

A large, stylized black silhouette of an eagle's head and neck, facing right. The eagle's head is white with a black eye and beak. The neck and body are black. The eagle is shown in a dynamic, forward-leaning pose, suggesting flight. The background is white.

# **LIBERTY OUTDOORS**

TRAVEL  
TRAILER  
MANUAL

**2018**



First, let us start off by expressing our gratitude. We sincerely appreciate your business and Liberty Outdoors, LLC (Liberty Outdoors) is committed to offering you as much trouble-free camping as possible.

To help get you started, please take a few minutes and review the Owner's Manual thoroughly. There are multiple components, appliances, and equipment unique to an RV and understanding how they function will be important to your overall enjoyment and safe operation. The Owner's Manual not only contains the Liberty Outdoors Limited Warranty, but it will help you understand many of the functions along with the required maintenance of your RV. If you have any questions please contact your selling dealer or Liberty Outdoors at **877-545-5897**. Additional information and resources about Liberty Outdoors and your RV can be found on our website at **[www.golibertyoutdoors.com](http://www.golibertyoutdoors.com)**. Again, we want to thank you for purchasing a Liberty Outdoors product. Enjoy camping in your new RV.

You can also find us on the below websites for product news and updates, owner insight, RV accessories and more.

Sincerely,  
Liberty Outdoors

### Liberty Outdoors on the Web

Little Guy Trailers	<a href="https://www.golittleguy.com/">https://www.golittleguy.com/</a>
ParkLiner	<a href="https://www.parkliner.com/">https://www.parkliner.com/</a>
Serro Scotty Trailers	<a href="https://www.serroscottytrailers.com/">https://www.serroscottytrailers.com/</a>
Liberty Outdoors	<a href="https://www.golibertyoutdoors.com/">https://www.golibertyoutdoors.com/</a>

### Liberty Outdoors on Facebook

Little Guy Trailers	<a href="http://www.facebook.com/golittleguy/">http://www.facebook.com/golittleguy/</a>
ParkLiner	<a href="http://www.facebook.com/parkliner/">http://www.facebook.com/parkliner/</a>
Serro Scotty Trailers	<a href="http://www.facebook.com/serroscottytrailers/">http://www.facebook.com/serroscottytrailers/</a>
Liberty Outdoors	<a href="http://www.facebook.com/GoLibertyOutdoors/">http://www.facebook.com/GoLibertyOutdoors/</a>

### Forums and Discussion Groups

Little Guy Max Group	<a href="https://www.facebook.com/groups/littleguymax/">https://www.facebook.com/groups/littleguymax/</a>
Little Guy Trailers Forum	<a href="http://www.golittleguy.com/forum/">http://www.golittleguy.com/forum/</a>

### Parts and Accessories

Teardrop Shop	<a href="https://teardropshop.com/">https://teardropshop.com/</a>
RV Supply Shop	<a href="https://rvsupplyshop.com/">https://rvsupplyshop.com/</a>

This manual is based on the latest information available at the time of publication. Due to continuous product development and improvements, Liberty Outdoors reserves the right to make changes in product specifications and components without prior notice. The most recent version of the owner's manual can be found on our website [www.golibertyoutdoors.com](http://www.golibertyoutdoors.com)



In order to effectively reduce downtime, we request your assistance in organizing your service requests into immediate needs (Priority 1) and future adjustments (Priority 2).

Please check each line and sign the bottom showing that you understand the following:

\_\_\_\_\_ I have been provided a copy of my service schedule. I clearly understand the requirements for the upkeep of the exterior of my RV.

\_\_\_\_\_ I understand the warranty is provided by Liberty Outdoors, LLC. Any repairs not covered by Liberty Outdoors are my responsibility. I understand that some of my concerns might be resolved by reading the enclosed owner's manuals and I will read them before bringing my unit in to the dealership.

\_\_\_\_\_ I understand that the dealership might use a priority service system that accepts two types of service requests: Priority 1 and Priority 2. Priority 1 issues are categorized as issues that keep the customer from using their unit. Priority 2 issues are categorized as adjustments or repairs that are not preventing customers from using their unit. The Service Department will be servicing Priority 1 issues first and Priority 2 issues might be addressed away from the peak season based on service availability. I also understand that some repairs require prior authorization from Liberty Outdoors, LLC and parts may take 4 to 6 weeks to be received.

Liberty Outdoors, LLC warranty does not cover travel time for mobile service calls. Parts and labor for warrantable items are covered within the 2-year period.

Please see the attached sheets for more information. Happy camping!

I have read and understand the service guidelines outlined above: (please sign and date)

*Signature* \_\_\_\_\_ *Date* \_\_\_\_\_

## **IMPORTANT WARRANTY INFORMATION FOR NEW LIBERTY OUTDOORS UNITS**

All Liberty Outdoors, LLC products come with a standard 2-year manufacturer warranty that is valid for the original customer purchasing the unit. The 2-year warranty period starts from the date of purchase as per Liberty Outdoors' policy.

It is important to know that any misuse, neglect, including failure to provide reasonable and necessary maintenance, unauthorized alteration, accident and improper loading, use as a permanent residence, commercial use, or leasing of the recreational vehicle, shall discharge Liberty Outdoors, LLC., from any obligation under this warranty. Warranty repairs can only be authorized by Liberty Outdoors. Please review your owner's manual for all information regarding your Liberty Outdoors warranty.

### **LIMITED TWO-YEAR WARRANTY**

Liberty Outdoors, LLC ("Liberty Outdoors") provides a Limited Warranty ("Warranty") that covers this recreational vehicle ("RV") for a period of two (2) years from the date of purchase by the first retail owner. This Limited Warranty covers defects in materials and workmanship supplied by and attributable to Liberty Outdoors' manufacturing and assembly of the RV, when the RV is used for its intended purpose of recreational camping. The RV must be registered within thirty (30) days of the date of purchase.

Liberty Outdoors is not responsible for any undertaking, representation, service agreement, or warranty beyond what is expressly set forth in this Limited Warranty.

**Transferability:** This Limited Warranty may be transferred by the first retail purchaser to a subsequent retail purchaser; however, the warranty shall in no way be extended beyond the two (2) year coverage period. In order to transfer this Limited Warranty after purchasing the RV from any person other than an authorized dealer, you may go to our website at [www.golibertyoutdoors.com](http://www.golibertyoutdoors.com) and provide Liberty Outdoors your VIN, name, address, phone, and email address (proof of purchase may be requested). You may also notify Liberty Outdoors of the transfer by phone at (877) 545-4897 or by email at [support@golibertyoutdoors.com](mailto:support@golibertyoutdoors.com)

### **REPAIR REMEDY:**

If within the two (2) year Limited Warranty period a defect in materials or workmanship is found to exist that is not excluded from coverage, Liberty Outdoors' sole and exclusive obligation shall be to repair the defect. As a limited back-up remedy in the event the RV cannot be repaired, to be determined in the sole and absolute discretion of Liberty Outdoors, after receiving a reasonable opportunity to repair, Liberty Outdoors may, at its option, either (1) pay you an amount equal to Liberty Outdoor's determination of the diminution in value of the RV that was caused by the defect, or (2) provide a similar replacement RV, less a reasonable allowance for the owner's use of the original RV, to be determined by Liberty Outdoors. Please note that any performance of repairs after the coverage period expires or any performance of repairs to those portions of your RV excluded from coverage shall be considered "good will" repairs, which shall not alter the express terms of this Limited Warranty.

### **HOW TO OBTAIN SERVICE:**

To obtain service we recommend that you first contact your local authorized dealer for warranty service. If you encounter any difficulty obtaining warranty service, please contact the Customer Service Department at Liberty Outdoors, Phone Number (877) 545-4897 or [support@golibertyoutdoors.com](mailto:support@golibertyoutdoors.com)

## WHAT IS NOT COVERED - THIS LIMITED WARRANTY SHALL NOT APPLY TO:

- Routine maintenance including, without limitation, caulking, re-caulking and waxing of the body of the RV, tightening screws, brake squeak/lock-up/adjustment, latches, locks, combustion systems, changing fuses, or light bulbs, and maintaining the air conditioning and heating systems;
- Adjustments to all doors, drawers, locks, latches, slide outs, awnings and window treatments beyond 90 days after retail sale;
- Tires, Batteries, and certain Appliances & Electronic Entertainment Equipment, all of which are warranted separately by the respective component manufacturer; ***See Component Warranties on Page 7***
- RV's used for business, rental, commercial, residential, or disaster relief purposes, or any purposes other than recreational travel and family camping;
- RV's which are not originally purchased through an authorized dealer or those purchased through auction, repossession, salvage or an otherwise damaged or distressed condition;
- Damage or loss caused in whole or in part by the misuse, abuse, neglect, theft, vandalism, product modification, improper customer or dealer installation, improper stowing of equipment, overloading or improper balancing of the load, low or high voltage, unauthorized repair or failure to follow instructions supplied with the RV;
- Damage or loss caused in whole or in part by the unauthorized attachments, modifications or alterations to the structure, body, pin box, or frame of the RV including but not limited to trailer hitches for towing, or platforms for supporting cargo;
- Deterioration due to normal wear, tear, and exposure;
- Design defects; Redesign/Re-construction of any part of the RV; or anything related to wheel or axle alignment;
- Rust or corrosion due to the environment; and any broken glass damage;
- Damage or loss caused in whole or in part by animals, exposure to natural or atmospheric elements, corrosive chemicals, ash or fumes generated or released by vehicles, collision, road hazards, rock chips, condensation, or any other source;
- Damage or loss caused in whole or in part by the willful or negligent acts of the driver of the vehicle pulling the RV, an accident involving the RV, or the condition of any road surface;
- Damage or loss to the RV caused in whole or in part by the tow vehicle selected by the owner, owner's operation or use of the tow vehicle, improper selection or installation of towing hitch on tow vehicle, weight distribution, sway control or equalizer equipment, or damage to the owner's tow vehicle;
- Any injury, loss or damage due to mold or fungi;
- Any RV licensed, registered, or primarily used outside the USA or Canada;
- Repairs or replacements made necessary by negligence, negligent use of, misuse of, abuse of, loading the unit beyond its gross weight limitations, accidents, acts of God, modifications or alterations in or to the RV by anyone, and failure to maintain or care for the RV, and any and all matters which were not within the control of Liberty Outdoors;

- Alterations, modifications or changes to the original design and build of the RV;
- Any defect caused in-transit to or from a dealer or to or from the consumer or by the consumer or another;
- Consequential/incidental expenses (damages) such as service calls, transportation, lodging, food, fuel, etc.  
NOTE: Some states do not allow the exclusion of incidental or consequential damages, so this exclusion may not apply to you;
- Fading, yellowing or aging of exterior materials due to UV or sunlight or weather exposure;
- Damage caused by unregulated water pressure, tank overfill or plumbing system modifications resulting in flooding of the vehicle;
- Damage caused by unprotected electrical hook-ups (home or campground), power surges, lightning, circuit overload or electrical system modifications;
- Damage caused by overloading or improper weight distribution;
- Damage caused by improper ventilation resulting in excessive condensation which results in water damage and/or mold or mildew;
- Damage, fading or deterioration caused by prolonged exposure to natural elements;
- Damage caused by infestation by insects or other animals;
- Damage caused by the tow vehicle hitch, equalizer, stabilizer, electrical or brake controller system;
- Damage caused by the environment or weather, including, but not limited to, flooding, high winds, acid rain, hail, lightning, high heat, extreme cold, etc.
- Damage caused by road surface conditions, applications of salt or de-icing chemicals, gravel/sand, ruts, holes, etc.; and
- Excess weight on the RV. (Please refer to weight capacities published on the RV.)

## **DEFECTS V. DAMAGE:**

Please note the distinction between “defect” and “damage” as used in this Limited Warranty: “Defect” means the failure of the workmanship performed and/or materials used to conform with the design and manufacturing specifications and tolerances of Liberty Outdoors. Defects are covered because Liberty Outdoors is responsible; on the other hand, Liberty Outdoors has no control over “damage” caused by such things as collision, misuse and lack of maintenance which occurs after the RV is delivered to the owner. Therefore, “damage” for any reason which occurs after the RV is delivered is not covered under this warranty. Maintenance services are also excluded from the warranty because it is the owner’s responsibility to maintain the RV.

## **AUTHORIZED DEALERSHIP OBLIGATIONS:**

The following are obligations which must be performed by the Authorized Liberty Outdoors Independent Dealership ("dealer")

- To properly maintain the RV until retail sold to the purchaser
- To perform a comprehensive pre-retail delivery inspection ("PDI")
- To repair or replace any defective parts
- To correct defects in workmanship which are identified prior to initial retail purchaser taking delivery of the RV
- To present the initial retail purchaser with this Limited Warranty prior to the initial retail purchaser entering into any written contract to purchase a RV
- To submit the signed Liberty Outdoors RV Warranty Registration Form and the signed Limited Warranty

## **PURCHASER'S OBLIGATIONS:**

The purchaser shall give notice to Liberty Outdoors or dealer within Thirty (30) days after it is or should have been discovered, and any action to enforce it shall be commenced not more than three (3) months thereafter; otherwise the Purchaser will have waived any such defect and claim, and any and all damages arising as a result thereof. The Purchaser is responsible to maintain the camper in accordance with the instructions provided in the Owner's Manual and/or any other care and maintenance manuals supplied with the RV. Failure to follow proper procedures and seasonal maintenance schedules may void your warranty. The Purchaser must inspect the RV at the time of delivery to ensure that it is acceptable as delivered. This RV has been sold to an independent dealer, and not an agent of Liberty Outdoors, for resale in the ordinary course of the dealer's business, on terms and conditions and equipped as the dealer and the initial retail purchaser determine, and the initial retail purchaser's agreement is solely with the dealer, not Liberty Outdoors. Liberty Outdoors does not participate in retail sales or retail contracts. Among the other requirements under this Limited Warranty, the Purchaser must also:

- Maintain the RV in accordance with the maintenance requirements contained in the Owner's Manual;
- Make minor adjustments including (but limited to) doors, drawers, latches, regulators, controls, mechanisms, etc. after 90 days of ownership;
- Maintain all exterior seals and sealant, which must be inspected every 6 months to assure there are no gaps or voids, and correcting as necessary; and
- Return their vehicle to an authorized dealer for repairs.

## **COMPONENT WARRANTIES:**

As stated above, some components, accessories or equipment are not covered by this Base Limited Warranty. Examples include tires, batteries, optional generators, and some appliance & electronic entertainment equipment. However, those items may have coverage provided by the component manufacturer. These warranties are completely separate from this Limited Base Warranty, and in some cases may be longer and/or have specific coverage provisions and requirements. In order to activate these warranties you may have to complete registration forms, postcards or some other form of notification to the component manufacturer within a specific time period. These forms and documents will be located with the Owner's Materials provided with your new vehicle. You must complete and submit them to the respective manufacturer as quickly as possible, and within the time periods required by those warranties.



## **DISCLAIMER OF CONSEQUENTIAL, PUNITIVE AND INCIDENTAL DAMAGES:**

The original retail purchaser of the RV and any person to whom the RV is transferred or given or

conveyed, and any person who is an intended or unintended user or beneficiary of this Limited Warranty, shall not be entitled to recover from Liberty Outdoors any consequential, punitive or incidental damages resulting from any defect in the RV, or loss of use, time or revenues. This Warranty also excludes costs of transportation to any authorized dealer or service representative or to Liberty Outdoors to get warranty service, loss of use of the RV, loss of time, loss of revenues, inconvenience, or other incidental or consequential damage and any punitive damages, with respect to business or property, whether as a result of breach of warranty, negligence, or otherwise. Some states do not allow the exclusion or limitation, or the exclusion may not apply to you.

IF ANY MODEL OR SAMPLE IS SHOWN TO THE PURCHASER PRIOR TO THE PURCHASE OF THE RV, SUCH SAMPLE OR MODEL WAS MERELY TO ILLUSTRATE A GENERAL TYPE OF QUALITY AND NOT TO REPRESENT THAT THE RV WOULD NECESSARILY CONFORM TO A SAMPLE OR MODEL AND SHALL NOT BE DEEMED TO BE PART OF THE BASIS OF THE BARGAIN OR CREATE ANY EXPRESSED WARRANTIES OR AFFIRMATIONS OR PROMISES.

## **DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:**

LIBERTY OUTDOORS EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY OTHER IMPLIED WARRANTIES. THERE IS NO EXPRESS OR IMPLIED WARRANTY MADE BY LIBERTY OUTDOORS BEYOND THAT CONTAINED IN THE LIMITED WARRANTY ABOVE. ANY OTHER IMPLIED WARRANTY ARISING BY OPERATION OF LAW THAT CANNOT BE DISCLAIMED ARE SPECIFICALLY LIMITED TO THE WARRANTY PERIOD OF THIS WRITTEN WARRANTY. THE ABOVE REFERENCED LIMITED WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES. NO PERSON HAS THE AUTHORITY TO ENLARGE, AMEND, OR MODIFY THIS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

## **EXCLUSIVE REMEDY:**

THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY FOR ANY DEFECTS RELATING TO THE RV.

## **DESIGN AND PRODUCT CHANGES:**

Liberty Outdoors reserves the right to change the design of its RV from time to time without notice and without obligation to make corresponding changes in its products previously manufactured.

## **ATTORNEYS FEES:**

Any warranty claim asserted or brought in violation of this Limited Warranty, or any claim brought against Liberty Outdoors, directly or indirectly, under which the Purchaser or any other person or entity seeks to broaden the terms of the Limited Warranty or under which the Purchaser or any other person fails to successfully prevail on any issue or matter of any type or nature, shall entitle Liberty Outdoors to recover its costs, damages, and reasonable attorney's fees in connection with the same.

This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. By registering or having your RV registered in your name, or by asserting a claim under this Limited Warranty, Purchaser (and all assigns) is agreeing on behalf of the purchaser and all assigns to be bound by the terms and conditions of this Limited Warranty.

**\*\*END OF 2 YEAR WARRANTY\*\***

## CONTACT LIBERTY OUTDOORS

For assistance with your recreational vehicle we suggest the following steps to insure customer satisfaction:

1. Contact your Sales Representative or Service Advisor at your dealership.
2. For further assistance contact the Sales Manager, Service Manager or General Manager at the dealership.
3. If the concern cannot be resolved at the dealership, please locate your Vehicle Identification Number (VIN) and contact Liberty Outdoors:

Liberty Outdoors, LLC

1519 Boettler Rd. Suite A

Uniontown, OH 44685

Phone: 877-545-4897

Fax: 330-791-3325

[www.golibertyoutdoors.com](http://www.golibertyoutdoors.com)

[support@golibertyoutdoors.com](mailto:support@golibertyoutdoors.com)



***DANGER IS USED FOR A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY TO PERSONS***



***WARNING IS USED TO ADVISE CAUTION WHEN PERFORMING ACTIONS THAT COULD RESULT IN MINOR OR MODERATE INJURY TO PERSONS AND/OR DAMAGE TO EQUIPMENT.***

## IMPORTANT INFORMATION REGARDING YOUR RV ROOF:

Inspection of roof components every 90 days is very important to make sure seams and seals are not cracked or worn. Proper maintenance of seals is necessary to keep moisture from entering and causing the damage such as rot, mold, or mildew. If you encounter dry, cracked, or weathered seals, reseal or replace as necessary.

Note: Liberty Outdoors warranty covers exterior seals within the first 90 days of ownership.

Note: Maintaining your RV's seals is an important step in preserving the integrity and lifetime value of your RV!

## IMPORTANT INFORMATION REGARDING WINTER PRECAUTIONS:

It is wise to monitor the water temperature in the tank and take steps to drain and winterize if necessary. Damage to water components and lines are not covered under warranty.

It is also important to remember that moisture can collect on inside surfaces during cold weather when inside humidity is high. While the trailer is in use, a family can vaporize up to three gallons of water daily through daily living

### PRIORITY 1 ISSUES

Priority 1 issues are considered safety related or essential to using your unit and should be scheduled at the earliest convenience based on your selling dealers shop capacity to ensure your primary systems are functioning.

