

Trailer Manual



ALWAYS MOVING FORWARDS

Highest quality - built to last for all your
commercial & domestic needs.
Made in Denmark.

www.variant-trailers.com.au

Data - My trailer

Model:

VIN nr.:

Registration date:

Registration nr.:

Service & Inspection:

Date:

By:

Date:

By:

Date:

By:

Date:

By:

Date:

By:

Date:

By:

Content

Congratulations on your new Variant trailer.

To get the most out of your trailer you should follow certain advice and instructions.

Therefore we encourage you to read and save this manual. Especially notice the information marked with **!**.

If any questions occur during use of the trailer, which cannot be answered by this manual you are always welcome to contact your dealer.



My trailer

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Operating instructions - all models

Attaching

1. The trailer is connected to the tow bar on the car (remember to grease the tow bar ball).
2. If the trailer has a security wire this one also is attached. It is important that the safety wire goes in a straight line from the trailer to the tow bar.
3. Connect the electric system by plugging the power plug in the trailer's socket.
4. With your chains -ensure they cross over each other -then attach to vehicle

Before you drive

- ! Make sure that the trailer is correctly attached to the car. This is controlled by lifting the trailer's handle. Some types of ball attachments are equipped with a red/green indicator, which indicates if the trailer is properly connected.
- 2. Test that all the trailer's lights are working correctly.
- 3. Control that the load is evenly distributed and possibly clamped.

Driving

- ! Driving with e.g. tall trailers or trailers with tall tarpaulins in strong side winds should be avoided, especially if the trailer is empty.
To drive in reverse with a trailer requires a little practice. When driving backwards the trailer is controlled by the ball on the tow bar.

Therefore it is necessary to turn the car in the opposite direction than you want the trailer to move. Try a couple of times, "practice makes perfect."

Since there are separate speed limits for driving with a trailer, always be aware about this. At the time of writing the speed limits are:

- 80-100km on highway.
- 70 -80km on country road.
- 50-60 km in the city (There may be signs with lower speed limit).

Look up the rules applicable to your states road for more information about speed limits with trailers.

Detaching

1. Unplug the electric system and place it in the holder. Remember to pull the plug and not the wire.
2. Remove the safety brakeway wire.
3. Detach the chain/s from your vehicle.
4. Detach the trailer from the car's tow bar. Lift the trailer free of the tow bar by winding the jockey wheel handle. When doing this be aware of the weight of any load. If the trailer is towed with overload on the jockey wheel this could damage or at worst cause distortion of the pull catch or bracket.



Loading

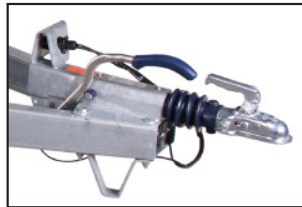
When driving with a trailer it is important for the stability to drive with the correct ball pressure. The pressure must be at least 4% of the trailer's total weight. Heavier weight is usually an advantage, but it's necessary to observe the tow bar's/car's maximum ball pressure. This information can be found in the car's manual. The trailer is designed so the center of gravity is in the center, slightly in front of the axle. When loading the trailer it is important to distribute the load evenly. Rather more in the front than in the back. A negative ball pressure - when the load is in the back - may be catastrophic and put you, the car and trailer in danger. If this happens immediately slow down by breaking and/or change to a lower gear.

Operating the hand brake

All Variant-trailers with braking are equipped with a hand brake, which is recommended to use when the trailer is parked. For long-term parking the hand brake should not be used, as the braking may stick.

The hand brake is activated by pulling the hand brake handle over the dead center whereafter the gas spring tightens the break and keeping it activated.

Warning: If the hand brake is not fully in a vertical direction, the trailer will still be able to move backwards.



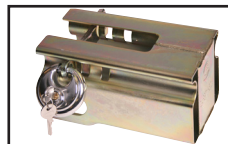
Tightening of wheel bolts

It is very important that the wheel bolts are tightened after approx. 30 kilometers and afterwards checked regularly after 1.000 kilometers. Paint, on the hubs and rims will gradually wear down whereafter the bolts can loosen. Therefore remember to tighten the bolts regularly.



Lock for ball coupling

A good lock for your ball coupling reduces the risks of theft. Your local Variant dealer will gladly show you the types of lock solutions for your trailer.



Regular Trailers

Overload

In the trailer's registration certificate it shows how much the payload is.

It is strongly advised against any kind of overload as your driving safety is significantly reduced. Driving with more weight than allowed may cause damage to tires, axles and chassis frame and no warranty cover will be possible. Driving with overload is also illegal.

