

Owner Care and Instruction Manual

2009 Models

HI-LO



LIMITED WARRANTY

Hi-Lo Trailer Co., hereinafter called Hi-Lo, 500 South Main Street, Bellville, Ohio 44813, issues the following Limited Warranty, subject to the limitations and conditions hereinafter provided:

HI-LO WARRANTS THE TRAILER TO WHICH THIS WARRANTY APPLIES:

- A. To be Merchantable and Fit for the Ordinary Purposes for which such trailers are ordinarily used; and
- B. Hi-Lo or its dealer will repair or replace, at Hi-Lo's option, any part, which has never been subject to another warranty, which is found to be defective.

(Note: The component parts of the trailer which are manufactured by others such as tires, running gear, battery, power converter, plumbing and electrical fixtures, compressors, pumps, air conditioners, furnaces, stereos, appliances and bedding are covered by the separate warranty. If any, and service policy of the manufacturer of such components. THESE PARTS ARE NOT COVERED BY THE HI-LO LIMITED WARRANTY. Service on these components will be covered by such manufacturer's warranty and service policy as delivered to the consumer-user at the time of the original purchase of the trailer. THESE COMPONENT PARTS ARE NOT COVERED IN ANY EXTENDED WARRANTY MADE AVAILABLE BY THE COMPANY.)

THE WARRANTIES EXPRESSED IN A AND B, ABOVE ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

THE SAID WARRANTIES CONTAINED IN A AND B ABOVE ARE SUBJECT TO THE FOLLOWING CONDITIONS AND LIMITATIONS

1. All Hi-Lo warranties, express or implied, shall expire TWELVE (12) MONTHS from the date of purchase by the consumer user; proof of purchase date will be required with all warranty claims. (Note: Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you).
2. The Hi-Lo Trailer must have been used, operated and maintained in accordance with the printed instructions provided to the original consumer user in the Care and Use Manual.
3. The warranties A and B above are limited to and extended only to the first purchasing consumer-user.
4. These warranties, A and B above, shall not extend to any trailer or part thereof that has been subjected to abuse, misuse, alteration, accident or use or operation contrary to the Care and Use Manual.
5. These warranties, A and B above, shall not extend to a trailer or any part thereof which has been loaned, leased, rented, or used commercially.
6. These warranties, A and B above, do not extend to a trailer which is not properly matched to a tow vehicle as per the tow vehicle manufacturer's specified limitations.
7. These warranties, A and B above, do not apply to damages to the trailer caused by road hazards nor to damages caused by off road towing or towing on unpaved roadways.
8. These warranties, A and B above, shall not extend to labor costs or repair costs other than costs or parts found to be defective. Except where required by applicable law, HI-LO SHALL IN NO EVENT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES. Hi-Lo does not assume responsibility for loss of use of the trailer, loss of time, inconvenience, expense of gasoline, towing, telephone, travel, lodging, loss or damage to personal property or loss of revenues; Hi-Lo does not undertake responsibility to any purchaser of its product for any undertaking, representation or warranty made by dealers or representatives selling its product beyond those representations and warranties herein expressed. (Note: Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you).
Hi-Lo may make changes in design and improvements in subsequent vehicles and models without including any obligations to make such changes or improvements to units previously manufactured.

WARRANTY PROCEDURES

To obtain warranty repairs, the trailer should be taken to the authorized franchised dealer who sold you the Hi-Lo. This warranty work is to be rendered in accordance with the dealer's franchise service agreement.

- A. Defects in the warranted trailer must be reported within 30 days of discovery to the franchised Hi-Lo dealer who sold you the trailer. (It is recommended they be reported immediately).

If the franchise dealer from whom the trailer was purchased is not available, contact Hi-Lo Trailer Co., 500 South Main Street, Bellville, Ohio 44813 (Telephone: 419-886-0066) for instructions as to the nearest franchise dealer for repairs or other arrangements. To contact our service department directly, you can reach them at 1-800-321-6402.

