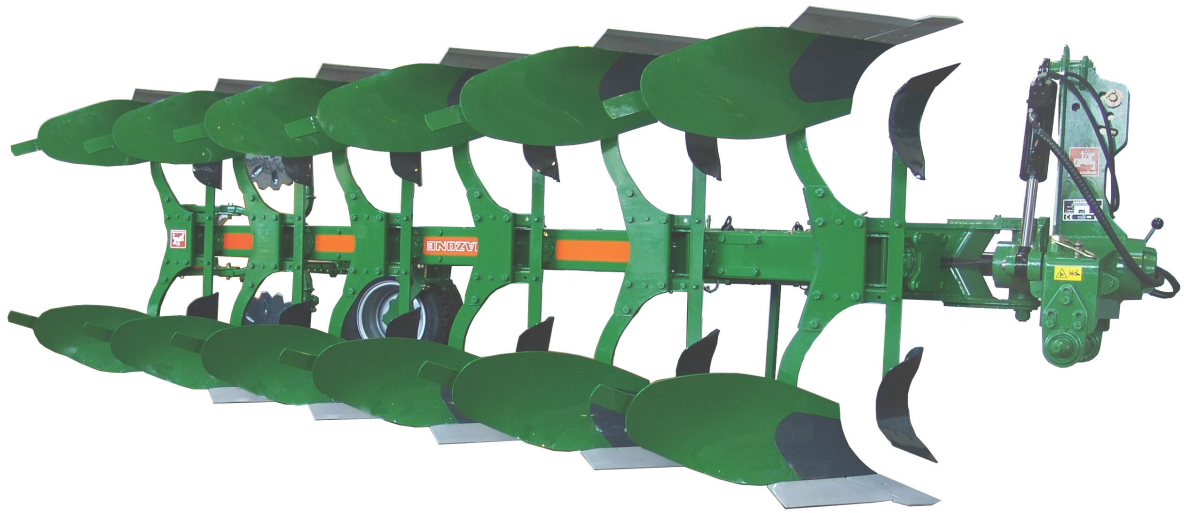
Operating Manual

AMAZONE

Cayron 200
Cayron 200 V

Reversible Plough



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SmartLearning

Read and observe this operating manual before using the implement for the first time! Keep it in a safe place for future use.

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.

Leipzig-Plagwitz 1872. Rud. Sark.

Identification data

Manufacturer:	AMAZONEN-WERKE H. DREYER SE & Co. KG
Implement ID No.	
Type:	Cayron
Permissible system pressure in bar:	
Year of manufacture:	
Factory:	
Basic weight (kg):	
Permissible total weight (kg):	
Maximum load (kg):	

Manufacturer's address

AMAZONEN-WERKE
H. DREYER SE & Co. KG
Postfach 51
D-49202 Hasbergen, Germany
Tel.: + 49 (0) 5405 50 1-0
E-mail: amazone@amazone.de

Spare part orders

Spare parts lists are freely accessible in the spare parts portal at www.amazone.de.

Please send orders to your AMAZONE dealer.

Formalities of the operating manual

Document number:	MG5094
Compilation date:	06.21

Foreword

Dear Customer,

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

On receiving the implement, check to see if it has been damaged during transport or if parts are missing. Using the delivery note, check that the implement has been delivered in full, including any special equipment ordered. Damage can only be rectified if problems are signalled immediately.

Before commissioning, read and understand this operating manual, and particularly the safety information. Only after careful reading will you be able to benefit from the full scope of your newly purchased implement.

Please ensure that all the implement operators have read this operating manual before the implement is commissioned.

Should you have any questions or problems, please consult this operating manual or contact your local service partner.

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

User evaluation

Dear Reader,

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

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1 User Information

The User Information section provides information on use of the operating manual.

1.1 Purpose of the document

This operating manual

- describes the operation and maintenance of the implement.
- provides important information on safe and efficient handling of the implement.
- is a component part of the implement and should always be kept with the implement or the towing vehicle.
- Keep it in a safe place for future use.

1.2 Locations in the operating manual

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

1.3 Diagrams

Instructions and responses

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

1. Instruction 1

→ Implement response to instruction 1

2. Instruction 2

Lists

Lists without an essential order are shown as a list with bullets. Example:

- Point 1
- Point 2

Item numbers in diagrams

Numbers in round brackets refer to items in diagrams.

Example (6)

→ Item 6

2 General Safety Instructions

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

2.1 Obligations and liability

Comply with the instructions in the operating manual

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

Obligations of the operator

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

- are aware of the basic workplace safety information and accident prevention regulations.
- Have been introduced to working with/on the implement.
- have read and understood this operating manual.

The operator is obliged

- to keep all the warning symbols on the implement in a legible state.
- to replace damaged warning symbols.

Obligations of the user

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

- to comply with the basic workplace safety instructions and accident prevention regulations.
- To read and observe the section "General safety information" of this operating manual.
- To read the section "Warning symbols and other labels on the implement" (page 15) of this operating manual and to follow the safety instructions represented by the warning symbols when operating the implement.
- To get to know the implement.
- 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).

Risks in handling the implement

The implement has been constructed to the state-of-the art and the recognised rules of safety. However, operating the implement may cause risks and restrictions to

- the health and safety of the user or third parties,
- the implement,
- other property.

Only use the implement

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

Eliminate any faults immediately which could impair safety.

Guarantee and liability

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

- Improper use of the implement.
- Improper installation, commissioning, operation and maintenance of the implement.
- Operation of the implement 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 design changes to the implement.
- Insufficient monitoring of implement parts which are subject to wear.
- Improperly executed repairs.
- Disasters through the impact of foreign bodies and Acts of God.

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 severity of the risk, and carries the following meaning:

DANGER

identifies a direct threat at high risk which can result in death or most serious bodily harm (loss of limbs or long-term harm), should it not be prevented.

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 cause 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 implement handling.

Non-compliance with these instructions can cause faults on the implement or disturbance to the environment.

NOTE

Indicates handling tips and particularly useful information.

These instructions will help you to use all the functions of your implement in the best way possible.

2.3 Organisational measures

The operator must provide the necessary personal protective equipment as per the information provided by the manufacturer of the crop protection agent to be used, such as:

- Protective goggles,
- Safety shoes,
- Protective overall,
- Skin protection agents etc.

The operation manual

- Must always be kept at the place at which the implement 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 starting up the implement each time, all the safety and protection equipment must be properly attached and fully functional. Check all 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 you should comply with the statutory road traffic regulations.

2.6 User training

Only trained and instructed persons should be allowed to work with/on the implement. The responsibilities of the operating and maintenance personnel must be clearly defined.

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

Person / Activity	Person specially trained for the activity [1]	Trained person [2]	Persons with specialist training (specialist workshop) [3]
Loading/Transport	X	X	X
Start-up	--	X	--
Set-up, tool installation	--	--	X
Operation	--	X	--
Maintenance	--	--	X
Troubleshooting and fault elimination	X	--	X
Disposal	X	--	--

Legend: X..permitted --..not permitted

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

2) 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.

3) 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 from several years' experience in the relevant field.

If maintenance and repair work on the implement is additionally marked "Workshop work", only a specialist workshop may carry out such work. 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 implement in a way which is both appropriate and safe.

2.7 Safety measures in normal operation

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

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

2.8 Danger from residual energy

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

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 good time.

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

Regularly check that bolted connections are firmly secured and tighten if necessary.

When the maintenance work is completed, check the functioning of the safety devices.

2.10 Design changes

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

Any expansion or modification work shall require the written approval of AMAZONEN-WERKE. Only use modification and accessory parts approved by AMAZONEN-WERKE so that the type approval, 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 crushing, cutting, being trapped or drawn in, or impact through the failure of support parts.

It is strictly forbidden to

- drill holes in the frame or on the running gear.
- increase the size of existing holes on the frame or the running gear.
- weld support parts.

2.10.1 Spare and wear parts and aids

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

Only use genuine AMAZONE spare and wear parts, or those approved by AMAZONEN-WERKE, so that the operating permit remains valid according to the national and international regulations. The use of spare and wear parts from third parties does not guarantee that they have been constructed such that they meet the requirements placed on them.

AMAZONEN-WERKE shall accept no liability for damage caused by the use of non-approved spare and wear parts or aids.

2.11 Cleaning and disposal

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

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

2.13 Warning symbols and other signs on the implement

Always keep all the warning pictograms of the implement 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 symbols - structure

Warning pictograms indicate danger areas on the implement and warn of residual dangers. Permanent or unexpected dangers exist in these areas.

A warning symbol consists of two fields:

Field 1

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

Field 2

is a symbol showing how to avoid the danger.

Warning symbols - explanation

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

1. A description of the danger.

   For example: risk of cutting

2. The consequence of non-compliance with the risk avoidance instructions.

   For example: causes serious injuries to fingers or hands.

3. Risk avoidance instructions.

   For example: only touch implement parts when they have come to a complete standstill.

2.13.1 Positions of warning symbols and other labels

Warning symbols

The following diagrams show the arrangement of the warning symbols on the implement.

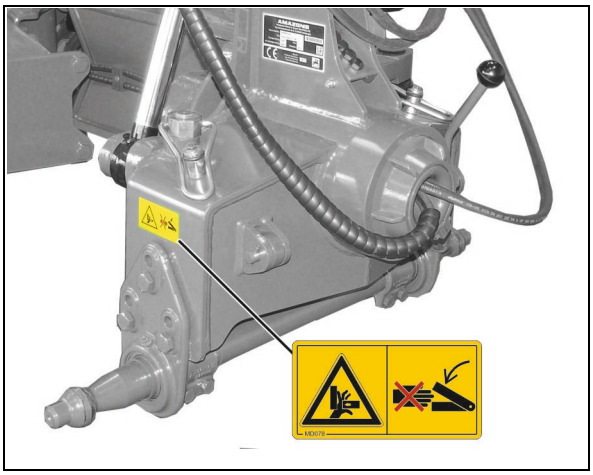


Fig. 1

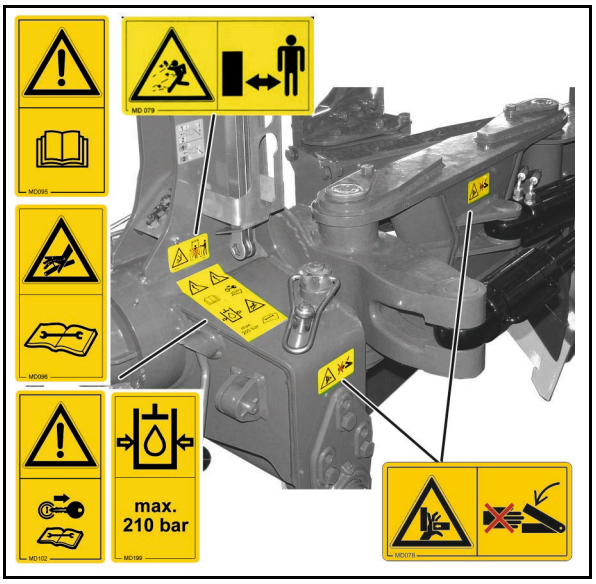


Fig. 2

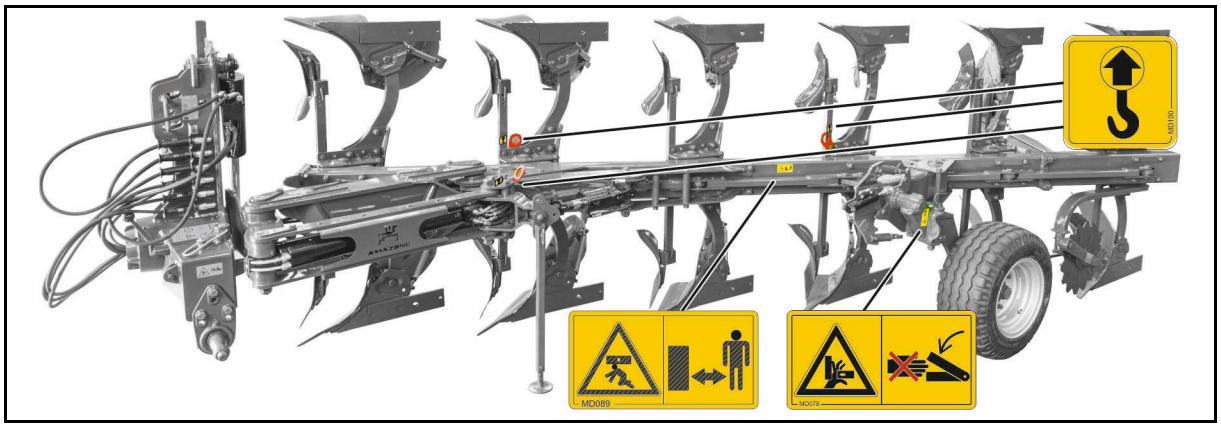
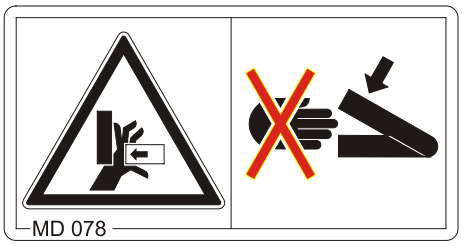
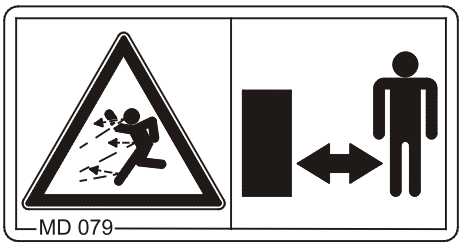
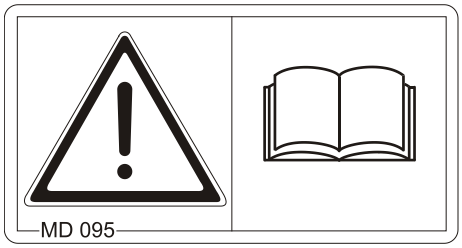


Fig. 3

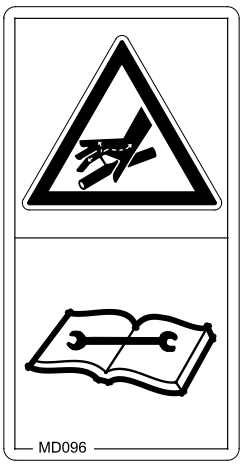
Order No. and explanation	Warning symbols
MD 078 **Risk of crushing of fingers/hand by accessible, moving parts of the implement!** This hazard can cause extremely serious injuries resulting in the loss of limbs. Never reach into the danger area when the tractor engine is running with the PTO shaft or hydraulic/electrical system connected.	
MD 079 **Risk of materials or foreign objects being flung away by or out of the implement!** These dangers can cause extremely serious and potentially fatal injuries. • Keep a sufficient safety distance from the implement as long as the tractor engine is running. • Ensure that all other persons also keep a sufficient safety distance from the danger area of the implement as long as the tractor engine is running.	
MD 095 Read and follow the operating manual and safety information before starting up the implement!	

MD 096

Danger from escaping high-pressure hydraulic fluid due to leaking hydraulic hose lines.

This danger may cause serious injuries, perhaps even resulting in death, if escaping high-pressure hydraulic fluid passes through the skin and into the body.

- Never attempt to plug leaks in hydraulic hose lines with your hand or fingers.
- Read and observe the information in the operating manual before carrying out maintenance work on the hydraulic hose lines.
- If you are injured by hydraulic fluid, contact a doctor immediately.

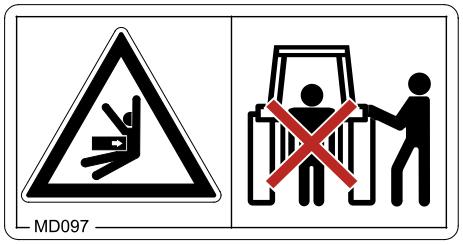


MD 097

Risk of crushing and contusions between the rear of the tractor and the implement when coupling and uncoupling the implement!

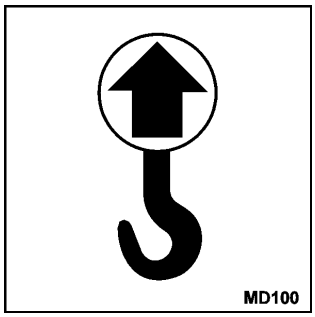
These dangers can cause extremely serious and potentially fatal injuries.

- It is forbidden to actuate the three-point hydraulic system of the tractor as long as persons are standing between the rear of the tractor and the implement.
- Actuate the operator controls for the tractor's three-point hydraulic system:
  - Only from the intended workstation alongside the tractor.
  - Only when you are outside the danger area between the tractor and the implement.



MD 100

This symbol indicates attachment points for lifting gear for loading the implement.

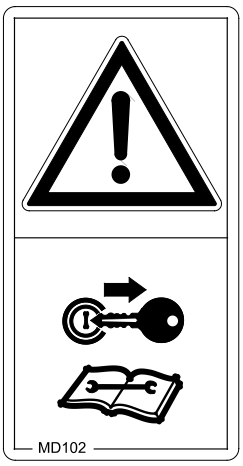


MD 102

Dangerous situations for the operator due to unintentional starting / rolling of the implement during all work on the implement, e.g. installation, adjustment, troubleshooting, cleaning or maintenance.

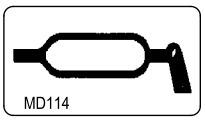
The potential dangers can inflict severe and potentially fatal injuries on all parts of the body.

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



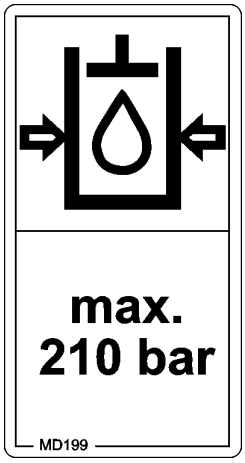
MD 114

This pictogram indicates a lubrication point.



MD 199

The maximum operating pressure of the hydraulic system is 210 bar.



