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NHTSA NOTIFICATION STATEMENT

If you believe that your vehicle has a defect which could cause a crash or cause injury or death, you should immediately inform the National Highway Transportation Safety Administration (NHTSA) in addition to notifying Benchmark Trailers.

If NHTSA receives similar complaints, it may open an investigation, and it if finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Benchmark Trailers.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-888-327-4236, go online to www.nhtsa.dot.gov, or write to: NHTSA Headquarters, 1200 New Jersey Avenue, SE, Washington, DC 20590. You can also obtain other information about motor vehicle safety from the Hotline.

STEPS FOR DETERMINING CORRECT LOAD LIMIT

- (1) Locate the statement "The weight of cargo should never exceed XXX kg or XXX lbs." on your trailer's placard.
- (2) This figure equals the available amount of cargo and luggage load capacity.
- (3) Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

Warnings

THE FOLLOWING SIGNAL WORDS AND SYMBOLS ARE USED TO ALERT YOU TO POTENTIAL HAZARDS. OBEY ALL MESSAGES AND INSTRUCTIONS THAT FOLLOW THESE WORDS TO AVOID POSSIBLE INJURY OR DEATH.



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

CAUTION used without the alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Introduction

Your new trailer is designed to make loading and launching your boat easier. Read this manual carefully before you use your trailer because it gives details on the trailer you just purchased. Pay attention to and follow all instructions and maintenance procedures in this manual.

We believe in, and stand behind our product. We know that if you care for your trailer, you will enjoy many years of dependable service from your Benchmark trailer. Our sincere thanks from everyone at Benchmark Trailers.

Choosing the Right Trailer Weight Capacity



DO NOT exceed your vehicle's GVWR

Choosing the right trailer to match your boat is very important. Your trailer not only has to be long enough and wide enough for your boat, but must be able to carry the weight of the boat and everything in the boat, including motor(s], fuel, water, personal gear, and other items that you may have on board. This final weight is called a 'wet weight' and cannot exceed the carrying capacity of the trailer. The GVWR [Gross Vehicle Weight Rating] listed for the trailer, is the maximum amount that the boat and trailer combined can weigh. Do not exceed your trailer's GVWR. If you don't know the weight of the boat when its fully loaded combined with the weight of the trailer, have it weighed.



The weight of the boat, as listed in the boat manufacturer's product brochure, may not include the weight of the motors, fuel, water and personal gear and should not be used alone when choosing a trailer.

Trailer Length

CAUTION

Make sure when the boat is on the trailer, there is enough space between the front of your boat and the back of your tow vehicle.

When choosing a trailer, make sure you take into account the boats true transom to bow length. Some boats have a bow pulpit, an anchor chock or other hardware on the bow of the boat. which can extend several feet forward beyond the bow. The trailer tongue must be long enough to give you enough space between your boat and the towing vehicle, when loading the boat, turning a corner, or backing up so you do not hit your tow vehicle. A less than adequate distance between the boat and towing vehicle may allow them to contact each other causing excessive damage to both. Longer or shorter tongues are available as an option on most models. Shorter winch stand posts are also available as an option on many models and may be necessary for boats with bow pulpits. Measure the length from the transom to the bow eye to make sure the winch stand can be moved forward or backward, as well as high and low, to meet the bow eye and still have the transom of the boat supported by the rearmost rollers or bunks.

Bunk vs. Roller

There are 2 basic types of support systems on boat trailers; bunks or rollers. Bunk style systems have long support bunks, usually made of wood or aluminum, with a carpet or a plasticlike surface. Roller systems generally have multiple sets of rollers to support the hull. Bunk trailers operate best on steep ramps where you are able to submerge the trailer deep enough to partially float the boat off and on the trailer. Roller trailers will function well on either shallow or steep ramps and will allow you to launch and load without putting the trailer in the water as deep as on a bunk style trailer. Some boat manufacturers specify which support system to use with their boats. Please see the "Launching and Loading" section on page 16 for further information.

Supporting Your Boat's Weight

Bunk trailer users should make sure that the long, straight bunks evenly carry the boat's weight. If one side of your boat is higher than the other side, adjust the bunks to the same height. The transom of your boat should be even with the back end of the bunk. If your transom is left unsupported, severe damage may occur to your boat. If bow and center supports are used, make sure that no large amount of pressure is placed on the hull in any one spot, where flexing could occur. As with roller trailers, the bunks and hardware on the left side of your trailer should be the same as on the right side.

Always keep tie-downs tightly fastened. Always use tie-downs or similar securing devices to secure the boat to the trailer, as well as the winch strap/cable and safety chains/cables supplied with your trailer.



Some state laws require brakes on trailers with a GVWR of 1,500 pounds or more.

Trailer Braking Systems

BENCHMARK boat trailers offers two different state-of-the-art braking systems; Hydraulic surge [drum brakes], and hydraulic surge [disc brakes]. Both braking systems offer excellent trailer braking, but each have unique qualities.

Hydraulic Surge [Disc Brakes]

Hydraulic surge disc brakes operate on the same idea as hydraulic surge drum brakes. The disc brake needs a special actuator with a back-up solenoid wired into the tow vehicle's reverse lights. When the tow vehicle is put in reverse, the solenoid locks out the braking system allowing the trailer to back up on level ground without the brakes locking up.

Since you can see most of the disc brake components, they are easy to keep clean and maintain.

Attaching Your Trailer



Always get help to back your tow vehicle to your trailer. NEVER move the trailer to the tow vehicle.

Before hitching your trailer to your tow vehicle, please check the items listed on the decal located on or near the winch stand. [See Figure 1 on page 8]

Make sure the coupler lever is up [coupler is open]. Raise the front of the trailer with the tongue jack. Back your tow vehicle close to the trailer, then get out and check the location of the coupler and hitch ball. Move your tow vehicle until the coupler is over the hitch ball. Using the tongue jack, lower the trailer until the coupler completely covers the hitch ball. Lock the coupler [coupler lever is down].



Make sure the coupler completely covers the ball and that the ball clamp inside the coupler is below the ball, not on top of the ball.

