Date VIN#

Dear Customer,

Congratulations on your purchase of your new Raft Trailer from Whitewater Worthy Equipment, LLC. This trailers is sure to give you many years of worry free operation. It is very important that you, the end user, ensure that **proper maintenance** is performed at regular intervals and **follow all warnings and checklists** posted on the trailer. You must also ensure that you following the recommendations made by the tow vehicle manufacturer.

Owners Manual

Proper trailer loading

Proper trailer loading of both total weight and amount of tongue weight is essential to safe towing. Your trailer has a VIN sticker and a tire and weight sticker on the left side of the Tongue that states the Gross Vehicle Weight Rating (**GVWR**). Once you have your boat on the trailer it is wise to take it to a scale to ensure you have a **GVWR** that is under the amount listed on the sticker.
Having the appropriate tongue weight is equally, if not even more, Important to safe towing.

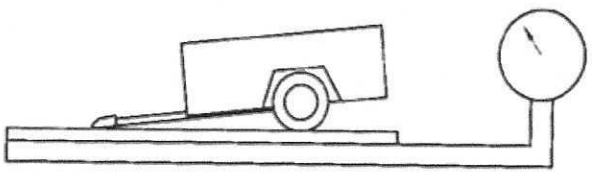
The following instructions on determining tongue weight was taken from http://www.eyershitch.com/trailer-weight.html
If the loaded weight of your trailer exceeds the **GVWR,** you'll have to remove items to bring the weight down to or below the **GVWR.** Here's how you can figure out your weight at the scales:

1. **Weigh the trailer by itself.** After driving the vehicle and trailer onto the scale, disconnect the trailer from the tow vehicle and move the tow vehicle off the scale. This figure must not exceed the GVWR of your trailer.

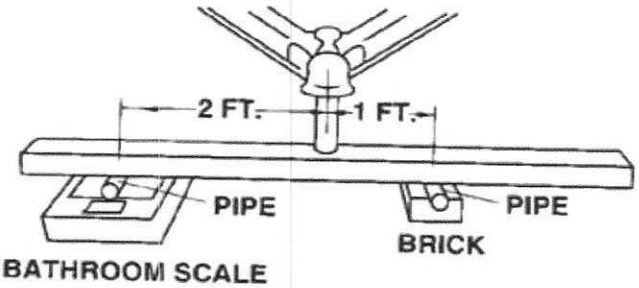
2. **Find the tongue weight.** Tongue weight is the amount of downward pressure exerted by the trailer tongue onto the hitch ball. Move the trailer until the tongue is off the scales. Re-level the trailer by adjusting the height of the tongue jack. Read the trailer weight on the axles alone. Subtract weight on the axle from the total weight. This weight difference will be the approximate tongue weight.

3. **For small trailers, you can place the tongue on a bathroom scale.** This won't work for trailers with tongue weight over 300 lbs. For heavier trailers, use the method shown below. Be sure the trailer is level. Measure from the ground to the bottom of the frame at the rear of the trailer and also at the front of the trailer. The amounts should be equal when it's level. Don't use a level stick!

Method For Measuring Gross Trailer Weight



Method For Measuring Trailer Tongue Weight (TW)
(Multiply scale reading by 3 to determine actual TW)



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Once you have calculated the tongue weight on your trailer, you need to make sure the total does not exceed the recommended load for your tow vehicle. If the tongue weight is below the recommended weight amount, you must move some of the load forward or strap a heavy object (like a toolbox) to the front frame of the trailer. If the tongue weight exceeds the recommended amount you must shift some of the load rearward in the trailer. Here are the recommended weight distribution figures:

Tandem Axle Trailer	9%-15%
Single Axle Trailer	10%-15%
Fifth Wheel Trailer	18%-20%

Here is the formula for calculating tongue weight:

$$\textit{Tongue weight \%} = \frac{\textit{Loaded tongue weight}}{\textit{Loaded trailer weight}} \times 100$$

To View to importance of trailer Loading visit the link below
https://www.facebook.com/dunlaoghairemarina/videos/1471663689527395/

Securing you load is Very Important!!!

The rollers on your trailer ensure the launch and recovery of your boat will be fast, easy, and efficient. It is equally important to secure your load to prevent a premature launch. Your trailer has multiple locations to accommodate carabiners on the sides of the trailer. **Carabiners** are recommended in combination with your trailer straps. Strap hooks can slip off the attachment if slack is introduced to the system. **DO NOT** run straps directly through the attachment locations or your **STRAP WILL FAIL**. Additional precautions should include strapping the bow and stern to prevent forward and aft movement when braking or accelerating. The **Rear Roller** is a good attachment for a strap to the back of the trailer. A strap from the **Base of the winch tower** to the boat is recommended to secure the front.

