










UNSINN

ORIGINAL OPERATING INSTRUCTIONS

in English

U. v. D. 2.0

Table of Content

1 Important Safety Instructions

Danger

Danger of misapplication

- Do only use the trailer for the transport of loads.
- Do not use the trailer to transport people.
  Otherwise you endanger others.
  You endanger yourself and others if you operate the trailer improperly or disregard safety instructions and warning signs.
  Severe injuries or considerable material damage can be the result.

Danger

Before initial operation the wheel screws must be retightened with the prescribed torque (90Nm). (Also see Chapter 9.3 Description of the Works You Can Do By Yourself)

Danger

Danger for inadmissible operators

Do only use the trailer if

- you have been properly instructed and
- you have understood the content of the operating instructions

Danger

Do NOT use the trailer under the influence of

- alcohol
- drugs or
- medication

Danger

Danger from impermissible modifications

- Do not modify the trailer of parts of it. Otherwise you change the safety and driving characteristics of the trailer and the general operating licence expires.

Danger

Danger from improper reparations / modifications

- Do not carry out repair or modification work on the axes, accumulating mechanisms and frame. Due to modifications or reparations on load-bearing parts the safety and driving characteristics of the trailer change and the general operating licence expires.

Caution

Do only use the trailer in road traffic

- If you have an appropriate driving licence.

Caution

When using the trailer do always consider

- **the traffic regulations as well as**
- **the accident prevention regulations.**

Before the galvanising provides effective protection from corrosion, the galvanised parts must be able to react with the surrounding air under dry conditions.

2 Used Symbols and Terms

All safety instructions and warning signs of this operating instruction are clearly highlighted. For warning signs the following symbols and signal words were used.

Danger
Warns you of dangers that can lead to **injuries of persons** or to **severe material damage.**

Caution
Disorders in the operating procedure can **appear** if you **disregard** the warnings and instructions.

Tip
Reference to **useful information** on the handling of the trailer.

Cross-references in this operating instruction are marked with this symbol or *with italics*.

Guideline

3 Master Data / Technical Data

3.1 Identification / Type Plate

The type plate can be found on the frame of the trailer and contains the following information:

- Chassis number
- Permissible gross vehicle weight
- Axle load and type designation.

The chassis number is also imprinted in the frame.

3.2 Determine Payload

Payload = Permissible gross vehicle weight – Anhängerleergewicht

Clarifications of Loads and Weights:

Tare Weight / Trailer Weight	the weight of the trailer taking into account all components and accessories (units, access rails, spare wheels etc.) without load	Permissible Gross Vehicle Weight	the maximum weight of the trailers that may not be exceeded at full load (payload) taking into account the tare weight
Payload	admissible load considering the permissible gross vehicle weight	Axle load	the load with which one axle of the trailer may be burdened
Support Load	the load that weighs from the drawbar onto the trailer hitch	Towing capacity	the maximum permissible weight towed by the towing vehicle. This may not be exceeded by the actual weight of the trailer

3.3 Determine Support Load According to Label

In the frontal area of the trailer a label is fixed which shows the support load to be met.

The actually towed weight may not exceed the listed towing capacity of the towing vehicle.

3.4 Determine Tyre Pressure According to Table

Information for before the drive:
Before the first drive and also after 50 km check tyre pressure!
Regularly check tyres for damages and the correct tyre pressure!

Tyre Type	Tyre pressure at full load in bar
195/50 B10	6,00
195/55 R10C 98/96N	6,25
155/70 R12C	6,25
225/55 R 12C 104N	5,30
145/70 R13	2,70
145/80 R13 79N	2,80
155 R13C 91N/89N	3,70
155 R13C 94N/96N	4,50
155/80 R13 84N	2,80
165 R13C	4,50
175/70 R13 86N	2,80
195/50 R13C 104N/102N	6,25
185/60 R14	2,70
185/65 R14 93N	2,90
185 R14C 104N/102N	4,50
205/65 R17,5 128J/127J	9,00

3.5 Electric Data

Pol Nr.	Attached user	Wire colour
1	Blinking light left	yellow
2	Rear fog lamp	blue
3	Ground pole 1-8*	white
4	Blinking light right	green
5	Rear light right	brown
6	Braking light	red
7	Rear light left	black
8	Reversing light	grey
9	Steady plus	brown/ blue
10	Charging line	brown/ red
11	Ground for charging line*	white/ red
12	Data cable	
13	Ground for steady plus*	white/ black

* The three ground wires may not be electroconductiuely connected

7 – pole system
DIN/ IOS 1724

13 – pole system
DIN/ IOS 114466

4 Proper Use

All trailer types may only be used on paved roads and ways.

4.1 Trailer with Cargo Superstructure

Caution

If there is an advertising panel mounted on the trailer it is mandatory to secure it before the drive.

For trailers with cargo superstructure it is inadmissible to access the roof.

Danger

The following regulation applies for all cargo trailers with thermo sandwich superstructure:
With dark foliation/paint there is an increased risk for damages on the elements due to higher heat development. Therefore we must exclude these foliations/paints from warranty.

4.1.1 Cool Trailer Type **C6, KIK and PIK**

These trailers are Cool trailers and meant for the transport of goods only. Due to the built-in cooling system the pre-cooled transport goods can be kept at the right temperature. The transport of dangerous goods is only permissible if the trailer meets the requirements for the goods which need to be transported. The permissible gross vehicle weight and the permissible support load may not be exceeded.

4.1.2 Cargo Trailer Types **LK, KC, VM, KK, LKK, PK and WEB**

These trailers are Cargo trailers and primarily meant for the transport of goods. Due to the cargo superstructure the transport goods are particularly protected from environmental influences. The transport of dangerous goods is only permissible if the trailer meets the requirements for the goods which need to be transported. The permissible gross vehicle weight and the permissible support load may not be exceeded.

4.2 Car Transporter

4.2.1 Car Transporter With Tilting Function Type **AHK und FTK**

These trailers are Car transporters with tilting function and primarily meant for the transport of cars and similar vehicles. Due to the special loading area an individual load securing of the car is possible. The tilting function enables the loading of cars with lower ground clearance. The permissible gross vehicle weight and the permissible support load may not be exceeded.

4.3 Trailers With Tilting Function Types PKL, PMT, PMTZK, GDK, UDK, UHK, PHK, DUO and WEB

These trailers are trailers with tilting function and primarily meant for the transport of goods. Due to the hydraulic tilting system not only piece goods but also bulk goods can be unloaded. The transport of dangerous goods is only permissible if the trailer meets the requirements for the goods which need to be transported. Only operate the tilting function on a firm and even base. The permissible gross vehicle weight and the permissible support load may not be exceeded.

4.4 Platform Trailers Types GDP, GTP, GP, K, LM, P, PU and WEB

These trailers are primarily meant for the transport of goods. The transport of dangerous goods is only permissible if the trailer meets the requirements for the goods which need to be transported. The permissible gross vehicle weight and the permissible support load may not be exceeded.

4.5 Drop-type Trailer Types GAS, GTAS, AS, GTASK and ASK

These trailers with a lowerable loading area are meant for the transport of goods and vehicles only. The lowerable loading area enables a particularly small ramp angle. The transport of dangerous goods is only permissible if the trailer meets the requirements for the goods which need to be transported. The permissible gross vehicle weight and the permissible support load may not be exceeded.

4.6 Special Trailers

4.6.1 Unsinn Building Machine Trailer Type UBA

This trailer is a Building machine trailer and primarily meant to transport building machines and goods. The permissible gross vehicle weight and the permissible support load may not be exceeded.

4.6.2 Braked Tandem Pipe Transporter Type GTR

This trailer is a Pipe transporter and meant to transport longer but relatively light goods only. The permissible gross vehicle weight and the permissible support load may not be exceeded.

5 Description

Information:
The following images show only a small part of the product range and can differ from the product you purchased. All significant parts are still highlighted.

5.1 Cool Trailer

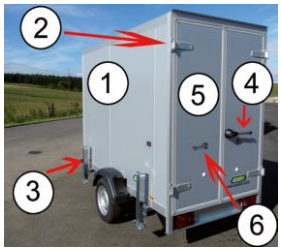


Image: Cool trailer rear view

Cool trailer rear view:

1. Isolation cargo superstructure
2. Door hinge
3. Support
4. Cold room compression lever
5. Double door
6. Door-stay

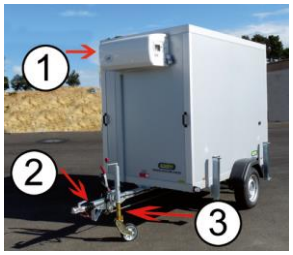


Image: Cool trailer front view

Cool trailer front view:

1. Cooling unit
2. Accumulating mechanism with breakaway cable and parking brake
3. Support wheel

5.2 Cargo Trailer

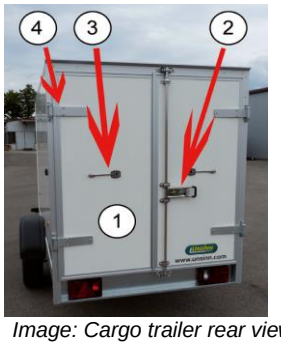


Image: Cargo trailer rear view

Cargo trailer rear view:

1. Double door
2. Espagnolette
3. Door-stay
4. Door hinge

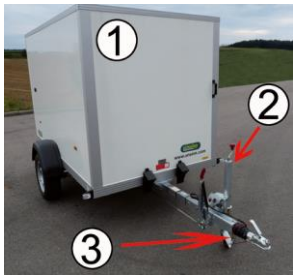


Image: Cargo trailer front view

Cargo trailer front view:

1. Cargo superstructure
2. Support wheel
3. Accumulating mechanism with breakaway cable and parking brake

5.3 Car Transporter with and without Tilting Function

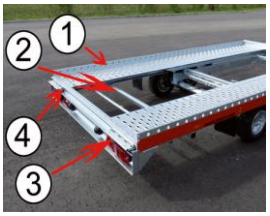


Image: Car transporter rear view

Car transporter rear view:

1. Loading area with exterior frame
2. Tensioning system for the access rails (only for types with access rails)
3. Access rails
4. Anti-slip device

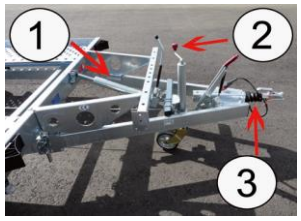


Image: Car transporter front view

Car transporter front view:

1. Hydraulic cylinder for tilting function (only for car transporters with tilting function except for Type AHK)
2. Support wheel
3. Accumulating mechanism with breakaway cable and parking brake

5.4 Trailer with Tilting Function

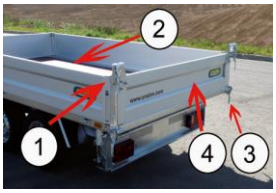


Image: Tipper rear view

Tipper rear view:

1. Swing sidewall locks
2. Loading area
3. Hook closure
4. Swing sidewall

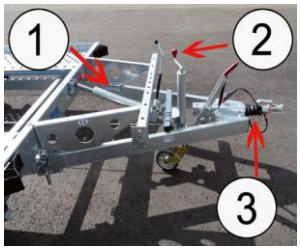


Image: Tipper front view

Tipper front view:

1. Hydraulic hand pump with stop valve
2. Accumulating mechanism with breakaway cable and parking brake
3. Support wheel
4. Sidwall with sunken locks

5.5 Platform Trailer

Image: Platform trailer rear view

Platform trailer rear view:

1. Side wall
2. Sunken side wall locks

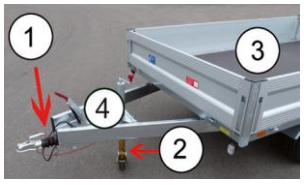


Image: Platform trailer front view

Platform trailer front view:

1. Accumulating mechanism with breakaway cable and parking brake
2. Support wheel
3. Loading area
4. Rope winch (only for PU)

5.6 Drop-type Trailer

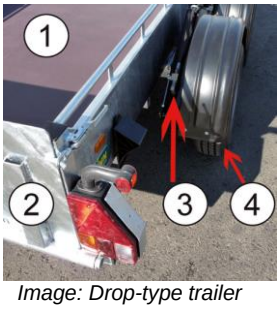


Image: Drop-type trailer rear view

Drop-type trailer rear view:

1. Loading area
2. Tailboard / Access flap
3. Manual stop valve for the lowerable axle
4. Lowerable axle

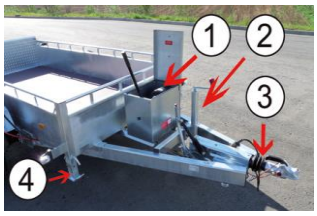


Image: Drop-type trailer front view

Drop-type trailer rear view:

1. Hydraulic hand pump with stop and control valve
2. Support wheel
3. Accumulating mechanism with breakaway cable and parking brake
4. Support

5.7 Special Trailer

5.7.1 Unsinn Building Machine Trailer UBA

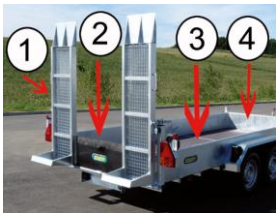


Image: Building machine trailer rear view

Building machine trailer rear view:

1. Access ramps with firm support
2. Centre section
3. Loading area
4. Fixed three sided side walls

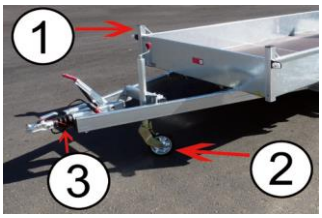


Image: Building machine trailer front view

Building machine trailer front view:

1. Strut for load securing
2. Support wheel
3. Accumulating mechanism with Breakaway cable and parking brake

5.7.2 Braked Tandem Pipe Transporter GTR

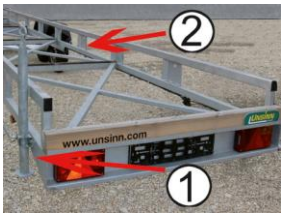


Image: Braked tandem pipe transporter rear view

Braked Tandem Pipe Transporter rear view:

1. Clamp support
2. Tubular frame

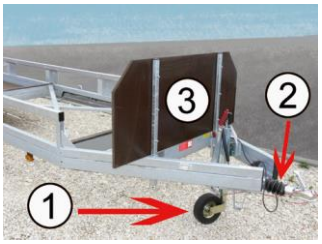


Image: Braked tandem pipe transporter front view

Braked Tandem Pipe Transporter front view:

1. Support wheel
2. Accumulating mechanism with breakaway cable and parking brake
3. Front wall

6 Docking, Undocking and Parking / Supporting

Information:
The following images show only a small part of the product range and can differ from the product you purchased. All significant parts are still highlighted.

Danger

Danger of clutch wear

- Check the wear indicator of the ball clutch
- For checking the ball clutch and the trailer ball apply exclusively to a specialist workshop.
- Have the worn parts replaced or repaired only by your specialist workshop.
  This way you can make sure the trailer will not part itself from the towing vehicle.

Danger

Danger of rolling

- Dock and undock the trailer only in even terrain.
- Secure the trailer with the parking brake and wheel chocks.
  This way you can prevent the undocked and/or parked trailer from rolling away.

Danger

Danger from improper handling
Do not use the handle of the ball clutch, the handle of the parking brake or the crank handle of the support wheel for manoeuvring.
This way you prevent components from being damaged.

Danger from incorrect mounting of the breakaway cable
When undocking the trailer make sure the mounted breakaway cable is not wrapped around the support wheel or the vehicle frame.
Otherwise the functioning of the breakaway cable is not ensured.

Danger

Danger from uncontrolled braking
Make sure the length of the breakaway cable is adequate even for curved paths.
Otherwise the trailer will be uncontrolledly braked. The breakaway cable must not be changed in length. With a torn or damaged breakaway cable contact your specialist workshop.

Danger

Danger of rolling back
When the parking brake is on, the trailer can still roll back a bit before the braking effect applies.
- Thus keep clear a sufficient area behind the trailer when you undock it. Make sure there is no person in this area during the undocking process.

Danger

Prevent damages
Make sure the power cable connected to the towing vehicle does not touch the ground. This way you prevent the cable from being frayed during the ride.

Caution

Place the ball clutch of the trailer over the trailer ball of your towing vehicle. Open the handle of the ball clutch.

6.1 Docking

Image 1: Wheel chock

Remove the wheel chocks and put them in the intended holders

Image 2: Positioning the ball clutch

Positioning to dock
- Position the ball clutch of the trailer over the trailer ball of your towing vehicle and open the handling of the ball clutch.
- Wind down the support wheel until the ball clutch is laid up on the trailer ball of your towing vehcile.

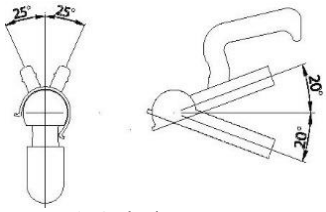


Image 3: Swivel range

- The maximum swivel range **of 25° (vertical) and 20° (horizontal)** may never be exceeded.

This way you prevent the components from damage.

Image 4: Closing the ball clutch

- Now close the handling of the ball clutch.
- Check after every docking if the ball clutch is completely on the trailer ball of your towing vehicle.

Image 5: Control indicator on the ball clutch

- The control indicator of the ball clutch can only be closed if the trailer is properly docked.
- With drawbars without accumulating mechanisms the handling of the ball clutch can be closed if the trailer is properly docked.

Image 6: Mounting the breakaway cable

Mounting the breakaway cable
- Mount the breakaway cable on the trailer hitch of your towing vehicle.
- Make sure the breakaway cable is threaded in the cable guide.

Image 7: Releasing the parking brake

Releasing the parking brake
- Push the button on the lever with your thumb and completely lower the handbrake lever.
- When the parking brake is in end position the button on the lever must be completely out again.

Image 8: Support wheel wound up

Winding up the support wheel
- Wind up the support wheel with the hand crank.
- Make sure the support wheel does not touch any other parts.
- Tighten the wound up support wheel with the hand crank.

Image: Connecting the power supply

Connecting the power supply

- Take the plug out of the plug holder and connect it to the towing vehicle.
- Make sure the power cable does not touch the ground.

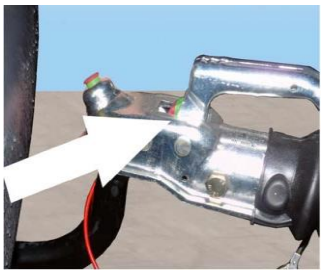


Image: Wear indicator ball clutch

Wear indicator on the ball clutch

The wear indicator shows the condition of the ball clutch. If you can only see the red mark the ball clutch and the trailer ball have to be immediately checked and replaced if necessary.

Important Information for an AL-KO Safety Clutch AKS

The AKS is a ball clutch with an anti-rolling device and connects the towing vehicle with the trailer. It is suitable as an attachment to the drawbar or the design certified accumulating mechanisms and meets the ISO 11555-1 (100 km/h-registration).

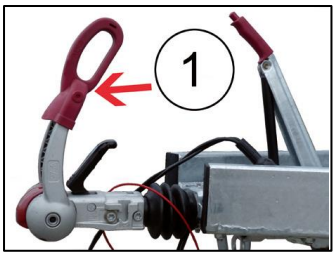


Image: AKS open

Docking

- Pull the stabilisation lever (1) up to the stop.
- Further docking see *6.1 Docking*
- Push the stabilisation lever (1) down to the stop.

The undocking happens in logical reverse order. See *6.2 Undocking.*

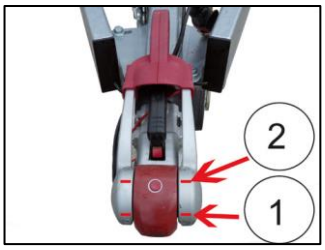


Image: Indicator soft – dock

Indicator soft – dock

For control dock the trailer to the towing vehicle.

Arrow underneath the mark (1)

- Friction lining within permissible range

Arrow above the mark (2)

- Worn friction lining

Danger

Maintenance

The AKS is almost maintenance-free, except for the friction lining. However we recommend cleaning all movable components thoroughly after use.

- When greasing it make sure not oil/grease comes in contact with the friction surface and / or the ball holder.
- Completely remove the coating on the clutch ball.
- Die Oberfläche der Kugelkupplung muss frei von Riefen, Rost und Fressspuren sein. Um die Kugelkupplung zu reinigen, verwenden Sie Verdünnung, Spiritus oder Bremsenreiniger. The surface of the ball clutch must be completely free of grooves, rust and milling traces. To clean the ball clutch use diluents, spirit or a brake cleaner.

Maintenance of the friction linings may only be carried out by specialist workshops.