Use a padlock or 1/4 inch bolt and nut to secure the coupler lever in the locked [down] position.

After the coupler is locked on the hitch ball, raise the front of the trailer using the tongue jack. If the coupler comes loose, open the coupler [lever up], attach the coupler to the hitch ball and raise the front of the trailer again. If the coupler will not stay attached, check the hitch ball and coupler for size and damage.

AWARNING

BEFORE TOWING THIS TRAILER CHECK THAT:

- Coupler and hitch ball are the same size and correct rating.
- · Coupler is latched (closed).
- All safety chains are attached. The trailer safety chains are crossed under the tongue.
- All trailer lights are working correctly.
- Boat is secured to the trailer front & rear. (DO NOT use winch line alone).
- Tongue jack is all the way up and stored.
- · Wheel lug bolts or nuts are tight.
- · Tires have correct pressure.
- Trailer brakes are adjusted and breakaway cable is attached to tow vehicle.
- Load on trailer is within trailer capacity, distributed correctly, and the trailer tongue weight is correct.

A CAUTION

You are required to obey local and state laws and regulations regarding brakes, licensing, and additional equipment that is needed for your trailer. Contact your state motor vehicle department for more information.

Fig 1: Trailer Warning Decal

After the coupler is secured to the hitch ball, raise the tongue jack all the way. If you have a swing-up style tongue jack, turn it to the traveling position and make sure the lock pin is secure in the hole.



Make sure the jack is in the stored or traveling position before towing the trailer. If it is not, it can cause the trailer to separate from the tow vehicle.

Cross the safety chains or cables under the tongue and attach them to the tow vehicle. Connect the trailer wiring harness to the lighting system of your tow vehicle. Remember to check your lights.

Spot check all other trailer components [i.e. tires and tie-downs].

You should be all set to go.

Hitch Recommendations and Tips



Your trailer's GVWR must not exceed the capacity of your hitch. Be sure you have the right size ball, shank, and capacity to match your trailer's model and coupler size. The correct ball size and capacity is marked on the coupler.

For most boat trailers, a weightcarrying hitch is usually adequate. Weight-distributing hitches are recommended for very heavy loads. If you choose a weight-distributing hitch, contact a dealer specializing in hitches and hitch installation to make sure it is properly installed, that it is compatible with your trailer's brake system and that you don't exceed weight requirements.

AWARNING

Do not use weight-distributing hitches with surge-braked trailers. Overloading or improper installation of weight-distributing hitches may not let hydraulic surge brake actuators work and the tow vehicle and trailer may take longer to stop.

Several models of weight distribution hitches will render the brakes inoperative. BENCHMARK TRAILERS cannot assume responsibility or accept warranty claims in such instances. Please make sure the weight distribution hitch you choose is compatible with the trailer's braking system.

AWARNING

For proper load distribution on tandem and triple torsion axle trailers, it is very important that the trailer is parallel to the ground while towing.

Please Note: Hitch ball height is determined by measuring from the ground to the top of the coupler ball housing when the trailer is on a level surface. The average height to the top of the hitch ball is usually from 14 inches to 21 inches above the ground when loaded. Actual height will vary from trailer to trailer.

Coupler and Hitch Ball Operation



Do not use a different size ball, shank, or capacity than recommended and be sure both the hitch ball and hitch ratings are the same or more than the Gross Vehicle Weight Rating of your trailer.

Every coupler on a BENCHMARK boat trailer is permanently marked with;

- a] Manufacturer's code, name or trademark:
- b] SAE coupling designation and gross coupler rating;
- c] Part number or style model; and d] Proper ball diameter.

Loosen or tighten the nut on the bottom of your coupler so the latch closes firmly with a tight fit on the ball. Class IV Couplers and hydraulic brake actuators usually need no adjustments. Keep the latch mechanism clean and lightly oiled.

If the latch mechanism or coupler is bent or deformed in any manner, do not use the trailer until a new latch assembly or coupler is installed. Replacement assemblies and rebuild kits are available at your BENCHMARK dealer.



Fig. 2: Coupler on ball with latch in proper lock position.

Using Safety Chains



Always attach the trailer and boat bow safety chains before towing.

Your trailer hitch should have a place to attach the trailer safety chains or cables. Crisscross the trailer safety chains or cables under the trailer tongue before attaching to the towing vehicle. [See Figure 3] Most state laws require the crisscrossing of these chains or cables. This may prevent the trailer tongue from falling to the road in the event that the trailer coupler becomes detached from the hitch ball. Do not connect the trailer safety chains or cables together.

Original trailer safety chains or cables should not be removed or tampered with. Should you need to replace them, contact BENCHMARK TRAILERS or your BENCHMARK TRAILERS Dealer for replacement chains or cables and hooks. Note: Some States/Provinces require closed connections on trailer safety chains or cables. Check with your State/Province for specific regulations regarding closed connections on trailer safety chains or cables.



Fig 3: Proper attachment of the safety chains is essential to trailer safety. Note how the safety chains are crisscrossed.

Tongue Jack Use and Care

Place the jack into position, crank the jack handle until the trailer coupler is high enough for the coupler to go over the hitch ball and lower the trailer coupler onto the ball by cranking the jack handle in the opposite direction.



Back your tow vehicle to your trailer.

DO NOT move your trailer to the tow vehicle. When the trailer is moved without a tow vehicle, the brakes do not work.

If your jack is a swing up type, return it to its stowed [up] position, making sure the securing pin is firmly in it's hole. [See Figure 4 Page 11]



Care must be used when engaging or disengaging a swing-up style tongue jack.

When using the jack in the down position to support weight, make sure the securing pin is firmly in it's hole before adding any weight to the jack. If the securing pin is not firmly in it's hole, the jack may collapse under the weight placed on it. While towing, if your jack is not folded up or retracted completely, damage could result and your jack may have to be replaced.

Like the winch, or any kind of mechanical assembly, a jack requires lubrication maintenance. Regularly grease the drive gear, and rack & pinion – and oil the caster and wheel bearings.



