Operating and maintenance instructions

SAW Push-off semitrailer

CE

Original operating instructions – Keep for future reference!

Peter Kröger GmbH | Bloge 4 | D-49429 Visbek-Rechterfeld, Germany
Telephone +49 4445 9636-0 | Fax +49 4445 9636-66 | info@agroliner.de | www.agroliner.de

Preamble

Dear Reader,

These operating instructions will help you to familiarise yourself with the safe operation of the vehicle. They should help you to get to know the vehicle, use it effectively and avoid any unnecessary malfunctions.

The trailer has been designed and built according to the current state of the art and in accordance with all applicable safety rules. Nevertheless, dangers for people or property may still arise, as not all dangers can be avoided if the full functionality of the trailer is to be maintained. You can, however, prevent accidents resulting from these dangers and malfunctions by observing these operating instructions and the instructions given during the briefing.

WARNING!

When operating and maintaining the trailer there are many dangers that can cause injury and property damage.

Therefore:

- Please be sure to carefully read these operating instructions before operating the trailer or performing any maintenance work.
- Observe all the instructions and information that they contain, in particular the safety instructions.
- If you lose the operating instructions, or parts of the operating instructions, or if they are in a poor condition, request a new copy from the manufacturer (CD-ROM, paper copy) (see Page 141).

These operating instructions contain information for beginners and experienced users. Unfortunately, they cannot meet all needs. Nevertheless, we always endeavour to optimise the instructions and the products for practical use in the future. If you, as the operator, require further instructions or have any suggestions for improvements, feel free to contact us at any time.

After working through the operating instructions for the first time, keep them in a safe place for the entire service life of the vehicle so that you can look up information later if needed.

If the trailer changes owner, the operating instructions must be passed on to the next owner.

Documentation provided by the suppliers of certain assemblies and components must also be observed. The manufacturer of the vehicle does not accept any responsibility or liability for the content of such third party documentation.

Copyright protection

These operating instructions are copyright protected.

Any reprinting and reproduction of these operating instructions, including any extracts thereof, requires the manufacturer's written approval.

Guarantee and liability

The trailer may only be converted or modified if the manufacturer has given their written approval. If any unauthorised modifications are made, the manufacturer shall not be held liable for them and the guarantee shall lapse.

Guarantee and liability claims are also excluded if they can be traced back to one or more of the following causes:

- Improper use of the vehicle
- Improper assembly, commissioning, operation and maintenance of the machine
- If the vehicle is operated with defective, improperly installed or non-functioning safety and protective devices
- Failure to comply with the information provided in the operating instructions
- Poor maintenance or repairs
- Force majeure

The vehicle is operated at the risk of the operator. The manufacturer cannot be held liable for any damage that occurs when using the vehicle unless this damage is caused by gross negligence or a wilful breach of contract on the part of the manufacturer.

The guarantee provisions are listed in the General Terms and Conditions of the manufacturer (see annex).

Only use original replacement parts and accessories approved by the manufacturer. Otherwise, the structural properties, functionality or safety of the vehicle could be negatively impacted. Using other parts therefore negates the manufacturer's liability for any arising consequences.

Definitions in the operating instructions

The following conventions apply in these operating instructions for ease of understanding:

1. Information

The following types of special symbols are used to highlight important information:

DANGER!

...indicates an imminently dangerous situation that will cause death or serious injury if not avoided.

WARNING!

...indicates a potentially dangerous situation that could cause death or serious injury if not avoided.

CAUTION!

...indicates a potentially dangerous situation that could cause minor injuries if not avoided.

ATTENTION!

...indicates a potentially dangerous situation that could cause property damage if not avoided.

...contains general instructions and useful information.

...indicates important information in other sections and documents.

2. Text structure

Some texts serve a specific purpose. These are identified as follows:

- Lists

  ⇨ Instructions

    ↳ Consequences of an action

3. Position numbers

Numbers in round brackets, e.g. “(2)”, refer to the position numbers of the operating elements listed in Section 2.4.

4. Orientation

Any information about directions and sides (left, right, front, back, etc.), always relate to the forward direction of the trailer.

5. Figures

These operating instruction apply for the models SAW 32 and SAW 34. The figures in these operating instructions mainly refer to the SAW 32 model. The representations can, however, be transferred to other models.

If a description applies to all models listed above, only the model series SAWis mentioned.

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1 Safety

A prerequisite for the safe and fault-free operation of the trailer is a thorough knowledge of the safety information and safety regulations.

As such, read this chapter through carefully before starting any work and always observe the information and warnings that it contains. The warning information that can be found at the corresponding points in the text of the following chapters must be observed. The manufacturer cannot be held liable for any damages if the information and warnings have not been observed.

The manufacturer cannot foresee every danger. The warnings included in these instructions and displayed on the trailer therefore may not cover all dangers associated with the trailer.

The operator is responsible for complying with all safety regulations and for ensuring the proper use of the vehicle.

In addition to the information in these operating instructions, any applicable statutory regulations, in particular the safety and accident prevention regulations, must be taken into account.

1.1 Intended use

The operational safety of the SAW two-axle trailer is only guaranteed if it is used as intended. Therefore, it must only be used as intended.

The intended use is only given if the SAW 32 two-axle trailer is used in compliance with the permissible total weight and if it is coupled to an approved towing vehicle and used for transporting pourable and bulk goods. The trailer is particularly suitable for transporting grains, silage, woodchips and humus.

During a pushing process, the vehicle may only be operated by the driver of the towing vehicle, who must remain seated in the driver's seat of the towing vehicle at all times. During a pushing process, no-one should be in the danger zone of 5 m around the trailer and towing vehicle.

The tailgate should not be operated while the trailer is moving.

Compliance with all information provided in these operating instructions forms part of intended use.

The SAW is a trailer that must be operated together with an HGV or a dolly trailer (like the EAD).

The SAW 34, is a turntable trailer. This means that the dolly trailer is permanently attached to the trailer. All points described in these operating instructions also apply to this vehicle, which has a permissible total weight of 34 tonnes.

WARNING!

Danger of injuries due to improper use.

If the SAW 32 two-axle trailer is used for anything other than the intended use described in these operating instructions, dangerous situations can arise that may cause bodily injuries or property damage. In addition, any guarantee claims will no longer be valid.

Therefore:

- Only use the two-axle trailer SAW 32 for its intended use.

1.2 Improper use

Any use that deviates from the uses mentioned in Section 1.1 is considered to be improper use.

In particular, this includes:

- Transporting pourable and bulk goods that can be carried by the trailer in terms of volume but which exceed the permissible total weight for the trailer. This can easily happen with grains.
- Transporting people and animals.
- Travelling with the tailgate open.
- Transporting sharp objects that can cause damage, e.g. erratic boulders, cullet or steel scrap.
- Climbing on parts of the trailer. Exception: Unless this is required for maintenance or repair work.
- Operating the trailer when it is in a defective state or affected by safety-relevant malfunctions.
- If any modifications have been made without the authorisation of the manufacturer. It is expressly prohibited to drill holes into the chassis, to counter drill any existing holes on the upper and lower flange of the chassis frame and to perform welding work on any load-bearing parts.
- The trailer being operated by unsuitable personnel.

1.3 Product monitoring

Malfunctions or problems that occur during operation, as well as accidents and near misses, must be reported to the manufacturer immediately. The manufacturer will work with the operator to find a solution to the problem and will use the knowledge gained in any subsequent work.

Contact: see Chapter 8, Page 141.

1.4 Personnel requirements

WARNING!

Danger of injuries as a result of personnel being insufficiently qualified.

Mishandling of the trailer can lead to significant personal injury and property damage which can result in serious injuries.

Therefore:

- Only the groups of people mentioned below may work with the trailer.

The only people that may work with the trailer are:

- People who hold a valid category L driver's licence (depending on the approval)
- People who have the physical and mental capacity to operate the trailer
- People who are rested and focused
- People who are not under the influence of alcohol, drugs, narcotics, medication or other substances
- People who have sufficient experience with trailers or have been instructed by experienced people
- People who have read and understood these operating instructions and the additional documents in the annex
- People who can be expected to complete the tasks assigned to them responsibly and reliably
- People who are familiar with the basic occupational safety and accident prevention rules
- People who comply with the requirements of the EU Directive 89/655/EEC
- People who have been authorised to use the trailer by the operator

The assembly, maintenance, repair, troubleshooting and disposal of the trailer may only be done by personnel with the relevant technical training and experience, e.g. particularly with regards to mechanical, hydraulic or electrical systems.

WARNING!

Danger of death caused by work that has not been carried out properly.

If assembly, maintenance and repair work, troubleshooting and disposal is not performed by qualified and authorised personnel, there is a very high danger of injury. This risk exists during this work and as a result of work that has not been performed correctly.

Therefore:

- Any assembly, maintenance and repair work, troubleshooting and disposal should only be performed by authorised and trained personnel.

These people must be carefully selected by the operator. The area of responsibility and competences of the respective personnel must be clearly defined by the operator. The operator must conduct or have conducted a qualified training course and have evidence to prove it.

1.5 Requirements for the towing vehicle

WARNING!

Danger of injuries if an inadequate towing vehicle is used.

Mishandling of the trailer can lead to significant personal injury and property damage which can result in serious injuries.

Therefore:

- The towing vehicle requirements must always be observed.

The following minimum requirement applies:

- The vehicle must offer the possibility to operate the hydraulics at least when the handbrake is released.

WARNING!

Danger of injuries if an inadequate towing vehicle is used.

If an emptying process is carried out when the handbrake is when the handbrake is applied, pressure builds up due to charging. When the handbrake is released, the vehicle can move forward uncontrollably. This can result in significant, or even severe, injuries and property damages.

Therefore:

- The towing vehicle requirements must always be observed.

- The minimum required hydraulic pressure is 180 bar, otherwise the tailgate cannot close properly.
- However, the hydraulic power should never exceed 300 bar or 120l/min. The system must be check before being connected for the first time.
- 24 Volt continuous power supply
- Option to switch on the hydraulics via radio remote control signal PIN 11 of the 15-pin ISO 12098 socket.

  See socket assignment for more information about this.

1.6 Danger zone

The danger zone is the zone in which the safety or health of personnel is at risk.

No-one should enter the trailer when it is being towed by a towing vehicle. Riding on the trailer is prohibited.

The trailer should only be parked on sufficiently solid ground that can bear the weight of a fully loaded trailer. When parking on an incline, the trailer must be secured against unintentional rolling away.

When the trailer is at a standstill, people may enter the following areas:

- When coupling and decoupling, the supply lines between the towing vehicle and trailer.
- No-one should be in the danger zone when the plate is being pushed (see Figure 1, Page 17).
- During a pushing process, the trailer may only be operated by the driver of the towing vehicle. They must remain seated in the driver's seat of the towing vehicle at all times so that they can stop the pushing process in an emergency.

All information provided in the technical specifications must be complied with (see Section 2.6, Page 46).

WARNING!

Danger of death during the pushing process:

During a pushing process, there is a risk of the centre of gravity of the trailer shifting, e.g. due to heavy sliding cargo or overloading, causing it to tip over and pull the towing vehicle with it. For people in the danger zone, there is a risk of being struck by or buried beneath the toppling trailer and any falling cargo.

Therefore:

- Never start a pushing process if there are people in the danger zone.
- Stop the pushing process if anyone enters the danger zone.
- Only restart the pushing process when these people have left the danger zone.

The danger zone of the SAW trailer and the towing vehicle (see Figure 1).

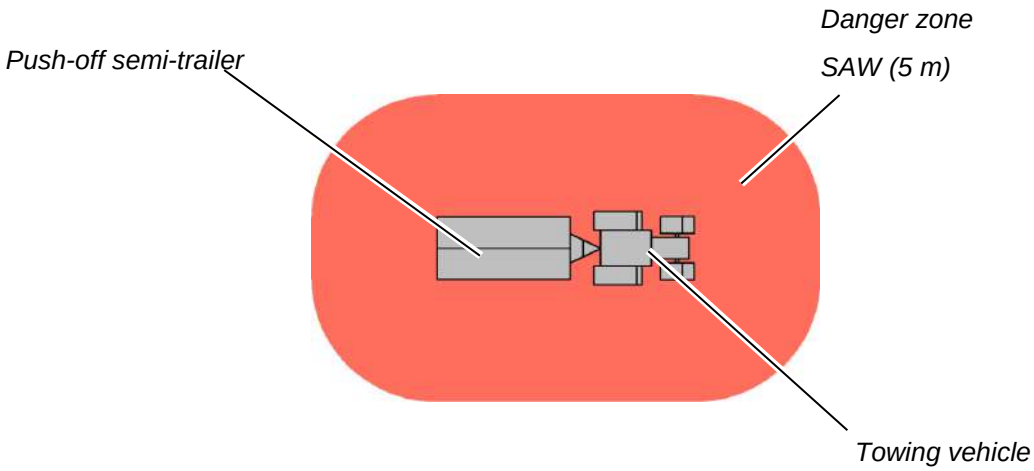


Figure 1: Danger zone of the SAW trailer and towing vehicle

During a pushing process, there is a risk of the centre of gravity of the trailer shifting, e.g. due to heavy sliding cargo or overloading, causing the trailer to tip over and pull the towing vehicle with it. This can result in serious or fatal injuries for anyone standing in the danger zone. As such, no-one should be in this zone during a pushing process.

1.7 Hazard points

The trailer has certain hazard points that cannot be structurally avoided without the function of the trailer being affected. These are listed below. This list is not a complete list of all possible hazard points.

When being in close proximity to hazard points is not absolutely necessary, e.g. for the operator, a safety distance of at least 5 m from any hazard points must be maintained at all times.

If this is not possible for operational reasons, the hazard points much be approached with extreme caution.

Danger of crushing:

- In the folding and swivelling range of the open tailgate
- In the cargo area during loading and unloading
- Between the towing vehicle and trailer, particularly during coupling and decoupling
- During decoupling if the unsecured trailer rolls away
- Under moving body sections that are in an open or raised position

Electrical hazards:

- When performing the (optional) hydraulic covering process near overhead power lines

Danger of impact:

- In the folding and swivelling range of the open tailgate
- When unfolding the ridge pipe

Danger of falling:

- During set-up work in the cargo area, e.g. when opening or closing the (optional) roller tarpaulin

1.8 Operator obligations

In addition to the safety instructions in these operating instructions, the applicable safety, accident prevention and environmental regulations for the operational area of the trailer must be complied with.

In particular, the following applies:

- The operator must carefully select the personnel to work with the trailer (see Section 1.4, Page 13).
- The area of responsibility and competences of the respective personnel must be clearly defined by the operator.
- All personnel tasked with working with the trailer must also read and observe these operating instructions and the documents in the annex. In addition, they must be instructed on the dangers associated with the trailer and the workplace.
- All personnel working in the area surrounding the trailer must be informed of the associated dangers.
- Personal protective equipment (PPE) suitable for the operational circumstances must be chosen, provided and worn (e.g. safety boots, safety goggles, protective clothing, ear protectors).
- The operator must inform personnel about how to use the protective equipment correctly in a safety training course. All personnel must be read all instructions for the PPE provided.
- If a danger or non-compliance with a regulation becomes known, corresponding measures must be taken immediately to counteract it.
- The operator must take care to ensure that the trailer and the surrounding area remain clean and clear at all times.
- The operator must ensure that the operating instructions are kept within close proximity of the trailer and that they are easily accessible and legible at all times. If the instructions are in a poor condition, or if any parts of the instructions are missing, the operator must request and provide a new copy.
- The operator must ensure that in addition to the information in these operating instructions, the German Road Traffic Licensing Regulation (StVZO), the German Road Traffic Regulations (StVO) and the German Accident Prevention Regulation for Vehicles (BGV D29), as well as all general and local accident

prevention and environmental protection regulations, are also complied with.

1.9 Disposal

At the end of its service life, the trailer may only be disposed of by qualified professionals. The manufacturer accepts no liability for any damage caused by the improper disposal of the trailer.

During all work, take care to ensure that no unnecessary environmental pollution occurs. Always remove oil and grease residues after maintenance work. Collect any leaking operating materials (e.g. oil). If oil needs to be drained from the trailer, ensure that there is a suitable collection container nearby.

All operating materials and oil-containing parts must be disposed of properly and in an environmentally friendly way in accordance with all applicable environmental protection regulations.

1.10 Safety and information signs

WARNING!

Danger of serious injuries, or even death, if safety signs are not visible.

The safety signs attached to the trailer warn of dangers and hazards that are not immediately identifiable. Removed or illegible safety signs can result in serious injuries.

Therefore:

- All safety signs on the trailer must be complied with.
- Never remove safety signs and ensure that they are always legible.
- Replace any loose, missing or illegible safety signs immediately (contact our customer service team: see Chapter 8, Page141).

Safety signs	Meaning
	Follow these safety instructions each time before using the trailer: • Check the wheel nuts to make sure that they are secure and then tighten them again after the trailer is used for the first time. • Check all bolted connections to make sure that they are secure after the trailer is used for the first time. • Check the tyre pressure. • During pushing processes, there should be no-one in the danger zone. • Only carry out pushing process when the trailer is at a complete standstill and parked on flat and solid ground. • When the trailer is attached, secure it with brake shoes and parking brakes. • When the trailer is moving, the roller tarpaulin must be closed and secured. Position: Left-hand side on the chassis above the service brake valves and filter.

Safety signs	Meaning
	All personnel must read the operating instructions before using the trailer. All information in the operating instructions must always be observed.
	Check that the wheel nuts are secure. Check that the wheel nuts are secure after the first loaded journey, or at the latest after 50km, as well as after each tyre change. Tighten with the specified tightening torque if necessary.
	Danger of crushing in the areas around moving parts.
	Danger of crushing in the area around the drawbar. There is a danger of being crushed between the towing vehicle and trailer when the towing vehicle is moving.
	Danger of injuries in the area around the raised cover. Sufficient distance from the cover must be maintained at all times.
	Danger of falling when riding on the trailer. Riding on the trailer is prohibited.
	Danger of injuries if the trailer rolls away. Before the trailer is coupled to the towing vehicle, it must be secured

Safety signs	Meaning
	against unintentional rolling with wheel chocks.
	Danger of injuries in the area around the raised, unsecured tailgate. It is prohibited to stand beneath the unsecured tailgate. Before any work is performed beneath the raised tailgate, the tailgate must first be secured with a mechanical support.
	Danger of fatal electric shock. A sufficient distance must be maintained between the trailer and any power supply lines.
	Danger as a result of mechanical work on frame parts. Mechanical work can result in dangerous, structural changes. It is therefore expressly prohibited to drill holes into the chassis, to counter-drill existing holes on the upper and lower flange of the chassis frame and to perform welding work on any load-bearing parts.
	Lever point for a jack A jack may be used at the points identified in this way.
	Maximum speed Shows vehicles travelling behind the trailer the maximum permitted speed for the trailer.

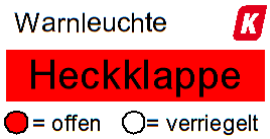
Information signs	Meaning
	Forced steering Brief instructions on how to set the forced steering (optional) (description in this document)
	Tailgate warning light The warning light lights up if the tailgate is not locked
	Crossrail position Parked position with a bulk cargo pile (e.g. manure, silage maize) Installed horizontally for free-flowing products (high side pressure) Mulching flap in folded down position
	Pusher plate Seal can get jammed!!! Move the pusher plate far enough forwards, before the tailgate is closed
	Pre-press max. 100 bar First load fully, then press (suitable for grass and maize silage)

Figure 2: Safety and information signs on the front of the trailer

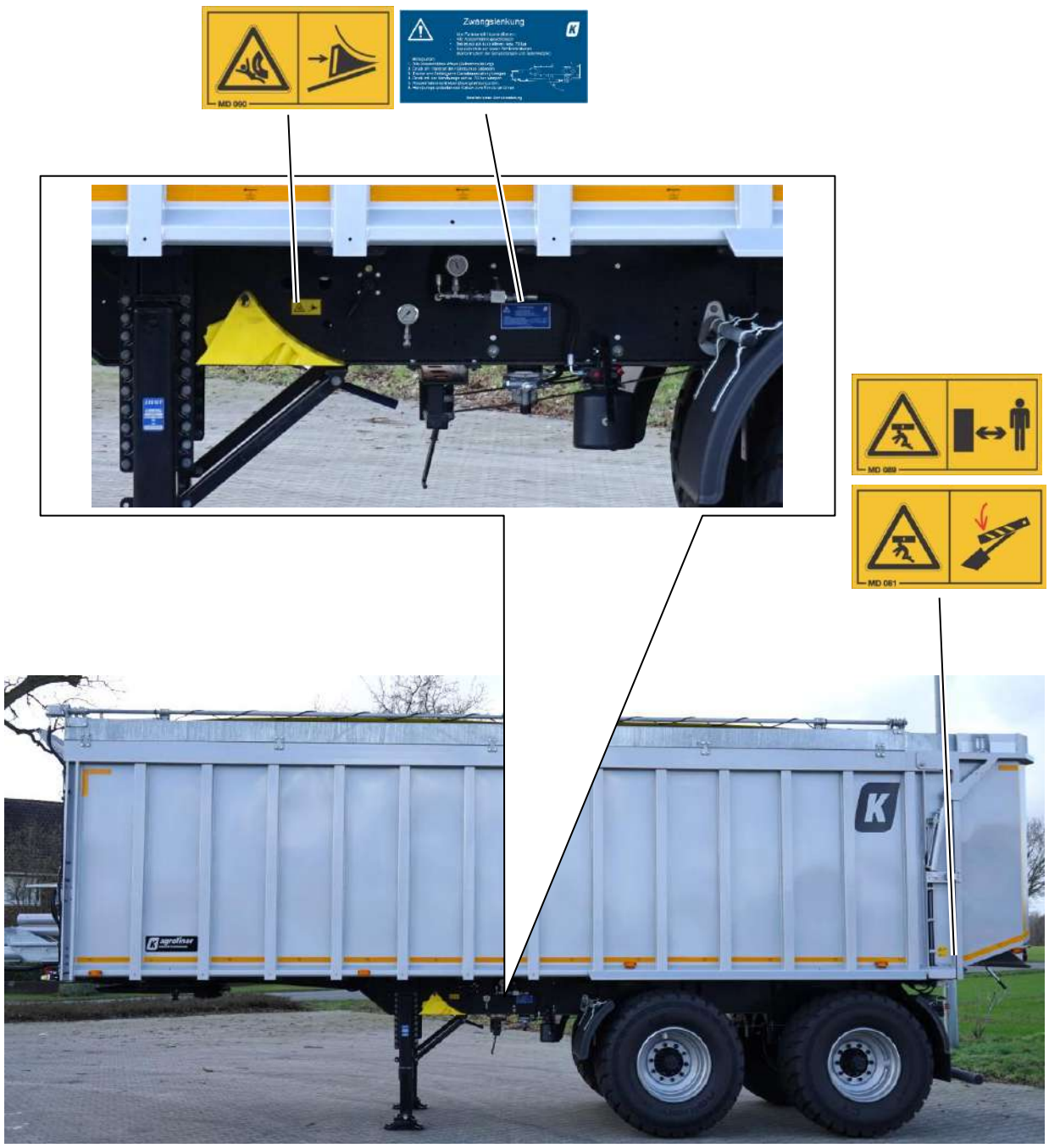


Figure 3: Safety and information signs on the side of the trailer, here: SAW 32 Left-hand side

Figure 4: Safety signs on the back of the trailer

2 Description of the trailer

The SAW 32 is a two-axle trailer (see Figure 5).

Figure 5: SAW 32 trailer

The SAW 34 is a three-axle, turntable trailer (see Figure 6: SAW 34 trailer).

Figure 6: SAW 34 trailer

The aim of this chapter is to illustrate the structure and function of a trailer. The individual assemblies and components are described below for this purpose.

2.1 Type plate

The trailer has a type plate that lists the trailer's basic data (see Figure 7). It is located on the front right of the frame.