- Do not clean friction lining – accident risk. Cleaned friction lining have a reduced damping torque. Replace greased and oiled friction linings **IMMEDIATELY**!

Important Information for a Height-adjustable Drawbar

Danger

Safety

- Adjust drawbar height only with the handle.
- Check the adjustable drawbar before every ride. The lock washers need to mesh without gaps.

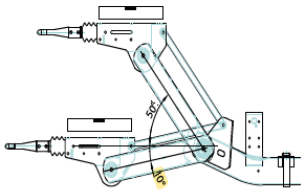


Image: Height-adjustable drawbar

Adjust accumulating mechanism

- Take out clip connector
- Release locking toggle and open up to the stop
- Adjust coupling element on handling of accumulating mechanism up (50°) or down (10°) to the stop
- Tighten locking toggle and secture with hammer blow (hard rubber hammer)
- Put in clip connector
- Retighten locking toggle after about 50 km

6.2 Undocking

Danger of rolling

- Dock and undock the trailer only in even terrain and on a firm base.
- Secure the trailer with the parking brake and wheel chocks.

This way you can prevent the undocked and/or parked trailer form rolling away.

Danger

To prevent the brakes from damage of longer down time the vehicle must be secured with wheel chocks instead of the parking brake.

Danger from inadequate marking of the trailer

The lighting installations of the parked trailer must be completely visible. Otherwise warning signs must be set up in order to mark the trailer.

Danger

Undock the trailer only in even terrain and on a firm base.

6.3 Support

Supporting the trailer

Always use the existing supports on your trailer. With the use of supports you make sure the trailer cannot uncontrolledly tip over while you load, unload or access it.

Danger

Use of the supports

- The supports must not be used to lift the trailer. Otherwise you can cause damages on the vehicle.
- All supports must stand on firm ground. If this is not the case use appropriate base material to support it and ensure a safe stand.

Before the drive

Before every drive make sure the supports are completely retracted and secured in this position.

Danger

Image: Sliding support

Sliding support

Grab the support at the handle before opening the clamp, otherwise the support falls down.

Open the clamp of the support, lower it to the ground, close the clamp.

Image: Installed stable support

Installed stable support

To adjust the height of the support you have to remove the locking pin. Be aware of the splint that prevents the locking pin from falling out.

You always have to make sure the locking pin is in the intended hole of the support.

The locking pin must be secured with the splint.

Image: Pivoting crank support

Pivoting crank support

The rough height adjustment of the crank support is identical to the setting of the stable support.

The fine adjustment can be done with a crank handle. It is inserted on the hexagonal of the crank support (red circle).

Image: Crank support pivoted

Crank support pivoted

The crank support pivoted can be adjusted with a crank handle.

It is inserted on the hexagonal of the crank support (red circle).

In the following subsections 6.4 to 6.4.7.2 specific differences in maintaining KNOTT components are listed. Which components your trailer has is shown on the label on the accumulating mechanism or the dust cap of the axle. (see the following images)

Image: AL-KO axis

Image: AL-KO accumulating mechanism

Image: KNOTT axis

Image: KNOTT accumulating mechanism

6.4 Knott Components

If Knott components are built in, please note the following operation:

6.4.1 Introduction

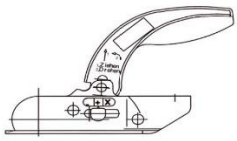
The following operating instructions with regulations refer to KNOTT chassis components. They are part of our guarantee provisions; in addition to that the relevant operating regulations of the vehicle producer must be considered. To maintain the operating and traffic safety the maintenance work has to be carried out regularly. Maintenance, reparation or the replacement of wear parts on the chassis and the braking system may only be carried out by specialist workshops.
Only KNOTT original spare parts may be used in order to a) ensure the functioning and safety, b) maintain the warranty claims, c) prevent the operating licence from expiring. The braking system, especially the accumulating mechanisms and wheel brakes as well as the side rails are approved according to EC regulations and may only be used in the permitted combination. A KNOTT chassis consists of the ball clutch, the accumulating mechanism, the transmission device, the wheel brakes in combination with the KNOTT rubber and torsion spring axles as well as the drawbar, side rails and / or side members where applicable.

6.4.2 Ball clutches

All KNOTT ball clutches are equipped with a safety control indicator. It consists of clearly imprinted symbols which are labelled with a red - green - red effect with the same symbols as well as a pointer. If the label is damaged you can remove it and use the imprints.

6.4.2.1 Undocking

To open it pull the clutch handle up and push it forward. The clutch automatically stays in the “open“ position, in which the pointer points to the red area with the big “X“.



The trailer may not be driven in this condition under any circumstances!

Caution:
Do not put your finger into the open ball clutch! Even slighter pressure on the calotte can trigger the spring-loaded closing mechanism and thus lead to injuries of the finger.

6.4.2.2 Docking

To dock the trailer put the open ball clutch (X-position) on the ball of the towing vehicle and let it snap in clearly audibly.
The pointer points to the green area of the mark, which is marked with a “+“, after the ball clutch properly snapped in. After the docking of the trailer it is necessary to check the indicator if the ball clutch properly snapped in on the ball: If the pointer points to the green “+“ area, the ball clutch is properly closed and snapped in and the ball on the car has enough wear reserves.

Only now the towing vehicle and the trailer are safely connected and the combination may be used in traffic.
Do not forget to release the parking brake and to mount the breakaway cable on the trailer hitch.
The breakaway cable is there to force an emergency braking of the trailer if it disconnected from the towing vehicle for any reason.

If the indicator shows the red “-“ area the clutch has been improperly connected and the trailer must not be used under any circumstances.

Three potential errors can be the reason:

1. The ball on the towing vehicle is too worn and does not support the ball clutch sufficiently. A new ball has a diameter of 50.0 mm. If the diameter is lower than 49 mm, even in places, the ball on the towing vehicle must be replaced.
2. The ball clutch itself is too worn and does not support the ball sufficiently. In this case the ball clutch must be replaced by a specialist workshop.
3. The closing mechanism of the ball clutch was triggered, the ball however was not in the ball clutch. The ball clutch is only laid up on the ball and does not have a strong connection. The clutch comes off the ball at travel commencement. Open the ball clutch as described under point 2.1 and try again to snap the ball clutch properly in the ball.

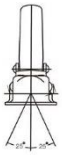
If the indicator shows the red "X" area the clutch has not closed. The ball clutch is only laid up on the ball and would come off the clutch at travel commencement.

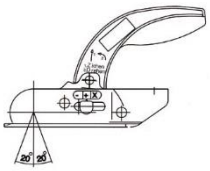
The trailer may not be driven in this condition under any circumstances!

The coupling mechanism might be stiff due to deferred greasing.
Please consider the maintenance and greasing instructions (see 6.4.6.1) and try to dock it again.

6.4.2.3 Permissible swivel range of the ball clutch

The swivel range of the ball clutch around the vehicle longitudinal axis is ±25° max. In horizontal direction swivel angles around ±20° are possible.





Caution
Exceeding the swivel ranges leads to overloading the components and the functioning of the ball clutch cannot be ensured.

6.4.2.4 Permissible support load

The permissible support load of the ball clutch is imprinted in the handle of the ball clutch.

The trailer must not be used with negative support load as this has a negative impact on the driving stability of the trailer.
A negative support load can easily be prevented by changing the burden on the trailer.

6.4.2.5 Mounting the drawbar eye / ball clutch

Repair, setting or renovation work may only be carried out by specialist workshops according to the "KNOTT Maintenance and Reparation Instructions"! To ensure the flawless functioning of all chassis components only original KNOTT spare parts may be used. Otherwise the operating licence and the insurance cover expires for the whole car-trailer-combination.

6.4.3 Mounting the braking system

Repair, setting or renovation work may only be carried out by specialist workshops according to the "KNOTT Maintenance and Reparation Instructions".

Caution
The handbrake lever of the KH performance is under prestress in release position. Do not remove the red security screw M10 before the accumulating mechanism and the brake linkage are mounted in the trailer and the whole braking system is set. Before removing the accumulating mechanism as well as when carrying out maintenance or reparation work or demounting the braking system the security screw must necessarily be put in! Disregarding this can lead to injuries as the braking lever can be triggered immediately by the pre-loaded spring.

6.4.4 Setting the braking system

Repair or setting work may only be carried out by specialist workshops according to the "KNOTT Maintenance and Reparation Instructions".

6.4.5 Maintenance

In order to keep your trailer in good condition it must be checked and maintained by specialists at regular intervals, which are prescribed by the producer. We recommend getting works on the axes and braking system carried out at specialist workshops. At rare use maintenance work is to be carried out at least once a year.

6.4.5.1 Ball clutch

Damaged components or parts of the braking system or the chassis are to be replaced by original spare parts immediately.

For reasons of smooth operation and safety the ball clutch must be greased at least half-yearly or immediately when it is stiff with customary machine oil or alternatively with engine oil at all pins and movable parts. Except for all stabilisation clutches the ball holder is to be slightly greased as well.

6.4.5.2 Accumulating mechanisms

- The accumulating mechanisms should be greased after 500 km or after a year at the latest on both of the grease nipples. In addition to that all movable parts such as pins or hinges or handbrake levers and reversing levers should be slightly greased.

- If the drawbar can be inserted for more than the half (about 45 mm) with a drawn handbrake, the braking system must be readjusted.
- Check response threshold; draw the handbrake of the parked trailer and slowly push the trailer backwards until the handbrake lever is in the end position. Then insert the drawbar in the accumulating mechanism. Inserting might require physical effort depending on the mechanism. The drawbar must autonomously extend into neutral position through the gas cushion in the hydraulic damper. If extending takes longer than about 30 seconds, the accumulating mechanisms should be checked in a specialist workshop.

6.4.5.3 Wheel screws

After the first 50 km or 50 km after a wheel change the wheel screws must be checked for tightness.
In addition to that the instructions of the rim manufacturer must be considered! The wheel screws are to be tightened crosswise.

Wheel screw	Strength class	Torque
M12 x 1.5	8.8	90 Nm
M12 x 1,5	10.9	120 Nm
M18 x 1,5	10.9	325 Nm

6.4.5.4 Wheel brakes

The linings of the wheel brakes are generally wear parts. Thus their condition must be checked all 5000 km or after a year at the latest through smaller observation holes on the back of the wheel brakes. A safe indicator for a strong wear of the brakes is that the overrun braking system can be inserted more than about 45mm at the check according to point 6.4.6.2.2. In this case the wheel brakes must be readjusted by a specialist workshop and the brake shoes replaced if necessary.

