RAUCH

Operator Manual

Please read carefully before using the machine!

Store carefully for future use!

This Operator Manual should be considered as part of the machine. Suppliers of new and second-hand machines are obliged to indicate in writing that the Operator Manual has been delivered with the machine.

AGT 6000

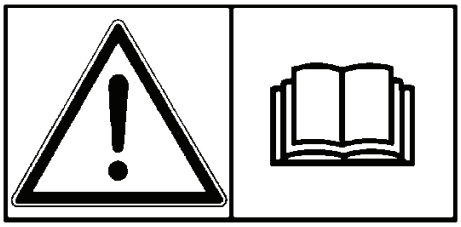
Translation of the original operating manual

5900787-d-en-0606

Preface

Dear customer,

Your purchase of the pneumatic **fertiliser spreader AGT 6000** has shown that you trust our product. Thank you. We want to justify your trust. You have purchased a high-performance and reliable fertiliser spreader. However, if any problems occur: Our Customer Service is always ready to help.



Please read this manual carefully before using the fertiliser spreader and observe the instructions. The manual explains in detail how to operate the spreader and contains valuable information on handling, maintenance and care.

These instructions could also describe equipment which is not included in your fertiliser spreader.

You should be aware that damage caused by incorrect operation or improper use may not be covered by warranty claims.

Note: Please enter the machine model and number, as well as the year of manufacture of the fertiliser spreader. You can find this information on the identification plate or on the frame. Please provide this information whenever you order spare parts and accessories or if you have any complaints or comments.

Model: Serial no.: Year of manufacture:

Technical Improvements

We are continuously improving Rauch products. For this reason we reserve the right to make any improvements and changes to our machine without notice, which we consider necessary. We do not accept any obligation to make such improvements or changes on machines that have already been sold.

We will be pleased to answer any other questions that you might have.

Yours sincerely

RAUCH

Landmaschinenfabrik GmbH

Contents

1 Designated Use and EU Conformity

1.1 Designated Use

The pneumatic fertiliser spreader AGT 6000 is exclusively intended for applying dry, granulated fertilisers, micro-granulates and similar spreading material.

Any use outside these stipulations is considered as improper. As such, the owner alone accepts the risk for any resulting damage.

The following, in particular, is not permitted:

- Use as a means of transport for people and livestock,
- Use as a means of transport for objects.

The AGT 6000 can only be trailed by tractors that are able to support the static load of the fertiliser spreader on the hitch and which also have the required technical equipment.

Designated use also includes observance of the manufacturer's conditioned for operation, maintenance and repair.

The fertiliser spreader AGT 6000 may only be used serviced and repaired by personnel who are familiar with it and have been trained accordingly.

Unauthorised modifications to the fertiliser spreader AGT 6000 are not permitted. Such modifications could impair the machine's safety. The manufacturer assumes no liability for damage resulting from such modifications.

Spare parts must correspond at least to the manufacturer's stipulated technical requirements. These are, for example, satisfied by using original spare parts.

1.2 EC Declaration of Conformity

We

RAUCH - Landmaschinenfabrik GmbH

Landstrasse 14, D-76547 Sinzheim

declare under our sole responsibility that the machine

Pneumatic Fertiliser Spreader AGT 6000

complies with the following provisions in its delivered version:

Machinery Directive 2006/42/EG, Appendix I.

Compilation of the technical documents by:

RAUCH – Design Management

Norbert Rauch

(Norbert Rauch – Managing Director)

2 User Instructions

2.1 About this Operator's Manual

This operator's manual is a component part of the pneumatic fertiliser spreader AGT 6000.

The operator's manual contains important instructions for a safe, correct and economic use and maintenance of the fertiliser spreader. Their observance helps to avoid dangers, reduces repair costs and downtimes, and increases the machine's service life.

This manual is part of the machine. All of the documentation comprising this manual, as well as all supplier documentation, must be stored within easy reach at the fertiliser spreader's operating site (e. g. in the tractor).

The operator's manual must also be included if the machine is transferred to third parties.

The operator's manual is intended for the owner of the fertiliser spreader AGT 6000 and its operating and maintenance personnel. It must be read, understood and applied by anyone who is entrusted with the following work on the machine:

- Operation,
- Maintenance and cleaning,
- Troubleshooting.

The following, in particular, must be observed:

- The chapter on "Safety",
- The warning instructions in the text in the individual chapters.

The operator's manual is not a substitute for your own responsibility as owner and operator of the fertiliser spreader AGT 6000.

2.2 Structure of the Operator's Manual

The operator's manual is divided into 6 main sections according to content:

- User instructions,
- Safety instructions,
- Machine specifications,
- Operating instructions for the fertiliser spreader,
- Instructions for detecting and remedying breakdowns and
- Maintenance and repair instructions.

2.3 Typographical conventions

2.3.1 Instructions and Directives

The handling steps performed by the operator are shown as a numbered list.

1. Handling instruction step 1.

2. Handling instruction step 2.

Instructions that only involve one step are not numbered. The same is applicable to handling steps where the sequence of their implementation is not strictly stipulated.

These instructions are preceded by a dot:

- Handling instructions.

2.3.2 Lists

Lists without a strict sequence are shown as a list with bullets or en-dashes:

- Characteristic A.
  - Detail 1,
  - Detail 2.
- Characteristic B.

2.3.3 References

References to other text sections in the document are shown by the section number, title text and page number:

- Also refer to chapter 3. "Safety" starting on page 5.

References to other documents are shown as an instruction or directive without exact section or page references:

- Also refer to the directives in the axle manufacturer's operating manual.

3 Safety

The chapter on safety contains basic safety instructions, occupational and traffic protection regulations for handling the fertiliser spreader AGT 6000.

Compliance with the instructions contained in this chapter is a basic requirement for the safe handling and reliable operation of this machine.

Moreover, other warning instructions are given in other chapters of this operator's manual, which must be likewise observed. The warning instructions are given before the respective handling methods.

Warning instructions with regard to supplier components are contained in the corresponding supplier documentation. These warning instructions must also be observed.

3.1 Meaning of the Warning Instructions

In this operator's manual the warning instructions are systematised according to the severity of the danger and the probability of its occurrence.

WARNING

This pictograph in conjunction with the word "WARNING." warns of a danger posing an immediate threat to the health and life of people.

Ignoring these warning instructions leads to very serious injuries, including fatal ones.

- You must observe the measures described for preventing this danger.

CAUTION

This pictograph in conjunction with the word "CAUTION." warns of a potentially dangerous situation for personal health as well as material and environmental damage.

Ignoring these warning instructions can lead to injuries or material and environmental damage.

- You must observe the measures described for preventing this danger.

IMPORTANT

This pictograph in conjunction with the word "IMPORTANT." warns of material and environmental damage.

Ignoring these warning instructions can damage the product or the environment.

- You must observe the measures described for preventing this danger.

NOTE

General information containing application tips and particularly useful information, but which constitutes neither warnings nor hazards.

3.2 General Information Regarding Machine Safety

The fertiliser spreader AGT 6000 is built in accordance with state-of-the-art technology and recognised technical standards. Nevertheless, when being used and serviced, dangers for the user's life and limb or that of third parties or the impairment of the machine and other material goods could occur.

As such, use the fertiliser spreader AGT 6000

- only when in a perfect and roadworthy condition,
- whilst taking into account safety and dangers.

This implies that you are aware of and apply the content of this operator's manual, the relevant accident prevention regulations as well as the generally recognised safety, occupational and traffic rules.

3.3 Instructions for the Owner

The owner is liable for the designated use of the fertiliser spreader AGT 6000.

3.3.1 Qualification of Personnel

Personnel who have to operate, service or repair the fertiliser spreader must have read and understood this operator's manual before initiating any work. This applies, in particular, to the chapter on safety and the warning instructions with regard to the relevant tasks.

- The machine may only be operated by trained personnel authorised by the owner.
- Personnel being educated/trained/instructed may only work on the machine under the supervision of an experienced person.
- Maintenance and repair work may only be performed by qualified and instructed personnel.

3.3.2 Instruction

Sales partners, factory representatives or employees of RAUCH will instruct the owner in the operation and maintenance of the fertiliser spreader.

The owner must ensure that newly recruited operation and maintenance personnel are instructed to the same extent and with the same care with regard to the operation and repair of the machine in compliance with this operator's manual.

3.3.3 Accident Prevention

The safety and accident prevention regulations are legally regulated in each country. The machine owner is responsible for ensuring compliance with the regulations in force in each country.

Moreover, the following instructions must be observed:

- Never leave the fertiliser spreader unsupervised whilst operating.
- Do not climb onto the fertiliser spreader during operation or road travel.
- Fertiliser spreader machine parts must not be used as climbing aids.
- Ensure that when a vehicle is not secured that no one remains between the tractor and fertiliser spreader.
- Wear hearing protection for tractors with an open cab.
- Do not wear loose clothing. Avoid wearing working clothes with belts, fringes or other parts which could get caught.
- When handling chemicals, observe the fertiliser manufacturer's instructions. You may have to wear protection equipment in some circumstances.
- Before actuating the boom, ensure that enough space is available and that no one in standing in the danger area.
- Park the fertiliser spreader on a horizontal, firm surface only when the hopper is empty and the boom is folded.

3.4 Instructions for Operational Safety

In order to avoid dangerous situations, the fertiliser spreader must only be used when in a perfect operating condition.

3.4.1 Checks before Start-Up

Before using for the first time, and before each subsequent use, check the fertiliser spreader for operational safety.

- Are all the protective devices on the AGT 6000 in place and working correctly?
- Are all fastening parts and supporting connections firmly attached and in a proper condition?
- Are all catches securely fastened?
- Is there anyone in the danger area of the fertiliser spreader?
- Is the drive shaft guard in a proper condition?

3.4.2 Filling the Fertiliser Spreader

As the fertiliser spreader is a single-axle vehicle with one-sided, tail heavy load there is a danger that the drawbar could lift.

- Ensure that the fertiliser spreader is coupled to the tractor before filling.
- Never fill the fertiliser spreader while the tractor engine is running. Prevent the unintentional start of the engine by removing the ignition key from the tractor.
- Use suitable auxiliary equipment for filling (e. g. shovel loader, worm conveyor).
- Avoid one-sided loading of the axle through uneven loading of the fertiliser spreader.

3.4.3 Uncoupling and Parking the Fertiliser Spreader

Park the fertiliser spreader on a horizontal, firm surface only when the hopper is empty and the boom is folded .

Before uncoupling, check that the fertiliser spreader is secured against tilting and rolling away.

- Is the parking brake applied?
- Is the parking strut released and secured?
- Are the wheels secured with chocks?

3.4.4 Field Operation

- In the event of malfunctions in the fertiliser spreader, you must bring the machine to an immediate standstill and secure it. Immediately have the authorised personnel repair the malfunctions.
- Never climb onto the fertiliser spreader when the spreader device is switched on.
- Rotating machine parts can cause serious injury. Therefore, ensure that limbs or clothes never come into contact with the rotating parts.
- Do not place any foreign parts (e. g. screws) in the spreading hopper.
- Before actuating the boom, ensure that enough space is available and that no one is standing in the danger area.
- Ejected spreading material can lead to serious injuries (e. g. eyes). Therefore, ensure that there is no one in the spreading area of the fertiliser spreader.
- The spreading procedure must be interrupted in the event of excessive wind speeds since keeping to the spreading area can no longer be guaranteed.
- The booms may flap a result of uneven terrain. Ensure that no dangerous situations arise as a result (e. g. contact with overhead cables).
- Never park the fertiliser spreader under electric high voltage lines. Should you ever have to stop under high voltage lines, never climb on top of the fertiliser spreader.

3.4.5 Wheels and Brakes

The running gear of the fertiliser spreader is subject to high stress as a result of the high total weight and the terrain. Pay particular attention to the following points in order to guarantee operational safety:

- Only use wheels and tyres which comply with the technical requirements stipulated by the manufacturer.
- Wheels must not exhibit any wobble or impermissible offset.
- Check the tyre air pressure before each trip.
- Change the brake linings at the correct intervals. Only use brake linings which correspond to the manufacturer's stipulated technical requirements.
- In order to avoid soiling the wheel bearings, these must always be covered by the caps.
- Observe the permitted carrying load of the wheels (entry in the type approval).

3.5 Use of the Fertiliser

Inappropriate selection or use of fertilisers can lead to serious personal injury or environmental damage.

- When selecting the fertiliser, ask about its effect on humans, the environment and the machine.
- Carefully follow the fertiliser manufacturer's instructions.

3.6 Hydraulic System

The hydraulic system is under high pressure and reaches a high operating temperature.

Hot fluids that are discharged under high pressure can cause serious injuries and harm the environment. Follow the instructions below in order to avoid dangers:

- The maximum permitted operating pressure must never be exceeded.
- Depressurise the hydraulic system before starting any work. Switch off the tractor engine and secure it from being switched back on.
- When checking for leaks always wear protective goggles and gloves.
- In the event of being injured by hydraulic oil, contact a doctor immediately to avoid serious infections.
- When connecting the hydraulic hoses to the tractor, ensure that the hydraulic system is depressurised both in the tractor and the control system.
- Only use the stipulated couplings to connect the hydraulic hoses from the tractor and control hydraulics.
- Avoid soiling the hydraulic circuit. Only hang the couplings in the brackets provided. Clean the connections before coupling.
- Check the hydraulic components and hydraulic hoses regularly for mechanical faults such as wear and tear, crushing, bending, cracking, porosity etc.
- Even when stored correctly and under approved loads, hoses and hose couplings are subject to a natural ageing process. This limits their storage and service life.

Hydraulic hoses may not be used for more than 6 years, including a possible storage time of maximum 2 years.

The manufacturing date of the hose is given on the hose fitting as the month and year.

- Replace the hydraulic hoses in the event of damage and ageing.
- The replacement hoses must correspond to the manufacturer's stipulated technical requirements. Pay particular attention to the different maximum pressure values of the hydraulic hoses to be replaced.

Diaphragm accumulators are fitted to the machine. Diaphragm accumulators are pressure vessels in accordance with the Pressure Equipment Directive 97/23/EC.

- Observe the regulations in force at the working site with regard to handling diaphragm accumulators.

3.7 Maintenance and Repair

During maintenance and repair work you must take additional hazards into account which do not arise when operating the machine.

- Always perform maintenance and repair work with increased awareness. Take special care and be aware of the dangers.

3.7.1 Qualification of Maintenance Personnel

- Adjustment and repair work on the brake system may only be performed by authorised workshops or brake service centres.
- Repair work on tyres and wheels may only be performed by qualified personnel and using suitable assembly tools.
- Welding and work on the electrical system may only be performed by qualified personnel.
- For static loads, the drawbar height may only be adjusted by qualified personnel.

3.7.2 Wearing Parts

- Strictly observe the maintenance and repair intervals described in this operator's manual.
- Also observe the maintenance and repair intervals for the supplied components. Consult the respective supplier documentation for more information.
- We recommend that you have the condition of the fertiliser spreader inspected by an expert after each season, in particular fixing parts, hydraulic system, metering parts, elbows and splash plates.
- Change the brake linings at the correct intervals. Only use the brake linings stipulated for the axles.
- Spare parts must correspond at least to the manufacturer's stipulated technical requirements. These are, for example, satisfied by using original spare parts.

3.7.3 Maintenance and Repair Work

- Switch off the tractor engine before any cleaning, maintenance or repair work, and also before troubleshooting. Wait until all rotating machine parts have come to a standstill.
- Ensure that no one can switch on the fertiliser spreader without being authorised to do so. Remove the ignition key from the tractor.
- Check that the fertiliser spreader is correctly parked. It must be parked on a horizontal, firm surface with an empty hopper and folded boom, and be secured against rolling away and jack-knifing.
- Depressurise the hydraulic system before starting any maintenance or repair work.
- Before working on the electrical system, disconnect it from the power supply.
- If you have to work with the rotating PTO shaft no one is allowed to stand in the area of the PTO shaft or drive shaft.
- Never remove blockages in the spreader with your hands; use a suitable tool. In order to avoid blockages, only fill the hopper using the filling sieve provided.
- Before cleaning the fertiliser spreader with water, steam jet or other cleaning agents, cover all components which must not come into contact with cleaning fluids (e. g. plain bearings, electrical connectors).
- Attach overload or free-wheel clutches on the device side. They may only be attached on the tractor side if the clutch is protected by a suitable mechanism on the tractor.
- After driving the first 5 km, check the tightening torque of each wheel nut.
- Check nuts and screws regularly to ensure that they are properly seated, and tighten loose connections.

3.8 Road Safety

When driving on public roads and paths, the tractor and fertiliser spreader must comply with the traffic regulations of the respective country. The vehicle owner and driver are responsible for observing these regulations.

3.8.1 Checks before Departure

An important contribution to road safety are the checks performed before departing. Immediately before each trip, check that operating conditions, road safety and the regulations of the respective country are being observed.

- Ensure that the total permitted weight is not exceeded. Also check the trailing load and static load of the drawbar as well as the permitted axle load, braking load and tyre load rating.
- Is the fertiliser spreader attached in accordance with regulations?
- Does the tyre pressure correspond to the tyre manufacturer's indications?
- Check the operation of the brake system.
- Are the booms fully retracted and the mechanical locks engaged?
- Is the covering sheet closed and secured against unintentional opening?
- Does the tractor lighting and identification correspond to the regulations in your country for use on public roads? Ensure that warning signs, rear reflectors and additional lighting are attached in accordance with regulations.

3.8.2 Road travel with the Fertiliser Spreader

The tractor's driving behaviour and the steering and braking characteristics change as a result of the attached fertiliser spreader. For example, the high static rear load relieves the front axle of your tractor, which impairs the steering ability.

- Adapt your driving style to modified driving conditions.
- Always ensure that you can see far enough ahead when driving. If this cannot be guaranteed (e. g. when reversing), another person is required to assist.
- Do not exceed the permitted maximum speed limit.
- Do not make sharp turns when driving in hilly terrain or transversally across slopes. Due to the changed centre of gravity there is a danger of overturning. Take particular care when driving over uneven, soft terrain (e. g. field entries, pavement edges) in order to prevent the fertiliser spreader from turning over or the axle from being subjected to an uneven load.
- No one is permitted on top of the fertiliser spreader during road travel.

3.9 Lighting System with Rear and Side Reflectors

3.9.1 General Principles

The lighting equipment must be attached in accordance with regulations and must always be ready for operation. It may not be covered or dirty.

The fertiliser spreader AGT 6000 is factory-equipped with front, rear and side identification in accordance with regulations.

3.9.2 Attaching to the Tractor

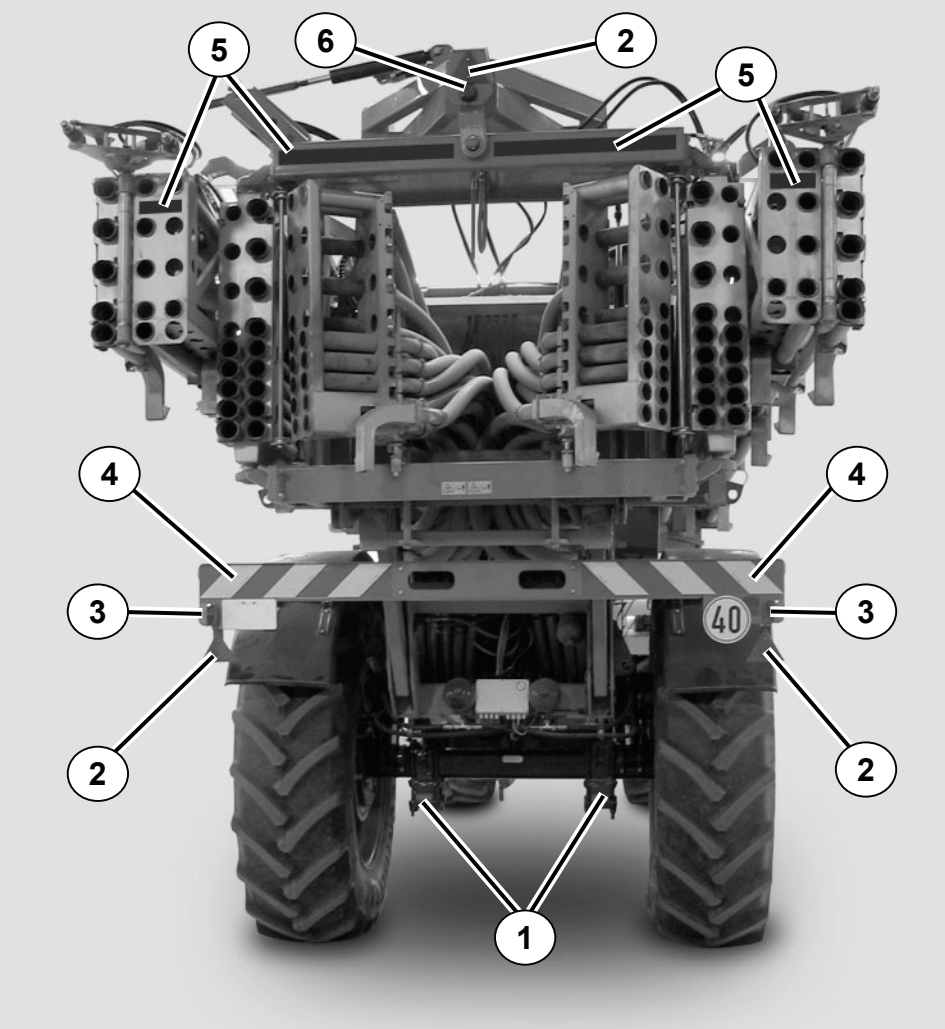


Fig. 1: Lighting system, seen from the rear

1 Rectangular rear reflector, red

2 Triangular rear reflector, red

3 Tail lights and left/right indicators

4 Warning signs, rear

5 Reflector film, red

6 Red tail light, top

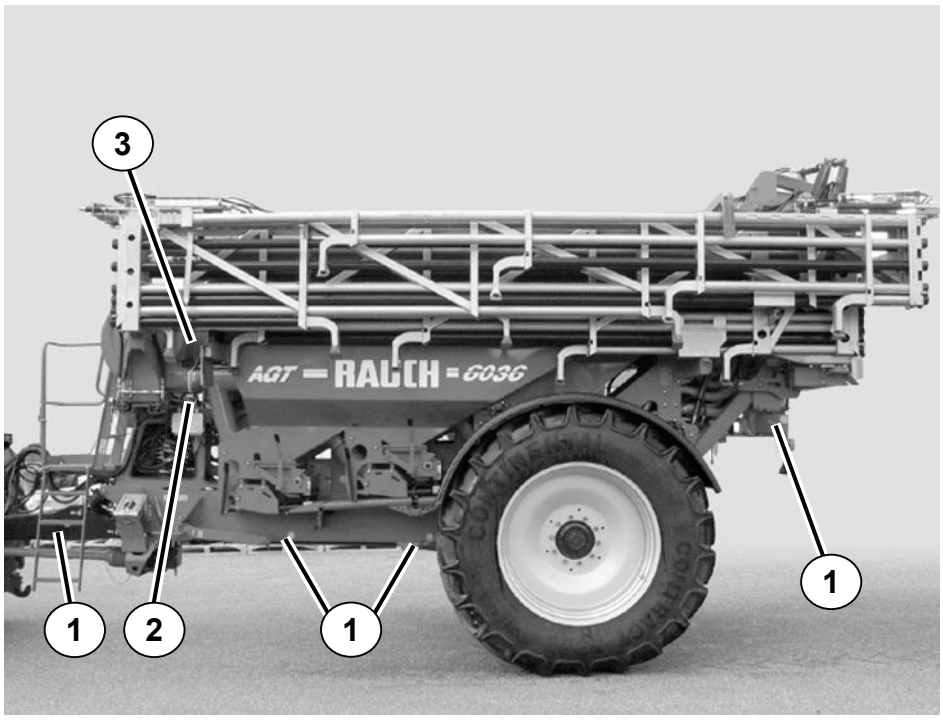


Fig. 2: Lighting system, side view left

1 Yellow side reflector

2 White clearance light, front

3 Warning signs, front

NOTE

The lighting system on the right-hand side is the same as on the left-hand side.

