2025 Model Year

OWNERS MANUAL

7188 Vantage Way,
Delta, BC
V4G 1K7
TEL: 604-946-6177
TOLL FREE: 1-877-445-4637
www.highlinertrailer.com
sales@highlinertrailer.com

TABLE OF CONTENTS

IMPORTANT

Read this manual carefully with special attention directed towards all WARNINGS, CAUTIONS and IMPORTANT information specially marked.

Because of the continual improvements being made in our line, Highliner Trailers reserves the right to add or discontinue models at any time or to change design and specifications without notice and incurring obligations.

All specifications contained herein were in effect at the time this manual was printed.

Trailer laws covering such things as brakes, licenses, etc., will vary according to state and province. Be sure that your trailer is in full compliance with your state and provincial laws. Your trailer dealer usually can help you in this regard. If not, contact your nearest motor vehicle department office for full information.

The key to carefree trailering is a proper matching of trailer to your needs. A proper match is one in which the total weight and size of the load you intend to haul falls under the capabilities that your trailer was designed and built to handle.

NOTE

All references to the left or right are made when standing behind the trailer, facing the trailer.

BOW EYE SAFETY CHAIN

WARNING

Failure to tie down the bow independently from the winch strap could allow your boat to shift while traveling, causing loss of control of the tow vehicle and resulting in serious injury or property damage.

Highliner Trailers uses bow eye safety chains on trailers with a 1300-lb. winch rating and over. It is very important that you use the bow eye safety chain at all times except during loading and unloading. The bow eye safety chain is an added protection should the winch or winch strap fail.

BRAKES

Most provinces and states require by law that vehicles with a Gross Vehicle Weight Rating of 1,500 pounds or more have brakes on all wheels. Upon special request, you can order axles with brake flanges to accommodate brake retrofit installation. Brakes are becoming more of a necessity especially since the introduction of the smaller size car.

Most trailer brakes are designed to operate automatically when the towing vehicle's brakes are applied. When the towing vehicle slows down or stops, the forward momentum of the trailer against the ball hitch applies pressure to a master cylinder in the trailer coupler. This pressure activates the trailer brakes through a hydraulic brake system.

CAUTION

Weight equalizing or sway control devices inhibit the performance of surge brake actuators and should not be used. Air shocks on the rear axle of the tow vehicle offer a good means of leveling the vehicle and trailer when necessary.

INTRODUCTION TO SURGE BRAKING

Surge braking is accomplished by replacing a trailer's standard tongue coupler with an actuator and adding hydraulic brake assemblies. The "surge" or "push" of the trailer toward the tow vehicle during deceleration automatically synchronizes these trailer brakes with the tow vehicle brakes. As the trailer pushes against the vehicle, the actuator telescopes together and applies force to its master cylinder, supplying hydraulic pressure to the trailer brakes.

Surge actuators of this type provide a service life of approximately five years with proper installation, usage, and maintenance. However, a well cared-for actuator can often exceed this estimate.

BRAKE FLUID FILLING AND BLEEDING

WARNING

Use only fresh fluid from a sealed container. DO NOT reuse fluid.
After filling and bleeding, remember to refill the actuator. Failure to maintain an adequate fluid level may cause brake failure.

1. Remove the master cylinder's cap and fill the reservoir to three-quarters full with DOT-3 brake fluid. DO NOT allow brake fluid to contact painted surfaces since it will damage the finish. Wipe up any spills immediately and wash the area with water.

2. Bleed the brake system either manually or with a pressure bleeder. Pressure bleeding equipment simplifies the process, and is available at your local automotive supply store. Use the instructions provided with the pressure bleeder. If you chose to manually bleed the system, an assistant makes the job easier. Use the following steps to manually bleed the brake system:
    - Fill the master cylinder with fluid as described above. Repeatedly press the tip of the push rod assembly. This can be done by inserting a screwdriver in the round hole on the top of the coupler case. Use the screwdriver as a lever to press the push rod. Apply short strokes until bubbling stops inside the master cylinder.

WARNING

DO NOT use the actuator's break-away lever or cable to bleed the brake system.

    - Install a bleeder hose on the bleeder screw of the farthest wheel cylinder from the actuator. (If the trailer has tandem axles, bleed the rear axle first.) Submerse the other end of the hose in a glass container of brake fluid, so that air bubbles can be observed.
    - Open the bleeder screw and have your helper stroke (but not release) the push rod. Brake fluid and/or air bubbles will flow into the jar. Close the bleeder screw. The helper can then allow the push rod to return.
    - Repeat the process until no more bubbles are released with the stroke. Air trapped in the brake lines will greatly reduce your braking efficiency. Be sure to close the bleeder screw securely when the cylinder is fully bled.
    - Repeat the bleeding operation at each wheel cylinder. During the bleeding process, replenish the master cylinder reservoir's brake fluid so that the level does not fall below half full. This will ensure that no air is drawn into the system.

3. After all brakes have been bled, again make sure that the master cylinder reservoir is filed to three-quarters full before operating. Check that the filler cap gasket is not

torn or damaged. Screw the filler cap and gasket into the master cylinder cover. The filler cap only needs to be finger tight.

Note: The preceding procedure should be done annually, to eliminate moisture from the system.

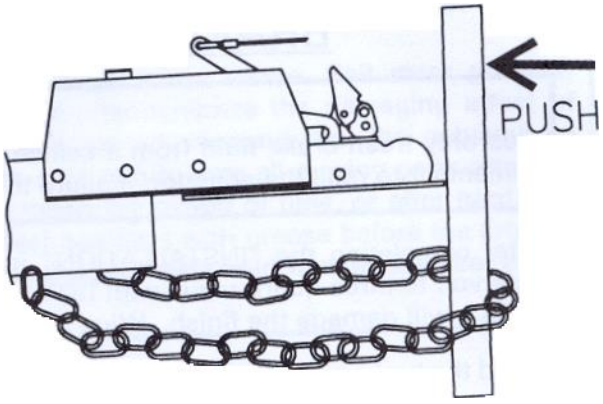
TESTING SURGE BRAKE SYSTEMS

WARNING

It should be noted that the field-test procedure indicates only if the trailer brake system is functional, but DOES NOT provide information on how efficiently it will operate. Regular inspection, maintenance, and adjustment of all brake system components (including the surge actuator, tubing, hoses, brake clusters, drums, and associated hardware/support structure) are still required to ensure maximum brake performance and smooth, even brake operations.