6.4.5.5 Wheel bearing

The wheel hubs are equipped with maintenance-free two-rowed angular ball bearings. After each 5000 km mileage the lateral bearing clearance must be checked by checking if the jacked trailer shows lateral play. With too much play the trailer should be checked at a specialist workshop.

6.4.5.6 Axis

KNOTT rubber spring and torsion spring axes are generally maintenance free. The mounting of the oscilliating element of a torsion spring axis must be greased all 5000 km or at least once a year with customary grease. Additional bearing positions of special axes must be appropriately greased as well.

Disorder	Cause	Elimination
1 Weak braking effect	Too much play in the braking system	Only by Knott service facilities or specialist workshop
1.1	Brake linings not inserted	Retighten handbrake lever, drive 2 - 3 km
1.2	Brake linings glazed, oiled or damaged	Only by Knott service facilities or specialist workshop
1.3	Stiff accumulating mechanisms	Grease accumulating mechanisms
1.4	Brake linkage stuck or twisted	Only by Knott service facilities or specialist workshop
1.5	Brake cable rusted or broken	Only by Knott service facilities or specialist workshop
2 Jerkily braking	Too much play in the braking system	Only by Knott service facilities or specialist workshop
2.1	Shock absorber of the accumulating mechanism is defective	Only by Knott service facilities or specialist workshop
2.2	Backmat brake shoes stuck in brake shoe bearing	Only by Knott service facilities or specialist workshop
3 Trailer brakes single-sided	Wheel brakes work single-sided	Only by Knott service facilities or specialist workshop
4 Trailer already brakes when taking gas away	Shock absorber of the accumulating mechanism is defective	Only by Knott service facilities or specialist workshop
5 Stiff reversing or not possible	Braking system set too strongly	Only by Knott service facilities or specialist workshop
5.1	Pre-loaded rope pull	Only by Knott service facilities or specialist workshop
5.2	See 2.2	Only by Knott service facilities or specialist workshop
6 Handbraking effect too weak	Improperly adjusted	Only by Knott service facilities or specialist workshop
6.1		Tighten handbrake lever up to stop
7 Wheel brakes get hot	Improper setting of the braking system	Only by Knott service facilities or specialist workshop
7.1	Dirty wheel brakes	Only by Knott service facilities or specialist workshop
7.2	Reversing lever of the accumulating mechanism is stuck	Only by Knott service facilities or specialist workshop
7.3	Spring mechanism is pre-loaded in neutral position	Only by Knott service facilities or specialist workshop
7.4	Handbrake lever was not or only partially released	Put handbrake lever into neutral position
8 Ball clutch does not snap in	Dirty internal parts	Cleaning and greasing
8.1	Ball on the towing vehicle too big	Measure ball: The trailer ball on the car may only have 50 mm Ø - DIN 74058 - max. in new state. If the diameter of the ball is less than 49.0 mm it has to be replaced. The ball must be round.

6.4.6 Overrun Braking System

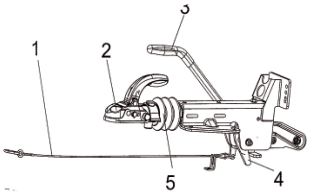
6.4.6.1 Setting the braking system

Preparation:
Jack up trailer, release handbrake and extend drawbar (5) on the accumulating mechanism.
Requirements:
Always begin the adjusting process at the wheel brakes. Do only turn the wheel in rotation direction of moving forward. Spreading lock in the brake must not be pre-loaded, if necessary loosen braking linkage (6) on brake balancing. Check ease of operation, spreading lock and rope pull (11).

6.4.6.1.1 Brake

Thighten readjusting screw (12) (outside on the brake sign, opposite to the rope guide (13)) clockwise until the wheel can hardly or no longer at all be turnt. Loosen readjusting screw (12) counterclockwise (ca. 1/2 turn) until freewheel is given. Slight grinding noise which do not affect the freewheel are permissible. With an exactly adjusted brake the actuation travel on the rope pull is about 4-6 mm.

Image 1: KNOTT accumulating mechanism

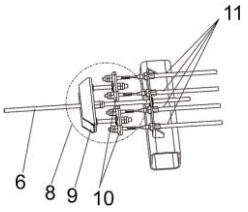


1	Breakaway cable
2	Ball clutch
3	Handbrake lever
4	Reversing lever
5	Drawbar with boor
6	Brake linkage
8	Balance cpl.
9	Balance (two – axle)
10	Balance (single – axle)
11	Rope pull

Carry out adjustment as described on all existing wheel brakes

Do not readjust the braking system or the brakes on the brake linkage (6) or on possibly available turnbuckles in the linkage!

Image 2: KNOTT transmission device for two - axle and single - axle chassis



6.4.6.1.2 Brake balance (8)
Preset the brake linkage (6) in its length (small play permissible). Apply handbrake lever (3) and check position of the balance (9+10). Please consider a right-angle position to the brake linkage. Adjust position of brake balance (10) and for two-axle trailers also the main balance (9) if necessary.

6.4.6.1.3 Brake linkage (6)
Set the brake linkage (6) without play in its length and without pre-load. Please make sure the reversing lever (4) is without play. Strongly activate the handbrake lever (3) repeatedly to set the braking system. Check the position of the brake balance (9+10). Please consider a right-angle position to the brake linkage. Check the play on the linkage (6), if necessary readjust the brake linkage (6) again without play and without pre-load. Check the position of the handbrake lever (3). Dead centre lever: Start of the effect at the 3rd gear. Please check the freewheel with released brake.

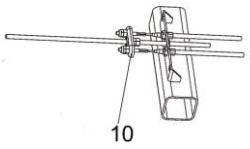
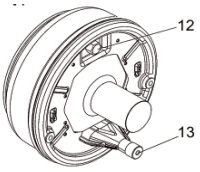


Image 3: KNOTT wheel brake

Final check
Check the securing - lock hexagonal nuts of the screw connection on the transmission device (rope pull, brake balance, linkage,...).
Test drive: Make 2-3 test brakings if necessary.
Test brakings: Check the play in the brake linkage (6) and readjust its length without play if necessary. At the operating brake an overrun travel of max. 2/3 is permissible.

6.4.6.2 Readjusting the braking system

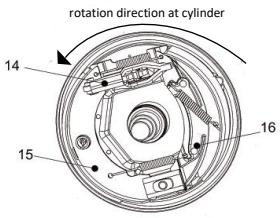
The coating wear happens generally over readjusting the wheel brakes.
Approach: see 6.4.7.1 Adjusting the braking system



Width over flats readjusting screw (12)

Brake size width over flats

160x35 / 200x50	**SW17**
250x40	**SW 19**
300x60	**SW 22**



12	Readjusting screw
13	Position insertion
14	Spreading lock
15	One – piece brake shoe
16	Brake shoe compl.: consisting of brake shoe holder and brake shoe

Service checklist

The works mentioned in this checklist must be carried out conscientiously and determined defects must be cleared upon consultation with the vehicle owner if necessary.

FIRST Inspection

Due after first load-bearing, after 500 km at the latest.

- Retighten wheel nuts
- Check brakes
- Check wheel play
- Retighten screw connections

INSPECTION

Due after each 10.000 km or at least annually

Brakes

- Check brake lining
- Check braking mechanics
- Grease bearings
- Check brake drums
- Check and grease brake cables and linkages
- Grease accumulating mechanisms and set brakes

Wheel bearing

- Check sealing and dust cap
- Check and grease wheel bearing

Axes

- Check and grease mounting
- Check shock absorbers and mounting for tightness

Wheels/tyres

- Check tyre pressure and tread
- Check for aging and damages

Frame

- Retighten screw connections
- Check for cracks and damages

Trailer hitch

- Check for functioning and play

Support wheel / Rope winch

- Check mounting and functioning
- Grease spindle
- Check rope/tape for damages

Electric installation

- Check plug, cable and lamps for damages and functioning

7 Loading and Unloading

Danger

Danger of overloading

- Do not overload the trailer.
- Always consider the permissible payload and support load (see point *3.2 Determine payload* and point *3.3 Determine support load according to label*).

This way you make sure the construction and braking system do not fail.

Danger

Danger of rolling away

- Load and unload the trailer only when it is docked to a towing vehicle.
- Make sure the trailer stands on even ground.
- Make sure the parking brake is completely activated.

This way you prevent the trailer from rolling away uncontrolledly.

Danger

Danger from uneven distribution of the load

- Distribute the load evenly and flatly on the loading area.
- Load the trailer in a way the axes are not released.
- Position the transport good near or directly over the axes if possible.

This way you make sure the driving characteristics are not dangerously affected by the load.

Danger

Danger from point load on the base plate

- Transport goods with point load only on a big and sufficiently firm base which distributes the weight.
- Use for example appropriate wooden plates for this.

This way you can achieve an even weight distribution and prevent the base plate from damages

Danger

Danger from dropping the transport good

- Do not drop the transport goods on the loading area.
- Put the transport good gently down on the loading area.

This way you prevent the trailer and the towing vehicle from damages due to sudden overload.

Danger

Danger from sharp edges

- Wear work gloves when you open or close side wall locks and closures.

This way you prevent yourself from bruises or other injuries from sharp edges.

Danger

Danger from falling heavy objects (only trailers with tilting function)

- Do not open all four locks of the hinged side walls at the same time. They can fall off.
- Open either both upper side wall locks to fold down the hinged side side walls
- or both lower side wall lockst o fold up the hinged side walls.

Danger from covering the lights 14.10.2010 / 018-ECE-R48
If the trailer gets loaded or unloaded in public traffic over the rear area, the rear flap must be removed in order to not cover the lighting.

Danger

Evenly distribute bulk material on the loading area.
An uneven distribution of the load can lead to damages on the trailer.

Caution

Always close tool box under the loading area (if mounted)
The box lid must always be closed before loading in order to prevent it from getting damages while lowering the loading area.

Caution

7.1 Important Instructions for Correct Loading

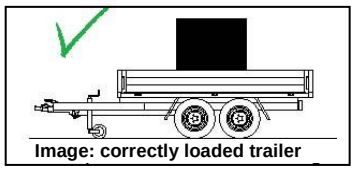


Image: correctly loaded trailer

This is how you load the trailer correctly:
- Always load the trailer over the axes.
- Load the trailer evenly if you transport bulk material.

This way you achieve an ideal road holding and the best braking effect.