An example with overload

A trailer type xxx has a design rating with 1350 kg. The measurements are 205×122×40 cm., which gives a volume around 1 m³.

If this trailer is loaded with sand the load will weigh approximately 1.500 kg.



Accessories

There is a large selection of accessories for your Variant trailer which makes it possible to put together a trailer for almost any need. The selection includes: jockey wheels, tarpaulins, locks, extra tall sides, grids, hard tops and slotted sides.

See more at www.variant-trailers.com.au or ask your local dealer to get the equipment that meets your needs.



Boat trailers



Settings

We recommend that when using your trailer for the first time, you spend a proper amount of time to get the boat properly adjusted. You will benefit from the time spend as future loading and unloading will go fast and smoothly. Your Variant dealer will be happy to assist you with advice and guidance. If the setting requires that the axle must be moved, the brake lever also has to be adjusted. Here are a number of advice on how the trailer is adapted to the boat.

The weight and length of the boat must be suitable for the boat trailer.

The boat's data such as weight and length are important. The weight is important in relation to the trailer's payload. Remember that the weight of any equipment, engine and gasoline must be added to the boat's own weight. The length should also be correct to avoid overloading the hull. It may be tempting to use the boat as a large luggage room but be careful not to overload the trailer. If you in doubt about the total weight we will recommend to weigh the boat, to check.

The boat must stand on the keel and be supported by the rollers on the side.

To avoid overload of the boat hull and to make loading and unloading of the boat easier, the boat must stand centrally on the keel and be supported by the rollers on the side. This is how the boat trailer is adjusted correctly:

1. The boat is pulled on the trailer with the hook. In order to obtain the lowest possible center of gravity the distance between the hull of the boat and the wheel shields should be as small as possible, preferably 20-30mm. Possibly unload the boat again and adjust the roller to the correct height. Does the boat have a flat bottom the rollers are adjusted around the upper position.
2. The boat is then aligned with the side rollers. The distance from the hull to the wheel shields must be the same on both sides. If necessary use a jack to lift the side rollers in place. The side rollers must never lift the boat from the roller underneath.

Bow support

The bow support is adjusted to fit the boat. Both the angle and the height can be adjusted. The bow support can be longitudinally displayed and tightened where the optimum ball pressure is achieved. While driving it is not enough to keep the boat supported only in the bow support using the hook as the wire gradually will be released during driving. The boat must therefore also be clamped on the support bracket with, for example a short tension strap.

Securing

In order for the boat to be firmly attached the boat should be secured with straps. Correct positioned securing is done with 4 straps - one in each corner.

Lighting system

The trailer has a rear light board which is removed when loading and unloading. When the split locks are detached it is easy to remove the light board. Remember to place the power plug back in the holder back into the socket.

Launching

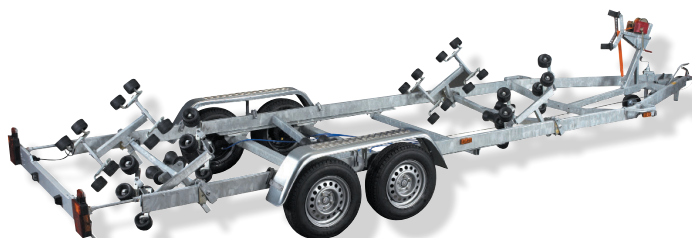
At launch the trailer should only be driven into the water to the edge of the rim. Brakes, cables, etc. should not be under water. If it happens that the trailer comes under salt water, it should immediately be rinsed with clean water. Similar to cleaning the boat.

Wheel bearings & brake cables

The Ocean boat trailer series features traditional wheel bearings and brake cables. All other boat trailers are equipped with water-tight bearings and stainless brake cables which requires minimal maintenance.

Boat storage

A boat trailer is primarily intended for transportation of boats but can also serve as a convenient storage space for your boat. For longer periods of boat storage (more than 3 weeks), we recommend that the trailer is covered up, otherwise the wheels and shaft suspension will be unnecessarily damaged and may in worst case break.



Service & Maintenance

To ensure your trailer is always operational and ready to use, make sure it is serviced at your local Variant dealer regularly.

We recommend that trailers with brakes receive a check each 10.000 kilometers or once a year.

Repair and adjustment of brakes should only be done by professionals.