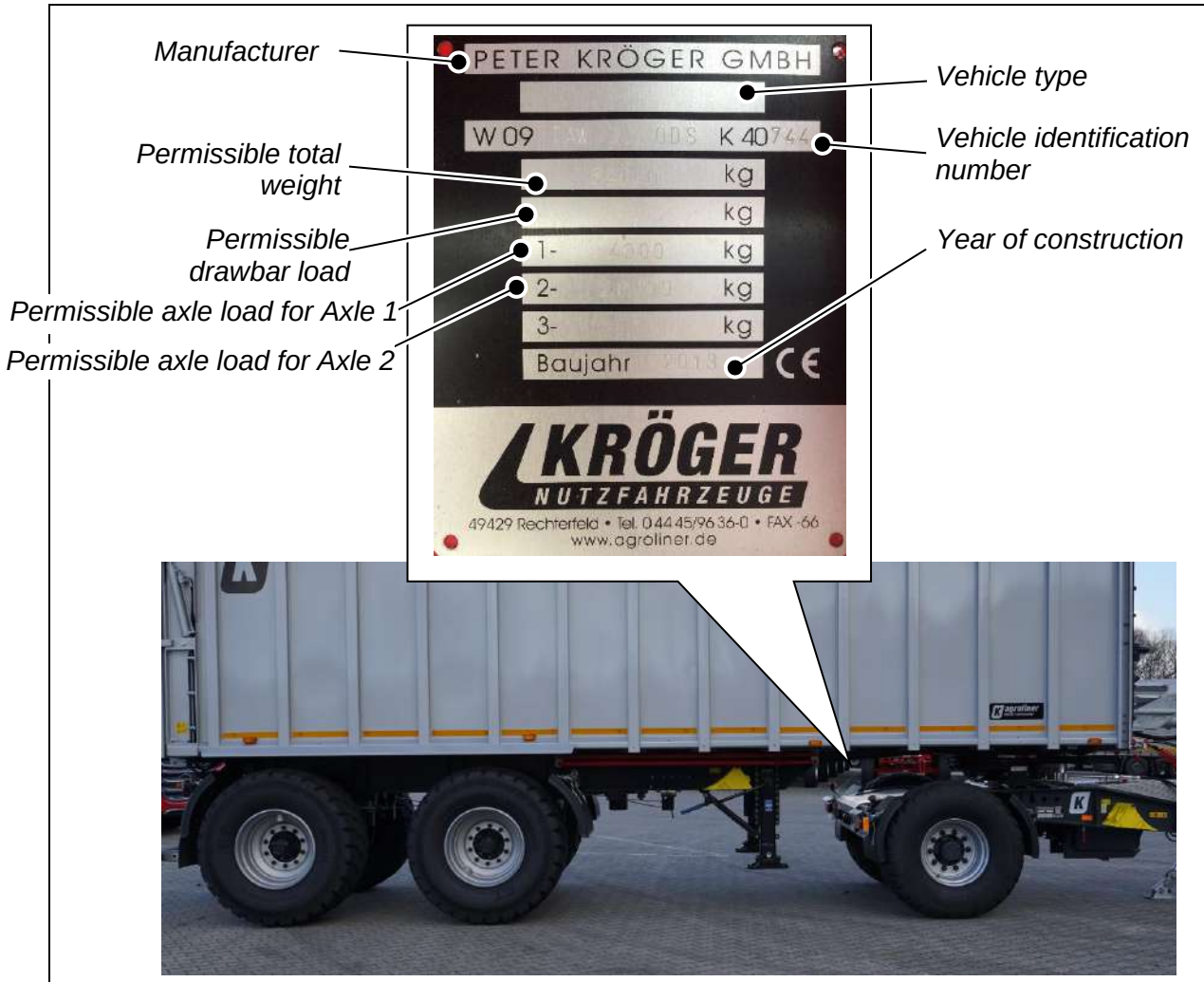


Figure 7: Type plate

Components and accessories from suppliers have their own type plates (see the documentation provided by suppliers in the annex).

2.2 ALB sign

The ALB sign contains the data needed to correctly set the automatic load-dependent braking (ALB) (basic setting) (see Figure 8). It is located on the front right-hand side of the frame.

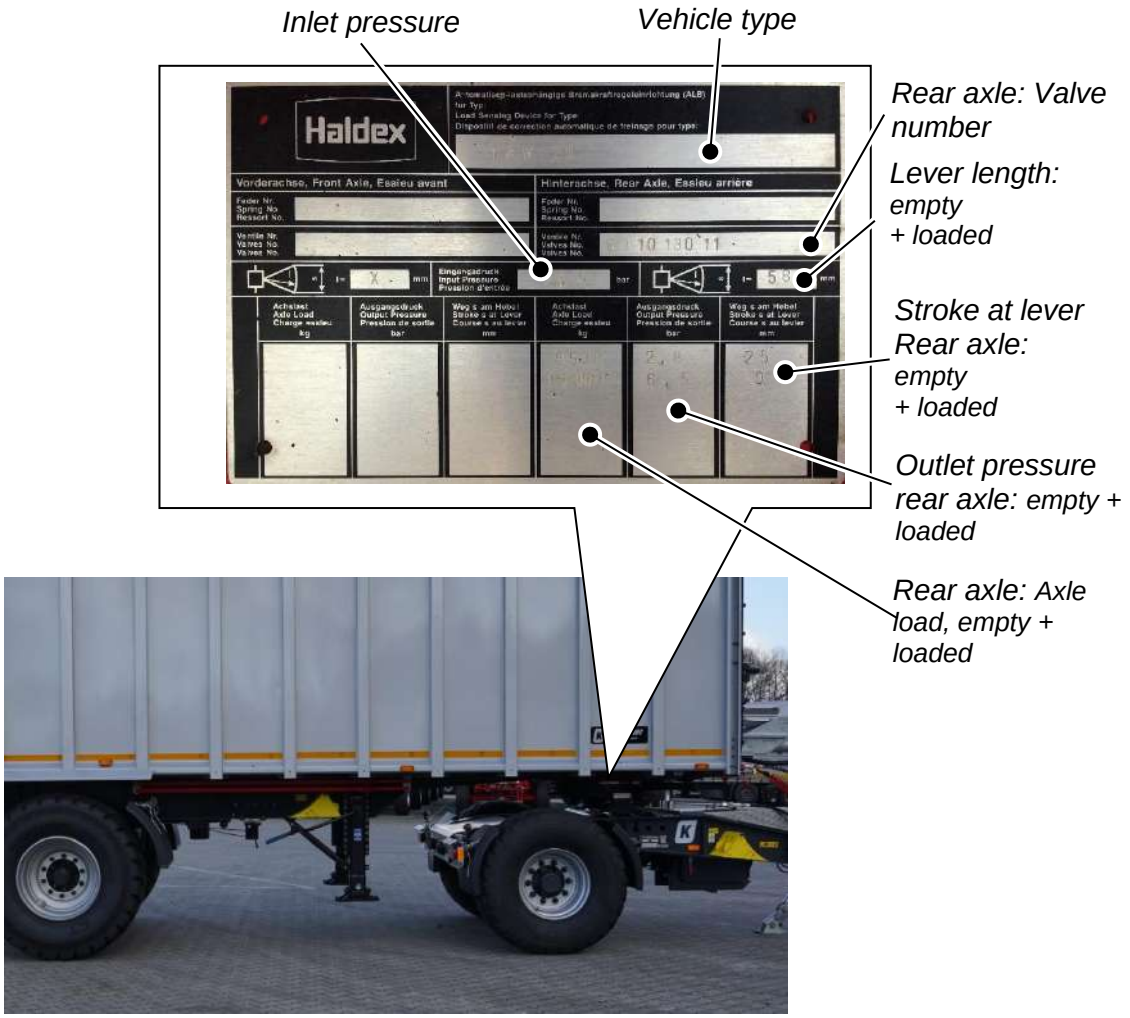


Figure 8: ALB sign

INFORMATION

In its basic configuration, the SAW 32 has automatic load-dependent braking (ALB) on the entire axle group. With the SAW 34, there is also an ALB system in the dolly trailer.

2.3 Structure

The trailer has the following main assemblies (also see Figure 9):

- Chassis
- Body - Trough
- Running gear
- Tailgate
- Dolly trailers

The individual assemblies are described in more detail in the following sections.

Figure 9 Trailer main assemblies, here: SAW 32

2.4 Chassis

The chassis (black) forms the basis of the trailer.

With the SAW 32 and the SAW 34, the chassis differs in the following ways:

- The SAW 32 has two axles, the SAW 34 and the dolly trailer have three axles altogether.

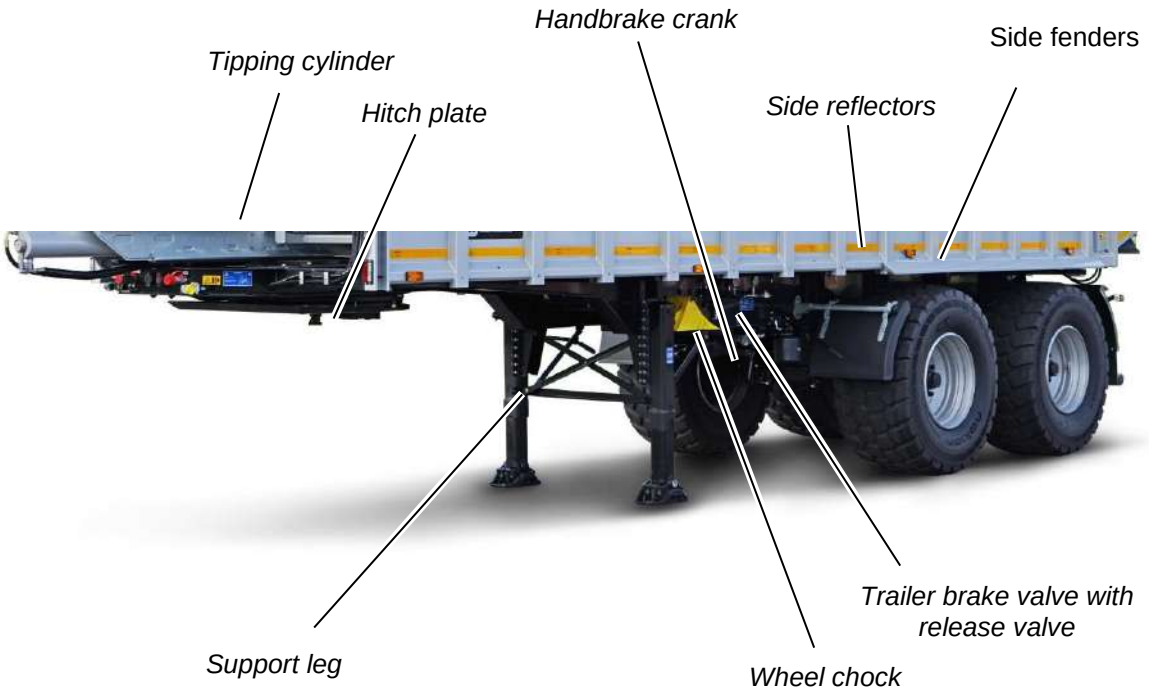
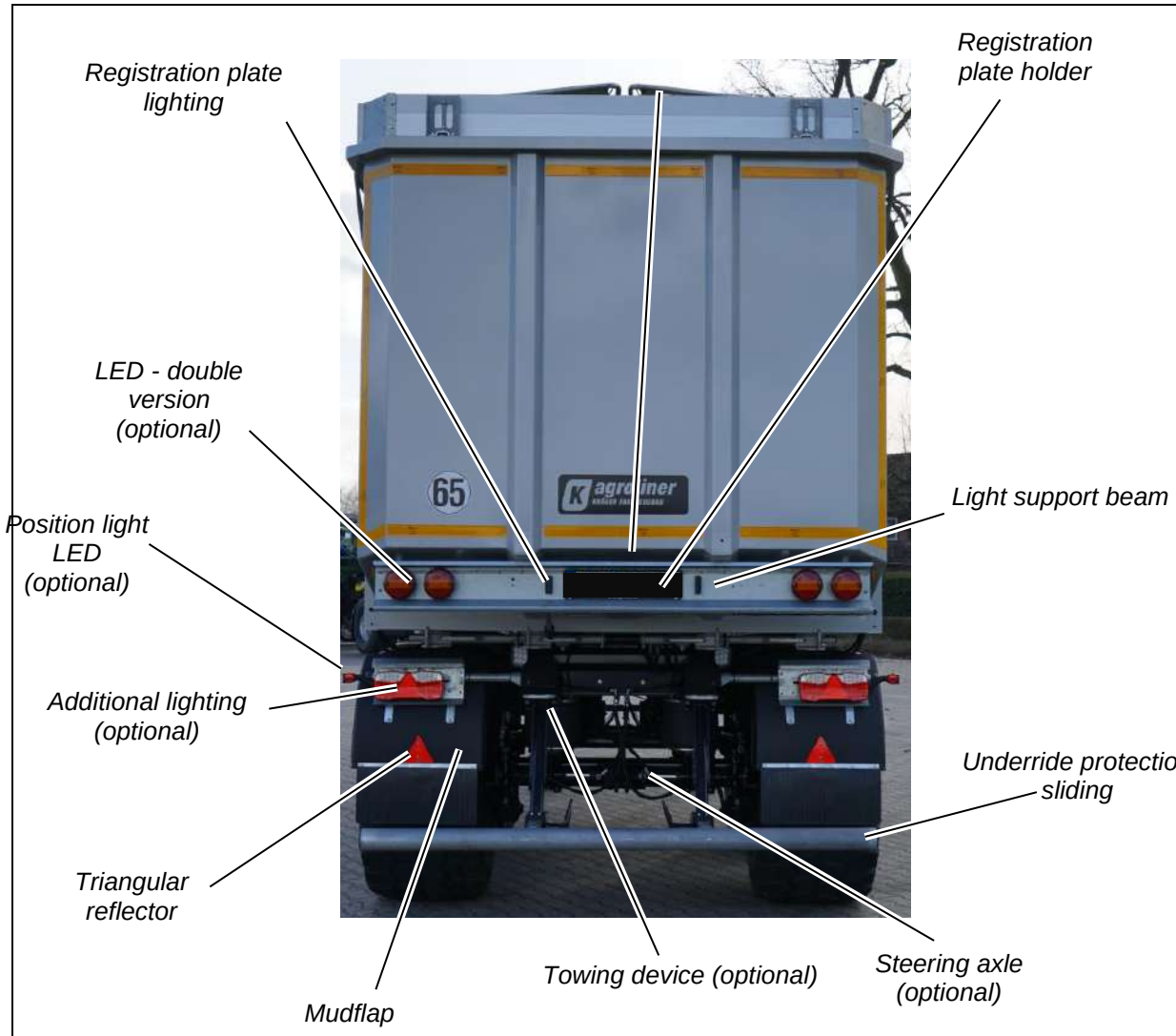


Figure 10: SAW 32 chassis from the front left



Off-centre position left and right

Figure 11: SAW 32 chassis from the rear

WARNING!

Danger of accidents.

A second vehicle must not be coupled to the trailer with towing device.

Therefore:

- Only use the towing device (optional) as indicated
- Only use one side when towing (towing cable length min. 3 m)

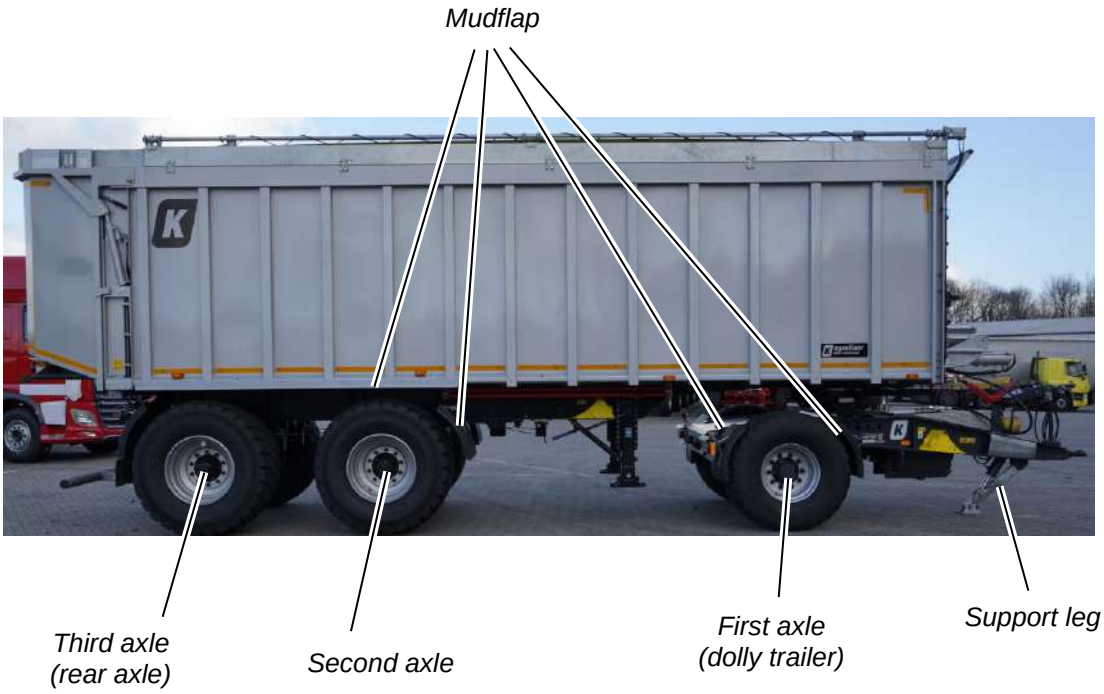


Figure 12: SAW 34 from the right

2.4.1 Tailgate

The light support beam shown in the picture is part of the tailgate.

Figure 13: Tailgate

Figure 14: Tailgate slightly open, from below

As you can see in Figure 14, two locking shafts that are connected by a cylinder are installed. When the tailgate is closed, both shafts are pushed outwards by the cylinder. The arrester hooks (two on each side) catch the locking chocks on the tailgate.

As a result, the tailgate is pressed against the cargo area until the seal and rubber buffer come into contact with it.

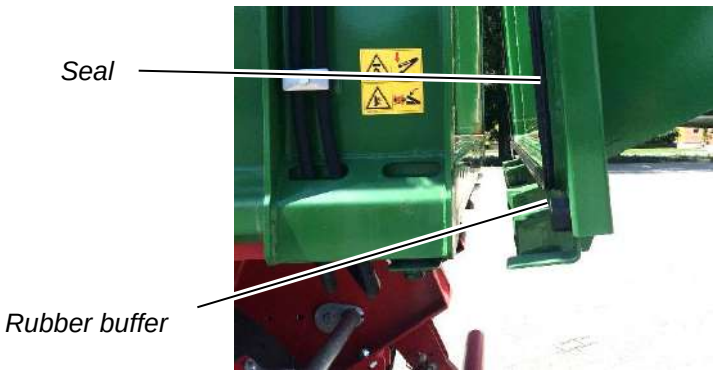


Figure 15: Tailgate slightly open, from the side

2.4.2 Pusher plate

Figure 16: Pushing process (shown without side panel)

The floor is made up of two parts. The front part of the floor rests on the rear floor assembly in the transition area. During the pushing process, the pusher plate and the front floor assembly are moved back over the rear, fixed floor assembly. The pressure plate then pushes off completely over the front floor to the rear spoiler.

The system is rail-mounted and is guided by 3 dual-action hydraulic cylinders that are connected to a control unit.

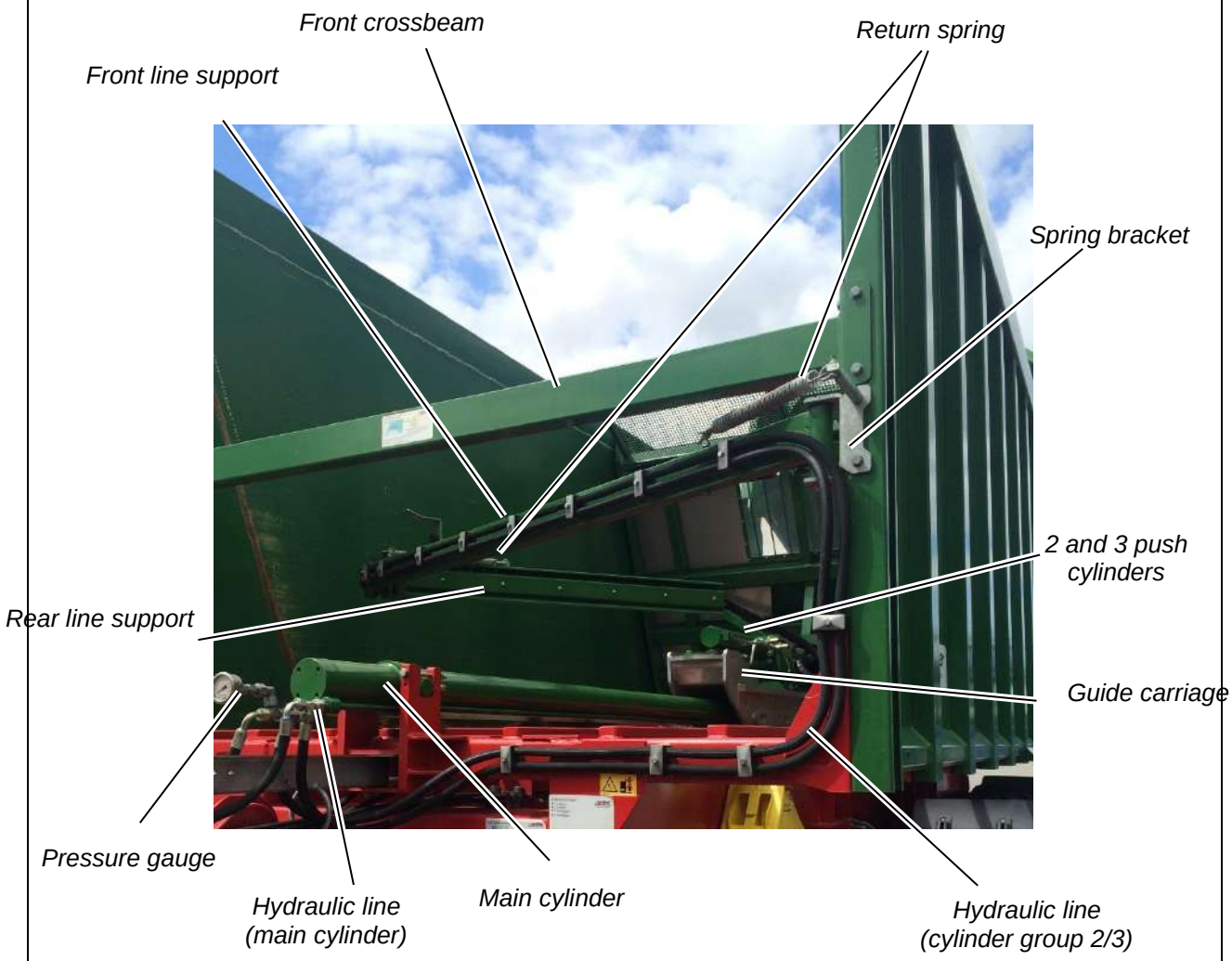


Figure 17: Pusher plate half back

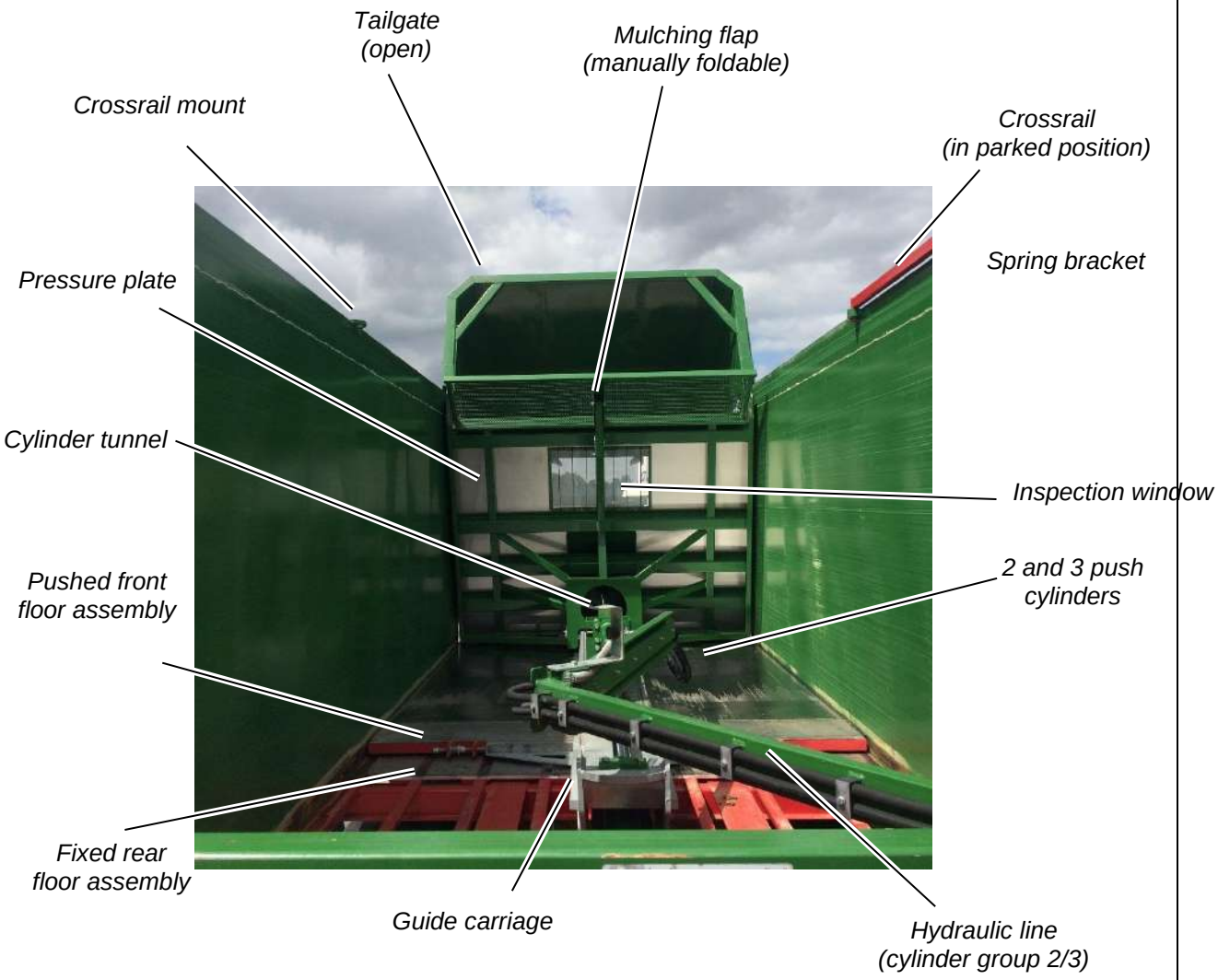


Figure 18: SAW 32 pusher plate view from the rear

2.4.3 Tyres

In its basic configuration, the SAW 32 and SAW 34 trailers are equipped with 425/65-R22.5 factory reconditioned tyres, which can only be driven at a maximum speed of 80 km/h.