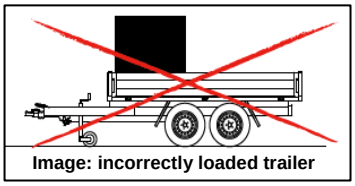


Image: incorrectly loaded trailer

Incorrect loading:
- With this loading you reduce the steering ability and the braking effect.
- Damages on the accumulating mechanisms and the ball head of the towing vehicle
- Rear axle and chassis of the towing vehicle get overstressed

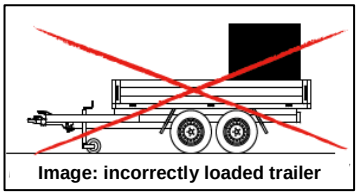


Image: incorrectly loaded trailer

Incorrect loading:
- With load at the rear you increase the risk of skidding and reduce the braking effect.
- Damages on the accumulating mechanisms and the ball head of the towing vehicle

7.2 Important Information on Support Load

Danger of overloading
- Do not overload the trailer.
- Always consider the permissible payload and support load (see point *3.2 Determine Payload*).

This way you make sure the construction and the braking system do not fail due to overstressing.

Danger

Danger of exceeding the support load
- Also consider the support load of the trailer hitch of the towing vehicle.

This way you achieve safe driving characteristics and reduce damages on the trailer hitch of your towing vehicle.

Danger

Consider the information on the support load.
They can be found on the frame of the construction underneath the front wall. Check the support load with a scale.

The support load must be checked with the final load and complete load securing.
- Consider point *7 Docking and Undocking*
- Consider points 7.4.1 – 7.4.5, which include the specific loading and undloading information.

Always use a scale if you are worried about exceeding the permissible support load.

Caution

Danger

Danger of exceeding the support load
Unload parts of the load if the support load is exceeded or position the load in a way the support load is not exceeded. This way you can ensure safe driving characteristics and prevent damages on the trailer hitch of the towing vehicle.

7.3 Important Instructions for Load Securing

Caution

All general load securing regulations of the respective country must be considered.

Danger

If the appropriate load securing devices for your load are not present, they must be retrofitted.

Danger

The load must be secured with appropriate lashing material (straps, chains, wire cables etc.) by lashing. Exceeding the maximum bearing capacity of the lashing points (recesses, hooks) must be avoided under any circumstances. Maximum bearing capacity see sign on the trailer. If the bearing capacity of the lashing points is exceeded use for example anti-slip mats.
The load does not only have to be secured from slipping but also from tipping over.

Danger

If the trailer does not have lashing material for load securing, the load securing must happen by interlocking load. With interlocking load or load securing by blocking please make sure the side walls are stressed completely extensively.

Danger

Only use the intended lashing points for the frictional load securing. Lashing over the side walls and other parts is not permissible and causes damages to the trailer.
Available rope winches must not be used for load securing under any circumstances! The load pressure brake can be released by vibrations.

Caution

When using the lashing material which is mounted in the base the overall pulling force may not exceed 1500 kg per long side. The maximum capacity per lashing material may not exceed the respectively given figure. In addition to that the minimum distance between used lashing points of 500 mm must be adhered to.

Caution

Lock bars must be used for anchor rails and lashing rods if the load must be secured over the complete trailer width.
If lashing materials are used their ends may only be hooked into the same anchor rail or lashing rod since the trailer can be damaged otherwise.

7.4 The Loading/Unloading Process for the Different Types

7.4.1 Cargo/Cool Trailer

Danger

Preparing to load, unload and access
For loading, unloading and accessing make sure the trailer is docked to the towing vehicle and available supports are being used if necessary.

Danger

Before every drive all doors and flaps must be closed and completely locked. Otherwise it can cause severe personal or material damage. Clear all door frames and hinges of the flaps from dirt before closing.

Caution

Important information for all cool trailers
To achieve a sufficient air circulation cool trailers may only be loaded up to 2/3 of the complete interior height. In addition to that the distance between transport goods and all outer walls must be at least 70mm.

- Only load the trailer with pre-cooled goods.
- Activate the cooling unit about 24 hours before loading the trailer in order to make sure the preset temperature is reached.
- If possible do not put the trailer under direct sunlight.
- After a drive the cooling unit must be left for an hour. This time is necessary for the coolant to settle down and thus to ensure a proper operation.

Image: Espagnolette

Espagnolette

- To open the espagnolette push the locking lever. Turn the lever outward.
- To close the espagnolette push the lever with the flat of you hand into the locking lever until it snaps in.

Image: Cool room compression lever

Cool room compression lever

- To open the cool room compression lever turn the lever upwards.
- Closing is done in logical reverse order to opening.

Danger

All doors or flaps must be secured from unwanted closing with door-stays after opening. Otherwise there is a high risk of personal damage.

Image: Sales flap

Sales flap

The sales flap is locked by an espagnolette. After opening the espagnolette one opens the sales flap manually up to the stop.
Caution: After reaching the stop the sales flap opens automatically with the support of gas springs. This support is also effective for closing. At this there is a high risk of injury. There must not be any person in the pivoting range during opening or closing the sales flap,
The open sales flap must be secured from unwanted closing. This can be done by turning the rotatable aluminium rail on the gas spring outward to the stop.

Image: Pull-out stairs

Pull-out stairs

The pull-out stairs are secured by a spring lock. After loosening the spring bar pull the stairs on the two blue handles out of their guiding to the stop. Lower the stairs and make sure you do not drop them. The stairs may only stand on firm and even ground. If the ground is not suitable for a safe stand you should use appropriate base support.
Note: Consider the label on the frame of the stairs.

7.4.2 Car and Machine transporter with Tiltable Loading Area

Caution

Car Transporter Type AHK
The Car Transporters Type AHK are equipped with a tiltable loading area and have a standard hydraulic cylinder. The trailer tipps autonomously by means of shift of emphasis after opening the tappet spanner.

Image: Machine transporter with Tilting function

Machine Transporter PKL and Car Transporter AHK with Easy-Load-System

- Open the tappet spanners on both sides.
- Close the manual valve on the hand pump. Tilt the loading area by pumping the hand lever.
- During the tilting process no person may be in the danger zone. The operator must stand next to the drawbar close to the parking brake.
- When the trailer is tilted, no person may be underneath the loading area.
- The loading area may only be pumped up until the back part of the loading area touches the ground and a low tension with the hydraulic cylinder is developed.
- The tilting function must not be used to lift the trailer under any circumstances.

Pulling out the access ramps:

Image: Licence plate flap

Access ramps with licence plate flap
Open the licence plate flap by pulling the spring lock to the side. By turning the spring lock it can be fixed in its current position.
Caution: There is a risk of injury.
After opening the flap pull the access rails out and hook them in the anti-slip securing.

Caution

After loading the trailer push the access rails back into the intended holders and secure them.
This works in the logical reverse order to pulling them out of the holders. After pushing them in and securing them the access rails need to be checked manually for firm seat.

Caution

Machine Transporter Type PKL
To lower (tilt to the rear) the loading area open the stop valve on the hydraulic cylinder. If the load is positioned correctly the loading area will lower.
The loading area may not be lowered by additional external forces except for mannual force in the empty state.
For type AHK the loading area tilts while accessing.

Danger

- Do not stay under the trailer.
- There is a risk of injury during the tilting process. Therefore do not stay in the swivelling range of the loading area.
- Lock the loading area with the tappet spanners after tilting the trailer.
- The stop valve on the hydraulic cylinder must be open during the drive.

7.4.3 Trailers with Tilting Function

Danger

Preparing to load, unload and access
For loading, unloading and accessing make sure the trailer is docked to the towing vehicle and available supports are being used if necessary.

Caution

Behaviour of the medium oil
Since the medium oil changes its volume in dependence of the temperature, before a drive, especially after a long parking time, the vehicle must be checked for a safe drive position.
Production-related tolerances and leaks after longer parking in the hydraulic system, e.g. between piston and cylinders and valves can be reasons for the cylinder to retract or pull out. This is harmless. Under stress an autonomous movement of the cylinder is not to be expected.
The seals are designed to have a better sealing effect under pressure.

Danger

- The side walls of the trailer may only be opened if the trailer is safely parked.
- Before every loading and unloading process the side walls must be opened when the trailer is not tilted. Otherwise it can result in damages on the trailer.
- Before every drive all side walls must be closed and completely locked. Otherwise it can cause severe personal and material damage. Here you have to make sure the contact surfaces of the side walls are clean.
- Before every drive the loading area must be clean-swept to prevent parts from falling down and endangering others.

Image: Sunken locks

Sunken locks
Open the locks by folding them down.

To close the locks, push it up with the palm of your hands.

Caution: Risk of injury.

Image: Hook closure

Hook closure
Push up the locking spring and pull the hook closure upwards. To lock it, push it downwards.

Danger from slipping load

- Make sure no person stands in the area of unloading or in the area of the dumping body while dumping.
- Do not loosen the transport goods when the loading area is tilted.

Danger This way you prevent yourself and others from severe injuries due to slipping transport goods.

Caution

Do not unload the trailer towards an embankment.
Otherwise the folded down side wall can collide with the ground. Side wall and dumping body can be damaged.

Danger

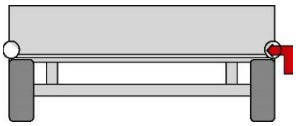
Danger of squeezing
Make the loading area return into its original position after the dumping process.

- Make sure there is no person under the dumping body or in the loading area during the returning process.

Danger This way you prevent people from being squeezed or severely injured.

Danger

Danger from a snapping loading area
If you use access ramps to get a vehicle on the loading area you must fix the loading area in the front with the two dumper pins (only for multi-sided dumpers). In addition to that the instructions on the access rails must be considered. Otherwise the loading area can snap.



Graph: Lateral tilting

Insert the dumper pins in dumping direction (only for mulit-side dumpers)

- Remove the safety splint of the respective dumper pin.
- Insert the dumper pins on the side you want to dump (see graph).
- Fix the safety splint again.

Image: Tilting the loading area

Tilting the loading area

- With a closed stop valve on the hydraulic tank the loading area can be tilted by pumping the hand lever.
- For lateral tilting the tilting process is limited by tensioning the arrestor cable.
- The loading area can be lowered by opening the stop valve.

Hydraulic unit Pumpless

1 External drive connector
2 Hand sink valve
3 Pressure relief valve
4 Oil filler neck and ventilation screw

Image: Hydraulic unit Pumpless

Tilting the loading area

- With a closed hand sink valve drive the external drive in clockwise direction by means of a suitable socket until the loading area reaches the desired angle.
- With lateral tilting please consider the pins.
- Lower the trailer by opening the hand sink valve.

