Operating Instruction

Rear tipper
Part 2 - HUK (1.3 t - 3.0 t)

HUMBAUR
MACHT'S MÖGLICH

en

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Your dealer

Name _____

Address _____

_____

Telephone _____

Email _____ @ _____

Please enter the name of your dealer.
Please fill in the service card on the back page and send it to Humbaur GmbH.
Ask for the handover inspection to be recorded when accepting your trailer.

Your trailer:

Model _____

Type (abbreviation) _____

Vehicle Identification Number (VIN) _____

Registration number _____

Please enter your trailer type and the identification.
You will find the dimensions / technical data of your trailer in the vehicle documents.

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Notes on use

This operating instruction manual must be carefully read, understood and complied with in full by anyone who is responsible for the trailer of Humbaur GmbH and its modules.
Humbaur GmbH accepts no liability for damage or failures which arise through disregard of this manual!

Read and observe the operating instruction manual with all the instructions, warnings and notes before driving for the first time!

Please note that all illustrations are representative and may differ from the actual appearance / equipment.

Also read and observe the instruction manuals for components such as axles, support devices, cable winches, etc.!

PART 2
This operating instruction manual “Rear tipper / Part 2 - HUK” is intended for you as the user of a ready-to-use trailer.

It provides detailed instructions for handling a rear tipper and its specific accessories.

It contains supplementary information on safe operation, care/cleaning, maintenance/servicing, troubleshooting and decommissioning/disposal of the trailer.

PART 1

For all other general information on trailers up to 3.5 to, see the operating instruction manual, “Trailers up to 3.5 to / Part 1 - General”.

This specific operating instruction manual (Part 2) for your trailer is provided on the enclosed CD. You can also download it from **www.humbaur.com** in the section: Downloads – Operating manuals

The complete technical documentation is part of the product and should be kept in the driver's cab of the towing vehicle for reference at all times.

Key details for the handling, operation and the requisite care and maintenance work of the trailer are referred to in this operating instruction manual, and errors can only be avoided and trouble-free operation guaranteed if you are familiar with them.

Errors excepted. The manufacturer:

Humbaur GmbH
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reserves the right make technical changes to the design, equipment and accessories with respect to the information and illustrations in the operating instruction manual.

As a result, no claims whatsoever can be derived from the information, illustrations and descriptions.

Obligations of the operator

The trailer may only be operated in perfect condition.

Ensure that the operating instruction manual is included with the trailer e.g. if it is sold.

Only utilise trained or instructed personnel.

Ensure that the operating instruction manual is complied with in all life cycle phases of the trailer and that the prescribed personal protective equipment is worn.

Provide the requisite operating and auxiliary materials.

User group

The trailer should only be operated by users who possess the following additional prerequisites and knowledge:

- Experience in handling tippers.
- Initiating tipping processes.
- Loading / unloading bulk goods.

Keyword index

Use the **keyword index** from page **5** to search for **specific** topics.

Refer to the technical documentation of the installed components for additional information.

1 Safety

You will find safety information for the correct handling of the trailer in the "Safety" chapter from page **7**.
Read this chapter before driving for the first time.

2 General information

You will find details on trailer identification in the "General information" chapter from page **11**.

3 Operation

You will find information on loading and unloading, correct load distribution and parking in the chapter on "Operation" from page **19**.

4 Operating the chassis

You will find valuable information on the operating elements of the chassis, such as the electro-hydraulic equipment and support devices, in the chapter on "Operating the chassis" from page **29**.

5 Operating the body / load securing

You will find out how to operate the body, drop sides and extensions correctly or about the equipment you can use to secure the load in the chapter on the "Body" from page **47**.

6 Electrical system

You will find information on the lighting in the chapter on the "Electrical system" from page **79**.

7 Testing, care and maintenance

You will find out more about the work required to maintain operational safety and the value of your trailer in the chapter on "Testing, care and maintenance" from page **81**.

8 Troubleshooting guide

You will find information on troubleshooting and important service addresses in the "Troubleshooting guide" from page **99**.

Keywords

1 Safety

Intended use

The following is permitted:

- Transport of bulk goods such as sand, gravel, stone, etc.
- Transport of loose load materials such as wood, wood chips.
- Transport of materials and load materials as solid / packaged load units, such as bricks on pallets.
- Load securing on the cargo bed with lashing brackets using form and force load securing methods.
- Tipping bulk goods to the rear.

Qualification of the personnel

HUMBAUR trailers and bodies and their operating components may only be used and maintained by personnel who are aware of:

- this operating instruction manual.
- the trailer and the associated towing vehicle.
- the operating and maintenance instructions of the suppliers.
- the German Road Traffic Act (StVO) and German Road Traffic Licensing Regulations (StVZO).
- all the respective health and safety / accident prevention regulations as well as other safety, occupational health and road traffic regulations.
- the basic requirements of goods transport.
- the hazards arising from handling tippers.

Reasonably foreseeable misuse

Any use extending beyond the prescribed transport applications is regarded as other than intended.
In particular, this includes:

- Driving when the drop sides and side wall extensions, e.g. steel mesh extension, aluminium extension, are not secured.
- Tipping the cargo bed if personnel / objects are located on the tipping side.
- Tipping the load onto people or things.
- Driving with a tipped / unsecured cargo bed.
- Driving with folded down / unsecured folding supports at the rear.
- Climbing onto a tipped trailer or going underneath an unsecured loading bridge.
- Non-observance of the safety instructions in the operating instruction manual "Trailers up to 3.5 to / Part 1 - General”.

The manufacturer:

Humbaur GmbH
Mercedesring 1
86368 Gersthofen (Germany)

rejects any damage which arises through disregard of this manual – the risks are borne solely by the user.

Liability exclusion

Any liability of the manufacturer becomes null and void if:

- the trailer and its components are altered without authorization.
- the original parts or conversion parts / accessories approved by Humbaur GmbH are replaced by other components.
- retrospective changes have been made to the trailer (e.g. new drill holes in the frame or the reboring of existing drill holes in the frame). This is considered by Humbaur GmbH to be a structural change, and the type approval therefore becomes null and void.
- non-approved accessories or third-party spare / component parts which are not original HUMBAUR parts are attached or installed. The type approval of the trailer, possibly even the insurance cover, becomes null and void.
- care and maintenance intervals prescribed by the manufacturer are not complied with.

Any risks and liability exclusions resulting from this also exist if:

- Acceptance inspections have been carried out by inspectors / authorised experts of the technical inspection authorities or officially recognised organisations.
- Official approvals are available.

Safety first!

WARNING

Driving with folded down / unsecured drop sides / side wall extensions!

Folded down / unsecured drop sides and side wall extensions may be torn off and flung away while driving - risk of impact / crushing!
Folded down drop sides cover the vehicle lights / vehicle markings – increased accident risk!

- ▶ Before driving off, check that all drop sides / side wall extensions are closed and secured.
- ▶ Remove all drop sides / side wall extensions / stanchions when using the trailer as a flat-bed.

CAUTION

Single-axle trailer snaps open!

Single-axle trailers can snap open during loading / unloading and parking, and crush fingers / hands / feet or collide with you.

- ▶ Only park the empty trailer on the jockey wheel or the drawbar support.
- ▶ Only couple / uncouple the trailer when it is empty.
- ▶ Make use of the folding supports during loading / unloading or couple the trailer to the towing vehicle.

Sources of danger

Take note of the following points without fail:

- Coupling and uncoupling a trailer: Standing in the danger area is prohibited.
- Driving with unsecured support devices.
- Clearance heights on the route, while loading and unloading.
- Driving with a tipped cargo bed - not permitted by law.
- Exceeding the permissible gross weight or one-sided overloading through incorrect loading.
- Poorly secured or unsecured goods and / or body components.
- Reversing - keep an eye on the rear area.
- Excessive twisting while manoeuvring.
- Overloading of the trailer, axles and brakes.
- Overstressing caused by fitting incorrect wheel and tyre sizes.
- Use of wheels with incorrect offsets, one-sided run-out or centrifugal imbalance.
- Overstressing as a result of reckless and inappropriate driving or handling.
- Impact and shock stress of the axles.
- Speed inappropriate for the road conditions and the loading status of the trailer, especially in bends.
- The parked trailer can tilt or sink in on soft uneven ground.
- Driving on severe inclines.
- Tilting the loading bridge too close to a slope or excavation.
- Loading / unloading of the trailer in an area with a steep gradient.
- Standing on / in a tipped / moving cargo bed.
- Going under an unsecured loading bridge.
- Jerky braking during tipping.
- Tipping with an engaged parking brake.
- Failure to clean the cargo bed after every use.
- Tipping viscous load materials e.g. asphalt, soil, loamy sand.
- Tipping large rocks.
- Tipping with an inclined combination.
- Tipping under high-voltage transmission lines (open power lines).

In the chassis area

Note the following in general:

- Establish the electrical connections.
- Retract the support devices and lock them.
- Check the tyres and rims for damage.
- Check the tyre pressure, including the spare wheel.
- Check the tightening torque of the wheel nuts.
- In the case of a new trailer, re-tighten the wheel nuts after 50 km and after the first journey with a load.
- Secure the:
  spare wheel / spare wheel holder, wheel chock
- Check the trailer lights, repair defective lights.
- Comply with the permissible gross weight.
- Check the number plate and signs.
- Check that the trailer coupling is in perfect condition.

In the body area

Close and secure all body components, such as:

- Drop sides
- Side wall extension
- Steel mesh extension
- Aluminium extension
- H-frame
- Flat cover
- Tarpaulin cover / frame
- Toolbox
- Load securing equipment
- Fix and secure the load.
- Ensure that the load distribution is balanced.

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2 General information

HUK rear tipper

Fig. 1 General view of the single-axle trailer

Fig. 2 General view of the tandem trailer

The HUK is available as a single-axle / tandem trailer.

The sheet steel platform is completely hot-dip galvanised and can only be tipped to the rear.

The drop sides are made of aluminium, can be folded down on all sides and are 350 mm high.

All the drop sides can be removed.

Once the drop sides and stanchions have been removed, the HUK trailer can be driven as a flat-bed trailer.

The HUK trailer features a hydraulic tipping system for tipping the cargo bed. This can be operated with an electric hydraulic pump or a manual pump.

The loading bridge can be tipped backwards by up to 45° by means of a 3-step hard chromium-plated telescopic cylinder.

The load can be secured by means of the tie-down rings. The retractable tie-down brackets have a lashing capacity of up to 400 daN (kg) as standard.
Tie-down brackets with a lashing capacity of up to 800 daN (kg) can be used as an option.

The load capacity ranges from 900 kg to a max. of 2315 kg depending on the model.

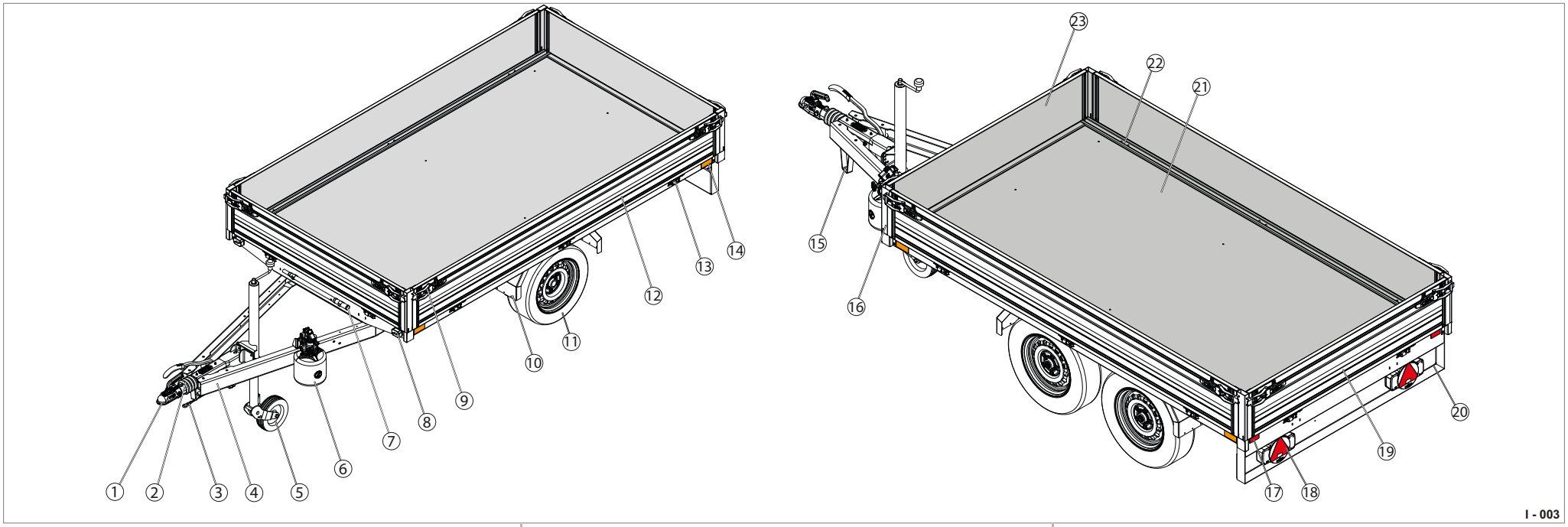

Fig. 3 General view, front / rear

1 Ball coupling
2 Overrun hitch with hand brake lever, brake linkage, brake accumulator
3 Safety cable
4 V drawbar
5 Automatic jockey wheel
6 Manual pump
7 Pump lever
8 Front position lamp
9 Tension lock
10 Mudguard
11 Wheel (tyre)
12 Side drop side
13 Drop side hinge
14 Side reflector
15 Drawbar support
16 Stanchion
17 Rear reflector
18 Multi-function light
19 Rear drop side
20 Underride protection
21 Cargo bed
22 Tie-down point, recessed
23 Front drop side

Optional accessories:

– Side wall extension
– Steel mesh extension
– Aluminium extension
– H-frame
– Cover net
– Flat cover
– Tarpaulin cover / frame
– Folding supports
– Toolbox
– Spare wheel
– Wheel shock absorbers
– Electric hydraulic pump

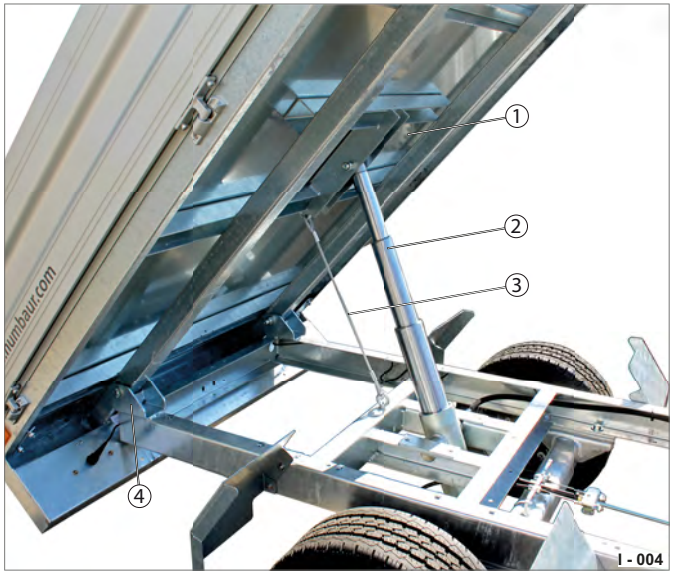

Fig. 4 Tipping position

1 Loading bridge
2 Telescopic cylinder
3 Arresting/securing cord
4 Bearing bracket

The chassis and the tipping platform are welded and hot-dip galvanised in an immersion bath.

Screw connections are used to mount the loading bridge in bearing brackets (Fig. 4 /4) at the rear.

Fig. 5 Manual pump

1 Pump lever
2 Manual pump

The hydraulic tipping function of the cargo bed can be operated with a manual pump.

The tipping function of the cargo bed can be operated with an electric hydraulic pump as an option.

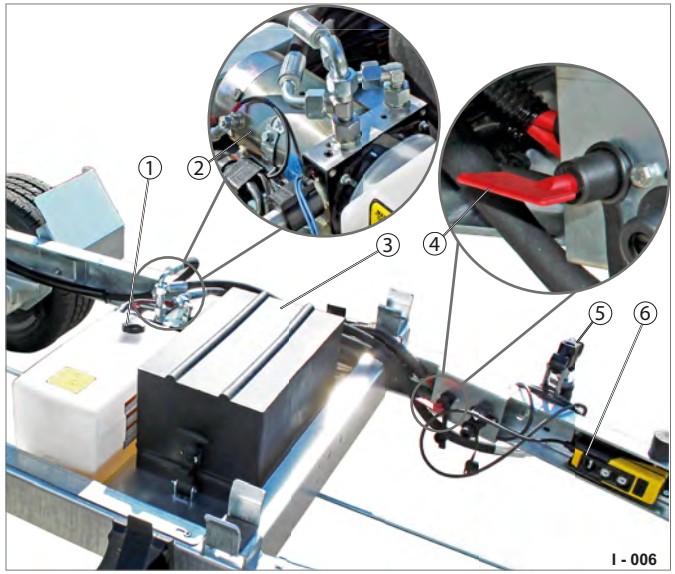

Fig. 6 Electro-hydraulic equipment

1 Hydraulic oil container
2 Electric hydraulic pump
3 Supply battery with cover
4 Plug-in switch
5 Manual emergency pump
6 Hand button (electric hydraulic pump)

The version of the HUK with electro-hydraulic equipment is also equipped with an emergency hand pump for use if no power is available.

CE conformity

Fig. 7 CE conformity

1 CE sticker

Humbaur GmbH hereby confirms that all the relevant EU directives for the approval and safe use of HUK trailers have been complied with.

▶ If required, request an EC declaration of conformity from us separately.
- see “Address of the manufacturer” on page 100.

Load securing

Fig. 8 Tie-down brackets, retractable

Side wall extension

Fig. 10 Attached to stanchions

Aluminium extension

Fig. 12 Attached to stanchions

Folding supports

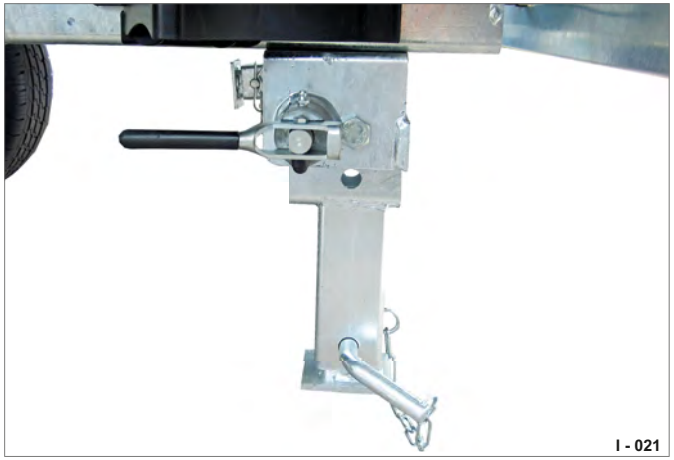

Fig. 9 Manually adjustable, at the rear

Steel mesh extension

Fig. 11 Attached to stanchions

Flat cover

Fig. 13 Cargo bed with flat cover

Tarpaulin cover / frame

Fig. 14 Tarpaulin cover with a height of 1300 / 1600 mm

H-frame

Fig. 16 On the front drop side, secured in stanchions

Electro-hydraulic equipment

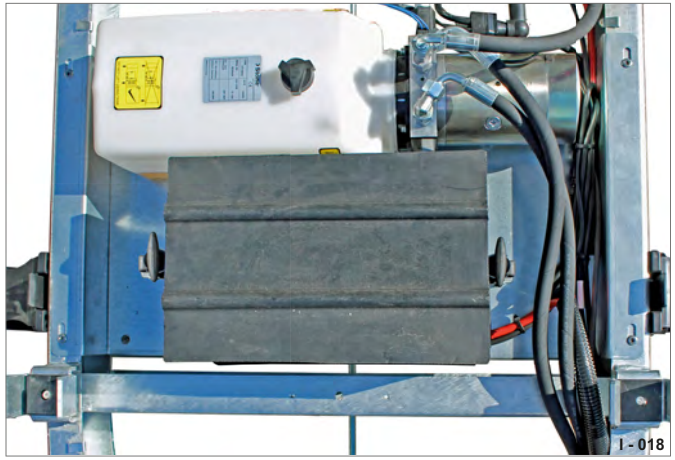

Fig. 18 Supply battery / hydraulic oil container / electric hydraulic pump

Cover net

Fig. 15 Cargo bed with cover net

Spare wheel

Fig. 17 Spare wheel / holder on front drop side

Hand button of the electric hydraulic pump

Fig. 19 Hand button in the holder

Maintenance brace

Fig. 20 Maintenance brace for securing the loading bridge

Toolbox

Fig. 21 on the side of the chassis

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3 Operation

Take note of the safety / driving instructions for driving with the towing vehicle and trailer stated in the operating instruction manual
"Trailers up to 3.5 to / Part 1 - General".

Prerequisites for safe driving with a trailer:

- The body must be fully closed while driving.
- All drop sides and stanchions must be removed for use of the trailer as a flat-bed.
- The rear drop side must be removed when driving with a projecting load (through-loading function).
- The load must be properly tied down / secured.
- Bulk goods must be covered (e.g. by a flat cover).
- The permissible gross weight and the axle loads must be complied with.
- Keep the centre of gravity of the load as low as possible: Distribute the goods evenly - avoid point / one-sided load distribution.
- Comply with the load securing guidelines pursuant to VDI 2700.

WARNING

Driving with support devices which have <u>not</u> been retracted and secured

The support devices (jockey wheel / folding supports) could be torn off and hurled away while driving - risk of accidents!

▶ Before setting off, make sure that all support devices have been retracted and secured.

Positional stability

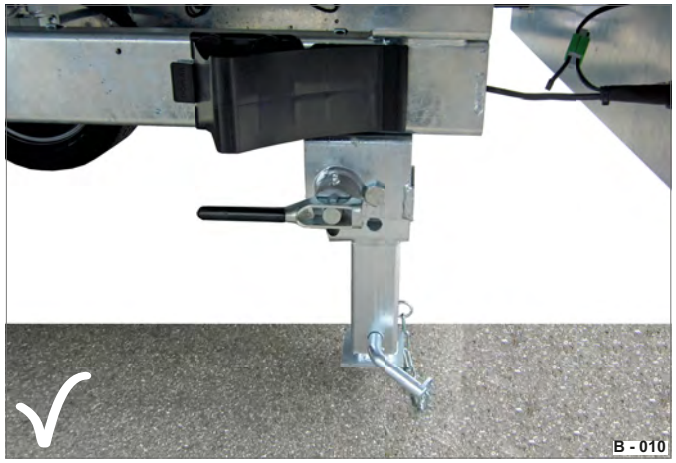


Fig. 1 Folding supports lowered

The folding supports can be used for parking / setting down the trailer with a load. The folding supports prevent the chassis from tipping backwards.

Safety during loading and unloading

WARNING

Dirty / wet cargo bed

The cargo bed can become slippery through dirt, water or ice - slip / fall hazard!

▶Step on the cargo bed carefully and watch out for dirty, wet / icy areas.

▶ If required, clean the dirty areas before stepping onto the cargo bed.

WARNING

Moving load

There is increased risk of injury during loading / unloading.

People can cut themselves and be crushed.

▶ Use  .

WARNING

Stepping on the cargo bed

People can fall when climbing up to / down from the cargo bed / the chassis via mudguards, drawbar, chassis and toolboxes.

▶ Use  .

▶ Take care when stepping on to the cargo bed.

▶ Never step on to a tipped cargo bed.

▶ Do not jump on to the cargo bed or down from the cargo bed.

▶ If required, use a stable ladder for climbing up and down.

WARNING

Loading / unloading with a crane

The fixing attachment could tear and the load drop - suspended loads can hit / crush people!

▶ Use  .

▶ Never stand under suspended loads.

▶  Keep people out of the danger area.

WARNING

Load / load securing elements on the cargo bed

The cargo bed can be blocked by the load, squared timbers, tension belts and pallets - trip hazard!

▶Provide adequate lighting on the cargo bed.

▶Store unneeded pallets, tension belts and tools in the storage areas intended for this purpose.

▶ Keep the cargo bed clean.

WARNING

Loading bulk goods

When bulk goods are loaded onto the trailer, they may get pressed against the drop sides. Unsecured drop sides may spring open, presenting a hitting/ crushing risk!

▶ Before loading bulk goods, make sure that all drop sides / bodies are closed and secured.

WARNING

Tipping while driving

The load could slide off the cargo bed in an uncontrolled manner - crushing / impact risk!

▶ Only carry out tipping processes while the trailer is standing still.

WARNING

Restricted view with a tipped cargo bed

People may not be seen and be run over when reversing.

▶ Use the mirrors to correctly assess the danger area around the trailer.

▶  Have a second person direct you.

Fig. 2 Tipped at the rear / danger areas

WARNING

Unloading bulk goods

The load can press against the drop sides. The load pressure could cause the drop sides to snap open when the locks are unlatched - impact risk!

▶Stand to one side when unlocking the drop sides – not directly in front of them.

▶ If required, first remove the bulk goods from the drop side to be opened to relieve the pressure.

CAUTION

Tipping dry bulk goods

Dust may form and visibility be impaired when tipping dry bulk goods.

▶ Tip dry bulk goods slowly.

▶ If required, interrupt the tipping process.

Procedure for loading / unloading bulk goods:

▶ Make sure that traffic is not obstructed.

▶ Secure the area if necessary.

▶ Before starting to tip, ensure that the trailer is hooked up (fixed in position) and has been connected to the hydraulic system and activated.

▶ When loading the trailer, distribute the load evenly across the cargo bed.

▶ Never stand in the danger area when loading or unloading bulk goods.

▶ Keep people out of the danger area.

▶ Open the rear drop side.

▶ Lift the cargo bed until the material flows out slowly and evenly.

▶ Tip the load in a controlled manner.

▶ Never step on the cargo bed or the chassis during tipping.

▶ Note the warning sticker on the trailer.

Permissible weights and load distribution

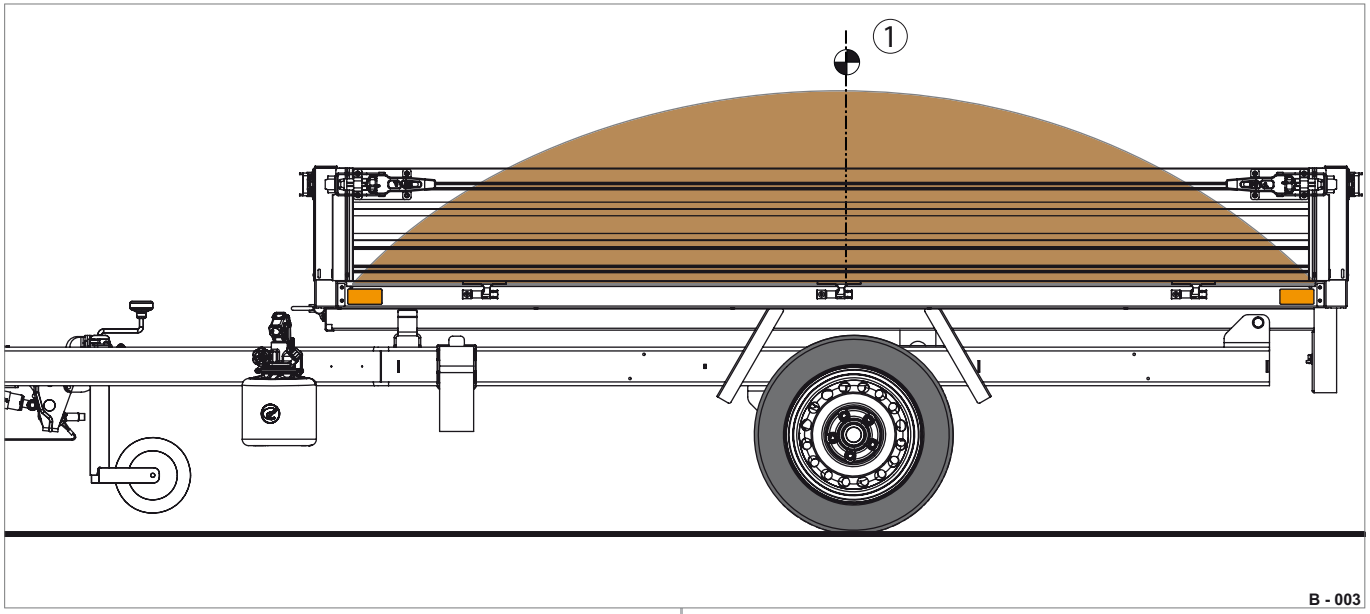


Fig. 3 Centre of gravity indication

1 Centre of gravity of the load

Stow away / distribute the load in such a way that the centre of gravity of the overall load is above the longitudinal centre line of the trailer as far as possible.

