



**SARDINE TRAILERS
OPERATORS/OWNERS
MANUAL**



IMPORTANT SAFETY INFORMATION

⚠️WARNING

Read all safety warnings and instructions.

Failure to follow the warnings and instructions may result in serious injury.

Save all warnings and instructions for future reference.

The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Assembly Safety

1. Keep work area clean and dry. Cluttered, damp, or wet work areas invite injuries.
2. Keep children away from work area.
3. Use eye protection. Wear ANSI-approved safety impact eye goggles when assembling this Trailer.
4. Do not modify this Trailer, and do not use this Trailer for a purpose for which it was not intended.
5. **WARNING:** The cord of this product contains lead and/or di (2-ethylhexyl) phthalate (DEHP), chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)

Connection Safety

1. Dress safely while connecting/disconnecting. Do not wear loose clothing or jewelry, as they can become caught in moving parts. Wear a protective hair covering to prevent long hair from becoming caught in moving parts. If wearing a long-sleeve shirt, roll sleeves up above elbows. Wearing safety work shoes is recommended.
2. Do not setup or use this Trailer if under the influence of alcohol or drugs. Read warning labels on prescriptions to determine if your judgement or reflexes are impaired while taking drugs. If there is any doubt, do not attempt to use this Trailer.
3. Stay alert. Watch what you are doing at all times. Use common sense. Do not setup or use this Trailer when you are tired or distracted from the job at hand.
4. The tail light bulbs supplied with this Trailer are for a 12 volt DC (negative ground) electrical system only. Do not attempt to power the Light Bulbs with any other type or voltage electrical current.
5. Make sure the Hitch Coupler (24) and the vehicle's ball hitch (not included) are of equal mating size (1-7/8") and are rated equal to or greater than the weight of the Trailer and its payload.
6. Before each use, attach the Trailer's Safety Chain (23) to the towing vehicle. Attach the Safety Chain to the towing vehicle's rear bumper or frame with equal length on each side and chains crossed under the trailer tongue. Allow just enough chain length for unrestricted turning. Do not allow the Safety Chain to drag on the ground.

Loading Safety

1. Do not exceed the Trailer's maximum payload capacity of 600 lb.
2. Properly and safely secure the payload in the Trailer. Load the Trailer evenly from side to side with 60% of the load forward of the Axle (5).
3. Make sure the towing vehicle and its hitch are both rated to safely tow the Trailer and its payload. The towing capacity of the hitch is typically stamped on the hitch drawbar.

Operation Safety

Note: Selected recommendations in this section are adapted from *TOWING A TRAILER - Being Equipped for Safety*, published by NHTSA. For full details, see that document.

1. This Trailer is not a toy.
Do not allow children to play on or near this item.
2. Take time to practice before driving on main roads.

Before Each Use

1. Check Tire (18) condition and air pressure.
2. Make sure wheel lug nuts/bolts are properly tightened.
3. Make sure hitch, coupler, draw bar, and other equipment that connect the trailer and the tow vehicle are properly secured and adjusted.
4. Make sure wiring is properly connected — not touching the road, but loose enough to make turns without disconnecting or damaging the wires.
5. Make sure all running lights, brake lights, turn signals, and hazard lights are working.
6. Check that all items are securely fastened on and in the trailer.

General Handling

1. Use the driving gear that the towing vehicle manufacturer recommends for towing.
2. Drive at moderate speeds. This will place less strain on your tow vehicle and trailer. Trailer instability (sway) is more likely to occur as speed increases. **Do not exceed 45 miles per hour when towing the Trailer.**
3. Avoid sudden stops and starts that can cause skidding, sliding, or jackknifing.
4. Avoid sudden steering maneuvers that might create sway or undue side force on the trailer.

Braking

1. Allow considerably more distance for stopping.
2. If you have an electric trailer brake controller and excessive sway occurs, activate the trailer brake controller by hand. Do not attempt to control trailer sway by applying the tow vehicle brakes; this will generally make the sway worse.

Acceleration and passing

1. When passing a slower vehicle or changing lanes, signal well in advance and make sure you allow extra distance to clear the vehicle before you pull back into the lane.
2. Pass on level terrain with plenty of clearance. Avoid passing on steep upgrades or downgrades.