2.14 Potential risks from not observing the safety instructions

Non-compliance with the safety information

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

In particular, non-compliance with the safety information could pose the following risks:

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

2.15 Safety-conscious working

In addition to the safety information in this operating manual, compliance with the generally applicable national workplace safety and accident prevention regulations is mandatory.

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

Before starting up the implement 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 generally applicable national safety and accident prevention regulations.
- The warning symbols and other labels attached to the implement provide important information on safe implement operation. Compliance with this information is in the interests of your safety.
- Before moving off and starting up the implement, check the immediate area of the implement (children). Ensure that you can see clearly.
- It is forbidden to ride on the implement 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 implement.

  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 connected or coupled implement.

Coupling and uncoupling the implement

- You may only couple and transport the implement on a tractor that fulfils the power requirements.
- When connecting implements to the tractor's three-point hydraulic system, the attachment categories of the tractor and the implement must always be the same!
- When coupling implements 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 implement against unintentional movement before coupling or uncoupling the implement.
- It is forbidden for people to stand between the implement to be coupled and the tractor while the tractor is moving towards the implement!

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

- When coupling and uncoupling implements, 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 implement 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 implement.
- It is forbidden for people to stand between the tractor and the implement when actuating the three-point hydraulic system.
- Connect the implement to the prescribed equipment in accordance with the specifications.
- The release ropes for quick action couplings must hang loosely and may not release themselves when lowered.
- Also ensure that uncoupled implements are stable!

Use of the implement

- Before starting work, ensure that you understand all the equipment and actuation elements of the implement and their function. There is no time for this when the implement is already in operation.
- Do not wear loose-fitting clothing. Loose clothing increases the risk of being caught by the drive shaft.
- Only start-up the implement, when all the safety equipment has been attached and is in the safety position.
- Comply with the maximum load of the connected implement and the approved axle and support loads of the tractor. If necessary, drive only with a partially filled tank.
- It is forbidden to stand in the working area of the implement.
- It is forbidden to stand in the turning and swivel range of the implement.
- There are crushing and cutting points at externally-actuated (e.g. hydraulic) implement points.
- Only actuate externally-actuated implement parts when you are sure that no-one is standing within the prescribed safety distance.
- Secure the tractor against unintentional start-up and rolling, before you leave the tractor.

  For this:

  - Lower the implement onto the ground
  - apply the parking brake
  - Switch off the tractor engine
  - Remove the ignition key

Implement transportation

- When using public roads, national road traffic regulations must be observed.
- Before moving off, check:
  - The correct connection of the supply lines
  - The lighting system for damage, function and cleanliness
  - The brake and hydraulic system for visible damage
  - That the parking brake is completely released
  - The functioning of the brake system
- Ensure that the tractor has sufficient steering and braking power.

  Any implements 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 load of the connected implement and the approved axle and support loads of the tractor.
- The tractor must guarantee the prescribed brake delay for the loaded vehicle combination (tractor plus connected implement).
- Check the brake power before moving off.
- When turning corners with the implement connected, take the broad load and balance weight of the implement into account.
- Before moving off, ensure sufficient side locking of the tractor lower links, when the implement is attached to the three-point hydraulic system or lower links of the tractor.
- Before moving off, move all the swivel implement parts to the transport position.
- Before moving off, secure all the swivel implement parts in the transport position against risky position changes. Use the transport locks intended for this.
- Before moving off, lock the operating lever of the tractor's three-point hydraulic system against the unintentional raising or lowering of the connected or hitched implement.
- Check that the transport equipment, e.g. lighting, warning equipment and protective equipment, is correctly mounted on the implement.
- Before transportation, carry out a visual check that the upper and lower link bolts are firmly fixed with the lynch pin against unintentional release.
- Adjust your driving 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 implement and tractor sides.
- It is forbidden 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 which:
  - 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 implement
  - Depressurise the hydraulic system
  - Switch off the tractor engine
  - apply the parking brake
  - remove the ignition key
- Have the hydraulic hose lines checked at least once a year by a specialist for proper functioning.
- Replace the hydraulic hose line if it is damaged or worn. Only use genuine AMAZONE hydraulic hose lines.
- The hydraulic hose lines should not be used for longer than six years. This period includes any storage time of a maximum of 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 connections made from thermoplastics, other guide values may be decisive.
- Never attempt to plug leaks in hydraulic hose lines with 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 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 that are too highly rated, the electrical system will be destroyed – 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 danger of explosion!
- Risk of explosion. Avoid sparking and naked flames in the area of the battery.
- The implement may be equipped with electronic components whose function is influenced by electromagnetic interference from other units. Such interference can pose risks to people, if the following safety information is not followed.
  - If retrofitting electrical units and/or components on the implement with a connection to the on-board power supply, the user is responsible for checking 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 2014/30/EEC in the appropriate version and carry the CE mark.

2.16.4 Cleaning, maintenance and repair

- Repair-, maintenance- and cleaning operations as well as the remedy of function faults should principally be conducted with
  - The drive is switched off
  - The tractor engine is at a standstill
  - the ignition key has been removed
  - The implement plug has been disconnected from the on-board computer
- Regularly check the nuts and bolts for firm seating and retighten them as necessary.
- Secure the raised implement and/or raised implement parts against unintentional lowering before performing any cleaning, maintenance or repair work on the implement!
- 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 implements.
- Spare parts must comply at least with the specified technical requirements of AMAZONEN-WERKE.
  This is ensured through the use of genuine AMAZONE spare parts.

3 Loading and unloading

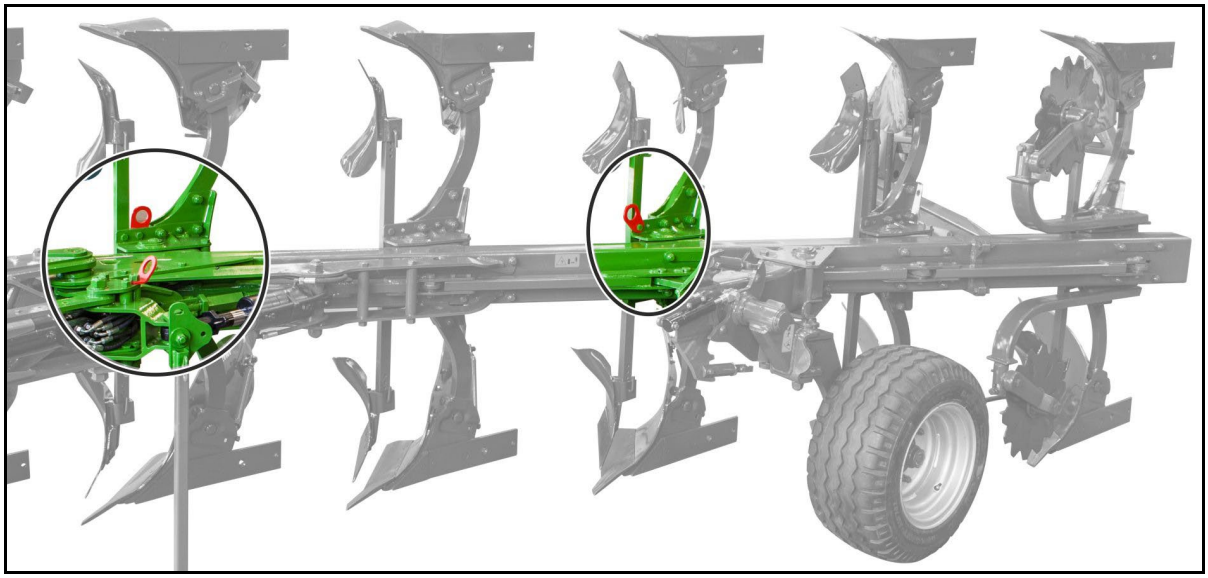
WARNING

Risk of crushing due to accidental falling of a implement attached to a load carrier during loading and unloading!

- Use only slings (ropes, belts, chains, etc.) with a minimum tensile strength greater than the total weight of the implement (see Technical data).
- Only attach your lifting equipment to/at the designated points.
- Never remain in or enter the area below a raised, unsecured load.

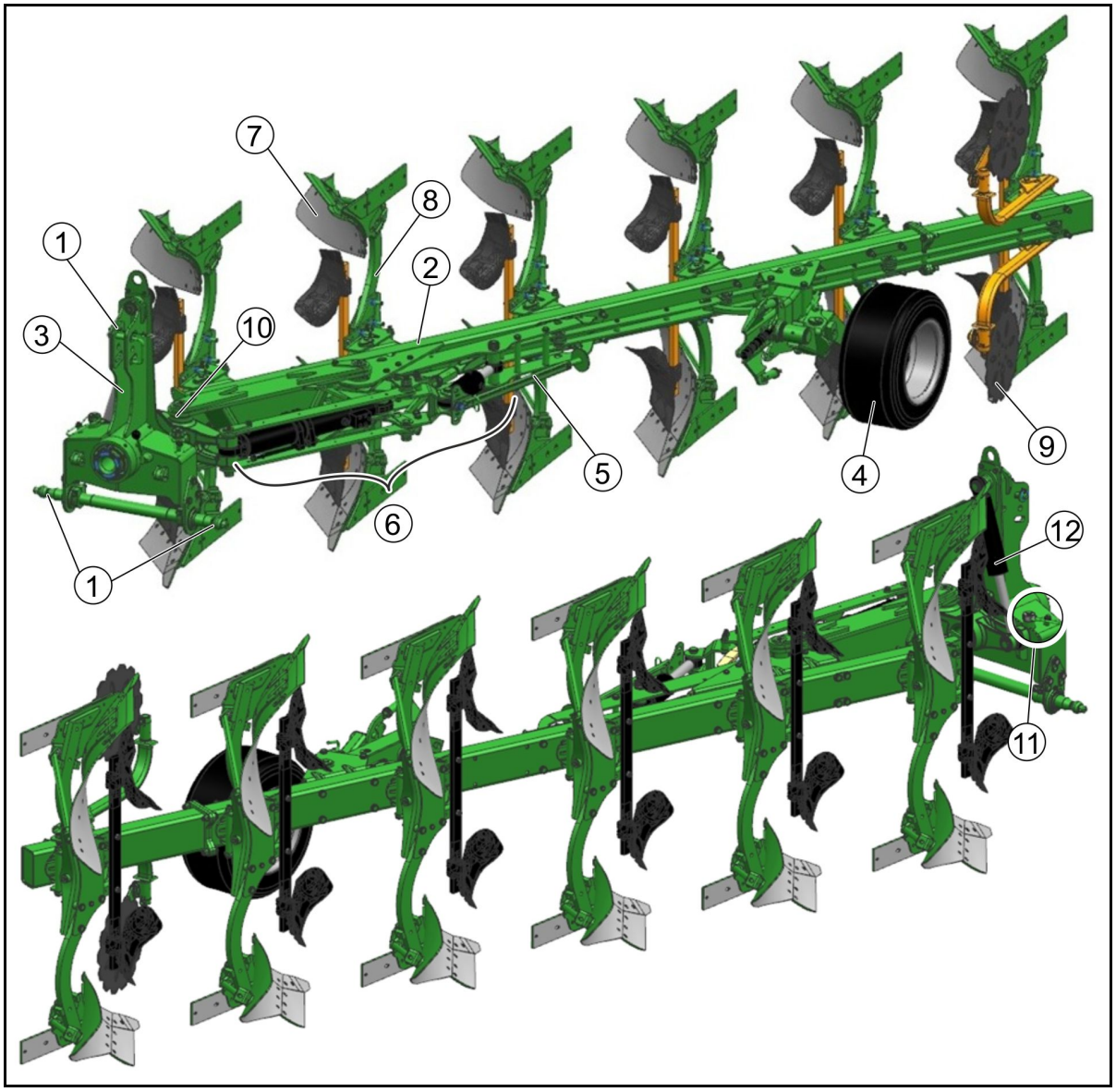
The minimum tensile strength per sling must be 1500 kg.

The implement has 3 attachment points for lifting equipment.



4 Product description

4.1 Overview of the assemblies



(1) Three-point hitch
(2) Beam
(3) Headstock
(4) Depth and transport wheel
(5) Parking support
(6) Adjustment centre
(7) Plough body
(8) Leg
(9) Disc coulter
(10) Turn-over bracket with locking device for the turn-over bracket during transportation.
(11) Tilt adjustment
(12) Turning cylinder

4.2 Safety and protection equipment

Turn-over bracket locking device for transportation.

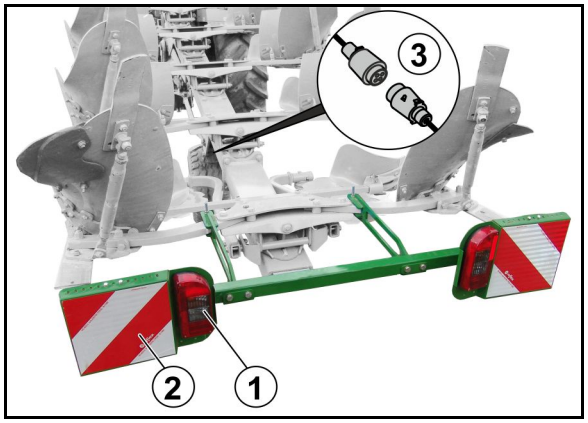
4.3 Transportation equipment

(1) Rear lights, brake lights, and turn indicators

(2) Warning signs at the rear

(3) Cable with connection for lighting

The power is supplied through a socket on the beam.



4.4 Intended use

The Cayron as a reversible plough

- Is built for conventional use in agricultural operations.
- It is
  - Coupled to a tractor on the lower link (transport)
  - Coupled to a tractor on the top and lower link (operation)
  - Operated by the driver.

Sloping terrain can be traversed as follows:

- Along the contours

  Direction of travel to left 15 %

  Direction of travel to right 15 %
- Along the gradient

  Up the slope 15 %

  Down the slope 15 %

"Intended use" also covers:

- Compliance with all the instructions in this operating manual.
- Execution of inspection and maintenance work.
- Exclusive use of genuine AMAZONE spare parts.

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

For any damage resulting from improper use

- the operator bears the sole responsibility,
- AMAZONEN-WERKE accepts no liability.

4.5 Danger areas and danger points

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

- work movements made by the implement and its tools
- materials or foreign bodies thrown out of the implement
- tools rising or falling unintentionally
- by unintentional rolling of the tractor and the implement

Within the implement 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 implement danger area:

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

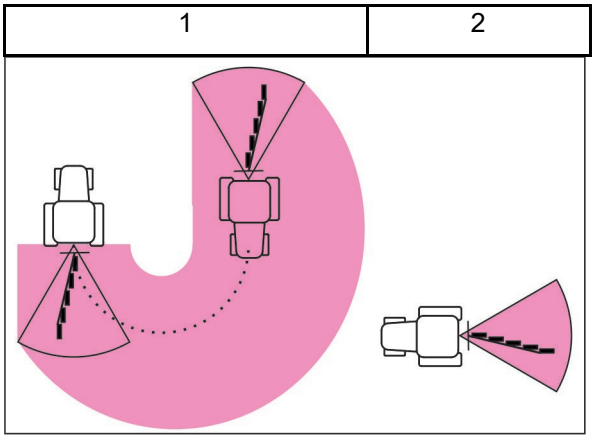
The operating person may only move the implement or switch or drive the tools from the transport position to the working position or vice-versa when there is no-one in the implement danger area.

The following danger areas exist:

- Between the tractor and the implement, particularly during coupling and uncoupling procedures.
- Where there are moving components.
- When the implement is in motion.
- Underneath raised, unsecured implements or parts of implements.

(1) Danger zone during travel

(2) Danger zone when stationary



4.6 Rating plate and CE mark

Machine rating plate

The following information is specified on the rating plate and the CE mark:

(1) Implement number

(2) Vehicle identification number

(3) Product

(4) Permissible technical implement weight

(5) Model year

(6) Year of manufacture

4.7 Technical Data

Cayron 200	**5-share**		**6-share**	
Working width adjustment	hydraulic		hydraulic	
Version Cayron	**200 V**	**200**	**200 V**	**200**
Working width per body	30-55 cm	40, 45, 50 cm	30-55 cm	40, 45, 50 cm
Working speed	4 – 9 km/h			
Transport speed	25 km/h			
Underbeam clearance	83 cm		83 cm	
Interbody clearance	100 cm		100 cm	
Transport length	5,70 m		6,70 m	
Transport height with depth and transport wheel	2,90 m		3,00 m	
+ Packer arm	3,20 m		3,30 m	
Underbeam clearance	2,00 m		2,00 m	
Weight	2410 kg	2100 kg	2735 kg	2425 kg
Draw bar load	1200 kg	1100 kg	1100 kg	1000 kg
Tyre pressure depth and transport wheel	3,5 bar	3,5 bar	3,5 bar	3,5 bar
Centre of gravity distance d	2180 mm	2150 mm	2480 mm	2450 mm

4.8 Necessary tractor equipment

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

Tractor engine power

- Up to 175 kW (240 HP)
- Above 110 kW (150 HP) 5-share plough
- Above 130 kW (180 HP) 6-share plough

Hydraulics

Maximum operating pressure:	• 210 bar
Tractor pump power:	• At least 20 l/min at 150 bar
Implement hydraulic fluid:	• HLP68 DIN 51524 The implement hydraulic fluid is suitable for the combined hydraulic fluid circuits of all standard tractor brands
Control units:	• See page 69.

Three-point hitch

- The lower links of the tractor must have lower link hooks.
- The upper links of the tractor must have upper link hooks.

4.9 Noise production data

The workplace-related emission value (acoustic pressure level) is 74 dB(A), measured in operating condition at the ear of the tractor driver with the cabin closed.

Measuring unit: OPTAC SLM 5.

The noise level is primarily dependent on the vehicle used.

5 Layout and function

5.1 Function

The Cayron 200 / Cayron 200 V plough is a mounted reversible plough with 5 or 6 shares.

The plough turns the soil in the area of the adjusted working depth and working width.

A reversible plough can turn the soil to the right or to the left.

After turning at the end of the field, the plough is rotated to the other side, to turn the soil towards the same side when driving back.

