

# Operating Manual

## **AMAZONE**

### **D9-9000 / D9-12000**

### **Catros 9000 / Catros 12000**



MG4254  
BAH0020-1 01.09



Please read and follow  
this operating manual before  
putting the machine into opera-  
tion for the first time.  
Keep it in a safe place  
for future reference.

en



# Reading the instruction

*manual and to adhere to it should not appear to be inconvenient and superfluous as it is not enough to hear from others and to realise that a machine is good, to buy it and to believe that now everything would work by itself. The person concerned would not only harm himself but also make the mistake of blaming the machine for the reason of a possible failure instead of himself. In order to ensure a good success one should go into the mind of a thing or make himself familiar with every part of the machine and to get acquainted with its handling. Only this way, you would be satisfied both with the machine as also with yourself. To achieve this is the purpose of this instruction manual.*

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*Leipzig-Plagwitz 1872. Rud. Sark.*

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**Identification data**

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Enter the machine identification data here. You will find the identification data on the rating plate.

Machine identification number:  
(ten-digit)

Type: Catros/D9 - 9000/12000

Year of manufacture:

Basic weight (kg):

Permissible  
total weight (kg):

Maximum load (kg):

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**Manufacturer's address**

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AMAZONEN-WERKE

H. DREYER GmbH & Co. KG

Postfach 51

D-49202 Hasbergen

Phone: + 49 (0) 5405 50 1-0

Fax: + 49 (0) 5405 501-234

E-mail: amazone@amazone.de

---

**Spare part orders**

---

AMAZONEN-WERKE

H. DREYER GmbH & Co. KG

Postfach 51

D-49202 Hasbergen

Phone: + 49 (0) 5405 501-290

Fax: + 49 (0) 5405 501-106

E-mail: et@amazone.de

Online spare parts catalogue: [www.amazone.de](http://www.amazone.de)

When ordering spare parts, always specify the (ten-digit) machine identification number.

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**Formalities of the operating manual**

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AMAZONEN-WERKE H. DREYER GmbH & Co. KG.

## Foreword

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## Foreword

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Dear Customer,

You have chosen one of the quality products from the wide product range of AMAZONEN-WERKE, H. DREYER GmbH & Co. KG. We thank you for your confidence in our products.

On receiving the machine, check to see if it was damaged during transport or if parts are missing. Using the delivery note, check that the machine was delivered in full including any special optional equipment ordered. Replacement will be made only if a claim is filed immediately!

Please read and follow this operating manual—in particular, the safety instructions—before putting the machine into operation. Only after careful reading will you be able to benefit from the full scope of your newly purchased machine.

Please ensure that all the machine operators have read this operating manual before they put the machine into operation.

Should you have problems or queries, please consult this operating manual or give us a call.

Regular maintenance and timely replacement of worn or damaged parts increases the lifespan of your machine.

## User evaluation

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Dear Reader

We update our operating manuals regularly. Your suggestions for improvement help us to create ever more user-friendly manuals. Send us your suggestions by fax.

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# **1 User information**

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The "User information" section supplies information on using the operating manual.

## **1.1 Purpose of the document**

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This operating manual

- Describes the operation and maintenance of the machine.
- Provides important information on safe and efficient handling of the machine.
- Is a component part of the machine and should always be kept with the machine or the traction vehicle.
- Keep it in a safe place for future use.

## **1.2 Locations in the operating manual**

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All the directions specified in the operating manual are always viewed in the direction of travel.

## **1.3 Diagrams used**

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### **Instructions for action and reactions**

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Tasks to be carried out by the user are presented as numbered instructions. Always keep to the order of the instructions. The reaction to instructions is given by an arrow. Example:

1. Instruction for action 1  
→ Reaction of the machine to instruction for action 1
2. Instruction for action 2

### **Lists**

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Lists without a mandatory sequence are presented as a list with bullet points. Example:

- Point 1
- Point 2

### **Item numbers in diagrams**

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Numbers in round brackets refer to the item numbers in the diagrams. The first digit refers to the diagram; the second digit, to the item number in the illustration.

Example: (Fig. 3/6):

- Figure 3
- Item 6



## 2 General safety instructions

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This section contains important information on safe operation of the machine.

### 2.1 Obligations and liability

---

#### Comply with the instructions in the operating manual

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Knowledge of the basic safety information and safety regulations is a basic requirement for safe handling and fault-free machine operation.

#### Obligations of the operator

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The operator is obliged only to let those people work with/on the machine who

- Are aware of the basic workplace safety information and accident prevention regulations.
- Have been trained in working with/on the machine.
- Have read and understood this operating manual.

The operator is obliged

- To keep all the warning pictograms on the machine in a legible state.
- To replace damaged warning pictograms.

If you still have queries, please contact the manufacturer.

#### Obligations of the user

---

Before starting work, anyone charged with working with/on the machine is obliged

- To comply with the basic workplace safety instructions and accident prevention regulations.
- To read and understand the section "General safety information" of this operating manual.
- To read the section "Warning pictograms and other signs on the machine", on page 16 of this operating manual and to follow the safety instructions on the warning symbols when operating the machine.
- To get to know the machine.
- To read the sections of this operating manual, important for carrying out your work.

If the user discovers that a function is not working properly, then they must eliminate this fault immediately. If this is not the task of the user or if the user does not possess the appropriate technical knowledge, then they should report this fault to their superior (operator).



## General safety instructions

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### Risks in handling the machine

---

The machine has been constructed to the state-of-the art and the recognised rules of safety. However, there may be risks and restrictions which occur when operating the machine

- For the health and safety of the user or third persons,
- For the machine,
- For other goods.

Only use the machine

- For the purpose for which it was intended.
- In a perfect state of repair.

Eliminate any faults that could impair safety immediately.

### Guarantee and liability

---

Our "General conditions of sales and business" are always applicable. These shall be available to the operator, at the latest on the completion of the contract. Guarantee and liability claims for damage to people or goods will be excluded if they can be traced back to one or more of the following causes:

- Improper use of the machine.
- Improper installation, commissioning, operation and maintenance of the machine.
- Operation of the machine with defective safety equipment or improperly attached or non-functioning safety equipment.
- Non-compliance with the instructions in the operating manual regarding commissioning, operation and maintenance.
- Unauthorised structural changes to the machine.
- Insufficient monitoring of machine parts that are subject to wear.
- Improperly executed repairs.
- Catastrophic events as a result of the impact of foreign objects or force majeure.

## 2.2 Representation of safety symbols

Safety instructions are indicated by the triangular safety symbol and the highlighted signal word. The signal word (DANGER, WARNING, CAUTION) describes the gravity of the risk and has the following significance:



### **DANGER**

Indicates an immediate high risk, which will result in death or serious physical injury (loss of body parts or long term damage) if not avoided.

If the instructions are not followed, then this will result in immediate death or serious physical injury.



### **WARNING**

Indicates a medium risk, which could result in death or (serious) physical injury if not avoided.

If the instructions are not followed, then this may result in death or serious physical injury.



### **CAUTION**

Indicates a low risk, which could incur minor or medium level physical injury or damage to property if not avoided.



### **IMPORTANT**

Indicates an obligation to special behaviour or an activity required for proper machine handling.

Non-compliance with these instructions can cause faults on the machine or in the environment.



### **NOTE**

Indicates handling tips and particularly useful information.

These instructions will help you to use all the functions of your machine to the optimum.

## 2.3 Organisational measures

---

The operator must provide the necessary personal protective equipment, such as:

- Safety glasses
- Protective shoes
- Protective suit
- Skin protection agents etc.



The operating manual

- Must always be kept at the place at which the machine is operated.
- Must always be easily accessible for the user and maintenance personnel.

Check all the available safety equipment regularly.

## 2.4 Safety and protection equipment

---

Before each commissioning of the machine, all the safety and protection equipment must be properly attached and fully functional. Check all the safety and protection equipment regularly.

### Faulty safety equipment

---

Faulty or disassembled safety and protection equipment can lead to dangerous situations.

## 2.5 Informal safety measures

---

As well as all the safety information in this operating manual, comply with the general, national regulations pertaining to accident prevention and environmental protection.

When driving on public roads and routes, then you should comply with the statutory road traffic regulations.

## 2.6 User training

Only those people who have been trained and instructed may work with/on the machine. The operator must clearly specify the responsibilities of the people charged with operation, maintenance and repair work.

People being trained may only work with/on the machine under the supervision of an experienced person.

Activity \ People	Person specially trained for the activity <sup>1)</sup>	Trained person <sup>2)</sup>	Person with specialist training (specialist workshop) <sup>3)</sup>
Loading/Transport	X	X	X
Commissioning	—	X	—
Set-up, tool installation	—	—	X
Operation	—	X	—
Maintenance	—	—	X
Troubleshooting and fault elimination	—	X	X
Disposal	X	—	—

Key: X..permitted —..not permitted

<sup>1)</sup> A person who can assume a specific task and who can carry out this task for an appropriately qualified company.

<sup>2)</sup> Instructed persons are those who have been instructed in their assigned tasks and in the possible risks in the case of improper behaviour, have been trained if necessary, and have been informed about the necessary protective equipment and measures.

<sup>3)</sup> People with specialist technical training shall be considered as a specialist. Due to their specialist training and their knowledge of the appropriate regulations, they can evaluate the work with which they have been charged and detect possible dangers.

Comment:

A qualification equivalent to specialist training can be obtained through long term activity in the appropriate field of work.



Only a specialist workshop may carry out maintenance and repair work on the machine, if such work is additionally marked "Specialist workshop". The personnel of a specialist workshop shall possess the appropriate knowledge and suitable aids (tools, lifting and support equipment) for carrying out the maintenance and repair work on the machine in a way which is both appropriate and safe.

## 2.7 Safety measures in normal operation

Only operate the machine if all the safety and protection equipment is fully functional.

Check the machine at least once a day for visible damage and check the function of the safety and protection equipment.

## 2.8 Dangers from residual energy

Note that there may be residual mechanical, hydraulic, pneumatic and electrical/electronic energy at the machine.

Use appropriate measures to inform the operating personnel. You can find detailed information in the relevant sections of this operating manual.

## 2.9 Maintenance and repair work, fault elimination

Carry out prescribed setting, maintenance and inspection work in a timely manner.

Secure all media such as compressed air and the hydraulic system against unintentional start-up.

Carefully fix and secure larger subassemblies to lifting gear when carrying out replacement work.

Check all the screw connections for a firm seat. On completing maintenance work, check the function of safety and protection equipment.

## 2.10 Constructive changes

You may make no changes, expansions or modifications to the machine without the authorisation of AMAZONEN-WERKE. This is also valid when welding support parts.

Any expansion or modification work shall require the written approval of AMAZONEN-WERKE. Only use the modification and accessory parts released by AMAZONEN-WERKE so that the operating permit, for example, remains valid in accordance with national and international regulations.

Vehicles with an official type approval or with equipment connected to a vehicle with a valid type approval or approval for road transport according to the German road traffic regulations must be in the state specified by the approval.



### **WARNING**

**Risk of being crushed, cut, caught, drawn in or struck if supporting parts break.**

It is prohibited to:

- Drill holes in the frame or on the chassis.
- Increasing the size of existing holes on the frame or the chassis.
- Welding support parts.

### **2.10.1 Spare and wear parts and aids**

---

Immediately replace any machine parts which are not in a perfect state.

Only use AMAZONE spare and wear parts released by AMAZONEN-WERKE, so that the type approval remains valid according to the national and international regulations. If you use wear and spare parts from third parties, there is no guarantee that they have been designed and manufactured in such a way as to meet the requirements placed on them.

AMAZONEN-WERKE accepts no liability for damage arising from the use of unapproved spare parts, wear parts or auxiliary materials.

### **2.11 Cleaning and disposal**

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Handle and dispose of any materials used carefully, in particular:

- When carrying out work on lubrication systems and equipment and
- When cleaning using solvents.

### **2.12 User workstation**

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The machine may be operated by only one person sitting in the driver's seat of the tractor.

## 2.13 Warning pictograms and other signs on the machine

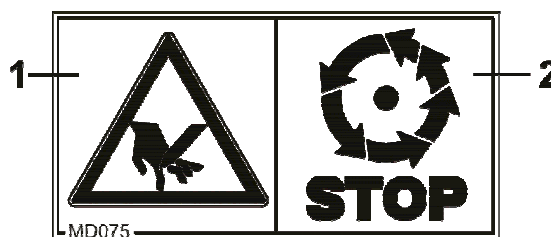


Always keep all the warning pictograms of the machine clean and in a legible state. Replace illegible warning pictograms. You can obtain the warning pictograms from your dealer using the order number (e.g. MD 075).

### Warning pictograms - structure

Warning pictograms indicate dangers on the machine and warn against residual dangers. At these points, there are permanent or unexpected dangers.

A warning pictogram consists of two fields:



#### Field 1

is a pictogram describing the danger, surrounded by triangular safety symbol.

#### Field 2

is a pictogram showing how to avoid the danger.

### Warning pictograms - explanation

The column **Order number and explanation** provides an explanation of the neighbouring warning pictogram. The description of the warning pictograms is always the same and specifies, in the following order:

1. A description of the danger.  
For example: danger of cutting!
2. The consequence of nonobservance of the danger protection instructions.  
For example: causes serious injuries to fingers or hands.
3. Instructions for avoiding the danger.  
For example: only touch machine parts when they have come to a complete standstill.



## Order number and explanation

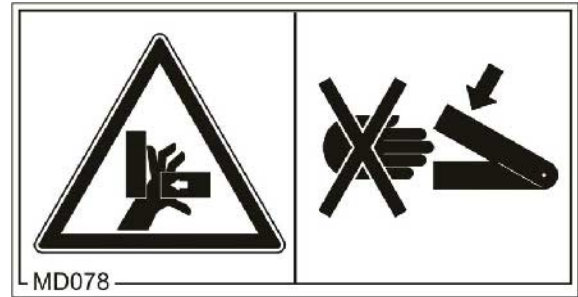
## Warning pictograms

## MD 078

**Risk of crushing fingers or hands through accessible moving machine parts.**

This danger causes extremely serious injuries with the loss of body parts such as fingers or hands.

Never reach into the danger area when the tractor engine is running with the hydraulic system connected.

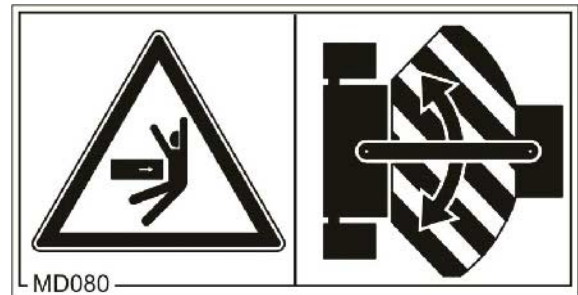


## MD 080

**Risk of crushing to torso in the articulated area of the drawbar due to sudden steering movements.**

This hazard will inflict extremely serious injuries to the torso which may also be fatal.

It is prohibited to stand in the danger area between the tractor and the machine if the tractor engine is running and the tractor is not secured to prevent it from accidentally rolling away.



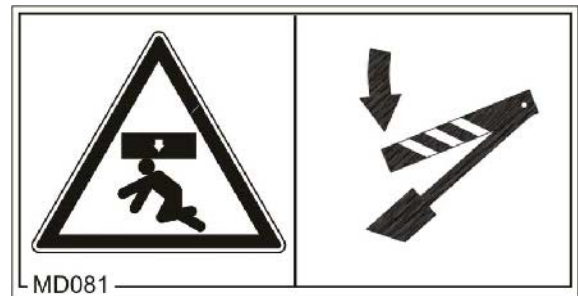
## MD 081

**Risk of any part of the body being crushed by machine parts descending unintentionally, having been raised via the lifting cylinder.**

This danger will cause serious injuries anywhere on the body or death.

If machine parts have been raised, secure the lifting cylinder against lowering unintentionally, before entering the danger area beneath the raised machine parts.

To do this, use the mechanical lifting cylinder support or the hydraulic locking device.



## General safety instructions

### MD 082

#### **Danger of falling from treads and platforms when riding on the machine!**

This danger will cause serious injuries anywhere on the body or death.

