Single-axle flatbed trailer

Operating Instructions

Part 2 - Steely, Startrailer, HA



en





1000 Series

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4

Please enter the name of your dealer.

Notes on use/Target group

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PART 2 - Original - "Steely, HA, Startrailer" Operating Instruction Manual

This "Steely, HA, Startrailer" operating instruction manual (Part 2) is intended for you as a user of a ready-to-use trailer. It describes detailed steps for handling the Steely, HA, Startrailer trailers.

It contains all of the relevant details on safe operation, care/cleaning, maintenance/servicing, troubleshooting and decommissioning/disposing of the trailer.

This specific operating instruction manual (Part 2) for your trailer is on the enclosed CD. You can also download it from **www.humbaur.com under the section: Download - Operating Instructions**.

PART 1 - "Trailers up to 3.5 to" (General Points)

For all other general information on car trailers, see the operating instruction manual, "Car Trailers" (General Points - Part 1).

• PART 1 and PART 2 together form the complete documentation for your trailer, which you as the user should have at your disposal.



Read this operating instruction manual carefully and completely before using your trailer for the first time and observe all of the instructions, safety information and warnings. Comply with the steps for handling the trailer.

- Non-observance of any of the documentation can cause injuries to you and to other persons or can cause material damage.
- Non-observance may invalidate your guarantee entitlement.
- Keep this operating instruction manual carefully for the entire service life of your trailer.
- It forms part of the product and also serves as a CHECK LIST for regular inspections of your trailer.
- We advise you to store the operating instruction manual in the driver's cab and to keep it at hand in case you need to consult it.
- It should be passed on to the new user/owner if you rent out or sell your trailer.



2

In addition, as a road user, you are obliged to observe all national regulations for driving a vehicle and trailer and to comply with your obligations as the owner of a commercial vehicle.

- This includes regularly carrying out maintenance and care tasks and periodically subjecting your trailer to an overall technical inspection.
- You must make sure that you are aware of any special stipulations that are specific to your country.



Table of Contents

Nc	otes or	n use/Target group	2				
1	Identification						
•	1.1 Declaration of Conformity						
	1.1	Decidiation of comornity	-				
2	Product Description						
	2 1 Steely						
	2.1 Steery 2.2 Startrailer						
	2.3	HA unbraked	6				
	2.4	HA braked	6				
	2.5	HA 500 braked / unbraked	7				
	2.6	HA tilting	7				
	2.7	HA with grid ramp wall (steel grid)	8				
	2.8	HA with ramp wall (wood)	8				
	2.9	Optional accessories	9				
	2.10	Multiple variants	10				
		Components	11				
3	Intended Use						
4	Foreseeable misuse						
5	General Safety Instructions						
6	Load	ding and Unloading	13				
Ŭ	6.1 Load distribution						
	6.2	Load securing	14				
	6.2.1	Projecting goods	15				
	6.3	Load securing with extension and					
		accessories	16				
	6.3.1	Motorcycle stand	17				
	6.3.2	Wood/aluminium cover with/without rail	18				
	6.4	Loading / unloading the trailer	21				
	6.4.2	Front drop side (foldable)	25				
	6.4.3	Grid ramp wall	26				
	6.4.4	Loading ramps	28				
	6.4.5 Wooden ramp wall						

7	Driving						
8	Parking						
9	Cleaning/Maintenance/Servicing 3						
	9.1	Care/Cleaning	32				
	9.2	Maintenance/Servicing	32				
	9.2.1	Tyres/Wheels	32				
	9.2.2	Gas strut	32				
	9.2.3	Shock absorbers	33				
	9.2.4	Eccentric tension locks	33				
10 Troubleshooting 3							

11	Decommissioning/Disposal	34
11	Decommissioning/Disposal	3



1 Identification

Put a cross next to the type of trailer you have acquired.

Please read the general operating instruction manual, "Car Trailers" (Part 1).

1.1 Declaration of Conformity

Humbaur GmbH hereby confirms that all relevant EU directives for the registration and safe use of trailers of the 1000 series with accessories have been complied with.

You can request a detailed EU declaration of conformity from us separately.

Product name: Single-axle flatbed trailer

1000 Series:

unbraked

Steely Type 1:	Steely	
Startra Type 1:	iler H 752010	
HA Type 1:	HA 751611	
Type 2: Type 3: Type 4: Type 5:	HA 752111 HA 752111 with 500-mm drop side HA 752113 HA 752113 with 500-mm drop side	
Type 6: Type 7: Type 8:	HA 752513 HA 752513 with 500-mm drop side HA 752513 tilting	

braked

HA

4

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Type 1:	HA 102111	
Type 2:	HA 102111 with 500-mm drop side	
Type 3:	HA 102113	
Type 4:	HA 102113 with 500-mm drop side	
Type 5:	HA 132513	
Type 6:	HA 132513 with 500-mm drop side	
Type 7:	HA 132513 tilting	
Type 8:	HA 132513 with tailgate ramp / ramp wall	
Type 9:	HA 133015	
Type 10	:HA 152513	
Type 11	:HA 153015	



2 Product Description

2.1 Steely

The Steely is equipped with galvanised steel-plate drop sides. The rear drop side can be folded down and removed; it can be locked with two tension locks.

The 9-mm floor plate is made of multiple layers of laminated wood.

Standard knobs have been fitted for attaching a tarpaulin or cover net to the outside of the drop sides.

The Steely is unbraked with a gross weight of up to 750 kg. The Steely permits a wide range of applications for payloads of up to 630 kg.

The load is secured with 4 tie-rings positioned on the inside of the drop sides.

Optional accessories:

Side wall extension, flat cover, high cover / frame construction, cover net, spare wheel, jockey wheel, 2x prop stands, H-frame.

Sample illustrations



Steely - side front



Steely - side rear

2.2 Startrailer

The Startrailer is equipped with anodised aluminium drop sides. The rear drop side can be folded down and removed. The locks are recessed in the drop sides.

