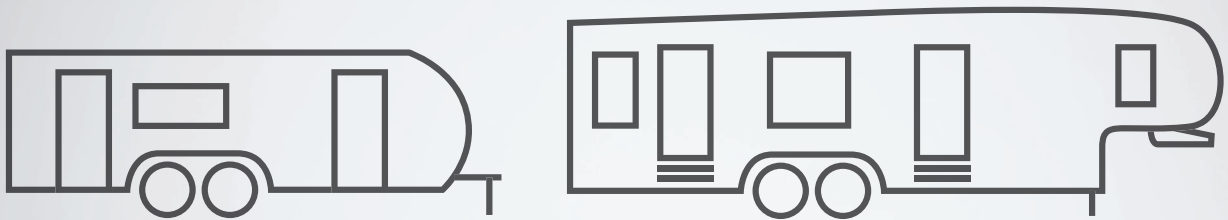
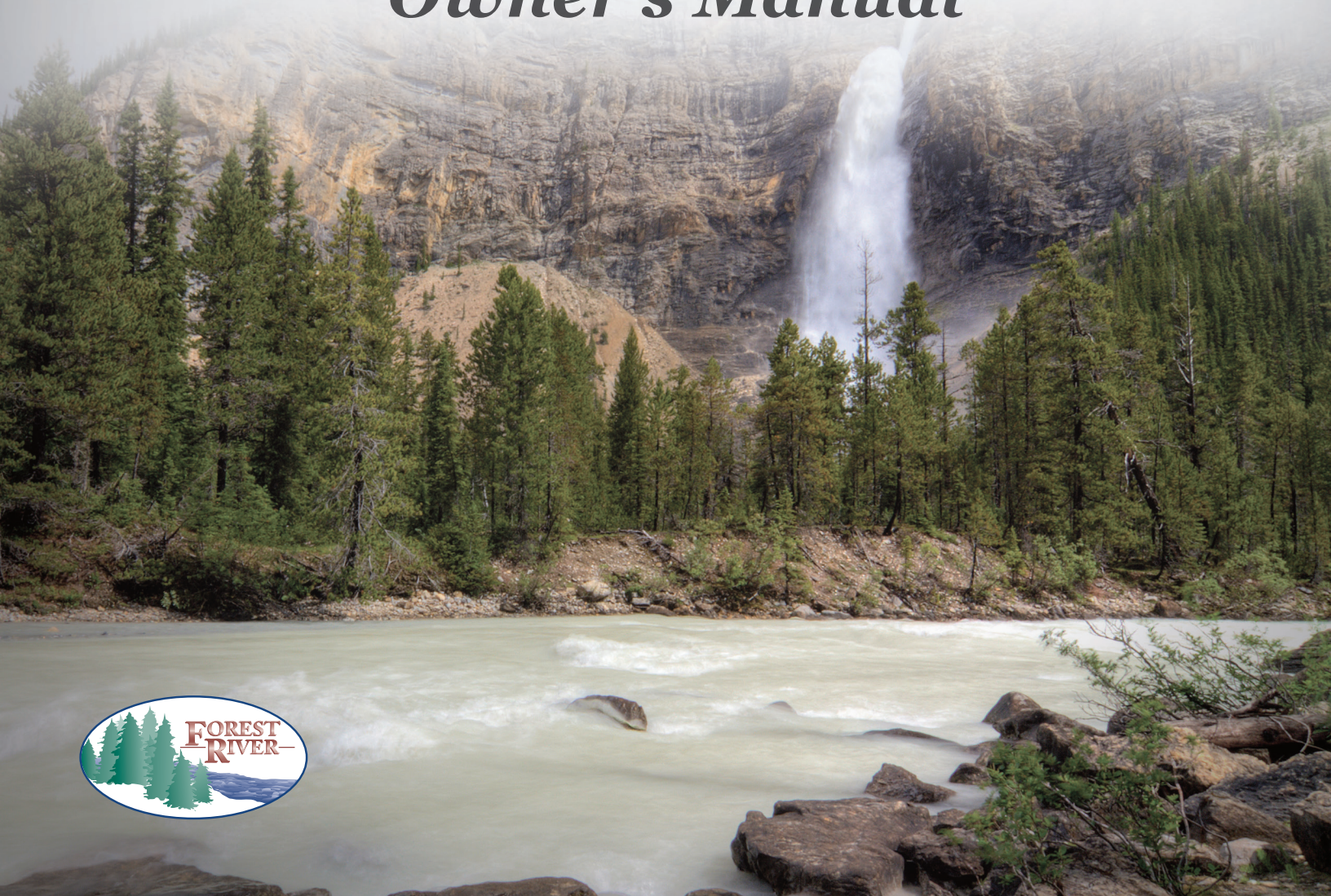


FOREST RIVER



Travel Trailer / Fifth Wheel Owner's Manual



Owner's Guide Overview



Thank you for using the Forest River, Inc. electronic Owner's Guide!

You have taken a valuable step to enhancing the enjoyment of your Forest River recreational vehicle. You are going to benefit from a unique and interactive experience that provides incredible ease and insight into use, maintenance and enjoyment of your Forest River RV product.

In this electronic Owner's Guide, you will find typical owner's manual content. However, we supplement this content with enhanced user information ranging from "How-To" videos, component manual PDFs, Troubleshooting Tips and pictures of various components. All of the content is fully searchable so that answers are always just a click away.

The electronic Owner's Manual is not intended for use as a technical service manual, nor does it provide complete operational instructions. It is a guide to help you become familiar with the safe operation and use of your Forest River RV. It is not model specific and is of a general nature, so the illustrations and descriptions provided may differ from the components installed in your particular Forest River RV.

VIDEOS

Forest River has created a variety of "How-To" videos to help you understand your RV's features and to help you perform general maintenance and routine tasks on your Forest River RV. Many of these videos are embedded into various

sections of the Forest River RV electronic Owner's Manual where applicable for your convenience.

At the BRAND level of this Application, you will find a library with brand-specific videos designed to take your knowledge and understanding of your particular RV and its components to a deeper level. Many of the videos that are brand-specific in nature will only be found within a specific brand's video library.

Additionally, we have partnered with many of our suppliers to provide videos that are specific to their products being used in your RV. Where appropriate, these videos are embedded into the various sections of the Forest River RV electronic Owner's Manual. Most of these supplier-created videos will be found in a Brand's video library if applicable.

The How-To Video library is displayed alphabetically. Video titles begin with the name of the manufacturer of the video. The library is fully searchable utilizing key words for ease and convenience.

COMPONENT MANUALS

Component manuals and manufacturer's literature is supplied by each individual Brand according to the specific items used in the production of your recreational vehicle. This information is part of the Owner's Packet you received with your RV. Only those products which were used during the manufacture of your RV will be included in this packet.

At the BRAND level of this Application, you will find a library with hundreds of component manual PDFs supplied by the manufacturer of the component that are specific to the selected Forest River RV brand.

The Component Manual library is displayed alphabetically. PDF titles begin with the name of the manufacturer of the component and include the type of component referenced (television, for instance). The library is fully searchable utilizing key words for ease and convenience.

TROUBLESHOOTING TIPS

There can be a lot of things to remember "how to do" when using a recreational vehicle and common user-oversights can prevent you from fully enjoying the many features of your RV. Occasionally, a minor adjustment or quick maintenance step will help solve a problem. Many sections of the Owner's Manual include troubleshooting tips that can alleviate minor technical issues. The

complete list of all troubleshooting tips can be found in the Basic Troubleshooting Tips folder.

FAQ

You have questions and we have answers! Your Forest River RV dealer and our Customer Service team members are ready and willing to assist you. However, many of your questions can be found and answered in the FAQ folder of this electronic Owner's Guide. Simply navigate to "FAQs" and let us help!

CHECKLISTS

Whether you're a first-time RV'er or an experienced veteran of the road, Forest River believes you will benefit from these detailed checklists that will fully prepare you for your next camping adventure.

RESOURCES

- **EMERGENCY ROADSIDE ASSISTANCE PROGRAM:** When you purchase a new Forest River RV, you and your family will travel safely with a one-year complimentary membership in our Emergency Roadside Assistance Program. Your one year complimentary membership includes emergency roadside assistance services such as towing, winch-out, jump-starts, tire changes, technical support, and more. Learn more about the benefits and features of your Emergency Roadside Assistance membership. Details can be found inside the Resources folder.
- **FOREST RIVER OWNER'S GROUP (FROG):** Part of the RV experience is being among other RV'ers who hold the same passions that you do. In 2011, the Forest River Owners' Group (FROG) was formed and it quickly has grown to over 115,000 members. These members attend rallies and tours throughout North America sharing memories and stories that will last a lifetime. Membership is FREE, and all it takes to become a member is to become a Forest River RV owner and submit a form on the FROG website. Visit [FOREST RIVER FROG](#) to learn more or to join the Forest River Owners' Group. Details can be found inside the Resources folder.



- **SUPPLIER CONTACT INFO:** Sometimes, it's necessary to contact a component manufacturer for warranty, service or technical assistance. Found inside the Resources folder, the Supplier Contact Information provides the contact information for many of the most commonly used suppliers to the RV industry.
- **RECALL SEARCH:** Utilize the helpful link provided to research any recalls associated with your Forest River recreational vehicle.
- **TOW VEHICLE RATINGS:** Utilize the helpful link provided to research the appropriate tow vehicle for your camping needs.

You may find a link to the printable version of this Limited Warranty here: [Limited Warranty](#)

FOREST RIVER LIMITED TOWABLE WARRANTY

This One-Year Limited Towable Warranty applies to Forest River towable products purchased on or before June 30, 2021.

