Boat trailer manual

This manual is intended to explain your boat trailer and to help you use your boat trailer safely and with pleasure. Read this manual carefully and carefully before using the trailer.
This guide is made for you to help you choose the right trailer. In addition, you will get acquainted with connecting the Trailer, explaining how you can put a boat into the water, or get it out of the water.
In addition, information is also provided about uncoupling the Trailer and about usage and maintenance instructions. If - despite reading this manual carefully - something is still not clear, please contact us.

How do I choose the right trailer?

Most importantly, the total weight of the boat (together with the engine and accessories) is less than the maximum payload of the trailer. You can often find the weight of your boat and motor by Googling.

Then you check whether the length of the boat is smaller than the maximum boat length of the trailer, taking into account that your engine is often still behind the boat.

. If the boat protrudes more than 1 meter behind the light box, it must be fitted with a “long cargo marking board” (diagonal red-white striped, dimensions 0.50 m by 0.50 m). Furthermore, the boat may in principle protrude a maximum of 5 meters at the rear of a motor vehicle or a single-axle trailer, measured from the rear rear axle. With a multi-axle boat trailer (tandem axle), a maximum of 4 meters protrude, measured from the rear rear axle. The protruding length should not be more than 0.5 x the length of the boat trailer.
The trailer must always be adjusted to the boat after purchase in order to load and transport the boat safely and without damage.
It is important that the weight of the boat (often at the rear with an outboard motor) is as much as possible above the load-bearing part of the boat trailer (i.e. not above the light box).
This is often not necessary with a self-adjusting trailer, so ideal if you have no experience or transport different boats.
Finally, you check whether your vehicle has sufficient towing capacity for the trailer and the boat. This information is on the registration certificate of your car, there is the maximum trailer weight. Or you can request this from the RDW. You will then receive a statement for a maximum mass braked (for a boat trailer with brakes) and a maximum mass unbraked (for a boat trailer without brakes).

All boat trailers are suitable for driving license B (provided that the weight maximum total weight of the car and the trailer is less than 3,500 kilograms combined.
Make sure that the chosen trailer matches the type of boat and have it adjusted or coordinated if necessary by your supplier of the trailer. For questions about this or advice you can always contact us, we as a manufacturer can answer all your questions about it.

Connecting / uncoupling a boat trailer

Step 1: Check that the tow ball coupling is open (X position).
Step 2: Check whether the coupling height of the trailer is approx. 5 cm above that of the towing vehicle. If necessary, this height can be corrected with the aid of the support wheel.
Step 3: Drive the towing vehicle backwards to the installed unbraked and/or braked trailer until the ball coupling is almost exactly above the ball on the vehicle. Please note that for safety reasons no persons are allowed between the trailer and the towing vehicle
Step 4: Remove any wheel chocks from the trailer.
Step 5: Release the trailer parking brake.
Step 6: make sure the trailer coupling is exactly above the ball
Step 7: Pull the trailer with the ball coupling exactly over the ball.
Step 8: You can slowly lower the coupling until the ball coupling is clearly audibly placed on the ball, this can be heard by a click. This is done by turning in the nose wheel (clockwise). Check on the basis of the marking on the coupling ball coupling whether the coupling is closed correctly. After correctly inserting the ball coupling, the pointer jumps to the green field of the marking, which is marked with a "+".
Step 9: Now the support wheel can be turned up further and fixed in the top position.
Step 10: Mount the breakaway cable to a closed eye that is on the towbar, possibly once around the ball neck, only loosely around the towbar is not allowed.
Step 11: Plug the trailer's lighting plug into the towing vehicle's power strip and check that all lights work.
To disconnect, do the same in reverse order.

