

Operating Manual

AMAZONE

**Catros 3001, 3501, 4001
Catros 4001-2, 5001-2, 6001-2**

Compact Disc Cultivator



MG 2530
BAG0053.1 05.08
Printed in Germany



Please read and follow this
operating manual before putting
the machine into operation.
Keep it in a safe place for
future use.



Reading the instruction

Manual and following it should seem to be inconvenient and superfluous as it is not enough to hear from others and to realize that a machine is good, to buy it and to believe that now everything should work by itself. The person in question would not only harm himself but also make the mistake of blaming the machine for possible failures instead of himself. In order to ensure success one should enter the mind of a thing, make himself familiar with every part of the machine and get acquainted with how it's handled. Only in this way could you be satisfied both with the machine and with yourself. This goal is the purpose of this instruction manual.

Leipzig-Plagwitz 1872. Rud. Sark.

**Identification data**

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

Machine identification number:
(ten-digit)

Type:

Catros

Year of manufacture:

Basic weight (kg):

Approved total weight (kg):

Maximum load (kg):

Manufacturer's address

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E-mail: et@amazone.de

Online spare parts catalogue: www.amazone.de

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

Formalities of the operating manual

Document number: MG 2530

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Foreword

Foreword

Dear Customer,

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

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

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

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

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

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

User evaluation

Dear Reader

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

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1 User information

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

1.1 Purpose of the document

This operating manual

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

1.2 Locations in the operating manual

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

1.3 Diagrams used

Instructions for action and reactions

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

Example:

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

Lists

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

Example:

- Point 1
- Point 2

Item numbers in diagrams

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

Example (Fig. 3/6)

- Figure 3
- Item 6



2 General safety instructions

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

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 machine operation.

Obligations of the operator

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

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

The operator is obliged

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

If you still have queries, please contact the manufacturer.

Obligations of the user

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

- To comply with the basic workplace safety instructions and accident prevention regulations.
- To read and understand the section "General safety information" of this operating manual.
- To read the section "Warning symbols and other labels on the machine" (page 17) of this operating manual and to follow the safety instructions represented by the warning symbols when operating the machine.
- To get to know the machine.
- To read the sections of this operating manual, important for carrying out your work.

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

Risks in handling the machine

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

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

Only use the machine

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

Eliminate any faults that could impair safety immediately.

Guarantee and liability

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

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

2.2 Representation of safety symbols

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

**DANGER**

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

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

**WARNING**

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

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

**CAUTION**

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

**IMPORTANT**

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

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

**NOTE**

Indicates handling tips and particularly useful information.

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

2.3 Organisational measures

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

- Protective glasses
- Protective shoes
- Protective suit
- Skin protection, etc.



The operation manual

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

Check all the available safety equipment regularly.

2.4 Safety and protection equipment

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

Faulty safety equipment

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

2.5 Informal safety measures

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

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

2.6 User training

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

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

Activity \ People	Person specially trained for the activity ¹⁾	Trained person ²⁾	Person with specialist training (specialist workshop) ³⁾
Loading/Transport	X	X	X
Commissioning	--	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 through long term activity in the appropriate field of work.



Only a specialist workshop may carry out maintenance and repair work on the machine, if such work is specifically designated "Workshop 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 machine in a way which is both appropriate and safe.

2.7 Safety measures in normal operation

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

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

2.8 Dangers from residual energy

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

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

2.9 Maintenance and repair work, fault elimination

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

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

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

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

2.10 Constructive changes

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

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

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



WARNING

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

It is forbidden to:

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



2.10.1 Spare and wear parts and aids

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

Use only genuine **AMAZONE** spare and wear parts or the parts cleared by AMAZONEN-WERKE so that the operating permit retains its validity in accordance with national and international regulations. If you use wear and spare parts from third parties, there is no guarantee that they have been designed and manufactured in such a way as to meet the requirements placed on them.

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

2.11 Cleaning and disposal

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 machine must be operated by only one person from the driver's seat of the tractor.

2.13 Warning pictograms and other signs on the machine

2.13.1 Positioning of warning pictograms and other labels

Warning pictograms

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

Catros 3001 / 3501 / 4001

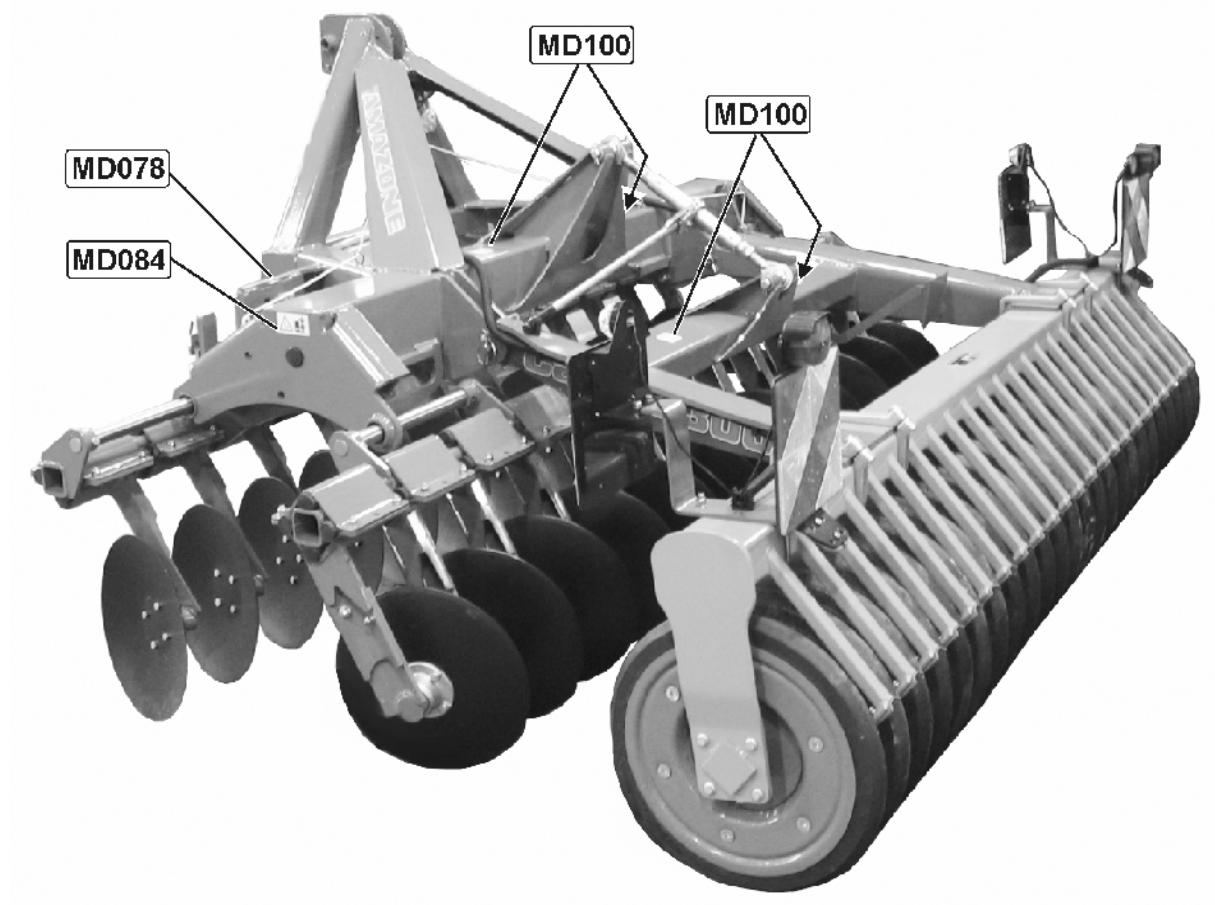


Fig. 1



Fig. 2

Catros 4001-2 / 5001-2 / 6001-2

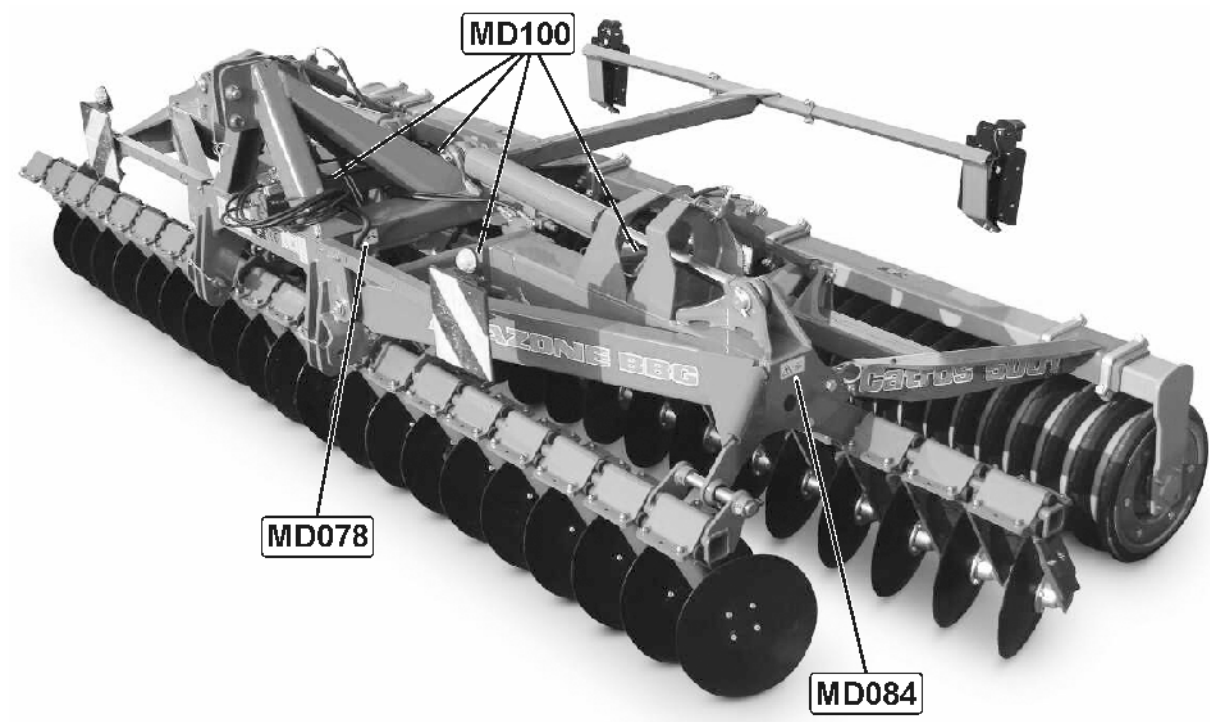


Fig. 3



Fig. 4



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

Warning pictograms - structure

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

A warning pictogram consists of two fields:



Field 1

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

Field 2

is a pictogram showing how to avoid the danger.

Warning pictograms - explanation

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

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

Order number and explanation

Warning pictograms

MD 078

Risk of contusions for fingers or hands through accessible moving machine parts!

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

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



MD 082

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

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

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

Ensure that no one rides with the machine.



MD 084

Risk of contusions over the whole body from machine parts moving down from above!

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

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

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



MD 095

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



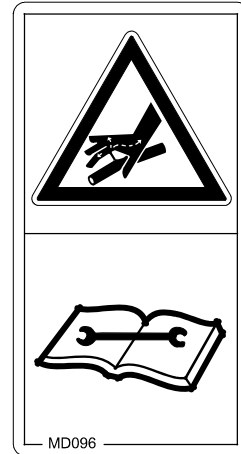
MD 096**Danger of infection to the whole body from liquids escaping at a high pressure (hydraulic fluid)!**

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

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

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

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

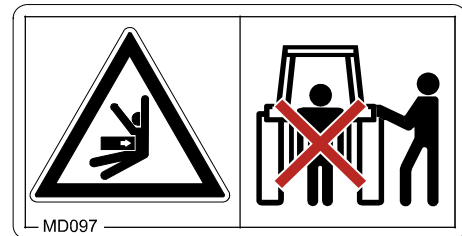
**MD 097****Danger of crushing your torso in the stroke range of the three-point suspension due to the narrowing spaces when the three-point hydraulic system is actuated!**

This danger causes extremely serious injuries and even death.