1. Hydraulic surge actuator systems provide automatic and smooth trailer braking without special application by the tow vehicle driver. While this is extremely convenient, it can sometimes be difficult to determine if the surge setup is functioning properly. The following steps provide a quick field-test to confirm that the trailer brake system is operational.

2. Move the trailer to flat, level ground, pulling **FORWARD** several feet before parking. This forward motion will ensure trailers equipped with free-backing brakes are in their normal operating mode. Disconnect the trailer from the tow vehicle and jack the trailer's tongue until it is horizontal.



3. Hook the trailer's safety chains (**NOT** the actuator's break-away cable/chain) together to form a loop, which is centered below the actuator's coupler as shown in the figure above.

4. Place a sturdy board, such as a 2-inch by 4-inch piece of lumber, into the chain loop below the coupler. The board should be 4 feet or longer so it will extend several feet above the actuator. Keep the end of the board a few inches off the ground, and position it to press against the front end of the actuator's coupler.

5. Stand in front of the trailer and face the rear. Apply force to the top end of the board to use it as a lever. Press back towards the rear of the trailer. The board will begin moving the coupler case (inner slide) into the actuator's outer housing.

6. Keep pressing the top of the board to stroke the actuator and its internal master cylinder. If the trailer brake system is operational, the brakes will apply and keep the trailer from rolling away from you. Properly adjusted uni-servo or duo-servo type brakes will prevent you from moving the trailer back more than a few inches. Free-backing type brakes will initially provide rolling resistance, but continued force on the board will switch them into free-backing mode. And you'll be able to move the trailer backwards.

Note: Highliner Trailers equipped with surge brakes utilize "free backing" brake clusters.

7. If you have uni-servo or duo-servo brakes, and stroking the actuator (as described above) causes the trailer to roll away from you freely or with only minimal resistance, the brakes are **NOT** applying properly. If you have free-backing brakes, and stroking the actuator (as described above) causes the trailer to roll away without initial resistance, the brakes are **NOT** applying properly. The brakes **MUST** be evaluated to determine the cause of the problem, and corrective action **MUST** be taken before the trailer is used.

8. Use this procedure each time you tow your trailer to check your surge brake system operation.

HITCHING TRAILER

WARNING
To ensure proper engagement of the actuator's coupler to the tow ball, **DO NOT** use a multi-piece ball, an incorrectly sized ball, or a worn/damaged ball.

1. Confirm the towing hitch and ball have a rating equal to or greater than the trailer G.V.W.R. and are properly and securely attached to the tow vehicle. The hitch MUST be installed so the trailer tongue is level (horizontal) when coupled to the tow vehicle.

2. To attach the actuator to the tow vehicle, follow the procedure below, which corresponds, to your actuator's coupler type.

   - MULTI-FIT COUPLER:
     The multi-fit (hand wheel) coupler will accept 1-7/8 inch, 50 millimeter, and 2-inch diameter tow balls. Open the coupler by depressing the hand wheel lock and turning the hand wheel fully counterclockwise until its rotation is stopped by the lock ring. Lower the coupler onto the ball, confirming that the ball is fully seated in the coupler socket. Tighten the hand wheel in a clockwise direction to secure the ball. The hand wheel lock should click as you turn the hand wheel to confirm that the hand wheel will stay tightened. Turn the hand wheel until it can no longer be turned by hand, and then back it off until the lock catches in the nearest notch on the bottom of the hand wheel. Check that the ball latch has been drawn up

snugly under the tow ball, trapping it in the coupler socket. **Do not tow the trailer if the coupler is damaged.**

- LEVER-LOCK COUPLER:
  The lever-lock coupler is preset at the TITAN factory to fit 2" trailer balls. It can be adjusted to fit 1-7/8 inch or 50-millimeter diameter tow balls by tightening the coupler's locknut, which is underneath the ball latch. After adjustment, make sure the sides of the locknut are trapped between the flanges of the lock plate so that the locknut cannot vibrate loose during trailering. Open the coupler by pressing the handle assembly's lock trigger so it unhooks from the lock plate's loop, and then by swinging the handle forward. Lower the coupler onto the ball, confirming that the ball is fully seated in the coupler socket. Swing the handle upwards until the lock trigger hooks onto the lock plate loop to secure the ball. Check that the ball latch has been drawn up snugly under the tow ball, trapping it in the coupler socket, and that the lock trigger is firmly hooked onto the lock plate loop. A properly adjusted ever-lock coupler will have between 1/64 inch and 1/32 inch of free play between the ball and ball socket. **Do not tow the trailer if the coupler is damaged.**

EXTENDED STORAGE INSTRUCTIONS

The following preventative maintenance is recommended for extended periods of storage.

1. Check brake system for proper fluid level in master cylinder and bleed all lines if necessary.

2. Lubricate all links and pivots to prevent rusting.

3. Remove wheel and drum assemblies and spray a good anti-corrosion compound (CRC formula 5-56) under rubber boot on forward end of brake wheel cylinder. Avoid spraying drum and brake linings.

4. Grease all bearings and reinstall wheel and drum assemblies with a new grease seal.

5. Make sure breakaway cable is fully released.

6. After extended storage refer to Maintenance Steps 1 through 4, to insure trailer readiness for towing.

TROUBLE SHOOTING

WARNING

If any of the following problems develop, the trailer must be immediately stopped and the proper corrective action taken before the trailer is put back into service.