Downgrades and Upgrades

1. Downshift to assist with braking on downgrades and to add power for climbing hills.
2. On long downgrades, apply brakes at intervals to keep speed in check. Never leave brakes on for extended periods of time or they may overheat.
3. Some tow vehicles have specifically calibrated transmission tow-modes. Be sure to use the tow-mode recommended by the manufacturer.

Backing Up

1. Put your hand at the bottom of the steering wheel. To turn left, move your hand left. To turn right, move your hand right.
2. Back up slowly.
3. Because mirrors cannot provide all of the visibility you may need when backing up, have someone outside at the rear of the trailer to guide you whenever possible.
4. Use slight movements of the steering wheel to adjust direction. Exaggerated movements will cause greater movement of the trailer.
5. If you have difficulty, pull forward and realign the tow vehicle and trailer and start again.

Parking

1. Try to avoid parking on grades.
2. If possible, have someone outside to guide you as you park.
3. **Once stopped, but before shifting into park:**
 - a. Have someone place blocks on the downhill side of the trailer wheels.
 - b. Apply the parking brake.
 - c. Shift into Park.
(first or reverse gear for manual transmissions)
 - d. Then remove your foot from the brake pedal.
4. **Before uncoupling a trailer:**
 - a. Place blocks at the front and rear of the trailer tires to ensure that the trailer does not roll away when the coupling is released.
 - b. An unbalanced load may cause the tongue to suddenly rotate upward; therefore, before uncoupling, place jack stands under the rear of the trailer to prevent injury.

Following this parking sequence is important to make sure your vehicle does not become locked in Park because of extra load on the transmission.

TRAILER LICENSING NOTICE

Some states may consider this Trailer a vehicle requiring registration, licensing, and titling. Check with your State Department of Motor Vehicles for information and guidance on registering, licensing, and titling the Trailer.

Maintenance Safety

1. Maintain labels and nameplates on the trailer. These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
2. Replacement parts and accessories: when servicing, use only identical replacement parts. Only use accessories intended for use with this Trailer. Approved accessories are available from Harbor Freight Tools.
3. Maintain this Trailer with care. Keep this Trailer clean and dry for better and safer performance.
4. For your safety, service and maintenance should be performed regularly by a qualified technician.
5. When not in use, store Trailer in a dry location to inhibit rust. Lock up Trailer, and keep out of reach of children.

Operating Instructions



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this Trailer.

Before each use

1. Check Tire condition and air pressure.
2. Make sure wheel lug nuts/bolts are properly tightened.
3. Make sure hitch, coupler, tow bar, and other equipment that connect the trailer and the tow vehicle are properly secured and adjusted.
4. Make sure wiring is properly connected — not touching the road, but loose enough to make turns without disconnecting or damaging the wires.
5. Make sure all running lights, brake lights, turn signals, and hazard lights are working.
6. Check that all items are securely fastened on and in the Trailer.
7. Be sure the trailer jack, tongue support, and any attached stabilizers are raised and locked in place.
8. Check load distribution to make sure the tow vehicle and Trailer are properly balanced front to back and side to side.
9. Check side- and rear-view mirrors to make sure you have good visibility.
10. Check routes and restrictions on bridges and tunnels.
11. Make sure you have wheel chocks and jack stands.
12. Check Trailer for loose bolts and nuts, structural cracks and bends, and any other condition that may affect its safe operation. Do not use the Trailer if even minor damage appears.

Connection

WARNING! Only use a 2" ball hitch (not included) on the towing vehicle.

1. To reduce friction between the hitch ball and Hitch Coupler, apply a thin layer of heavy weight grease over the hitch ball.
2. Unlock the Coupler Trigger by removing its R-Clip and Locking Pin.
3. Pull up on the Trigger and lift up on the Handle.

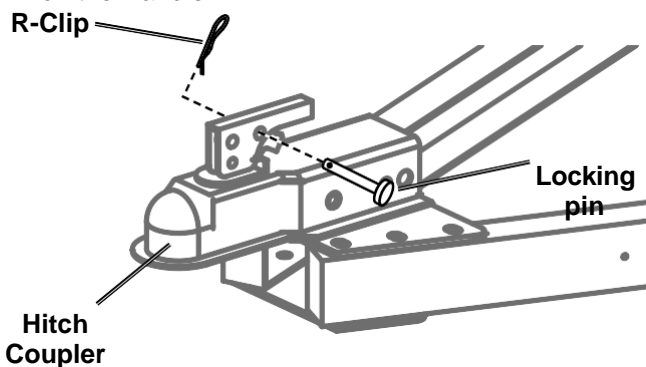


Figure L: Remove R-Clip and Locking pin

4. With assistance, place the Hitch Coupler over the vehicle's hitch ball, pull back on the Trigger and push down on the Handle until the Trigger locks in the slot.