Thank you for choosing to purchase a Recreational Vehicle by Forest River Inc., a fine product in which design and construction have received the care that quality demands. This important warranty covers many items and is indicative of our desire to stand behind our products and assure our customers' complete satisfaction. If at any time the need arises to speak with a Forest River representative please find our contact information in our owner's manual or at www.forestriverinc.com.

WARRANTY COVERAGE SUMMARY OF WARRANTY: Forest River Inc., 55470 CR 1, P.O. Box 3030, Elkhart, Indiana 46515-3030 (Warrantor) warrants to the ORIGINAL CONSUMER PURCHASER ONLY, when purchased from an authorized Forest River Inc. dealer, for a period of one (1) year from the date of purchase (Warranty Period), that the body structure of this recreational vehicle shall be free of substantial defects in materials and workmanship attributable to Warrantor.

EXCLUSIONS FROM THIS WARRANTY: Warrantor expressly disclaims any responsibility for damage to the unit where damage is due to condensation, normal wear and tear or exposure to elements. Warrantor makes no warranty with regard to, but not limited to, the chassis including without limitation, any mechanical parts or systems of the chassis, axles, tires, tubes, batteries and gauges, optional generators, routine maintenance, equipment and appliances, or audio and/or video equipment. Their respective manufacturers and suppliers may warrant some of these items. Warranty information with respect to these items is available from your dealer.

This recreational vehicle is designed solely for its intended purpose of recreational camping and personal use. Warrantor makes no warranty with regard to any recreational vehicle used for commercial, rental, or business purposes, or any recreational vehicle not registered and regularly used in the United States or Canada. For purposes of this limited warranty, it shall be deemed conclusive evidence of commercial, rental, or business purposes if the recreational vehicle is licensed, titled, registered, or insured in the name of any corporation, LLC, or any other form of business or commercial entity.

LIMITATION AND DISCLAIMER OF WARRANTIES: WARRANTOR EXPRESSLY LIMITS THE DURATION OF ALL EXPRESS AND IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE EXCEPT IN THOSE STATES THAT DO NOT ALLOW THIS EXCLUSION. WARRANTOR EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AFTER EXPIRATION OF THE WARRANTY PERIOD. No action to enforce express or implied warranties shall be commenced later than ninety (90) days after expiration of the Warranty Period. There is no warranty of any nature made by the Warrantor beyond that contained in this Warranty. No person has authority to enlarge, amend or modify this Warranty or to bind the Warrantor to any action under this warranty, except the Warrantor.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

No action to enforce express or implied warranties shall be commenced without prior written notice to the manufacturer and/or Warrantor at the address listed above of the alleged defect or nonconformity or the authorized repair facility's failed repair attempt and **MANUFACTURER, AT ITS DIRECT OPTION, SHALL HAVE A FINAL OPPORTUNITY TO REMEDY.**

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES: THE ORIGINAL CONSUMER PURCHASER OF THIS RECREATIONAL VEHICLE AND ANY PERSON TO WHOM THIS UNIT IS TRANSFERRED, AND ANY PERSON WHO IS AN INTENDED OR UNINTENDED USER OR BENEFICIARY OF THIS UNIT, SHALL NOT BE ENTITLED TO RECOVER FROM WARRANTOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

NOTICE of any dispute or claim arising under this warranty or any applicable Federal or State laws must be sent to Warrantor at: Forest River Inc., 55470 CR 1, P.O. Box 3030, Elkhart, Indiana 46515-3030

The terms, conditions, rights and responsibilities of this warranty shall be governed by the laws of the State of Indiana notwithstanding any other state laws.

WARRANTOR'S OBLIGATIONS: Warrantor will remedy substantial defects in materials and workmanship caused by Warrantor. Warrantor shall elect to remedy the defect from among the following: repair or replacement. Warranty performance can only be obtained at Warrantor's authorized dealers and service centers and from Warrantor at the discretion of the Warrantor. All costs incurred in transporting this recreational vehicle for warranty service shall be borne by Purchaser. Warrantor shall remedy the defect within a reasonable amount of time after appointment and delivery by Purchaser. All of Warrantor's expenses in remedying the defect shall be borne by the Warrantor.

PURCHASER'S OBLIGATIONS: Purchaser shall deliver this recreational vehicle for warranty service within a reasonable time after discovery of the defect and in no event after expiration of the Warranty Period, which Warranty Period is one (1) year. All expenses incurred by Purchaser in obtaining warranty service shall be borne by Purchaser. Warranty service shall, whenever possible, be scheduled with the selling dealer by an appointment in order to avoid possible delays. Purchaser can, if necessary, obtain a list of persons authorized to perform warranty service by contacting Warrantor at the above address. No action to enforce express or implied warranties shall be commenced without prior written notice to the manufacturer and/or Warrantor at the address listed above of the alleged defect or nonconformity or the authorized repair facility's failed repair attempt and MANUFACTURER, AT ITS DIRECT OPTION, SHALL HAVE A FINAL OPPORTUNITY TO REMEDY.

EVENTS DISCHARGING WARRANTOR FROM OBLIGATION UNDER THIS WARRANTY: Misuse or neglect, including failure to provide reasonable and necessary maintenance, unauthorized alteration, accident, and improper loading, commercial use or leasing of the recreational vehicle, shall discharge Warrantor from any obligation under this Warranty. Notwithstanding these or other terms discharging the Warrantor, the provision of service by a Forest River authorized service center, authorization of repairs by Forest River, or any other attempt to resolve a complaint or request for warranty service shall not constitute a waiver of Warrantor's rights.

PARTS AND DESIGN CHANGES: Warrantor reserves the right to change the parts and design of its recreational vehicle from time to time without notice and with no obligation to maintain spare parts or make corresponding changes in its products previously manufactured.

OBTAINING WARRANTY SERVICE: To ensure your local dealer's personal interest in your complete satisfaction, it is recommended that all warranty service be performed by the authorized dealer from whom you purchased your unit. Following a move or as you are traveling, should warranty service become necessary, such service shall be performed by any authorized dealer in the United States or Canada. Such service shall also, whenever possible, be scheduled by an appointment in order to avoid possible delays.

WARRANTY REGISTRATION: A warranty registration is to be completed by the owner at the time of purchase and returned to the Warrantor. The return of this registration is a condition precedent to warranty coverage; failure to return the completed registration to Warrantor will invalidate this Warranty.

OTHER WARRANTIES: As indicated in the paragraph above, entitled 'Exclusions From This Warranty', certain items that are not covered by this Warranty may be warranted separately by their manufacturers or suppliers. In order to validate those warranties, you may also be required to complete and return to the appropriate manufacturer the warranty forms included with the information package. See these warranties with respect to their terms and conditions. These other warranties may cover such items as chassis, tires, tubes, batteries, optional generators, and appliances, which are not covered by this Limited Warranty. For service or parts required for these products, it may be necessary to write or call the product manufacturer to obtain the nearest authorized service center location. In requesting parts for separately warranted products from the manufacturer of the product or its authorized service center, it may also be necessary to first obtain a warranty work authorization number before the work is done. It may also be necessary to provide the Product Name, Model and Serial Number along with the description of the problem and part needed, plus shipping instructions.

OWNER ASSISTANCE: Your confidence and goodwill are important to Forest River Inc. as is maintaining a pleasant relationship with our dealers. We, at Forest River, recognize that there may be occasions when a warranty or service problem is not handled to your satisfaction. After discussing the situation with the dealer- ship management, if your problem has not been resolved to your satisfaction, we welcome you to contact the Forest River Customer Service Manager at the address listed above. Our recommendations for an agreeable solution will be communicated to the local dealer. Forest River customer service contacts can be found in our owner's manual or by visiting www.forestriverinc.com.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

FOREST RIVER LIMITED TOWABLE WARRANTY

Thank you for purchasing a Forest River Product. This document explains certain rights and limitations provided under the terms of this Limited Warranty. Please review this document carefully.

This One-Year Limited Towable Warranty applies to Forest River towable products purchased on or after July 1, 2021.

ONE-YEAR LIMITED WARRANTY

The Forest River, Inc. ("Forest River") Limited Warranty covers this recreational vehicle ("RV") for a period of one (1) year from the date of purchase of the RV by the first retail purchaser when purchased from an independently owned and authorized Forest River dealer. This Limited Warranty only applies to the first retail purchaser of the RV. This Limited Warranty does not cover those items identified in the "Exclusions From Coverage" section of this Limited Warranty.

This Limited Warranty covers the RV against **Substantial Defects** in material and workmanship attributable to Forest River's manufacture and assembly of the RV. Substantial Defects are those defects which prevent the RV from performing its intended use for short term recreational camping.

Additionally: Minor adjustments including, but not limited to, adjustments to drawers, interior doors, latches, awnings and window treatments will be covered at no cost to you for the first ninety (90) days of the Limited Warranty Period (see "Exclusions From Coverage" section of this Limited Warranty).

There is no warranty, of any nature, beyond what is contained in this Limited Warranty. No person has authority to enlarge, amend, or modify this Limited Warranty. Repairs will not extend the warranty coverage or period in which you may enforce an action, unless prohibited by law. This RV has been sold to an independent authorized dealer of Forest River. The dealer is NOT an agent of Forest River. Forest River is not bound by any representation or warranty made by the dealer or between the dealer and the retail purchaser. Forest River shall not be held to be a party to any aftermarket and/or third-party service contract or warranty.

THIS LIMITED WARRANTY DOES NOT PROMISE OR EXTEND TO FUTURE PERFORMANCE OF THE RV AND DOES NOT MAKE A REPRESENTATION AS TO HOW THIS RV WILL PERFORM IN THE FUTURE. THIS LIMITED WARRANTY ONLY REPRESENTS WHAT THE REMEDY WILL BE IF A SUBSTANTIAL DEFECT EXISTS.