1. Appliances	2. Water System	3. Exterior System
Refrigerator	Water Pump	Roof Leaks
Furnace	Water and Waste Tanks	Exterior Water Leaks
Range/Oven	Water Leaks	Exterior Lighting
Hot water Heater	Water lines	Electric Brakes
Roof Air Conditioner		Awnings
Propane System		
Microwave Oven		

## PROCEDURE:

In order to ensure immediate processing of these issues, please contact the service department. Upon contacting the service advisor, please indicate that you have a Priority 1 issue that requires attention. Please call in as soon as possible to allow for proactive response time. Some repairs require preauthorization and parts from Liberty Outdoors or other vendors. Be sure to list the issues requiring immediate attention accurately to ensure our service writers and technicians know exactly what the problem is.

## PRIORITY 2 ISSUES:

Items not listed on the Priority 1 list are considered maintenance and/or cosmetic issues. These issues are considered important for the longevity of your RV and could be scheduled for completion away from the peak usage times (Fall and Winter) based on service availability at your dealership. Many Priority 2 issues often require parts being ordered from the manufacturer. There are times when it may take 4-6 weeks for some parts to be received and even longer if the parts are backordered from the original manufacturer. It is important that the dealership receives a copy of your concerns within your warranty period. A clear description of your concerns with accompanying pictures will help expedite service. If you have a Priority 2 issue(s) in addition

to a Priority 1 issue(s), you can note these with the service department. Please recognize that Priority 2 issue(s) could be dealt with away from peak usage times based on service availability at your dealership. Thank you for understanding and your assistance.

### **BEFORE YOU BRING YOUR UNIT IN FOR A SERVICE APPOINTMENT:**

Prior to dropping your unit off for service, your black tank should be emptied and sanitized. This ensures that your sensors read properly and you are not charged for a black tank flush. If you have any service request that involves the drainage system and the tanks are not emptied, you may be charged for a tank flush to properly address the service concern.

### **SERVICE APPOINTMENTS:**

Traditionally, customers would call in to the selling service department to set up a service appointment.

The best way to contact the service department is by phone. Email allows for easy and detailed documentation of your service requests, including the ability to send pictures. The service advisor can then review pictures while discussing your service concern to ensure an accurate description of the service request is recorded.

We have found that our customers can include extra information and pictures in their emails that is vital to properly troubleshooting and addressing concerns. Accurate, descriptive explanations of your concerns and the extra information will expedite the service process. Please use the following template:

- Customer Name
- Unit VIN
- Year, Make, Model
- Type of Service Request
- List of Concerns

Remember that the Spring and Summer is the busiest time of year for all RV dealerships across the nation. Please be patient with us and your dealership as we are dedicated to addressing your needs and concerns appropriately.

Wait Appointments: Service appointments are not wait appointments unless specifically coordinated. Some issues may appear simple but might require lengthy troubleshooting by a specialized technician.

### **60-90 DAY APPOINTMENTS:**

What is a 60-90 Day Warranty Appointment? Liberty Outdoors has a 90-day adjustment period that is covered under warranty. This optional appointment is to address needed adjustments before the 90-day warranty adjustment period has expired. A 60-90 Day Warranty Appointment is not a wait appointment and is not a complete recheck of your RV's systems or appliances. It is an appointment available for customers but is not required if no adjustments are needed. If you need this appointment, please call the Service Department at your dealership to schedule.

Note: If these adjustments are not documented with Liberty Outdoors before the 90 day warranty adjustment period expires, Liberty Outdoors may deny these repairs.

### **HOW TO OBTAIN SERVICE:**

The Liberty Outdoors dealer network is the exclusive provider of Parts, Service and Warranty for Liberty Outdoors. We recommend your selling dealer be contacted first as they have a vested interest in your satisfaction.

### **OWNER RESPONSIBILITIES:**

Review the information contained within this manual and all supplied component manuals.

1. Ensure the proper care and maintenance outlined in the manual is executed by appropriately trained personnel according to the Maintenance Schedule outlined in this manual including taking whatever preventative measures necessary to maintain the exterior sealants of the RV and to prevent foreseeable secondary moisture or water damage to the RV from rain, plumbing leaks, condensation and other natural accumulation of water in the RV. Owners should not leave a RV unattended while attached to an internal or external water source which could lead to a 'flooding' condition. Examples of secondary damage include, but are

not limited to, stained upholstery, carpeting or drapes, mold formation and growth, furniture, cabinetry or floor deterioration, etc. Mold is a natural growth given certain environmental conditions and is not covered by the terms of the Limited Warranty.

2. Make an appointment to return the RV, at your expense, to your selling dealer for the necessary service.
3. If the dealer is unable to timely resolve any warrantable issues, or for assistance in arranging repairs, please contact: Liberty Outdoors at Phone: 877-545-4897 or Email: support@golibertyoutdoors.com. Upon receipt of notice of a claim, where the dealer was unable or unwilling to resolve the problem, Liberty Outdoors may then direct you to another dealer or service center for the repairs to be completed. Liberty Outdoors may, at its option, request that the recreational vehicle be returned to one of its Customer Service facilities in Somerset, Pennsylvania or Liberty, North Carolina. Liberty Outdoors will repair or replace any parts necessary to correct defects in material or workmanship or will take other appropriate action as may be required. If the dealer is unable to correct any covered defects that you believe substantially impairs the value, use or safety of your recreational vehicle, you must, to the extent permitted by law, notify Liberty Outdoors directly of the failure to successfully repair the defect(s) so that Liberty Outdoors can become directly involved for the purpose of performing a successful repair to the identified defect(s).

**Service Calls or repairs completed by Non-Authorized dealers are not warranted by Liberty Outdoors. Should you encounter a situation that may require such a service, contact your selling dealer for assistance PRIOR to incurring these types of expense.**

## **OBTAINING WARRANTY SERVICE:**

Please note that in almost every situation, you will need to make an appointment with the dealer. Whenever possible, follow these steps to help assure a smooth Service experience:

1. Call Ahead - Give thought to an appointment time and call ahead. Mondays and Fridays are generally the busiest times at a dealer's service center, as are right before seasonal holidays. All shipping or towing expenses incurred in transporting the recreational vehicle for warranty service shall be owner's responsibility. Upon requesting the warranty services you will be asked for:
  - Your name
  - Date of purchase
  - Liberty Outdoors Vehicle Identification Number (VIN)
  - An explanation of the anticipated warranty claim
2. Be Prepared/Make a List – Have a detailed list ready to review with the dealer when making the appointment. Clearly identify what occurred, when and how the RV was being used at the time it occurred (Shore cord plugged in or on battery power, using the water pump or on city water, only happens when I use the shower, etc.). The more information provided up front, the better chance the concern will be addressed timely and accurately the first time.
3. Parts Lead Times – While many of the parts needed for warranty repairs are in stock at your dealer or at Liberty Outdoors, a number of them may be special order. Many of these parts need to be manufactured with extended lead times that can delay the repair process. In those situations, we recommend the dealer complete the repairs that can be completed and the retail owner take the RV to use. Once the parts needed to complete the repairs are received by the dealer, return the RV for completion of the remaining repairs.
4. Inspecting your repairs – Your dealer and Liberty Outdoors want you to be satisfied with any repair. After a repair is performed, inspect it thoroughly. Go over the repairs with the dealer service representative and check off your list as you go. In the event a problem should reoccur

after you have left the dealership, contact the repair center or Liberty Outdoors as soon as possible so the situation can be resolved expediently.

## **OBTAINING WARRANTY SERVICE IN TRANSIT:**

Should you encounter an issue affecting the use, value or safety of your RV while traveling, contact your selling dealer for assistance. Should you need to locate an Authorized Liberty Outdoors Service Center, a dealer locator can be found at [www.golibertyoutdoors.com](http://www.golibertyoutdoors.com) or by contacting Liberty Outdoors at 877-545-4897 Monday-Friday 9am – 5pm

## **PRODUCT WALKTHROUGH**

### **TOWING & HITCHES:**

Towing properly is extremely important for the safety and the longevity of your RV. There are many resources online that show how to properly hook up and tow your RV. If you are using a weight distribution kit on your travel trailer, please refer to the manufacturer's website for specific questions regarding the product.

Always check to make sure your breakaway cable is properly secured and hooked up to the tow vehicle. The breakaway cable is designed to lock up the trailer brakes in emergencies. Trailering your RV without the breakaway pin properly secured in the mount will damage your RV's brake system. When the breakaway pin is pulled from the assembly, 12 volts of power is applied to the RV's brake system, locking up the brakes. If you continue to pull the trailer while power is applied to the brakes, this will damage the brake assemblies and will not be covered by any manufacturer warranty.

### **TOWING CONSIDERATIONS**

Getting Started...

#### **TOW VEHICLE SELECTION:**

We recommend the tow vehicle selected have a trailer weight rating to handle at least the Gross Vehicle Weight Rating (GVWR) of the RV you have

selected. Please consult with your tow vehicle dealer for more information about the specific ratings of your tow vehicle.

## **HOOKING UP TO THE TOW VEHICLE:**

### **TRAVEL TRAILER:**

1. Crank the tongue of the trailer jack up until the hitch coupler is high enough to clear the tow vehicle.
2. Back the tow vehicle to the trailer until the hitch ball is directly under the coupler on the trailer.
3. Set the parking brakes, raise the locking latch on the coupler and crank it down on the ball.
4. Move the locking latch down to lock it on the ball. Secure with a padlock or pin.
5. Connect the power cord between the tow vehicle and the trailer.
6. Connect the breakaway switch to the tow vehicle.
7. Connect the safety chains to the tow vehicle
8. Install the weight distribution bars and sway control. Refer to the hitch manufacturers directions for proper hook up and adjustment.
9. Crank the jack all the way up.
10. Install and adjust side mirrors.
11. Check all lights on the trailer and tow vehicle (running, turn signals and brakes).
12. Pull forward and check the operation of the trailer brakes with the hand control to ensure proper operation. Refer to manufacturer specifications on setting the brake control.

### **TOW VEHICLE SET UP:**

#### **WEIGHT DISTRIBUTION:**

Proper weight and load distribution is absolutely essential to safe towing. Before your first trip, load your RV with the weight distributed evenly (front



to rear, side to side) with all personal belongings, equipment, food, water, etc. you feel are needed and weigh the RV as shown in Chapter 4 “Weighing Your Trailer”. Compare the weights of the RV to the weight ratings of the RV. Keep the loaded tongue weight between 10% and 15% of the total weight for travel trailers.



**LOCATE AND SECURE CARGO AND VEHICLES TO MAINTAIN SAFE WEIGHT DISTRIBUTION IN THE CARGO AREA AND THROUGHOUT THE TRAILER. IMPROPER WEIGHT DISTRIBUTION OR OVERLOADING COULD LEAD TO LOSS OF VEHICLE CONTROL DURING TRAVEL RESULTING IN SERIOUS INJURY OR DEATH. THE ROOF SHOULD BE FREE OF SNOW PRIOR TO TRANSPORTING THE TRAILER. FOLLOW ALL GUIDELINES CONTAINED IN THIS MANUAL FOR LOADING AND WEIGHING PROCEDURES. MAINTAIN THE LOADED HITCH WEIGHT WITHIN THE PERCENT LEVELS STATED ABOVE. WHERE APPLICABLE, A HITCH WITH BUILT IN SWAY CONTROL IS RECOMMENDED. DO NOT EXCEED THE GVWR (GROSS VEHICLE WEIGHT RATING) OR THE GAWR (GROSS AXLE WEIGHT RATING) OF EITHER THE TOW TRAILER OR TOW VEHICLE.**

#### **BRAKE CONTROL:**

A brake control is a device that is installed in the tow vehicle that activates the electric trailer brakes. Your trailer brakes should work in synchronization with your tow vehicle brakes. Never use your tow vehicle or trailer brakes alone to stop the combined load. Your brake controller must be set up according to the brake control manufacturer’s specifications to ensure proper synchronization between the tow vehicle and the trailer. Additionally, you may have to make small adjustments occasionally to accommodate changing loads and driving conditions.

#### **HITCH SELECTION:**

The hitch must be rated over the GVWR and the hitch weight (tongue weight) of the trailer.

Weight specifications can be found at [www.golibertyoutdoors.com](http://www.golibertyoutdoors.com). Liberty Outdoors does not supply the tow vehicle hitch, weight distribution bars or the sway control. Your RV dealer will be able to help with proper hitch selection for your tow vehicle.

#### **WEIGHT DISTRIBUTION BARS - TRAVEL TRAILER:**

Weight distribution bars transfer weight from the rear axle of the tow vehicle to the front axle and the trailer axles. Properly set up, they will control up and down oscillation at the hitch while towing. Weight distribution bars do not control sway. Liberty Outdoors recommends weight distribution bars for safe towing. Your dealer will be able to assist with proper selection for your specific tow vehicle and travel trailer setup.

#### **SWAY CONTROLS - TRAVEL TRAILER:**

A sway control device is installed by dealers as part of the hitch set up and prevents sway (or fishtailing) while towing. Liberty Outdoors recommends a sway control device that will prevent sway (or fishtailing) for safe towing. If you experience sway while towing, contact your dealer immediately for corrective action. Some less expensive brands of sway control are not adequate to control sway in larger travel trailers. The sway control must be properly set up for it to be effective. Your dealer will be able to assist with proper selection for your specific tow vehicle and travel trailer setup.

#### **SAFETY CHAINS - TRAVEL TRAILERS:**

Safety chains are included with every travel trailer and, in most states, are required when towing a travel trailer. Hook them to the safety chain loops provided on the tow vehicle’s hitch, crossing them under the trailer tongue. Inspect the length of the chains once attached to the tow vehicle frame. They should be long enough to allow for turns, but short enough to avoid any drag.



***ALWAYS USE SAFETY CHAINS WHEN TOWING. THEY MAINTAIN THE CONNECTION BETWEEN THE TRAVEL TRAILER AND TOW VEHICLE IN THE EVENT OF THE TRAILER BECOMING DETACHED DURING TRAVEL.***

#### **BREAKAWAY SWITCH:**

The breakaway switch is another safety device as it provides a means of automatically slowing and stopping your RV if it should become detached from the tow vehicle during transit. The cable from the breakaway switch should be attached to the tow vehicle and if a separation occurs, the pin is pulled out of the switch which activates the brakes of the trailer to slow and eventually stop the trailer. The breakaway switch is only powered by a 12 volt RV battery on the trailer. The RV battery is not supplied by Liberty Outdoors. Please consult your RV dealer to purchase the proper battery.

#### **HOW TO TEST THE BREAKAWAY SWITCH:**

1. Disconnect the 7-way trailer cord from the RV to the tow vehicle.
2. Pull the lanyard pin out to the first stage.
3. Brakes should audibly engage.
4. Double check by moving the tow vehicle forward slightly to be sure the RV brakes have locked and are operating correctly.



***DISCONNECT THE SEVEN-WAY TRAILER CORD FROM THE TOW VEHICLE PRIOR TO TESTING THE BREAKAWAY SWITCH. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE BRAKE CONTROLLER.***

#### **LIGHTS:**

Check all electrical connections to ensure all lights on the tow vehicle and travel trailer are functioning properly. The brake lights, marker lights, identification lights, hazards and turn signals should be in synchronization with the tow vehicle.

#### **MIRRORS:**

Adjust the mirrors on the tow vehicle prior to departure. Having someone to assist you will make this safety step quick and easy. First line up the tow vehicle and trailer. Next, sit in the driver's seat and adjust the left mirror to where you can see the entire left side of the trailer and well beyond. Finally, while still sitting in the driver's seat, have someone adjust the right mirror until the same result is achieved. Some vehicles may require the use of mirror extensions to properly see down the side of the trailer. See your Liberty Outdoors dealer for recommendations.

#### **ALSO CONSIDER THE FOLLOWING BEFORE TRAVELING...**

- Disconnect all park connections (power, cable, etc.) and securely store.
- Close and secure all doors, windows, awnings and roof vents.
- Return the entry step to the travel position.
- Refer to the "Pre-Travel Checklist" located in the back.

#### **TOWING:**

Towing a recreational vehicle can be enjoyable if special attention toward safety is applied every time you tow your trailer. Before heading out on your first camping trip practice turning, stopping and backing in low traffic areas or large parking lots.

Driving with a trailer in tow is different. Start out slowly, checking the traffic after signaling and being sure the road is clear. Accelerate slowly and evenly, checking the mirrors frequently as you move into the proper lane. Try to drive with an anticipation of problems that may occur way ahead and prepare for them, even though they may never happen.



As a motorist sharing the road, you are taller, heavier, longer and require more time and distance to stop. Weather and road conditions will require adjustments to speed. Anticipate dips, gutters, and depressions in the road, slowing down well in advance, these are the hardest jolts of any kind on your vehicle, hitch, recreational vehicle and items stored inside the RV. Take dips and bumps slowly and be certain the trailer wheels have passed the point before accelerating.

### **CONTROLLING SWAY OR FISHTAILING:**

Sway or fishtailing is the sideways action of a trailer caused by external forces. It is common for travel trailers to sway in response to strong winds or crosswinds or when passed by or passing a semi-tractor and trailer or driving downhill.



***EXCESSIVE SWAY OR FISHTAILING OF YOUR TRAVEL TRAILER CAN LEAD TO THE ROLLOVER OF THE TRAILER AND TOW VEHICLE. SERIOUS INJURY OR DEATH CAN OCCUR. IT IS IMPORTANT THAT YOU READ AND UNDERSTAND THE INFORMATION IN THIS SECTION.***

Sway or fishtailing of your recreation vehicle can be controlled and is primarily impacted by four factors:

- Equipment.
- Tongue weight.
- Driving.
- Corrective measures.

**Equipment** – When hitched together, the trailer and the tow vehicle must be level. The tires of both the trailer and tow vehicle should be in good condition and inflated to the pressure recommended as noted on the tire placards of the trailer and tow vehicle.

**Tongue Weight** - See “Weight Distribution” for information on maintaining proper tongue weight.

**Driving** – This is the most important component. The tendencies for the vehicle to sway increases with

speed therefore, obey all speed limits and reduce speed during inclement weather or windy conditions.

**Corrective measures** – If sway occurs the following techniques should be used:

1. Slow down immediately, remove your foot from the accelerator. Avoid using the tow vehicle brakes unless there is a danger of collision. Reduce speed gradually whenever possible. If you can do so safely, use the brake hand controller (independent of the tow vehicle brakes) to gently and progressively apply the trailer brakes. This will help to keep the vehicles aligned. Practice using the brake hand controller in a deserted parking lot. Don't wait until an emergency occurs before using it. Location of the brake hand controller is important and should be made easily accessible.
2. Steer as little as possible while maintaining control of the vehicle. Because of natural reaction lag time, quick steering movements to counter trailer sway will actually cause increased sway and loss of control. Keep both hands on the wheel. Hold the wheel as straight as possible until stability is regained.
3. Do not jam on the brakes or attempt to press on the accelerator to speed your way out of the fishtailing. Both actions make the situation worse and could cause severe injury or death.
4. Once the swaying is under control, stop as soon as possible. Check tire pressures, cargo weight distribution and look for any signs of mechanical failure. Travel at reduced speeds that permit full control until the problem can be identified and corrected.

### **BACKING:**

Back with care. Having a person outside to assist is a good idea. If no one is available to help, the driver should inspect the area behind the vehicle to avoid any unseen obstacles and unpleasant surprises.

## **BRAKING:**

Start braking sooner than you would if driving without a trailer in tow. Stopping distances are increased while towing a trailer. See “Brake Control” for more information.

## **PASSING AND ACCELERATING:**

Remember when you pass another vehicle that it takes longer to accelerate and additional time must be allowed due to the added length of the trailer. Passing should be done on level terrain and downshift, if necessary for added acceleration. Whenever deciding to pass another vehicle, exercise caution and always use the turn signals.

## **SHARPLY WINDING AND NARROW ROADS:**

Keep well to the center of the lane, equally away from both the center line and pavement edge. This allows the trailer to clear the edge of the pavement without the likelihood of the wheels dropping onto the shoulder, causing potential dangerous sway. Do not crowd or cross the centerline.

## **STEEP OR LONG GRADES:**

Downshifting into a lower gear or range in advance assists braking on descents and adds power on the climb. Avoid situations that require excessive and prolonged use of the brakes. Apply and release brakes at short intervals to give them a chance to cool.