Keep this centre of gravity as low as possible.

Load your trailer within the limits of the permissible gross weight, the permissible axle loads and the permissible drawbar load.

Also aim for an even weight distribution in the case of a partial load, so that each axle is proportionally loaded and a sufficient drawbar load is provided.

The maximum load capacity of the trailer can only be obtained if the overall centre of gravity of the load is within the permitted range.

Restrict point loading of the cargo bed to the permissible extent through suitable load distribution measures.

NOTICE

Poor/one-sided load distribution of the goods!

Severely uneven / point load distribution can lead to over-stressing and damage to the trailer components.

- ▶ Before loading your trailer, check which load objects are the heaviest.
- ▶ Position the heaviest objects centrally on the cargo bed in the area of the axles.
- ▶ Distribute the goods evenly over the cargo bed - avoid point / one-sided load distribution.

Single-axle rear tipper

Loads	Max. weights
perm. gross weight	1,300 kg
Drawbar load (S)	50 kg
Unladen weight	approx. 375 kg
Load capacity	approx. 900 kg

Tab. 1 HUK 132314

Loads	Max. weights
perm. gross weight	1,500 kg
Drawbar load (S)	50 kg
Unladen weight	approx. 375 kg
Load capacity	approx. 1,100 kg

Tab. 2 HUK 152314

Loads	Max. weights
perm. gross weight	1,500 kg
Drawbar load (S)	50 kg
Unladen weight	approx. 475 kg
Load capacity	approx. 1,025 kg

Tab. 3 HUK 152715

Tandem rear tipper

Loads	Max. weights
perm. gross weight	2,000 kg
Drawbar load (S)	50 kg
Unladen weight	approx. 530 kg
Load capacity	approx. 1,470 kg

Tab. 4 HUK 202715

Loads	Max. weights
perm. gross weight	2,700 kg
Drawbar load (S)	50 kg
Unladen weight	approx. 540 kg
Load capacity	approx. 2,160 kg

Tab. 5 HUK 272715

Loads	Max. weights
perm. gross weight	2,700 kg
Drawbar load (S)	50 kg
Unladen weight	approx. 685 kg
Load capacity	approx. 2,015 kg

Tab. 6 HUK 273117

Loads	Max. weights
perm. gross weight	3,000 kg
Drawbar load (S)	50 kg
Unladen weight	approx. 685 kg
Load capacity	approx. 2,315 kg

Tab. 7 HUK 303117

Uncoupling the trailer

In the rear tipper, the wheel chocks are attached to the side of the chassis in the front section of the trailer as standard.

WARNING

Unsecured wheel chocks

Unsecured wheel chocks could fall off while driving - risk of accidents!

- ▶ Check that the wheel chocks are secured before driving off.
- ▶ Check the holders for damage at regular intervals.

WARNING

Incorrectly uncoupled trailer

The trailer could start moving and tip over.

People could be struck by the trailer and run over - risk of crushing!

▶Only uncouple the trailer when it is empty.

- ▶ Use wheel chocks to secure the trailer from rolling away before uncoupling.

Wheel chock secured

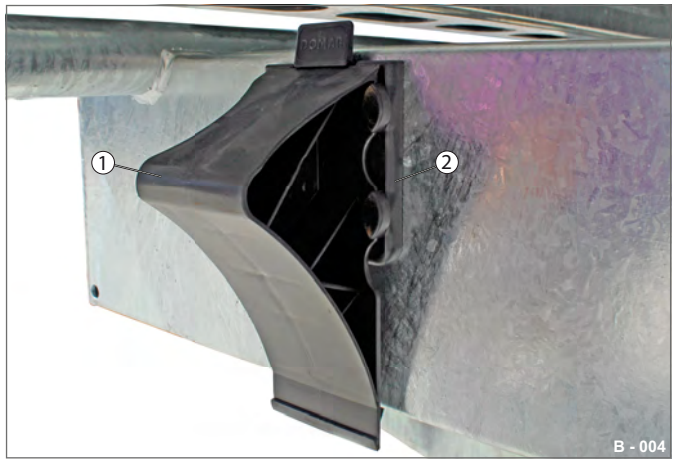


Fig. 4 Wheel chock in the holder

1 Wheel chock
2 Holder

Wheel chocks must always be available. Replace any lost or damaged wheel chocks immediately.

Manual manoeuvring of the trailer

Fig. 5 Manual manoeuvring of the trailer

1 Hand brake
2 Jockey wheel

In addition to the parking brake, the trailer must be secured with wheel chocks on slopes / gradients and when uncoupled.

- ▶ Use .
- ▶ Pull / push the trailer in the desired direction.
- ▶ Ensure that your feet do not get under the jockey wheel.
- ▶ Park the trailer on level ground / an even surface wherever possible
  - not on a slope or on an uphill / downhill incline.
- ▶ Apply the handbrake.

Manipulating the wheel chock

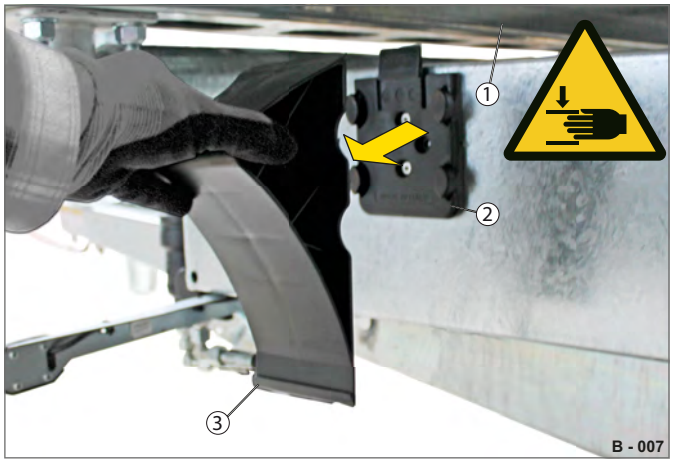


Fig. 6 Risk of crushing

1 Loading bridge
2 Holder
3 Wheel chock

Take note of the safety instructions for manipulating the wheel chocks in the operating instruction manual, “Trailers up to 3.5 to / Part 1 - General”.

CAUTION

Removing wheel chocks

You could crush your hands / fingers when removing the wheel chocks. You could also hit your head on the chassis.

▶ Use .
▶ Manipulate the wheel chocks slowly and carefully.
▶ Avoid jerky movements.

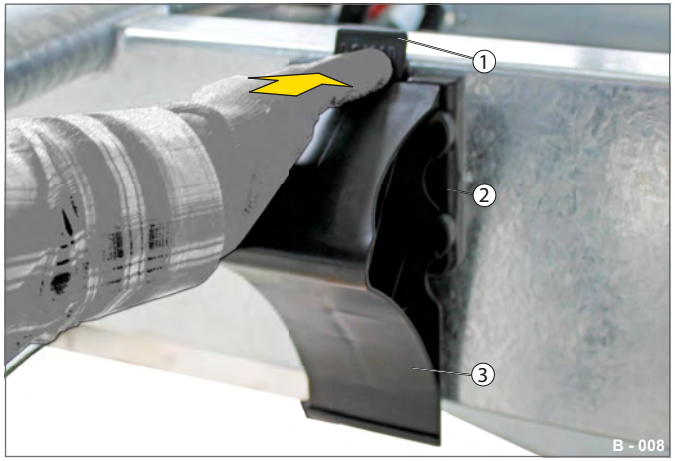


Fig. 7 Removing the wheel chock

1 Lever
2 Holder
3 Wheel chock

▶ Press the lever (Fig. 7 /1) of the holder (Fig. 7 /2).
▶ Remove the wheel chock (Fig. 7 /3) at the same time.

Fig. 8 Wheel chocks positioned

1 Wheel chock

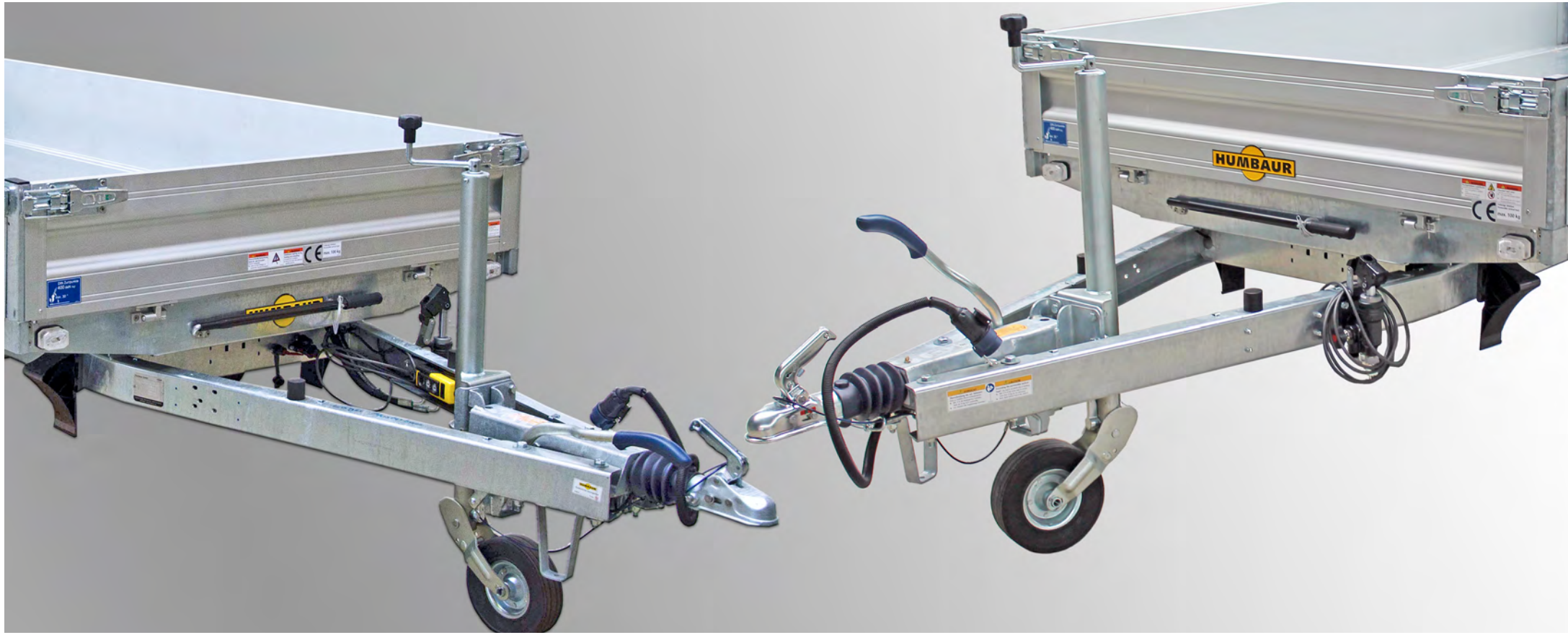
▶ Place the complete surface of the wheel chocks (Fig. 8 /1) under the wheels.
Consider the direction of inclination of the trailer e.g. on a slope.
▶ Place the wheel chocks in the holders after use.

Check before departure

- Trailer has been correctly coupled.
- Electrical plug has been connected.
- Towing connection (optional) has been disconnected and parked.
- Pump lever and hand button have been secured in the holders.
- Cargo bed has been tipped back.
- Parking brake has been released.
- Folding supports have been folded up and secured.
- Drop sides / extensions have been closed and secured.
- Toolbox has been locked and secured.

Check when parking

- Trailer has been correctly uncoupled.
- Parking brake has been applied.
- Wheel chocks have been positioned.
- Cargo bed has been tipped back.
- Electrical plug has been parked.
- Drop sides / extensions have been locked.
- Toolbox has been locked.



4 Operating the chassis

Design variants

The telescopic cylinder of the trailer for tipping the cargo bed is actuated by a hydraulic system.

The following variants are possible:

– Manual pump
– Electro-hydraulic equipment with emergency hand pump (option)
– Electro-hydraulic equipment with towing connection (option)

The cargo bed can be tipped by means of the manual pump and with an electric hydraulic pump as an option or also via the towing vehicle by means of a towing connection.

The hydraulic system is designed as a 2-circuit system.

The hydraulic system is filled with hydraulic oil HLP ISO 46 in the factory and commissioned.

The "Electro-hydraulic equipment with towing connection" variant can also be combined with a manual or electric hydraulic pump. This permits operation on different towing vehicles.

DANGER

Excessive operating pressure

The max. permissible pressure is exceeded - the lines could burst / components are damaged.

People will be injured by the escaping oil - risk of accidents!

▶ Comply with the maximum specifications for oil pressure and oil quantity - see sticker on the trailer.

▶ Contact a specialist workshop in the case of a defective hydraulic system.

WARNING

Lines are under pressure

The hydraulic line is under pressure when it is uncoupled.

The oil can escape under high pressure and cut people / shred skin!

▶ Before uncoupling, check that the lines are not under pressure and the towing vehicle has been switched off.

▶ Use  .

WARNING

There may be a loss of stability while tipping!

The trailer could tip to the side when the cargo bed is tipped - danger of crushing/accident!

▶ Only carry out tipping processes while the trailer is standing still and coupled with a vehicle.

▶ Before initiating the tipping process check that:
- The trailer is standing on level ground and is stable.
- The air pressure in all the tyres on the trailer is the same.
- It is located at least 2 m from the slope/excavation pit.
- There is no heavy crosswind (recommended up to a max. of 5 Bft, approx. 35 km/h - deciduous trees sway)
- The entire combination (trailer with towing vehicle) is in line/straight.

CAUTION

Driving without secured pump lever!

The pump lever can come loose from its holder and fall onto the road.
People may be hit - accident risk!

▶ Ensure that the pump lever is secured before driving off.

NOTICE

Using incorrect / old hydraulic oil

The hydraulic system (hoses, connections, cylinder) could corrode quickly and fail.

▶ Only use hydraulic oils from the groups HL, HLP and HPLD e.g. ISO-VG 46.

Manual pump

Fig. 1 Operating elements

1 Pump lever
2 Insertion opening (top)
3 Insertion opening (bottom)
4 Valve wheel
5 Oil container (plastic)

The manual pump is mounted on the side of the V drawbar on the left in the direction of travel.

The pump lever is mounted in the centre of the chassis. It can be secured with two different mounting variants (clamp / pin holder).

The technical data of the hydraulic system:

– 10 litres of oil
– Ambient temperature -30 °C to +100 °C
– Hydraulic oil: ISO-VG 46 acc. to DIN 51 524

Manual pump - Tipping the cargo bed

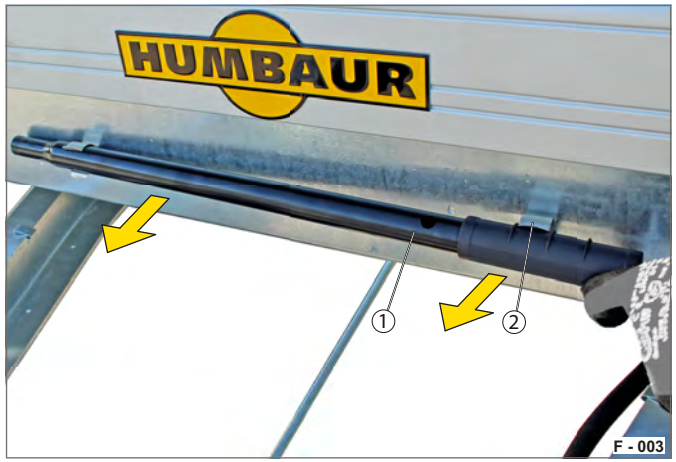


Fig. 2 Removing the pump lever from the clamp holder

1 Pump lever
2 Clamp holder

▶ Remove the pump lever (Fig. 2 /1) from the two clamp holders (Fig. 2 /2).

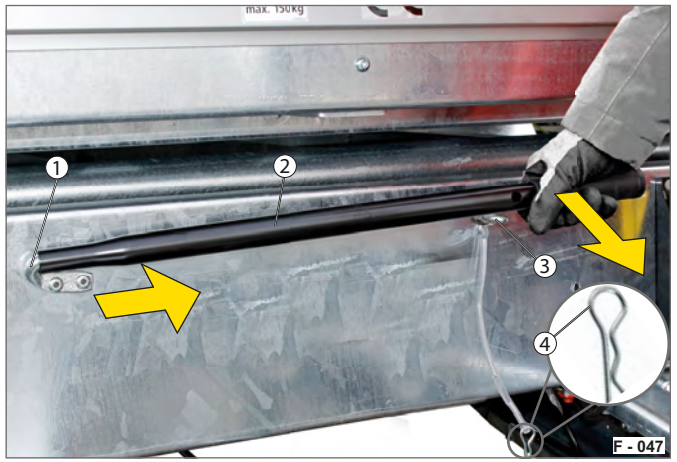


Fig. 3 Removing the pump lever from the pin holder

1 Retaining pin
2 Pump lever
3 Securing pin
4 R-clip

▶ Pull the R-clip (Fig. 3 /4) from the securing pin (Fig. 3 /3).
▶ Lift the pump lever (Fig. 3 /2) off the securing pin at an angle.
▶ Remove the pump lever from the retaining pin (Fig. 3 /1).

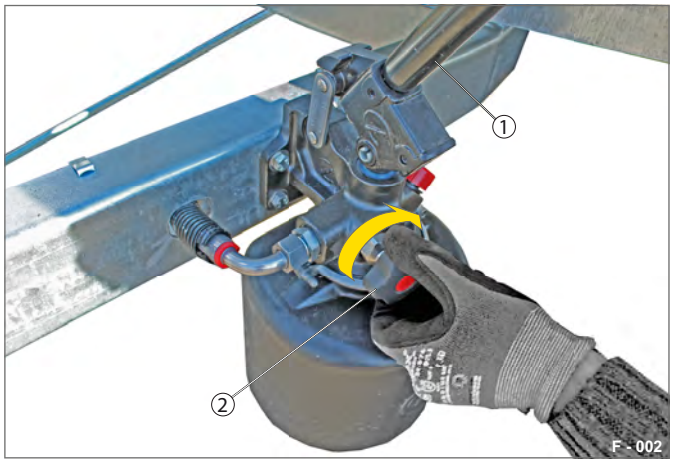


Fig. 4 Closing the valve wheel

1 Pump lever in the insertion opening (top)
2 Valve wheel

▶ Insert the pump lever in the top insertion opening (Fig. 4 /1).

▶ Turn / close the valve wheel (Fig. 4 /1) in a clockwise direction.

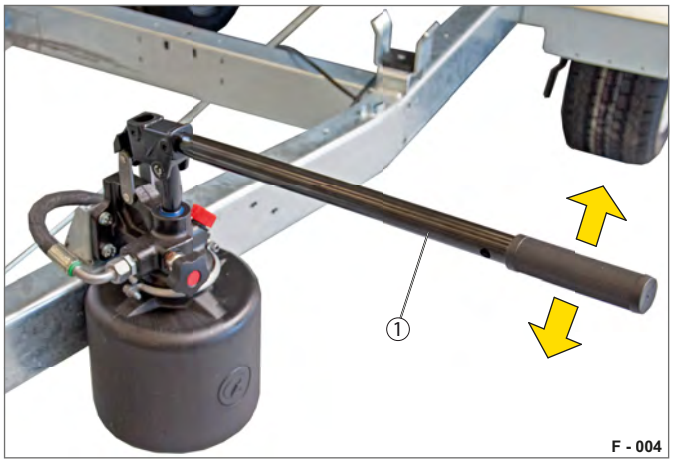


Fig. 5 Tipping the cargo bed

1 Pump lever

A few strokes are required at the beginning until the pressure has been built up in the hydraulic system.

▶Move the pump lever (Fig. 5 /1) up and down.

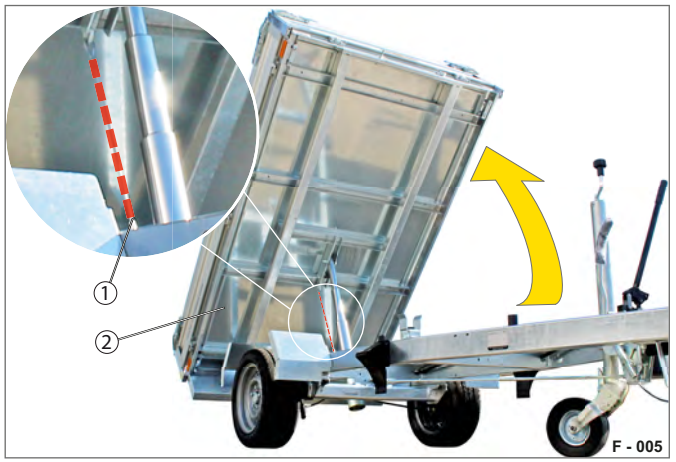


Fig. 6 Cargo bed tipped

1 Securing cord
2 Cargo bed

▶ Pump until:
- the cargo bed (Fig. 6 /2) is in the desired position
or
- the securing cord (Fig. 6 /1) is taut (max. tilting angle).

Manual pump - Tilting back the cargo bed

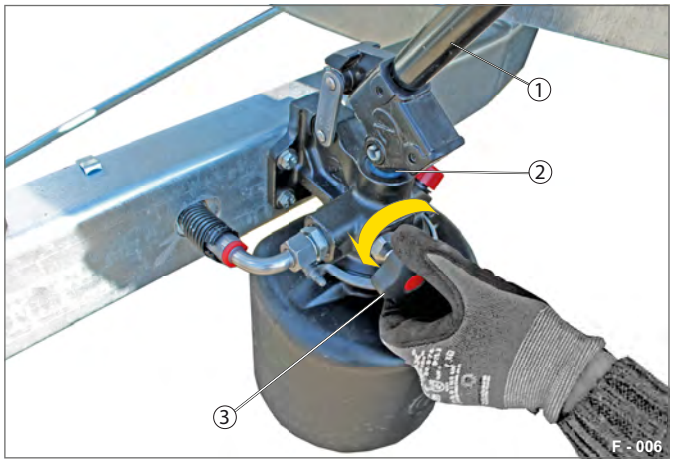


Fig. 7 Opening the valve wheel

1 Pump lever
2 Pump piston
3 Valve wheel

▶ Slowly turn / open the valve wheel (Fig. 7 /3) in an anticlockwise direction
- never open the valve wheel completely.

The cargo bed will slowly lower into its original position.

▶ Press the pump lever (Fig. 7 /1) down, so that the pump piston (Fig. 7 /2) is retracted.

▶ Monitor the behaviour of the trailer while the cargo bed is tilting back.
The tilting back process is interrupted / stopped by closing the valve wheel.

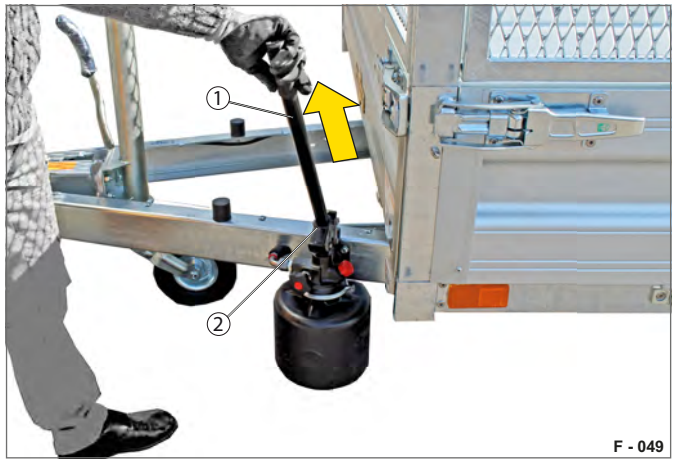


Fig. 8 Removing the pump lever

1 Pump lever
2 Insertion opening

▶ Remove the pump lever (Fig. 8 /1) from the insertion opening (Fig. 8 /2).

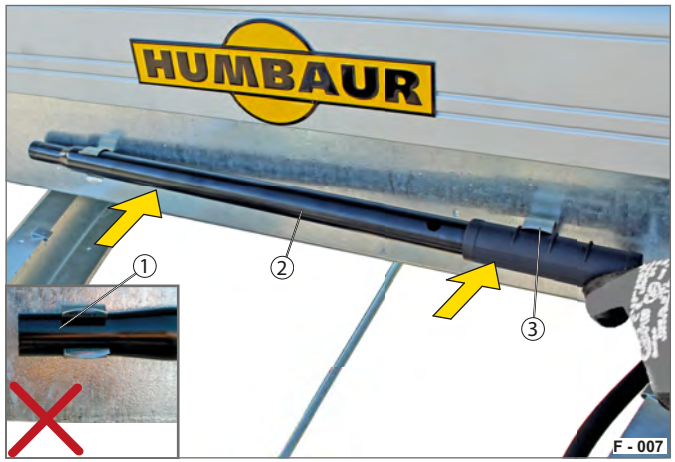


Fig. 9 Securing the pump lever in the clamp holder

1 Male end piece
2 Pump lever
3 Clamp holder

▶ Press the pump lever (Fig. 9 /2) into the clamp holders (Fig. 9 /3).
Ensure that the clamp holder is not positioned at the male end piece (Fig. 9 /1) of the pump lever.

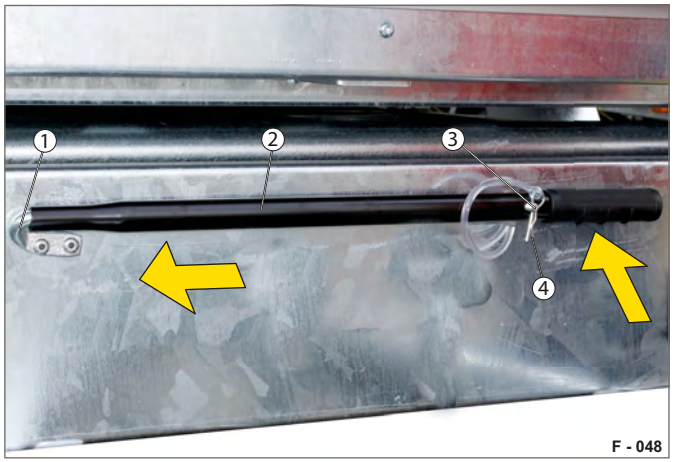


Fig. 10 Securing the pump lever in the pin holder

1 Retaining pin
2 Pump lever
3 Securing pin
4 R-clip

▶ Place the pump lever (Fig. 10 /2) on the retaining pin (Fig. 10 /1).
▶ Place the hole of the pump lever on the securing pin (Fig. 10 /3).
▶ Insert the R-clip (Fig. 10 /4) in the hole of the securing pin.

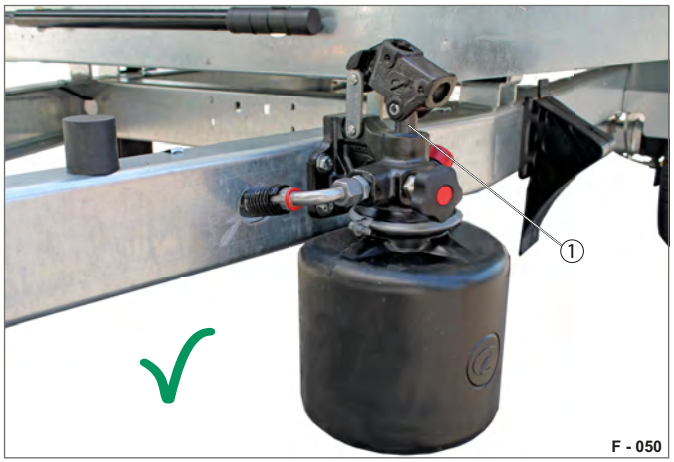


Fig. 11 Manual pump in driving position

1 Pump piston

▶ Ensure that the pump piston (Fig. 11 /1) has been retracted before driving off.

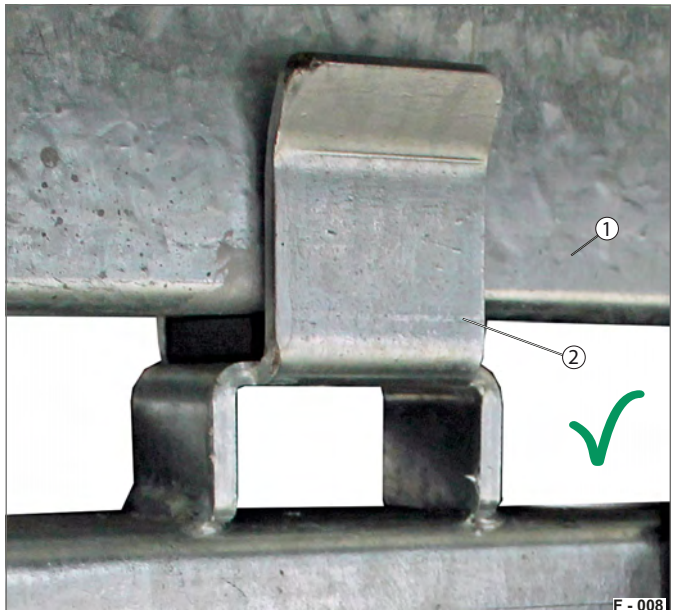


Fig. 12 Loading bridge secured

1 Loading bridge
2 U-bracket

▶ Before driving off, check that the loading bridge (Fig. 12 /1) has been secured in the U-bracket (Fig. 12 /2).