Different types of tyres and tyre sizes are available as an option.

The permissible dimensions of trailers that should not be surpassed are set out in Section 32 of the German Road Traffic Licensing Regulation (StVZO). This section states that a maximum vehicle width of 2.55 m must be complied with. If low pressure tyres are used, the 35th derogating provision of the StVZO applies. This provision states that, contrary to Section 32, Para. 1, No. 1 of the StVZO, the total width of agricultural or forestry towing machines and their trailers may exceed 2.55 m, if the greater width results solely from these trailers being optionally equipped with wide tyres, which at a reference speed of 10 km/h have the tyre load capacity required to achieve the respective permissible axle load at an internal pressure of no more than 1.5 bars, and if safe travel on public roads in ensured. However, the total width must not exceed 3 m. (Attention: From 2.75 m, the larger width must be indicated to other road users with warning signs!)

For more information (see Section 5.3.7 Checking and correcting the tyre pressure).

2.4.4 Hydraulic system

The hydraulic system is designed individually for each trailer, depending on its equipment.

For the basic version of the SAW 32, a dual-action control unit for the tailgate and a single-acting control unit for the support leg (only SAW 34) is required.

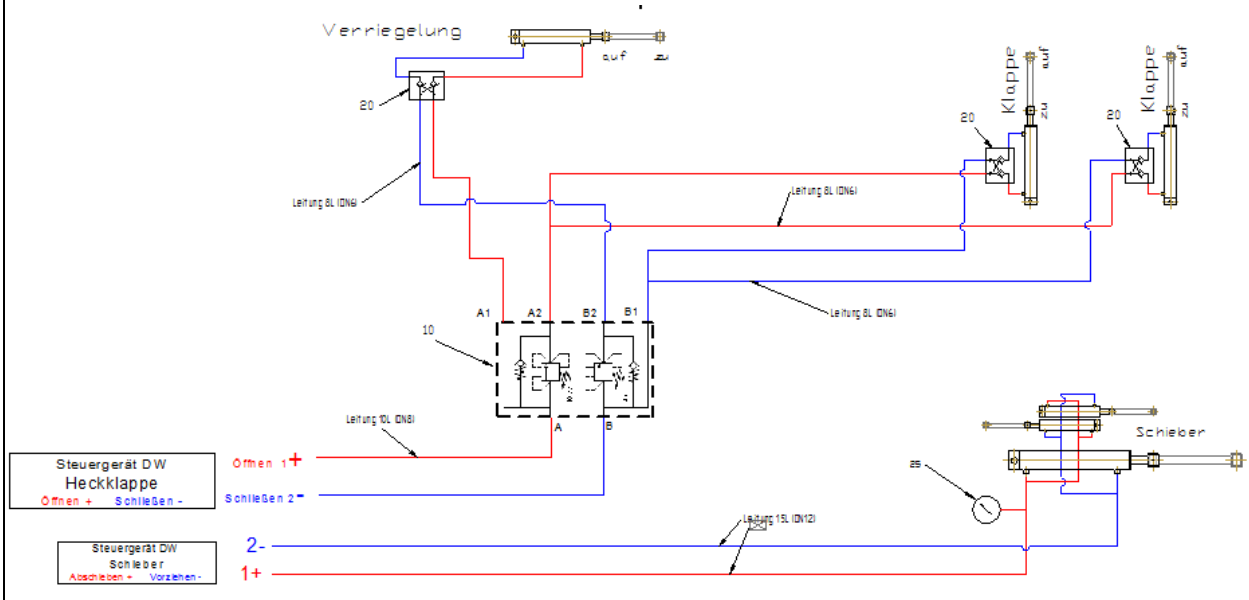


Figure 19: Hydraulic diagram, basic equipment

When opening the tailgate, the lock must be opened first. The tailgate is only opened when the system pressure has reached 140 bar. The pressure sequence valve then activates the intake to the tailgate.

To close the tailgate, perform the steps above in reverse order. Once the tailgate has been closed, the pressure will increase to 140 bar again. As a result, the lock is activated.

Service and parking brake

The service brake is a dual line service brake system with automatic load-dependent braking (ALB). It acts on all tyres.

The brake line, marked in yellow, directly controls the service brake (0 bar = no brake applied, 6.5 bar = brake fully applied).

The supply line, marked in red, feeds a compressed air tank which serves as an energy storage device so that the service brake engages when the trailer is uncoupled. If the trailer breaks away from the towing vehicle, the trailer brake valve will trigger the emergency brake.

If the securing pressure in the compressed air tank is not below the limit, the operator can release the service brake again by activating the release valve.

If the compressed air tank is unpressurised, the brakes cannot be applied to the trailer.

The parking brake stops a trailer weighing the permissible total weight from rolling away on slopes on an incline of up to 7%.

The parking brake is a spindle parking brake. It only acts on the front axle and is manually operated with a crank.

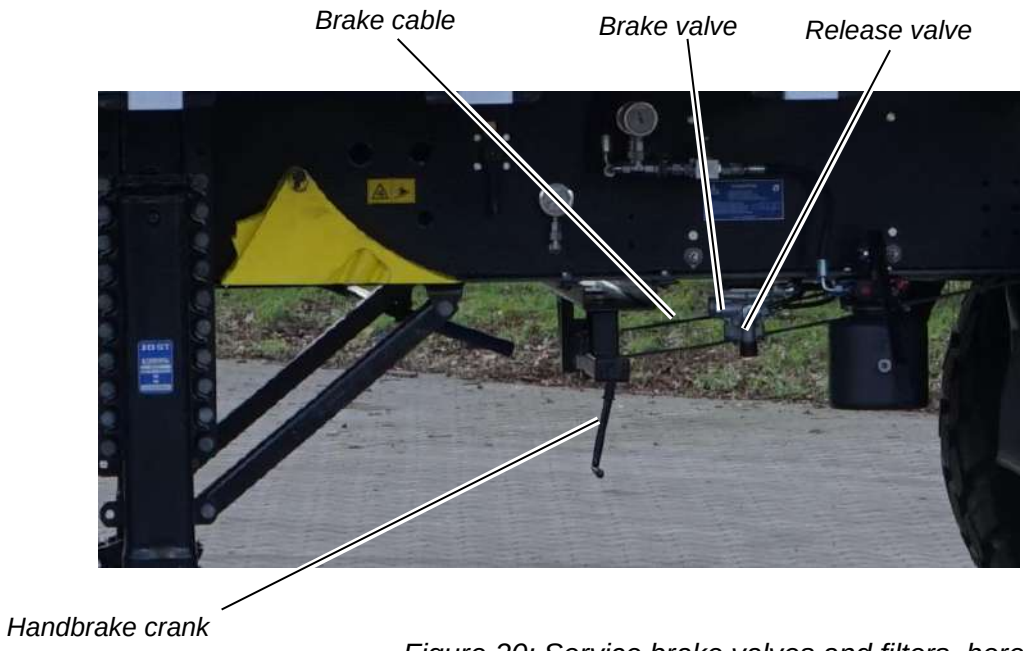


Figure 20: Service brake valves and filters, here: SAW 32

ALB (Automatic load-dependent braking)

The ALB regulates the brake force of the service brake depending on the load condition of the trailer and acts on all wheels. To determine the height, a spring-loaded connecting rod is mounted between the axles.

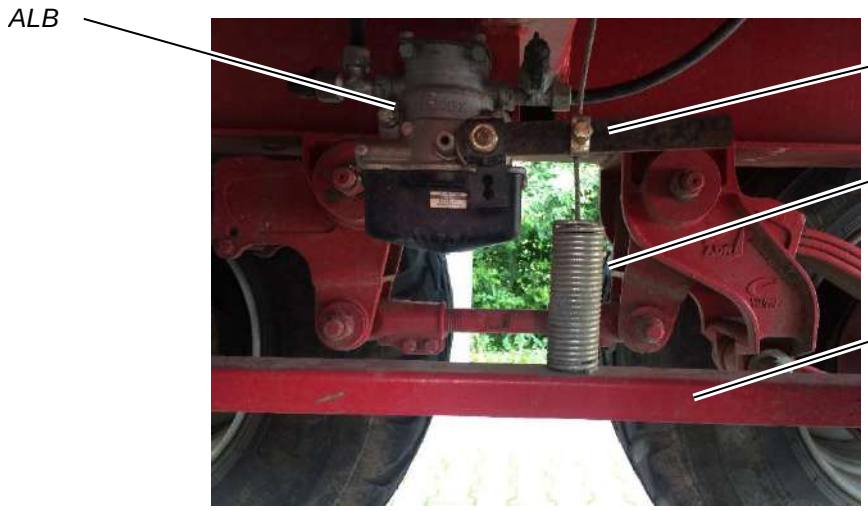


Figure 21: ALB, here: SAW 32

The basic setting of the ALB is given on the ALB sign (see, *Page 30).*

INFORMATION

In its basic configuration, the SAW 32 has automatic load-dependent braking (ALB) on the entire axle group. It is installed between the front and rear axle.

In its basic configuration, the SAW 34 also has automatic load-dependent braking (ALB) on the dolly trailer.

The dolly trailer is also equipped with a brake system.
With the SAW 32, this system is completely separate. Observe the relevant operating instructions for this.
With the SAW 34, the two control buttons for spring accumulators and the release valve are omitted. This are installed in the centre of the vehicle and extend out to the dolly trailer.

The height adjustment, however, is operated separately on the dolly trailer.

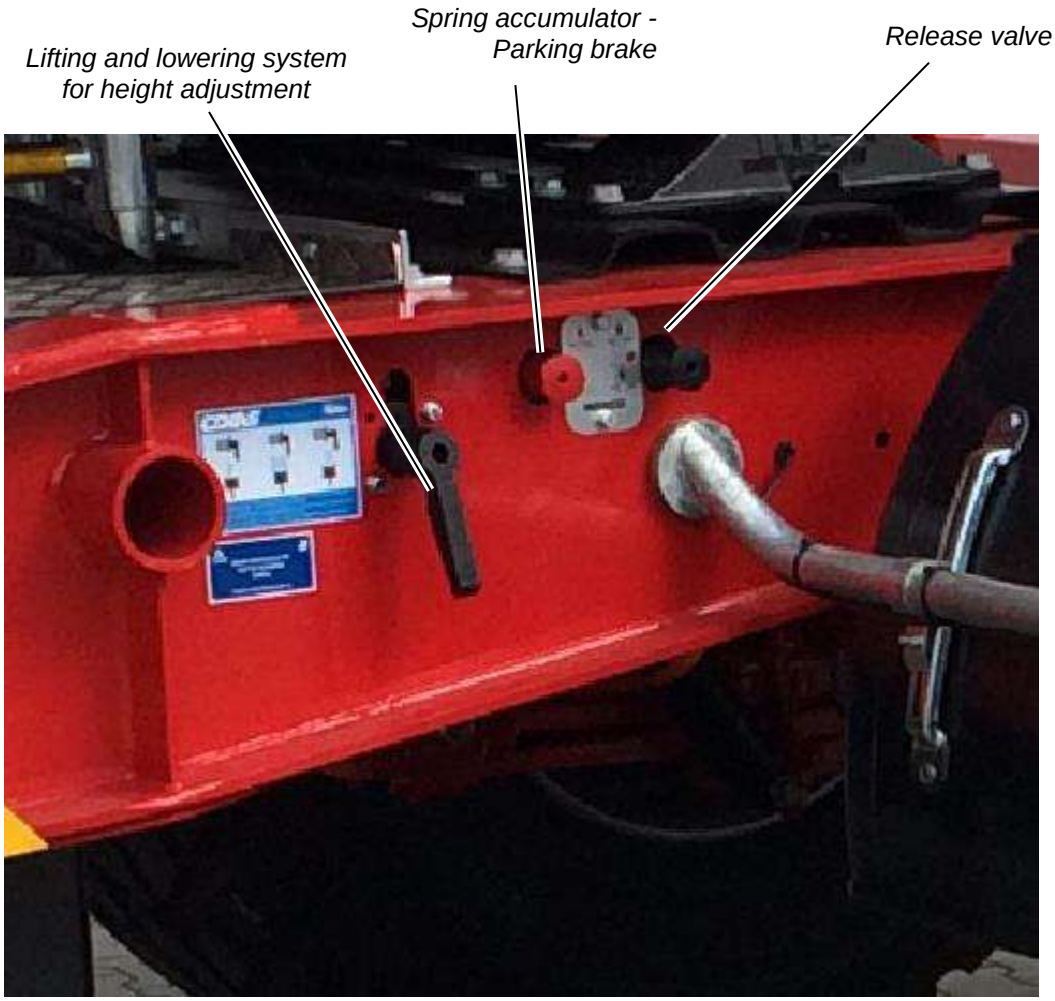


Figure 22: Service brake valve on the dolly trailer, here: SAW 32

2.5 Example of a towing vehicle

The options described in the following chapters partially refer to towing vehicle designations. For example, below is the rear of a tractor.

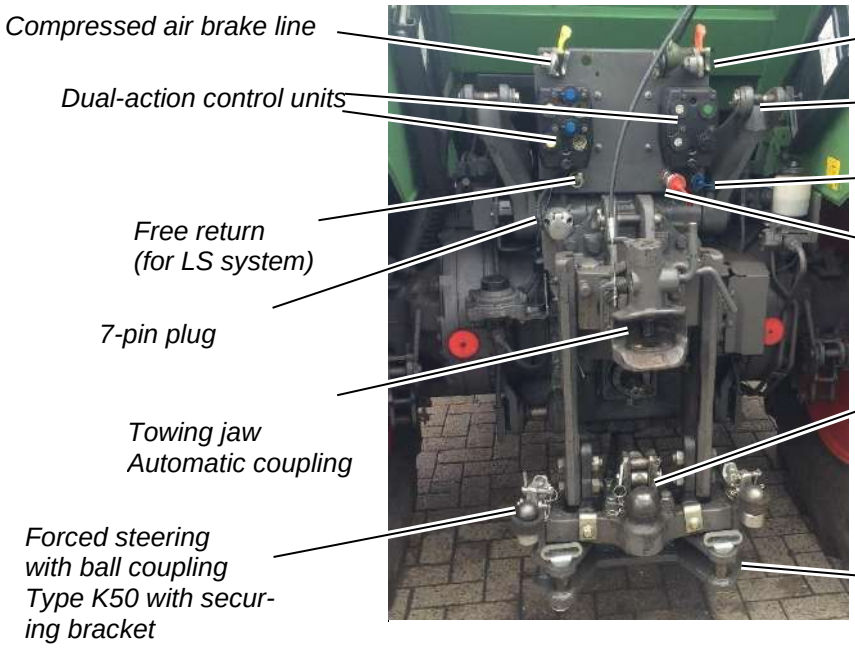


Figure 23: Rear view of a towing vehicle (here tractor)

2.5.1 Operating and control elements in the cab of the towing vehicle

A pushing process is controlled from the cab of the towing vehicle.

An control element to which the trailer is connected is controlled via an operating element in the driver's cab. This enables the tailgate to the opened and closed and the trough to be lifted and lowered.

The operating element is usually a control lever.

To operate the control elements to which the trailer is connected in the towing vehicle: see the towing vehicle operating instructions.

2.6 Technical specifications (basic configuration)

2.6.1 Dimensions

	SAW 32	SAW 34
External dimensions incl. towing drawbar (L x W x H)	10,538 x 2,550 x 3,560 mm	11,324 x 2,550 x 3,560 mm
Cargo area external dimensions (L x W x H)	9,390 x 2,550 x 2,020 mm	9,390 x 2,550 x 2,020 mm
Cargo area internal dimensions (L x W x H)	9,200 x 2,370 x 2,020 mm	9,200 x 2,370 x 2,020 mm

2.6.2 Weights

	SAW 32	SAW 34
Empty weight (basic configuration)	8,800 kg	10,050 kg
Payload (basic configuration)	23,200 kg	23,950 kg
Permissible total weight (basic configuration)	32,000 kg	34,000 kg
Drawbar load	12,000 kg	4,000 kg (up to 40 km/h)

2.6.3 Load

	SAW 32	SAW 34
Type of cargo	Agricultural pourable and bulk goods up to 1.2 to/m³	
Examples of cargo	Silage, woodchips, compost, grains	
Density of the main goods transported	List of different goods with information in kg/m³, see data sheet “Densities (poured)”	

2.6.4 Axles

	SAW 32	SAW 34
Type	Tapered roller bearing axles	Tapered roller bearing axles
Track width	2,050 mm	2,050 mm
Load per axle	12,000 kg	12,000 kg

2.6.5 Tyres (basic configuration)

	SAW 32	SAW 34
Dimensions	425/65 R 22.5 (factory reconditioned)	425/65 R 22.5 (factory reconditioned)
Total number	4 pieces	6 pieces
Load-bearing capacity (at 80 km/h)	5,150 kg	5,150 kg
Speed	max. 40 km/h	max. 40 km/h
Tyre pressure	9.0 bar	9.0 bar
Tightening torque	550 Nm	550 Nm
Rims	Centre well rims	Centre well rims

2.6.6 Speeds

	SAW 32	SAW 34
Maximum permitted speed (with ABS and suitable tyres (optional))	80 km/h	

2.6.7 Electrical system

	SAW 32	SAW 34
Supply voltage	12 V	

2.6.8 Towing drawbar

	SAW 32	SAW 34
Basic version	Fifth-wheel coupling	Ball coupling Type K 80

2.6.9 Operating and auxiliary materials

The following lubricants may be used:

For manual lubrication, grease NLGI Class 3, in accordance with DIN 51818

For central lubrication systems, grease NLGI Class 2, in accordance with DIN 51818 (without solid lubricants)

Different types of hydraulic fluids are used depending on the operating conditions (normal or extreme).

Normal operating conditions are:

- Regular use, travel on surfaced roads,

  occasional transportation of full loads, central European climate

Extreme operating conditions are:

- Long downtimes, travel on unsurfaced roads and

  uneven ground, constant transportation of full loads, extreme climate

The following lubricants may be used:

Manufacturer	**Lubricant name**	
	Normal operating conditions	**Extreme operating conditions**
ARAL	Aralub HL 2	Aralub HLP 2
ESSO	Beacon 2	Beacon EP 2
SHELL	Retinax Hd 2	Retinax Hdx 2
TOTAL	Multis EP2	Multis 2

PANOLIN	HLP SYNTH 46 (biodegradable)
FUCHS	Plantosyn 3268 (biodegradable)

2.6.10 Tightening torque for bolts

(unless otherwise stated)

Thread	Spanner size	Tightening torque (in Nm) depending on the bolt / nut grade		
		8.8	10.9	12.9
M 8	13	25	35	41
M°8 x 1		27	38	41
M 10	17	49	69	83
M°10 x 1		52	73	88
M 12	19	86	120	145
M°12 x 1.5		90	125	150
M 14	22	135	190	230
M°14 x 1.5		150	210	250
M 16	24	210	300	355
M°16 x 1.5		225	315	380
M 18	27	290	405	485
M°18 x 1.5		325	460	550
M 20	30	360	460	560
M°20 x 1.5		396	506	616
M 22	32	440	560	660
M°22 x 1.5		484	616	726
M 24	36	530	670	760
M°24 x 2		583	737	836
M 27	41	650	760	880
M°27 x 2		715	836	968
M 30	46	780	890	1050
M°30 x 2		858	979	1155

2.6.11 Tightening torque for wheel nuts

Axle manufacturer	Size	Centring type	Tightening torque (Nm)
BPW	M°18 x 1.5	Conical	290
BPW	M°22 x 1.5	Conical	510
BPW	M°22 x 1.5	Flat	550
SAF	M°18 x 1.5	Conical	270
SAF	M°22 x 1.5	Conical	430
SAF	M°22 x 1.5	Flat	600
GIGANT	M°22 x 1.5	Flat	630

Further tightening torques can be found in the annex.

2.6.12 Tyre pressure

Tyre size	Pressure (bar)
425/65 R 22.5	9.0

For other tyres see Chapter 5.3.7 Checking and correcting the tyre pressure.

2.6.13 Towing vehicle requirements (towing operation)

	Towing vehicle
Ball-head coupling	In accordance with DIN 11028 or Type K80 ball coupling or fifth-wheel coupling
Control unit required	2 dual action control units + control units for the dolly trailers
Maximum operating pressure	180 bar

2.6.1 Towing vehicle requirements (HGV operation with control block)

	Towing vehicle
Trailer coupling	Fifth-wheel coupling
Fifth-wheel height	1,250 mm (basic configuration) approx. 1,350 mm with older tyres
Control unit required	Pressure line and free return as swivel boom with bolt coupling
Maximum operating pressure	250 bar
Fifth-wheel measurement	min. 1,800 mm
Power supply	24V DC continuous current on PIN 9 15-pin plug in accordance with ISO 12098
Function	Power take-off min. can be switched to neutral*

*Attention: Power take-offs can usually only be activated with active parking brakes. Consult your HGV dealer if necessary.

Transport

INFORMATION

The trailer is usually attached to a towing vehicle to be transported. The information in the Initial start-up (Chapter 3, Page 52) and Operation (Chapter 4, Page 53) chapters must therefore be taken into account before such transport.

3 Initial start-up

Before starting-up the trailer for the first time, care must be taken to ensure that the service brake of the trailer is optimally matched to the towing vehicle used.

WARNING!

Danger of death caused by long braking distances.

If the service brake of the trailer has not been optimally set, this can result in long braking distances, which can cause fatal accidents. During the initial start-up, the trailer's service brake system must achieve a braking coefficient of at least 50%.

Therefore:

- During the initial start-up of the trailer, perform test brakes with the trailer both empty and full.
- Have a tractor/trailer coordination between the towing vehicle and the trailer carried out in a specialist workshop to optimise braking performance and reduce brake pad wear.

Take a look at the following chapters and sections in particular:

- 4.4 Operating the support leg/support jack
- 4.8 Setting the forced steering)
- 4.10 Coupling and decoupling the trailer
- 5Maintenance and repairs after 10 operating hours
- 5.3.24 Performing a tractor/trailer coordination

4 Operation

Numbers in round brackets, e.g. “(2)”, refer to the position numbers of the operating elements listed in Section 2.4.

4.1 Safety rules for operating the trailer

DANGER!

Danger of death due to electric shock.

If the trailer is close to overhead power lines and the cover system or tailgate is activated, the frames may come into contact with the power lines. The trailer and towing vehicle will then be under high voltage. During storms, there is a danger of lightning striking the cover if it is open. In both cases, this usually leads to the death of the driver.

Therefore:

- Covering processes and tailgate operations should never be performed in the vicinity of overhead power lines.
- Do not perform any covering processes during thunderstorms or approaching thunderstorms.

WARNING!

Danger of falling.

If there are people on or near the trailer while it is being transported, they may fall and be run over and suffer from fatal injuries.

Therefore:

- Riding on the trailer is prohibited.

WARNING!

Danger of accidents when stepping on the cover. The frame has not been designed to hold the weight of people.

Therefore:

Never step on the cover.

WARNING!

Danger of impact and crushing.

When the trailer is in operation, there are many hazard points which can cause severe or fatal injuries for the operator, people and animals.