Technical data

- Operating temperature: -10°C - +40°C

HYDRAULIC OIL

For our hydraulic unit we recommend the use of HLP32 (ISO VG32). When using hydraulic oil, please make sure to comply with the safety and protective measures.
Hydraulic oil can be dangerous to health!
Do not let the hydraulic oil come in direct contact with your skin or eyes. It can lead to severe injuries. Please use appropriate protective equipment (safety goggles, gloves).

The hydraulic fluid may not get into the soil. The fluid must be collected in an appropriate container and disposed correctly according to the respective regional requirements. The condition of the oil as well as its quantity must be checked regularly. Before using hydraulic fluids that do not comply with the aforementioned specifications you must get in contact with UNSINN Fahrzeugtechnik GmbH.

Requirements of the drive unit
Note: The tilting of the loading area is not realised by means of force but by a high number of rotations.

- Make sure your cordless screwdriver has a torque of at least 45 Nm, driving „Pumpless“ with max. 2.000 min^{-1}, otherwise there is a risk of damaging the screwdriver.
- Cordless screwdrivers with less than 45 Nm torque should only be used in the first gear. There is a risk of damaging the screwdriver.
- Impact screwdrivers may not be used in impact mode and therefore are only suitable for little load on the trailer.

- After lowering the loading area the tilting bearings must snap in the dumper pins.
- During the drive the stop valve must be open to make sure the hydraulic system is unpressurised.
- To prevent the hand pump from setting, activate it regularly.

Danger

Machine Transporter / Dumper Type DUO (520900)

- Several safety instructions can be found in the operating instructions.
- The trailer type DUO has a lateral tilting function to dump bulk material.
- The trailer type DUO has a lowering function to the rear to access the trailer with vehicles.
- Loading and unloading must always happen on firm and even ground.

Danger

Loading with vehicles by the lowering function at the rear:

1. Position tilting bearing pins at the left and right rear **(Image 1)**
2. Open and hang out the lock of the loading bridge at the front **(Image 2)**
3. Lower the bridge with radio remote control until the lateral supports touch the ground
4. Auffahrklappe aufklappen Open access flap **(Image 3)**
5. Safely access the loading bridge with the vehicle. When reaching the centre of the loading bridge the remote control must be operated to lower the trailer. **(Image 5)**
6. Close access flap
7. Lock loading bridge
8. Check required support load, readjust loading position if necessary.
9. Fix load securing

Unloading with vehicles by the lowering function at the rear:

1 Remove load securing
2 Unlock loading bridge **(Image 2)**
3 Auffahrklappe öffnen Open access flap **(Image 3)**
4 Access vehicle (load good)
5 Lift loading bridge with hydraulic remote control **(Image 6)**
6 Unload vehicle (load good) off the loading bridge
7 Bring loading bridge in driving position and lock it

Unloading bulk material laterally:

1. Position tilting bearing locking pins for lateral tilting; both locking pins left or both right
2. Unlock the loading bridge at the front
3. Open side walls
4. Operate remote control for tilting of the loading bridge
5. Bring loading bridge in driving position and lock it
6. Clean side wall mechanism and lock side walls


Image 1


Image 2


Image 3


Image 4


Image 5


Bild 6

Safety instructions:

- Loading and unloading must always happen on even and firm ground and only if the trailer is hitched!!
- Secure the work environment!
- Staying under the loading bridge is prohibited!
- Take care when changing the loading positions! For a safe transport and to enable tilting to the rear there must be a sufficient support load of the trailer.
- Tilting loaded goods to the rear with the tilting function beyond the tilting angle 8e.g. near the edge of a pit) is prohibited and can cause severe personal or material damage!
- The tilting process to the rear must be carried out with the hydraulic remote control under any circumstances! Otherwise the loading bridge snaps and can cause personal or material damage!
- Always charge the battery sufficiently!
- Transport may only be carried out with a locked loading bridge!
- The power source for loading the electric hydraulic battery must be equipped with a fault-current circuit braker.
- There must not be a connection to the power source when cleaning the trailer.
  Impinging the electric components (cable, plug, lights, remote control) with a high-pressure jet (e.g. with a high-pressure cleaner jet) is prohibited.
- With temperatures lower than 0°C and under wet and dirty conditions the electric hydraulic remote control must be kept in a warmer, dry area!

Electrohydraulics

- The stop valve on the emergency hand pump must be closed to be able to tilt the loading area.
- By operating the respective button the loading area goes up or down.
- Should the electrohydraulic system fail the loading area can be tilted by the emergency hand pump or lowered by opening the stop valve.
- To prevent the emergency pump from setting operate it regularly!
- To load the battery the trailer is connected over the available plugs to the 220/230 Volt power supply. With an empty battery charging takes about 12 hours.
- Caution! For electrohydraulics with charging line the hydraulics must NOT be operated while the motor is running and the cable is connected.

Danger

Remote control

Caution! After finishing the works the remote control must be switched off.

7.4.4 Platform trailer

Danger

Preparations for loading, unloading and accessin

When loading, unloading and accessing please make sure the trailer is hitched to the towing vehicle and available supports are used if necessary.

Danger

- The side walls of the trailer may only be opened if the trailer is securely parked.
- Before every loading process and every unloading process the side walls must be opened. Otherwise it can cause damages on the trailer.
- Before every drive the side walls must be closed and completely locked. Otherwise severe personal or material damages can be caused. Please make sure the contact surfaces of the side walls are clean.
- Before every drive the loading area must be cleaned to prevent falling pieces from endangering others.

Image: Sunken locks

Sunken locks

Open the locks by folding them down.

To close the locks, push it up with the palm of your hands.

Caution: Risk of injury.

Image: Hook closures

Hook closures

Push up the locking spring and pull the hook closure upwards. To lock it, push it downwards.

Image: Aluminium top

Aluminium rop

Open the top by unlocking the tension lock with your thumb (Image 1) and then folding the bracket out of the holder.
Now you can open the top at the handles.

Image: Tension lock

Always have the top under control when opening it, otherwise it will open autonomously and might cause injuries. To close the top operate in logical reverse order. Make sure the top is thoroughly closed and fixed to prevent autonomous opening during the drive.

Danger

Caution!

- Top opens by means of gas spring lifting aid!
- Risk of injuries! There is a risk of crushing during opening and closing!

Image: Turntable

Turntable
Instead of the support wheel the drawbar can be kept on the desired height by the tension spring. The correct spring pre-tensioning is adjusted in factory. If a readjustment is required, the turnbuckle will have to be readjusted with a turnbuckle lever. Caution! When lifting, lowering or swivelling the drawbar there is a risk of injury due to squeezing near all movable parts.

Image: Pole-type trailer

Langmaterial Anhänger
Open side walls must not be used for storing load or for accessing

Image: Drawbar setting

Drawbar setting
Remove the splint, unscrew the nut and pull out the securing screw. Do not move the drawbar in loaded condition. Check before every ride if the drawbar setting is properly locked.

Image: Rope winch

Rope winch
Max. load daN (kg), lowest rope position 900 daN, highest rope position 330 daN. The fleet angle of the rope must not be more than 4° when winding and unwinding.

- Do not touch the wire rope without safety gloves
- To wind up the rope keep it at slight tension without load. For a proper braking function a load of at least 25 kg is necessary.
- Das Seil unter Last nur so weit aufwickeln, dass ein Bordscheibenüberstand von mindestens 1,5x Seildurchmesser gesichert ist.
  Im Fahrtbetrieb muss der Haken der Seilwinde in den dafür vorgesehenen Ring eingehängt werden und das Seil unter leichter Spannung stehen.

7.4.5 Drop-type Trailer

Danger

Preparations for loading, unloading and acessing

- When loading, unloading and accessing please make sure the trailer is hitched to the towing vehicle
- The front supports must be set before lowering the trailer so that docking and undocking is possible in lowered condition
- In addition the supports ensure that the automatic support wheel has the necessary ground clearance to unfold for its intended use

Danger

Drop-type Trailer Type AS

- The access flap of the trailer may only be opened if the trailer is securely parked
- The drive-on plate must be laid up flatly on the ground over the entire length
- The licence plate must be folded to the side before every loading and unloading process. Before every drive make sure the licence plate holder has completely snapped in
- The mudguard holder must be opened before lowering, otherwise it can cause damages on the trailer. Before every drive make sure the mudwing holder is completely fixed.

Drop-type Trailer Type GAS/GTAS

- Before every loading and unloading process the access ramp must be opened, otherwise it can cause damages on the trailer.
- Before every drive the access flap must be closed and completely locked, otherwise severe personal and material damages can be the result. Make sure the contact surfaces of the access ramps are clean.
- Before every drive the loading area must be properly cleaned to prevent that falling parts endanger others.

Danger

- While opening or closing the access flap no person may stay in the swivel range of the trailer.
- The access flap must be closed and secured during lowering or lifting the trailer.
- The drop-type trailer may only be driven in completely lifted condition.

Drop-type/Motorcycle Trailer (AS)
AS/ASK Hydraulic system with hand pump without ball valve as of 2017


Image 1


Image 2


Image 3


Image 4

Lowering:

- Open mudguard locks and lift mudguard (see Image 1).
- Loosen pump lever in its mounting on the front wall and put it in the pumping mechanisms.
- Check the danger zone around the trailer.
- Turn the pump valve to “down“ position and operate the pump lever until the trailer is lowering (Image 2). Depending on the pumping intensity the lowering speed can be regulated. The lowering process can be stopped by shifting the pump valve lever in “up“ position.

Lifting:

- Turn pump valve lever in “up“ position and operate the pump lever (Image 3). A remarkably higher resistance on the pump lever shows the maximum pressure in the system and the trailer is in horizontal driving position.
- You may only drive with the hitched trailer in completely lifted condition. Thus the trailer must be lifted until the axes are in end position.
- Put the pump lever in the mounting on the front wall and secure it.
- Bring mudguards in driving position (Image 4).

Image 5

Driving position:
Before the drive or when parking the trailer, the pump valve lever must be put in “up“ position (see Image 5).

AS/ASK Hydraulic system with electric pump without ball valve (as of 2017)

Lowering:

- Loosen mudguard locks and lift mudguards
- Check the danger zone around the trailer.
- Push the arrow button which points downwards until the vehicle is completely lowered. Stop pushing the button to keep the respective lowered level.