After unlocking the Handle, press back on the nut retaining plate (holding the

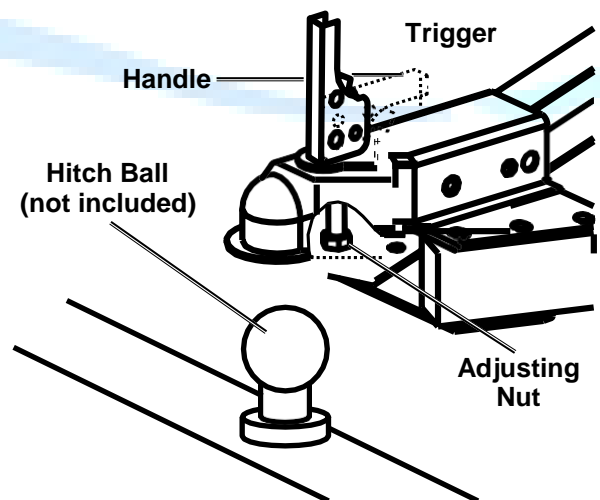


Figure M: Ball Connection

5. Pull up and down on the Coupler to make sure the hitch ball fits snugly in the Coupler. There must be no play between the hitch ball and Coupler. **WARNING!** If there is play, tighten the Adjusting Nut until no play is present.

Adjusting Nut in place) while the Nut is tightened. After the Nut is tightened, **the retaining plate must fit in place against the flats of the Nut to prevent it from moving.** This adjustment should be done by two people. If the Adjusting Nut is too tight, the Handle will not lock.

6. After the Adjusting Nut is properly adjusted, pull back on the Trigger and push down on the Handle until the Trigger locks in the slot.
pull up on the Handle firmly to make sure the Trigger is locked in place and the Handle cannot move. **Replace the Locking pin and R-Clip.**
7. Attach the Safety Chain (23) to the towing vehicle's rear bumper or frame with equal length on each side and chains crossed under the trailer tongue. Allow just enough chain length for unrestricted turning without dragging chain on the ground.
8. Connect the Wiring Harness to the towing vehicle's 12 Volt DC system.

Note: Consult the operator's manual of the towing vehicle for proper connection instructions.

9. When towing Trailer over long distances, stop and check the tightness of all connections, Side Running Lights, and Tail Lights *at least* every 100 miles.

Loading a Boat

WARNING! Load or unload only using a properly constructed and maintained loading ramp. Loading or unloading at an improper location may result in boat/trailer damage, in the boat/trailer becoming stuck, or in serious injury from out of control trailer or boat.

Check towing vehicle condition, particularly engine power, brakes, and parking brake. Do not use a vehicle that is not in optimal condition for towing.

Boat designs differ. Be sure boat will not be damaged by the loading and unloading process, and can be properly and safely supported along its entire length during transport. Boat design must be such that the loaded boat will contact the entire length of all bunks and rollers at all times during transportation. Harbor Freight Tools cannot be responsible for boat/trailer damage or personal injury resulting from boat movement during transport, boat designs that do not completely conform to this trailer, or other improper/unsafe transportation techniques.

1. Prepare boat for launch before arriving at the ramp.
2. Unplug Trailer Lights. Allow enough time for light bulbs to cool.
3. Check that Trailer Bunks are undamaged, parallel to each other, and sufficiently padded. Do not use if even minor damage or misalignment appears.
4. Back Trailer down loading ramp into water. Trailer should be far enough into water to allow boat to glide up onto the farthest roller.
5. Put vehicle in Park, engage parking brake, and leave vehicle running.
6. Float boat onto Trailer. Crank boat fully onto Trailer. Bow should be snug against winch post. In addition to winch strap, use safety chain (not included) to attach bow to trailer.
7. Secure boat to trailer using straps (sold separately) at stern.
8. Raise outboard or sterndrive.
9. Guide Trailer slowly up ramp.
10. Check and tighten straps securing boat to Trailer. Boat may have shifted during exit from water.
11. Unplug boat drains.
12. Plug in Trailer Lights.
13. Thoroughly test Trailer Lights, boat to Trailer attachment, and boat balancing on Trailer before transporting the Trailer further. If any part of the boat extends beyond the end or sides of the Trailer, additional safety markings, such as flags, may be required for transport on public roads. Follow federal, state, and local regulations.