All warranty work shall be performed by an authorized franchise dealer during the time specified in the public day and hours of such dealer.

Within reasonable limits, preference will be given to warranty work in accordance with the dealer's franchise agreement.

The procedures herein outlined and the remedies hereinabove outlined, shall be exclusive remedy for any alleged defect or breach of any warranty.

Note: THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH MAY VARY FROM STATE TO STATE. HI LO DOES NOT AUTHORIZE ANY PERSON TO CREATE FOR IT ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH THESE TRAILERS.

Hi-Lo does not authorize any person to create for it any other obligation or liability in connection with these vehicles, TO THE EXTENT ALLOWED BY LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO THESE VEHICLES IS LIMITED IN DURATION TO THE DURATION OF THESE WRITTEN WARRANTIES. NEITHER HI-LO NOR THE SELLING DEALER SHALL BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS OR CONSEQUENTIAL DAMAGES (Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages, so the above may not apply to you).

INTRODUCTION

Congratulations, you have joined a growing group of satisfied travelers, who own a trailer carrying the Hi-Lo mark of quality and distinction. Being a Hi-Lo owner sets you apart as an individual who demands safe trailering comforts.

Hi-Lo designs its telescoping travel trailer to fit the needs of the traveler. Since 1955, our aerodynamically efficient low travel profile has provided safety, towability, and up to 77% savings in fuel consumption, while our well planned interiors provide all the roominess, beauty and comforts of home.

It is important that you read this owners manual carefully. This manual is designed to provide you operating instructions, maintenance information, and useful tips that make your travel and camping care-free and trouble-free. We also recommend you keep this manual at hand during your trips for easy reference.

Hi-Lo prides itself in the quality of each trailer's construction and excellent workmanship. Your dealer will fill out a certified customer care registration card and mail it to Hi-Lo, where it is kept on file.

All of our employees thank you for choosing Hi-Lo as your recreational vehicle.

TABLE OF CONTENTS

1.	Before You Leave Your Dealer	
	1.1 Check-off list	4
2.	Preparing For Travel	
	2.1 Hitching up	5
	2.2 Load capacity	5
	2.3 Weight distribution	5-6
	2.4 Packing and inspecting trailer	6
	2.5 Vehicle inspection	6
	2.6 Holding tanks	6
3.	Travel	
	3.1 Towing speed	7
	3.2 Towing stability	7
	3.3 Passing	8
	3.4 Stopping	8
	3.5 Backing up	8
	3.6 Mirrors	8
	3.7 Towing with a diesel powered vehicle	8
	3.8 Selecting proper tow vehicle	8
	3.9 Hitch Ball Height	8
4.	Parking and Set-up	
	4.1 Selecting campsite	9
	4.2 Leveling trailer	9
	4.3 Raising your Hi-Lo	9
	4.4 Utility hook ups	9-10
	4.5 Awnings and windows	10
	4.6 Preparing to leave camp and lowering your Hi-Lo	11
5.	LP-Gas System	
	5.1 General information	12
	5.2 Checking for leaks	12
	5.3 LP-Gas regulator setting	12
	5.4 Using automatic change over regulator	12
	5.5 Gas containers - using alcohol	13
	5.6 Filling LP-Gas containers	13
	5.7 LP-Gas consumption	13
	5.8 Safety in using LP-Gas /LP-Gas Detector	14-16
6.	Electrical System	
	6.1 General information	17
	6.2 110/125 volt AC circuit	17
	6.3 Ground fault interrupter	17
	6.4 12 volt DC circuit	17
	6.5 110 to 12 volt DC converter	18
	6.6 DC distribution panel (12 volt fuses)	18
	6.7 110 volt to electric/hydraulic power lifting unit	18
	6.8 Electric brakes	18
	6.9 Breakaway switch	18
	6.10 7-wire plug (trailer end)	19
	6.11 Schematics of the electrical system	19
	6.12 Understanding use of power cord including air-conditioning circuit cord	19
7.	Hydraulic Lifting System	
	7.1 Electric/hydraulic power lifting unit	22
	7.2 Electric motor	22
	7.3 Raising solenoid	22
	7.4 Hydraulic pump	22
	7.5 Lowering solenoid	23
	7.6 Safety bar	23
	7.7 Hydraulic cylinder	23
	7.8 Cable lifting assembly	23
	7.9 Trouble shooting Hi-Lo lift mechanism	23-24
	7.10 Servicing hydraulic lifting system	24-26