The 12-mm floor plate is made of multiple layers of laminated wood.

Standard knobs have been fitted for attaching a tarpaulin or cover net to the outside of the drop sides.

The Startrailer is unbraked with a gross weight of up to 750 kg. The Startrailer permits a wide range of applications for payloads of up to 628 kg.

The load is secured with 4 lashing rings positioned on the outside of the stanchions.

Optional accessories:

Crossbar on drawbar, side wall extension, side rail, flat cover, high cover / frame construction, cover net, spare wheel holder / spare wheel, jockey wheel, 2x prop stands, H-frame, wood/aluminium cover and rail with 2 lateral bracings for bicycle stand.

Sample illustrations



Startrailer - side front



Startrailer - side rear



2.3 HA unbraked

The HA is equipped with anodised aluminium drop sides. The rear drop side can be folded down and removed.

The locks are recessed in the drop sides.

The 15-mm floor plate is made of multiple layers of laminated wood and an anti-slip coating.

Standard (model-dependent) with foldable front drop side and tie-down brackets.

The HA is unbraked with a gross weight of up to 750 kg. The HA permits a wide range of applications for payloads of up to 625 kg.

The load is secured with tie-down brackets, integrated on the insides of the lateral drop sides.

Optional accessories:

Side wall extension, side / front + rear rail, flat cover, high cover / frame construction, cover net, spare wheel holder / spare wheel, jockey wheel, 2x prop stands, H-frame, steel grid extension, wood/aluminium cover and rail with 2 lateral bracings for bicycle stand.

Sample illustrations



HA unbraked - side front



HA unbraked - side rear

2.4 HA braked

The HA is equipped with anodised aluminium drop sides. The rear drop side can be folded down and removed. The locks are recessed in the drop sides.

The 15-mm floor plate is made of multiple layers of laminated wood and an anti-slip coating.

Standard (model-dependent) with foldable front drop side and tie-down brackets.

The HA is braked with a gross weight of up to 1,500 kg. The HA permits a wide range of applications for payloads of up to 1,248 kg. The HA comes with an overrun brake as standard, including a hand brake and reverse automatic. The load is secured with tie-down brackets, integrated on the insides of the lateral drop sides.

Optional accessories:

Side wall extension, side / front + rear rail, flat cover, high cover / frame construction, cover net, spare wheel holder / spare wheel, jockey wheel, 2x prop stands, H-frame, wheel shock absorber with 100 kph approval, steel grid extension, wood/aluminium cover and rail with 2 lateral bracings for bicycle stands.

Sample illustrations



HA braked - side front



HA braked - side rear



2.5 HA 500 braked / unbraked

Both the braked and unbraked versions of the HA 500 have a higher drop side of 500 mm as a standard fitting.

The HA 500, unbraked, with a gross weight of 750 kg, permits a wide range of applications for payloads of up to 598 kg.

The HA 500, braked, with a gross weight of 1,300 kg, permits a wide range of applications for payloads of up to 1,043 kg.

The load is secured with 4 lashing rings positioned on the outside of the stanchions.

The optional accessories are available for either the braked or unbraked HA trailers.

2.6 HA tilting

Both the braked and unbraked versions of the tilting HA have low-maintenance tilting mechanics with hydraulic shock absorbers. The "bridge" cargo bed is double-secure with two adjustable eccentric tension locks. The rear drop side has a support rope in addition to the drop side hinges; the braked version also has an aluminium tread plate.

The HA, tilting, unbraked, with a gross weight of 750 kg, permits a wide range of applications for payloads of up to 577 kg.

The HA, tilting, braked, with a gross weight of 1,300 kg, permits a wide range of applications for payloads of up to 1,046 kg.

The load is secured with 6 tie-down brackets, integrated on the insides of the lateral drop sides.

The optional accessories are available for either the braked or unbraked HA trailers.

Sample illustrations



HA 500 unbraked - side front



HA 500 braked - side front



HA 500 - side rear

Sample illustrations



HA tilting, unbraked - side front



HA tilting, braked - side front



HA tilting - side rear



2.7 HA with grid ramp wall (steel grid)

The HA 132513 with grid ramp wall (braked version) is designed to transport light vehicles with a maximum weight of 500 kg and at least 2 wheels.

The grid ramp wall can be manually folded out and is secured to the lateral drop sides with eccentric tension locks.

Sample illustrations



HA with ramp wall (steel grid) - secured



HA with ramp wall (steel grid) - unlocked



HA with ramp wall (steel grid) - lowered

2.8 HA with ramp wall (wood)

The HA 132513 with a wooden ramp wall (braked version) is a special model custom-made for specific applications.

The ramp wall can be manually folded out and is secured to the lateral drop sides with rotary lever locks. The gas struts support the lifting of the ramp wall and act as shock absorbers when lowering the ramp wall. In addition, the cargo bed can be equipped with an aluminium tread plate.

Sample illustrations



HA with ramp wall (wood) - secured



HA with ramp wall (wood) - cargo bed with tread plate

8



Optional accessories 2.9





Cover net





Flat cover







High cover / frame



Motorcycle stand

ΗA

Steel grid extension



H-frame



Rail

Startrailer, HA

Startrailer, HA

Loading ramp(s)

9

Wood/aluminium cover





Bicycle stand

Cover - rail / lateral bracing









2.10 Multiple variants



Basic component + accessories (sample illustrations)





Components

- 1. Coupling ball
- 2. Drawbar support
- 3. V-drawbar
- 4. Electric plug
- 5. Safety cable
- 6. Overrun hitch with handbrake lever, brake linkage, spring mechanism
- 7. Jockey wheel
- 8. Front drop side (facing drop side)
- 9. Front reflector / white reflector or front position lamp
- 10. Stanchion
- 11. Side reflector / yellow reflector
- 12. Lateral drop side
- 13. Wheel (tyre)
- 14. Mudguard (with / without mud flap)
- 15. Tie-down bracket, lashing ring, tie-
- down ring 16. Rear drop side (back drop side)
- 16. Rear drop side (back drop side
- 17. Cargo bed / loading bridge
- Axle / chassis / brakes
 Wheel chock
- Tail light, combined with triangular reflector, indicator, brake light, rear fog light, possibly reversing light,
- position lamp
- 21. Drop side hinge
- 22. Number-plate holder, possibly with number-plate light on side
- 23. Underride protection
- 24. Rear reflector / red reflector
- 25. Drop side lock

Accessories / extensions are explained separately in the part description below or in the operating instruction manual, "Car Trailers"

(General Points - Part 1).