Fig 4: Swing jack in traveling position.

Trailer Lights



Always check your trailer lights to make sure they are in working order before any trip. If your trailer has electric brakes,

unplugging the trailer wire from the tow vehicle will disable the trailer brakes.

Your BENCHMARK TRAILERS boat trailer is equipped with the best lighting system available. Always double-check your lights to make sure they are in working order before any trip.

Twice a year, it is a good idea to trace the wiring system from the tow vehicle to your boat trailer's taillights and look for bare wires, cracked insulation or corroded terminals. Always be sure the white ground wire is connected to the trailer frame. Replace all worn or damaged parts.

Waterproof grease, petroleum jelly, or WD-40® should be put on plug contacts and bulb bases to prevent rust and corrosion. Tow vehicles with three-light lighting system [different lights for brake, turn, and tail lights] need an adapter to change the three-light system to a two-light system. Make sure your vehicle is equipped with the proper lighting package. We recommend that a professional, i.e. your automotive dealer, install it for you. BENCHMARK TRAILERS's Wire

Color Code is listed below at Figure 5. Even though your lights are submersible, it is still advisable to always disconnect the light harness prior to submerging the trailer.

Wile Color Code
Yellow and Brown Left
Green and Brown Right
Brown Tail lights, rear marker light,
front and rear side lights
YellowLeft stop and turn
Green Right stop and turn
White Ground
Blue* Underwater lights
* Custom trailers only
Fig 5: BENCHMARK TRAILERS Wire Color

Before You Tow Tying Down Your Boat

Code

Wire Color Code



Always attach the boat bow safety chains. Make sure the boat is secure and held in place before towing.

Tie down the boat securely at the stern, in both a downward and forward direction, with approved tie downs. Use the rear tiedown points provided on your trailer.

A boat bow safety chain is provided on most BENCHMARK TRAILERS models and should be attached to the bow eye of your boat after the winch firmly pulls the boat against the bow stop. Do not depend on the winch line, strap or cable alone to hold your boat secure.

Check the winch line, strap or cable for fraying, cuts or tears. If it is damaged, replace it immediately. If the winch line and tie—downs are tight and you are still able to rock the boat on the trailer, check the settings of the bunks and/or rollers and winch adjustment.

Winch Adjustment and Use



Never disengage the winch ratchet lock while winching your boat onto the trailer.

Whether your winch is a handoperated model [standard] or an electric model [aftermarket], both can be adjusted for the best possible performance. The winch height should be adjusted so that the winch cable/ strap is level with the bow eye of the boat when the boat is resting on the trailer, with the bow stop roller or vee block just above the bow eye of the boat. Your boat will then be pulled in a straight line onto the trailer and against the bow stop on the winch stand. The angle the winch is pulling your boat should not make the boat lift up or pull down when pulling the bow eye against the underside of the bow roller or vee block. It should pull the bow eye straight into the underside of the bow roller or vee block. [See Figure 6]

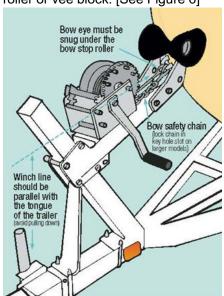


Fig 6: Proper winch operation

Maintenance of the mechanical winch is simple. Keep clean, lubricate regularly and apply heavy grease to the gears frequently. Make sure the winch line, strap or cable doesn't rub against anything sharp; fraying and wear could result. If your line, strap or cable becomes worn, contact your BENCHMARK TRAILERS Dealer for replacement as soon as possible.

Do not Exceed Load Carrying Capacity or GVWR



Make sure the total weight of the trailer, boat, engine, fuel, batteries, and gear does not exceed the trailer's GVWR.

The weight capacity of your trailer is found using the Gross Vehicle Weight Rating [GVWR] of the trailer. The GVWR is printed on the Vehicle Identification Number [VIN] decal at the left front of the trailer. If you do not know the weight of your trailer with boat, motor[s], fuel, gear, etc., have it weighed. [See SCALES in the yellow pages.] The trailer must not be connected to the tow vehicle when you get the total weight of the trailer. It is up to you to make sure the weight of your boat, trailer, and boat cargo does not exceed the GVWR.

Tongue Weight & Weight Distribution



Poor weight distribution can cause trailer sway ["fishtailing"] and put extra force on your boat, trailer, towing equipment, and tow vehicle.

Proper load distribution on your trailer is also very important. Five to ten percent of your trailer's Gross Vehicle Weight should be supported by the hitch ball, with the tongue level. This is called "tongue weight". For example, if the GVW of the boat, gear and trailer is 1,500 lbs., the weight on the coupler should not be more than 150 lbs. – or the maximum rating of the hitch [whichever is less] – or be less than 75 lbs. For lighter boats, a small scale [like a bathroom scale] can be used to check the weight on the coupler.

If you are over or under the standard weight distribution, try moving gear inside your boat first. If further adjustment to the trailer is necessary, contact your BENCHMARK TRAILERS Dealer.



Your trailer's GVWR must not exceed the capacity of your hitch.

CAUTION

Check with your BENCHMARK TRAILERS Dealer or automotive dealer to make sure you have the proper towing vehicle for the load you'll be pulling. Check your vehicle manufacturer's hitch weight recommendations as well. Be sure you have the right size ball, shank and capacity to match your trailer's model and coupler size. The correct ball size and capacity is marked on the coupler.

Check Tire Pressure



Keep your tires inflated to the recommended tire pressure on the VIN decal [found on the left front of your trailer]. Check the tire pressure before each trip.