## **SLIPPERY PAVEMENT:**

On slippery and icy pavement, reduce speed and drive slowly. Hydroplaning can occur with little water on the pavement. If skidding begins, remove your foot from the throttle and gently apply the trailer brakes only.

## **FREEWAYS AND HIGHWAYS:**

Try to pick the lane in which you want to move and stay in it, preferably keeping to the slower lane on the right.

## **TURNING CORNERS:**

Here is where you find a first basic difference when towing. The trailer wheels do not follow the path of your tow vehicle’s wheels. The trailer will make

a closer turn than the tow vehicle. Compensate by pulling further into the intersection so that the trailer will clear the curb or clear any parked vehicles along the road. Left turns require a wider than normal swing into the new lane of traffic to keep the trailer from edging into the opposing lane. Use the turn signals early to communicate to traffic behind and slow down well in advance.

## **MUD AND SAND:**

Let the momentum of the tow vehicle and trailers carry you through. Apply power gently and stay in the tracks of the previous vehicle. If stuck, tow the trailer and tow vehicle out together without unhitching.

*Additional towing safety information can be found at the National Highway Traffic Safety Administration’s website.*

<http://www.nhtsa.dot.gov/Cars/problems/Equipment/towing/Towing.pdf>

## **PROPANE**

### **1. If you smell gas:**

- Extinguish any open flames, pilot lights and all smoking materials.
- Do not touch electrical switches.
- Shut off the gas supply at the tank valve or gas supply connection.
- Open doors and other non-powered ventilation openings.
- Leave the area until the odor clears.

### **2. WARNING:** It is not safe to use cooking appliances for comfort heating. Cooking appliances need fresh outside air; open windows to bring in fresh air while cooking.

### **3. LP propane detectors** are great safety devices, but they are very sensitive and false alarms occur. If your LP detector goes off and you do not smell a rotten egg smell, try opening some windows and hitting the reset button on the detector. If it does not go off again, it is likely a false alarm. They also may not work properly if

the temperature inside the unit gets below 40 or above 90 degrees Fahrenheit. An LP alarm can also be triggered by a low battery. Be sure to replace the batteries in smoke alarms and LP detectors regularly.

4. After the propane valve has been turned off for a while or the tank has been filled, it may take a little while for the gas appliances to light. Light all the burners on the stove and let them burn for a few seconds to make sure all of the air is out of the lines and that the propane is flowing properly. The burners should be a nice steady blue color. Even after this is done, the refrigerator might show a check light and have to be turned off and back on several times on gas before it will light (it has a very small flame and takes a while to purge out any air that is still in the lines).



#### **IF YOU SMELL PROPANE**

1. EXTINGUISH ANY OPEN FLAMES AND ALL SMOKING MATERIALS.
2. SHUT OFF THE PROPANE SUPPLY AT THE CONTAINER VALVE(S) OR PROPANE SUPPLY CONNECTION.
3. DO NOT TOUCH ELECTRICAL SWITCHES.
4. OPEN DOORS AND OTHER VENTILATING OPENINGS.
5. LEAVE THE AREA UNTIL THE ODOR CLEARS.
6. HAVE THE PROPANE SYSTEM CHECKED AND LEAKAGE SOURCE CORRECTED BEFORE USING AGAIN.

***IGNITION OF FLAMMABLE VAPORS COULD LEAD TO A FIRE OR EXPLOSION AND RESULT IN DEATH OR SERIOUS INJURY***

***PORTABLE FUEL-BURNING EQUIPMENT, INCLUDING WOOD AND CHARCOAL GRILLS AND STOVES, MUST NOT BE USED INSIDE THE RECREATIONAL VEHICLE. THE USE OF THIS EQUIPMENT INSIDE THE RECREATIONAL VEHICLE MAY CAUSE FIRES OR ASPHYXIATION.***

#### **SAFETY**

Always follow the manufacturer's instructions on the use of all appliances and observe all safety warnings and instructions included.

Before camping, all campers should review and understand the locations of all safety equipment inside the coach and all emergency exit windows as well as doors. An escape plan for emergencies whether at home or camping is always a good idea.

#### **PROPANE APPLIANCE MAINTENANCE**

Follow the instructions and warnings noted in the appliance and equipment owner's manual as well as the ones listed below:

- Annual maintenance should be conducted on the propane appliances and equipment by an authorized dealer or repair facility.
- Insects can build nests in the burners of the various appliances and equipment. The burner and burner orifice of the propane appliances and equipment should be cleaned out by an authorized dealer or repair facility anytime circumstances or conditions warrant, but no less frequently than on an annual basis.

#### **OPERATING APPLIANCES AT HIGH ALTITUDE**

All gas appliances experience lowered efficiency (or rating) at high altitude. This is a direct result of lower atmospheric pressure and oxygen levels, and is not a defect of appliance.

#### **PROPANE GAS SYSTEM**

Read all manufacturer appliance literature, including the information on the propane bottles and regulator, provided within the RV manual packet and follow any instructions given.

#### **GENERAL INFORMATION**

Propane gas is a clean burning dependable fuel for operating all propane gas appliances when utilized properly. Propane gas is highly flammable and is contained under high pressure. Improper use may

cause fires and/or explosions. Propane gas is colorless and odorless in its natural state. An odorant, similar to rotten egg smell, has been added for consumer safety purposes to help detect leaks and provide warning. If a sulfur or “rotten egg smell” is detected in or around the trailer, perform the following steps immediately:

## PROPANE GAS SYSTEM

The propane gas system is a closed system made up of bottles (also referred to as cylinders), regulators, valves, supply lines and appliances. Propane tanks contain liquid under high pressure which is vaporized into a gas. The gas is regulated into a low-pressure and distributed through the supply lines to provide the fuel for propane appliances to burn. Consumption of propane gas depends upon the frequency and duration of use of the propane appliances. The furnace and oven have the highest consumption rates. During cold weather it is advisable to check the bottles often and always keep one full. Safety must be observed at all times when using the propane gas system.

**DO NOT FILL PROPANE CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY. A PROPERLY FILLED CONTAINER CONTAINS APPROXIMATELY 80 PERCENT OF ITS VOLUME AS LIQUID PROPANE. OVERFILLING THE PROPANE CONTAINER(S) CAN RESULT IN UNCONTROLLED PROPANE FLOW, WHICH COULD LEAD TO A FIRE OR EXPLOSION AND RESULT IN DEATH OR SERIOUS INJURY.**

**DO NOT PLACE PROPANE CYLINDERS INSIDE THE VEHICLE. PROPANE CYLINDERS ARE EQUIPPED WITH SAFETY DEVICES THAT RELIEVE EXCESSIVE PRESSURE BY DISCHARGING PROPANE TO THE ATMOSPHERE. PROPANE GAS IS HIGHLY FLAMMABLE. MAY LEAD TO A FIRE OR EXPLOSION AND RESULT IN DEATH OR SERIOUS INJURY**

## REGULATOR

The regulator is the heart of the propane system. Propane is under high pressure in the bottle and the regulator reduces this pressure to allow safe use with the appliances in recreational vehicles. The lower pressure is distributed to the appliances. The lever on the automatic gas regulator will point to the gas bottle in service. When the red flag appears in the

inspection glass, this indicates that bottle is empty. The lever should be then turned toward the other bottle and the empty filled as soon as possible.

The regulator has a vent that allows it to breathe. Propane regulators must always be installed with the regulator vent facing downward. Regulators that are not in compartments have been equipped with a protective cover; make sure that the regulator vent faces downward and the cover is kept in place to minimize vent blockage that could result in excessive propane pressure, causing fire or explosion. Check the vent frequently to keep the vent clean and clear of any debris, corrosion or obstruction. A clogged regulator can result in higher pressures, loss of fuel and/or component failure. The vent can be cleaned by using a toothbrush and should be checked periodically for correct pressure output by a qualified propane service center.



**! DANGER**

**DO NOT ATTEMPT TO ADJUST OR REPAIR REGULATOR. ADJUSTMENTS AND REPAIRS REQUIRE SPECIALIZED TRAINING AND TOOLS. CONTACT A QUALIFIED PROPANE SERVICE TECHNICIAN. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN A FIRE, EXPLOSION AND/OR INJURIES, INCLUDING LOSS OF LIFE.**

## PROPANE GAS LINES

The primary manifold is a black pipe located beneath the RV. Copper tubing, with flare fittings, are used as secondary lines running to the gas appliances. If repairs are needed to these lines or any component of the propane system, DO NOT ATTEMPT to repair yourself and follow the steps listed under the warning “IF YOU SMELL PROPANE” in this chapter.

Although your propane gas system was thoroughly inspected for leaks before delivery, the propane gas system should be inspected and checked for leaks by a RV dealer at least once a year or any time the system is opened.

## **WARNING**

**THE PROPANE PIPING SYSTEM IS DESIGNED FOR USE WITH PROPANE ONLY. DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.**

### **PROPANE GAS LEAK DETECTOR**

Please refer to the manufacturer instructions supplied with the RV for care & operation. Liberty Outdoors installs a propane gas leak detector in every camper. It is a safety device that is permanently mounted near the floor and is powered by 12V (the RV battery and/or converter). The detector is operational only as long as 12V power is available. If the power is disconnected, the monitor will not operate.

Should a propane leak occur, the detector will sound an alarm and continue until the gas has dissipated or until a mute button is pressed. The mute button will only stop the alarm from sounding for 60 seconds and alarm will reoccur if gas is still present. The alarm may sound at times when no propane is present when household products are in use such as aerosol hair spray, cleaners, adhesives, alcohol etc. Be sure to air out the trailer thoroughly after delivery and when using these products. The propane gas leak detector has a self-check circuit which runs at all times while receiving 12 Volt power. In the event that the circuitry fails, a failure alarm will sound and the operating indicator will cease to light. Replace the detector when recommended by the manufacturer (typically every five years).

## **WARNING**

**PROPANE GAS MAY BE PRESENT IN OTHER AREAS BEFORE IT CAN REACH THE DETECTOR LOCATION. THE DETECTOR ONLY INDICATES THE PRESENCE OF PROPANE GAS AT THE SENSOR. NEVER CHECK FOR LEAKS WITH OPEN FLAME. USE ONLY A MILD SOAP AND WATER SOLUTION. DO NOT USE PRODUCTS THAT CONTAIN AMMONIA OR CHLORINE.**

**PROPANE POWERED APPLIANCES PRODUCE CARBON MONOXIDE. CARBON MONOXIDE CAN BE FATAL! WHEN THE CO ALARM DETECTS CARBON MONOXIDE IN THE AIR IT WILL SOUND. CONSULT THE INDIVIDUAL DETECTORS USER MANUAL FOR SPECIFIC INSTRUCTIONS AND/OR AUDIBLE WARNING MEANINGS.**

## **DANGER**

### **IF THE ALARM SOUNDS...**

1. EXTINGUISH ANY OPEN FLAMES, PILOT LIGHTS AND ALL SMOKING MATERIALS.
2. DO NOT TOUCH ELECTRICAL SWITCHES.
3. SHUT OFF THE PROPANE SUPPLY AT THE CONTAINER VALVE(S) OR PROPANE SUPPLY CONNECTION.
4. OPEN DOORS AND OTHER VENTILATING OPENINGS.
5. LEAVE THE AREA UNTIL THE ODOR CLEARS.
6. HAVE THE PROPANE SYSTEM CHECKED AND LEAKAGE SOURCE CORRECTED BEFORE USING AGAIN.

**FAILURE TO COMPLY COULD RESULT IN EXPLOSION RESULTING IN DEATH OR SERIOUS INJURY**

### **ELECTRICAL**

1. Never delete the center ground. By national code, all parts must have a proper ground.
2. If you trip the breaker at the campground several times, you may have too many appliances running on 110V power. They do not use much propane and will free up about 12 amps of 110V power for other uses.
3. It is a good idea to carry spare fuses with you for each amp rating that your RV uses. Common amp ratings are 5, 7.5, 10, 15, 20, 30, and 40 Amp. These fuses can be purchased at any auto parts or RV parts store.



4. If the left or right turn signal or running lights on your towable RV stop working, the first thing to check is the fuses in the truck. Most trucks have separate fuses for the truck tail lights and trailer tail lights, so a fuse could be blown even if all the lights on the truck work. The fuses for the trailer lights are usually under the hood in the power distribution box.
5. **WARNING!** If you want to plug your RV in to a 30 amp or 50 amp outlet at any place other than an RV park, or if you want to have an outlet put in, make sure it is wired correctly (many electricians do not even know the correct way to wire an RV outlet). Plugging an RV into a welder outlet, 220V outlet or incorrectly wired RV outlet can put 220V to all the 110V appliances and outlets in the RV and can do a great deal of damage.
6. Liberty Outdoors always recommends using a surge protector on your RV. Electrical surges are not covered under manufacturer warranty.

## **ELECTRICAL SYSTEM**

The electrical system in your RV is a combination 12 Volt DC (Direct Current) and 120 Volt AC (Alternating Current) system. In simpler terms, the 12 Volt system is what an automobile uses and the 120 Volt system is what most households use. Every facet of the electrical system is built to the Recreational Vehicle Industry Standard (RVIA) which complies with the NFPA 1192 and the National Electric Code.

### **12 VOLT SYSTEM - DC**

The 12 Volt system can be powered in three different ways: a RV battery (not included by Liberty Outdoors), the converter changing 120V AC to 12V DC or by the tow vehicle's 12 Volt system. Almost all equipment except the microwave, and roof air conditioner operates using 12V. Depending on your trailer model, your Television (TV) may not operate on 12V.

### **RV BATTERY**

The heart of the 12 Volt system is the RV battery so choose yours wisely. Your battery is essentially a storage device for electrical energy. We recommend

a RV/Marine Deep Cycle battery for our applications. Before you select your battery, define your camping needs thoroughly. For example, if you will typically camp with access to 120V to plug in the shoreline cord, a standard deep cycle battery should suffice. If you will be camping without access to 120V and will rely heavily on battery to run the many features in your RV, you need to consider a deep cycle battery that has considerable amperage available or possibly installing 2 batteries for your needs. A well charged and maintained battery is critical for proper operation of the appliances and features within your RV. A battery which is not well charged and maintained can cause intermittent or failure of operation with most of the 12V components in your RV. Follow the charging and maintenance instructions closely for the battery you select. Your Liberty Outdoors RV will charge your RV battery when plugged into the tow vehicle and when the shoreline cord is plugged into a 120V power source.

### **120 VOLT SYSTEM - AC**

The 120 Volt system is supplied by plugging the Shore line cord (power cord) into an outside power source (campground, house, etc.) or running the generator if equipped. Once connected or powered, the RV is furnished with power to operate the roof air conditioner(s), microwave, and 120V receptacles throughout the RV. If equipped, some refrigerators and water heaters can run from 120V power in addition to 12V and LP.

### **SHORE LINE CORD / POWER CORD**

The shore line cord is a heavy-duty 30 amp cable with a 3 prong grounding plug on one end and connects directly to the power converter inside the RV on the other end. This cord is used to plug into an external 120V source.

### **30 AMP SERVICE**

30 amp service is the most common in the RV industry and used widely in campgrounds. 30 amp service is 120 Volt service limited to a total of 30 amps of power at one time if your shore line cord is plugged into a 30 amp service. With this service, you will be able to run any single appliance in the RV, however, you may not be able to run a certain

group or equipment/appliances at the same time. For instance, most air conditioners will draw up to 15 amps and a Microwave about 10 amps. While running the air conditioner if you turn the microwave, it may blow a breaker either in the trailer or at the pole. This is because the air conditioner and the microwave draw 25 amps combined and the converter (which runs continuous) is drawing an additional 5 - 13 amps depending on the 12V load (battery charging, lights, etc.). Also consider common loads such as the refrigerator, water heater, coffee maker, and other appliances.

Following is a reference chart to show typical amperage draw on common appliances. It is recommended to operate the water heater on gas only when using other high amp draw appliances to prevent tripping of breakers.

### **AVAILABLE POWER**

The power system in your RV is only as good as the power supply feeding it. Some campgrounds have only 15 amp service available which is not adequate to properly run an air conditioner or certain other appliances. The best way to know what amperage is available is to call ahead to the campground. There are special adaptors available through your local Liberty Outdoors dealer to make these connections to campgrounds with lower service ratings.

### **ADAPTERS/REDUCERS**

These devices connect to the shore line cord to allow it to plug into a lesser power supply. When using adapters, your available electrical power for the entire RV is reduced to the rating of the adapter. 50 amp to 30 amp, 30 amp to 20 amp and 30 amp to 15 amp are the most common. Use the reference chart supplied to manage what you can effectively use in your RV at one time should you choose to utilize this type of aftermarket equipment.

### **EXTENSION CORDS**

If it is necessary to use an extension cord to extend your recreational vehicle shore cord to the available campground electrical outlet, the correct size of the extension cord must be utilized i.e. 30 amp service- 30 amp 10 gauge extension cord not to exceed 50 feet.

Adapters/Reducers are not to be used when using an extension cord and do not plug multiple extension cords together. Your local Liberty Outdoors dealer can assist you in obtaining the proper extension cord



for your needs.

***THE USE OF INCORRECT SIZE OR LENGTH EXTENSION CORDS, ADAPTERS, REDUCERS WILL INCREASE THE RISK OF FIRE, PERSONAL INJURY OR PROPERTY DAMAGE.***

## POWER CENTER/CONVERTER



Distributed in the U.S.A. and Canada by

Arterra Distribution

Warranty Service (877) 294-8997

Fax (574) 294-8698

[www.wfcoelectronics.com](http://www.wfcoelectronics.com)

### INSTALLATION AND SERVICING OF THE WFCO WF-8700 SERIES POWER CENTER



***THIS PRODUCT SHOULD BE INSTALLED BY AN EXPERIENCED TECHNICIAN. CAUTION AND CARE MUST BE TAKEN WHEN SERVICING THIS EQUIPMENT. TO PREVENT SEVERE SHOCK OR ELECTROCUTION CONSULT YOUR SERVICING DEALER. NO SERVICEABLE PARTS.***

This unit employs components that tend to produce arcs or sparks. To prevent fire or explosion, do not install in compartments containing batteries or flammable materials. To prevent fire, do not cover or obstruct ventilation openings. Do not mount in zero-clearance compartment. **Overheating may result.**

For continued protection against risk of fire, or electric shock replace only with same type and ratings of fuse. Check on a monthly basis the fluid level in any battery connected to RV charging system. This product is not ignition protected and should not be installed in an LP compartment.



## GENERAL CONSUMER INFORMATION

### REVERSE BATTERY PROTECTION

This feature prevents permanent damage to the converter from an incorrect battery connection.

### AUTOMATIC COOLING FAN

The fan is variable speed and current controlled.

### ELECTRONIC CURRENT LIMITING

Automatically shuts down power during overload or short-circuit conditions. Automatically returns to normal operation after conditions are corrected.

### DC FUSES

Six 12V DC circuits (including one battery circuit, one circuit for slideouts)

- Maximum of 30 Adc fuse for DC circuits 5 and 6 (all others max. 20 Adc)
- Reverse battery protection fuse; replace with ATC "Littelfuse" Type 257 fuse

### CIRCUIT BREAKERS

One 30 Aac "Main circuit" and a maximum of five 20 Aac "Branch circuits"

### UL-LISTED MAIN CIRCUIT BREAKERS, RATED FOR 120 VAC, MAXIMUM 30 AAC ACCEPTABLE CIRCUIT BREAKERS ARE AS FOLLOWS:

Once connected to a power source (Shore line/Generator), the Power Center/Converter serves 3 primary purposes:

1. Power distribution - All the incoming power is distributed to the RV through the 120V circuit breakers and 12V fuses within the Power Center.
2. Converting 120V to 12V power - In essence, utilization of the converter will reduce the usage of the RV battery.
3. Battery charger - It will charge the RV battery.

When plugged in to a power source for long periods of time, it will be necessary to maintain your RV Battery more frequently. Because the battery is being charged constantly, checking battery water levels is critical to properly maintain your RV battery.