Maintenance of the trailer sides



Trailers with ply sides

For Variant-trailers with ply sides we use first class waterproof plywood, which is treated with phenol and almost maintenance-free. After some time the plywood may get dulled or matt. The best way to get back the shine is to apply acid free oil or a mixture of raw linseed oil and turpentine in the ratio 1:1. The oil is applied to the plywood in a generous amount. After approximately 15 minutes the excess is wiped off with a dry cloth. Keep in mind that the cloth with raw linseed oil must be disposed in a sealed plastic bag, as the cloth may otherwise ignite.

Trailers with aluminium sides

The aluminium sides hardly require any maintenance. Avoid cleaning with strong alkaline as this will react chemically with aluminium. The nice finish is best kept using auto wax.

Trailers with steel sides

The steel sides are properly cleaned with warm water & universal cleaning detergent.

Galvanized parts

Galvanized parts must be "oxygenated" before the galvanization is an effective protector against rust. Galvanization is complete and effective when the metal turns matt.

Tire pressure and load

Settings

Different types of tyres must have different tyre pressure to work optimally and not wear down too fast.

Using the chart below you can find the correct tire pressure.

For longer periods of storage the trailer should be covered up (smaller trailers may be parked vertically). This avoids a point loading which can cause "bulged" tires.

Tire pressure and load			
Tire size	Tire pressure at maximum load		Maximum load
	Bar	Psi	pr. tire in kg.
4.00-8 4 PR	4,25	60	265
4.00-8 6 PR	4,25	60	335
5.00-10 C	2,40	34	375
145 R10/145 B10	2,50	36	375
195/55 R10 C	6,25	90	750
195/60 R12	6,25	90	900
145/70 R13	3,00	43	475
145/80 R13	3,00	43	475
155 R13	3,00	43	500
155 R13 C	4,50	65	600
165 R13 C	4,50	65	675
185/70 R13 C	6,25	90	900
195/50 R13 C	6,25	90	900
165 R14	3,75	54	550
165 R14 C	4,50	65	675
185/65 R14	3,60	43	650
185 R14 C	4,50	65	945

The tightening torques of the wheel bolts should be 100-110 Nm at a size of 17 mm. and 110-120 Nm at the size of 19 mm.

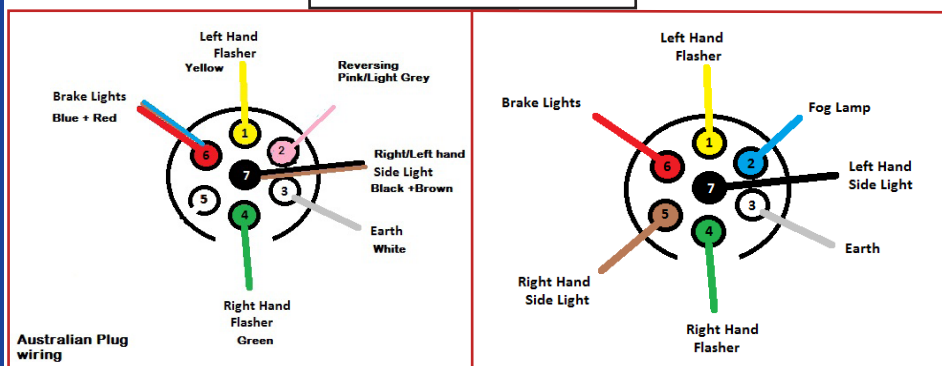
NOTE! Please note that the load of tyres which are used for passenger cars with max speed 80 km/h may be exceeded with 10%. Therefore it is possible that the loading instructions written on the trailer's tyres may differ from the weights shown in the chart above.

Wire diagram

When replacing or repairing the trailer's power plug the following diagram may be used:

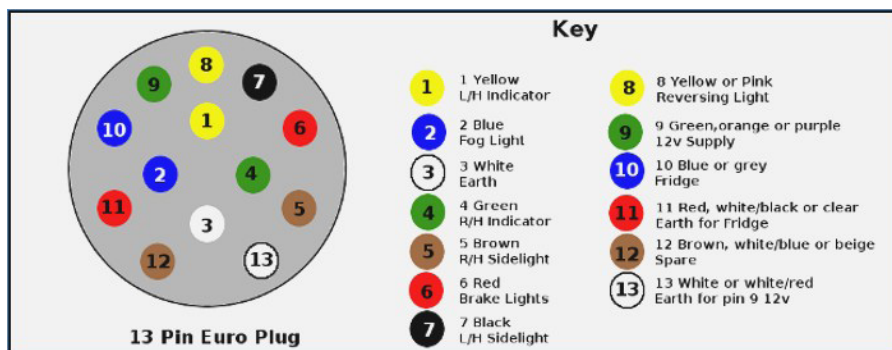
7 - pin plug for

Jokon lights
Radex lights



13 - pin plug for

Radex lights



Warranty



The warranty includes

Replacement or - factory's choice
- repair of construction or material defects, in case of errors arising during normal and proper use of the trailer.