Tire Description	PSI	Capacity
20.5X8X10B	35	905lbs
20.5X8X10C	50	1105lbs
20.5X8X10D	70	1330lbs
20.5X8X10E	90	1535lbs
480X12B	60	780lbs
480X8B	60	590lbs
530X12B	55	840lbs
530X12C	80	1045lbs
ST175/80R13B	35	1100lbs
ST175/80(R or D)13C	50	1360lbs
ST185/80(R or D)13C	50	1480lbs
ST205/75R14B	35	1430lbs
ST205/75(R or D)14C	50	1760lbs
ST215/75(R or D)14C	50	1870lbs
ST225/75R15D	65	2540lbs
ST235/80R16D	65	3000lbs

Fig 7: Tire pressure chart

Check All Nuts and Bolts

Even though BENCHMARK TRAILERS uses self-locking, vibration resistant nuts, it is the owner's responsibility to make sure all of the fasteners are tight before using the trailer – not just the first time you use it, but on a regular basis.

Lug Bolt or Nut Tightening Method



Check your lug bolts or nuts for tightness before every trip.

If you lose a lug nut, replace it promptly with the correct size. Use 60 degree cone angle zinc plated lug nuts. Initially tighten to 35-45 foot pounds, using a tightening sequence on a 5 bolt wheel of 1,3,5,2,4 – see Figure 8.

Finish torquing lug nuts to 85 foot pounds. Re-torque after 50 miles of use and on a periodic schedule from then on. Lug nuts should be clean and dry. Do not put grease or other lubricant on them.

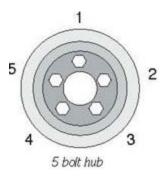


Fig 8 Lug nut order

On the Road BENCHMARK TRAILERS recommends all people wear appropriate safety restraints at all times while towing with any vehicle.

Going too fast is a major cause of vehicle-trailer accidents. At a minimum, observe the posted speed limits. Slow down for curves, bad weather, hazardous road conditions and expressway exits. Do not feel secure if your trailer tows easily at higher speeds. A road hazard that could be avoided at 45 or 50 mph, may not be at 55 mph.

Stopping/Following Distance

Your tow vehicle and trailer are heavier and longer than your tow vehicle alone. This means it will take you longer to stop. Allow at least 4 seconds between you and the vehicle in front of you. Start counting when the back of the vehicle in front of you passes a fixed object, such as a signpost, telephone pole, or crack in the road. If the front of your vehicle reaches the object before the end of the 4 seconds, slow down to increase the distance. Then check the following distance again. If you are driving in bad weather, such as rain, snow, or fog, use at least a 5 second gap.

Hills

To prevent your tow vehicle's engine from lugging when going up hills, shift into lower gears. This will improve gas mileage and reduce engine overheating.

Swaying or "fishtailing" happens more often going downhill. To prevent this from happening, decrease speed BEFORE going down the hill. If your trailer has surge brakes, do not shift into lower gears when going downhill. This can make the trailer brakes come on the whole time you are going downhill and may cause your trailer brakes not to work.

DO NOT ride the brake pedal going downhill. When you need to slow down, press the brake pedal and slow down at least 5 mph below the speed limit. Then let completely off the brake pedal and let the brakes cool before you press the brake pedal again.

Passing

Your tow vehicle and trailer are heavier and longer than your tow vehicle alone and you will need more time and distance to pass. Passing by another vehicle in the same or opposite direction can cause sway or fishtailing. This sway is greater when your speed is higher. See the SWAY/FISHTAILING section below on what to do if this happens.

Sway/Fishtailing

One or more causes [cross winds, passing vehicles, quick driver steering actions, improper loading, excessive speed, etc.] may result in sway.

During sway, applying your brakes or turning the steering wheel can cause a jackknife, loss of control or both.

If sway happens:

Let off the gas pedal. NEVER speed up to try to control sway.

♠ DO NOT apply your brakes.

Steer straight ahead, enough to keep in your lane. DO NOT try to control sway by turning the steering wheel.

After the swaying has stopped:

Pull a safe distance off the roadway and stop. Get all the occupants out and away from the vehicle.

^î Check the cargo in your boat to make sure it has not shifted. Also make sure the trailer is loaded heavier in the front.

Check that all the tires are properly inflated and all lug bolts or nuts are tight.

^ Check the trunk or cargo bed of the tow vehicle to make sure it is not overloaded.

DRIVE AT A SLOWER SPEED.
Sway happens most often at higher speeds.

Road Shoulders

Sometimes the trailer is wider than the tow vehicle. Drive in the center of the lane to allow for a wider trailer.

If wheel[s] of your vehicle or trailer go off the paved roadway:

1 Hold the steering wheel firmly.

Let off the gas pedal and slow down below 25 mph.

↑ DO NOT apply the brakes.

DO NOT turn the steering wheel sharply.

After slowing down below 25 mph, gradually turn the steering wheel just enough to get you back on the roadway. Proceed with caution when entering traffic.

Backing

To back your trailer, keep your hand at the bottom of the steering wheel. To move the trailer left, move your hand left. To move the trailer right, move your hand right. If your tow vehicle and trailer starts to jackknife, or isn't headed where you want it, STOP. Pull forward to straighten out, and then start again.

Breakdowns & Accidents

Get Off The Road

If something goes wrong and you need to get off the road, immediately park your tow vehicle in a safe place, as far away from the road as possible. Turn on your emergency flashers. Get all the occupants out of the vehicle and away from the roadway. If you must continue on the road to reach a safe place off the road, turn on your emergency flashers, slow down, and proceed with caution.

Do not hesitate to drive on a flat tire if it is necessary to reach a safe place completely off the roadway. Drive slowly, since the scraping tire and wheel could cause a fire.

Getting In and Out of the Water

The handling of your boat and trailer at the ramp requires practice, skill and patience. With care and attention to the following tips, you can launch and load your boat with relative ease.

Always prepare the boat for launching before you get to the ramp. Stop in a launching prep area near the ramp that doesn't block traffic and remove your tiedowns, tilt up your engine or drive unit, replace your transom drain plugs, etc.

Do not disconnect the wiring harness, winch cable or boat bow safety chain until you are by the water, ready to launch.

15

When loading, always prepare for the procedure prior to reaching the ramp. If the ramp is busy, preparation will shorten the time it takes for you to get your boat out of the water.