## 120V CIRCUIT BREAKERS

The 120V circuits are protected by circuit breakers and can handle from 15 to 30 amps depending upon the circuit. The most common cause of a circuit breaker to open is an overloaded circuit. An example of an overloaded circuit is when a space heater is plugged into the same outlet as the toaster. The circuit is protected by a 15 amp breaker and the combined amp draw of the space heater and toaster is at least 17 amps. If this happens, reduce the load on the circuit and reset the breaker.



***NEVER REPLACE CIRCUIT BREAKERS OR FUSES OF HIGHER CURRENT RATING THAN THOSE ORIGINALLY INSTALLED. THIS COULD OVERHEAT THE WIRING AND START A FIRE.***

### 12V FUSES

The fuses that protect the 12V system are located in the distribution panel next to the 120V breakers. Typically, the fuse panel is labeled to indicate fuse size and which components are on each circuit.

### GFCI – (GROUND FAULT CIRCUIT INTERRUPTER)

Certain receptacles are protected by a highly sensitive device, known as a "Ground Fault Circuit Interrupter", which is designed to sense the slightest electrical "short" at those receptacles and instantly disconnect the current before a person can be injured. This works like a circuit breaker and has a reset button on the face of the receptacle. Typically, they are located in the bathroom or kitchen.

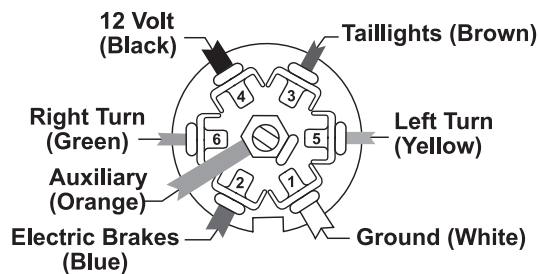
### GFCI-TESTING

The GFCI receptacle should be tested at least once a month or prior to every trip. To test the GFCI, push the TEST button. The RESET button will pop out. Power is now off at all outlets protected by the GFCI receptacle. Push in the RESET button to restore power. The test is complete when the reset button remains pushed in. If the RESET button does not pop out when testing, the GFCI is malfunctioning and no outlets should be used on this circuit, as protection is lost. Call your dealer if the GFCI malfunctions.

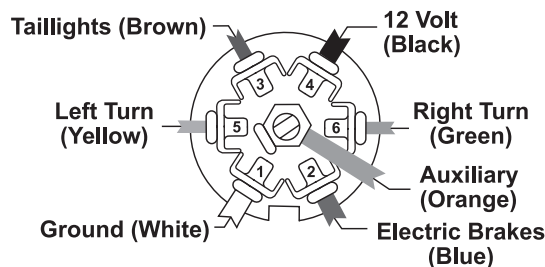
## 7-WAY TRAILER PLUG

A 7-pin plug supplies the electrical connection between the tow vehicle and the RV. This plug connects into a receptacle on the tow vehicle to allow operation of the RV's marker lights, taillights, brake lights and electric brakes. When connected, the tow vehicle alternator will also charge the RV battery in the RV. Typically, the wires within the 7-Way trailer plug are color-coded as identified in the graphics on this page.

**7- Way Car End**



**7- Way Trailer End**



## BRAKES, ELECTRIC

Some Liberty Outdoors RVs are equipped with electric brakes. These brakes are designed to work in conjunction with a properly installed brake controller which would be installed in the tow vehicle. Please refer to the axle manufacturer instructions supplied with the RV for care & operation and/or [www.dexteraxle.com](http://www.dexteraxle.com) or [www.lci1.com](http://www.lci1.com).

## AXLES

Even with normal usage, Axles may require periodic alignment which is not considered warrantable. See the axle manual for further information

## ANTENNA (TV)

1. The TV antenna is located on the ceiling. The antenna is on the large round disk, rotate the antenna for better reception. To improve reception, locate the switch on the antenna base it can be used to amplify the signal.
2. If your TV antenna is stiff or hard to rotate, try lubricating the gears and friction points. WD40 or a spray silicone work well as lubricants for this purpose.
3. Note: TV reception may vary based on atmospheric conditions and the broadcast signal strength.

The two (2) primary components are the Antenna and the Booster. The booster will be typically located near one of the TV locations and has switch to turn it on & off. The booster is designed to amplify the TV (Air) signal. The antenna is designed to capture the best signal available by moving it to the optimal position. If your RV is equipped with "Cable", the booster must be off for the "Cable" signal to reach your desired TV locations.

Before raising the TV Antenna, be sure the area is clear of any electrical wires or other obstructions. Also, be sure to properly stow the antenna before moving the RV. Please refer to the manufacturer instructions supplied with the RV for care and operation and/or [www.kingconnect.com](http://www.kingconnect.com)

## CABLE HOOK-UP

If equipped, locate the exterior hookup on the side of the recreational vehicle. Attach the cable source to the cable jack on the RV. The TV Antenna booster must be off for the cable signal to reach the TV location.

## WATER

1. While traveling, do not leave the water pump switch in "ON" position. If a water line breaks or loosens while traveling, this could flood the floor and cause major damage.
2. If the pump does not turn on, check the switch. Make sure it is in the "ON" position. Check fuses, located in the vehicle's electrical panel. If a fuse is found to be bad, always replace the fuse with the exact same amperage rating.
3. To fill the fresh water tank, on some models, open the outside water fill door, unscrew the round cap and insert the hose to begin filling. When the tank is full, water will come out of the small vent line. You can always check the fill level at the monitor panel.
4. Drain and flush the fresh water tank after each camping use. In the spring, you can pour a cup of bleach into your garden hose and then fill the tank with the water and bleach solution. Turn on the water pump and run the solution through the toilet, water heater, and all faucets. The bleach will sanitize and deodorize the system. Be sure to drain and flush the water system once completed and run water through the lines to clear.

## WATER SYSTEM

1. Always use a water pressure regulator any time you hook up to city water. This protects your water system in case the city water has excessive

pressure. Excessive pressure can burst lines and cause leaks that might not be covered under warranty if a pressure regulator was not used.

2. When filling the water heater after it has been drained, reinstall the drain plug on the outside. You will probably get water first and then air mixed with water. Leave the hot tap open until only water comes out and then shut it off. The pump should pressurize and shut off in a few seconds.
3. If one of the faucets does not seem to have water pressure, but the rest of the system does, the small aerator on the end of the faucet may be clogged with debris. Turn on the faucet to see if there is pressure without the aerator and if there is pressure, clean the aerator and reinstall.
4. Be sure to winterize the RV if the temperature is near 32-degree Fahrenheit. Freezing temperatures can cause serious damage to the RV's water system if it is not properly winterized. Improper winterization will not be covered under warranty. Consult your dealership for winterizing help. If you decide to winterize the camper without the help of your dealership Liberty Outdoors is not responsible for any resulting damage due to improper winterization.

## WATER HEATER

1. Your RV's water heater has a limited capacity and requires time to recover a full tank of hot water. To heat the water on propane, locate the switch (normally on the monitor panel) and turn it on. A red light should glow. **WARNING: Your water heater must be filled before turning it on.**
2. On water heaters that have an electric heating element, be sure the element is turned off before you drain the water heater tank. The element will burn out quickly if there is not water in the tank.

It is recommended to drain and flush the water heater tank after every use to avoid skunky-smelling water. This is also recommended for the fresh water tank.

## HEAT/FURNACES

1. The thermostat is typically located at eye level. Set the control panel to the "On" or "Auto" position and select the desired temperature. Wait up to two minutes for the fan to come on and up to five minutes for heat.
2. If the furnace does not come back on, check your battery power. If your battery power is low, charge the battery or plug in to shore power.
3. If the fan comes on full speed but you still have no heat, light the stove-top burners to ensure there is propane as indicated by a flame. If there is no flame, make sure propane tanks are at least 1/8 full and are turned on. Low pressure from your propane tanks can cause the furnace not to light.
4. Some furnaces have a delay after the thermostat is activated before the blower starts and all have a delay after the blower starts before the burner ignites. Most furnaces will run for a minute or more after the thermostat is off, before the blower will shut off, this is so the blower can cool the unit down.
5. If the furnace just blows cold air, make sure the propane tank is at least partially full and the valve is turned on. Remember that furnaces will run longer and use more propane when temperatures decline. Always monitor your propane levels.

## AIR CONDITIONING

1. If an air conditioner fails to work, make sure the shore power cord is plugged in to the electrical box on the compartment where the shore power cord comes from.
2. When the air conditioning is turned off (or the breaker trips), wait at least 3 minutes before restarting the air conditioner to allow the head pressure to bleed off. Failure to do so is hard on the unit and could trip the breaker because the compressor has to work too hard to start up (it puts an extremely high amount of electrical load on the system).

3. In high humidity weather, be sure to run the air conditioning on high fan mode. Failure to do so could result in freezing the compressor.
4. Always double check your thermostat settings for proper operation.

## REFRIGERATOR

1. Check often to verify thermostat settings. When outside temperatures are below 30 degrees Fahrenheit and exceed 90 degrees Fahrenheit, the refrigerator has a harder time cooling, especially when the door is opened frequently. Make sure the outside refrigerator vent is clear of debris and branches. If possible, position the RV so the refrigerator is not in direct sun. This will help keep the internal temperature constant.
2. If the refrigerator is not cooling sufficiently:
  - Ensure that the RV is level.
  - Open the outside refrigerator vent door to dissipate heat from coils.
  - Turn the thermostat up during the day and down during the night (if needed). Some models are fully automatic with manual overrides. When automatic functions fail, it is necessary to completely shut off the refrigerator, wait ten seconds and restart.
  - For complete refrigerator failure, use cold ice packs, dry ice, or ice cubes to cool the refrigerator manually.
3. After the refrigerator is shut off and not being used, store it with the door propped open slightly. This will keep it from molding and becoming too hot inside. (Excessive heat inside the refrigerator can cause the foam insulation and interior walls to swell, damaging the refrigerator.) Be sure to close the refrigerator door before operating any slides that might be in its path.
4. Both the refrigerator and freezer compartment need air circulation inside to cool properly. Therefore, don't pack them too full of food or cover the grates in the refrigerator with plastic or foil, which will reduce air circulation.

5. Turn on the refrigerator the day before you plan to load it so it will be fully cold when you load it and leave. Also, pre-chill the food you are planning to take.
6. Sometimes the refrigerator or freezer doors are hard to open right after closing. This is a good thing, as it means there is a good seal on the door gaskets.

## **RANGE/OVEN**

1. RV stoves and ovens are smaller than household ones and need good airflow when in use. On the cooktop, never use a pan that covers 2 burners or hangs past the edge of the grate. Never put aluminum foil under or around the burners.
2. When using the stove or oven, make sure at least one window in the RV is open a little bit to replenish the oxygen used by the burners.

Note: Never use the stove or oven for heating the unit. It is not designed for this and could overheat. It could also use up the oxygen in the RV.

## **CONDENSATION AND VENTILATION**

It must be first understood that building materials or construction methods do not cause moisture in the air, resulting in condensation. Solely the occupants of the recreational vehicle and their living habits cause condensation. Condensation resulting from moist air within the RV can be a problem if not properly dealt with and can cause warp, rot, paint failure and staining of woodwork and walls. The formation of condensation is a visible indication of high humidity in the air.

When living in an RV, one must remember that its main intent and design for use was short-term occupancy. If you expect to live in your RV for extended periods of time, be prepared to deal with condensation and the humid conditions that may be encountered.

The normal activities of even a small number of occupants in the relatively small space in an RV will lead to rapid saturation of the air inside and the appearance of visible moisture. Visible condensation is a strong signal to ventilate your RV.

## **CONDENSATION IS CAUSED SOLELY BY THE LIVING HABITS OF THE OCCUPANTS OF THE RV AND DAMAGE RESULTING FROM CONDENSATION IS NOT COVERED BY WARRANTY.**

1. It is the responsibility of the owner to take such preventative measures as are necessary to maintain the exterior caulking and sealer of your unit.
2. It is the responsibility of the owner to use reasonable, prudent care to prevent foreseeable secondary damage from rain, plumbing leaking, and the natural accumulation of moisture in your unit, such as:
  - A delaminated floor
  - Stained upholstery, carpeting and drapes
  - Mold formation and growth
  - Furniture damage
  - Etc.

*Mold is a natural growth given certain environmental conditions and is NOT covered by the terms of the warranty.*

## **DUMPING HOLDING TANKS**

1. Locate the sewer hose, carefully remove the sewer cap and attach one end of the hose to the outlet on the RV. Be sure it is latched properly. Attach the other end to the RV park's system.
2. Locate and pull the large black water valve and drain the tank.
3. Locate and pull the small grey water valve. This drains the kitchen sink and shower water.
4. **WARNING:** Keep the chemical contents of this can away from children. Drop one pouch directly into the toilet and flush 10 times to add water in the tank to activate the chemicals.
5. Return the sewer hose to its storage place.
6. When camping, it is fine to leave the gray valve open all of the time if the campground has a sewer dump at each site, but not the black valve because it will create a blockage in time.

7. Put additional toilet chemical to the black tank after each time it is dumped. The mixture of water and chemical creates a smooth dump process.
8. Use only RV toilet paper. Household toilet paper will not dissolve quickly enough.
9. It is a good idea to have the black and gray tanks about 1/3 full of clean water when traveling. The water sloshing around will help clean the tanks and give better accuracy to the tank monitor panel. Also, if the black tank reads incorrectly (which they often do), you can fill the black tank 1/3 full of clean water and put in a bucket of ice cubes through the toilet before travel. The ice will clean the sensor probes better than just water.

## **AWNINGS**

1. Don't leave the awning out unattended. The wind could increase and damage it.
2. When setting up your awning, it is recommended to position one end a little higher than the other. This will cause the rain run off instead of pooling in the middle of the awning fabric. If this is not done, a heavy rain could break the awning (warranty will not pay for this).
3. If an awning is wet when you roll it up, it is good to unroll it when the rain stops to let it air dry. This will prevent mold and prolong the life of the awning.

## **TIRES**

1. Check that the tires are inflated to the recommended PSI is on off door side front of the trailer. Check tire pressure before every trip (this includes the spare). Trailering your RV with low tire pressure will damage the tires.
2. Use tire covers to help prevent sun damage. Tires will degrade quickly when exposed to direct sunlight for extended periods of time.
3. Any warranty issue regarding tires on your new RV must be documented with pictures of the defect and DOT date codes. The original

manufacturer will require this information to process any claim for warranty authorization.

## **EXTERIOR**

Every 90 days, inspect all exterior sealants such as the roof fixtures, edges and seams; also around windows, doors and trim. Reseal as needed. Warranty will not pay for reseals or damage incurred after 90 days of ownership.

## **LEVELING**

When using the stabilization jacks on your RV, putting blocks under them so they do not have to extend so far will help the RV become stable. Be sure not to over extend the jack. Use them to stabilize, not to lift the RV.



## FAQS

### **WHY WON'T THE FURNACE COME ON?**

Check the switch at the bottom of the thermostat to ensure that it is on the "ON/HEAT" position. Plug in to shore power to charge batteries and ensure power.

### **WHY DOES THE MONITOR PANEL ALWAYS READ FULL, EVEN IF I JUST DUMPED THE TANKS?**

This is a normal condition due to debris sticking to the sending units in the tank. To help solve this problem, be sure to fully rinse holding tanks. Also, try to fill the tank 1/3 full of water and add a bucket of ice before driving. The ice will slosh around the tank to help clean off the sensors. Using anything other than RV toilet paper can also cause problem with sensors.

### **WHY IS THERE A FOUL ODOR COMING FROM THE BATHROOM?**

Drop a chemical packet into the toilet. Fill the bowl twice with water and leave a small amount of standing water in the bowl.

### **WHY DOES THE TV GET POOR RECEPTION?**

Locate the antenna booster switch and turn the switch to "ON." A little light indicates that the amplifier is working. Check the cable and connection at the rear of the TV.

### **WHY DO THE LIGHTS KEEP GOING DIM?**

This is an indication of low battery power. Check water level of batteries. Plug in to shore power.

### **WHY WON'T THE PROPANE APPLIANCES WORK?**

Verify propane tanks are full. Ensure that batteries are fully charged. Check fuses and circuit breakers.

### **WHY IS THERE NO HOT WATER?**

Be sure the water heater switch is turned on (double check to make sure the water heater tank has been filled). A light on the switch will indicate power. Turn the switch to the "OFF" position, wait 10 seconds and turn it on again. Be sure the batteries are fully charged. Push the reset button on the water heater.

## PRE-TRAVEL CHECKLIST

### INTERIOR (NOT ALL ITEMS ARE APPLICABLE TO ALL MODELS)

- ☐ Lights → Off
- ☐ Water pump → Off
- ☐ Hot water heater → Off
- ☐ AC & furnace switch → Off
- ☐ Vents, doors and drawers → Closed and secured
- ☐ Refrigerator and freezer → Secured with travel locks
- ☐ Loose personal items → Stored or latched down
- ☐ Dinette table → Down and secure
- ☐ Cutting board → Placed in a drawer
- ☐ Shower door → Closed and latched
- ☐ TV lift → Down and away
- ☐ Stove lid → Closed

### EXTERIOR

- ☐ Tires → Properly inflated and in good condition
- ☐ Wheel lug nuts → Tight
- ☐ Lights (both vehicles) → Brake, turning, headlights and running lights all work
- ☐ Hoses (both drain and fill) → Disconnected and stored, caps secured
- ☐ Power cord → Disconnected or stored
- ☐ Steps → Pushed in
- ☐ Stabilizing jacks → Retracted
- ☐ Access doors and hatches → Closed and locked
- ☐ Propane bottle(s) → Connections secured
- ☐ Windows → Closed and locked

### HITCHING AND COUPLING

- ☐ Hitch → Secure (with pin or padlock)
- ☐ Safety chains → Properly secured
- ☐ Break-away switch connector → Properly attached

- ☐ Front jack(s) → Raised
- ☐ Mirrors → Properly adjusted

### BEFORE LEAVING YOUR CAMP AREA

- ☐ Disconnect and pull away all hoses and power cord.
- ☐ Shut off water heater (if used).
- ☐ Check outside for personal items.
- ☐ Check for loose items inside. Secure or put away.
- ☐ Close vents, check TV antenna and satellite dish.
- ☐ Back off leveling blocks and put away.
- ☐ Check to see that the entry steps are up.
- ☐ Check campsite for personal items and trash.

### UPON ARRIVING HOME

- ☐ Stop at a dump station. Dump and flush the holding tank. Many gas stations have an RV dump station available for use.
- ☐ Check to make sure the water pump is turned off.
- ☐ Empty the refrigerator and turn off propane tank.
- ☐ Leave the refrigerator door open to defrost.
- ☐ Close all windows.



## TIRES, AXLES & WEIGHTS

### TIRE SAFETY INFORMATION

This portion of the Owner's Manual contains tire safety information as required by 49 CFR 575.6(4) and is based in part on the National Highway Traffic Safety Administration's Brochure entitled "Tire Safety-Everything Rides on It." It can be obtained and downloaded from NHTSA, free of charge, from the following web site: [http://www.NHTSA.dot.gov/cars/rules/TireSafety/ridesonit/tires\\_index.html](http://www.NHTSA.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html)

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, driving within the designated tire speed ratings, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires.

These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling.
- Help protect you and others from avoidable breakdowns and accidents.
- Improve fuel economy.
- Increase the life of your tires.

### PREVENTING TIRE DAMAGE

- Slow down if you have to go over a pothole or other object in the road.
- Do not run over curbs or other foreign object in the roadway or when parking.

### SAFETY CHECKLIST

- Check tire pressure at least once a month (including the spare) and before any long trip. See Tire Information Loading Label for recommended tire size, inflation pressure, Cargo Carrying Capacity as well as weight and axle weight ratings.
- Inspect tires for uneven wear patterns on the

tread, cracks, foreign objects, or other signs of wear or trauma and remove bits of glass and foreign objects wedged in the tread.

- Do not exceed the safe age to operate the tire.
- Make sure your tire valves have valve caps.
- Do not overload your vehicle and distribute weight evenly in the RV. • Do not exceed tire speed ratings regardless of the posted maximum speed limit.