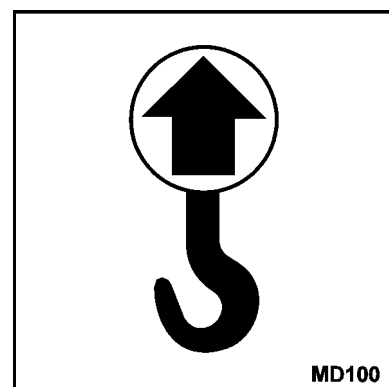
Personnel are prohibited from entering the stroke area of the three-point suspension when the three-point hydraulics are actuated.

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

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

**MD 100**

This symbol indicates lashing points for fastening slinging gear when loading the machine.



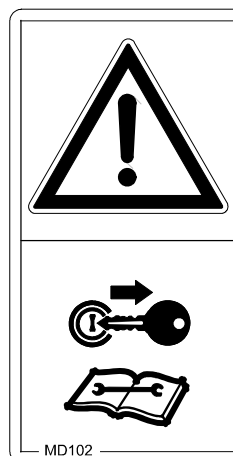
General safety instructions

MD 102

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

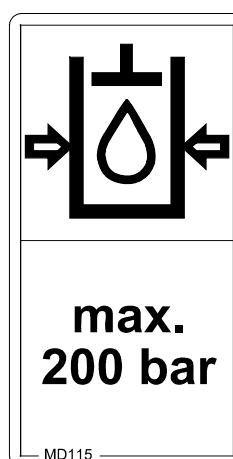
This danger will cause serious injuries anywhere on the body or death.

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



MD 115

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



MD 145

The CE mark on the machine indicates compliance with the stipulations of the valid EU directives.



2.14 Dangers if the safety information is not observed

Nonobservance of the safety information

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

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

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

2.15 Safety-conscious working

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

Comply with the accident prevention instructions on the warning pictograms.

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

2.16 Safety information for users



WARNING

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

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

2.16.1 General safety and accident prevention information

- Beside these instructions, comply with the general valid national safety and accident prevention regulations.
- The warning pictograms and labels attached to the machine provide important information on safe machine operation. Compliance with this information guarantees your safety!
- Before moving off and starting up the machine, check the immediate area of the machine (children)! Ensure that you can see clearly!
- It is forbidden to ride on the machine or use it as a means of transport!
- Drive in such a way that you always have full control over the tractor with the attached machine.

In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor and the connected machine.

Connecting and disconnecting the machine

- Only connect and transport the machine with tractors suitable for the task.
- When connecting machines to the tractor three-point hydraulic system, the attachment categories of the tractor and the machine must always be the same!
- Connect the machine to the prescribed equipment in accordance with the specifications.
- When coupling machines to the front or the rear of the tractor, the following may not be exceeded:
 - The approved total tractor weight
 - The approved tractor axle loads
 - The approved load capacities of the tractor tyres
- Secure the tractor and the machine against unintentional rolling, before coupling or uncoupling the machine.
- It is forbidden for people to stand between the machine to be coupled and the tractor, whilst the tractor is moving towards the machine!

Any helpers may only act as guides standing next to the vehicles, and may only move between the vehicles when both are at a standstill.
- Secure the operating lever of the tractor hydraulic system so that unintentional raising or lowering is impossible, before connecting the machine to or disconnecting the machine from the tractor's three-point hydraulic system.

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

Use of the machine

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



Machine transportation

- When using public highways, 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 released completely
 - the proper functioning of the braking system
- Ensure that the tractor has sufficient steering and braking power. Any machines and front/rear weights connected to the tractor influence the driving behaviour and the steering and braking power of the tractor.
- If necessary, use front weights. The front tractor axle must always be loaded with at least 20% of the empty tractor weight, in order to ensure sufficient steering power.
- Always fix the front or rear weights to the intended fixing points according to regulations.
- Comply with the maximum load of the connected machine 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 machine).
- Check the brake power before moving off.
- When turning corners with the machine connected, take the broad load and balance weight of the machine into account.
- Before moving off, ensure sufficient side locking of the tractor lower links, when the machine is fixed to the three-point hydraulic system or lower links of the tractor.
- Before moving off, move all the swivel machine parts to the transport position.
- Before moving off, secure all the swivel machine parts in the transport position against risky position changes. Use the transport locks intended for this.
- Before moving off, secure the operating lever of the three-point hydraulic system against unintentional raising or lowering of the connected machine.
- Check that the transport equipment, e.g. lighting, warning equipment and protective equipment, is correctly mounted on the machine.
- Before transportation, carry out a visual check that the upper and lower link pins are firmly fixed with the lynch pin against unintentional release.
- Adjust your 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 machine 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 that:
 - are continuous or
 - are automatically locked or
 - necessarily require an open centre or pressure position to operate correctly
- Before working on the hydraulic system
 - Lower the machine
 - Depressurise the hydraulic system
 - Switch off the tractor engine
 - Apply the parking brake
 - Take out the ignition key
- Have the hydraulic hose line 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 original **AMAZONE** hydraulic hose lines.
- The hydraulic hose lines should not be used for longer than six years, including any storage time of maximum two years. Even with proper storage and approved use, hoses and hose connections are subject to natural ageing, thus limiting the length of use. However, it may be possible to specify the length of use from experience values, in particular when taking the risk potential into account. In the case of hoses and hose connections made from thermoplastics, other guide values may be decisive.
- Never attempt to plug leaks in hydraulic lines using your hand or fingers.

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

If you are injured by hydraulic fluid, contact a doctor immediately. Danger of infection.
- When searching for leakage points, use suitable aids, to avoid the serious risk of infection.

2.16.3 Electrical system

- When working on the electrical system, always disconnect the battery (negative terminal).
- Only use the prescribed fuses. If fuses are used with too high a rating, the electrical system will be destroyed – danger 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. Contact with earth may cause an explosion
- Risk of explosion: avoid the production of sparks or the presence of naked flames in the vicinity of the battery.
- The machine can be equipped with electronic components, the function of which may be influenced by electromagnetic interference from other units. Such interference can pose risks to people, if the following safety information is not followed.
 - In the case of retrofitting of electrical units and/or components on the machine, with a connection to the on-board power supply, the user must check whether the installation might cause faults on the vehicle electronics or other components.
 - Ensure that the retrofitted electrical and electronic components comply with the EMC directive 89/336/EEC in the appropriate version and carry the CE label.

2.16.4 Cleaning, maintenance and repairs

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

3 Loading and unloading

Loading using a lifting crane:



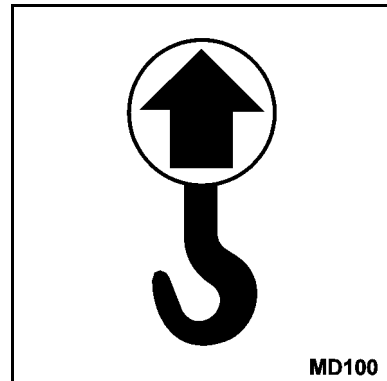
CAUTION

When loading the machine using a lifting crane, use the marked lashing points for lifting belts.



CAUTION

The minimum tensile strength of each lifting belt must be 1000 kg!



The machine has 4 lashing points for lifting belts.

4 Product description

This section:

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

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

The machine is composed of the following main components:

- Rigid frame (**Catros 3001, 3501 and 4001**)
- Hydraulically foldable frame (**Catros 4001-2, 5001-2 and 6001-2**)
- Two-row concave-disc arrangement
- Wedge ring roller with scraper

4.1 Overview of subassemblies

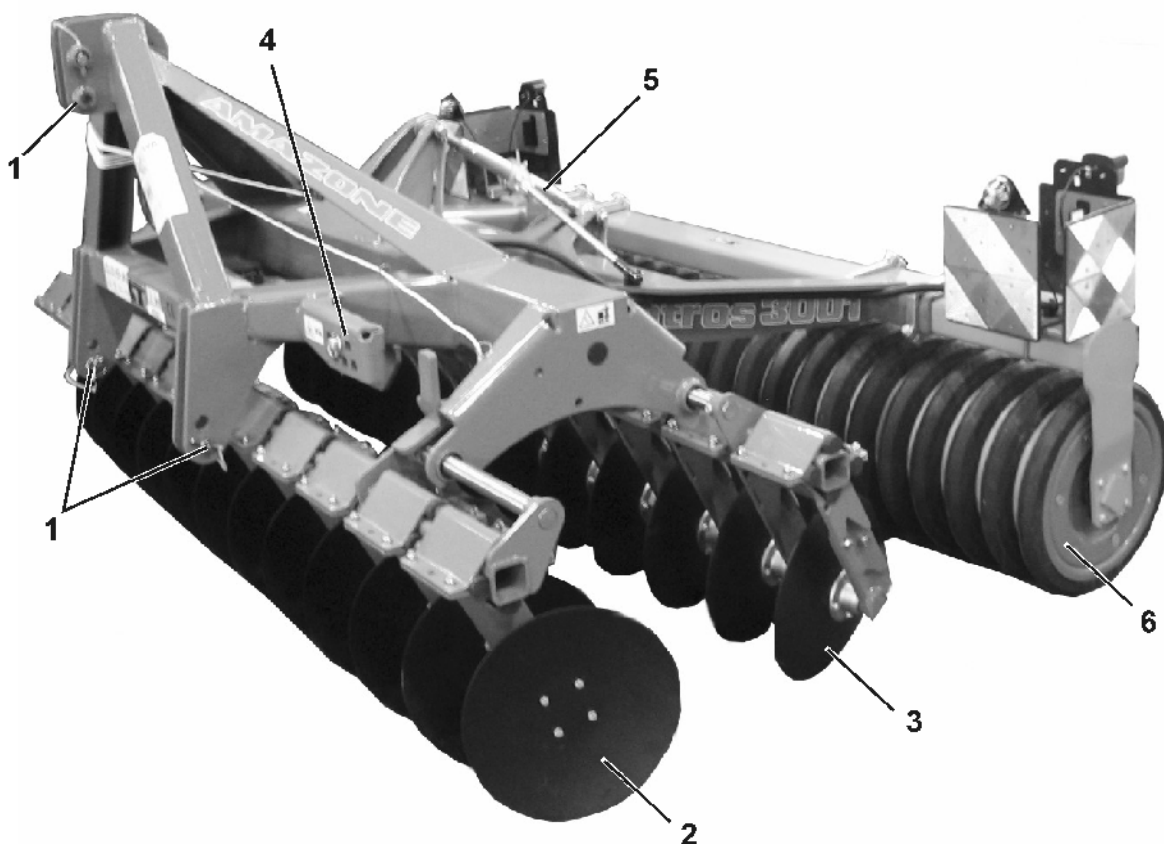


Fig. 5

- | | |
|----------------------------|--|
| (1) Three-point attachment | (4) Disc offset adjustment |
| (2) 1. disc row | (5) Setting spindle for depth adjustment |
| (3) 2. disc row | (6) Wedge ring roller |

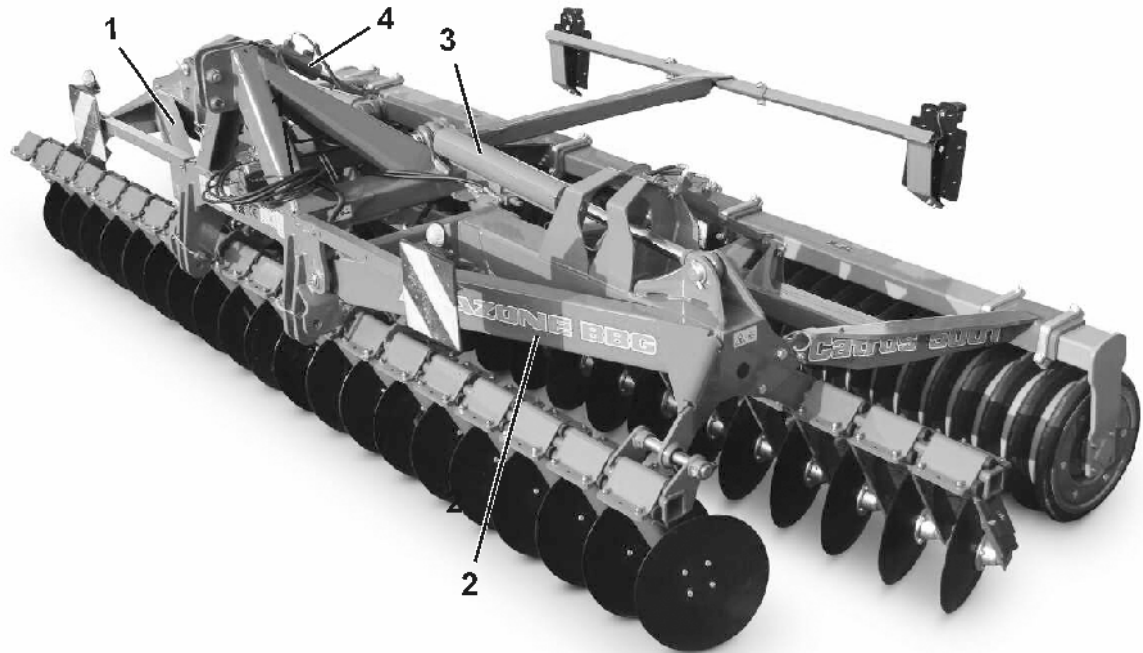


Fig. 6

- (1) Foldable boom, right
- (2) Foldable boom, left
- (3) Hydraulic cylinder for folding the booms
- (4) Hydraulic cylinder for depth adjustment

4.2 Supply lines between the tractor and the machine

- Hydraulic hose lines
- Electric cable for lighting

4.3 Transportation equipment

Fig. 7/...