Therefore:

- The trailer should only be operated by trained and authorised personnel.
- When operating the trailer, these operating instructions must be followed.
- Do not reach into moving parts.
- The trailer operator must ensure that people and animals maintain a distance of 1 to 2 m from all hazard points at all times.
- The trailer operator must ensure that no people or animals are inside the 5 m danger zone around the trailer and towing vehicle during a pushing process.
- The trailer operator must ensure that no people or animals are endangered when the trailer is being operated.

WARNING!

Danger of injuries caused by non-functioning parts.

If a part is defective or malfunctioning, its functionality is no longer guaranteed. This can cause accidents that may result in injury of people or animals.

Therefore:

- Machines with defects or malfunctions must not be operated. Have the machine repaired by qualified specialists immediately and take the machine out of operation until the repairs can be carried out.

4.2 Bringing the trailer to a complete stop in an emergency

If people are at risk of being hurt:

⇨ You can release the button for pushing on the remote control.

↳ The pushing process will be stopped.

↳ The trough will immediately stop moving.

↳ Loaded pourable and bulk goods will continue to trickle from the trailer.

WARNING!

Danger of death even with stopped pushing processes.

If a pushing process iss stopped and the trailer is no longer moving, there is still a risk that the loaded goods will continue to trickle from the trailer and bury or injure any people or animals in the vicinity.

Therefore:

- Make sure that there are no people or animals in the danger zone during a pushing process.

For a description of the towing vehicle's operating and control elements: see the operating instructions for the towing vehicle.

4.3 Stopping the pushing process in an emergency

⇨ Move the control lever in the cab of the towing vehicle to neutral.

↳ The pushing process will be stopped.

↳ The pusher plate will immediately come to a standstill.

↳ Loaded pourable and bulk goods will continue to trickle from the trailer.

WARNING!

Danger of death even with stopped pushing processes.

If a pushing process iss stopped and the trailer is no longer moving, there is still a risk that the loaded goods will continue to trickle from the trailer and bury or injure any people or animals in the vicinity.

Therefore:

- Make sure that there are no people or animals in the danger zone during a pushing process.

For a description of the towing vehicle's operating and control elements: see the operating instructions for the towing vehicle.

4.4 Operating the support leg/support jack

Mechanical support jack

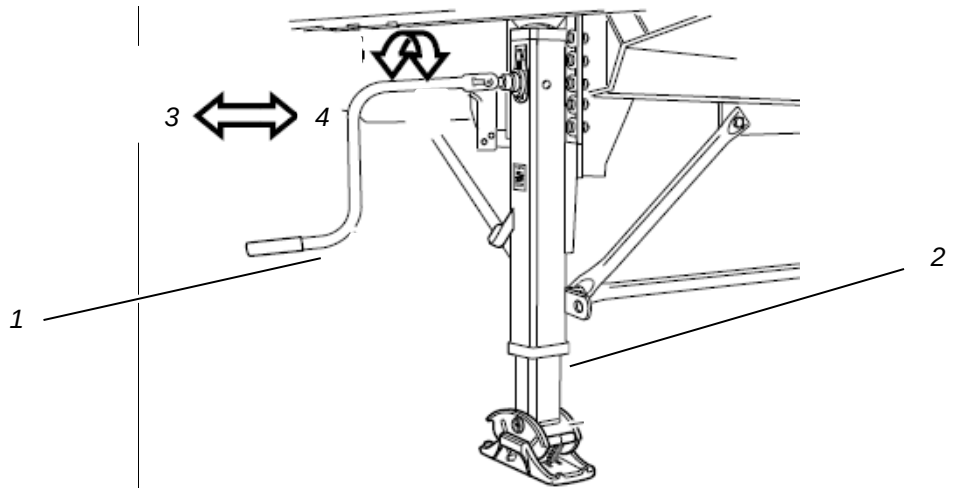


Figure 24: Draw gear, here: SAW 32

Pos.	Name	Function
1	Crank	For extending and retracting the support leg
2	Support leg	To park the trailer when it is empty
3	Fast gear	For the rapid extension and retraction of the support device
4	Low gear	For the lifting and lowering of the loaded and unloaded trailer vehicle

⇨ Move the crank (1) out of the park position.

⇨ When in a clear space, move the crank into fast gear ().

⇨ Switch to low gear (4) before the support leg (2) reaches the floor.

⇨ Move the crank (1) into the park position

4.5 Parking/Service brake lifting/lowering valve (optional)

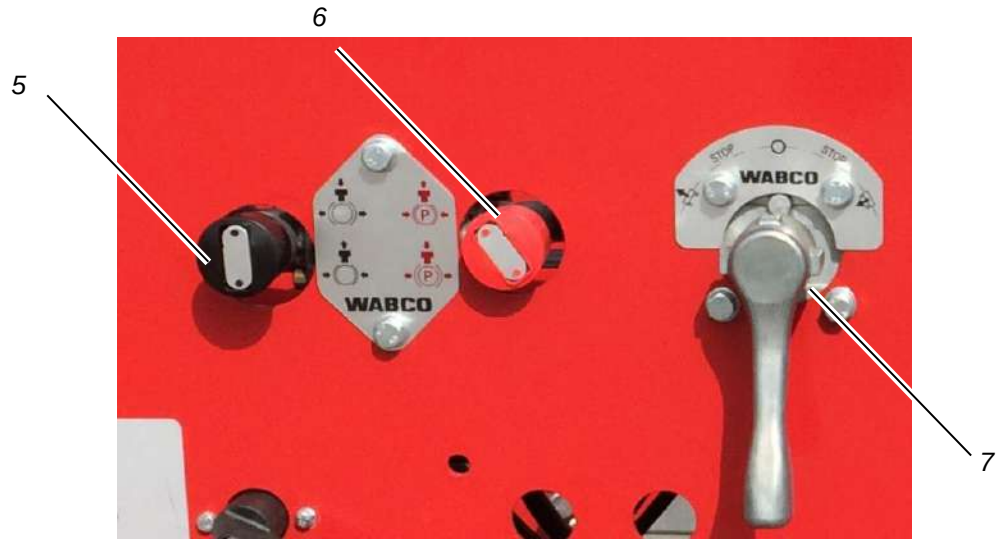


Figure 25: Parking/Service brake lifting/lowering valve, here: SAW 32

Pos.	Name	Function
5	Release valve actuator button	Triggers the service brake of the coupled trailer.
6	Parking brake spring accumulator	Activates the spring accumulator (works like the crank-operated parking brake)
7	Parking brake crank	Turned clockwise: Applies the parking brake. Turned anti-clockwise: Releases the parking brake.

4.5.1 Applying and releasing the parking brake

⇨ Pull out the parking brake spring accumulator (6).

↳ The parking brake will be applied.

To release the parking brake, perform the steps above in reverse order.

4.5.2 Manoeuvring the coupled trailer

If the securing pressure in the compressed air tank is not below the limit, the operator can release the service brake again by activating the release valve.

To manoeuvre the trailer, this does not need to be completely connection with all of the towing vehicle's supply lines. It is enough when just the K80 or the kingpin is couple with the towing vehicle. However, there are several safety aspects that must be taken into consideration.

WARNING!

Danger of accidents if the service brake is triggered when a trailer is coupled.

When the trailer is manoeuvred without all supply lines coupled to the towing vehicle, the service brake is not active. Only the towing vehicle brakes the trailer. The braking behaviour changes. The longer braking distance can cause accidents.

If the trailer is disconnected from the towing vehicle without the parking brake being applied or the wheel chock (9), or chocks (9), in place, the trailer can roll away and roll over any people or animals in the vicinity. This can cause serious or even fatal injuries.

Therefore:

- The trailer must be connected to the towing vehicles and the towing vehicle must be sufficiently secured against rolling away before the service brake is released by the release valve actuator button 5.

4.5.3 Lifting and lowering valve

The driving height of the dolly trailer and rear vehicle can be adjusted separately. This is required with low underpasses and when coupling and decoupling the trailer. However, the normal position should be the driving position (see Figure 25: Parking/Service brake lifting/lowering valve, here: SAW 32)

⇨ Push the swivelling lever in and turn it to the right to the “LOWER” symbol.

↳ The vehicle lowers.

⇨ Push the swivelling lever in and turn it to the left to the “STOP” symbol.

↳ The vehicle will stay in its current position.

⇨ Push the swivelling lever in and turn it to the left to the “LIFT” symbol.

↳ The vehicle will lift.

⇨ Push the swivelling lever in and turn it to the right to the “STOP” symbol.

↳ The vehicle will stay in its current position.

WARNING!

Danger of accidents caused by impermissible driving height.

The driving height of the trailer can be set too high for public roads.

The driving behaviour deteriorates

The trailer may exceed the maximum height for bridges, street lights and underpasses and collide with them.

Therefore:

- Before starting your journey, make sure that the driving height of the trailer is not exceeded.

  Observe all national regulations.
- Check that the lifting/lowering valve is in the driving position before starting your journey.

INFORMATION

An incorrectly set driving height can result in increased tyre and braking system wear. **Check that the lifting/lowering valve is in the driving position before starting your journey.**

4.6 Removing the wheel chock from its bracket and stowing it away

Figure 26: Wheel chock, here: SAW 32

Pos.	Name	Function
8	Linchpin	Secures the wheel chock in its bracket.
9	Wheel chock	Used in addition to the parking brake to secure the coupled trailer against accidental rolling.

4.6.1 Removing and stowing away the wheel chock

⇨ Pull the linchpin (8) out.

⇨ Remove the wheel chock (9) from its bracket.

To stow it away, perform the steps above in reverse order.

4.7 Draining the compressed air tank

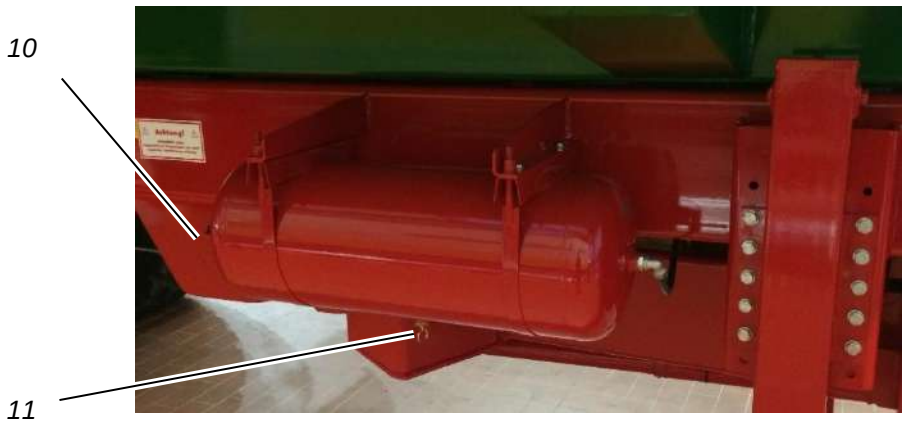


Figure 27: Operating elements on the compressed air tank

Pos.	Name	Function
10	Test connection for the pressure gauge	Can be used to check the pressure in the compressed air tank.
11	Drain valve	Drains condensed water from the compressed air tank.

WARNING!

Danger of injuries caused by escaping compressed air.

If the escaping compressed air comes directly in contact with the eyes, this can cause eye injuries.

Therefore:

- Always wear protective equipment (PPE) (safety goggles) when draining the compressed air tank.

Condensed water collects in the compressed air tank and must be removed before each journey.

⇨ To do this, pull the ring of the drain valve (11) sideways.

↳ The condensed water will be blown out of the compressed air tank.

⇨ Keep the drain valve ring (11) pulled sideways until no more condensed water comes out.

⇨ Release the drain valve ring (11).

4.8 Setting the forced steering

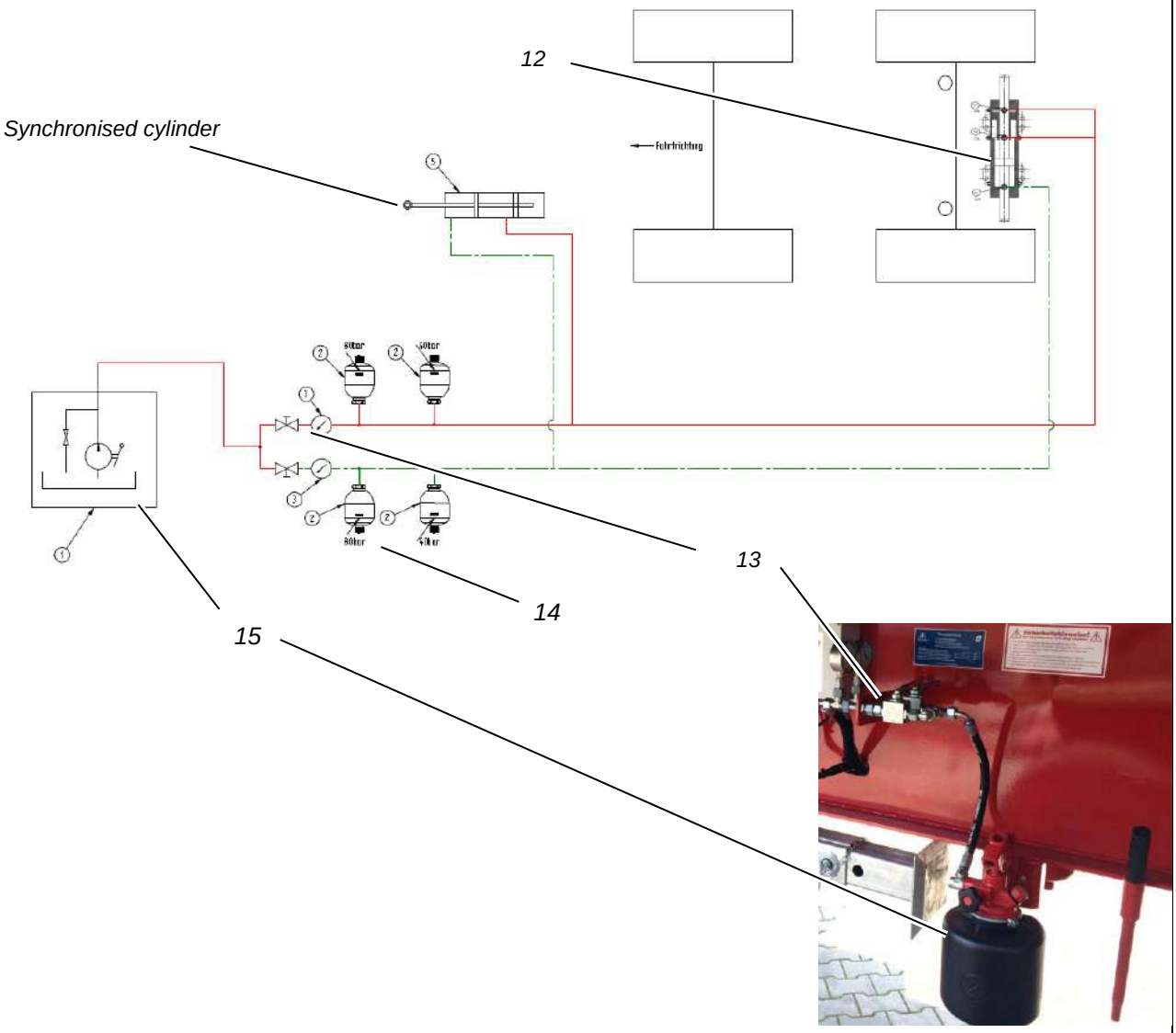


Figure 28: Schematic diagram of the forced steering, here: SAW 32

Pos.	Name	Function
12	Steering cylinder	Controlled by the fluid from the master cylinder and steers the axles
13	Stopcocks	Separates the lines (green and red)
14	Nitrogen accumulator	Maintains the preload pressure

Pos.	Name	Function
15	Manual pump	Can be used to adjust the system pressure

WARNING!

Danger of accidents caused by defective forced steering.

If the steering axles have not been adjusted and set correctly, negative driving characteristics can lead to accidents.

Therefore:

- Before starting your journey, check the directional stability and hydraulics pressure.

The steering axle is set in the factory. However, a pressure correction may be required for this hydraulics circuit:

⇨ To do this, open all stopcocks (13).

⇨ The red line and green line in Figure 28 are now connected.

⇨ Make sure that the towing vehicle and trailer are in a straight line.

⇨ Stand behind the trailer and check the wheel tracks.

⇨ Close the handwheel on the manual pump and use the lever to increase the system pressure to approx. 70 bar.

⇨ Close the stopcocks (13).

⇨ Release the handwheel on the manual pump again to push the piston down.

⇨ This way, the piston is protected against the effects of the weather.

4.9 Hydraulic 2-wing cover system (optional)

Pos.	Name	Function	Number
16	Hydraulic	0°	2
			2
			ail-
21	Control un		1
22	Toggle switch	Switches to manual mode	1

Figure 29: Cover system, here: MUK

DANGER!

Danger of death due to electric shock.

If the trailer is close to overhead power lines and the cover system is activated, the cover may come into contact with the

power lines. The trailer and towing vehicle will then be under high voltage.

Therefore:

- Never perform covering processes in the vicinity of overhead power lines.
- Do not perform any covering processes during thunderstorms or approaching thunderstorms.

INFORMATION

The system has been designed so that a power supply to the control unit (21) is required. The control unit ensures that the tailgate cannot be activated when the cover system is closed. Activating the tailgate can damage the cover system.

Therefore:

The tailgate can only be used when the cover is open.

The functioning of the cover system is controlled by a dual-action control unit from the towing vehicle or by the on-board hydraulics (optional). The oil flows through a 6/2-way control valve, which is unlocked if there is a power supply from the control device (21) and if the sensor (20) is active.

Both hydraulic motors (16) (left and right) are controlled this way. The cover system may move at an uneven speed. The oil flow rate must not exceed 7l/min!

With this option, the tailgate oil supply is also guided via a 6/2-way control valve (but not connected). The valve allows for operation when both sensors (17) are active and thus signal that the cover is open.

INFORMATION

In the event of a technical defect in the sensors, the manual switch (22) on the control unit box (21) can be switched from “Auto” to “Manual”. The interdependent conditions for the cover and tailgate are then deactivated. A power supply is still required.

Therefore:

The “Manual” function can only be used if the sensors are defective.

4.10 Coupling and decoupling the trailer

4.10.1 Coupling the trailer Safety

WARNING!

Danger of crushing between the towing vehicle and trailer.

When backing the towing vehicle up to the trailer, people can be crushed between the towing vehicle and trailer. This can cause serious or even fatal injuries.

Therefore:

- There should be no-one between the towing vehicle and trailer during this process.
- Anyone helping the driver must stand next to the towing vehicle and trailer.
- The area between the towing vehicle and trailer should only be entered once the towing vehicle has come to a standstill and been secured against rolling away.

WARNING!

Danger of accidents if the operating steps are performed in the incorrect order.

If the compressed air supply lines are connected in the incorrect order, the service brake will be triggered.

Therefore:

- Always connect the brake line marked in yellow first.
- Then connect the supply line marked in red.

WARNING!

Danger of accidents due to the hydraulic system being pressurised.

If the hydraulic system of the towing vehicle or trailer is pressurised, it can cause accidents during the coupling process. Anyone standing in the vicinity could be injured.

Therefore:

- Before coupling, take care to ensure that the hydraulic systems of the towing vehicle and trailer have been fully depressurised: The control lever in the cab of the towing vehicle should be in the float position.

CAUTION!

Danger of injuries due to an incorrectly coupled trailer.

If the trailer has not been coupled correctly, it can become detached during transport or when travelling on an incline and

move uncontrollably. This can lead to many significant dangers and can cause serious or even fatal accidents.

Therefore:

- Take care to ensure that all steps of coupling the trailer to a towing vehicle with automatic hitch are completed in full.
- The manual safety device of the K80 and K50 couplings must be properly placed and secured.

4.10.2 Coupling an SAW 34 model

Below, the process for coupling a SAW 34 is described. With the SAW 32, this section may also be relevant (see 4.10.3 Coupling the SAW 32).

⇨ If the coupling height does not work, the towing vehicle must be parked securely just in front of the trailer.

⇨ Make sure that all the required control levers in the cab of the towing vehicle are in the float position "〜".

↳ The hydraulic system is then depressurised.

⇨ Connect the correct hydraulic line for the support leg to the towing vehicle.

⇨ Set the correct coupling height (Section 4.4 Support leg SAW 34).

⇨ Reverse the towing vehicle until the K80 ball coupling is directly above the tractor's ball coupling.

⇨ Lower the draw gear by completely retracting the support leg.

WARNING!

Danger of accidents if the support leg has not been fully retracted. While moving, the support leg may touch the ground, the trailer may be levered out and / or the driver may loose control of the trailer.

Therefore:

- Only position the support leg fully extended or retracted.

⇨ Fold the support leg up at an angle of 90° until it is in the parked position.

⇨ If your trailer has a ball coupling, secure the manual safety devices on the towing vehicle (Figure 23: Rear view of a towing vehicle).

⇨ Connect the trailer's brake line, marked in yellow, to the towing vehicle.

⇨ Connect the trailer's supply line, marked in red, to the towing vehicle.

↳ The service brake will be released.

↳ The release valve actuator button will be pushed out.

⇨ Connect the trailer's 7-pin plug to the towing vehicle.

⇨ Check the plugs of the hydraulic connections to ensure that they are clean. If they are dirty: Clean them.

⇨ Plug the hydraulic connection of the hydraulic hoses into the socket of a control unit on the towing vehicle until the hydraulic connection is locked into place.

⇨ Check the paths of all connected supply lines. They should not have any kinks, should not be under tension when the vehicle is moving (even when driving around corners) and should not rub against vehicle parts.

⇨ Drain the compressed air tank (see Section 4.7, page 63).

⇨ If necessary, remove the wheel chock (9) and stow it away on the trailer.

⇨ Check that the service brake and light system are working correctly.

⇨ Push the swivelling lever in and turn it to the right to the "Driving position" symbol.

The vehicle will lift.

4.10.3 Coupling the SAW 32

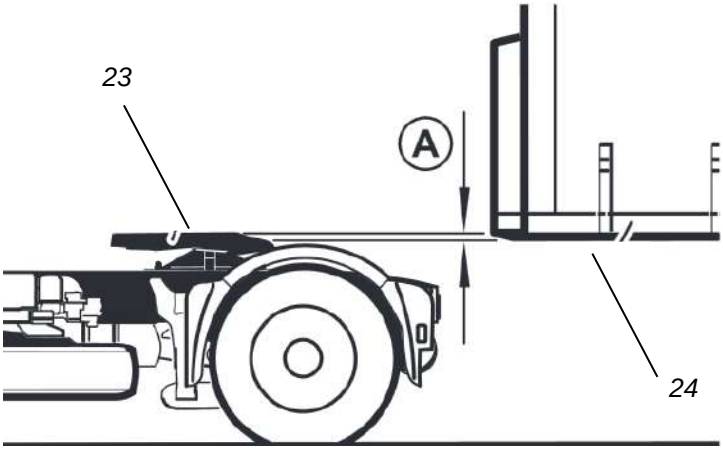


Figure 30: Operating elements on the compressed air tank

Pos.	Name	Function
23	Hitch plate	Hitch plate support surface
24	Wear plate	Trailer coupling

Below, the process for coupling a SAW 32 is described. The coupling is done a dolly trailer (such as the EAD) or an HGV towing machine.

⇨ Take care to ensure that the wear plate is positioned approx. 5 cm lower than the hitch plate.

⇨ Set the correct coupling height so that the height of the trailer matches the height of the dolly trailer/HGV.

⇨ Check to see whether the hitch coupling lock is in the retracted position. If not, open the lock.

⇨ Reverse the towing vehicle until the connection to the trailer is available and check to make sure that the coupling is secured.

⇨ Lift the dolly trailer until the support leg on the SAW 32 is in the air.

WARNING!

Danger of accidents if the support leg has not been fully retracted. While moving, the support leg may touch the ground, the trailer may be levered out and / or the driver may loose control of the trailer.

Therefore:

- Only position the support leg up or down.

⇨ Crank up the support jack (see Section 4.4 Operating the support leg/support jack).

⇨ Connect the trailer's brake line, marked in yellow, to the towing vehicle.

⇨ Connect the trailer's supply line, marked in red, to the towing vehicle.

↳ The service brake will be released.

↳ The release valve actuator button will be pushed out.

⇨ Connect the trailer's 7-pin plug to the towing vehicle.

⇨ Make sure that all the required control levers in the cab of the towing vehicle are in the float position "〜".

↳ The hydraulic system is depressurised.

⇨ Check the plugs of the hydraulic connections to ensure that they are clean. If they are dirty: Clean them.

⇨ Plug the hydraulic connection of the hydraulic hoses into the socket of a control unit on the towing vehicle until it is locked into place or screw both hoses into the provided couplings.

⇨ Check the paths of all connected supply lines. They should not have any kinks, should not be under tension when the vehicle is moving (even when driving around corners) and should not rub against vehicle parts.

⇨ Drain the compressed air tank (see Section 4.7, page 63).