Electro-hydraulic equipment

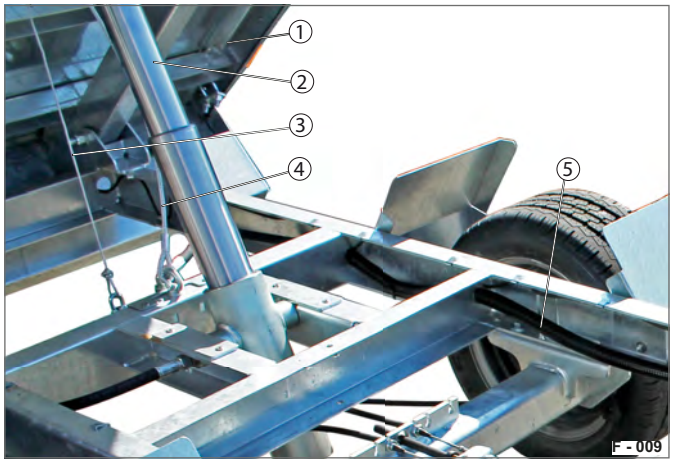


Fig. 13 Components: Tipping system

1 Loading bridge
2 Telescoping hydraulic cylinder, 3-step
3 Stroke limitation cord
4 Securing cord
5 Hydraulic line

The electro-hydraulic equipment consists of an electric hydraulic pump, hydraulic oil container and supply battery and is integrated in the chassis.

The electric hydraulic pump is supplied with 12 V from a battery.

The hydraulic oil container is filled with hydraulic oil in the factory and commissioned.

The electro-hydraulic equipment can be activated / deactivated via the plug-in switch.

The cargo bed is tipped via the telescopic cylinder.

The electro-hydraulic equipment is operated by means of a hand button.

If the electric hydraulic pump fails, the cargo bed can be tipped with the emergency hand pump.

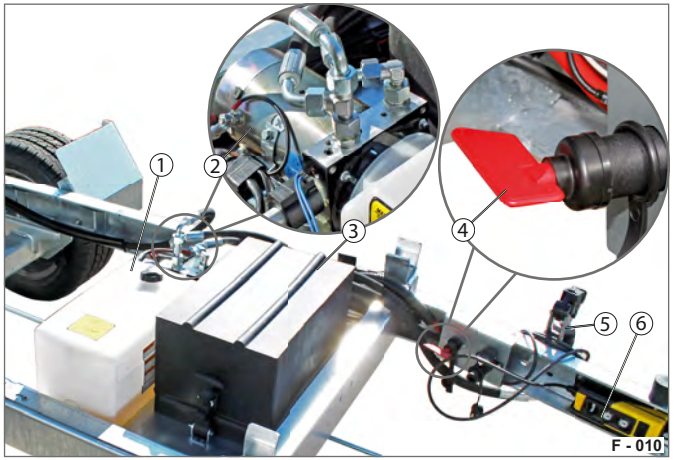


Fig. 14 Electro-hydraulic equipment

1 Hydraulic oil container
2 Electric hydraulic pump
3 Supply battery with cover
4 Plug-in switch
5 Emergency hand pump
6 Hand button (electric hydraulic pump)

Maintenance / repair work on the electro-hydraulic equipment may only be carried out by trained and qualified personnel in a specialist workshop!

The raised loading bridge must be secured with the maintenance brace when carrying out work on the electro-hydraulic equipment!

See page **81** in the Maintenance section.

Take note of the safety instructions for handling hydraulic oil in the chapter on “Checking / changing the hydraulic oil” on page 91 in the Maintenance section.

Charging the supply battery

The supply battery can be charged via the battery charging plug if the power is low.

Please refer to the instruction manual / safety instructions of the charger manufacturer.

Preparation of the charging plug
- see page **94**in the Maintenance section.

Fully charge the supply battery at regular intervals.

Charge tester

The Battery Guard can be used to check the charge status of the supply battery.

You will find the operating principle of the app "IntAct Battery-Guard" in the chapter “Charging the supply battery / Checking the charge status” on page 93 in the Maintenance section.

Hazards arising from handling the supply battery

WARNING

Danger when handling batteries

Batteries can explode as a result of spark generation or short circuits.

- ▶ Avoid short circuits and the formation of sparks.
- ▶ Do not place any tools / objects on the batteries.
- ▶ Cover the terminals of the batteries prior to starting work on batteries.
- ▶ Do not smoke near batteries and keep naked flames away.

WARNING

Leaking battery acid

Battery acid is corrosive. There is a danger of acid burns if it comes into contact with you.

▶ Seek medical advice immediately in the event of contact.

WARNING

Hot batteries

Bridged batteries can become hot - burn hazard!

▶ Allow bridged batteries to cool down prior to starting work on them.

NOTICE

Discharged / low supply battery!

A discharged or low supply battery in the trailer can cause defective motor-starting relays

in the towing vehicle.

▶ Check the power of the supply battery at regular intervals.

▶ Fully charge the supply battery via an external battery charger.

▶ Maintain the power of the supply battery via a trickle charge in the event of prolonged disuse.

Electro-hydraulic equipment - Tipping the cargo bed

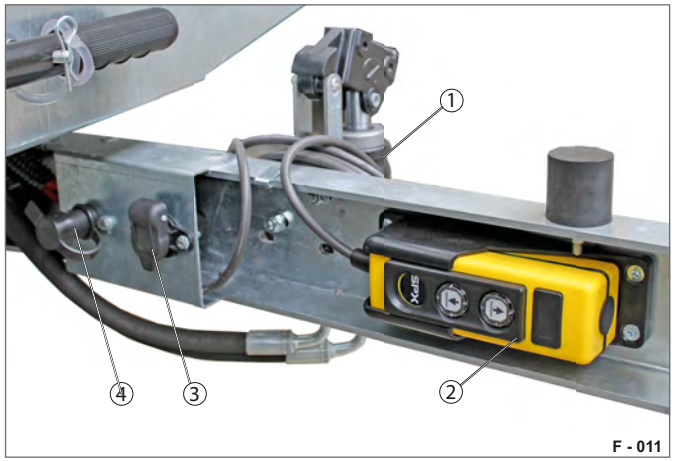


Fig. 15 Operating elements of the electro-hydraulic equipment

1 Emergency hand pump
2 Hand button
3 Battery charging socket
4 Plug-in switch socket

The trailer must be coupled to the towing vehicle before the cargo bed is tipped.

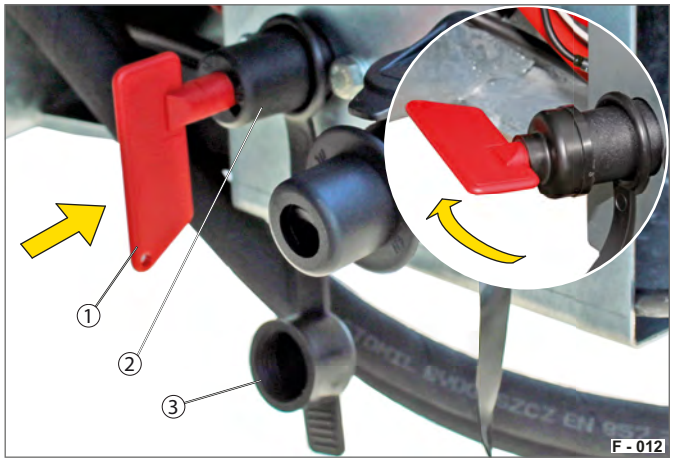


Fig. 16 Activating the electro-hydraulic equipment

1 Plug-in switch
2 Plug-in switch socket
3 Covering cap

▶ Remove the covering cap (Fig. 16 /3).

▶ Insert the plug-in switch (Fig. 16 /1) in the plug-in switch socket (Fig. 16 /2).

▶ Turn the plug-in switch in a clockwise direction to ON.

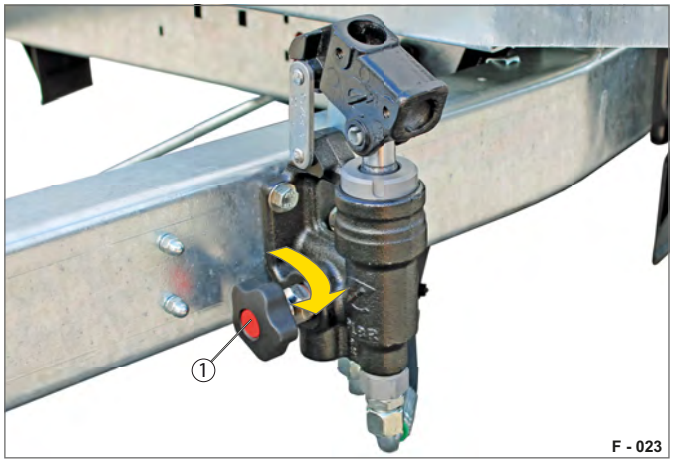


Fig. 17 Closing the emergency hand pump valve

1 Valve wheel

▶ Turn / close the valve wheel (Fig. 17 /1) in a clockwise direction.

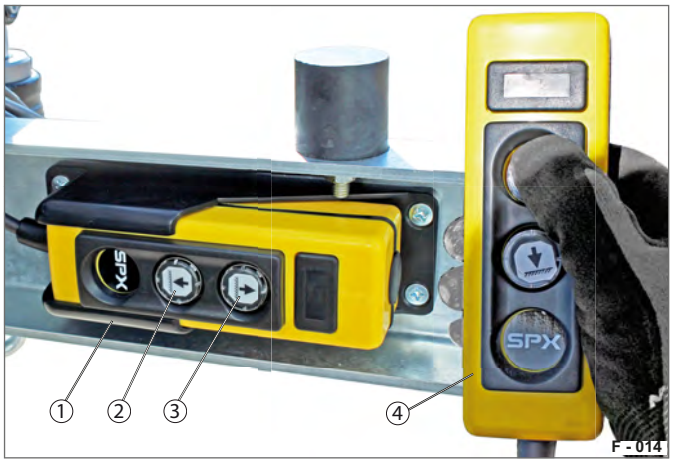


Fig. 18 Tipping the cargo bed

1 Holder
2 Button (arrow down)
3 Button (arrow up)
4 Hand button

▶ Remove the hand button (Fig. 18 /4) from the holder (Fig. 18 /1).

▶ Press and hold the button (arrow up) (Fig. 18 /3) until the cargo bed is in the desired position.

Once it has reached its maximum tipping angle, the electric hydraulic pump is turned off via the limit switch.

Fig. 19 Cargo bed tipped

▶ Monitor the behaviour of the trailer during the tipping process.

▶ Stop the tipping process if e.g. the bulk load is not sliding from the cargo bed properly or if the trailer moves in an unexpected way.

▶ Carry out the tipping process in inch mode if necessary.

The bulk load slides off the cargo bed through abrupt stopping in inch mode.

Electro-hydraulic equipment - Tilting back the cargo bed

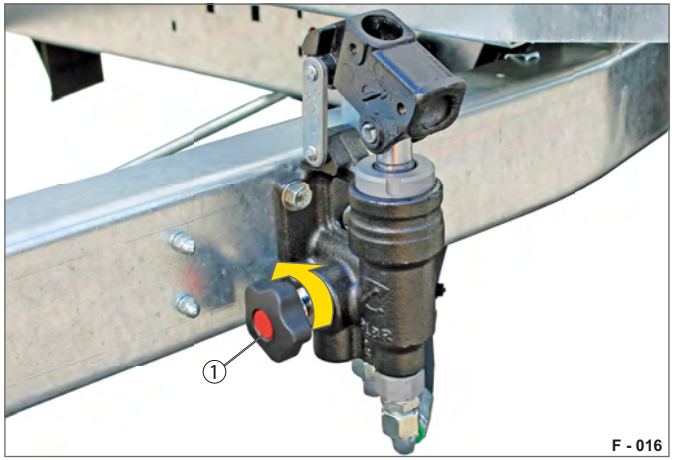


Fig. 20 Opening the valve wheel

1 Valve wheel

▶ Slowly turn / open the valve wheel (Fig. 20 /1) in an anticlockwise direction.

The hydraulic lines are blocked against pressure build-up.

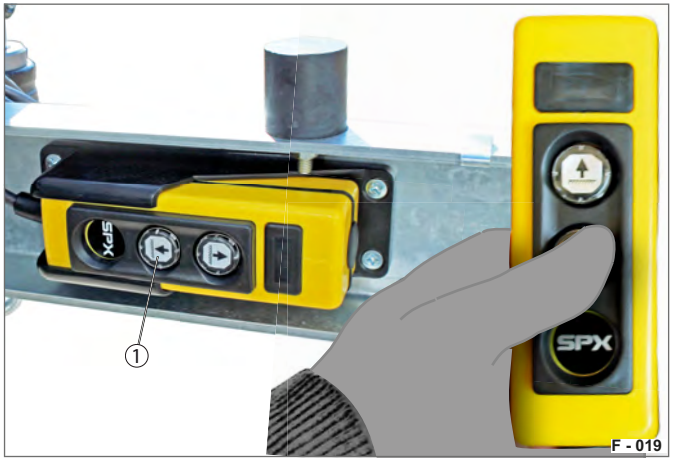


Fig. 21 Lowering with the electric hydraulic pump

1 Button (arrow down)

▶ Press and hold the button (arrow down) (Fig. 21 /1) until the cargo bed again rests fully on the chassis.

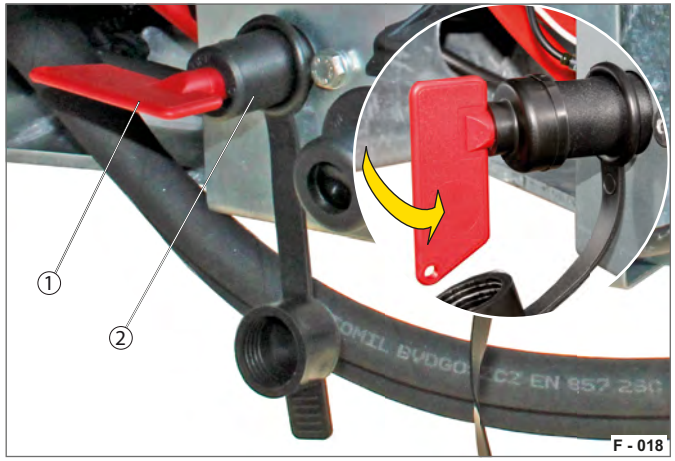


Fig. 22 Plug-in switch: switched to OFF

1 Plug-in switch
2 Plug-in switch socket

▶ Turn the plug-in switch (Fig. 22 /1) in an anticlockwise direction to OFF.

▶ Turn the plug-in switch by another 45° in an anticlockwise direction and remove the plug-in switch from the plug-in switch socket (Fig. 22 /2).

▶ Keep the plug-in switch in a safe place

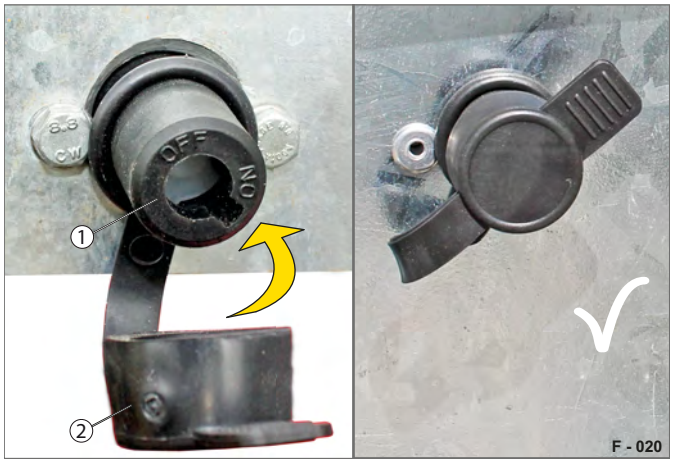


Fig. 23 Plug-in switch socket with covering cap

1 Plug-in switch socket
2 Covering cap

▶ Place the covering cap (Fig. 23 /2) on the plug-in switch socket (Fig. 23 /1).

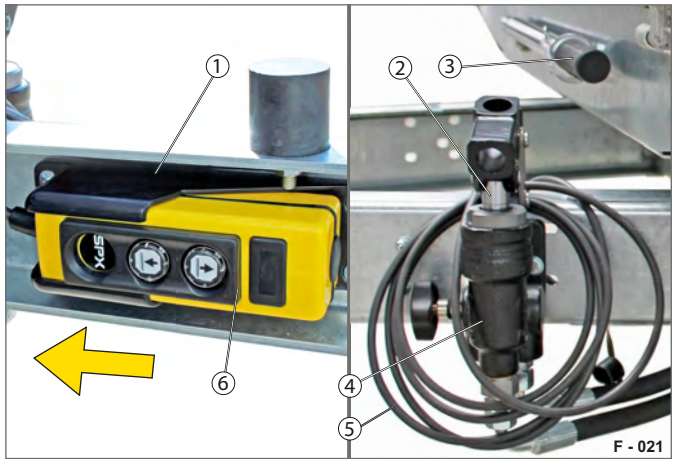


Fig. 24 Secure the hand button (driving position)

1 Holder
2 Pump piston
3 Pump lever
4 Emergency hand pump
5 Power cable
6 Hand button

WARNING

Loose cable

The cable could come loose while driving and fall on the road - accident risk!

▶ Before setting off, make sure that the cable is securely in place on the V drawbar and secured.

▶ Push the hand button (Fig. 24 /6) tightly in the holder (Fig. 24 /1).

▶ Ensure that the pump piston (Fig. 24 /2) has been retracted.

▶ Wrap the power cable (Fig. 25 /5) securely around the emergency hand pump (Fig. 24 /4).

Fig. 25 Position for driving

1 U-bracket
2 Loading bridge

▶ Before driving off, check that the loading bridge (Fig. 25 /2) has been secured in the U-bracket (Fig. 25 /1).

▶ Ensure that the pump lever (Fig. 24 /3) has been secured in the holder
- see “Manual pump” on page 31 ff.

Operating the emergency hand pump

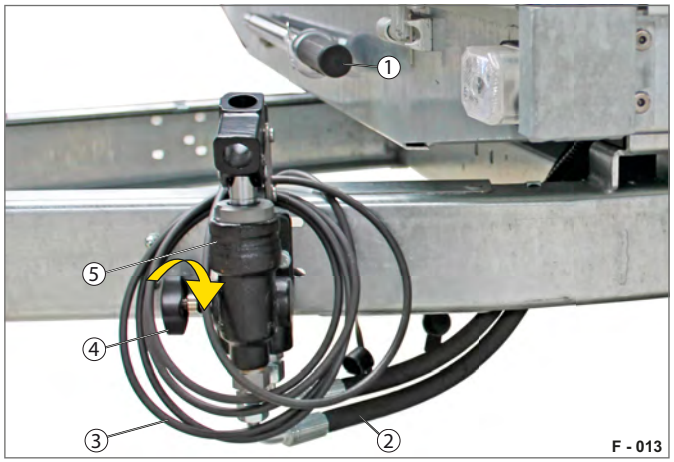


Fig. 26 Close the emergency hand pump valve

1 Pump lever
2 Hydraulic lines
3 Hand button power cable
4 Valve wheel
5 Emergency hand pump

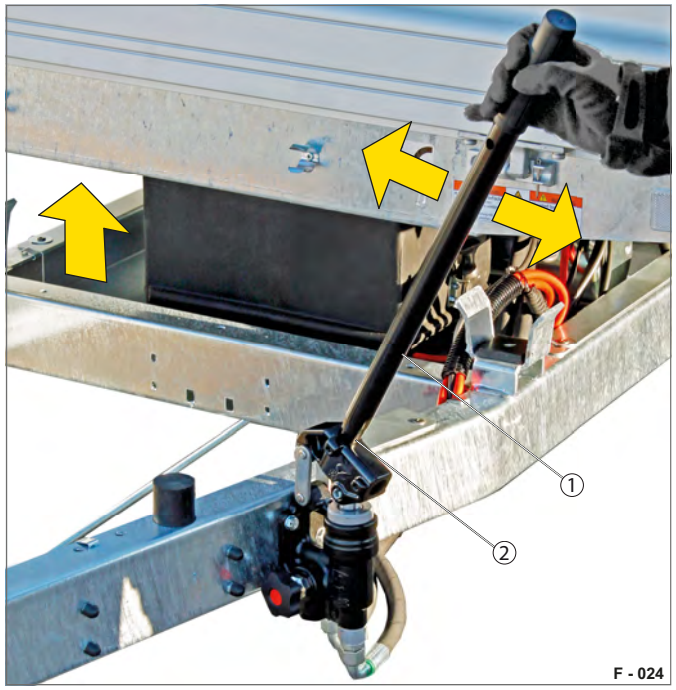


Fig. 27 Tipping the cargo bed

1 Pump lever
2 Insertion opening

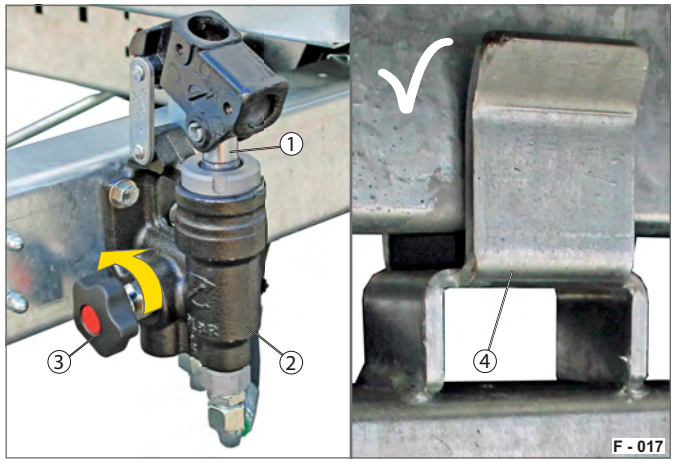


Fig. 28 Opening the emergency hand pump valve

1 Pump piston
2 Emergency hand pump
3 Valve wheel
4 U-bracket

The emergency hand pump (Fig. 26 /5) can be used to tip and lower the cargo bed in case of emergency, e.g. if the electric pump fails or maintenance work must be done.

- ▶ Remove the power cable (Fig. 26 /3) from the emergency hand pump (Fig. 26 /5) if necessary.
- ▶ Turn / close the valve wheel (Fig. 26 /4) in a clockwise direction.
- ▶ Remove the pump lever (Fig. 26 /1) from the holder - see “Manual pump” on page 31 ff.

- ▶ Insert the pump lever (Fig. 27 /1) in the insertion opening (Fig. 27 /2).
- ▶ Move the pump lever up and down.
- ▶ Pump until:
  - the cargo bed is in the desired position
  or
  - the securing cord is taut (max. tilting angle).
- ▶ Press the pump lever (Fig. 27 /1) down, so that the pump piston (Fig. 28 /1) is retracted.

- ▶ Slowly turn / open the valve wheel (Fig. 28 /3) in an anticlockwise direction.
  The cargo bed will slowly lower into its original position.
- ▶ Monitor the behaviour of the trailer while the cargo bed is tilting back.
  The tilting back process is stopped by closing the valve wheel.
- ▶ Make sure that the loading bridge is secured in the U-brackets (Fig. 28 /4) before driving off
  - see “Manual pump - Tilting back the cargo bed” on page 33 ff.

Towing connection

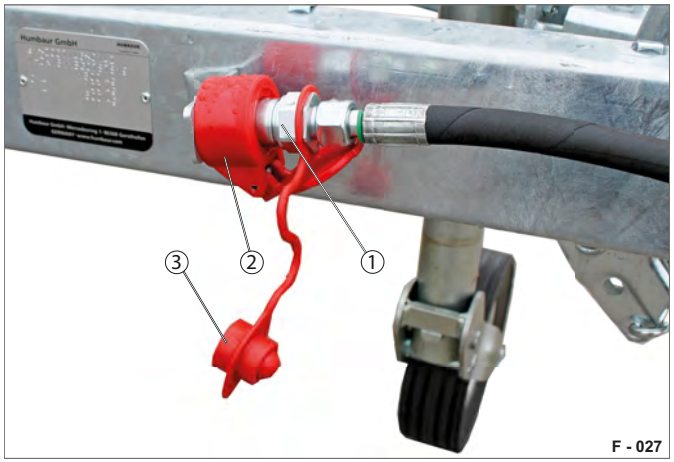


Fig. 29 Hydraulic connection for tractors

1 Hydraulic connection for tractors (SVK BG3)
2 Tractor parking socket
3 Sealing cap

The hydraulic connection for tractors is a connection for the towing vehicle. This connection enables the hydraulic system of the towing vehicle to be used for the hydraulic functions of the trailer. It is located on the V drawbar.

In this respect, the HUK is operated from the towing vehicle.

The connection has a two-way cock which enables the hydraulic circuit of the towing vehicle and the hydraulic circuit of the manual pump / electric hydraulic pump of the trailer to be switched.

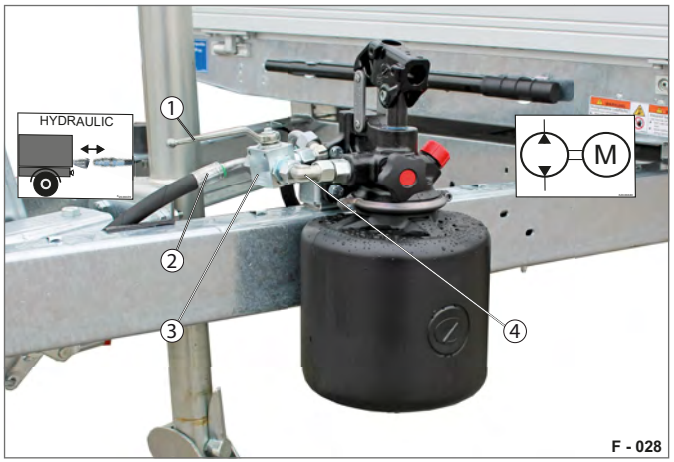


Fig. 30 Change-over of the hydraulic supply

1 Lever
2 Hydraulic circuit (towing vehicle)
3 Two-way cock
4 Hydraulic circuit (manual pump / electric hydraulic pump)

WARNING

Excessive hydraulic operating pressure

The hydraulic lines could burst as a result of excess pressure and the hydraulic oil squirting out may penetrate the skin.

- ▶ Check the condition of the hydraulic line before connecting it to the towing vehicle.
- ▶ Make sure that the operating pressure of the hydraulic unit has been adjusted to the operating pressure of the trailer - the operating pressure may have to be restricted.
- ▶ Take note of the hydraulic systems sticker on the trailer.

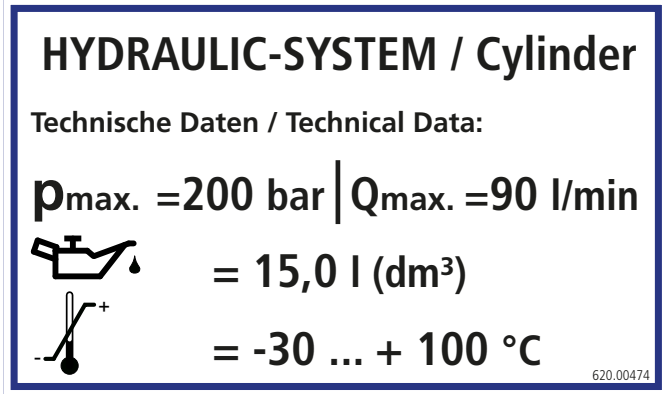


Fig. 31 Sticker on the trailer

1 Max. oil pressure ($p_{max.}$): 180 bar
2 Max. oil quantity: 10 l
3 Operating temperature: -30 °C / +100 °C

Take note of the instruction manual of the towing vehicle with regard to the hydraulic supply of the trailer.

The hydraulic system of the towing vehicle must be filled with the requisite quantity of oil and may not exceed the max. permissible operating pressure.