Use this information to make tire safety a regular part of your vehicle maintenance routine and use good judgment to adjust towing to road conditions, weather conditions, traffic and posted speed limits while operating the vehicle. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

## TIRE LABELING & US DOT TIRE IDENTIFICATION NUMBER (TIN)

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall. The TIN begins with the letters "DOT" and indicates that the tire meets all federal standards.

### Breaking down tire codes

<b>ST205/75D14</b> ST identifies your tire as a Special Trailer tire	<b>ST205/75D14</b> This letter tells us about the tire's construction R=Radial D=Bias
<b>ST205/75D14</b> The three digits following the service type tell us the cross-sectional width of the tire in millimeters	<b>ST205/75D14</b> The last digits represent the tire and wheel diameter
<b>ST205/75D14</b> The next two digits tell us the aspect ratio measurement	

**SPEED RATING "L" ( 75MPH/120 KM/HMAX)**  
SAM: S M L  
LL- 0/7

The speed rating is a measurement of the speed at which the tire is designed to run for extended periods

**6PR LOAD RANGE G TOOL TUBELESS**  
UAX LIAD 1760LBS (800KO) AT 40PSI ( 330KPO) GOLD

Load Range C means this tire is a 6 ply tire with a max load pressure of 50 psi  
C = 6 ply 50 psi  
D = 8 ply 65 psi  
E = 10 ply 80 psi

100 L means this tire has a load index of 100 and speed index of L  
100 = 1760 LBS  
L = 75 MPH

Manufacturer's unique code

**DOT JUL7** **3415**

1 st two digits - Week made  
Last two digits - Year made

## CHECKING TIRE PRESSURE

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine under-inflation by visual inspection. For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

## STEPS FOR MAINTAINING PROPER TIRE PRESSURE

1. Locate the recommended tire pressure on the vehicle's Tire and Loading Information label located on the exterior front left side wall.
2. Record the tire pressure of all tires.
3. If the tire pressure is too high in any of the tires, 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.
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 or using an air compressor, add the missing pounds of air pressure to each tire that is under-inflated.

6. Check all the tires to make sure they have the same air pressure. If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's Tire and Loading Information label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to re-check and adjust the tire's pressure when you can obtain a cold reading.

## UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure—measured in pounds per square inch (psi)—a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (KPA), which is the metric measure used internationally.)

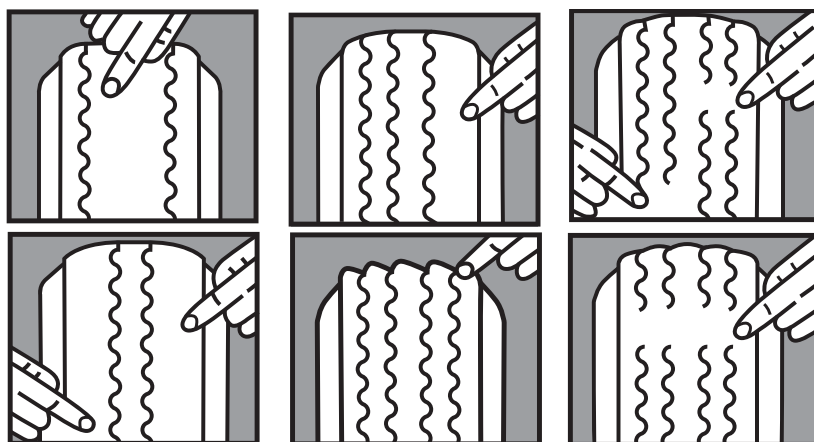
Vehicle manufacturers determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

## TIRE SAFETY TIPS

### TIRE TREAD

Even Center Wear	Over-Inflation	Check & Adjust Pressure When Cold
Inside & Outside Wear	Under-Inflation	Check & Adjust Pressure When Cold
Smooth Outside Wear (One Side)	Loss of Chamber or Over-Loading	Check & Unload as Necessary and/or Have Alignment Checked
"Feathering" Across the Face	Axle Not Square to Frame or Incorrect Toe-In	Square Axles and/or Have Alignment Checked
Cupping	Loose Bearings or Wheel Balance	Check Bearing Adjustment and Wheel & Tire Balance
Flat Spots	Wheel Lock-Up	Adjust Brakes

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in tread-wear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.



### TIRE AGING

Tires are manufactured by bonding rubber to fabric plies and steel cords. Despite the anti-aging ingredients mixed into the rubber compounds tires remain perishable. Since most recreational vehicles spend a lot of idle time at the campground or in storage, with only occasional trips on the road, they are not operated like a typical person uses a car or truck. Therefore, it is much more likely that the tires on your recreational vehicle will actually "age out" before their treads will wear out. Most studies indicate that tires should be replaced, regardless of tread depth, when they are between 6-10 years old. The age of the tire can easily be determined by inspecting the sidewall of the tire. See "Breaking down tire codes". Refer to the tire manufacturer directly for the age life cycle of your tires.

## VEHICLE LOAD LIMITS

Determining the load limits of a vehicle includes more than understanding the load limits of the tires alone. On a trailer, there is a Federal Certification Label that is located on the forward half of the left (road) side of the RV. The certification label will indicate the vehicle's gross vehicle weight rating (GVWR). This is the most weight the fully loaded vehicle can weigh. It will also provide the gross axle weight rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided. In the same location as the certification label described above, there is a vehicle placard. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity.

## CARGO CAPACITIES

Cargo can be added to the vehicle, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded vehicle cannot exceed the stated GVWR.

Water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the RV before it is loaded with cargo and is not considered part of the disposable cargo load. Water however, is a cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be offloaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel and camping needs.

## HOW OVERLOADING AFFECTS YOUR RV AND TIRES

The results of overloading can have serious consequences for passenger safety. Too much weight on your vehicle's suspension system can cause spring, shock absorber, or brake failure, handling or steering problems, irregular tire wear, tire failure or other damage. An overloaded vehicle is hard to drive and hard to stop. In cases of serious overloading,

brakes can fail completely, particularly on steep hills. The load a tire will carry safely is a combination of the size of tire, its load range, and corresponding inflation pressure. Excessive loads and/or under-inflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. Since RVs can be configured and loaded in many ways, air pressures must be determined from actual loads (determined by weighing) and taken from the load and inflation tables provided by the tire manufacturer. These air pressures may differ from those found on the certification label. However, they should never exceed the tire limitation for load or air pressure. If you discover that your tires cannot support the actual weights, the load will need to be lightened.

## TIRE SIZE

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the Tire and Loading Information label, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

## TIRE WARRANTY

Liberty Outdoors Manufacturing does not administer the warranty for tires. Please contact the tire manufacturer direct at:

Americana Tire & Wheel - 574-522-9450 - <http://www.americanatire.com>.

## WEIGHT RATINGS & DEFINITIONS

### GVWR (GROSS VEHICLE WEIGHT RATING)

The maximum permissible weight of this trailer when fully loaded. It includes the maximum allowable weight at the trailer axle(s) plus the hitch (tongue/pin) weight.

UVW (Unloaded Vehicle Weight/Dry Weight)

The weight of this trailer as manufactured at the factory. It includes all weight at the trailer's axle(s) and hitch. If applicable, it also includes full generator fluids, fuel, engine oil and coolants.

### CCC (CARGO CARRYING CAPACITY)

U.S. - Equal to GVWR minus the UVW and LP gas weight. (Water is considered a component of cargo) Canada - Equal to GVWR minus the UVW, full fresh (potable) water weight (including the water heater) and full LP gas weight.

### GAWR (GROSS AXLE WEIGHT RATING)

The maximum permissible weight on an axle(s) when fully loaded.

### HITCH (TONGUE/PIN) WEIGHT

The weight of the trailer that is transferred to the hitch of the tow vehicle when hooked up.


### WEIGHT RATINGS - LABELS

There are four labels that use weight information. They are the Federal tag, Tire and Loading Information label and the Cargo Carrying Capacity label and, in the case of a Canadian trailer, a different Cargo Carrying Capacity label.

- Federal Certification Label - This label specifies maximum capacities for GVWR, GAWR and tires. It is located on exterior left front of vehicle.

MANUFACTURED BY/FABRIQUE PAR: LIBERTY OUTDOORS LLC	DATE: 12/2017
GVWR / PNBV 1724 KG (3800 LB)	
GAWR (EACH AXLE) / PNBE (CHAQUE ESSIEU) 1588 KG (3500 LB)	
TIRE/PNEU ST205/75/R15D RIM/JANTE 15x6	
COLD INFL. PRESS/PRESS. DE GONFL. A FROID 344 KPA (50 PSI/LCP) SINGLE	
THIS VEHICLE CONFORMS TO ALL APPLICABLE US. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE THIS	
VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT ON THE DATE OF	
MANUFACTURE / CE VÉHICULE EST CONFORME À TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU RÉGLEMENT SUR LA SÉCURITÉ DES VÉHICULES	
AUTOMOBILES DU CANADA EN VIGUEUR À LA DATE DE SA FABRICATION.	
V.I.N./N.I.N.: 1L9TT2113JS566368	TYPE/TYPE TRAILER / REMORQUE

- Tire and Loading Information label - This label specifies the maximum amount of cargo that can be safely added to the trailer. It is located on the exterior front left of vehicle.



### TIRE AND LOADING INFORMATION

### RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

The weight of the cargo should never exceed **327** kg or **720** lbs.  
 Le poids du chargement ne doit jamais dépasser **327** kg ou **720** lb.

TIRE PNEU	SIZE DIMENSIONS	COLD TIRE PRESSURE PRESSION DES PNEUS A FROID
FRONT AVANT	ST205/75/R14C	344 KPA / 50 PSI
REAR ARRIERE	ST205/75/R14C	344 KPA / 50 PSI
SPARE DE SECOURS	ST205/75/R14C	344 KPA / 50 PSI

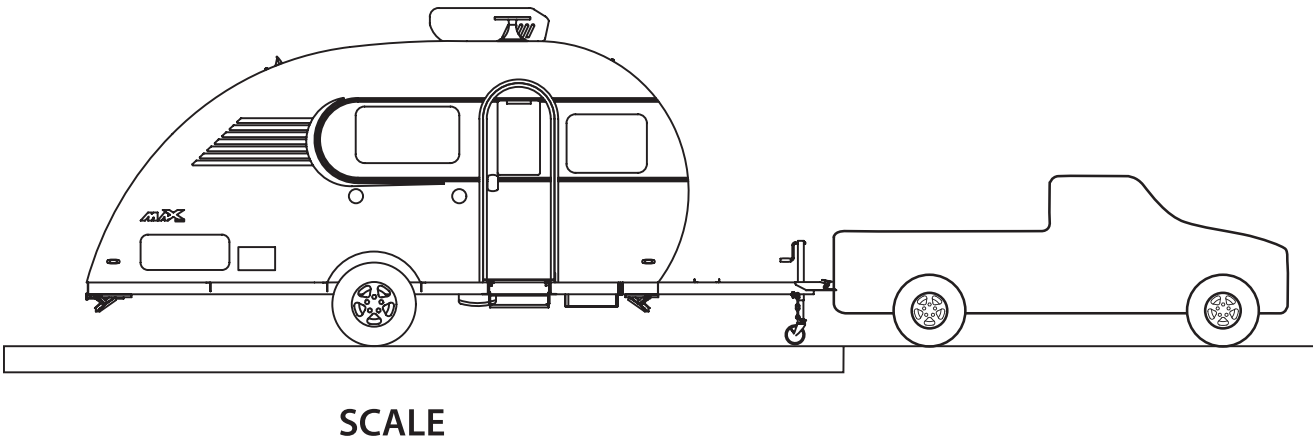
1L9TT161XJL566350

SEE OWNER'S  
MANUAL FOR  
ADDITIONAL  
INFORMATION  
VOIR LE MANUEL  
DE L'USAGER  
POUR PLUS DE  
RENSEIGNEMENTS  
FD-339

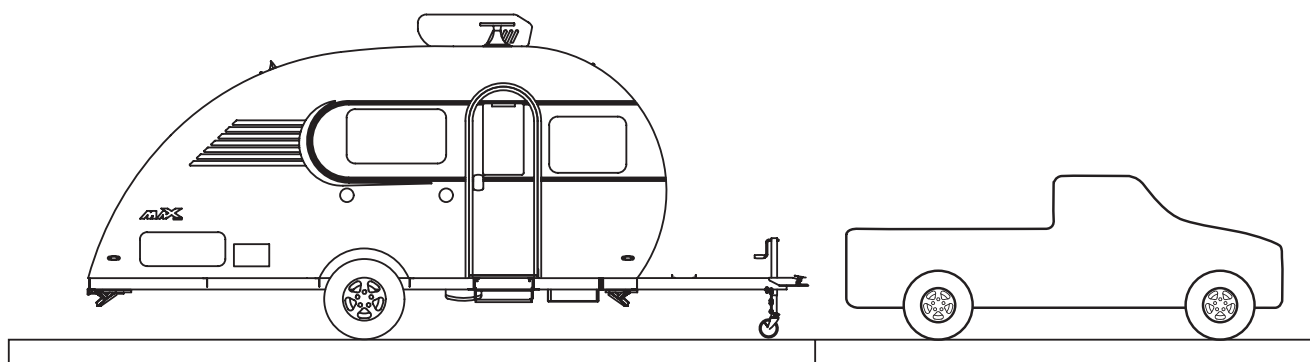
### WEIGHING YOUR TRAILER

- Pull on the scales until only the trailer axles are on the scale. Record axle weight.
- Unhook the trailer on the scale to get a total weight of the trailer.
- To determine hitch weight subtract the axle weight from the total weight.

Note: To calculate suspension weights/ratings, it is necessary to subtract the hitch weight. This weight is being carried on the tow vehicle, not by the suspension of the trailer.







## SCALE

***IF THE TOTAL WEIGHT OF THE TRAILER EXCEEDS THE GVWR, THE RV IS OVERLOADED. OPERATING YOUR TRAILER WHILE EXCEEDING THE SPECIFIED WEIGHT RATINGS INCREASES THE RISK OF A CRASH, PERSONAL INJURY AND DEATH. IT IS NECESSARY TO REMOVE PAYLOAD (EQUIPMENT, PERSONAL BELONGINGS, WATER, ETC.) UNTIL THE TOTAL WEIGHT OF THE TRAILER NO LONGER EXCEEDS GAWR BEFORE OPERATING THE RV.***

***IF THE WEIGHT ON THE TRAILER AXLES EXCEEDS THE GAWR, THE AXLES ARE OVERLOADED. OPERATING YOUR TRAILER WHILE EXCEEDING THE SPECIFIED WEIGHT RATINGS INCREASES THE RISK OF A CRASH, PERSONAL INJURY AND DEATH. IT IS NECESSARY TO REMOVE OR REARRANGE PAYLOAD (EQUIPMENT, PERSONAL BELONGINGS, WATER, ETC.) UNTIL THE AXLE WEIGHT NO LONGER EXCEEDS THE GAWR BEFORE OPERATING THE RV.***

***NOT OPERATING YOUR RV WITHIN THE DESIGNED WEIGHT RATINGS CAN CAUSE DAMAGE TO YOUR RECREATIONAL VEHICLE WHICH IS NOT COVERED UNDER WARRANTY.***

## AXLES & SUSPENSION

Liberty Outdoors selects the axles, suspension, tires and wheels applicable to the specific application of the RV. In addition to the Gross Vehicle Weight Rating (GVWR), each of these components have specific weight ratings and limitations for proper operation.



***EXCEEDING THE ESTABLISHED WEIGHT RATINGS FOR THE AXLES, RUNNING GEAR, TIRES AND WHEELS CAN LEAD TO FAILURE THAT CAN AFFECT MOTOR VEHICLE SAFETY AND LEAD TO PROPERTY DAMAGE OR DAMAGE TO THE TRAILER.***

Please refer to the manufacturer instructions supplied with the RV for care and operation and/or [www.dexteraxle.com](http://www.dexteraxle.com) or [www.lci1.com](http://www.lci1.com).

## SUSPENSION

In most cases, there are two types of suspension used on Liberty Outdoors RVs, Leaf Spring or Rubberized suspension. Please refer to the manufacturer instructions supplied with the RV for care and operation.



## SHOCK ABSORBERS

If equipped, shock absorbers may provide a “ride enhancement” to the trailer. They do not affect the stability or towability of the trailer.

## SPARE TIRE

If equipped, can be utilized in an emergency if a trailer tire loses air pressure or goes flat. Certain brands use different wheels than original with the intent for the spare to be temporary.

## TIRE CHANGING BASICS

1. Use emergency flares when near a road or highway.
2. Block the wheels on the opposite side from the tire you wish to change to prevent accidental movement.
3. Position a hydraulic jack on the frame close to the spring hanger. (Never attempt to use a stabilizer jack to lift the RV)
4. Raise the trailer until the tire clears the ground.
5. Set a jack stand under the frame just to the rear of the tire being changed.
6. Follow the Wheel Nut Torque and Wheel re-installation instructions provided in this section.

## WHEEL NUT TORQUE

The information contained in these printed instructions outlines the most recently recommended processes involving Lug Nut Torque and takes precedence over any information regarding Lug Nut Torque shown in your Lippert or Dexter Owner’s Manuals.



## WARNING

***ALWAYS TORQUE WHEEL NUTS TO THE WHEEL MANUFACTURER’S SPECIFICATIONS. OVER OR UNDER-TORQUED WHEEL NUTS CAN CAUSE THE WHEEL TO SEPARATE FROM THE WHEEL MOUNTING SURFACE DURING OPERATION, CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.***

The axle and wheel assemblies of your RV are designed differently than those on your car. The overall size, weight and center of gravity of a recreational vehicle subject the wheels to pressures unique to trailering. During normal cornering, the tires and wheels experience a considerable amount of stress called “sideload”. Therefore, the lug nuts on your recreational vehicle require periodic torque maintenance.

Torque is the amount of rotating force applied to a fastener, such as a lug nut. Proper torque of lug nuts can only be achieved by using:

- Torque wrench (Dial indicator or Adjustable dial, not supplied by Liberty Outdoors).
- 7/8” or 13/16” socket (Not supplied by Liberty Outdoors)

These instructions will show you how to maintain proper lug nut torque by following these important steps:

1. Check torque before every trip.
2. Use proper tools.
3. Follow the appropriate star pattern sequence.
4. Torque lug nuts in the correct stages and follow-up intervals after any wheel reinstallation.

Some wheel assemblies require an extension. DO NOT USE a flexible extension. Also, DO NOT USE a 4-way socket or any other type of wrench which does not measure the actual pressure applied to the lug nut.



#### Step 1: Wheel Reinstallation

- 1 20-30ft/lbs  
50-60ft.lbs (9/16" stud)
- 2 55-60ft/lbs  
90-100ft.lbs (9/16" stud)
- 3 110-120ft/lbs  
140-150ft/lbs (9/16" stud)

#### Step 2: Follow-up

- 3 110-120ft/lbs  
140-150ft/lbs (9/16" stud)

**Re-torque after first:**  
10 miles → 25 miles → 50 miles

## USING TORQUE WRENCHES

- Most torque wrenches are required to be set at "0" when not in use to maintain calibration.
- Please refer to the manufacturer's instructions for further information on care and use.

## SETTING TORQUE VALUE ON A DIAL INDICATOR WRENCH

1. Make sure your indicator needle is set to "0".
2. As you apply clockwise pressure to the lug nut, both needles will show the current amount of torque being applied.
3. When you reach your desired torque value, stop applying pressure and your indicator needle will stay at the highest torque value reached.

## SETTING TORQUE VALUE OF ADJUSTABLE DIAL WRENCH

1. Unlock the handle and set the dial to your desired torque value.
2. Lock the handle back in place.
3. As you apply clockwise pressure to the lug nut, you will hear an audible "click" when the desired torque wrench value is reached. Do not apply further pressure once you hear the "click".

## PRE-TRIP MAINTENANCE

### ALWAYS REMEMBER

- Check lug nut torque before every trip. Liberty Outdoors recommends this maintenance procedure to ensure proper torque has been applied to lug nuts before heading out on the road.
- Lug nuts should be torqued to 110-120 ft/lbs (140-150 ft/lbs on hubs using a 9/16" stud).
- Always follow the appropriate star pattern as indicated in these instructions or in your axle manufacturer's owner's manual to assure proper torque.