LIMITATION AND DISCLAIMER OF WARRANTIES: THIS LIMITED WARRANTY IS IN PLACE OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS. ANY WARRANTY THAT IS FOUND TO ARISE BY WAY OF STATE OR FEDERAL LAW, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR IMPLIED WARRANTIES OF FITNESS, IS LIMITED TO AND DOES NOT EXTEND BEYOND THE SCOPE AND DURATION OF COVERAGE AS SET FORTH IN THIS LIMITED WARRANTY.

NOTE: SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

DISCLAIMER OF CONSEQUENTIAL DAMAGES: FOREST RIVER SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND THAT MAY RESULT FROM BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY. THE EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL BE INDEPENDENT OF ANY FAILURE OF THE ESSENTIAL PURPOSE OF ANY WARRANTY. THIS LIMITED WARRANTY DOES NOT COVER ANY LOSS OF USE OF THE RV.

NOTE: SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

IMPORTANT TERMS APPLICABLE TO FOREST RIVER WARRANTIES **SERVICE**

This RV is designed solely for its intended purpose of short term recreational camping. It is normal to expect some warranty service during the Limited Warranty Period. If the need for warranty service should arise, you should contact your independent authorized selling dealer (to the extent possible) or local independent authorized dealer to schedule the repairs. Owner shall deliver this RV for warranty service within a reasonable time after discovery of the Substantial Defect and within the applicable Warranty Period. All expenses incurred in obtaining warranty service, including but not limited to gas, mileage, and accommodations, shall be the Owner's responsibility.

Please note: Forest River does not control independent authorized dealerships or the scheduling of repairs at their facilities and you may encounter delays.

If you encounter difficulty obtaining warranty service, please contact Forest River's Customer Service Department at: Post Office Box 3030, Elkhart, Indiana 46515-3030 or 574-825-7000. For more information regarding Forest River service contacts please visit www.forestriverinc.com.

DEFECT vs. DAMAGE

The Forest River Limited Warranty only covers "Substantial Defects" in materials or workmanship attributable to Forest River's manufacture and assembly of the RV, not "damages." "Damages" include issues or repairs stemming from misuse or collision that occurs after the purchase of the RV by the first retail purchaser, as well as repairs due to lack of maintenance, because it is the owner's responsibility to maintain the RV. See Owner's Responsibilities and Maintenance below.

GOODWILL REPAIRS

Performance of repairs on portions of the RV "Excluded from Coverage" or after expiration of the Limited Warranty Period shall be considered "Goodwill" repairs. Forest River is not obligated to perform Goodwill repairs and performance of Goodwill repairs shall not alter the express terms of the applicable Limited Warranty.

REPAIR REMEDY AND NOTICE

REPAIR REMEDY: Forest River's SOLE OBLIGATION under this Limited Warranty is to repair any covered Substantial Defect discovered within the applicable Limited Warranty Period if not excluded under the terms of this Limited Warranty. If the authorized selling dealer or local independent authorized dealer does not adequately repair the RV, the Owner must provide written NOTICE by contacting Forest River IN WRITING at Post Office Box 3030, Elkhart, Indiana 46515-3030 and advise it of any Substantial Defect(s), including a list of the Substantial Defect(s), and provide Forest River (and not the authorized dealer) an opportunity to repair the RV. Forest River may require the Owner to deliver the RV to another authorized Forest River dealer or its factory facilities. Forest River, at its sole option, may cover the reasonable costs of transporting the RV to its factory. Refusal to allow Forest River an opportunity to repair the RV will void warranty coverage for the identified Substantial Defect(s).

EXHAUSTION OF REMEDY AND LEGAL ACTION: OWNER MUST PROVIDE WRITTEN NOTICE AS DESCRIBED ABOVE AND PERMIT FOREST RIVER THE OPPORTUNITY TO REPAIR THE RV BEFORE OWNER MAY INITIATE ANY ACTION TO SEEK LEGAL OR EQUITABLE REMEDIES FOR BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTIES.

PRIOR MODEL YEAR REMEDY

If at the time of purchase by the first retail purchaser, the RV is not the current or prior model year, the Limited Warranty ends ninety (90) days after the date of purchase of the RV. The ninety (90) day warranty is subject to the same terms, conditions, and limitations of the Limited Warranty, excluding the applicable Limited Warranty Period. **ANY ACTION FOR BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY OR REVOCATION OF ACCEPTANCE OR ANY ACTION TO ENFORCE ANY PORTION OF THIS LIMITED WARRANTY MUST BE COMMENCED WITHIN THREE (3) MONTHS OF THE EXPIRATION OF THE NINETY (90) DAY WARRANTY PERIOD.**

SOME STATES DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES OR THE STATUTE OF LIMITATIONS SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

OWNER'S RESPONSIBILITIES AND MAINTENANCE

MAINTENANCE: This RV and its component parts will require routine maintenance, service, cleaning, and care. Information regarding recommended and/or required routine maintenance can be found in the Owner's Manual. You, as the individual owner of the RV, are responsible for ensuring all recommended and/or required routine maintenance is performed timely and correctly. Maintenance services are excluded from this Limited Warranty.

Warranty Registration: Owner shall complete and return a warranty registration form at time of purchase. The return of this registration is a condition precedent to warranty coverage and failure to return the completed warranty registration will invalidate the Limited Warranties.

PARTS AND DESIGN CHANGES

Forest River reserves the right to change the parts and design of its recreational vehicles from time to time without notice and with no obligation to maintain spare parts or make corresponding changes in products previously manufactured by Forest River.

WARRANTY REPAIRS AND ACCEPTANCE OF TERMS

When you request and accept the performance of warranty repairs under the terms of this Limited Warranty, you are accepting all terms of this Limited Warranty, including but not limited to, warranty limitations and disclaimers, the forum selection clause, and the clause reducing the time period when a lawsuit must be filed for any breach of warranty.

EXCLUSIONS FROM COVERAGE

The Limited Warranty Does Not Apply To:

- ❖ Any use of the RV for purposes other than short term recreational camping. Such unauthorized use includes, but is not limited to, use for commercial, business, rental, or disaster relief purposes. Registration of the RV in the name of any business entity shall be considered conclusive evidence of commercial and/or business use.
- ❖ Recreational vehicles registered, licensed, or predominantly used outside the United States or Canada.
- ❖ Recreational vehicles purchased through an auction, wholesale, or from a dealer or party that is not an authorized dealer of Forest River.
- ❖ Equipment, component parts, or accessories that are working as designed, but with which you are unhappy.
- ❖ Owner Maintenance, including but not limited to, maintaining or resealing exterior seals, tightening screws, latches, locks, maintaining air filters, bulbs, caulking and re-caulking, or any other items identified in Owner's Manual as "care and maintenance."
- ❖ Damage or loss related to water leaks due to failure to properly maintain or care for the RV, such as failure to properly maintain exterior seals.
- ❖ Items that are added, installed, or changed after the RV leaves the possession of Forest River.
- ❖ Damage or loss to the RV caused by neglect, misuse, abuse, improper operation, theft, vandalism, improper balancing or overloading, accidents involving the RV, product modification, unprotected electrical hookups, failure to provide routine maintenance, unauthorized modifications, structural attachments, or repairs.
- ❖ Damage or loss caused by normal use or wear, including discoloration or fading of exterior designs, discoloration or fading of fabrics, tearing, or deterioration caused by prolonged exposure to natural elements.
- ❖ Injury, damage or loss caused by improper ventilation, interior or exterior condensation, mold, mildew, or fungi.
- ❖ The chassis including without limitation, any mechanical parts or systems of the chassis, frame, axles, tires, tubes, batteries, gauges, or optional generators.
- ❖ Damage or loss caused by infestation of insects or animals.
- ❖ Damage or loss caused by factors not attributable to Forest River such as road hazards, off road use, rocks, tire wear, tire failure, glass breakage, exposure to fumes emitted by other vehicles, corrosion or rust due to the environment, salt, corrosive chemicals, air pollutants, or condensation.
- ❖ Any appliance, component, system or part of the RV that is covered by another limited warranty. These items include, but are not limited to, roof air conditioners, microwave, refrigerator, oven, stove, CD player, television, DVD player, stereo, speakers, washer, dryer, water heater, camera or furnace. Forest River will administer certain separate appliance and component warranties only during the one-year Limited Warranty period provided by Forest River. Please contact an authorized Forest River dealer for information on non-Forest River warranties. The terms of this Limited Warranty are not altered in any way by Forest River administering the separate appliance and component warranties.
- ❖ Adjustments to interior doors, latches, drawers, window treatments, awnings, tubes and locks beyond ninety (90) days after sale to first retail purchaser.
- ❖ Damages to the fiberglass caps such as rock chips, fading, impact, scratches or failure to maintain all as described herein and set out in the Owner's Manual.
- ❖ Damage or loss caused by the willful or negligent acts of any 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 by tow vehicle, 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 RV or tow vehicle.

LEGAL REMEDIES

THIS LIMITED WARRANTY SHALL BE INTERPRETED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF INDIANA.

EXHAUSTION OF REMEDY AND LEGAL ACTION: THE WRITTEN NOTICE AND REPAIR REMEDY DESCRIBED ABOVE MUST BE COMPLETED PRIOR TO INITIATING ANY ACTION TO SEEK LEGAL OR EQUITABLE REMEDIES FOR BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTIES.

ANY ACTION FOR BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY OR REVOCATION OF ACCEPTANCE OR ANY ACTION TO ENFORCE ANY PORTION OF THIS LIMITED WARRANTY MUST BE COMMENCED WITHIN NINETY (90) DAYS OF THE EXPIRATION OF THE WARRANTY PERIOD. SOME STATES DO NOT PERMIT REDUCTION OF THE STATUTE OF LIMITATIONS, SO THE LIMITATION MAY NOT APPLY TO YOU.