- (1) Rear lights, brake lights, turn indicators, red reflectors
- (2) Warning signs (square)

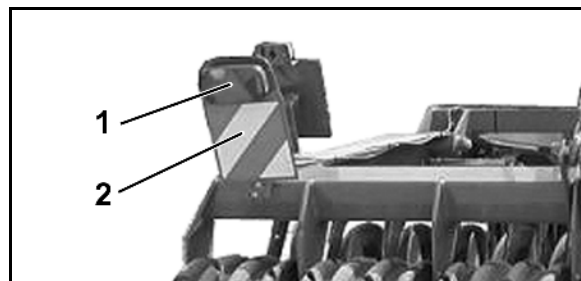


Fig. 7

Fig. 8/...

- (1) 2 warning signs (square)
- (2) 2 limiting lights / turn indicators

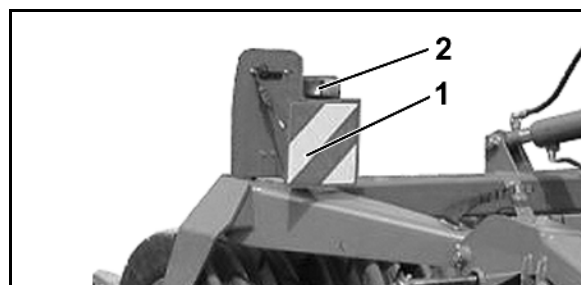


Fig. 8

4.4 Intended use

The machine

- Has been designed for conventional soil tillage of agricultural crop lands.
- is coupled to the tractor using the three-point attachment and is operated by an additional person.

Slopes can be travelled

- 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 %

The intended use also includes:

- Compliance with all the instructions in this operating manual.
- Execution of inspection and maintenance work.
- Exclusive use of original **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 assumes no liability whatsoever.

4.5 Danger area and danger points

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

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

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

No-one may stand in the machine danger area:

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

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

Danger points exist:

- between the tractor and machine, especially when coupling and uncoupling.
- in the area of moving parts:
 - Trailing wedge ring roller
 - Rotating discs
 - Displaceable disc rows
- when the machine is in motion
- in the swivel area of the machine
- in the area of the machine's hydraulic system:
 - Working on the hydraulic hoses

4.6 Rating plate and CE marking

The following diagrams show the location of the rating plate and CE marking.

The rating plate shows:

- machine ID no.
- type
- permissible system pressure (bar)
- year of manufacture
- factory
- power output (kW)
- basic weight (kg)
- permissible maximum weight (kg)
- rear axle load (kg)
- front axle supported weight (kg)



Fig. 9

4.7 Technical data

Catros		3001	3501	4001	4001-2	5001-2	6001-2
Version		rigid	rigid	rigid	foldable	foldable	foldable
Basic weight	[kg]	1700	1900	2050	2550	2950	3300
Approved total weight	[kg]	1970	2150	2350	3250	3650	4000
Transport width	[mm]	3000	3500	4500	2950	2950	2950
Transport height	[mm]	1700	1700	1700	2500	3000	3500
Total length	[mm]	2450	2450	2450	2650	2650	2650
Working width	[mm]	3000	3500	4000	4000	5000	6000
Power requirement	[kW]	66	77	91	91	110	130
Disc spacing	[mm]	250					
Adjustment of disc alignment		Mechanical Hydraulic (optional)					
Working depth	[mm]	30 – 120					
Device attachment		Category II and III					
Centre of gravity distance (d)	[mm]	1200					

4.8 Conformity

The machine fulfils the:

Directives / standards

- Machines directive 98/37/EC
- EMC directive 89/336/EEC

4.9 Necessary tractor equipment

For the machine to be operated as intended, the tractor must fulfil the following requirements:

Tractor engine power

Catros 3001	from 66 kW (90 bhp) upwards
Catros 3501	from 77 kW (105 bhp) upwards
Catros 4001	from 91 kW (125 bhp) upwards
Catros 4001-2	from 91 kW (125 bhp) upwards
Catros 5001-2	from 110 kW (150 bhp) upwards
Catros 6001-2	from 130 kW (180 bhp) upwards

Electrical system

Battery voltage:	<ul style="list-style-type: none">• 12 V (volts)
Lighting socket:	<ul style="list-style-type: none">• 7-pin

Hydraulic system

Maximum operating pressure:	<ul style="list-style-type: none">• 200 bar
Tractor pump power:	<ul style="list-style-type: none">• At least 15 l/min at 150 bar
Machine hydraulic fluid:	<ul style="list-style-type: none">• Transmission/hydraulic oil Otto SAE 80W API GL4 <p>The machine hydraulic/transmission fluid is suitable for the combined hydraulic/transmission fluid circuits of all standard makes of tractor.</p>
Control units:	<ul style="list-style-type: none">• Depending on equipment, see page 35.

4.10 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 Structure and function

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

5.1 Function



Fig. 10

The **Catros** compact disc cultivator is suitable for

- shallow stubble cultivation directly after threshing
- seed bed preparation in spring for maize or sugar beet
- incorporation of catch crops, e.g. yellow mustard
- incorporation of liquid manure.

The **Catros** is attached to the tractor with a three-point attachment.

The two-row disc arrangement ensures soil cultivation and rotavation.

The trailing wedge ring roller serves to re-consolidate the soil and to adjust the depth of the discs. The depth of the concave discs is adjusted by means of setting spindles or hydraulic (optional).

5.2 Hydraulic system connections



WARNING

Danger of infection from escaping hydraulic fluid at high pressure!

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

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

Tractor control unit		Function		Hose markings
1	Double-action	foldable machine	• Fold out	1 x blue
			• Fold in	2 x blue
2	Double action	working depth (Optional)	• Increase	1 x green
			• Decrease	2 x green



In this operating manual, the tractor control units are designated in accordance with the table above with the ordinal number and the colour of the assigned hose marking.

Example: Tractor control unit 1 (blue)

5.2.1 Coupling the hydraulic hose lines



WARNING

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

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



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

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

5.2.2 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 connectors and hydraulic connector sockets against soiling with the dust protection caps.

5.3 Two-row disc cultivator

The concave discs are arranged offset to the direction of travel by an angle of 17° at the front and 14° at the rear.

The mounting of the concave discs (Fig. 11/1) consists of a two-row angular contact ball bearing with slide seal and oil filling and is maintenance-free.

The following are adjustable

- The offsetting of the two disc rows is adjusted via the offset slide (Fig. 11/2) to working depth and speed.

Adjustment is made with the **AMAZONE** eccentric pins.

- The working intensity of the discs over the working depth of the disc cultivator can be adjusted. The depth is adjusted
 - mechanically by means of setting spindles
 - hydraulically via tractor control unit 2 (green).

The elastic rubber sprung suspension of the individual discs enables

- adaptation to soil unevenness
- evasion by the discs when hard obstacles are encountered, e.g. stones.

This protects the individual discs against damage.

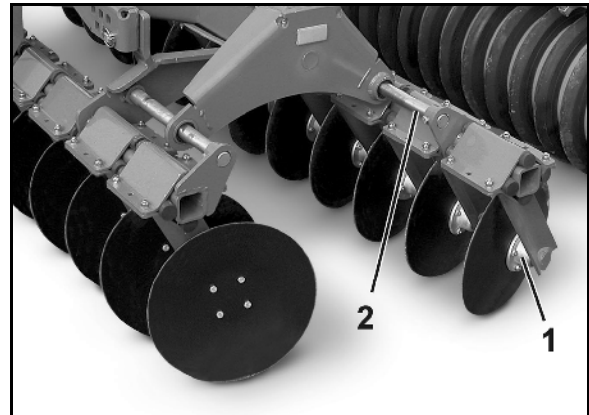


Fig. 11

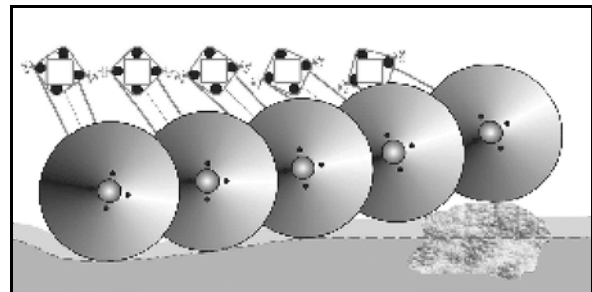


Fig. 12

Catros 3001 / 3501:

To achieve the transport width, the disc rows must be locked in the transport position..

They are locked and unlocked via a release cord from the tractor cabin.

The disc rows are locked when the locking pawls (Fig. 13/1) on the left and right of the disc rows enclose the round steel (Fig. 13/2).

Fig. 13/...

- (1) Locking pawl
- (2) Round steel
- (3) Indicator
- (4) Release cord

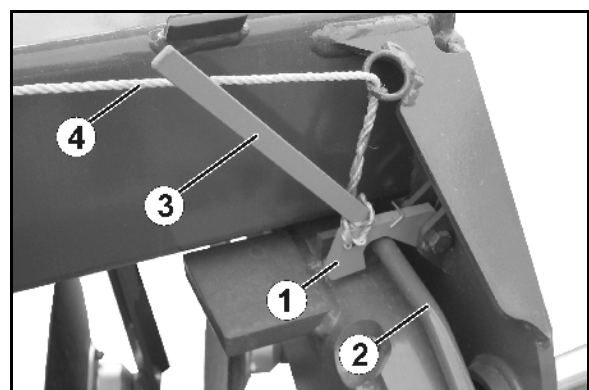


Fig. 13

5.4 Wedge ring tyre roller

The wedge ring roller (Fig. 14/1)

- compacts the cultivated soil in strips
- takes over the depth control of the concave discs

The scraper ensures that the spaces between the wedge rings are clean.

Alternatively, the **Catros** can be equipped with a cage roller. However, the wedge ring roller is always mounted at the factory.

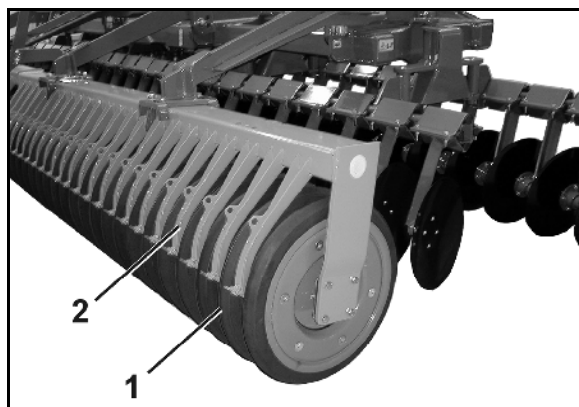


Fig. 14

5.5 3-point attachment frame

Catros 3001, 3501, 4001:

Fig. 15/...