Connecting the tractor connection

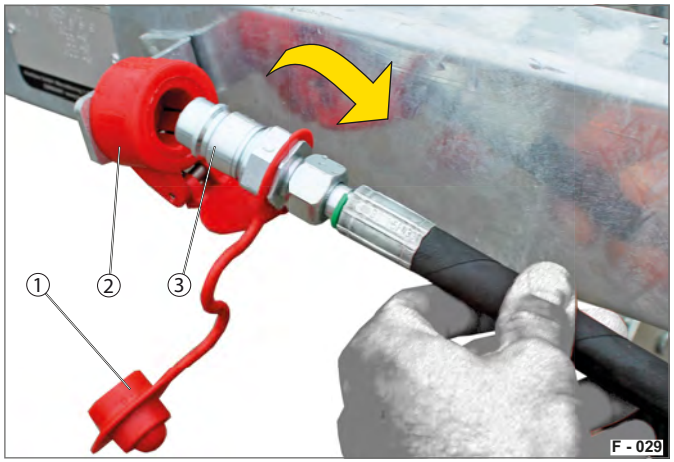


Fig. 32 Hydraulic line, connection

1 Line connection
2 Tractor parking socket
3 Sealing cap

- ▶ Remove the line connection (Fig. 32 /1) from the tractor parking socket (Fig. 32 /2) and remove the sealing cap (Fig. 32 /3).
- ▶ If required, clean the line connection with a clean cloth.
- ▶ If required, check the hydraulic oil level of your towing vehicle.
- ▶ Insert the line connection in the connection socket of the towing vehicle.

Switching over the hydraulic supply

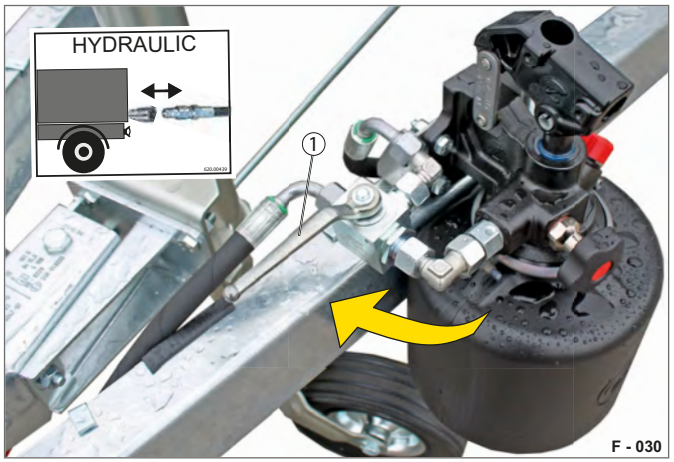


Fig. 33 Switching over to the hydraulic supply of the towing vehicle

1 Lever

- ▶ Turn the lever (Fig. 33 /1) away from the chassis in a clockwise direction.

  The lever has been set to supply from the towing vehicle.

  The pressure is built up by starting the towing vehicle.

Towing connection - Tipping the cargo bed

Fig. 34 Loading bridge tipped

1 Loading bridge

The loading bridge (Fig. 34 /1) is controlled from the operating unit on the towing vehicle.

- ▶ Before tipping the loading bridge, ensure that the trailer is coupled to the towing vehicle and secured so that it cannot roll away.

Towing connection - Tilting the cargo bed back

Fig. 35 Tilting back the loading bridge

1 Loading bridge

The loading bridge (Fig. 35 /1) is controlled from the operating unit on the towing vehicle.

- ▶ Tilt the loading bridge back to the driving position.
- ▶ Switch off the towing vehicle.

Uncouple towing connection

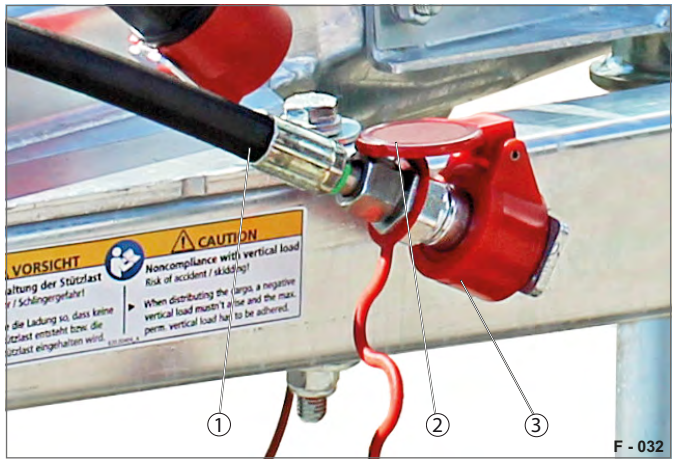


Fig. 36 Hydraulic line, parked

1 Line connection
2 Cover flap
3 Tractor parking socket

The line may not be under pressure when it is uncoupled.

- ▶ Remove the line connection (Fig. 36 /1) from the connection socket of the towing vehicle.
  The circuit to the towing vehicle has been disconnected.
- ▶ Open the cover flap (Fig. 36 /2) and insert the line connection in the tractor parking socket (Fig. 36 /3).
  The line connection is prevented from falling out by the cover flap.

Switching between the circuits

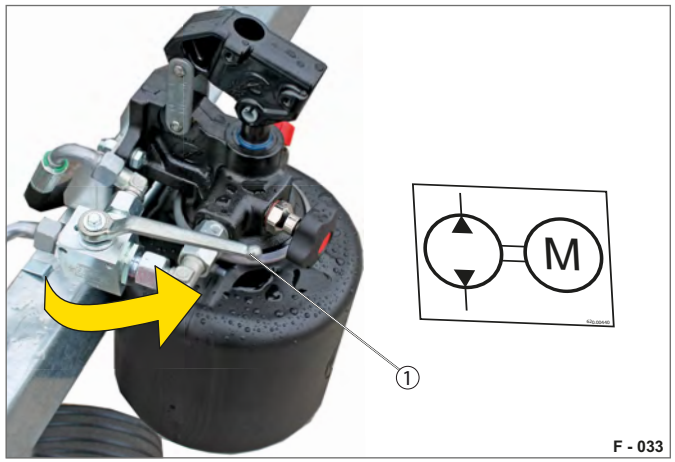


Fig. 37 Change-over to the electric hydraulic pump

1 Lever

Change-over is only possible if the loading bridge is in the driving position (down).

- ▶ Ensure that the loading bridge has been tilted back.
- ▶ Turn the lever (Fig. 37 /1) towards the chassis in an anti-clockwise direction.
  The lever has been set to supply from the manual pump / electric hydraulic pump.

Folding support

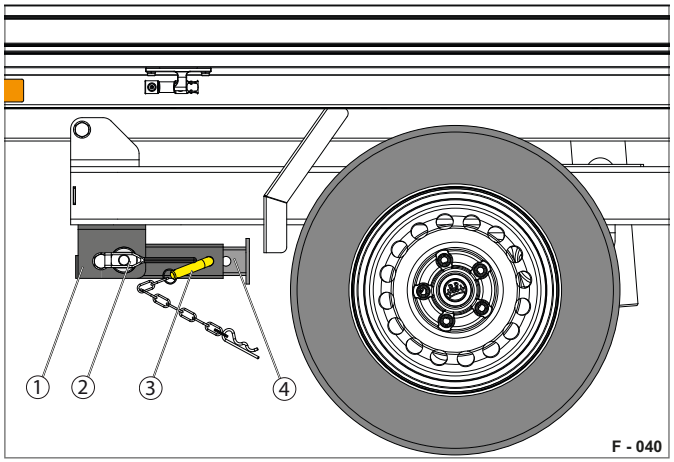


Fig. 38 Folding supports folded in at the rear (driving position)

1 Fastening bracket
2 Spring latch
3 Plug pin with R-clip
4 Adjustable support (adjustable)

The folding supports stabilize the trailer while it is being loaded and unloaded.

The folding supports relieve the weight of a loaded trailer when it is parked long-term.

The folding supports protect your trailer from damage caused when loading and unloading.

Folding down the folding support

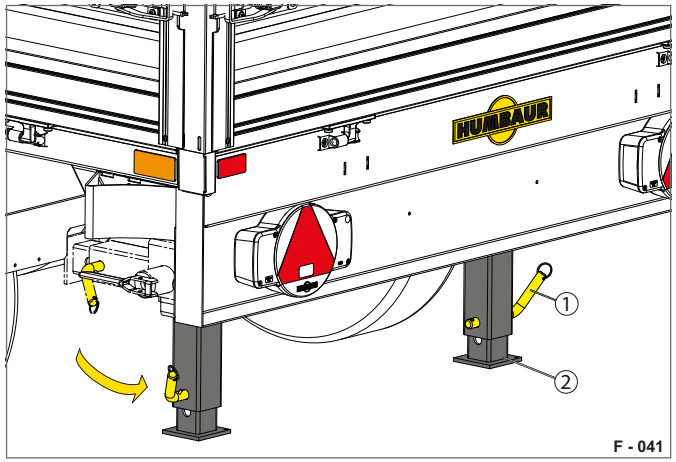


Fig. 39 Folding supports folded down

1 Plug pin
2 Adjustable support

▶ Open the spring latch (Fig. 40 /1).
▶ Fold down the folding support (Fig. 40 /2) before loading / unloading.
▶ Close the spring latch.

Height adjustment

▶ Remove the R-clip (Fig. 38 /3) from the plug pin (Fig. 39 / 1).
▶ Remove the plug pin from the adjustable support (Fig. 39 /2).
▶ Adjust the adjustable support.
▶ Secure the adjustable support with the plug pin in one of the holes.
▶ Secure the plug pin with the R-clip.

Folding up the folding support

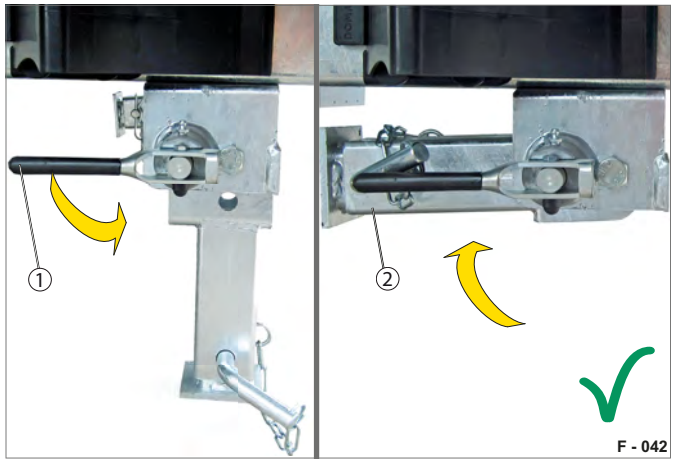


Fig. 40 Folding supports

1 Spring latch
2 Folding support

The folding supports must be folded up and secured before driving.

Instructions for operating the folding supports are provided in the operating instruction manual

▶ Open the spring latch (Fig. 40 /1).
▶ Fold up the folding support (Fig. 40 /2) before driving off.
▶ Close the spring latch.

Toolbox

A lockable toolbox is available as an option.

The toolbox is located on the front of the chassis on the right in the direction of travel.

The toolbox is used for stowing away lashing straps, tools, cleaning equipment, etc.

The toolbox is not waterproof.

WARNING

Unlocked toolbox

Objects could fall out while driving.

The lid could be torn off - risk of accidents!

- ▶ Check that the toolbox is closed and secured before driving off.
- ▶ Lock the toolbox to prevent unauthorised access.

Opening the toolbox

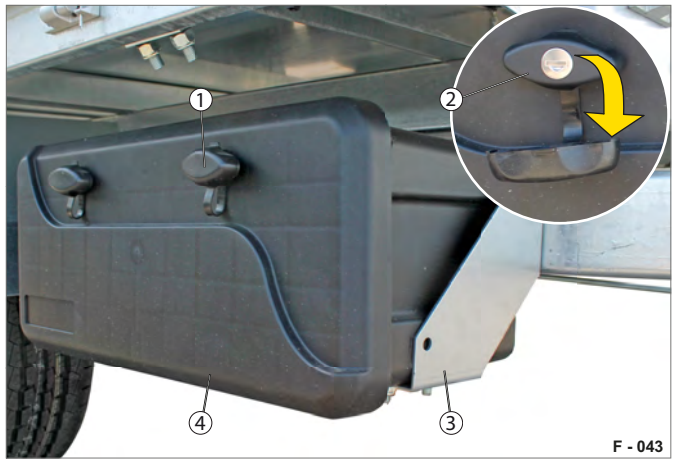


Fig. 41 Toolbox locked

1 Cover
2 Lock with lock cylinder
3 Fastening bracket
4 Lid

Please note the specified surface loading (see manufacturer's specification on the inside of the lid, approx. 30 kg).

- ▶ Fold down the covers (Fig. 41 /1) of the lock cylinders (Fig. 41 /2).
- ▶ If required, use a key to open the locks (Fig. 41 /2).
- ▶ Open the locks by turning.
- ▶ Fold down the lid (Fig. 41 /4).
- ▶ Watch out for falling objects when opening the lid.

Closing the toolbox

Fig. 42 Toolbox open

1 Key
2 Toolbox
3 Lid

- ▶ Fold the lid (Fig. 42 /3) upwards.
- ▶ Close the locks (Fig. 41 /1) by turning.
- ▶ If required, use the key (Fig. 42 /1) to lock the toolbox. The lid is locked.
- ▶ Close the cover (Fig. 41 /1).

Spare wheel holder

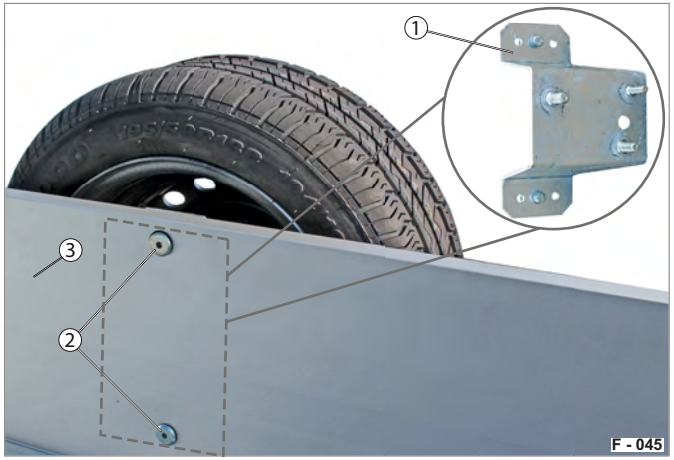


Fig. 43 Spare wheel holder, from the inside

1 Spare wheel holder
2 Mounting bolts
3 Front drop side

A spare wheel holder (Fig. 43 /1) is available as an option.

The spare wheel holder may only be used to attach and carry a spare wheel (Fig. 44 /3).

The spare wheel holder is mounted on the front drop side (Fig. 43 /3).

No additional holes may be made in the chassis / V drawbar for attachment of the spare wheel holder.

The spare wheel holder / spare wheel may not be used for load securing.

A spare wheel may only be retrofitted at the provided attachment points.

Screwing the spare wheel into place

Fig. 44 Spare wheel holder with spare wheel

1 Spare wheel holder with wheel bolts
2 Spherical collar nut
3 Spare wheel

NOTICE

Tightening up spare wheel nuts too tightly

The wheel rim could be deformed.

▶ Tighten the spare wheel nuts to a maximum of 80 Nm.

▶ Before driving off, make sure that the max. drawbar load is not exceeded.

▶ Carefully place the spare wheel on the wheel bolts of the spare wheel holder (Fig. 44 /1).

▶ Screw the wheel on tightly with the spherical collar nuts (Fig. 44 /2).

▶ Do not exceed a tightening torque of 80 Nm.

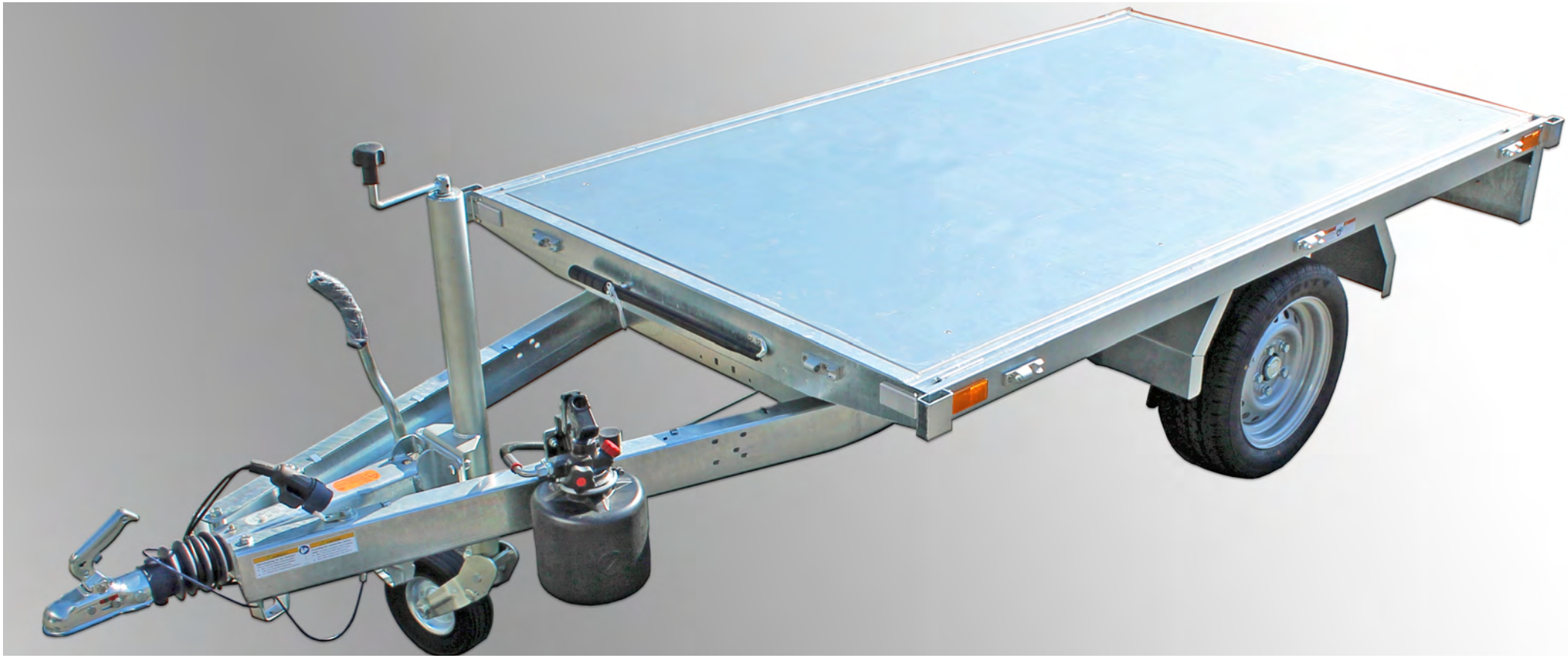
▶ Check the air pressure of the spare wheel at regular intervals.

▶ Check the secure attachment of the spare wheel at regular intervals.

The spare wheel, spare wheel holder and securing elements must be properly secured against loss. Spare wheels transported loose (on the cargo bed) must be securely tied down.

Carrying a spare wheel holder at the front of the trailer increases the drawbar load.

HUMBAUR
MACHT'S MÖGLICH



5 Load securing / Operating the body

Fig. 1 Body components

1 Front drop side
2 Side drop side
3 Tension lock
4 Rear drop side
5 Drop side hinge

The body mainly consists of:

– Side drop side
– Rear drop side
– Front drop side
– Tie-down brackets / lashing rings
– Drop side extension (optional)
– Steel mesh extension (optional)
– Aluminium extension (optional)
– H-frame (optional)
– Tarpaulin cover / frame (optional)
– Flat cover (optional)
– Cover net (optional)

Fig. 2 Danger points

WARNING

Climbing on the body

The body does not provide sufficient stability for people.

The components of the body could give way or break - Falling hazard!

▶ Do not use the components of the body as a ladder.
▶ Do not climb on trailer components such as the V drawbar,cargo bed, slot-in slats, wheels, etc. to handle the tarpaulin cover.
▶ Use a stable ladder for carrying out work on the body.

WARNING

Objects on the trailer!

Ice, snow, branches and other objects could fall from the body / cargo bed while driving - risk of accidents!

▶ Before setting off, make sure that there are no pools of water, Ice, snow, branches or other objects on the body / cargo bed.
Remove these if required.
▶ Use a stable ladder where required.

WARNING

Unsecured / slipped load

The load can fall off the trailer when opening the tensioning elements - crushing / impact risk!

▶ Ensure that the load is upright and has not slipped.
▶ Open the tensioning elements carefully and secure an unsecured load which has slipped.
▶ Open the body locking mechanisms from a position outside the swivelling ranges of the body components (drop sides).

Opening and closing drop sides / locks

The drop sides enable form-fitting load securing.

Driving with unlocked or partly removed drop sides is not permitted by law.

Drop sides are heavy!

Fitting / removal of the drop sides requires 2 persons.

Note / comply with the following without fail when handling:

– Stand to one side of the drop side before releasing the tension locks.
– Only open or close the drop sides if the cargo bed is horizontal.
– Release the tension locks in turn and hold the drop side tightly at the same time.

DANGER

Driving with open drop sides / stanchions

People may be caught and dragged along.

The load could fall off - accident risk!

▶ Before setting off, make sure that all drop sides have been closed, inserted and secured.

WARNING

Driving with partly removed drop sides

The drop sides cannot be secured - accident risk!

▶ Only drive with all the drop sides attached or with the drop sides completely removed.

WARNING

Unsecured tension locks

The drop side could open while driving – accident risk!

▶ Check that all tension locks are secured with locking springs before driving off.

CAUTION

Opening and closing drop sides and locks

Fingers / hands could be crushed when opening / closing drop sides and locks - risk of crushing!

▶ Use  .
▶ Fold the drop sides down in a controlled way - do not allow them to fall down.
▶ Do not touch a drop side you intend to latch directly in the area where the drop side stanchions / locks are.
▶ Close the hand lever with a flat hand.

CAUTION

Drop sides under pressure from a load

The drop sides could fly open when they are being opened - impact risk!

▶ Check to make sure that the goods are not pressing against the drop side before unlatching the drop side locks.
▶ If required, reposition the load beforehand.
▶ Stand to the side when opening the drop side - outside the swinging range.

CAUTION

Removed drop sides

Removed drop sides could become an obstacle - trip hazard!

▶ Do not place removed drop sides directly in the area required for loading and unloading.
▶ Lay the drop sides flat on the ground - do not place them on end.

Operating the tension lock

Fig. 3 Tension lock, secured

1 Stanchion
2 Locking lug
3 Latch
4 Bolt bracket
5 Bolt handle

The tension locks secure the drop sides in the stanchions.

Releasing the tension lock

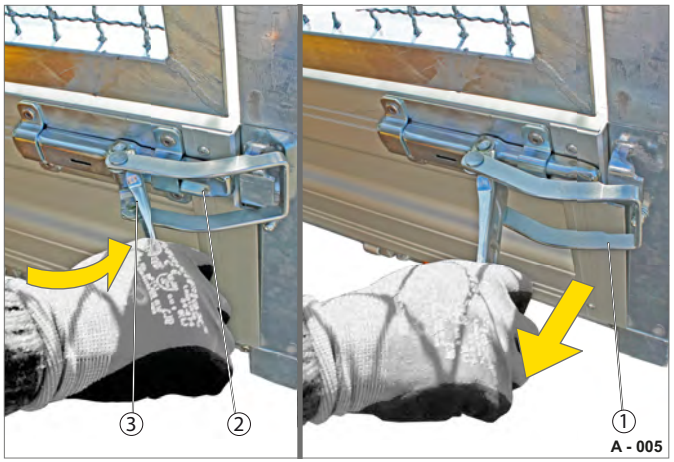


Fig. 4 Releasing the tension lock

1 Bolt bracket
2 Latch
3 Bolt handle

- ▶ Release the tension lock (Fig. 3) on one side.
- ▶ Pull the bolt handle (Fig. 4 /3).
  The bolt bracket (Fig. 4 /1) is released.
- ▶ Swing the bolt bracket downwards.
- ▶ Release the tension lock on the other side of the drop side.
- ▶ While doing so, hold the drop side with one hand.

Locking the tension lock

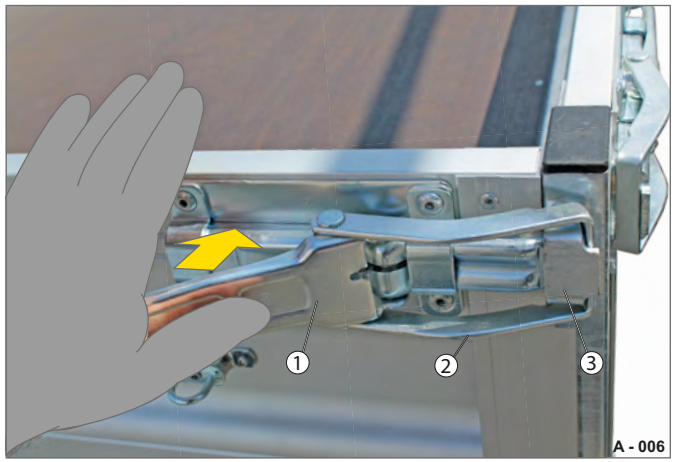


Fig. 5 Locking the tension lock

1 Bolt handle
2 Bolt bracket
3 Locking lug

- ▶ Place the bolt bracket (Fig. 5 /2) in the locking lug (Fig. 5 /3).
- ▶ Use a flat hand to press in the bolt handle (Fig. 5 /1) towards the drop side until it engages.
  The drop side has been secured against unintentional opening while driving.

Handling the front drop side

Fig. 6 Front drop side closed

1 Tension lock
2 Front drop side
3 Rubber pad

The front drop side (Fig. 6 /2) can be folded down and removed.

The front drop side enables form-fitting load securing.

Folding down the front drop side

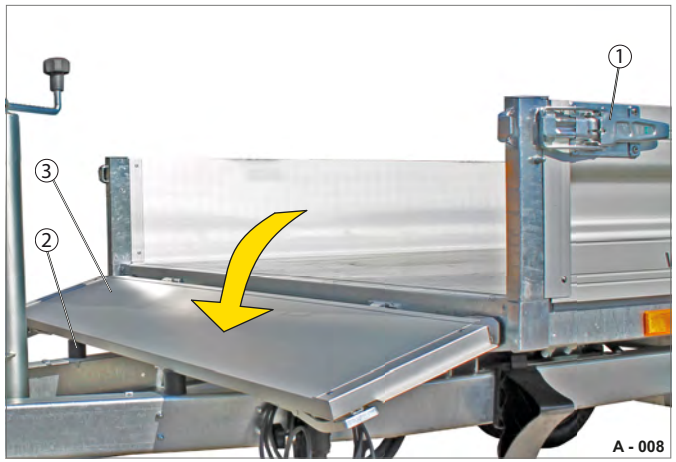


Fig. 7 Front drop side open

1 Tension lock
2 Rubber pad
3 Front drop side

Ensure that the front drop side (Fig. 7 /3) rests on the rubber pads (Fig. 7 /2).

▶Release the tension lock (Fig. 7 /1)
- see “Releasing the tension lock” on page 50.

▶ Carefully fold down the front drop side in a controlled manner.

Folding up the front drop side

Fig. 8 Drop side closed

1 Tension lock
2 Front drop side

▶ Carefully fold the front drop side (Fig. 8 /2) up in a controlled manner.

▶ Lock the tension lock (Fig. 8 /1)
- see “Locking the tension lock” on page 50.

Handing the side drop side

Fig. 9 Side drop side, closed

1 Tension lock
2 Side drop side

The side drop sides (Fig. 9 /2) are movably mounted in the drop side hinges (Fig. 10 /2).

The drop sides are secured with tension locks (Fig. 9 /2) on the left and right.

Only open or close the side drop sides if the cargo bed is horizontal.

Folding down the side drop side

Fig. 10 Side drop side, open

1 Drop side hinge
2 Side drop side

▶ Release the tension lock
- see “Releasing the tension lock” on page 50.

▶ Carefully fold down the side drop side (Fig. 10 /2) in a controlled manner.

Folding up the side drop side

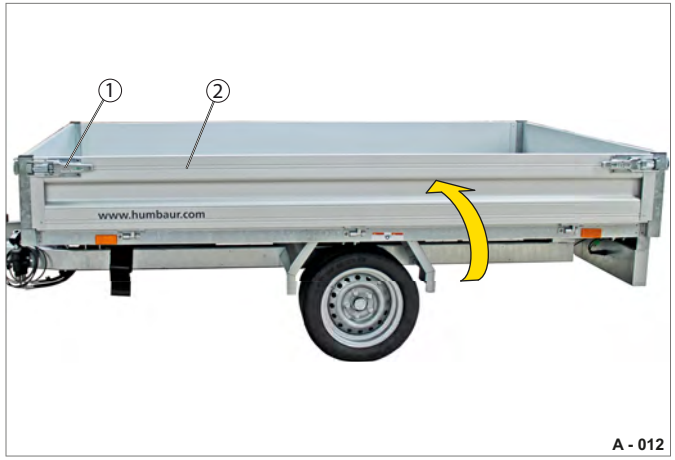


Fig. 11 Side drop side, closed

1 Tension lock
2 Side drop side

▶ Carefully fold the side drop side (Fig. 11 /2) up in a controlled manner.