It is prohibited to ride on the machine and/or climb the running machine. This ban also applies to machines with treads or platforms.

Ensure that no one rides with the machine.



### MD 084

#### **Risk of crushing to the whole body from machine parts moving down from above.**

This danger will cause serious injuries anywhere on the body or death.

It is prohibited to stand in the swivel area of moving machine parts.

Instruct people to leave the swivel area of moving machine parts before the machine parts move down.

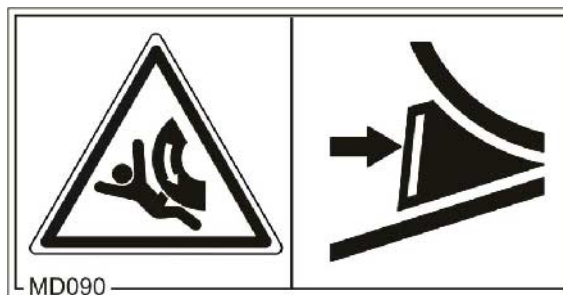


### MD 090

#### **Risk of crushing from the machine rolling out of position unintentionally when it is uncoupled or unsecured.**

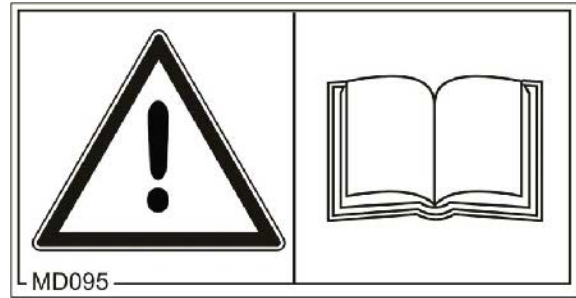
This danger will cause serious injuries anywhere on the body or death.

Secure the machine against unintentional rolling, before uncoupling the machine from the tractor. For this, use the tractor parking brake and/or the wheel chock(s).



### MD 095

Read and understand the operating manual safety information before starting up the machine!



### MD 096

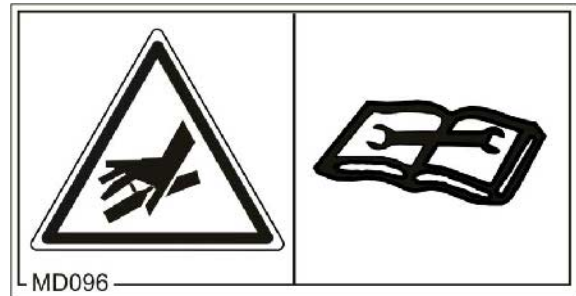
**Danger of infection to the whole body from liquids escaping at a high pressure (hydraulic fluid)!**

This danger will cause serious injuries over the whole body, if hydraulic fluid escaping at high pressure passes through the skin and into the body.

Never attempt to plug leaks in hydraulic hose lines using your hand or fingers.

Read and understand the information in the operating manual before carrying out maintenance and repair work.

If you are injured by hydraulic fluid, contact a doctor immediately.



### MD 097

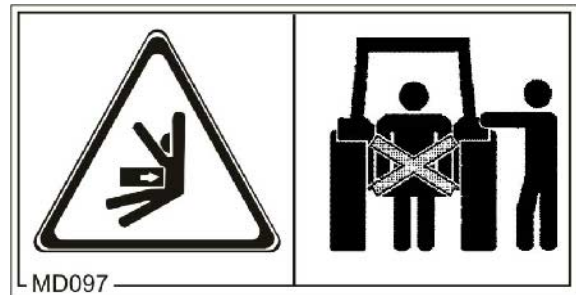
**Danger of crushing your torso in the stroke range of the three-point suspension due to the narrowing spaces when the three-point hydraulic system is actuated!**

This danger causes extremely serious injuries and even death.

Personnel are prohibited from entering the stroke area of the three-point suspension when the three-point hydraulic system is actuated.

Only actuate the operator controls for the tractor's three-point hydraulic system:

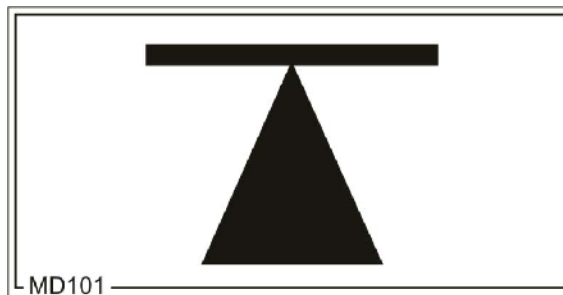
- From the intended workstation.
- If you are outside of the danger area between the tractor and the machine.



## General safety instructions

### MD 101

This pictogram shows application points for lifting gear (jack).



### MD 102

**Danger from unintentional machine starting and rolling during intervention in the machine, e.g. installation, adjusting, trouble-shooting, cleaning, maintaining and repairing.**

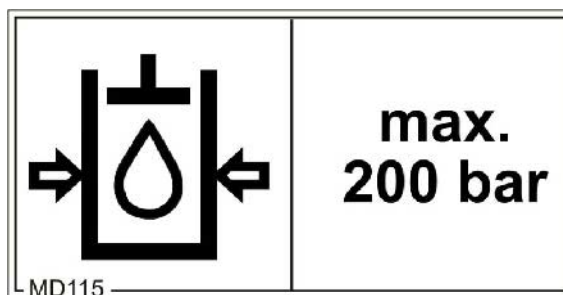
This danger will cause serious injuries anywhere on the body or death.

- Secure the tractor and the machine against unintentional start-up and rolling before any intervention in the machine.
- Depending on the type of intervention, read and understand the information in the relevant sections of the operating manual.



### MD 115

The maximum operating pressure of the hydraulic system is 200 bar.



## 2.13.1 Positioning of warning pictograms and other labels

### Warning pictograms

The following diagrams show the arrangement of the warning pictograms on the machine.

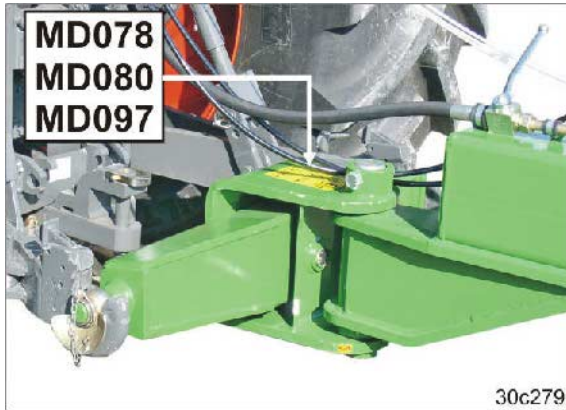


Fig. 1



Fig. 2



Fig. 3

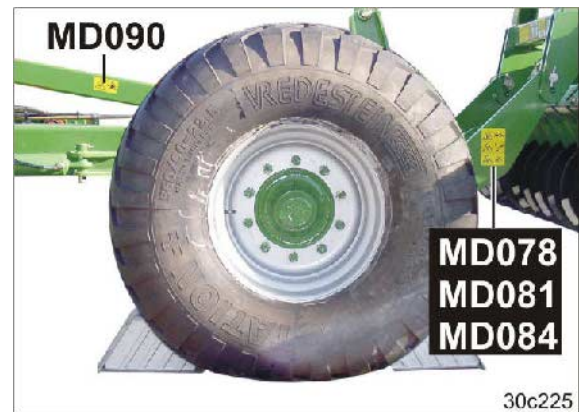


Fig. 4



Fig. 5

## 2.14 Dangers if the safety information is not observed

---

Nonobservance of the safety information

- Can pose both a danger to people and also to the environment and machine.
- Can lead to the loss of all warranty claims.

Seen individually, non-compliance with the safety information could pose the following risks:

- Danger to people through non-secured working areas.
- Failure of important machine functions.
- Failure of prescribed methods of maintenance and repair.
- Danger to people through mechanical and chemical impacts.
- Risk to environment through leakage of hydraulic fluid.

## 2.15 Safety-conscious working

---

Besides the safety information in this operating manual, the national general workplace safety and accident prevention regulations are binding.

Comply with the accident prevention instructions on the warning pictograms.

When driving on public roads and routes, comply with the appropriate statutory road traffic regulations.

## 2.16 Safety information for users



### WARNING

**Risk of being crushed, cut, caught, drawn in or struck due to insufficient traffic and operational safety!**

Before starting up the machine and the tractor, always check their traffic and operational safety.

### 2.16.1 General safety and accident prevention information

- Beside these instructions, comply with the general valid national safety and accident prevention regulations.
- The warning pictograms and labels attached to the machine provide important information on safe machine operation. Compliance with this information guarantees your safety!
- Before moving off and starting up the machine, check the immediate area of the machine (children)! Ensure that you can see clearly!
- It is prohibited to ride on the machine or use it as a means of transport!
- Drive in such a way that you always have full control over the tractor with the attached machine.  
In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor and the influences caused by the machine if it is attached or hitched.

### Connecting and disconnecting the machine

- Only connect and transport the machine with tractors suitable for the task.
- When connecting machines to the tractor three-point hydraulic system, the attachment categories of the tractor and the machine must always be the same!
- Connect the machine to the prescribed equipment in accordance with the specifications.
- When coupling machines to the front or the rear of the tractor, the following may not be exceeded:
  - The approved total tractor weight
  - The approved tractor axle loads
  - The approved load capacities of the tractor tyres
- Secure the tractor and the machine against unintentional rolling, before coupling or uncoupling the machine.
- It is prohibited for people to stand between the machine to be coupled and the tractor, whilst the tractor is moving towards the machine!  
Any helpers may only act as guides standing next to the vehicles, and may only move between the vehicles when both are at a standstill.
- Secure the operating lever of the tractor hydraulic system so that unintentional raising or lowering is impossible, before connecting



the machine to or disconnecting the machine from the tractor's three-point hydraulic system.

- When coupling and uncoupling machines, move the support equipment (if available) to the appropriate position (stability).
- When actuating the support equipment, there is a danger of injury from contusion and cutting points!
- Be particularly careful when coupling the machine to the tractor or uncoupling it from the tractor! There are contusion and cutting points in the area of the coupling point between the tractor and the machine.
- It is prohibited to stand between the tractor and the machine when actuating the three-point hydraulic system.
- Coupled supply lines:
  - Must give without tension, bending or rubbing on all movements when travelling round corners.
  - must not chafe against other parts.
- The release ropes for quick action couplings must hang loosely and may not release themselves when lowered.
- Also ensure that uncoupled machines are stable!



---

## Use of the machine

---

- Before starting work, ensure that you understand all the equipment and actuation elements of the machine and their function. There is no time for this when the machine is already in operation!
- Do not wear loose-fitting clothing! Loose clothing increases the risk over being caught by drive shafts!
- Only start-up the machine, when all the safety equipment has been attached and is in the safety position!
- Comply with the maximum load of the connected machine and the approved axle and drawbar loads of the tractor. If necessary, drive only with a partially-filled hopper.
- It is prohibited to stand in the working area of the machine.
- It is prohibited to stand in the turning and rotation area of the machine.
- There are nip and shear points at externally-actuated (e.g. hydraulic) machine points.
- Only actuate externally-actuated machine parts when you are sure that there is no-one within a sufficient distance from the machine!
- Secure the tractor against unintentional start-up and rolling before you leave the tractor.  
For this:
  - Lower the machine onto the ground
  - Apply the tractor parking brake
  - Switch off the tractor engine
  - Remove the ignition key.



### Transporting the machine

---

- Before moving off, check:
  - The correct connection of the supply lines
  - That the tractor parking brake is released completely.
- Ensure that the tractor has sufficient steering and braking power. Any machines and front/rear weights connected to the tractor influence the driving behaviour and the steering and braking power of the tractor.
- If necessary, use front weights.

The front tractor axle must always be loaded with at least 20% of the empty tractor weight, in order to ensure sufficient steering power.
- Always fix the front or rear weights to the intended fixing points according to regulations.
- Comply with the maximum payload of the connected machine and the approved axle and drawbar loads of the tractor.
- The tractor must guarantee the prescribed brake delay for the loaded vehicle combination (tractor plus connected machine).
- Check the brake power before moving off.
- When turning corners with the machine connected, take the broad load and balance weight of the machine into account.
- Before moving off, ensure sufficient side locking of the tractor lower links, when the machine is fixed to the three-point hydraulic system or lower links of the tractor.
- Before moving off, move all the swivel machine parts to the transport position.
- Before moving off, secure all the swivel machine parts in the transport position against risky position changes. Use the transport locks intended for this.
- Before transportation, secure the operating lever of the three-point hydraulic system to prevent unintentional raising or lowering of the machine if it is attached or hitched.
- Before transportation, carry out a visual check that the upper and lower link pins are firmly fixed with the lynch pin against unintentional release.
- Adjust your forward speed to the prevailing conditions.
- Before driving downhill, switch to a low gear.
- Before moving off, always switch off the independent wheel braking (lock the pedals).

## 2.16.2 Hydraulic system

- The hydraulic system is under a high pressure.
- Ensure that the hydraulic hose lines are connected correctly.
- When connecting the hydraulic hose lines, ensure that the hydraulic system is depressurised on both the machine and tractor sides.
- It is prohibited to block the operator controls on the tractor which are used for hydraulic and electrical movements of components, e.g. folding, swivelling and pushing movements. The movement must stop automatically when you release the appropriate control. This does not apply to equipment movements that:
  - are continuous or
  - are automatically locked or
  - require a float position or pressure position due to their function.
- Before working on the hydraulic system
  - Lower the machine
  - Depressurise the hydraulic system
  - Switch off the tractor engine
  - Apply the tractor parking brake
  - Take out the ignition key.
- Have the hydraulic hose lines checked at least once a year by a specialist to ensure they are in safe working order.
- Replace the hydraulic hose lines if they are damaged or show signs of ageing. Only use original AMAZONE hydraulic hose lines.
- The hydraulic hose lines should not be used for longer than six years, including any storage time of maximum two years. Even with proper storage and approved use, hoses and hose connections are subject to natural ageing, thus limiting the length of use. However, it may be possible to specify the length of use from experience values, in particular when taking the risk potential into account. In the case of hoses and hose lines made from thermoplastics, other guide values may be decisive.
- Never attempt to plug leaks in hydraulic hose lines using your hand or fingers.

Escaping high pressure fluid (hydraulic fluid) may pass through the skin and ingress into the body, causing serious injuries!  
If you are injured by hydraulic fluid, contact a doctor immediately.  
Danger of infection.
- When searching for leakage points, use suitable aids, to avoid the serious risk of infection.

### 2.16.3 Electrical system

---

- When working on the electrical system, always disconnect the battery (negative terminal).
- Only use the prescribed fuses. If fuses are used with too high a rating, the electrical system will be irreparably damaged – risk of fire.
- Ensure that the battery is connected correctly - firstly connect the positive terminal and then connect the negative terminal. When disconnecting the battery, disconnect the negative terminal first, followed by the positive terminal.
- Always place the appropriate cover over the positive battery terminal. If there is accidental earth contact, there is a risk of explosion.
- Risk of explosion. Avoid the production of sparks and the presence of naked flames in the vicinity of the battery.
- The machine can be equipped with electronic components, the function of which may be influenced by electromagnetic interference from other units. Such interference can pose risks to people, if the following safety information is not followed.
  - In the case of retrofitting of electrical units and/or components on the machine, with a connection to the on-board power supply, the user must check whether the installation might cause faults on the vehicle electronics or other components.
  - Ensure that the retrofitted electrical and electronic components comply with the EMC directive 89/336/EEC in the appropriate version and carry the CE mark.

### 2.16.4 Attached machines

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- Comply with the approved combination options for the attachment equipment on the tractor and the machine drawbar.  
Only couple approved combinations of vehicles (tractor and attached machine).
- In the case of single axle machines, observe the maximum permitted drawbar load of the tractor on the attachment equipment.
- Ensure that the tractor has sufficient steering and braking power.  
Machines connected to a tractor can influence your driving behaviour, as well as the steering and braking power of the tractor, in particular in the case of single axle machines with the drawbar load on the tractor.
- Only a specialist workshop may adjust the height of the drawbar on yoke bars with a drawbar load.