Repairs carried out within the warranty period will not extend the deadline of the warranty.

The warranty does not include

Expenses for ongoing services and maintenance or expenses caused by normal wear and tear or as a result of the trailer not being used for a longer period of time.

Defects caused by non-proper use of the trailer.

Defects caused by the use of non-original spare parts.

Costs of renting a replacement trailer.

! Newly galvanized parts will be very smooth and silver in the beginning. After a short while the parts become matt in finish and a more "rough" surface. This is quite normal and is due to the "oxygenation" of the galvanized parts. This also applies to cut edges. They rust when the trailer is new, but the rust disappears over time.

The process ensures that the galvanization will provide optimal protection against corrosion. This "cosmetic" change will not be recognized as a justified warranty claim.

! Also note that galvanized parts should never be in contact with acid and certain other chemicals. Therefore always rinse carefully with clean water after driving on salted roads or transport of fertilizer or any other acidic goods.

! Plywood is a living material. Please note that bottom and side sheets can change under different conditions. High amounts of moisture can make the plywood bend. When the wood dries up it will return to normal. It is recommended to mount a flat tarpaulin on the trailer to keep it dry.

Legal rules

A number of laws and regulations apply to trailers and their use. The most important ones are listed in this section.

However please be aware that there may be changes in the rules as well as different interpretations of the laws in the individual states.

Therefore Variant can not be held responsible for changes or differences in interpretation.

Taxation

Trailers which weight 500 kg or less are exempted from taxation, while trailers weighting more than 500 kg have to pay a small fee.

Inspection

All Variants trailers are standard type approved in the EU. This means they are covered by the rules for passenger cars. Trailers are free of inspection at the time of purchase and by change of ownership within the first 5 years.

Weight rules

The rules for inspection free coupling and driver's license rules only apply to passenger cars and vans with a maximum allowed weight of up to 3500 kg. Car and trailer must be approved for inspection free coupling which is written in the registration certificate. A car is allowed to drive with a trailer if the actual total weight (trailer's weight + load) of the trailer does not exceed "the maximum total weight of trailers with/without brakes", called the coupling weight, which is stated in the car's registration certificate. Even if the car is approved for one size of weight it may still drive a trailer that is approved for a greater weight. The trailer's actual total weight can't exceed the coupling weight. Therefore it is allowed to drive a 500kg trailer even if the car only is allowed to pull 450kg, as long as the trailer's actual total weight does not exceed 450 kg. Note, regarding the coupling, it is the actual total weight of the trailer and not the trailer's allowed total weight which is essential.

Insurance

The trailer is covered by the car's liability insurance. Mounting the tow bar necessitates a change in the car's liability insurance so that it includes the pull of the trailer. The engine register automatically informs the insurance company when the tow bar is mounted. If the trailer is wished to be insured further you will need a casco insurance.

Driver's license rules

When deciding which driver's license is required you must know the following 4 values which all can be found on the car's/trailer's registration certificate:

- A** The car's allowed total weight.
- B** The car's own weight.
- C** Maximum coupling weight.
- D** Total trailer weight allowed.

Only driver's licenses for passenger car (B) is required if just one of the following conditions are met:

- **D** cannot exceed 750 kg.
 - **A+D** cannot exceed 3500 kg.
 - **A+C** cannot exceed 3500 kg.
- (A+C only applies to driver's licenses issued before may 2009)

Regardless of the above B+E licenses are always required if both **C** and **D** are more than **B**+50 kg.

Reduction of weight

To legally drive the trailer it may be necessary to reduce one or more of the weights A, C or D. The trailer's total weight (D) can be reduced by up to 30% of the original total weight rounded up to nearest number divisible by 25. It is also possible to reduce the total weight of the car (A). Reduction of the trailer's/car's total weight requires approval by inspection. In some cases it may be advantageous to reduce the coupling weight (with brakes) (C).

This value can be reduced only with permission from the tax office.

Example

The car's allowed total weight	The car's actual weight	Max. coupling weight	The trailer's total weight	Driver's license needed
A	B	C	D	
2000	1200	1200	1600	B
2100	1300	1400	1300	B
2100	1300	1400	1400	BE
2500	1500	1100	1000	B
3500	1850	2000	750	B
2800	1700	2000	800	BE

Note that regarding the driver's license conditions it is always the car's/trailer's registered weight which is crucial.



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