Problem: Release handle does not close easily

Oversized ball	Check ball size
Ball not fully inserted into socket	Check to see if tongue jack is fully retracted. Hold release handle open when inserting ball
Foreign material in actuator	Clean and lubricate

Problem: Squeaking, Clatter or Chucking

PROBLEM CAUSE	REMEDY
Insufficient lubrication on hitch ball	Lubricate with conventional automotive grease or commercial lubricant made for hitch balls
The linkage and pivots on the brake actuator	Oil linkage and pivots on brake actuator
Loose hitch ball	Inspect hitch ball and tighten
Loose hitch	Inspect hitch and tighten
Hitch ball worn or too small	Replace
Overheated brakes	Replace wheel bearing
Broken brake drum(s)	Replace brake drum(s) and check brake shoes.
Low brake fluid level	Fill and bleed brakes
Worn out shock absorber	Replace
Partial application of breakaway	Fully release breakaway cable
Brakes improperly adjusted	Check brakes for adjustments
Broken return spring	Replace return spring
Seized actuator master cylinder	Replace/rebuild actuator master cylinder
Worn out brake shoes	Replace brake shoes and check brake drums
Leaky wheel cylinder	Replace/rebuild wheel cylinder and replace brake shoes. Clean drums and other hardware
Leaky wheel bearing grease seal	Pack wheel bearings and replace wheel bearing grease seal and wheel bearings. Clean drums and other hardware

Problem: Brake overheating, Sidepull, Brakes do not operate, Poor brake performance

Only one brake is applying	Check brake adjustment
Leaking wheel cylinder	Check and replace wheel cylinder and bleed brakes
Seized wheel cylinder piston	Check and rebuild or replace wheel cylinder and bleed
Foreign material in brake unit	Clean thoroughly
Low hydraulic fluid level	Fill and bleed brakes
A bent shoulder bolt	Replace
A bent push rod in the shock absorber	Replace
A damaged socket assembly	Replace
Broken or pinched brake line	Replace
Brake actuator frame damaged	Replace actuator

HUBS, BEARINGS, RACES AND SEALS

Highliner Trailers uses the following sizes of hubs on all of its model trailers. Measurements listed are both spindle size and hub size.

Hub Size	Bearing, Race & Seal Size	Manufacturer's Number

1-1/16"	Inner & Outer Bearing 1-1/16"	L-44649
5-1/2" Flange	Inner & Outer Race 1-1/16"	L-44610

	Spring loaded dust seal (1.250 I.D.-1.985 O.D.)	12192 TB
1-3/8" - 1-1/16"	Inner Bearing 1-3/8"	L-68149
5 Bolt UHI	Inner Race 1-3/8"	L-68111
10" Brake Drums	Outer Bearing 1-1/16"	L-44649
	Outer Race 1-1/16"	L-44610
	Spring loaded dust seal (1.750 I.D.-2.565 O.D.)	171255 TB
	S/S Sleeve, 1.65 I.D. x 1.68 O.D.	
1-3/4" - 1-1/4"	Inner Bearing 1-3/4"	25580
6 Bolt UHI	Inner Race 1-3/4"	25520
12" Brake drum	Outer Bearing 1-1/4"	LM67048 or L-15123
	Outer Race 1-1/4"	LM67010 or L-15245
	Spring loaded dust seal (2.125 I.D.-3.83 O.D)	21333 TB

GREASE SEALS

Inspect the grease seals periodically. A visual inspection is sufficient and is done quite easily on a trailer without brakes. It is normal to see a small oil film around the seal area. This should not pose problems. However, if the leakage becomes excessive replace the seal before bearing failure occurs. Replacement of the seal requires removing the complete hub assembly from the spindle.

On axles with brakes you must remove the complete brake drum assembly to inspect the seals. It is **very important** that you check the seals on brake axles periodically to make sure they are not leaking. Leaking seals allows the grease to get on the break linings thus causing grabby brakes. Eventually the brake linings will become saturated with grease and will have to be replaced.

If you decide to add wheel bearing protectors to a trailer not so equipped, we suggest you install new spring loaded double lip seals, available at your dealer or an auto store.

USE AND SERVICE TIPS FOR WHEEL BEARING PROTECTORS

The spring loaded piston in the wheel bearing protector, pushing against grease inside the hub holds a slight (3 psi) constant pressure inside the hub. Because there is always more pressure inside the hub than outside (even when the trailer wheels are submerged) water can’t enter. This helps prevent wheel bearing failure.

For bearing protectors to function properly, hubs must be completely filled with grease. Hubs must contain enough grease to force the spring-loaded piston outward approximately 1/8” from its seated position.

Check the hub lubricant level by pressing on the edge of the spring-loaded piston. If you can move or rock the piston, the hub has sufficient grease. Don’t add any more! This simple check instantly tells you that the hub is full of grease.

If the piston cannot be moved, it's time to add grease. Add only enough to move the piston outward approximately 1/8 inch.

Bearing protectors have a built-in automatic pressure relief feature that prevents over-filling of the hub and also prevents rear seal damage. When the piston is forced out beyond the "O" ring on which it rides, grease can escape around the edge of the piston. If you try to put too much grease into the hub it will come right back out as you trail. No harm will be done - you will just get grease on your wheels. If you don't like grease on your wheels, don't overfill!

When your trailer is new, it is possible that air has been trapped inside the hub during the initial filling. As you trail, air will work its way out of the hub, but may force a little grease out ahead of it. Add more grease to maintain the piston at about 1/8" outward from the seated position. As soon as all the trapped air works its way out, the grease leakage will stop.

WHEN TO CHECK

Trailers often sit idle for extended periods of time so it is a good idea to check all of these before any use. Bearings rechecked and repacked before storage and after immersion in salt water will last longer.

Check the lubricant level when the hub is warm. On boat trailers, we suggest that you check just prior to launching to be sure the hub is full of grease when the axle is submerged.

RECOMMENDED LUBRICANT

Schaeffer's Manufacturing Moly Ultra NLGI 2 (221-2) is installed at the factory. This grease is an aluminum complex, waterproof grease, containing Molybdenum, and other EP additives. Continued usage of this product is recommended.

Please visit www.schaeffersoil.com for technical data and/or MSDS.