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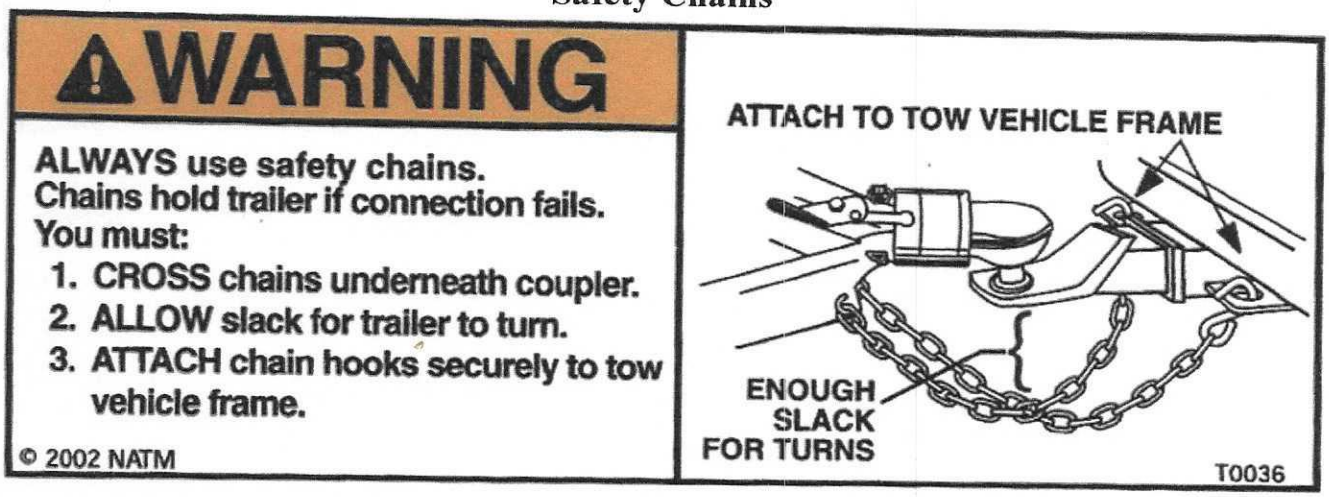
Adjust Driving When Towing Trailer

When towing a trailer, you will decrease acceleration, increase stopping distance, and increase turning radius. The trailer changes the handling characteristics of the tow vehicle, making it more sensitive to steering inputs and more likely to be pushed around in windy conditions or when being passed by large vehicles. In addition, you will need a longer distance to pass, due to slower acceleration and increased length.

With this in mind:

- When encountering trailer sway, take your foot off the accelerator, and steer as little as possible in order to stay on the road. Use small "trim-like" steering adjustments. Do not attempt to steer out of the sway; you'll only make it worse. Also, do not apply the tow vehicle brakes to correct trailer swaying.
- Check rear-view mirrors frequently to observe trailer and traffic.
- Be aware of trailer height, especially when approaching bridges, roofed areas and trees.
- Be alert for slippery conditions. You are more likely to be affected by slippery road surfaces when driving a tow vehicle with a trailer, than driving a tow vehicle without a trailer.
- Anticipate the trailer "swaying." Swaying can be caused by excessive steering, wind gusts, roadway edges, or by the trailer reaction to the pressure wave created by passing trucks and buses.
- Use lower gear when driving down steep or long grades. Use the engine and transmission as a brake. Do not ride the brakes, as they can overheat and become ineffective.

Safety Chains



Coupler Size

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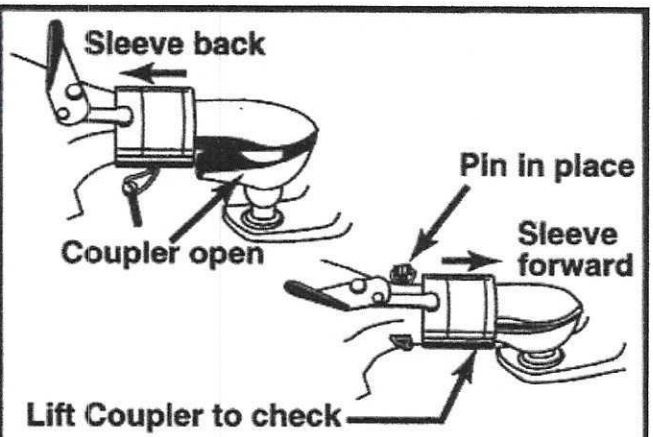
Attaching Coupler to Tow Ball

⚠WARNING

Uncoupling will cause trailer to come loose from tow vehicle. You must:

1. **CHECK that ball LOAD RATING is same or greater than coupler LOAD RATING.**
2. **CHECK that ball SIZE is same as coupler.**
3. **CLOSE COUPLER CLAMP on ball.**
4. **LIFT coupler upwards to test that it will not separate from ball.**
5. **LOCK sleeve with pin or padlock.**