3 Intended Use

- Transporting of goods, with the exception of hazardous goods, e.g. explosive, chemical or liquid materials.
- Transporting of small garden vehicles, motorcycles, bicycles, with corresponding fitted accessories and a suitable trailer type with loading aids.
- Transporting of fixed / loose loads.

4 Foreseeable misuse

- Transporting of persons or animals.
- Driving over the ramp wall with an excessive load or a high point load.
- Tipping of goods into areas where there are persons or objects.
- Tipping the cargo bed while persons are on it.
- Driving with the wood/aluminium cover / loading ramps / cargo bed / drop sides unlocked.
- Driving with side wall extensions / H-frame not bolted to stanchions.
- For "Steely" type: Driving with goods projecting over the back of the vehicle.
- Driving with insufficient load securing.
- Non-observance of the safety instructions in the operating instruction manual, "Car Trailers" (Part 1).

5 General Safety Instructions



WARNING

Opening the ramp wall!

An unlocked ramp wall may fold down and hit / bump you!

 Stand to one side when unlocking the ramp wall - not directly behind it.



Unsecured tilting cargo bed!

In tilting trailers, the cargo bed may tilt on its own while driving.

Before driving off, check that the cargo bed is secured with the eccentric tension locks.

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.
- Before driving off, check that the side wall extensions are bolted to the stanchions.



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 prop stands during loading / unloading or couple the trailer to the towing vehicle.



Observe the other general safety recommendations in the operating instruction manual, "Car Trailers" (General Points - Part 1).



6 Loading and Unloading



Single-axle trailers may only be loaded and unloaded with goods after being coupled to the towing vehicle.

6.1 Load distribution

Negative / insufficient drawbar load! Maximum permissible drawbar load exceeded!

A negative / too-low drawbar load or exceeding the maximum permissible drawbar load may result in accidents.

- Distribute the weight evenly across the trailer.
- Do not fall below the minimum drawbar load of the trailer (for trailers up to 750 kg gross weight, this is: 4% of the towed load or 25 kg).
- Do not exceed the maximum permissible drawbar load of the towing vehicle and trailer coupling.
- Where possible, make use of the maximum permissible drawbar load (see COC papers, Section 19).
 - Observe the information on the maximum permissible drawbar load in your vehicle papers and the trailer coupling.
- Do not exceed the maximum permissible drawbar load of the trailer. Observe the information on the maximum permissible drawbar load in the COC papers, Section 19.





Avoid turning your load into a projectile.

- The static force [m] is used as a point of departure for dimensioning the means of load securing.
- As the speed increases, so does the inertia / centrifugal force of the load.
- Sample calculation: $[m] = 1 \text{ kg} \sim 1 \text{ daN static force}$ [v] = acceleration speed of mass $[E_{kin}]$ Formula: $E_{kin} = \frac{m \cdot v^2}{2}$

at 0 kph = 1 kg kinetic energy at 40 kph = \sim 600 kg kinetic energy at 80 kph = \sim 2,400 kg kinetic energy



Vehicle standing still



Fully braked at 40 kph



Forces acting on trailer when fully braked

Conclusion:

- When doubling the speed, the kinetic energy that can be released by the unsecured load when the trailer is fully braked increases four-fold.
- Wrongly / poorly distributing the load results in serious accidents, even at low speeds.
- Overloading the trailer means intentionally producing a risk, which can result in the trailer skidding and meeting with a serious accident even after a minor steering manoeuvre, a bump in the road or a gust of wind!



Forces to be secured against skidding

- Securing at the front (when fully braked) 0.8 or 80% of the static force: e.g. 500 kg must be secured with 400 daN
- Securing at the side / rear (when swerving / starting / driving round bends)
 0.5 or 50% of the static force:
 e.g. 500 kg must be secured with 250 daN



- Counteract the potential release of forces by:
- Correct load distribution
- Using adequate means to secure the load in accordance with its weight (tie-down equipment, tie-down points)
- Using anti-skid materials (anti-slip mats)
- Correctly attaching the load, e.g. with a cover net, tarpaulin or cover
- Adapted speed
- Additional accessories (H-frame, side wall extensions)

Correct load distribution



Load correctly distributed

- Centrally aligned (balanced load)
- Heaviest load positioned above axle
- Form-fitted at front and rear

Incorrect load distribution



Load incorrectly distributed



Load incorrectly distributed

- Eccentrically aligned (one-sided load)
- Too far forward or too far back
- Load not form-fitted
- Proper tie-down not possible

6.2 Load securing



Loose load not secured



Secured with cover net

1. Cover net



Secured with flat cover

2. Flat cover



Secured with high cover / frame

3. High cover / frame





Secured with form-fitting and tie-down

4. Lashing strap



Secured with tie-down



Wrongly secured / loaded

- 5. Long load, supported on rear drop side
- Preferably secure the load as a combination of form-fitting and force-fitting:
 - Force-fitted by: direct tie-down of the load.

- Form-fitted by: supporting the various components of the load against each other, against the drop sides and against the cargo-bed extensions, without spaces in-between.

6.2.1 Projecting goods



Goods that project over the cargo bed or drop sides must be marked in accordance with Section 22 of the StVO (German Road Traffic Act).

For the "Steely", the goods generally must <u>not</u> project beyond the back of the trailer!