- (1) Upper coupling point, Category III
- (2) Lower coupling point, Category III
- (3) Upper coupling point, Category II
- (4) Lower coupling point, Category II

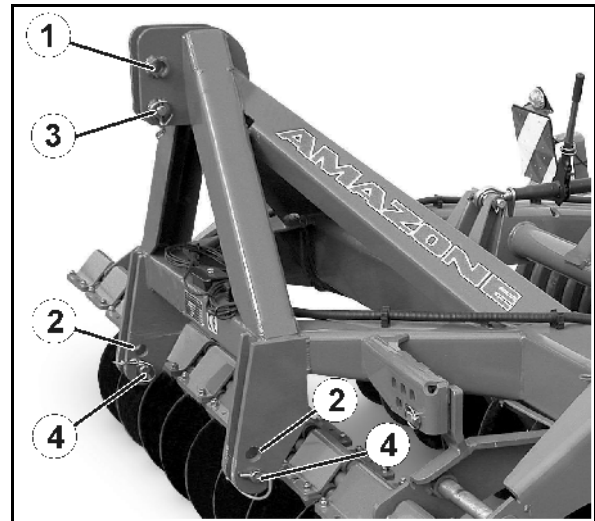


Fig. 15

Catros 4001-2, 5001-2, 6001-2:

Fig. 16/...

- (1) Upper coupling point, Category III
- (2) Lower coupling point, Category III
- (3) Upper coupling point, Category II
- (4) Lower coupling point, Category II

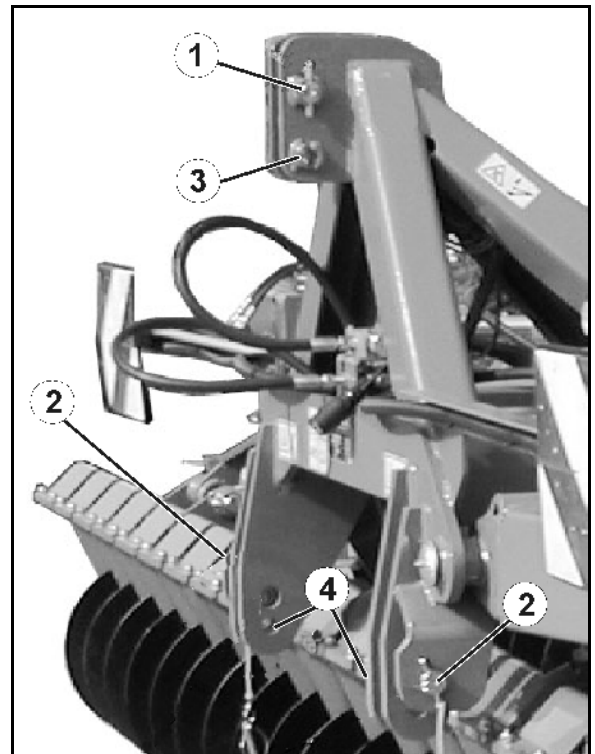


Fig. 16

5.6 Rear harrow

(Optional)

The rear harrow (Fig. 17/1) creates a fine soil structure as seeding preparation. For the purpose of mechanical weed control, it places cut plants on the soil surface, so that they dry out and die.

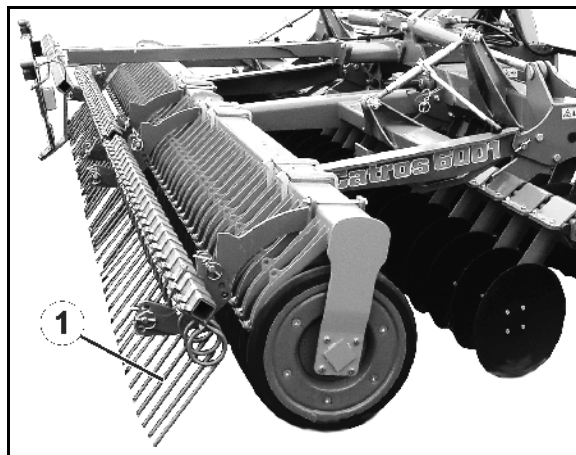


Fig. 17

5.7 Additional weights

(Optional)

The **Catros** can be equipped with additional weights (Fig. 18/1).

Under dry and extremely hard conditions, the additional weights make it possible to optimise the penetration of the discs into the soil.

- One set of additional weights corresponds to 4 times 25 kg.

Catros 3001, 3501 and 4001:

Install max. 2 sets.

Catros 4001-2 and 6001-2:

Install max. 3 sets.

Mounting the additional weights:

1. Mount the holder tube (Fig. 19/1) with 4 screws (Fig. 19/2) on the outside of the boom.
2. Screw two additional weights (Fig. 19/3) onto each holder tube (Fig. 19/4) and secure.

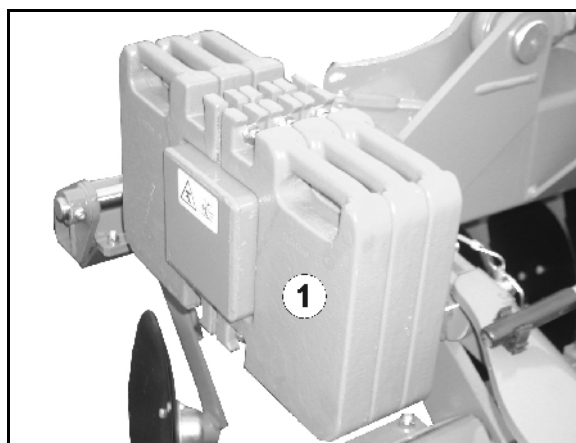


Fig. 18

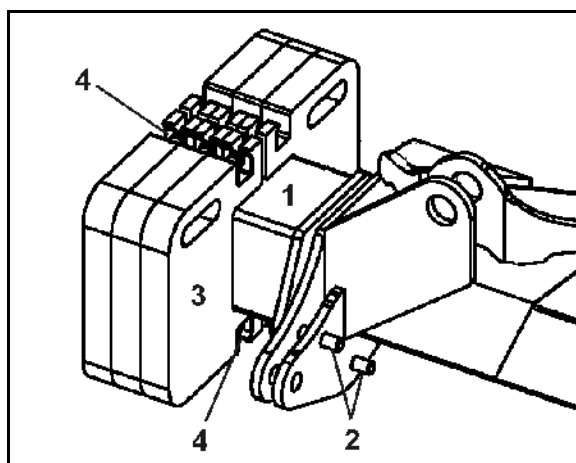


Fig. 19

5.8 Catch crop sowing device **C-Drill**

(Optional for **Catros 3001** and **4001**)

The **C-Drill** catch crop sowing device allows the sowing of fine seeds and catch crops during soil cultivation with the **CATROS** disc cultivator.



See also the
C-Drill operating manual.

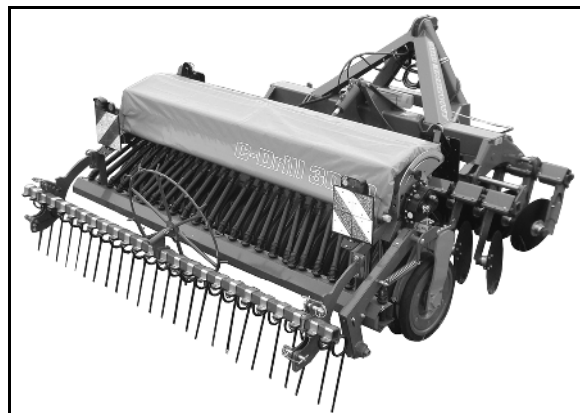


Fig. 20

5.9 Parking device

(Optional)

The parking device serves to park the machines **CATROS 4001-2**, **5001-2** and **6001-2**.



CAUTION

- The parking device must be placed on a level surface.
- The machine must be folded in and secured.

The machine is placed on 4 support points.

- Support points Fig. 22/1: The horizontal surface of the folded-in boom frame, left and right.
- Support points Fig. 22/2: The square tube of the roller frame, left and right.

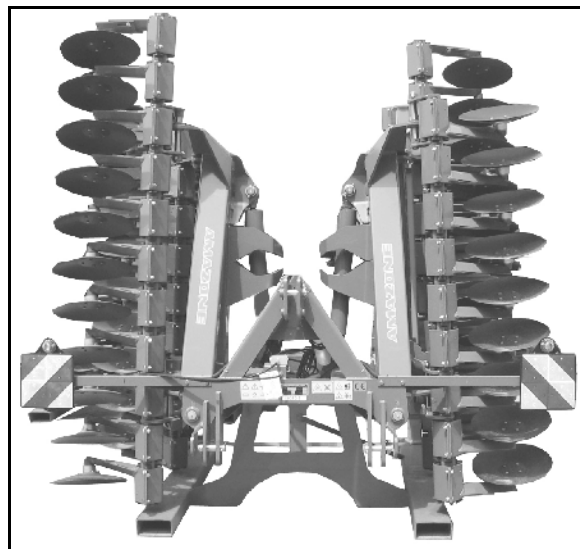


Fig. 21



CAUTION

Before uncoupling the parked machine:

1. Relieve the load from the top link and lower link points.
2. Check the stability of the machine!
3. Then uncouple the machine.

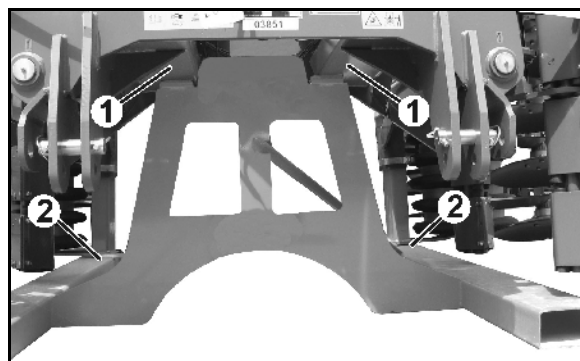


Fig. 22

6 Commissioning

This section contains information

- on operating your machine for the first time.
- on checking how you may connect the machine to your tractor.



- Before operating the machine 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" on page 22 onwards when
 - connecting and disconnecting the machine,
 - transporting the machine and
 - using the machine
- Only couple and transport the machine to/with a tractor which is suitable for the task.
- The tractor and machine must meet the national road traffic regulations.
- The operator and the user shall be responsible for compliance with the statutory 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 that:

- are continuous or
- are automatically locked or
- necessarily require an open centre or pressure position to operate correctly

6.1 Checking the suitability of the tractor



WARNING

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

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

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

- The approved total weight
- The approved axle loads

- The approved drawbar load at the tractor coupling point
- The load capacity of the installed tyres
- The approved trailer load must be sufficient

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

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

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

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



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

- empty tractor weight
- ballast weight and
- machine's total weight when attached or supported weight when hitched.



This note only applies 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.