Lifting:

- Push the arrow button which points upward until the vehicle is completely lifted (it can be noticed by the changed pumping sound)
- You may only drive with the hitched trailer in completely lifted condition. Thus the trailer must be lifted until the axes are in end position. Make sure the battery is sufficiently charged.
- Bring mudguards in driving position.


Image: Hydraulic hand pump

Hydraulic hand pump

- On every lowerable axle there is a stop valve. These stop valves must be closed during the drive. If the trailer is to be lowered or lifted, all stop valves must be open.
- To lower the trailer open the hand wheel on the hydraulic tank.
- To lift the trailer close the hand wheel on the hydraulic tank and operate the hand pump.
- With the two coupled throttle valves next to the hand pump you can operate the speed of the lowering or lifting process.


Image: Operating unit electrohydraulics

Operating unit electrohydraulics

- When lowering the trailer make sure there is enough ground clearance
- It is necessary to evenly lift or lower the trailer. If the trailer is lowered one-sidedly, it may cause damages to the mudguards.
- Caution: During the lowering and lifting process there is a risk of danger near all movable parts.
- You may only drive with the hitched trailer in completely lifted position. Thus the trailer must be lifted until the axes are in end position. Please make sure the batteries are sufficiently charged.

7.4.6 Special Trailer

7.4.6.1 Unsinn Building Machine Trailer UBA

Danger

Preparations for loading, unloading and accessing
When loading, unloading and accessing please make sure the trailer is hitched to the towing vehicle.

Danger

- The access flap of the trailer may only be opened if the trailer is securely parked.
- Before every loading and unloading process the access ramps must be opened, otherwise it can cause damages on the trailer.
- Before every ride the access flap must be closed and completely locked. The centrepiece must be put between the access ramps. Otherwise severe personal and material damage can be the result. Make sure the contact surfaces of the access ramps are clean.
- Before every drive the loading area must be properly cleaned to prevent that falling parts endanger others.
- While opening or closing the access flap no person may stay in the swivel range of the trailer.
- The access ramps with their grating must not be used for load securing.
- The holding eyelets on the tappet spanner are set in factory. They must exert a slight tension on the access ramps in closed condition. In addition a firm fit must be ensured. If this is not the case, you will have to readjust the holding eyelets or have a specialist readjust them.

Image: Unsinn Building Machine Trailer

Unsinn Building Machine Trailer
When lowering the access ramps the centrepiece must be taken out first. Subsequently one tappet spanner at a time must be opened.
For this push back the safety lever and open the tension lever. Hang out the tension eyelet on the access ramp.
Caution: Hold the access ramp on the handle, as they could fall down otherwise. Slowly lower the access ramp manually, do not drop it. The access ramps can be adjusted to the track width by slightly lifting them in folded out position and moving them on the bar. To close them the access ramps must be moved outward. Otherwise securing with the tappet spanners is not possible. Before the ride the centrepieces must be put in again.

7.4.6.2 Braked Tandem Pipe Transporter Type GTR

Danger

Pipe frame
Due to the pipe frame of the trailer it must always be flatly loaded. If this is not adhered to, the frame might warp or brake. The pipe frame is suitable for load securing.

8 Control Points Before Every Drive

Check the tyre pressure (see point 3.4 Determine tyre pressure according to table)

Danger

Danger due to loose wheel screws
- Tighten the wheel screws after the **first 50 km**. (see table 9.3 p. 30)
- Check all other fixing screws for firm fit.

Tighten them if necessary.

Danger

- Make sure the loading area is proper clean
- Make sure the side walls are closed and locked. Driving with open side walls is not permitted.
- Make sure all other locks and / or fixations on the trailer are locked and secured with the respective safety device.
- Make sure nothing can come off the trailer during the drive.
- Make sure no side wall or door can open during the drive.
- Doors with sunken or superimposed locks must be closed and locked.
- Driving with tarpaulin superstructures with improperly mounted tarpaulins or partly open tarpaulins is prohibited.
- When driving with a tarpaulin superstructure without a tarpaulin, it must be sufficiently secured.
- With a trailer with hydraulics make sure the entire system is unpressurised.

Caution

- Check if the entire lighting installation of your trailer works.
- Check your trailer for free movement. For this purpose shortly drive forward and then backward.

In case of sluggishness, check if the parking brake is completely open.
Open it if necessary.
This way you prevent the wheel brake from overheating.

8.1 Driving with a Trailer


Danger

Danger from low visibility
- When reversing an observation of the road and the following traffic must be possible
- Make sure there is no person in the swivel range
- Do not reverse without a flagman


Danger

Danger from inappropriate speed
- Adapt your speed to the road condition. This way you prevent an overuse of the axes due to shocks.
- Do not exceed the **permissible maximum speed as tob e found in the traffic regulations**


Danger

Danger from incompletely opened parking brakes
- Make sure the parking brake is completely pushed down.

This way you prevent the wheel brakes from overheating and failing.

8.2 Driving with Transport Goods


Danger

Danger from protruding or sagging parts
- Make sure the lighting system is not covered by the load
- If necessary install an additional and proper lighting unit.

This way you make sure the lighting of the trailer is still visible.


Danger

Check the load securing
- Retighten the lashing material after a maximum of 20 kilometres and in regular intervals.
- With rough road conditions check the lashing material for firm fit sooner.

9 Regular Caring and Maintenance


Danger

Danger from sharp edges and of squeezing
- Wear working gloves when carrying out maintenance work.

This way you prevent yourself from injuries due to sharp edges or from squeezing.


Danger

Danger from rolling
- Carry out maintenance work only in even terrain.
- Secure the trailer with the parking brake and wheel chocks.

This way you prevent the undocked and/or parked trailer from rolling.


Danger

Danger from high hydraulic pressure
The hydraulics work with pushing up to 180 bar.
- Do not carry out work on the hydraulic system and the hydraulic hoses yourself.

Only let a specialist carry out work on the hydraulic system.

Caution

Protection against corrosion for galvanised parts
Before the galvanisation effectively protects against corrosion, the galvanised parts must be able to react with the surrounding air in dry condition. This process takes some months. As long as the metal appears brightly silver, this process has not completed. To maintan the gloss as long as possible we recommend treating the vehicle regularly with protection wax. Galvanised parts are not resistant to special acids and chemicals such as road salt in winter, fertiliser and other acidic or alkalinebased substances.
Thus it is important to rinse all galvanised parts of the trailer after the contact with these substances with clear water.

Caution

Cleaning recommendation for coated polycarbonate sheets
- Do not use scrubbing or strongly alcaline cleaners
- The sheet must not be cleaned with squeegees, raser blades or other sharp tools
- Clean coated polycarbonate sheets not under direct sunlight or high temperatures

- The abrasion-resistant polysiloxan coating allows an easy cleaning due to its great resistancy to chemicals. Dirt, dust, grease or paint can be easily removed with enough water or a customary cleaning agent.
- We recommend customary isopropanol (IPA) as cleaning agent – Please use it according to the regulations of the respective producer.

Cargo superstructure:
All cargo trailers and cargo superstructures are only fully robust when the varnish has hardened. This process takes a few months. During this time you may only use clear water under 60°C and no high-pressure cleaners. The entire trailer is to be cleaned with clear water after coming in contact with salt, salt-like, acidic and alcaline agents.

Caution

Carry out maintenance work according to the table
- Carry out maintenance work according to the table or have them carried out by an authorised specialist company.
- All works carried out by the specialist company must be recorded in the *Service Record*, otherwise your warranty claim expires.

9.1 What You Can Do By Yourself

Carry out the following maintenance work yourself or have them carried out by a specialist.	After about 50 km	After about 500 km	Quarterly	Half-yearly	Every 5,000 km or annually	Every 10,000-15,000 km or	Every 30,000 km or every two years
Check wheel screws for firm seat	X	X			X		
Check wheels for uneven wear and damages	X				X	X	
Check breakaway cable for damages HVZD: Clean the lock washer connection				X	X		
Oil or grease the reversing lever	X				X	X	
Grease hinged parts of the accumulating mechanism	X				X	X	
Clean ball clutch, oil grease ball shell, hinges and bearing parts	X			X	X		X
Operate hand pump or emergency hand pump several times to prevent it from setting		X	X				
Oil or grease sidewall hinges and locks as well as movable parts			X		X		
Grease tilting bearing and retighten screws				X	X		
Grease ball socket hydraulic cylinder Check wheel hub for firm sea				X	X		
Grease gimbal				X			
Oil and grease support wheel parts				X			
Oil mechanism of the parking brake				X			
Oil movable lashing eyes				X			
Check supports					X		
Check tappet spanner and readjust it if necessary				X			
Carry out greasing according to greasing plan (only UKA)			X	X			
Grease lubrication points with greasing nipples				X			

9.2 Works Your Specialist Dealer Needs to Carry Out

Have a specialist carry out the following works	After about 50 km	After about 500 km	Quarterly	Half-yearly	Every 5,000 km or annually	Every 10,000-15,000 km or annually	Every 30,000 km or every two years
Braking transmission device: Check flexibility and grease the drawbar, handbrake lever, reversing lever, rods and all movable parts	X	X			X		
Check braking system, readjust and repair if necessary		X			X	X	
Check shock absorber of accumulating mechanism	X				X	X	
Check coupling	X				X	X	
Take braking system to pieces, clean, adjust and repair it if necessary; renew Bowden cable and return swing		X		X	X	X	X
Check automatically readjusting braking system (AAA), readjust and repair if necessary					X	X	X
Check wheel play, adjust it if necessary (only for tilted roller bearings)			X		X		
Change grease of wheel hub bearing (only for tilted roller bearings)				X	X		
Change hydraulic hoses				X	X		
“Swivel-Check“: Check and maintain all components of the swivel mechanism (only UKA)			X	X			

9.3 Description of the Work You Can Do By Yourself

Check and tighten wheel screws

- Check the wheel screws after the first 50 kilometres and 50 kilometres after every tyre change for firm seat.
- Tighten the wheel screws crosswise with a torque key
- See table Wheel screws tightness 10.9 and 8.8

Check tyres

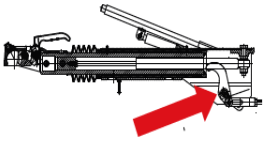
- Check tyres for uneven wear.
- Change the tyre if you see cracks or bubbles.
- Change the tyres after a maximum of six years.
- Check the tyre pressure. (also see point *3.4 Determine Tyre Pressure According to Table*).
- Check tyre pressure with cold tyres.
- The pressure difference in the tyres of one axle must not exceed 0.1 bar.