⇨ If necessary, remove the wheel chock (9) and stow it away on the trailer.

Check that the service brake and light system are working correctly.

4.10.4 Decoupling the trailer

⇨ Align the towing vehicle and trailer in a stretched position on a suitable surface.

⇨ Completely lower the SAW 34 using the lifting and lowering valves to help.

⇨ If the SAW 32 needs to be parked together with a dolly wagon, the trailer needs to be lowered.

⇨ Use the crank to lower the support leg until it is just above the ground.

⇨ Secure the towing vehicle against rolling away.

For decoupling, follow the steps for the coupling but in reverse.

WARNING!

Danger of accidents if the operating steps are performed in the incorrect order.

If the compressed air supply lines are disconnected in the incorrect order, the service brake will not be active.

Therefore:

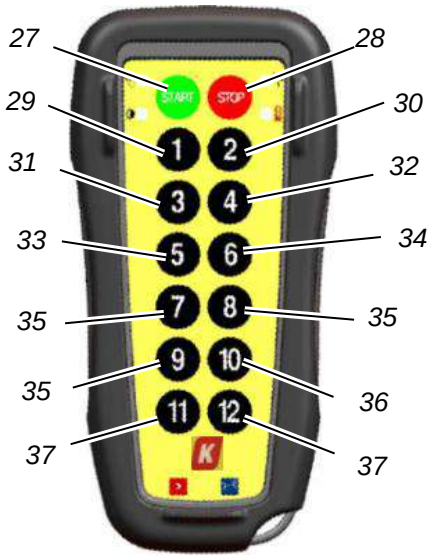
- Always disconnect the supply line marked in red first.
- Then disconnect the brake line marked in yellow.

INFORMATION

Once the supply line, marked in red, is no longer pressurised with compressed air, the supply line to the trailer brake valve is vented and the service brake engages.

4.11 Control block option

4.11.1 With remote control



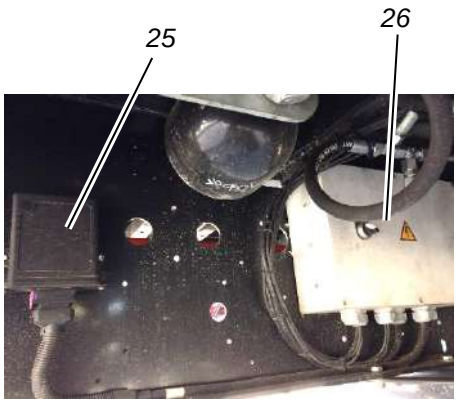


Figure 31: Remote control, receiver and control device

Pos.	Name	Function
25	Radio receiver	Receives the signals from the remote control
26	Control boxes	Receives signals - Controls valves
27	START	Establishes the radio connection
28	STOP	Deactivates the radio connection
29	Button “1”	Push
30	Button “2”	Retract pusher plate
31	Button “3”	Open tailgate
32	Button “4”	Close tailgate
33	Button “5”	Open cover
34	Button “6”	Close cover
35	Buttons “7- 9”	Free options
36	Button “10”	Remote control EAD tipping valve on (option)

37	Buttons “11- 12”	Lighting (optional)

To switch on the system, the 15-pole plug must guarantee a supply of power. After just a few seconds, the receiver (25) is ready for operation. Activate the control of the trailer by pressing the start button (26).

INFORMATION

The connection between the remote control and receiver lasts for 2 minutes. Pressing any button on the remote control restarts a connection time of 2 minutes.

If you use an EAD in connection with the trailer, you can active the PTO shaft for the tipping hydraulics of the dolly trailer by pressing the“10” (36) button→ Hydraulic system is supplied with oil.

INFORMATION

This is only possible if the dolly trailer has been prepared for this. If you are interested, this function can also be made possible through retrofitting.

Consult the manufacturer if necessary.

Press the “3” (31) button to open the tailgate. Press the “1” (29) button to move the pusher plate backwards. Press the “2” (30) button to move the pusher plate forwards.

Press the “4” (32) button to close the tailgate. The tailgate closes as soon as the button is pressed.

With optional covers, the “5” and “6” (33)(34) buttons can be used to open and close them (also see 4.9 Hydraulic 2-wing cover system (optional)).

The “7-9” buttons do not have a function but they can be used for additional functions.

See the annex SAR2 Instructions for more information

4.11.2 Hydraulic block and system

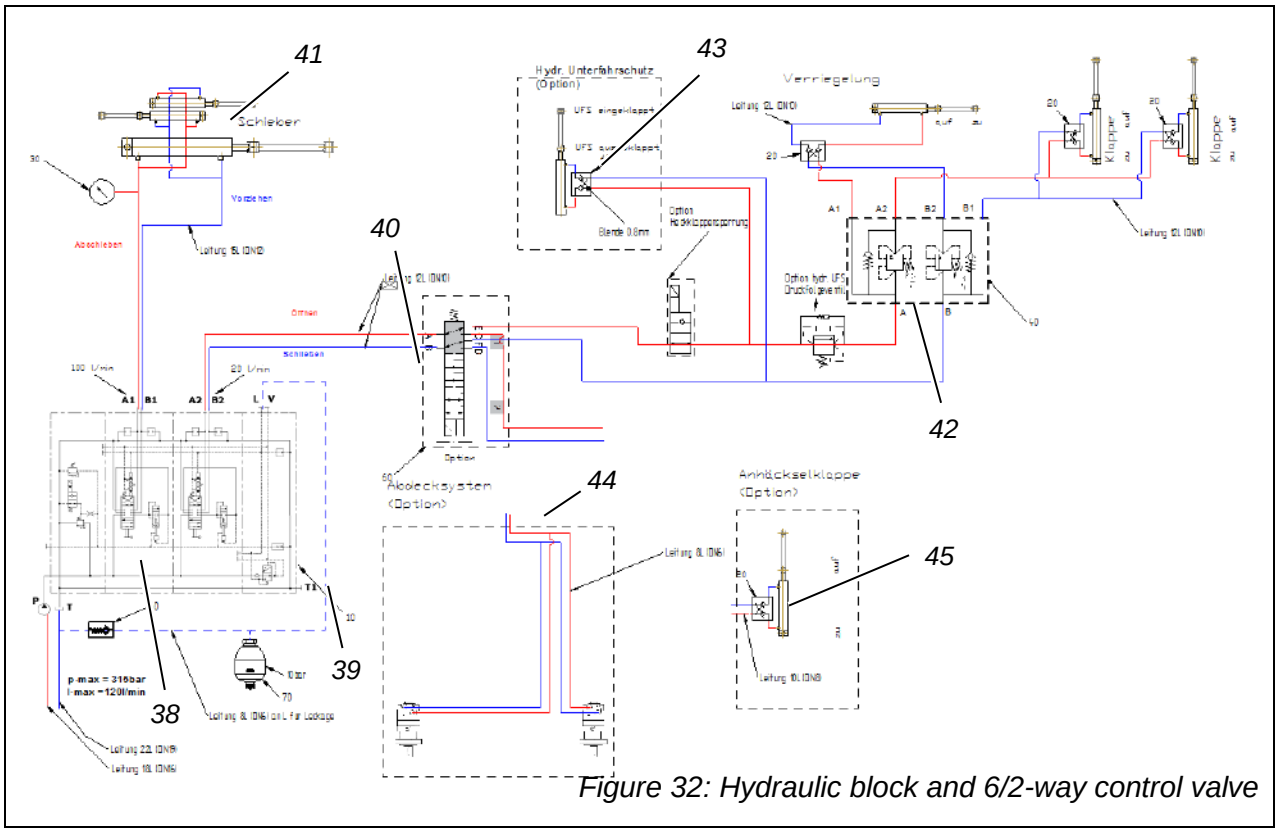


Figure 32: Hydraulic block and 6/2-way control valve

Pos.	Name	Function
38	Hydraulic block	Basic function pusher plate and tailgate
39	Bypass	Leakage oil return
40	6/2-way control valve	Extension example Cover system
41	Pusher plate	Pushing process
42	Tailgate	Locking and tailgate control
43	Underride protection	Hydraulic foldable underride protection
44	Cover system	Cargo area cover
45	Mulching flap	Folding down rear wall

4.12 Opening, closing and securing the roller tarpaulin (optional)

WARNING!

Danger of accidents due to a moving roller tarpaulin.

The roller tarpaulin must be closed during transport. If not, there is a risk of it being blown off.

This also applies if the roller tarpaulin is damaged, if rubber straps are missing, or if there are any other defects that prevent the roller tarpaulin from being closed safely.

Therefore:

- Always secure the roller tarpaulin during transport.
- Check the roller tarpaulin for defects (tears, missing rubber straps, etc.) before starting your journey. Repair any defects immediately, replace the roller tarpaulin or remove the roller tarpaulin from the trailer completely.

WARNING!

Danger of injuries caused by falling.

If people slip from the ladder or tread surfaces, they can fall and injure themselves.

Therefore:

- All tread surfaces may only be used by competent persons and when the machine is at a standstill.
- When climbing the machine, only ladders designed for this purpose may be used.
- Damaged ladders or tread surfaces must not be used. They must be repaired immediately.
- The condition of all ladders must be inspected regularly.
- Ladders must be kept free from dirt, hydraulic fluid, gear oil and any other lubricants.

4.12.1 Opening and closing the roller tarpaulin

⇨ Remove all rubber straps from the rear wall and the lashing straps from the sidewalls.

⇨ Step onto the catwalk on the bulkhead.

⇨ Remove all rubber straps from the bulkhead

⇨ Fold up the part of the roller tarpaulin that hangs down from the bulkhead.

⇨ Use the hand crank to roll up the roller tarpaulin until it rests on the four stops.

To close the roller tarpaulin, perform the steps above in reverse.

The two middle lashing straps on the front and rear board walls must be crossed over each other.

Figure 33: Roller tarpaulin closed correctly

4.12.2 Closing the roller tarpaulin

The tailgate can be operated regardless of whether the roller tarpaulin is closed or open.

Figure 34: Roller tarpaulin closed and secured

The tarpaulin tube (optional) rests on the crossbars and can be folded to the side when the roller tarpaulin is opened. It goes all the way from the front and remains in its original position when the tailgate is opened.

The tarpaulin tube can be dismantled together with the tarpaulin.

4.13 Loading the trailer

WARNING!

Danger of goods falling and spilling.

If people or animals are on the loading surface while the trailer is being loaded, they can be struck or buried by falling pourable and bulk goods.

Therefore:

- Before loading the cargo area, ensure that there are no people or animals in the cargo area.

WARNING!

Danger of accidents caused by overloading.

If the trailer is overloaded, the parts, which are not designed to carry this weight, may become overburdened and break. The sidewalls may not be able to withstand the increased pressure and may give way. Braking distances will increase. The centre of gravity of the trailer may shift, causing it to tip over. Any people or animals in the vicinity may be seriously or fatally injured.

Therefore:

- The payloads, axle loads and permissible total weight listed in the technical specifications must not be exceeded.

WARNING!

Danger of accidents caused by uneven loading.

If the trailer is unevenly loaded (more weight on the draw gear, more weight on the right-hand side than on the left), this can negatively impact its driving and braking characteristics. If the centre of gravity shifts, there is a particular risk of understeering in corners and of the towing vehicle spinning or tipping over. This can cause serious or even fatal injuries for people or animals that are in the vicinity.

Therefore:

- Always load the trailer evenly by distributing loads evenly across the entire cargo area.

WARNING!

Danger of being run over by a trailer that is rolling away.

If the trailer has not been secured against rolling away during the loading process, it may start to move and roll over any people or animals standing in the vicinity.

Therefore:

- The towing vehicle of a coupled trailer must be secured against rolling away while the pusher is being loaded.
- If the trailer is not coupled to a towing vehicle, it must be secured against rolling away while being loaded with the parking brake and wheel chocks (9).
- There must be no people in the danger zone while the pusher is being loaded.

WARNING!

Danger of accidents caused by falling cargo.

If cargo falls from the trailer it can injure people and animals in the vicinity. Pourable and bulk goods blown off the trailer during road travel can block the view of following vehicles and cause accidents, for example. If pourable and bulk goods (or other cargo) falls from the cargo area, they can bury or strike any people or animals in the vicinity.

Therefore:

- Before loading, ensure that all locks are closed securely.
- There must be no people in the danger zone while the trailer is being loaded.
- Secure the cargo, e.g. with a roller tarpaulin (optional), so that other people and road users are not in danger.

CAUTION!

Danger of accidents and property damage caused by severe impacts.

If heavy goods fall onto the loading surface from a substantial height, they can break parts and injure any people and animals in the vicinity.

Therefore:

- Do not load the trailer with large rocks or rubble.

4.13.1 Loading catwalks from above

INFORMATION

Remove the ridge pipe before loading from above (only with the roller tarpaulin option). This prevents pourable and bulk goods from bouncing off the ridge pipe and not fully landing in the cargo area. This also protects the ridge pipe against contamination and wear and tear.

⇨ Open the roller tarpaulin or cover (optional) (see Section 4.12, page 78), if there is one.

⇨ Remove the ridge pipe from its bracket.

⇨ Load the floor of the trailer evenly.

⇨ Secure the cargo in accordance with applicable regulations.

⇨ Close the roller tarpaulin (optional) if there is one.

4.14 Towing the trailer

WARNING!

Danger of death in the event of a service brake malfunction.

If the trailer is towed without a functioning service brake, there is a risk of the braking distances being significantly longer which can lead to serious or fatal accidents that can also affect bystanding people or animals.

Therefore:

- Before towing the trailer, ensure that it is coupled correctly and that the service brake is connected.
- Perform a brake check before starting your journey to ensure that it is working correctly.

WARNING!

Danger of accidents caused by dangerous driving.

If the parking brake is not released before starting the journey, the trailer will exhibit dangerous driving behaviour due to the brake being applied to the front axle. The blocked tires will also produce smoke if the trailer continues to be driven. This could obstruct the view of any road users behind you and could lead to accidents. People and animals could be injured as a result.

Therefore:

- Before starting your journey, ensure that the parking brake

has been released.

WARNING!

Danger of accidents due to excessive speed.

If the trailer is towed at speeds exceeding its maximum permissible speed and / or exceeding what local road conditions allow for, there is a risk of parts becoming overloaded and breaking. There are many dangers for the driver as well as for any people or animals in the vicinity.

Therefore:

- The maximum speed of a tractor/trailer combination must always be based on the trailer with the lowest maximum speed.
- The maximum speed must always be adapted to local conditions.

WARNING!

Danger of accidents due to a loss of cargo.

If the board walls and tailgate are not closed correctly, cargo may be lost during the journey. This can result in serious or fatal accidents that may also affect bystanding people and animals.

Therefore:

- Before starting the journey, ensure that all locks and long lever locks are locked.

WARNING!

Danger of accidents due to falling from the trailer.

If there are people on the trailer while it is being towed, they may fall and seriously injure themselves.

Therefore:

- There must be no people or animals on the trailer when it is being moved.
- People must not jump onto a moving trailer.

4.14.1 Checks to carry out before each journey

⇨ Before starting work each day, perform the tasks that must be carried out in accordance with the Maintenance Plan (see Section 4.14.1, Page 85).

⇨ Make sure that the trailer is coupled correctly and that all necessary supply lines are connected.

⇨ Make sure that the tailgate fully locked.

⇨ Make sure that the roller tarpaulin (optional) is secured (see Section 4.12, page 78).

⇨ Make sure that the parking brake has been fully released.

⇨ Make sure that the wheel chocks (9) have been removed and stowed away in their brackets (see Section 0, Page 61).

⇨ Make sure that the cargo area has been loaded evenly.

⇨ Wait until the pressure gauge on the towing vehicle shows 8 bar before starting your journey.

4.14.2 Checks to carry out after each journey

⇨ Use your hand to check that the brake drums and wheel hubs have not overheated.

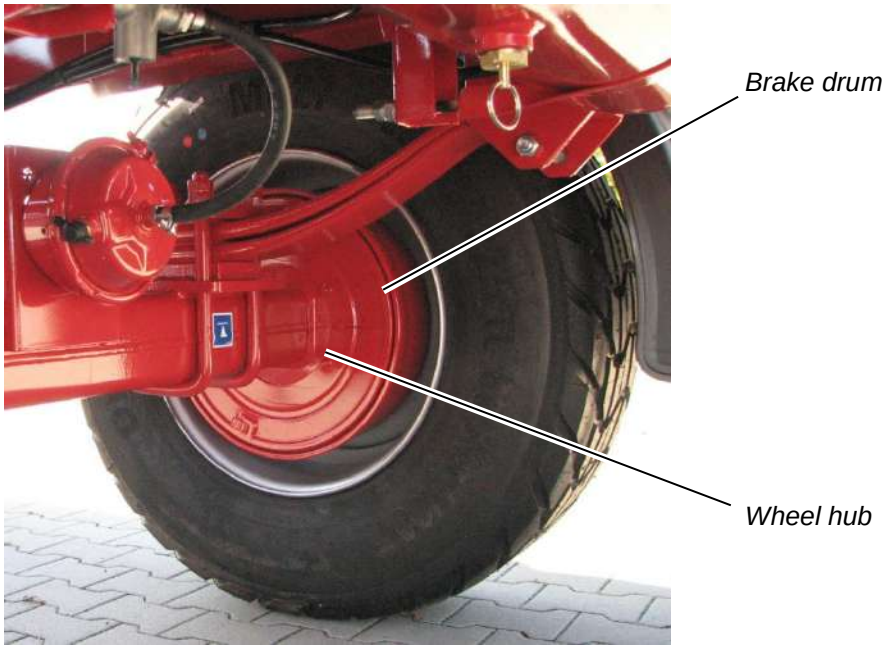


Figure 35: Brake drum and wheel hub

⇨ If you notice any defects: Take the trailer out of operation and perform the necessary repairs (see Chapter 8, page 141).

4.15 Unloading the trailer

WARNING!

Danger of accidents caused by cargo that does not slide easily.

If the trailer carries cargo that does not slide easily, such as manure, compost or goods frozen to the floor, this can cause problems when unloading if the cargo does not slide off the cargo area floor. The centre of gravity of the trailer may shift, causing it to tip over. Any people or animals in the vicinity may be seriously or fatally injured.

Therefore:

- When performing a tipping process with cargo that does not slide easily, drivers must be particularly vigilant and immediately stop if they notice that the trailer is at risk of becoming unstable.
- If necessary, use a loader to unload goods that do not slide easily from tipped trailer.

WARNING!

Danger of death due to numerous hazards.

If there are people or animals in the immediate vicinity of the trailer during a pushing process, they will be exposed to a range of different hazards. They may be struck by the cargo or by the closing tailgate. They may be knocked by the board walls being raised or buried by poured and bulk goods.

Therefore:

- During a pushing process, nobody can enter the danger zone of 5 m around the towing vehicle or stand on or under the trailer.

WARNING!

Danger of death if the tailgate breaks off.

If the tailgate bumps into an obstacle it can break off and drop. Any people or animals in the vicinity may be seriously or fatally injured.

Therefore:

- Make sure that there are no obstacles in the ways before opening the tailgate.

⇨ Make sure that the trailer is parked on a flat and solid surface.

⇨ Set up the trailer and towing vehicle in a stretched position. They must not be at an angle.

⇨ Make sure that there is enough space behind the trailer.

⇨ Open the tailgate.

⇨ Activate the control unit for the pusher plate and apply the foot brake to prevent the trailer from rolling away accidentally if pressure develops due to the cargo being pushed off.

⇨ To get rid of any built-up pressure, release the foot brake in a controlled manner.

⇨ Drive carefully away from the pushed off load.

WARNING!

Danger of death if the trailer and towing vehicle roll away forwards in an uncontrolled manner.

People and animals must not stand in this area. People or animals in the vicinity can be seriously injured.

Therefore:

- Always keep an eye on the area in front of the vehicles during the pushing process.

⇨ Make sure that there are no people or animals in the danger zone behind or in front of the trailer and towing vehicle (see Section 1.6, page 16).

WARNING!

Danger of accidents due to jerky movements.

If you try to loosen any sticking cargo by moving the cargo area jerkily or by moving the trailer forwards and then braking suddenly, the centre of gravity of the trailer may shift, causing it

to tip over. Any people or animals in the vicinity may be seriously or fatally injured.

⇨ If you feel that the trailer is no longer stable: Press the button to stop the pusher plate.

⇨ Once all the cargo has been completely pushed out of the cargo area: Press the button to move the pusher plate backwards.

↳ The cylinder retracts.

⇨ Activate the control unit for the tailgate until the lock is fully closed.

4.15.1 Unloading via the grain feed

Figure 36: Grain feed

Pos.	Name	Function
46	Feed lever	Regulates the opening of the feed
47	Locking screw	For securing the feed

WARNING!

Danger of being buried by falling cargo.

If a person is standing directly in front of the grain feed, there is a danger of them being buried by cargo spilling out suddenly or under pressure.

Therefore:

- When opening the feed, the operator must stand on the side that the feed lever is on.
- Before opening the feed, make sure that there is no-one standing directly in front of the grain feed.

⇨ Loosen the locking screw (47).

⇨ Move the feed lever (46) downwards.

To close the grain feed, perform the steps above in reverse order.

5 Maintenance and repairs

5.1 Safety instructions when performing maintenance and repairs

Numbers in round brackets, e.g. “(2)”, refer to the position numbers of the operating elements listed in Section 2.4.

Before performing any maintenance on outsourced parts, read their operating instructions carefully.

DANGER!

In the event of inadequate maintenance, the proper functioning of the trailer cannot be guaranteed. This can cause injury to people and property damage.

Therefore:

- Maintenance and repair work is classed as part of the trailer’s intended use and must be performed at the specified intervals.
- Maintenance and repair work must only be performed by the manufacturer or by qualified and authorised professionals (e.g. by the manufacturer’s partner workshops).
- Keep a record of all maintenance performed.
- Only use original spare parts or accessories and spare parts authorised by the manufacturer. If any other parts are used, the manufacturer cannot be held liable for the resulting consequences.

WARNING!

Danger of injuries from the trailer during maintenance and repair work.

The trailer and movements performed by the trailer or any of its parts can cause many hazards during maintenance and repair work.

Therefore:

- Before performing any maintenance and repair work secure the trailer against rolling away.
- Always wear personal protective equipment (PPE), particularly safety boots, when performing maintenance and repair work.
- Let the service brake cool sufficiently to avoid burns from hot parts.
- Only perform work on the electrical systems when the trailer has been disconnected from the towing vehicle's power supply.
- With work that requires the trailer to be left running, always perform the work with a second authorised person.
- Do not reach into moving parts.
- Maintain a sufficient distance from moving parts.
- Tie back long hair and/or wear a hairnet. Wear tight-fitting clothing. Take off any loose, hanging objects, such as scarves, ties, shawls, jewellery, etc. before performing any maintenance and repair work.
- Observe all applicable safety and environmental protection regulations.

WARNING!

Danger of death if safety devices are missing or defective.

If safety devices have been removed or are defective, they cannot protect operators from dangers that may arise.

Therefore:

- Only remove safety devices for maintenance and repair work.
- Replace the safety devices immediately after completing the work.
- Do not modify or bypass any safety devices.
- Regularly check the safety devices according to the Maintenance Plan.

WARNING!

Danger of injuries caused by movements.

If the trailer is operated while maintenance and repair work is being carried out, safe handling is not guaranteed. This can cause dangerous situations. Maintenance personnel, people or animals in the vicinity can be seriously injured.

Therefore:

- Bring the machine to a stop before performing any maintenance and repair work and secure it against accidental start-up.

WARNING!

Danger of injuries due to incomplete maintenance and repair work.

If the trailer is put back into operation, even though the maintenance and repair work has not yet been completed, there is a danger of injury.

Therefore:

- Only put the trailer into operation once all maintenance and repair work has been completed.
- If the work needs to be stopped before it is completed, a clearly visible sign must be attached to the trailer that states that it must not be put into operation due to incomplete assembly.

WARNING!

Danger of death due to changed statics.

If you make any modifications to load-bearing parts without the manufacturer’s authorisation, the safety of the trailer may no longer be guaranteed. This can cause serious accidents that may result in serious or fatal injuries to people and animals.

Therefore:

- It is expressly prohibited to make unauthorised modifications to load-bearing parts, e.g. drilling holes into the chassis, counter-drilling existing holes on the upper and lower flange of the chassis frame and performing welding work on any load-bearing parts.

WARNING!

Danger of death if parts are damaged.

If repair work is carried out carelessly and thoughtlessly, parts may be damaged, and this can lead to a loss of function of the

trailer. People and animals may be injured as a result of accidents.