3.10 Protective Devices on the Machine

The protective devices safeguard your health and life.

- Only operate the fertiliser spreader in conjunction with effective protective devices.

3.10.1 Location of the Protective Devices

NOTE

The protective devices are successively numbered in the following figures. The function of the respective protective device is described in section 3.10.2 under this number.

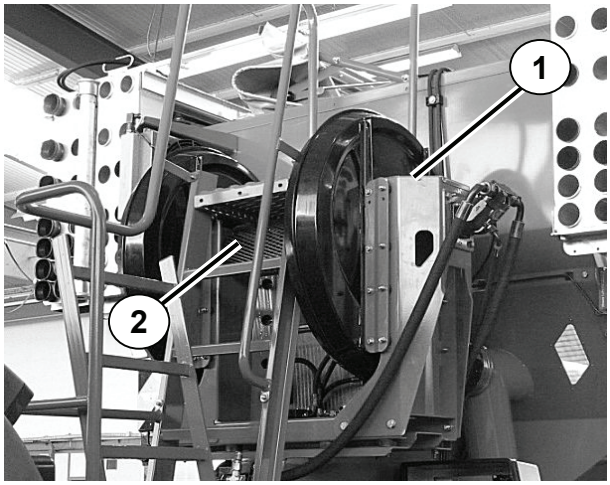


Fig. 3:
Protective devices of blower

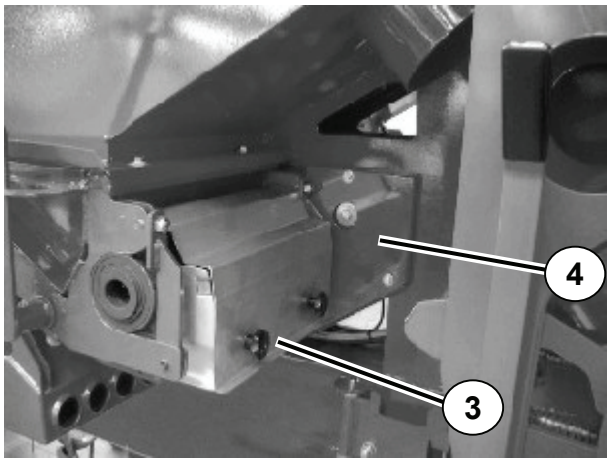


Fig. 4:
Protective devices of metering unit

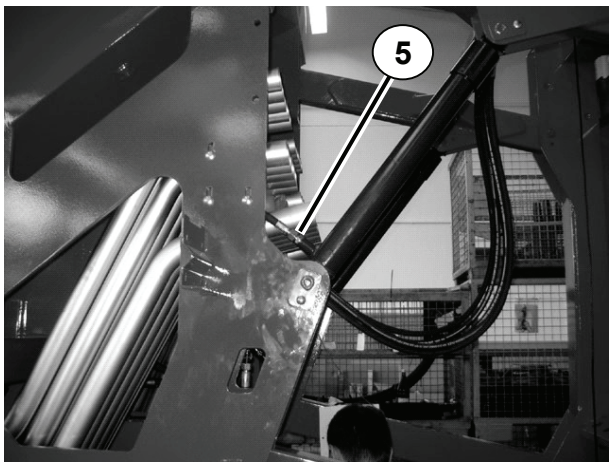


Fig. 5:
Drop prevention for parallelogram

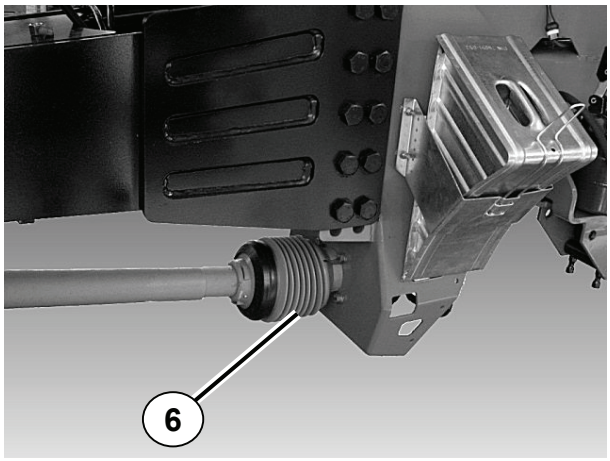


Fig. 6:
Drive shaft protection

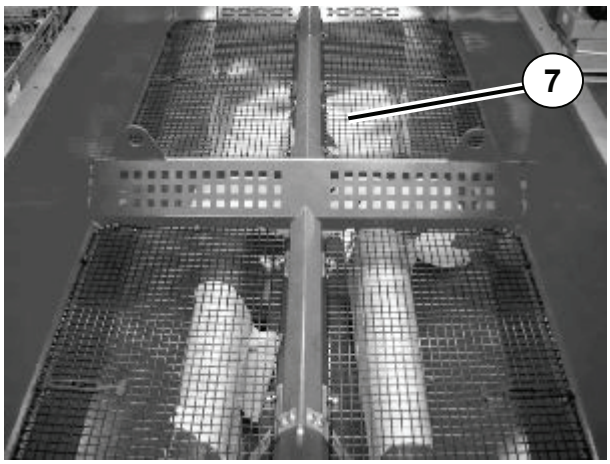


Fig. 7:
Grating in the hopper

3.10.2 Function of the Protective Devices

Pos.	Designation	Function
1	Cover blower drive	Prevents limbs from being pulled into the blower support.
2	Suction grating blower	Prevents larger parts from being pulled into the suction area of the blower.
3	Cover metering sump cam wheels	Prevents limbs from being pulled into the metering units. Cover on each metering unit.
4	Cover protection spur wheels	Prevents limbs from being pulled into the drive elements of the metering units fitted on the side.
5	Falling securing device parallelogram	Restrictor between the hydraulic cylinder and the hydraulic line prevents the parallelogram suddenly dropping in the event of a hydraulic system failure (e. g. hose break).
6	Drive shaft protection	Prevents limbs from being pulled into the rotating drive shaft.
7	Grating	Prevents limbs from being pulled into the rotating metering units.

3.11 Warning and Information Signs

There are various warning and information signs attached to the fertiliser spreader AGT 6000.

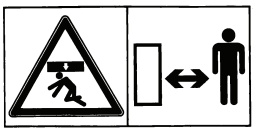
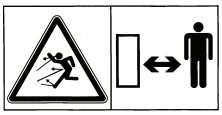
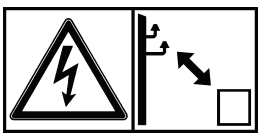
The warning and information signs are part of the machine. They must not be removed or modified. Missing or illegible signs must be replaced immediately.

If new components are installed during repair work, the same warning and information signs must be attached to them as were fitted to the original parts.

NOTE

The correct warning and information signs can be procured from the spare parts service.

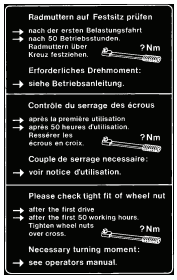
3.11.1 Hazard Signs

1		**Read operator's manual and safety instructions** Read the operator's manual and the safety instructions before starting the machine.
2		**Switch off engine and remove key** Switch off the engine and remove the ignition key before maintenance and repair work.
3		**Danger from lowering parts** Do not stand in the area of the pendulum frame or boom. When operating any moving parts of the boom, ensure that no one is standing in the area.
4		**Danger from spreading material** Danger from ejected spreading material. Remove all persons from the danger area (spreading area) of the machine before starting the fertiliser spreader.
5		**Danger of crushing** Danger of crushing your hand. It is prohibited to insert your hand into the danger area.
6		**Danger of falling** There is a danger of falling if standing on the fertiliser spreader. **No carrying of people** It is not allowed to climb onto the fertiliser spreader during operation and road travel.
7		**Danger of death from high voltage lines** Never park the fertiliser spreader under high voltage lines. Maintain a safe distance. Never climb onto the fertiliser spreader if in the vicinity of high voltage lines.

3.11.2 Prohibition Signs

8		Spray prohibition It is prohibited to spray water into the casing.

3.11.3 Instruction Signs and Nameplates

9		**PTO speed** The max. permitted PTO speed is 1000 rpm^{-1}.
10		**Information sign for checking wheel nuts**
11		**Permitted maximum speed**
12		**Nameplate of braking system**
13		**Tractor number**
14		**Tractor nameplate**
15		**Axle nameplate**
16		**Drawbar nameplate**
17		**Hitching ring nameplate**
18		**Lubrication point** (see section 9.9.1: "Location of the Lubrication Points" on page 87)

3.11.4 Location of the Signs on the Tractor

The locations where the warning and information signs are affixed to the fertiliser spreader AGT 6000 are shown below.

NOTE

The position numbers shown in the following figures indicate the location of the signs described in sections 3.11.1, 3.11.2 and 3.11.3 under this number.

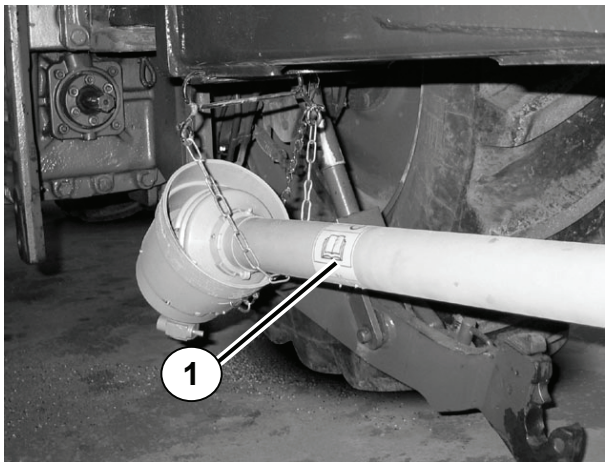


Fig. 8:
Warning for drive shaft

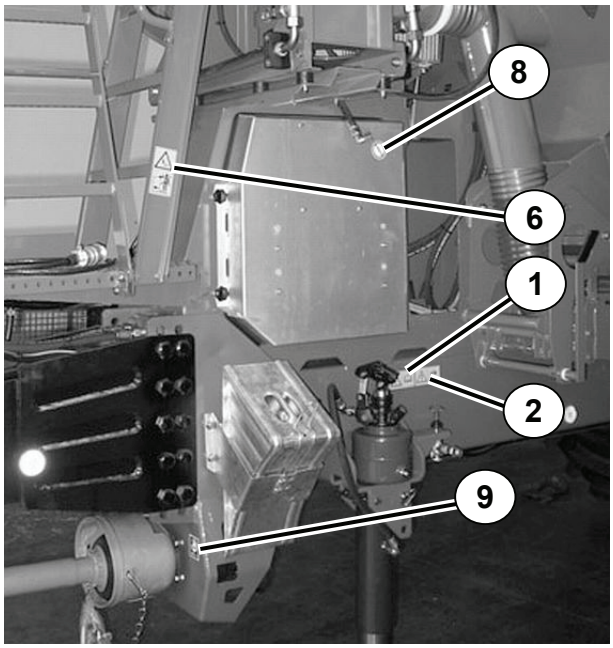


Fig. 9:
Warning and information signs front left

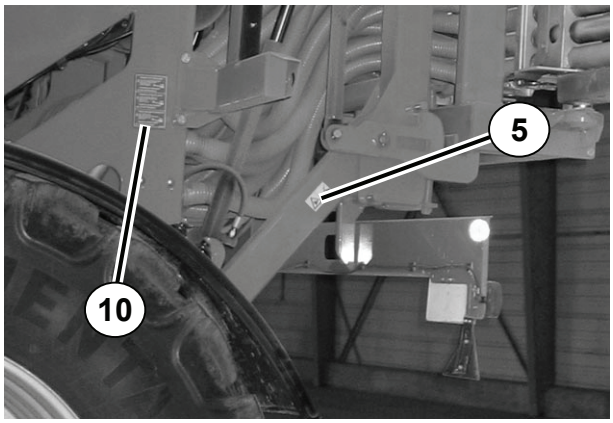


Fig. 10:
Warning and information signs rear left

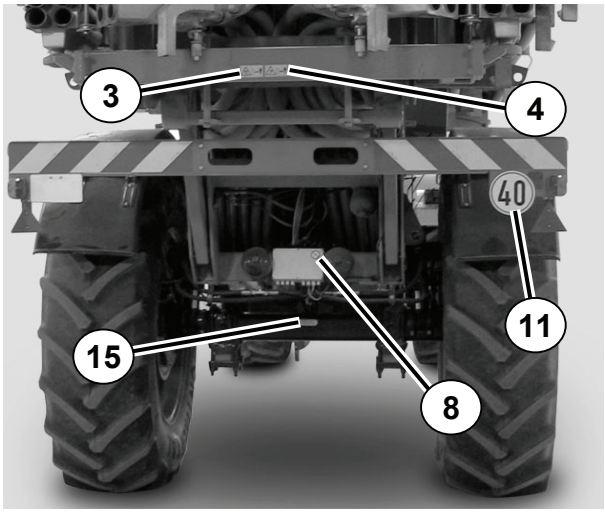


Fig. 11:
Warning and information signs rear

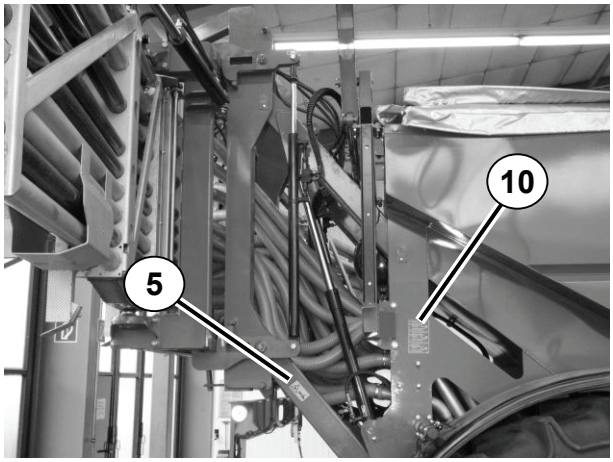


Fig. 12:
Warning and information signs rear right

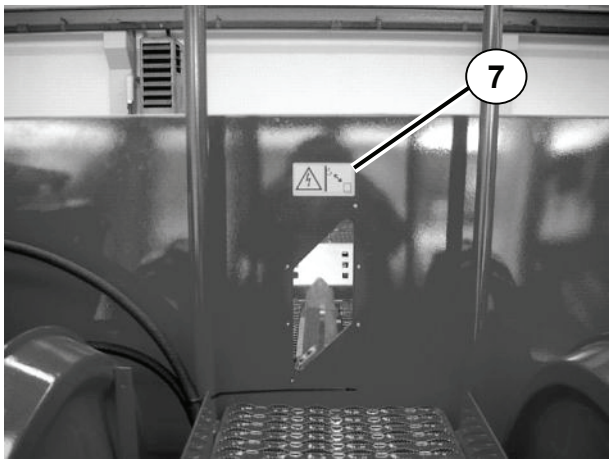


Fig. 13:
Warning top centre

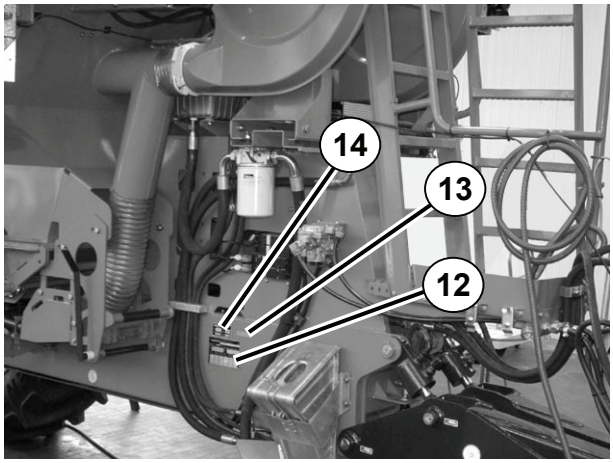


Fig. 14:
Nameplates and tractor number front right

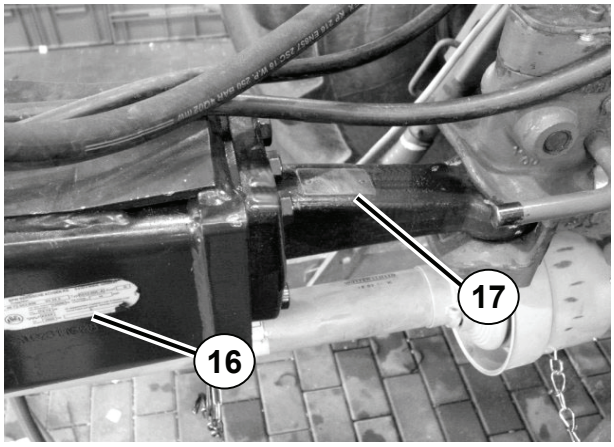


Fig. 15:
Nameplates on drawbar and hitching ring

4 Machine Information

4.1 Manufacturer

RAUCH Landmaschinenfabrik GmbH

Landstrasse 14 Postfach 1162

D-76547 Sinzheim D-76545 Sinzheim

Tel.: +49 (0)7221 / 985-0 Fax: +49 (0)7221 / 985-200

Technical Customer Service: Tel.: +49 (0)7221 / 985-250

Fax: +49 (0)7221 / 985-203

4.2 Technical data

The AGT 6000 is a pneumatic boom fertiliser spreader, which is attached to a tractor as a single-axle trailer.

Dimensions:

	AGT 6036	**AGT 6030**
Vehicle length (hitching ring to vehicle end)	7.9 m	
Vehicle length (hitching ring to axle)	5.1 m	
Transport width	2.98 m	
Transport height (with standard tyres)	3.9 m	
Ground clearance (to lower edge of frame)	0.7 m	
Hopper volume	approx. 6300 l / approx. 4700 kg UAN	
Fill height	3.15 m	

Weights and Loads:

	AGT 6036	**AGT 6030**
Max. gross weight	12,000 kg[1]	
Empty weight	approx. 7000 kg	approx. 6970 kg
Fertiliser payload	approx. 5000 kg*	
Max. axle load	10,000 kg*	
Max. static load on hitching ring	2000 kg	

NOTE

The empty weight (mass) of the fertiliser spreader varies depending on the equipment. The empty weight (mass) specified on the nameplate refers to the standard version.

[1] Observe entries in the type approval for the wheel load

Running Gear and Brakes:

	AGT 6036	AGT 6030
Track width	2.00 - 2.25 m	
Hitching ring diameter[1]	40 mm	
Ball head coupling diameter[*]	80 mm	
Compressed air tank for brake system[2]	60 l	
Max. road speed	40 km/h	

Standard Tyres

	AGT 6036	AGT 6030
Model	520/85 R42	
Tyre outer diameter	1,983 mm	
Tyre width	560 mm	
Max. speed	40 km/h	
Load carrying capacity	5000 kg	
Air pressure	2.2 bar	

Boom and Metering:

	AGT 6036	AGT 6030
Boom working width	36 m	30 m
Partial width control	6-way	
Max. application rate of UAN at a speed of 15 km/h	250 kg/ha (36 m)	
Number of injectors and elbows	30	26

Electrics and Hydraulics:

	AGT 6036	AGT 6030
Tractor operating voltage	12 V DC	
Operating pressure hydraulics	180 bar	
Max. pressure of hydraulics (tractor)	210 bar	
Max. pressure of Vario drive (blower)	345 bar	

Emissions:

	AGT 6036	AGT 6030
Workstation-related noise level with the tractor's cab fully closed	78 dB (A)	
Workstation-related noise level with the tractor's cab open	94.5 dB (A)	

The technical specifications of the type approval are decisive and may therefore deviate from the above table.

Any modification to the fertiliser spreader must be entered on the type approval.

[1] Optional, depending on equipment

[2] Only with the compressed air brake system

5 Start-Up

5.1 Delivery of the Fertiliser Spreader

Upon delivery of the fertiliser spreader, check that the scope of delivery is complete.

The standard equipment includes:

- 1 AGT 6000 operator's manual,
- 1 Electronics with ISOBUS terminal, joystick and brackets,
- 1 Tractor installation set:
  1 x ISOBUS cable (2054380),
  1 x terminal cable (2054811),
- 1 Drive shaft,
- 2 Chocks,
- 1 Collection container,
- 1 Type approval report.

Also check for ordered optional accessories.

Check for shipping damage or missing parts. Ensure that the shipping damage is confirmed by the shipping agent.

NOTE

Upon delivery, check the firm and correct seating of the attachment parts.

If in doubt, please contact your dealer or the factory.

5.2 Type Approval (Germany)

The fertiliser spreader AGT 6000 is subject to type approval.

As a result of the type approval provided, your local authorities grant an operating permit for single vehicles (EBE) upon request.

A valid operating permit is a prerequisite for driving in road traffic.

5.3 Tractor Requirements

For the safe and designated use of the fertiliser spreader AGT 6000 the tractor must satisfy the required mechanical, hydraulic, pneumatic and electric conditions.

- Tractor engine output: at least 180 HP,
- Permitted static load on the clevis hitch: 2000 kg,
- Drive shaft connection: 1 3/8 inches, 6 pieces, 1000 rpm^{-1},
- 2 double-acting control devices,
- 1 free return,
- Oil supply: min. 60 l/min at p = 180 bar,
- On-board voltage: 12 V DC must be guaranteed even in the presence of various consumers,
- ISO bus connection for job computer, in accordance with ISO 11783,
- COBO connector socket in accordance with ISO 12369.

5.4 Setting the Height of the Clevis Hitch / Ball Head Coupling

Depending on the equipment, the AGT 6000 is attached to the tractor's clevis hitch or ball head coupling.