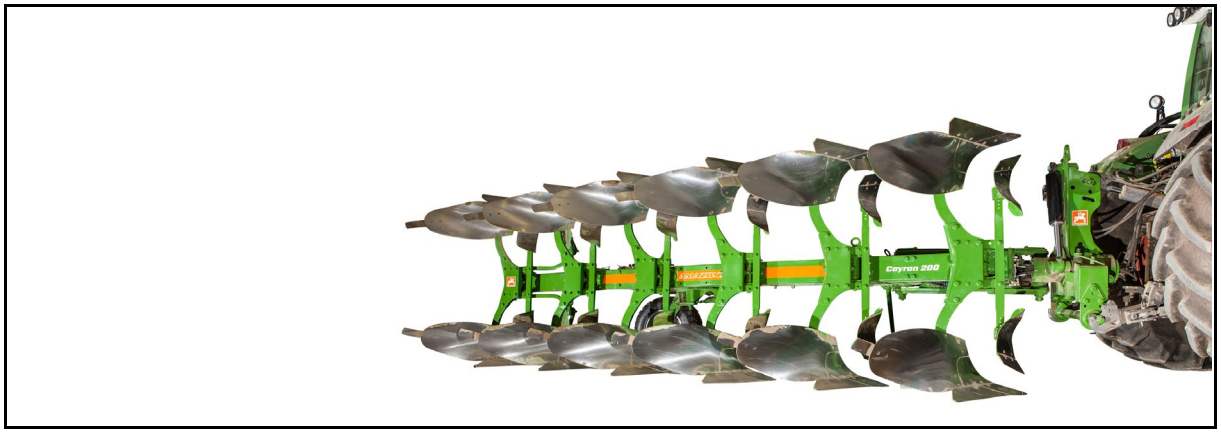
Depending on the equipment, the working width adjustment is hydraulic or manual.

During operation, the plough is coupled to the tractor via the three-point hitch, because the plough has to be lifted completely for the rotation. During ploughing, the top link rests at the front in the slot of the coupling point.

The implement weight is carried by the tractor lower links and the Vario wheel.

During transport, the plough is only coupled onto the tractor lower link and is pulled by the tractor on the Vario wheel.

Working position:



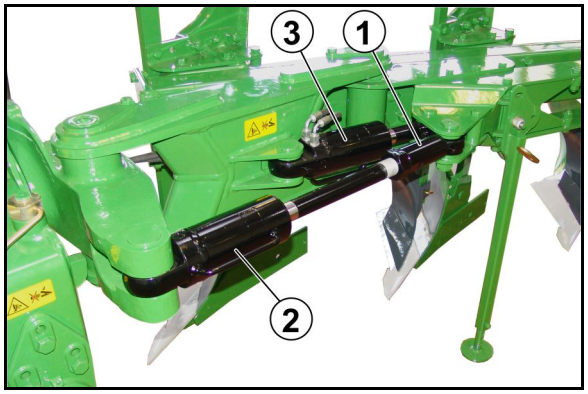
Transport position:

Parking position:

5.2 Cayron 200 – Cayron 200V Adjustment Centre

Cayron 200

3 cutting widths (40 cm, 45 cm, 50 cm) / working widths can be adjusted manually.



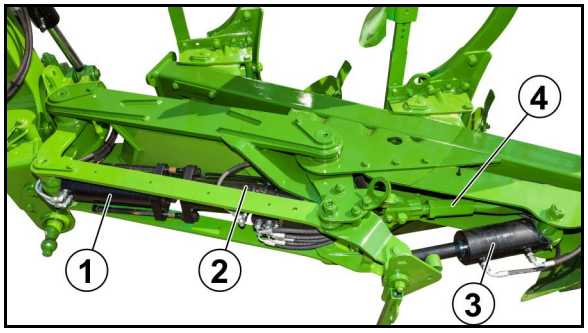
(1) Adjustment spindle for the traction point

(2) Hydraulic cylinder for swivelling the beam

(3) Hydraulic cylinder for the front furrow width

Cayron 200V

Cutting width / working width can be infinitely adjusted in the range from 30 to 55 cm hydraulically.



(1) Hydraulic cylinder for swivelling the beam

(2) Hydraulic cylinder for the front furrow width

(3) Hydraulic cylinder for adjusting the working width

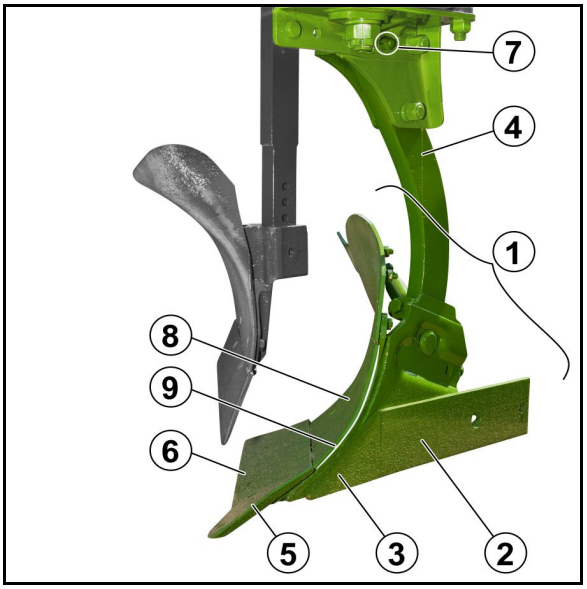
(4) Adjustment spindle for the pull point (factory-set)

(Diagram without cover plate)

5.3 The plough body

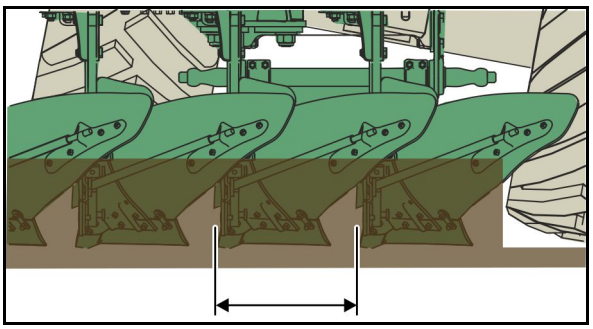
- The cutting width of the plough body is adjustable.
- The cutting width for all of the plough bodies must be adjusted the same.
- The sum of all cutting widths and the front furrow width is the working width.

(1) Share body
(2) Landside
(3) Landside point
(4) Leg
(5) Point tip
(6) Wing
(7) Shear bolt
(8) Mouldboard
(9) Mouldboard front section



Cutting Width

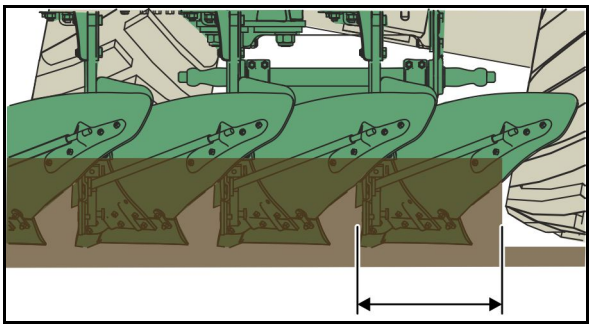
The cutting width is the actual cutting width of a share body, measured at 90° to the direction of travel.



The front furrow width

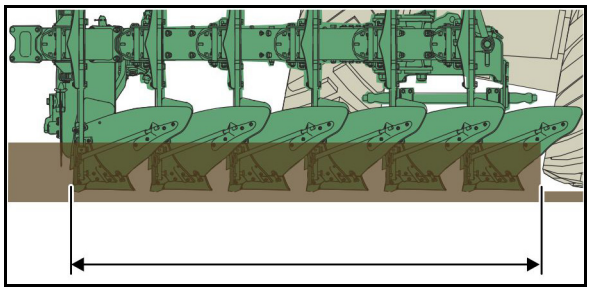
The front furrow width

- Is the working width of the first share body,
- Is measured from the edge of the furrow to the landside of the first share body
- Must correspond to the selected cutting width,
- Is important for a uniform ploughing pattern,
- Is affected by:
  - The working width of the plough
  - Inner track width of the tractor
  - Cutting angle



Working width

The working width corresponds to the field width that is processed in one pass.



5-share plough: working width =

4 x cutting width + front furrow width

6-share plough: working width =

5 x cutting width + front furrow width

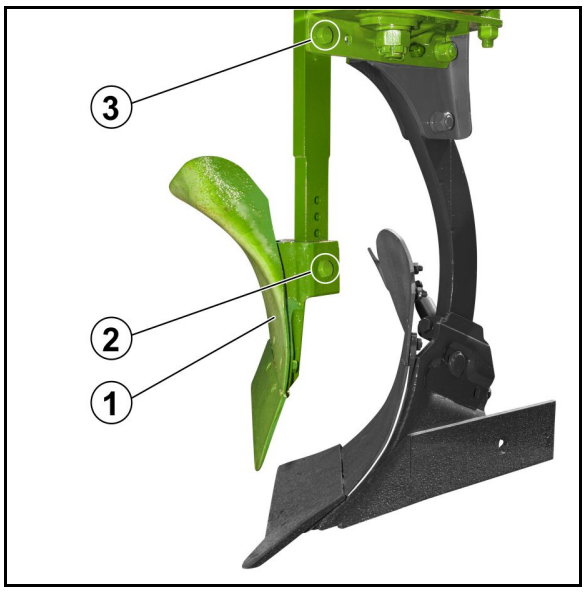
5.4 Skimmer

The skimmers skim the soil in the top third of the working depth in front of the plough share,

(1) Skimmer

(2) Height adjustment

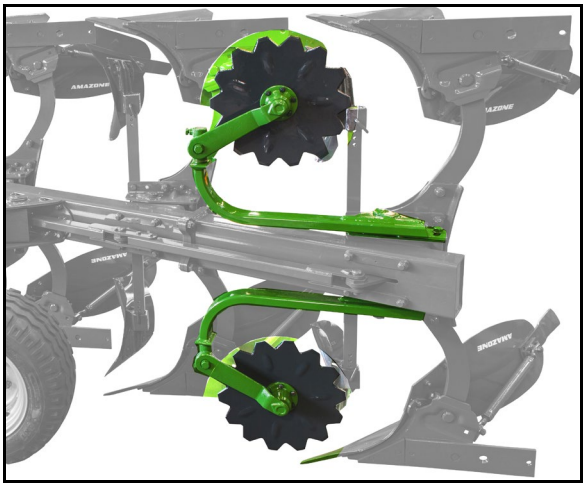
(3) Adjustment of the distance to the plough body



5.5 Disc coulter

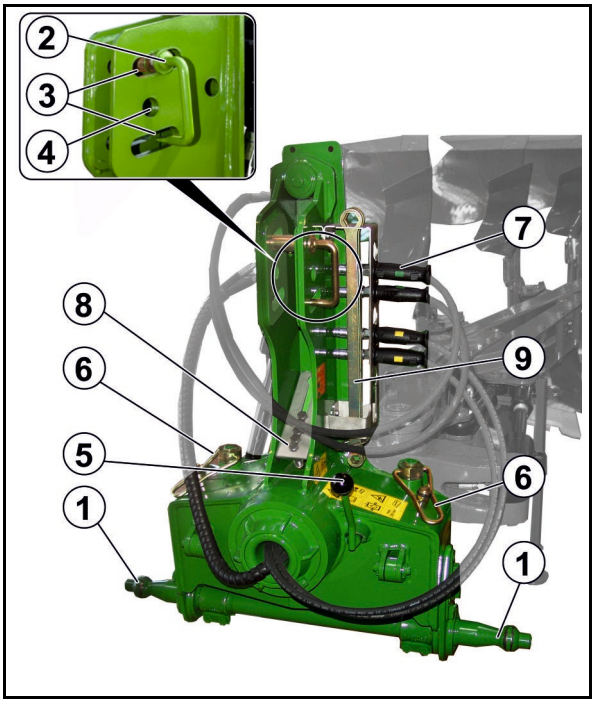
The disc coulter

- Cuts the soil open vertically,
- Provides a clean last furrow,
- Cuts crop residues,



5.6 Headstock

Headstock for the three-point attachment on the tractor of Category 3.



(1) Category 3 lower link pin with integrated ball bushing

(2) Category 3 top link pin with handle

(3) Top and lower slot for coupling the top link

(4) Middle fixing position for coupling the top link

(5) Lever for locking the turn-over bracket

(6) Tilt adjustment left and right

(7) Hydraulic hoses in hose cabinet

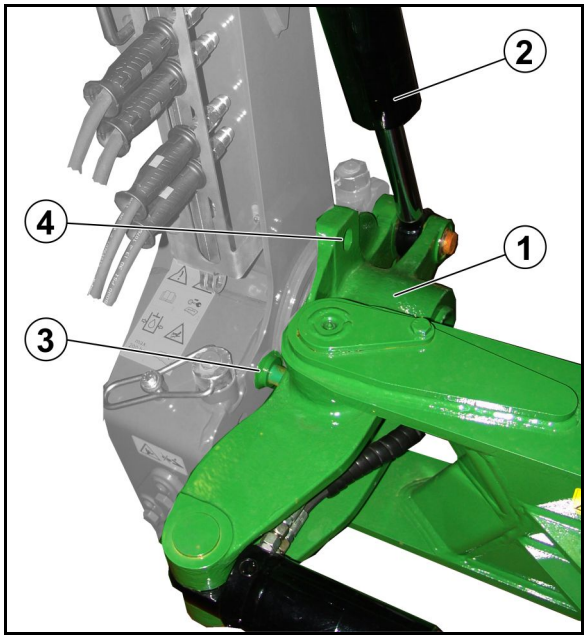
(8) Spare share bolts for the leg

(9) Wrench

5.7 Turn-over bracket

Using the turn-over bracket, the plough is

- Rotated from one working direction to the other,
- Rotated into transport position and locked.

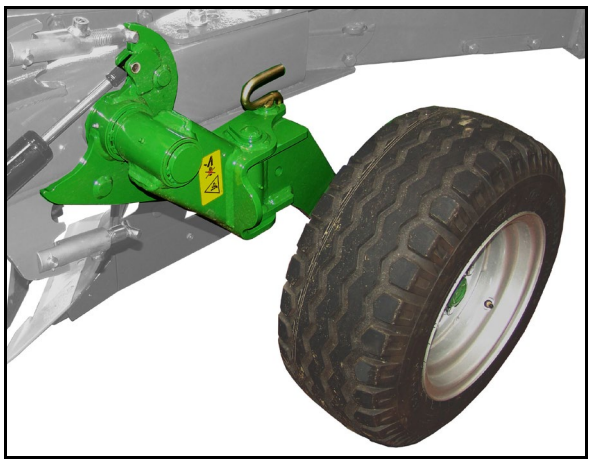


(1) Turn-over bracket
(2) Turning cylinder
(3) Pins for locking the turn-over bracket
(4) Retainer for the locking pins

5.8 Depth and transport wheel

The depth and transport wheel

- in transport position serves as a running gear during transportation,
- in working position serves for depth guidance of the shares.

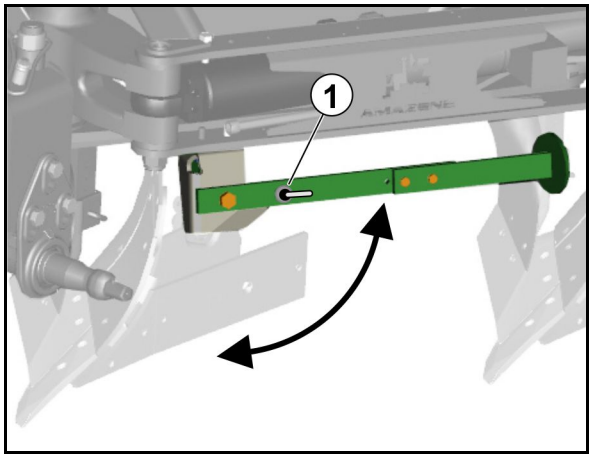


5.9 Parking support

The swivellable parking support serves for parking the implement.

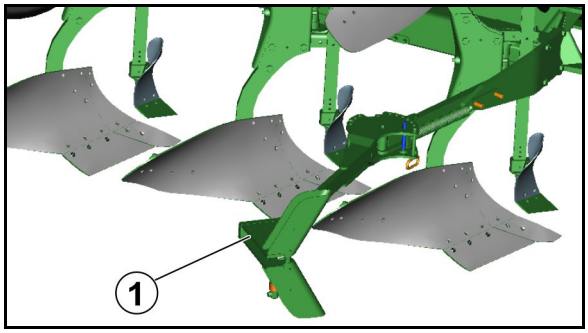
(1) Locking pin to secure the transport position

When coupling and uncoupling the tractor, observe the sequence otherwise the parking support could be damaged.



5.10 Swivel arm for supporting a packer

(1) Swivel arm in catch position



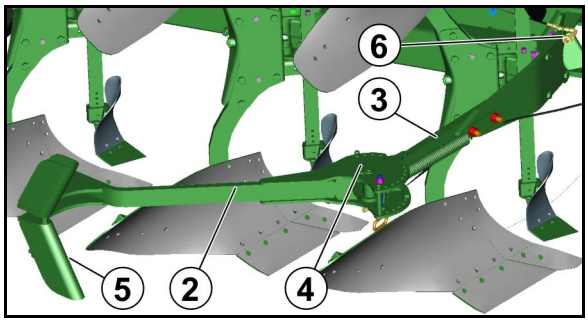
(2) Swivel arm in traction position

(3) Support for the swivel arm

(4) Adjustment console

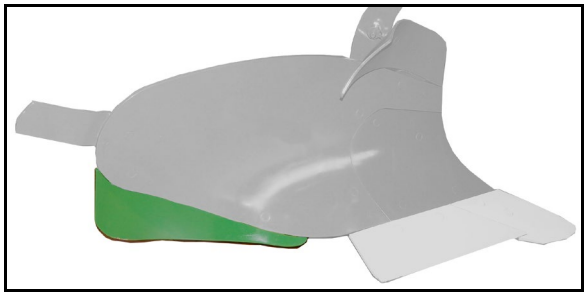
(5) Support for packer with guidance and hydraulic release device

(6) Hydraulic coupling



5.11 X-Blade

X-Blade is the additional plate on the last plough body for additional furrow clearance.