Marking goods

- 1. Sign / flag (30 cm x 30 cm) or cylindrical body (ø 35 cm x 30 cm), bright red
- Check that your load does not exceed the maximum permissible values according to Section 22, "Goods", of the StVO.
- Mark any projecting goods.Make use of the prescribed means for doing so.
- Do not load the goods too far forward.
 The required swerving range for driving around bends must remain open!



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!

- Remove the front and rear drop side.
- Before driving off, check that the restricted swerving range will allow you towing vehicle to drive around bends.
- Adjust the distribution of the load (towards the middle of the drawbar) if necessary.



Through-loading (wrong load securing)

- 1. Front drop side, folded down
- 2. Lashing strap around the drop side
- 3. Rear drop side, folded down (held with lashing strap)
 - Only tie the goods to the tie-down points provided for that purpose.



6.3 Load securing with extension and accessories

Tying down goods



Steely - tie-down points

 Tie-rings, inside of side drop sides (permissible tie-down forces = max. 120 daN (kg))



Startrailer / HA 500 - tie-down points

2. Tie-down ring, outside of stanchions



HA - tie-down points

3. Recessed tie-down bracket, inside of lateral drop side (permissible tie-down forces = max. 400 daN (kg))



Optional / additional tie-down points

4. Tie-down ring recessed in tie-down groove in loading platform

(permissible tie-down forces = max. 400 daN or 200 daN (kg))



Optional / additional tie-down points

- 5. Folding rings on the loading platform
 - Tie down the load.
 Do not exceed the maximum permissible tie-down forces per tie-down point.
 - Where applicable, take note of the sticker providing information about the maximum tie-down forces on the trailer.





Tie-down of load

- 1. Tie-down point
- 2. Tie-down equipment (tension belt)
- 3. Tie-down force information
 - Adhere to the maximum tie-down force for the tie-down equipment (e.g. tension belts).



6.3.1 Motorcycle stand

Functional explanation

- With the proper tie-downs, a motorcycle stand can be used for safely transporting a motorcycle.
- The motorcycle stand serves as a limit stop and is mounted in the centre of the cargo bed.
- The motorcycle stand is adjustable and prevents the motorcycle from falling off the trailer.
- The motorcycle stand is available for the type: HA 132513 available with loading ramps or tailgate ramp.



If retrofitted, the motorcycle stand must be positioned at the centre of the cargo bed and vertically against the front drop side.



Operating the motorcycle stand



Adjusting the motorcycle stand

- 1. Front stop, foldable
- 2. Wing nut / spring washer / retaining screw
- 3. Base rail
- 4. Plug bolt with cotter pin
- 5. Loading ramp
- 6. Adjustment holes



Position the loading ramp



The loading ramp must be adjusted to the size of the motorcycle wheel. After positioning the motorcycle, the loading ramp should fit snugly around the wheel.

- Pull the cotter pin out of the plug bolt.
- Pull out the plug bolt.
- Osition the loading ramp in accordance with the wheel size of your motorcycle and in line with the base rail.
- Insert the plug bolt through the axle and align it with the adjustment holes.
- Insert the cotter pin into the drill-hole of the plug bolt.
- Swivel the loading ramp around.
 The motorcycle can now be positioned.



Folding down the front stop

- • • Loosen the screws (wing nuts) on both sides.
- Operation 2 Position the loading ramp as far forward as possible.
- Fold down the stop.
- ▶ ④ Insert the retaining screws from the inside.
- Firmly tighten the wing nuts with their spring washers.



6.3.2 Wood/aluminium cover with/without rail

Functional explanation

- The wood/aluminium cover is used for the protected transport of sensitive goods.
- The wood/aluminium cover can be locked with a key and thus protects your goods against theft.
- The loading volume is increased by the internal height of the wood/aluminium cover, i.e. by 185 mm.
- The wood/aluminium cover is supported by a gas strut for easier opening. The gas strut keeps the cover in an open position.
- The wood/aluminium cover is available for the following type: HA & Startrailer available with rail and bicycle stand. It has been specifically adapted to the trailer size.



Driving with cover open / unlocked!

The cover can spring open while driving and be torn off / deformed. The goods may be flung off. The trailer may start to skid and be uncoupled from the towing vehicle.

- ▶ Do not drive with the cover open / half-open.
- Before driving off, check that the cover is properly closed and locked.



Presence in the trailer with the cover closed!

Risk of suffocation due to lack of oxygen in loading area.



- Do not transport any live animals.
- Before closing the cover, check that there are no persons / animals in the trailer.



Operating the cover!

You may catch your hands/body in the cover or bump your head while folding the cover down.

- Operate the cover carefully.
 Do not allow the cover to for
 - Do not allow the cover to fall shut on its own. Use the handle to operate the cover - do not reach over
- the closing edge or into the transmission linkage.
- Use the pull strap to close the cover and hold it firmly by the handle.



Risk areas

🔨 CAUTION



Where a gas strut is leaking / worn, the cover may fold down on its own and hit / bump you.

- When operating the cover, ensure that it does not fall down by itself.
- Have any faulty / worn gas struts replaced immediately by a specialised workshop.

NOTICE

Overload on cover / rail!

The cover / rail may become deformed or break.

Limit the weight on the cover / rail to a maximum of 60 kg.
 Do not climb onto the cover / rail.



Opening the foldable front drop side!

The transmission linkage for the gas strut is attached to the front drop side. Opening the front drop side results in deformation of the cover. It may fall down.

- Never open the front drop side.
- Do not remove the locking screws.





Operating the cover



Wood/aluminium cover with rail

- 1. Cover
- 2. Lock
- 3. Handle
- 4. Pull strap
- 5. Rail
- 6. Gas strut
- 7. Transmission linkage
- 8. Front drop side, fixed
- 9. Rear drop side, foldable

Unlocking



Lock unlocked

- Use the key to open the lock.
- Turn the lock into a vertical position.
 The cover is now unlocked.