Loading Your Boat

Unlock your winch and unwind enough cable/strap to attach the hook to the bow eye of your boat. For safety, always keep at least three turns of cable/strap around the winch drum. Never let your cable/strap all the way out. Lock your winch before attempting to wind the cable/strap in.

Bunk or Custom Trailers — Launching & Loading

Launching Checklist In the Parking Area

- Remove the trailer-to-motor supports.
- Remove tie-downs.
- Load and store gear that goes on boat.
- Check all systems, including your boat's engine, blower, bilge pump and lights.
- Disconnect trailer wiring from car.
 [Leave the wiring attached if you have Benchmark Trailers cabcontrolled electric brakes.
 Disconnection will eliminate braking capability.]
- Remember to properly install all drain plugs.

At the Ramp — in Launch Position

- Disconnect the bow safety chain hook from the bow eye.
- Follow launching instructions.
- Always practice good boating safety.

Trailer Maintenance and Storage

One of the best maintenance procedures for your trailer is washing the trailer with soap and rinsing with fresh water after every use. This will help prevent rust and give your trailer that "showroom" appearance for a long time.

People often forget to give their trailer the same waxing care as their car, but if you want your trailer to last, wax it on a regular basis. Touch up all scratches and spots of rust as soon as they occur. Matching paint can be obtained at your BENCHMARK TRAILERS Dealer.

Check your tire pressure [when tires are cold] and make sure they are inflated to the correct pressure. [See tire pressure chart on page 13, Figure 7]

Every trip, check your lug nuts or bolts for tightness on your wheels. Once a year, or every 2000 miles, whichever comes first, check your hub bearings [see pages 21-22]. Check your light wires and electric brake wiring [if applicable] for damage, and make sure they do not hang down where they could be caught.

Flush kits are available for drum style brakes and will help to keep the brakes clean, especially in saltwater or brackish water usage areas. A handy hint: A little petroleum jelly in the light bulb sockets creates a better seal, prevents corrosion and makes it easier for replacement, if ever necessary. L.E.D. lights require no maintenance.

Periodically grease the shafts of the

rollers and roller assembly [if you have a roller trailer] and lubricate the winch latch assembly and gears. Watch for frayed cables, straps or ropes and replace them as soon as possible.

For off-season storage, park your boat and trailer in a protected area, such as a garage or carport. Do not put plastic bags around your light fixtures – condensation will occur and cause corrosion.

While your boat is in storage, it is a good time to touch up any rust spots, nicks and chips on your boat and trailer. Galvanized trailers occasionally show small rust spots, so touch up those spots with cold galvanizing spray paint, available at most paint stores.

A little trailer maintenance goes a long way in preserving the appearance and performance of your trailer. Please follow our recommendations. We want you to have your BENCHMARK TRAILERS boat trailer for a long, enjoyable time.

CAUTION

Boat bottom cleaners containing muriatic or other acids have a highly corrosive effect on both painted, galvanized or aluminum trailers and should not be allowed to contact the trailer.

Brake Adjustment



Drum style brakes are NOT self-adjusting brakes and will require regular checking and adjustment from time to time to make sure they operate properly.



Using pads and shoes without enough brake lining material can result in brake damage, create excessive heat, and cause the brakes not to work correctly.



Make sure the trailer is not allowed to move. Attach it to the tow vehicle and block the tires when servicing the brakes.

Only a qualified mechanic trained in the repair and maintenance of braking systems should attempt brake adjustment, repair, and replacement. To make the brake adjustments to your BENCHMARK TRAILERS trailer, follow the method explained below. If you are not sure about making these adjustments, your BENCHMARK TRAILERS Dealer can make these adjustments for you. See the Jack Placement section on page 20 for instructions on jack placement.

For Hydraulic Drum Brakes

- 1. Raise the trailer wheel so it can turn freely.
- Locate and remove the dust cover

from the adjusting slot on the lower back of the brake backing plate.

- 3. Locate the brake adjusting screw [called a star adjuster] through the adjusting slot and insert a brake adjusting tool. Adjust the brake shoes out [tighten by turning the star adjuster down on the left side drum and up on the right side drum] until tires will not turn by hand, then back off [loosen by turning the star adjuster up on the left side drum and down on the right side drum] the adjustment until the wheel turns freely, usually 8 to 10 clicks. Rotate the drum in the direction of forward rotation only. [See Figure 16]
- 4. If properly adjusted the drum should turn freely and have a barely audible sound of the shoes against the drums. This indicates that the shoes are in contact with the drum, but not dragging a lot.



The star adjuster can disconnect from the brake and fall to the bottom of the brake drum if you loosen it too much. This will cause damage to the brake and will not let the brakes work properly.

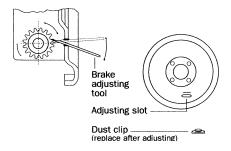


Fig 16: Brake Adjustment

Trouble-Shooting Hydraulic Brakes SYMPTOM SOLUTION **BRAKE NOISE** Shoe chatter, lining coated Locate cause of grease or oil with grease or oil. leakage, reline and grind for proper lining-to-drum contact. Vibration with loose bolts, Tighten hub bolts or nuts and recondition or replace drums. out-of-round drums. Vibrations with loose bearing Adjust or replace bearings and adjustment or rough bearing. races. Worn/cracked drums or machined Replace drums. beyond oversize limits.

Trouble-Shooting Hydraulic Brakes

SYMPTOM

SOLUTION

EXCESSIVE TRAVEL OF ACTUATOR

Leaks in hydraulic lines.	Replace defective lines.
Low fluid in master cylinder reservoir. Air in hydraulic lines.	Refill master cylinder and bleed system.
Leaking wheel cylinders	Repair or replace.
Leaking primary cup in master cylinder. Ports closed or restricted with dirt. Defective hoses. Leaking check valve fails to keep hydraulic system preloaded.	Check problem components and adjust, repair or replace as required.
Excessive lining-to-drum clearance	Adjust brakes or replace linings.
PRESSURE BUILD-UP IN SYSTEM	
Contaminated fluid causing cup swelling.	Drain, flush and replace fluid. Replace cups.
Master cylinder piston fails to stop and keeps the compensating port closed.	Check all components and adjust, repair or replace as required.
Hose or cylinder ports are closed or restricted with dirt.	Overhaul or replace.
Weak return spring	Overhaul or replace.
HEAVY CLUNKING SOUND FROM ACTUATOR	
Leaks in hydraulic lines	Replace hydraulic lines.
Low fluid in master cylinder	Refill master cylinder and bleed system.
If no hydraulic leaks & good fluidlevel	Replace shock absorber.