6.1.1.1 Data required for the calculation

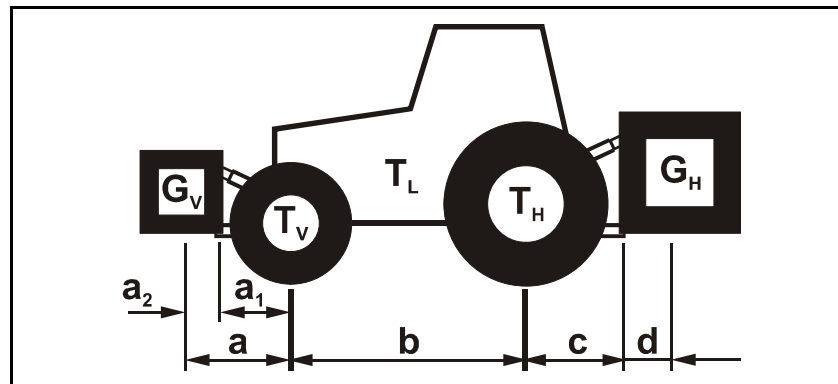


Fig. 23

T_L	[kg]	Empty tractor weight	See tractor operating manual or vehicle documentation
T_V	[kg]	Front axle load of the empty tractor	
T_H	[kg]	Rear axle load of the empty tractor	
G_H	[kg]	Total weight of rear-mounted machine or rear ballast	See technical data for machine or rear ballast
G_V	[kg]	Total weight of front-mounted machine or front ballast	See technical data for front-mounted machine or front ballast
a	[m]	Distance between the centre of gravity of the front machine mounting or the front weight and the centre of the front axle (total $a_1 + a_2$)	See technical data of tractor and front machine mounting or front weight or measurement
a_1	[m]	Distance from the centre of the front axle to the centre of the lower link connection	See tractor operating manual or measurement
a_2	[m]	Distance between the centre of the lower link connection point and the centre of gravity of the front machine mount or front weight (centre of gravity distance)	See technical data of front machine mounting or front weight or measurement
b	[m]	Tractor wheel base	See tractor operating manual or vehicle documents or measurement
c	[m]	Distance between the centre of the rear axle and the centre of the lower link connection	See tractor operating manual or vehicle documents or measurement
d	[m]	Distance between the centre of the lower link connection point and the centre of gravity of the rear-mounted machine or rear ballast (centre of gravity distance)	See technical data of machine

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

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

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

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

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

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

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

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

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

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

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

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

6.1.1.6 Tyre load capacity

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

6.1.1.7 Table

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



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



WARNING

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

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

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



- Ballast your tractor with weights at the front or rear if the tractor axle load is exceeded on only one axle.
- Special cases:
 - If you do not achieve the minimum ballast at the front ($G_{V \min}$) from the weight of the front-mounted machine (GV), you must use ballast weights in addition to the front-mounted machine.
 - If you do not achieve the minimum ballast at the rear ($G_{H \min}$) from the weight of the rear-mounted machine (GH), you must use ballast weights in addition to the rear-mounted machine.

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



WARNING

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

- **unintentional lowering of the machine when it is raised with the tractor's three-point hydraulic system and unsecured.**
- **unintentional lowering of parts of the machine when in a raised position and unsecured.**
- **unintentional start-up and rolling of the tractor-machine combination.**
- Secure the tractor and the machine against unintentional start-up and rolling before any intervention in the machine.
- It is forbidden to make any intervention in the machine, such as installation, adjustment, troubleshooting, cleaning, maintenance and repairs
 - when the machine is being operated.
 - as long as the tractor engine is running with the PTO shaft / hydraulic system connected.
 - if the ignition key is in the tractor and the tractor engine can be started unintentionally with the PTO shaft / hydraulic system connected.
 - if the tractor and machine have not each been prevented from unintentionally rolling away by applying their parking brakes and/or securing them with wheel chocks
 - if moving parts are not blocked against unintentional movement.

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

1. Lower the machine and machine parts when raised and unsecured.
- This prevents unintentional falling:
2. Turn off the tractor engine.
 3. Remove the ignition key.
 4. Apply the tractor's parking brake.
 5. Secure the machine against unintentional rolling (only attached machine)
 - by applying the parking brake (if fitted) or by using wheel chocks, if the terrain is level.
 - by applying the parking brake and using wheel chocks if the machine is on unlevel terrain or on an incline.

7 Coupling and uncoupling the machine



When coupling and uncoupling machines, follow the instructions given in the section "Safety instructions for the operator" page 22.



WARNING

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

Secure the tractor and machine against unintentional start-up and rolling away before entering the danger area between the tractor and machine to couple or uncouple the machine. See page 47.



WARNING

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

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

- only from the intended workstation.
- only if you are outside of the danger area between the tractor and the machine.

7.1 Coupling the machine



WARNING

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

You may only connect the machine to tractors suitable for the purpose. See section "Checking tractor suitability", page 42.



WARNING

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

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

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



WARNING

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

- Use the intended equipment to connect the tractor and the machine in the proper way.
- When coupling the machine to the tractor's three-point hydraulic system, ensure that the attachment categories of the tractor and the machine are the same.
Be absolutely certain to upgrade the category II upper and lower link pins of the machine to category III using reducing sleeves if your tractor has a category III three-point linkage.
- Only use the upper and lower link pins provided for coupling the machine.
- Visually check the upper and lower link pins for obvious defects whenever the machine is coupled. Replace upper and lower link pins if there are clear signs of wear.
- Use a lynch pin on each of the upper and lower link pins in the pivot points on the three-point frame attachment to secure them against unintentional release.



WARNING

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

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

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

1. Fasten the ball sleeves over the top link pins and fasten the lower link pins in the pivot points of the three-point attachment frame.
- Be absolutely certain to upgrade the category II upper and lower link pins of the machine to category III using reducing sleeves if your tractor has a category III three-point linkage.
2. Secure the top link pins and lower link pins with clip pins against unintentional release.
3. Direct people out of the danger area between the tractor and machine before you approach the machine with the tractor.
4. First connect the supply lines before coupling the machine and the tractor.
 - 4.1 Drive the tractor up to the machine to leave a clearance of approximately 25 cm between tractor and machine.
 - 4.2 Secure the tractor against unintentional starting and unintentional rolling away.
 - 4.3 Connect the supply lines to the tractor.
 - 4.4 Position the lower link hooks so that they are aligned with the lower linking points on the machine.
5. Now, reverse the tractor all the way to the machine so that the lower link hooks of the tractor automatically pick up the ball sleeves of the lower attachment points of the machine.
- The lower link hooks lock automatically.

6. From the tractor seat, couple the upper link to the top attachment point of the three-point attachment frame using the top link hook.
→ The top link hook locks automatically.
7. Perform a visual inspection to ensure that the upper and lower link hooks are correctly locked before reversing the tractor.

7.2 Uncoupling the machine



WARNING

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

Park the empty machine on a horizontal space with a hard surface.



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



Foldable machines can be parked when folded in or folded out.

1. Park the empty machine on a horizontal space with a hard surface.
2. Disconnect the machine from the tractor.
 - 2.1 Relieve the load from the top link.
 - 2.2 Unlock and uncouple the top link hooks from the tractor seat.
 - 2.3 Relieve the load from the lower link.
 - 2.4 Unlock and uncouple the lower link hooks from the tractor seat.
 - 2.5 Draw the tractor approximately 25 cm forwards.
→ The resulting free space between the tractor and the machine provides better access to the supply lines when disconnecting them.
 - 2.6 Secure the tractor and machine against unintentional starting and unintentional rolling away.
 - 2.7 Uncouple the supply lines.

8 Adjustments



WARNING

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

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

Secure the tractor and the machine against unintentional start-up and rolling before making adjustments to the machine. See Page 47.

8.1 Mechanical working depth adjustment

The height of the wedge ring roller is adjustable for accurate depth guidance.

The maximum working depth is 12 cm.

The depth is adjusted by turning the setting spindle (Fig. 24/1) using the hand lever (Fig. 24/2).



Catros 4001-2, 5001-2 and 6001-2:

Set the length of the setting spindles the same on both sides!

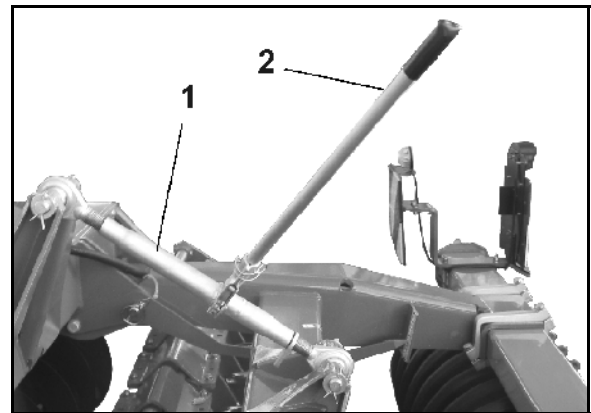


Fig. 24

1. Secure the tractor against unintentional starting and unintentional rolling away.
 2. Check the set working depth using the scale on the carrying arms of the wedge ring roller (Fig. 25/1).
- Reduce working depth:
set indicator toward 2.
- Increase working depth:
set indicator toward 12.
3. Lock the position of the setting spindles with locking levers (Fig. 25/2).

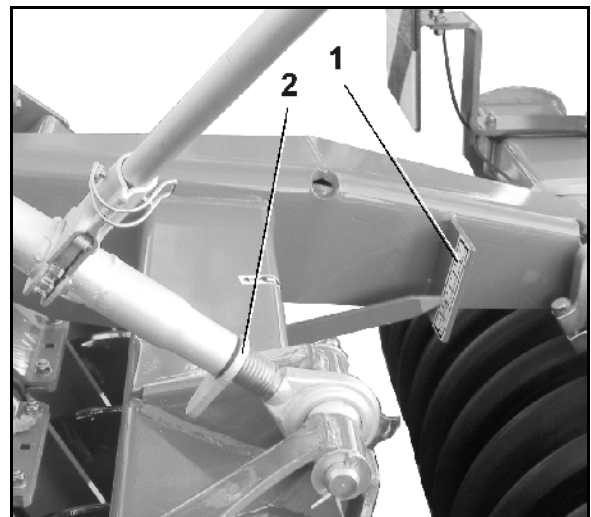


Fig. 25

8.2 Hydraulic working depth adjustment (optional)

Actuate tractor control unit **2** (green).

→ The working depth is set hydraulically using the scale (Fig. 26).1

- Reduce working depth:
set indicator toward 0.
- Increase working depth:
set indicator toward 12.

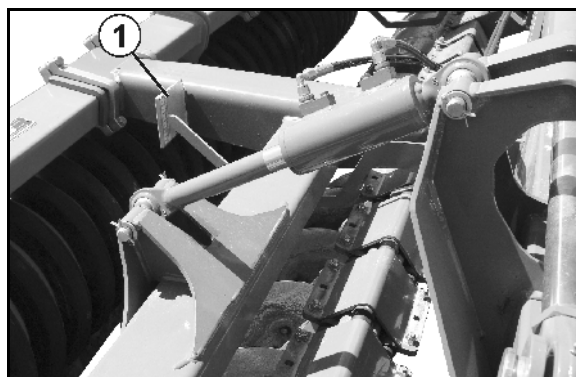


Fig. 26

8.3 Offset of the disc rows

The offset of the disc rows is adjusted as required by means of an **AMAZONE** eccentric pin.

6 insertion holes are available for this purpose. (Fig. 27).

1. Move the machine back a little.
→ The disc rows are displaced so that the insertion holes are uncovered.
2. Secure the tractor against unintentional starting and unintentional rolling away.
3. Release clip pins (Fig. 27/1 and Fig. 28/1).
4. Insert eccentric pins (Fig. 27/2 and Fig. 28/2) into the desired insertion hole.
5. Secure the clip pin.

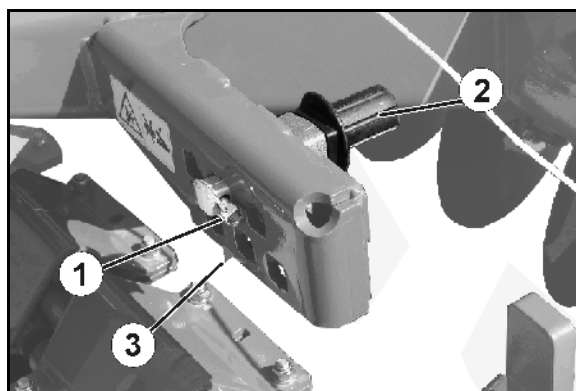


Fig. 27



CAUTION

Crushing hazard between eccentric pin and stop of disc row!



- A preferential insertion hole is marked with an arrow (Fig. 27/3).
- **Catros 4001-2 to 6001-2** have one possible disc offset setting for each boom (Fig. 28):
→ Select the same insertion holes on left and right!