Opening



Cover open

 Take hold of the handle and lift the cover.
 The gas strut supports the opening of the cover and holds it open in its final position.

Closing



Closing the cover

- First close the rear drop side.
- Take hold of the handle or the pull strap first if the cover is large - and pull the cover downwards.
 Ensure that the lock is in an open position.

Locking





Lock locked

- Turn the lock into a horizontal position.The cover is closed.
- Use the key to lock the lock.
 The cover is locked.



The goods must be secured, even in a closed trailer.

Secure the goods within the loading area.



Cover with rail

Functional explanation

- The cover with a rail may be used as an additional cargo bed for light loads.
- The rail on the cover is used to transport and secure loads such as bicycles, surfboards, boxes, etc.
- The 2 lateral bracings on the rail are used to attach the bicycle stands, for example.



Opening the cover after placing a load on it!

The cover may fold down unexpectedly, as the gas strut is not designed to carry additional load - risk of crushing / impact. Goods may slide / fall down and injure you or others.

- Where possible, only open an unloaded cover.
- When opening the cover, ensure that no unsecured load on the cover can slide down.
 - First remove the load from the cover.

Rail with lateral bracing



Wood/aluminium cover with rail and lateral bracing

- 1. Rail
- 2. Lateral bracing (x2)
- 3. Bicycle stand with bracket



The rail can also be retrofitted. Fitting should only be carried out by a person with specialised mechanical knowledge and experience in the use of tools and their inherent risks.



Read and observe the assembly instructions.

Bicycle stand



Bicycle stand attached to lateral bracings



The rail must be equipped with 2 lateral bracings when using a bicycle stand.



Read and observe the assembly instructions.

- Safely secure the bicycle stand onto the lateral bracings.
 Depending on the space required, 2 bicycle stands may be fitted.
- Re bi

Read the operating instruction manual for the bicycle stand.



- Fasten and properly secure the bicycle to be transported.
- Observe the maximum payload of the bicycle stand.
- Secure the bicycle against theft.
 Turn the lock.
- Secure the bicycle stand when it is not in use.



Bicycle stand secured



6.4 Loading / unloading the trailer



Make sure that the trailer is secured so that it cannot roll away.





Make sure that road traffic safety is not impaired when loading and unloading the trailer.

 If necessary, use additional signalling devices, e.g. signs, barriers.

6.4.1 Loading / unloading a tilting trailer



WARNING

Tilting the cargo bed down / back! When operating the cargo bed, you could crush your hands / feet or those of a person assisting you. A loaded cargo bed is too heavy to push it down alone and secure the eccentric tension locks - risk of injury!

- Avoid being in the danger / crushing areas.
- It takes two people to operate the cargo bed when transporting vehicles / loads.
- ► Use 🚺 , 🕅.



Risk areas



Tilting the cargo bed when the trailer is uncoupled!

The trailer can set in motion and hit / collide with people.

 Couple the trailer to the towing vehicle before tilting the cargo bed.



Operating a tilting trailer with extensions!

Persons could bump their head against the extensions (grid walls, tarpaulin frame) during loading / unloading. The view is reduced by the extensions - risk of injury!

- Take particular care when loading / unloading a tilted cargo bed with extensions.
- Pay attention to the head area.



Agree on communication signs with the assistant, if necessary.



Steel grid extension / rear drop-side open

NOTICE

Rear drop side folded down!

When tilting the cargo bed with the rear drop side folded down, it is pressed against the floor / base and may get jammed.

Only tilt the cargo bed when the rear drop side is closed or if it has been secured with the support rope against complete folding down.



Rear drop side secured

- 1. Support rope
- 2. Snap hook
- 3. Rear drop side
- 4. Eyelets for support rope



Open the rear drop side



- Unlock the locks on both sides.
- Fold down the rear drop side.
- ▶ Hook the snap hook of the support rope into the eyelet.

Close the rear drop side



- Fold up the rear drop side.
 Ensure that the support rope is not jammed between the stanchion and the drop side.
- Lock the locks on both sides.

6.4.1.1 Tilting the cargo bed down / back

Unlock the eccentric tension locks



Eccentric tension locks secured

- 1. Hook
- 2. Eyelet
- 3. Cotter pin
- 4. Handle
- 5. Rubber buffer



Before tilting the cargo bed, the rear drop side must be secured with the support rope.



Open / close the eccentric tension locks

Opening

- Pull the cotter pin out of both eccentric tension locks.
- Hold the cargo bed down with one hand to stop it from tilting upwards, if necessary with the help of an assistant.
- Fold up the handles.
- Swivel the eyelets out of the hook.

Closing

- Place the eyelets onto the hooks.
- Push down the handles.
- Insert the cotter pins into both eccentric tension locks.

The eccentric tension locks are secured against automatic opening.

Tilting down the cargo bed (empty)



Cargo bed tilted down / rear drop side folded down

- Slowly tilt the cargo bed downwards in a controlled manner.
- Unhook the snap hook from the eyelet.
 - The rear drop side must be completely rested on the floor / base.



Tilting the cargo bed back (empty)

6.4.1.2 Tilting the cargo bed down / back (with goods)



Tilting the cargo bed back

- 1. Cargo bed
- 2. Chassis
- 3. Shock absorber
- 4. Rubber buffer
- 5. Eyelet
- Stand in front of the front drop side of the trailer
 do not climb onto the drawbar.
 Ensure that you and the assistant are not in an area presenting a hazard / crushing risk.
- If necessary, swivel the eyelets backwards so that they do not stop the cargo bed from tilting back.
- Push down the cargo bed until it rests on the rubber buffers.
- Hold the cargo bed down with one hand to stop it from tilting upwards, if necessary with the help of an assistant.



Cargo bed secured

- 1. Rubber buffer
- 2. Eccentric tension locks
- Close the eccentric tension locks.
- Check that they fit correctly the eccentric tension locks must fit tightly.
 Adjust them where necessary (see Section: Maintenance)
- Close the rear drop side.