### 2.16.5 Tyres

---

- Repair work on tyres and wheels may only be carried out by specialists with suitable installation tools.
- Check the air pressure at regular intervals.
- Inflate tyres to the specified pressure. If the air pressure in the tyres is too high, then there is a risk of explosions!
- Park the machine in a safe place and secure the machine against unintentional lowering and rolling (tractor parking brake, wheel chocks), before carrying out work on the tyres.
- Tighten or retighten all the fixing screws and nuts in accordance with the specifications of AMAZONEN-WERKE!

### 2.16.6 Operation of the seed drill

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- Observe the permitted filling volumes of the seed hopper (seed hopper content).
- Only use the steps and the loading board when filling the seed hopper.  
It is prohibited to ride on the machine during operation.
- During the calibration test, note the danger points from rotating and oscillating machine parts.
- Before transportation, remove the track discs of the tramline marker.
- Do not place any parts in the seed hopper.
- Lock the track marker (construction-dependent) in the transport position before transportation.

### 2.16.7 Cleaning, maintenance and repairs

---

- Only carry out cleaning, maintenance and repair work on the machine when:
  - the drive is switched off
  - the tractor engine is at a standstill
  - the ignition key has been removed
  - the machine connector has been disconnected from the on-board computer.
- Regularly check the nuts and bolts for a firm seat and retighten them as necessary.
- Secure the raised machine and/or raised machine parts against unintentional lowering before performing any cleaning, maintenance or repair work on the machine.
- When replacing work tools with blades, use suitable tools and gloves.
- Dispose of oils, greases and filters in the appropriate way.
- Disconnect the cable to the tractor generator and battery, before carrying out electrical welding work on the tractor and on attached machines.
- Spare parts must meet at least the specified technical requirements of AMAZONEN-WERKE! This is ensured through the use of original AMAZONE spare parts.

### 3 Loading and unloading



#### DANGER

Do not stand under a machine that has been hoisted by a crane.

#### 3.1 Loading the KR 9002 / KR 12002 coupling frame

1. Remove the lifting frames which are secured to the booms.



Fig. 6

2. Load the KR 9002 and KR 12002 coupling frame with a crane (Fig. 6).
3. Secure the coupling frame to the tractor according to instructions. Bear in mind that the coupling frame has no parking brake.

## 4 Product description

This section:

- Provides a comprehensive overview of the machine structure.
- Provides the names of the individual modules and controls.

Read this section when actually at the machine. This helps you to understand the machine better.

### 4.1 Coupling frame: Overview of subassemblies

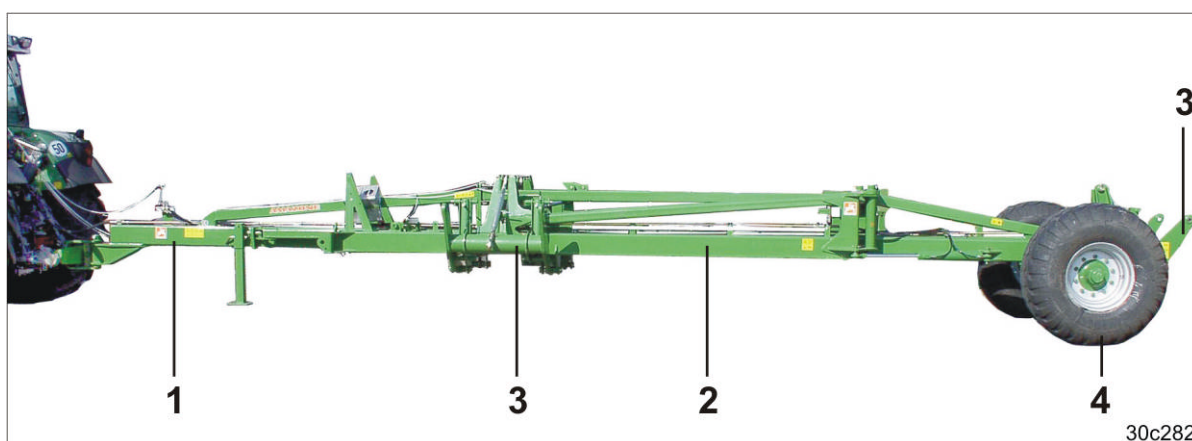


Fig. 7

Fig. 7/...

- |                         |                               |
|-------------------------|-------------------------------|
| (1) Coupling frame KR   | (3) Lifting frames (3 pieces) |
| (2) Coupling frame boom | (4) Running gear              |

Fig. 8/...

- |  |
|--|
| (1) Tensioned crosspiece   |
| (2) Stand, extendable  |
| (3) Shut-off valve (when closed, the shut-off valve prevents the lifting frames from lowering) |
| (4) 6/2 directional control valve with pull cable as required, switches between                |
| o the boom folding system  |
| o boom holder actuation.   |

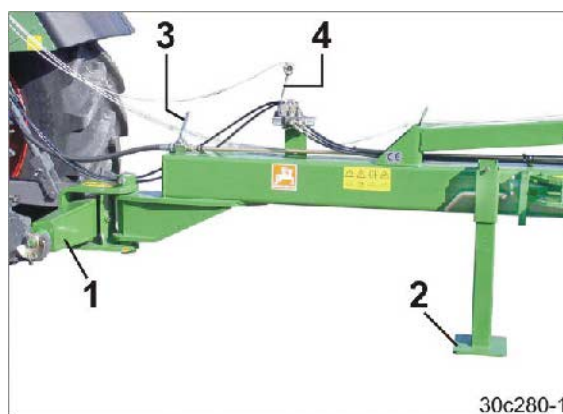


Fig. 8



Fig. 9/...

(1) Supply lines



**Fig. 9**

Fig. 10

Wheel chocks



**Fig. 10**

## 4.2 Coupling frame: Safety and protection equipment

Fig. 11/...

- (1) Boom holder (secures the booms in the transport position)



Fig. 11

Fig. 12/...

- (1) Locking hook 1 (secures the boom holder in the transport position)

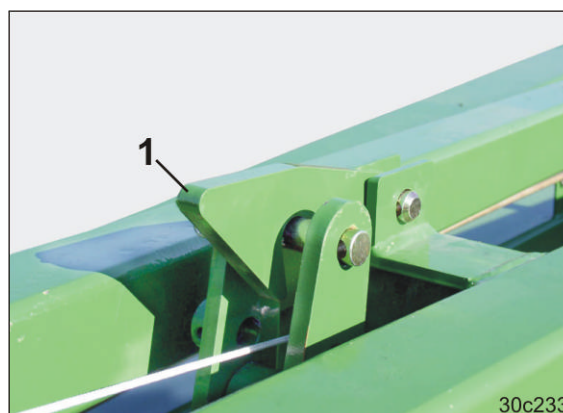


Fig. 12

Fig. 13/...

- (1) Locking hook 2 (secures the booms in the working position)

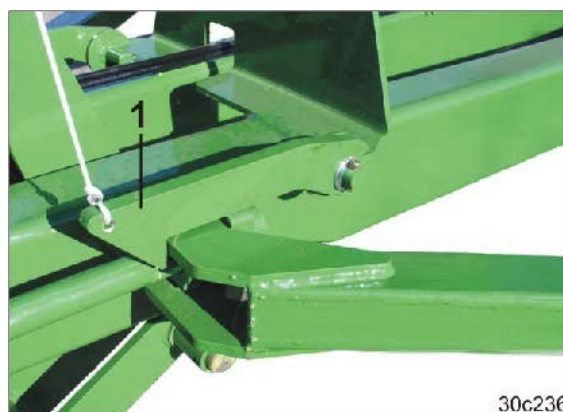


Fig. 13

## 4.3 Overview – supply lines

### 4.3.1 Coupling frame supply lines

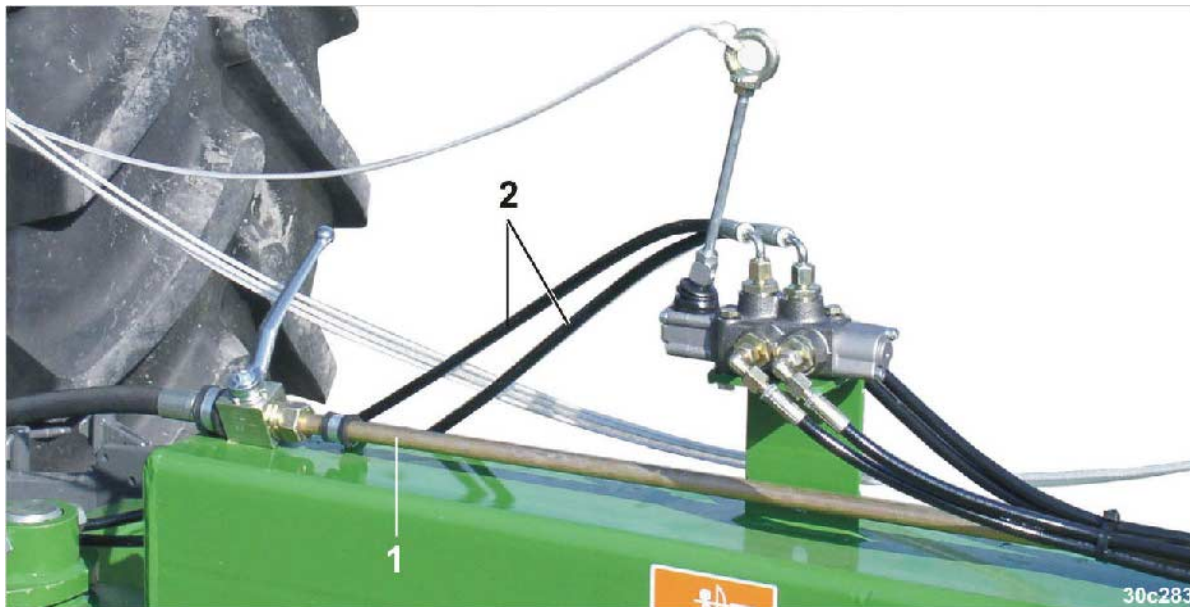


Fig. 14

Fig. 14/..	Designation		Marking	Function
(1)	Hydraulic line 1	Delivery/ return flow	1 cable tie, neutral	Lowers/raises the lifting frames
(2)	Hydraulic line 2	Feed line	1 cable tie, green	<ul style="list-style-type: none"> <li>Folds booms in/out</li> <li>Raises/lowers the boom holder</li> </ul>
		Return line	2 cable ties, green	
	Hydraulic line 3	Delivery/ return flow	1 cable tie, yellow	Raises/lowers the track marker

### 4.3.2 D9 seed drill supply lines



Fig. 15

Fig. 15/..	Designation		Marking	Function
(1)	Hydraulic line 4	Delivery/ return flow	1 cable tie, yellow	<ul style="list-style-type: none"> <li>Control box</li> <li>Tramline marking</li> </ul>
(2)	Hydraulic line 5	Delivery/ return flow	1 cable tie, blue	<ul style="list-style-type: none"> <li>Coulter pressure adjustment</li> <li>Exact harrow pressure adjustment</li> <li>Seed rate remote control</li> </ul>
(3)	Machine connector (as required)			
	<ul style="list-style-type: none"> <li>AMACO</li> <li>AMALOG+</li> <li>AMATRON+</li> </ul>			

## 4.4 Intended use

The coupling frame

- is designed for coupling three attachable machines
  - Catros compact disc cultivator or
  - D9 seed drilleach with a 3 m or 4 m working width
- is coupled to the tractor using the lower tractor line and is operated by an additional person.

The Catros compact disc cultivator is designed for intensive, flat stubble cultivation on agricultural crop lands.

The D9 seed drill is designed for metering and placing conventional seeds.

Slopes can be travelled

- Along the contours

Direction of travel to left	10 %
Direction of travel to right	10 %
- Along the gradient

Up the slope	10 %
Down the slope	10 %

The intended use also includes:

- following all instructions in this operating manual and the specific operating manual for the attachable machines, included in this operating manual
- adherence to inspection and maintenance work.
- Exclusive use of original AMAZONE spare parts.

Other uses to those specified above are prohibited and shall be considered as improper.

For any damage resulting from improper use:

- the operator bears sole responsibility
- AMAZONEN-WERKE assumes no liability whatsoever.

## 4.5 Danger area and danger points

---

The danger area is the area around the machine in which people can be caught:

- By work movements made by the machine and its tools
- By materials or foreign objects ejected by the machine
- By tools rising or falling unintentionally
- By unintentional rolling of the tractor and the machine

Within the machine danger area, there are danger points with permanent or unexpected risks. Warning pictograms indicate these danger points and warn against residual dangers, which cannot be eliminated for construction reasons. Here, the special safety regulations of the appropriate section shall be valid.

No-one may stand in the machine danger area:

- as long as the tractor engine is running with a connected hydraulic system.
- as long as the tractor and machine are not protected against unintentional start-up and running.

The operating person may only move the machine or switch or drive the tools from the transport position to the operational position or vice-versa when there is no-one in the machine danger area.

Danger points exist:

- in the arc of the swivelling coupling frame booms
- in the arc of the swivelling track marker
- in the arc of the swivelling lifting frames.

## 4.6 Coupling frame: Rating plate and CE mark

The illustration (Fig. 16) shows the layout of the rating plate and the CE mark.

The rating plate shows:

- Mach. ident. no.
- Type
- Basic weight, kg
- Maximum load, kg
- Year of manufacture
- Factory



Fig. 16

The CE mark (Fig. 17) on the machine indicates compliance with the stipulations of the applicable EU directives.



Fig. 17



## 4.7 Technical Data

<b>Coupling frame</b>		<b>KR 9002</b>	<b>KR 12002</b>
Maximum working pressure (hydraulics)	[bar]	200	200
Tensioned link		Tensioned crosspiece (Cat. III, Cat. IV, Cat. V)	
		Drawbar (option)	
Tyres		550/60-22.5 12PR	550/60-22.5 12PR
Tyre pressure	[bar]	2.5	2.5
permissible max. speed <sup>1)</sup>	[km/h]	25	25
Overall height with track markers in transport position	[mm]	4000	4000
Oil flow rate (minimum)	[l/min]	80	80

<sup>1)</sup> Not permitted on public roads

<b>Coupling frame (solo) without machines</b>		<b>KR 9002</b>	<b>KR 12002</b>
Transport width (solo)	[m]	2.8	2.9
Total length (solo)	[m]	11.4	11.4
Empty weight	[kg]	3550	3850
Permissible total weight	[kg]	10000	10500
Permissible axle load	[kg]	10000	10000
Permissible (max.) drawbar load ( $F_H$ )	[kg]	3000	3500

<b>Coupling frame with Catros disc cultivator</b>		<b>KR 9002 / Catros</b>	<b>KR 12002 / Catros</b>
Working width	[m]	9.0	12.0
Transport width with Catros	[m]	7.0	7.0
Total length with Catros	[m]	14	14
Power requirement (from)	[kW/bhp]	198 / 270	257 / 350
Working speed	[km/h]	approximately 15	approximately 15
maximum drawbar load ( $F_H$ )	[kg]	3000	3500
Overall height (without track markers in the transport position)	[mm]	2100	2100



<b>Coupling frame with D9 seed drills</b>		<b>KR 9002 / D9-30</b>	<b>KR 12002 / D9-40</b>
Working width	[m]	9.0	12.0
Transport width with D9	[m]	6.55	6.55
Total length with D9	[m]	13.3	13.3
Power requirement (from)	[kW/bhp]	110/150	147/200
Working speed	[km/h]	6 to 10	6 to 10
Maximum drawbar load ( $F_H$ )	[kg]	2500	3000

## 4.8 Necessary tractor equipment

For operation of the machine in compliance with the intended use, the tractor must fulfil the following requirements.

### Tractor engine power

D9-9000	From 110 kW (150 bhp)
Catros 9000	From 198 kW (270 bhp)

D9-12000	From 147 kW (200 bhp)
Catros 12000	From 257 kW (350 bhp)



## Product description

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### Hydraulic system

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Maximum operating pressure: 200 bar

Tractor pump capacity: At least 80 l/min at 150 bar

Machine hydraulic fluid: Gearbox/hydraulic fluid Utto SAE 80W API GL4

The machine hydraulic/transmission fluid is suitable for the combined hydraulic/transmission fluid circuits of all standard makes of tractor.