Before using the fertiliser spreader for the first time, the height of the clevis hitch or the ball head coupling must be adjusted correctly.

IMPORTANT

Correct setting of the clevis hitch / ball head coupling height

An incorrect or unprofessional adjustment of the clevis hitch or ball head coupling impairs the operational safety of the entire unit (tractor / fertiliser spreader).
Also refer to the tractor manufacturer's operating manual.

The drawbar must be adjusted in such a way that the fertiliser spreader is horizontal after attaching it to the tractor.

5.5 Adjusting the Drawbar

If it is not possible to adjust the tractor's hitching point to the correct height, the drawbar can be raised or lowered on the fertiliser spreader by a row of holes (approx. 45 mm).

Prerequisite:

In order to carry out adjustments, the fertiliser spreader must be parked on a horizontal firm surface with an empty hopper and folded and locked booms.

Also refer to the instructions in section 5.10: "Parking and Uncoupling the Fertiliser Spreader" on page 35.

Procedure:

Danger of crushing!

CAUTION

The drawbar weighs approx. 80 kg. If it were to fall, it could cause crushing injuries to limbs.

- Secure the drawbar from falling.
- Wear robust footwear when working (safety shoes) and protective gloves.

1. Loosen screwed connections (1).
2. Place the drawbar in the new position at top (2) or bottom (3) and secure it.
3. Tighten the screwed connections with a torque of **775 Nm**.

   To do so, use 20 hex bolts ISO 4014 M24x75 FK10.9 and hex nuts ISO 4032 M24 FK10.

   Do not reuse the spring washers DIN 127-24B if they have been destroyed or deformed during the disassembly procedure.

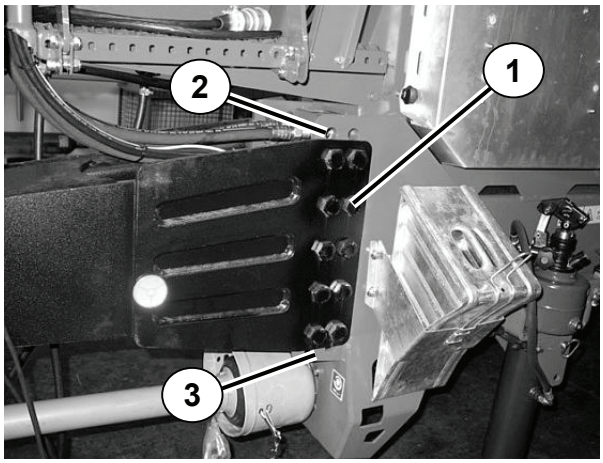


Fig. 16: Adjusting the drawbar height

NOTE

The tightening torque of 775 Nm for the drawbar screwed connections must be strictly observed.

5.6 Brake System

Depending on the equipment version, the fertiliser spreader AGT 6000 is equipped with a hydraulic or a compressed air brake system.

The respective country regulations must also be observed with regard to the brake system.

5.6.1 Compressed Air Brake System[1]

If the AGT 6000 is equipped with a dual-circuit compressed air brake system and a parking brake with compressed air valve, observe the following instructions for operating the fertiliser spreader:

- Before hitching, clean the sealing rings and the coupling heads of the pneumatic hoses.

[1]Optional according to the country equipment version

- After hitching, and before all trips, check the sealing and function of the brake system. To do so, actuate the tractor's service brake.
- Do not travel with the hitched fertiliser spreader before the pressure gauge in the driver's cab displays a reading of at least 5.0 bar operating pressure.

5.6.2 Hydraulic Brake System[1]

If the AGT 6000 is equipped with a hydraulic brake system and a manually operated parking brake, observe the following instructions for operating the fertiliser spreader:

- Before hitching, clean the sealing rings and the coupling heads of the hydraulic hoses.
- After hitching and before all trips, check the sealing and function of the brake system. To do so, actuate the tractor's service brake.

5.7 Coupling and Hitching to the Tractor

5.7.1 Prerequisites

Danger from an unsuitable tractor!

WARNING

Use of an unsuitable tractor for the fertiliser spreader AGT 6000 can lead to major accidents when operating and driving.

Only use tractors which **satisfy** the **technical requirements** of the fertiliser spreader.

- Consult the vehicle documents to determine if your tractor is suitable for the fertiliser spreader.

Danger from rolling away!

WARNING

If the fertiliser spreader is unsecured it could roll away during the hitching procedure and cause serious injury to people and material damage.

The fertiliser spreader may only be hitched if it is **secured**, **empty** and has the **boom folded**.

- Secure the AGT 6000 from rolling away by using the parking brake as well as the chocks on both wheels.

Pay particular attention to the following:

- Are both the tractor and the fertiliser spreader operationally secure (also see chapter 3: "Safety" starting on page 5)?
- Does the tractor satisfy the mechanical, hydraulic, pneumatic and electric requirements described in section 5.3: "Tractor Requirements" starting on page 26?

[1] Optional according to the country equipment version

- Does the tractor satisfy the requirements stipulated in the technical data of the fertiliser spreader (e. g. tractive load, static load)?
- Is the fertiliser spreader on a firm surface and secured against rolling away in accordance with instructions?
- Is the height of the clevis hitch / ball head coupling on the tractor correctly adjusted, to ensure that the fertiliser spreader AGT 6000 is pulled horizontally (see section 5.4: "Setting the Height of the Clevis Hitch / Ball Head Coupling" on page 26)?
- Is the operating terminal for the control electronics installed in the tractor?
- Is the combination of connection devices (clevis hitch/hitching ring or ball head coupling/hitching ring) permitted?

NOTE

Consult the manufacturer's operating manual for the installation of the operating terminal.

5.7.2 Coupling / Hitching the Fertiliser Spreader

Danger of crushing between tractor and fertiliser spreader!

WARNING

People who stand between the tractor and the fertiliser spreader during hitching are in **danger of death**.

The tractor's braking action may be delayed, or not work at all, as the result of negligence or incorrect operation.

- Ensure that no one is located between the tractor and the fertiliser spreader.

Danger of being drawn in by the PTO!

WARNING

Hitching the fertiliser spreader when the PTO shaft is running can cause very serious injuries (crushing, being drawn in by the rotating PTO shaft).

Never hitch the fertiliser spreader when the PTO shaft is engaged.

- Disengage the PTO shaft.

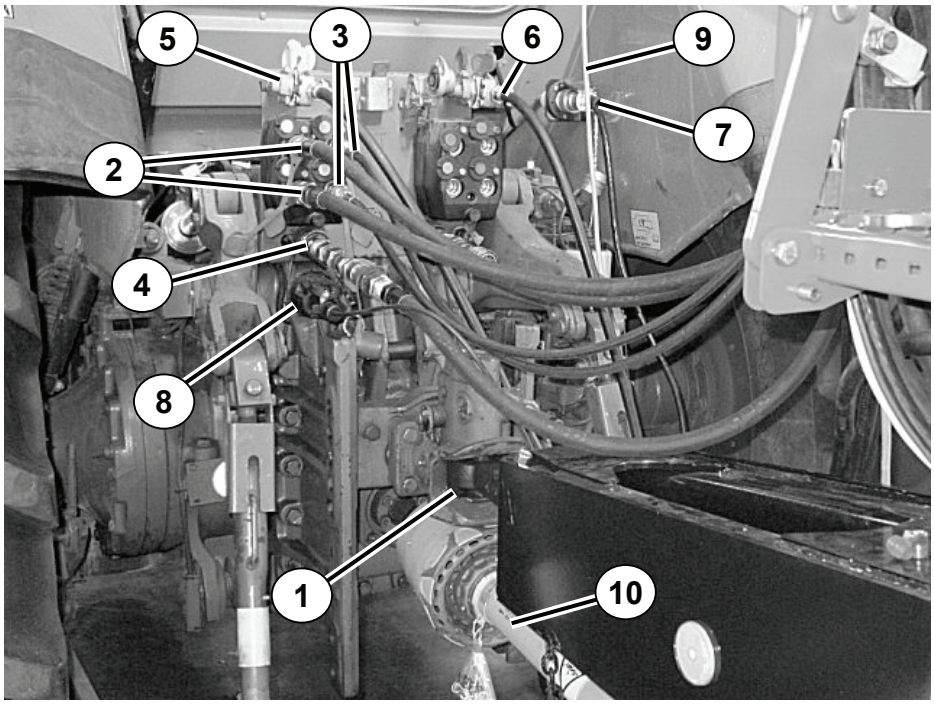


Fig. 17: Connections on the tractor

1. Hang the drawbar into the clevis hitch (Fig. 17: Pos. 1) or into the ball head coupling on the tractor. Secure the connection with the hitch pin. Secure the hitch pin positively.
2. Connect the hydraulic hoses for the control unit (Fig. 17: Pos. 2).

NOTE

The couplings of the hydraulic hoses are colour coded and positive. Always connect the hoses according to colour and suitability.

Ensure that the connections and coupling heads of the hoses are clean.

3. Connect the covering sheet hoses (Fig. 17: Pos. 3)
4. Connect the free return hose (Fig. 17: Pos. 4).
5. Connect the pneumatic control hose (Fig. 17: Pos. 5) to the yellow coupling (only with compressed air brake system).
6. Connect the pneumatic supply hose (Fig. 17: Pos. 6) to the red coupling (only with compressed air brake system).
7. Connect the ISO cable to the ISO bus connector socket (Fig. 17: Pos.7) at the rear of the tractor.
8. Connect the lighting connector (Fig. 17: Pos. 8).
9. Connect the COBO connector in the tractor cab (cable Fig. 17: Pos. 9).
10. Attach the drive shaft (Fig. 17: Pos. 10).

Danger from an unsuitable drive shaft!

CAUTION

The use of incorrectly sized or unauthorised drive shafts can damage the tractor and fertiliser spreader.

Only use the drive shafts specified by the manufacturer.

Follow the instructions in the drive shaft manufacturer's operating manual.

When using the drive shaft for the first time, match it to the tractor. Follow the instructions in the drive shaft manufacturer's operating manual.

10. Subsequently, secure the drive shaft shield against moving by hanging the chain.

11. Check the tightness and function of the brake system. To do so, actuate the tractor's service brake.

The fertiliser spreader is now coupled and hitched to the tractor.

5.8 Preparing the Fertiliser Spreader for Road Travel

1. Before departing, ensure that the boom is fully folded and that the boom (Fig. 18: Pos. 1) and pendulum frame locks are closed.

NOTE

There are 2 boom locks.

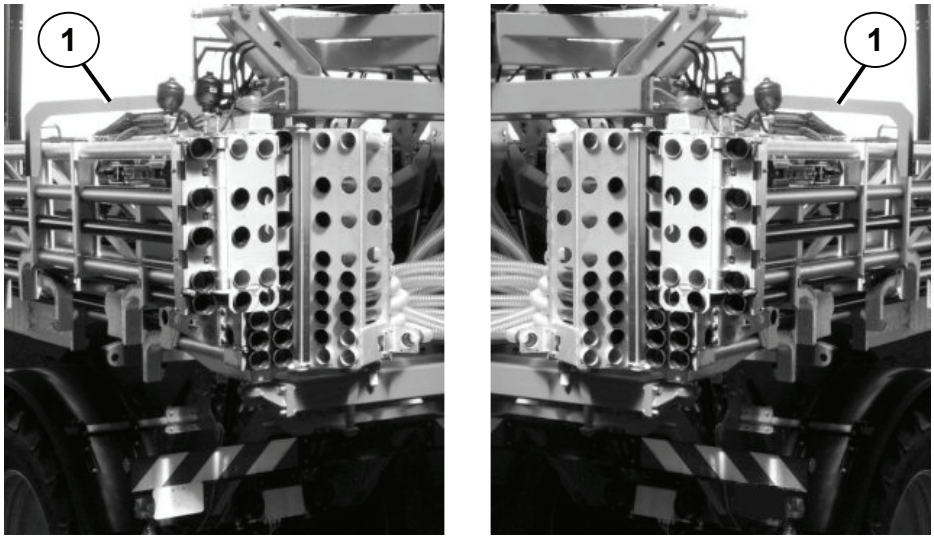


Fig. 18: Boom locks on the fertiliser spreader

2. Fold up the ladder and secure it

3. Position the hydraulic parking strut in the transport position as follows:

- Open valve (1).
- The parking strut is folded automatically.
- Close valve (1).
- Unlock both locking pins (2) for the parking strut.
- Hold the parking strut at the handle (3) and fold back until the locking pins have engaged in the top position.

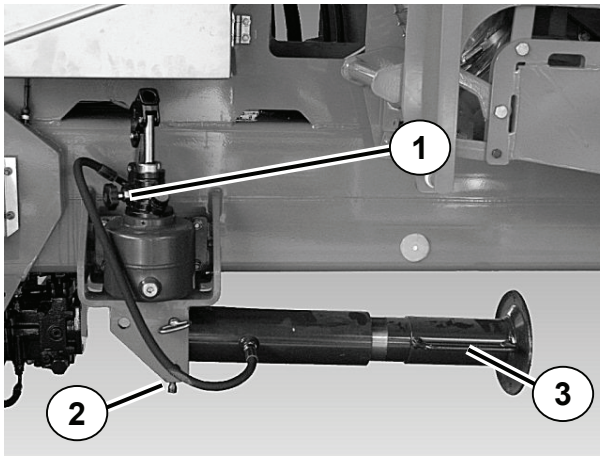


Fig. 19: Parking strut on the fertiliser spreader left

4. Position the chocks in the positions provided.

5. Release the fertiliser spreader parking brake as follows:

- Actuate valve (1) for the parking brake.[1]

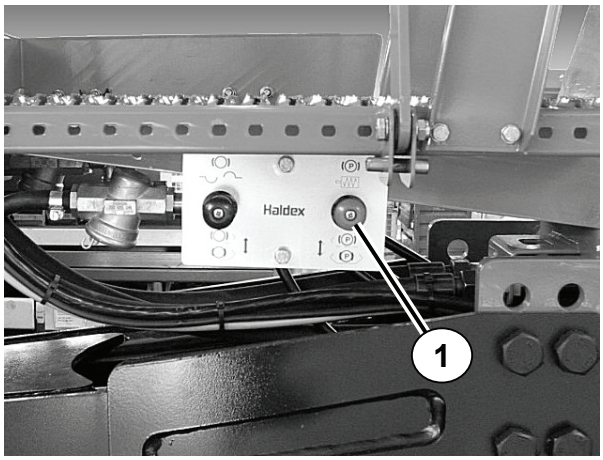


Fig. 20: Release the parking brake (pneumatic brake system)

- Press in valve (1) for releasing the parking brake*.

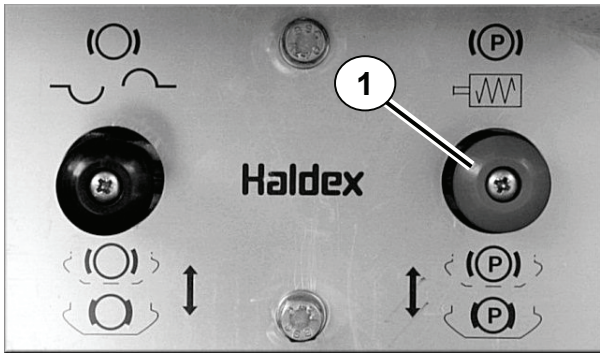


Fig. 21: Valve parking brake

[1] Optional according to the country equipment version

- Turn manual crank (1) counter-clockwise up to the stop[1].

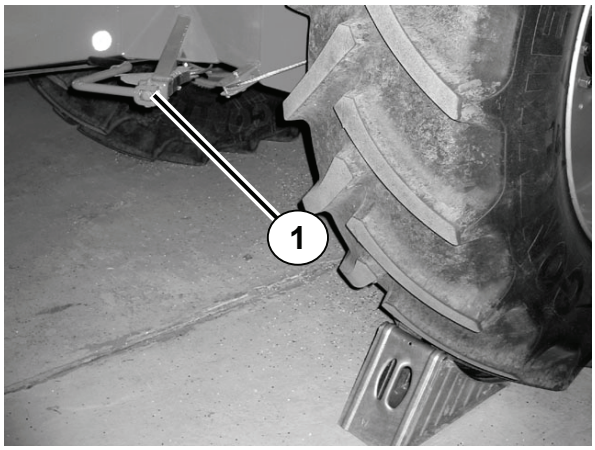


Fig. 22: Release parking brake (hydraulic brake system)

The fertiliser spreader is now ready for road travel.

NOTE

In order to operate the hydro-pneumatic spring suspension, the tractor's hydraulic system and the operating terminal must be switched on in the tractor. The spring suspension is operated in automatic mode.

6. **Before each trip**, check the operational and road safety of the tractor/spreader in accordance with the instructions in chapter 3: "Safety" starting on page 5.

[1] Optional according to the country equipment version

5.9 Filling the Fertiliser Spreader

Danger from a running engine!

WARNING

Working on the fertiliser spreader with the engine running can lead to serious injuries caused by the mechanics and discharged fertiliser.

Never fill the fertiliser spreader while the tractor engine is running.

- Switch off the tractor engine and remove the ignition key.

Danger from overturning or rolling away!

WARNING

If the fertiliser spreader is not secured, it could overturn or roll away during the filling procedure and cause severe injuries to people and material damage.

The fertiliser may only be filled if secured and hitched to the tractor.

- Only fill the fertiliser spreader on even, firm ground.
- Ensure that the fertiliser spreader is hitched to the tractor before filling.
- Ensure that the parking brake is applied.

1. Open the covering sheet of the spreading hopper.

Impermissible gross weight

CAUTION

Exceeding the permitted gross weight impairs the operating and road safety of the vehicle (fertiliser spreader + tractor) and can lead to serious machine and environmental damage.

- **Before** filling, determine which volume can be filled.
- Do not exceed the volume capacity of approx. **5000 kg**.

2. Fill the fertiliser spreader.

   To do so, use a shovel loader or a worm conveyor.

   Fill the fertiliser spreader evenly.

3. When the spreading hopper has been filled, cover it with the covering sheet.

5.10 Parking and Unhitching the Fertiliser Spreader

Danger from overturning!

WARNING

The fertiliser spreader is a single-axle vehicle. An excessively high tail load can cause the fertiliser spreader to overturn and injure people or cause material damage.

- Park the fertiliser spreader on a **horizontal**, **firm** surface, and only when the hopper is **empty** and the booms are folded and locked.
- Never unhitch the fertiliser spreader from the tractor with an **excessive tail load**.

Danger of crushing between tractor and fertiliser spreader!

WARNING

People who stand between the tractor and the fertiliser spreader during unhitching are in **danger of death**.

Through negligence or incorrect operation, the tractor or fertiliser spreader can roll onto each other and crush anyone standing in between.

- Ensure that there is **no one between the tractor** and **fertiliser spreader**.

1. Drive the entire machine to a horizontal, firm parking area.

   Switch off the tractor engine and remove the ignition key.
2. Secure the tractor from rolling away. To do so, apply the fertiliser spreader parking brake.

- Actuate the valve (1).[1]

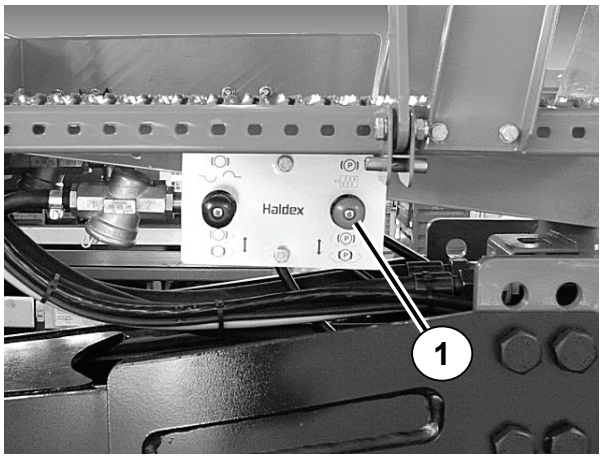


Fig. 23: Apply the parking brake (pneumatic brake system)

[1] Optional according to the country equipment version

- Pull out the valve (1) to release the parking brake[1].

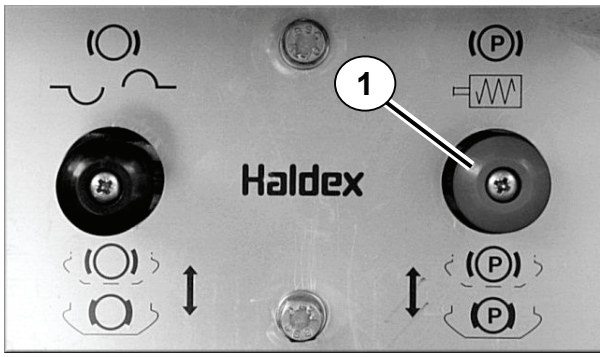


Fig. 24: Parking brake valve

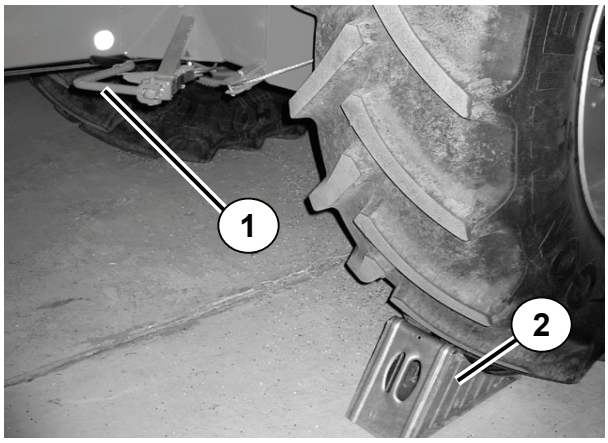


Fig. 25: Apply parking brake (hydraulic brake system)

3. Place chocks under both wheels (Fig. 25: Pos. 2).

[1] Optional according to the country equipment version

4. Position the hydraulic parking strut in the support position as follows:

- Unlock both locking pins (1) for the parking strut.
- Hold the parking strut at the handle (2) and fold down until the locking pins (1) have engaged in the bottom position.
- Engage the operating lever (3) in the pump holder.

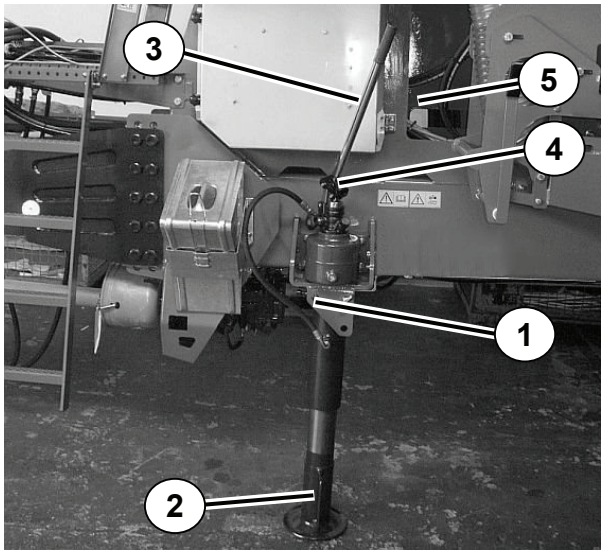


Fig. 26: Parking strut lowered

IMPORTANT

Lowering the fertiliser spreader

When actuating the valve on the parking strut, the fertiliser spreader settles by a few millimetres.