10. Carry emergency flares and fire extinguisher, if required for operation in your state. Carry extra bulbs and fuses if towing the Trailer at night over long distances.

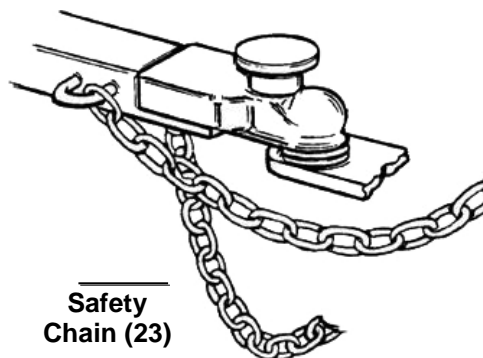


Figure N: Safety Chain

Clean Trailer off thoroughly with fresh water after every use.

WARNING! If winch handle slips out of grip, let it spin. Do not try to stop it.

Unloading a Boat

1. Unplug Trailer Lights.
2. Thread plugs securely into all boat drains.
3. Disconnect straps.

IMPORTANT: Do not disconnect winch line or bow Safety Chain until the the boat and trailer are in the water and ready for launch.

4. Back Trailer slowly down loading ramp until water reaches just above Trailer Wheel Hubs.
5. Engage parking brake.
6. Disconnect bow Safety Chain. Let out winch line until boat is free of Trailer.
7. Disconnect winch and launch boat.

Tire Information

Tire Terminology Glossary

- **Accessory weight means**- the combined weight of automatic transmission, power steering, power brakes, power windows, power seats, radio, and heater, to the extent that these items are available as factory-installed equipment.
- **Carcass means**- the tire structure except for the tread which provides the major portion of the tire's capability to deflect in response to the vertical loads and tractive forces that the tire transmits from the roadway to the non-pneumatic rim, the wheel center member, or the vehicle and which attaches to the vehicle or attaches, either integrally or separably, to the wheel center member or non-pneumatic rim.
- **Carcass separation means**- the pulling away of the carcass from the non-pneumatic rim or wheel center member.
- **Chunking means**- the breaking away of pieces of the carcass or tread.
- **Cracking means**- any parting within the carcass, tread, or any components that connect the tire to the wheel center member.
- **Curb weight means**- the weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine. Load rating means- the maximum load a tire is rated to carry.
- **Maximum loaded vehicle weight means**- the sum of:
 - a. Curb weight;
 - b. Accessory weight;
 - c. Vehicle capacity weight; and
 - d. Production options weight.
- **Maximum tire width means**- the greater of either the linear distance between the exterior edges of the carcass or the linear distance between the exterior edges of the tread, both being measured parallel to the rolling axis of the tire.
- **Normal occupant weight means**- 68 kilograms times the number of occupants.
- **Occupant distribution means**- distribution of occupants in a vehicle.
- **production options weight means**- the combined weight of those installed regular production options weighing over 2.3 kilograms in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.
- **Tread means**- that portion of the tire that comes in contact with the road.
- **Tread separation means**- pulling away of the tread from the carcass.
- **Vehicle capacity weight means**- the rated cargo and luggage load plus 68 kilograms times the vehicle's designated seating capacity.
- **Vehicle maximum load on the tire means**- that load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.
- **Vehicle normal load on the tire means**- that load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight and dividing by 2.

Tire Care

Checking Tire pressure

Note: Underinflated tires can decrease handling, stopping performance, traction, tire life, and load-carrying capability, in addition to causing other negative and hazardous effects, including tire failure. Overinflated tires are at greater risk of an impact break, where the tread and casing break when striking a hard edge, often opening a huge gash across the tread. Incorrect inflation pressure also increases tires wear rate. Therefore, it is important to keep tires inflated properly.