Wheel screw/ Wheel nut	Tightness	Tightening Torque
M12 x 1,5	8.8	90 Nm
M12 x 1,5	10.9	120 Nm
M18 x 1,5	10.9	325 Nm

The pressure difference in the tyres of one axle must not exceed 0.1 bar. After a longer drive or at high temperatures the tyre pressure can increase up to 1 bar. Do not release any air. Otherwise the pressure will be too low.

Caution
Check breakaway cable for damages

- Check breakaway cable every 5,000 km or at least once a year for damages.
- Carry out a visual check before every drive.



Graph: Grease reversing lever

Grease reversing lever of accumulating mechanism

- Grease reversing lever
- Check reversing lever for flexibility

Image: Greasing nipples acc. mechanism

Grease hinged parts of the accumulating mechanism

- Grease the greasing nipples with a greasing gun.

Image: Grease ball shell

Ball clutch

- Clean the ball clutch.
- Oil the hinges and bearing parts.
- Grease the ball shell and contact surface to the clutch of the towing vehicle.

Image: Grease support wheel

Oil and grease support wheel components

- Grease the telescopic tube. Wind down the support wheel for this purpose.
- Oil the hinges and bearing parts

Oil mechanisms of the parking brake
Oil all bearing parts and hinges on the handbrake lever and the corresponding gas pressure spring.

Sidewall hinges and locks

- Oil all movable parts and bearings of the side wall, hinges and locks
- Oil all locking bolts and eyes

Movable lashing eyes

- Oil the bearing bolts and bearings of the lashing eyes.
- Clean the movable parts if they are dirty.

For trailers with tilting function

- Grease all bearings which are relevant for the tilting function with multi-purpose grease
- Retighten all screws of the tipper bridge bearing

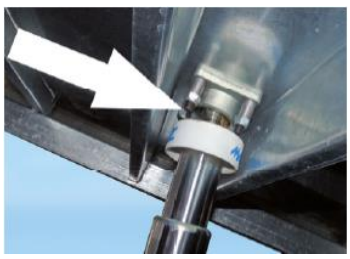


Image: Grease ball socket

Grease ball socket

- Grease the ball of the hydraulic cylinder and the ball socket with multi-purpose grease over the greasing nipple with a grease gun.

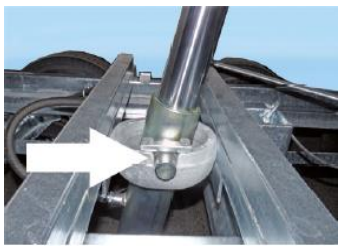


Image: Grease gimbal

Grease gimbal

- Grease the gimbal at the bearing parts with multi-purpose grease.

Check the supports

- Check the supports and the clamping device for damages and ease of operation.
- Clean the supports and the support bearings and grease all glide surfaces and bearings of the supports with multi-purpose grease.

Check tappet spanner, readjust it if necessary

- Check if the tappet spanner exerts enough force on the tightened parts. The parts which need to be tightened must not be flexible of completely movable when tightened.
- To readjust the tappet spanner screw the towing eye on the tappet spanner further in. Ther must be a moderate resistance when closing the tappet spanner.

Grease lubrication points with greasing nipples

Grease all lubrication points with a greasing nipple by means of a greasing gun and multi-purpose grease.

Lubrication points lowering axle

- Grease the lowering axle at the positions shown in the image according to the maintenance plan.

Rope winch maintenance and check intervals

- After 100 m of lifting and lowering (high load)
- After 200 m of lifting and lowering (low load, less than 50 % of the nominal load)

Check work:

- Check ease of operation of the crank handle
- Check locking function of the safety catch
- Check wear of the brake disks and the brake pads after longer operation. The braking pad must be at least 1.5 mm thick!

Lubrication points

The winch is already greased at the point of delivery. Grease the following parts again regularly.

- Drum hub
- Gear ring
- Bearing bushes of the motor shaft
- Crank handle threads

Do not oil or grease the braking mechanism.

10 Maintaining and Repairing

Danger

Have repair work carried out exclusively by specialist workshops

- Reparation, replacement of defective or worn vehicle components as well as fault elimination must be exclusively carried out by specialist workshops.
- This applies especially for works on the braking system, the accumulating mechanism and the coupling device.

Contact your authorised specialist company.

Caution

Only use originial spare parts

- Defective parts must only be replaced by original spare parts.

Otherwise your warranty claim expires.

10.1 What You Can Do By Yourself

For the replacement of light bulbs use the following bulbs:

Rear fog light	12 V / 21 V
Brake light	12 V / 21 V
Indicator lamp	12 V / 21 V
Rear light	12 V / 5 V
Licence plate light	12 V / 5 V
Front position lamp	12 V / 5 V
Reversing light	12 V / 21 V

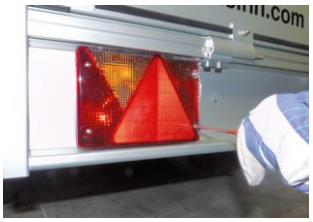


Image: Remove rear light glass

- Open the screws of the rear light glass with a Phillips type screwdriver.
- Take off the rear light glass
- Replace the defective light bulb with a new suitable type.
- Fix the rear light glass again.

10.2 Fault Location and Reparation By Specialist Dealer

Fault	Possible cause	Elimination
The trailer brakes onesided	The wheel brakes are unevenly adjusted; brake ropes are not tight	Have brakes checked and adjusted; Have new brake ropes installed
The trailer brakes when taking gas away	Shock absorber of the overrun brake is defective	Have shock absorbers replaced
The trailer brakes jerkily	Shock absorber is defective Brakes are worn	Have shock absorbers replaced Have brakes repaired
Unstable driving characteristics or jerkily braking	Too much play in the braking system; defective shock absorbers; worn brakes	Have shock absorbers replaced Have brakes repaired
Stiff or blocked reversing	Only appears if braking system is adjusted too tightly; reversing lever is tight	Have braking system adjusted Have brakes repaired
Weak braking effect	Drawbar pushes itself entirely in; Pads are not retracted; Pad is dirty or damaged; Friction loss too high; Corrosion at the drawbar; Worn brakes	Have brake setting checked; Eases after several brakings; Have shoes replaced; Make transmission device/brake cable smoother; Have brakes repaired
Overheating of the brakes during headway	Wrong setting; Braking system during headway not completely open; Reversing lever tight; Bent linkage holder; Dirt in the wheel brakes; Defective rope or Bowden cable; Return spring is slackened or broken; Rust in the brake drum	New setting; Open parking brake and check transmission device; Check reversing lever of the accumulating mechanism; Clean; Have Bowden cable replaced; Have springs replaced; Have brake drum and shoes replaced (if necess.)
Hand brake effect too weak	Wrong setting – lost way too long; pads are not retracted; Friction loss too high; defective gas spring	Have it adjusted; Eases after short run-in period; Make transmission device and Bowden cable smoother; Have gas spring replaced
Clutch does not snap in after putting it on the ball	Ball diameter bigger than 50 mm; inside of the ball clutch dirty or blocked; deformed clutch	Have ball replaced; clean and grease clutch; Have it replaced if necessary
Trailer cannot be docked	Non-round ball; Ball clutch is defective	Have trailer clutch or ball clutch replaced
Too much play between ball and clutch; danger of undocking	Worn clutch; Exceeded swivel range; Bent stud	Have clutch replaced; Have ball replaced
HVZD: adjustment too stiff	Linkage of the control rod too tight; adjustment lever tight	Have hinges loosened, cleaned, greased and readjusted
HVZD: no or not enough weight compensation	Gas spring is too weak or defective	Have gas spring replaced

11 Warranty

The warranty includes the replacement or at the discretion of the producer the reparation of construction or material fault. The reparation of these faults which are performed during the guarantee period do not automatically extend the same.

The warranty does not include damages occuring due to
- regular wear
- improper use
- ignoring the operating instructions

or an unintened use.

A further requirement for the warranty claim is
- complying with the maintenance intervals
- that reparations are carried out by a specialist workshop
- that original spare parts are used.

otherwise the warranty claim expires.

12 Service Record

Type:_____ Vehicle - Ident – Nr.: **WUF**_____ Date of purchase: _____

Stamp/ Signature Date:	Stamp/ Signature Date:	Stamp/ Signature Date:
Stamp/ Signature Date:	Stamp/ Signature Date:	Stamp/ Signature Date:
Stamp/ Signature Date:	Stamp/ Signature Date:	Stamp/ Signature Date:
Stamp/ Signature Date:	Stamp/ Signature Date:	Stamp/ Signature Date:
Stamp/ Signature Date:	Stamp/ Signature Date:	Stamp/ Signature Date:

13 EC Declaration of Conformity

According to the EC regulation Machines 2006/42/EG, Annex II 1 A

Herewith we confirm that the following machine in its conception and construction as well as in the performance as it was put on the market by us corresponds to the regulations named above.
In case of a not mutually agreed change of the machine the declaration loses its validity.

Product Type:	Vehicle trailer		
Machine designation:	Platform / Box trailer	**Machine designation:**	Tipper
Machine type:	GDP GTP GP K LM UNI P PU WEB	**Machine type:**	WEB PKL PMT PMTZK GDK UDK UHK PHK DUO

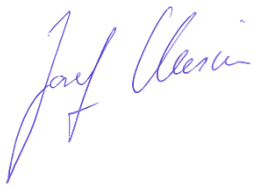
Machine designation:	Car transporter	**Machine designation:**	Cargo / Cool trailer
Machine type:	ATH FTK AHK	**Machine type:**	C6 KIK PIK LK KC VM KK LKK PK WEB
Machine designation:	Drop-type trailer	**Machine designation:**	Special
Machine type:	GAS GTAS AS GTASK ASK	**Machine type:**	UBA GTR

Producer and Address: **UNSINN Fahrzeugtechnik GmbH**
Rainer Straße 23
86684 Holzheim

Applied harmonised standards, especially:	Safety of machines EN 982 EN 12195, EN 12195-1 EN 12195-2 EN 12640 EN 12642 EN 75410 EN ISO 12100-1 EN ISO 12100-2 EN ISO 14121
Applied national standards and guidelines, especially:	VDI 2700, VDI 2700 8.1 VDI 2700 8.2

Authorised representative:

*** UNSINN Fahrzeugtechnik GmbH**



ppa. Josef Unsinn, Management

* The hand-signed original document is part of the documentations accompanying the product.

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