EXCLUSIVE JURISDICTION FOR DECIDING LEGAL DISPUTES RELATING TO THIS LIMITED WARRANTY, AN ALLEGED BREACH OF WARRANTY, BREACH OF IMPLIED WARRANTIES, OR REPRESENTATIONS OF ANY KIND MUST BE FILED IN THE COURTS WITHIN THE STATE OF INDIANA.

ANY AND ALL CLAIMS OR CAUSES OF ACTION ARISING OUT OF OR RELATING TO THIS LIMITED WARRANTY OR IMPLIED WARRANTY SHALL BE GOVERNED BY THE LAWS OF THE STATE OF INDIANA, WHETHER SUCH CLAIMS SOUND IN CONTRACT, TORT, OR STATUTE (INCLUDING THE STATUTE OF LIMITATIONS), WITHOUT GIVING EFFECT TO ANY CONFLICT OF LAW RULE THAT WOULD RESULT IN THE APPLICATION OF THE LAWS OF A DIFFERENT JURISDICTION.

Note: Any authorization or performance of repairs, attempt to resolve a complaint, or request for warranty service shall not constitute a waiver of Forest River's rights and shall not extend the warranty coverage period or when you must commence an action to enforce any breach of warranty claim, unless prohibited by state law.

THE ABOVE LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE AND PROVINCE TO PROVINCE.

(A) Welcome Letter



Welcome Home!

Thank you for selecting a Forest River recreational vehicle and welcome to the lifestyle that gives you the freedom to travel and enjoy camping fun whenever you wish.

Your Forest River RV complies with the requirements set forth by the Recreational Vehicle Institute Association, as well as various other federal and state agencies.

Items of quality, such as this recreational vehicle, respond best to considerate treatment and care. Therefore, before using it, we suggest that you review the entire contents of this manual. The material within has been prepared in sufficient detail to be of maximum assistance and the illustrations will be of considerable help when you are getting to know your new camper.

Review this manual with your dealer. They should be able to answer any questions you may have. Read all the literature supplied with your new RV, including all warranty and warranty registration information. Remember to validate the warranties by completing and mailing the individual warranty cards for each of the respective manufacturers.

Be sure your dealer has completed and returned your Forest River Warranty Registration Form.

Keep this Owner's Manual with the camper for easy reference, observing and following all instructions and warnings associated with its use. Remember that accidents are usually caused by failure to observe simple and fundamental safety rules or precautions. Accidents can be prevented by recognizing the cause of the accidents and by avoiding the action, or inaction, that may lead to an accident. A careful owner is the best insurance against an accident. You can also access this information by visiting www.forestriverinc.com and selecting the appropriate prompts or by downloading the mobile phone app at the Apple APP Store or Google Play for Android.

Your Forest River RV underwent a thorough inspection before it was shipped to the dealer. However, to ensure your complete satisfaction, the dealer will perform an inspection of various components and the operating system of your camper before you take delivery. Take time to walk through this inspection with your dealer. A walk around with your dealer will help you become more familiar with your new RV and its components, while providing you with the assurance that everything is in proper working order. If you are not familiar with towing a recreational vehicle, schedule a test drive with your dealer. Ask any questions you may have at this time.

Your Forest River recreational vehicle was designed for personal short-term and recreational use. It was not designed to be used as a permanent dwelling.

Should a problem develop for which you need assistance, contact your Forest River Inc. dealer. If you are experiencing an appliance problem, check the appliance manufacturers' information for details regarding warranty work and/or for the location of an appliance service center.

If you experience a problem with your RV when traveling, and your camper is under warranty, and you cannot locate an authorized service center, contact your Forest River Inc. dealer BEFORE having repairs performed at an independent service center. Your dealer can advise you about what is covered under the terms of your warranty. If a warranty part requires replacement, return the part, along with your invoice, to your local dealer. Doing so enables your dealer to note what has occurred and ensures that you are properly reimbursed for your expenditures. Modifications made to the RV without written authorization from the Forest River Inc. Warranty or Service Department can result in reduction or loss of warranty coverage. Please be sure to contact your dealer before making such changes.

Some products described or displayed in this manual may be optional equipment, and not included with your RV. Any special equipment, modifications, or additions made by, or at the request of, the customer, or any subsequent owner, whether made at the factory or in the field, are not covered in this manual. We reserve the right to change the construction, or material, of any part, at any time, without incurring the obligation to install such changes on previously manufactured recreational vehicles.

This Owner's Manual was current at the time of printing; however, products are continually being upgraded and improved; therefore, some differences may occur between the description in this manual and the product(s) in your camper. If differences do occur, follow the component manufacturer's instructions provided with your Forest River Inc. Owner's literature packet.

We wish you many happy and adventurous days as you make great memories with your new Forest River Inc. recreational vehicle.

Travel Safely and...GO RV'ing!

(B) Component Manufacturer's Warranty

COMPONENT MANUFACTURER'S WARRANTY

A component manufacturer is one who produces a product which is used in the production of your RV.

The following list of components has been compiled to help you know which products installed on your recreational vehicle may have their own warranties. If you have any of these components on your RV, be sure to check the manufacturer's literature supplied with your RV Owner's Packet to confirm whether they require you to register your purchase with them to validate their warranty. These warranties usually apply only to the first owner of the recreational vehicle. We recommend that you send the various warranty registration cards immediately before any time constraints on registration expire.

Manufacturer's literature is supplied by each individual company according to the specific items used in the production of your RV. This information is part of the Owner's Packet you received with your RV. Only those products which are used on your RV will be included in this packet. Inspect this literature with your dealer during the pre-delivery inspection and report any literature shortage to the dealer at that time. Your RV might include the following Manufacturer's literature:

APPLIANCES

- Range, Range Hood and Cooktop
- Water Heater
- Microwave/Convection Oven
- Coffee Maker
- Refrigerator
- Ice Maker
- Roof Air Conditioner
- Heater
- Furnace
- Radio
- TV/VCR/CD/DVD
- Backup Camera
- GPS

WATER & DRAINAGE

- Water Pump
- Purifier
- Faucet
- Toilet
- Holding Tank
- Propane Tank
- Regulator

ELECTRICAL

- 120VAC/12VDC Converter
- Inverter
- Generator

MISCELLANEOUS

- Fire Extinguisher
- CO Detector
- Smoke Detector
- Propane Detector
- Slide Rooms
- Leveling/Stabilizing Systems

MODIFICATIONS

Modifications to your RV, without written authorization from Forest River Inc., could result in reduction or loss of warranty coverage. Contact your dealer before making such changes.

(C) Taking Delivery of Your New RV

DEALER'S RESPONSIBILITIES

The selling dealership is responsible for inspecting both factory and dealer installed components for proper operation. This is known as the pre-delivery inspection (PDI) and systems check. The dealer is responsible to deliver your new RV to you in the best condition possible.

Your dealer will complete the Forest River Customer Delivery & Warranty Registration Form as part of your new RV delivery. If you do not have a copy in your Owner's Packet, request a copy for your records. It is an important part of the history of your RV. Please review the completed form carefully to ensure complete understanding of all the components on your RV and their function.

NOTICE

Forest River Inc. wants you to have the best possible adventure with your new RV. To get the most enjoyment out of your new RV and to ensure you fully understand how your new recreational vehicle operates, please address immediately any questions or concerns you may have regarding your RV with your dealer before leaving the dealership or prior to your first camping trip.

CUSTOMER DELIVERY & WARRANTY REGISTRATION FORM (SAMPLE)



FOREST RIVER, INC.
CUSTOMER DELIVERY AND WARRANTY REGISTRATION FORM **MOTORIZED** **12345**
DEALER TO ASSURE THAT THIS FORM IS PROPERLY COMPLETED & RETURNED TO FOREST RIVER, INC. WITHIN 100 WORKING DAYS AFTER PDI IS PERFORMED. (SEE BACK OF FORM FOR CORRECT MAILING ADDRESS)

OWNERS NAME:		E-MAIL ADDRESS:		OWNERS NAME:		CHASSIS VIN #	
ADDRESS: Street:	City:	State:	Zip:	ADDRESS: Street:	City:	State:	Zip:
DEL DATE:	PHONE #:	FOREST RIVER INC, SERIAL # (LAST 7 DIGITS)		ODOMETER READING	BRAND:	MODEL #:	

PLEASE MARK EACH ITEM OK OR NA (NOT APPLICABLE)