Therefore:

- With welding, drilling, flame cutting and grinding work as well as with work with cutting discs that is performed in the vicinity of plastic and electrical cables, cover the cables to protect them or remove them at particularly critical points.
- With welding, drilling, flame cutting and grinding work as well as with work with cutting discs that is performed in the vicinity of the parabolic springs, these springs must be covered for protection.
- With welding work performed with electrical welding apparatus, never connect the negative terminal of the apparatus to the parabolic springs.
- Never work on parabolic springs with hammer blows or sharp objects.
- Once retaining nuts have been removed twice, they must be replaced by new retaining nuts.
- Observe the tightening torques for screws and wheel nuts (see Section 2.6.11, page 50 and Section 2.6.10, page 50).
- Have any damage to paintwork repaired promptly by a professional.

WARNING!

Danger of injuries due to electrical faults.

Touching live parts can cause injuries. If moisture gets into electrical components, it can cause electrical faults.

Therefore:

- Work on electrical systems must only be performed by qualified and trained professionals.
- Particular care must be taken to ensure that no moisture gets into electrical components during cleaning work.

WARNING!

Danger of injuries due to a lack of personal protective equipment.

There is a risk of serious injury if personal protective equipment is not worn during maintenance and repair work.

Therefore:

- Always wear personal protective equipment (PPE) when performing this type of work (safety boots, safety goggles, protective clothing).

WARNING!

Danger of burns from overheated brakes.

If the service brake or parking brake becomes hot due to faults or operating errors, people can burn themselves if they touch the hot parts.

Therefore:

- Only perform maintenance and repair work on brakes and tyres when they have cooled down.

CAUTION!

Danger of death for children.

If children get hold of the operating materials and swallow or ignite them, it can cause serious or fatal accidents.

Therefore:

- Always keep operating materials (e.g. oil, hydraulic fluid, grease) out of reach of children.

CAUTION!

Danger of environmental pollution.

If operating materials are handled incorrectly, it can cause environmental pollution. In the medium term, this indirectly leads to health hazards for people, animals and plants via the soil, water and air.

Therefore:

- Always dispose of operating materials (e.g. oil, hydraulic fluid, grease) and cloths, containers and parts containing operating materials separately, carefully and in accordance with all applicable environmental regulations.
- Do not let cleaning agents and waste water containing cleaning agents seep away, instead send them to be processed in accordance with all applicable environmental regulations.

5.2 Regular maintenance work

The Maintenance Plan lists the maintenance work that must be carried out on a regular basis.

For maintenance work that must be performed by a professional, please contact our customer service team (see Chapter 8, page 141).

5.2.1 Maintenance records

Enter any maintenance work performed in the table provided (see Section 5.4, page 137) and have it confirmed where applicable. This makes it possible to monitor the maintenance performed.
It is recommended that you keep your own lists for further records of maintenance work.

5.2.2 Maintenance Plan

The maintenance intervals stated in the Maintenance Plan apply if the trailer is used under normal operating conditions. The intervals may need to be shortened depending on the actual operating conditions. In case of any doubt, contact the manufacturer (see Chapter 8).

For the maintenance of built-in parts, the documentation provided by the respective suppliers must also be observed (see annex).

Activity	Interval			
	Before the journey starts	After the first 10 operating hours	Every 50 operating hours 3 months	Every 250 operating hours 6 months
Perform a general visual inspection for damage and faults and carry out any necessary repair work:	•			
Check the trailer for mechanical damage, e.g. for				
unusual deformations	•			
Wear and tear	•			
Check the forced steering	•			
Check the tyres for damage	•			
Check the tyres for sufficient tyre pressure	•			
Check the tyres for sufficient tread depth	•			
Check the braking system:				
pipe and hose lines	•			
Coupling heads	•			
Cables and pulleys	•			
Drain the compressed air tank	•			
Brake cylinder piston stroke	•			
Check the hydraulic system	•			
Check the light system	•			
Check that the wheel chocks are in place	•			
Check that the trailer is not making any unusual noises	•			
Tighten all screw connections:				
Tighten the wheel nuts		•	•	
Other fastenings		•	•	
Fastenings on the running gear (see annex)		•	•	
Tighten steering wheel screws		•	•	
Check the service brake:				
Clean the brake system line filter		•		•
Check the service brake for leaks			•	
Check the pressure in the compressed air tank			•	
Check the position of the compressed air tank			•	

Check the brake cylinder pressure			•	
Check the brake cylinder stroke			•	
Check the joints on the brake valves, brake cylinders and brake linkage			•	
Check the ALB (automatic load-dependent braking)			•	
Check that all safety signs are in place; replace any missing safety signs immediately			•	
Check the light and air connections for damage; carry out any necessary repair work			•	
Check the parking brake and adjust if necessary			•	
Check the ALB for ease of movement of the adjustment shaft and for damage to the linkage			•	
Check the axle suspension			•	
Check the operational sequence of the tailgate and set the pressure sequence control if necessary			•	
Check the spring sliders and side plates of the spring shoes for wear				•
Check the pneumatic suspension and tighten any screws				•
Check the kingpin for wear				•
Perform a visual inspection of the support device to check for cracks and deformation	•			•
Check the spindle and spindle nut for wear				•
Have the electrical system checked by a professional and perform any necessary repairs				•
Check for corrosion				•
Check the ladders and tread surfaces to ensure they are suitable and in good condition				•
Change the on-board hydraulic system oil filter (optional)	After the first 1500 pushing processes min. once a year before winter			

5.3 Performing maintenance work

5.3.1 Checking the draw gear

WARNING!

Danger of accidents caused by a defective draw gear.

If the draw gear has any defects, the safe operation of the trailer is no longer guaranteed. This can cause accidents that may result in injury to people or animals.

Therefore:

- Only the manufacturer can determine if a damaged draw gear can be repaired. Contact the customer service team (see Chapter 6, page 141).
- Repairs to the draw gear should only be carried out by the manufacturer. Contact the customer service team (see Chapter 8, page 141).
- An irreparably damaged draw gear must be immediately replaced by a new one.
- Welding and drilling into the draw gear is strictly prohibited.

⇨ Check the draw gear for any unusual deformations, corrosion or wear and tear.

⇨ If you notice any defects: Take the trailer out of operation and perform the necessary repairs (see Chapter 6, page 141).

⇨ Check the condition of the coupling.

INFORMATION

The K80 has a permissible amount of wear which can be checked with a gage. Contact a specialist workshop that can perform this check.

5.3.2 Checking the safety and information signs for completeness

The positions of the safety and information signs are described in Section 1.10, page 21.

⇨ Check each individual safety and information sign to ensure that it is there and legible.

If the safety and information signs are no longer on the trailer or have become illegible:

⇨ Replace them. Contact the customer service team if needed (see Chapter 8, page 141).

⇨ Do not use the trailer until all safety and information signs are complete, in place and legible again.

⇨ Attach new safety and information signs to the trailer immediately.

5.3.3 Checking the locks

Check the:

- Locks on the tailgate.

  Check the hook guide and the lock path. If the catch hooks are worn, they must be replaced.

- The correct sequence for opening and closing the tailgate:

  When closing, the locking hooks should only be activated when the tailgate is completely closed.

  When opening, only open the tailgate when the locking hooks are completely open.

  ⇨ If this is not the case, contact a specialist workshop to set the subsequent process correctly (for more information see 2.4.4 Hydraulic system).

5.3.4 Draining the compressed air tank

See Section 4.7, page 63.

INFORMATION

If you notice any impurities or contamination when draining the compressed air tank, you must clean the compressed air tank (see Section5.3.5, page101).

5.3.5 Cleaning the compressed air tank

⇨ Keep the ring of the drain valve (11) pulled sideways until all the compressed air has escaped.

Only clean the compressed air tank with compressed air and water.

ATTENTION!

If the drain valve (11) is blocked, it must be dismantled and cleaned after all the compressed air has been released. Any further repairs should only be carried out by a recognised specialist workshop.

5.3.6 Maintaining the on-board hydraulics (SAW 34)

You can find the relevant maintenance instructions for the dolly trailer in the EAD14 operating instructions.

5.3.7 Checking and correcting the tyre pressure

Make sure that the trailer always has the right tyre pressure. If the tyre pressure is too high or too low, it can reduce the mileage of the tyres.

WARNING!

Danger of accidents caused by bursting tyres.

If the tyre pressure is too high, it can cause the tyres to burst. This can cause accidents that may result in injury to people or animals.

Therefore:

- Always comply with the stated tyre pressure.

INFORMATION

- You should check the tyre pressure when the tyres are cold – before starting a journey.
- The difference in tyre pressure between two tyres on an axle must not exceed 0.1 bar.
- The tyre pressure can increase by up to 1 bar after driving fast or in warm weather. If this happens, the tyre pressure must not be reduced, as the pressure would then be too low once the tyres have cooled down.

⇨ Use a soft, lint-free cloth to remove all possible contamination from the valve.

⇨ Press the connector of a tyre inflater gauge onto the valve and increase or reduce the tyre pressure according to the table.

⇨ Remove the connector of the tyre inflater gauge from the valve.

	Size	Company name	Permissible top speed ([km/h] with axle load)	Tyre load capacity [kg] at 10 km/h and 1.5 bar	Tyre width (diameter) according to guide [mm]	Recommended tyre pressure*(2) [bar]
Michelin Cargo XBIB	500/60 R 22.5	155 D	40 (9 tonnes)	4050*(1)	513 (1180)	4.0
	560/60 R 22.5	161 D	65 (9 tonnes)	4835	570 (1251)	4.0
	600/50 R 22.5	159 D	50 (9 tonnes)	4575	616 (1181)	4.0
	710/45 R 22.5	165 D	65 (9 tonnes)	4975	732 (1210)	4.0
	600/55 R 26.5	165 D	65 (10 tonnes)	5385	626 (1348)	4.0
	710/50 R 26.5	170 D	65 (10 tonnes)	6275	732 (1405)	4.0
	800/45 R 26.5	174 D	65 (10 tonnes)	6470	815 (1395)	4.0
NOKIAN						
	560/60R22.5 CK TL	161 D	65 (9 tonnes)	5000	564 (1244)	4.0
	650/50R22.5 CK TL	163 D	65 (9 tonnes)	4580	645 (1237)	6.0
	620/60R26.5 CK TL	169 D	65 (5.8 tonnes)	5310	625 (1400)	4.0
	710/50R26.5 CK TL	170 D	65 (6 tonnes)	5615	727 (1405)	4.0
BKT / Altura						
	550/60-22.5 16PR	163 B	50 (9 tonnes)	4875	544 (1232)	3.0
	700/50-22.5 16PR	174 A8	50 (6 tonnes)	7125	700 (1270)	2.4
Alliance						
	650/55R26.5 HD	178 D	65 (9 tonnes)	6950	641 (1367)	5.0
	650/55R26.5 P380	167 E	70 (10 tonnes)	4450	645 (1360)	5.0

*(1): On axles with a track of no more than 2000 mm (e.g. standard axle ADR “Black Bull”) this results in an external width of approx 2513 mm. The 35th derogating provision does not apply in this situation.

*(2) With tyres not listed here, it is recommended that you get information about the recommended tyre pressure from the tyre manufacturer.

Figure 37: Tyre pressures

5.3.8 Checking the tread depth of the tyres

WARNING!

Danger of accidents caused by trailer braking poorly.

If the tread depth of the tyres is no longer sufficient, this can increase the trailer's braking distance. It may also cause the trailer to aquaplane more readily on wet surfaces. This can result in serious or fatal accidents for people and animals.

Therefore:

- Tyres that have reached the minimum permissible tread depth must be replaced by tyres with a deeper tread as soon as possible.

INFORMATION

- The minimum tread depth permitted by law is 1.6 mm. This minimum depth must be present at every point on the tyre surface.
- The smaller the tread depth, the longer the braking distance on wet surfaces and the higher the risk of aquaplaning.
- Thanks to elevations in the tread grooves, known as wear indicators, you can quickly check whether the tread depth is still in the permissible range.

⇨ Check the wear indicators at multiple points on the tread: If the wear indicators are already level with the tread, the tyre is at or even below the minimum tread depth.

⇨ Measure the tread depth with a tread depth gauge.

If the tread depth is below the minimum depth permitted by law:

⇨ Replace the tyre with a tyre with a sufficient tread depth. Always check the age of replacement tyres.

INFORMATION

You can tell how old tyres are by looking at the DOT number located on the tyre sidewall and encircled by an oval.

⇨ If the tyres are “Regroovable”: get the tread depth regrooved by a tyre specialist.

INFORMATION

The tread of “Regroovable” tyres can be regrooved as long as there is a remaining tread depth of 2.5 mm.

5.3.9 Changing the tyres

WARNING!

Danger of accidents caused by an incorrectly positioned jack.

If a jack is positioned incorrectly, the trailer can slip when changing tyres and injure people and animals in the process.

Therefore:

- Only use jacks at the points marked with information signs.

WARNING!

Danger of accidents caused by a lack of knowledge and unsuitable tools.

If people change tyres without having the necessary knowledge and without suitable tools, this can cause accidents. People or animals in the vicinity can be injured as a result.

Therefore:

- Only use appropriate tools.
- Only people that have sufficient experience or that have been instructed by an experienced person may change tyres.

Removing tyres

⇨ Secure the trailer against rolling away (see Section 0, page 61).

⇨ Remove the protective caps from the wheel nuts.

⇨ Half loosen the wheel nuts with suitable tools.

⇨ Position a jack at the marked jack points and jack up the trailer.

⇨ Check the stability of the trailer.

⇨ Loosen the wheel nuts completely and remove them.

⇨ Remove the tyres from the wheel hub.

Putting on new tyres

WARNING!

Danger of accidents if wheel bolts and nuts become loose.

If wheel bolts and nuts become loose, there is a risk that the entire tyre may come loose and cause injury to people and animals.

Therefore:

- Do not use any lubricants on the wheel bolts and nuts.
- Do not oil the threads of wheel bolts and nuts.

WARNING!

Danger of accidents caused by defective rims.

Corrosion around the tyres, rims and axles can lead to accidents while driving and can injure people and animals.

Therefore:

- Do not use corroded rims.
- Eliminate any corrosion professionally or have it eliminated by a professional.

⇨ On the new tyre to be fitted, check the tyre seat surface of the rim for contamination and signs of corrosion.

⇨ If you notice any contamination or signs of corrosion: Remove it thoroughly and permanently from the tyre seat surface.

⇨ Push the tyre onto the wheel hub.

⇨ Tighten the wheel nuts crosswise, but do not tighten them fully.

⇨ Lower the jack so that the tyres are touching the ground.

⇨ Tighten the wheel nuts crosswise, taking into account the permissible tightening torques, (see Section 2.6.11, page 50).

⇨ Put the protective caps back into place on the wheel nuts.

5.3.10 Tightening the wheel nuts

Wheel nuts can loosen over time. This must be done after every tyre change.

WARNING!

Danger of accidents caused by defective wheel bolts and wheel nuts.

If defective wheel bolts and nuts are used, there is a risk of the tyre becoming loose and causing injury to people and animals as a result.

Therefore:

- Damaged, stiff or rusty wheel nuts and bolts must be replaced immediately.

INFORMATION

For the basic configuration of the trailer the tightening torque is 600 Nm.

You can find the tightening torques of optional axles and wheels in the annex.

⇨ Tighten the wheel nuts step by step crosswise with a torque spanner.

5.3.11 Lubrication plan for lubricating parts

	Interval		
Lubricating points	Every 10 operating hours Daily	Every 50 operating hours 3 months	Every 250 operating hours 6 months
Lubricate the tailgate and lock (6 lubricating nipples)	•		
Lubricate the line support (4 lubricating nipples)	•		
Lubricate the master cylinder (2 lubricating nipples)		•	
Lubricate the slewing ring (8 lubricating nipples)		•	
Oil mulching flap hinges		•	
Lubricate parking brake: Lubricate the ropes and pulleys with a brush Lubricate the spindle with grease (1 lubricating point)			•
For axle units, the intervals stated by the supplier must be observed (see annex).			

Lubricants: see Section 2.6.9, page 48.

Before lubricating the parts:

- ⇨ Make sure that the trailer is secured against rolling away (see Section4.5.1, page59, and Section0, page 61).
- ⇨ Make sure that the trailer is not loaded.

Lubricating the slewing ring

⇨ 8 lubricating nipples on the slewing ring

⇨ 2 lubricating nipples on the master cylinder

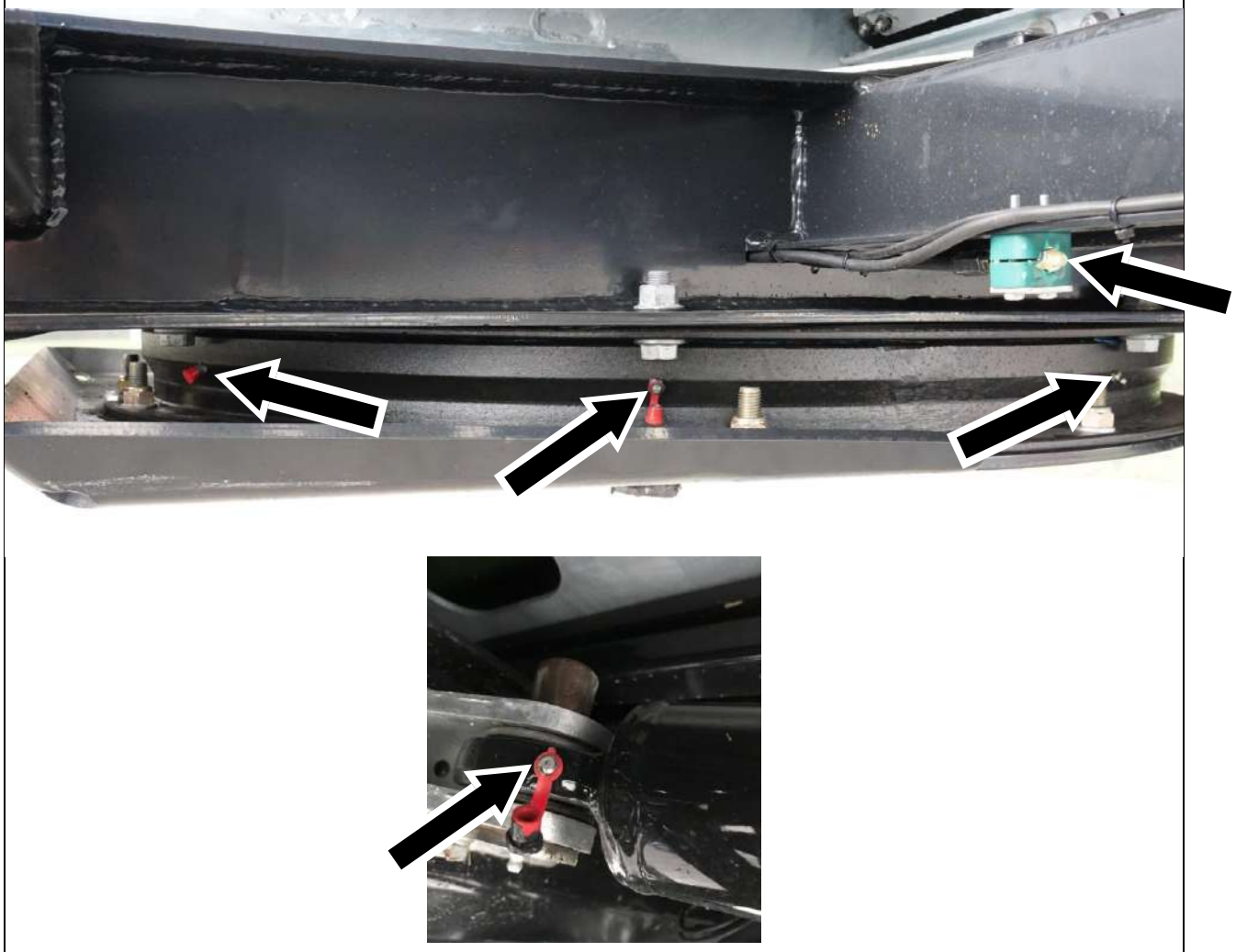


Figure 38: *Slewing ring lubricating nipple*

Lubricating the tailgate

⇨ 3 lubricating nipples per side (see Figure 39).

Figure 39: *Lubricating the tailgate*

Lubricating the line support

⇨ 2 lubricating nipples per side (see *Figure 40*).

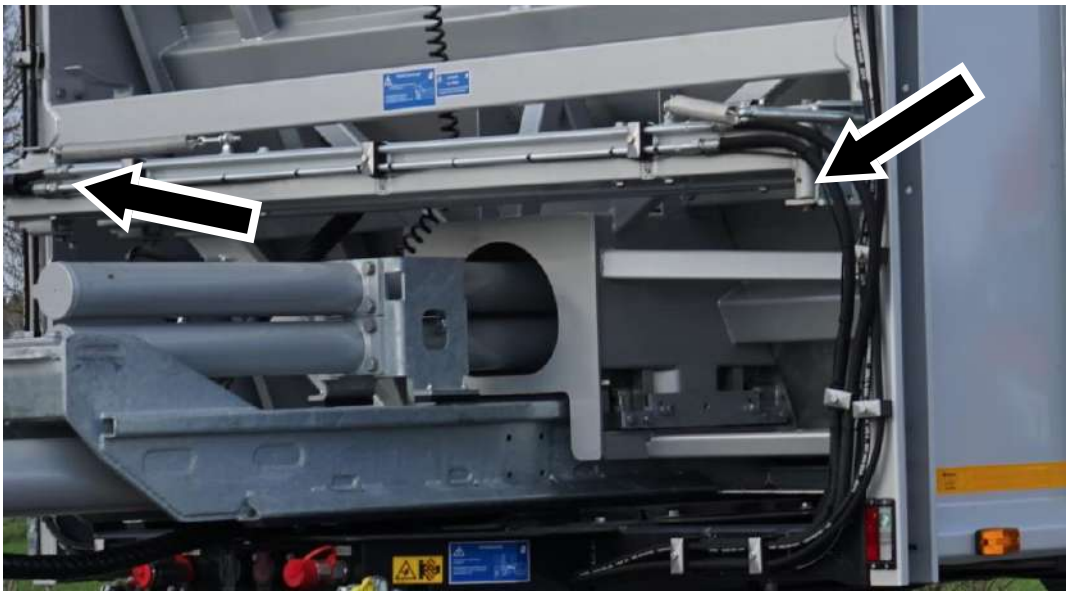


Figure 40: *Lubricating the line support*

Lubricating the parking brake

⇨ Lubricate the brake cable and pulley with a brush (see Figure 41).

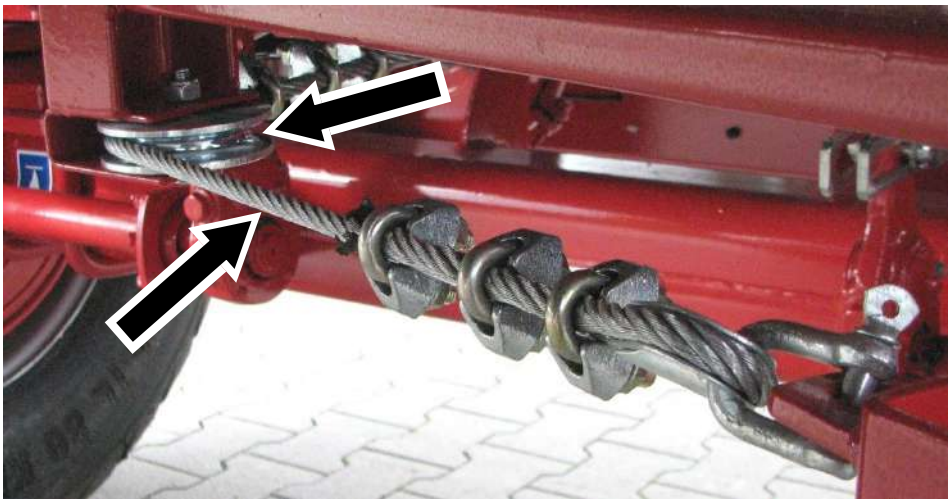


Figure 41: *Lubricating the pulley and brake cable*

⇨ Lubricate the spindle with grease via the lubricating nipple (see Figure 42).