### PRE-TRIP PROCEDURE

1. Set your torque wrench to 110-120 ft/lbs (140-150 ft/lbs for 9/16" stud).
2. Begin with the appropriate bolt for your wheel (12 o'clock position for 8 and 6 hole wheels and 2 o'clock position for 5 hole wheels, as illustrated) and apply torque to all lug nuts following the star pattern indicated.
3. Complete the procedure on each wheel. Before moving to each new wheel, be sure to verify your preset torque wrench value.



***ALWAYS TORQUE WHEEL NUTS TO THE WHEEL MANUFACTURER'S SPECIFICATIONS. OVER OR UNDER-TORQUED WHEEL NUTS CAN CAUSE THE WHEEL TO SEPARATE FROM THE WHEEL MOUNTING SURFACE DURING OPERATION, CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.***

### WHEEL REINSTALLATION

After removing a wheel from your RV for any reason, you must carefully follow a 2 step process:

1. Wheel re-installation.
2. Follow-up.

### STEP 1) WHEEL RE-INSTALLATION

During wheel reinstallation, the lug nut torque must be applied in 3 stages. This will ensure the wheel studs are centered in the wheel holes, and will help the lug nuts maintain proper torque. Start all lug nuts by hand.

**Stage 1:** Set your torque wrench to 20-30 ft/lbs (50-60 ft/lbs for 9/16" stud). Begin with the appropriate bolt for your wheel (12 o'clock position for 8 and 6 hole wheels and 2 o'clock position for 5 hole wheels, as illustrated) and apply torque to all lug nuts following the star pattern indicated.

**Stage 2:** Increase your torque wrench setting to 55-60 ft/lbs (90-100 ft/lbs for 9/16" stud). Begin with the appropriate bolt for your wheel and apply torque to all lug nuts following the star pattern indicated. Following stage 2, the wheel can support the weight of the trailer and can be lowered off of the jack stand.

**Stage 3:** Increase your torque wrench setting to 110-120 ft/lbs (140-150 ft/lbs for 9/16" stud).

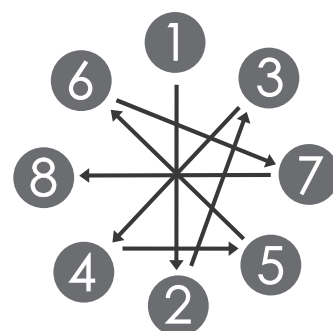
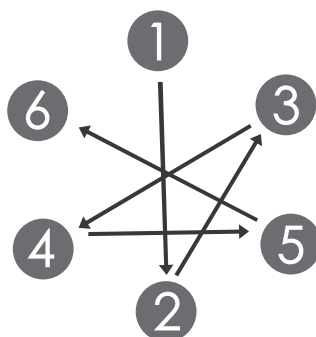
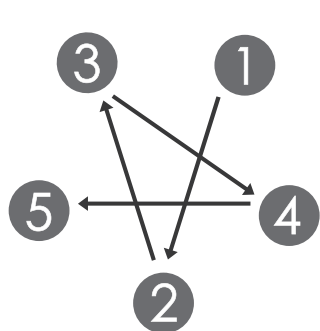
Begin with the appropriate bolt for your wheel (as illustrated) and apply torque to all lug nuts following the star pattern indicated.

## STEP 2) FOLLOW-UP: RETORQUE AFTER 10, 25, AND 50 MILES:

1. After the first 10 miles of your trip, pull your recreation vehicle off the road into a safe work area.
2. Set your torque wrench to 110-120 ft/lbs (140-150 ft/lbs for 9/16" stud).
3. Begin with the appropriate bolt for your wheel and apply torque to all lug nuts following the star pattern indicated.
4. Re-apply torque (at 110-120 ft/lbs or 140-150 ft/lbs for 9/16" stud) and repeat steps 1, 2, & 3 again at 25 miles and at 50 miles of your first trip.

The follow up process is complete and you should refer to the general lug nut torque maintenance process described in "Pre-Trip Maintenance".

## WHEEL NUT TORQUE SEQUENCE



**IF YOU ARE UNCERTAIN OR UNFAMILIAR WITH ANY PROCEDURE, PLEASE CONTACT YOUR LOCAL DEALER.**

## SUMMARY

1. Check torque before every trip.
2. Use proper tools.
3. Follow the appropriate star pattern sequence.
4. Torque lug nuts in the correct stages and follow-up intervals after any wheel reinstallation.



**DO NOT TOW THE TRAILER WITH MISSING OR DAMAGED AXLE STUDS. AN INCREASED RISK OF WHEEL SEPARATION WILL OCCUR.**

**INSTALLATION OF WHEELS WHICH ARE NOT COMPATIBLE WITH THE MANUFACTURER INSTALLED AXLE ASSEMBLY COULD RESULT IN WHEEL SEPARATION, WHICH CAN LEAD TO PROPERTY DAMAGE, SERIOUS INJURIES OR LOSS OF LIFE.**

## **CAMPER SET UP AT DESTINATION SITE REQUIREMENTS AND SELECTION**

### **ELECTRICAL**

Do you need 30 or 50 amp service? What will you be running in the camper will help decide this. If you will be running one roof a/c, refrigerator and converter most of the time and the microwave periodically, we would recommend at least 30 amp service. You may not be able to run the microwave and roof a/c at the same time, but it is easy to adjust the thermostat of the roof a/c so it will not be running while the microwave is.

### **ANTENNA/SATELLITE**

If equipped, be sure your selected site will allow you to set-up to get these signals.

### **SEWER**

Holding tank sizes can vary significantly by brand and floor plan. How large are your holding tanks? How long and how many people will be using the facilities? How much water is typically used? Answering these questions will help you decide if you should go for the added cost of a sewer hook up at your campsite. You might just consider a site closer to the campground facilities. If you do choose a site with a sewer hook up, DO NOT leave the valves open. Please refer to Plumbing for more detail.

### **WATER**

In most instances, water and electric come in combination. Should you be without a water source for city water, you can fill your water tank and utilize the on board water pump. Once again, holding tank sizes can vary significantly by brand and floor plan so know how many gallons your fresh water tank is and monitor how many people are using the facilities and how often so you don't leave yourself dry.

### **CAMPSITE**

Many campsites offer 'pull through' sites that require no backing up. When you do not have this option and backing will be required, set yourself up to back into the site from the left. This allows you to see the entire "Drivers Side" while you are backing into your site.

Backing in from the right can be done, you are just not able to see as well. Before beginning, safely park and survey the campsite for fire pits, stumps, posts, trees, low tree branches, etc and decide where you want the camper to end up. Use a spotter to help guide you into position. If you are alone, ask a neighbor for some help, you might meet a new friend. While entering and exiting your campsite, be careful not to cut your turn short and clip something. Once again, we recommend a spotter to assist.

### **CAMPER SET UP**

Once you have arrived and parked in your campsite, before removing the camper from your tow vehicle, your camper needs to be leveled to ensure proper operation of certain features (refrigerator, etc.)

### **LEVELING PROCEDURES**

1. Choose a site that is as level as possible (Some sites are equipped with a prepared surface such as concrete or asphalt). Ensure the ground is not soft and will support the weight of jacks and/or other support devices.
2. Before uncoupling, level the RV from side to side with suitable lengths of 2" x 6" wood blocks under the tires. Place the wood blocks on the ground forward of the wheels and tow the RV onto the blocks. Use wheel chocks to be sure the RV cannot roll.
3. Use a small level in the refrigerator, on a countertop or floor of the trailer to make sure it is level.
4. Lower the A-frame jack onto wood blocks.
5. Once the RV is level, put wheel chocks or blocks in place so the RV can't move, uncouple the RV from the tow vehicle.
6. If equipped, lower the stabilizing jacks onto blocks until they firmly engage. Be sure all 4 jacks have about the same pressure on them as to not put the RV in a twist. Doing so can cause slide-outs, doors, etc. to bind and/or operate intermittently. DO NOT attempt to lift the RV with the stabilizer jacks. These are not designed to bear weight, only help stabilize the RV from movement.
7. Before resuming travel, be sure the stabilizer jacks are fully retracted.

## HOOK UPS

1. Once the RV is safely leveled and stabilized, continue with setup.
2. Connect the shore-line cord.
3. Open the step.
4. Inside, set the Thermostat to the desired temperature (air conditioning/furnace), open a roof vent and turn on the fan (if applicable) to create air exchange, turn on the refrigerator then complete the remainder of the set up.
5. Turn on the LP.
6. Connect the water hose.
7. Connect the sewer hose, park cable, (if applicable).
8. Open slide-outs (if applicable).
9. Set up the remaining features as needed.

variations available depending on the RV. An air conditioner takes a sizable amount of power to run. Most RV electrical systems are designed with 30 amps of available power with some having 50 amp capability (See Electrical System). It may be necessary to reduce other loads when using air conditioning to reduce the chance of overload and possibly tripping the main breaker. (For thermostat operation on the air conditioner, see "Thermostat" in this section).

## COLD WEATHER CAMPING

Some RVs are equipped with additional features to enhance your ability to camp in cold weather. Depending on your specific want/needs, it may be necessary for you to take additional actions or invest in additional enhancements to suit your particular needs. Consult your local Liberty Outdoors dealer for more information regarding aftermarket equipment that may be available to adapt a model to your needs. The cost of these enhancements would not be warrantable.

## APPLIANCES AND EQUIPMENT

In this section of the manual, we rely on the component manufacture manuals that have been supplied with the RV for detailed operating instructions. Liberty Outdoors can only provide a summary operational description and recommend you review each of the component manuals before use of the component

## AIR CONDITIONER (OPTIONAL)

For those RVs equipped with roof mounted or cabinet/wall mounted air conditioners, they operate on 120V AC power. There are different sizes and



## CAPABILITY VS. ENVIRONMENT

At best, a properly functioning roof air conditioner will cool the intake air it receives by 20 degrees F. The capability of the air conditioner to maintain the desired inside temperature is directly affected by the heat gain of the RV.

During extreme high outdoor temperatures, the heat gain of the vehicle may be reduced by:

1. Parking in a shaded area.
2. Keeping blinds down or drapes shut.
3. Operation on High Fan/Cooling mode will provide the maximum efficiency in high humidity or high temperatures.
4. Using awnings to block direct sunlight exposure on the RV.
5. Avoiding use of heat producing appliances.
6. Giving the A/C a "head start" by turning the air conditioner on early in the morning.

***NEVER RUN THE A/C WITHOUT THE FILTER. THIS COULD PLUG THE RV EVAPORATOR SUBSTANTIALLY EFFECTING PERFORMANCE.***

## FURNACE

The furnace is a propane gas appliance that requires 12 volt power to electronically light. New furnaces sometimes emit smoke and an odor during the first 5 - 10 minutes of initial use due to paint burning off the heating chamber. Do not mistake this for a malfunctioning furnace. Please refer to the manufacturer instructions supplied with the RV for care and operation. Please refer to the manufacturer instructions supplied with the RV for care and operation.



***ALL PILOT LIGHTS, APPLIANCES AND THEIR IGNITORS (SEE OPERATING INSTRUCTIONS) SHALL BE TURNED OFF BEFORE REFUELING OF FUEL TANKS AND/OR PROPANE CONTAINERS. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.***

***DO NOT STORE GASOLINE OR ANY OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF ANY APPLIANCE BECAUSE A FIRE OR EXPLOSION CAN RESULT.***

## THERMOSTAT - WALL MOUNTED

If equipped, a wall mounted thermostat can be for furnace only or a combination air conditioner/furnace thermostat. Please refer to the manufacturer instructions supplied with the RV for care and operation.

## THERMOSTAT - REMOTE CONTROL

If equipped, a remote control thermostat can control the furnace and air conditioner. Please refer to the manufacturer instructions supplied with the RV for care and operation.

## CARBON MONOXIDE (CO) DETECTOR

For your safety, a carbon monoxide (CO) detector is installed in every RV. Depending on the model, it may be operated by battery (9V, AA) or wired so that it will be powered by a RV battery (if equipped) or 12V power from the converter. Please refer to the manufacturer instructions supplied with the RV for care and operation.

Common sources of CO are malfunctioning or misuse of gas appliances, vehicle engines, generators and many other fuel burning products.

Some indications of CO poisoning include (but not limited to) the following:

### MILD EXPOSURE

- Symptoms of the flu (minus a fever)
- Slight Headache
- Dizziness
- Fatigue

### MEDIUM EXPOSURE

- Severe Throbbing Headache
- Drowsiness
- Confusion
- Fast Heart Rate

### EXTREME EXPOSURE

- Unconsciousness
- Convulsions
- Cardiorespiratory Failure
- Death



**DANGER**

***IF THE ALARM SOUNDS, EXIT THE VEHICLE IMMEDIATELY. THE CO BUILD-UP MAY DISSIPATE BEFORE HELP ARRIVES, BUT MAY BE ONLY TEMPORARILY SOLVED. IT IS CRUCIAL THAT THE SOURCE OF THE CO IS DETERMINED AND REPAIRED.***

***GASOLINE GENERATORS AND LP GENERATORS AND APPLIANCES PRODUCE CARBON MONOXIDE. CARBON MONOXIDE CAN BE FATAL! WHEN THE DEVICE DETECTS CARBON MONOXIDE IN THE AIR IT WILL SOUND. CONSULT THE INDIVIDUAL DETECTOR'S USER MANUAL FOR SPECIFIC INSTRUCTIONS AND/OR AUDIBLE WARNING MEANINGS.***

***THE CO ALARM CAN ONLY WARN YOU IN THE PRESENCE OF CO. IT DOES NOT PREVENT CO FROM OCCURRING NOR CAN IT SOLVE AN EXISTING CO PROBLEM.***

## FOR YOUR SAFETY AND TO KEEP YOUR CARBON MONOXIDE ALARM IN GOOD WORKING ORDER, FOLLOW THE STEPS BELOW.

- Verify the alarm's lights and battery function by pushing the "Test" button weekly.
- Vacuum the CO alarm cover with a soft brush attachment once a month to remove accumulated dust.
- Instruct children never to play with the CO alarm. Warn children of the dangers of carbon monoxide poisoning.
- Never use detergents or solvents to clean the carbon monoxide alarm.
- Avoid spraying paint, hair spray, air fresheners or other aerosols near the CO detector.
- Do Not paint the CO detector. Paint will seal the vents and interfere with the sensor ability to detect CO.
- Do not place near a diaper pail.
- Test the alarm operation after your coach has been in storage, before each trip and at least once a week during the camping season.
- Replace the CO detector when recommended by the manufacturer (typically every five years).

**TEST THE OPERATION OF THE CARBON MONOXIDE DETECTOR AS FOLLOWS:**

- AFTER VEHICLE HAS BEEN IN STORAGE,
- BEFORE EACH TRIP,
- AT LEAST ONCE PER WEEK,
- AND IMMEDIATELY BEFORE SLEEPING WITH THE GENERATOR OPERATING. FAILURE TO DO SO CAN RESULT IN DEATH OR SERIOUS INJURY.

## **WARNING**

**CARBON MONOXIDE IS POISONOUS AND CAN CAUSE UNCONSCIOUSNESS AND DEATH. FOLLOW ALL INSTRUCTIONS IN THIS SECTION AS WELL AS THE ONES OUTLINED IN THE GENERATOR OPERATOR'S MANUAL.**

### **RANGE HOOD (IF APPLICABLE)**

The range hood operates on 12V power and should be used to ventilate when cooking. Operational switches for the fan and/or light are on the front panel of the range hood. Please refer to the manufacturer instructions supplied with the RV for care and operation.

### **EXTERIOR LP CONNECTION**

If equipped, this feature typically is located towards the rear curb side of the camper.

## **WARNING**

**GAS COOKING APPLIANCES NEED FRESH AIR FOR SAFE OPERATION. BEFORE OPERATING: OPEN VENTS OR WINDOWS SLIGHTLY OR TURN ON EXHAUST FAN PRIOR TO USING COOKING APPLIANCE. GAS FLAMES CONSUME OXYGEN WHICH SHOULD BE REPLACED TO ENSURE PROPER COMBUSTION. IMPROPER USE CAN RESULT IN DEATH OR SERIOUS INJURY.**

**DO NOT LEAVE THE COOK TOP UNATTENDED WHILE IN USE. IF WINDY CONDITIONS CAUSE THE FLAME TO INVERT INTO THE COOKTOP,**

**STOP USING IMMEDIATELY. CONTINUED USE WILL RESULT IN HEAT BUILD UP IN THE COOKTOP CAUSING DAMAGE TO THE COOK TOP AND INCREASED RISK OF FIRE.**

**DO NOT USE OVERSIZE COOKWARE. THE COOKWARE SHOULD NOT BE MORE THAN ONE INCH LARGER THAN THE BURNER GRATE. THE MAXIMUM SIZE COOKWARE IS 10 INCHES IN DIAMETER. OVERSIZE COOKWARE WILL RESULT IN HEAT BUILD UP IN THE COOKTOP CAUSING DAMAGE TO THE COOK TOP AND INCREASED RISK OF FIRE.**

**DO NOT USE COOKWARE THAT COVERS MORE THAN ONE BURNER AT A TIME. OVERSIZE COOKWARE WILL RESULT IN HEAT BUILD UP IN THE COOKTOP CAUSING DAMAGE TO THE COOK TOP AND INCREASED RISK OF FIRE. FOLLOW ALL WARNING LABELS ON THE COOK TOP AND IN THE MANUFACTURER'S INSTRUCTIONS SUPPLIED WITH THE RV.**

**DO NOT USE COOKING APPLIANCES FOR COMFORT HEATING. CAN LEAD TO CARBON MONOXIDE POISONING WHICH CAN LEAD TO DEATH OR SERIOUS INJURY.**

### **REFRIGERATOR**

The refrigerator can operate on 120V or on LP gas (requires 12V to light). The RV must be level to operate properly. The refrigerator will operate most efficiently when:

1. The RV is level.
2. It is allowed 4 hours to cool prior to putting items in it.
3. The items are already cold or frozen before putting them in the refrigerator. Some brands may have altitude limits for proper operation on LP gas. Please refer to the manufacturer instructions supplied with the RV for care and operation and/or [www.norcold.com](http://www.norcold.com) [www.dometic.com](http://www.dometic.com)

By design, these refrigerators will not operate properly when indoor air temperatures exceed approximately 110 degrees Fahrenheit. In addition, operating the refrigerator in these conditions

could cause compressor failure which may not be considered warrantable. Leave the air conditioner set at a temperature below this if the refrigerator is left running in a vehicle that is not being used or shut it off.



***ALL PILOT LIGHTS, APPLIANCES AND THEIR IGNITORS (SEE OPERATING INSTRUCTIONS) SHALL BE TURNED OFF BEFORE REFUELING OF FUEL TANKS AND/OR PROPANE CONTAINERS. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY. DO NOT STORE GASOLINE OR ANY OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF ANY APPLIANCE BECAUSE A FIRE OR EXPLOSION CAN RESULT.***

### **ROOF VENTS (POWER/MANUAL)**

If equipped, a powered ceiling vent fan runs on 12V. This equipment is an excellent tool in help manage indoor air quality. Please refer to the manufacturer instructions supplied with the RV for care and operation.

### **TELEVISIONS**

If equipped, please refer to the manufacturer's instructions included in the RV for care and operation. The typical operating temperature range for a LCD TV is 41° F (5° C) to 104° F (40° C). Please refer to the manufacturer instructions supplied with the RV for care and operation.

### **FIRE EXTINGUISHER**

Each recreational vehicle includes a fire extinguisher, which is located near the main entry door. The fire extinguishers are rated for Class B (gasoline, grease, and flammable liquids) and Class C (electrical) fires. Please refer to the manufacturer instructions supplied with the RV for care and operation.

### **SMOKE DETECTOR**

For your safety a smoke detector is installed in every RV. Most detectors are powered by a 9-Volt battery. Check the manufacturer's expiration date on the label, replace the batteries if needed, and clean dust away from the slots so that smoke can enter freely. All smoke alarms, hard-wired and battery powered,

should be replaced every ten years. Please refer to the manufacturer instructions supplied with the RV for care and operation.