ELECTRICAL SYSTEM	APPLIANCES (cont.)	EXTERIOR
<input type="checkbox"/> 120 VOLT SYSTEM/CIRCUITS, BREAKERS, OPERATION	<input type="checkbox"/> AIR CONDITIONER & THERMOSTAT	<input type="checkbox"/> ENT. DOOR(S)/COMPT. DOORS/LOCKS-ALL KEYS
<input type="checkbox"/> 120 VOLT AUXILIARY GENERATOR OPERATION	<input type="checkbox"/> MICROWAVE	<input type="checkbox"/> ENTRANCE STEPS/ LEVEL SECURE TO FRAME/ALIGNED
<input type="checkbox"/> 12 VOLT CONVERTER CIRCUITS, FUSES, OPERATION	<input type="checkbox"/> WASHER/ DRYER	<input type="checkbox"/> PAINT GRAPHICS, SIDING IN GOOD CONDITION
<input type="checkbox"/> GROUND FAULT CIRCUIT INTERRUPTOR (GFCI)	<input type="checkbox"/> CENTRAL VACUUM	<input type="checkbox"/> TRIM/SEALANTS, WINDOWS, ROOF, BODY
<input type="checkbox"/> ALL INTERIOR LIGHTS, RECEP.TS, SWITCHES	LP GAS SYSTEM	<input type="checkbox"/> AWNING DEMONSTRATED/CANVAS CHECKED
<input type="checkbox"/> ALL EXTERIOR LIGHTS, RECEP.TS, SWITCHES	<input type="checkbox"/> LOCATION OF LP LINES, CONNECTIONS SECURE	<input type="checkbox"/> STABILIZER JACKS DEMONSTRATED
<input type="checkbox"/> BATTERY SYSTEM	<input type="checkbox"/> OPERATION OF REGULATOR	<input type="checkbox"/> EXTERIOR MAINTENANCE PROCEDURES EXPLAINED
<input type="checkbox"/> MONITOR PANEL OPERATION	<input type="checkbox"/> EXTERIOR GRILL USE, OPERATION DEMONSTRATED	SLIDE OUT(S) (IF APPLICABLE)
<input type="checkbox"/> PHONE CABLE/SATELLITE FUNCTIONS	<input type="checkbox"/> LP BOTTLES FILLED AND IN GOOD CONDITION	<input type="checkbox"/> OPERATION & MANUAL OVERRIDE DEMONSTRATED
<input type="checkbox"/> AUDIO/VIDEO ENTERTAINMENT SYSTEM FUNCTIONS	WATER PLUMBING SYSTEM	<input type="checkbox"/> INTERIOR/EXTERIOR SEALS CHECKED
<input type="checkbox"/> PROPANE DETECTOR/ENTERTAINMENT SYSTEM FUNCTIONS	<input type="checkbox"/> TOILET & WATER IN/OUT DRAIN LOCATIONS	<input type="checkbox"/> HYDRAULIC OR ELECTRIC PUMP/LINES CHECKED
<input type="checkbox"/> SMOKE DETECTOR	<input type="checkbox"/> DEMAND PUMP DEMONSTRATED	<input type="checkbox"/> SLIDE OUT TOPPER(S) CANVAS/OPERATION CHECKED
<input type="checkbox"/> ALL INTERIOR FANS	<input type="checkbox"/> CITY WATER FILL CONNECTIONS	CHASSIS
<input type="checkbox"/> STABILIZER JACKS (IF ELECTRIC)	<input type="checkbox"/> FAUCETS/FIXTURES/INO. W/D WATER PRESSURE CHECKED	<input type="checkbox"/> CHECK ALL FLUID LEVELS
<input type="checkbox"/> SIREL CORD INSPECTION & OPERATION	<input type="checkbox"/> WINTERIZING PROCT. D.E.MONSTRATED	<input type="checkbox"/> TIRE CONDITION & PRESSURE SET @ _____ PSI (INCL. SPARE)
<input type="checkbox"/> INVERTOR OPERATION & FUNCTION	<input type="checkbox"/> EXTERIOR SHOWER DEMONSTRATED	<input type="checkbox"/> WHEEL LUG TORQUE SET PER MFG. INSTRUCTIONS
<input type="checkbox"/> DRIVER DASH CONTROLS & SWITCHES	<input type="checkbox"/> BLACK HOLDING TANK/GATE VALVE OPERATIONS	<input type="checkbox"/> HANDLING/TRANSMISSION/CRUISE/ETC.-ALL VERIFIED
<input type="checkbox"/> HYDRAULIC LEVELING JACKS FUNCTIONS	<input type="checkbox"/> GREY HOLDING TANK/CREDIT VALVE OPERATIONS	GENERAL
<input type="checkbox"/> BACKUP CAMERA & MONITOR	<input type="checkbox"/> FRESH WATER TANK FILL/DEMPTIED	<input type="checkbox"/> UNIT CLEANED
APPLIANCES	<input type="checkbox"/> TOILET OPERATION	<input type="checkbox"/> ALL ACCESSORIES (INCLUDING REMOTES) ARE IN UNIT
<input type="checkbox"/> FURNACE & THERMOSTAT	<input type="checkbox"/> BLACK TANK CLEANOUT DEMONSTRATED/EXPLAINED	<input type="checkbox"/> ALL WARRANTY FORMS ARE COMPLETED & REVIEWED
<input type="checkbox"/> RANGE/OVEN	<input type="checkbox"/> WATER FILTER OPERATION DEMONSTRATED	<input type="checkbox"/> ALL REQUIRED LITERATURE IS IN UNIT
<input type="checkbox"/> WATER HEATER	<input type="checkbox"/> ALL FITTINGS TIGHT/NO SYSTEM LEAKS	<input type="checkbox"/> ALL OWNERS MANUALS IN UNIT & REVIEWED
<input type="checkbox"/> REFRIGERATOR	<input type="checkbox"/> P-TRAPS/VENTS TIGHT/UNSHED	

LIST DEALER INSTALLED OPTIONS (THESE ARE NOT COVERED UNDER THE FOREST RIVER, INC. LIMITED WARRANTY)

OWNER/DEALER INSPECTION REVIEW

- EXTERIOR & INTERIOR FIT & FINISH
- OPERATED ALL APPLIANCES, OPTIONAL EQUIPMENT & ACCESSORIES (REVIEWED MAINTENANCE & SAFETY OF LP GAS SYSTEM)
- EXPLAINED WEIGHT RATINGS, LIMITATIONS & PROPER LOAD DISTRIBUTION, RUNNING GEAR/FARMS/CHASSIS MAINTENANCE
- OPERATED ALL FRESH WATER & PLUMBING COMPONENTS, INCLUDING PROPER WINTERIZATION & DRAIN LOCATIONS
- REVIEWED TOW VEHICLE GVWR, HITCH, SWAY CONTROL, SET-UP, BRAKE CONTROL & OFFERED A TEST DRIVE WITH MY VEHICLE
- COMPLETE REVIEW OF OWNERS MANUALS & HIGHLIGHT OF SAFETY ISSUES

I have completed the above inspections on this family recreation vehicle to my satisfaction and have been offered a test drive at the time of purchase. I understand that issues regarding damage such as scratches, tears, dents, broken items, etc. will not be warranted except those noted in this space:

I have had the opportunity to review the Forest River, Inc. Limited warranty during the purchase of this unit and I understand that this product is designed to be used for recreational camping and travel. I have been given the opportunity to make notations in the space provided above, have observed or received satisfactory explanations to all questions regarding the items listed during this delivery process.

DATE _____

PURCHASER'S SIGNATURE _____

DEALER'S SIGNATURE _____ F-0910

FOREST RIVER COPY SEND TO PLANT OF UNIT ORIGIN

A qualified dealer representative will perform a 'walk-through' demonstration which will provide you with important information regarding the operation of your RV's components. Be sure you fully understand the information given and the proper functioning of your RV to ensure you have the best camping experience possible. Your dealer will fully explain all the system functions and will supply component information for items used in the manufacture of your recreational vehicle.

Your dealer is required to perform a test drive with you. The test drive should provide a good understanding of how your new RV operates and proper safety requirements.

The Owner's Information Packet will be presented at delivery. This information should include all warranty cards, component information, operation and maintenance instructions relating to your new RV. All component warranty forms should be discussed and/or completed at this time. Your selling dealer should assist you in understanding any and all limited warranty provisions to help you avoid loss of warranty for any reason. Ask any questions you may have before leaving the dealership.

Your dealer should provide you with information concerning any need for service for your RV, whether in or out of their area. They should provide contact numbers for the dealership both during and after hours along with contact information for the correct Forest River division should you need to contact us.

CUSTOMER'S RESPONSIBILITIES

Regular and proper maintenance is an important responsibility of owning a recreational vehicle. As the owner, you are required to properly maintain your recreational vehicle. Be sure you have service performed in a timely manner; don't ignore a problem. It isn't always necessary to take your RV to a service center; sometimes a phone call to your Forest River dealer is all that is needed. The service technicians can advise you on appropriate resolutions.

Familiarize yourself with your RV. Observe all the component manufacturers' instructions regarding the use and service of their products. Complete and send in all the warranty cards. Doing so may help you avoid conditions arising from neglect that are not covered under warranty.

It's the responsibility of the owner to take the RV to an authorized Forest River dealer for warranty work. Failure to do so, may result in incomplete or no reimbursement for repairs.

The following is a list of suggestions to assist you in avoiding most warranty issues:

- Read your warranties and review them with your selling dealer. The dealer's obligation is to educate you regarding the proper and safe operation of your RV and all its components.
- Be sure to inspect the entire RV and note any service issues before leaving the dealership.
- Locate all paperwork and ask any questions you may have before leaving the dealership.

Use your new recreational vehicle responsibly. Your camper was not designed to be used as a permanent dwelling, but for short-term and recreational use. If you intend to use your RV as permanent housing, it could cause premature wear on your appliances, furnace, water systems, carpet, drapes, upholstery, bedding and interior surfaces. This premature wear caused by permanent residency may be considered abnormal or abusive use and could reduce or in some cases void your warranty coverage.

This recreational vehicle is designed solely for its intended purpose of recreational camping and personal use. Warrantor makes no warranty with regard to any recreational vehicle used for commercial, rental, or business purposes, or any

recreational vehicle not registered and regularly used in the United States or Canada. For purposes of this limited warranty, it shall be deemed conclusive evidence of commercial, rental, or business purposes if the recreational vehicle is licensed, titled, registered, or insured in the name of any corporation, LLC, or any other form of business or commercial entity.

MAKING A SERVICE APPOINTMENT

It is best to have your service work performed several weeks before you plan to use your RV. Your dealer may need time to get you on their schedule. Special order parts, which can take several weeks in some cases, may also be required to complete some service work.

When you call to schedule a service appointment with your Forest River dealer, have the following information available:

- RV Identification Number (17 letters and digits, sometimes referred to as a serial number).
- Type of RV (for example, 2018 Cherokee Travel Trailer).
- Date of purchase.
- Description of the problem.
- History or repairs and repair center location (where the repairs were performed).
- A calendar with your schedule noted for convenience in coordinating a service date that works for you and the repair center.