BEARING REPACKING

Because the wheels are often submerged in water during loading and unloading, preventative maintenance is required. This type of maintenance varies so greatly because one individual may back his trailer in and out of the water 300 times a year and tow it 1,500 Km total while another individual may back his in the water six times a year but tow it 7,000 Km. There are also those individuals who haul their boats 30 miles, put them in the water for the summer, and then load them back up in the fall for the 40 Km trip home.

The various ways in which people use their trailers mean that setting up a regular maintenance schedule for bearing service is extremely difficult. In this instance, common sense applies.

Note the following:

1. When water gets in the bearings and is on the steel itself, it will rust. So importantly, get a good grade of wheel bearing grease that will not break down when water is mixed with it.
2. Pack the bearings by forcing the grease into all the small cavities in the bearings. Fill the cavity in the hub with grease.
3. Fill the dust cap half full with grease before driving on the hub.
4. Make sure the grease seals are in usable condition.
5. Keep the bearings and grease free of any dirt or foreign matter.
6. The wheel bearings should be repacked before storage anytime during the year that you plan on storing the trailer for a period of time.
7. The more often you back your trailer in the water, the more chance you stand of getting water in the bearings. You should definitely pack your bearings more often (at least twice during the season) if this is the situation.
8. Towing a trailer numerous miles has its good points and bad points. Long towing may warm the hub and grease it up enough to remove any water it may have collected. However, should you then back the warm hubs into the water just after a long tow, as they will take on water through condensation. It is therefore important that you let them cool before backing into the water.
9. Be sure the bearings are adjusted properly – not too tight or not too loose. See "Bearing Adjustments".
10. Bearing protectors help by having the hub under pressure with grease at all times.

Torsion axles are an option. We also use double lip seals to help withstand the internal pressures of the grease. We feel these are necessities and would recommend that you do likewise should you decide to install bearing protectors on your trailer as an option. This is very important, especially on brake axles.

Check the grease in your hubs once a year. In most instances, if a good quality lubricant is used and the lubricant levels are maintained, it may not be necessary to repack the bearings. However, should the grease appear to be contaminated or broken down, remove all of the old grease from the bearings and hubs and completely repack. Removing the rear bearings will most likely cause damage to the rear seal. A new one should be installed when reassembling.

BEARING ADJUSTMENT

The wheel bearings have been pre-adjusted at the factory. To maximize bearing life however, we suggest that you check the bearing adjustment after the first 50 miles of use, then every time the bearings are repacked.

Bearing adjustment can be checked by jacking up one side of the trailer. Grip the edge of the wheel and see if you can rock it or move it. If you have movement, remove the dust

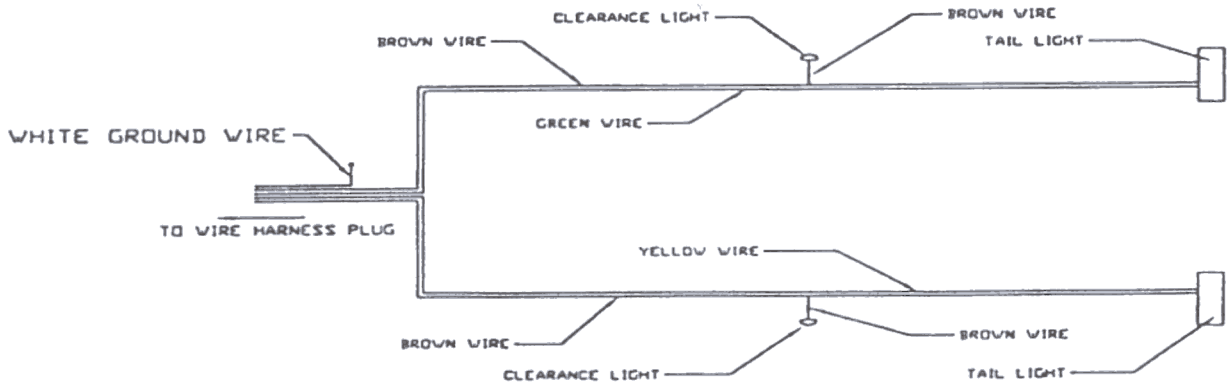
cap or bearing protector, and the cotter key/pin. While rotating the wheel, tighten the spindle nut to a recommended 20 inch-pounds of torque if your trailer has 1-1/16" – 1-1/16" bearings or 30 inch-pounds if your trailer has 1-3/8" – 1-1/16" bearings. Do not over tighten. Look for the hole in the spindle through the slot in the spindle nut.

If you can see any part of the hole through the slot in the nut, turn the nut counterclockwise until the next slot in the nut lines up with the cross hole. Insert cotter key/pin.

If you cannot see any portion of the hole in the spindle through the slots in the nut, turn the nut counterclockwise until the hole lines up with the first slot available in the nut. Insert cotter key.
This adjustment will give you from one-thousandths to ten-thousandths endplay, which is in tolerance for proper adjustment. Check wheel again for movement. If no movement, spin wheel. Wheel should turn easily and have no end play (lateral movement). Bend ends of cotter key/pin to keep it from coming off. Position driver, then alternating sides as you work around the dust cover, tap screwdriver with hammer until the dust cover is completely into hub and the flange on the dust cover is tight against hub face. Repeat on other wheels. Once the bearing protector is started in the hub, hit the position with the rubber hammer or place a flat board over the bearing protector and then hit the board with hammer.

LIGHTING & WIRING DIAGRAM & COLOUR CODE

Make sure that all trailer lights are in proper working order.



Yellow Wire – Left Stop & Turn
Green Wire – Right Stop & Turn
Brown Wire – Taillights, Rear Marker Lights, Front & Rear Side Light
White Wire – Ground

Provincial, State and Federal regulations require all types of trailers to be equipped with tail, stop, turn and side marker lights. Trailers over 80 inches wide must have clearance and identification lights. All the necessary lights are supplied by Highliner Trailers, however it is the owner's responsibility to maintain them in good operating condition at all times.

Make sure the ground wire is attached to both the trailer and towing vehicle to make a sure, positive ground. Some towing vehicles are equipped with 4-wire taillight systems. It then becomes necessary to use a converter.