Attaching a boat trailer, what you need to know:

• After coupling, check with the aid of the pointer whether the ball coupling is correctly placed on the ball: If the pointer is in the green "+" field, the ball coupling is closed and locked correctly and the ball still has enough on the car wear reserve.
• Only in this case a safe connection is made between your vehicle and the trailer and they are allowed to participate in traffic. Do not forget to release the trailer from the handbrake and attach the breakaway cable to the ball neck.
• The breakaway cable has the function of activating the trailer brake, should the coupling of the trailer and the towing vehicle be interrupted for whatever reason. With no brakes, the breakaway cable has an auxiliary coupling function. If the coupling of the towing vehicle is interrupted, the cable takes on the auxiliary coupling function.
• If the indicator is in the red "-" field, the coupling is incorrectly closed and the trailer must not be driven under any circumstances.
There can be three reasons for this:
1. The ball on the towing vehicle is already very worn and does not provide the ball coupling with sufficient grip. A new bullet has a diameter of 50.0 mm. If this cross-section decreases due to wear, albeit only partially, below 49 mm, the ball on the towing vehicle must in any case be replaced and may no longer be used.
2. The ball coupling itself is very worn and no longer offers sufficient grip to the ball. In this case, the ball coupling must be replaced by a qualified workshop.
3. The ball coupling locking mechanism has been activated, but there is no ball in the coupling. The ball coupling is loose on the ball and has no fixed connection. The clutch pops off the ball as soon as you drive. Open the ball coupling as described under point 2.1 and try again to engage the ball coupling correctly on the ball.

• When the pointer is in the red "X" field, the ball coupling is not closed. The bullet is loose on the bullet and would jump off the bullet when it drives away. Under no circumstances should the trailer be driven in this situation!
The coupling mechanism may be stiff due to lack of lubrication.
• The swivel range of the ball coupling about the vehicle axis is max. ±25°. In the horizontal direction, angles of rotation within a range of ±20° are possible.
NB! If the turning ranges are exceeded, the components are overloaded and the function of the ball coupling is no longer guaranteed.
• The permissible support load of the respective tow ball coupling is indicated in the handle of the tow ball coupling. It is not allowed to drive with a negative support load, as this negatively affects the driving stability of the trailer. A negative support load can easily be avoided by changing the loading of the trailer.
• To ensure optimum driving and braking behavior of the trailer, it is absolutely necessary that the coupling heights of the towing vehicle and trailer match. According to DIN 74058, the position of the coupling point on the trailer must be 430 ±35 mm above the point where the wheel rests on the ground. To check the coupling height, the trailer and the towing vehicle must be exactly horizontal and loaded to the entire permissible weight. In addition, the wheel pressure must comply with the manufacturer's instructions.
• The nose weight is the vertical force of the trailer on the hitch coupling. The type plate on the tow bar indicates the maximum permitted weight on the towball (usually 50 to 150 kilograms).
• The permitted nose weight of a loaded boat trailer must be at least 5% of the attached weight. So with a weight of 1,000 kilograms (boat with trailer) at least 50 kilograms nose weight. The desired nose weight is usually between 50 and 80 kilograms. To determine this quickly, you can use 75 kilograms. Check the nose weight with the boat on the trailer.
• You can measure the nose weight with a nose weight gauge (drawbar scale) or an ordinary personal scale. It is important that the trailer is horizontal (level). With a personal scale, place a shelf on the scale to distribute the force over a larger surface. Then place a piece of wood upright between the coupler and the plank and let the trailer rest on it.
• If the nose weight is too low, the boat trailer does not lean sufficiently on the tow bar. Then there is too little stability of the combination. This can cause the boat trailer to sway in crosswinds and overtaking trucks, which is very dangerous. If the combination is still swinging, brake as hard as possible.
• If the nose weight is too high, the car can bounce too far (and then have too little grip at the front wheels).
• If the center of gravity of the boat is above the center of the axle assembly (tandem axle) or the center axle (single axle), the coupling pressure is in most cases correct.
If the nose weight is not optimal, you can increase or decrease it by moving the boat forwards or backwards. You can adjust this by moving the winch support.
• Install the breakaway cable. The breakaway cable ensures that an unbraked boat trailer remains attached if it unexpectedly comes loose from the car. With a braked boat trailer, the cable will ensure that the boat trailer brakes itself and comes to a standstill (the breakaway cable breaks loose).
• After connecting the lighting plug, check whether the lighting of the boat trailer is functioning. If you have a 7-pin socket on the car, you can use an adapter to make the connection with the 13-pin plug of the boat trailer. It is therefore an adapter type 7-pin to 13-pin instead of 13 to 7-pin.
• Raise the jockey wheel. For smaller jockey wheels, make sure that the jockey wheel enters the notch so that it locks into place and clamp the jockey wheel against the trailer.
• Check the tires annually for drought cracks. Check the correct tire pressure for safety to save fuel and reduce tire wear.
• The permitted maximum towing weight of the car is calculated on the weight of the trailer with boat (and engine). So keep the load in mind.
• With an unbraked boat trailer, click the license plate onto the light box (light box at the rear of the trailer).