Many dealerships will prefer that customers making a service appointment do it via email. Email allows for easy and detailed documentation of your service requests including the ability to send helpful pictures. Pictures and documentation in advance allow the dealership's service advisor the ability to fully discuss your service concerns to expedite and better execute the service process.

ORGANIZE

Planning ahead and being prompt when having service are beneficial for all. When someone misses their appointment, or arrives late, it disrupts the service schedule for the entire day. Please be courteous and drop your RV off at the scheduled time and on the scheduled date. Have a list ready, be specific, and be reasonable with your expectations.

WAITING AT THE REPAIR FACILITY

For safety reasons, most insurance policies prohibit nonemployee personnel to be in the work area. If it is necessary for you to wait until the repairs are completed, most dealers provide you with a safe, comfortable customer lounge.

INSPECT THE WORK PERFORMED

Before leaving the dealership, inspect all service work and repairs thoroughly.

Notify the dealership service manager of any areas of concern immediately. If you discover an area of concern, or the problem re-occurs after leaving the dealership, contact the dealership immediately to report your dissatisfaction and schedule a return appointment.

OBTAINING WARRANTY SERVICE WHILE TRAVELING

Should you require warranty service of your RV while traveling, contact your selling dealer for assistance. To locate an authorized Forest River dealer while traveling, a dealer locator can be found at www.forestriverinc.com. A list of company contacts can also be found on our web site if you have additional questions.

NOTICE

If you have repairs performed by a non-Forest River repair center, you still must return the defective part to Forest River to be considered for reimbursement. Repairs and modifications to your RV, without written authorization from Forest River, could result in reduction or loss of warranty coverage.

(D) How To Contact Us

HOW TO CONTACT US

Thank you for purchasing a Forest River RV and placing your confidence in our Company. We understand your expectations of a trouble free and rewarding ownership experience and we are committed to standing behind our product while providing you with the service you expect and deserve.

Your local Forest River dealer should always be your first contact when you have a service/warranty question or concern. However, at Forest River, customer satisfaction is our #1 priority. Accordingly, we want to assure that your questions are answered and any issues you may have are resolved. If you have unresolved questions or concerns after contacting your local Forest River dealer, please contact the appropriate division below. We want to help!

COACHMEN RV

**P.O. Box 30
Middlebury, IN 46540
Phone: (800) 353-7383**

DYNAMAX

**2745 Northland Drive
Elkhart, IN 46514
Phone: (888) 295-7859**

EAST TO WEST RV

**3000 County Road 6 W
Elkhart, IN 46514
Phone: (574) 264-6664**

FOREST RIVER RV

**2602 College Ave.
Goshen, IN 46528
Phone: (574) 534-6521**

PALOMINO RV

**1047 E. Hwy M-86
Colon, MI 49040
Phone: (269) 432-3271**

PRIME TIME MANUFACTURING

**P.O. Box 3030
55470 CR 1
Elkhart, IN 46514
Phone: (574) 862-1025**

SHASTA RV

**105 14th Ave.
Middlebury, IN 46540
Phone: (574) 825-7178**

If, after contacting your Forest River division listed above, you are still not satisfied, please tell us via our owner relations service. Simply call 1-574-825-7000 or email at ownerrelations@forestriverinc.com.

(E) Emergency Roadside Assistance

EMERGENCY ROADSIDE ASSISTANCE

When you take delivery of your new Forest River, Inc. recreational vehicle, you are automatically registered with an emergency roadside assistance service provided by SafeRide Motor Club. The roadside assistance service will be free for one year from the date of purchase. This is a comprehensive emergency roadside service that is available to you 24/7, around the clock. Your SafeRide Motor Club roadside assistance service includes emergency roadside assistance services such as towing, winch-out, jump-starts, tire changes, technical support, and more. The membership covers you and your spouse or significant other when driving your RV or other vehicles owned by you, but it does not cover additional recreational vehicles. Learn more about the services and features of the SafeRide Motor Club roadside assistance service below. SafeRide Motor Club is an independent company not affiliated in any way with Forest River, Inc., and the terms and conditions of the SafeRide roadside assistance service can be obtained by contacting SafeRide Motor Club.

NOTICE

The SafeRide Motor Club roadside assistance service is designed to provide assistance to owners who are traveling and have an emergency while on the road. It is not intended, nor does it provide for mobile service to your residence or at a campground. NOTE: THE SAFERIDE MOTOR CLUB ROADSIDE ASSISTANCE PROGRAM DOES NOT CREATE ANY WARRANTY, EITHER EXPRESS OR IMPLIED. THE ONLY WARRANTY OFFERED BY FOREST RIVER, INC. IS SET FORTH IN THE WARRANTY SECTION OF THIS OWNER'S MANUAL.

TOWING

Towing disabled vehicles to the nearest qualified repair facility.

JUMP STARTS

Jump-starting vehicles' dead batteries or towing vehicles to qualified repair facilities.

TIRE ASSISTANCE

Changing flat tires using a mounted and inflated spare tire, delivering comparable tires to disablement sites, or towing vehicles to a tire facility. The cost of a delivered replacement tire, alignment, mount and dismount, and balancing is not covered.

Customers are responsible for all charges related to on-site repairs, including but not limited to parts and labor costs.

DELIVERY OF FUEL AND EMERGENCY FLUIDS

Delivering fuel, oil, and water, as necessary, to remedy disablements. **Customers are responsible for the cost of fluids.**

LOCKSMITH/LOCKOUT SERVICES

Providing locksmith services, opening locked vehicles, and/or obtaining replacement keys. **Customers are responsible for all charges related to on-site repairs, including but not limited to parts and labor costs.**

WINCH OUT

Winch Out for RVs that can be accessed from an established, maintained road, highway, thoroughfare, or street.

MOBILE TIRE SERVICE

In the event of a tire-related breakdown, a mobile tire service company will be dispatched to mount a like tire to the customer's vehicle. Mobile tire service is not available in all areas. Towing to the nearest qualified repair facility will be provided if mobile tire service is not available. **Customers are responsible for all charges related to on-site repairs, including but not limited to parts and labor costs.**

TECHNICAL SUPPORT

Features 24/7 technical assistance from our staff of RVIA/RVDA and ASE Certified Technicians, who speak directly with customers to troubleshoot operational issues. Should you need emergency roadside assistance, our vast network of providers offers a wide range of services to handle their unique RV.

RV MOBILE MECHANIC

Dispatching of a mechanic to the site of mechanically disabled vehicles. **Customers are responsible for all charges related to on-site repairs, including but not limited to parts and labor costs.**

NOTICE

The Forest River Roadside Assistance membership provides for dispatch of a mobile mechanic to a disabled vehicle. It does NOT provide for any charges that might be incurred for on-site parts or repairs.

DEALER LOCATOR SERVICES

Assisting customers to the closest qualified service facility when they're in unfamiliar territory.

HOW TO CONTACT EMERGENCY ROADSIDE SERVICES

Please call the following number for emergency roadside assistance:
Phone: (866) 209-2895

VALID FOR 1 YEAR FROM DATE OF PURCHASE.

(F) Label and Vehicle Identification

LABELS

Listed below are symbols and descriptions you will find throughout this manual and applied to your recreational vehicle. They are used to alert you to possibly dangerous or hazardous situations. When you see these symbols, please read them carefully and follow the instructions to help prevent damage to your recreational vehicle and for your personal safety.

⚠ DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury. This sign is commonly RED.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury. This sign is commonly ORANGE.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in vehicle damage or minor to moderate injury. This sign is commonly YELLOW.

Listed below are symbols and descriptions you will find throughout this manual. They are used to alert you to information not related to personal injury. Various best practices, maintenance suggestions, troubleshooting tips, and FAQs will utilize these symbols.

NOTICE

Indicates information that does not represent a hazardous situation.

BASIC TROUBLESHOOTING TIPS

Indicates information to potentially identify, trace and correct faults with the RV's equipment and/or function.

SUPPLIER FAQs

Indicates a hyperlink or address is provided to access a Component Manufacturer's FAQ web page.

VEHICLE ID DECALS AND PLATES

The recreational VIN (vehicle identification number) label is mounted on the front lower roadside corner of the RV.

Always give model, year, and the last 8 digits of the chassis VIN when scheduling service or ordering parts. The serial number is a combination of 17 letters and digits. We recommend keeping a copy of that information in a safe place, separate from the recreational vehicle. In the event of theft or vandalism, you may be required to supply a copy of this information to the authorities.

A vehicle data card is also supplied with your coach, listing manufacturer, model, and serial number information for major factory-installed appliances and accessories. A separate copy of this information could be useful to you in the event of theft, vandalism, disaster, or when certain service functions may require it.

Decals and data plates placed throughout the recreational vehicle aid in its safe and efficient operation; others give service instructions. Read all decals, data, and instruction plates before operating your recreational vehicle. If any decal, data, or instruction plate has been removed, is damaged or painted over, it should be replaced.

(G) Reporting Safety Defects

REPORTING SAFETY DEFECTS

THE FOLLOWING IS ADDED AS A REQUIREMENT OF THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA).

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

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

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to: Administrator, NHTSA, 400 Seventh Street SW, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

THE FOLLOWING IS ADDED AS A REQUIREMENT OF THE CANADA DEPARTMENT OF TRANSPORT.

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the Canada Department of Transport in addition to notifying Forest River Inc.

To contact Department of Transport, you may call 1-800-333-0510 (in Canada); go to <https://www.tc.gc.ca/recalls>; or write to Transport Canada - ASFAD, 330 Sparks Street, Ottawa, ON K1A0N5.

Adresse postale: Transports Canada - ASFAD, 330 rue Sparks, Ottawa (Ontario) K1A0N5; telephone 819-994-3328 (dans la région de Ottawa-Gatineau et à l'extérieur du pays) Sans frais: 1-800-333-0510 (au Canada); Internet <https://www.tc.gc.ca/rappels>.