▶ Lock the tension lock (Fig. 11 /1)
- see “Locking the tension lock” on page 50.

Handling the rear drop side

Fig. 12 Rear drop side closed

1 Tension lock
2 Rear drop side

The rear drop side (Fig. 12 /2) can be folded down and removed.

WARNING

Opening the rear drop side with the cargo bed tilted

The rear drop side can fly open through the pressure of the load - risk of impact / crushing!

▶ Release the rear drop side before tipping the cargo bed.

Folding down the rear drop side

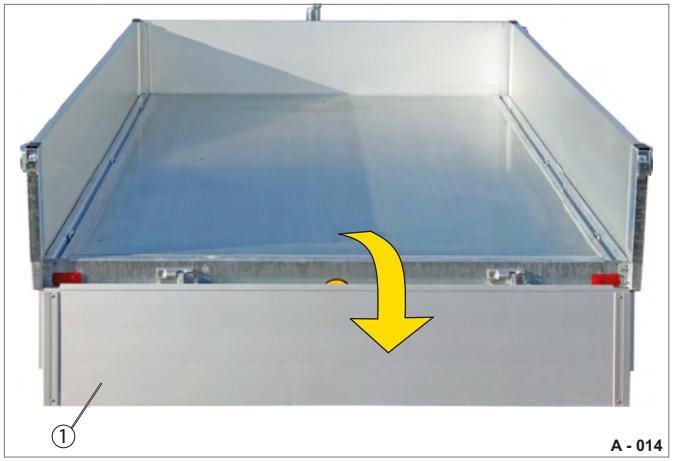


Fig. 13 Rear drop side, folded down

1 Rear drop side

▶ Release the tension lock (Fig. 12 /1)
- see “Releasing the tension lock” on page 50.

▶ Carefully fold down the rear drop side (Fig. 13 /4) in a controlled manner.

Fig. 14 Rear drop side, removed

As an option, the rear drop side can be removed for tipping moist bulk goods (e.g. soil).

▶ Remove the rear drop side
- see “Removing the drop side” on page 57.

Folding up the rear drop side

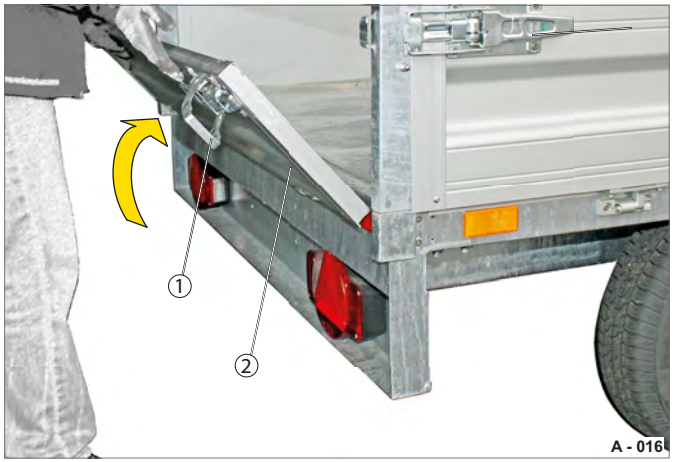


Fig. 15 Closing the rear drop side

1 Tension lock
2 Rear drop side

▶ Carefully fold the rear drop side (Fig. 15 /2) up in a controlled manner.

▶ Close the tension locks (Fig. 15 /1) of the rear drop side in turn.
- see “Locking the tension lock” on page 50.

The rear drop side has been secured with both locks.

Through-loading function

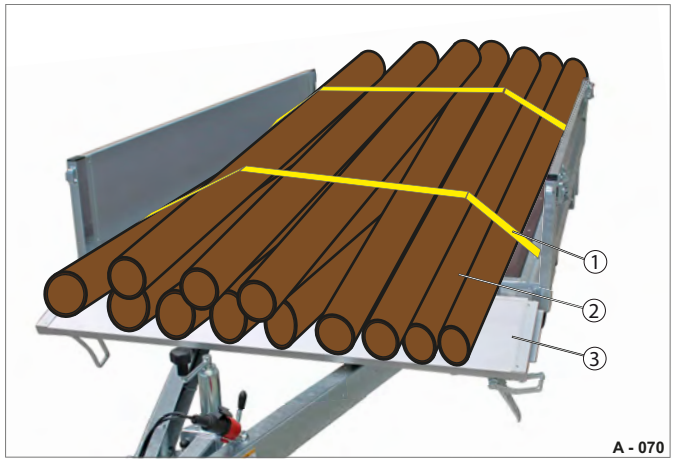


Fig. 16 Trailer with a projecting load

1 Lashing strap
2 Load
3 Front drop side

⚠ WARNING

Restricted swerving range – risk of collision!

Supporting the load on the front drop side and allowing it to project forwards reduces the swerving range when driving around bends - accident risk!

▶ When the front drop side is open, do not allow the load to project over the folded-down front drop side.

▶ Before driving off, check that the restricted swerving range will allow your towing vehicle to drive around bends.

▶ Adjust the distribution of the load (towards the middle of the V drawbar) if necessary, or remove the front drop side.

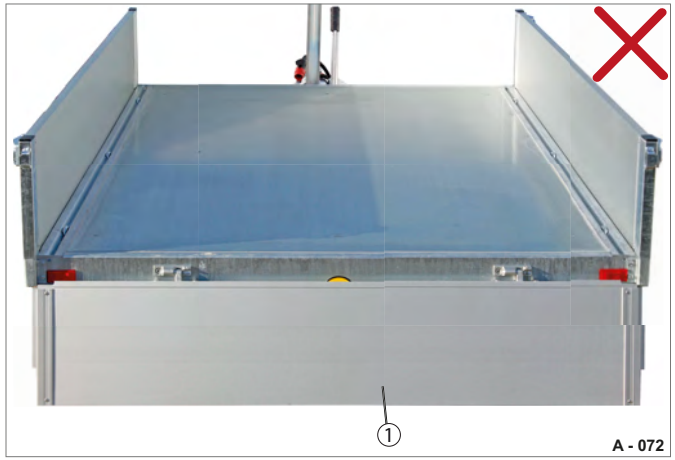


Fig. 17 Negative example of through-loading

1 Rear drop side, folded down

⚠ WARNING

Transporting with the rear drop side folded down

Rear lighting is covered.
Road safety is compromised - accident risk!

▶ Remove the rear drop side with a projecting load.

▶ Mark any projecting goods.
- Make use of the prescribed means for doing so.

The front drop side must be folded down and the rear drop side removed for through-loading.

▶ Fold down the front drop side.
- see “Folding down the front drop side” on page 51.

▶ Tie down the load at the tie-down points.
- see “Handling the tie-down points” on page 77.

Fig. 18 Through-loading function: Rear drop side closed

1 Rear drop side, closed

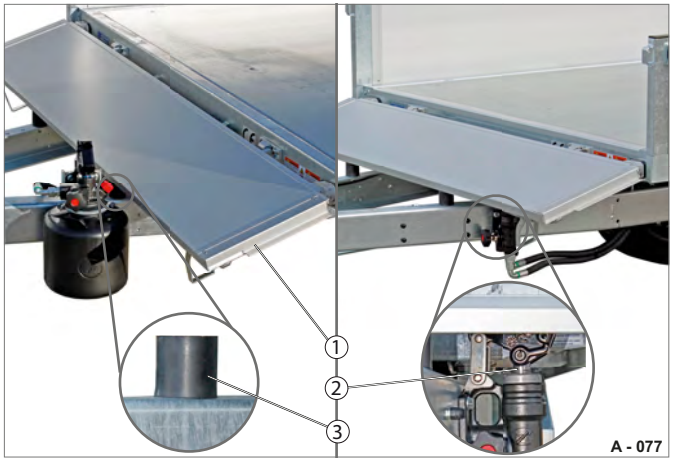


Fig. 19 Placing the front drop side on the rubber pads

1 Front drop side
2 Pump piston
3 Rubber pad

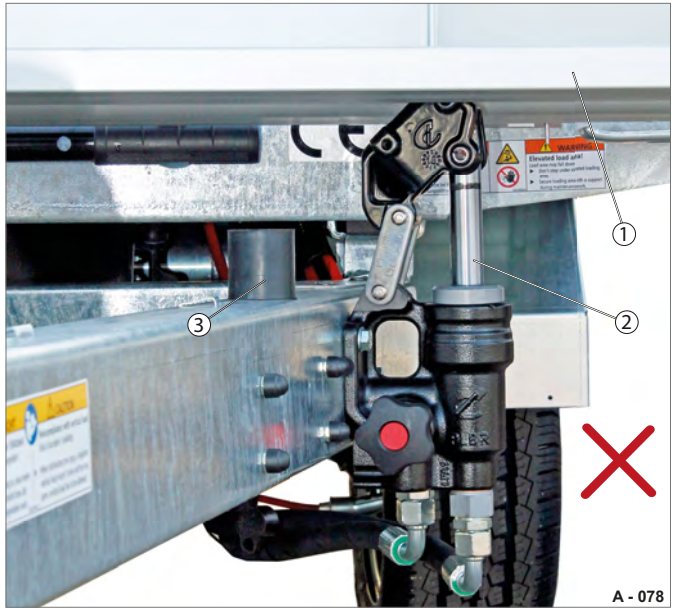


Fig. 20 Pump piston extended: Negative example

1 Front drop side
2 Pump piston
3 Rubber pad

▶ Remove the rear drop side
- see “Removing the drop side” on page 57.
or
▶ Close the rear drop side
- see “Folding up the rear drop side” on page 54,
- see “Locking the tension lock” on page 50.

▶ Retract the pump piston (Fig. 19 /2)
- see “Manual pump” on page 31 ff.
▶ Ensure that the front drop side (Fig. 19 /1) rests on the rubber pads (Fig. 19 /3) when it is folded down.

NOTICE

Placing the front drop side on the manual pump

The front drop side could be deformed.

▶ Before folding down the front drop side, ensure that the pump piston has been retracted.

The front drop side (Fig. 20 /1) may not be placed on the (extended) pump piston (Fig. 20 /2)!

Removal of the drop sides and stanchions

Fig. 21 HUK as a flat-bed trailer

Form-fitting load securing is not possible when using the trailer as a flat-bed.

Force-fitting load securing must be provided.

The drop sides and stanchions can be removed.

The trailer can be used as a flat-bed e.g. for transporting construction machinery.

Releasing the drop side

Fig. 22 Drop sides folded down

1 Stanchion
2 Rear drop side

▶ Carefully fold down the drop sides (Fig. 22 /2) in a controlled manner.
- see “Folding down the front drop side” on page 51,
- see “Folding down the side drop side” on page 52,
- see “Folding down the rear drop side” on page 53.

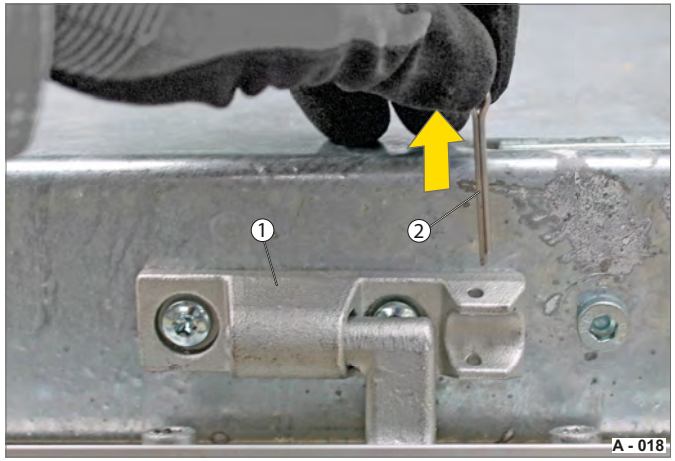


Fig. 23 Releasing the drop side

1 Drop side hinge
2 Securing split pin

▶ Remove the securing split pin (Fig. 23 /2) from the drop side hinge (Fig. 14 /1) - keep it in a safe place.

Removing the drop side

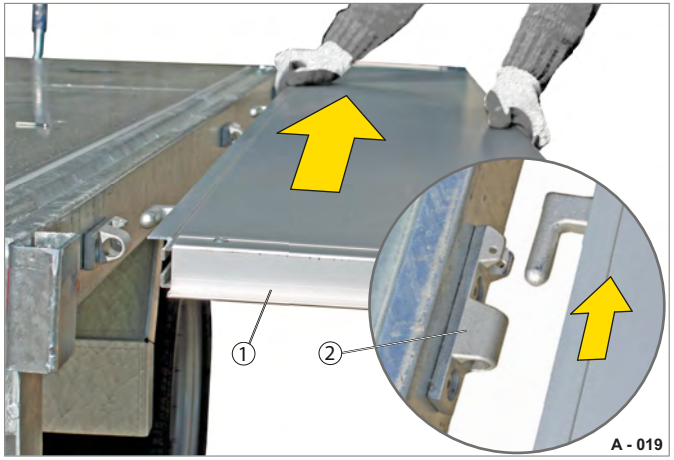


Fig. 24 Removing the drop side

1 Drop side
2 Drop side hinge

- ▶ Hold the drop side (Fig. 24 /1) lengthwise approximately in the middle.
- ▶ Fold the drop side to a horizontal position.
- ▶ Carefully pull the drop side out of the drop side hinges (Fig. 24 /2) in the direction that is now unobstructed.
- ▶ Put the drop side somewhere where it is safe from damage.

  The drop sides have been released and removed.

Removing the stanchion

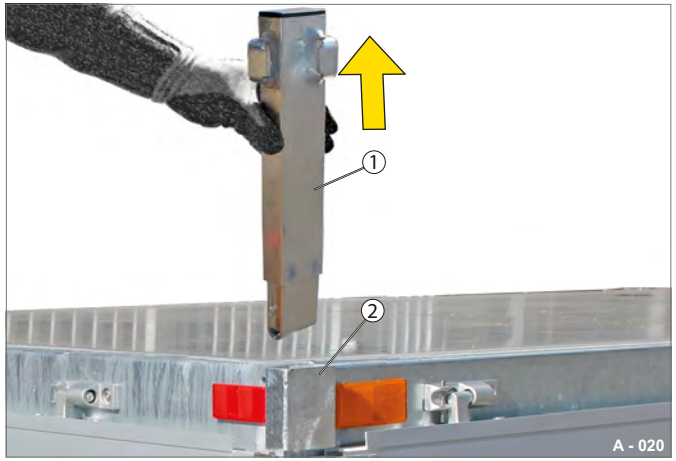


Fig. 25 Removing stanchions

1 Stanchion
2 Stanchion pocket

- ▶ Pull the stanchions (Fig. 25 /1) out of the stanchion pockets (Fig. 25 /2) .

  If the stanchions are stuck:
- ▶ Release them by carefully tapping them with a soft-head hammer.
- ▶ Store the stanchions safely to prevent damage.

Putting on the stanchion

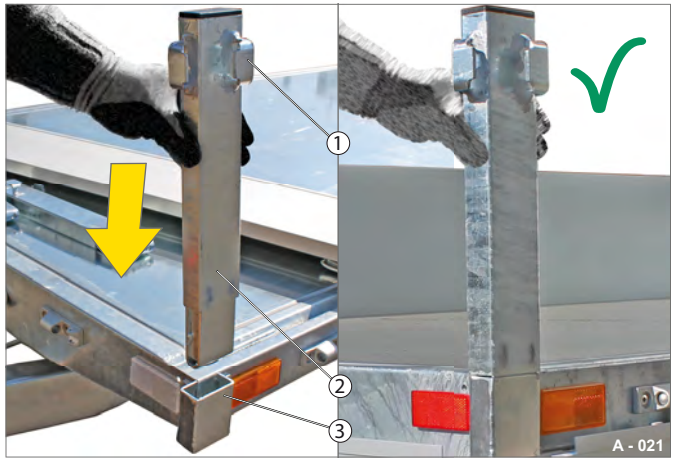


Fig. 26 Inserting the stanchions

1 Locking lug
2 Stanchion
3 Stanchion pocket

All stanchions must be inserted in order to lock the drop sides!

- ▶ Insert all stanchions (Fig. 26 /2) in the stanchion brackets (Fig. 26 /3).
  - Ensure that the locking lugs (Fig. 26 /1) point outwards.

  If the stanchions cannot be inserted by hand:
- ▶ Carefully tap the stanchions with a soft-head hammer until they go all the way in.

Putting on the drop side

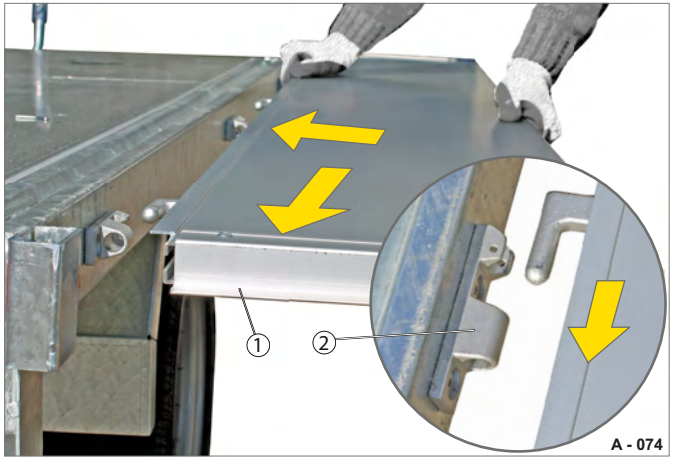


Fig. 27 Putting on the drop side

1 Drop side
2 Drop side hinge

▶ Hold the drop side (Fig. 27 /1) lengthwise approximately in the middle.

▶ Slide the drop side onto the drop side hinges (Fig. 27 /2) in a horizontal position.

Securing / closing the drop side

Fig. 28 Folding up the drop side

1 Securing split pin
2 Drop side hinge
3 Drop side

⚠ WARNING

Unsecured hinges / drop sides

The drop side could slide off / drop off the hinges when it is folded down - risk of impact / crushing!

▶ Before handling the drop side, ensure that it has been secured in one of the hinges with a securing split pin.

▶ Replace any damaged / worn securing split pins.

▶ Push the securing split pin (Fig. 28 /1) into one of the drop side hinges (Fig. 28 /2)
- spread the securing split pin slightly.
Replace any damaged securing split pins.

▶ Fold up the drop sides (Fig. 29 /1).
Tension locks (Fig. 29 /2) must have been opened,
- see “Folding up the front drop side” on page 51,
- see “Folding up the side drop side” on page 52,
- see “Folding up the rear drop side” on page 54.

Locking the drop side

Fig. 29 Drop sides secured

1 Front drop side
2 Side drop side
3 Tension lock
4 Rear drop side

▶ Lock all drop side tension locks (Fig. 23 /3).
- see “Locking the tension lock” on page 50.
The drop sides (Fig. 29 /1/2/4) have been closed and secured.

Side wall extension / steel mesh extension / aluminium extension

Fig. 30 Side wall extension

1 Side wall extension

Read and observe the assembly instructions.

The side wall extension is 350 mm high. The side wall extension can be removed if it is not needed.

The handling of the side wall extension (Fig. 30 /1) is explained separately
- see “Handling the side wall extension” on page 61 ff.

Fig. 31 Steel mesh extension, four-sided

1 Rear steel mesh extension
2 Stanchion extension
3 Side steel mesh extension
4 Rear drop side

The steel mesh extension / aluminium extension are 620 mm high and increase the load volume of the trailer.

The extensions consist of 4 steel mesh walls / aluminium extension walls and 4 stanchion extensions.

The extension walls are placed on the base drop sides and secured with locks.

The function of the base drop sides (folding down operation) remains unchanged.

Fig. 32 Aluminium extension, four-sided

1 Aluminium extension

WARNING

Fitting / removing the extensions

Extensions could fall off - risk of crushing!

▶  two people are required to handle them.

▶ Use  ,  .

WARNING

Driving with stanchion extensions inserted without extensions

The stanchion extensions are not secured and could be thrown off - risk of impact / accident!

▶ Remove the stanchion extensions when disassembling the extensions.

WARNING

Driving with unsecured extensions!

Unsecured extensions could be thrown off while driving - risk of impact / accident!

▶ Screw the stanchion extensions into the stanchions of the base drop side.

▶ Close all locks on the base drop sides before driving off.

▶ Before setting off, check that all extensions and lamellar plugs are securely attached.

CAUTION

Swinging extensions around

Swung around extensions could come out and fall down - risk of impact / accident!

▶ Don't swing around the extension walls.

▶ If required, remove the extension walls for loading / unloading.

NOTICE

Unloading coarse bulk goods e.g. stone

The rear drop side could be deformed when unloading large rocks in swinging operation.

▶ Remove the rear drop side.

Handling the side wall extension

Fig. 33 Side wall extension fitted

1 Stanchion extension
2 Tension lock
3 Stanchion
4 Drop side hinge
5 Base drop side
6 Side wall extension

The stanchion extensions must be secured in the stanchions of the base drop sides!

Read and observe the assembly instructions.

Removing the side wall extension

Fig. 34 Folding down the base drop side

1 Tension lock
2 Rear drop side

▶ Release the tension locks (Fig. 34 /1).
▶ Fold down the rear drop side (Fig. 34 /2)
- see “Folding down the rear drop side” on page 53.

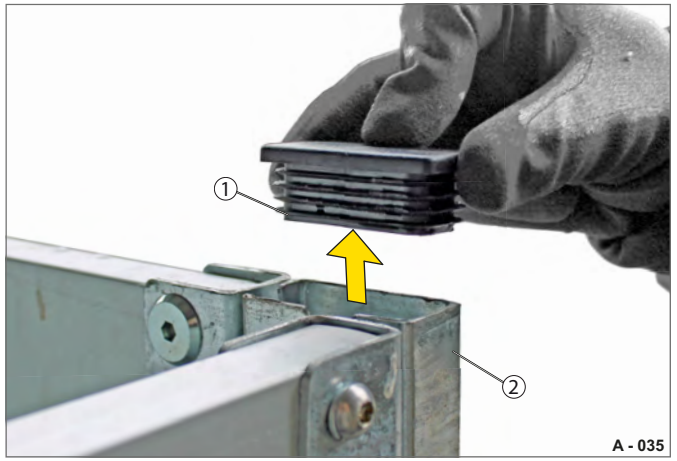


Fig. 35 Remove the lamellar plugs

1 Lamellar plugs
2 Stanchion extension

▶ Remove the lamellar plugs (Fig. 35 /1) from the stanchion extensions (Fig. 35 /2)
- use tools.
▶ Keep the lamellar plugs in a safe place.

Fitting the side wall extension

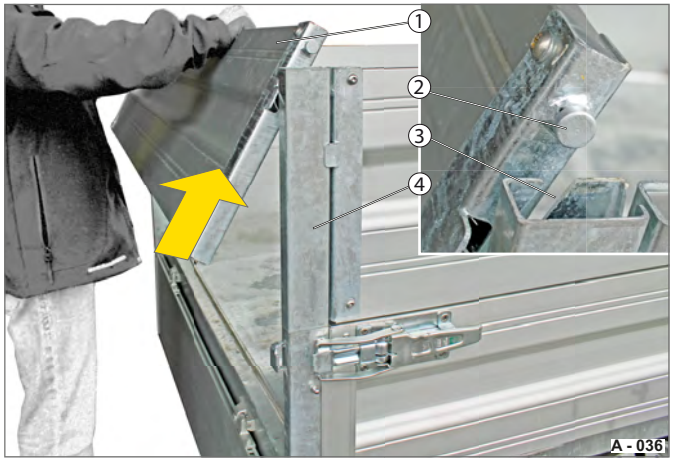


Fig. 36 Removing the side wall extension

1 Side wall extension
2 Lug
3 Guide
4 Stanchion extension

▶ Lift the wall of the side wall extension (Fig. 36 /1) out of the stanchion extensions (Fig. 36 /4) at an angle.

The lugs (Fig. 36 /2) will move out of the guides (Fig. 36 /3).

▶ Put the side wall extension somewhere where it is safe from damage.

▶ Insert the lamellar plugs slightly into the stanchions.

Fig. 37 Side wall extension removed

The wall of the side wall extension has been removed and the laminar plugs have been inserted in the stanchion extensions.

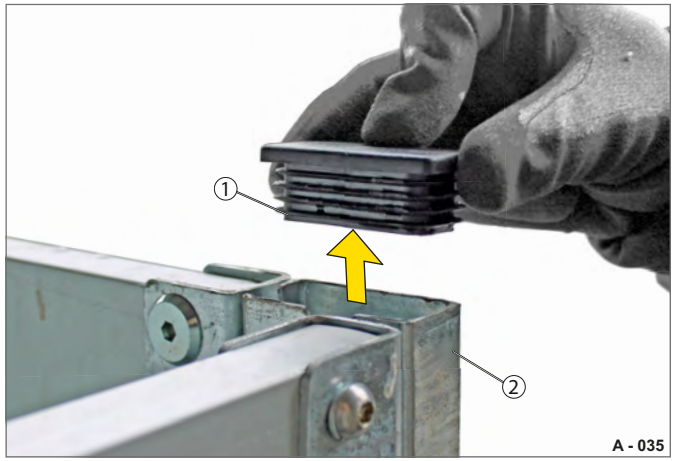


Fig. 38 Removing the lamellar plugs

1 Lamellar plugs
2 Stanchion extension

▶ Fold down the rear drop side
- see “Removing the side wall extension” on page 61.

▶ Remove the lamellar plugs (Fig. 38 /1) from the stanchion extensions (Fig. 38 /2)
- use tools.

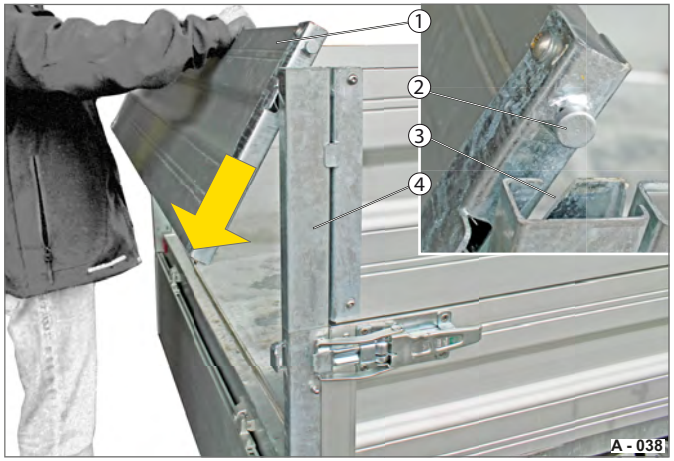


Fig. 39 Fitting the side wall extension

1 Side wall extension
2 Lug
3 Guide
4 Stanchion extension

The rear drop side must be folded down.
The lamellar plugs must have been removed.

▶ Insert the side wall extension (Fig. 39 /1) in the guides (Fig. 39 /3) of the stanchion extensions (Fig. 39 /4) by means of the lugs (Fig. 39 /2).

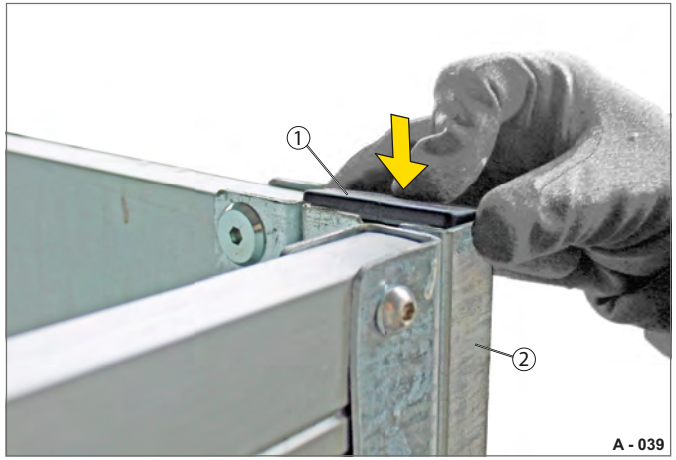


Fig. 40 Inserting the lamellar plugs

1 Lamellar plugs
2 Stanchion extension

▶ Insert the lamellar plugs (Fig. 40 /1) in the stanchion extensions (Fig. 40 /2) - tap them in gently.

Fig. 41 Folding up the base drop side

1 Tension lock
2 Rear drop side

▶ Fold up the rear drop side (Fig. 41 /2)
- see “Folding up the rear drop side” on page 54.
▶ Lock the tension locks (Fig. 41 /1) of the rear drop side
- see “Locking the tension lock” on page 50.

Fig. 42 Rear drop side / side wall extension in the driving position

Rear drop side and side wall extension have been secured.

Handling the steel mesh extension / aluminium extension

Fig. 43 Steel mesh extension, driving position

The aluminium extension / steel mesh extension is handled in the same way as the side wall extension - see “Handling the side wall extension” on page 61.