### Control unit for actuating the coupling frame

---

Control unit 1: single-acting control unit

Control unit 2: double-acting control unit

Control unit 3: single-acting control unit

### Control units for actuating the D9 seed drills

---

Control unit 4: single-acting control unit

Control unit 5: single-acting control unit

## 5 Structure and function

The following section provides information on the machine structure and the functions of the individual components.

### 5.1 Coupling frame/Catros compact disc cultivator combination



Fig. 18

The effective working width of 9.0 m or 12.0 m results from three Catros compact disc cultivators being attached to the coupling frame (Fig. 18/1).

The Catros compact disc cultivator is especially suited to flat, intensive stubble cultivation in medium and heavy soil. Even in soil with a lot of organic matter, the coulter discs (Fig. 18/2) run without blockages. The intensive mixing soil tillage facilitates the quick and even germination of volunteer grain and weeds. To protect it from damage, every disc is fitted with elastic rubber spring elements.

The wedge ring roller (Fig. 18/3) pushes the coulter discs down into the ground. The high-compression wedge ring creates the optimum soil closure for ideal germination conditions. Water infiltrates through the non-compacted areas.

When transporting between fields, on private roads, the booms are hydraulically folded in to a transport width of 7.0 m.

## 5.2 Coupling frame/D9 seed drills combination



**Fig. 19**

Attaching three D9 seed drills to the coupling frame gives an effective working width of 9.0 m or 12.0 m.

Each individual machine runs on its own running gear, so that it can be flexible enough to suit even extreme ground undulations.

Each seed drill is lifted in the liftpack for transport and turning at the field edge.

The stable track marker marks a track in the centre of the tractor and is folded perpendicular for transport and when turning at the field edge.

The middle seed drill is equipped with a tramline control (option), which can create tramlines spaced at 12, 24 or 36 m. When switching the track marker, the tramline control continues counting, to create tramlines at the required rhythm.

To reduce unwanted wheel tracks, all seed drills are equipped as standard with large wheels (approx. Ø 600 mm). The wheel mark eradicator (option) with stone release opens up the seed drill tracks. The tractor tracks are covered over by the wheel mark eradicators (option).

The WS coulters are particularly well suited for conventional drilling or small amounts of straw, e.g. for rape or turnips.

The drilling accuracy, area efficiency and service life is optimised by using the RoTeC coulters. The RoTeC coulters are also not blocked up by large quantities of straw and plant remains.

When transporting between fields using private roads, the outer machines are hydraulically folded in.

## 5.3 Hydraulic hose lines



### WARNING

**Danger of infection from escaping hydraulic fluid at high pressure!**

When coupling and uncoupling the hydraulic hose lines, ensure that the hydraulic system is depressurised on both the machine and tractor sides.

If you are injured by hydraulic fluid, contact a doctor immediately.

### 5.3.1 Coupling the hydraulic hose lines



### WARNING

**Risk of being crushed, cut, caught, drawn in or struck due to faulty hydraulic functions when the hydraulic hose lines are connected incorrectly!**

When coupling the hydraulic hose lines, observe the coloured markings on the hydraulic connectors.



- Check the compatibility of the hydraulic fluids before connecting the machine to the hydraulic system of the tractor.  
Do not mix any mineral oils with biological oils.
- Observe the maximum approved hydraulic fluid pressure of 200 bar.
- Only couple clean hydraulic connectors.
- Push the hydraulic connector(s) into the hydraulic sockets until the hydraulic connector(s) perceivably lock(s).
- Check the coupling points of the hydraulic hose lines for a correct, tight seat.

1. Swivel the actuation lever on the spool valve on the tractor to float position (neutral position).
2. Clean the hydraulic connectors of the hydraulic hose lines before you couple the hydraulic hose lines to the tractor.
3. Connect the hydraulic hose line(s) to the tractor control unit(s).



Fig. 20

## 5.3.2 Uncoupling the hydraulic hose lines

1. Swivel the actuation lever on the control unit on the tractor to float position (neutral position).
2. Unlock the hydraulic connectors from the hydraulic sockets.
3. Protect the hydraulic connectors and hydraulic connector sockets from soiling using the dust protection caps.
4. Place the hydraulic hose lines in the holder for the supply lines.



Fig. 21

## 5.4 Lifting frames

The coupling frame is equipped with three lifting frames (Fig. 22/1), each of which secures an attachable machine.

The machines are lifted by the lifting frames for transport and turning at the field edge.



Fig. 22



### DANGER

- Risk of injury from moving parts when raising the lifting frame!
- Only operate the hydraulic lifting frame if persons are outside the swivelling area!
- It is prohibited to enter or remain in the area below the raised combination!

## 5.5 Track marker (option)

The hydraulically actuated track markers dig into the ground alternately on the left and the right of the machine.

In the process, the active track marker produces a marker line. This mark serves as an orientation aid for the correct bout tracking after turning at the headland.

After turning, the tractor driver drives over the centre of the mark.



Fig. 23

It is possible to set:

- The length of the track marker
- The working intensity of the track marker, depending on the type of soil.



Fig. 24

To pass obstacles the active track marker can be folded in and out on the field.

The track markers are equipped with shear protectors. If the track marker strikes against a solid obstacle, a bolt shears off and the track marker deviates around the obstacle. We recommend carrying replacement shear bolts (see section "Shearing of the track marker boom", on page 91) along with you in the tractor.



## 6 Commissioning

This section contains information

- on initial operation of your machine
- on checking how you may attach the machine to your tractor.



- Before operating the machine for the first time the operator must have read and understood the operating manual.
- Please refer to the section "Safety information for users", from on page 23 onwards when
  - Connecting and disconnecting the machine
  - Transporting the machine
  - Use of the machine
- Only couple and transport the machine to/with a tractor which is suitable for the task.



### WARNING

**Risk of contusions, cutting, catching, drawing in and knocks in the area of hydraulically or electrically actuated components.**

Do not block the operator controls on the tractor which are used for hydraulic and electrical movements of components, e.g. folding, swivelling and pushing movements. The movement must stop automatically when you release the appropriate control. This does not apply to equipment movements that:

- are continuous or
- are automatically locked or
- require a float position or pressure position due to their function.



## 6.1 Checking the suitability of the tractor



### WARNING

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power on improper use of the tractor!**

- Check the suitability of your tractor before you attach or hitch the machine to the tractor.  
You may only connect the machine to tractors suitable for the purpose.
- Carry out a brake test to check whether the tractor achieves the required braking delay with the machine connected.

Requirements for the suitability of a tractor are, in particular:

- The permissible total weight
- The approved axle loads
- The approved drawbar load at the tractor coupling point
- The load capacity of the installed tyres
- The approved trailer load must be sufficient

You can find this data on the rating plate or in the vehicle documentation and in the tractor operating manual.

The front axle of the tractor must always be subjected to at least 20% of the empty weight of the tractor.

The tractor must achieve the brake delay specified by the tractor manufacturer, even with the machine connected.

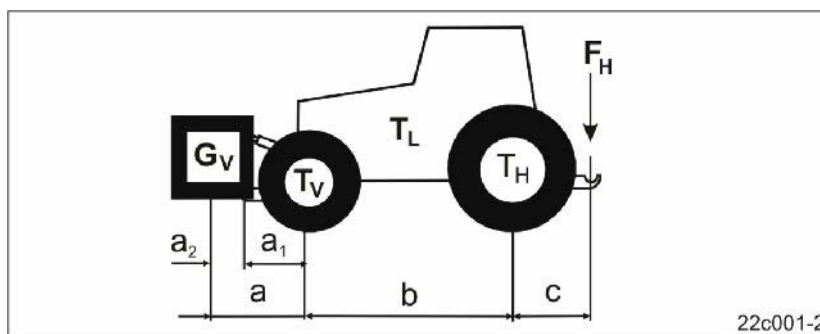
### 6.1.1 Calculating the actual values for the total tractor weight, tractor axle loads and load capacities, as well as the minimum ballast



The permissible total tractor weight specified in the vehicle documentation must be greater than the sum of the

- tractor empty weight
- ballast weight and
- the total weight of the attached machine or drawbar load of the hitched machine.

## 6.1.1.1 Data required for the calculation (hitched machine)



**Fig. 25**

$T_L$	[kg]	Empty tractor weight	See tractor operating manual or vehicle documentation
$T_V$	[kg]	Front axle load of the empty tractor	
$T_H$	[kg]	Rear axle load of the empty tractor	
$G_V$	[kg]	Front weight (if available)	See front weight in technical data, or weigh
$F_H$	[kg]	Maximum drawbar load	See section "Technical Data", on page 40
$a$	[m]	Distance between the centre of gravity of the front machine mounting or the front weight and the centre of the front axle (total $a_1 + a_2$ )	See technical data of tractor and front machine mounting or front weight or measurement
$a_1$	[m]	Distance from the centre of the front axle to the centre of the lower link connection	See tractor operating manual or measurement
$a_2$	[m]	Distance between the centre of the lower link connection point and the centre of gravity of the front machine mount or front weight (centre of gravity distance)	See technical data of front machine mounting or front weight or measurement
$b$	[m]	Tractor wheel base	See tractor operating manual or vehicle documents or measurement
$c$	[m]	Distance between the centre of the rear axle and the centre of the lower link connection	See tractor operating manual or vehicle documents or measurement

### 6.1.1.2 Calculation of the required minimum ballasting at the front $G_{V \min}$ of the tractor for assurance of the steering capability

$$G_{V \min} = \frac{F_H \cdot c - T_V \cdot b + 0,2 \cdot T_L \cdot b}{a + b}$$

Enter the numeric value for the calculated minimum ballast  $G_{V \min}$ , required on the front side of the tractor, in the table (Section 6.1.1.7).

### 6.1.1.3 Calculation of the actual front axle load of the tractor $T_{V \text{ tat}}$

$$T_{V \text{ tat}} = \frac{G_V \cdot (a + b) + T_V \cdot b - F_H \cdot c}{b}$$

Enter the numeric value for the calculated actual front axle load and the approved tractor front axle load specified in the tractor operating manual in the table (Section 6.1.1.7).

### 6.1.1.4 Calculation of the actual total weight of the combined tractor and machine

$$G_{\text{tat}} = G_V + T_L + F_H$$

Enter the numeric value for the calculated actual total weight and the approved total tractor weight specified in the tractor operating manual in the table (Section 6.1.1.7).

### 6.1.1.5 Calculation of the actual rear axle load of the tractor $T_{H \text{ tat}}$

$$T_{H \text{ tat}} = G_{\text{tat}} - T_{V \text{ tat}}$$

Enter the numeric value for the calculated actual rear axle load and the approved tractor rear axle load specified in the tractor operating manual in the table (Section 6.1.1.7).

### 6.1.1.6 Tyre load capacity

Enter the double value (two tyres) of the approved load capacity (see, for example, tyre manufacturer's documentation) in the table (Section 6.1.1.7).

## Commissioning

### 6.1.1.7 Table

	Actual value according to calculation	Approved value according to tractor operating manual	Double approved load capacity (two tyres)
Minimum ballast front / rear	<div style="border: 1px solid black; padding: 5px; display: inline-block;">/ kg</div>	--	--
Total weight	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	--
Front axle load	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>
Rear axle load	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>



- You can find the approved values for the total tractor weight, axle loads and load capacities in the tractor registration papers.
- The actually calculated values must be less than or equal to ( $\leq$ ) the permissible values.



#### WARNING

**Risk of contusions, cutting, catching, drawing in and knocks through insufficient stability and insufficient tractor steering and brake power.**

It is prohibited to couple the machine to the tractor used as the basis for calculation, if

- One of the actual, calculated values is greater than the approved value.
- There is no front weight (if required) attached to the tractor for the minimum front ballast ( $G_{V \min}$ ).



You must use a front weight, which is equal to at least the required minimum front ballast ( $G_{V \min}$ ).

### 6.1.2 Requirements for tractor operation with attached machines



#### WARNING

**Risk of breakage during operation of components through unapproved combinations of connecting equipment!**

Ensure:

- that the connection device on the tractor has a sufficient permissible drawbar load for the drawbar load actually in question
- that the axle loads and weights of the tractor altered by the drawbar load are within the approved limits. If necessary, weigh them.
- that the static actual rear axle load of the tractor does not exceed the permissible rear axle load
- that the permissible total weight of the tractor is complied with
- that the approved load capacities of the tractor tyres are not exceeded.

### 6.1.3 Possible combinations of connecting devices and towing eyes

Table Fig. 26 shows permitted combination options for joining the connection fitting on the tractor and the towing eye on the machine in relation to the maximum permitted drawbar load.

You will find the maximum permitted drawbar load in the vehicle documentation or on the rating plate on the connection fitting of your tractor.

Maximum permissible drawbar load	Connecting device on tractor	Towing eye on rigid drawbar attachment
2000 kg	Pin coupling DIN 11028 / ISO 6489-2	Towing eye 40 for hydraulic high-lift drawbar DIN 11043
	Non-automatic pin coupling DIN 11025	

Fig. 26

## 6.1.4 Calculating actual $D_C$ value for coupling combination



### WARNING

**Danger from breaking connecting devices between tractor and machine in event of incorrect use of the tractor!**

Calculate the actual  $D_C$  value of your combination, comprising tractor and machine, in order to check whether the connecting device on your tractor has the required  $D_C$  value. The actual calculated  $D_C$  value for the combination must be smaller than or equal to ( $\leq$ ) the specified  $D_C$  value of the connecting device of your tractor.

The actual  $D_C$  value of a combination to be coupled is calculated as follows:

$$D_C = g \times \frac{T \times C}{T + C}$$

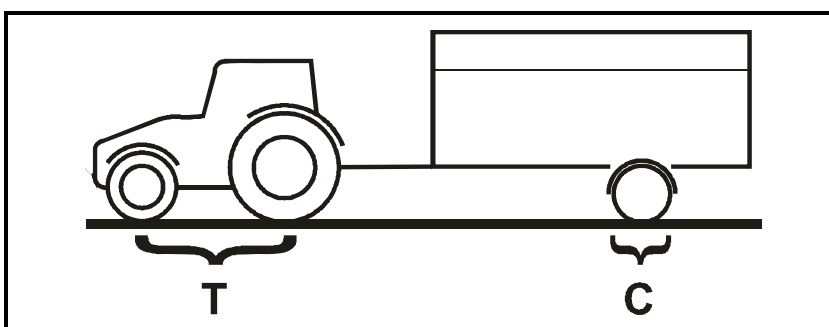


Fig. 27

**T:** Permissible total weight of your tractor in [t] (see tractor operating manual or vehicle documents)

**C:** Axle load of the machine loaded with the permissible (payload) in [t] without drawbar load

**g:** Earth acceleration ( $9.81 \text{ m/s}^2$ )

Actual calculated  
 $D_C$  value for the combination

Stated  $D_C$  value of connecting device on tractor

KN	$\leq$	KN
----	--------	----



You will find the  $D_C$  value for the connecting device directly on the connecting device / in the operating manual of your tractor.

### 6.1.5 Machines without their own brake system



#### **WARNING**

**Risk of contusions, cuts, dragging, catching or knocks from insufficient tractor brake power.**

The tractor must achieve the brake delay specified by the tractor manufacturer, even with the machine connected.

If the machine does not possess its own brake system:

- Then the actual tractor weight must be greater than or equal to ( $\geq$ ) the actual weight of the connected machines.
- The maximum forward speed is 25 km/h.

## 6.2 Securing the tractor / machine against unintentional start-up and rolling



### WARNING

**Risk of contusions, cutting, catching, drawing in and knocks when making interventions in the machine through**

- **unintentional lowering of the unsecured machine when it is raised via the three-point hydraulic system of the tractor**
- **unintentional lowering of raised, unsecured parts of the machine**
- **unintentional start-up and rolling of the tractor-machine combination.**
- Secure the tractor and the machine against unintentional start-up and rolling before any intervention in the machine.
- Any interventions on the machine, such as installation, adjustment, troubleshooting, cleaning, maintenance and repairs are prohibited under the following circumstances
  - as long as the tractor engine is running with a connected hydraulic system.
  - if the ignition key is inserted in the tractor and the tractor engine can be started unintentionally with the hydraulic system connected
  - if the tractor and machine are not secured with wheel chocks to prevent them from accidentally rolling away
  - if moving parts are not blocked against unintentional movement.