(A) Tires

TIRE SAFETY

Before using your RV, you should inspect all the tires for proper inflation, uneven wear on the tread, cracks, foreign objects, or other signs of wear or damage. If excessive or irregular tread wear, under-inflation or damage like scrapes, bulges, cracks, punctures, foreign objects embedded in the tire are present or if you are experiencing continuous pressure loss, the tire should be dismantled and inspected by a trained tire technician.

Regularly inspecting and replacing your tires can help prevent tire failure. Use the following information to make tire safety a regular part of your vehicle maintenance routine.

Tires deteriorate over time even if they are not used or driven on. This deterioration can cause tires to fail even when there is no visible sign of damage. Lack of use, overloading, and underinflation can cause tires to deteriorate faster. While there is no hard and fast rule or expiration date on tires, most experts recommend replacing tires every 4 to 6 years depending on use and climate.

NOTICE

Properly maintained tires improve steering, stopping, traction, and load-carrying capability of your vehicle. Under-inflated tires and overloaded vehicles are major causes of tire failure. Therefore, to avoid flat tires and other types of tire failures, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards and regularly inspect your tires manually. Do NOT rely solely on TPMS or other tire monitoring systems. Don't forget to inspect your spare tire while conducting routine tire safety inspections.

TIRE SAFETY TIPS

- Make sure all of the lug nuts are secure. Use a torque wrench. Do not guess! It is important to maintain proper wheel nut torque to provide safe and secure attachment of the wheel to the hub/drum.
- Slow down if you have to go over a pothole or other object in the road.
- Do NOT run over foreign objects in the roadway and avoid striking the curb when parking.
- Check tire pressure before each trip including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.

- Remove bits of glass and any other foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Do NOT overload your vehicle. Check the tire information placard for the maximum recommended load for the vehicle.
- If you are towing a trailer, remember that some of the weight of the loaded trailer is transferred to the towing vehicle.
- Do NOT drive on a flat or severely under-inflated tire. Driving on a flat tire for even a short distance can ruin the tire even if there is no visible damage.
- Using tire covers when your RV is stationary and properly maintaining your tires can help slow tire deterioration and prevent tire failure.
- ONLY use tire cleaners and protectants that are approved by the tire manufacturer. Many products marketed as tire cleaners or dressing/protectants are actually harmful to tire compounds.

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.

Vehicle manufacturers determine this number based on the vehicle's design load limit, which is the greatest amount of weight a vehicle can safely carry, and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the 'recommended cold inflation pressure'. Tire pressure should always be measured when the tire is cold to get an accurate measurement. A cold tire is one that hasn't been driven on for at least three (3) hours. As you drive, your tires get warmer, causing the air pressure within the tire to increase. Therefore, you cannot get an accurate measurement of tire pressure unless the tire is cold.

The tire information and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size.
- Recommended tire inflation pressure.
- Gross Vehicle Weight Rating (GVWR – the maximum occupant and cargo weight a vehicle is designed to carry.)
- Front and rear gross axle weight ratings (GAWR - the maximum permissible weight, including cargo, fluids, optional equipment and accessories that can be safely supported by each axle.)

CHECKING TIRE PRESSURE

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the 'maximum permissible inflation pressure' on the sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions and for carrying the maximum weight limit of tire capacity.

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

- Most tires naturally lose air pressure over time.
- Tires can lose air suddenly if you drive over a pothole or strike the curb when parking.
- With radial tires, it is usually not possible to determine under-inflation by visual inspection. For your convenience, purchase a tire pressure gauge to keep in your vehicle.

TIRE PRESSURE MONITORING SYSTEM (TPMS)

Your RV may be equipped with a Tire Pressure Monitoring Systems (TPMS).

These systems are valuable in warning you about problems affecting tire inflation, particularly while the RV is in motion. It is important to understand how these systems work in order to protect yourself, your family, and your investment.

TPMS activates a warning light when the pressure in one or more tire falls below a certain limit. The warning light must be activated when tire pressure falls below 25% of the manufacturer's recommended tire pressure.

Some important points to keep in mind:

- TPMS can only measure air pressure and possibly temperature. It does not tell you the condition of the tires.
- It's imperative that you inspect your tires and ensure they are properly inflated regularly and before each use. Don't forget the spare!
- Look for signs of uneven wear on the tread, cracks, foreign objects, or other signs of wear or damage. If excessive or irregular tread wear, under-inflation or damage like scrapes, bulges, cracks, punctures, foreign objects embedded in the tire are present or if you are experiencing continuous pressure loss, the tire should be dismantled and inspected by a trained tire technician.
- Have ALL the tires on your RV inspected if one or more is damaged.
- Do NOT rely solely on a TPMS to monitor your tires.

NOTICE

In cases of TPMS failure, the TPMS warning light may not activate and a tire may be significantly under-inflated without warning. This can lead to premature tire wear or failure of the tire. Therefore, you should NEVER rely solely on a TPMS to tell you when your tires need service or replacement.

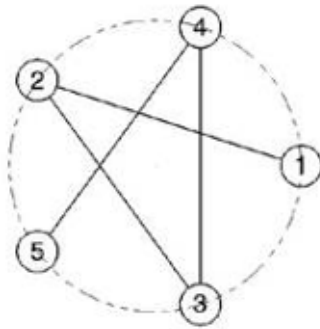
WHEEL NUT TORQUE

Ensuring wheel mounting nuts (lug nuts) on the wheels are tight and properly torqued is critical for safe recreational vehicle travel. Inadequate wheel nut torque is a major reason that wheel nuts loosen or fail in service. Loose wheel nuts can rapidly lead to a wheel separation with potentially serious safety consequences.

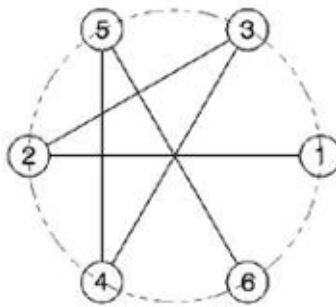
Always refer to the wheel manufacturer's information for proper wheel nut torque and tightening sequence. But, when installing a wheel, industry standards dictate that you:

1. Remove contaminants from mating areas of parts to be assembled.
Excessive rust, paint runs or drips and debris should be completely eliminated.
2. If your RV is equipped with an ornamental center cap that requires installation before wheel is secured to the hub, ensure the cap does not interfere with the flush fit of the wheel to the hub.
3. If specified by the chassis or wheel manufacturer, apply stud lubrication in the areas specified.
4. Place the wheel assembly on the axle hub in such a way that flush contact is made between the wheel and the hub surface.
5. Start all wheel nuts by hand to prevent cross threading.
6. Drive wheel nuts down to the specified torque in a "star" pattern (see Figure T1 below), gradually increasing torque on each lug as the pattern is repeated around the bolt circle. Start at 1 and go to 2, then 3 and 4, etc. Wheel nut torque requirements vary depending on the size and manufacturer of the wheel.
7. If this information differs from the chassis or wheel manufacturer's information, use the wheel manufacturer's recommendation.
8. Verify wheel nut torque at the conclusion of the tightening process using a calibrated torque wrench or equivalent on each wheel nut.

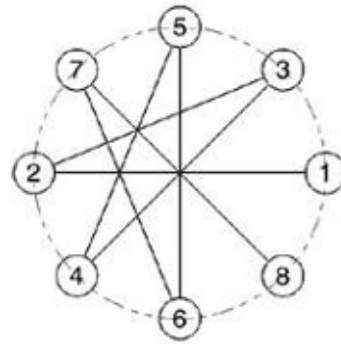
WHEEL LUG NUT TIGHTENING SEQUENCE (T1)



5 LUG BOLT
PATTERN



6 LUG BOLT
PATTERN



8 LUG BOLT
PATTERN

Forest River strongly encourages you to have a qualified service technician perform tire work. If you have to change a tire or perform tire work, use extreme caution and carefully follow the chassis manufacturer's instructions on proper procedures and jack placement which can be found in the chassis owner's manual.

NOTICE

NEVER exceed the wheel manufacturer's recommendations for proper wheel nut torque.

NOTICE

ALWAYS use the wheel manufacturer's recommendation but do not exceed 120 ft./lbs. on 1/2" studs or 140 ft./lbs. on 9/16" studs. Unless otherwise specified by the wheel manufacturer, use a final torque of 90-120 ft./lbs. on 1/2" studs.