Fig. 44 Aluminium extension, driving position

Tipping to the rear / Swinging operation

Fig. 45 Folding down the rear drop side

1 Tension lock
2 Rear drop side

The rear drop side can be folded down for unloading fine-grain bulk goods such as sand and gravel.

The rear drop side can be removed if required.

▶ Fold down the rear drop side
- see “Folding down the rear drop side” on page 53.

▶ Remove the rear drop side (Fig. 45 /2)
- see “Removing the drop side” on page 57.

Fig. 46 Swinging operation of the side wall extension

1 Stanchion extension
2 Side wall extension

▶ Tip the cargo bed
- see “Manual pump - Tipping the cargo bed” on page 31,
- see “Electro-hydraulic equipment - Tipping the cargo bed” on page 36,
- see “Towing connection - Tipping the cargo bed” on page 42.

The side wall extension (Fig. 46 /2) hangs in the stanchion extension (Fig. 46 /1) and also swings.

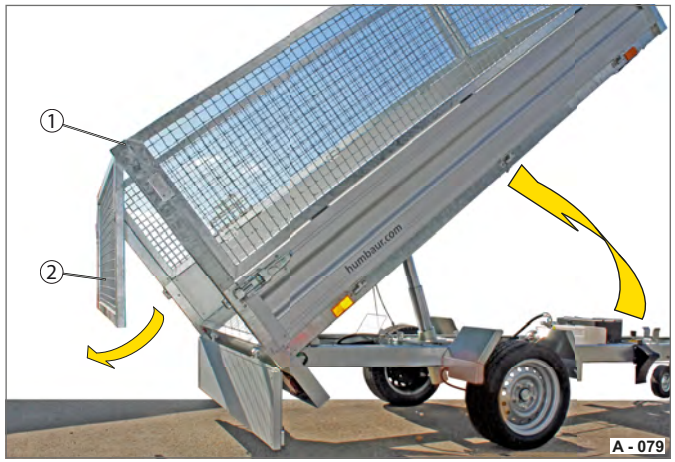


Fig. 47 Swinging operation of the steel mesh extension

1 Stanchion extension
2 Steel mesh extension

The steel mesh extension / aluminium extension is handled in the same way as the side wall extension
- see “Folding down the rear drop side” on page 53.

Fig. 48 Steel mesh extension wall swung around, negative example

1 Steel mesh extension wall at the rear
2 Lamellar plugs

CAUTION

Swinging extensions around

Swung around extensions could come out and fall down - risk of impact / accident!

- ▶ Don't swing around the extension walls.
- ▶ If required, remove the extension walls for loading / unloading.

Fig. 49 Cargo bed tipped, rear

1 Rear side wall extension
2 Cargo bed
3 Rear drop side

The rear drop side (Fig. 49 /3) has been folded down and the rear side wall extension (Fig. 49 /1) is in swinging operation.

- ▶ Fold the rear drop side up after tilting back the cargo bed - see “Folding up the rear drop side” on page 54, or
- ▶ Mount the rear drop side after tilting back the cargo bed - see “Putting on the drop side” on page 58.

Driving with the rear drop side removed is prohibited!

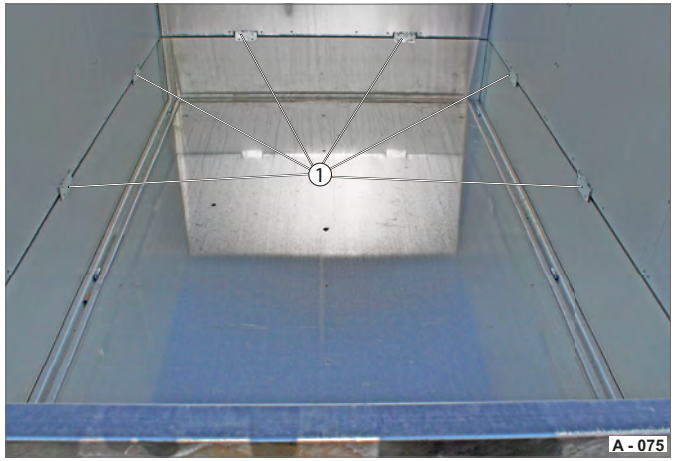


Fig. 50 Stops, inner

1 Stops, inner

The inner stops prevent the extensions from swinging through.

Handling the cover net

Fig. 51 Cover net, fitted

1 Round button
2 Cover net
3 Drop side
4 Elastic cable

The cover net (Fig. 51 /2) is stretched over the drop sides (Fig. 51 /3) and secured to the round buttons (Fig. 52 /1) with an elastic cable (Fig. 51 /4).

The cover net is for securing loose load materials e.g.: light garden waste, leaves, twigs, wood chips, grass, paper, cardboard packaging, etc. which have to be prevented from flying off the cargo bed.

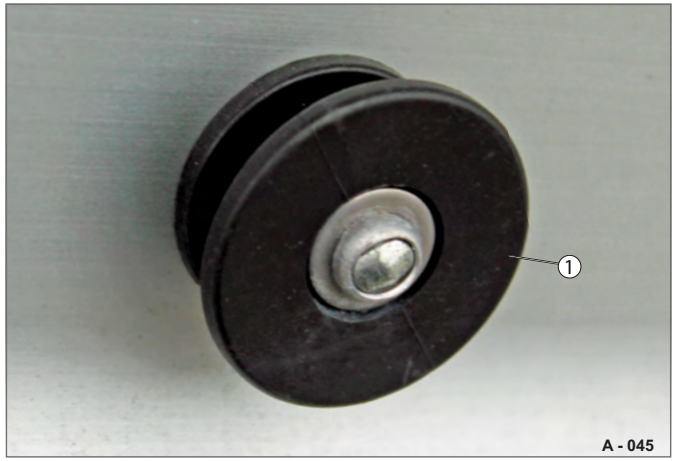


Fig. 52 Securing element for cover net

1 Round button

See the assembly instructions for attaching the round buttons.

The cover net may only be used with closed drop sides / extensions.

The cover net is not designed for securing the drop sides / extensions.

The cover net / elastic cable may not have any tears.

CAUTION

Unsecured / incompletely attached cover net!

The cover net could come loose and fly around when driving. The load could be stirred up / thrown out - accident risk!

▶Make sure that the cover net covers the drop sides completely and has been secured before driving off.

Attachment

▶ Place the cover net (Fig. 51 /2) over the cargo bed.
▶ Attach the elastic cable (Fig. 51 /4) to the round buttons in turn (Fig. 52 /1).

Removal

▶ Pull the elastic cable off all the round buttons in turn.
▶ Fold the cover net together and stow it safely away e.g. in the toolbox.

Handling the flat cover

Fig. 53 Example: Flat cover with base drop side

1 Drop side
2 Flat cover
3 Hook
4 Tension rope

The flat cover (Fig. 53 /2) can be stretched over the base drop side, side wall extensions, steel mesh extensions or aluminium extensions.

The flat cover is secured by means of tension ropes (Fig. 53 /4) and hooks (Fig. 53 /3).

The lateral bracings between the side drop sides support the flat cover and prevent damage which could be caused by accumulation of water / load.

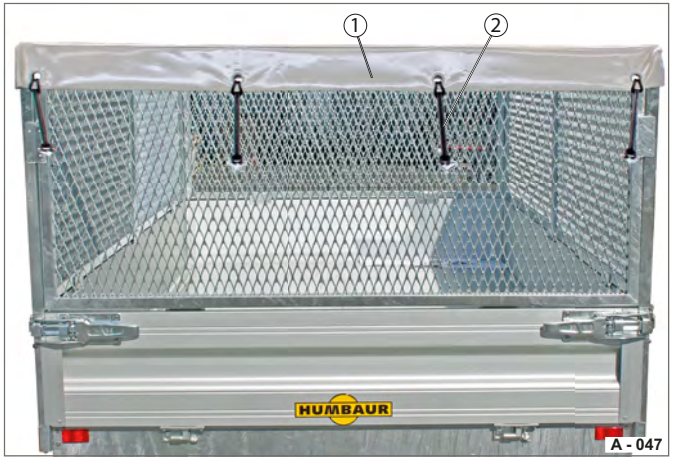


Fig. 54 Example: Flat cover with steel mesh extension

1 Flat cover
2 Tension rope

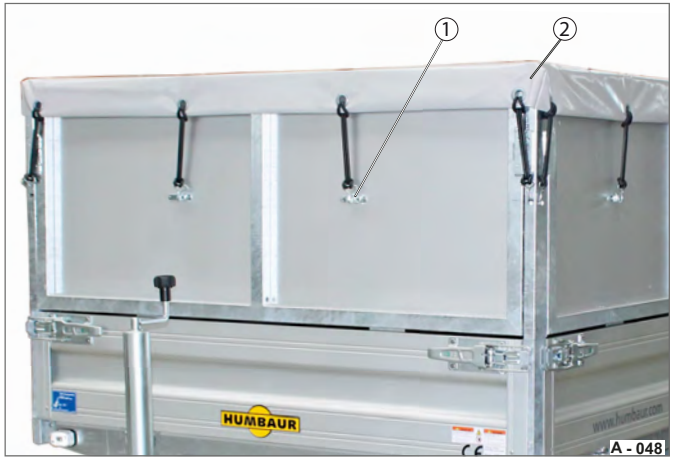


Fig. 55 Example: Flat cover with aluminium extension

1 Eyelet
2 Flat cover

Positioning the lateral bracing

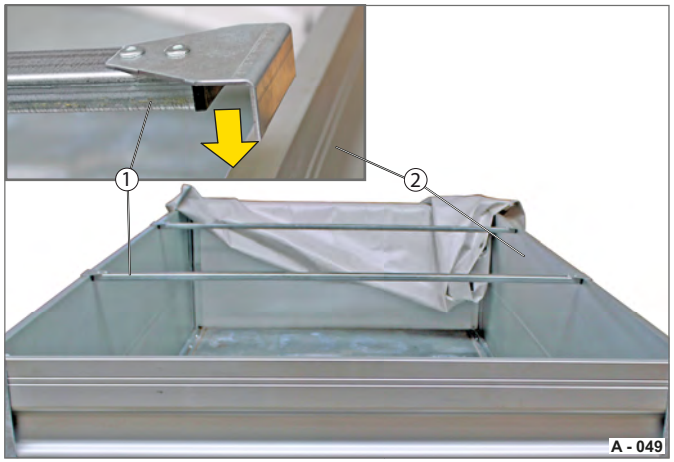


Fig. 56 Lateral bracings positioned

1 Lateral bracing with angle bracket
2 Side drop side

WARNING

Driving with the lateral bracings inserted - without a flat cover!

The lateral bracings could be thrown off while driving and hit people – risk of accident!

▶ Remove the lateral bracings before driving without a flat cover.

▶ Attach the lateral bracing (Fig. 56 /1) to the side drop sides (Fig. 56 /2).

▶ Arrange the lateral bracing in parallel at equally spaced intervals over the length of the trailer.

Preparing the flat cover

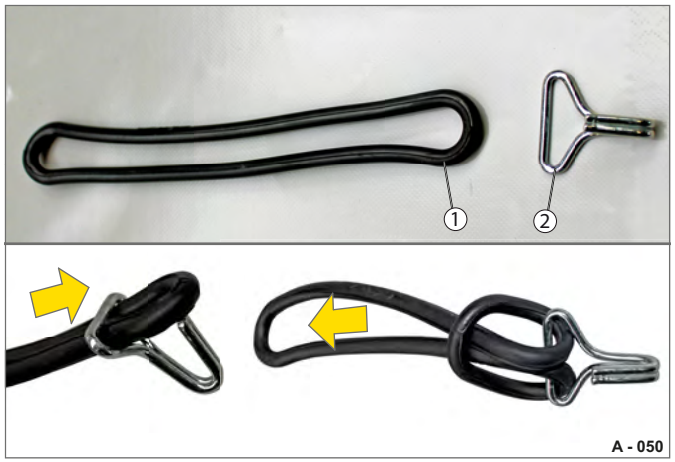


Fig. 57 Preparing a tension rope with a hook

1 Tension rope
2 Hook

▶ Thread the tension rope (Fig. 57 /1) through the hook (Fig. 57 /2).

▶ Loop the tension rope around and pull it tight at the hook.

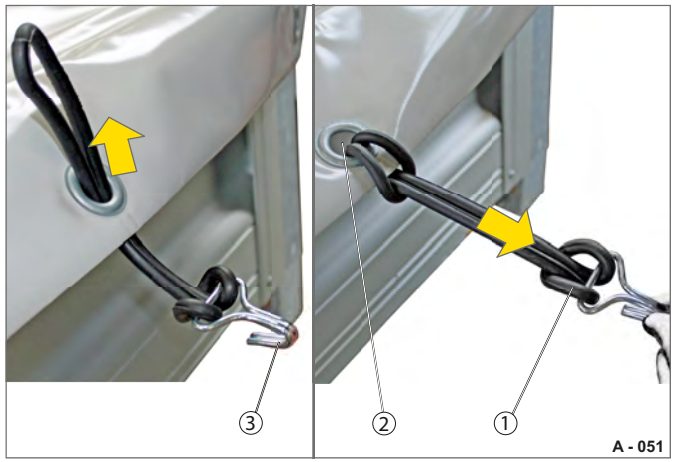


Fig. 58 Fasten the tension rope

1 Tension rope
2 Eyelet
3 Hook

▶ Stretch the flat cover over the drop sides or side wall extensions.

▶ Fasten the tension ropes (Fig. 58 /1) with hooks (Fig. 58 /3) in the eyelets (Fig. 58 /2) of the flat cover.
- Thread the tension rope through the eyelet of the flat cover and loop it around.

Releasing the flat cover with base drop side

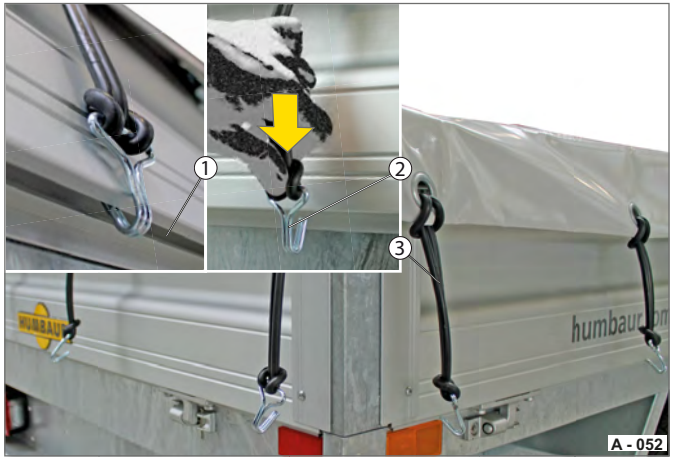


Fig. 59 Releasing the flat cover

1 Drop side slot
2 Hook
3 Tension rope

CAUTION

Tension ropes are under tension!

There is a risk of injury when adjusting the tension ropes at the hooks.

▶ Keep a firm hold of the tension ropes when making adjustments - do not let go of the ropes while they are under tension.

▶ Pull the hooks (Fig. 59 /2) out of the drop side slot (Fig. 59 /1).

Fig. 60 Flat cover opened

1 Flat cover

▶ Open and remove the flat cover (Fig. 60 /1).
▶ Fold up the flat cover evenly.
▶ Put the flat cover somewhere where it is safe from damage.

Securing the flat cover with base drop side

Fig. 61 Flat cover secured (with base drop side)

1 Drop side
2 Hook
3 Drop side slot

▶ Stretch the flat cover (Fig. 60 /1) over the drop sides (Fig. 61 /1).
▶ Secure the flat cover on all sides by inserting the hooks (Fig. 61 /2) in the drop side slot (Fig. 61 /3) of the base drop sides.

The flat cover has been closed and secured.

Flat cover with aluminium extension

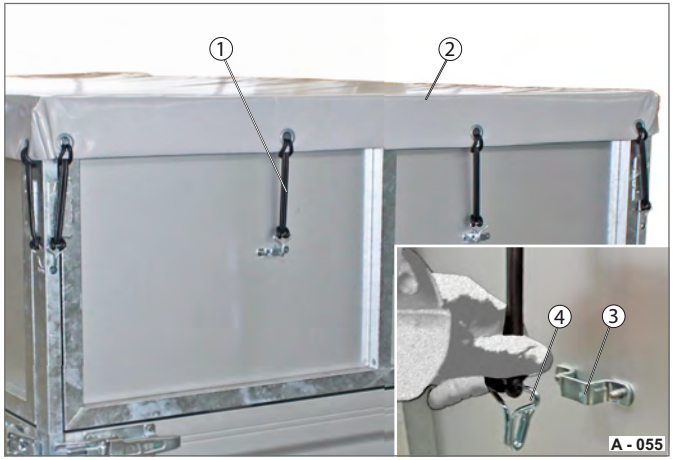


Fig. 62 Flat cover

1 Tension rope
2 Flat cover
3 Eyelet
4 Hook

▶ Pull the hooks (Fig. 62 /4) out of the eyelets (Fig. 62 /3) or holes (Fig. 63 /5).
▶ Open and remove the flat cover (Fig. 62 /2).
▶ Put the flat cover somewhere where it is safe from damage.

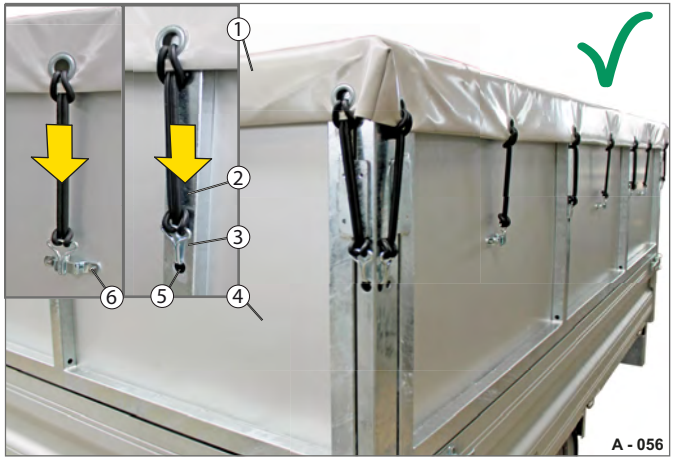


Fig. 63 Flat cover secured (driving position)

1 Flat cover
2 Tension rope
3 Hook
4 Aluminium extension
5 Holes
6 Eyelet

▶ Stretch the flat cover (Fig. 63 /1) over the aluminium extension (Fig. 63 /4).
▶ Secure the flat cover on all sides by inserting the hooks (Fig. 63 /3) in the eyelets (Fig. 63 /6) or holes (Fig. 63 / 5).

The flat cover has been closed and secured.

Flat cover with steel mesh extension

Fig. 64 Flat cover

1 Flat cover
2 Steel mesh extension

The handling of the flat cover (Fig. 64 /1) with the steel mesh extension (Fig. 64 /2) is the same as with the base drop side / aluminium extension.

The hooks are hooked into the steel mesh walls on all sides.

Handling the tarpaulin cover

Fig. 65 Tarpaulin cover, open at the side

1 Frame
2 Slat insert
3 Stanchion

The HUK trailer can be equipped with a tarpaulin cover and frame with heights of 1300 mm / 1600 mm as an option.

Instructions for handling the tarpaulin cover / frame are provided in the operating instruction manual "Trailers up to 3.5 to / Part 1 - General".

Fig. 66 Tarpaulin cover, open at the rear

1 Slat insert
2 Staple

Fig. 67 Example: Loading, at the rear

Securing the tarpaulin cover

Fig. 68 Tarpaulin cover, secured (driving position)

1 Tarpaulin cover
2 Belt
3 Staple
4 Drop side

Read and observe the assembly instructions.

▶ Secure the tarpaulin cover (Fig. 68 /1) to the drop sides on all sides (Fig. 68 /4) with the staples (Fig. 68 /3).

Handling the H-frame

Fig. 69 H-frame mounted

1 H-frame (screwed)
2 Stanchion

Instructions for fitting / removing the H-frame are provided in the operating instruction manual "Trailers up to 3.5 to / Part 1 - General".

The H-frame is used for transporting and securing long load materials.

The H-frame (Fig. 69 /1) is inserted in the front stanchions (Fig. 69 /2) and screwed in place.

Securing a load

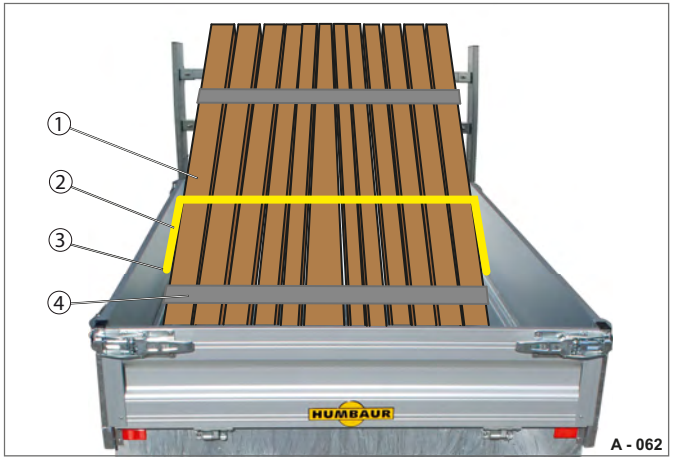


Fig. 70 Load securing with H-frame

1 Load
2 Tension belt
3 Tie-down point
4 Securing the loading unit

Long loads must be secured as individual loading units.
Driving with loose loads on the H-frame is prohibited.

The loading unit can also be tied down to the H-frame

- ▶ Use tension belts to tie down the load (Fig. 70 /1) to form an individual loading unit (Fig. 70 /4).
- ▶ Tie down the loading unit (Fig. 70 /2) at the tie-down points (Fig. 69 /3) with tension belts.
  - Ensure that the load cannot slide and is safely positioned / distributed.

General information

Many accidents are attributable to deficient load securing.

Correctly secured loads prevent:

– Personal injury
– Material damage to the load
– Material damage to trailers
– Unnecessary waiting times in traffic checks

Legal foundations / Statutory provisions

Load securing is prescribed by the legislature in Germany in the following regulations and legislation:

– StVZO (German Licensing Regulations), Section 31
– StVO (Road Traffic Regulations) Sections 22/23
– Accident Prevention Regulations for Vehicles (VBG 12)
– HGB (German Commercial Code), Section 412

On this basis, the following persons are responsible for load securing:

– Driver
– Owner
– Loader
– Consignor
– Freight company

Further information / practical tips can be found in the brochure BGI 649 "Load Securing on Vehicles":
A manual for operators, schedulers, driving and loading personnel.

Guidelines of the VDI 2700 series

These represent the state of the art of the accepted engineering standards.

– VDI 2700 Securing of loads on road vehicles
– VDI 2700, Sheet 2, Tie-down forces
– VDI 2700, Sheet 4, Load distribution plan
– VDI 2700, Sheet 6, Part-load consignment
– VDI 2700, Sheet 7, Safety of loads in combined transport

Physical foundations

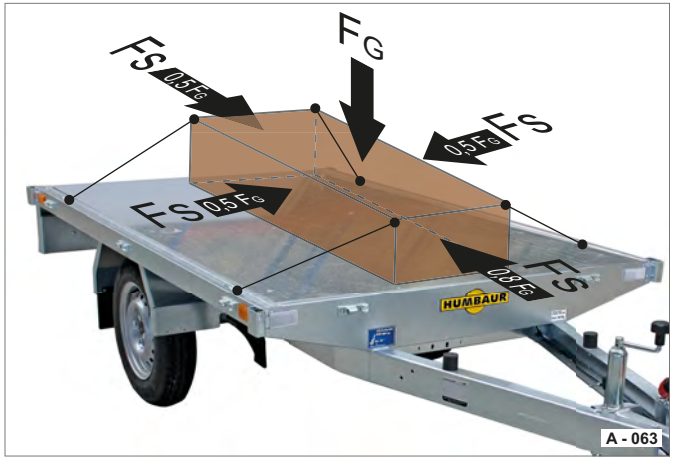


Fig. 71 Maximum inertia forces
Resulting from the dynamics of vehicle movement in road traffic
FS Load securing force,
F_G Inertial force of the load

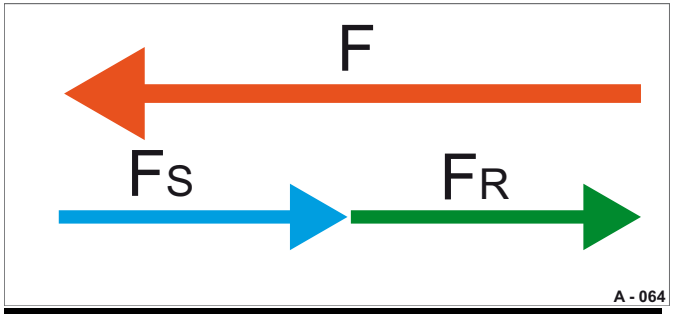
Forces caused by pulling away, braking and changing direction act on the load during driving.

These dynamic driving forces cause the load to slide if it is inadequately secured and unstable goods to tilt.

An appropriately adapted driving style minimises the arising forces and wear. It always provides an increase in safety.

Inertia force F

Force which counteracts a change in the state of movement



Tab. 1 Inertia force F

Example:

- Inertia force F_G = 2000 daN
- Maximum forward acceleration = 0.8 g
  (1 g = gravitational acceleration 9.81 m/s^2)

Result:
F_G forwards = 2,000 daN x 0.8 g = 1,600 daN (kg)

The actually required load securing force F_S is reduced by the amount of frictional force F_R (between the load and the trailer floor) in the case of stable load materials.

Further information on friction-coefficient matchings can be found in the VDI 2700 guideline.
All friction-coefficient matchings apply to clean surfaces.

Tab. 2 Sample calculation

Load securing force FS:
Force which has to be absorbed by the tie-down equipment or the trailer body

Frictional force FR: Sliding friction coefficient x weight force

Calculation formula: FS = F – FR

Example:

- Inertia force F_G forwards: 1,600 daN
- Friction coefficient μ_o = 0.3 (screen floor / pallet)
- **Frictional force** F_R = 0.3 x 2,000 daN = 600 daN

Actually required load securing force
$F_{S:}$ = 2,000 daN – 600 daN = 1,400 daN (kg).

Tab. 3 Required load securing force (F_S)

Types of load securing

Form-fitting load securing

The HUK trailer in box form with drop sides can be used for form-fitting load securing by arranging the load in a certain way.

Prerequisite:
The dimensions of the load materials and bodies match. Otherwise the gaps arising from e.g. pallets or padding have to be filled in.

Form-fitting load securing is not possible when transporting a large number of different goods.

These load materials must be secured in a way which is suitable for practical application according to DIN EN 12195 and the VDI guidelines via a large number of tie-down points according to DIN EN 12640.

Force-fitting load securing

The direct lashing and tie-down lashing of the load with tie-down equipment is covered by the term "force-fitting load securing".

Direct lashing as "oblique and diagonal lashing" is included in the form-fitting securing processes as a result of the substantially higher tie-down forces which can be obtained compared with tie-down lashing.

Prerequisite:
Tie-down points are provided at the required points on the load and trailer.

Tie-down lashing is the most common type of load securing.

In this case, the required securing force is obtained solely by increasing the friction force.

The load is "pressed" on the cargo bed by means of tie-down equipment (e.g. lashing straps).

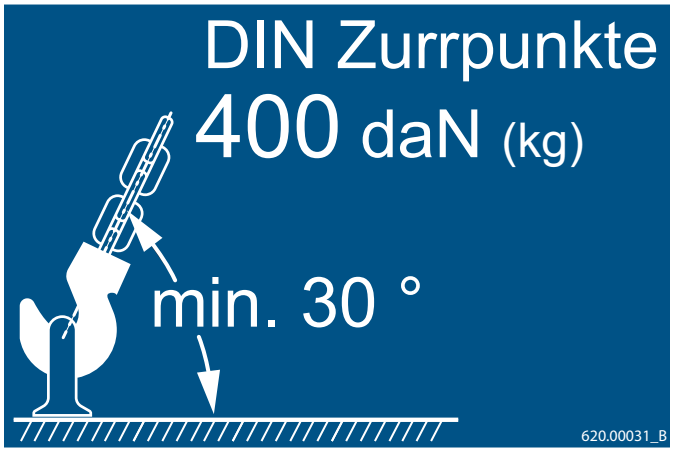


Fig. 72 Example: Lashing point sign

WARNING

Impermissible tensile loads / lashing angles

Tie-down equipment could break / tear.
The load is inadequately secured - accident risk!

▶Comply with the maximum stated values for the force specifications.

▶ Use suitable tie-down equipment.
The max. possible tension values are stated on the tie-down equipment.

▶ Do not tie down with the tensioning equipment at an angle of less than 30°.
Attach the fixing point to the top of the load materials as far as possible.