Check all tires' pressure at least monthly, due to the following factors:

- Most tires naturally lose air gradually.
- Tires can suddenly lose air if the tire strikes a pothole, curb, or other object.
- It is usually not possible to determine underinflation of radial tires by visual inspection.

This vehicle has 60 PSI recommended cold tire inflation pressure. The term "cold" in this manual does not refer to the temperature outside, but it refers to the fact that a tire that has not been driven for a period is cooler (and therefore has lower pressure) than a tire that has been driven on. Tires heat up while being driven on. To check (or fill to) a tire's cold inflation, the tire must have not been driven for more than a mile or two for at least three hours. If you check a tires pressure when it is not "cold", the pressure will appear higher than the actual cold tire inflation.

Steps for Maintaining proper Tire pressure

1. Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual. This Trailer has 60 PSI recommended cold tire inflation pressure.
2. Measure and record the tire pressure of all tires.
3. If the tire pressure is too high in any of the tires and the tires have not been driven for at least three hours, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure. If the vehicle has been driven within the past three hours and the tire pressure is too high on any tires, then recheck the pressure once the tires have been allowed to sit motionless for at least three hours.
4. If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
5. At a service station, add the missing pounds of air pressure to each tire that is underinflated.
6. Check all the tires to make sure they have the same air pressure.
7. If the tires' pressure was not measured "cold", then the pressure should be rechecked with the tires cold as soon as possible.

Tire Size

To maintain safety, only purchase new tires of the same size as the original tires. Look at the Tire and Loading Information Placard, the Specifications Chart in this manual, or the sidewall of the tire being replaced. If you have any doubt about selecting the correct size, consult a tire dealer.

Tire Tread

The tire tread provides traction that prevents your vehicle from slipping, especially if the road is wet or icy. Tires are unsafe and should be replaced when the tread is worn down to 1/16". Measure tread depth using a tread depth indicator (not included).

Tire Rotation

Every 5,000 miles the left and right tires should be switched. This will cause the tires to wear more evenly and last longer.

Tire Balance and Alignment

The tires need to be balanced to prevent vibration when driving. This involves attaching small weights to the rim to offset small differences in rim and tire weight. The tires also need to be aligned properly. Alignment is the orientation of the tires to the road surface and their being parallel. This helps the tires to wear evenly, and provide better traction. Both tire balance and alignment require specialized equipment that is not provided with this vehicle.

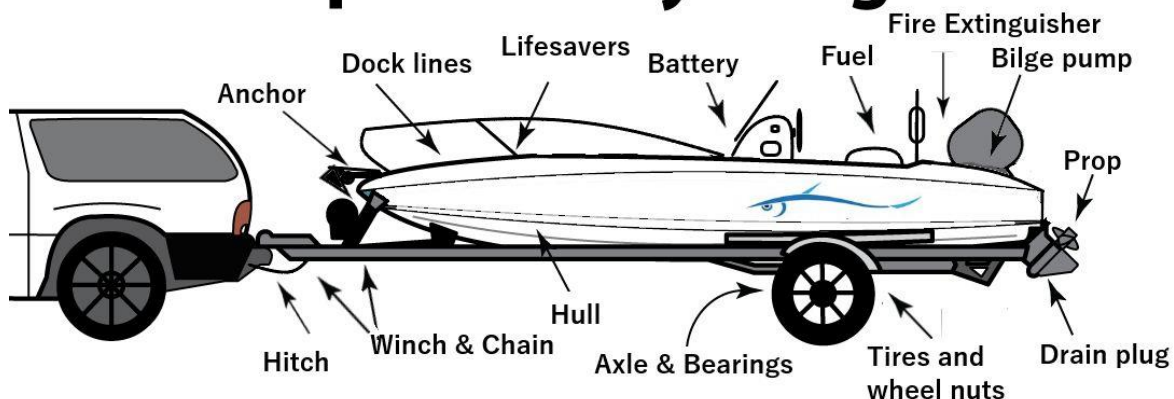
Tire Repair

To properly repair a punctured tire, the hole needs to be properly plugged and patched from the inside of the tire. Tread punctures can be repaired if they are not too large. Sidewall punctures should not be repaired, the tire needs to be replaced if the sidewall is damaged. Tires should be removed from the rim to be inspected before being plugged and patched. A qualified mechanic should remove the tire from the rim, perform the repair, and remount the tire.