8. Plumbing	
8.1 Fresh water tank	27
8.2 External water supply	27
8.3 Filling fresh water supply	27
8.4 Sanitizing potable water	27-28
8.5 Winterizing water system	28
8.6 Waste water system	28
8.7 Toilet	28
8.8 Waste water draining	28-29
8.9 Deodorizing waste tanks	29
8.10 Winterizing waste water system	29
8.11 Shower	29
9. Appliance Operation and Care	
9.1 3-way electric refrigerator	30
9.2 Oven/range combination	30
9.3 Range exhaust hood	30
9.4 Automatic gas hot water heater	30
9.5 Furnace	30
10. Expand-A-Room Operation	
10.1 Opening the Expand-A-Room	31
10.2 Closing the Expand-A-Room	31
11. Maintenance	
11.1 Electric brakes	32
11.2 Wheel bearing lubrication	32
11.3 Tire inspection	32
11.4 Exterior care	32
11.5 Interior care	32-33
11.6 Hitch inspection and lubrication	33
11.7 Battery care	33
11.8 Hydraulic cylinder	33
11.9 Periodic maintenance check list	33
11.10 Extended Storage Considerations	34
11.11 Lubrication of the Lift System	34
12. Operating the DVD Player and TV Monitor	
12.1 Turning on the DVD player	35
12.2 Turning on the TV Monitor	35
12.3 Selecting playback mode	35
12.4 Raise the Antenna	36
12.5 Turn on the booster	36
12.6 Select mode source	36
12.7 Channel	36
12.8 Tune Antenna	36
12.9 Scan for channels	36
12.10 Open faceplate	37
12.11 Insert DVD	37
12.12 Playback begins	37
12.13 Attach coax cable	38
12.14 Attach coax cable jumper	38
13. Important Safety Considerations	
13.1 Additional safety considerations	39-40
13.2 Emergency stopping safety	40
13.3 Reporting safety defects	40
Hi-Lo Warranty	Inside Cover & 41

1. BEFORE YOU LEAVE YOUR DEALER

1.1 Check Off List

Before leaving your dealer be sure you understand how to:

- Raise and lower your Hi-Lo properly
- Operate LP-gas system
 - Light pilots
 - Shut off LP-gas system
- Operate electrical system
 - Change fuses
 - Reset circuit breakers
 - Change bulbs
 - Check all vehicular lighting
 - Understand usage of power cords (including optional A/C unit)
- Operate water system
 - Attach hose to city water
 - Fill potable water supply
 - Drain locations
 - Pump switch locations
- Operate drainage system
 - Toilet operation
 - Holding tank chemical addition
 - Sewer hose connection and storage
 - Holding tank evacuation procedures
- Connect your unit to tow vehicle
 - Hitch ball, coupler, and coupler latch
 - Equalizer bars
 - Safety chains
 - Automotive electrical connector (12-volts)
 - Break-away switch
 - Mirror adjustment
- Stabilize your unit
 - Leveling procedures
- Convert into sleeping quarters
 - Dinette
 - Twin beds
 - Sofa bed
 - Swing away bunk
 - Operate the ExpandA-Room (if equipped)

Be sure to fill out registration card and leave with your dealer

NOTICE: Vehicles with overall body width greater than 96" are known as "wide bodies" and have the advantage of more spacious interiors and innovative floor plans. Wide body vehicles are restricted to use on main highways in certain states. A vast majority of states allow for 102" body width on all highways and 102" body width is now allowed on all federal highways in the United States. Your dealer may be able to furnish more specifics.