6 Settings

WARNING

Risk of injury during adjustments on the implement caused by unintentional starting and rolling of the tractor and mounted implement.

Secure the tractor and the implement against unintentional starting and rolling before making adjustments on the implement, see page 58 for more information.

WARNING

Risk of injury during adjustments on the implement caused by unintentional lowering of the coupled and raised implement.

- Secure the tractor cabin against access by other persons and therefore prevent unintentional actuation of the tractor hydraulic system.
- Perform adjustments with the implement slightly raised.

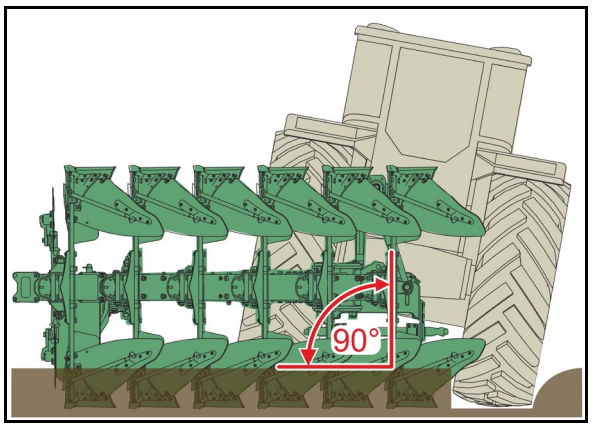
6.1 Adjusting the inclination to the tractor

During operation, the plough should be running at a right angle to the unploughed soil.

To do so, the inclination of the plough to the headstock must be adjusted.

The inclination depends on the adjusted working depth.

Adjust the inclination separately on the left and right side using the spindle on the headstock.



Furrow connection setting

Inclination angle greater than 90°:

- More pressure on the wing
- First share carries more soil

Inclination angle smaller than 90°:

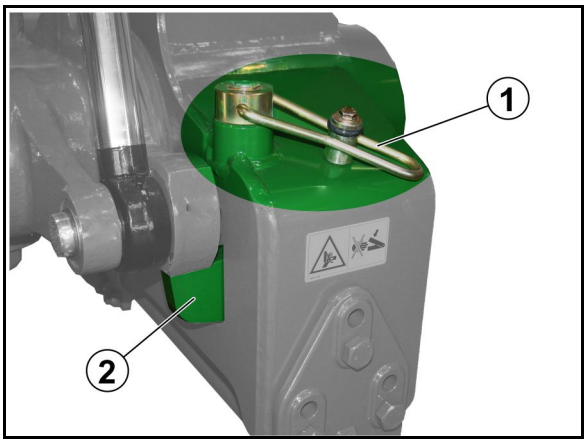
- More pressure on the point tip
- First share carries less soil

Adjusting the inclination angle:

1. Lift the retaining clip (1).
2. Use the retaining clip to turn the adjustment spindle.

- Reposition the stop (2) further down
  → Inclination > 90°
- Reposition the stop (2) further up
  → Inclination < 90°

3. Secure the retaining clip again against unintentional turning.
4. Perform the same adjustment on both sides.



The tilt sensor can be adjusted on both sides.

6.2 Adjusting the feed rod

The feed rod can be used to align the beam with the shares with the headstock.

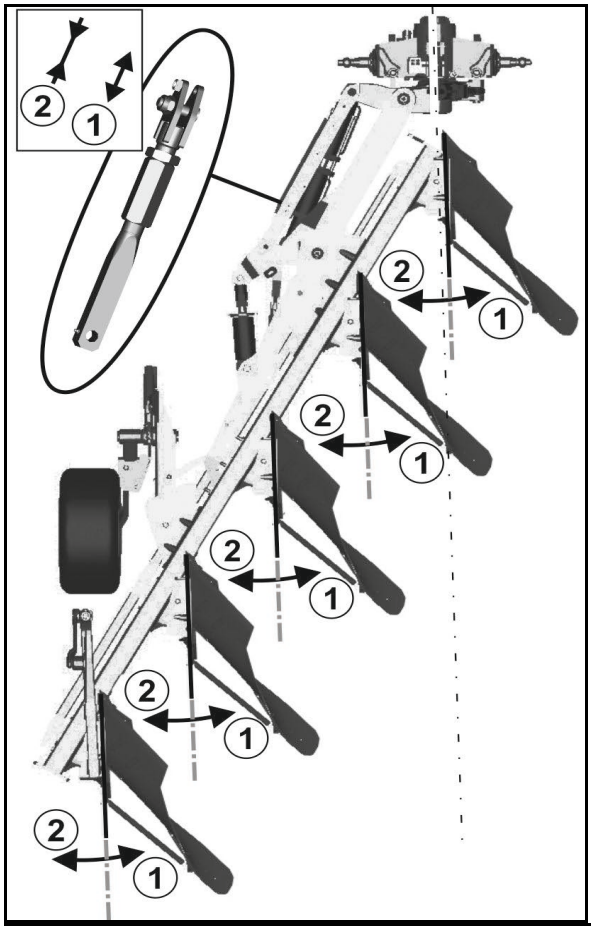
The length of the feed rod must be adjusted to correct influences on the implement.

Adjustment may be necessary when

- Working on slopes
- Working with a packer
- Deviating inner track width on the tractor
- Changing the cutting width on the Cayron 200

Align the beam such that

- The landside of the share bodies are aligned parallel to the turning axle.
- The tractor runs without lateral pull.



(1) Extending the feed rod

→ Lower landside presssure

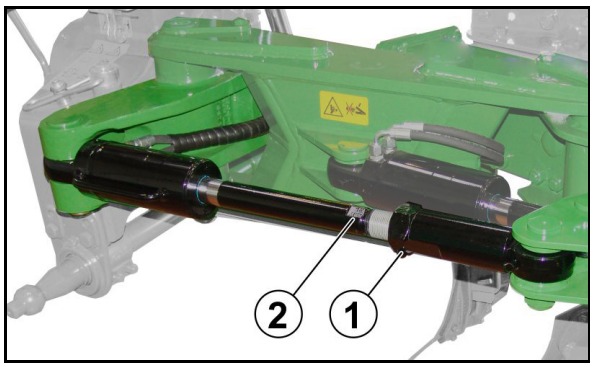
(2) Shortening the feed rod

→ Higher landside pressure

Cayron 200 feed rod

Before making adjustments, briefly actuate the *red* tractor control unit.

→ Relieve the hydraulic cylinder (extend by approx. 2 cm).



1. Loosen the lock nut (1) (wrench size 60).
2. Adjust the length of the rod using the wrench (wrench size 41) on the spanner flat (2).
3. Re-tighten the lock nut.

Cutting width [mm]	Rod length [mm] to be adjusted
400	884
450	867
500	850

The adjustment values are theoretical values and can deviate.

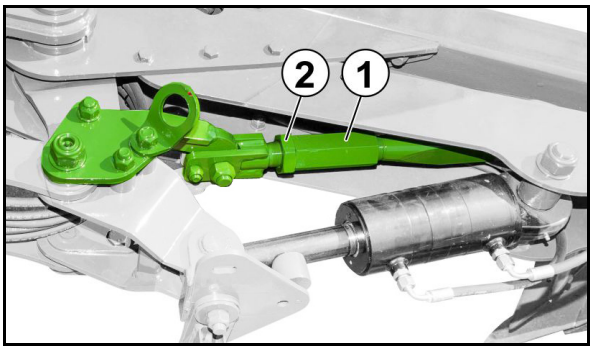
The adjustment values result in a parallel alignment of the landside to the direction of travel.

A different adjustment may be required on slopes.

Cayron 200V feed rod

1. Loosen the lock nut (1) (wrench size 70).
2. Adjust the length of the rod using the wrench (wrench size 60) on the spanner flat (2).
3. Re-tighten the lock nut.

Standard length: 764 mm



6.3 Mechanical cutting width adjustment (Cayron 200)

When adjusting the cutting width, the following must also be adjusted:

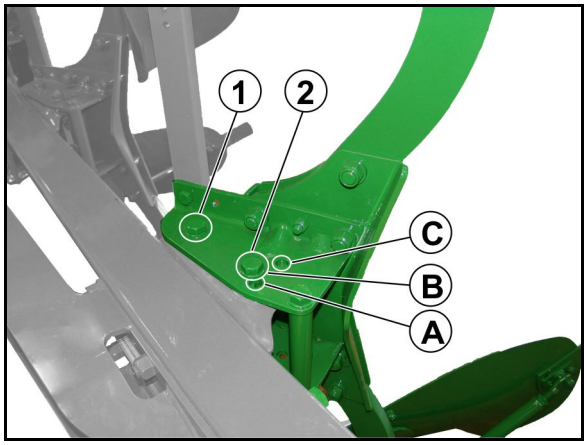
- The beam alignment to the headstock (Adjusting the feed rod, see page 43)
- The depth and transport wheel

Cutting widths of 40 cm, 45 cm and 50 cm can be adjusted.

Adjusting the cutting width

Adjust the cutting width on the support of each share body:

1. Loosen the bolts (1).
2. Loosen the bolts (2) on the top and lower support and remove them..
3. Turn the share body according to the desired cutting width and insert the bolts.
4. Firmly tighten the bolted connections (1, 2).



Cutting width [mm]	Bolt position
500	A
400	B
450	C

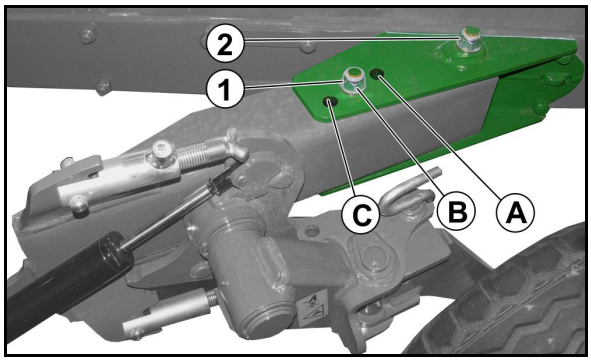
Adjusting the depth and transport wheel for the cutting width (Cayron 200)

To adjust the depth and transport wheel for cutting width, there are 3 positions on the depth and transport wheel.

1. Remove the bolted connection at position (1).
2. Swivel the depth and transport wheel to the desired position.

Also loosen the bolted connection at the turning point (2) if necessary.

3. Fit and tighten the bolted connection.

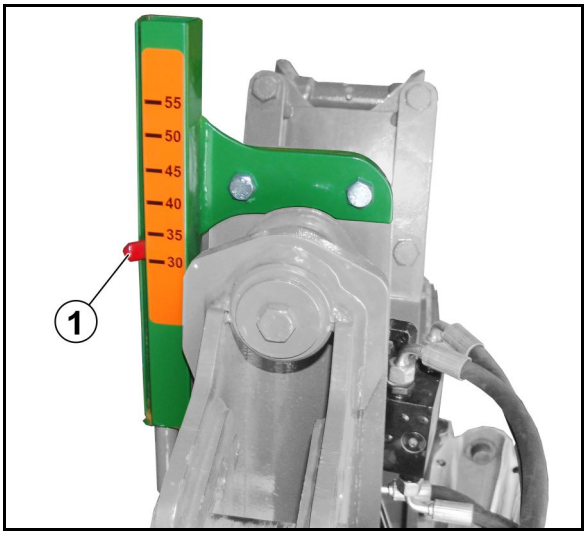


Cutting width [mm]	Bolt position
400	A
450	B
500	C

6.4 Hydraulic cutting width adjustment (Cayron 200 V)

The cutting width can be adjusted in the range from 30 to 55 cm.

Actuate the tractor control unit *red*.

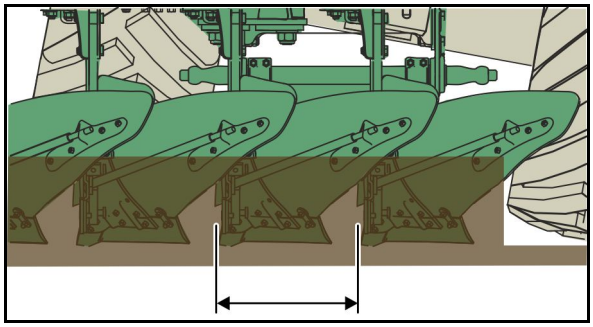


The indicator (1) shows the cutting width in cm on the scale.

6.5 Setting the front furrow width

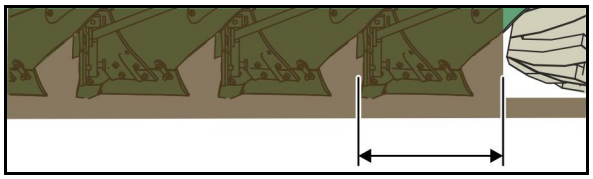
Adjust the front furrow width to the same measurement as the cutting width.

1. Raise the implement using the 3-point hydraulic system.
2. Actuate the tractor control unit yellow.



- Displace the implement towards the furrow.

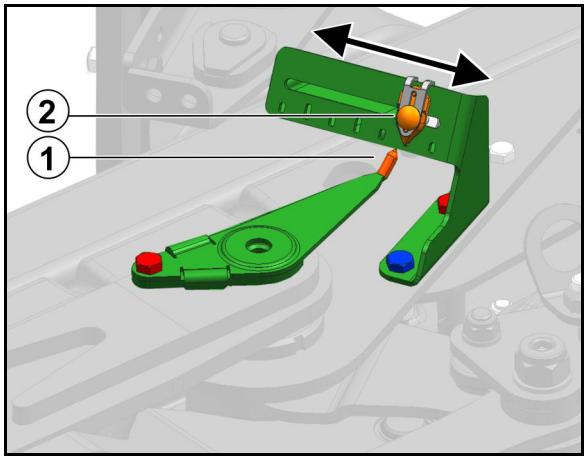
→ Front furrow width is smaller.



- Displace the implement away from the furrow.

→ Front furrow width is larger.

Front furrow indicator



The front furrow indicator makes it easy to find the desired front furrow width again.

This can be useful when the front furrow width was changed during operation.

The indicator is only correct for the set cutting width.

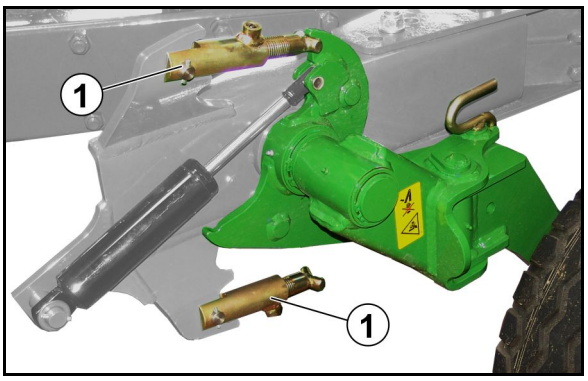
The pointer (1) shows the current front furrow width.

To easily find the front furrow width again, align the mark (2) with the pointer and tighten with the rotary knob.

6.6 Adjusting the working depth of the plough shares using the depth and transport wheel

Adjust the same working depth on both sides by turning the screw spindle (1).

When adjusting the spindle, it may not rest on the stop of the depth and transport wheel.

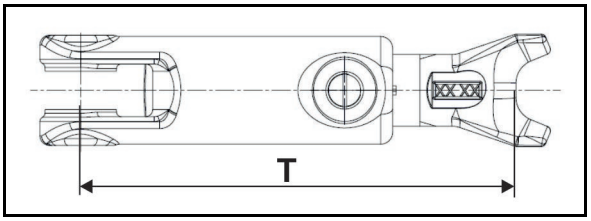


Furthermore, the working depth depends on:

- The height of the tractor lower link
- The length of the top link
- The soil conditions

Table for the adjustment measurements:

Working depth [mm]	Spindle length T to be adjusted [mm]
200	204
250	195
300	180



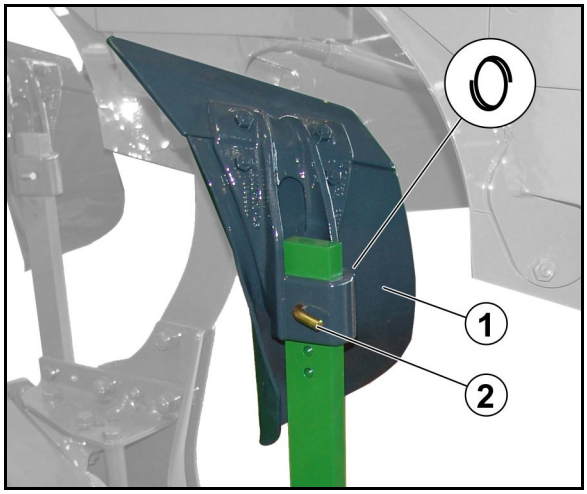
The adjustment values are based on the diameter of the wheel without load and can deviate.

6.7 Setting the skimmer

Adjusting the working depth of the skimmers:

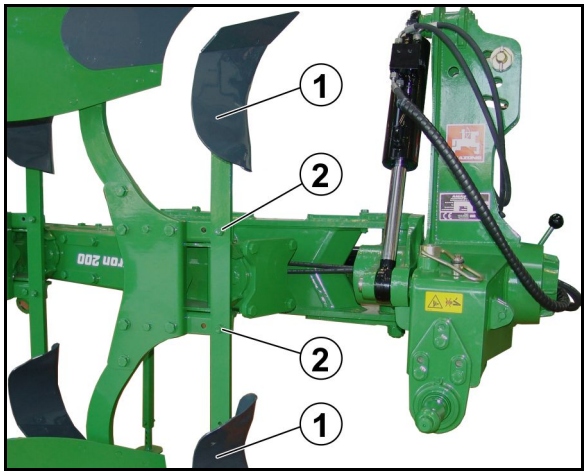
- Adjust all skimmers in the same way.
- Working depth of the skimmers should be 1/3 of the total working depth.

1. Hold the skimmer (1).
2. Remove the locking ring and pin (2).
3. Position the skimmer at the desired height and secure with the locking ring.