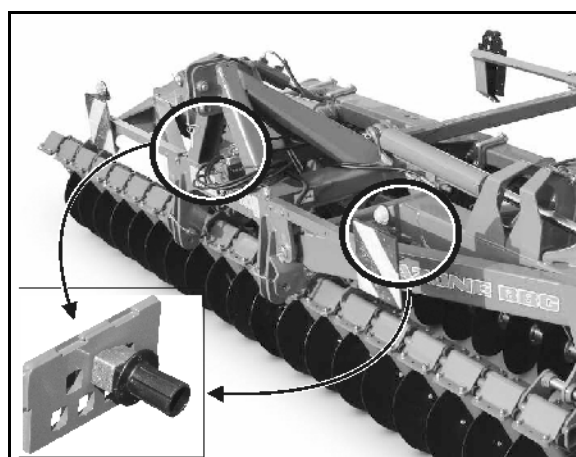


Fig. 28

Fine adjustment is carried out by rotating the eccentric pin (Fig. 29) from position 1 to position 4.

1. Release the clip pin.
2. Turn the eccentric pin (position 1-4).
3. Secure the clip pin.

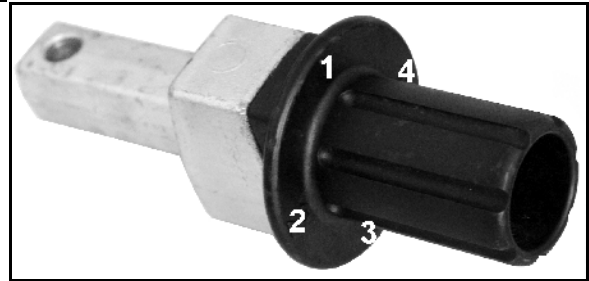


Fig. 29

The work pattern must be checked by viewing the cultivation horizon behind the machine:

- (1) Cutting edge 1st disc row
- (2) Cutting edge 2nd disc row

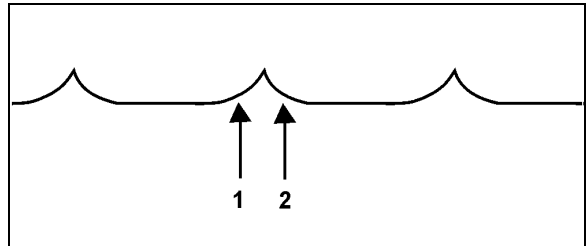


Fig. 30

- **Fig. 30:**
Correct setting of disc rows.
- **Fig. 31:**
Adjust 1st disc row to right and check again.
- **Fig. 32:**
The cutting edge of the 2nd disc row is not visible and follows the 1st disc row. Adjust 1st disc row to left.

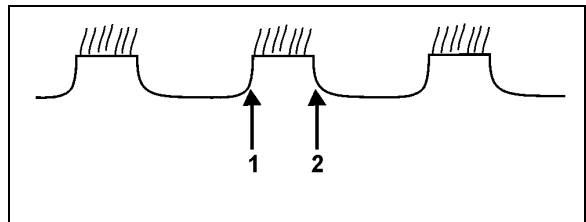


Fig. 31

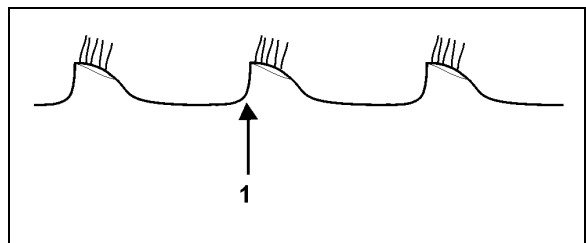


Fig. 32

8.4 Scraper

Scrapers are adjusted at the factory. Adjust the setting to the working conditions as follows:

1. Secure the tractor against unintentional starting and unintentional rolling away.
2. Release the screw (Fig. 33/1) below the scraper.
3. Adjust the scraper in the slotted hole.
4. Retighten the screw.



Fig. 33

8.5 Rear harrow

1. Raise the machine.
- The rear harrow is raised and the adjusting pin is relieved.
2. Secure the tractor against unintentional starting and unintentional rolling away
3. Release the clip pin (Fig. 34/1).
4. Secure the adjusting pin (Fig. 34/2) in the desired position.
 - o Lower adjusting pin for greater aggressiveness.
 - o Raise adjusting pin for reduced aggressiveness.
5. Resecure the clip pin.

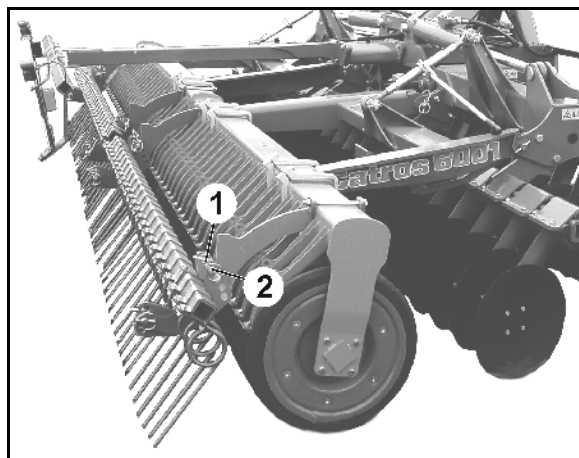


Fig. 34



Fit all adjusting pins in the centre and side sections in the same position!

If there is a lot of plant remains on the soil surface, there is the risk of increasing shaking of the harrow. In this case, the aggressiveness must be reduced, i.e. the tines must be set at a flatter angle.

For use in seed bed preparation on ploughed or cultivated areas, the aggressiveness can be increased for more intensive work, i.e. the tines can be set at a steeper angle.



When not in use, remove the rear harrow!

9 Transportation



- On transportation journeys, follow the instructions given in the section "Safety instructions for the operator", page 24.
- Before moving off, check:
 - that the supply lines are connected correctly.
 - the lighting system for damage, function and cleanliness.
 - the hydraulic system for visible defects



WARNING

Risk of being crushed, cut, caught, drawn in or struck if the machine is unintentionally released from its attached or hitched position.

Before transportation, carry out a visual check that the upper and lower link pins are secured with a lynch pin against unintentional release.



WARNING

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

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



WARNING

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

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



WARNING

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

These risks pose serious injuries or death.

Comply with the maximum load of the connected machine and the approved axle and support loads of the tractor. If necessary, drive only with a partially-filled hopper.



WARNING

Risk of falling from the machine if riding against regulations!

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

Instruct people to leave the loading site before approaching the machine.

9.1 Conversion from operational to transport position

Catros 3001 and 3501

The disc rows must each be locked in the transport position by means of a ratchet on the left and right of the machine.

1. Lower the machine.
 2. Pull the tractor release cord.
 3. With the machine lowered, reverse a little on the field.
- Move the disc rows to the transport position.
4. Let go of the release cord.
- The disc rows lock in the transport position.
5. Check the locking of the disc rows.

Disc rows locked:

- Fig. 35 - Right machine side, position A.
 - Fig. 36 - Left machine side
6. Raise the machine.
 7. Clean the tools.

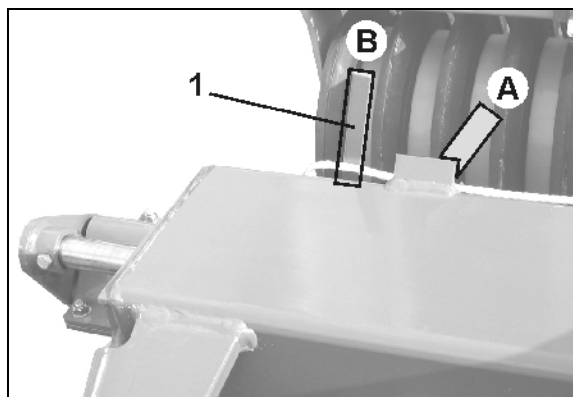


Fig. 35



Fig. 36

Catros 4001

The transport position corresponds to the operational position! No conversion is necessary!



The machine is very wide!

Pay attention to country-specific regulations for road transport!

Catros 4001-2, 5001-2, 6001-2

1. Raise the machine so that there is sufficient ground clearance to allow unobstructed folding in.
2. Clean external tools.
3. Actuate control unit 1 (2x blue).
 - Fold in the machine.
4. Close the ball valve (Fig. 37/1) (position A).
 - Secure the machine against unintentional folding out.
5. Clean the central tools.
6. Clean the lighting.
7. Raise the machine so that there is sufficient ground clearance for transport.

Fig. 38:

Folded-in machine in transport position.

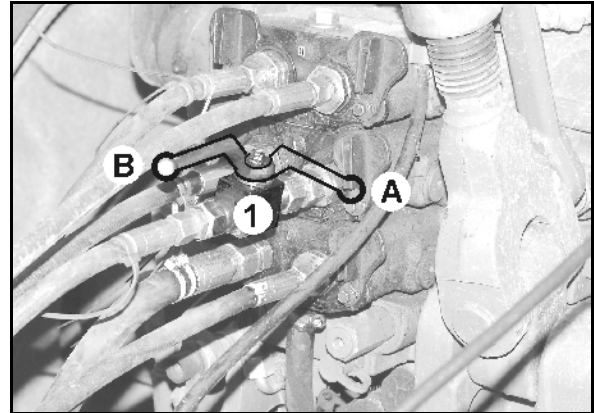


Fig. 37

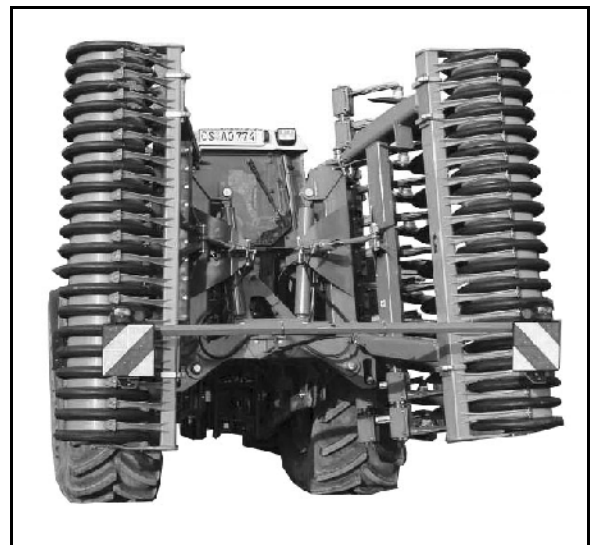


Fig. 38

10 Use of the machine



When using the machine, observe the information in the sections

- "Warning signs and other labels on the machine", from page 17 and
- "Safety instructions for operators", from page 22

Observing this information is important for your safety.



WARNING

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

Comply with the maximum load of the connected machine and the approved axle and support loads of the tractor. If necessary, drive only with a partially-filled hopper.



WARNING

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

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

In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the driver and the connected machine.



WARNING

Risk of being crushed, cut, caught, drawn in or struck if the machine is unintentionally released from its attached or hitched position. Each time before the machine is used, carry out a visual check that the upper and lower link pins are secured with a lynch pin against unintentional release.



WARNING

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

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

10.1 Conversion from transport to operational position



WARNING

Instruct people to leave the swivel area of machine's extension arm before you fold the machine's extension arm out or in.



- Align the tractor and machine straight on a flat surface before you fold the machine's extension arm out or in!
- Always raise the machine fully before you fold the machine's extension arm out or in. Only when the machine is fully raised do the soil cultivating tools have sufficient ground clearance and are thus protected against damage.

Catros 3001 and 3501

1. Lower the machine.
 2. With the machine lowered, reverse a little on the field.
 3. Pull the release cord from the tractor and drive forwards.
- Unlock the disc rows.
- Driving forwards with the machine lowered moves the discs to operational position.