WARNING



Tilting down and unloading the cargo bed alone!

People may fall when climbing onto the cargo bed and find themselves in the crushing areas. When tilting the cargo bed, the load may roll off over the open rear drop side in an uncontrolled manner.



It takes two people to unload a tilting cargo bed.

 Climb very carefully onto the cargo bed - do not jump up and down.



Weight shifting during loading / unloading!

A weight shift may cause the cargo bed to suddenly tilt upwards. People may fall when climbing off the cargo bed.

The assistant must first secure the cargo bed with the eccentric tension locks before the loading person may climb down from the cargo bed.



Centre of gravity

1. Marking the centre of gravity



Loading the cargo bed towards the front beyond the centre of gravity (front drop wall) will cause the cargo bed to tilt.



NOTICE

Tilting after extending the prop stands!

When tilting the cargo bed, the underride protection cannot make contact with the floor. The prop stands can be damaged.

• Push the prop stands up before tilting the cargo bed.



Tilted cargo bed with prop stands

- 1. Prop stand
- 2. Rear drop side
- 3. Underride protection

Loading and unloading process



Loading / unloading a small vehicle from the cargo bed

- 1. Rear drop side completely open
- 2. Vehicle with max. 500 kg



Open drop side extensions

- 1. Steel grid extension
- 2. Tarpaulin extension
- Open the extensions (tarpaulin, steel grid flap) before loading / tilting the load.

Unloading (tilting)



It takes two people to unload the cargo bed.

- Open the rear drop side completely and unhook the support rope.
- Climb onto the cargo bed from the back to unload the load (vehicle).
- Stand towards the front of the cargo bed forwards from the centre of gravity.
- ► Have your assistant close the rear drop side and hook in the support rope do not lock.
- ► Have your assistant unlock the cargo bed, opening the eccentric tension locks.
- Slowly drive the load (vehicle) off the cargo bed the cargo bed will tilt by itself as the weight shifts.

The cargo bed is now empty and can be tilted back and locked.

Loading (tilting back)



It takes two people to load the cargo bed.

- Tilt down the empty cargo bed.
- Load the cargo bed by driving the vehicle onto the cargo bed until it automatically tilts back and rests on the rubber buffers.
- ► Have your assistant secure the cargo bed, closing the eccentric tension locks and inserting the cotter pin.
- ► Have your assistant open the rear drop side completely and unhook the support rope.
- Climb off the cargo bed at the back do not jump or climb over the drop sides.
- Close and lock the rear drop side and hook in the support rope.

The cargo bed has been loaded and can be transported.



6.4.2 Front drop side (foldable)

🖳 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 you towing vehicle to drive around bends.
- Adjust the distribution of the load (towards the middle of the drawbar) if necessary, or remove the front drop side.



Driving with the front drop side open.

- 1. Front drop side
- 2. Towing vehicle

Opening / closing the front drop side



Front drop side closed / open

- 1. Drop side hinge, secured
- 2. Front drop side, locked
- 3. Covered lock
- 4. Jockey wheel / locking lever

Opening

- ► Unlock the front drop side locks on both sides.
- ► Hold the front drop side firmly with one hand.
- ► For the braked trailer, turn the locking lever and the jockey wheel crank forwards.
- Carefully fold down the front drop side onto the drawbar.

Closing

- Fold up the front drop side.
 - Ensure that the locks are open.
- Hold the front drop side firmly with one hand.
- Lock the front drop side locks on both sides.

Removing / fitting the front drop side



Front drop side removed

- 1. Disk
- 2. Securing split pin
- 3. Drop side hinge

Removal

- Remove the securing split pin and disk from the drop side hinge.
- Fold the front drop side into a horizontal position.
- Carefully pull out the front drop side in the direction that is now unobstructed.
- Put the front drop side where it is safe from damage.

Mounting

- Slide the front drop side onto its hinges in a horizontal position.
- ▶ Insert the disk and the securing split pin.
- Fold up the front drop side.
 Ensure that the locks are open.
- Lock the locks on both sides.



Opening / folding down



Overloading the ramp wall!

Driving over the ramp wall may cause a loss of stability and may break it.

The ramp wall may fall off while driving, posing an accident risk! Someone may be injured - risk of crushing!

- Do not place more than 500 kg load onto the ramp wall.
- Before loading, ensure that the maximum carrying capacity is not exceeded by the load / vehicle to be loaded.
- Do <u>not</u> drive over the ramp wall with a pallet loader or a mobile lifting platform - their small wheels exert a high point load.
- Do not drive with a deformed ramp wall replace it immediately.

\land CAUTION



Impact / crushing risk when unlocking the ramp wall!

When the ramp wall is unlocked, it may fall down in an uncontrolled manner. A person could be crushed / hit.

- Keep firm hold of the ramp wall when unlocking it.
- Fold the ramp wall open in a slow, controlled manner.

It takes two people to operate the ramp wall.



Grid ramp wall closed (driving position)

- 1. Ramp wall divided into two parts
- 2. Lock
- 3. Prop stand



The trailer must be supported with prop stands and/or coupled to the towing vehicle before driving over the grid ramp wall.



Unlocking the grid ramp-wall locks

- 1. Upper section
- 2. Lower section
- 3. Handles
- 4. Lock
- 5. Hook
- 6. Eyelet
- 7. Snap-lock
- 8. Quick-release lever

Unlock the lock on the drop-side side without handles on the ramp wall.

- Push the snap lock away.
- Pull the quick-release lever open and take the eyelet off the hook.

Push the quick-release lever shut.

- Unlock the lock on the drop-side side with handles on the ramp wall.
- Hold the unlocked ramp wall firmly at the handles with both hands.



Grid ramp wall - fold open

Carefully unfold the ramp wall.
 Ensure that the upper and lower section of the ramp wall form a straight / even driving surface.