Adjusting the distance to the share body:

1. Remove both skimmers (see above)
2. Loosen both bolted connections (1) on the shaft (2).
3. Firmly bolt the shaft in the front or rear position.
4. Reinstall both skimmers.



6.8 Adjusting the disc coulter

Perform the same adjustments on each of the two disc coulters.

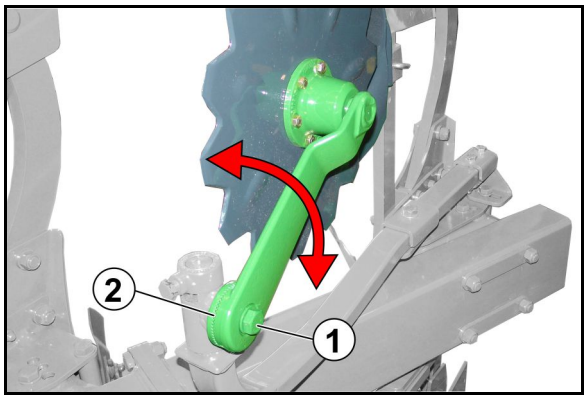
Adjusting the working depth of the disc coulters

Adjust the working depth of the disc coulters in the range from 10 - 20 cm.

1. Loosen the bolted connections (1).
2. Adjust the working depth by turning the linkage on the gear rim (2).
3. Retighten the bolted connection.

→ The teeth must engage correctly.

The shifting of one gear on the gear rim results in a change in the working depth of approx. 30 mm.

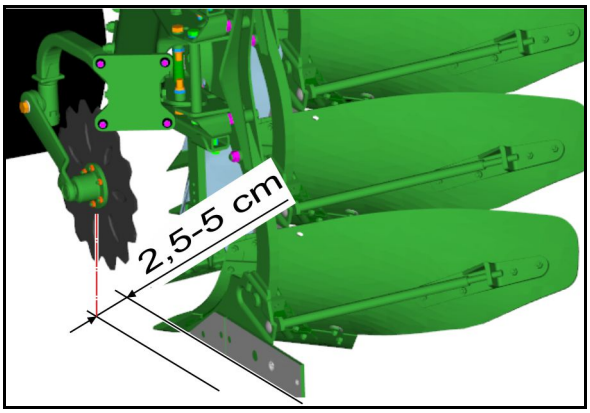


Adjusting the line to the plough body

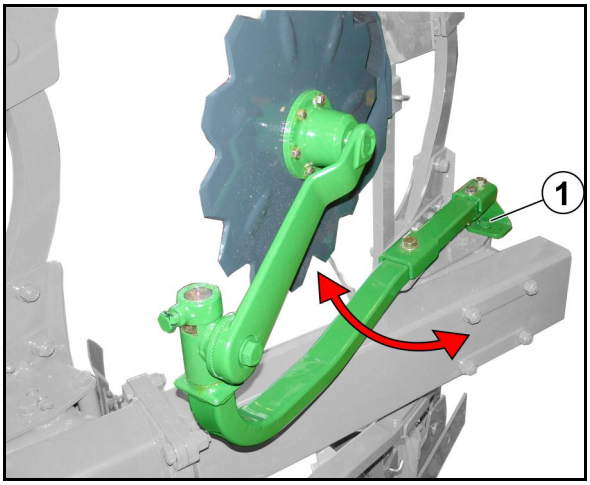
The disc coulter must be in a line to the landside of the plough body.

Adjust the disc coulter such that it is offset by 2,5 to 5 cm parallel to the landside.

1. Loosen the bolted connections (1).
2. Turn the disc coulter until it is parallel to the landside.
3. Retighten the bolted connection.



Standard disc coulter with elongated slot

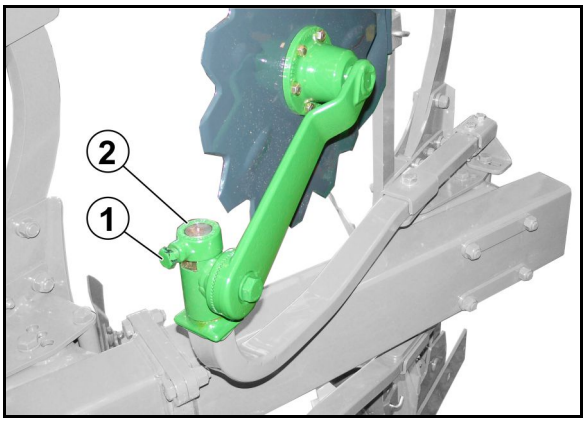


Adjusting the swivelling range

The disch coulter can turn freely around its vertical axis in the adjustable range.

Adjust the swivelling range such that the disc coulter runs smoothly parallel to the landside and it can deflect on unploughed soil.

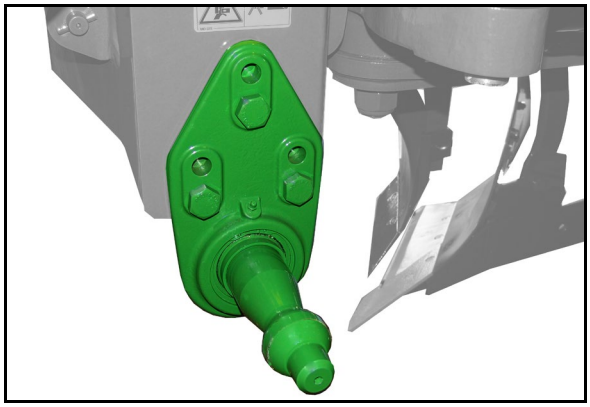
1. Loosen the locking bolt (1).
2. Turn the collar (2).
3. Tighten the locking bolt.



6.9 Adjusting the height of the lower link pins

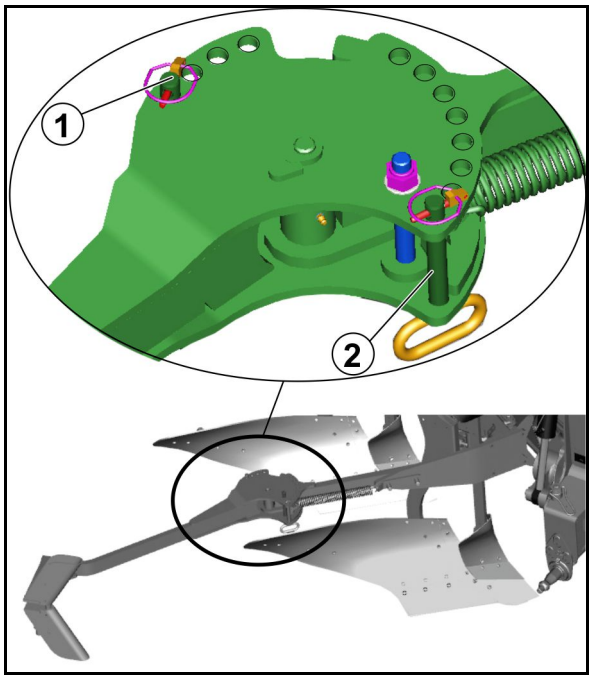
The height of the lower link pins can be adjusted at 2 positions.

The adjustment is performed using 3 bolts respectively on the left and right of the headstock.



6.10 Adjusting the swivel arm for packer rollers

Position the swivel arm with pins in a suitable hole in the hole group and secure with a linch pin.



(1) Pin connection for the adjustment of the traction position.

- Limits the distance between the packer and the plough.
- Depends on the width of the packer

(2) Pin connection for the adjustment of the catch position.

- Moves the catching arm in an optimal position for attaching the packer

7 Start-up

This section contains information

- on initial operation of your implement
- on checking how you may mount / tow the implement to your tractor.

- Before operating the implement for the first time the operator must have read and understood the operating manual.
- Follow the instructions given in the section "Safety instructions for the operator" from page 21 onwards when
  - Coupling and uncoupling the implement
  - Implement transportation
  - Use of the implement
- Only couple and transport the implement to/with a tractor which is suitable for the task.
- Tractor and implement must satisfy the national road traffic regulations!
- Vehicle owner and vehicle operator are responsible for compliance with the statutory provisions of the national road traffic regulations!

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 which:

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

7.1 Checking the suitability of the tractor

WARNING

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

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

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

- The approved total weight
- The approved axle loads
- The load capacity of the installed tyres
  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 implement connected.

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

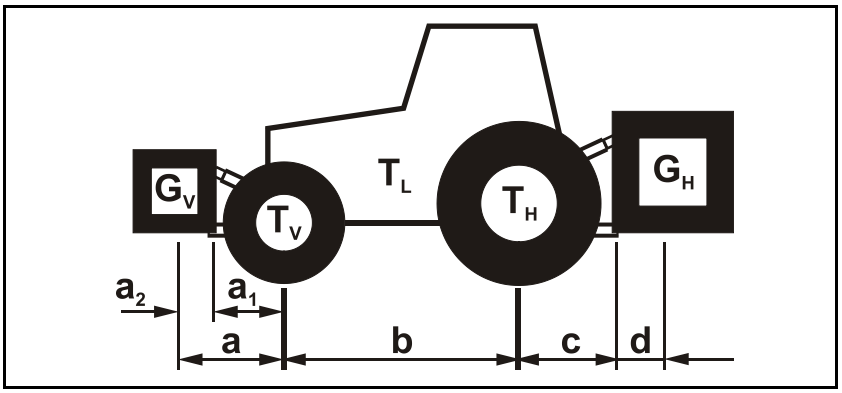
The approved total tractor weight, specified in the vehicle documentation, must be greater than the sum of the

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

This notice applies only to Germany:

If, having tried all possible alternatives, it is not possible to comply with the axle loads and / or the approved total weight, then a survey by an officially-recognised motor traffic expert can, with the approval of the tractor manufacturer, be used as a basis for the responsible authority to issue an exceptional approval according to § 70 of the German Regulations Authorising the Use of Vehicles for Road Traffic and the required approval according to § 29, paragraph 3 of the German Road Traffic Regulations.

7.1.1.1 Data required for the calculation



T_L	[kg]	Tractor empty 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_H	[kg]	Total weight of rear-mounted implement or rear ballast	See technical data for the implement or rear ballast
G_V	[kg]	Total weight of front-mounted implement or front ballast	See technical data for front-mounted implement or front ballast
a	[m]	Distance between the centre of gravity of the front implement mounting or the front weight and the centre of the front axle (total $a_1 + a_2$)	See technical data of tractor and front implement 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-mounted implement or front ballast (centre of gravity distance)	See technical data of front implement 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
d	[m]	Distance between the centre of the lower link connection point and the centre of gravity of the rear-mounted implement or rear ballast (centre of gravity distance)	See technical data for the implement

7.1.1.2 Calculation of the required minimum ballasting at the front $G_{V\,min}$ of the tractor to ensure steering capability

$$G_{V\ \min} = \frac{G_H \bullet (c+d) - T_V \bullet b + 0{,}2 \bullet T_L \bullet b}{a+b}$$

Enter the numeric value for the calculated minimum ballast $G_{V\,min}$, required on the front side of the tractor, in the table (section 7.1.1.7).

7.1.1.3 Calculation of the actual front axle load of the tractor $T_{V\,tat}$

$$T_{V\ tat} = \frac{G_V \bullet (a+b) + T_V \bullet b - G_H \bullet (c+d)}{b}$$

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 7.1.1.7).

7.1.1.4 Calculation of the actual total weight of the combined tractor and implement

$$G_{tat} = G_V + T_L + G_H$$

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 7.1.1.7).

7.1.1.5 Calculation of the actual rear axle load of the tractor $T_{H\,tat}$

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

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 7.1.1.7).

7.1.1.6 Tyre load capacity for the tractor tyres

Enter the double value (two tyres) of the approved load capacity (see, for example, tyre manufacturer's documentation) in the table (section 7.1.1.7).

7.1.1.7 Table

	Actual value according to calculation		Approved value according to tractor instruction manual		Double approved load capacity (two tyres)
Minimum ballast front / rear	/	kg	--		--
Total weight		kg	≤	kg	--
Front axle load		kg	≤	kg	≤ kg
Rear axle load		kg	≤	kg	≤ kg

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

WARNING

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

It is forbidden to couple the implement 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 ($G_{V\,min}$).

7.2 Preparing the tractor

- Same air pressure on the tractor tyres on one axle.
- Remove the straight drawbar on the tractor
- The front inner track width may not be more than 10 cm bigger than at the rear. In this way, the tractor runs parallel along the furrow wall.

→ The inner track width may not be smaller at the front.

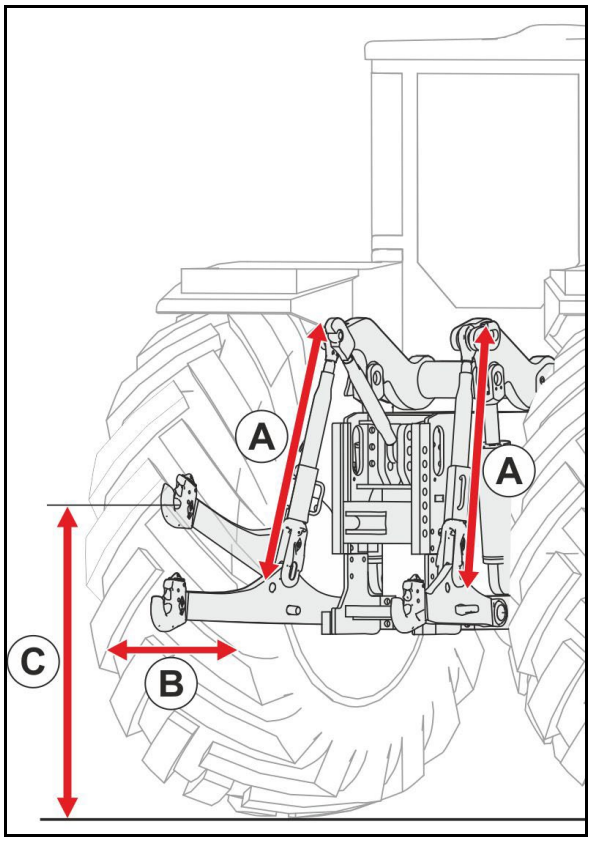
- Install front weight for sufficient ballast on the front axle of the tractor.

  Recommendation

  o 5-share plough: 1200 kg

o 6-share plough: 1800 kg

- Check that the lifting struts have the same length A, block slotted holes of the lifting struts.
- In the working position, the lower link must have a lateral clearance B of 10 cm to allow the plough to guide itself.
- In transport position, the lower links may not have any lateral clearance.
- The lifting height of the lower link C must be at least 900 mm from the ground in order to have sufficient clearance to rotate.



7.3 Securing the tractor / implement against unintentional start-up and rolling

WARNING

Risk of crushing, shearing, cutting, catching, drawing in and knocks during all work on the implement

- **By driven work elements.**
- **By unintentional movement of work elements or unintentional actuation of hydraulic functions when the tractor engine is running.**
- **By unintentional starting and rolling of the tractor and mounted implement.**

- Secure the tractor and the implement against unintentional starting and rolling before any intervention in the implement.
- It is forbidden to make any intervention in the implement, such as installation, adjustment, troubleshooting, cleaning, maintenance and repairs
  - When the implement is being operated.
  - As long as the tractor engine is running with a connected PTO shaft/hydraulic system.
  - If the ignition key is inserted in the tractor and the tractor engine can be started unintentionally with the PTO shaft / hydraulic system connected
  - If moving parts are not blocked against unintentional movement
  - If there are persons (children) on the tractor.

  Particularly during these operations there are dangers due to unintentional contact with driven, unguarded work elements.

1. Switch off the tractor engine.
2. Remove the ignition key.
3. Apply the tractor parking brake.
4. Ensure that there are no persons (children) on the tractor.
5. If necessary, lock the tractor cab door.

8 Coupling and uncoupling the implement

WARNING

Risk of crushing, catching, drawing in and/or knocks due to unintentional starting and rolling of the tractor when coupling or uncoupling the PTO shaft and supply lines.

Secure the tractor and implement against unintentional starting and rolling before entering the danger area between the tractor and implement to couple or uncouple the the PTO shaft and supply lines.
See page 58.

WARNING

Risk of crushing and contusions between the rear of the tractor and the implement when coupling and uncoupling the implement!

- It is forbidden to actuate the three-point hydraulic system of the tractor as long as persons are standing between the rear of the tractor and the implement.
- Actuate the operator controls for the tractor's three-point hydraulic system:
  - Only from the intended workstation alongside the tractor.
  - Only when you are outside the danger area between the tractor and the implement.

8.1 Coupling the implement

WARNING

Risk of crushing and contusions between the tractor and the implement when coupling the implement!

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

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

WARNING

Risk of crushing, drawing in, catching or contusions if the implement unexpectedly comes away from the tractor!

- Use the intended equipment to connect the tractor and the implement in the proper way.
- When coupling the implement to the tractor's three-point hydraulic system, ensure that the attachment categories of the tractor and the implement are the same.
- Only use the upper and lower link pins provided (original pins) for coupling the implement.
- Check the top and lower link pins for visible damage each time you couple the implement. Replace the top and lower link pins if there are clear signs of wear.
- Use locking pins to secure the upper and lower link pins against accidental loosening.
- Visually check that the upper and lower link hooks are correctly locked before you drive off.

WARNING

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

You may only connect the implement to tractors suitable for the purpose. See section "Checking tractor suitability", page 53.

WARNING

Risk of power supply failure between the tractor and the implement through damaged supply lines!

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

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

DANGER
Risk of injury and death for persons when driving by.

When transporting the implement, the struts on the tractor lower link must be locked to prevent swinging transverse to the direction of travel.

1. Fasten the ball bushing on the top link pin.
2. Lock the top link pin with the linch pin against unintentional loosening.
3. Direct people out of the danger area between the tractor and implement before you approach the implement with the tractor.
4. Before coupling the implement onto the tractor, couple the supply lines with the tractor first:
   - 4.1 Drive the tractor up to the implement such that a gap remains (approx. 25 cm) between the tractor and implement.
   - 4.2 Secure the tractor against unintentional starting and rolling away. To do so, see the Chapter "Securing the tractor against unintentional starting and rolling away" starting from page 58.
   - 4.3 Couple the hydraulic hose lines, to do so, see Chapter "Coupling the hydraulic hose lines", starting from page 66.
   - 4.4 Position the lower link hooks so that they are aligned with the lower pivot points on the implement.
5. Now drive the tractor in reverse towards the implement, so that the lower pivot points of the implement are inserted into the lower link hooks of the tractor.
6. Raise the 3-point hydraulic system of the tractor until the ball bushings are inserted into the lower link hooks and automatically locked.