- Ensure that no one is located underneath the fertiliser spreader.

- Securely close the top valve (4).
- Release the parking strut through pump movements until the fertiliser spreader is free of the tractor's hitching point.

  Hang the operating lever (3) in the holder provided (5).

IMPORTANT

Remove the parking strut operating lever

The parking strut operating lever can fall down whilst travelling.

- After each actuation of the parking strut, remove the operating lever and stow it in the place provided.

5. Disconnect the hydraulic, electric and pneumatic connections from the tractor.
6. Protect all couplings from dirt with the dust seals.
7. Uncouple the drive shaft.
8. Unhitch the fertiliser spreader from the tractor.

6 Calibration Test

For exact control of the application, we recommend performing a new calibration test each time the fertiliser is changed.

Perform the calibration test:

- Before spreading for the first time.
- If the fertiliser quality has changed considerably (moisture, high proportion of dust, grain break).
- If a new type of fertiliser is used.

The calibration test must be performed during standstill. The fertiliser spreader must be hitched to the tractor. The hydraulic, electric and pneumatic hoses must be connected.

NOTE

The calibration test should not be used for calibrating the spreader in the event of a reduced partial width. The inspection of the application rate can also be performed with a **reduced partial width**.

6.1 Preparing the Calibration Test

Danger from a running PTO shaft!

WARNING

Working on the fertiliser spreader with the PTO shaft running can lead to serious injuries caused by the mechanics and discharged fertiliser.

Never carry out the activities for preparing the calibration test when the PTO shaft is engaged. The PTO shaft is not required for the calibration test.

- Disengage the PTO shaft.

As described below, the calibration test is always performed with the **first metering unit at front left** in the **direction of travel**.

In the operating terminal this corresponds to **partial width 3**.

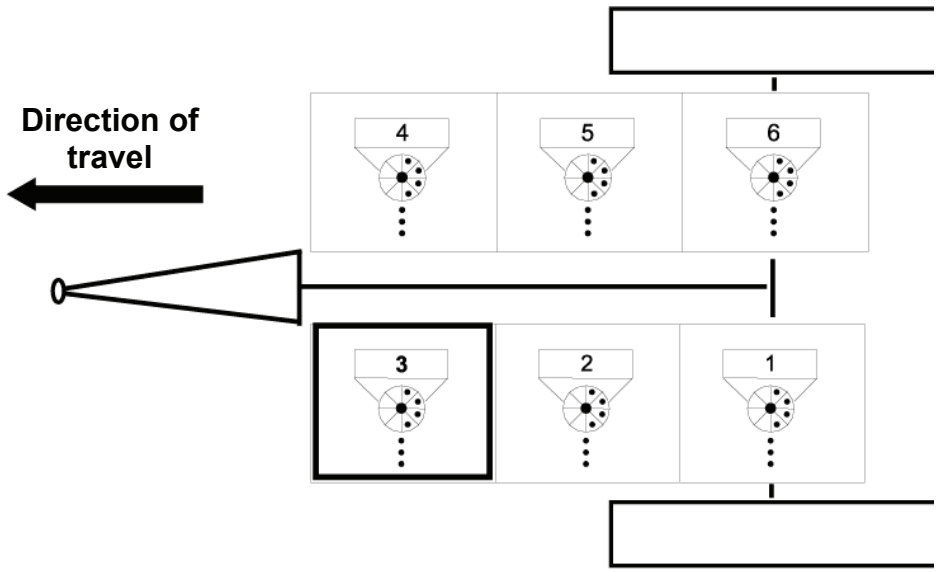


Fig. 27: Representation of the partial widths on the fertiliser spreader

1. Disconnect the connections between pressure chamber and injectors on the left-hand side of the fertiliser spreader by moving the lever for the pressure chamber forwards.

   Push all three levers (Fig. 28: Pos. 1) forwards on the tractor side until the securing device has fully engaged.

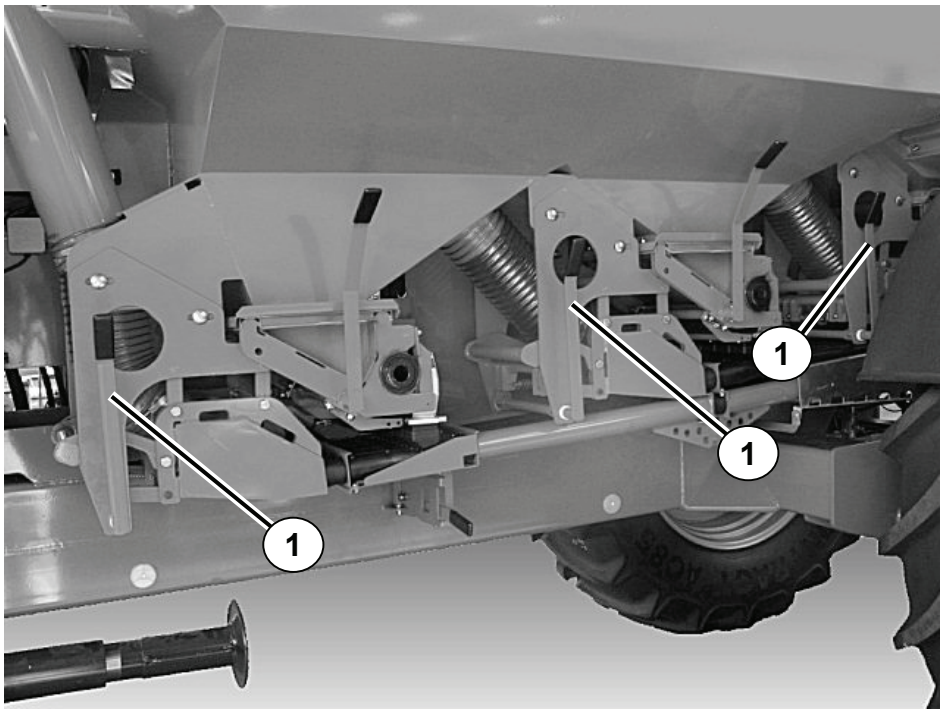


Fig. 28: Pressure chamber lever tractor side left

2. The pressure chamber securing device (Fig. 29: Pos. 1) drops down and engages.

   The pressure chamber is now held in this position, the connection to the injector is disconnected.

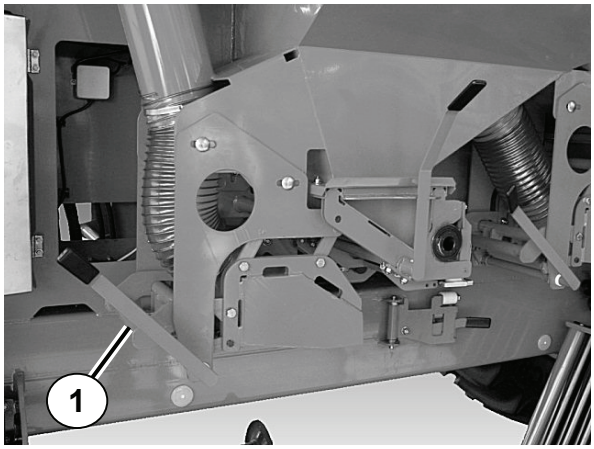


Fig. 29: Pressure chamber securing device

Danger of crushing!

The air duct weighs approx. 15 kg. If it falls, it could cause crushing injuries to limbs.

Only remove the air duct if your health and physique allow you to do so and only then when wearing personal protective equipment.

CAUTION

- Wear robust footwear (safety shoes) and protective gloves during the calibration test.

3. Lift the air duct with your **left** hand.
4. Lift the lever for the rack with your right hand.

   Swing back the lever (right) up to the frame.

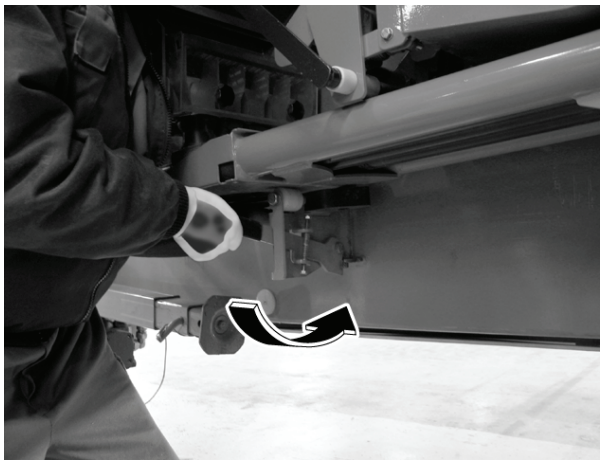


Fig. 30: Swing back the lever for the air duct rack

NOTE

The lever for the air duct rack must be engaged in the lock on the frame.

The lever (Fig. 31: Pos. 1) for the rack is swung back fully to the frame and engaged.

5. Now lower the air duct (Fig. 31: Pos. 2) with your left hand.

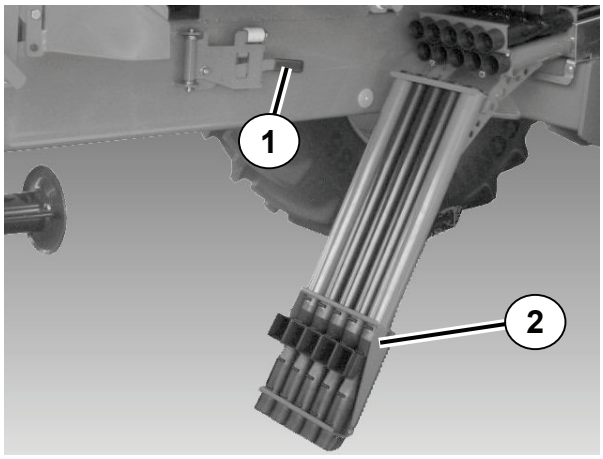


Fig. 31: Lowering the air duct

6. Put the air duct aside.

7. Place the metering tray, a wheelbarrow or any other suitable collection container under the metering device.

Fig. 32: Collection container under the metering device

The fertiliser spreader AGT 6000 is now ready for the calibration test.

6.2 Performing the Calibration Test

Injuries from chemicals!

CAUTION

Discharged fertiliser can cause injury to eyes and nose mucous membranes.

- Wear protective goggles during the calibration test.
- Remove all persons from the danger area of the machine before starting the calibration test.

Prerequisite:

- Ensure that the metering device is exposed (see section 6.1: Calibration Test, starting on page 39).
- Ensure that the operating terminal for the fertiliser spreader is in operation.
- Provide a sufficiently large container for collecting the fertiliser. The container must be able to hold at least **25 kg** of fertiliser.
- Ensure that the tractor hydraulic system is switched on.

Implementation:

NOTE

The settings for the calibration test are carried out on the operating terminal in the tractor.

Also refer to the manufacturer's operating manual.

1. Press the key  in the **MAIN MENU** of the operating terminal.

   This takes you to the **SETTINGS/INFO** menu.

2. Press key  .

   This takes you to the **CALIBRATION TEST** menu.

   In the **CALIBRATION TEST** menu you can save the calibrated volume with the fertiliser type on 4 memory locations.

3. Press one of the keys  1…  4.

   This takes you to the **SAVE VALUES** menu of the corresponding memory location.

4. Enter the Fertiliser with the cursor wheel.

5. Press key  .

   This takes you to the **PARTIAL WIDTH** menu. This is where you can set the partial width being used for the calibration.

NOTE

Partial width 3 is factory-set (at front left on the fertiliser spreader in the direction of travel).

6. Press key  .

   The metering roller now fills the spreading tray and stops automatically after approx. 12 sec.

   The following text appears on the operating terminal display:
   The metering tray is filled.
   Empty the collection container.

7. Empty the fertiliser collection container and put it back under the metering device.

8. Press key 

   The calibration procedure now runs automatically until the metering switches off automatically (after approx. 80 sec).

9. Weigh the collected fertiliser volume.

10. Enter the value for the collected fertiliser volume in the operating terminal.

    To do so, turn the cursor wheel until the value has been set. Then press the key in the cursor enter field OK .

    The values entered in the system are calculated as value Imp/kg and saved.

11. Press key  .

This takes you to the **CALIBRATION TEST** menu.

12. Press key  .

You exit the **CALIBRATION TEST** menu and return to the **SETTINGS / INFO** menu.

13. Press key  .

This takes you back to the **MAIN MENU**.

The fertiliser spreader is now calibrated for spreading.

NOTE

For assembly of the fertiliser spreader refer to the instructions in 7.5: "Assembling the Fertiliser Spreader" on page 50.

7 Spreading Operation

7.1 Actuating the Booms

The fertiliser spreader AGT 6000 is equipped with hydraulically-operated folding booms.

The maximum working width of the booms is 36 m.

The boom height is infinitely variable between 1.0 and 2.0 m.

NOTE

The height specifications refer to the tyres ex-works. They may vary slightly when using other tyres.

The boom incline to the ground is infinitely variable using the pendulum frame.

7.1.1 Unfolding the Boom

Risk of injury

When unfolding and folding, the booms can injure people and cause material damage.

WARNING

In particular, note that the booms not only require space at the sides but also behind the machine.

- Only actuate the booms if there is sufficient clearance around the fertiliser spreader.
- Only fold the booms when the fertiliser spreader is hitched and at a standstill.
- Remove all persons from the danger area of the booms.

1. Position the fertiliser spreader as horizontally as possible in order to unfold the booms.

NOTE

The other tasks required for unfolding the booms are performed at the operating terminal or using the joystick of the control electronics in the tractor.

Also refer to the manufacturer's operating manual.

2. Unfold the booms.

   To do so, actuate the corresponding key or the joystick on the operating terminal of the control electronics.

3. Open the pendulum frame lock for spreading work

NOTE

The working height, also with late fertilising, is approx. 0.7 m above the plant stand on the splash plate of the innermost elbow.

With very uneven terrain, it is advisable to select a higher working height in order to prevent the booms from touching the ground.

4. Position the height and incline of the booms.

7.2 Spreading the Fertiliser

7.2.1 Prerequisites

Before starting work, check whether all the conditions for safe and economical spreading are satisfied.

Pay particular attention to the following points:

- Is the entire machine assembly (tractor and fertiliser spreader), safe to operate?
- Is there anyone on the fertiliser spreader or in the spreading area? Remove such people from the danger areas.
- Do environmental conditions allow spreading to be performed safely? Pay particular attention to wind speeds.
- Are you familiar with the terrain and aware of potentially dangerous areas?
- Are you using the correct fertiliser?
- Have you performed a calibration test before starting to operate the fertiliser spreader?
- Is the drive shaft engaged (so that the blower works)?
- Is the boom unfolded and are its height and incline positioned?
- Is the pendulum frame lock (Fig. 33: Pos. 1) open so that the boom is able to swing freely?

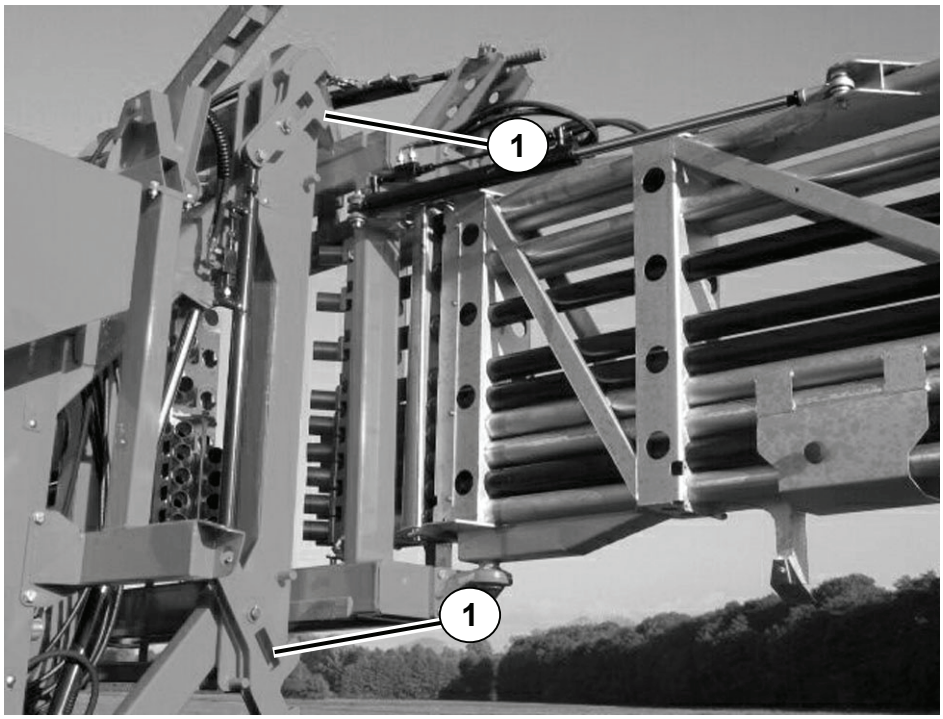


Fig. 33: Pendulum frame locks

The boom is now unfolded and positioned. You can start the spreading work.

7.2.2 Spreading Operation

Hearing protection!

IMPORTANT

During spreading work and with the cab fully closed, the noise level is 78 dB(A). With the cab open or with open windows, the noise level is 94.5 dB(A). In the long term, this volume can lead to impaired hearing.

- When working with the blower switched on, wear hearing protection if not working with the cab closed.

Damage to the pendulum frame!

IMPORTANT

Never spread with the pendulum frame lock closed.

- Open the pendulum frame lock (Fig. 33: Pos. 1) by pressing the key on the operating terminal for the spreading work.

1. Switch on the blower (engage the PTO shaft).
2. Start the metering shaft drive (switch on the tractor hydraulics).
3. If required, switch the partial widths.

You can now start the spreading work.

NOTE

Bear in mind that the service life of your fertiliser spreader is dependent on the way you drive.

- Reduce speed on uneven terrain, drive carefully through headlands and ensure that the boom does not hit the ground.
- The fertiliser spreader AGT 6000 works according to ground speed. When changing the ground speed, the metering shaft speed is automatically readjusted.
- The regulating pump keeps the blower speed constant at PTO shaft speeds of 600-1300 rpm^{-1} constant. When driving within this range you do not have to worry about maintaining the PTO speed.

7.3 Stopping, Folding the Booms

Risk of injury!

When unfolding and folding, the booms can injure people and cause material damage.

WARNING

In particular, note that the booms not only require space at the side but also behind the machine.

- Only actuate the booms if there is sufficient clearance around the fertiliser spreader.
- Only fold the booms when the fertiliser spreader is hitched and at a standstill.
- Remove all persons from the danger area of the booms.

1. Stop the metering drive.
2. Switch off the blower.
3. Position the fertiliser spreader as horizontally as possible in the tramline.
4. Lower the booms with the parallelogram to the lowest position.
5. Lock the pendulum frame.
6. Lift the booms with the parallelogram until the highest position is reached.
7. Fold the booms into the transport position.
8. Ensure that the booms are fully folded and that the boom locks are engaged for road travel.

7.4 Emptying Remaining Fertiliser

In order to protect from corrosion and blockages, as well as to preserve the characteristics of the fertiliser, we recommend that you empty the remaining fertiliser daily after each use.

NOTE

When spreading at a **reduced working width**, the proportion of remaining fertiliser in the hopper increases above the outer partial widths. The outer partial widths are supplied by both the metering units located at the rear in the direction of travel.

7.4.1 Safety

In order to empty the remaining fertiliser you must push back and remove the air duct and the spreading tray of the fertiliser spreader.

WARNING

Danger from a running engine!

Working on the fertiliser spreader with the engine running can lead to serious injuries caused by the mechanics and discharged fertiliser.

Never carry out the activities for emptying the remaining fertiliser when the engine or PTO shaft is engaged.

- Disengage the PTO shaft.
- Switch off the tractor engine and remove the ignition key.

Moreover, ensure the following conditions:

- The fertiliser spreader is on a firm horizontal surface and is secured against overturning and rolling away.
- The fertiliser spreader is hitched to the tractor during the emptying procedure.
- No one is standing in the danger area.

7.4.2 Emptying the Fertiliser Spreader

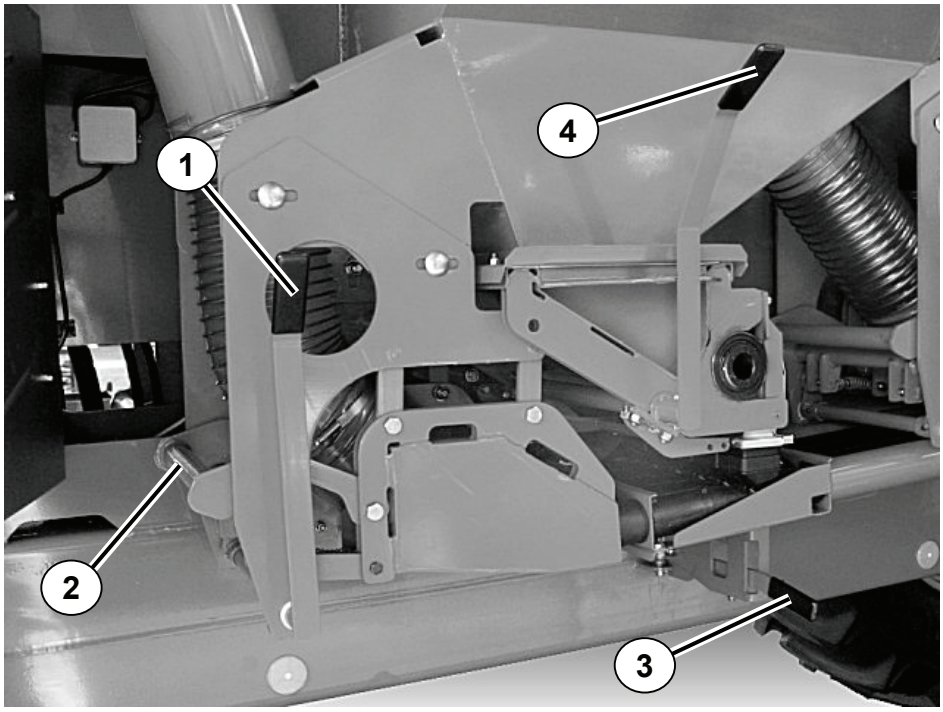


Fig. 34: Emptying the fertiliser spreader

1. Disconnect the connection between pressure chamber and injectors by moving the lever for the pressure chamber forwards.

   Push all three levers (Fig. 34: Pos. 1) forwards on the tractor side until the securing device has fully engaged.