If you are concerned about trailer width, we invite you to consider other Hi-Lo trailers offered in the standard 94" width.

12. PREPARING FOR TRAVEL

2.1 Hitching Up

Note: The hitch ball diameter must be the correct size to mate with the coupler on the trailer. All 2006 Hi-Lo models require 2 5/16" ball size.

1. Move tow vehicle into place so ball on hitch is directly below the ball lock coupler on trailer.
2. Hook up breakaway switch cable. Be sure it is properly attached to tow vehicle. (See Fig. a)
3. Lower ball lock coupler over hitch ball and secure.
4. Install the stabilizer bars, completely retract jack and remove dolly wheel.
5. Plug in electrical connections and check to see that the turn signals, brake, and trailer marker lights are working properly (may be necessary to equip heavy duty flashers on tow vehicle.)
6. Hook up safety chains.
7. Pull out the breakaway switch-actuating pin. Test brakes by attempting to drive away. The breakaway switch is functioning properly if the trailer brakes are activated. Replace breakaway pin. (See Fig. b)
8. Put step in travel position.

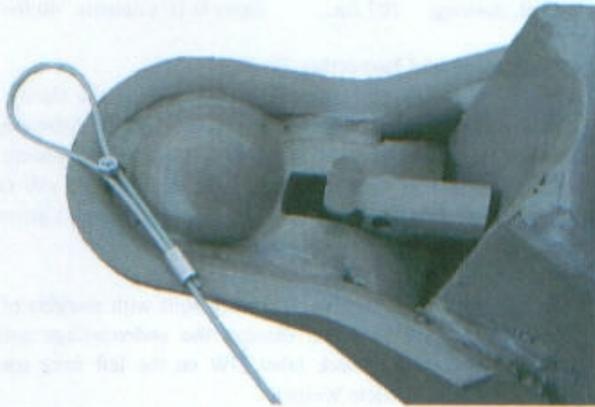


Figure a. Break-Away Cable



Figure b. Break-Away Switch

Note: Before you go, check inside to make sure all materials are stored securely. Then check to make sure the trailer is in the fully lowered position. We recommend you not tow the trailer in the upright position for any distance. When all is ready, close the doors firmly and lock the outer door. Be sure the LP-gas system is turned off. Check both bottles.

2.2 Load Capacity

Located on the left exterior wall of your trailer, near the front, is the Federal Certification Label, which gives the maximum weight-carrying capacities of your trailer and each axle, designated by the letters 'GVWR' and 'GAWR', respectively.

The Gross Vehicle Weight Rating (GVWR) is the maximum your trailer should weigh with water and LP-gas tanks full, and with food, clothing and all other supplies aboard.

Each axle also has a maximum load bearing capacity referred to as the Gross Axle Weight Rating (GAWR). (See pg. 6)

2.3 Weight Distribution

When loading your trailer, store heavy gear first, keeping it on or as close to the floor as possible. Heavy items should be stored directly over or slightly ahead of the axles. Store only light objects on high shelves. Distribute weight to obtain even side-to-side balance of the loaded vehicle. Secure loose items to prevent weight shifts that could affect the balance of the trailer.

With the trailer fully loaded, drive to a scale, unhitch the trailer from the tow vehicle, and weigh separately the load on the hitch coupler and the load on the axles. The load on each axle should not exceed its GAWR. The total of the axle loads and hitch load should not exceed the GVWR. For best towing stability, the load at the hitch coupler should be between 12% and 15% of the fully loaded trailer weight. If a weight distributing hitch is employed; the load on the axles should also be weighted with the trailer hitched to the tow vehicle to make certain the load on the axle does not exceed its GVWR. If weight ratings are exceeded, move or remove items to bring all weights below the ratings.