Grid ramp wall - as an even driving surface

Driving



Grid ramp wall - folded open

- Support the trailer using the prop stands.
- Slowly and carefully drive over the grid ramp wall.

Folding up / locking



Grid ramp wall - folded up

- 1. Ramp wall
- 2. Lock
- 3. Prop stand
 - ► Hold the ramp wall firmly at the handles with both hands.
 - ► Fold up the upper and lower section until they are vertical and simultaneously push them against the rear of the trailer.
 - Keep firm hold of the ramp wall.



Grid ramp wall - secured with locks

- 1. Hook
- 2. Eyelet
- 3. Snap-lock
- 4. Quick-release lever
- Push the snap lock away.
- Pull the quick-release lever outwards, so that the eyelet can engage with the hook.
- Push the eyelet over the hook.
- Push the quick-release lever shut. It must engage with the snap lock.
- Close the lock on the other side.
- Check that the locks have correctly tightened the grid ramp wall (leaving no play).
- If necessary, open the locks and retighten the eyelets by turning them clockwise.

The grid ramp wall is closed and secured.

Push the prop stands up and secure them.





Overloading the loading ramps!

Driving over the loading ramps may cause a loss of stability and may break it. Someone may be injured - risk of crushing!



Read and observe the manufacturer's operating instructions before using the loading ramps.

Belastungskapazität für Safety Ramps							
-				Belastung bei Achsabstand in Kg			
Warennr.	Länge	Breite	Eigengewicht/ paar	0-499 mm	500-750 mm	751-1200 mm	>1200 mm
55.1500L-200	1500 mm	200 mm	6,0 kg	220 kg	280 kg	360 kg	400 kg
55.1500B-200	1500 mm	200 mm	6,0 kg	220 kg	280 kg	360 kg	400 kg
55.2000L-200	2000 mm	200 mm	9,0 kg	260 kg	320 kg	400 kg	400 kg
55.2000B-200	2000 mm	200 mm	9,0 kg	260 kg	320 kg	400 kg	400 kg
55.1500L-260	1500 mm	260 mm	11,0 kg	650 kg	750 kg	800 kg	1000 kg
55.2000L-260	2000 mm	260 mm	15,0 kg	650 kg	750 kg	800 kg	1000 kg
55.2000B-260	2000 mm	260 mm	15,0 kg	650 kg	750 kg	800 kg	1000 kg
55.2500L-260	2500 mm	260 mm	19,7 kg	650 kg	750 kg	800 kg	1000 kg
55.25008-260	2500 mm	260 mm	19,7 kg	650 kg	750 kg	800 kg	1000 kg
55.3000L-260	3000 mm	260 mm	26,5 kg	650 kg	750 kg	800 kg	1000 kg

Do not place more load on the loading ramp walls than permitted in the manufacturer's operating instructions.

- Maintain the axle distance.
- Observe the information on the maximum capacity on the loading ramps themselves.
- Before loading, ensure that the maximum carrying capacity is not exceeded by the load / vehicle to be loaded.
- Do not drive over the ramp wall with a pallet loader or a mobile lifting platform - their small wheels exert a high point load.



Risk crushing!

Fingers / hands can be crushed when removing and positioning the loading ramps!

CAUTION

Remove and position the loading ramps carefully.
 Hold them at the sides.





Loading ramps secured on drop sides (driving position)

- 1. Lateral bracing
- 2. Loading ramp
- 3. Lateral drop side



The trailer must be supported with prop stands and/or coupled to the towing vehicle before driving over the loading ramps.

Removal



Remove the loading ramps

- 1. Loading ramp (right + left)
- 2. Wing nut with washers 2x
 - Unscrew both wing nuts.
 While doing so, hold the loading ramp firmly with one hand.
- Place the loading ramp onto the cargo bed.
- If necessary, unscrew the second loading ramp.
- Screw the wing nuts a short way into the drill holes to prevent them from getting lost.



Positioning



Loading ramps positioned

1. Loading ramp lug

Setting the track width

- 2. Slot between chassis and loading platform
- ► Unlock the rear drop-side locks.
- Carefully fold down the rear drop side.
- Grip a loading ramp with both hands.
- Insert the lug of the loading ramp into the slot between the chassis and the loading platform.



Setting the track width

- 1. Individual loading ramps (for two-wheeled vehicles)
- 2. Double loading ramp (for four-wheeled vehicles)
- Adjust the loading ramps to the track width of the vehicle to be loaded.
- Ensure that they are at right angles to the trailer (at a 90° angle) - not skew or lopsided.

Driving



Positioning the vehicle to be loaded

- Support the trailer using the prop stands.
- Remove the lateral bracing if necessary.
- Open / close the motorcycle stand if necessary.
- Slowly and carefully drive over the loading ramp(s) and slowly push the vehicle to be loaded upwards in a controlled manner.
- Ensure that the vehicle to be loaded is facing the loading ramps and the track is centred.

Stowing / securing



Loading ramps secured

- 1. Loading ramp
- 2. Wing nut with 2 washers
- 3. Lateral bracing (centred)
- Unscrew the wing nuts from the drill holes.
- Position the loading ramp along the lateral drop side, centring the position so that both drill holes are aligned with the holes.
- Fasten the loading ramp, using the wing nuts and washers.
- Lock the rear drop side.
- Push the prop stands up and secure them.
- Where applicable, insert the lateral bracing into the holes in the rail, aligning it.

- The lateral bracing supports the centre of the flat cover. Any water / load accumulating on the flat cover may cause it to sag and damage it.



Opening / folding down

Overloading the ramp wall!

Driving over the ramp wall may cause a loss of stability and may break it.

The ramp wall may fall off while driving, posing an accident risk! Someone may be injured - risk of crushing!

- Do not load the ramp wall with more than 300 kg for two reinforcement profiles and no more than 500 kg for three reinforcement profiles.
- Before loading, ensure that the maximum carrying capacity is not exceeded by the load / vehicle to be loaded.
- Do not drive over the ramp wall with a pallet loader or a mobile lifting platform - their small wheels exert a high point load.
- Do not drive with a deformed ramp wall replace it immediately.