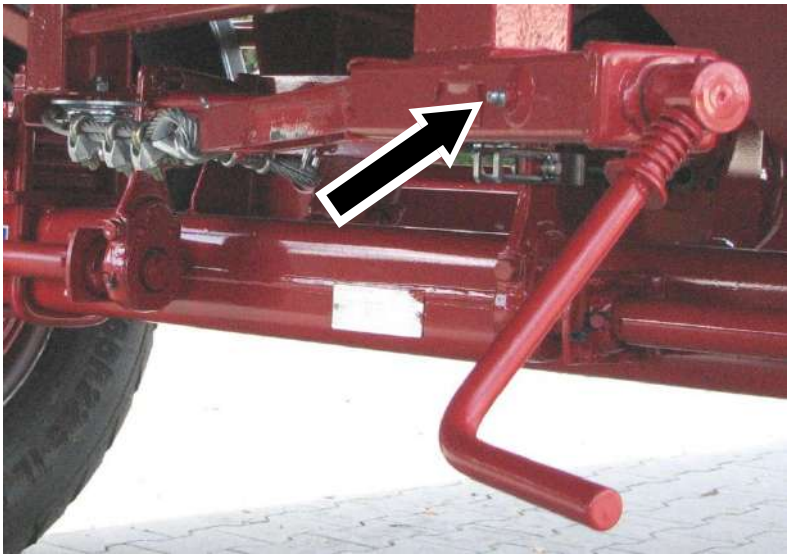


Figure 42: *Spindle lubricating nipple*

5.3.12 Seals

Tailgate seal

- ⇨ Wipe the tailgate seal with a clean and lint-free, soft, slightly damp cloth and remove any contamination.
- ⇨ Do not use solvents!
- ⇨ Check the seal for damage.
- ⇨ It is clamped in place in the U-rail and can simply be pulled out when it needs to be changed without any other fastenings having to be loosened first.
- ⇨ A replacement seal can be tapped into place with a rubber mallet.
- ⇨ Before installing a new seal, it is recommended that you spray a detergent solution on the rubber of the seal and the U-rail.

  It is possible to change only part of the seal at a time. The old seal and new replacement part must be cut cleanly. The edges of the old seal and new seal must be connected with a suitable adhesive.

Pushing element seals

- ⇨ These seals do not require any special maintenance.
- ⇨ Do not use solvents!
- ⇨ However, the seals must be replaced if they are torn or become porous.
- ⇨ All seals are fixed to the trailer with a counter plate. The counter plate must be removed before the seal can be changed.

5.3.13 Cleaning the trailer

WARNING!

Danger of accidents due to brake failure caused by improper cleaning.

If the brake lines are cleaned with unsuitable cleaning agents it can cause damage that can result in a loss of brake function. People and animals in the vicinity could be injured as a result.

Therefore:

- Never clean brake lines with petrol, benzene, petroleum or mineral oils.

WARNING!

Danger of accidents as a result of improper cleaning with a pressure washer or steam jet.

Handling pressure washers or steam jets incorrectly can damage parts and result in a loss of function. People and animals in the vicinity could be injured as a result.

Therefore:

- Do not clean electrical components with a pressure cleaner/steam jet.
- Do not clean chrome-plated parts with a pressure cleaner/steam jet.
- Do not aim a pressure cleaner/steam jet directly at lubricating points and bearings.
- Maintain a distance of at least 300 mm between the cleaning nozzle and paintwork or parts. During the first 3 months, maintain a distance of 500 mm.
- Observe the safety regulations of your employers' liability insurance association when handling pressure washers.

INFORMATION

To protect against de-icing salt and other environmental influences, we recommend spraying the underside of the trailer with wax-based preservatives to protect it. Contact the customer service team for more information (see Chapter 8, page 141).

In the first 3 months for a new trailer

- ⇨ - Maximum pressure ***50 bar***
- ⇨ - Minimum distance ***50 cm***
- ⇨ - Spray pipe angle ***25°***
- ⇨ If possible: Wash the trailer with plenty of cold water to help harden the paintwork.
- ⇨ Lubricate all lubricating nipples with grease again (see Section 5.3.11, page 108).

After the first 3 months for a new trailer

- ⇨ When cleaning the trailer, bear in mind the measures mentioned above to avoid damaging the paintwork.
- ⇨ Clean the trailer with plenty of water.
- ⇨ Use a hygienic industrial cleaner in addition if needed.
- ⇨ Lubricate all lubricating nipples with grease again (see Section 5.3.11, page 108).

INFORMATION

Clean the trailer more frequently in winter to remove any adhering road salt and any salty condensation and spray.

If you want to protect your trailer with wax, you can order the products that you need from our customer service team (Item No. 2892 997).

Please observe the directions for use provided.

Inhalt	5 Liter
Gebinde	Kanister
Farbe Schutzfilm	Milchig-transparent
Trocknungsdauer Umgebungstemperatur +5°C	24 Std. Stunden
Verarbeitungstemperatur	+15 bis +30°C

5.3.14 Visual inspection of the service brake

WARNING!

Danger of death due to non-functioning brakes.

If any unauthorised work is performed on the service brake, it may impair its functioning. Accidents can occur as a result. Any people or animals in the vicinity may be seriously or fatally injured.

Therefore:

- Do not alter the brake valve settings determined by the manufacturer.
- Take the settings for the brake valve from the ALB sign (see Section2.2, page 30).

WARNING!

Danger of death due to non-functioning brakes.

If the service brake is not functioning correctly, it can result in longer braking distances, which in turn can result in accidents. Any people or animals in the vicinity may be seriously or fatally injured.

Therefore:

- Always perform a brake test after making any adjustments to or carrying out any repair work on the service brake.

INFORMATION

When changing the brake pads, check the wear of the wheel bearings!

⇨ Check all pipe lines, hose lines, connections, screw connections, coupling heads and the compressed air tank for visible damage, corrosion and leaks.

⇨ Change any leaking parts and seal any leaks.

⇨ Change any pipe and hose lines with chafe marks.

⇨ Change any defective and porous pipe and hose lines.

⇨ Check to see whether the compressed air tank moves around in its straps. If it does: Tighten the straps.

⇨ If you notice any defects: Take the trailer out of operation and perform the necessary repairs (see Chapter 8, page 141).

5.3.15 Checking the service brake for leaks

INFORMATION

The service brake is considered to not have any leaks if the pressure does not drop by more than 0.15 bar in 5 minutes.

⇨ Measure the pressure in the compressed air tank via the test connection for the pressure gauge (10).

⇨ Wait for 5 minutes.

⇨ Measure the pressure in the compressed air tank via the test connection for the pressure gauge (10) again.

If the pressure has dropped by more than 0.15 bar:

⇨ Replace any leaking valves.

⇨ Seal any leaks.

5.3.16 Checking the pressure in the compressed air tank

INFORMATION

The set point is between 6.0 bar and 8.1 bar $^{+0.2\ bar}$.

⇨ Remove the protective cap from the test connection (10) (see Figure 43).

⇨ Insert the pressure gauge into the test connection (10) and read the measured air pressure.

⇨ Remove the pressure gauge.

⇨ Place the protective cap back on the test connection (10).

⇨ If the air pressure is lower than the set point: Couple the trailer to a towing vehicle.

↳ The supply line (4), marked in red, will be pressurised with compressed air and will fill the compressed air tank.

⇨ Check the pressure display in the towing vehicle and monitor for any leakage losses.

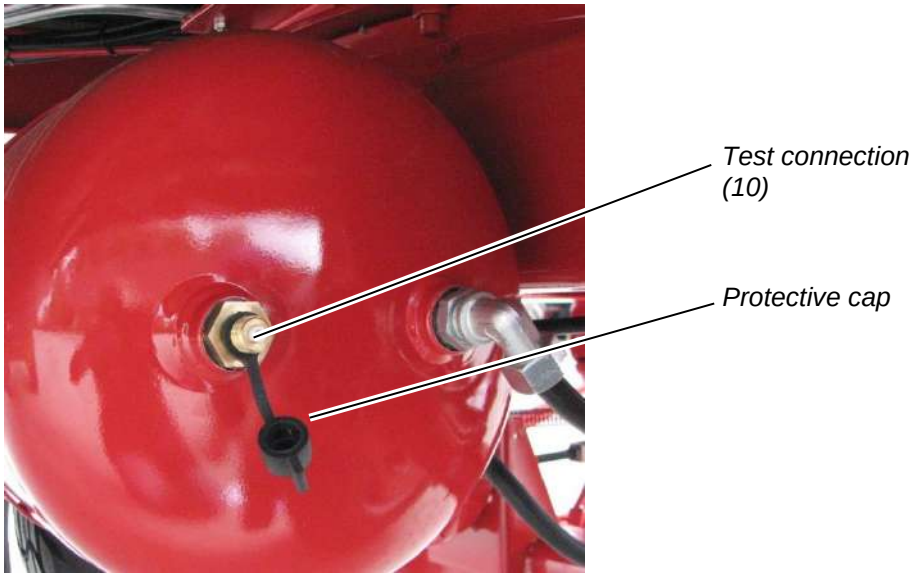


Figure 43: *Test connection for a pressure gauge on the compressed air tank*

5.3.17 Checking the brake cylinder pressure

INFORMATION

When the brake is not active, the set point is 0.0 bar.

When the brake is active, the information from the ALB sign (see Section 2.2, page 30) applies.

- ⇨ Remove the protective cap from the test connection (see Figure 44).
- ⇨ Insert the pressure gauge into the test connection and read the measured air pressure.
- ⇨ Remove the pressure gauge.
- ⇨ Place the protective cap back on the test connection.
- ⇨ If the air pressure deviates from the set point: Have the brake cylinder pressure set by a recognised specialist workshop.

Figure 44: *Test connection for brake cylinder pressure*

5.3.18 Checking the brake cylinder stroke

INFORMATION

The brake cylinder stroke should be 30 mm maximum.

⇨ Perform a full brake with the trailer.

⇨ Measure the brake cylinder stroke according to Figure 45.

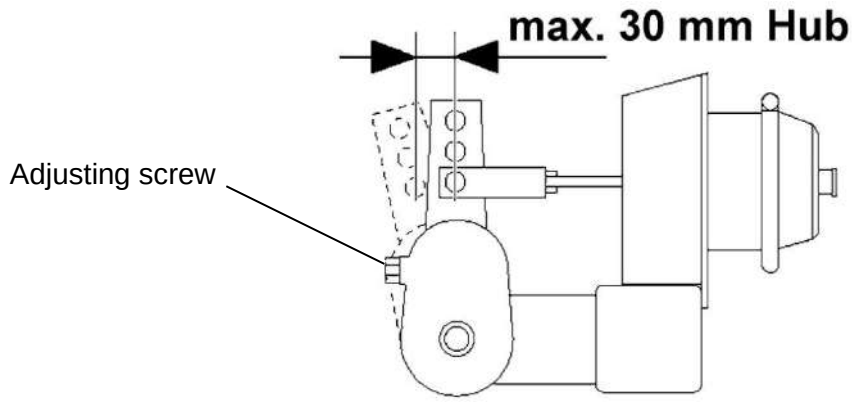


Figure 45: *Brake cylinder stroke*

⇨ If the brake cylinder stroke is more than 30 mm: Adjust the brake cylinder stroke (see Section 5.3.19, page 120).

5.3.19 Adjusting the brake cylinder stroke

⇨ Turn the adjusting screw (see Figure 46) in a clockwise direction until you feel resistance.

⇨ Then turn it half a turn backwards.

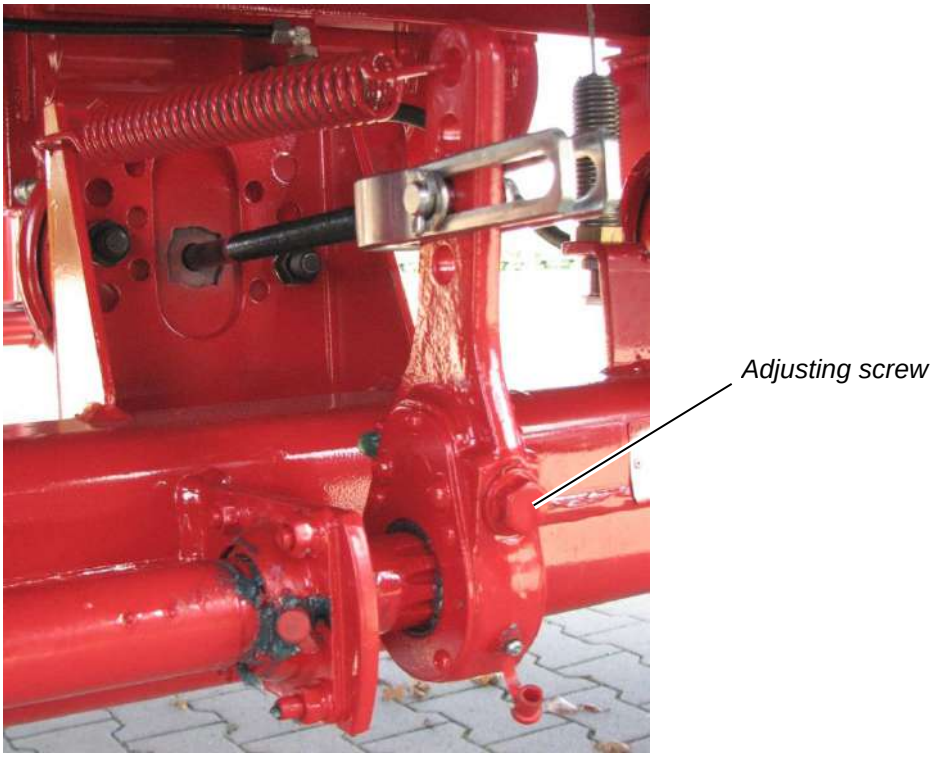


Figure 46: *Brake cylinder stroke, brake cylinder*

⇨ Check the free wheel of the wheels when the brake is not applied.

⇨ Check the brake cylinder stroke (see Section 5.3.19, page 120).

5.3.20 Cleaning the brake line filters

WARNING!

Danger of death due to non-functioning brakes.

If the service brake is not functioning correctly, this can result in accidents. Any people or animals in the vicinity may be seriously or fatally injured.

Therefore:

- Replace any defective filter inserts immediately.

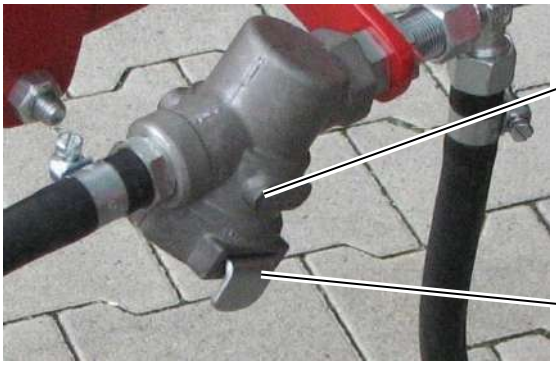


Figure 47: Line filter

- ⇨ Place one hand under the line filter (see Figure 47).
- ⇨ With your other hand, pull the bolt out from the line filter (see Figure 47).
- ⇨ Instead of a bolt, a spring washer may be installed as a lock: In this case, the ring must be compressed.
- ⇨ Remove the closing piece with the O-ring, compression spring and filter insert.
- ⇨ Wash the filter insert with petrol or thinner and dry it with compressed air.
- ⇨ Check the filter insert for defects. Only reuse filter inserts if they are fully intact.
- ⇨ Check the O-ring and compression spring and if needed clean them with a clean, soft, lint-free cloth.

⇨ Put the closing piece with the O-ring, compression spring and filter insert back into place.

INFORMATION

When inserting the closing piece, take care to ensure that the O-ring does not tilt in the guide slot.

5.3.21 Checking the joints on the brake valves, brake cylinders and brake linkage

⇨ Check all joints on the brake valves, brake cylinders and brake linkage to ensure that they move easily and freely.

⇨ If the joints are stiff: Lubricate them with grease or lightly oil them.

5.3.22 Checking the ALB (automatic load-dependent braking)

INFORMATION

The ALB can only be checked when the service brake has been released.

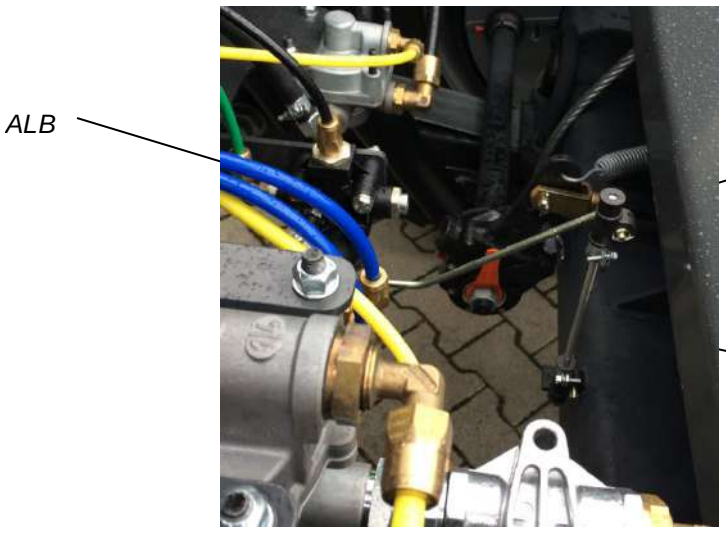


Figure 48: ALB, here: SAW 32

⇨ Make sure that the parking brake has been fully released.

⇨ Check that the adjustment shaft moves freely and easily.

⇨ Check the linkage for damage.

⇨ If you notice any defects: Take the trailer out of operation and perform the necessary repairs (see Chapter 8, page 141).

5.3.23 Checking the towing vehicle's air dryer

INFORMATION

Make sure that the towing vehicle's air dryer is working flawlessly. This is a prerequisite for the fault-free functioning of the service brake. This specific part of the towing vehicle must be checked particularly carefully in winter.

5.3.24 Performing a tractor/trailer coordination

For optimal braking behaviour and minimum brake pad wear, we recommended having a recognised specialist workshop perform a tractor/trailer coordination between your towing vehicle and trailer after a breaking-in period.

If you mainly travel on B-roads, the breaking-in period is the first 1000 to 2000 km. If you mainly travel on motorways, the breaking-in period is the first 3000 to 5000 km. These values are based on our experience.

⇨ If you notice abnormal wear on your trailer, have the tractor/trailer coordination performed before these values are reached.

INFORMATION

During the tractor/trailer coordination, the service brake is checked and adjusted. This can only be done once the brake has been broken in, as the permanent braking effect only sets in during this first breaking-in period.

5.3.25 Checking the spring-loaded brake

INFORMATION

Over time, the brake cables can stretch.

The brake cables are too long if three quarters of the spindle's tensioning distance is needed to apply the parking brake.

⇨ Park the vehicle on a flat surface when it is coupled.

⇨ Couple the brake hose from the towing vehicle.

⇨ First connect the red and then the yellow coupling head.

⇨ Activate the release valve (see 4.5 Parking/Service brake lifting/lowering valve)

⇨ Activate the parking brake

⇨ The air is blown out and the brake is activated

⇨ Check to see whether the brake linkage is looser.

⇨ If this is the case, it may be that a spring in the brake cylinder is broken. This means that the brakes are no longer safe

⇨ A specialist workshop must perform the necessary repairs immediately.

WARNING!

Danger of death due to non-functioning brakes.

If the parking brake is not functioning correctly, this can result in accidents. Any people or animals in the vicinity may be seriously or fatally injured.

Therefore:

- Have the necessary repairs performed immediately.

⇨ Once the brake has passed its inspection, the coupling heads can be reconnected.

⇨ The trigger valve springs back out.

⇨ The spring-loaded brake can be deactivated again.

5.3.26 Checking the hydraulic system

WARNING!

Danger of accidents when checking the hydraulic system.

Hydraulic fluid escaping under high pressure can penetrate the skin and cause serious injuries.

Therefore:

- Always wear personal protective equipment (PPE), in particular safety goggles and protective clothing.
- Contact a doctor immediately in the event of any accidents.

WARNING!

Danger of accidents caused by unauthorised maintenance work.

If any errors are made during maintenance and repair work due to ignorance, this can cause accidents when the trailer is in operation, which can injure people and animals.

Therefore:

- Only qualified specialists should perform repairs on the hydraulic system.

INFORMATION

Hydraulic hoses and hose connections still age naturally, even if they are properly stored and only subject to permissible loads. As a general rule hydraulic hoses should not be used for more than 6 years. The storage time within these 6 years should generally not be more than 2 years.

For hydraulic hoses made from thermoplastics, other guide values may apply.

The date that the hydraulic hoses were manufactured is printed on them. For example, if “3Q15” is printed on the hose, this means that the hose was made in the 3rd quarter of 2015.

⇨ Carefully examine the entire hydraulic system (hydraulic pipes, hydraulic hoses, screws, hydraulic valves, couplings) for:

⇨ Leakages

⇨ Brittle outer layer

⇨ The hose manufacturing date (hydraulic hoses must not be more than 6 years old)

- ⇨ Chafe marks, cuts, tears (from the outer layer to the liner)
- ⇨ Deformations such as layer separation, blistering, crushed areas or kinks (when the hoses are pressurised and unpressurised)
- ⇨ Damage to or deformation of hose fixtures
- ⇨ Hose drifting out of the fixtures
- ⇨ Corrosion of the hose fixtures
- ⇨ Incorrect installation
- ⇨ Significant contamination
- ⇨ If you notice any leaks: Tighten the screw connections with a suitable tool.
- ⇨ If you notice any heavy contamination: Clean the areas
- ⇨ If you notice any other defects: Take the trailer out of operation and have the necessary repairs carried out by a qualified professional (see Chapter 8, page 141).

5.3.27 Checking sliding guides

The sliding guides on the pusher plate must be kept free from grease. Using grease in conjunction with accumulated dirt can lead to increased wear!

The sliding guides shown in the image have been designed to last for a long time. This applies when the vehicle is used under normal conditions and is maintained well.

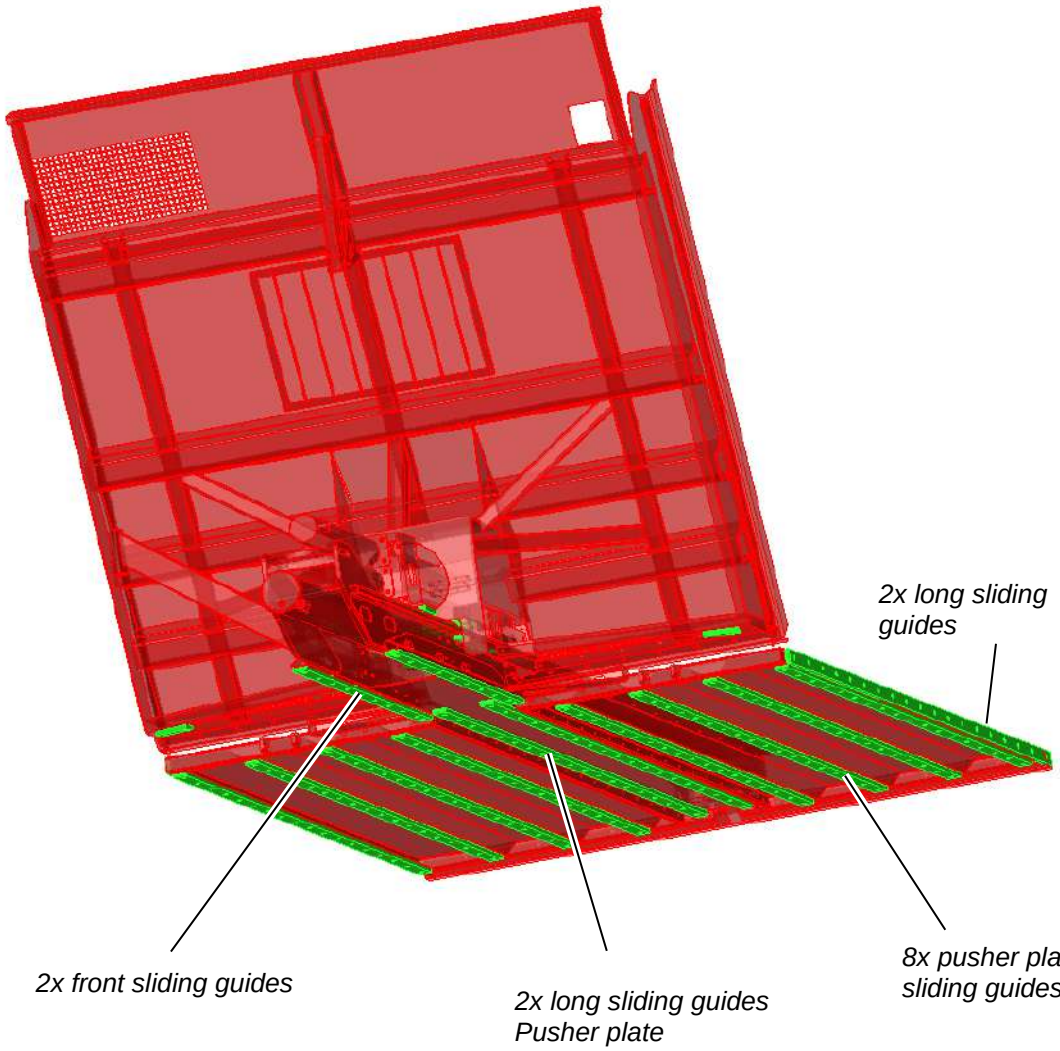


Figure 49: Floor unit sliding guides

⇨ Check the state of wear to counteract any excessive wear through an adjustment.