When carrying out such work, there is a high risk of contact with unsecured components.

1. Always park the tractor and the machine on firm, flat ground.
2. Shut down the tractor engine.
3. Remove the ignition key.
4. Apply the tractor's parking brake.
5. Secure the machine with wheel chocks to prevent it from accidentally rolling away.



## 7 Coupling and uncoupling the machine



When coupling and uncoupling the machine, please refer to the section "Safety information for users", on page 23.



### **WARNING**

**Risk of contusions from unintentional starting and rolling of the tractor and machine when coupling or uncoupling the machine!**

Secure the tractor and machine to prevent unintentional starting and rolling before entering the danger area between the tractor and machine to couple or uncouple the machine. For more information, see section 6.2, on page 56.



### **WARNING**

**Risk of contusions between the rear of the tractor and the machine when coupling and uncoupling the machine!**

Only actuate the operator controls for the tractor's three-point hydraulic system:

- only from the designated workstation
- never if you are outside of the danger area between the tractor and the machine.

## 7.1 Coupling the coupling frame to the tractor



### WARNING

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power on improper use of the tractor!**

You may only connect the machine to tractors suitable for the purpose. See the section "Checking the suitability of the tractor", on page 49.



### WARNING

**Risk of contusions when coupling the machine and standing between the tractor and the machine!**

Instruct people to leave the danger area between the tractor and the machine before you approach the machine.

Any helpers may only act as guides standing next to the tractor and the machine, and may only move between the vehicles when both are at a standstill.



### WARNING

**Risk of contusions, cutting, catching, drawing in and knocks when the machine unexpectedly releases from the tractor!**

- Use the intended equipment to connect the tractor and the machine in the proper way.
- When coupling the machine to the tractor's three-point hydraulic system, ensure that the attachment categories of the tractor and the machine are the same.



### WARNING

**Risk of energy supply failure between the tractor and the machine through damaged supply lines!**

During coupling, check the course of the supply lines. The supply lines

- must give slightly without tension, bending or rubbing on all movements of the connected machine.
- must not chafe against other parts.



### DANGER

**Once separated from the tractor, the coupling frame must be secured with 2 wheel chocks (see section "Uncoupling the coupling frame", on page 66) as the coupling frame does not have a parking brake!**



### DANGER

**The lower link of the tractor must not have any lateral play so that the machine always runs centrally behind the tractor and does not swing back and forth.**



**CAUTION**

Do not make any machine connections until the tractor and machine are coupled, the tractor engine is shut down, the tractor parking brake applied and the ignition key removed!

## 7.1.1 Coupling the coupling frame with tensioned crosspiece to the tractor

1. Check that the coupling frame is secured with 2 wheel chocks (Fig. 28/1).



Fig. 28



### WARNING

**Do not remove the wheel chocks until the coupling frame is connected to the tractor and the tractor's parking brake is applied.**

2. Place a ball sleeve on each lower link pin (Fig. 29/1) with a collecting tray.
3. Secure the ball sleeves with lynch pins.



The design of the ball sleeves depends on the tractor type (see the operating manual for the tractor).

The coupling frame can be equipped with Cat. III, Cat. IV or Cat. V lower link pins.



Fig. 29



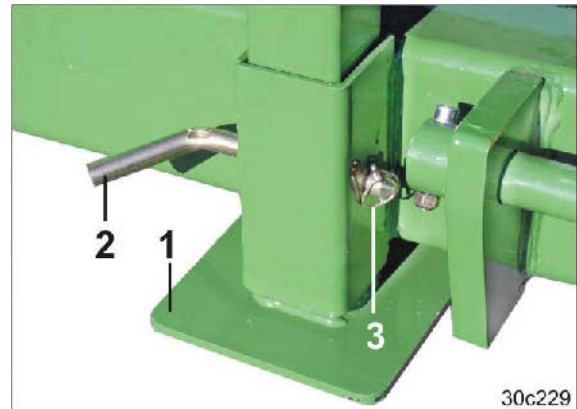
### CAUTION

**Risk of crushing in the area of the moving tensioned crosspiece.**

4. Open the tractor lower link securing device, i.e. it must be ready for coupling.
5. Align the lower link hooks so that they are flush with the pivot points of the machine.
6. Direct people away from the danger area between the tractor and the coupling frame.
7. Reverse the tractor towards the coupling frame.
  - The tractor lower link hook automatically removes the coupling frame ball sleeve.
  - The lower link hooks lock automatically.
8. Check whether the securing device of the tractor's lower link

locking system is closed and secured (see tractor operating manual).

9. Lift the tractor's lower link until the stand (Fig. 30/1) is free of the ground.
10. Secure the tractor against unintentional starting and unintentional rolling.
11. Apply the tractor parking brake, switch off the engine and remove the ignition key.
12. Couple the supply line (see section 7.1.3, on page 65) to the tractor.
13. Hold the stand (Fig. 30/1) tight and remove the bolt (Fig. 30/2).
14. Push up the stand and secure it with the bolt.
15. Secure the bolt with the lynch pin (Fig. 30/3) supplied.



**Fig. 30**



Check the route of the supply lines.

The supply lines

- must move out of the way slightly in order to accommodate all movements produced when cornering without being subjected to tension, kinks or friction
- must not chafe against other parts.

16. Stow the wheel chocks in the mountings and secure them with spring tensioners (Fig. 31/1).



**Fig. 31**

### 7.1.2 Coupling the coupling frame with drawbar to the tractor

1. Check that the coupling frame is secured with 2 wheel chocks (Fig. 28/1).



Fig. 32



#### WARNING

Do not remove the wheel chocks until the coupling frame is connected to the tractor and the tractor's parking brake is applied.

The coupling frame and tractor are placed on a firm, horizontal surface.

2. Level the coupling frame using the support crank (Fig. 33/1) until it is horizontal.
3. Adjust the tractor pin coupling (Fig. 33/2) to vertical (see tractor operating manual), aligning it with the drawbar (Fig. 33/3).

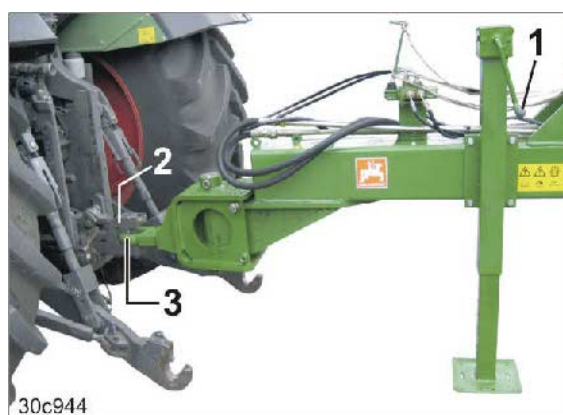
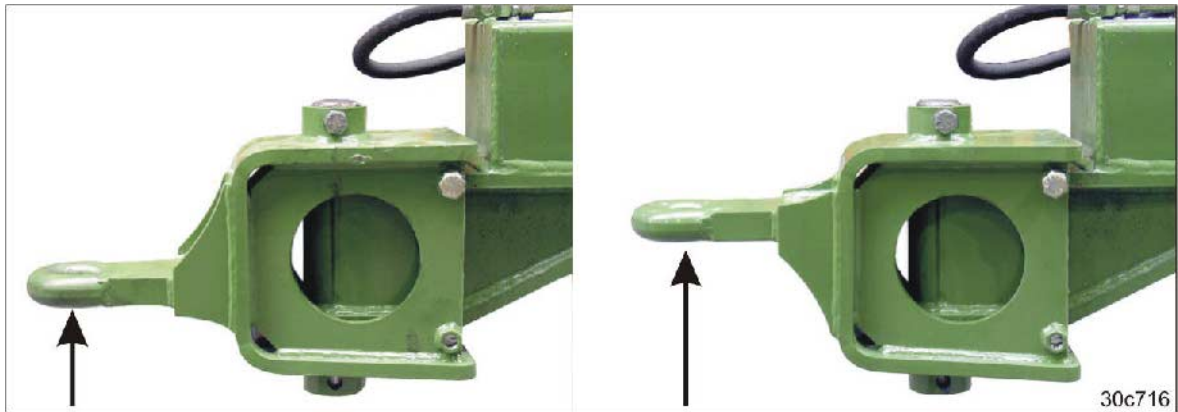


Fig. 33



**Fig. 34**

#### 4. Balance

- small deviations using the support crank (Fig. 33/1)
- large deviations by turning the drawbar (workshop work) (see Fig. 34).



The height of the yoke bar is varied by turning the drawbar (see Fig. 34).

5. Open the tractor pin coupling securing device, i.e. it must be ready for coupling.
6. Direct people away from the danger area between the tractor and the drawbar.
7. Reverse the tractor towards the coupling frame.
  - Depending on the type of tractor
    - the tractor pin coupling locks the drawbar automatically.
    - the drawbar must be manually locked and secured.



**Fig. 35**



#### CAUTION

##### Risk of crushing.

Direct people away from the danger area between the tractor and the drawbar.

8. If using automatic trailer couplings, check that the connection is secure (also see the tractor operating manual).
9. If using non-automatic trailer couplings, secure the coupling pin by interlocking after inserting it.



## Coupling and uncoupling the machine



If using automatic trailer couplings, check that the connection is secure (also see the tractor operating manual).

If using non-automatic trailer couplings, secure the coupling pin by interlocking after inserting it.

10. Crank up the stand (Fig. 36/1) until it stops.
11. Secure the tractor against unintentional starting and unintentional rolling.
12. Apply the tractor parking brake, switch off the engine and remove the ignition key.
13. Couple the supply lines (see section 7.1.3, on page 65) to the tractor.



**Fig. 36**



Check the route of the supply lines.

The supply lines

- must move out of the way slightly in order to accommodate all movements produced when cornering without being subjected to tension, kinks or friction
- must not chafe against other parts.

14. Stow the wheel chocks in the mountings and secure them with spring tensioners (Fig. 31/1).



**Fig. 37**



### 7.1.3 Making hydraulic connections for actuating the coupling frame



Clean all hydraulic couplings before connecting them to the tractor. Minor oil impurities from particles can cause a failure of the hydraulic system.

Tractor control unit		Connection	Marking	Function
1	single-acting	Supply/ return flow	1 cable tie, neutral	<ul style="list-style-type: none"> <li>• Lowers/raises the lifting frames</li> </ul>

Tractor control unit		Connection	Marking	Function
2	double-acting	Feed line	1 cable tie, green	<ul style="list-style-type: none"> <li>•Folds booms in/out</li> <li>• Raises/lowers the boom holder</li> </ul>
		Return line	2 cable ties, green	

Tractor control unit		Connection	Marking	Function
3	single-acting	Supply/ return flow	1 cable tie, yellow	<ul style="list-style-type: none"> <li>• Raises/lowers the track marker</li> </ul>

## 7.2 Uncoupling the coupling frame



### WARNING

**Risk of contusions, cutting, catching, drawing in and knocks through insufficient stability and possible tilting of the uncoupled machine!**

Set the empty machine down on a horizontal parking area with a firm base.



### DANGER

**Never uncouple the coupling frame from the tractor, if only one disc cultivator is secured to the rear of the coupling frame.**

The tail-heavy coupling frame could move rapidly upwards after the tensioned crosspiece is released.



When uncoupling the machine, there must always be enough space in front of the machine, so that you can align the tractor with the machine if necessary.

1. Ensure the tractor and machine are aligned in a straight line and the empty machine is on a horizontal parking surface with a firm base.
2. Apply the tractor parking brake, switch off the engine and remove the ignition key.
3. Release the spring pins (Fig. 38/1) and remove both wheel chocks from the mountings at the front of the machine.



Fig. 38

4. Secure the coupling frame with 2 wheel chocks (Fig. 39/1).

**DANGER**

Always secure the machine with 2 wheel chocks before you uncouple the machine from the tractor. The wheel chocks take the place of the machine's parking brake.

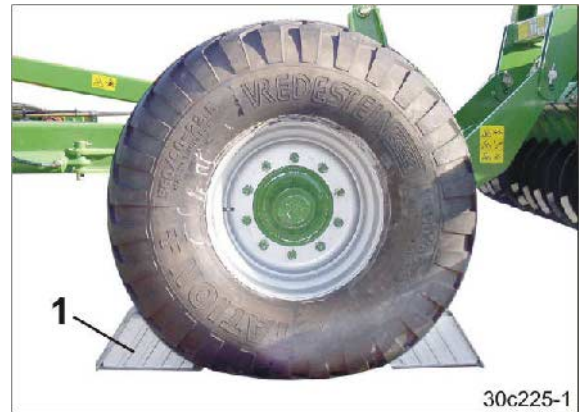


Fig. 39

5. Uncouple all supply lines between the tractor and machine.
6. Close the supply line hydraulic connectors with protective caps.



Fig. 40

### Uncouple the machine

- with a tensioned crosspiece according to section "Uncoupling the coupling frame with a tensioned crosspiece", on page 68
- with a drawbar according to section "Uncoupling the coupling frame with a drawbar", on page 69

## 7.2.1 Uncoupling the coupling frame with a tensioned crosspiece

1. Hold the stand (Fig. 41/1) tight and remove the positioning bolt (Fig. 41/2).
2. Lower the stand and locate it using the positioning bolt supplied.
3. Secure the positioning bolt with the lynch pin (Fig. 41/3) supplied.

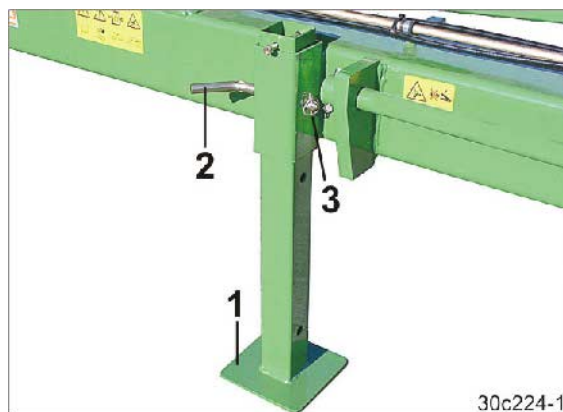


Fig. 41

4. Set the machine down on the stand.



### WARNING

**Set the machine down on a horizontal, firm base only!**

Ensure that the stand does not sink into the ground. If the stand does sink into the ground, it will be impossible to recouple the machine.



Fig. 42

5. Open the securing device (Fig. 43) of the tractor's lower link (see tractor operating manual).
6. Uncouple the tractor's lower link.
7. Pull the tractor forwards.



### DANGER

**While pulling the tractor forwards, no-one should be between the tractor and the machine.**



Fig. 43

### 7.2.2 Uncoupling the coupling frame with a drawbar

1. Crank the support (Fig. 44/1) down until the coupling frame stands securely on the stand.

**WARNING**

**Set the machine down on a horizontal, firm base only!**

Ensure that the stand does not sink into the ground. If the stand does sink into the ground, it will be impossible to recouple the machine.



**Fig. 44**

2. Open the tractor pin coupling securing device (see tractor operating manual).
3. Pull the tractor forwards.

**DANGER**

**While pulling the tractor forwards, no-one should be between the tractor and the machine.**

## 7.3 Coupling the Catros to the coupling frame



Starting with the middle machine, secure the disc cultivators to the coupling frame in turn.

1 Park the Catros on a horizontal solid surface.

2. Open the lifting frame locking valve (Fig. 45/1).

→ The lifting frame locking valve is shown open.

3. Operate control valve 1.

→ Lower the lifting frames.