Wooden ramp wall, closed (driving position)

- 1. Reinforcement profiles
- 2. Ramp wall (with tread plate), divided into two sections
- 3. Gas strut
- 4. Rotary lever lock



The trailer must be supported with prop stands and/or coupled to the towing vehicle before driving over the wooden ramp wall.



Wooden ramp wall - unlock locks

- 1. Eyelet
- 2. Safety spring
- 3. Rotary lever
- Push in the safety spring.
- Open the rotary lever.
 The rotary lever hook is detached from the eyelet.
- Unlock the rotary lever lock on the other side of the ramp wall.
- Carefully fold down the lower section of the ramp wall against the force of the gas struts - stand to one side next to the ramp wall while doing so.



Folding open the upper section

- 1. Lower section of ramp wall
- 2. Upper section of ramp wall
- Carefully unfold the upper section of the ramp wall.

- Make sure that your hands / feet are not under the upper section of the ramp wall.

Driving

- Support the trailer using the prop stands.
- Before driving onto the wooden ramp wall, check that you are not exceeding the maximum permissible load.
- Slowly and carefully drive over the wooden ramp wall.



Folding up / locking



Wooden ramp wall - folded up

- 1. Upper section of ramp wall
- 2. Limit buffer
- 3. Reinforcement profiles
- Fold down the upper section onto the lower section.
- Ensure that the rotary lever locks are open.
- ► Fold up the upper and lower section until they are vertical and simultaneously push them against the rear of the trailer the gas struts will assist you in this.
- ► The ramp wall will be pushed against the limit buffers.
- Keep firm hold of the ramp wall.



Wooden ramp wall - locks open

- 1. Rotary lever lock
 - Close the rotary lever locks one by one.
 The safety spring will engage automatically.

The wooden ramp wall is closed and secured.



When driving, observe the height of the reinforcement profiles.



7 Driving



Before driving off, make sure that the maximum permissible loads (load capacity and drawbar load) are not exceeded.



Observe the maximum permissible towing load and drawbar load of your towing vehicle and the trailer coupling.

- Where required, check the weight information for the goods to be loaded.
- Carry out a departure check (see the operating instruction manual, "Car Trailers" General Points - Part 1)

8 Parking

Observe the general safety and warning instructions on parking your trailer safely in the operating instruction manual, "Car Trailers" (General Points - Part 1).

9 Cleaning/Maintenance/Servicing

9.1 Care/Cleaning



Observe the safety instructions and instructions for general cleaning/care of trailers in the operating instruction manual, "Car Trailers" (General Points - Part 1).

9.2 Maintenance/Servicing

Maintenance instructions are given in the operating instruction manual, "Car Trailers" (General Points - Part 1).

Further specific maintenance instructions may be found here.

9.2.1 Tyres/Wheels

 Check the tyre pressure on all wheels on a regular basis and before long journeys.
 (see the table: "Maintenance instructions" in the operating instruction manual, "Car Trailers" (General Points - Part 1).

9.2.2 Gas strut

WARNING

Remove gas struts!

The gas struts are subject to high pressure! Improper fitting / removal may result in injury to persons - impact/collision risk!

- Observe the safety warnings on the gas struts.
- Take note of the instructions provided by the gas-strut manufacturer.
- Have worn / defective gas struts replaced by trained staff only.



The working range of the gas struts is: -25° C to $+60^{\circ}$ C.

Service life, functionality and safety depend largely on ensuring that the gas struts are serviced and maintained regularly.



Maintaining gas struts

- 1. Attachment
- 2. Gas strut (body)
- 3. Piston rod



During spraying, do not aim the water jet directly at the gas struts.

- Keep films and paper packaging away (electrostatic charging is possible).
- Do not scratch or paint the piston rod or treat it with aggressive media (abrasives).
- Grease the piston rod.



9.2.3 Shock absorbers



The shock absorbers are intrinsically maintenance-free.

The damping effect will decrease after long periods of use and long intervals of use.

The shock absorbers and their attachment need to be regularly checked for oil leaks, damage, ageing, breakage and material fatigue.

Servicing work must only be carried out by qualified specialists.



Maintaining the shock absorbers

- 1. Attachment
- 2. Shock absorbers (marking)
- Check the attachments for secure fit and tighten if necessary.
- Check the shock absorbers visually for oil leaks.
- If the damping effect reduces or if there are visible oil leaks, replace the shock absorbers.

Use only genuine spare parts, see designation / article no. on the shock absorber.

9.2.4 Eccentric tension locks



The eccentric tension locks must be regularly checked for a firm fit (at least every 6 months or 5,000 km).

Have loose attachments repaired by a specialised workshop.



Adjusting the eccentric tension locks

- 1. Eyelet
- 2. Thread
- 3. Hook
- Unlock the eccentric tension locks.
- Use the thread to turn the eyelets OPEN or CLOSED depending on whether you want to fasten or loosen them.
- Place the eyelets onto the hook and check that the eccentric tension locks fit firmly and that the cargo bed or ramp wall is firmly attached; adjust if necessary.



10 Troubleshooting



For further causes of faults and rectification measures, see the operating instruction manual "Car Trailers" (General Points - Part 1).

11 Decommissioning/Disposal



Observe the safety instructions for decommissioning / disposal of trailers in the operating instruction manual, "Car Trailers" (General Points - Part 1).

11.1 Decommissioning the trailer

- Secure your trailer against unauthorised use by third parties, e.g. using wheel clamps.
- Park your trailer so that it cannot cause any further hazards for third parties, e.g. by tipping over, rolling away, or causing a traffic obstruction.

11.2 Disposal

Take the individual parts or the entire trailer to a car/vehicle recycling facility. The specialists at the car/vehicle recycling facility will dispose of the individual components in the proper manner.







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