***TEST SMOKE ALARM OPERATION AFTER VEHICLE HAS BEEN IN STORAGE, BEFORE EACH TRIP, AND AT LEAST ONCE PER WEEK DURING USE. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY.***

### **BATTERY DISCONNECT**

If equipped, is designed to give you the ability to disconnect all loads to your 12V battery (battery not supplied by Liberty Outdoors) without disconnecting the battery cables. Typically, this is used to prevent your battery from being discharged during storage. The battery disconnect should be on while driving to allow the batteries to be charged. Please refer to the manufacturer instructions supplied with the RV for care and operation and/or [www.intellitic.com](http://www.intellitic.com).

### **COMPONENT SUPPLIERS THAT COULD HAVE WARRANTY BEYOND 1 YEAR**

We consider ourselves a "One Stop Shop for Warranty", meaning that during the limited one year warranty period, Liberty Outdoors wants any warranty claims filed by your dealer for your RV directly to Liberty Outdoors (with a few exceptions). With this information we can track and remedy quality issues and monitor component suppliers for the products they supply us.

Many of our component suppliers provide limited warranties that exceed one year direct to a consumer. For information concerning the actual warranty statement and eligibility for each of the listed components you must consult the written limited warranty provided by the supplier which can be found in the component supplier owner's manual included with the RV or on the supplier website. If you are unable to find a written copy, please contact the supplier directly. Any component supplier warranty is separate from the Liberty Outdoors Limited Warranty and may only be applicable to the original consumer purchaser. The component suppliers and this list are subject to change by Liberty Outdoors without notice to the dealer or the retail customer.

For your convenience, we have provided contact information for the most common component suppliers that may offer additional warranties direct to a consumer.

## COMPONENT MANUFACTURERS

**\*\*NOT COVERED UNDER THE LIBERTY OUTDOORS WARRANTY\*\***

### **Air Conditioner**

Dometic  
1-260-463-2191  
[www.dometic.com](http://www.dometic.com)

Mid West Sales and Service, Inc. (Danby)  
1-800-772-7262  
[www.midwestsales.org](http://www.midwestsales.org)

### **Awning**

Lippert Components (Thule)  
1-574-537-8900  
[www.lci1.com](http://www.lci1.com)

### **Axle**

Dexter Axle  
1-574-295-7888  
<http://www.dexteraxle.com>

Lippert Components  
1-574-537-8900  
[www.lci1.com](http://www.lci1.com)

### **Baggage Door and Entry Door**

Challenger  
1-574-773-8166  
[www.challengerdoor.com](http://www.challengerdoor.com)

Lippert Components  
1-574-537-8900  
[www.lci1.com](http://www.lci1.com)

### **Engineered Wood Floor**

Huber Engineered Woods LLC  
800-933-9220  
[www.huberwood.com](http://www.huberwood.com)

### **Fiberglass Walls & Fiberglass Roof Skin**

Amerimax  
1-800-506-8360  
[www.amerimaxfp.com](http://www.amerimaxfp.com)

### **Pex Plumbing**

Wesco  
1-412-454-2200  
[www.wesco.com](http://www.wesco.com)

### **Flooring (Vinyl)**

Dehco, Inc.  
1-800-621-2278  
[www.dehco.com](http://www.dehco.com)

### **Graphics**

Illusions Inc.  
1-727-861-1197  
[www.illusionsgfx.com](http://www.illusionsgfx.com)

### **Microwave**

Collins and Company (High Point)  
1-574-848-1118  
[www.burnstines.com](http://www.burnstines.com)

Mid West Sales and Service, Inc. (Danby)  
1-800-772-7262  
[www.midwestsales.org](http://www.midwestsales.org)

### **Power Vent Fan**

Dometic  
1-260-463-2191  
[www.dometic.com](http://www.dometic.com)

### **Refrigerator**

Dometic  
1-260-463-2191  
[www.dometic.com](http://www.dometic.com)

Thetford/Norcold  
1-800-543-1219  
[www.norcold.com](http://www.norcold.com)

### **Stove/Range**

Dometic  
1-260-463-2191  
[www.dometic.com](http://www.dometic.com)

### **Tires/Wheels**

Kenda/Americana Tire & Wheel  
1-717-793-9700  
[www.americanatire.com](http://www.americanatire.com)

### **Toilet**

Dometic  
1-260-463-2191  
[www.dometic.com](http://www.dometic.com)

### **TV Antenna**

King  
952-922-6889  
[www.kingconnect.com](http://www.kingconnect.com)

### **Water Heater**

Dometic  
1-260-463-2191  
[www.dometic.com](http://www.dometic.com)

### **Water Pump**

Pentair (Shurflo)  
1-800-854-3218  
[www.shurflo.com](http://www.shurflo.com)

## PLUMBING SYSTEM

Your RV plumbing consists of two primary systems: The fresh (potable) water system and the wastewater system.

### FRESH (POTABLE) WATER SYSTEM

Potable fresh water is supplied to the RV in two ways: 1) By filling the fresh water tank and pumping the water through the system with the water pump. 2) Connecting a potable water hose to the “City Water Fill” which automatically pressurizes the system.

**USE POTABLE WATER ONLY IN THE FRESHWATER SYSTEM. SANITIZE, FLUSH AND DRAIN BEFORE USING. SEE INSTRUCTIONS UNDER HEADING “SANITIZING THE FRESH WATER SYSTEM. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.**

### WATER PUMP

The 12V water pump installed is self-priming and operates upon demand. In simpler terms, when you open a faucet, the pump will turn on and pump the water from the tank to that faucet. For the pump to operate, please note the following:

1. The fresh water tank must have sufficient water in it.
2. The pump on/off switch must be in the on position. Typically located on the monitor panel.
3. There must be sufficient 12V power (battery or converter) to operate the pump.
4. The water heater has a bypass valve that can prevent water from entering the water heater.
5. The water pump should prime itself and stop running after the open faucet(s) is closed.
6. Pump should now run on demand when a faucet is opened, and stop when the faucet is closed.

**NEVER LET THE WATER PUMP RUN WHILE THE FRESH WATER TANK IS EMPTY. DAMAGE TO THE PUMP AND/OR A BLOWN CIRCUIT MAY OCCUR.**

Please refer to the manufacturer instructions supplied with the RV for care and operation and/or [www.shurflo.com](http://www.shurflo.com).

## FRESH WATER TANK

Most Liberty Outdoors RVs are equipped with a fresh water tank. Tanks vary significantly in size by RV brand & model. Liberty Outdoors trailers use 2 different methods to fill the fresh water tank depending on the brand & model.

**Gravity Water Fill** - Remove the cap, on the exterior connection labeled “Fresh Water Connection”, and insert the hose from your water source and turn on the water. While filling the tank, periodically check the monitor panel to determine the level of water in the tank. When full turn the water source off. If overfilled, water will “spit” back out of the gravity fill as there is no automatic shut off. DO NOT leave the RV unattended while filling the fresh water tank. Overfilling the tank can cause damage to the system components which may not be considered warrantable.

**Pressure Water Fill** - Hook a potable water supply to the city water fill valve, turn the valves to the tank fill position and turn on the water supply. While filling the tank, periodically check the monitor panel to determine the level of water in the tank. When full turn the water source off immediately. DO NOT overfill and DO NOT leave the RV unattended while filling the fresh water tank. Overfilling the tank can cause damage to the system components which may not be considered warrantable.

All RVs are equipped with “Low-Point” drains that are designed to drain water from the water tank and all lines. These are located underneath the RV, typically near the water tank. These drains must be closed or the water system will drain itself of any water entering.

Water should be drained from the fresh water system when not in use. Over time, water quality can degrade which can contaminate the plastic used in the water system and/or cause ill health affects. Fresh Water is considered “Cargo”, therefore, your Cargo Carrying Capacity (CCC) is reduced by the weight of the water you choose to carry.



## CITY WATER FILL

The city water fill allows a pressurized potable water line connection (water spigot) direct to the RV. Because the connection is pressurized, there is no need to use the water pump. This method also bypasses the water tank and feeds the entire water system directly. Connect the city water fill by using a hose manufactured for potable water use and turn on the source. When in need of water, open the desired faucet or spigot. Air will purge itself when the faucet is opened.

Each time this connection is made, we recommend inspection of visible water connections for leaks. DO NOT leave the RV unattended when hooked to City Water fill for extended periods of time. Always use a water pressure regulator to control the water pressure entering the trailer.

City water fills may be in a combination housing with the gravity water fill or stand alone.

Although the fresh water system was thoroughly inspected for leaks before delivery, fittings can loosen over time and with normal use. Periodically check the fittings at the faucets and all other visible connections and tighten as necessary.

## WATER SUPPLY AND ODOR

Local water supplies (well or city) sometimes contain high levels of sulphur or other chemicals which can cause unpleasant odors. Some, like sulphur, can be very unpleasant. Sanitizing the water system, as described and allowing the sanitizing solution to remain for a few days, should eliminate the odor.

## SANITIZING THE FRESH WATER SYSTEM

Keeping the fresh water system clean and free of any potential contaminants should be a top priority. Sanitizing the system before initial use and thereafter annually, or whenever water remains unused for prolonged durations, is recommended. This will help keep the water system fresh and discourage harmful bacterial or viral growth. To sanitize your system, perform the below:

### Gravity Fill Models:

1. Drain the tank by opening the low point drains.

Close the drains after water has drained.

2. Prepare a chlorine bleach solution of  $\frac{1}{4}$  cup to one gallon of water for every 15 gallons of tank capacity. Example: Use 2  $\frac{3}{4}$  gallons of the solution for a 40-gallon tank. If using Ultra bleach concentrations, reduce bleach to  $\frac{1}{8}$  cup to one gallon of water.
3. Add solution to tank through the gravity fill port and fill with water. Open each faucet/fixture until a distinct chlorine odor is smelled. Close faucets and let stand 4 hours.
4. Drain system and flush with fresh water until chlorine odor and smell is gone. (If a water filter has been added, change it at this time).

### Power Fill Models:

1. Drain the tank by opening the low point drains. Close the drains after water has drained.
2. Prepare a chlorine bleach solution of  $\frac{1}{4}$  cup to one gallon of water for every 15 gallons of tank capacity. Example: Use 2  $\frac{3}{4}$  gallons of the solution for a 40-gallon tank. If using Ultra bleach concentrations, reduce bleach to  $\frac{1}{8}$  cup to one gallon of water.
3. Add solution to tank through the tank vent located on the side of the coach. This vent is an arched shape part with the words "tank vent" on the vent cover. The vent cover is removable and held in place by detents on either side of the vent. Remove the bug screen inside the vent. Using a funnel and tube, add the sanitizing solution. Reinstall the screen and cover when done.
4. Open each faucet/fixture until a distinct chlorine odor is smelled. Close faucets and let stand 4 hours.
5. Drain system and flush with fresh water until chlorine odor and smell is gone. (If a water filter has been added, change it at this time).

## WATER HEATER

Please refer to the manufacturer instructions supplied

with the RV for care & operation of the water heater. The water heaters used in Liberty Outdoors products range in size from 6-12 gallons depending on the brand and model. There are 2 types used: 1) Operates only on LP gas (utilizing 12V to light) 2) Operates on LP gas or 120V electric. The on/off switch for the 12V is mounted inside. The on/off switch for the 120V may be mounted inside or on the water heater itself. DO NOT start the water heater unless it has water in it. To verify there is water in the water heater, open the relief valve located on the outside of the water heater. If water is present at the relief valve, you can be sure there is sufficient water in the water heater to operate. Then verify the bypass valve located on the back side of the water heater is set to the use position and open a "hot" water spigot on any faucet. The water will travel from the source, into the water heater and then present itself at the spigot when the water heater is full. Water heaters are equipped with pressure relief valve designed to relieve water or air pressure therefore dripping may be normal. Please refer to the manufacturer instructions supplied with the RV for care and operation.



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### **WATER HEATER BYPASS KIT**

If equipped, a bypass kit allows winterization of the freshwater system without putting RV antifreeze into the water heater. The bypass valve(s) are located on the back of the water heater (which is inside the RV) and in bypass mode, allow water to travel through a "cross-over" line connecting the input and the output lines of the water heater. BE CAREFUL, if in bypass mode, turning on a "hot" water spigot, WILL NOT put water in the water heater and lighting the water heater with an empty tank could damage the tank which may not be warrantable.

### **WATER HEATER STORAGE & DRAINING**

When not using the RV, drain the water from the water heater tank. Over time, water quality can degrade which can permanently contaminate the lining of the water heater tank. Also, drain the water heater during cold weather to avoid damage from freezing.

To Drain the Water Heater:

1. Turn off power to the water heater at the switch or the main breaker.
2. Shut off the gas supply and the water pump.
3. Open all fixtures, both hot and cold throughout the RV.
4. Remove/open the exterior access door to the water heater.
5. Remove the drain plug (or anode rod if equipped) from the tank.
6. Open the pressure relief valve to allow air in and water will drain out tank.

### **WINTERIZATION**

RV components can be damaged from the effects of freezing. Protection of the plumbing system and related components is crucial. Damages due to weather are not covered under warranty at any time. Many recreational vehicle owners choose to have their RVs winterized by their dealer, while others choose to do it themselves.

Following are descriptions of two methods used to winterize:

1. Compressed Air (Dry) Method - Uses compressed air to blow out any remaining water in the system after draining the system of all water. This method requires an air compressor and appropriate adapters.
2. RV Antifreeze (Wet) Method - Uses RV approved, non toxic, potable, antifreeze in the system and does not require any special tools.

Many Liberty Outdoors products include a bypass kit that allows the plumbing system to bypass the hot

water heater, reducing the amount of antifreeze that will be needed (by-pass kits are available at most RV service centers for a reasonable expense and can be installed during winterization). Without a bypass kit installed, an additional 6 – 10 gallons of antifreeze will be required.

On the following page are the procedures for both methods. Your local dealer is best suited to answering any questions as well as providing information on winterization and storage that may be particular to the climate in your area. If using the compressed air method, a special adapter should be purchased to allow compressed air to be delivered through the city water fill. These adapters are available at most RV supply stores.

#### **METHOD 1 - COMPRESSED AIR (WITH BYPASS KIT INSTALLED)**

1. Purchase 1-2 gallons of RV non-toxic antifreeze.
2. Use compressed air (max 30 psi) to blow out the black tank flush system if equipped.
3. Drain the fresh water tank and empty the waste water holding tanks.
4. Drain water heater.
5. Turn water heater bypass valve to bypass position. (The bypass valve is located near the water heater incoming lines – an access panel may have to be removed depending upon the model.)
6. If installed, remove water filter from assembly and discard. Install diverter if included.
7. Open all faucets, including shower head sprayer, toilet flushing device and water line drains. Remember the outside shower if equipped.
8. Turn on the water pump for 30 seconds to clear out any water in the suction line.
9. Connect an air hose with an adapter to the city water fill connection.
10. Set the pressure no greater than 30 pounds and blow out the water lines until no water can be seen coming out of the fixtures and lines.
11. Close all drains.
12. Pour about one quart of RV antifreeze into drains, p-traps, toilet, and tanks.

#### **METHOD 2A - RV ANTIFREEZE (WITH BYPASS KIT INSTALLED)**

1. Purchase 2-4 gallons of RV approved, non-toxic, antifreeze.
2. Use compressed air (max 30 psi) to blow out the black tank flush system if equipped. An alternate method is to pump antifreeze into the inlet with a hand pump available from your RV dealer.
3. Drain all tanks, fresh water and sewage tanks.
4. Drain water heater. Close the drains after water has drained.
5. Turn water heater bypass valve to bypass position. (The bypass valve is located near the water heater incoming lines – an access panel may have to be removed depending upon the model.)
6. If installed, remove water filter from assembly and discard. Install diverter if included.
7. Pour an amount of RV non-toxic antifreeze into the freshwater tank to fill the tank above minimum water pump operating level. (Use of a long funnel may be helpful) Add more, if necessary, during procedure. An alternate method is to install a bypass hose on the suction side of the water pump and pull direct from the antifreeze container. See your RV dealer for necessary hose and fittings.
8. Turn on pump switch and open the cold water side of all faucet fixtures. Leave open until the antifreeze comes out (generally, pink in color). Repeat for hot water side. Remember the outside shower if equipped.
9. Flush toilet until antifreeze begins to flow into the bowl and then pour one quart of antifreeze down the toilet to winterize the black tank. Leave a small amount of antifreeze in the toilet to cover the seals.

10. Pour about one quart of antifreeze down each shower/tub, lavatory sink, and kitchen sink to fill p-traps. See video at [www.golibertyoutdoors.com](http://www.golibertyoutdoors.com) for more information.



***DO NOT USE AUTOMOTIVE ANTIFREEZE. AUTOMOTIVE ANTIFREEZE IS POISONOUS AND NOT FOR USE IN POTABLE WATER SYSTEMS.***

### **DE-WINTERIZATION / REMOVAL OF ANTIFREEZE**

If purchasing a coach which is winterized with RV antifreeze, or having had an existing RV winterized before winter storage, the plumbing system must be flushed and sanitized prior to use. Do not attempt to turn on water heater if system is winterized. Perform the following prior to attempting to operate the water heater or use the plumbing system.

1. Drain all tanks, fresh water and sewage. Close the drains after water has drained.
2. Attach garden hose to fresh water fill and fill tank.
3. Turn on pump switch and open cold water side of all faucet/ shower fixtures. Leave open until water runs clear. Repeat for hot water side.
4. Flush toilet until clear water runs into bowl.
5. Dump tanks again. Close the drains after water has drained.
6. Sanitize water system.
7. If a water filter is installed, drain lines, remove filter assembly, clean and reinstall with new filter.
8. When ready to use the water heater, turn bypass valve to open position to allow water to enter hot water heater tank and fill according to instructions.

## **WASTE WATER SYSTEM**

The wastewater system is self-contained within the RV. There are 2 primary waste systems in a trailer: Black Water Waste and Gray Water Waste. In some floorplans, a sink(s) or shower may empty into the Black Water Tank. Components are the toilet, holding tanks and termination valves. As in residential households, the drainage system has drain lines, p-traps and plumbing vents that route gases/odors out through the roof assembly.

### **BLACK WATER WASTE**

This system consists of the toilet, drains lines, black water tank, and termination valves.

### **TOILET**

The toilet operates with fresh water supplied by the fresh water tank or city water fill. When flushed, the toilet drains into the black water tank. Please refer to the manufacturer instructions supplied with the RV for care & operation.

### **DRAIN LINES**

The drain lines carry the waste from the toilet to the tank and from the tank to the termination valves where it will be drained from the RV.

### **BLACK WATER TANK**

The term “black water” refers to the by-products of using the toilet. Once the black water tank reaches the desired capacity, the contents can be dumped from the termination valve into an approved dump station. We recommend using a tank deodorizer to help control odors and breakdown solids, available from dealer.

### **SOLID BUILD-UP IN THE BLACK WATER TANK**

When camping and using a “Full Hook-up” (includes a dump station at the site), DO NOT leave termination valves open. When solids are flushed, the water will run into the dump station and the solids will stick to the bottom of the tank and build up. Leave the termination valves closed until the tank level warrants dumping. Not using enough water when flushing solids can also cause build up. To prevent this from occurring, add plenty of water to the bowl

prior to using/flushing the toilet when solids will be involved. Only use toilet paper approved for use in recreational vehicles. Should you ever have a build up of solids, close the valves, fill the tanks about  $\frac{3}{4}$  full with freshwater, drive a distance to agitate the solids and drain the tanks. If the problem continues, it may be necessary to purchase a wastewater digester from your local RV dealer which can be added to the tank to help break down solids. Follow the instructions of the digester. Depending on the severity of the situation, it may be necessary to repeat this procedure

Do not put these items in toilet or drains

- 1. Facial tissues, paper towels, sanitary products (including those labeled flushable).
- 2. Detergents or bleach.
- 3. Automotive antifreeze, ammonia, alcohols, or ketones.
- 4. Grease from cooking, table scraps or other solids that may cause clogging.