2. The lock (Fig. 34: Pos. 2) drops down and engages.

   The pressure chamber is now held in this position, the connection to the injector is disconnected.

Danger of crushing!

CAUTION

The air duct weights 15 kg. If it falls, it could cause crushing injuries to limbs.

Only remove the air duct if your health and physique allow you to do so and only then when wearing personal protective equipment.

- Wear robust footwear when working (safety shoes) and protective gloves.

---

3. Lift the air duct with your **left** hand. Use your right hand to swing the lever for the rack (Fig. 34: Pos. 3) to the rear (right) until it engages.
4. Remove the front part of the air duct and keep aside (also see section 6.1 " Calibration Test" starting on page 39).

5. Pull the rear part of the air duct forwards and completely remove it.

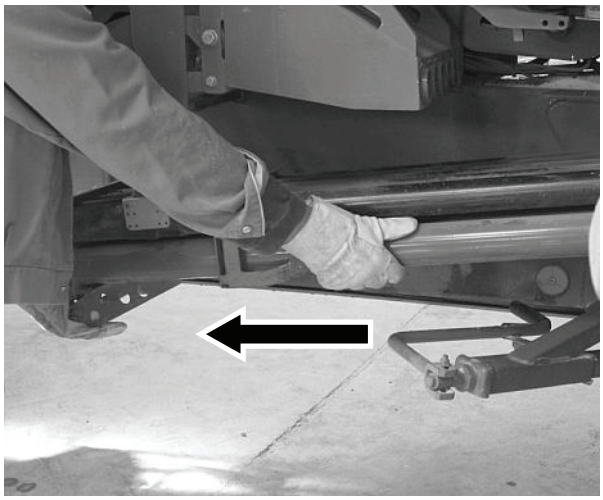


Fig. 35: Remove rear part of the air duct

6. Unfold the spreading trays downwards. To do so actuate the lever (Fig. 34: Pos. 4).

The fertiliser now flows from the hopper.

7. After the spreading hopper is completely empty, clean the tractor (see section 9.2 "Cleaning the Fertiliser Spreader" on page 55).

7.5 Assembling the Fertiliser Spreader

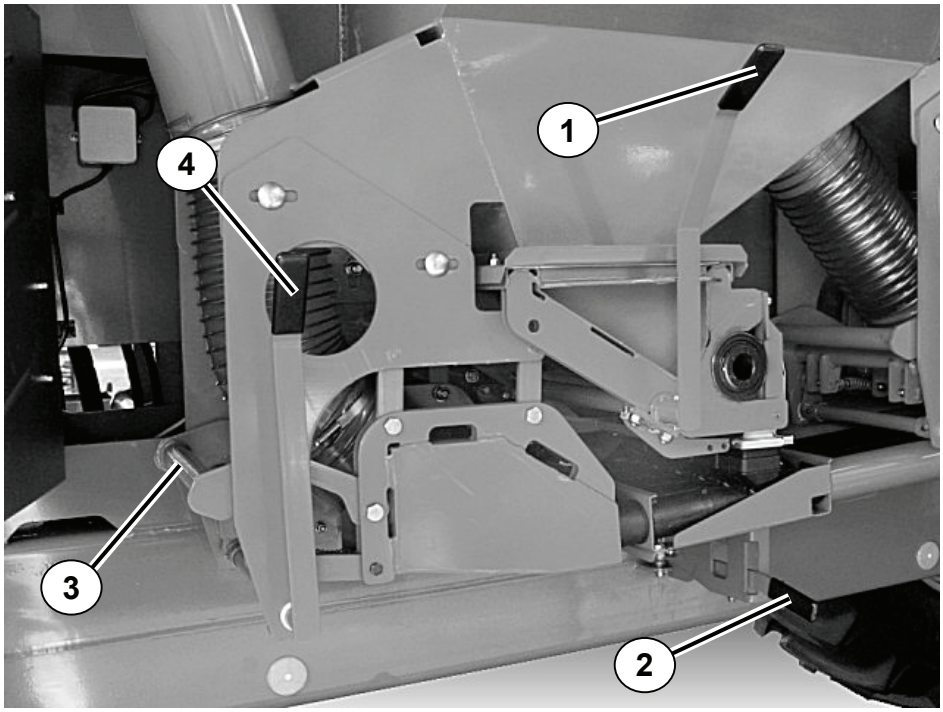


Fig. 36: Assemble the fertiliser spreader

1. Use the lever to fold up (Fig. 36: Pos. 1) the spreading tray.

Danger of crushing!

CAUTION

The air duct weighs approx. 15 kg. If it falls, it could cause crushing injuries to limbs.

Only remove the air duct if your health and physique allow you to do so and only then when wearing personal protective equipment.

- Wear robust footwear during the assembly (safety shoes) and protective gloves.

2. Push in the air duct and put into position by lifting.
3. Secure the air duct by pulling out the lever (Fig. 36: Pos. 2) for the rack.

IMPORTANT

Ensure that the lever lock is engaged.

4. Unlock the pressure chamber securing device (Fig. 36: Pos. 3).
5. Use the operating lever (Fig. 36: Pos. 4) to push the pressure chamber into the air duct.

The fertiliser spreader is now completely reassembled.

8 Malfunctions and Alarm Messages

8.1 General Information

This chapter describes how to detect and remedy malfunctions in the fertiliser spreader AGT 6000. In most cases you will be given support from the job computer in the tractor which displays malfunctions as alarm messages.

Risk of injury and accident from forgotten or inadequate troubleshooting.

WARNING

Late or inadequate troubleshooting by personnel who are not suitably qualified leads to incalculable risks with negative consequences for people, the machine and the environment.

- Immediately remedy any malfunctions which arise.
- Only do your own troubleshooting if you are qualified accordingly.

8.1.1 Qualification of Personnel

Some troubleshooting tasks require further qualifications with regard to operation.

- Adjusting and repair work on the brake system may only be performed by specialist workshops or authorised brake service centres.
- Repair work to tyres and wheels may only be performed by qualified personnel and using suitable assembly tools.
- Welding and work on the electrical system may only be performed by qualified personnel.
- Malfunctions on the job computer may only be repaired by experts with detailed knowledge of the control electronics.

8.1.2 Procedure to Follow in the Event of an Alarm Message

In the event of malfunctions, various alarm messages are generated on the job computer display.

1. Carry out the instructions given by the alarm message.

   If you are unable to remedy the malfunction, ensure that it is immediately resolved by a specialist. Also refer to the instructions in section 8.1.1: "Qualification of Personnel" on page 53.

2. Press the "C" key on the job computer after the malfunction has been repaired.

   This deletes the alarm message from the display.

8.2 Alarm Messages on the Operating Terminal

NOTE Please contact our service centre in the event of alarm messages on the operating terminal.

9 Maintenance and Repair

9.1 Before Starting Maintenance and Repair Work

During maintenance and repair work you must take additional hazards into account, which do not arise when operating the machine.

Always perform maintenance and repair work with increased awareness. Take special care and be aware of the dangers.

Check the following before starting any maintenance and repair work:

- Is the tractor engine switched off? Have all the rotating parts on the tractor and on the fertiliser spreader come to a standstill?
- Have you secured the fertiliser spreader from being switched on without authorisation?
- Is the fertiliser spreader correctly parked? It must be parked on a firm surface with the hopper empty and the boom folded, and be secured against rolling away.

Also refer to the warnings in chapter 3: "Safety" starting on 5.

NOTE

Pay particular attention to section 3.7 "Maintenance and Repair" starting on page 11.

9.1.1 Qualification of Maintenance Personnel

Some maintenance and repair work on the fertiliser spreader AGT 6000 requires further qualifications with regard to operation.

- Adjusting and repair work on the brake system can only be performed by specialist workshops or authorised brake service centres.
- Repair work to tyres and wheels may only be performed by qualified personnel and using suitable assembly tools.
- Welding and work on the electrical system may only be performed by qualified personnel.
- The drawbar height, in the case of drawbars with static load, may only be adjusted by qualified personnel.

9.1.2 Wearing Parts

- We recommend that you have the condition of the fertiliser spreader inspected by an expert after each season, in particular fixing parts, hydraulic system, metering parts, elbows, fertiliser hoses and splash plates.
- Spare parts must correspond at least to the manufacturer's stipulated technical requirements. These are, for example, satisfied by using original spare parts.

9.2 Cleaning the Fertiliser Spreader

Fertiliser and dirt encourage corrosion. Although the fertiliser spreader's components are made of rust-free material, we recommend immediately cleaning the machine after each use in order to keep it in peak condition.

Before cleaning, also follow the instructions below:

- Only clean oily machines in washing bays with oil separator.
- When cleaning using a high-pressure water jet never direct it at electrical equipment, hydraulic components, plain bearings and stickers.

NOTE

Refer to the instructions for emptying the fertiliser spreader in section 7.4 "Emptying Remaining Fertiliser" starting on page 48.

Refer to the instructions for assembling the fertiliser spreader in section 7.5 "Assembling the Fertiliser Spreader" starting on page 50.

Cleaning:

- Clean the fertiliser spreader with a soft water jet.
- Pay particular attention to cleaning the air ducts, injectors and elbows.

Care:

- After cleaning, handle the spreader with a biologically degradable corrosion protection agent.

9.3 Maintenance of the Mechanics

9.3.1 Checking Screwed Connections

The screwed connections are factory-tightened with the required torques and secured. Vibrations and jerks, in particular during the initial operating hours, can loosen screwed connections.

- With a new fertiliser spreader, check all screwed connections for tightness after approx. 30 operating hours.
- Regularly check all screwed connections for tightness, at the latest before the start of the spreading season.
- Tighten loose screwed connections. When doing so, pay particular attention to the manufacturer's torque indications.

9.3.2 Checking Metering and Application

For accurate metering and application, the metering units must be correctly set and free from fertiliser residues.

Check:

The distance of the cam wheels and the upper edge of the spreading tray must have an even distance of approx. 3mm over the entire width.

- Place a 3 mm thick sheet metal strip in the space between the cam wheels (1) and the sheet metal edge of the spreading tray (2).

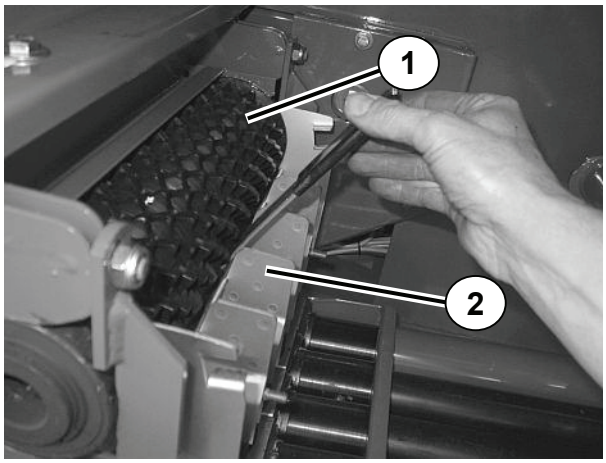


Fig. 37: Check the distance between cam wheels and spreading tray

The distance is correctly set when:

- The 3 mm thick sheet metal strips can be inserted over the entire measuring width without play,
- The distance is **equally** set over the entire width.

NOTE

When spreading at a **reduced working width,** only the equal distance of 3 mm must be checked at the height of the conveyed cam wheels. In the area of the solid pulleys the distance may vary (no conveying of fertiliser).

Adjusting:

- Use the set screws (1) to adjust the distance of the spreading tray support to 3 mm.

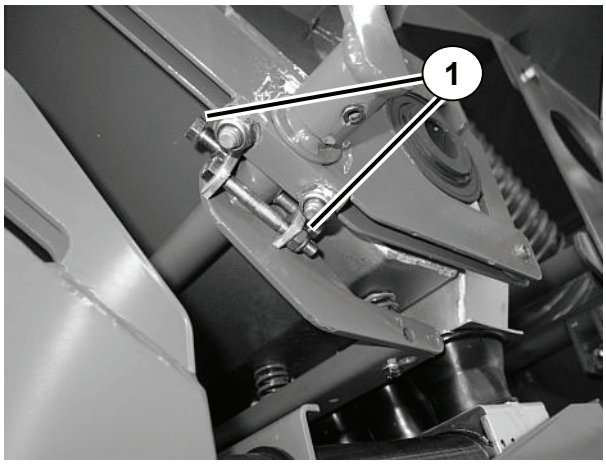


Fig. 38: Adjust the distance between cam wheels and spreading tray

NOTE

If it is no longer possible to adjust the distance to 3 mm, the cam wheels of the metering shaft must be replaced.

Checking other metering units for wear:

- Check the air ducts, sealing funnels, elbows, fertiliser hoses and splash plates for wear.
- These components must be replaced in the event of breakage as a result of wear.

NOTE

Check the correct metering weight using the calibration test (see chapter 6 "starting" on page 39).

9.3.3 Checking and Adjusting Unfolded Booms

After the individual segments have been unfolded, the booms must form a line vertically and horizontally. At the same time, the sealing funnel on the joint bearings of the boom elements must mate tightly. If this is not the case, the stop screws must be readjusted for the vertical adjustment. For horizontal adjustment, the set screws on the lower and top bearing plate of the joints must be adjusted.

Danger of crushing and shearing from unfolded booms.

WARNING

Between the pendulum frame and boom, as well as at the joint points of the booms, limbs could be crushed or sheared off.

- Never grip between the pendulum frame and boom or between the boom elements.
- Wear protective gloves during the checking and adjusting work.

WARNING

Danger of injury from swinging booms

When the pendulum frame locks are open, the booms may swing considerably and injure people.

- When making adjustments, always close the pendulum frame lock.
- Remove all persons from the danger area of the booms.

Prerequisite:

- All boom segments are fully unfolded.
- The pendulum frame lock is closed.

Check:

- The boom segments form a line in the horizontal and vertical alignment.
- The sealing funnels mate tightly on the joint bearings of the boom elements.
- The distance dimension a (see Fig. 39: Pos. a) is approx. 47 mm.

Adjusting the vertical alignment:

1. Check which boom segment is not correctly aligned.
2. Loosen the locknut (1) of the stop screw to be adjusted.
3. Set the stop screws (2) to the respective joint points.

The booms must form a **vertical** line. The sealing funnels must mate tightly. Distance a should be approx. 47 mm.

4. Retighten the locknut.

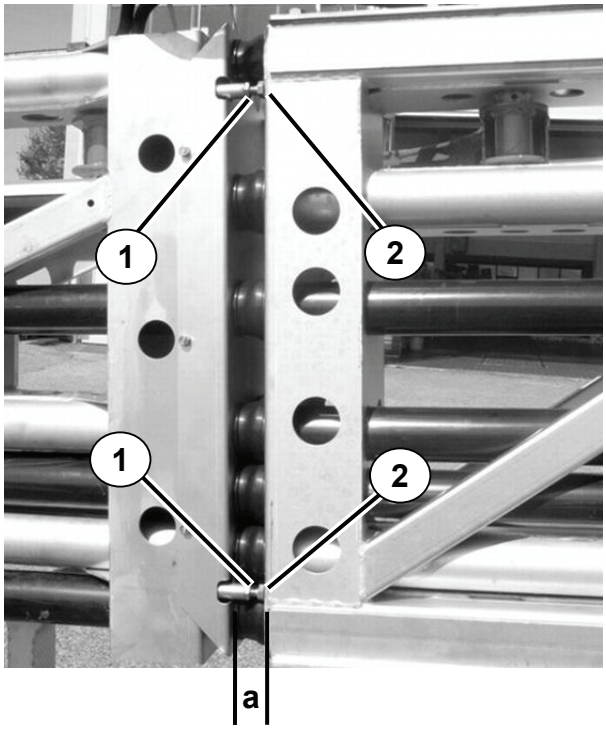


Fig. 39: Vertical adjustment of the unfolded booms

Adjusting the horizontal alignment:

5. Loosen the screws on the joint plate (1) (not completely)
6. Loosen the locknuts on the threaded rod.
7. Turn the threaded rod (2) in or out for position optimisation.

   The booms must form a horizontal line which gradually drops outwards. The sealing funnels must mate tightly.
8. Retighten the locknut and the screws on the joint plate.

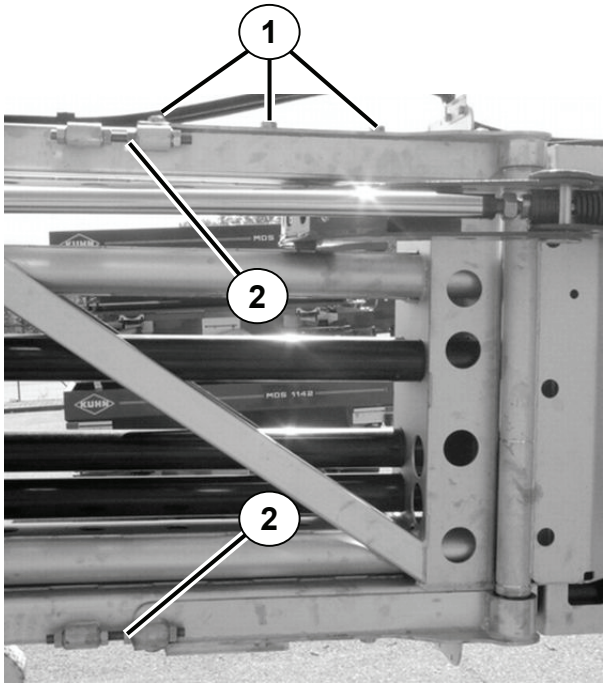


Fig. 40: Horizontal adjustment of the unfolded booms

NOTE

After horizontal adjustment, the correct vertical alignment must be checked again (see paragraph "C" on page 59).

9.3.4 Adjusting the Holding Force of the Boom Elements

When the booms are unfolded you can adjust the holding force of the boom segments via the boom actuation.

Danger of crushing and shearing from unfolded booms.

Between the pendulum frame and boom as well as at the joint points of the booms, limbs could be crushed or sheared off.

WARNING

- Ensure that the pendulum frame lock is closed when making adjustments.
- Never grip between the pendulum frame and boom or between the boom elements.
- Wear protective gloves during the checking and adjusting work.

NOTE

During the activities discussed below, the hydraulic cylinders are always counted from the inside to the outside.

Example: The "2nd hydraulic cylinder boom central section to start section" the 2nd cylinder from the **inside**.

Boom central section to start section:

The holding force of the boom central section to the start section is adjusted at the spring assembly on the 2nd hydraulic cylinder.

1. Loosen the locknut (1).
2. Turn the threaded rod (2) on the 2nd hydraulic cylinder.

   To **increase** the tension: Turn threaded rod outwards.

   To **reduce** the tension: Turn threaded rod inwards.

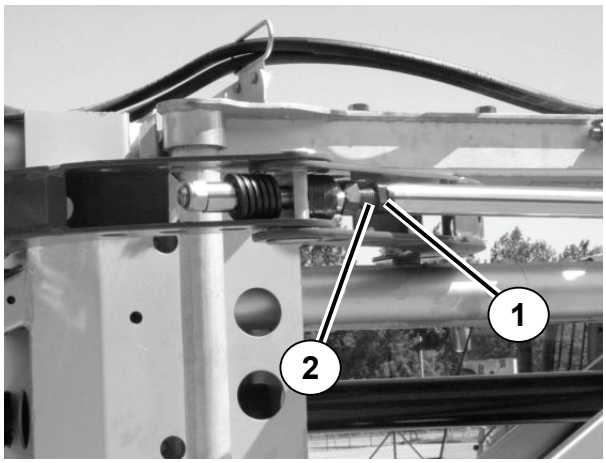


Fig. 41: Change the holding tension on the 2nd hydraulic cylinder (whilst unfolded)

Boom end section:

The holding force of the boom end section is adjusted at the spring assembly on the 3rd hydraulic cylinder.

1. Loosen the locknut (1).
2. Turn the threaded rod (2) on the 3rd hydraulic cylinder.

   To **increase** the tension: Turn threaded rod outwards.

   To **reduce** the tension: Turn threaded rod inwards.

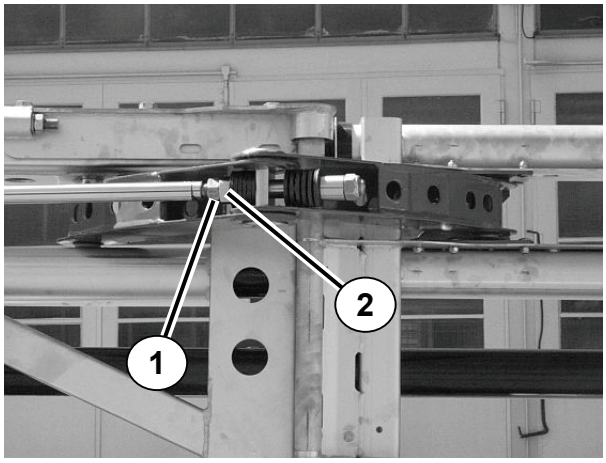


Fig. 42: Change the holding tension on the 3rd hydraulic cylinder (whilst unfolded)

9.3.5 Checking and Adjusting Folded Booms

Danger of crushing and shearing on the booms

WARNING

Between the pendulum frame and boom, as well as between the boom and tractor frame, limbs could be crushed or sheared off.

- Never grip between the pendulum frame and boom or between the boom elements.
- Wear protective gloves during the adjusting work.

Checking position:

1. Slowly fold the booms. When doing so, observe at what height (too high or too low) the booms reach the console.
2. Wait until the boom lock has completely closed.

   The tension of the folded boom package is maintained by the function of the stop blocks.
3. Check the position of the boom package.

- The transport locks (1) lie against the boom.
- The boom packages (2) lie slightly tensed laterally on the stop (3).
- The boom packages lie on the lateral consoles.

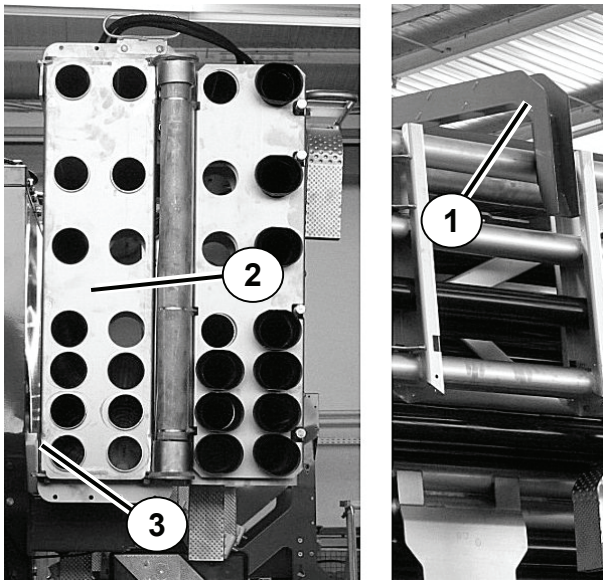


Fig. 43: Check folded booms

Adjusting the holding tension:

The tension is adjusted on the unfolded boom.