First raise the parking support, then couple the top link.

7. Raise the parking support into transport position.
8. From the tractor seat, couple the top link with the top pivot point of the three-point headstock using the top link hook.

→ The top link hook locks automatically.

Preferably use a hydraulically adjustable top link.

9. Adjust the length of the top link such that it is positioned in the front area of the slot when the implement is lowered.
10. Slightly raise the implement using the 3-point hydraulic system of the tractor.
11. If necessary, put the depth and transport wheel into the freely rotating transport position.
12. Put the hand lever of the turn-over bracket into the locked position.
13. Completely raise the implement using the 3-point hydraulic system of the tractor.
14. Actuate the tractor control unit *green*.

→ The implement is rotated into transport position.

→ The turn-over bracket is locked automatically.

15. Park the implement on the depth and transport wheel using the 3-point hydraulic system of the tractor.

→ The top link must be relieved.

16. Uncouple the top link from the pivot point of the implement and secure on the tractor.
17. Lock the tractor lower link transverse to the direction of travel.
18. Install the lighting.
19. Perform a visual check to ensure proper locking of the top and lower link hooks before you drive off.

8.2 Uncoupling the implement

DANGER
Risk of injury or even death due to tipping over of the uncoupled implement.

Park the implement on the right plough bodies, the depth and transport wheel and the parking support.

First move the implement from transport into working position. Then uncouple the implement.

Moving the implement into working position:

1. Always inspect the implement for obvious signs of damage during uncoupling. Observe here the chapter "Obligations of the user", page 8.
2. From the tractor seat, couple the top link with the top pivot point of the three-point headstock using the top link hook.

→ The top link hook locks automatically.

3. Unlock the turn-over bracket.
4. Completely raise the implement using the 3-point hydraulic system of the tractor.
5. Actuate the tractor control unit *green*.

→ The implement rotates to the right into the parking position.

Rotates the implement to the left:

Perform a complete rotation and

actuate the tractor control unit *green* again.

→ The implement rotates to the right into the parking position.

6. Move the depth and transport wheel into working position

Uncoupling the implement in working position:

7. Park the implement on the right plough bodies and the depth and transport wheel using the 3-point hydraulic system of the tractor.
8. Uncouple the implement from the tractor as follows:

First uncouple the top link, then lower the parking support.

8.1 Relieve the top link.

8.2 Unlock and uncouple the top link hooks from the tractor seat.

8.3 Slightly raise the lower link.

8.4 Lower the parking support into parking position.

8.5 Relieve the lower links.

→ Park the implement on the right plough bodies, the depth and transport wheel and the parking support.

8.6 Unlock and uncouple the lower link hooks from the tractor seat.

8.7 Pull the tractor forward by approx. 25 cm.

→→ This will allow more clearance between tractor and implement and give better access for uncoupling the supply lines.

8.8 Secure the tractor against unintentional starting and unintentional rolling, to do so, see page 58.

8.9 Uncouple the hydraulic hose lines, to do so, see page 66.

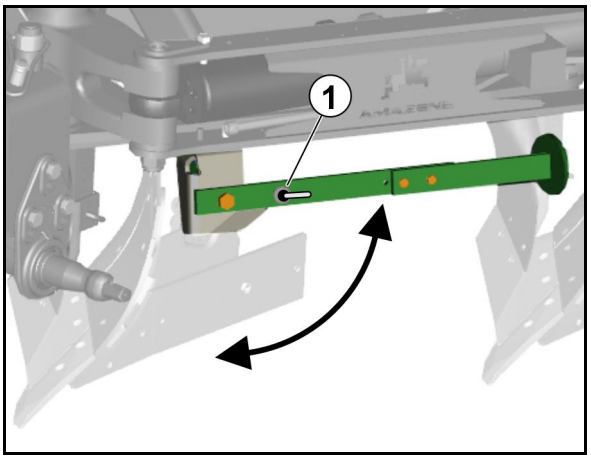
8.3 Parking support - parking position / transport position

The implement must be rotated to the right and slightly raised to be able to put the parking support into parking position or transport position.

Move the parking support into parking position:

1. Pull and hold the locking pin (1).
2. Swivel the parking support down into parking position.

→ The parking support can swing freely.



Put the parking support into transport position:

1. Swivel up the parking support into transport position.

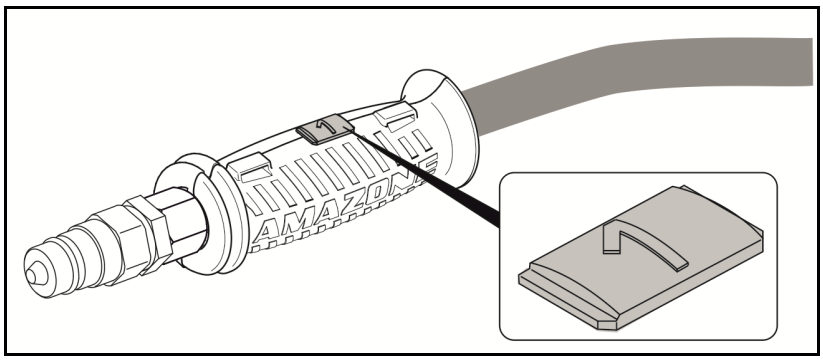
→ The locking pin automatically secures the transport position

2. Check the locking of the parking support with the locking pin.

8.4 Hydraulic connections

- All hydraulic hose lines are equipped with grips.

  Coloured markings with a code number or code letter have been applied to the gripping sections in order to assign the respective hydraulic function to the pressure line of a tractor control unit!



  Films are stuck on the implement for the markings that illustrate the respective hydraulic function.

- The tractor control unit must be used in different types of activation, depending on the hydraulic function.

Latched, for a permanent oil circulation	∞
Tentative, activate until the action is executed	
Float position, free oil flow in the control unit	

Marking		Function			Tractor control unit	
Yellow	1		Set the front furrow width	Greater	Double acting	
	2			Smaller		
Red	1		Cayron 200 V: Adjusting the cutting width / working width	Greater	Double acting	
	2			Smaller		
Green	1		Turning the direction of work	Right and left	Double acting	
	2			• Releasing the packer (optional) • Cancelling a started rotation		
Beige	1	(optional)	Pre-tensioning of the stone release		Single-acting	

*) On the tractor side, ensure that the pressure of return flow on the tractor control unit is as low as possible. Back pressure can cause malfunctions on the packer arm.

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 implement and tractor sides.

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

8.4.1 Coupling the hydraulic hose lines

WARNING

Danger from incorrect hydraulic functions if the hydraulic hose lines are connected incorrectly!

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

- Observe the maximum admissible working pressure of 210 bar.
- Check the compatibility of the hydraulic fluids before connecting the implement to the hydraulic system of your tractor.
- Do not mix mineral oils with bio-oils..
- Push the hydraulic connector(s) into the hydraulic sockets until you feel them lock.
- Check the coupling points of the hydraulic hose lines for a correct, tight seat.
- Coupled hydraulic hose lines
  - Must give without tension, bending or rubbing on all movements when travelling round corners.
  - Must not chafe against other parts.

1. Swivel the actuation lever on the control valve on the tractor to float position (neutral position).
2. Clean the hydraulic connector of the hydraulic hose lines before you connect them to the tractor.
3. Connect the hydraulic hoses to the tractor control units.

8.4.2 Uncoupling the hydraulic hose lines

1. Swivel the actuation lever on the control valve on the tractor to float position (neutral position).
2. Unlock the hydraulic connectors from the hydraulic sockets.
3. Protect the hydraulic sockets from soiling by fitting the dust caps.
4. Hook the hydraulic connectors into the connector holders.

9 Transportation

DANGER

- **During transportation, follow the instructions given in the section "Safety instructions for the operator", page 24.**
- **When driving on the road with the implement raised, the operating levers on the tractor must be locked to prevent unintentional lowering and folding out!**

DANGER

Risk of accident from excess width!

Only perform road transport with the implement resting on the depth and transport wheel.

DANGER
Risk of injury and death for persons when driving by.

When transporting the implement, the struts on the tractor lower link must be locked to prevent swinging transverse to the direction of travel.

- Remove dirt from the implement before transportation.
- The top link must be uncoupled while driving.
- Put the swivel arm into transport position if necessary.

10 Use of the implement

DANGER!

- **Observe the chapter "Safety instructions for the user", page 21, when using the implement.**
- **Observe the warning symbols on the implement. The warning symbols give you important information for safe operation of the implement. Compliance with this information is in the interests of your safety.**

Ensure that the completely raised implement does not collide with the tractor when rotating.

Keep the rear window closed.

The lower links must be laterally movable during operation. However, in a raised position, they must be laterally secured, if possible with the tractor's equipment.

On the plough side, the top link should be about 5 cm higher than on the tractor.

10.1 Changing from working to transport position

1. If applicable, move the swivel arm into transport position.
2. Lock the tractor lower links transverse to the direction of travel.
3. Slightly raise the implement using the 3-point hydraulic system of the tractor.

Cayron-V: Actuate the red tractor control unit.

→ Set the minimum cutting width.

→ Set the cutting width to 45 cm

4. Put the depth and transport wheel into the freely rotating transport position.
5. Put the hand lever of the turn-over bracket into locking position.
6. Completely raise the implement using the 3-point hydraulic system of the tractor so that the wheel axle is as vertical as possible.
7. Actuate the tractor control unit *green*.

→ The implement is rotated into transport position.

→ The turn-over bracket is locked automatically.

Keep actuating the tractor control unit until the pivot ram reaches the end position.

8. Park the implement on the depth and transport wheel using the 3-point hydraulic system of the tractor.

→ The top link must be relieved.

9. Uncouple the top link from the pivot point of the implement and secure on the tractor.

10. Lift the implement as far it it goes using the tractor lower link.
11. Install lighting.

10.2 Changing from transport to working position

1. Unlock the tractor lower link transverse to the direction of travel.
2. Remove lighting.
3. Couple the top link with the top pivot point of the three-point headstock from the tractor seat using the top link hooks.

→ The top link hook locks automatically.

4. Unlock the turn-over bracket.
5. Completely raise the implement using the 3-point hydraulic system of the tractor.
6. Actuate the tractor control unit *green*.

→ The implement is rotated into working position towards the right or left.

If the implement does not rotate in the desired direction:

Perform a complete rotation and

actuate the tractor control unit *green* again.

→ The implement is rotated in the other direction.

7. Put the depth and transport wheel into working position.
8. If applicable, move the swivel arm into transport position.

In working position, the top link on the pivot point of the tractor should be lower than on the pivot point of the implement.

After conversion, check that there is sufficient distance between the depth and transport wheel and the ground in working position.

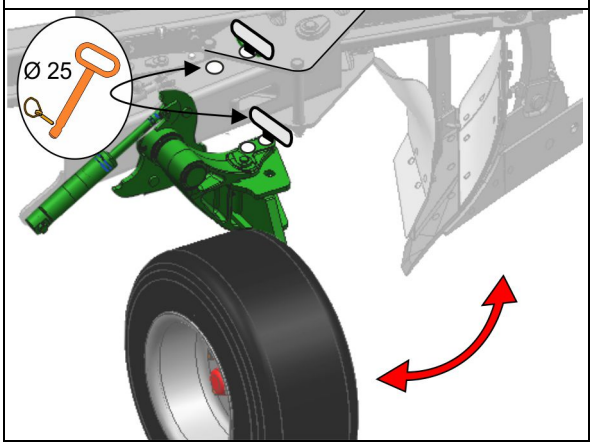
If this is not the case:

- Couple the top link to a higher pivot point on the implement.
- Couple the top link to a lower pivot point on the tractor.
- Install the lower link pins of the implement in the lower position.

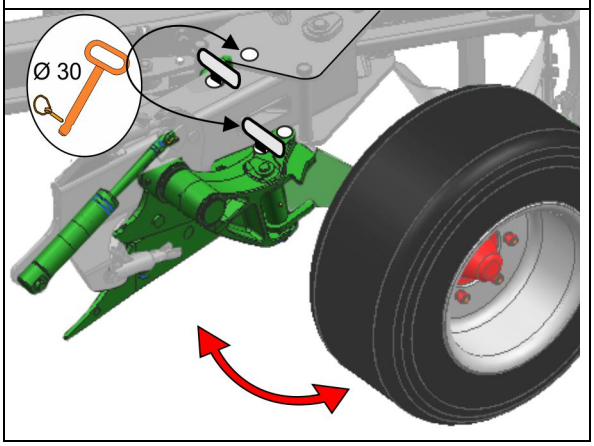
10.3 Depth and transport wheel - working position / transport position

The implement must be rotated to the right and slightly raised in order to put the depth and transport wheel into working or transport position.

Transportation position



Working position



Moving the depth and transport wheel into transport position

1. Activate tractor control unit *red*.

→ Set the cutting width to 30 cm.

2. Take the Ø 30 pins from the depth and transport wheel.
3. Insert the Ø 30 pins in the bracket and secure with a linch pin.
4. Swivel the depth and transport wheel to the front.

Caution, risk of crushing hands.

5. Remove the Ø 25 pins from the parking position, peg the depth and transport wheel into transport position, and secure with a linch pin.

Moving the depth and transport wheel into working position

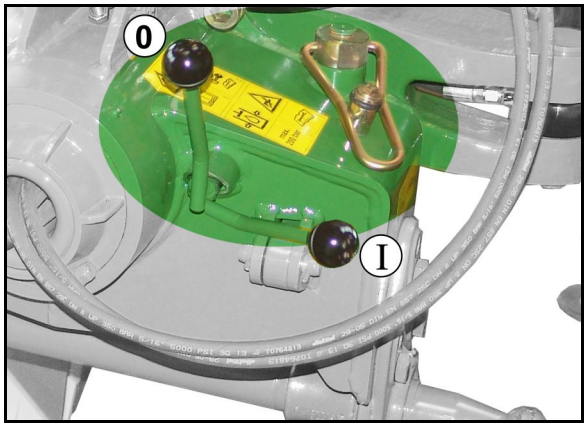
1. Remove the Ø 25 pins from the depth and transport wheel, peg into parking position, and secure with a linch pin.
2. Swivel the depth and transport wheel to the rear.

Caution, risk of crushing hands.

3. Remove the Ø 30 pins from the bracket, peg the depth and transport wheel into working position, and secure with a linch pin.

10.4 Locking the turn-over bracket

Locking the turn-over bracket secures the implement in transport position against unintentional rotation.



Locking the turn-over bracket:

1. Swivel the hand lever to position 1.
2. Raise the implement to its maximum height using the tractor 3-point hydraulic system.
3. Actuate the tractor control unit *green*.

→ The implement is rotated into transport position.

→ The turn-over bracket is locked automatically.

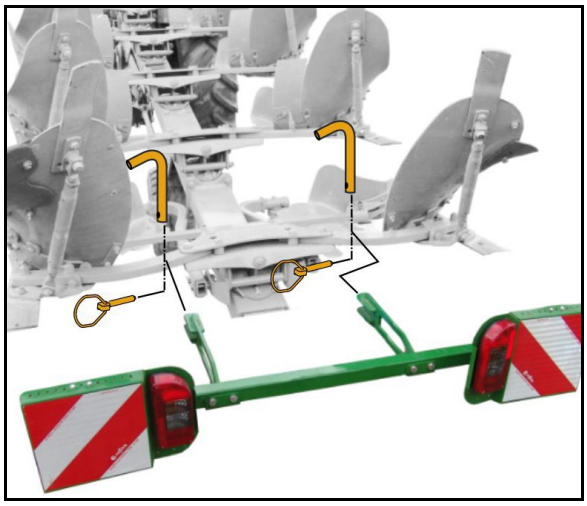
Unlocking the turn-over bracket:

1. Swivel the hand lever to position 0.

10.5 Installing the lighting

The lighting is fastened with pins and linch pins on 2 attachments on the rear plough beam.

The power is supplied through the socket on the beam.



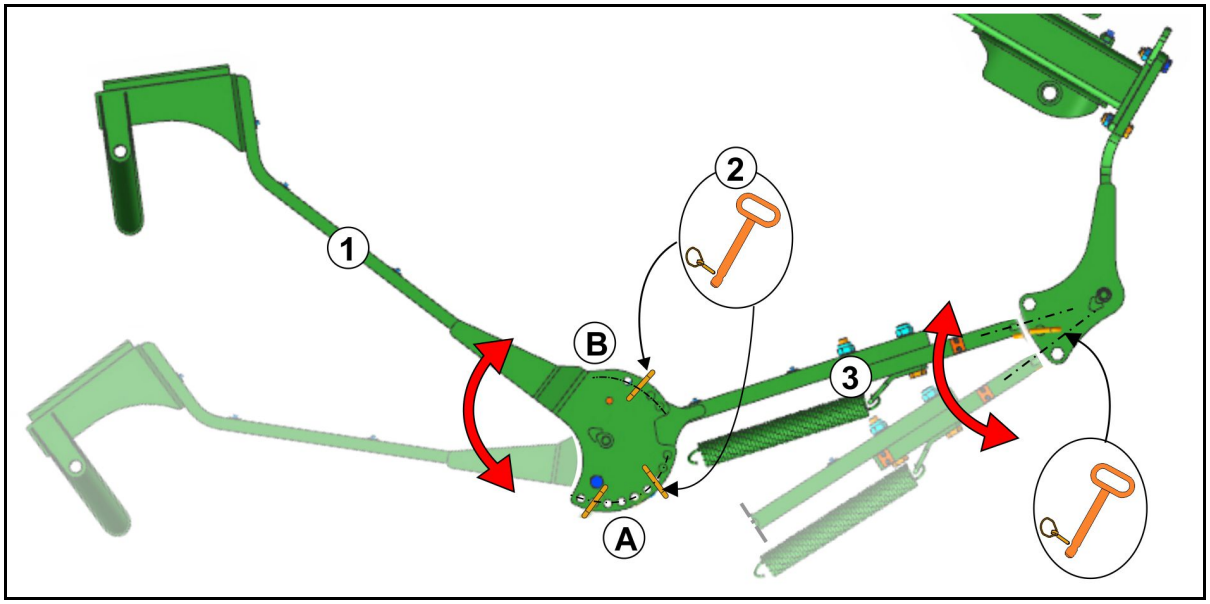
10.6 Swivel arm – working position/transport position

Transport position:

Swivel in the swivel arm completely and firmly fix and lock the position in hole group A with a pin.