TROUBLESHOOTING AND MAINTENANCE

The Highliner electrical system is generally trouble-free especially with the use of the automotive type wire harness that we use. This eliminates shorts in the system due to black or corroded connections. We suggest however that you use the following precautions for trouble-free trailering:

1. Disconnect the tongue harness from the towing vehicle before backing the trailer into the water. This will eliminate the bulbs from lighting while submerged in the water. Lighting submerged light bulb will cause it to burn out. (This is necessary if your unit is equipped with waterproof taillights and rear cluster).
2. Carry a spare taillight bulb #1157, which is the large bulb in the taillight. The smaller bulb in the taillight for the sidelight is #57, and is also used in the rectangular amber sidelight.
3. Once a year remove the light lenses and spray or coat the metal components with either WD40 or CRC. A light coat of petroleum jelly also works well.
4. Make sure your towing vehicle's electrical system is sufficient to handle the extra load required to power your trailer lights. Check with your local automotive dealer for specifications and any options available to increase the electrical capacity.
5. In order to ensure a positive ground connection between the trailer and the towing vehicle, it is important that the white ground wires are secured properly to both the trailer and the towing vehicle. A poor ground connection will cause the taillights to blink and not function properly.

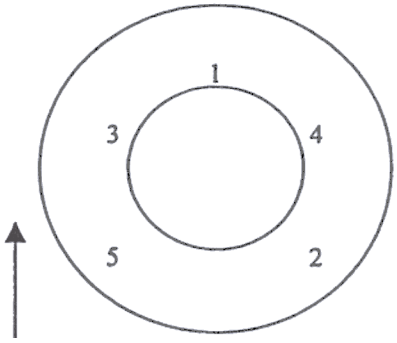
RECOMMENDED TORQUING PROCEDURE FOR MOUNTING WHEELS

WARNING

Maintain proper torque on lug nuts or wheel bolts. Failure to do so may result in serious injury or property damage.

1. After dismounting old wheel, remove all dirt, rust, grease and oil from stud threads. Do not lubricate threads.
2. Position wheel on trailer. Inspect to insure full contact between mounting surface (seat pads) of wheel and mounting surface of hub or brake drum.
3. Start wheel nuts on studs.
4. Finger tighten top nut, then rotate wheel so that number 2 nut is at top and finger tighten. Finger tighten remaining nuts in numerical (crisscross) order; always tighten nut in top position.
5. Repeat Step 4, rotating wheel and finger tightening nuts until all nuts are snug.
6. Tighten nuts in same fashion as described in Steps 4 and 5. Nuts should be torqued to 80-90 ft. lbs. Re-torque nuts after 50 miles of driving and periodically thereafter.
7. After wheels (with tires) have been mounted, visually inspect to insure noninterference with body or other component parts. Be sure to inspect wheels in all possible positions (extreme turns, etc.)

NOTE: Check the fit of your lug wrench. An oversize wrench results in mutilated lug nuts.



CHANGING TIRE

It is desirable that you carry a jack that will work on your trailer in the event that you have a flat tire. A small board or block can also be very beneficial in the event you are jacking on soft dirt or hot asphalt. The jack (depending on style) may be placed under the side frame in back of the wheel or also under the axles.

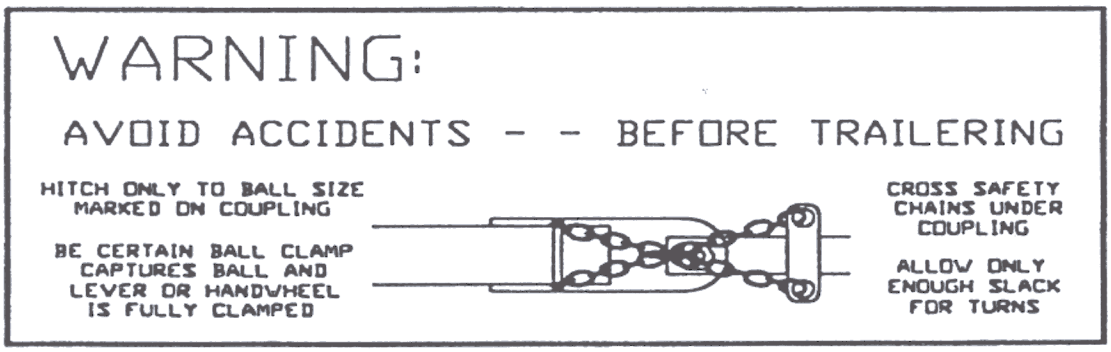
SAFETY CHAINS

CAUTION

Avoid sharp turns. This could bend, create extreme stress or fracture either the coupler or the trailer tongue.

The safety chains on your unit are an added insurance that it will not become detached from the towing vehicle. Your trailer hitch on the towing vehicle should have two holes or rings for fastening the safety chains, preferably one on each side of ball hitch. It is

strongly recommended that you crisscross the chains under the tongue, the chain on the left side of the trailer attached to hole or ring on the right side of ball hitch, and vice versa. This prevents the trailer tongue from dropping to the road should the coupler or ball hitch fail. The chains should be rigged as tight as possible with just enough slack to allow tight turns to be made. This can be accomplished by twisting the chain hook in a clockwise or counterclockwise direction, thus twisting the link spacings and making the chain shorter. Also, by keeping your chains as short as possible you prevent them from dragging on the road and wearing the chain links. **Note:** *If for any reason you find it necessary to replace a safety chain, do not use or substitute any lighter weight chain than that supplied with your trailer. All chain attachments such as hooks, s-hooks, etc. must be equally as strong as the chain itself.*



Trailer Class	Trailer Weight GVWR in Pounds	Minimum Breaking Strength in Pounds
I	To 2,000	2,000
II	2,000 to 3,500	3,500
III	3,500 to 5,000	5000
IV	5,000 to 10,000	GVWR of trailer

TIE DOWNS

It is very important that your recreational boat is supported properly by the trailer. It is also important that your recreational vehicle stays positioned on the trailer while towing. This is accomplished by securing your load to the trailer by some type of tie down.