Periodic Brake Adjustment

- 1. Adjust trailer brakes after the first 1000 miles of use.
- 2. Trailer brakes should be inspected and adjusted at the beginning of each boating season, or every 2000 miles, whichever comes first.
- 3. Wheel bearings and seals should also be inspected at this time.

For Disc Brakes

Adjustment is not necessary on BENCHMARK TRAILERS's disc brakes. Make sure the brake parts are free from rust and debris. Check brake pads periodically to make sure there is a proper amount of lining left. Check the brake fluid and make sure it is full before every trip.

Only a qualified mechanic trained in the repair & maintenance of braking systems should attempt brake adjustment, repair and replacement. **Tire Changing**

CAUTION

Make sure you are on solid footing and level ground when changing tires.

Replace your trailer tires promptly if they become worn or damaged. If within the warranty period, contact the tire manufacturer for an adjustment. You can get a spare tire at your BENCHMARK TRAILERS Dealer. We also recommend that you carry a jack, such as a small hydraulic jack, for tire changes.

Getting your hands in tight places under the fender can cause accidental

pinching. We recommend wearing gloves while changing tires. After the tire is changed, be sure to retorque the lug bolts or nuts as mentioned in the "Torque Procedure" section.

To change a tire, make sure the trailer is not allowed to move. Attach it to the tow vehicle and block a tire on the opposite side.

Jack Placement



Make sure the trailer is not allowed to move. Attach it to the tow vehicle and block the tires.

On tubular steel type trailers, the best place to put your tire jack is under the axle where the spring mounts to the axle. On a torsion axle trailer, place the jack under the axle tube as near the tire as possible, but not on the torsion arm. If the jack will not fit under the axle, place it under the main frame rail [boom] as close to the axle as possible.

BENCHMARK TRAILERS wheel sizes are as follows:

Spare Wheels

8" 5 Hole - 4 1.2" Bolt Circle 10" 5 Hole - 4 1.2" Bolt Circle 12" 5 Hole - 4 1.2" Bolt Circle 13" 5 Hole - 4 1.2" Bolt Circle 14" 5 Hole - 4 1.2" Bolt Circle 20.5" 5 Hole - 4 1.2" Bolt Circle

Wheel, Tire, and Hub Care

Since your BENCHMARK TRAILERS boat trailer is put in water and put through other severe conditions, it needs more attention to the wheels and its components than your car.

Keep Bearings Lubricated using the Greased Bearing System



Since boat trailers wheels are put in water, it is important you check and grease your wheel bearings on a regular basis.

Do not use a power-assisted grease gun to add bearing grease. Caution should be used when adding grease. Using a power-assisted grease gun or over-greasing the bearing protectors can cause the seal to fail. Hubs must be completely filled with grease in order for the bearing protectors to work properly.

To check your bearings, raise your wheel clear of the road surface [by the procedure indicated in "tire changing"]. With your hands on the outside edges of the tire, try to rock the wheel by pushing on one side and pulling on the other. No noticeable rocking should occur. Spin the wheel and listen for noise or roughness. A smooth, silent operation means that your bearings are in good order. If a grinding sound is heard, BENCHMARK contact your TRAILERS Dealer for warranty and/or replacement instructions. Grease carefully with a hand operated grease gun before launching or storage. Do not add grease when the hub is cold because too much grease flow can damage seals and brake shoes. Do not use a power assisted grease gun.

Hubs must be completely filled with grease in order for the bearing protectors to function properly. Use certified water-proof lithium-based marine trailer bearing grease. DO NOT OVERFILL WITH GREASE.

Some BENCHMARK TRAILERS are factory equipped with a bearing protector that uses a spring loaded

piston to slowly feed grease through the bearing protector and into the bearings. On these models, this spring is plainly visible to the user. A zirc [grease] fitting is attached to the center of a disc located on the bearing protector. The disc is about the size of a half dollar. As you add grease to the bearing protector through the zirc fitting, the cavity slowly fills up and the disc will start to move towards you as it begins to compress the spring. Stop adding grease when the spring begins to compress and the disc begins to move towards you. Do not fill the bearing protector until the spring is fully compressed. This can result in damage to the seal, loss of the grease, and potential race, bearing and spindle damage. Periodic checking can be accomplished by simply rocking the disc side to side with your fingers. If the disc is able to rock side to side, it is floating on grease and no more grease needs to be added. If the disc has bottomed out [seated] and cannot be moved, it is time to add more grease using the instructions above.

If you have to remove a greased system bearing protector, lay a block of wood against the side of it and tap the wood with a hammer. Then place the wood on the opposite side and tap again. Continue until you "walk" the protector out of the hub. To install a bearing protector, make sure you have the proper sized bearing protector to match your hub. Then line the protector up with the hub, lay a block of wood over the front of the protector and pound the wood with a hammer. Bearing protectors are designed to fit tightly into the hub, so be sure it is carefully aligned before striking the wood.

Note: Bearing Protectors are not a replacement for proper bearing maintenance.

Changing or Adjusting Bearings



Make sure the trailer is not allowed to move. Attach it to the tow vehicle and block the tires.

The trailer wheel bearings have been torqued at the factory. However, if the bearings need adjustment, follow the method explained below or have your BENCHMARK TRAILERS Dealer do the work. BENCHMARK TRAILERS recommends you check the bearing adjustment every 2,000 miles or before every season, whichever is less.