2008 Hi-Lo Weight Specifications

	1509T	1709T	1909T	2209T	2409T
Hitch Weight	270	320	380	520	580
Axle Weight	1690	2277	2400	2812	3529
UVW	1960	2597	2790	3432	4109
CCC	1240	1243	1100	2068	1891
GVWR	3200	3840	3840	5500	6000
GAWR	3500	3500	3500	3500/3500	3500/3500
Coupler Height	26"	26"	26"	26½"	26½"

	2709T	2509C	2809C
Hitch Weight	840	600	820
Axle Weight	3639	4097	4362
UVW	4479	4817	5320
CCC	2021	1483	1680
GVWR	6500	6300	7000
GAWR	3500/3500	3500/3500	3500/3500
Coupler Height	26½"	26½"	26½"

Note: All weights above are estimates, and may vary from trailer to trailer.

Steps for Determining Correct Load Limit—

1. Locate the statement "The weight of cargo should never exceed XXX kg or XXX lbs." On your vehicle'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.

2.3 Weight Distribution (continued)

Weight of optional equipment

Swing away bed	80 lbs.	Air Conditioner	105 lbs.
14 ft. Awning	93 lbs.	Spare Tire & Wheel	54 lbs.
18 ft. Awning	107 lbs.	Extra O.H. Cabinets	40 lbs.

2.4 Packing and Inspecting Trailer

Part of the fun of trailer travel and camping is the ability to take along recreational equipment such as a boat, motor, fishing gear and sports equipment. Comfort items such as awnings, folding tables, and chairs add to your camping pleasure. And, you will certainly want to include some of the foodstuffs from your own kitchen. Also, be sure to fill your water tank.

Although your Hi-Lo trailer is sturdily built with margins of safety, too much extra weight can damage the undercarriage and cause excessive tire wear. Check label GW on the left front corner for maximum Gross Vehicle Weight.

Your Hi-Lo trailer is designed and balanced for easier and safer towing so that just the right tongue weight rests on the car hitch. In packing extra equipment, it is important to maintain that balance as near as possible fore and aft. It is also recommended that the heaviest item to be positioned as near as possible to directly over the wheels. In stowing loose equipment, pack it in such a way as to avoid shifting during acceleration or braking. Pad heavy and sharp items to avoid damaging interiors and equipment. A little extra care and a few minutes spent in getting your trailer ready for travel assures a pleasant trip.

2.5 Vehicle Inspection

Your vehicle should be in good running order. Also tires, lights, and brakes should be checked before travel.

2.6 Be sure waste holding tanks are empty. (See 8.9)

The above weights are approximate weights of standard models. Add for optional items if applicable:

GVWR (Gross Vehicle Weight Rating) means the maximum permissible weight of this trailer. The GVWR is equal to or greater than the sum of the Unloaded Vehicle Weight plus the Net Carrying Capacity.

UVW (Dry or Unloaded Vehicle Weight) means the weight of this trailer as built at the factory. If applicable, it includes full generator fuel, engine oil, and coolants. The UVW does not include cargo, fresh water, LP gas, or dealer installed accessories.

CCC (Cargo Carrying Capacity) means the maximum weight of all personal belongings, food, fresh water, LP gas, tools, dealer installed accessories, etc, that can be carried by this trailer. (NCC is equal to or less than GVWR minus UVW).

This trailer is capable of carrying up to 36 gallons of fresh water (including water heater) for a total of 300 pounds. Reference: Weight of fresh water is 8.33 lbs/gal; Weight of propane is 4.5 lbs/gal (average).

3. TRAVEL

3.1 Towing Speed

Probably the greatest factor in safe, pleasant towing is maintaining reasonable vehicle speed. Reducing speed increases trailer-towing stability and reduces required emergency stopping distances. If you are new to travel trailering, reduce your driving speed while towing. As you gain experience you will be able to determine the maximum safe driving in speeds for all towing conditions. Slower speeds will also decrease fuel consumption.