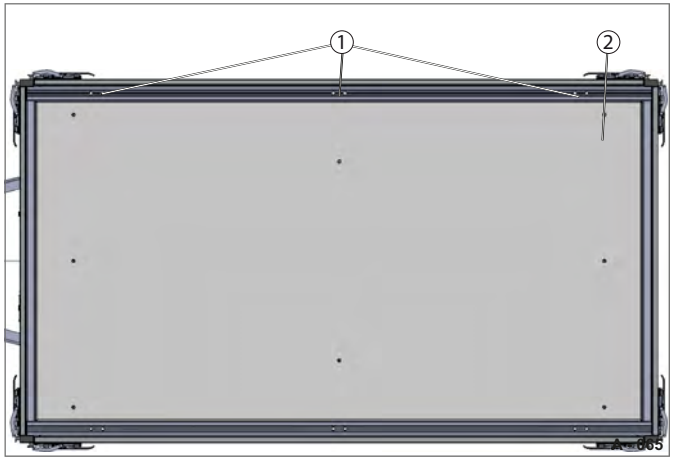


Fig. 73 Tie-down points arrangement

1 Tie-down brackets (2 pairs / 3 pairs / 4 pairs from a box length of 3100 mm)
2 Cargo bed

NOTICE

Exceeding the tie-down forces / falling below the lashing angle

Tie-down points could break.

▶ Note the stickers on the tie-down points.

▶ Comply with the following specifications:

- Maximum tension load of the tie-down points on the cargo bed: 400 daN (kg) per tie-down bracket.

▶ Only use suitable / tested tie-down equipment.

Handling the tie-down points

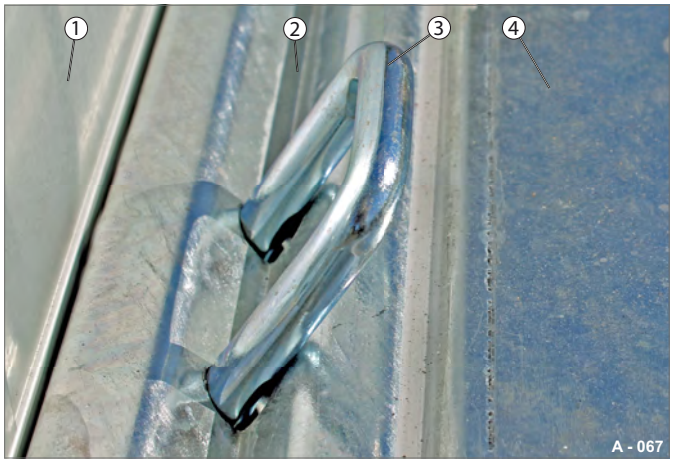


Fig. 74 Tie-down bracket (standard), 400 daN (kg)

1 Side drop side
2 V lashing rails
3 Tie-down bracket
4 Cargo bed

▶ Press the tie-down bracket (Fig. 74 /4) up from below.
▶ Retract unused tie-down brackets.

Fig. 75 Tie-down bracket retracted

Fig. 76 Tie-down bracket (optional), 800 daN (kg)

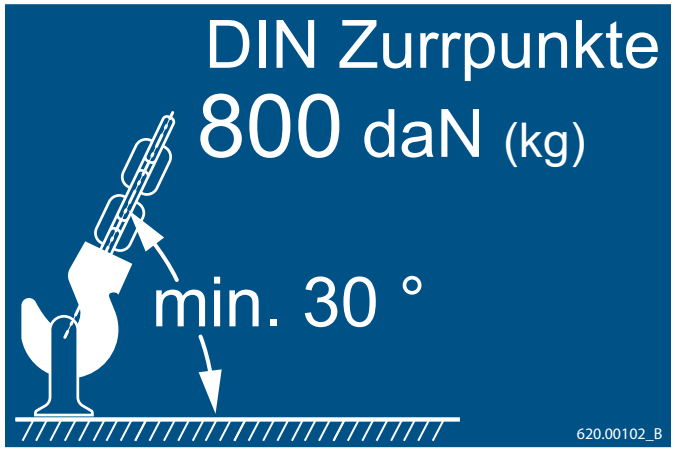


Fig. 77 Example: Lashing point sign

The HUK trailer can be equipped with retractable 800 daN (kg) tie-down brackets as an option.

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6 Electrical system

Lighting system / Electrical supply

Take note of the safety instructions and the instructions for the electric system in the operating instruction manual, “Trailers up to 3.5 to / Part 1 - General”.

The electrical lighting system operates with 12 V as standard.

WARNING

Failure of electrical functions

The road handling and the braking distance deteriorate - accident risk!

- ▶ Check that all electrical connections have been assembled before driving off.
- ▶ Check the condition of the electrical plugs and cables before driving off.
- ▶ Do not drive with cracked or defective electrical connections.

Fig. 1 Lights at the front

1 Front position lamp (2x)

Refer to the category “Electro-hydraulic equipment” on page 35 for operation of the electro-hydraulic equipment.

Refer to the category “Electro-hydraulic equipment” on page 90 for maintenance of the electro-hydraulic equipment.

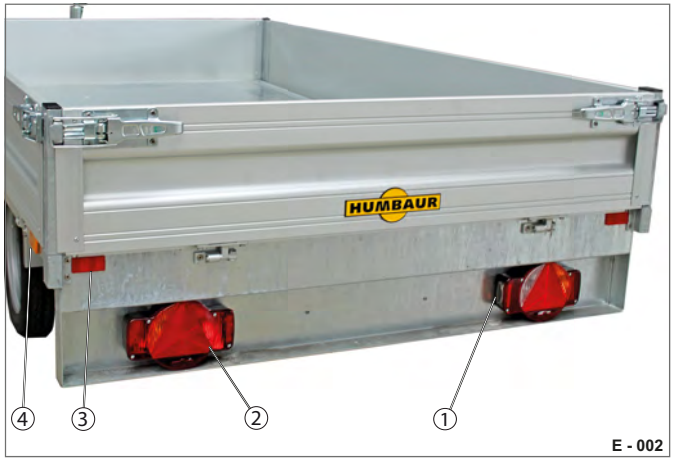

Fig. 2 Lights at the rear

1 Number plate light
2 Multi-function light
3 Rear reflector
4 Side reflector

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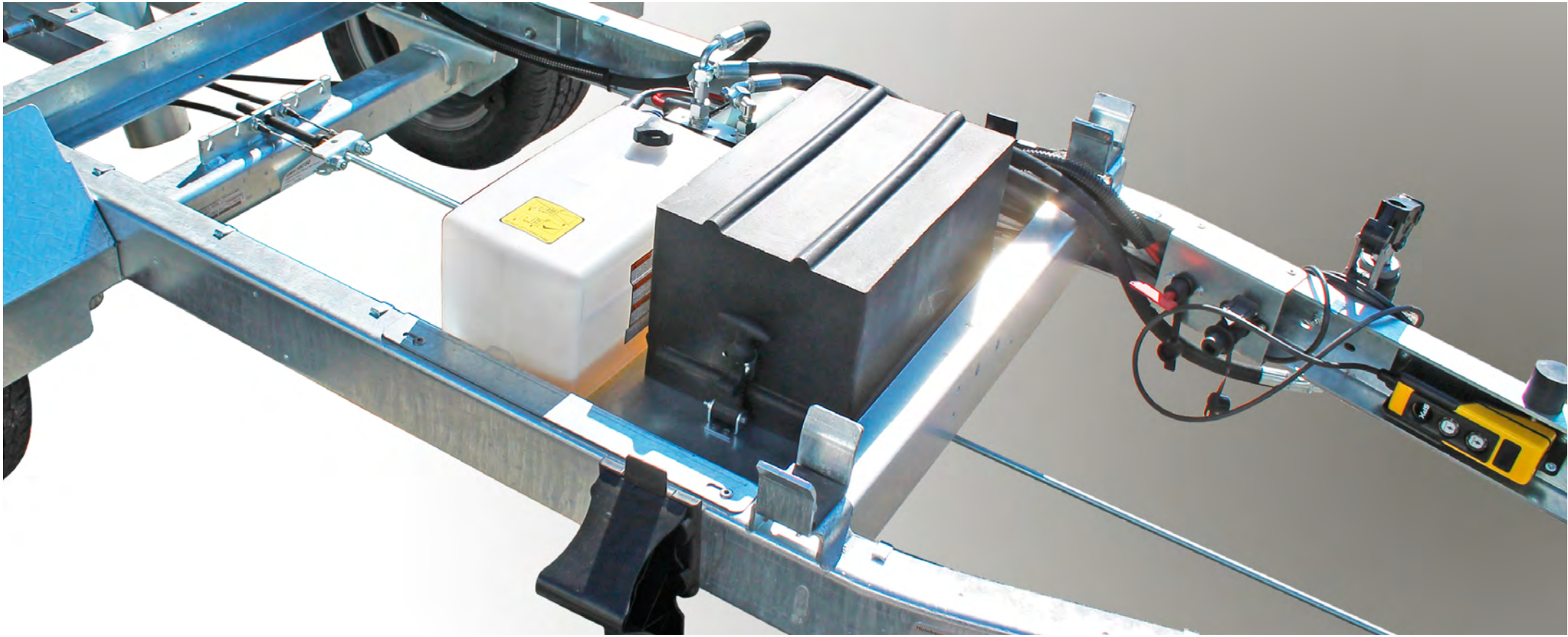

7 Testing, care and maintenance

Trailers must be inspected by a competent / qualified specialist for their condition for safe operation as and when required, but at least once a year.

This also applies to all components which are used for the load securing according to VDI 2700 or / and EN 12642.

All important mechanical components must be inspected and maintained at regular intervals for safety reasons.

These include:

- Axles
- Brakes
- Bolts
- Attachments
- Switch-off and securing mechanisms
- Electrical system / Electro-hydraulic equipment

Note:

- Comply with the accident prevention regulations for all maintenance work.
- Comply with the environmental protection guidelines.
- Switch off the engine of the towing vehicle prior to starting maintenance work.
- Ensure that the electro-hydraulic equipment has been switched off.
- Damaged tie-down points may not be repaired on any account, but must be exchanged for new parts.
- Damaged and non-functioning trailer parts must be exchanged for original spare parts of Humbaur GmbH.

Note the maintenance regulations in the operating instruction manual “Trailers up to 3.5 to / General – Part 1”.

Certain maintenance work may only be carried out by trained and qualified personnel.

The prescribed maintenance intervals must be complied with.

Proof of the HU / SP

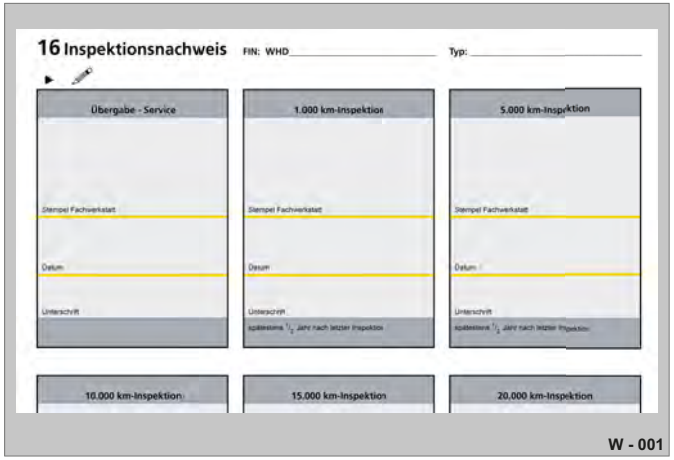

Fig. 1 Proof of inspection (in the operating instruction manual "Trailers up to 3.5 to / Part 1 - General")

HU = General inspection
SP = Safety inspection

- ▶ Enter the implemented HU / SP in the proof of inspection (Section 29, sub-section 12 of the StVZO (German Licensing Regulations)).
- ▶ Keep the latest inspection report (HU) and the latest test record (SP) at least until the next inspection / test (Section 29, sub-section 10 of the StVZO).
- ▶ Keep the inspection log book as proof until the trailer is finally taken out of service (Section 29, sub-section 13 of the StVZO).

Maintenance of axles / wheels

Fig. 2 Example: Operating instruction manual for axles

- ▶ Carry out the prescribed visual inspections and maintenance work or have them carried out by qualified specialist workshops.
- ▶ Have the inspections documented in the service booklet.

Overrun hitch

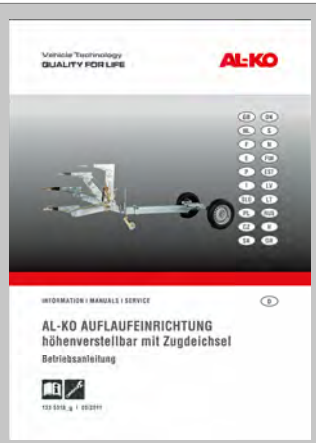

Fig. 3 Example: Operating instruction manual for drawbar

- ▶ Carry out the prescribed visual inspections and maintenance work or have them carried out by qualified specialist workshops.
- ▶ Have the inspections documented in the service booklet.

Checking the tyres

Fig. 4 Checking the wheels / tyres

1 Steel rim
2 Tyres (as selected by the manufacturer)

Tyre type	$p_{max.}$ in bar
175 / 70 R13	3.0
175 / 80 R14	3.0
185 / 60 R15	3.0
185 / 65 R14	3.0
185 / 65 R15	3.0
195 / 60 R15	3.0
195 / 65 R14	3.0
195 / 65 R15	3.0

Tab. 1 Tyre pressure / tyre size

▶ Please use the correct tyre pressure as specified in this table.

Fig. 5 Check the spare wheel attachment

1 Spherical collar nut
2 Spare wheel

▶ Check the tyre pressure / tread depth on all wheels incl. the spare wheel (Fig. 5 /2) on a regular basis and before long journeys.
▶ Use a torque wrench (80 Nm) to check that the spherical collar nuts (Fig. 5 /1) of the spare wheel holder are secure.

Using the maintenance brace

WARNING

Working under an unsecured loading bridge!

The loading bridge could drop in an uncontrolled manner - risk of impact / crushing!

People may be crushed.

- ▶ Before working under the loading bridge, make sure that it has been properly secured with the maintenance brace.
- ▶ If there is no maintenance brace, secure the loading bridge with lifting equipment, e.g. a crane.
- ▶ Keep people away from the danger area during maintenance.

The loading bridge must be secured with a maintenance brace before carrying out maintenance work.

The maintenance brace is swivel-mounted on the chassis.

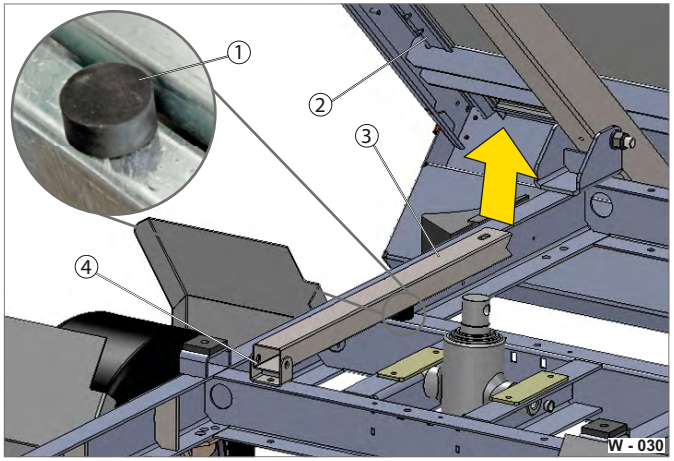

Fig. 6 Maintenance brace in the driving position

1 Rubber pad
2 Loading bridge
3 Maintenance brace
4 Fastening bracket

CAUTION

Going under a loading bridge

You can hit your head.

- ▶ Move carefully when you are under a raised loading bridge - no hurried / quick movements.

- ▶ Tip the loading bridge (Fig. 6 /2).
- ▶ Fold the maintenance brace (Fig. 6 /3) up vertically.

Supporting the loading bridge

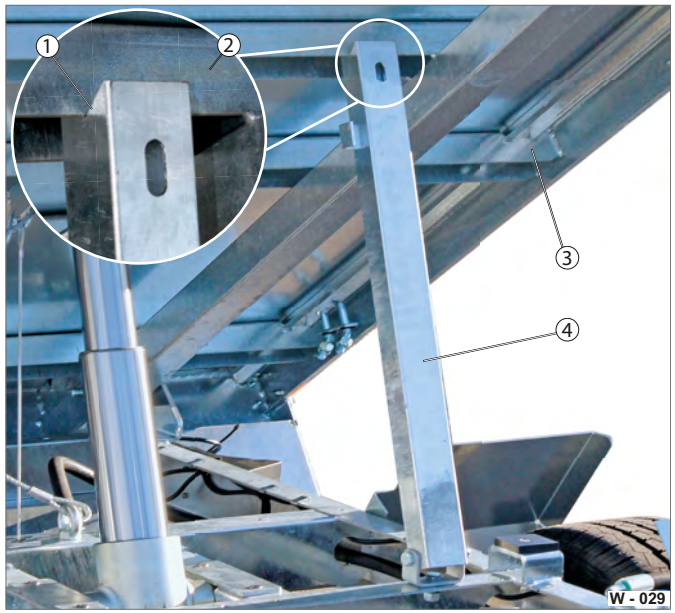

Fig. 7 Loading bridge supported

1 Notch
2 Lateral bracing
3 Loading bridge
4 Maintenance brace

- ▶ Tip the loading bridge (Fig. 7 /3) slowly on to the maintenance brace (Fig. 7 /4), so that the lateral bracing (Fig. 7 /2) engages in the notch (Fig. 7 /1).
  The loading bridge has been mechanically secured against falling down.

Parking the maintenance brace

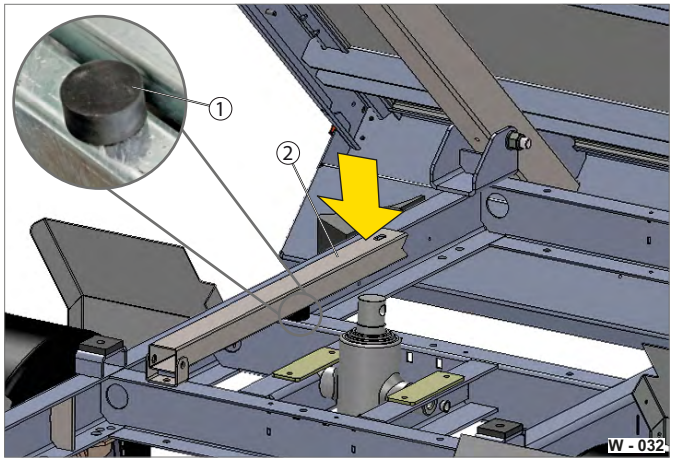

Fig. 8 Maintenance brace parked

1 Maintenance brace
2 Rubber pad

▶ Tip the loading bridge completely, so that the maintenance brace is relieved of load.

▶ Swivel the maintenance brace downwards onto the rubber pad (Fig. 8 /2).

The maintenance brace is in the driving position.

▶ Tilt the loading bridge completely back to the driving position.

The maintenance brace is secured by the loading bridge.

Telescopic cylinder

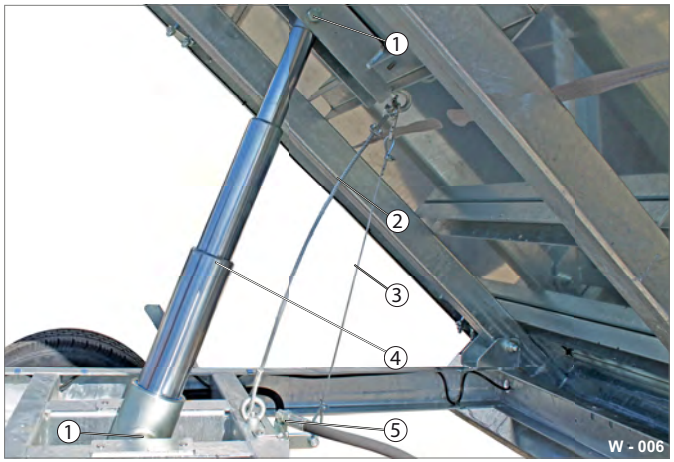

Fig. 9 Telescopic cylinder components

1 Upper / lower bearing
2 Securing cord
3 Switch-off cord (for electro-hydraulic equipment)
4 Telescopic cylinder
5 Switch-off valve / mechanism

- ▶ Check the telescopic cylinder (Fig. 9 /4) for leaks (hydraulic oil loss) and firm seating in the lower and upper bearings (Fig. 9 /1).
- ▶ Clean off any hydraulic oil that has leaked from the hydraulic components.
- ▶ Immediately repair any leaks - environmental pollution!

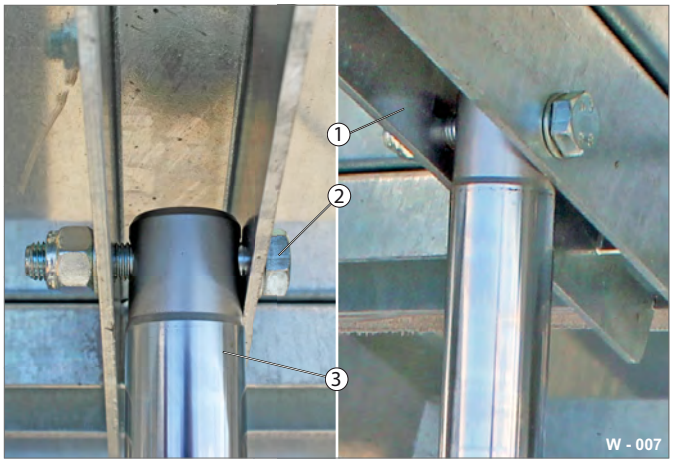

Fig. 10 Bearing at the top on the loading bridge

1 Loading bridge
2 Screw connection
3 Cylinder head

- ▶ Lubricate the top screw joint (Fig. 10 /2) on the cylinder head if required.

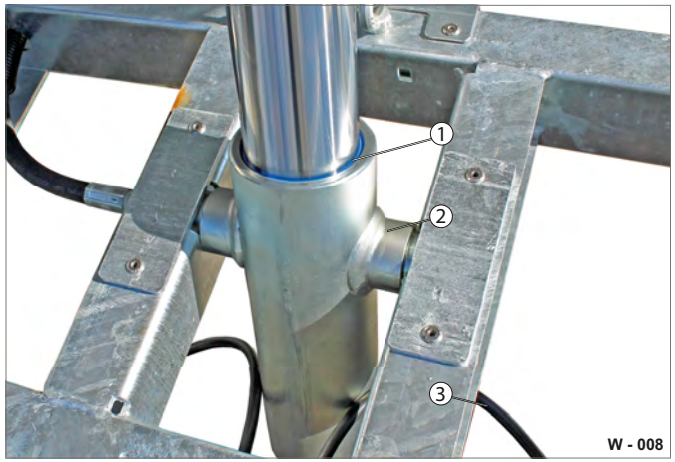

Fig. 11 Bearing underneath on the chassis

1 Wiper / seal
2 Bearing point
3 Hydraulic hose

- ▶ Grease the bearing points (Fig. 11 /2).
- ▶ Check the hydraulic hoses (Fig. 11 /3) for cracks / deformation.
- ▶ Have the hydraulic hoses replaced by qualified personnel after about 6 years.

Switch-off / securing mechanisms

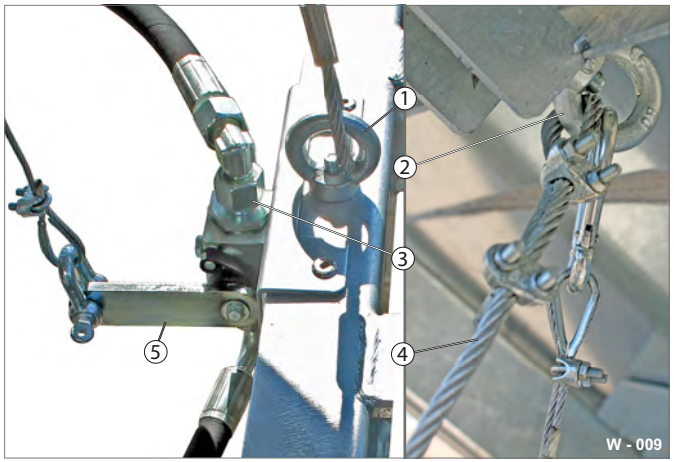

Fig. 12 Switch-off / securing mechanisms with electro-hydraulic equipment

1 Eyelet on the chassis
2 Eyelet on the loading bridge
3 Switch-off valve for electro-hydraulic equipment
4 Securing cord / stroke limiter
5 Turn off lever

The stroke limiter of the loading bridge is maintenance-free.

The stroke of the tilting loading bridge is preset in the factory. Unauthorised adjustment of the stroke limitation is not permitted!

Maintenance and repair work on the switch-off and securing mechanisms may only be carried out by trained and qualified personnel.

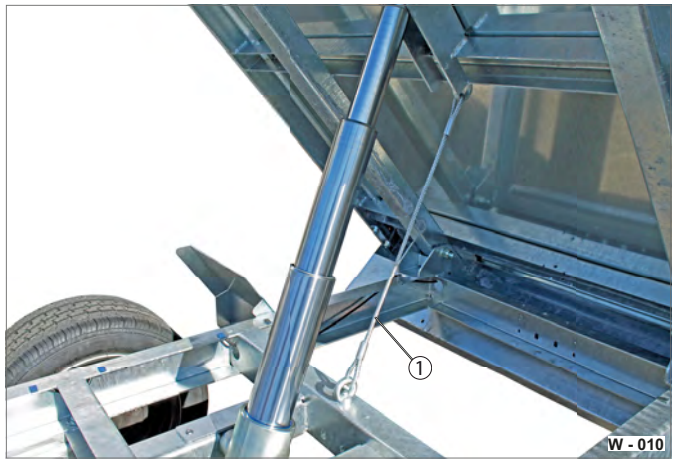

Fig. 13 Securing mechanism for manual hydraulic system

1 Securing cord

The loading bridge must be secured with the maintenance brace before carrying out maintenance / repair work.

▶ Replace any damaged components if required.

Bearing of the loading bridge

Fig. 14 Rear bearing points

1 Screw connection
2 Bearing bracket
3 Loading bridge

▶ Tip and secure the loading bridge (Fig. 14 /3).
▶ Check the screw connections (Fig. 14 /1) on the bearing brackets (Fig. 14 /2) of the loading bridge.
▶ Remove any possible contamination.
▶ Tighten the screw connections if necessary.
▶ Lubricate the rear bearing points.

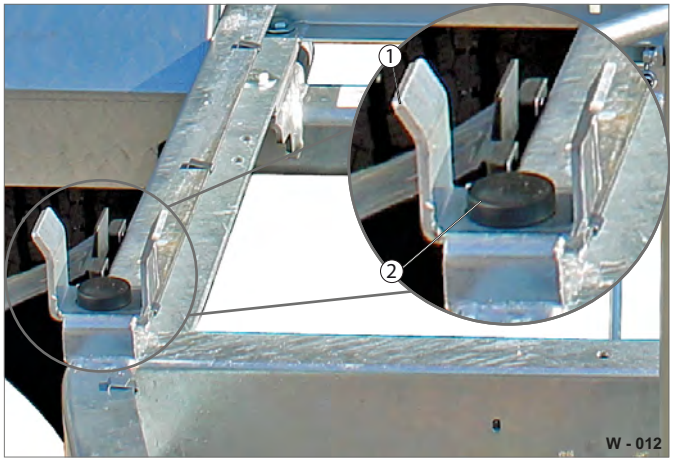

Fig. 15 Front bearing points

1 U-bracket
2 Rubber pad

▶ Check the U-bracket (Fig. 15 /1) and rubber pad for deformation (Fig. 15 /2).

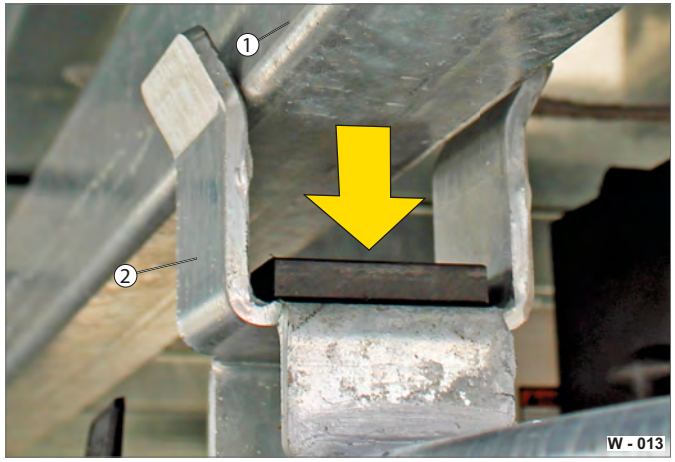

Fig. 16 Lower the loading bridge onto the chassis

1 Loading bridge
2 Front bearing point / U-bracket

▶ Tilt the loading bridge / cargo bed (Fig. 16 /1) back
- see “Manual pump - Tilting back the cargo bed” on page 33,
- see “Electro-hydraulic equipment - Tilting back the cargo bed” on page 38
- see “Towing connection - Tilting the cargo bed back” on page 43.