Make sure the trailer is properly secured against moving, attach it to the tow vehicle and block the tires. Place the iack under the axle or under the frame near the axle [please see the proper jack locations listed under "Jack Placement" on page 20]. Jack up the side of your trailer and remove the bearing protector or oil bath cap. cotter pin and spindle nut retainer. To tighten the spindle nut, tighten [preload] the spindle nut to 30 foot pounds while turning the hub. Back the spindle nut off. While backing off, do not disturb the hub. Then retighten the spindle nut using a torque wrench to 18-24 inch lbs. [finger tight, do not over-tighten]. When the nut is tightened and positioned properly, the wheel should turn easily with no hub play when you rock the tire [side-toside movement].

To replace the nut retainer, put it over the nut so that the cotter pin can be put in the spindle hole without loosening or tightening the nut. Rock the tire to check the hub play, check tightness, and loosen or tighten as needed. Put the cotter pin in the hole, bend the ends of the cotter pin and put on the bearing protector or oil bath cap.

With a greased bearing system, add grease to the bearing protector until you begin to see the spring compress, as described in the section Keeping Bearings Lubricated using the Greased Bearing System on page 21. DO NOT OVERFILL WITH GREASE.



Unlubricated or dry wheel bearings may cause serious damage.
Unlubricated or dry wheel bearings will cause the wheel to make a lot of noise. The wheel and hub can separate from the trailer if it is driven in an unlubricated or dry condition.

Check your wheel bearings often during times of heavy usage and/or salt water applications.



Grease or oil on the trailer brakes can cause the brakes not to work orrectly.

Check Wheel Bearing Seals

It is normal to see a film of grease or oil around the seal area, so a slight amount of leakage will not hurt, but if the seal leaks excessively, it should be replaced by an BENCHMARK TRAILERS Dealer.

If you are adding a lot of grease or oil to the hub under normal usage, the seal is probably leaking and you should have the seal checked right away by an authorized BENCHMARK TRAILERS Dealer. BENCHMARK TRAILERS recommends wheel bearings be inspected and seals replaced when your boating season is over or before the trailer is put in storage.

Definitions

Aft: A nautical expression referring to the back area of a boat.

Actuator: See 'Trailer Actuator'

Anchor Chock: A bracket or roller usually mounted on the front of the boat and often sticking forward past the bow of the boat

Back-up Solenoid: An electrical solenoid used on brake actuators for trailers with disc brakes that allows the trailer to be backed up on level ground without the brakes locking up.

Bearing Protector: A device that is installed on the hub that allows lubrication of the bearings.

Boat Bow Safety Chains: Safety chain[s] attached to the winch stand of the trailer and hooked onto the bow eye of the boat as a safety precaution. [See Safety Chains]

Boat Strakes: Small ribs on the underside of the boat running fore and aft, visible from the underside of the boat.

Boom: The main frame members that run fore and aft on the trailer.

Bow: The front tip of the boat.

Bilge Pump: A pump used to remove unwanted water from the bilge [the lower part of the boat.]

Bow Eye Length: A measurement taken from the transom to the bow eye for purposes of determining trailer length and winch stand placement.

Bow Pulpit: A small platform sticking forward past the tip of the bow of the boat.

Bow Stop Roller: A roller on the trailer's winch stand that the bow of the boat rests against.

Brackish Water: Polluted water or mixed freshwater and saltwater

Brake Controller: An electrical brake controller mounted inside the cab of the tow vehicle that lets you manually activate the brakes and also houses the inertia sensing device. [See 'Inertia Sensing Device'].

Brake Flush Kit: A garden hose adapter kit that attaches to drum brakes that allows fresh water to be flushed into the drum brakes to rinse out salt water, brackish water or small debris

Bunks: Generally either made of wood covered with carpet or aluminum with a plastic like surface. Provides the main support under the boat's hull while on a bunk style trailer.

Channel Glide Bunk Covers: A slippery channel shaped plastic like material that goes over the existing wood bunk to make launching and loading the boat easier by reducing friction between the boat and the carpeted bunk. Recommended for aluminum boats only.

Coupler: See 'Trailer Coupler'.

Coupler Locking Device: A lock or small nut & bolt put through the locking hole on the latch of the coupler that helps to prevent the coupler from coming off the hitch ball.

Coupler Safety Chains: Safety chains running from the coupler or actuator area on the trailer to the hitch area of the tow vehicle.

Fishtailing: The boat and trailer swaying from side to side while being towed.

Fore: A nautical term referring to the front area of the boat

Gross Vehicle Weight: The actual combined weight of the trailer, boat with motor, fuel and gear.

Gross Vehicle Weight Rating [GVWR]: The maximum allowable combined weight of the trailer, boat, motor, fuel and gear.

Hitch Ball: The ball shaped part of the hitch on the rear of the tow vehicle used to connect to the trailer.

Hydraulic Surge [disc brakes]: Disc brakes on the trailer using the hydraulic surge method to apply the brakes.

Hydraulic Surge [drum brakes]: Drum brakes on the trailer using the hydraulic surge method to apply the brakes.

Inertia Sensing Device: This is part of an electrical unit used with electric brakes that senses the vehicle slowing down and activates the trailer brakes automatically. It is generally mounted inside the cab of the tow vehicle. [see 'Brake Controller']

Keel: The fore and aft center line of the boat, the lowest point of the hull on a V-bottomed boat.

Launch Position: Having the trailer deep enough in the water that if the boat were launched it would have enough water to support the boat without making contact with the ground or cause any damage.

Load Guides: Attachments to the side of the trailer that have rollers, bunks or PVC tubes that are near the side of the boat to assist in keeping the boat centered on the trailer while loading or launching.

Mooring Line: A rope or line attached to the bow of the boat so that a person has control of the boat after it is launched off of the trailer.

Port: A nautical directional term for left or left side.

Roller Pattern: The spacing the rollers have on the underside of the boat on roller trailers.

Rollers: Round cylindrical rolls that support the boat and roll when the boat is being launched or loaded on a roller style trailer.

Safety Chains: A general term used to describe either the safety chains located on the winch stand that attach to the bow eye of the boat, or located near the coupler or actuator and attach near the hitch area on the tow vehicle.