NOTE

The booms are factory-set to the correct positions and the correct holding force. Readjustment is only required after replacing individual boom segments.

We recommend that you contact our service before starting to make adjustments.

1. Unfold the booms.
2. Loosen the locknut (1).
3. Dismantle the bolt (3) and swing the cylinder out.
4. Turn the threaded rod (2) on the 1st hydraulic cylinder at the start section.

   To **increase** the tension: Turn threaded rod inwards.

   To **reduce** the tension: Turn threaded rod outwards.

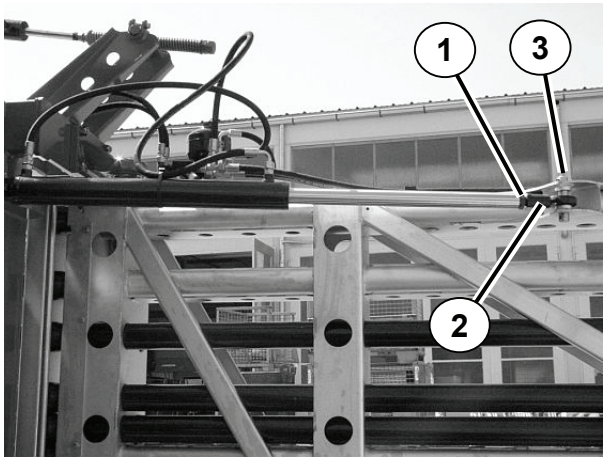


Fig. 44: Adjust the holding tension on the boom start section (unfolded boom)

The holding tension of the boom segments in the transport position can be set via the boom actuation.

4. Turn the nut (1) on the 2nd hydraulic cylinder.

   To **increase** the tension: Turn nut to the right.

   To **reduce** the tension: Turn nut to the left.

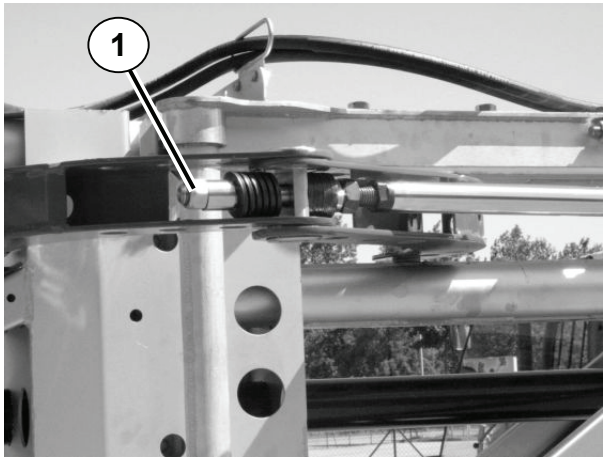


Fig. 45: Adjust the holding tension on the boom central section at the start section

5. Turn the nut (1) on the 3rd hydraulic cylinder.

   To **increase** the tension: Turn nut to the right.

   To **reduce** the tension: Turn nut to the left.

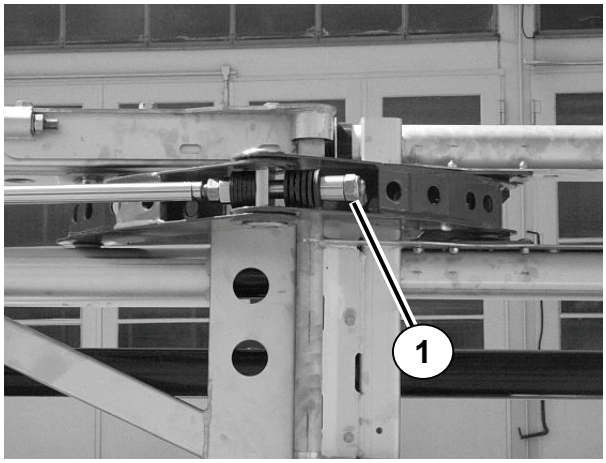


Fig. 46: Adjust the holding tension on the boom end section

9.3.6 Checking the Hitching Ring and Ball Head Coupling for Wear

Use of a hitching ring whose diameter exceeds the wear limit, or a severely worn ball head coupling can lead to the spreader being torn off when in motion.

- Regularly check the diameter of the hitching ring and ensure that a worn ring is quickly replaced.
- Check the clearance between the ball head coupling and pressure pad and ensure that a worn ball head coupling is quickly replaced.

NOTE

Refer to the tractor operating instructions for maintenance and repair instructions for the hitching ring or ball head coupling.

9.4 Maintenance of the Hydraulics

The hydraulic system of the fertiliser spreader AGT 6000 is comprised of two hydraulic circuits which are **independent from each other**.

- Vario drive for blower function with own oil reservoir,
- Hydraulic control unit with oil supply from the tractor.

Within the hydraulic circuits, the drive components and actuators are connected to each other via hydraulic hoses.

In operating conditions, the hydraulic system of the fertiliser spreader is under high pressure. The temperature of the oils in the system is approx. 100°C during operation.

Danger from high pressure and high temperature in the hydraulic system

WARNING

Fluids which are hot and discharged under high pressure can cause serious injuries.

- Before starting any work, depressurise the hydraulic system.
- Switch off the tractor engine and secure it from being switched back on.
- Allow the hydraulic system to cool.
- When checking for leaks always wear protective goggles and gloves.

Risk of infection from hydraulic oils

CAUTION

Fluids which are discharged under high pressure can penetrate the skin and cause infections.

- Immediately contact a doctor in the event of suffering an injury from hydraulic oil.

Environmental danger from hydraulic or gear oils

IMPORTANT

Hydraulic or gear oil which ends up in the sewerage system or the ground can contaminate large volumes of ground and drinking water.

- Always dispose of used oil in accordance with the manufacturer's instructions and in compliance with environmental requirements at the stipulated collection points.

9.4.1 Checking Hydraulic Hoses

Hydraulic hoses are subjected to high stress. They must be checked regularly and be immediately replaced if damaged.

Hydraulic hoses are subject to an ageing process. They may be used for a maximum of 6 years, including storage time of maximum 2 years.

NOTE

The manufacturing date of the hose is given on one of the hose fittings as the month and year (e. g. 4/04).

- Regularly check the hydraulic hoses, at the latest before the start of the spreading season, with a visual inspection for wear.
- Replace the hydraulic hoses when detecting the following damage:
  - Damage to the outer layer through to the inlay,
  - Embrittlement of the outer layer (formation of cracks),
  - Deformation of the hose,
  - Sliding of the hose out of the hose fitting,
  - Damage to the hose fitting,
  - Reduced strength and function of the hose fitting as a result of corrosion.
- Before the start of the spreading season, check the age of all the hydraulic hoses. Replace the hydraulic hoses once the storage and use duration has elapsed.

9.4.2 Replacing Hydraulic Hoses

Preparation:

- Ensure that the hydraulic system is depressurised.
- Provide a collection container for escaping hydraulic oil under the separation points.
- Provide suitable caps, to prevent the hydraulic oil from escaping from hoses which do not have to be replaced.
- Prepare suitable tools.
- Wear protective gloves and goggles.
- Ensure that the new hydraulic hose corresponds to the model of the hose to be replaced. Pay particular attention to the correct pressure range and the hose length.

Implementation

1. Loosen the hose fitting at the **top** end of the hydraulic hose to be replaced.
2. Bleed the oil contained in the hydraulic hose.
3. Loosen the other end of the hydraulic hose.

4. Immediately hold the loosened hose end over the oil collection container and close the connection.
5. Loosen the hose fixtures and remove the hydraulic hose.
6. Connect the new hydraulic hose to the connections. Tighten the hose fittings.

   Fix the hydraulic hose with the hose fastenings.
7. Check the position of the new hydraulic hose. The hose guide must be identical to that of the previous hydraulic hose. No fretting points should appear, the hose must not be twisted or be laid under tension.

9.4.3 Hydraulic System Maintenance Vario Drive

The Vario drive is responsible for ensuring the constant speed of the blower. The axial piston pump is driven by the tractor's drive shaft. The on-board hydraulic system is filled in the **oil container** with **25 litres** of hydraulic oil.

The Vario drive comprises the following components which must be serviced:

- Drive shaft,
- Gearbox,
- Axial piston pump,
- Axial piston motor,
- Oil container,
- Oil filter,
- Oil cooler.

9.4.4 Checking the Oil Level in the Hydraulic System of the Vario Drive

Check the oil level in the reservoir daily.

- Unscrew the lid (1) with the oil dipstick on the Vario drive oil container (2).

  The oil level is correct when the oil reaches the green mark on the dipstick. (max. oil level)

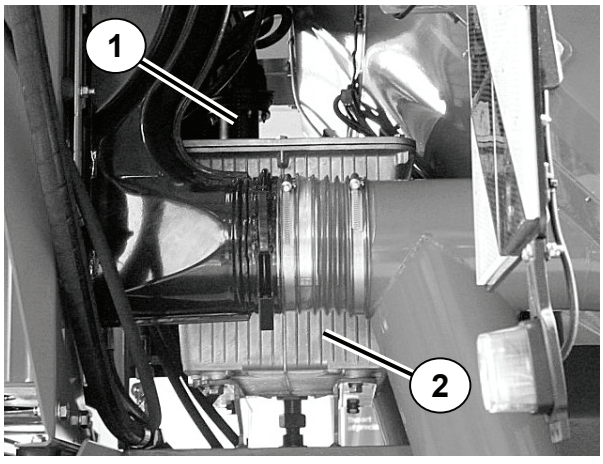


Fig. 47: Vario drive oil container position

9.4.5 Changing the Oil and Oil Filter of the Vario Drive Hydraulic System

Always change the oil and oil filter at the same time. Proceed as follows to change the oil and filter in the hydraulic system of the Vario drive:

- After the first 50 operating hours,
- Then after every 100 operating hours,
- At least once a year.

The hydraulic system is filled with approx. 25 litres **TEXAMATIC 7045 E** hydraulic oil in the factory.

NOTE

Other oil types which can be used are listed in section 9.9.3: "Service Fluids" on page 91.

Bleeding oil, changing oil filter:

1. **Before** bleeding the oil ensure that you have a sufficiently large collection container.
2. Loosen the hydraulic hose (1) on the oil filter (2).

   Allow the oil to flow into the collection container.
3. Dismantle the oil filter (2).

   Allow the residual oil to drain into the collection container.
4. Fill the new oil filter with approx. 2 l oil.

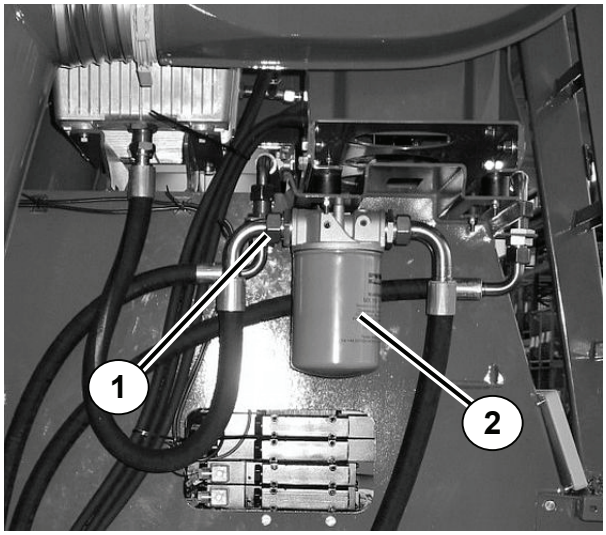


Fig. 48: Change oil filter

5. Unscrew the new oil filter (2).
6. Fix the hydraulic hose (1) to the oil filter (2).

Topping up hydraulic oil:

IMPORTANT

Material damage caused by the incorrect oil type

An incorrect oil type or mixing different types of oil can cause material damage to the machine hydraulics and to the machine parts moved by the hydraulics.

- Only use the permitted oil types described in this operator's manual.
- Never mix different types of oil. Always carry out a complete oil change.

1. Fill the new hydraulic oil into the oil container.
2. The oil level is correct when the oil reaches the green mark on the dipstick (1). (max. oil level)
3. Lock the filler cap.

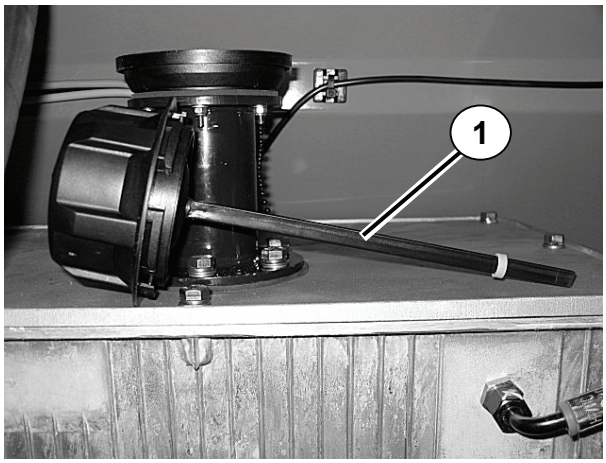


Fig. 49: Top up hydraulic oil

9.4.6 Checking and Topping Up the Oil Level in the Vario Drive Gearbox

1. Open the checking screw (1) on the gearbox.

   The oil level is correct when oil flows out.

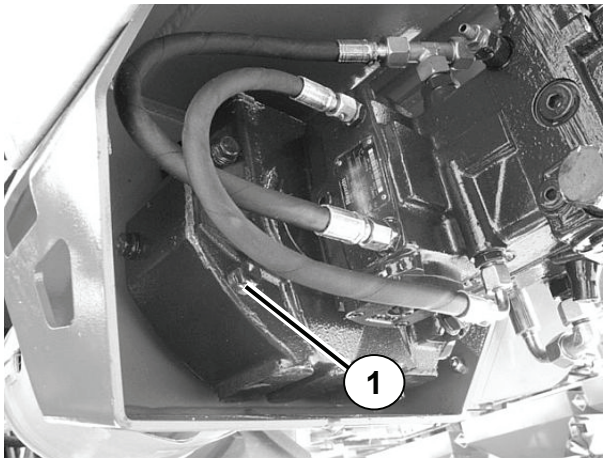


Fig. 50: Check the oil level gearbox Vario drive

If the oil level is not correct, you must top up the gearbox oil:

IMPORTANT

Material damage caused by the incorrect oil type.

An incorrect oil type or mixing different types of oil can cause material damage to the machine hydraulics and to the machine parts moved by the hydraulics.

- Never mix different types of oil.

2. Find out which oil type is currently being used and top up the gearbox oil with the same type.

   The oil level is correct when oil flows out of the checking screw.

9.4.7 Changing the Oil in the Vario Drive Gearbox

Proceed as follows to change the oil in the Vario drive gearbox:

- After the first 50 operating hours,
- Then after every 500 operating hours.

The gearbox is filled with 1.1 litres **Meropa 220** gear oil in the factory.

NOTE

Other oil types which can be used are listed in section 9.9.3: "Service Fluids" on page 91.

1. **Before** bleeding the oil ensure that you have a sufficiently large collection container.
2. Open the oil drain plug (1).

   The oil flows out immediately.
3. Fully bleed the oil.
4. Lock the oil drain plug again.

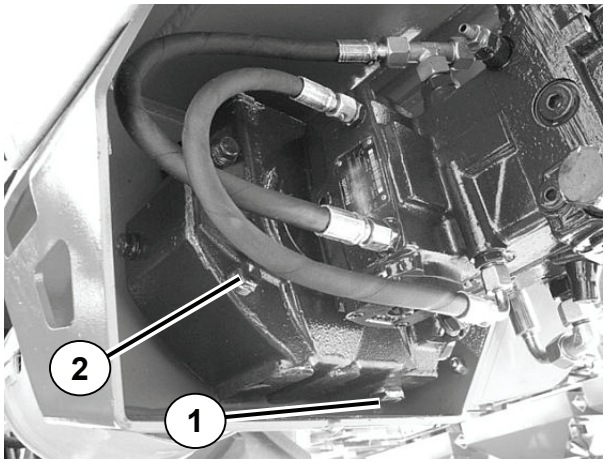


Fig. 51: Bleed gearbox oil

5. Open the filler screw and checking screw (Fig. 51: Pos. 2).
6. Fill the gearbox with **1.1** litres of gearbox oil.
7. Close the filler and checking screw (Fig. 51: Pos. 2) again.

9.4.8 Checking other Components

- Check the following

  Axial piston pumps (1),

  Axial piston (2),

  Oil cooler (3)

  regularly, at least before each spreading procedure.
- Check the components for external damage and leaking.

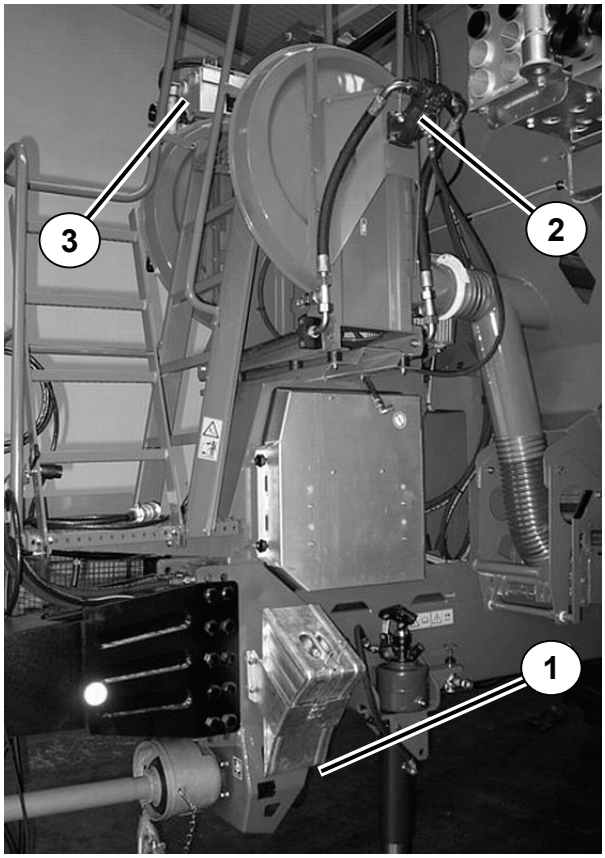


Fig. 52: Check the axial piston pump, axial piston motor and oil cooler

9.4.9 Maintenance of Hydraulic System Control Unit

Essential drive and actuator functions, which are operated from the operating terminal and the multifunctional handle, are supplied by the **hydraulic control unit**.

The hydraulic control unit (1) is connected to the tractor via a double-acting control valve with free return.

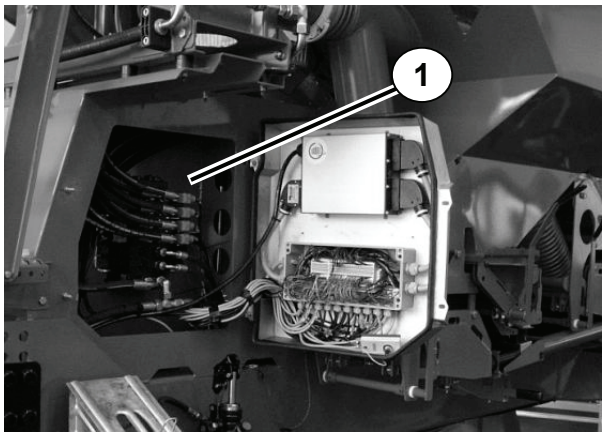


Fig. 53: Hydraulic control unit position

The components to be serviced on the hydraulic system hydraulic control unit are:

- Hydromotors of the drive function for the metering procedure.
- Hydraulic cylinder for the adjustment functions.
- Hydropneumatic spring suspension.

9.4.10 Checking the Hydromotors for the Metering Procedure

Check all hydromotors regularly, at least before each spreading procedure.

Metering is driven via 3 hydromotors on the left (1) and 3 hydromotors on the right.

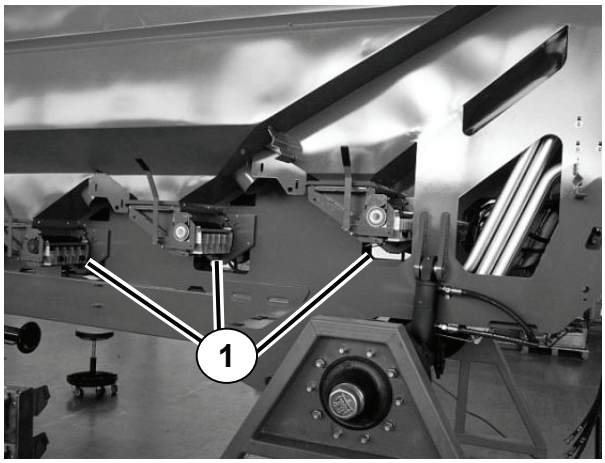


Fig. 54: Hydromotors left on the metering device

- Check the components for external damage and leaking.

9.4.11 Checking Hydraulic Cylinders for the Adjustment Functions

Check all **hydraulic cylinders** regularly, at least before each spreading procedure.

Adjustment functions: hydraulic cylinder for boom adjustment (1), boom actuation (2), pendulum frame lock (3), covering sheet (4).

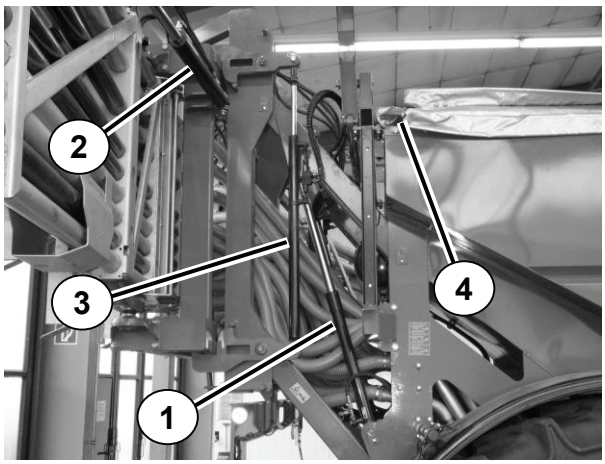


Fig. 55: Hydraulic cylinder of the adjustment functions boom rear right

Adjustment functions: hydraulic cylinder for transport lock (1).

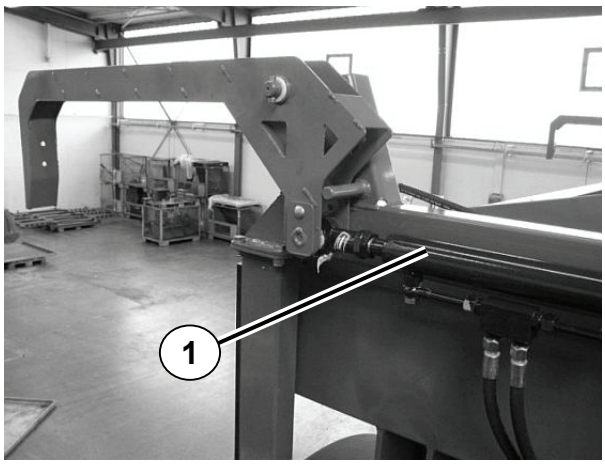


Fig. 56: Hydraulic cylinder of the adjustment functions transport lock

Adjustment functions: hydraulic cylinder for slope incline (1).