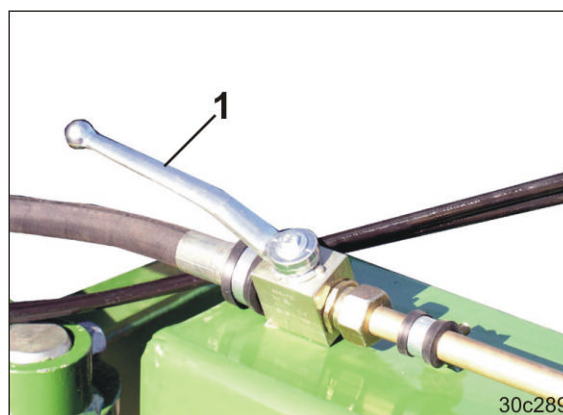


Fig. 45

4. Direct people away from the danger area between the coupling frame and the machine.
5. Drive up to the machine with the coupling frame.
6. Apply the tractor parking brake, switch off the engine and remove the ignition key.
7. Secure the tractor against unintentional starting and unintentional rolling.

8. Secure the Catros lower link (Cat. III) on the lifting frame with the lower link pin (Fig. 46/1).

9. Secure the bolts with the lynch pins supplied.



Fig. 46



10. Secure the lifting frame upper link (Cat. III) on the Catros with the upper link pin (Fig. 47/1).

Equip the middle machine with a damped upper link.

11. Secure the bolt with the lynch pin supplied.
12. Adjust to the correct top link length.
  - 12.1. Align the Catros so it is straight.
13. Tighten the upper link lock nut securely.



**Fig. 47**

14. Fold the coupling frame booms out (see section "Folding the coupling frame booms in/out", on page 84).
15. Secure the outer disc cultivators to the coupling frame as described above.

### 7.4 Uncoupling the Catros from the coupling frame

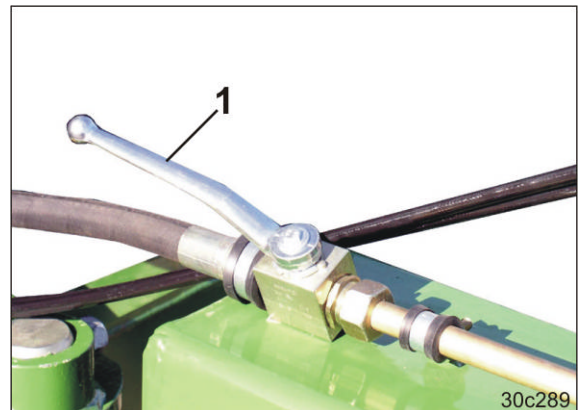
1. Fold the coupling frame booms out (see section "Folding the coupling frame booms in/out", on page 84).
2. Set the combination down on a firm, level surface.

3. Open the lifting frame locking valve (Fig. 48/1).

→ The lifting frame locking valve is shown open.

4. Operate control valve 1.

→ Lower the lifting frames.



**Fig. 48**

5. Apply the tractor parking brake, switch off the engine and remove the ignition key.
6. Secure the tractor against unintentional starting and unintentional rolling.
7. Starting with the middle machine, release the disc cultivators from the coupling frame in turn.

## Coupling and uncoupling the machine

8. Remove the upper link pin (Fig. 49/1) and carefully lay down the upper link.



Fig. 49

9. Remove the lower link pin (Fig. 50/1).
10. Direct people away from the danger area.



### **DANGER**

**It is prohibited to stand between the coupling frame and the machine.**

11. Pull the coupling frame forwards.



Fig. 50



## 7.5 Couple the D9 seed drills to the coupling frame



Starting with the middle machine, secure the seed drills to the coupling frame in turn.

1 Park the precision airplanter on a horizontal solid surface.

2. Open the lifting frame locking valve (Fig. 51/1).

→ The lifting frame locking valve is shown open.

3. Operate control valve 1.

→ Lower the lifting frames.

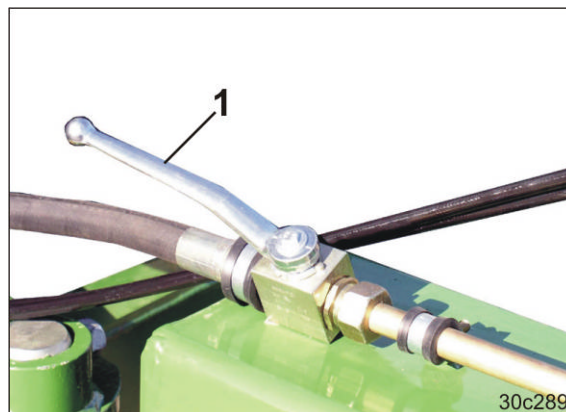


Fig. 51

4. Connect the lower link compensating suspension (Fig. 52/1) to the lifting frame.

5. Secure the bolts with the lynch pins supplied.

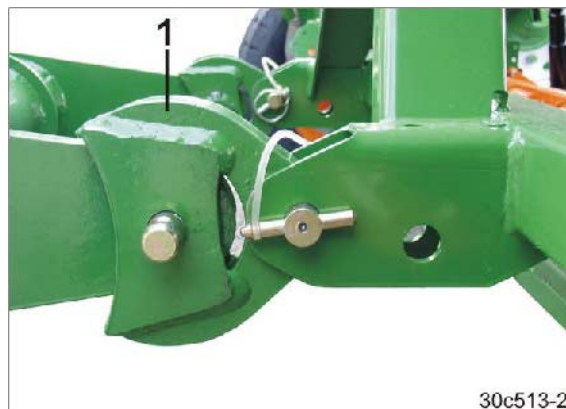


Fig. 52

6. Direct people away from the danger area between the coupling frame and the machine.
7. Drive up to the machine with the coupling frame.
8. Apply the tractor parking brake, switch off the engine and remove the ignition key.
9. Secure the tractor against unintentional starting and unintentional rolling.

## Coupling and uncoupling the machine

10. Attach the seed drill lower link (Cat. II) to the compensating suspension.
11. Secure the lower link pins (Fig. 52/2) with the lynch pins supplied.

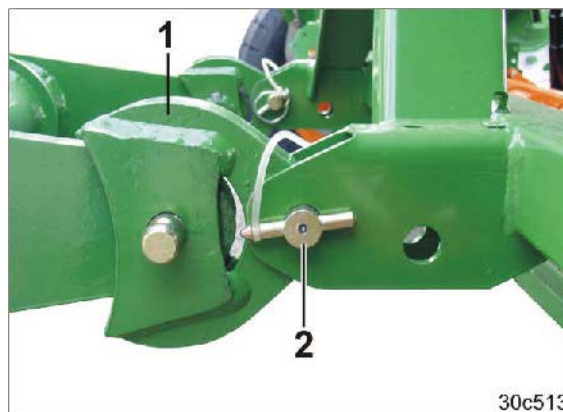


Fig. 53

12. Connect the lifting frame upper link (Cat. III) to the upper link pin (Cat. II) for the precision airplanter.

The upper link pin ((Fig. 54/1) must be equipped with a reduction bush (Cat. II / Cat. III).

Equip the middle machine with a damped upper link (Fig. 54/2).

13. Secure the top link pins (Fig. 54/1) with the lynch pin supplied.
14. Ensure the seed drill is aligned in a straight line.
  - 14.1 Set the top link length accordingly.
15. Tighten the upper link lock nut securely.

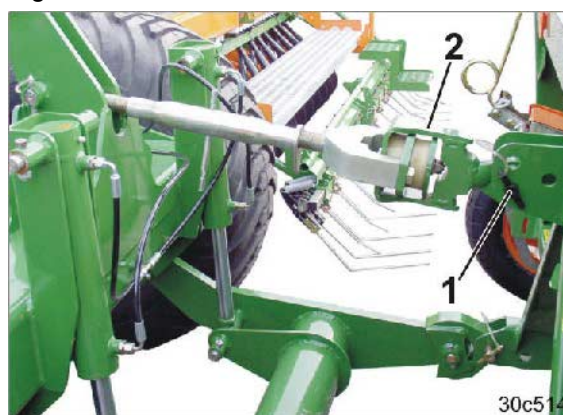


Fig. 54

16. Fold the coupling frame booms out (see section "Folding the coupling frame booms in/out", on page 84).
17. Secure all seed drills to the coupling frame as described above.

### 7.5.1 Connecting the hydraulic lines



Before connection, clean the hydraulic couplings.  
Minor oil impurities from particles can cause a failure of the hydraulic system.

#### 7.5.1.1 Coupling frame/D9 digital interface

1. Couple the hydraulic lines  
[see table (Fig. 55)].

Coupling frame/D9 digital interface		
Connection	Marking	Function
Supply/ return flow	1 cable tie, yellow	<ul style="list-style-type: none"> <li>• Control box</li> <li>• Tramline marker</li> </ul>
Supply/ return flow	1 cable tie, blue	<ul style="list-style-type: none"> <li>• Coulter pressure adjustment</li> <li>• Exact harrow pressure adjustment</li> <li>• Seed rate remote control</li> </ul>

Fig. 55

#### 7.5.1.2 Tractor/coupling frame digital interface

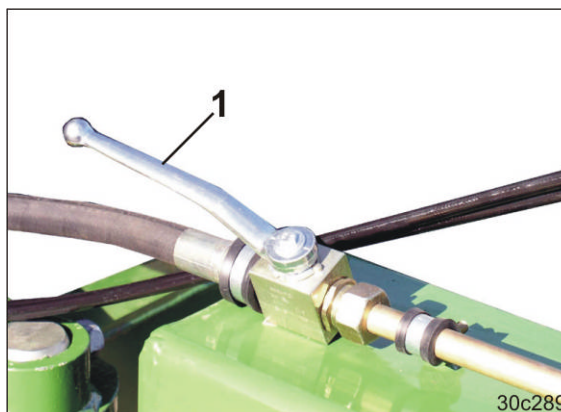
1. Couple the hydraulic lines  
[see table (Fig. 56)].

Tractor control unit		Connection	Marking	Function
3	single-acting	Supply/ return flow	1 cable tie, yellow	<ul style="list-style-type: none"> <li>• Control box</li> <li>• Tramline marker</li> </ul>
4	single-acting	Supply/ return flow	1 cable tie, blue	<ul style="list-style-type: none"> <li>• Coulter pressure adjustment</li> <li>• Exact harrow pressure adjustment</li> <li>• Seed rate remote control</li> </ul>

Fig. 56

## 7.6 Uncoupling the D9 seed drills from the coupling frame

1. Fold the coupling frame booms out (see section "Folding the coupling frame booms in/out", on page 84).
2. Park the machine on a horizontal solid surface.
3. Open the lifting frame locking valve (Fig. 57/1).
- The lifting frame locking valve is shown open.
4. Operate control valve 1.
- Lower the lifting frames.



**Fig. 57**

5. Couple the hydraulic lines (see section Tractor/coupling frame digital interface, on page 75).
6. Couple the hydraulic lines (see section Coupling frame/D9 digital interface, on page 75).
7. Apply the tractor parking brake, switch off the engine and remove the ignition key.
8. Secure the tractor against unintentional starting and unintentional rolling.
9. Starting with the middle machine, release the disc cultivators from the coupling frame in turn.

10. Remove the upper link pin (Fig. 58/1) and carefully lay down the upper link.

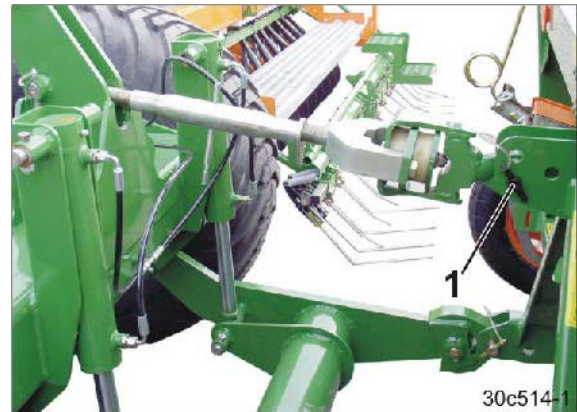


Fig. 58

11. Remove the lower link pin (Fig. 59/1).
12. Direct people away from the danger area.



**DANGER**

**It is prohibited to stand between the coupling frame and the machine.**

13. Pull the coupling frame forwards.

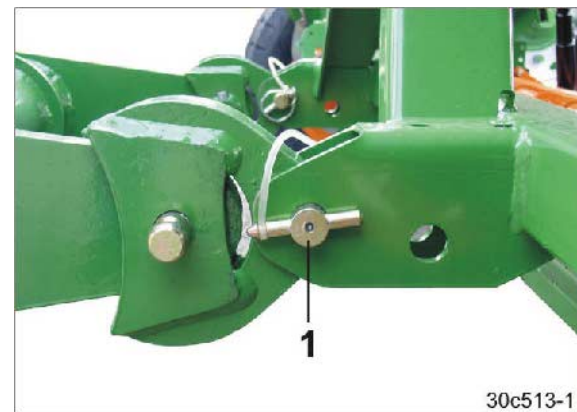


Fig. 59

## 8 Settings



### WARNING

Risk of contusions, cutting, catching, drawing in and knocks through

- unintentional falling of the machine raised using the tractor's three-point hydraulic system.
- unintentional falling of raised, unsecured machine parts.
- unintentional start-up and rolling of the tractor-machine combination.

Secure the tractor and the machine against unintentional starting and rolling before you make any adjustments to the machine. See section 6.2, on page 56.

## 8.1 Adjusting the track marker length and working intensity



### DANGER

It is prohibited to stand in the swivel area of the track marker.

1. Direct people away from the danger area.
2. Fold out the first track marker on the field and drive for a few metres.
3. Apply the tractor parking brake, switch off the engine and remove the ignition key.
4. Loosen the screws (Fig. 60/1).
5. Set the track marker length to distance "A" (see table Fig. 61, below).

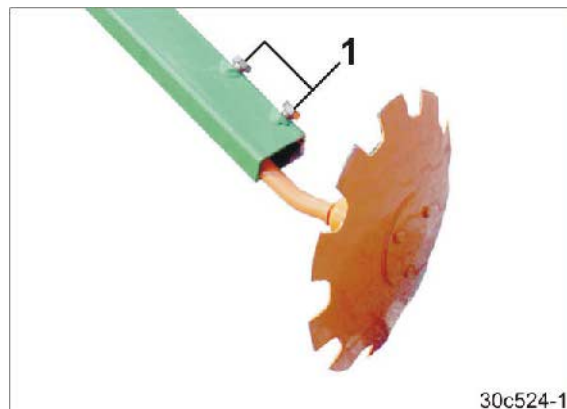


Fig. 60

6. Turn the track marker disc to adjust the working intensity of the track marker so that it runs roughly parallel to the direction of travel on light soil and more grip is facilitated on heavier soil.
7. Tighten the screws (Fig. 60/1).
8. Repeat the operation on the second track marker.

The table values specify the distance "A"

- from the centre of the machine
- up to the contact surface of the track marker disc.

	Distance "A"
D9-9000	9.0 m
D9-12000	12.0 m

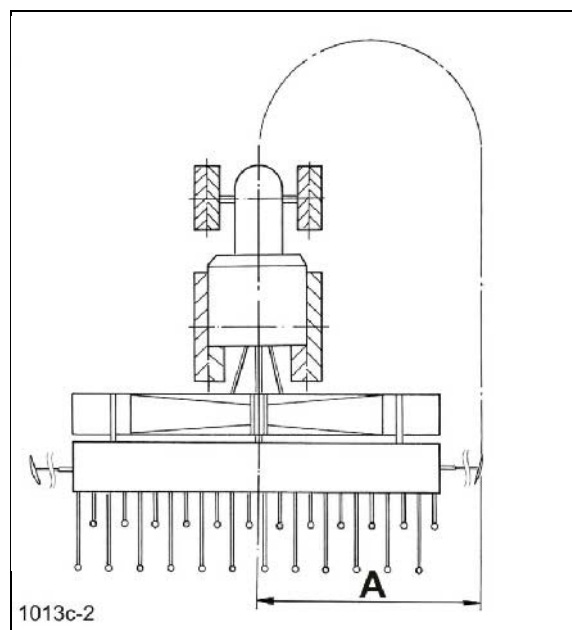


Fig. 61

## 9 Transportation



- Transport on public roads and unclassified roads is not permitted. The permissible transport width of 3.0 m is exceeded.
- The permissible maximum speed of the machine on private roads is 25 km/h. The machine must always be driven at much lower speeds especially when travelling on poor roads and unclassified roads.
- The large overhang and inertia of the machine must be taken into consideration during cornering.