**KEEP DRAIN VALVE CLOSED TO MINIMIZE THE PRESENCE OF SEWER GASES. SEWER GASES MAY BE PRESENT WHEN RV IS CONNECTED TO CAMPGROUND SEWAGE HOOKUP. MAY LEAD TO ILLNESS OR PERSONAL INJURY.**

## TERMINATION VALVE

Typically, there is a termination valve for each waste holding tank in the RV and they are located on the roadside. The termination valves are closed to hold waste in the waste tank and open to drain it. See “Dumping Instructions” to drain the waste water system. RVs with multiple bathrooms and/or dual gray/black tanks may have termination valves separated from the RVs primary termination valves/dumping location. The following label has been placed near the side-vented termination that reads:

## DUMPING INSTRUCTIONS

1. Twist off the termination outlet cap.
2. Connect the sewer hose by turning clockwise, locking the end levers over the termination end.
3. Place the other end of the sewer hose into an approved dump station.
4. Open the black tank termination valve first and drain.
5. After the black tank is almost empty, open the gray tank termination valve and drain. This will use gray water to help flush any remaining solids from draining the black tank through the sewer hose.
6. Close termination valves.
7. Disconnect sewer hose, rinse and store.
8. Replace termination cap on the outlet.
9. Add chemical deodorant / breakdown agent approved for RV use.
10. Wash hands with approved soap/hand sanitizer.

\*If the RV is equipped with the No-Fuss Flush System, perform flush at this time.

## TANK FLUSHING

Periodically for correct monitor panel function and to control odor, it is necessary to fill all waste water tanks (black or gray) with fresh water and repeat the dump procedure to help flush any remaining residue from usage. The intervals for this need vary based on amount of use, type of use, holding tank chemical usage, etc.

## GRAY WATER WASTE

Typically, this system consists of all sink/shower drains, gray water tank(s) and termination valves. Gray water is the wastewater from the sinks, tub/shower drains and is stored within one (or more) gray tank(s). Gray water is drained through a termination valve on the roadside of the RV. On some floorplans, some of the gray water waste will empty into the black water tank.



***DO NOT LEAVE THE RV UNATTENDED DURING THIS PROCESS AND MAKE SURE THE BLACK TANK TERMINATION VALVE IS OPEN AND YOUR SEWER HOSE IS CONNECTED TO AN APPROVED DUMP STATION. OVERFILLING THE BLACK WATER TANK WILL RESULT IN WATER OVERFLOWING INTO THE INTERIOR OF YOUR RV FROM THE TOILET AND THE RESULTING DAMAGE IS NOT COVERED BY WARRANTY.***

## **ODOR CONTROL**

The secret to good air quality in (and around) your RV lies with finding an effective holding tank chemical and applying the proper amount based on use and ambient temperature. It is important to note some brands work more effectively than others! If you are experiencing unpleasant odors from your holding tank(s), try switching brands to something proven to work before thinking something may be wrong with the plumbing. The gray tank can produce offending odors as well as the black tank. Follow the guidelines supplied with the chemical for usage directions.

## **MONITOR PANEL**

The monitor panel is designed to give approximate liquid levels of the fresh, gray and black water tanks at a given moment as well as a charge value (based on voltage) of the battery. Please refer to the manufacturer instructions supplied with the RV for care and operation and/or [www.kibenterprises.com](http://www.kibenterprises.com)

## **CARE & MAINTENANCE**

The instructions and recommendations in this manual are meant to be used in conjunction with the individual component manufacturers manuals accompanying the RV. Be sure to thoroughly review each component manual to avoid any specific requirement not reviewed here.

Care and maintenance of the recreational vehicle is an important step in maintaining the safety, dependability and the appearance, both interior and exterior, of the RV. Keep good records of all maintenance performed as these may be necessary for warranty information or may assist in possible repairs needed.

Operational usage and climates may affect the frequency of maintenance needed on certain components. Preventative maintenance is important to the life and enjoyment of any recreational vehicle as many problems can be caught before they occur. Please do not hesitate to call your dealer with a question on the care and maintenance of any item.

## **FRAME/FRAME COMPONENTS**

It is normal for the frame and its' components to corrode. When and how much depend on the environment the RV is subjected to, how often it is subjected to it and the preventative maintenance performed. The more exposure to snow, rain, road salt, road chemicals, salt water, etc. the more accelerated and more severe the corrosion will be. Diligence on the part of the owner when a RV is subjected to these elements can significantly reduce the severity and how quickly this occurs.

When your RV is exposed to a known corrosive (road salt, road chemicals, salt water, etc.) take the time to rinse off the frame, frame components, under carriage, axles & running gear as soon as possible after reaching your destination. Wash the exterior. Taking these simple steps will greatly reduce the extent and slow corrosive action significantly.

Inspect the frame and frame components periodically. If a spot of rust is developing or the frame was nicked or scratched by road debris, sand (or wire brush) and touch it up with rust proof enamel paint. Think of it as a tooth with a cavity developing. Take care of it before it gets to deep and causes bigger issues.

## **STEPS**

Keep clean of dirt, salt, mud, etc. and lubricate pivot points with a dry lubricant spray every 30 – 60 days.

## **HITCH COUPLERS (TRAVEL TRAILERS)**

Inspect prior to each trip. The ball socket and clamp should be cleaned and lubricated monthly with wheel bearing grease. If coupler or coupler components appear damaged or worn, contact your dealer immediately.

## **SAFETY CHAINS (TRAVEL TRAILERS)**

Safety chains should be inspected before every trip and if damaged or weakened, replace immediately. Never tow without use of the safety chains.

## **TONGUE JACKS, MANUAL/POWER**

When preparing to travel, inspect the jack for any damage and test operation. If jack is difficult to operate, clean and oil lightly (Manual). If jack is still difficult to operate or freezes, it should be serviced or replaced by a qualified RV technician. Please refer to the manufacturer instructions supplied with the RV for care and operation.

## **SIDING & SIDEWALL ATTACHMENTS**

“Black streaks” are caused when pollution, rain, dirt and sealant deterioration mix. We are not aware of any way to prevent “black streaks”. However, keeping your exterior washed and waxed often will make them much easier to remove. There are many products in the market that are effective in removing “black streaks”. Consult your dealer for these products.

## **RV GELCOAT FINISH - CARE AND MAINTENANCE**

Fiberglass is a common term for fiber-reinforced plastic, or FRP, which is a plastic material, strengthened using glass fiber cloth and used on many RV's for sidewalls and caps. To give the fiberglass a smooth and shiny surface, a clear or colored gel resin material is applied to the outer surface. Gelcoat is available in many colors and is very durable, but it can become dull or faded as it weathers. Sunlight, heat and moist air combine to oxidize the gelcoat surface, fading it and making the surface cloudy. So how do you keep your fiberglass looking good? Simple, you clean and apply a top quality wax twice a year or every 3 months in cases where the vehicle is in constant exposure to the elements.

## **GENERAL MAINTENANCE**

Normal maintenance of your gel coated fiberglass RV is similar to the care you would give your automobile. In general, automotive cleaners and waxes work well. Do not use caustic, highly alkaline (high pH) cleaners or those containing ammonia. These cleaning agents

may darken white or off-white weathered gel coat surfaces. The staining that results is a chemical reaction within the weathered gelcoat, and can be removed with a rubbing compound or by light sanding with 400 grit sandpaper followed by application of rubbing compound and waxing.

## **CLEANING**

Periodic cleaning with a mild detergent product is necessary to remove normal accumulations of soil. This soil is the result of regular use of your RV as well as environmental pollutants, soot, smog, etc. General washing as needed prevents soil build-up, staining, etc.

## **WAXING**

As the gel coat begins to lose its gloss from constant exposure to the natural environment and pollutants, it will require some special attention to restore the original gloss and color. After washing with mild soaps and detergents, a good polishing with a self-cleaning automotive wax will restore most of the original gloss. A fall and spring wax job is generally all that is needed to maintain the original appearance. If the surface has been allowed to weather badly, and cleaning and wax polishing does not restore the finish satisfactorily, then compounding will be necessary.

## **ABS/TPO PLASTIC AND MOLDED PARTS**

Some components are constructed of strong ABS molded plastic. A mild solution of soap and water should be used when cleaning. When using any product, make sure the product is recommended for use on plastics. Avoid harsh abrasive cleaners, ammonia or citric-based products as discoloration may result.

## **WINDOWS**

The seals/sealants used to seal the windows to the sidewall of the RV are subject to deterioration over time. Every six months, inspect the area between the window frame and the side wall for sealant gaps/voids, cracks, shrinkage, etc. and reseal as necessary. In addition, after a rain, inspect the interior of the RV around windows for any evidence of water penetration. If any interior leaks are noticed, contact



an authorized dealer immediately. If caught early, it may save you much time, frustration and money.

To ensure window operation, adjust and lubricate latches and any moving parts annually. A light oil or powdered graphite can be used for lubrication. Periodically use a vacuum attachment to clean any debris out of the window weep holes, which are necessary to drain any condensation or moisture from hard driving rains that may collect.

Some of our products use Plastoform European styled acrylic windows. These windows have a rubber seal around the perimeter of the window around the cutout in the sidewall. Check the rubber seals every six months to verify the seals are intact. Acrylic windows are very sensitive, do not use any cleaning products with ammonia to avoid potential damage. Please see below for more information on the Plastoform windows

## INSTRUCTIONS FOR SAFETY AND LONG LIFETIME

Within these instructions you will be able to find information to most common questions about correct usage of PLASTOFORM Blanca windows. If you can't find the information you need here, please contact us directly on email: [blanca@plastoform.si](mailto:blanca@plastoform.si)

## WHILE DRIVING

When vehicle is in motion all windows must be fully closed.

## SUN BLINDS

Never use blind on direct sunlight. If you use the blind on direct sunlight, also for a shorter period, heat will accumulate between window and blind and window will get damaged (will start bending, ballooning...).

## CLEANING

Never use abrasive and corrosive substances or solvents on windows, such as turpentine, spirit, dishwasher detergents, as they will damage acrylic and/or print. We recommend cleaning with generous amount of water or mild cleaner intended for use on acrylic. Every cleaning with dry cloth can damage the acrylic and leave scratches; always use moist sponge or moist soft cloth. Never clean windows with high

pressure washer. Also carwash can damage windows and cause scratches or other damages.

**ACRYLIC MATERIAL CAN GET SCRATCHES VERY EASILY, PLEASE CONSIDER ABOVE INSTRUCTIONS FOR CLEANING, SO THAT YOU WILL NOT CAUSE SCRATCHES OR OTHER DAMAGES WHILE CLEANING.**

## CONDENSATION

Condensation can appear on the window or between both panes. This is a normal occurrence that appears because of different temperatures inside and outside, moist and properties of acrylic itself. Condensation will disperse after some time. This doesn't mean that there is something wrong with the window or that it is leaking. With properly ventilating the vehicle, you can in most cases prevent also condensation.

## OPENING AND CLOSING THE WINDOWS

Your windows are equipped with either handles with button or handles without button and stays on step version or in version with knob screw. Consider the following instruction to avoid the most common damages that can occur:

**Handles with button:** always push the button when opening/closing handle.

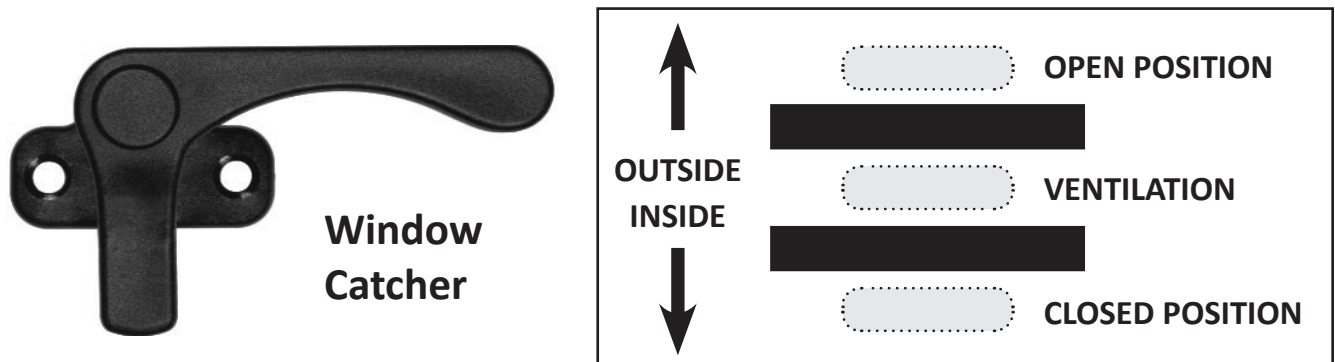
**Stays in step version:** you will hear clicks when opening the window. Every click represents position in which a window can stay opened. When closing the window, you must open it till the end and then close. Do not try to close it without first opening it as wide as it goes, as this will damage the stays.



Stays with knob screw: always make sure to unscrew the knob before closing the window.



Catcher enables three positions of the window. Open position is where the handle is open placed on the outer part of the catcher. If the handle is placed in the middle of the catcher, this is position for ventilating. Closed position is position where the handle is closed on the inner part of the catcher.



***PLASTOFORM BLANCA WINDOWS ARE TOP QUALITY WINDOWS FROM ACRYLIC MATERIAL. IF YOU CONSIDER ABOVE INSTRUCTIONS, YOUR WINDOWS CAN STAY IN GOOD SHAPE FOR A LONG TIME. WINDOWS ALSO REQUIRE PERIODIC MAINTENANCE AND CHECK BY YOUR DEALER AT LEAST ONCE PER YEAR.***

## **CORNER MOLDINGS**

A corner molding is the trim that covers the joint between a front/rear wall and a sidewall. The sealants used here are subject to deterioration in time. As sealants dry out and the RV twists and turns during normal operation, these areas are subject to leaks. This area is very important because a leak may not manifest itself inside the RV where it is easily identifiable. This type of leak may take time to be evident and by then, there could be substantial damage. Every six months, inspect these areas for sealant gaps/voids, cracks, shrinkage, etc. and reseal as necessary. Please consult your local Liberty Outdoors dealer for assistance if needed.

## **MOLDINGS**

There are a variety of other moldings used on the exterior of our applications that include but are not limited to floor line, awning rail, roof line, flat trim with screw cover. Every six months, inspect these areas for sealant gaps/voids, cracks, shrinkage, etc. and reseal as necessary. Please consult your local Liberty Outdoors dealer for assistance if needed.

## **ROOF SEAMS AND/OR JOINTS**

Roof sealants will deteriorate which can lead to leaks. Deterioration can be accelerated in heavy sun, changes in climates (expansion/contraction with aggressive temperature change), and cold climates. Once the RV leaves our manufacturing facilities, we can no longer maintain the sealants, this becomes your responsibility. Take this seriously because it can help prevent a very frustrating situation that can be expensive to remedy (damage from water leaks).

Inspect the roof at least every 90 days, paying close attention to all seams and/or joints and attachments where sealant is used. Look for cracks, shrinkage and/or gaps/voids in the sealants. These must be carefully cleaned and resealed. It is necessary to use the same sealant as originally installed if touching up cracks, shrinkage and gaps/voids. There is no way to know if 2 different brands of sealant will seal to each other.

If there any doubt in your mind in performing this maintenance, please contract with your local dealer to have it done.

## **BEDSPREADS (IF APPLICABLE)**

Refer to the label attached to the bed spread by the manufacturer. Dry-clean only unless the care instructions on the label indicate otherwise. Washing a dry-clean only bedspread could cause premature deterioration, fading, shrinkage and/or possible damage.

## **CABINET DOORS AND DRAWERS**

The cabinet doors and drawer fronts should be cared for similar to the fine furniture in your home. Using a quality furniture polish will help maintain the beauty and luster of the wood as well as keep the wood from drying out. The accidental scratches can be covered satisfactory with a good quality commercial furniture scratch remover.

## **CEILINGS AND WALLS**

Clean only with a mild detergent in warm water, using a damp cloth to clean the ceiling. Never use strong chemicals or excessive water / moisture, as either can damage the ceiling or walls.

## **COUNTERTOPS**

Most countertops are made of high-pressure plastic laminates and are highly resistant to normal spills and scuffs. Soap and lukewarm water or a mild, non-abrasive cleaner are recommended. Avoid use of abrasive pads and scouring powders, which can dull the surface and make it more stain-prone. Always use a chopping block or cutting board when using knives. Pots and pans straight from the burner or oven should be placed on lined hot pads and not directly on the counter surface.

## **FABRIC, UPHOLSTERY AND FURNITURE**

Do not laundry upholstery fabrics. Blot up stains promptly and use an upholstery cleaner or mild solvent, depending on the stain. Never soak the fabric and use as little water as possible. Blot rather than rub. Towel dry or have professionally cleaned. Upholstery can be vacuumed regularly using a soft brush attachment. Do not remove law tags from furniture, they are use to identify the products for part replacements. Whether a warranty or non-warranty repair, this material can be easily repaired utilizing

a local company specializing in restoration (vinyl, rubber, leather, fabric, plastic repair of furniture, car seats, fabrics, dashboards, etc).

## **FAUCETS AND FIXTURES**

To protect the finishes on your kitchen and bath faucets and fixtures, use only a damp soft cloth or sponge. Do not use abrasive cleaners or materials as they can damage the finish.

## **FLOORING, VINYL**

For routine cleaning, sweep or vacuum regularly. Follow by using a damp mop with warm water and clean a small area at a time. Rinse the mop frequently as to not redistribute the dirt picked up. If washing is needed, use a quality product designed for no-wax flooring. To polish the floor, do not use solvent-based waxes or polishes as damage to the flooring may result. Use only polishes recommended for no-wax flooring. Whether a warranty or non-warranty repair, this material can be easily repaired utilizing a local company specializing in restoration (vinyl, rubber, leather, fabric, plastic repair of furniture, car seats, fabrics, dashboards, etc).

## **SINKS, TUBS AND TOILETS**

Many of these products are made of acrylics, plastics or composite materials and use of non-abrasive cleaners is recommended to protect the finish. Use of harsh cleaning products can cause premature deterioration and/or yellowing of the surface finish.



**THIS MANUAL BELONGS TO:**

VIN NUMBER: \_\_\_\_\_

**DEALER:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

DEALER PHONE: \_\_\_\_\_

**DEALER CONTACT:**\_\_\_\_\_

## MAINTENANCE RECORD

[illegible]

## MAINTENANCE REQUIREMENTS

Note: The intervals outlined here are based on typical recreational travel and family camping in typical climates and weather conditions.  
\*Please refer to the manufacturer instructions supplied with the RV for care & operation or the applicable website for the various components

SERVICE	Pre-Trip	After Each Use	Monthly	Every 3 Months	Every 6 Months	Yearly	Procedure
Exterior							
Hitch Coupler	X		X				Verify operation and free of defects
Safety Chains	X						Verify attachment and free of defects
Jacks (A-Frame, Stabilizing)				X	X		Verify operation and free of defects
Fiberglass/Gel Coat				X	X		Clean with car wash soap
Lighting	X						Verify operation
Window Sealants				X			Inspect seals and reseal if necessary
Corner Moldings				X			Inspect seals and reseal if necessary
Other Moldings				X			Inspect seals and reseal if necessary
Roof Seams & Joints				X			Inspect seals and reseal if necessary
Brakes (every 3 months or 3,000 miles)	X			X			Check prior to each trip and adjust as needed
Entry Steps			X				Lubricate mechanism as needed
Tires	X						Verify condition and pressure
Lug Nut Torque	X						Check torque prior to trip
Axle						X	Follow lubrication and maintenance as stated by axle manufacturer
Chassis Paint					X		Touch up and spots with missing powder coat
Battery	X						Check condition prior to trip
Appliances/Interior							
Fresh Water System		X				X	Flush and sanitize as needed
Grey Water System		X					Flush and sanitize as needed
Black Water System		X					Flush and sanitize as needed
Flooring		X					Sweep and clean with mild detergent
Roof Air Conditioner			X				Clean filter
Propane System						X	Leak test system
CO Detector	X						Verify operation
LP Detector	X						Verify operation
Smoke Alarm	X						Verify operation
Furnace						X	Clean system
Refrigerator						X	Clean system
Roof Vents				X			Inspect seal and verify operation
Water Heater		X				X	Flush as needed
Latches & Locks			X				Lubricate and verify operation
Annual Checkup						X	Annual full service checkup



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