Vehicle Load Limit

Steps for Determining Correct Load Limit

1. Locate the statement "The weight of cargo should never exceed XXX kilograms or XXX pounds" on your vehicle's placard.
2. That 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.
4. If the Trailer's load exceeds the cargo and luggage load capacity, then the Trailer will be unsafe resulting in hazardous effects, such as: Trailer's tires will not be able to maintain traction properly, and stopping distance will be increased significantly.



Maintenance



procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠️ WARNING

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:

Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Note: Tow vehicles often have more frequent maintenance requirements, including changes of engine and transmission oils and filters, lubrication of components, and cooling system checks. Check your owner's manual for information on scheduled maintenance of your tow vehicle.

BEFORE EACH USE: Inspect the trailer and tow vehicle according to the instructions on page 12.

Tires

1. Periodic inspection and maintenance of tires and wheels are essential to towing safety, including spare tires. Proper tire pressure affects vehicle handling and the safety of your tires. You can find the correct tire pressure for your tow vehicle on the tire information placard.
2. Underinflation reduces the load-carrying capacity of your tow vehicle or trailer, may cause sway and control problems, and may result in overheating, causing blowouts or another tire failure.
3. Over inflation causes premature tire wear and affects the handling characteristics of the tow vehicle or trailer.

Wheel Bearings

1. **EVERY 2,000 TO 3,000 MILES OF USE**, lubricate the Hub Assemblies with a heavy weight bearing grease,
2. After each Hub Assembly is reassembled, tighten the Castle Nut until the wheel starts spinning with slight resistance. Loosen the Castle Nut about 1/6 turn from this point.
3. Insert a new Cotter Pin through the Castle Nut and the hole in the axle.
4. Bend the Cotter Pin back, locking it and the Nut in place.

Hitch

Check the nuts, bolts, and other fasteners to ensure that the hitch remains secured to the tow vehicle and the coupler remains secured to the trailer. The connection point may require periodic lubrication to permit free movement of the coupler to the hitch ball.

Wiring

1. Make sure connector-plug prongs and receptacles, light bulb sockets, wire splices, and ground connections are clean and shielded from moisture. Lightly coat all electrical terminal connections with nonconducting (dielectric), light waterproof grease.
2. Clean the prongs with very fine sandpaper, being careful not to damage the contact area.
3. Turn lights off, then clean the surface deposits in the connector holes. Try to clean off only the deposits and lubricate lightly with dielectric, light waterproof grease.

TRAILERING TIPS:

- Be sure that the rollers or bunks displace a large amount of hull surface and be sure the boat and equipment distribute evenly on the trailer.
- Make sure your boat is properly tied down and a safety chain is used.
- Check local and state laws concerning any trailer requirements.
- Do not trailer with your boat's Bimini top up or exposed to wind. It will be severely damaged.
- Use a mooring cover for extended trips.
- You are required by State and Federal laws to equip boat trailers with functional taillights and turn signals.
- Some states require registration of boat trailers and license plates.
- Check with the Department of Motor Vehicles for regulations governing your particular state.



- **WARNING:** Improper trailer size and improper weight distribution can cause swaying and fishtailing that can result in extensive damage to the trailer, the boat, and the towing vehicle.

Swaying and fishtailing are especially dangerous at higher speeds where they can become uncontrollable. Damage caused as a result of improper trailering is not covered under the Sardine Marine Warranty.

- Boat ownership and trailering carries with it certain responsibilities to yourself as well as your passengers and the general public. Safety, common sense operation, careful maintenance, and compliance with the law will not hamper your boating pleasure but will make boating more enjoyable.

REPORT SAFETY DEFECTS

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 Long Chih Industrial Co., Ltd. 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 Long Chih Industrial Co., Ltd. To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-888-327-4236 or 202-366-4000 or write to NHTSA, 1200 New Jersey Avenue, SE, West Building, Washington, DC 20590. You can also obtain other information about motor vehicle safety from the Hotline.

Note: Check with your local Department of Motor Vehicles for registration procedures. Some DMV's require the Certificate of Origin to be notarized, others do not.

Limited 90 Day Warranty

Sardine Marine LLC. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise.

If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

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



**PLEASE, SAVE THESE
INSTRUCTIONS.**