1 Bow Tie Down: Highliner Trailers offers one of the best winch post assemblies as far as adjustment and stability are concerned. However, for added security, you may want to use a separate tie down to tie the bow eye both downward and also forward. This should guard against any sudden stop or starts. This also guards against winch or winch strap failure.

2 Rear Tie Down: It is very important that the transom of your boat is resting fully and securely on the supports provided and that it remains that way while trailering. The two most common types of tie downs are transom tie down strap and the gunwale tie down. Either system works well and holds your boat solidly on the trailer. Places to fasten the gunwale tie downs are provided on the side frame brackets.

TIRES & TIRE PRESSURE

WARNING

Keep tires properly inflated. Failure to maintain correct pressure may result in tire failure and loss of control and cause serious injury or property damage.

The most common cause of trailer tire trouble is under-inflation. It is important therefore that you always maintain full air pressure, as indicated by the tire manufacturer on the tire's sidewalls or on the trailer manufacturer's certification label.

Probably the second most common cause of tire failure is sun checking. You can partially avoid this problem by keeping your tires covered when not in use.

Always check air pressure when the tires are cold, before you have moved the trailer. Tires heat up and the air pressure increases after traveling only a short distance.

When your trailer tires become worn or damaged, replace them promptly with the same type, size and capacity (not necessarily the same brand) as the original tires.

For safety and convenience, it is recommended that you always carry a spare wheel and tire. Check your provincial and state laws in regards to spare wheels – some provinces and states require you to carry a spare at all times.

TOWING YOUR TRAILER

CAUTION!

Check the following items each time before towing trailer.

1. Be sure all parts, bolts and nuts are tight.
2. Secure load to trailer with BIA approved tiedowns.
3. Check tire pressure when tire is cold. Check and adjust wheel bearings, if necessary, after first 50 miles of use.
4. Inspect and repack wheel bearings at least twice a year and before storing.
5. Do not exceed trailer capacity.
6. Be sure all lights are operating and are disconnected before backing into water.
7. Coupling ball – make sure you are using the size marked on the trailer coupling and coupling must be securely latched to the ball.
8. Cross safety chains under tongue and secure to towing vehicle.

9. Check brake operation.

WARNING:

- Respect your winch. High forces are created when using a winch, creating potential safety hazards. It should be operated and maintained in accordance with manufacturers instructions. Never allow children or anyone unfamiliar with winch operation to use or operate.
- Check for proper ratchet operation on each use of the winch. Do not use if damaged. Seek immediate repairs.
- Maintain a firm grip on the winch handle at all times. Never release handle when ratchet lever is in unlocked position with a load on the winch or handle will spin violently, which could cause personal injury.
- Never use the winch handle as a handle for pulling or maneuvering the entire trailer or other equipment. Never pull on the winch handle against a locked ratchet.
- Never exceed rated capacity of winch. Excess loads may cause premature failure and result in serious personal injury.
- Never apply load on winch with line fully extended. Keep at least three full turns of line on reel.
- Secure load properly. When winching operation is complete, do not depend on winch to support load.
- Make sure load is secured on trailer before entering or exiting.
- Using a winch line or line hook which is damaged or worn can result in serious personal injury or damage to the load.
- Stand to one side when winching the load onto your trailer to reduce the risk of serious injury should the winch line or hook break.
- Never step inside or on the trailer frame during launching or loading procedures.
- Never stand behind the towing vehicle when load is being driven on the trailer.

TO BEGIN LAUNCHING

While you are waiting for your turn at the ramp, you should prepare your boat for launching. Attach a bow line to your boat and detach trailer tie-downs. If your boat is an outboard or stern drive, tilt up the lower unit. To avoid flooding and swamping your boat, before launching be sure the hull drain plug is in place and tight.

BACK TRAILER TO THE RAMP

Have someone stand to one side of the ramp to direct you. Backing up a trailer can be tricky. A good way to simplify the procedure is to grasp the steering wheel with one hand at its lowest point (at 6 o'clock). When you want the trailer to go right, move your hand on the wheel to the right; to make the trailer go left, move your hand to the left.

LAUNCHING

Back your trailer into the water until the front step of the fender is at water level. This is a water level guide, which you can use on most ramps. However, on extremely flat ramps you will want to back in further and on steeper ramps you will not want to back in as far. The other controlling factor is the style of boat you have. Experimenting at this point will give you the best conditions for launching and loading your boat.

Set parking brake and gear shift. Unlock winch and push boat slowly but firmly off the trailer into the water. Be sure you (or your partner) have a firm hold on the boat line.

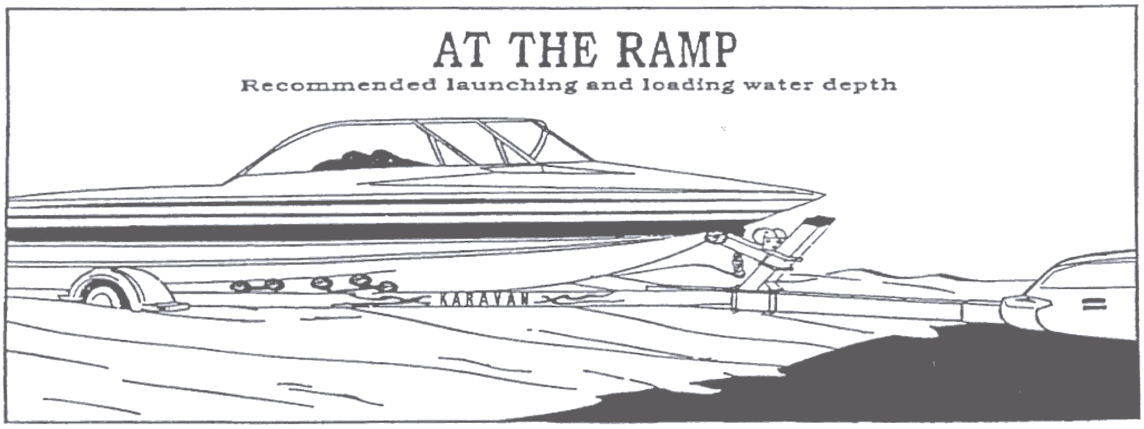
A more controlled launching can be achieved by letting your boat roll off the trailer with the winch rope attached. This is a slower process of unloading but is definitely more controlled.