Disc rows unlocked:

- Fig. 39 - Right machine side, pos. B.
- Fig. 40 - Left machine side

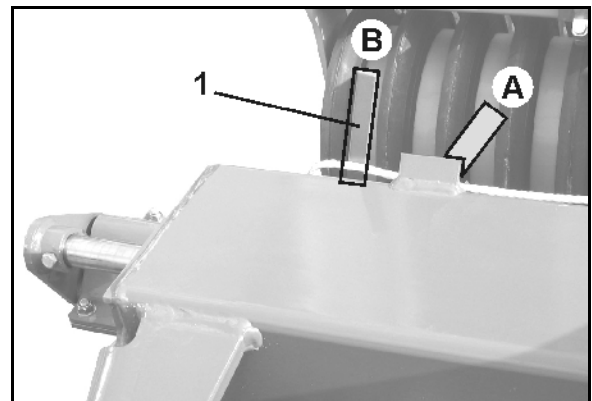


Fig. 39

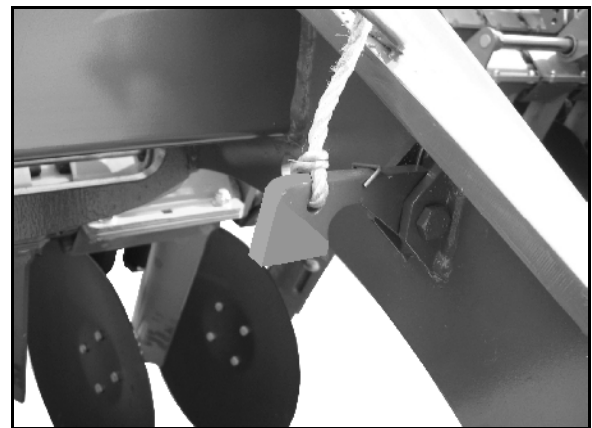


Fig. 40

Catros 4001:

The transport position corresponds to the operational position! No conversion is necessary!

- **Catros 4001-2, 5001-2 and 6001-2:**
 1. Raise the machine so that there is sufficient ground clearance to allow unobstructed folding out.
 2. Open the ball valve (Fig. 41/1) (position B).
 3. Actuate control unit 1 (1x blue).

→ Fold out the machine.

 4. Lower the machine.

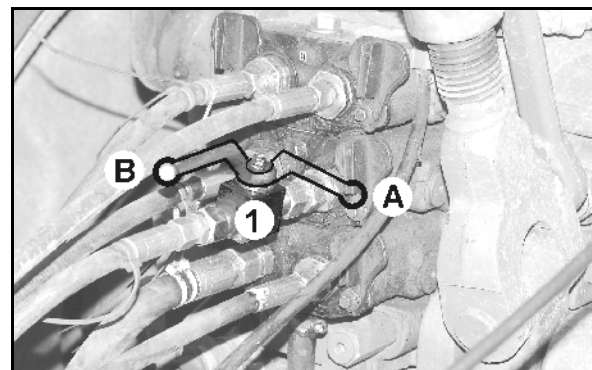


Fig. 41

10.2 Use on the field

The compact disc cultivator should preferably be used in float position of the tractor three-point hydraulic system. The depth control is by means of the wedge ring roller.

During use in the field, operation is limited to raising or positioning the device at the headland.

Correct the setting of the top link if the machine does not run straight behind the tractor.

- Machine pulls to right:
→ Set top link longer
- Machine pulls to left:
→ Set top link shorter



Fig. 42



The device must be adjusted at the lifting arm spindles and the top link of the tractor so that the frame is parallel to the soil surface longitudinally and transversely during the work procedure!

10.3 Turning at headland

When turning through a curve at the headland, the disc rows must be raised to prevent transverse stresses.



Use at the headland only when the direction of the implement corresponds to the direction of working.

11 Faults



WARNING

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

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

Secure the tractor and the machine against unintentional start-up and rolling before eliminating faults on the machine. See Page 47.

Wait for the machine to stop, before entering the machine danger area.

11.1 Different working depths across the working width

Catros 4001-2, 5001-2, 6001-2 with hydraulic working depth adjustment:

Different working depths across the working width?

→ Synchronise the hydraulic cylinders!

For a uniform working depth across the entire machine width, it is necessary for the hydraulic cylinders for depth adjustment to be of the same length. If this is not the case, the cylinders can be hydraulically synchronised:

Actuate the tractor control unit **2** (green) and keep actuated for a further 10 s. An overflow process is initiated to flush the cylinders. The cylinders adjust themselves to the same length.

12 Cleaning, maintenance and repairs



WARNING

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

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

Secure the tractor and machine against unintentional starting and unintentional rolling away before you perform any cleaning, servicing or maintenance work on the machine. See page 47.

12.1 Cleaning



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

Cleaning with a high pressure cleaner / steam jet



- Always observe the following points when using a high pressure cleaner / steam jet for cleaning:
 - Do not clean any electrical components.
 - Do not clean any chromed components.
 - Never aim the cleaning jet from the nozzle of the high pressure cleaner / steam jet directly on lubrication and bearing points.
 - Always maintain a minimum jet distance of 300 mm between the high pressure cleaning or steam jet cleaning nozzle and the machine.
 - Comply with safety regulations when working with high pressure cleaners.

12.2 Lubrication regulations

Lubrication points on the machine are indicated with the foil (Fig. 43).

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

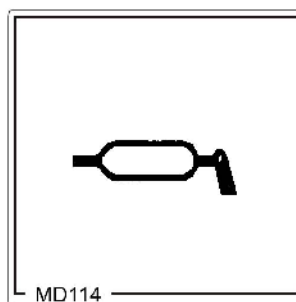


Fig. 43

12.2.1 Lubricants



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

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

12.2.2 Lubrication point overview

Fig. 44	Lubrication point	Interval [h]	Quantity
1	Flange bearings of the roller	50	1
2	Centre section joint bearing, right and left	50	2
3	Working depth above setting spindle or	50	4
3	Working depth above hydraulic cylinder	50	4
4	Hydraulic cylinder folding	50	4

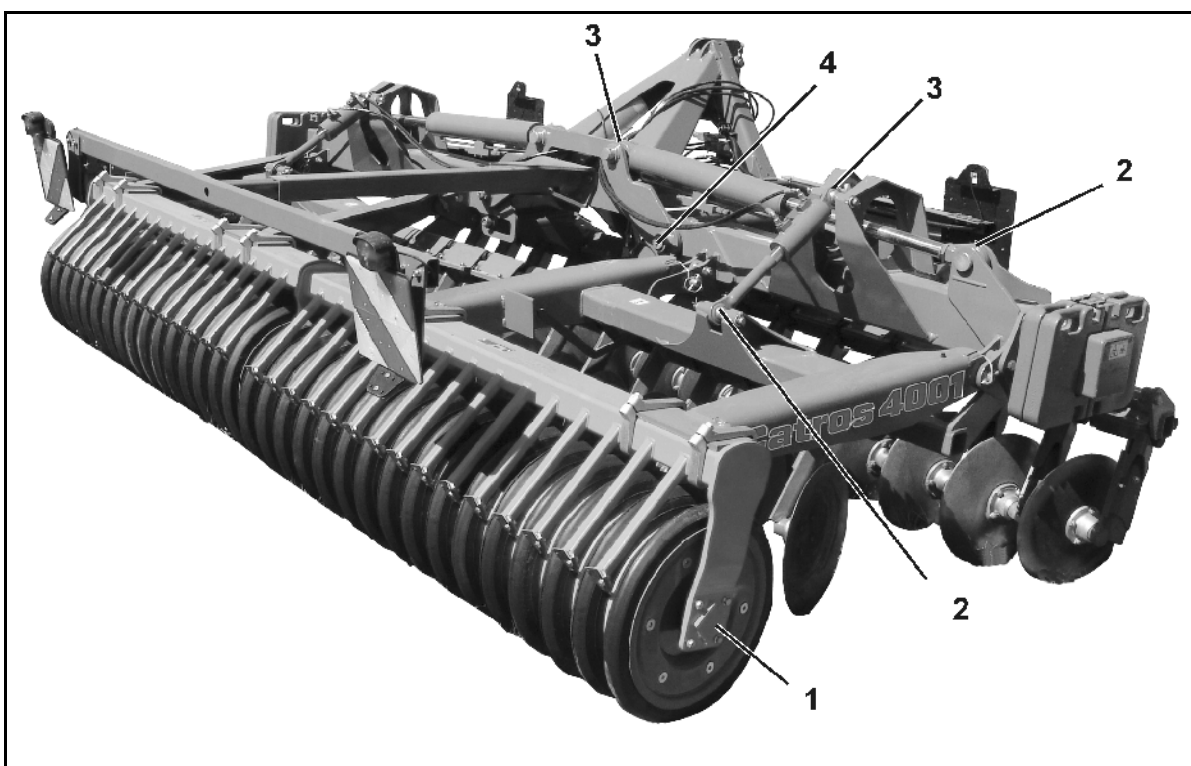


Fig. 44

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 work-shop
Disc carrier fixture	<ul style="list-style-type: none"> • Retighten bolted connections 		
Hydraulic system	<ul style="list-style-type: none"> • Inspection for defects • Check leak tightness 	68	X

Daily

Component	Servicing work	See page	Specialist work-shop
Electric lighting	<ul style="list-style-type: none"> • Changing defective bulbs 	70	

Weekly / every 50 working hours

Component	Servicing work	See page	Specialist work-shop
Hydraulic hose lines	<ul style="list-style-type: none"> • Check 	69	X
Hydraulic cylinder for folding in/out	<ul style="list-style-type: none"> • Visual check of pins and lock nuts 	67	

Every three months / 200 working hours

Component	Servicing work	See page	Specialist work-shop
Hydraulic cylinder for foldable booms	<ul style="list-style-type: none"> • Check torque of lock nuts on adjustable ball eyes 	67	

As required

Component	Servicing work	See page	Specialist work-shop
Disc XL011	<ul style="list-style-type: none"> • Check wear - replace if minimum diameter 360mm 	65	X
Slide bearing 78200437	<ul style="list-style-type: none"> • Check wear - replace at approx. 4mm clearance 	66	X
Roller 78200356	<ul style="list-style-type: none"> • Check wear - replace as required 	66	X
Hydraulic cylinder for depth setting	<ul style="list-style-type: none"> • Synchronise 	61	
Upper/lower link pin	<ul style="list-style-type: none"> • Replace 	66	

12.4 Replacing the discs (Workshop work)

Minimum disc diameter: 360 mm.

The discs are replaced with

- the machine folded out
 - the discs raised
 - the machine secured against unintentional lowering
1. Release the four screws securing the disc.
 2. Remove the disc.
 3. Secure the new disc with 4 screws.

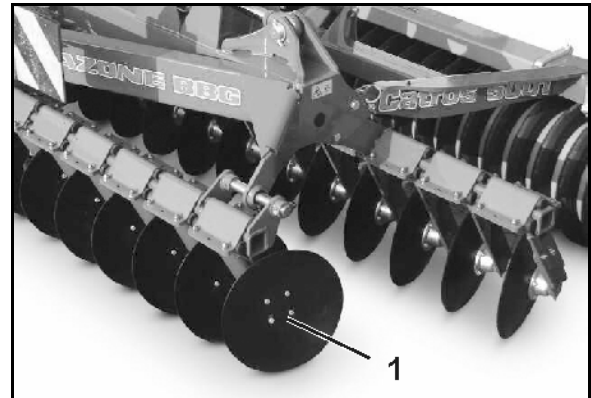


Fig. 45



When removing spring-suspended elements (disc segments), remember that the parts are under pretension! Use a suitable tool!

For installation and removal, additionally use longer screws as an auxiliary tool! (Fig. 46)

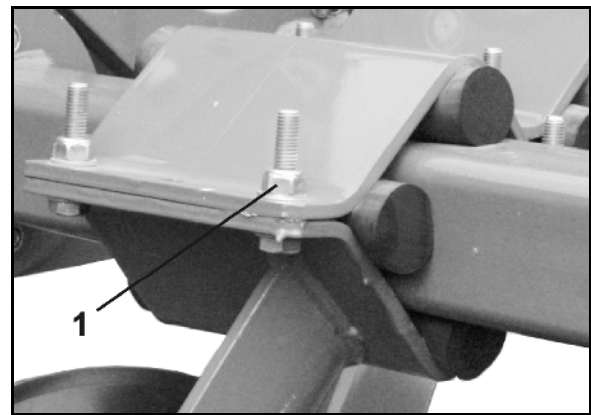


Fig. 46

12.5 Slide bearings of offset slide (Workshop work)



Replace slide bearing at approx. 4 mm clearance.