1. Fold in and secure the track marker (see section "Securing/releasing the track marker", on page 87).
2. Operate control valve 1.  
→ Raise the lifting frames.
3. Fold in the booms (see section "Folding the coupling frame booms in/out", on page 84).
4. Apply the tractor parking brake, switch off the engine and remove the ignition key.

5. Close the shut-off valve.

→ The shut-off valve is shown closed.



When closed, the shut-off valve prevents the lifting frames from lowering.



Fig. 62

6. Check the locking hook 1 is correctly seated.

→ Locking hook 1 secures the boom holder in the transport position.

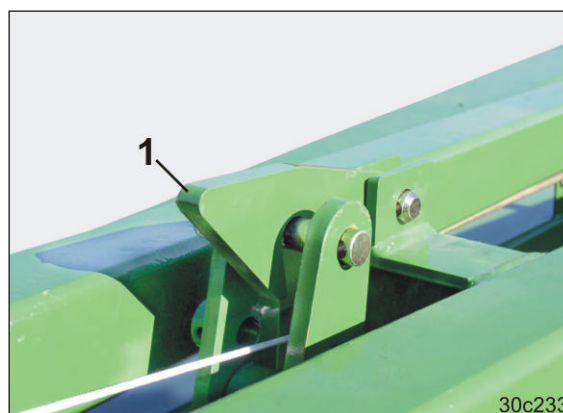


Fig. 63





- For transportation, refer to the section "Safety information for users", on page 23.
- Before transportation, check that the supply lines have been properly connected.

**WARNING**

**Risk of contusions, cutting, catching, drawing in and knocks when making interventions in the machine through unintentional machine movements.**

- On folding machines, check that the transport locks are locked correctly.
- Secure the machine against unintentional movements before starting transportation.

**WARNING**

**Risk of contusions, cuts, dragging, catching or knocks from tipping and insufficient stability.**

- Drive in such a way that you always have full control over the tractor with the attached machine.  
  
In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor and the influences caused by the machine if it is attached or hitched.
- Before transportation, fasten the side locking of the tractor lower link, so that the connected or coupled machine cannot swing back and forth.

**WARNING**

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power on improper use of the tractor!**

These risks pose serious injuries or death.

Observe the permissible axle and drawbar loads of the tractor.

**WARNING**

**Risk of falling from the machine if riding against regulations!**

It is prohibited to ride on the machine and/or climb the running machine.

Ensure people keep their distance when starting the machine.

## 10 Use of the machine



When using the machine, observe the information in the sections

- "Warning pictograms and other signs on the machine", from on page 16 and
- "Safety information for users", on page 23.

Observing this information is important for your safety.



### **WARNING**

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power on improper use of the tractor!**

Comply with the maximum load of the connected machine and the approved axle and drawbar loads of the tractor. Only travel with an empty hopper.



### **WARNING**

**Risk of contusions, cutting, catching, drawing in and knocks through insufficient stability and tipping of the tractor and/or the connected machine.**

Drive in such a way that you always have full control over the tractor with the attached machine.

In doing so, take your personal abilities into account, as well as the driving characteristics of the tractor and the influences caused by the machine if it is hitched.



### **WARNING**

**Risk of contusions, drawing in and catching during machine operation without the intended protective equipment!**

Only ever start up the machine when the protective equipment is fully installed.



Only actuate the tractor control units from inside the tractor cab.

## 10.1 Folding the coupling frame booms in/out



### DANGER

Warn people to stay clear of the swivel area of the coupling frame booms before the booms are folded in or out.



Before folding the coupling frame booms in or out

- Align the tractor and implement on a level surface so they are straight
- raise the lifting frames.

### 10.1.1 Folding the coupling frame booms out

1. Ensure the combination is aligned in a straight line, on a level field.
2. Apply the tractor parking brake.

3. Pull the cord (locking hook 1).

→ Locking hook 1 (Fig. 64/1) opens.



Locking hook 1 (Fig. 64/1) mechanically locks the boom holder.

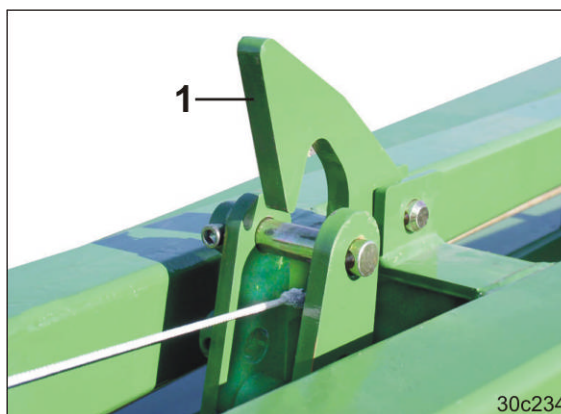


Fig. 64

4. Pull and secure the cable for the valve lever (Fig. 65/1).

→ The 6/2 directional control valve switches to actuating the boom holder.



Fig. 65

5. Operate control unit 2, with the valve lever pulled (Fig. 65/1).

→ The boom holder (Fig. 66/1) swivels underneath.



Keep control unit 2 activated until the boom holder (Fig. 66/1) is completely lowered.



Fig. 66

6. Tension the cable for the valve lever (Fig. 65/1).

→ The 6/2 directional control valve switches to actuating the booms.

7. Operate control unit 2.

→ The booms are folded out.



Keep control unit 2 activated until the booms are folded out completely and the locking hooks 2 (Fig. 67/1) are correctly engaged.



Locking hooks 2 (Fig. 67/1) mechanically lock the extended booms.



Fig. 67

## 10.1.2 Folding the coupling frame booms in

1. Ensure the combination is aligned in a straight line, on a level field.
2. Apply the tractor parking brake.

1. Pull the cord (locking hook 2).
- Open locking hooks 2 (Fig. 68/1).
2. Operate control unit 2 (initially, with the cable pulled).
- The booms are folded in.



Actuate control unit 2 until the booms are folded in completely.



Fig. 68

3. Pull in the cable for the valve lever (Fig. 69/1).
- The 6/2 directional control valve switches to actuating the boom holder.



Fig. 69

4. Operate control unit 2, with the valve lever pulled (Fig. 69/1).
- The boom holder (Fig. 66/1) swivels upwards.



Keep control unit 2 activated until the boom holder is swivelled completely upwards and locking hook 1 (Fig. 70/1) is correctly locked.



Locking hook 1 (Fig. 70/1) mechanically locks the boom holder.

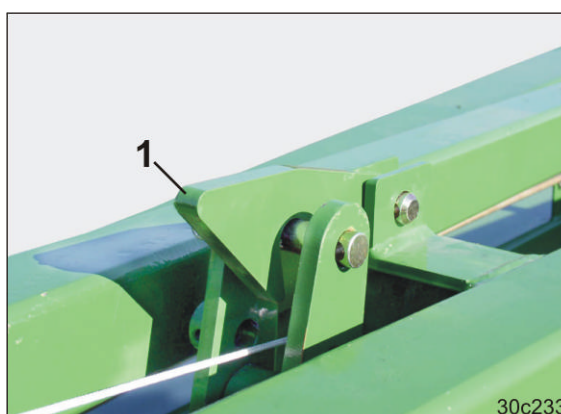


Fig. 70

## 10.2 Securing/releasing the track marker



### DANGER

Immediately after finishing work in the field, secure the track marker to prevent it folding out unintentionally.

The track marker securing device must be released immediately before work in the field starts.



### DANGER

Before folding the track marker in or out, warn people to stay clear of the track marker's swivel area.

### 10.2.1 Securing the track marker

1. Connect the boom (Fig. 71/1) to the locking link (Fig. 71/2).
  - 1.1 Secure the bolt (Fig. 71/3) with the safety splint (Fig. 71/4).
2. Connect the track marker suspension pipe (Fig. 71/5) to the second locking link (Fig. 71/6) and secure with the lynch pin (Fig. 71/7).
3. Repeat the operation on the second track marker.

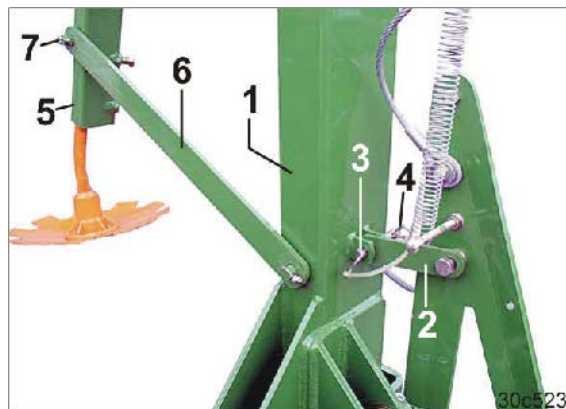


Fig. 71

### 10.2.2 Releasing the track marker securing device

1. Release the locking link (Fig. 72/1) and connect it in the parking position.
    - 1.1 Remove the lynch pin (Fig. 72/2).
    - 1.2 Swivel the locking link (Fig. 72/1) upwards and replace it in the parking position on the track marker boom (Fig. 72/3).
  2. Release the second locking link (Fig. 72/4).
    - 2.1 Remove the safety splint (Fig. 72/5) and pull out the bolt (Fig. 72/6).
- The track marker boom (Fig. 72/3) will easily lean to the side once the bolt (Fig. 72/6) is removed.
3. Repeat the operation on the second track marker.

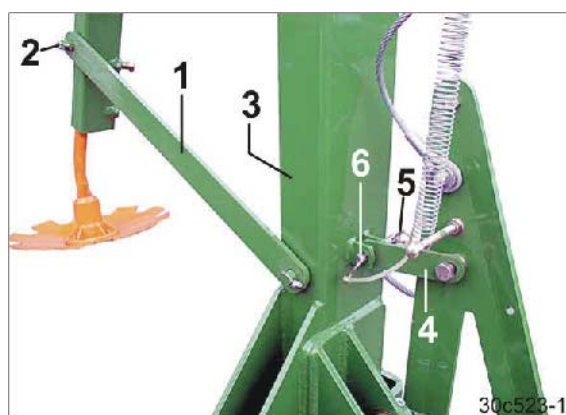


Fig. 72



## 10.3 Work commencement



### DANGER

- Direct people out of the danger area of the machine, in particular from the swivel area of the coupling frame boom.
- Only actuate the tractor control units from inside the tractor cab.



### DANGER

- Direct people out of the danger area of the machine, in particular from the swivel area of the track marker.
- When operating the tractor control unit, depending on the setting, one of the two track markers folds out.
- There are nip and shear points between the track marker and the machine. Never reach into this danger area when folding the track marker in and out.

1. Direct people out of the danger area of the machine.
  2. Fold the coupling frame booms out  
(see section "Folding the coupling frame booms in/out", on page 84).
  3. Operate control unit 1.
- The lifting frames move the attached machines to the working position.



When lowering the attached machines, pull the coupling frame forward slightly.



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**Coupling frame with D9 only**

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4. Secure the track marker and move it to the working position (see section "Securing/releasing the track marker", on page 87).
  5. Operate control unit 3.
- Moves the active track marker to the working position.



The inactive track marker is lowered by activating control unit 1 in the float position, switching the control unit through several times.

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**All types**

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6. Apply the tractor parking brake, switch off the engine and remove the ignition key.
7. Adjust the attached machines according to the relevant machine operating manual, included in this operating manual.
8. Start moving with the tractor.



Always check the planting depth, as described in the D9 operating manual.

---

**Turning at end of the field**

---

1. Slow down your travel speed.
  2. Operate control unit 1.
- The lifting frames raise the attached machines.
3. Operate control unit 3 (only when using the track marker).
- Raise the active track marker.
4. Turn over the combination.

## Use of the machine

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### After turning at the end of the field

---

1. Operate control unit 3 (only when using the track marker).  
→ Moves the active track marker to the working position.
2. Operate control unit 1.  
→ The lifting frames lower the attached machines.
3. Start the field run.

## 11 Faults

### 11.1 Shearing of the track marker boom

If the track marker strikes against a solid obstacle, a bolt shears (Fig. 73/1) and the track marker folds backwards.

Only use M6 x 90 bolts with a strength rating of 8.8 as replacements (see online spare parts list).



Fig. 73

## 12 Cleaning, maintenance and repairs



### WARNING

Risk of contusions, cutting, catching, drawing in and knocks through

- unintentional falling of the machine raised using the tractor's three-point hydraulic system.
- unintentional falling of raised, unsecured machine parts.
- unintentional start-up and rolling of the tractor-machine combination.

Secure the tractor and machine against unintentional starting and unintentional rolling away before you perform any cleaning, servicing or maintenance work on the machine. See on page 56.



### DANGER

Cleaning, maintenance and repairs must only be carried out when the lifting frames are completely lowered.



Information on cleaning, maintaining and repairing the attached machines can be found in the relevant machine operating manual.

### 12.1 Securing the connected machine

Before working on the machine, place the machine connected to the tractor on the sustainer (Fig. 74/1) to prevent unintentional lowering of the tractor's lower link.



Fig. 74

## 12.2 Cleaning the machine



- Inspect the hydraulic hose lines with particular care.
- Never treat hydraulic hose lines with petrol, benzene, kerosene or mineral oils.
- After cleaning, grease the machine, in particular after cleaning with a high pressure cleaner / steam jet or liposoluble agents.
- Observe the statutory requirement for the handling and removal of cleaning agents.

### Cleaning with a high-pressure cleaner / steam cleaner



**Always observe the following points when using a high-pressure cleaner / steam jet for cleaning:**

- Never aim the cleaning jet from the nozzle of the high pressure cleaner / steam jet directly on lubrication and bearing points.
- Always maintain a minimum jet distance of 300 mm between the high pressure cleaning or steam jet cleaning nozzle and the machine.
- Comply with safety regulations when working with high pressure cleaners.

1. Ensure the tractor and machine are aligned in a straight line on a horizontal parking surface with a firm base.
2. Fold the coupling frame booms out (see section "10.1", on page 84).
3. Lower the lifting frames.
4. Place the machine connected to the tractor on the stand (Fig. 75/1).



Fig. 75

5. Apply the tractor parking brake, switch off the engine and remove the ignition key.
6. Clean the machine with water or with a high-pressure cleaner.

## 12.3 Lubrication specifications



Lubricate the machine in accordance with the specifications of the manufacturer.

Carefully clean the lubrication nipple and grease gun before lubrication so that no dirt is pressed into the bearings. Press the dirty grease out of the bearings completely and replace it with new grease.

The lubrication points on the machine are marked with a foil sticker (Fig. 76).

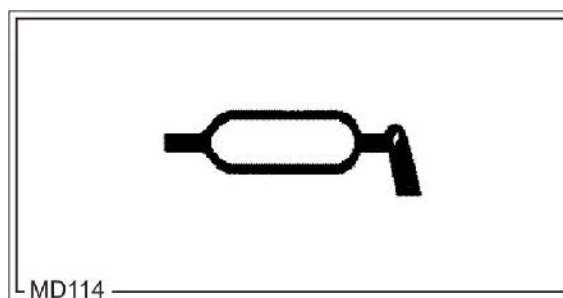


Fig. 76

### 12.3.1 Lubricants



For lubrication work use a lithium saponified multipurpose grease with EP additives.

Company	Lubricant designation
ARAL	Aralub HL2
FINA	Marson L2
ESSO	Beacon 2
SHELL	Ratinax A

## 12.3.2 Lubrication point overview

	Coupling frame		Lubrication interval
	KR 9002	KR 12002	
Fig. 79/1	1	1	25 h
Fig. 80/1	1	1	25 h
Fig. 80/2	1	1	25 h
Fig. 81/1	12	12	25 h
Fig. 82/1	6	6	25 h
Fig. 83/1	2	2	25 h
Fig. 84/1	1	1	25 h

**Fig. 77**

### 12.3.2.1 Lubricating the machine

1. Ensure the tractor and machine are aligned in a straight line on a horizontal parking surface with a firm base.
2. Fold the coupling frame booms out (see section 10.1, on page 84).
3. Lower the lifting frames.
4. Place the machine connected to the tractor on the stand (Fig. 78/1).