LOADING YOUR BOAT

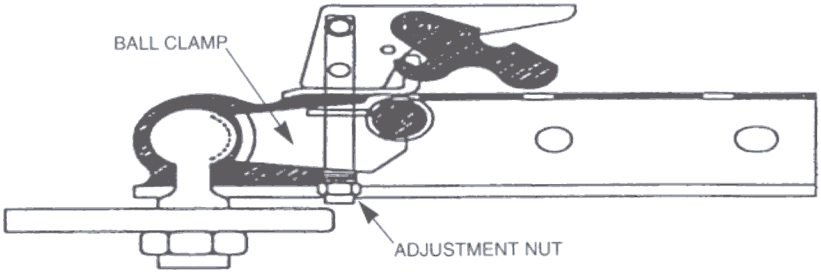
Again, back the trailer into the water following the same instructions as just stated for launching.

1. Prepare your boat for winching on the trailer. Bring your boat over to the trailer with the mooring rope. With the winch in the neutral lock position, grab the winch rope and unwind the winch. Hook winch rope into eyelet on boat. Place winch latch into lock position for cranking boat on trailer. Winch slowly at first giving the boat time to swing around into position. This is necessary, especially with a cross-current or cross-wind. Crank boat completely onto trailer. Hook bow eye safety chain.
2. Some boaters prefer to drive their boats on the trailer. One thing to keep in mind is that you should not back into the water too deep. If you are in too deep the trailer loses all of its centering capabilities because your boat is floating on the water above the trailer. Loading your unit several times will give you a better feel for the depth to back your trailer in.

Drive your boat on carefully and try to hit the centre of the trailer as much as possible. If you do not hit the centre of the trailer, just keep slight pressure on the boat at slow throttle and drive the boat like you would a car. If you do not hit the centre of the trailer, turn your boat so the front will go to the right, reverse the procedure if you are to the left of centre. Keep turning until you feel the boat slide or drop into the centre. Line the front of the boat up so it is headed right into the bow stop on the winch stand, adjusting it by turning the rear of your boat like a car.



TRAILER BALLS AND COUPLERS



WARNING

Failure to properly engage the hitch ball in the coupler ball socket and securely lock the coupler latch mechanism can cause the trailer to become detached from the tow vehicle while traveling, which may cause serious injury or property damage.

Trailer Couplers shall be permanently marked with (a) Coupler manufacturer name, initials, or trademark, (b) Part, style or model number, (c) SAE coupler designation and gross trailer weight, (d) Ball diameter for which rating (GVWR) shall not exceed the gross trailer weight marked on the trailer coupler. Do not use a different size ball than recommended.

Class	Coupler	Dia. Ball Size	Dia. Shank Size
II	3500 # GWR	2"	3/4"
III	5000 # GWR	2"	1"
III	6000 # GWR	2"	1-1/4"
IV	7500 # GWR	2-5/16"	1-1/4"
IV	10000 # GWR	2-5/16"	1-1/4"

Note: A 6000lb. Gross Vehicle Weight Rating (GVWR) is attainable by combining either the Atwood or DICO 60 brake actuator with a 2" diameter ball with a 1-1/4" Diameter shank.

To adjust your Class II and III coupler to your trailer ball, turn the adjusting nut clamp clockwise to tighten the ball clamp grip on the ball, counterclockwise to loosen ball clamp grip on the ball. The brake actuators and the Class IV units require no adjustments. A loose fit will cause jerking while towing.

HITCH COUPLER TROUBLESHOOTING

If the coupler becomes damaged, it must be repaired or replaced before towing. When the coupling is placed on the ball, the latch should close firmly. Keep the latch mechanism lightly oiled and clean.

1. Latch does not grasp ball securely:
   A. Check ball size. Make sure ball is correct size for coupler
   B. Unlatch mechanism; reach under ball clamp and raise. Turn adjustment nut clockwise on complete turn. Make sure the nut retainer clip is down in position to keep nut from turning. Re-latch on ball. If still loose repeat process until grasp is tight.
2. Latch does not snap into full latch position:
   A. Check adjustment. Latch may be too tight. Loosen, reversing procedure in step #1.
   B. Check to see that the coupler housing has not been damaged, keeping the ball hitch from fitting completely into housing as designed.
3. Keep tongue blocked up so that the coupler mechanism does not lie on the ground.
4. Apply small amount of grease to ball before hitching coupler.
5. Make sure the latch safety pin is in position before towing.

COUPLER AND BALL ENGAGEMENT

If the coupler and towing ball resist attempts to make engagement, check the ball diameter to verify that it conforms to Society of Automotive Engineers (SAE) specification. Standard two-inch diameter balls should be within the limits of 2.000 inches to 1.970 inches. Balls larger than 2.000 inches will not readily fit the coupler. Improper engagement of the coupler and ball can cause damage if the vehicles separate in transit; thus, caution must be exercised to insure a secure hook-up. Lower the coupler onto the ball with the coupler latch in the vertical position. Continue to lower the trailer tongue until the jack clears the ground and flip the coupler latch to its locked (horizontal) position. At this point, it may be desirable to visually observe that the ball is fully engaged in the socket; however, an even better habit is to re-jack the trailer until the coupler actually lifts the rear of the tow vehicle. If the connection was not properly made the ball and socket will separate as the tongue of the trailer is raised and the above procedure must then be repeated.

Proper operation of the coupler locking mechanism is best assured by lubricating the ball with conventional automotive grease.

WEIGHT DISTRIBUTION

WARNING

Fishtailing caused from improper tongue weight on the tow vehicle hitch ball can cause loss of control of the two vehicle and result in serious injury or property damage.

Establishing a trailer with the proper GVWR is very important. But once that has been established and you have the load on the trailer, it is equally important that you have the proper distribution of the weight on the trailer. By that we mean you should have 5% to 10% of the total weight of your loaded trailer on the hitch coupler, which is called tongue weight. This should be checked when the tongue is parallel to the ground. A bathroom scale can be used to determine this, or go to a truck scale. As an example: the gross vehicle weight of trailer and load is 2,000 pounds. The tongue weight should not be less than 100 pounds nor more than 200 pounds.