Saltwater: Water with salt content in it.

Side Rollers: Refers to roller style load guides. [See

Load Guides]

SpindleNut: The nut that threads onto the spindle of

the axle.

Spindle Nut Retainer: A steel cap that fits over the spindle nut used in conjunction with a cotter pin to keep the spindle nut from unscrewing.

Starboard: A nautical directional term for right or right side.

Stern: A nautical expression referring to the back end of the boat

Tie-downs: A securing device that attaches to or near the rear transom of the boat and downward to the trailer to help secure the back end of the boat to the trailer.

Tongue: The most forward portion of the trailer that has the coupler or actuator attached to it.

Tongue Weight: The amount of weight the tongue is carrying if weighed at the actuator or coupler.

Torsion Axle Trailer: A trailer using torsion as a means of suspension rather than leaf springs.

Tow Vehicle: The vehicle that pulls the boat and trailer.

Trailer Actuator: The part of the trailer that is bolted or welded to the tip of the tongue of the trailer that houses the hydraulic reservoir and several other components of a hydraulic brake system. This also is the part that attaches to the hitch ball on the tow vehicle.

Trailer Coupler: The part of the trailer that is bolted or welded to the tip of the tongue of the trailer and attaches to the hitch ball of the tow vehicle.

Trailer Tonque: See "Tonque".

Transom: The near vertical rear end of the boat where the outboard motor is generally attached, or the lower unit of the inboard outboard motor is generally attached.

Transom Drain Plugs: Plugs in the lower rear transom area that when removed will drain excess water from the boat after the boat is out of the water on the trailer. Drain plugs must be kept in the transom drain plug holes whenever the boat is in the water.

Vee Block: A 'V' shaped block on the trailer's winch stand that the bow of the boat rests against.

Weight Carrying Hitch: A hitch that supports some of the weight of the boat and trailer.

Weight-distributing Hitch: A hitch that distributes some of the weight of the boat and trailer into the frame of the tow vehicle.

Winch Latch Assembly: A latch assembly located on the trailer winch that switches the winch from a 'reel-in' condition to a 'reel-out' or a 'neutral free-wheeling' condition.

Winch Safety Chains: See 'Boat Bow Safety Chains' Winch Strap/Cable: A cable or strap attached to the trailer winch used in loading, launching and securing of the boat.

60 degree Cone Angle Zinc Plated Lug Bolts: A 60 degree lug bolt used to attach the wheel to the hub or drum on a trailer.

Benchmark Trailers Boat Trailer Limited Warranty

Benchmark Trailers warrants a boat trailer frame and frame components for two (2) years from the date of manufacture against defective material and workmanship. During this warranty period, Benchmark Trailers will either replace or repair, at their discretion, any part deemed defective after the trailer has been delivered to an authorized dealer for assessment. The following items are not covered under this warranty: tires, and vendor supplied items, e.g., tires, winches, jacks, lights, and brakes; these items will be warranted directly through the appropriate vendor or manufacturer.

Since boat trailers are used in environments which subjects the paint many elements that are hazardous, paint finish which shows signs of, but not limited to, rust or paint chipping resulting from road debris, saltwater or brackish waters will not be warranted.

General Exclusions from Warranty:

- 1. Abuse or neglect
- 2. Lack of proper maintenance as described in owner manual
- 3. Installation of parts or accessories that are not equivalent in design and quality to Benchmark Trailers' parts
- 4. Normal wear and tear
- 5. Damage resulting from failure to keep bearings properly lubricated
- 6. Damage caused by accidents, collisions, road hazards, overloading, or trailer modifications
- 7. Failure attributable to improper assembly or damage to components if the hub is removed from the axle spindle
- 8. Damage caused by use of wheels not supplied by the trailer manufacturer

Transfer of Warranty:

Transfer of the balance of the original warrant from the original purchaser to any subsequent purchaser will be at the discretion of Benchmark Trailers. The original purchaser must have the trailer inspected by an authorized boat dealer and request the seller to submit a change of warranty registration to Benchmark Trailers within 10 days of the transfer of ownership.

Benchmark Trailers makes no other warranty of any kind, expressed or implied. All implied warranties of merchantability and fitness for a particular purpose which exceed the obligations and time limits stated in this warranty are hereby disclaimed by Benchmark Trailers and are excluded from this warranty. Some states do not allow warranty time limitations, so the above limitation may not apply to you.

All excluded from this warranty, are any incidental or consequential damages, including loss of use. Some states do not allow exclusions or limitations of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

Prior Authorization is required from BENCHMARK TRAILERS before repairs are performed.

Warranty Registration

Fill out and mail the Warranty Registration Card if the dealer has not already done it. Having this card on file will speed up the process if you have a problem, need replacement parts, or if we need to contact you with important information about your trailer. Using the Vehicle Identification Number we can look up the registration which has the information we would need to make sure that you get the right parts for your trailer. Please ask your Benchmark Trailers Dealer or give us a call if you have any questions regarding the Warranty Card. Keep the upper portion of the card for your records and send in the lower half.

Warranty Questions

If your Benchmark trailer doesn't live up to our warranty, we want to make it right. Discuss the problem first with your Benchmark Dealer. In most cases, a satisfactory solution can be resolved.

Manufacturers of marine products are required to keep current owner registration lists. If there is a safety modification or product recall, we will be able to notify you accordingly.

Please send in your warranty card promptly after purchase.

Contact Information

Manufacturer:

Questions, or Comments may be Directed to: Customer Service Department Benchmark Trailers 9941 Manchester Highway Morrison, TN 37357 (931) 235-8496

Reporting Safety Defects

Benchmark Trailers
9941 Manchester Highway
Morrison, TN 37357
If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration [NHTSA] in addition to notifying Benchmark Trailers.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Benchmark Trailers.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 [or 366-0123 in Washington D.C. area] or write to:

NHTSA
U.S. DEPARTMENT of
TRANSPORTATION
400 7TH Street SW, [NSA-11]
Washington, DC 20590
You can also obtain other information
about motor vehicle safety from the
Hotline.