**Fig. 78**

5. Apply the tractor parking brake, switch off the engine and remove the ignition key.
6. Lubricate the machine in accordance with the table (Fig. 77).

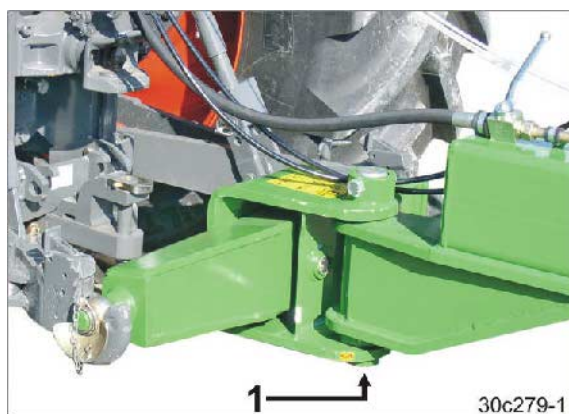


Fig. 79

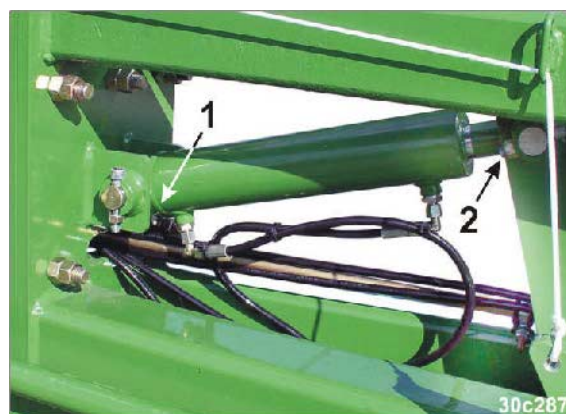


Fig. 80



Fig. 81

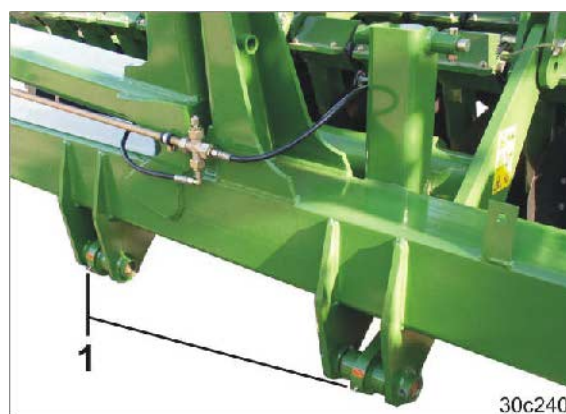


Fig. 82



Fig. 83

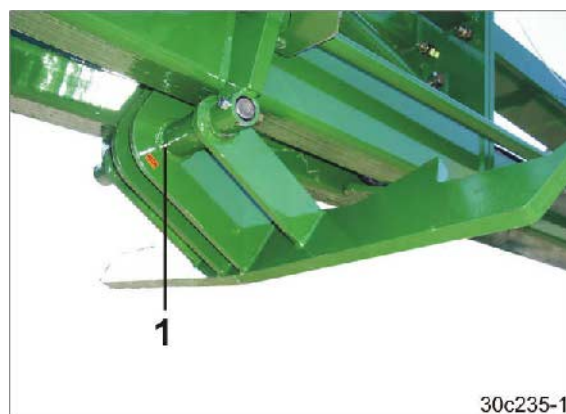


Fig. 84



## 12.4 Coupling frame: maintenance schedule – overview



Carry out maintenance work when the first interval is reached.


The times, continuous services or maintenance intervals of any third party documentation have priority.

<b>Before commissioning</b>	Specialist workshop	Check and service the hydraulic hose lines. The inspection must be documented by the operator.	Section 12.4.3
<b>After the first 10 operating hours</b>	Specialist workshop	Tightening the wheel and hub screws (specialist workshop)	Section 12.4.1
	Specialist workshop	Check and service the hydraulic hose lines. The inspection must be documented by the operator.	Section 12.4.3
<b>Daily at the end of work</b>		Cleaning the machine (as required)	Section 12.2
<b>Every week, at the latest every 50 operating hours</b>	Specialist workshop	Check and service the hydraulic hose lines. The inspection must be documented by the operator.	Section 12.4.3
<b>Before the season, then every 2 weeks</b>	Specialist workshop	Checking the tyre pressure (specialist workshop)	Section 12.4.2
<b>Every 6 months before the season</b>	Specialist workshop	Check and service the hydraulic hose lines. The inspection must be documented by the operator.	Section 12.4.3

### 12.4.1 Tightening the wheel and hub screws (specialist workshop)

Tighten the wheel and hub screws and check compliance with tightening torques (see table Fig. 86).

	Screws	Tightening torque
(1)	Wheel bolts M18x1.5	325 Nm



30c225-1


**Fig. 85**

**Fig. 86**

### 12.4.2 Checking the tyre pressure (specialist workshop)

Check compliance with specified tyre pressure (see table Fig. 88).

Tyres	Tyre pressure
550/60-22.5	2.5 bar



30c225-1

**Fig. 87**

**Fig. 88**

### 12.4.3 Hydraulic system



#### WARNING

**Risk of infection through the high pressure hydraulic fluid of the hydraulic system entering the body!**

- Only a specialist workshop may carry out work on the hydraulic system.
- Depressurise the hydraulic system before carrying out work on the hydraulic system.
- When searching for leak points, always use suitable aids.
- Never attempt to plug leaks in hydraulic hose lines using your hand or fingers.

Escaping high pressure fluid (hydraulic fluid) may pass through the skin and ingress into the body, causing serious injuries!

If you are injured by hydraulic fluid, contact a doctor immediately. Risk of infection!



- When connecting the hydraulic hose lines to the hydraulic system of connected machines, ensure that the hydraulic system is depressurised on both the drawing vehicle and the trailer.
- Ensure that the hydraulic hose lines are connected correctly.
- Regularly check all the hydraulic hose lines and couplings for damage and impurities.
- Have the hydraulic hose lines checked at least once a year by a specialist to ensure they are in safe working order.
- Replace the hydraulic hose lines if they are damaged or show signs of ageing. Only use original AMAZONE hydraulic hose lines.
- The hydraulic hose lines should not be used for longer than six years, including any storage time of maximum two years. Even with proper storage and approved use, hoses and hose connections are subject to natural ageing, thus limiting the length of use. However, it may be possible to specify the length of use from experience values, in particular when taking the risk potential into account. In the case of hoses and hose lines made from thermoplastics, other guide values may be decisive.
- Dispose of old oil in the correct way. If you have problems with disposal, contact your oil supplier.
- Keep hydraulic fluid out of the reach of children!
- Ensure that no hydraulic fluid enters the soil or waterways.

### 12.4.3.1 Labelling hydraulic hose lines

The valve chest identification provides the following information:

Fig. 89/...

- (1) Manufacturer's marking on the hydraulic hose line (A1HF)
- (2) Date of manufacture of the hydraulic hose line (04/02 = Year / Month = February 2004)
- (3) Maximum approved operating pressure (210 BAR).

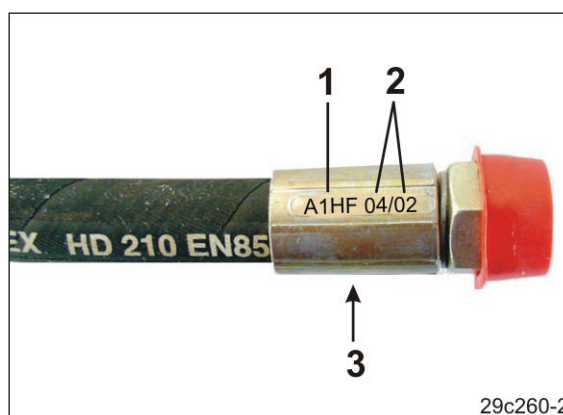


Fig. 89

### 12.4.3.2 Maintenance intervals

**After the first 10 operating hours, and then every 50 operating hours**

1. Check all the components of the hydraulic system for tightness.
2. If necessary, tighten screw unions.

**Before each start-up:**

1. Check hydraulic hose lines for visible damage.
2. Eliminate any scouring points on hydraulic hose lines and pipes.
3. Replace any worn or damaged hydraulic hose lines immediately.

### 12.4.3.3 Inspection criteria for hydraulic hose lines



For your own safety, comply with the following inspection criteria!

**Replace hydraulic hose lines, on determining any of the following during the inspection:**

- Damage to the outer layer up to the ply (e.g. scouring points, cuts, cracks).
- Brittleness of the outer layer (crack formation of the hose material).
- Deformations which do not match the natural shape of the hose or the hose line. Both in a depressurised and pressurised state or when bent (e.g. layer separation, bubble formation, pinching, bends).
- Leak points.
- Damage or deformation of the hose assembly (sealing function restricted); minor surface damage is not a reason for replacement.
- Movement of the hose out of the assembly.
- Corrosion of assembly, reducing the function and tightness.

- Installation requirements not complied with.
- Life span of 6 years has been exceeded. The date of manufacture of the hydraulic hose line on the assembly is decisive for determining these six years. If the date of manufacture on the assembly is "2004", then the hose should not be used beyond February 2010. See also "Labelling of hydraulic hose lines".

#### 12.4.3.4 Installation and removal of hydraulic hose lines



When installing and removing hydraulic hose lines, always observe the following information:

- Only use original AMAZONE hydraulic hose lines.
- Ensure cleanliness.
- You must always install the hydraulic hose lines so that, in all states of operation:
  - There is no tension, apart from the hose's own weight.
  - There is no possibility of jolting on short lengths.
  - Outer mechanical influences on the hydraulic hose lines are avoided.

Use appropriate arrangements and fixing to prevent any scouring of the hoses on components or on each other. If necessary, secure hydraulic hose lines using protective covers. Cover sharp-edged components.
  - The approved bending radii may not be exceeded.
- When connecting a hydraulic hose line to moving parts, the hose length must be appropriate so that the smallest approved bending radius is not undershot over the whole area of movement and/or the hydraulic hose line is not over-tensioned.
- Fix the hydraulic hose lines to the intended fixing points. Avoid using hose clips at points where the natural movement and changes in length of the hose will be restricted.
- It is prohibited to paint over hydraulic hose lines.

#### 12.4.4 Workshop adjustment work and repair work 10 operating hours after a wheel change (specialist workshop)

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Tightening the wheel and hub screws (specialist workshop), see section 12.4.1.

### 12.5 Lower link pin

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#### **WARNING**

**Risk of contusions, catching, and knocks when the machine unexpectedly releases from the tractor!**

Check the lower link pin for conspicuous defects whenever the machine is coupled. Replace the drawbar if there are any clear signs of wear to the lower link pin.

## 12.6 Screw tightening torques

Thread	Width across flats [mm]	Tightening torques [Nm] depending on the quality of the nuts/bolts		
		8.8	10.9	12.9
M 8	13	25	35	41
M 8x1		27	38	41
M 10	16 (17)	49	69	83
M 10x1		52	73	88
M 12	18 (19)	86	120	145
M 12x1.5		90	125	150
M 14	22	135	190	230
M 14x1.5		150	210	250
M 16	24	210	300	355
M 16x1.5		225	315	380
M 18	27	290	405	485
M 18x1.5		325	460	550
M 20	30	410	580	690
M 20x1.5		460	640	770
M 22	32	550	780	930
M 22x1.5		610	860	1050
M 24	36	710	1000	1200
M 24x2		780	1100	1300
M 27	41	1050	1500	1800
M 27x2		1150	1600	1950
M 30	46	1450	2000	2400
M 30x2		1600	2250	2700



Tightening torques of the wheel and hub screws, see section 12.4.1, on page 98.

## 13 Coupling frame hydraulic diagram (without attached machines)

Fig. 90/...	Designation
T1a	Hydraulic cylinder, left (lifting frame 1)
T1b	Hydraulic cylinder, right (lifting frame 1)
T2a	Hydraulic cylinder, left (lifting frame 2)
T2b	Hydraulic cylinder, right (lifting frame 2)
T3a	Hydraulic cylinder, left (lifting frame 3)
T3b	Hydraulic cylinder, right (lifting frame 3)
T4	Hydraulic cylinder (boom holder)
T5	Hydraulic cylinder (left folding system)
T6	Hydraulic cylinder (right folding system)
T7	6/2 directional control valve
T8	1 x cable tie, yellow
T9	1 x cable tie, green
T10	2 x cable tie, green

All position specifications in direction of travel



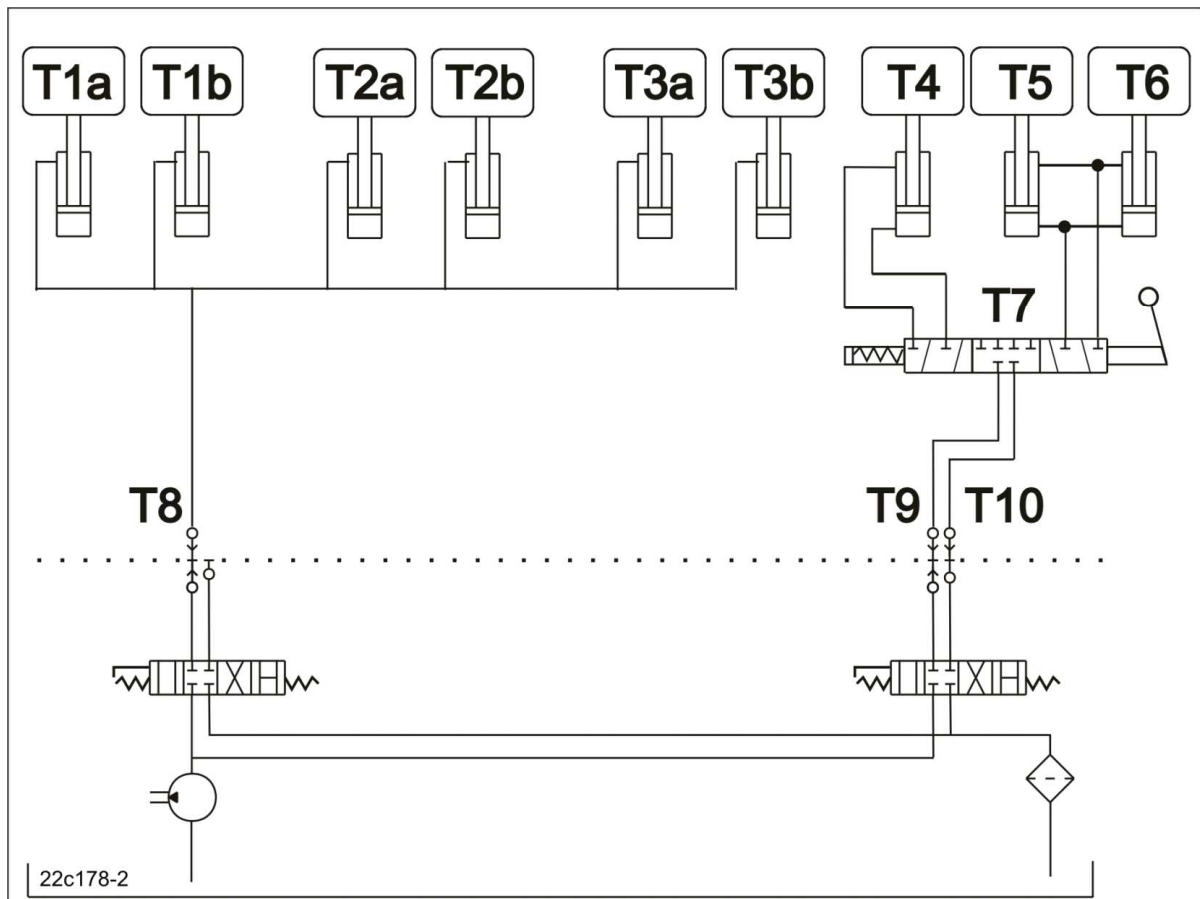


Fig. 90







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