To replace the slide bearings (Fig. 47/1), place the folded-out machine down so that the slide bearings are free from tension.

The disc units must touch the ground, but must not support the weight of the machine!

If necessary, support the disc units!

- Each disc unit has two slide bearings.
 1. Release the screw union (Fig. 47/2) of the shifting shaft (Fig. 47/3).
 2. Drive the shifting shaft out of the bearing.
 3. Remove the circlips from the slide bearing.
 4. Replace the slide bearing.
 5. Fit the circlips.
 6. Reinstall the shifting shaft and secure with a screw union.

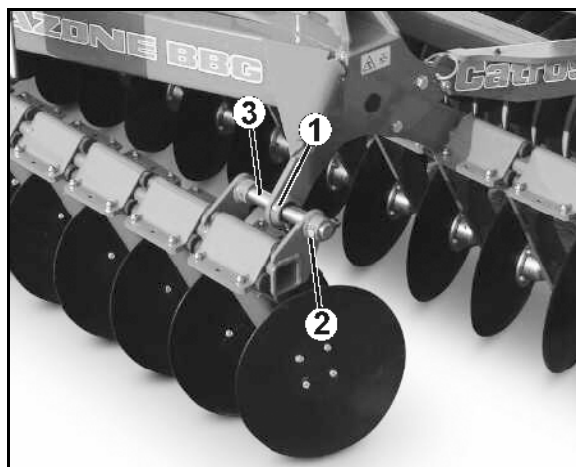


Fig. 47

12.6 Roller (Workshop work)

To replace the roller (Fig. 48/1), place the folded-out machine down so that the roller is free from tension.

1. Release screw union (Fig. 48/2).
2. Withdraw sleeve (Fig. 48/3).
3. Replace roller as required.
4. Fit sleeve.
5. Tighten screw.

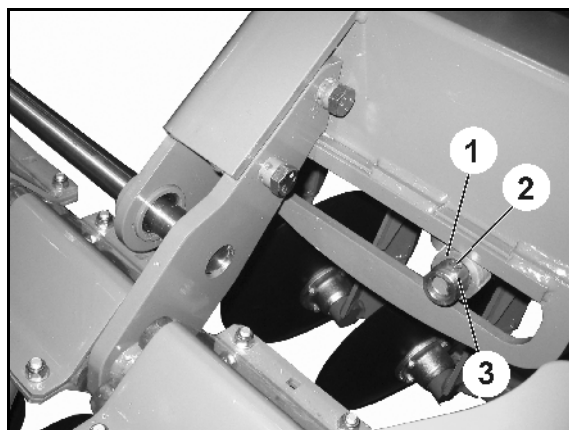


Fig. 48

12.7 Top and lower link pins



WARNING

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

Check the upper and lower link pins for visible damage each time you couple the machine. Replace upper and lower link pins if there are clear signs of wear.

12.8 Hydraulic cylinder for foldable booms



Required tightening torque for lock nut on hydraulic cylinder for foldable booms: **300 Nm**

Check the screw connections on the hydraulic cylinders (Fig. 49/1) every 50 operating hours / weekly:

Fig. 50: Specified screw-in depth

Fig. 51: Tightening torque 300 Nm

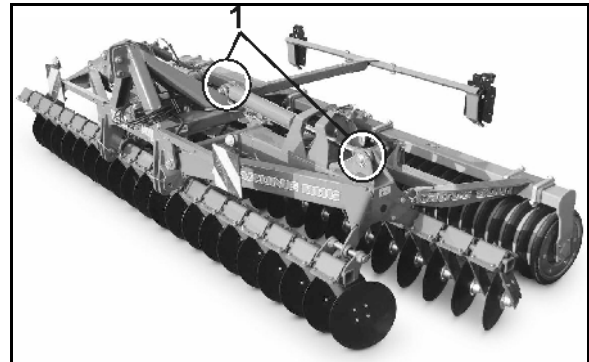


Fig. 49

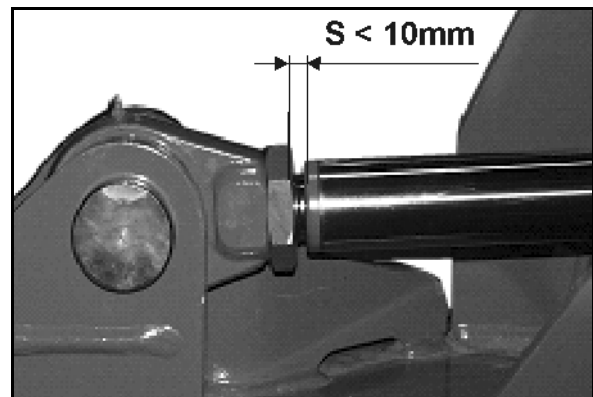


Fig. 50

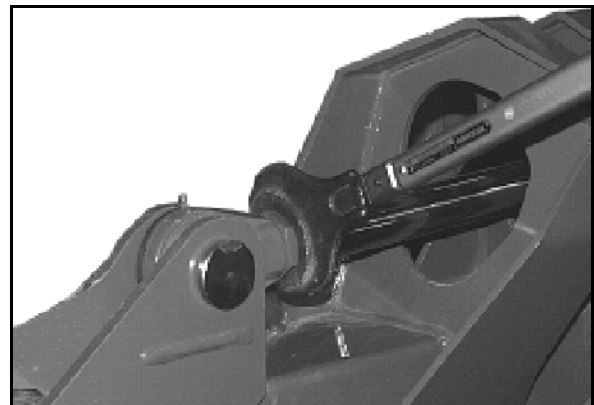


Fig. 51

12.9 Hydraulic system



WARNING

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

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

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

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



- When connecting the hydraulic hose lines to the hydraulic system of connected machines, ensure that the hydraulic system is depressurised on both the drawing vehicle and the trailer.
- Ensure that the hydraulic hose lines are connected correctly.
- Regularly check all the hydraulic hose lines and couplings for damage and impurities.
- Have the hydraulic hose line 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 original **AMAZONE** hydraulic hose lines.
- The hydraulic hose lines should not be used for longer than six years, including any storage time of maximum two years. Even with proper storage and approved use, hoses and hose connections are subject to natural ageing, thus limiting the length of use. However, it may be possible to specify the length of use from experience values, in particular when taking the risk potential into account. In the case of hoses and hose 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.

12.9.1 Labelling hydraulic hose lines

The assembly labelling provides the following information:

Fig. 52/...

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

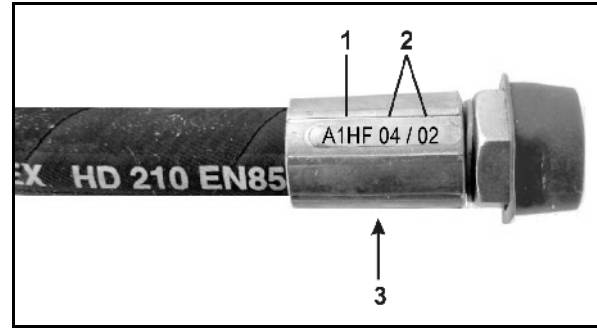


Fig. 52

12.9.2 Maintenance intervals

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

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

Before each start-up:

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

12.9.3 Inspection criteria for hydraulic hose lines



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

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

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

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

12.9.4 Installation and removal of hydraulic hose lines



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

- Only use original **AMAZONE** hydraulic hose lines.
- Ensure cleanliness.
- You must always install the hydraulic lines so that, in all states of operation:
 - There is no tension, apart from the hose's own weight.
 - There is no possibility of jolting on short lengths.
 - Outer mechanical influences on the hydraulic hose lines are avoided.
Use appropriate arrangements and fixing to prevent any scouring of the hoses on components or on each other. If necessary, secure hydraulic hose lines using protective covers. Cover sharp-edged components.
 - The approved bending radii may not be exceeded.
- When connecting a hydraulic hose line to moving parts, the hose length must be appropriate so that the smallest approved bending radius is not undershot over the whole area of movement and/or the hydraulic hose line is not over-tensioned.
- Fix the hydraulic hose lines to the intended fixing points. There, avoid hose clips, which impair the natural movement and length changes of the hose.
- It is forbidden to paint over hydraulic hose lines!

12.10 Electrical lighting system

Changing bulbs

1. Unscrew safety lens.
2. Remove defective bulb.
3. Insert replacement bulb (make sure voltage and wattage is correct).
4. Fit safety lens and screw on.

12.11 Hydraulics diagram

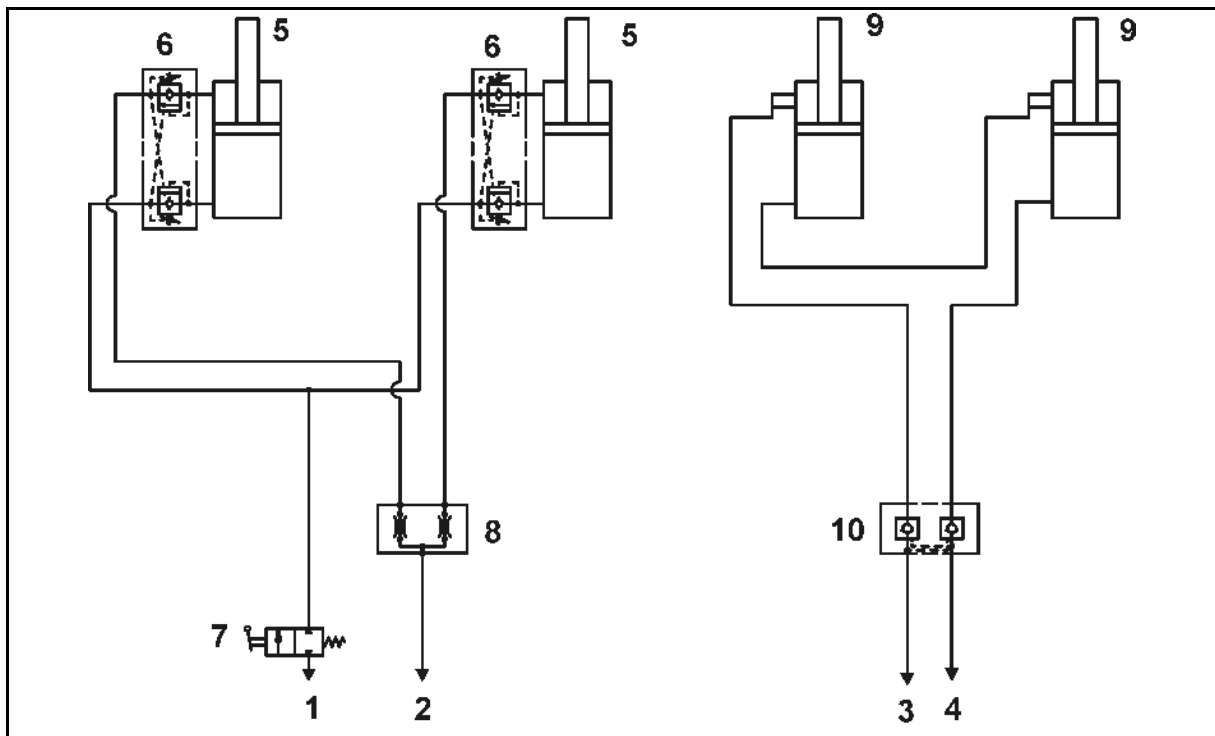


Fig. 53

- (1) Connection on control unit 1 – folding out
(Hose marking 1 x blue)
- (2) Connection on control unit 1 – folding in
(Hose marking 2 x blue)
- (3) Connection on control unit 2 – increasing working depth
(Hose marking 1 x green)
- (4) Connection on control unit 2 – reducing working depth
(Hose marking 2 x green)
- (5) Hydraulic cylinder for folding mechanism
- (6) Lowering brake valve
- (7) Ball valve
- (8) Quantity divider
- (9) Hydraulic cylinder for working depth
- (10) Locking block

12.12 Screw tightening torques

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



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