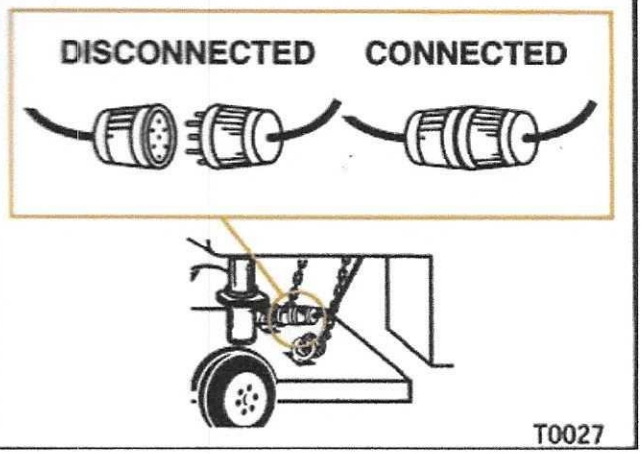


Connecting Trailer Lights

⚠WARNING

Lights can prevent trailer from being hit by other vehicles. You must:

1. **CONNECT trailer and tow vehicle electrical connectors.**
2. **CHECK all lights: tail lights, turn signal, and brake lights.**
3. **DO NOT TOW if lights are not working.**



Lug nuts Must be checked
for proper torque and set to the Axle Manufactures specifications.
http://www.lci1.com/assets/content/support/manuals/Axles%20and%20Suspension/Trailer_Axle_Owner_s_Manual_2_7K.pdf

Tire Safety
Recommendations for tire safety can be found at:
http://www.nhtsa.dot.gov/cars/rules/TireSafety/ ridesonit/tires_index.htm

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⚠ WARNING

Check following points each time before towing trailer.

- ✔ Make sure all parts, bolts and nuts are tight.
- ✔ Secure load to trailer - check tilt and the down mechanisms - use extra rope as a safety measure.
- ✔ Check tire air pressure when tire is cold.
- ✔ Repack wheel bearings once a year, preferably in the Fall before storing trailer.
- ✔ Make sure you are not exceeding trailer capacity.
- ✔ Make sure the coupler is securely latched to the hitch ball.
  Check each time you stop & leave trailer.
- ✔ Cross safety chains under tongue and secure to towing vehicle.
  If equipped, hook up break-away brake chain with slack to permit cornering.
- ✔ Make sure the trailer electrical connector is properly connected and all lights are operating.
- ✔ Check brake operation.
- ✔ Make sure the jack is raised to its highest position.
- ✔ Make sure all gates and latches are secured.

Maintainance

Your new trailer is equipped with a Torsion Axle that will require a Y**early re-packing of the of grease and replacement of the seals** to ensure that water does not damage the bearing and races. It is recommended to have the bearings serviced by a professional shop and document that the service was preformed. **Axle Bolts** are set to 40ft/lb of torque. **Coupler Bolts** are set to 60ft/lb torque. **All bolts Must be checked** at the same intervals as the lug nut schedule listed above.

Spare Tire

Your spare tire is mounted to the tongue with a "U bolt" and Lug nuts. Those Lug nuts are removed with a 13/16" wrench or deep socket. You need to ensure that you have a wrench that can access those nuts before leaving on your trip. **Don't get Stranded!!!!**

Installing Rollers

This procedure is easiest with two people. You will need an 18" long screw driver or piece of steel rod about 5/16" diameter. Insert the roller axle into the roller body. Push it in until the axle is about 12" from the second end bearing i.e.black plastic bushing. Insert your screw driver through the end bearing and feel for the axle. Once you locate the axle slide the tool out until you can feel the end of the axle. Now cannulate the axle with the tool. Next, the second person pushes the axle furthur into the body, using the tool to guide it through the second end bearing. Insert the axle in to the bracket and install the keeper pins or bolts. If the keeper is a bolt, apply thread locker to the bolt to insure it can't vibrate loose.

The Procedure is a bit tricky at first but like anything it gets easier with practice.

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Maintainance Log

Date	Service Preformed
	10 mi Bolt and Lug Nut check Tow rig Odometer _____
	25 mi Bolt and Lug Nut check Tow rig Odometer _____
	50 mi Bolt and Lug Nut check Tow rig Odometer _____

Limited Warranty

--Modification of the trailer structure or alteration of your trailer can make the trailer unsafe and will void all warranty options. Before making any alteration to the trailer, contact your dealer or the manufacturer and describe the alteration you are contemplating.

--Whitewater Worthy Equipment, LLC guarantees your trailer to be free from defects in material and workmanship for a period of 3 years from the date of purchase. This applies to the original buyer only, and is supported for customers in the USA and Canada, operating under "normal conditions" and does not include trailers that are rented or loaned to other persons. This includes the Main Frame, Cross Members and Sub Frame only. If a repair is done under warranty it does not include the cost to Powder Coat the repaired area.

--The deck is covered for 60days from the date of purchase.

--Powder coating a guaranteed to resist fading for a period on one year from the date of purchase. Damage from rocks or other road debris is not covered.

--Damage to any cargo is not covered under this warranty.

--All parts that are made buy another Manufacturer and covered by that Manufacturer. Examples include but are not limited to: Axle, Tire, Coupler, Lights, Winch, Jack Stand, etc.

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