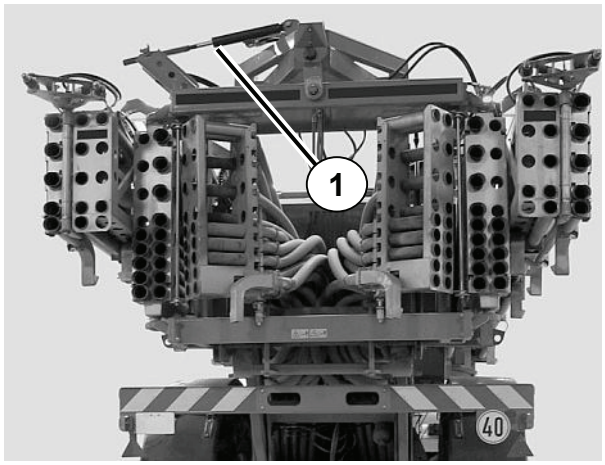


Fig. 57: Hydraulic cylinder of the adjustment functions slope incline

- Check the components for external damage and leaking.

9.4.12 Checking the Diaphragm Accumulators

The diaphragm accumulators (1) are generally maintenance-free. Nevertheless, in order to guarantee long and failure-free operation, the following must be checked at regular intervals, at least annually:

- The connections for firm seating and leaking,
- Fittings and safety devices for correct condition,
- Fixing element for firm seating.

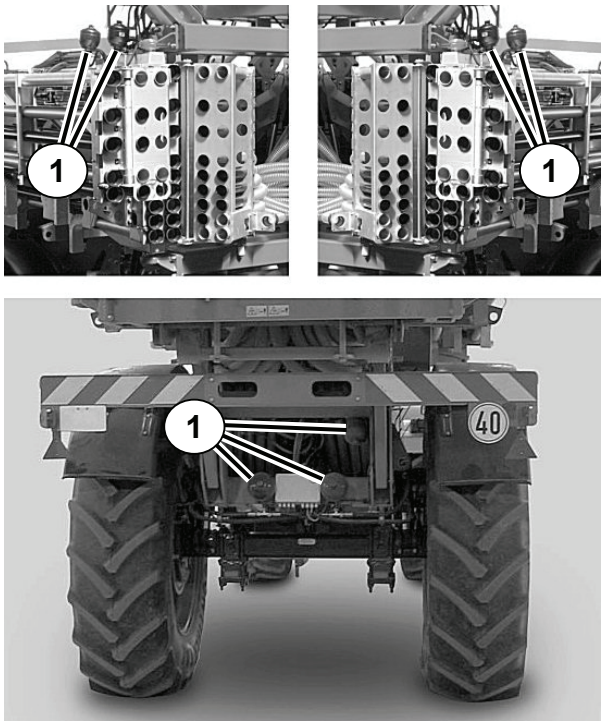


Fig. 58: Diaphragm accumulator

Danger from inadequate work performed on the diaphragm accumulator.

WARNING

If not properly assembled and handled, the diaphragm accumulator can explode or burst and cause extremely serious injury.

- All work performed on the hydraulic and pneumatic connections of the diaphragm accumulator must only be carried out by authorised qualified personnel.
- Refer to the diaphragm manufacturer's operating manual.

Also note the following when working on the diaphragm accumulator:

- Do not weld, solder or undertake mechanical work on the diaphragm accumulator. The diaphragm accumulator can explode or burst.
- The accumulator body can become hot. There is a danger of burns.

9.4.13 Checking the Hydropneumatic Spring Suspension

NOTE

Refer to the instructions for the maintenance and repair of the hydropneumatic spring suspension in section 9.5.3: "Checking the Condition of the Axle Suspension" on page 76.

9.5 Maintenance of Running Gear and Brakes

The weight of the fertiliser spreader AGT 6000 is supported by a hydropneumatic sprung axle. The machine is braked by a dual-circuit compressed air brake system.

Running gear and brakes are decisive for the operational safety of the fertiliser spreader.

Risk of accident from inadequately performed work.

WARNING

Unprofessional work performed on the running gear and on the brake system impairs the operational safety of the fertiliser spreader and can lead to serious accidents for people or material damage.

- Adjusting and repair work on the brake system may only be performed by specialist workshops or authorised brake service centres.

9.5.1 Checking the Conditions and Function of the Brake System

Regularly check the brake system

IMPORTANT

As your fertiliser spreader is a working device, there is no obligation for a scheduled general inspection by a technical safety monitoring service.

However, the perfect function of the brake system is of great significance for the safety of your fertiliser spreader.

- Ensure that the brake system is checked regularly, at least once a year, by an authorised workshop.

The brake system must be checked for damage and leaking at regular intervals, at least before each trip.

Follow the instructions below when checking the brake system:

- Check the brake system in dry conditions, not when the vehicle is wet or in the rain.
- Check the brake system for leaks and damage.
- Check the braking lever and connecting rod for ease of movement.
- Press the brake pedal with the engine running (pneumatic pressure must have built up). It must only be able to be depressed up to a maximum of 2/3. The brake must otherwise be adjusted.
- Change the brake linings at the correct intervals. Only use the brake linings stipulated for the axles.
- Check the condition and the seating of the bellows and protective bellows.

9.5.2 Draining the Air Tank

Condensation which builds up in the pneumatic system of the braking circuit collects in the air tank.

In order to prevent damage to the pneumatic system due to corrosion, the air tank must be drained daily.

1. Open the drain valve (1) by pulling on the eyelet.
2. Fully drain the condensate.
3. Close the drain valve (1).

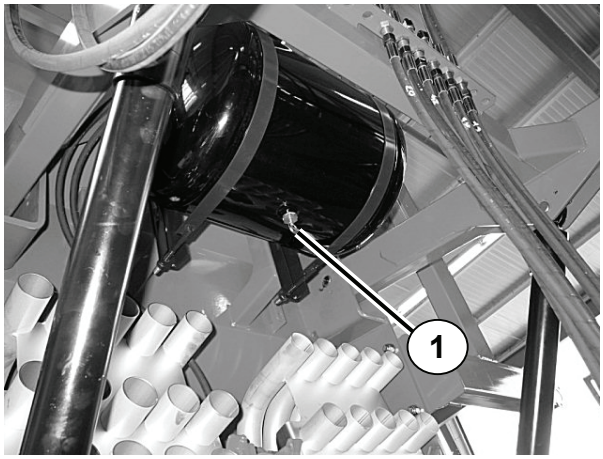


Fig. 59: Draining the air tank

9.5.3 Checking the Condition of the Axle Suspension

The axle suspension must be checked at regular intervals, at least before each trip, for damage and leaks.

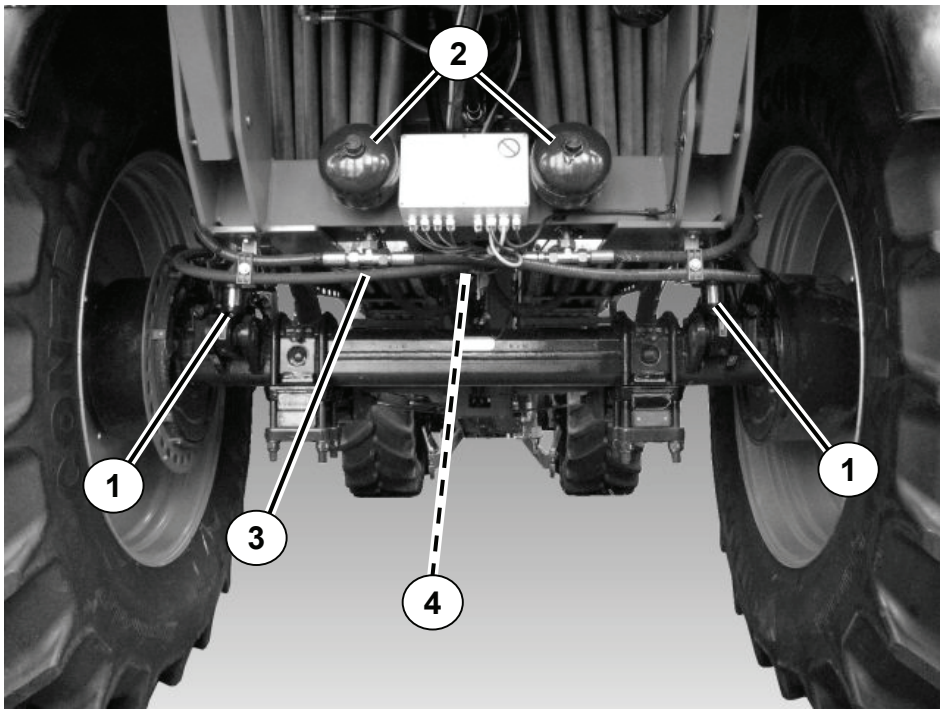


Fig. 60: Check the axle suspension

Follow the instructions below when checking the axle suspension:

- Check the axle suspension system in dry conditions, not when the vehicle is wet or in the rain.
- Check the suspension cylinder (Fig. 60: Pos. 1), nitrogen accumulator (Fig. 60: Pos. 2) and hydraulic hoses (Fig. 60: Pos. 3) for damage.
- Check the unit and the pressure compensator (Fig. 60: Pos. 4) visually for damage and leaks.

- Check the suspension cylinder fastenings such as bolts (1) or circlips (2) for firm seating.

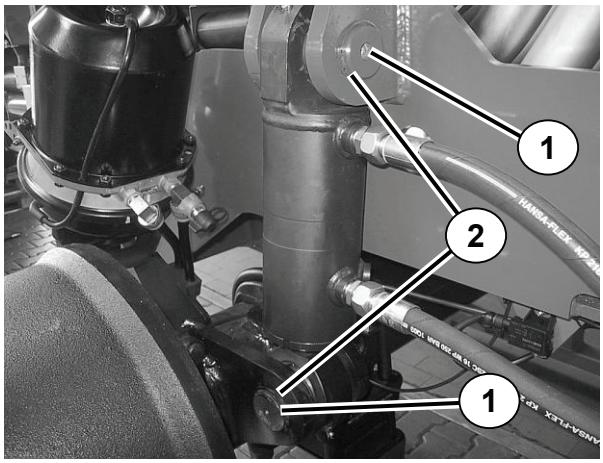


Fig. 61: Check the suspension cylinder fastenings

9.5.4 Checking the Function of the Axle Suspension

The hydropneumatic suspension is supplied by the tractor's hydraulic system and operated via the operating terminal for the spreader.

Prerequisite:

- Ensure that the tractor's hydraulic system and the spreader's operating terminal are switched on.

Implementation:

1. In the **MAIN MENU** in the operating terminal press key 
   This takes you to the **SETTINGS/INFO** menu.
2. Press key  .
   This takes you to the **AXLE SUSPENSION** menu.
3. Press key  , until both hydraulic cylinders of the suspension have fully extended.
4. Press key  .
   Both cylinders retract to the end position.

5. Once both cylinders have retracted to the end position, press key 

.

   The hydraulic cylinders must now automatically adjust to the travelling height (extended approx.50 mm).

NOTE

Should there be malfunctions during the functional test, refer to the manufacturer's instructions or contact our service.

The manufacturer's instructions also provide further information regarding maintenance and repair of the hydropneumatic suspension.

9.6 Wheels and Tyres

The condition of the wheels and tyres is of paramount importance for the operational safety of the fertiliser spreader.

Risk of accident from inadequately performed work.

WARNING

Inadequate work performed on the wheels and tyres impairs the operational safety of the pneumatic fertiliser spreader and can lead to serious accidents for people or material damage.

- Repair work to tyres and wheels may only be performed by qualified personnel and using suitable assembly tools.
- Never weld torn rims or wheel discs. Due to dynamic stress during the travelling mode, the welded areas would tear in a very short time.

9.6.1 Checking the Tyres

Check the tyres regularly for wear, damage and embedded foreign bodies.

Check the tyre pressure every two weeks when the tyres are cold. Observe the manufacturer's indications.

9.6.2 Checking the Condition of the Wheels

Check the wheels regularly for deformation, rust, tears and breaks.

- Rust can cause stress cracks on wheels and damage to tyres. Keep the contact surfaces to the tyre and wheel hub rust-free.
- Replace cracked, deformed or otherwise damaged wheels.
- Replace wheel with cracked or deformed bolt hole seats.

9.6.3 Changing a Wheel

Risk of accident from incorrectly performed wheel change.

WARNING

An incorrect wheel change of the fertiliser spreader can lead to serious accidents with injuries to people.

- Only change the wheel when the fertiliser spreader is empty and hitched to the tractor.
- The fertiliser spreader must be on even and firm ground for the wheel change.

Prerequisites:

- Use a jack which can lift a load of at least **3.5 tonnes**.
- Use a torque spanner to tighten the wheel nuts.

Jack positioning:

- Position the jack in such a way that the mounting surface cannot slip under any circumstances (e. g. using a suitable piece of wood or rubber block).
- Additionally secure the jack from rolling away.

- When changing the wheel on the left, position the jack on the left (1) under the axle at the height of the guidance spring.
- When changing the wheel on the right, position the jack on the right (2) under the axle at the height of the guidance spring.

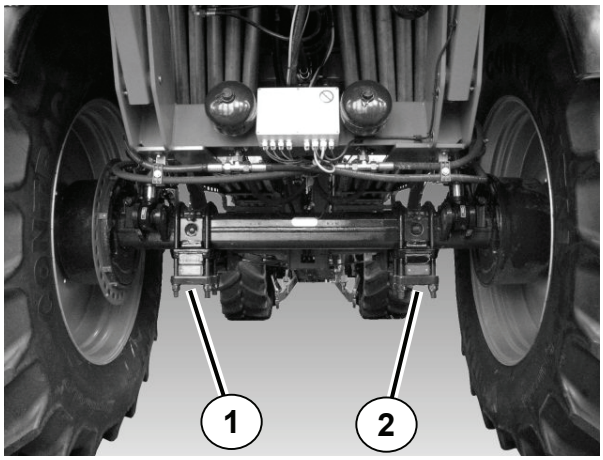


Fig. 62: Jack positioning points

Wheel mounting:

- Before mounting, clean the wheel contact surface at the hub.
- Check the wheel nuts and wheel bolts before mounting. Change damaged, stiff or rusty wheel nuts or wheel bolts.
- Tighten all wheel nuts **in stages** and **crosswise** with a torque spanner.
  - Tighten the wheel nuts with a tightening torque of **560 Nm**.
  - All **10** wheel nuts per wheel must be unscrewed and tightened.

Due to setting processes, the wheel nuts loosen during the initial kilometres driven with a new fertiliser spreader or after a wheel change.

- Retighten the wheel nuts after **50 km** to the stipulated torque.

NOTE

Refer to the instructions and the stipulated tasks to be performed as indicated by the axle manufacturer for wheel mounting.

9.7 Electrics, Electronics

9.7.1 Overview of Electric System Connections

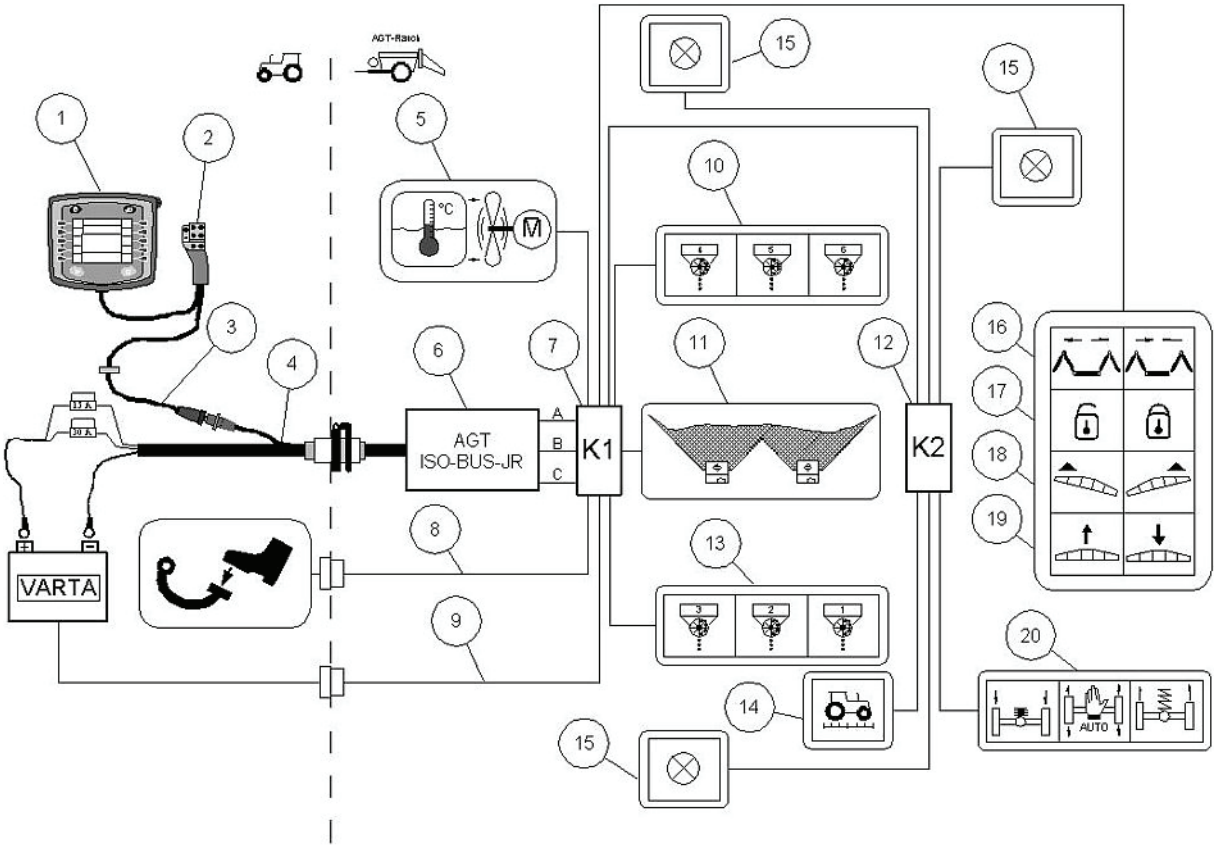


Fig. 63: Electric system overview

1 BASIC terminal
2 Multifunctional handle
3 Connection cable to the ISO BUS
4 ISO BUS cable
5 Oil cooler
6 ISO BUS job computer
7 Distribution box K2, front
8 Cable for lighting system
9 Power supply for oil cooler
10 Metering with partial widths, right (4,5,6)
11 Level sensors
12 Distribution box K2, rear
13 Metering with partial widths, left (1,2,3)
14 Ground speed sensor
15 Lighting system
16 Boom actuation with transport lock
17 Pendulum frame lock
18 BOOM incline
19 BOOM height adjustment
20 Axle suspension

9.7.2 Electrical Fuses

The trailed device power supply is provided via the tractor's ISO bus cable.

RAUCH ISO bus cable:

The RAUCH ISO bus cable is protected from overload with a 15 A and a 30 A fuse. The fuses are close to the connections at the tractor battery.

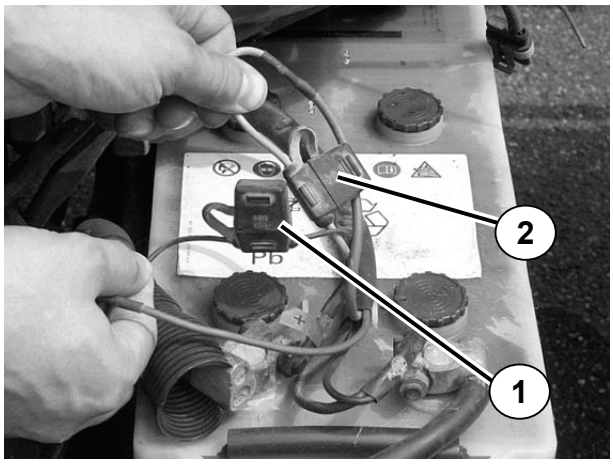


Fig. 64:
Fuses on the RAUCH ISO bus cable

1 30 A fuse (orange cable)
2 15 A fuse (red cable)

Electronics of axle suspension

The electronics for the axle suspension are protected by a separate fuse. The fuse is positioned in distribution box **K2** at the rear of the vehicle.

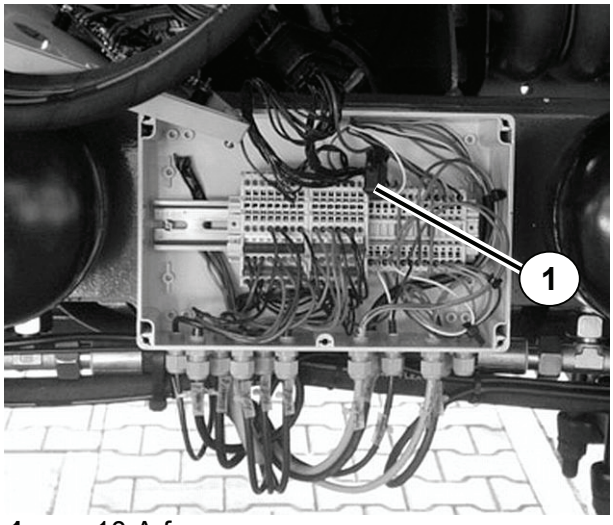


Fig. 65:
Fuse in the distribution box K2

1 10 A fuse

9.7.3 Checking Electrical Cables

- Visually inspect the electrical cables for wear. Pay particular attention to damage or breaks.

9.7.4 Checking the Function of the Lighting System

The fertiliser spreader AGT 6000 is factory-equipped with a front and rear lighting system.

- Check the function of the rear lights, brake lights, indicators and position lights.

9.7.5 Electronic Control System

The metering units, boom functions and the axle suspension are controlled and regulated electro-hydraulically.

The tractor has a BASIC terminal and a multifunctional handle installed for operating the fertiliser spreader.

Checking function

Risk of injury

WARNING

Checks of the electronic control system occur in real time. I.e. the machine components execute the selected function immediately.

Before checking a function, ensure that safety for you and third parties is guaranteed. Refer to the relevant chapters in this operator's manual.

- In particular, ensure that sufficient space is available for checking the booms.
- Remove all persons from the danger area of the booms.

Check the following functions on the electronic control system:

- Metering shaft speed ON/OFF,
- Partial width control,
- Connecting rod functions (unfolding, folding, lifting, lowering, tilting),
- Connecting rod lock,
- Pendulum frame lock,
- Axle suspension, raise/lower level,
- Automatic axle suspension,
- Check ground speed sensor.