Working position:

The working position corresponds to the catch position, see page **51**.

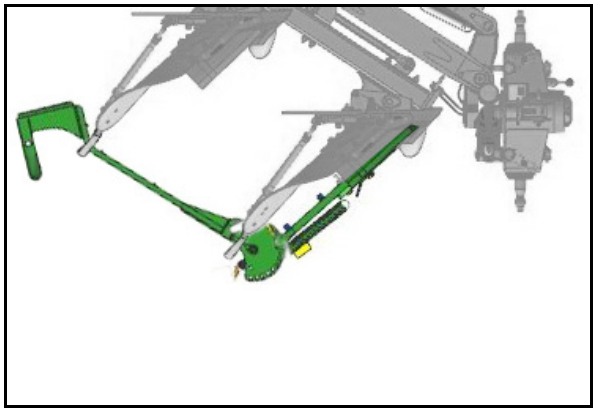


(1) Swivel arm

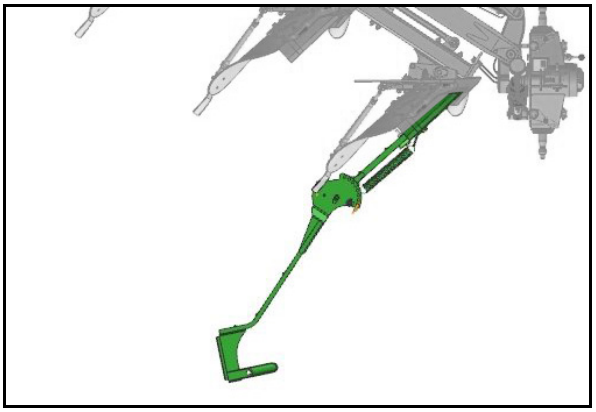
(2) 2 pins for fixing the transport and working position

(3) Swivelling attachment for the stone release option

Transport position



Catch position



10.7 On the field

1. Completely lower the 3-point hydraulic system of the tractor and drive off.
2. When the working depth has been reached, raise the 3-point hydraulic system until the implement is horizontal.
3. At the headlands, raise the plough using the 3-point hydraulic system to its maximum height.
4. Actuate the tractor control unit *green*.

→ Completely rotate the plough.

5. After the headlands, lower the plough using the 3-point hydraulic system.
6. Check the adjustment after the 2nd furrow.

During operation, the implement must be aligned parallel to the ground surface.

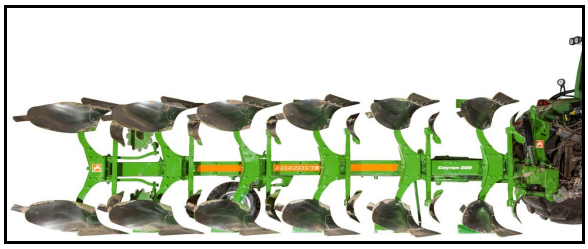
The top link should generally rest at the front of the slotted hole

→ To relieve the depth and transport wheel

→ Less slippage, better traction

On very hilly terrain, the top link should rest in the middle of the elongated slot.

→ For improved following of the ground contours.



Raise the implement before driving in curves.

11 Faults

11.1 Overload safety device of the shares

When there is an overload, the shear bolt shears on the leg to protect the shares.

Replace broken shear bolts.

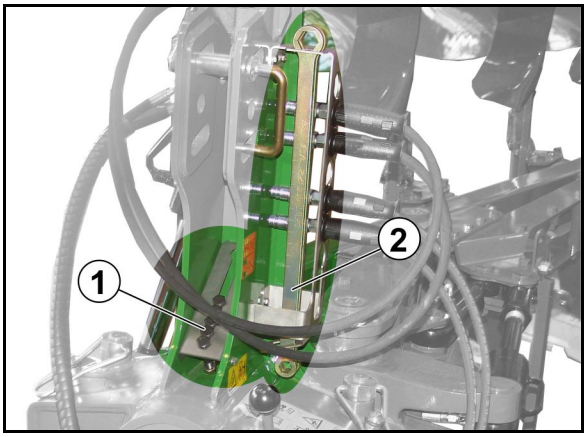
(1) Spare shear bolts and self-locking nuts for share attachment.

M14 x 75 mm with shaft (SW 22 mm),

Bolt quality 8.8, black

Use only genuine Amazone shear bolts.

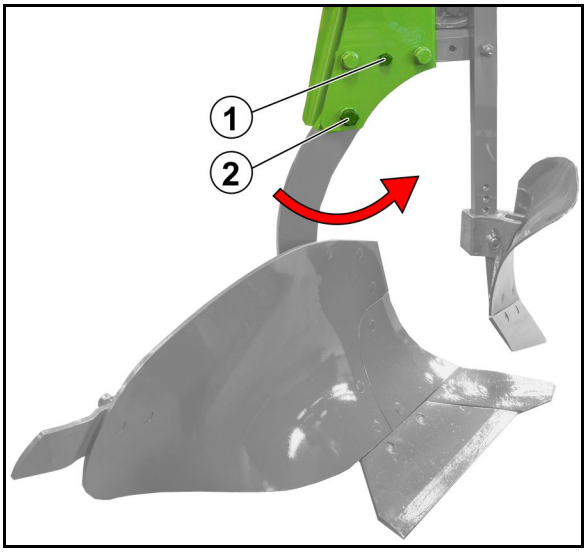
(2) Wrench (SW 22,SW 27, SW 30)



WARNING

Danger of crushing of hands and fingers when swivelling back the plough bodies.

Wear gloves.



1. Swivel the plough share back into working position.

WARNING
Risk of injury due to the share suddenly swivelling down.

- Only approach the plough bodies from the rear.
- Maintain as much distance as possible.

2. If the share is blocked, loosen the bolt at the pivot point (2).

→ The share swivels to its original position.

3. Tighten the bolt (2).

4. Insert and tighten the shear bolt (1) and self-locking nut.

5. Tighten the bolted connections with the supplied wrenches.

- When replacing the shear bolts, always use self-locking nuts.
- Insert the bolt such that the bolt head is facing the ploughed soil.

Fault	Cause	Remedy
Plough is not positioned vertically	Inclination is set incorrectly	Adjust the inclination
Plough ploughs deeper at the rear	Support wheel is set incorrectly Top link is too long	Set the support wheel flatter Turn the top link shorter
Plough ploughs flatter at the rear	Support wheel is set incorrectly Top link too short	Set the support wheel lower Set the top link longer
Plough does not turn	Locking bolts engaged	Release the locking bolts
Plough does not dig into the ground	Point tips worn Inclination is set incorrectly	Change the point tips Adjust the inclination
Plough presses out of the ground	Top link in the slotted hole	Top link in the rigid hole
Furrow connection does not fit	Front furrow width is set incorrectly	Set the front furrow width

12 Cleaning, maintenance and repair

Check wear parts, skimmers, and disc coulters for cracks or fractures on a daily basis.

WARNING

Risk of crushing, shearing, cutting, being caught and/or drawn in, or impact through

- **unintentional lowering of the implement raised using the tractor's 3-point hydraulic system.**
- **unintentional lowering of raised, unsecured implement parts.**
- **Unintentional starting and rolling of the tractor-implement combination.**

Secure the tractor and implement against unintentional starting and unintentional rolling away before you perform any cleaning, servicing or maintenance work on the implement. See page 58.

DANGER!

- **During cleaning, maintenance and repair work, observe chapter "Safety instructions for the user" from page Seite 26,**
- **Always use suitable supports when carrying out maintenance work on the raised implement.**
- **Check the proper function of the light system!**

- After repair work involving repainting, the product logos and instruction signs must be replaced!
- Worn and damaged parts must be replaced. Use only OEM spare parts!
- All marked lubrication points must be lubrication according to the lubrication plan (page 78) and the sliding and pivot points greased accordingly!
- Clean the tools after work!

12.1 Cleaning

- Pay particular attention to the brake, air and hydraulic hoses!
- Never treat brake, air and hydraulic hoses with petrol, benzene, petroleum or mineral oils.
- After cleaning, grease the implement, in particular after cleaning with a high pressure cleaner/steam jet or liposoluble agents.
- Observe the statutory requirements for the handling and removal of cleaning agents.

Cleaning with a high-pressure cleaner / steam cleaner

- Always observe the following points when using a pressure washer / steam jet for cleaning:
  - Do not clean any electrical components.
  - Do not clean any chrome-plated components.
  - Never aim the cleaning jet of the cleaning nozzle of the high pressure cleaner/steam jet directly at lubrication points, bearings, rating plates, warning signs, and stickers.
  - Always maintain a minimum jet distance of 300 mm between the high pressure or steam jet cleaning nozzle and the machine
  - The set pressure of the high-pressure cleaner / steam jet must not exceed 120 bar.
  - Comply with the safety regulations when working with high pressure cleaners.

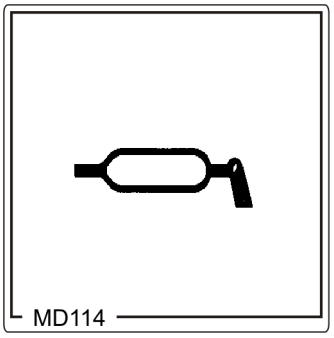
12.2 Lubrication specifications

Grease all lubricating nipples (keep seals clean).

Lubricate / grease the implement at the specified intervals.

Lubrication points on the implement are indicated with the sticker.

Carefully clean the lubrication points 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.


MD114

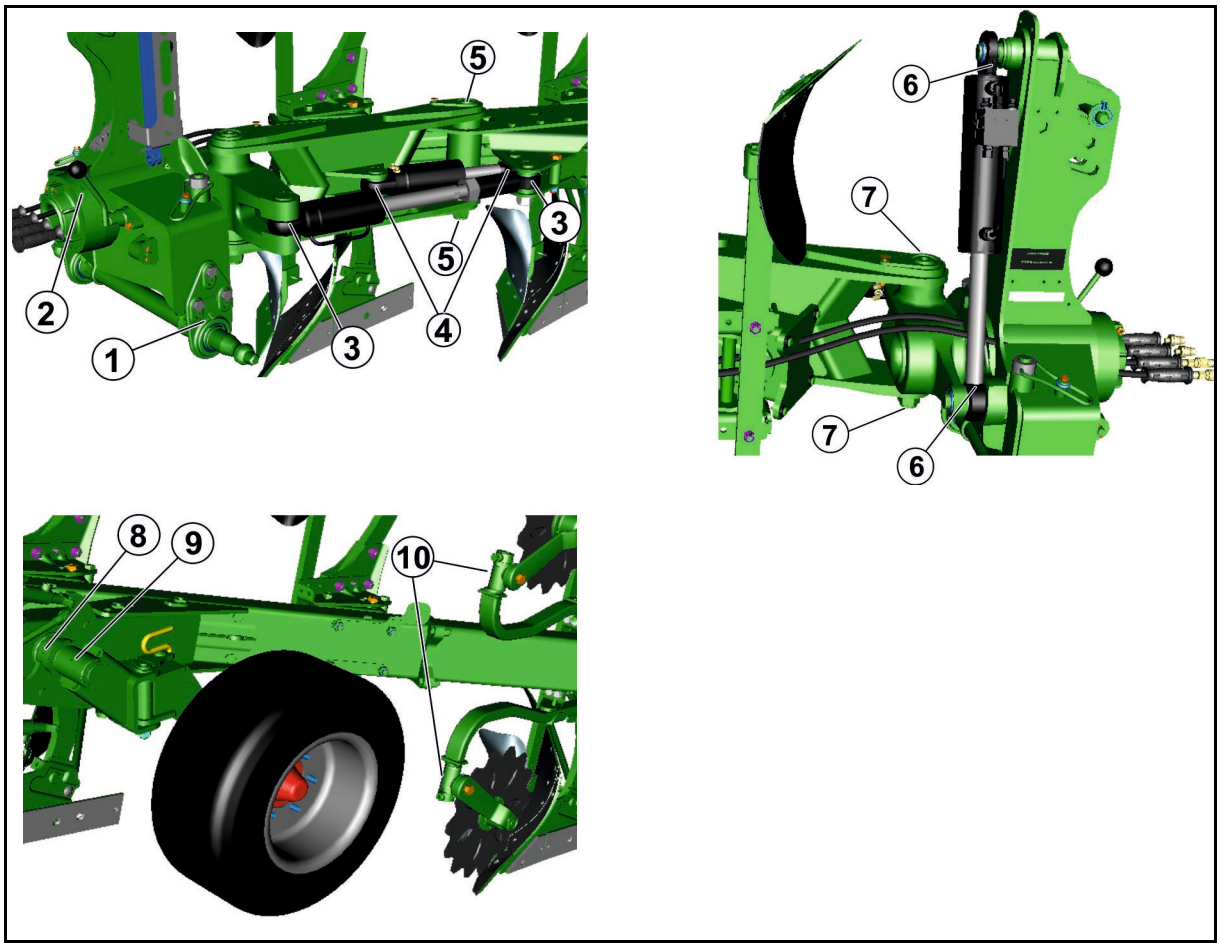
Lubricants

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

Company	Lubricant designation	
	Normal operating conditions	Extreme operating conditions
ARAL	Aralub HL 2	Aralub HLP 2
FINA	Marson L2	Marson EPL-2
ESSO	Beacon 2	Beacon EP 2
SHELL	Retinax A	Tetinax AM

Lubrication plan

Lubrication interval for lubrication points (1-10): 50 h



12.3 Service plan – overview

- Carry out maintenance work when the first interval is reached.
- The times, continuous services or maintenance intervals of any third party documentation shall have priority.

After the first working run

Component	Servicing work	See page	Specialist workshop
Hydraulic system	• Inspection for defects • Check leak tightness	81	**X**
Wheels	• Wheel nut check • Checking the play on wheel hub bearings	80	
Lower link hitch	• Check that the bolted connections of the clamp rings and of the bearings are firmly	80	

Daily

Component	Servicing work	see page	Specialist workshop
Whole implement	• Visual inspection before operation		
Lower link hitch	• Check that the bolted connections of the clamp rings and of the bearings are firmly	80	

Weekly / every 50 working hours

Component	Servicing work	See page	Specialist workshop
Hydraulic hose lines	• Check	82	**X**
Wheels	• Check air pressure • Wheel nut check • Checking the play on wheel hub bearings	80	

12.4 Lower link hitch

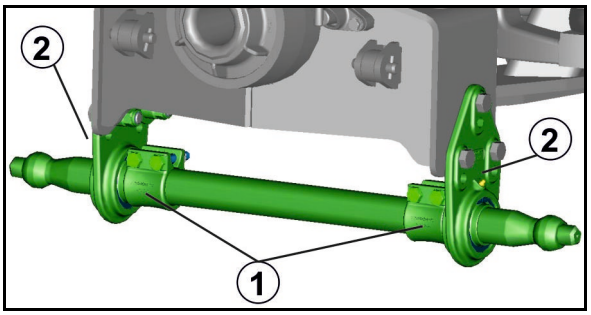
Check that the bolted connections of the clamp rings (1) and of the bearings (2) are firmly secured and tighten if necessary.

Tightening torque:

- Clamp ring: 210 Nm
- Bearing: 640 Nm

During the process:

- Before tightening the clamp rings: Check the central installation position of the lower link axle and that the clamp rings are flush.
- Check the lower link balls for obvious defects.



12.5 Depth and transport wheel

When the tread is worn on one side, the depth and transport wheels with an offset of 0 mm can be mounted the other way around and still be used.

Tyre inflation pressure

Check the tyre inflation pressure regularly.

Required tyre inflation pressure: **3.5 bar**

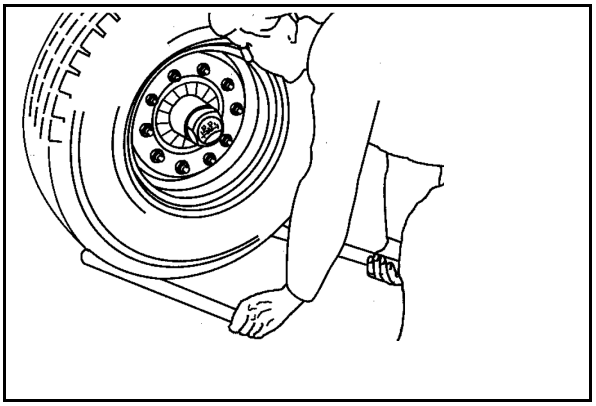
12.5.1 Checking the play on wheel hub bearings

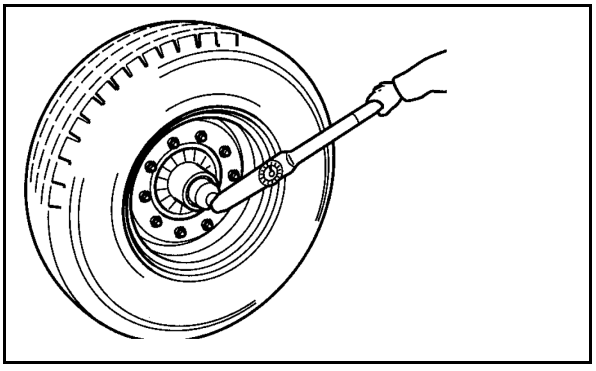
To check the play on wheel hub bearings, raise the axle until the wheels turn freely. Release the brake. Place a lever between the tyre and the ground and check the play.