Too light of a tongue weight can cause the trailer to "fishtail" (sway from side to side) as you travel down the highway. This creates excessive strains on the towing vehicle, hitch and also the trailer itself. It can very easily cause an accident. To adjust for too light of tongue weight the axle/axles must be moved backward on the trailer allowing more weight to be carried on the tongue. This is accomplished by loosening the U-bolts on most models. Adjustments should be made until the tongue weight falls within the 5% to 10% recommended range.

Likewise, if you have too much tongue weight, adjust the axle/axles forward until the tongue weight falls in the recommended range.

If only a slight weight adjustment is required, it is possible you may be able to move gear to compensate for the difference. Some towing vehicles require less tongue weight than others.

The 5% to 10% guide lines will hold quite true to form until you get into larger size loads - anywhere from 4,000 pounds on up. At this point it becomes necessary to strike a happy medium of sufficient tongue weight to tow properly and yet not too much tongue weight as to create undue stress on the towing vehicle, hitch and hitch coupler. Check hitch rating to be sure of its capacity or when buying a hitch make sure it will carry the load.

A weight-distribution hitch may be recommended to you by the dealer for heavier units. If this type system is installed, all responsibilities will become those of the owner of the unit, not those of Highliner Trailers.

HIGHLINER TRAILERS

Model	Boat Length	Capacity lb.	Net Weight lb.	Overall Width	Track	Tire Size	Winch Size	Frame Size	Number of Rollers	Coupler Size	Hydraulic Brakes
BUNK TRAILERS, SINGLE AXLE											
MBW8-14	10-14'	800	297	66"	60"	4.80x12	600#	channel	Bunk (2)	2"	N/A
CL13-15	13-15'	1350	338	74"	66"	5.30x12	1500#	2x3	Bunk (2)	2"	OPT
CL15-16	13-16'	1550	380	76"	69"	17513B	1500#	2x3	Bunk (2)	2"	OPT
CL17-17	15-17'	1700	440	79"	72"	17513B	1500#	3x3	Bunk (2)	2"	OPT
CL21-18	16-18'	2100	460	79"	72"	17513C	1500#	3x3	Bunk (2)	2"	OPT
CL23-19	17-19'	2300	550	96"	84"	20514C	1800#	3x3	Bunk (2)	2"	OPT
CL25-19	17-19'	2500	660	96"	84"	20514C	1800#	3x3	Bunk (2)	2"	STD
CL30-20	18-20'	3100	704	96"	84"	21514C	2000#	3x4	Bunk (2)	2"	STD
CL40-22	19-22'	4100	850	96"	84"	22515D	2600#	3x4	Bunk (2)	2"	STD
ROLLER TRAILER, SINGLE AXLE											
PFR17-17	15-17'	1750	462	79"	72"	17513B	1500#	3X3	12	2"	OPT
PFR21-18	16-18'	2100	506	79"	72"	17513c	1500#	3X3	16	2"	OPT
PFR23-19	17-19'	2350	638	96"	84"	20514C	1800#	3X3	16	2"	STD
PFR25-19	17-19'	2500	715	96"	84"	20514C	1800#	3X3	16	2"	STD
PFR30-20	18-20'	3000	737	96"	84"	21514C	2000#	3X4	20	2"	STD
PFR40-22	19-22'	4100	880	96"	84"	22515D	2600#	3X4	28	2"	STD
BUNK TRAILER, TANDEM AXLE											
TCL42-21	18-21'	4200	1100	96"	88"	205R14C	2600#	3x4	Bunk (2)	2"	STD
TCL47-23	20-23'	4800	1320	96"	88"	215R14C	3200#	3x4	Bunk (4)	2"	STD
TCL50-24	21-24'	5200	1540	96"	88"	225R15C	3200#	3x5	Bunk (4)	2-5/16"	STD
TCL62-25	22-25'	6400	1540	96"	88"	225R15C	3200#	3x5	Bunk (4)	2-5/16"	HydraStar
TCL85-26	23-26'	8500	1940	96"	88"	225R15D	3200#	3x5	Bunk (4)	2-5/16"	HydraStar
TCL10-28	25-28'	10,400	2330	96"	88"	95016.5	3700#	3x5	Bunk (4)	2-5/16"	HydraStar
BUNK TRAILER, TRIPLE AXLE											
TCL12-30	20-26’	12,500	2640	102"	94"	225R15D	3700#	3x6	Bunk (4)	2-5/16"	HydraStar
TCLW16-32	30-32’	16,000	2800	102”	94”	235R16E	3700#	3x8	Bunk (4)	2-5/16”	HydraStar
TCLW18-34	32-34	18,000	3000	102”	94”	235R16E	3700#	3x8	Bunk (4)	2-5/16”	HydraStar
ROLLER TRAILER, TANDEM AXLE											
TRP42-21	18-21'	4200	1100	96"	84"	205R14C	2600#	3x4	28	2"	STD
TRP47-23	21-23'	4800	1320	96"	84"	215R14C	2600#	3x4	32	2"	STD
TRP50-24	21-24'	5200	1540	96"	84"	225R15C	3200#	3x5	40	2-5/16"	STD
TRP62-25	22-25'	6400	1540	96"	84"	225R15C	3200#	3x5	40	2-5/16"	HydraStar
TRP85-26	23-26'	8500	1940	96"	84"	225R15D	3200#	3x5	48	2-5/16"	HydraStar
TRP10-28	25-28’	10,000	1330	96”	88”	235R16E	3700#	3x5	64	2-5/16”	HydraStar
ROLLER TRAILER, TRIPLE AXLE											
TRP12-30	26-30’	12,000	2640	102”	94”	225R15D	3700#	3x6	64	2-5/16”	HydraStar

SPECIALTY TRAILERS

Fifth Wheel and Gooseneck Trailers are available, please call for pricing and lead times.

Specs subject to change without notice – current August 2023