Safety instructions / warnings

The electro-hydraulic equipment (motor, hydraulic tank, hoses, electric cables, and connections) is low-maintenance.

However, the equipment needs to be regularly checked for damage, ageing, fracture, and material fatigue.

Maintenance / repair work may only be carried out by trained and qualified personnel.

The electro-hydraulic equipment for powered operation of the loading bridge is subject to the Machinery Directive 2006/42/EC.

The electro-hydraulic equipment may only be operated by trained personnel!

Maintenance / repair work on the electro-hydraulic equipment may only be carried out by trained and qualified personnel in a specialist workshop!

Read and follow the safety instructions from the battery manufacturer.

Batteries are subject to the EU Directive 2006/66/EC and can be returned free of charge to the manufacturer.

The utmost of caution must be exercised when removing/replacing the supply battery!

NOTICE

Using the pressure washer!

The electro-hydraulic equipment and batteries or hydraulic hoses could be damaged if cleaned with a high-pressure cleaner.

- ▶ Be especially careful when cleaning the trailer with high-pressure cleaners.
- ▶ Do not aim the water stream directly at the electro-hydraulic equipment / hydraulic hoses / electrical cables / batteries.

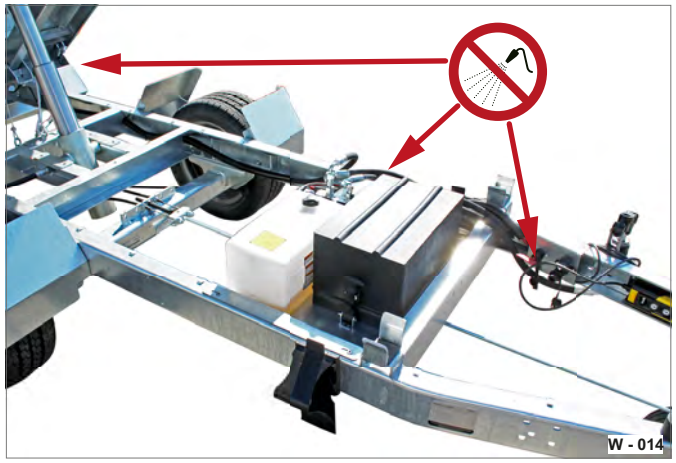

Fig. 17 Cleaning sensitive components/chassis

Batteries and rechargeable batteries are waste which has to be specially disposed of. They may not be disposed of in household waste or in the environment under any circumstances.

Hydraulic oil may not enter the environment!

Leaks must be repaired immediately!

WARNING

Danger when handling batteries!

The battery can explode as a result of spark generation or short circuits.

- ▶ Use , .
- ▶ Avoid short circuits and the formation of sparks.
  - Do not place any tools / objects on the batteries.
- ▶ Cover the terminals of the batteries prior to starting work on batteries.
- ▶ Do not smoke and keep naked flames away.

WARNING

Leaking battery acid!

Battery acid is corrosive, and if it comes into contact with you there is a danger of severe injury.

- ▶ You must consult a doctor immediately in the event of contact.

WARNING

Hot batteries!

Bridged batteries can become hot - burn hazard!

- ▶ Allow the battery to cool down before you start working on it.

WARNING

Burn hazard!

Unintentionally bridged batteries are hot!

- ▶ Eliminate the bridge-out if possible.
- ▶ Allow the batteries to cool down before you start maintenance and servicing work.

WARNING

Leaking hydraulic oil / lines under pressure

Hydraulic oil escaping under pressure can cut the skin / cause skin irritations!

- ▶ Before commencing maintenance work on the hydraulic system, ensure that the lines are not under pressure and / or they have been disconnected from the towing vehicle.
- ▶ Use , .

Checking / changing the hydraulic oil

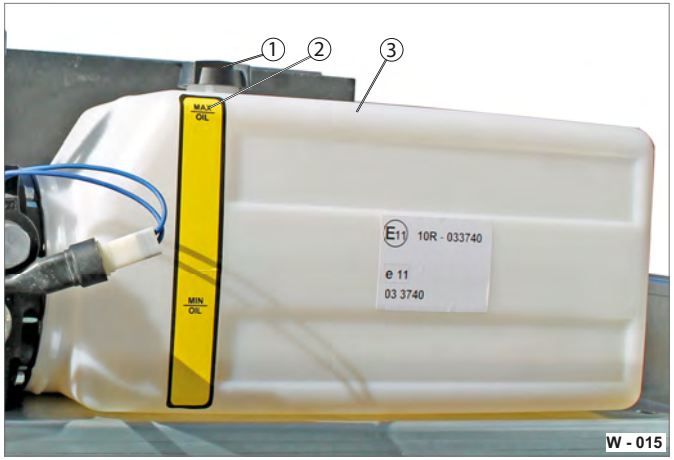

Fig. 18 Hydraulic oil container

1 Cover, oil filler spigot
2 Fill level marks
3 Hydraulic oil container

The hydraulic oil container is designed to hold a maximum of 6.0 litres.

The oil level and condition of the hydraulic oil must be checked at regular intervals (depending on the level of use, but at least every 6 months)!

Only hydraulic oils of the HLP-B series (ISO VG-46) may be used.

- ▶ Open the cover / oil filler spigot (Fig. 18 /1).
- ▶ Pour the respective hydraulic oil into the hydraulic oil container (Fig. 18 /3).
- ▶ Pay attention to the fill level marks (Fig. 18 /2).
- ▶ Have the hydraulic oil changed in a specialist workshop if required.

Checking the supply battery

Fig. 19 Covered supply battery (driving position)

1 Rubber fasteners, secured (2x)

- The supply battery supplies the electro-hydraulic equipment with a voltage of 12 V.
- Supply batteries in the form of gel or AGM batteries in a gas-tight design (no screw caps on the top) are maintenance-free according to DIN.
- Supply batteries in the form of fluid batteries with screw caps on top must be serviced at regular intervals, in order to maintain the charge capacity.

The installation date label (under the supply battery cover) reveals the age of the supply battery.

- ▶ Replace defective or old supply batteries (Fig. 21 /6).
- ▶ Prevent possible battery damage e.g. lack of charge, exhaustive discharge.
- ▶ Check the power of the supply battery at regular intervals (note the installation date label).

Supply battery - Opening the cover

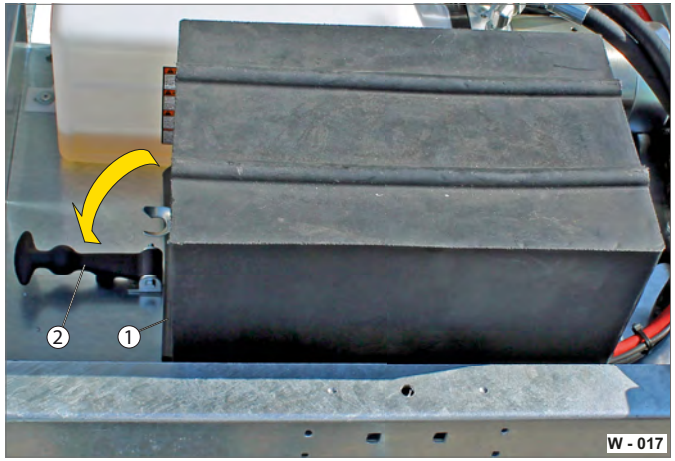

Fig. 20 Removing the supply battery

1 Supply battery cover
2 Rubber fastener, released

- ▶ Pull the rubber fastener upwards (on both sides) (Fig. 20 /2) and fold it out to the side.
- ▶ Remove the battery cover (Fig. 20 /1).

Changing the supply battery

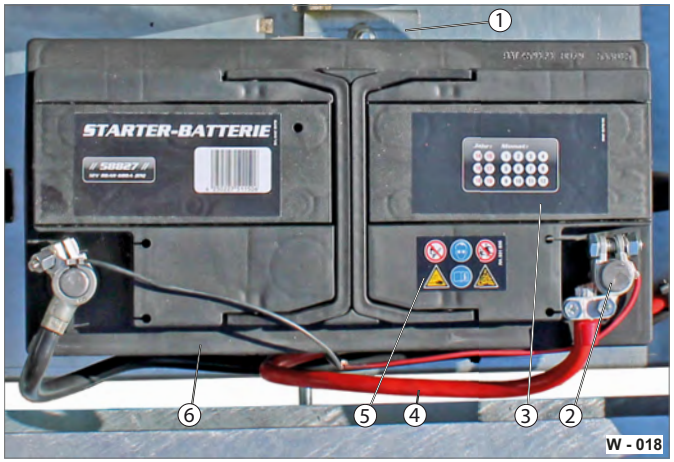

Fig. 21 Installing the supply battery

1 Clamp fastening
2 Connection terminal
3 Installation date label
4 Cable connections
5 Warning sticker
6 Supply battery

- ▶ Release the connection terminals (Fig. 21 /2).
- ▶ Remove the cable connections (Fig. 21 /4).
- ▶ Undo the screw on the clamp fastening (Fig. 21 /1).
- ▶ Carefully lift out the supply battery (Fig. 21 /6).
- ▶ Insert the new supply battery - of the same type and power.
- ▶ Fasten the supply battery with the clamp fastening.
- ▶ Attach the cable connections - ensure correct polarity.
- ▶ Firmly tighten them to the connection terminals.
- ▶ Note down the installation date of the new supply battery on the installation date label (Fig. 21 /3).
- ▶ Check that the supply battery / electro-hydraulic equipment are working correctly.

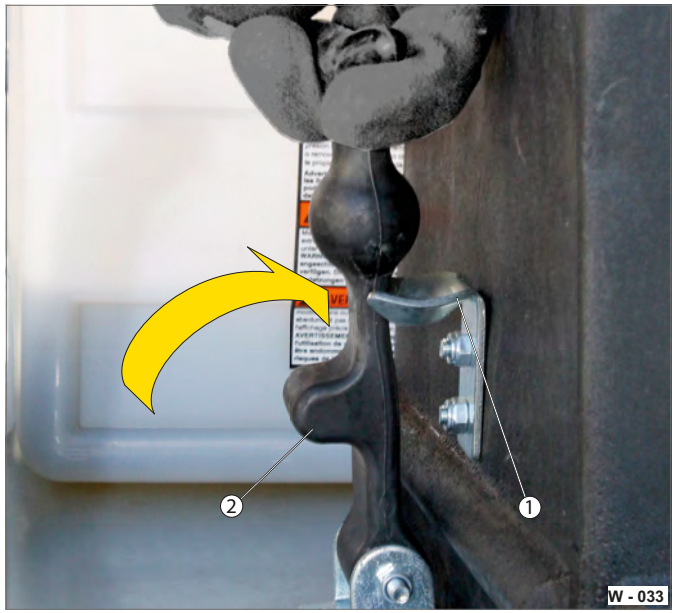

Fig. 22 Securing the battery cover

1 Locking hook
2 Rubber fastener

- ▶ Put on the battery cover (Fig. 20 /2).
- ▶ Secure the battery cover in the locking hook (Fig. 22 /1) with the rubber fasteners (Fig. 20 /2) .

Checking the charge status

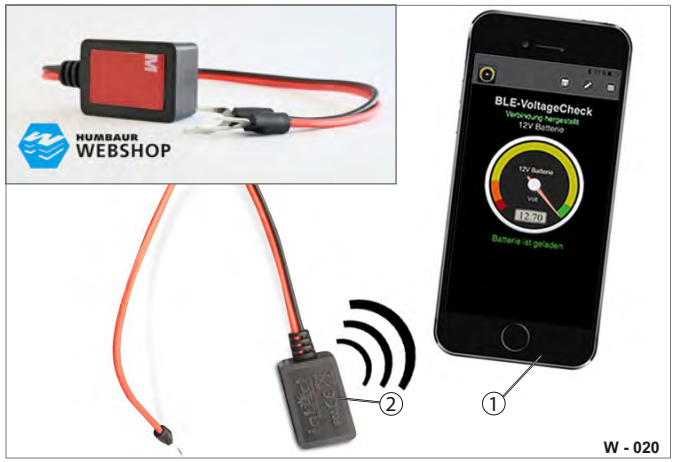

Fig. 23 Tester

1 Smartphone
2 Battery Guard

NOTICE

Discharged / low supply battery!

A discharged or low supply battery in the trailer can cause defective motor-starting relays in the towing vehicle.

- ▶ Check the power of the supply battery at regular intervals.
- ▶ Fully charge the supply battery via an external battery charger.
- ▶ Maintain the power of the supply battery via a trickle charge in the event of prolonged disuse.

- ▶ Check the charge status of the supply battery e.g. with a Battery Guard (Fig. 23 /2).
- ▶ Connect the contacts to the positive / negative terminal of the supply battery.
- ▶ Download the “IntAct Battery-Guard” app for your smartphone (Fig. 23 /1).
- ▶ Check the charge status by means of Bluetooth.

Charging the supply battery / Checking the charge status

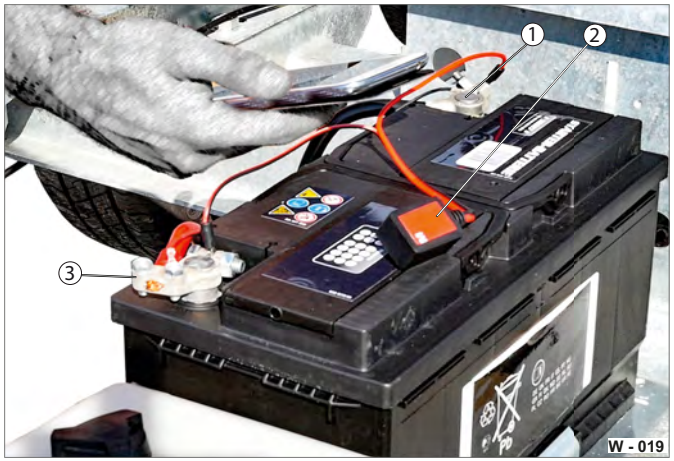

Fig. 24 Charging / checking the supply battery

1 Negative terminal
2 Battery Guard
3 Positive terminal

Charging options:

– Via an external battery charger (12 V)
– Via the battery charging plug

For fluid batteries with screw caps:

▶ Remove the screw caps on the top.
▶ Check the battery acid level.
▶ If required, top up the supply battery with distilled water up to the mark.
▶ Charge the supply battery if the power is low.

Trickle charge

Towing vehicles without a battery charging socket according to DIN ISO 11446 do not normally have a cut-off relay.

Damage to the vehicle battery and electronic system as well as exhaustive discharge of the vehicle battery could therefore occur.

The charge of the supply battery of the trailer is maintained via a charging line according to DIN ISO 11446 while driving. This is connected to the 13-pin socket on the towing vehicle.

▶ Please note this is primarily a trickle charge. This is not sufficient for a full charge of the supply battery.
If only short distances are travelled, the charging time may also not be enough for a trickle charge.

The cross-sections the cables in most towing vehicles (cars) are too small to completely charge the supply battery. The output of the alternator is usually insufficient to fully charge an additional supply battery in the trailer.

Charging by means of an external battery charger (12 V)

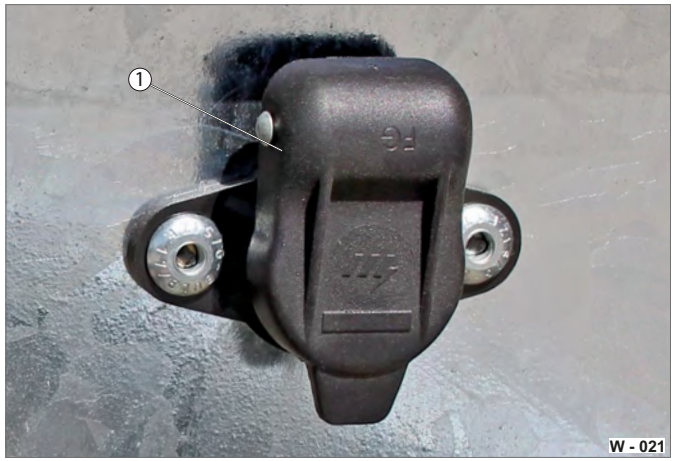

Fig. 25 Connection for battery charging plug, closed

1 Covering cap for battery charging socket

Make sure that the external battery charger is suitable for the supply battery.

Read the instructions for your external battery charger carefully and comply with the correct sequence of contact connections.

▶ Fold the covering cap (Fig. 25 /1) upwards.
▶ Connect the external battery charger to the vehicle battery in accordance with the relevant instructions.
▶ Charge the supply battery with the external battery charger.
▶ Remove the external battery charger.
▶ Close the covering cap (Fig. 25 /1).

Charging using the battery charging plug

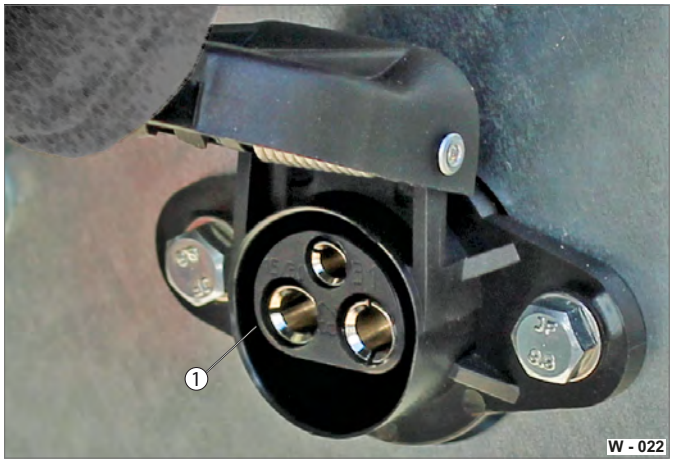

Fig. 26 Connection for battery charging plug, open

1 Battery charging socket

If your external battery charger has a compatible electrical plug, you can connect it to the battery charging plug and charge the supply battery.

▶ If your external battery charger does not have a suitable electrical plug:
Connect the charging line to the supplied battery charging plug (Fig. 27 /1).

Fig. 27 Battery charging plug inserted

1 Battery charging plug

The contacts on the battery charging plug may not be soiled / corroded. These can be treated with contact spray.

▶ Insert the battery charging plug (Fig. 27 /1) in the battery charging socket (Fig. 26 /1).

Pre-assembly of the battery charging plug

Fig. 28 Connecting the cable to the battery charging plug

1 Front section of the charging plug (with contacts)
2 Rubber sealing ring
3 Rear section of the charging plug
4 Positive conductor no. 15/30; negative conductor no. 31
5 Pin terminal No. 82 (free)

A cable cross-section of at least 2.5 mm² must be complied with!

▶ Remove the battery charging plug (Fig. 27 /1) from the battery charging socket (Fig. 26 /1).
▶ Unscrew the battery charging plug - remove the rubber sealing
ring (Fig. 28 /2) in the process.
▶ Pull the rear section of the plug (Fig. 28 /3) on to the charging line (Fig. 29 /6).
▶ Open the front section of the plug (Fig. 28 /1).

Electric hydraulic pump

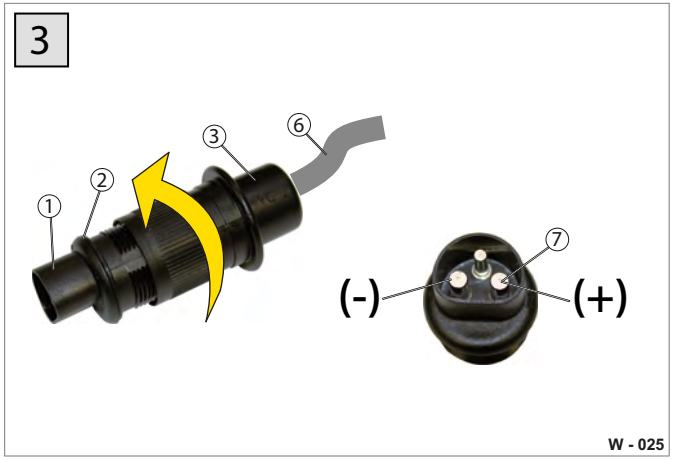

Fig. 29 Closing the battery charging plug

1 Front section of plug (with contacts)
2 Rubber sealing ring
3 Back of plug
6 Charging line, connected
7 Contacts

- ▶ Attach the positive conductor, terminal no. 15/30 (generally red) (Fig. 28 /4) to the positive terminal (Fig. 29 /6).
- ▶ Attach the negative conductor, terminal No. 31 (generally black) (Fig. 28 /4) to the negative terminal (Fig. 28 /5).
- ▶ Leave the third pin terminal No. 82 free.
- ▶ Close the front section of the plug (Fig. 29 /1).
- ▶ Push the rubber sealing ring (Fig. 29 /2) on the plug.
- ▶ Screw the plug elements together again.

The external battery charger can be connected via the battery charging socket by means of the battery charging plug.

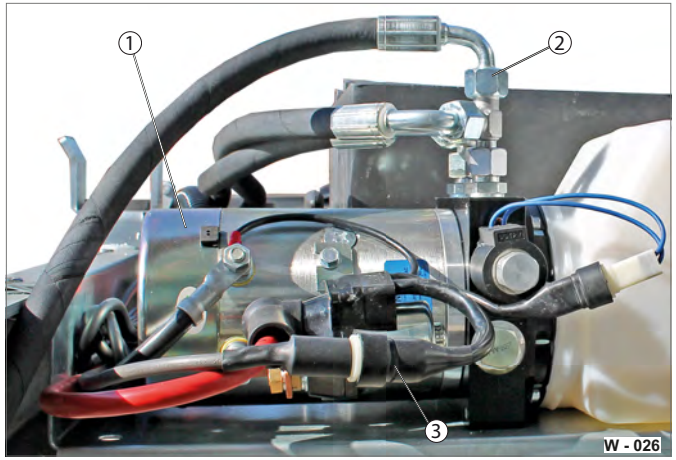

Fig. 30 Electric motor with pump

1 Hydraulic connection
2 Electric connections
3 Electric motor with pump

Maintenance / repair of the electric motor with pump (Fig. 30) may only be carried out by qualified electricians!

Trailer materials

Fig. 31 Materials / surfaces

1 Aluminium, anodised
2 Steel, hard-chrome plated
3 Soft rubber
4 Plastic
5 Steel, galvanised
6 Rubber (hoses)

The trailers are assembled from various materials.

Always take note of the specific features for care of the materials / surfaces.

When cleaning the chassis with high-pressure cleaners, sensitive components, (e.g.: electrical / hydraulic / pneumatic lines, electronic components, brake components) must be protected from direct contact with the stream!

The telescopic cylinder may not be sprayed directly.
The extensions and wipers of the telescopic cylinder must be protected from spray water.

Cleaning the trailer / cargo bed

Fig. 32 Cleaning the chassis / cargo bed

1 Tie-down points
2 Drop side hinge
3 Drop side folded down

The loading bridge can be tilted slightly for easier cleaning of the cargo bed.

The drop sides and stanchions can be opened and removed.

The cargo bed should be cleaned after any transport of bulk goods.

WARNING

Wet / smooth components during cleaning!

You could slip – risk of falling!

▶ Use , .

▶ Do not climb on the trailer components to clean the cargo bed.

▶ Use a stable ladder for the cleaning work.

▶ Open and remove the drop sides (Fig. 32 /3)
- see “Removal of the drop sides and stanchions” on page 56 ff.

▶ Tip the cargo bed.
- see “Manual pump - Tipping the cargo bed” on page 31,
- see “Electro-hydraulic equipment - Tipping the cargo bed” on page 36,
- see “Towing connection - Tipping the cargo bed” on page 42.

▶ Remove coarse debris such as grit, sand and twigs from the cargo bed / tie-down points / drop side hinges with a broom.

▶ Rinse off the cargo bed with the pressure washer.

▶ Allow the chassis and the cargo bed to dry completely after cleaning work.

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8 Troubleshooting guide

Action in the case of faults

This section contains information on possible faults in the trailer. The information should facilitate the search for the fault source and enable it to be rectified to the extent that the next service station of Humbaur GmbH can be reached.

Faults which occur as a consequence of failing to comply with the operating instruction manual or as a result of a lack of maintenance are not considered.

Unfortunately we cannot cover all the problems which may occur here.

In the case of major faults, please notify the **Humbaur Service** (see contact addresses stated below).

WARNING

Improper troubleshooting

Improper troubleshooting can cause components to fail - accident risk!

▶ Have faults rectified only by a qualified specialist workshop.

WARNING

Unsecured trailer / unexpected movement

Going under the chassis when troubleshooting - risk of crushing if the trailer starts to move unexpectedly.

▶ Make sure that the trailer is secured by wheel chocks / wooden blocks, so that it cannot roll away.

▶ Do not actuate the hydraulic system when you or anyone else go under the chassis.

Humbaur Service

Any warranty claims become invalid if the trailer or its modules are altered or disassembled without our previous written agreement.

Technical customer service

tel.: +49 821 24929 0

fax.:+49 821 24929 540

email: service@humbaur.com

Humbaur Service Partners

can be found at www.humbaur.com
under Dealers/Service > Service/Repairs

Address of the manufacturer

Humbaur GmbH

Mercedesring 1

86368 Gersthofen (Germany)

tel.: +49 821 24929 0

fax.:+49 821 24929 100

www.humbaur.com

info@humbaur.com

Spare parts

Only use original Humbaur spare parts!

Spare parts can be obtained stating the **VIN** and the part designation as follows:

- Online, email, telephone

Contact parts logistics

tel.: +49 821 24929 0

fax.:+49 821 24929 200

email: parts@humbaur.com

Fault	Possible causes	Remedy
Cargo bed cannot be lowered. Telescopic cylinder does not retract.	A line or screw connection in the hydraulic system is defective.	▶ Have the line / screw connection replaced in a specialist workshop.
	A screw connection in the hydraulic system is loose.	▶ Tighten up the screw connection.
	The hydraulic oil is too cold (viscous).	▶ Ensure that the hydraulic oil has the requisite operating temperature and viscosity.
	The hydraulic oil is too old (viscous).	▶ Have the hydraulic oil changed in a specialist workshop.
	Telescopic cylinder is frozen.	▶ Defrost the telescopic cylinder.
	Line break safety device is activated, but no leakage apparent.	▶ Use the manual pump (build up pressure). ▶ Then turn the hand wheel of the manual pump very slowly to open it (release pressure).
	Supply battery has failed.	▶ Have the supply battery replaced in a specialist workshop.
	Supply battery is too weak (empty).	▶ Charge the supply battery.

Malfunction	Possible causes	Remedy
Cargo bed cannot be tipped. Telescopic cylinder cannot be extended.	Supplied quantity of hydraulic oil is too low.	▶ Check the hydraulic oil level in the hydraulic oil container. Hydraulic oil container. ▶ Top up hydraulic oil if required.
	Excessive hydraulic oil pressure applied - with towing connection.	▶ Comply with the max. hydraulic oil pressure.
	The hydraulic oil is too viscous and too cold.	▶ Ensure that the hydraulic oil has the requisite operating temperature and viscosity.
	Hydraulic oil pressure in the system is too low.	▶ Check that sufficient hydraulic oil pressure is generated by the towing vehicle in the case of a towing connection. ▶ Check that the electric hydraulic pump is functioning and generating pressure. ▶ Check that there are no hydraulic oil leaks, e.g. cracked hoses, leaky connection points.
	Supply battery has failed.	▶ Have the supply battery replaced in a specialist workshop.
	Supply battery is too weak (empty).	▶ Charge the supply battery. ▶ Tip the cargo bed with the emergency hand pump.
	Valve wheel on the hand pump is open.	▶ Close the hydraulic oil valve wheel on the manual pump and actuate the manual pump once again.
	Telescopic cylinder is frozen.	▶ Defrost the telescopic cylinder.

We wish you a
pleasant & safe journey

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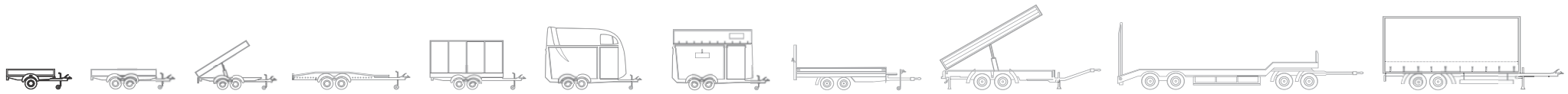
Safety note!
The trailer may only be used with express compliance with all road traffic, professional association and load securing regulations.

All illustrations are representative and may show special equipment - they are not binding. Deviations and modifications are subject to the model type. We assume no responsibility for printing or other errors or omissions.

Subject to technical modifications.
All specifications are approximate values and relate to a series vehicle without accessories.

Date: V012019



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