If bearing play can be detected:

Adjust the bearing play

- Remove the dust cup or hub cap.
- Remove the split pin from the axle nut.
- Tighten the wheel nut while turning the wheel at the same time until the wheel hub is lightly braked as it turns.
- Turn axle nut back to the next available split pin hole. To the next matching hole (max. 30°).
- Fit split pin and bend slightly open.
- Top up the dust cap with high melting point grease and drive it into, or screw it onto the wheel hub.





12.6 Hydraulic system (workshop work)

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 with 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 the drawing vehicle, 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 for proper functioning.
- Replace the hydraulic hose lines if they are damaged or worn. Only use genuine AMAZONE hydraulic hose lines!
- The hydraulic hose lines should not be used for longer than six years. This period includes any storage time of a maximum of 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 connections 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.

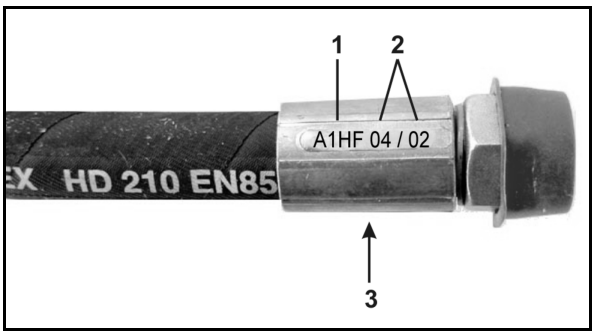
12.6.1 Labelling hydraulic hose lines

Valve chest identification provides the following information:

(1) Manufacturer's marking on the hydraulic hose line (A1HF)

(2) Date of manufacture of the hydraulic hose lines (02 04 = February 2004)

(3) Maximum approved operating pressure (210 BAR).



12.6.2 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 the hydraulic hose lines for visible damage.
2. Repair any areas of chafing on hydraulic hose lines and pipes.
3. Replace any worn or damaged hydraulic hose lines immediately.

12.6.3 Inspection criteria for hydraulic hose lines

For your own safety and in order to reduce pollution, ensure the following inspection criteria.

Replace hoses if the respective hose fulfils at least one of the following criteria:

- 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. 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".

12.6.4 Installation and removal of hydraulic hose lines

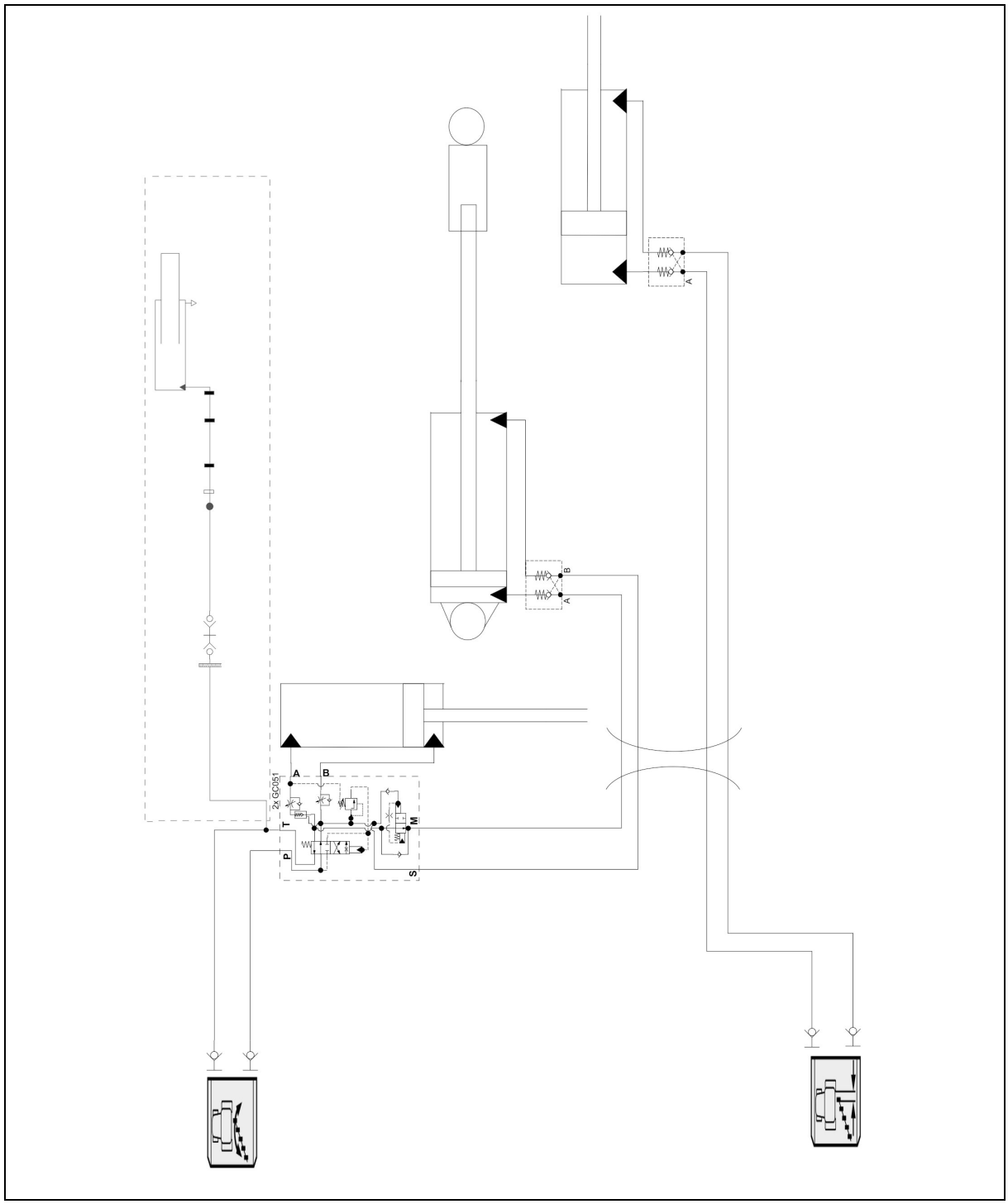
When installing and removing hydraulic hose lines, always observe the following information:

- Only use genuine AMAZONE hydraulic hose lines!
- Ensure cleanliness.
- You must always install the hydraulic 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.
  - External mechanical influences on the hydraulic hose lines are avoided.

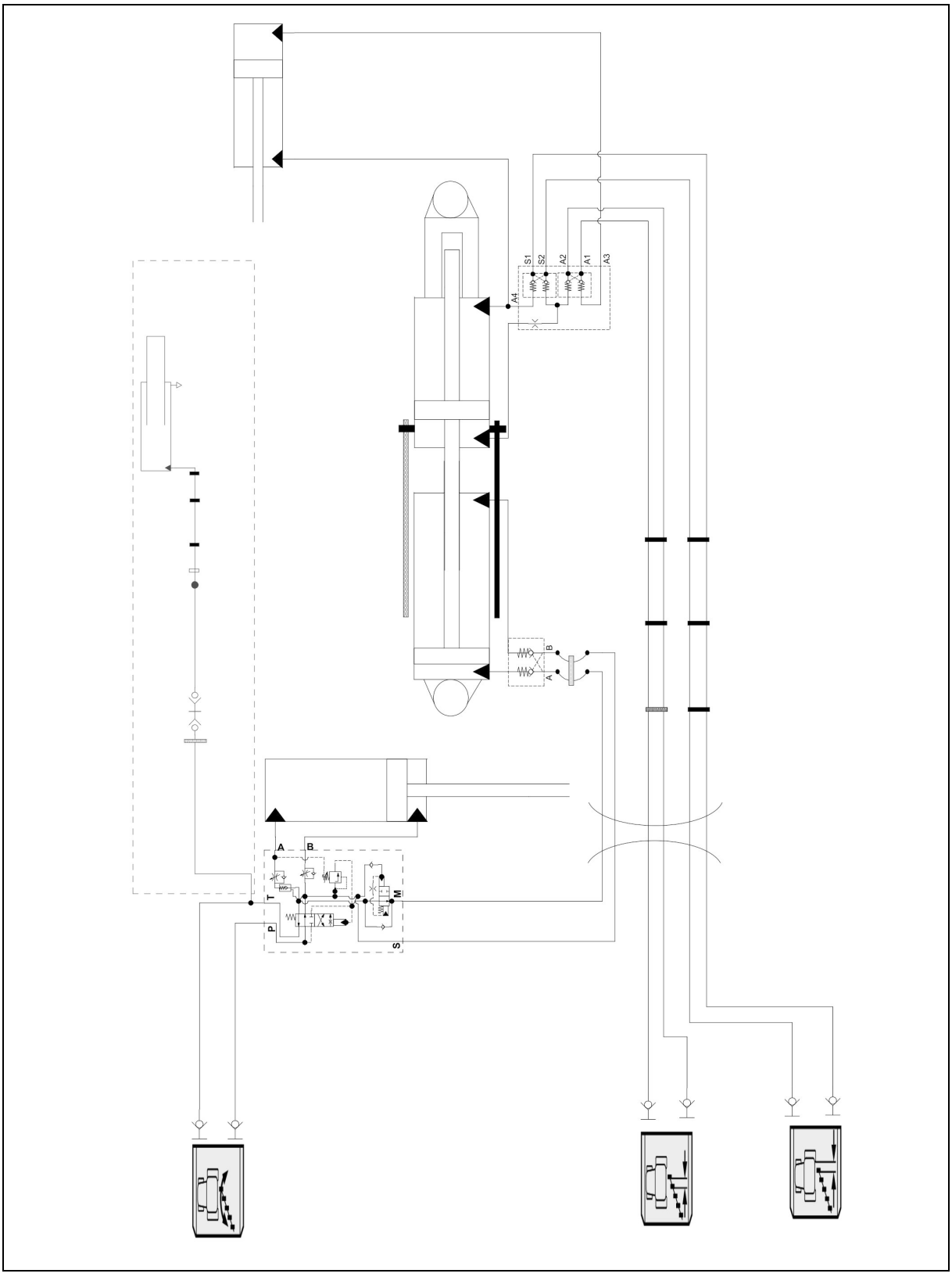
    Use appropriate arrangements and fixing to prevent any scouring of the hoses on components or on each other. If necessary, secure hydraulic hose lines using protective covers. Cover sharp-edged components.
  - The approved bending radii may not be exceeded.
- When connecting a hydraulic hose line to 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 overtensioned.
- Fix the hydraulic hose lines at the specified fixing points. There, avoid hose clips, which impair the natural movement and length changes of the hose.
- The coating of hydraulic hose lines is not permitted.

12.7 Hydraulic diagram

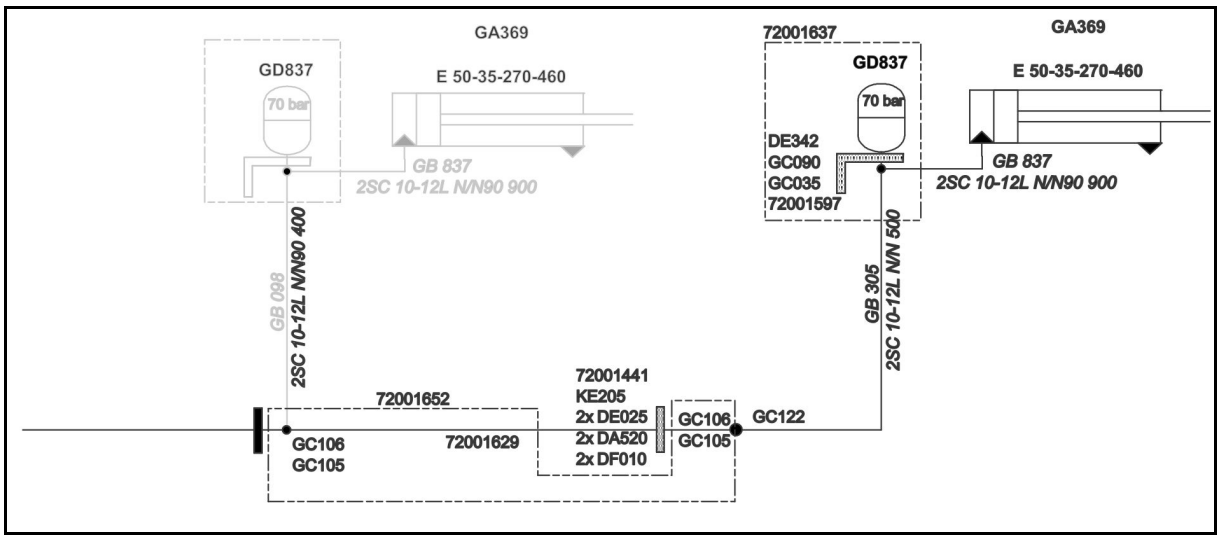
Cayron 200



Cayron 200 V

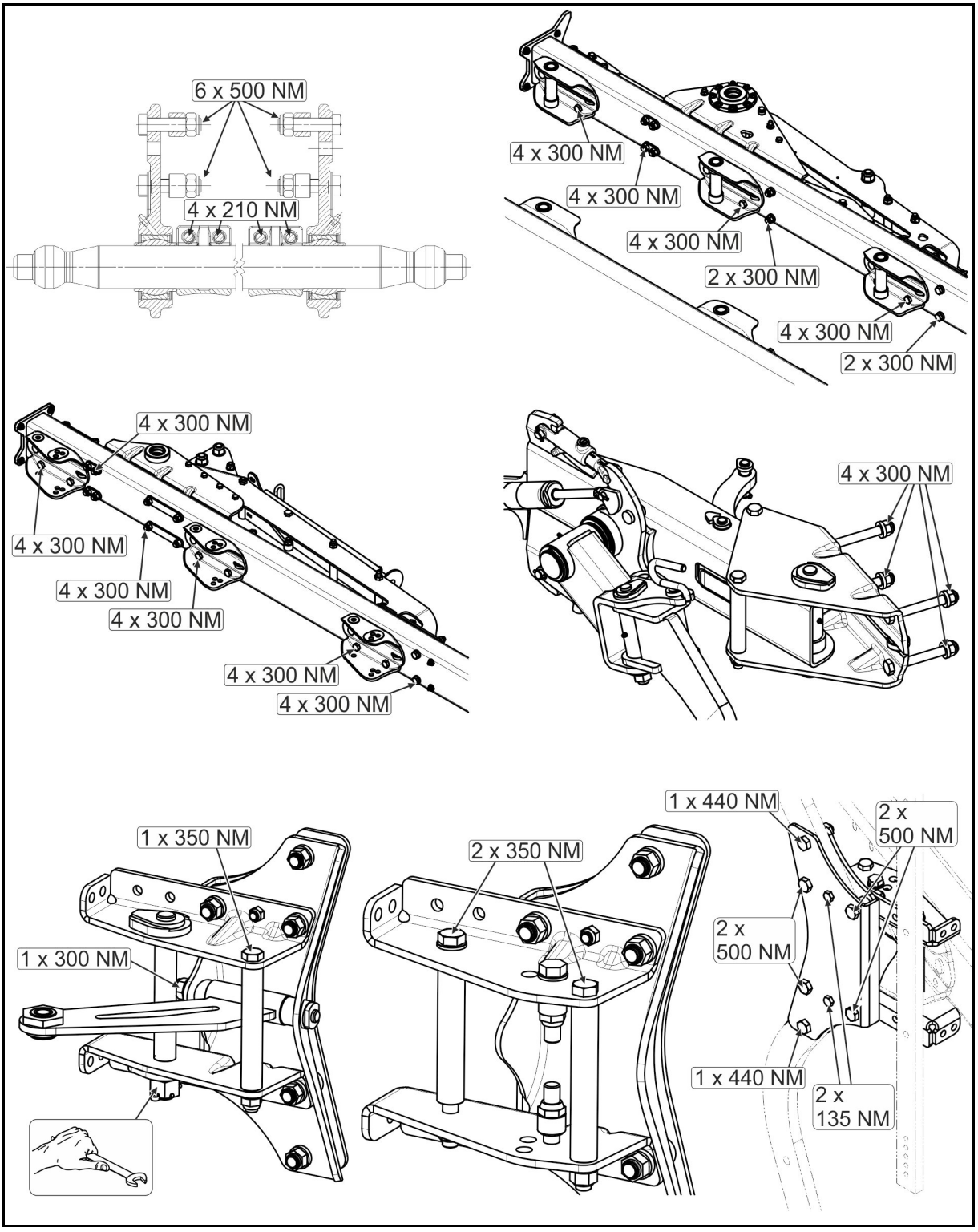


Frame

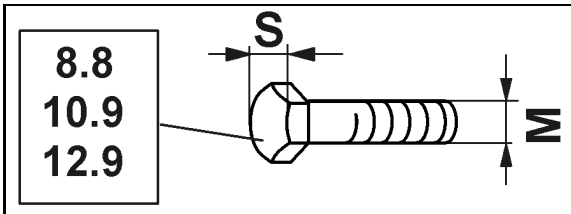

GA369
GD837
70 bar
E 50-35-270-460
GB 837
2SC 10-12L N/N90 900
GB 098
2SC 10-12L N/N90 400
72001637
GD837
70 bar
DE342
GC090
GC035
72001597
GA369
E 50-35-270-460
GB 837
2SC 10-12L N/N90 900
GB 305
2SC 10-12L N/N 500
72001652
GC106
GC105
72001629
72001441
KE205
2x DE025
2x DA520
2x DF010
GC106
GC105
GC122

12.8 Screw tightening torques

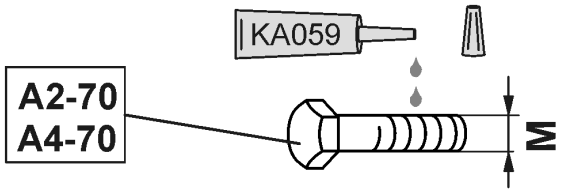
Special screw tightening torques



Screw tightening torques standard



M	S	Nm 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



M	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Nm	2,4	4,9	8,4	20,6	40,7	70,5	112	174	242	342	470	589

Coated bolts have different tightening torques.

Observe the specific data for tightening torques in the maintenance section.

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