• The boat must never protrude from the front of a trailer coupling. When turning, it will collide with the car.
• The boat may protrude up to 20 centimeters on each side, otherwise the boat must be equipped with markings. The total width of the boat trailer may never exceed 2.55 meters. The trailer including boat may be a maximum of 3 meters in width.

Checking new vehicles

The wheel bolts must be checked after the first ride, at the latest after 50 km.
Before every ride, check:
- Tire condition/enough air pressure?
- function of the lighting
- drawbar support wheel raised and fixed? (The jockey wheel must always be parallel to the direction of travel.)
- ball coupling locked securely? (the ball coupling must have closed properly around the ball. You can read this from the glued or notched marking in the towing ball coupling (see 2)). The trailer may only be driven if the pointer points to the green field with the "+" marking!
- breakaway cable hooked up?
- handbrake released?
- securing the bolts?

Principles for safe trailer operation

• Overloading and thus overloading the chassis components is not permitted
• External changes in the center of gravity due to incorrect loading must be avoided.
• Heavy objects should be placed as close as possible to the axle and/or axles.
• No overload due to irresponsible or rough driving or incorrect handling. Blows and bumps should be avoided.
• The driving speed must match the road and the load resp. the load of the trailer can be adjusted. This applies in particular to curves.
• Make a note of the chassis number for tracking down after theft. If the boat is on the boat trailer, make sure to have a CCV / SCM approved coupling lock (even if it is coupled to a car) to prevent theft of the trailer and boat (and in the event of long-term parking on the public road, an additional wheel clamp is allowed). you can park the boat trailer on the public road in most municipalities for a maximum of 3 days). Ask your insurer for the conditions so that you can be sure that everything is properly insured.
• The boat trailer is covered by your third-party liability insurance policy if you cause damage. This only applies if the boat trailer is connected to the car at that time. Take out trailer insurance if you cause damage if the boat trailer is not connected or in the event of external damage (for example fire damage) or theft. Full hull (all risk) cover for a boat trailer is also an option. Check whether the boat trailer is covered by home contents insurance. This happens when there is no registration requirement.

Launch boat:

• Important: Close any open lens plug (usually on the underside of the mirror (back)).
• Remember to remove the light bar from the trailer before loading and unloading. Hang the plug in such a way that the plug cannot be submerged in water.
• Prepare any tilting mechanism by disconnecting it.
• Make sure the outboard motor is tilted to prevent damage to your motor from the slope when towing.
• Reverse the car with trailer to the ramp with the windows open for communication. At the ramp, someone checks whether the boat enters the water properly and, for example, does not hit stones or other obstacles in or out of the water.
• The trailer does not have to go too deep in the water (up to the axle of the wheels, it is best if the axle remains dry). Lower the boat with the winch. Be aware that the ratchet can injure you if it is released.
• There may be a person in the boat (boarding at the front) to keep control and to use two lines to keep the sloop on course and maneuver alongside the shore.

Taking boat out of the water:

• Remove the light box and make sure that the plug does not fall into water.
• Have two lines ready on board. If necessary, arrange for someone in the boat who can keep control.
• Attach the winch strap to the trailer eyelet mounted in the fronts of your boat.
• Maneuver the boat using the lines right behind the trailer. Make sure the bow is straight in front of the keel roller and pull the boat onto the trailer with the winch.
• Always secure the boat to the winch at the front, this prevents the boat from sliding backwards during transport.
• Note that the trailer must always be adjusted to the boat (you can do this yourself or, if you have no experience, by a water sports company). Placing the boat in the correct position relative to the boat trailer or adjusting the rollers, outriggers, bow support and axles and thus the braking system is of great importance.
• It is important that rollers are adapted to the size of the boat, so that the greatest pressure is on the keel and the bilge (the angle where the floor meets the side). Keel rollers (the middle rollers) carry the weight. If a keel roller does not support the boat, set it higher (this can be done while the boat is on the trailer). The bilge rollers provide the correct vertical support for your boat. It is best to set this quite low before loading the boat onto the trailer (so that the boat rests on the keel rollers). Then set the bilge rollers as high as possible. If a keel (boat) is higher, especially the rear can be secured more tightly by using outriggers instead of rollers.
• For wide boats, place a set of extra struts for extra stability.
• Remember to tie the boat to the trailer with 2 or more ratchet lashing straps. A length of 5 meters is usually sufficient and a working tension of 1,000 kilograms. Otherwise, the boat could come off the trailer due to wind or a collision, for example. To protect the boat you can use special corner protectors, foam rubber, a cloth or cardboard between the lashing strap and the boat.
• Ensure a good spread of the tensioning straps. Place a tension strap a quarter boat length from the bow (front). Also place a tension strap a quarter boat length from the transom (rear). Use the special eye bolts where possible. If a boat has special points such as a frog through which a strap can be easily passed, that is the best option.
• Make sure you pull the strap of the tension strap through the ratchet as far as possible before using the ratchet. This prevents too much strap from getting stuck in the ratchet.

• Check whether the boat can no longer move sideways, otherwise the boat will not be properly secured to the boat trailer.
• Always secure a RIB boat to the GRP hull instead of over the tubes (to prevent wear and leakage and therefore a loose RIB).
• Reassemble the light bar and check that the lighting is working.
• Secure hatches and loose equipment otherwise these items could fall out of the boat or be blown over.
• Rinse the trailer if it has come into contact with salt water, especially the inside of the brake drums.
• Consider purchasing an anti-sway clutch (stabilizer clutch). This way you can bring the trailer back into balance if it unexpectedly starts to swing due to crosswinds or bad road surfaces, for example.
• Open the lens plug at (usually on the underside of the transom (rear) of the boat to allow the existing water to drain out.

Uncoupling boat trailer:

• Apply the parking brake to the boat trailer if available.
• Place wheel chocks on a sloping surface to prevent the trailer from driving away.
• Disconnect the breakaway cable and lighting plug.
• All KNOTT drawbar couplings are equipped with a safety check indicator. This consists of clearly carved symbols, which are pasted over with a red - green-red label with the same symbols, and of a pointer. If the label is damaged, it is removed and the score used, or the label is renewed, matching the dividing lines of label and score.
• To open, pull the coupling handle up and then swivel it forward. (The clutch will automatically stay in the "open" position with the pointer pointing to the red field with the large "X".)
• Move the clutch handle up and then forward to open the clutch. Then turn the nose wheel upwards, then the coupling handle remains up and the boat trailer is uncoupled.
• STOP! Under no circumstances may the trailer be driven in this position.
• NB! Do not put your fingers into the open tow ball coupling! Even a slight pressure on the spherical cap can activate the spring-loaded closing mechanism and lead to injury to the fingers.

Operating and maintenance instructions ALKO and KNOTT chassis components with operating instructions:

The following operating and maintenance instructions with operating instructions are for KNOTT chassis components. They are part of warranty provisions; In addition, the respective manufacturer's instructions for use must be observed. In order to maintain safety in use and in traffic, maintenance work must be carried out at the prescribed intervals. Maintenance, repairs resp. Replacement of parts subject to wear on the chassis and in the braking system may only be carried out by a qualified workshop. Only original KNOTT spare parts may be used, in order to
a) to guarantee function and safety,
b) retain warranty and warranty claim,
c) to maintain company authorization according to national and international regulations
The braking system, in particular the overrun device, the wheel brakes and also the drawbar have been tested in accordance with the valid EC guidelines and may only be used in the approved combination. KNOTT chassis consists of the drawbar coupling, the overrun device, the transmission system, the wheel brakes in conjunction with KNOTT rubber, torsion and steel torsion spring axles and, if necessary, the drawbar, the drawbars or the side members.