The following sliding guides are exposed to the greatest stresses. They may need be to changed.

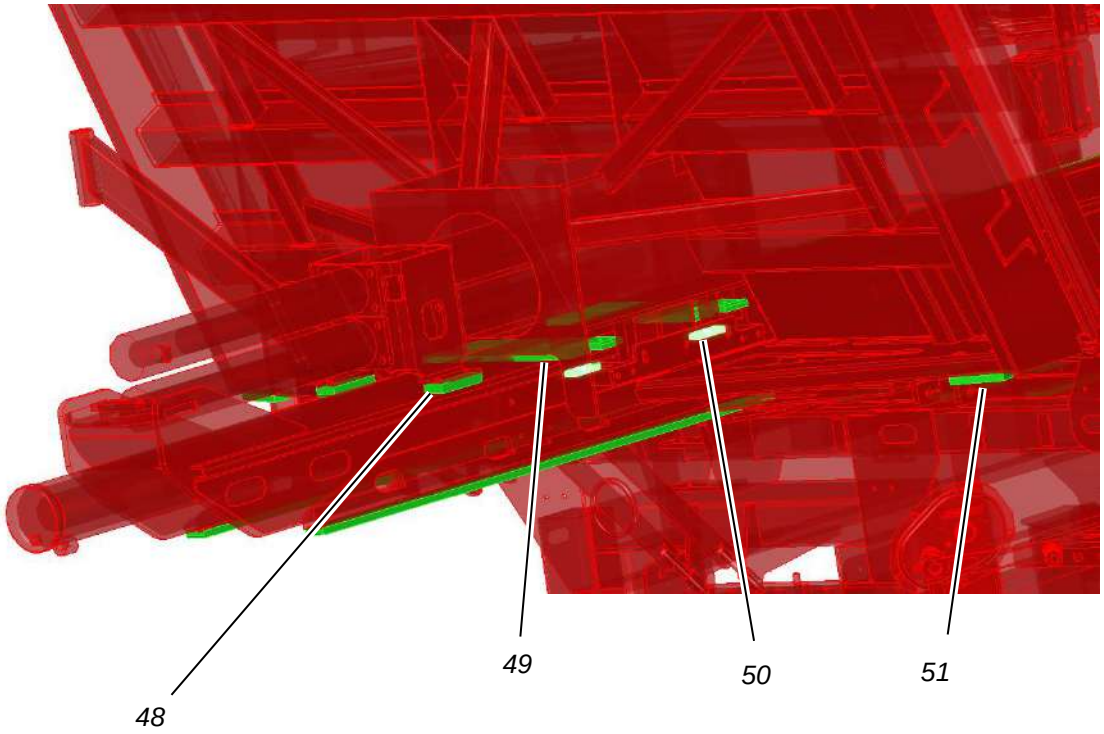


Figure 50: Pusher plate sliding guides

Pos.	Name	Function	Number
48	Sliding plate	Bearing point of the upper cylinder	2
49	Cylinder housing sliding guide	Intercepts the forces from the pusher plate	4
50	Carriage sliding guide	Holds down the carriage	4
51	Pusher plate tilt protection	Limits the tilting movement to the sides	2

The following chapters describe which adjustments can be made and how to change parts.

5.3.28 Adjusting and changing the plate guide

The vehicle must be placed on a level surface when making adjustments or changing parts to prevent twisting.

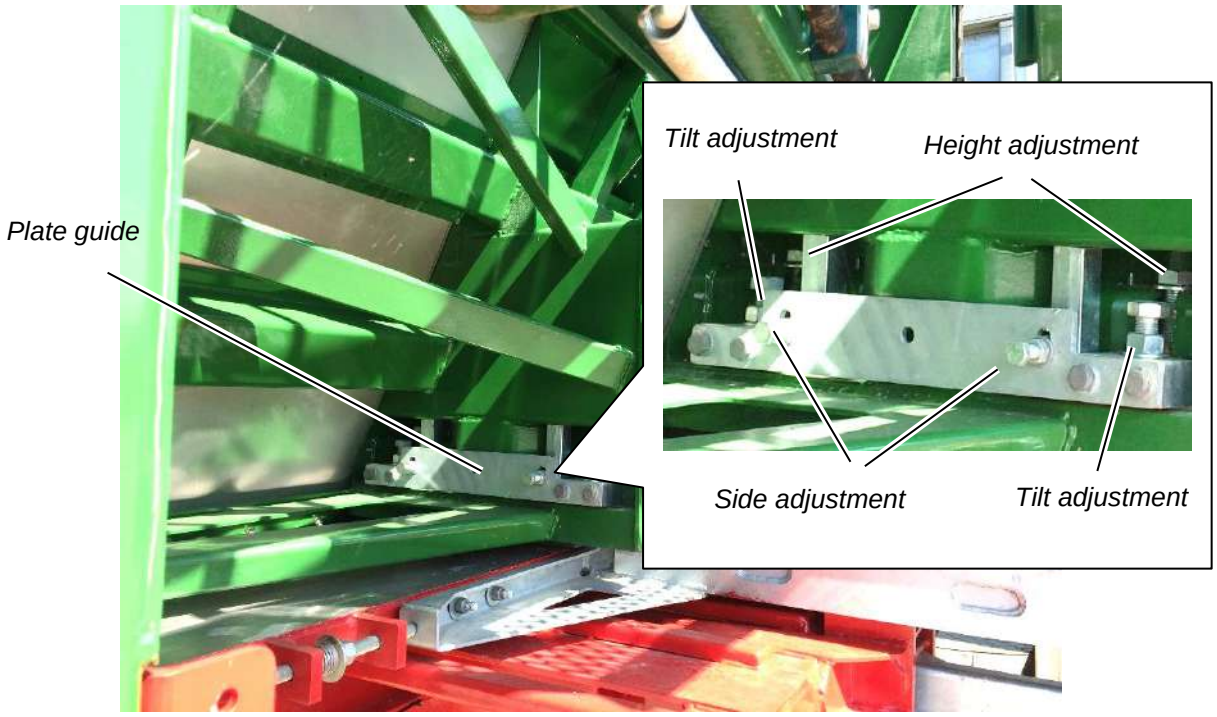


Figure 51: Carriage guide, view from the right

Adjusting the sliding guide carriage (50) The following description refers to the front and rear screws, as well as the screws on the other side.

⇨ Slightly loosen the counter nut and bolt for the tilt adjustment.

⇨ Loosen both counter nuts for the side adjustment (do not loosen the bolt and the final counter nut!)

⇨ Use the height adjustment bolt to set the appropriate height.

⇨ Set the appropriate side guide with the lock nuts.

⇨ Tighten all bolts and nuts evenly so that the setting stays in place.

⇨ When changing the sliding guide (50), remove all the bolts described above. Also remove the bolt for the side adjustment.

⇨ The sliding guide itself is fixed to the sliding guide with a countersunk bolt.

The company is not aware of any other changes that need to be made to other sliding guides. You must contact the manufacturer, if a change needs to be made.

5.3.29 Adjusting the carriage guide

The vehicle must be placed on a level surface for any adjustments to prevent twisting.

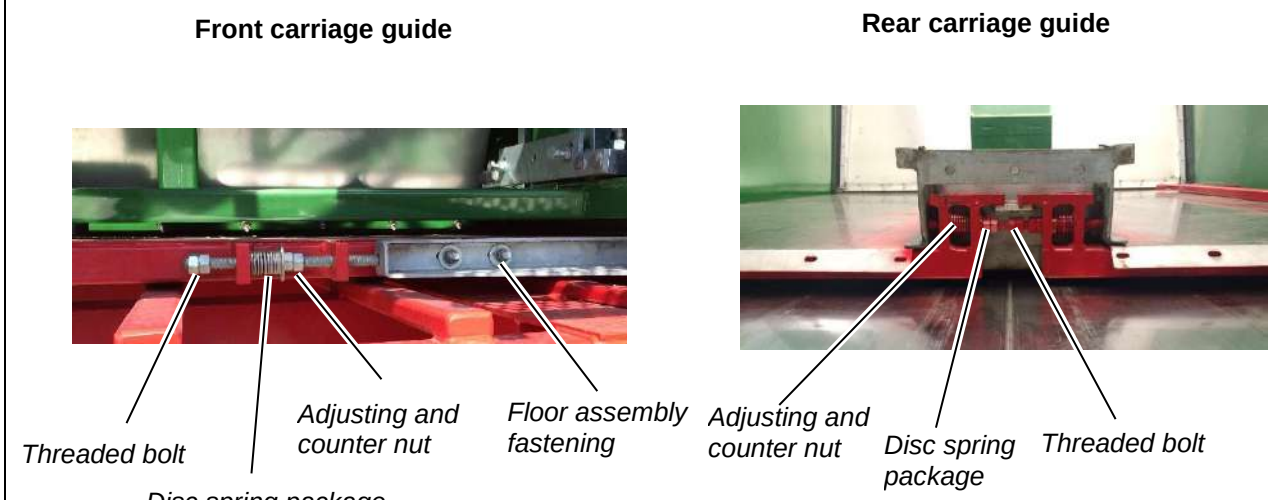


Figure 52: Floor unit, view from the front and back

The floor unit is separated in the middle by the guide carriage. The left and right floor plates are supported on the sides by the guide carriage in the front and rear area (see Figure 52: Floor unit, view from the front). This pushes the sliding guide side-long (see Figure 49: Floor unit sliding guides) against the side walls. This also centres the guide carriage at the same time. For this reason, it is necessary to centre the guide carriage in addition to setting the pressure.

⇨ Remove the cover and seal from the carriage guide in the internal space.

⇨ Loosen the adjusting and counter nuts on the front, back, left and right of the carriage guide.

INFORMATION

Do not loosen the floor assembly fastening!

This is only used for this purpose and must always be slightly loose so that the floor can move to the left and right.

⇨ Use a mounting lever to align the carriage guide in the middle.

Align the centrepoint as described in the following illustration.

Front carriage guide

Measurement point (left and right)

Rear carriage guide

Measurement point

Figure 53: Floor unit

⇨ Once you have centred the carriage guide, you should also check the other points, such as the path of the cylinder and the seal of the plate on the sidewalls.

⇨ Firmly hold the threaded bolts in one hand and use your other hand to manually tighten the adjusting nuts.

⇨ At all points.

⇨ Now tighten the disc spring packages 1 ½ turns with a spanner!!

⇨ Tighten the counter nuts.

⇨ Perform a trial pushing process and ensure that the balance is right.

⇨ Replace the cover and seal on the carriage guide in the inner area.

5.3.30 Replacing light bulbs 7-pin plug

Replacing the light bulbs in a three-compartment light

⇨ Unscrew the two screws from the three-compartment light (see Figure 54).

⇨ Remove the protective glass (see Figure 54).

⇨ Remove the light bulb.

⇨ Replace the light bulb, taking care to ensure that the new light bulb has the correct voltage and wattage.

⇨ Replace the protective glass.

⇨ Firmly screw the two screws back in.

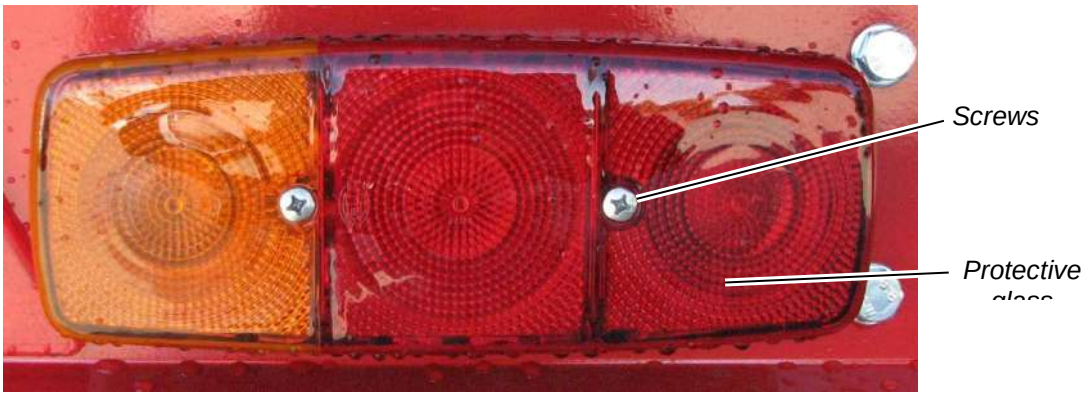


Figure 54: Three-compartment light

Replacing the light bulb in a registration plate light

- ⇨ Unscrew the screws from the registration plate light (see Figure 55).
- ⇨ Remove the housing (see Figure 55).
- ⇨ Remove the light bulb.
- ⇨ Replace the light bulb, taking care to ensure that the new light bulb has the correct voltage and wattage.
- ⇨ Replace the housing.
- ⇨ Firmly screw the screw back in.

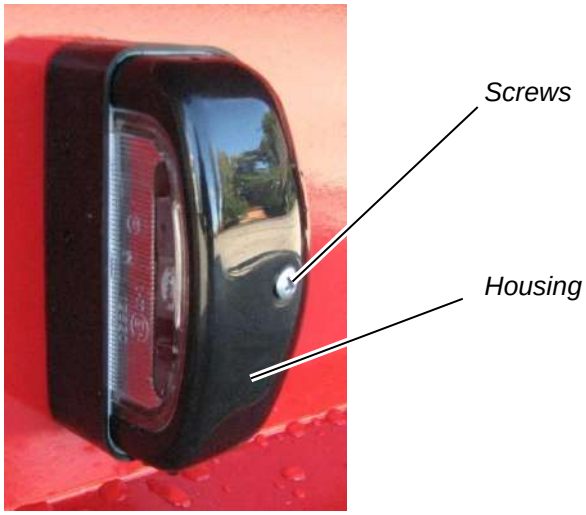


Figure 55: Registration plate light

Replacing the light bulb in a position light

- ⇨ Press the protective glass out of its holder (see Figure 56).
- ⇨ Remove the light bulb.
- ⇨ Replace the light bulb, taking care to ensure that the new light bulb has the correct voltage and wattage.
- ⇨ Press the protective glass back into its holder.

Figure 56: Position light

7-pin plug

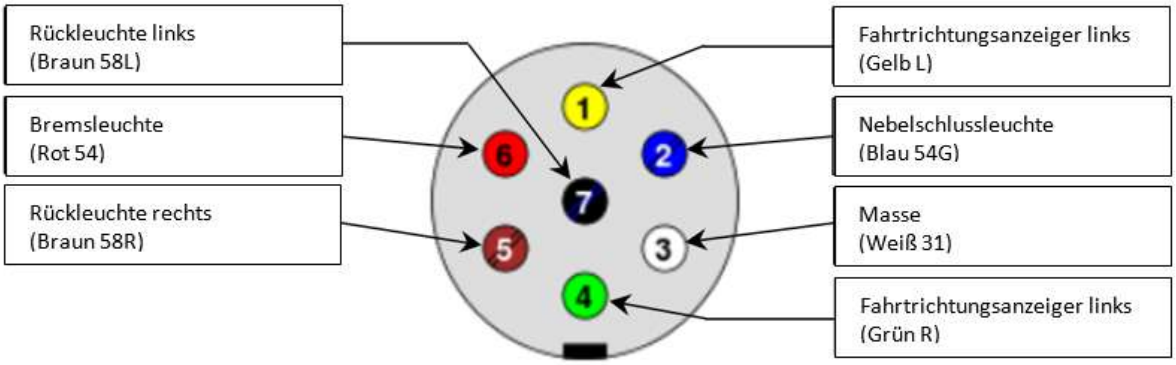


Figure 57: 7-pin plug

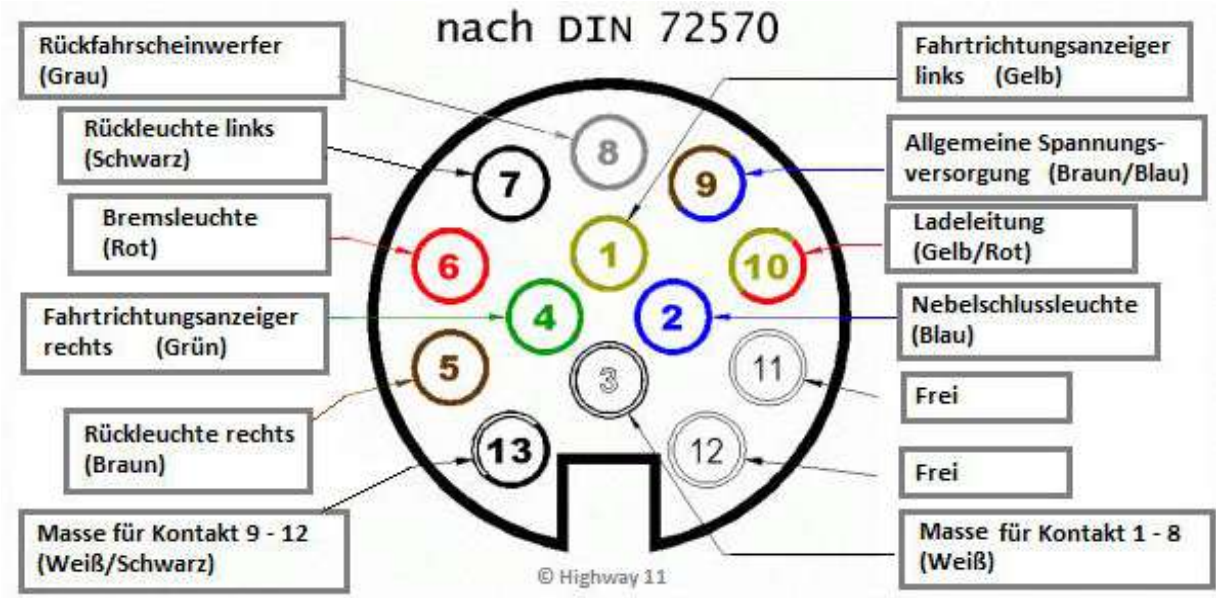


Figure 58: 13-pin plug

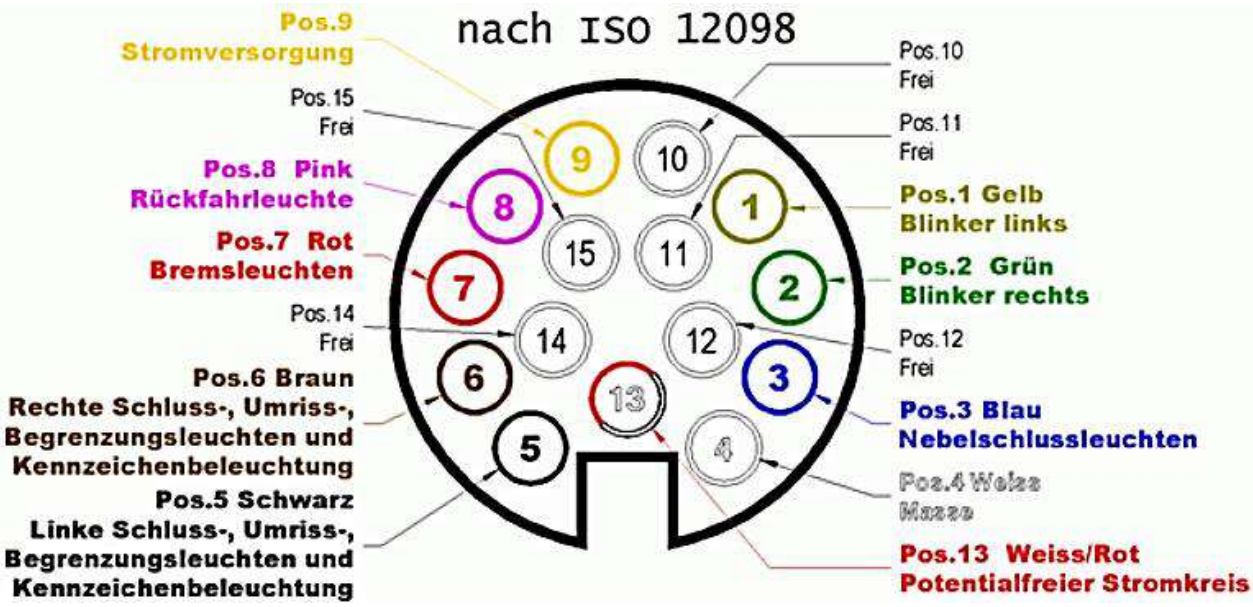


Figure 59: 15-pin plug

5.4 Maintenance and repair instructions

Maintenance work performed		
Date	Signature	Comments/Work performed

6 Decommissioning

The trailer can only be decommissioned by the manufacturer or qualified professionals. The manufacturer shall not be held liable for any damage caused by improper decommissioning or by the disposal of machine parts.

We do not image that the trailer will have to be decommissioned temporarily. Therefore, preservation measures are not necessary.

7 Malfunctions and troubleshooting

With trailer malfunctions, proceed according to the malfunction table below. If this does not help, contact the customer service team (see Chapter 8, page 141).

Malfunctions are often caused by faulty operation. The information provided in these operating instructions must be observed.

Malfunction	(Possible) cause	Measures
The parking brake is hot and ultimately produces smoke.	The parking brake was not released before the start of the journey. Or: The parking brake was not released before the start of the journey.	Release the parking brake.
	Brake lever is stiff or rusted.	Make the brake lever moveable.

Malfunction	(Possible) cause	Measures
Brake drums and/or wheels hubs are hot.	Brake cylinder does not release.	Check the brake cylinder: Check the connections and connect correctly if needed. Check the supply pressure. If the supply pressure is below the set point (see Section 5.3.16, page 117), check the compressed air system for leaks and repair any leaks that you find. Check to see whether the brake shaft moves easily. Make the brake shaft easy to move. If the measures mentioned do not resolve the malfunction: Consult a recognised specialist workshop.
	Return spring broken or weakened.	Replace the return spring.
	Defective bearing.	Have the bearing changed by a recognised specialist workshop.
	The trailer is overloaded.	See Section 4.13, page 81.
The service brake does not work effectively.	Journey was started before the towing vehicle achieved an operating pressure of 8 bars.	See Section 4.14.1, page 85.
	The compressed air tank was not drained.	See Section 4.7, page 63.
	The compressed air tank is contaminated.	See Section 5.3.5, page 101.
	The line filters are contaminated.	See Section 5.3.20, page 120.
	The compressed air from the towing vehicle is too damp.	See Section 5.3.23, page 123.
	The brake cylinder stroke is too long.	See Section 5.3.18, page 119 and Section 5.3.19, page 120.

Malfunction	(Possible) cause	Measures
	Leaks in the compressed air system.	Check the compressed air system for leaks and repair any leaks that you find.
The pressure in the compressed air tank is often too low.	The line filters are contaminated.	See Section 5.3.20, page 120.
	Uneven surface.	Stop the pushing process and change the position of the trailer.
Tailgate lock does not work.	Foreign object between tailgate.	Remove the foreign object.
	Pressure sequence valve setting is too weak.	Adjust the pressure sequence valve (seeHydraulic system 2.4.4)

8 Customer service

The Peter Kröger GmbH customer service team is available to help with orders for spare parts, maintenance and repair work, any questions about construction and conversion work, as well as with any other problems or questions that you may have.

Our address is:

Peter Kröger GmbH

Bloge 4

D-49429 Visbek-Rechterfeld, Germany

Telephone: +49 (0) 4445 9636 - 0

Fax: +49 (0) 4445 9636 - 0

E-mail: info@agroliner.de

Website: www.agroliner.de

9 Declaration of conformity

EC declaration of conformity

according to the EC Machinery Directive 2006/42/EC, Annex II A

We, as manufacturer, hereby declare that the machine described below in its conception and construction, as well as in the version we have put into circulation, complies with the basic health and safety requirements of the EC Directive 2006/42/EC. If any modifications are made to the machine without our authorisation, this declaration will no longer be valid.

Name: **Two and three-axle semitrailers**
Type: **SAW 32 / SAW 34**
Number: -
Year of construction: 2020

Manufacturer
Company: **Peter Kröger GmbH**
Address: **Bloge 4**
D-49429 Visbek, Germany

We also declare that the machine complies with the following additional applicable directives:
Electrical equipment (2006/95/EC),
Electromagnetic compatibility (2004/108/EC)

Applied harmonised standards:
DIN EN ISO 12100

Other applied technical standards and specifications:
-

Authorised representative for the technical documentation:
Peter Kröger GmbH
(Address: see manufacturer's address)

Rechterfeld, 31.08.2019		Managing Director: Peter Kröger
Place, date	Signature	Identification of the signatory

10 Important information from the supplier

Contents

Supplier’s documentation for the axles / suspension

ADR Maintenance Instructions 08-2015:

BPW Maintenance Instructions 01-2005:

Supplier’s documentation for the single ladder

Krause Operating Instructions 02-2023:

Radio Remote Operation Operating Instructions:

11 Annex

Contents
Handover confirmation