  During road travel and field work, the true ground speed is displayed on screen 1 of the operating terminal. If this is not the case, the ground speed sensor must be checked.

  The ground speed sensor is fitted in the LEFT axle hub in the direction of travel (Fig. 66: Pos. 1)

  The guard plate (2) must be removed in order to inspect the installation position and the sensor distance.

- The distance between the wheel sensor and the pulse wheel must be 3 mm.
- Check the distance with a 3 mm thick sheet metal strip and adjust if required.

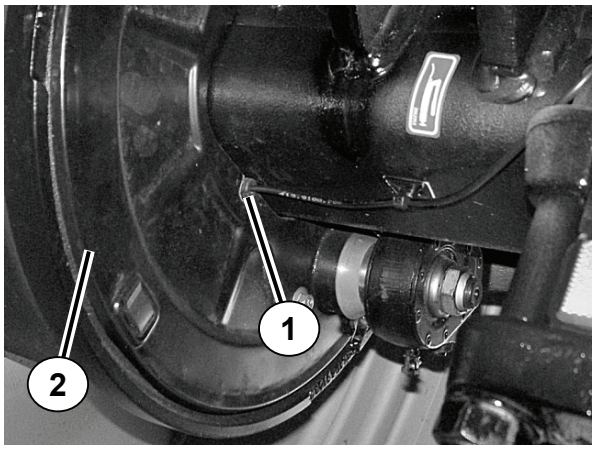


Fig. 66: Wheel hub LEFT

- Check the firm seating of the spur wheel (located behind the guard plate) on the rotational pulse generator shaft (1).
- There are a total of 6 rotational pulse generators on the machine. These are always positioned directly on the metering drive.

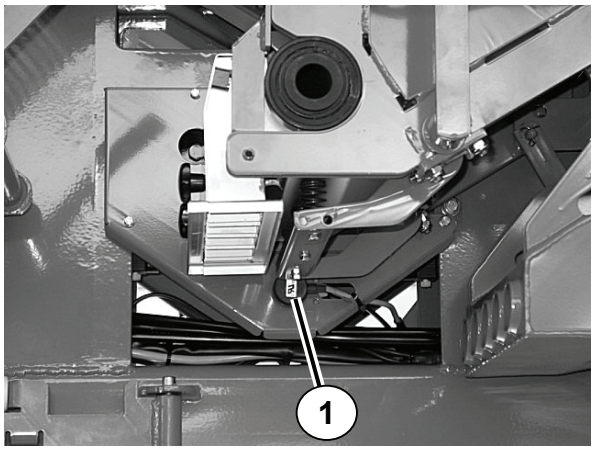


Fig. 67: Metering RIGHT

NOTE

There is a separate operator's manual for the control electronics via the BASIC terminal.

9.8 Maintenance Schedule

This chapter describes the maintenance activities in the order of intervals.

NOTE

Refer to section 9.9.2: "Lubrication Schedule" on page 91 for lubrication and lubrication intervals.

Daily:

Time	Component	Activity	Note
Before use	Hitching ring/ ball head coupling	Check for wear	→ P.64
	Hydraulic tank Vario drive	Check oil level, top up if required	→ P.67
	Axial piston pumps	Check for damage/ leaks	→ P.71
	Axial piston motor	Check for damage/ leaks	→ P.71
	Oil cooler	Check for damage/ leaks	→ P.71
	Hydraulic system control unit	Check for damage/ leaks	→ P.72
	Brakes	Functional check before departure	→ P.75
	Axle suspension	Check condition	→ P.76
	Wheels and tyres	Check condition Check air pressure	→ P.78
	Lighting system	Check function	→ P.83
After use	Entire fertiliser spreader	Cleaning	→ P.55

According to the number of operating hours:

Number of operating hours	**Component**	**Activity**	**Description**
30	Total mechanics	Check screwed connections	→ P.57
50	Vario drive gearbox	Check oil level	→ P.69
100	Vario drive hydraulic system	Change oil and oil filter	→ P.68
500	Vario drive gearbox	Oil change	→ P.70
	Air tank brake system	Drain	→ P.76
Annually	Vario drive hydraulic system	Change oil and oil filter	→ P.68
	Brake system	Check condition and function	By authorised workshop
6 years	Hydraulic hoses	Change	→ P.66

Before each season:

Component	**Activity**	**Note**
Total mechanics	Check screwed connections	→ P.57
Metering and application	Check, adjust if required	→ P.57
Boom	Check position, adjust if required	→ P.58 → P.62
Boom	Check holding tension, adjust if required.	→ P.60
Hydraulic hoses	Check condition	→ P.66
Electronic control system	Check function	→ P.83

Non-recurrent maintenance:

When	**Component**	**Activity**	**Note**
After **50 operating hours**	Vario drive gearbox	Oil change	→ P.70
	Vario drive hydraulic system	Change oil and oil filter	→ P.68
After **50 km**	Wheels	Retighten wheel nuts	→ P.79

9.9 Lubrication

9.9.1 Location of the Lubrication Points

The lubrication points are distributed and identified throughout the machine.

This symbol identifies the lubrication points: 

- Always ensure that the lubrication point markings are clean.

NOTE

The position numbers shown on the figures below indicate the location of the lubrication points described in section 9.9.2: "Lubrication Schedule" on page 91 under this number.

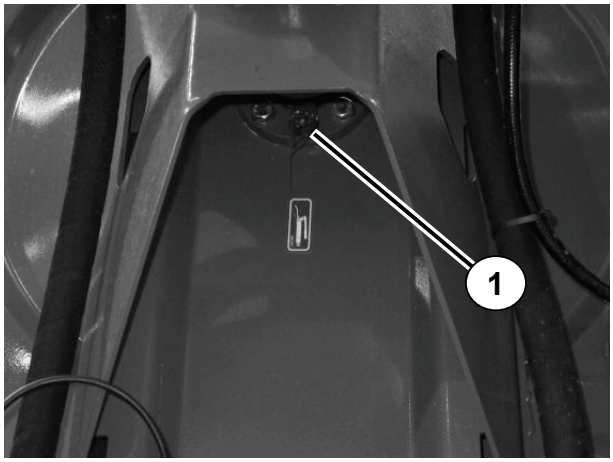


Fig. 68:
Flange bearing blower drive

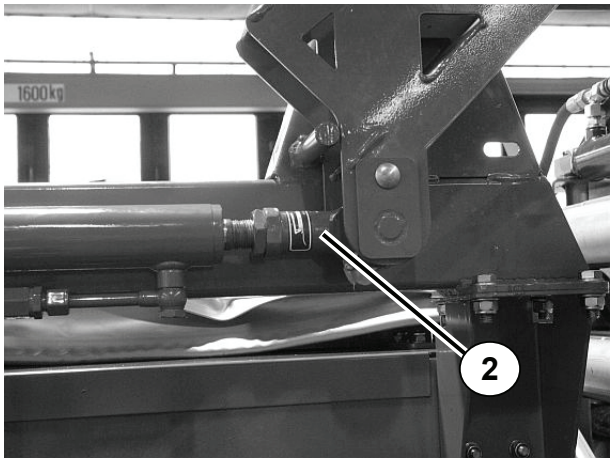


Fig. 69:
Hydraulic cylinder for boom securing device

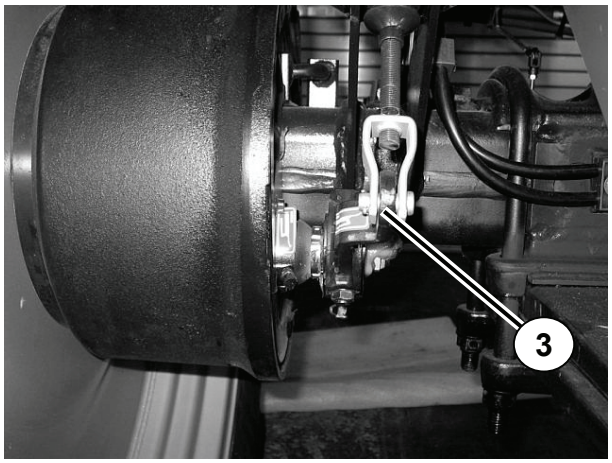


Fig. 70:
Support brake lever left

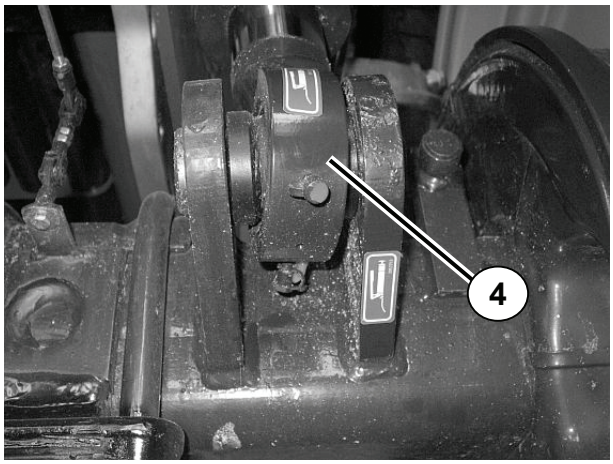


Fig. 71:
Joint bearing on the hydraulic cylinder for axle suspension

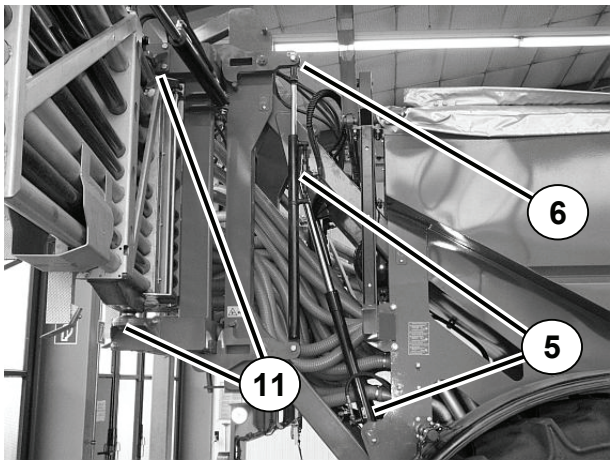


Fig. 72:
Pendulum frame, parallelogram

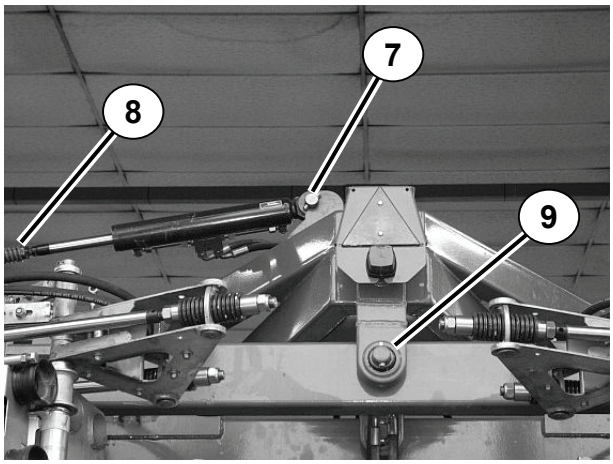


Fig. 73:
Hydraulic cylinder for incline

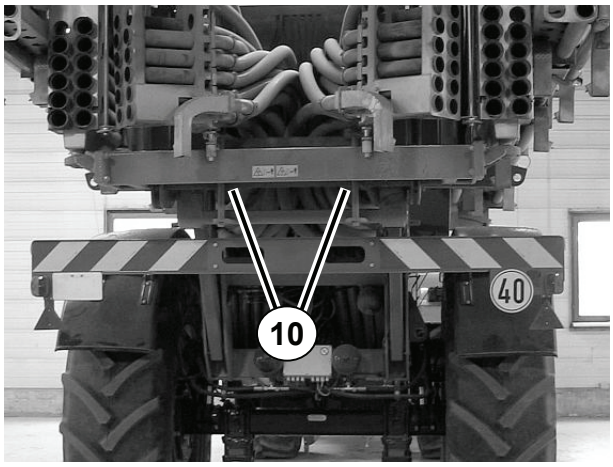


Fig. 74:
Sliding surface on the pendulum frame

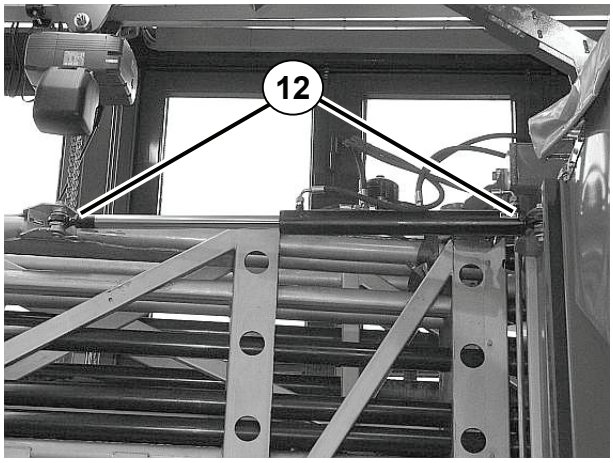


Fig. 75:
Hydraulic cylinder boom start section

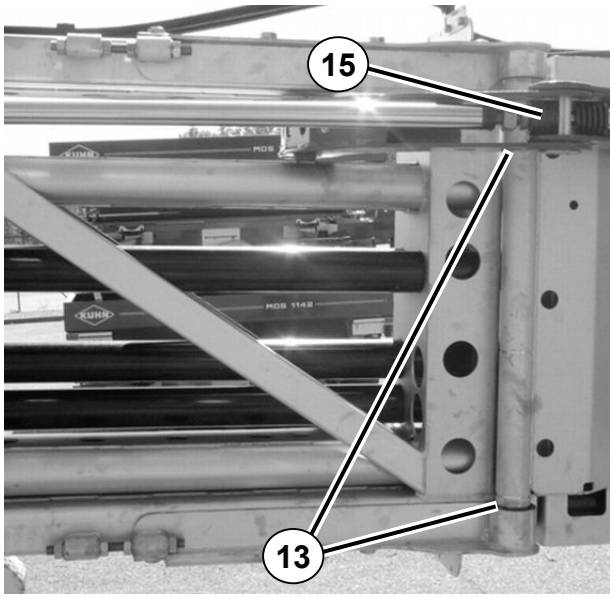


Fig. 76:
Joint boom central section

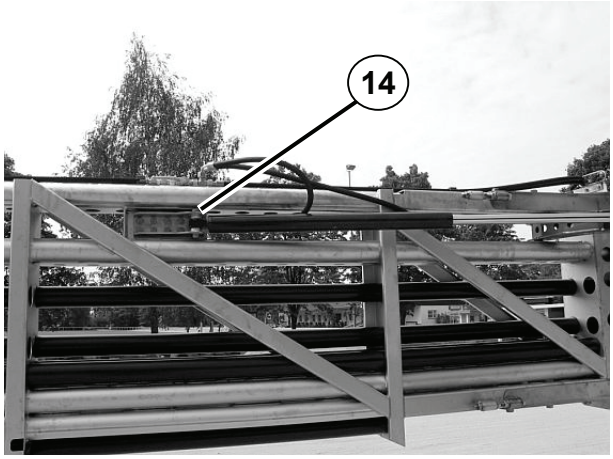


Fig. 77:
Rod end bearing hydraulic cylinder boom central section

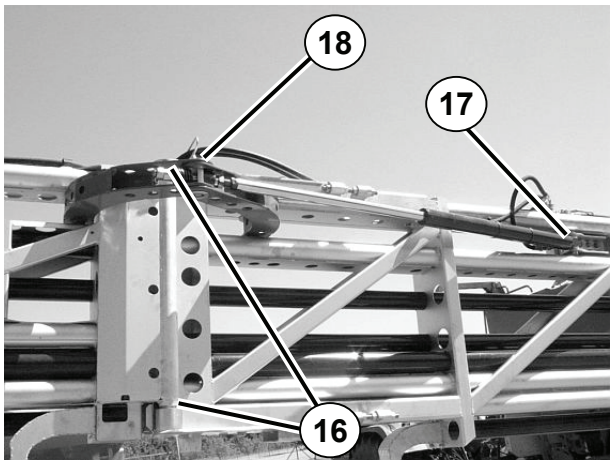


Fig. 78:
Joint boom end section

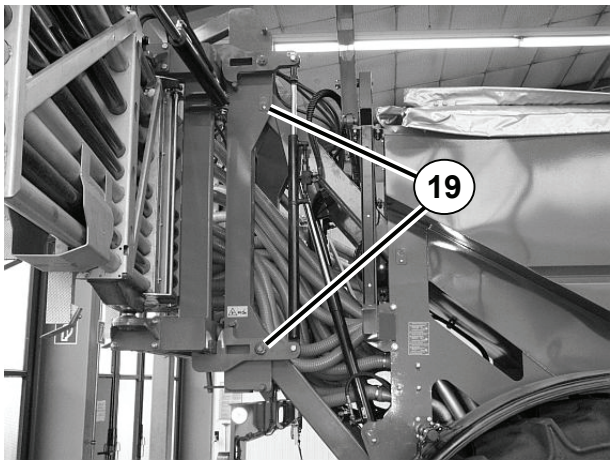


Fig. 79:
Bearing pin attachment frame

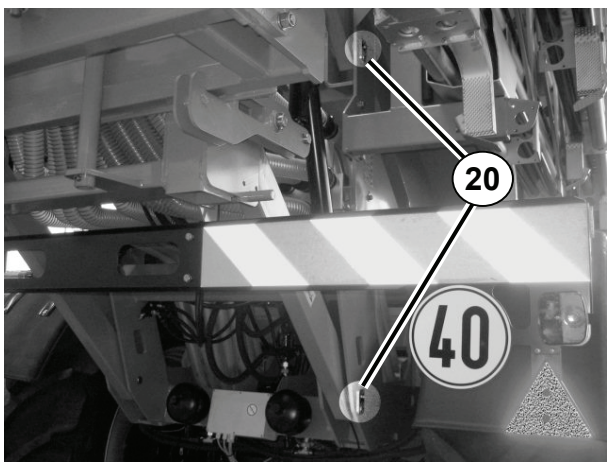


Fig. 80:
Bearing pin parallelogram

9.9.2 Lubrication Schedule

Pos.	Lubrication Points	Interval Operating Hours	Lubricant
1	Flange bearing blower drive, **left** and **right**	50	Grease
2	Joint bearing on the hydraulic cylinder for boom securing device, **front** and **rear**	50	Grease
3	Support brake lever, **left** and **right**	50	Grease
4	Joint bearing on the hydraulic cylinder for axle suspension, **bottom**, **left** and **right**	50	Grease
5	Joint bearing on the hydraulic cylinder for parallelogram, **top**, **bottom, left** and **right**	50	Grease
6	Rod end bearing on the hydraulic cylinder for pendulum frame lock, **top**, **left** and **right**	50	Grease
7	Rod end bearing on the hydraulic cylinder for incline	50	Grease
8	Spring unit on the hydraulic cylinder for incline	50	Grease
9	Supports on the pendulum, **inside** and **outside**	50	Grease
10	Sliding surface between pin rod and pendulum frame	50	Grease
11	Supports for boom on the pendulum frame **left**, top and bottom / **right**, top and bottom	50	Grease
12	Rod end bearings on the hydraulic cylinder for boom start section, **left** and **right**	50	Grease
13	Joint support for boom central section, **left** and **right**	50	Grease
14	Rod end bearings on the hydraulic cylinder for boom central section, **left** and **right**	50	Grease
15	Spring assembly on the hydraulic cylinder for boom central section, **left** and **right**	50	Grease
16	Joint support for boom end section, **left** and **right**	50	Grease
17	Rod end bearings on the hydraulic cylinder for boom end section, left and right	50	Grease
18	Spring assembly on the hydraulic cylinder for boom end section, **left** and **right**	50	Grease
without figure	Hitching ring / ball head coupling	50	Grease
	Drive shaft	50	Grease
19	Bearing pin attachment frame, **left** and **right**	50	Grease
20	Bearing pin parallelogram, **left** and **right**	50	Grease

9.9.3 Service Fluids

Vario drive hydraulic oil:

Factory Filling	**25 l**	**Texamatic**	• **7045 E**
Other permitted hydraulic oils	25 l	Agip	• ATF D III

IMPORTANT

Do not use bio-oils.

Bio-oils are not suitable for the operating temperature of the Vario drive hydraulic system.

- Only use the listed oil types.

Gearbox oils:

Factory Filling	**1.1 l**	**Texaco**	• **Meropa 220**
Other permitted gearbox oils	1.1 l	Total	• Carter EP 220
		Castrol	• Alpha SP 220
		BP	• Energol GR-XP 220
		DEA	• Falcon CLP 220
		Esso	• Spartan EP 220
		Shell	• Omala Oil 220
		Mobil	• Mobilgear 630

NOTE

If you should wish to use oils which are not listed here (in particular bio-oils), please contact your RAUCH contact person.

10 Guarantee and Warranty

RAUCH devices are manufactured with modern production methods and with the greatest care and are subject to numerous inspections.

Therefore RAUCH offers a 12-month warranty subject to the following conditions:

1. The warranty begins on the date of purchase.
2. The warranty covers material and manufacturing faults. Our liability for third-party products (hydraulic system, electronics) is limited to the warranty of the manufacturer of the equipment. During the warranty period, manufacturing and material faults are corrected free of charge by replacement or repair of the affected parts. Other rights extending beyond the above, such as claims for conversion, reduction or replacement for damages that did not occur in the object of supply are explicitly excluded.

   Warranty services are provided by authorised workshops, by RAUCH factory representatives or the factory.
3. The following are excluded from coverage by the warranty: normal wear, dirt, corrosion and all faults caused by improper handling and external causes. The warranty is rendered void if the owner carries out repairs or modifications to the original state of the object of supply. Warranty claims are rendered void if RAUCH original spare parts were not used.

   Please follow the directions in the operator's manual. In all cases of doubt, contact our factory representatives or the factory directly.

   Warranty claims must be submitted to the factory within 30 days at the latest after occurrence of the problem. The date of purchase and the serial number are required.

   If repairs under the warranty are required, they must be carried out by the authorised workshop only after consultation with RAUCH or the company's appointed representatives.

   The warranty period is not extended by work carried out under warranty.

   Shipping faults are not factory faults and therefore are not part of the manufacturer's warranty obligation.
4. Any claims for replacement of damage which has not occurred on the overload trailer or fertiliser spreader are excluded.

   This also means that no liability will be accepted for damages resulting from spreading errors. Unauthorised modifications to the overload trailer or fertiliser spreader can lead to consequential damage for which the supplier accepts no liability.

The supplier's exclusion of liability is not applicable in the event of the owner's or an executive employee's intent or gross negligence and in cases where, in accordance with the product liability law, defects in the object of supply incur personal or material damage to privately used objects and liability is accepted. It will also not apply in the case of faults in properties that are explicitly assured, if the assurance had the purpose of protecting the purchaser against damage that does not arise from the object of supply itself.

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