3.2 Towing Stability

The three main principal factors affecting trailer-towing stability are traveling speed, wind conditions and weight distribution. Poor trailer towing stability can be recognized by the trailer having the tendency to sway from side to side after quick course changes, while being passed by large trucks or buses, or in cross winds.

If the trailer begins to sway strongly from side to side, make as little steering corrections as possible. Using the hand lever on the brake controller, firmly apply the trailer brakes to pull the trailer straight behind the tow vehicle and reduce speed. (Note: Electronic and brake mounted controls may not allow for independent operation.) Do not attempt to stop the trailer swaying by making quick steering changes or by forcefully applying the tow vehicle brakes.

Since cargo weight in the rear of the trailer can reduce towing stability avoid storing heavy objects in the rear of the trailer or on the rear bumper. Empty the waste holding tanks before traveling whenever possible.

Weight distributing hitches improves towing stability and should be used on all Hi-Lo trailer models. In addition, most hitch manufacturers offer sway control devices. These will help reduce swaying, and will improve trailer handling during emergencies or in crosswinds. Be sure to follow hitch and sway control manufacturer's instructions. Correct use of these devices will increase stability, but should not be considered a substitute for prudent speed, proper cargo loading, safe weather conditions, and towing experience.

Small but sudden course changes can occur when a vehicle towing a trailer is passed from the rear by a large flat-fronted vehicle such as a truck or bus. These course changes happen when the wind from the flat front blows against the side of the trailer. As the truck front passes the rear of the trailer, the tow vehicle will tend to turn away from the truck, and as the truck front passes the trailer wheels, the tow vehicle will turn back toward the truck.

If a large flat-fronted vehicle passes from behind causing your vehicle to change course, make as little steering correction as possible, remembering that the tow vehicle will be turned back to its original course as soon as the truck front passes the trailer wheels. Avoid quick steering corrections that can inadvertently magnify these course changes and start trailer swaying.

3.3 Passing

When passing another vehicle, remember that your tow vehicle will accelerate more slowly than usual because of the added weight of the trailer. Allow ample passing time and distance. Once past the other vehicle, allow for clearance of the trailer before returning to the original lane. Use your outside rear view mirrors and proper turn signals to assure safe maneuvering.

3.4 Stopping

The increased weight of the car-trailer combination requires greater stopping distances. Maintain at least twice the normal stopping distance while towing your trailer.

3.5 Backing Up

Here is an easy way for new trailerists to remember the way to turn the steering wheel when backing a trailer. Place your hand at the bottom of the steering wheel. To turn the trailer to the left, move your hand to the left (turn steering wheel clockwise). To turn the trailer to the right, move your hand to the right (turn the steering wheel counter clockwise). Your car should go the opposite way that you want the trailer to turn. In time, and with a little practice, backing will be accomplished with little effort. Always be aware that you have poor visibility to the rear. Someone standing outside at the rear of the trailer guiding your actions will assure safe backing.

3.6 Mirrors

There are many types of outside mirrors that can be used on your tow vehicle. Some may prefer a non-permanent installation that can be removed between trips. Most states require mirrors extending on both the right and left sides of the towing vehicle to provide the driver a clear view when passing or being passed.

Install mirrors as close to the driver as possible to provide the maximum field of view.

Check for specific requirements in the states where you will travel.

3.7 Towing With Diesel Powered Vehicle

Improper maintenance and driving at low RPM under load conditions can cause excessive diesel smoke, which could enter the trailer while traveling.

It may be necessary to use extension pipes to divert diesel exhaust into the airflow.

3.8 Selecting Proper Tow Vehicle

Engine sizes, axle ratios, and gross vehicle weight rating (GVWR) are important criteria when choosing a tow vehicle. To make your selection of the proper tow vehicle, consult your tow vehicle dealer. They should also be able to tell you what information you need on your present vehicle.

3.9 Hitch Ball Height

This measurement should be the height of the **trailer coupler (top of ball socket)** to the ground when trailer is level. (See page 6)