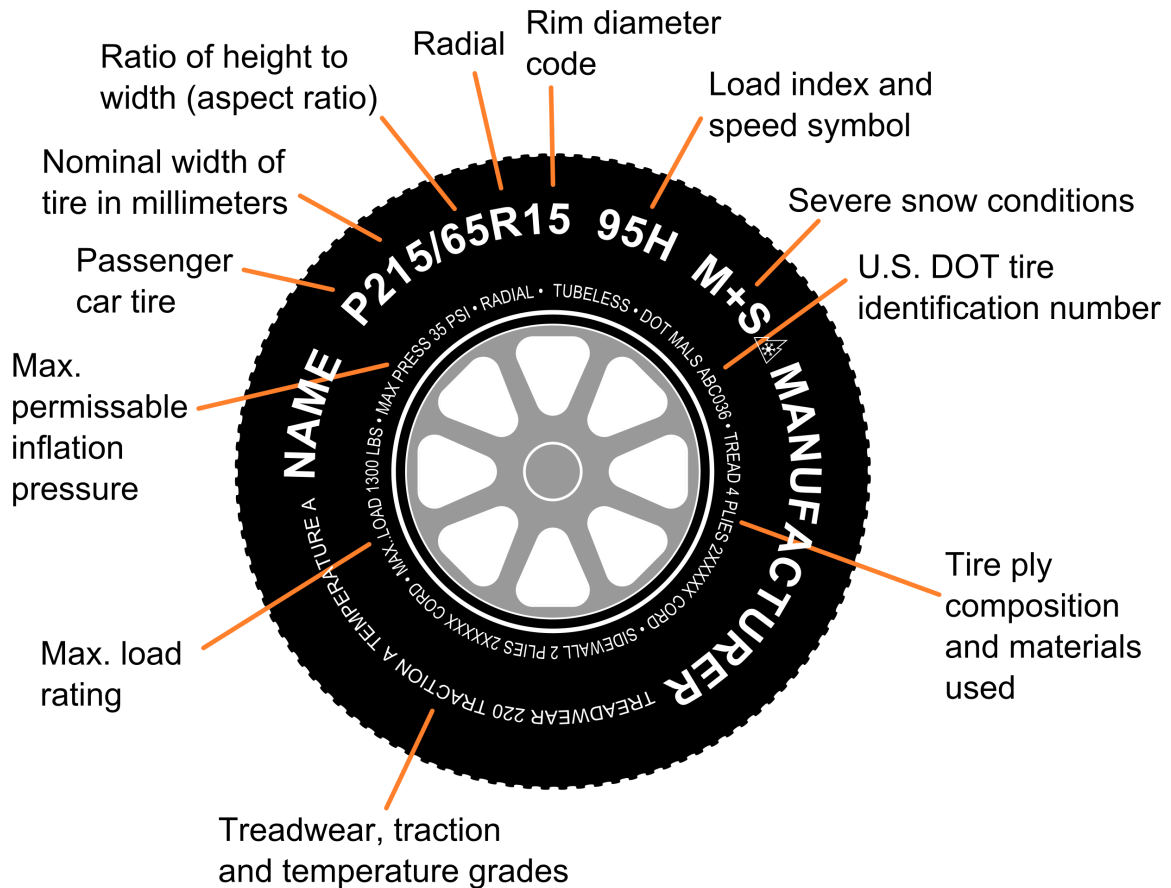
▲ WARNING

Be sure to use wheel nuts that meet the wheel manufacturer's requirements/specifications as outlined in the manufacturer's owner's manual. Improperly torqued wheel nuts can cause the wheel to separate from the wheel mounting surface during operation. This could result in property damage, serious personal injury or loss of life.

▲ WARNING

In the event of tire failure, do NOT attempt to change your tire. Please call a qualified service professional or roadside assistance. Refer to your Chassis owner's manual for proper jack placement in emergency.

TIRE FUNDAMENTALS



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.

P - Indicates the tire is for passenger vehicles.

NOTICE

Passenger car tires are NOT recommended for use on trailers, because the capacity ratings are not marked on the sidewalls of these tires. In the event a passenger car tire is used, the capacity must be de-rated by 10%.

Next (3 digit) Number - Gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

Next (2 digit) Number - Gives the tire's ratio of height to width (known as the aspect ratio). Numbers of 70 or lower indicate a short sidewall for improved

steering response and better overall handling on dry pavement.

R - 'R' stands for radial.

Next number - This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

Next number - This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. If you are unsure, contact a local tire dealer.

NOTICE

You may NOT find this information on all tires since it is not required by law.

M+S - 'M+S' or 'M/S' indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

Speed Rating – The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 65 miles per hour (mph) to 186 mph.

Letter Rating	Speed Rating
ST	65 MPH
Q	99 MPH
R	106 MPH
S	112 MPH
T	118 MPH
U	124 MPH
H	130 MPH
V	149 MPH
W	168 MPH
Y	18H MPH

NOTICE

You may NOT find this information on all tires since it is not required by law.

U.S. DOT Tire Identification Number - This number begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured and the last four numbers represent the week and year the tire was built. For example, the numbers 3197

mean the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

NOTICE

If it becomes necessary to replace a tire and you feel it is a warranty issue, most tire manufacturers require the D.O.T. number be cut out and returned to them with the warranty claim. Otherwise, the warranty could be voided.

Tire Ply Composition and Materials Used - The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

Maximum Load Rating - Load rating indicates the maximum load in kilograms and pounds that can be carried by the tire.

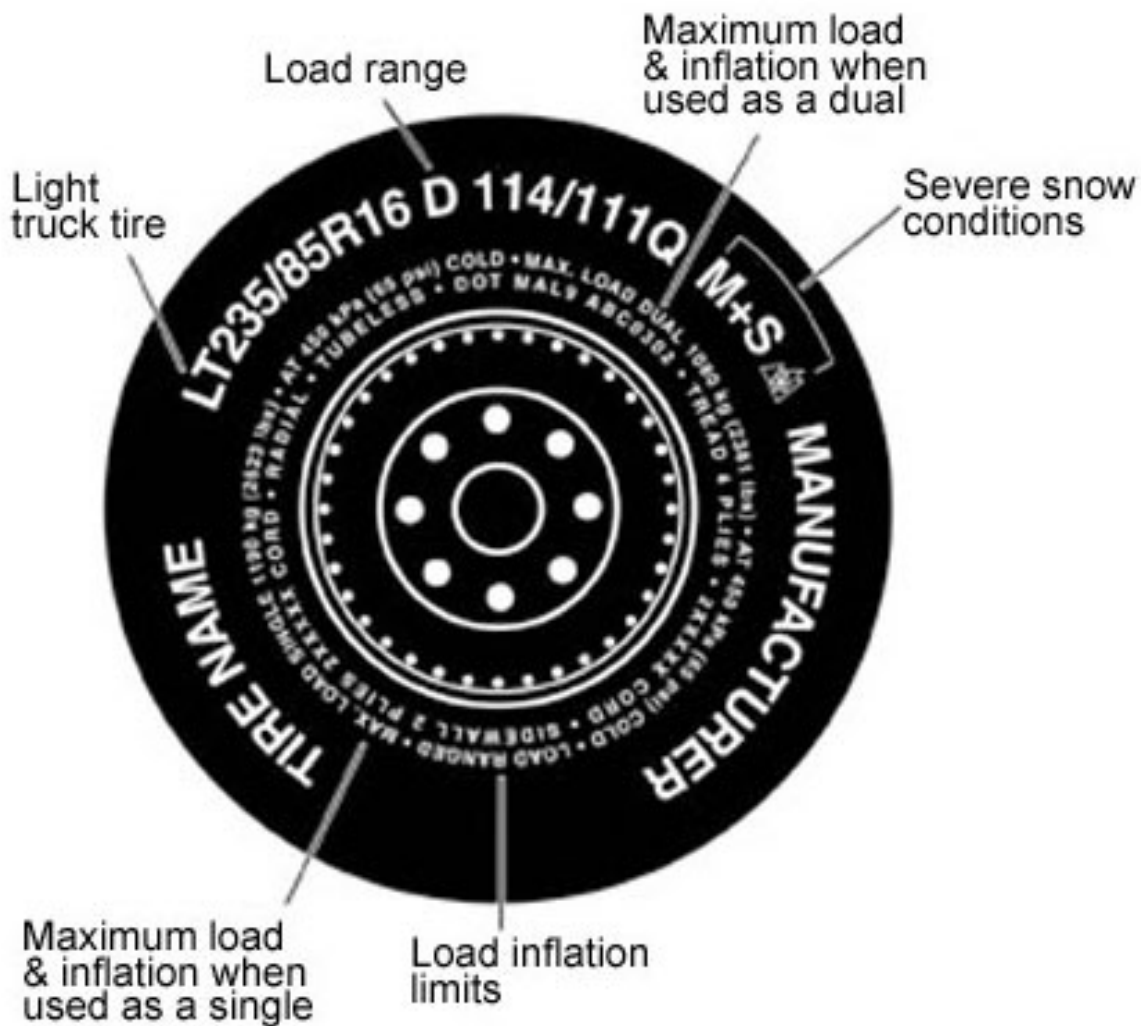
Maximum Permissible Inflation Pressure - This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

Treadwear Number - This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

Traction Letter - This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as 'AA', 'A', 'B', and 'C'.

Temperature Letter - This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, under inflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as 'A', 'B', or 'C' (see "Appendix A" for more information).

LIGHT TRUCK TIRES



LT- The “LT” indicates the tire is for light trucks or trailers.

ST – An “ST” is an indication the tire is for trailer use only.

Maximum Load Dual kg (lbs.) at kPa (psi) Cold – This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axles (a total of six or more tires on the vehicle).

Max. Load Single kg (lbs.) at kPa (psi) Cold - This information indicates the maximum load and tire pressure when the tire is used as a single.

Load Range - This information identifies the tire’s load-carrying capabilities and its inflation limits.

⚠ CAUTION

It is recommended that wheel bearings be inspected to axle manufacturer's specifications. Please refer to the axle manufacturer's owner's manual.

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 (GAWR). This is the maximum permissible weight, including cargo, fluids, optional equipment and accessories that can be safely supported by each axle. 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 trailer 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 830 pounds. If more cargo is being transported, water can be off-loaded 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.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire.

The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your trailer dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include weights for the following: axles, wheels, hitch or pin and total weight.

HOW OVERLOADING AFFECTS YOUR TRAILER AND TIRES

The results of overloading can have serious consequences for passengers' 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 the tire, its load range, and corresponding inflation pressure.

Excessive loads and/or under inflation cause tire over-loading, 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 trailers can be configured and loaded in many ways, air pressure 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.

Underinflated Tires Can Lead to Disaster



Avoiding This Is Quick And Easy



FIND YOUR PSI.

Your PSI is the **p**ounds per **s**quare **i**nch of air pressure that's right for your tires. The correct PSI for your tires is located on your **vehicle's** tire information label – not on the sidewall of your tire.

CHECK IT MONTHLY.

At least once a month, check your vehicle's tire pressure using an accurate pressure gauge.

Bottom line: you cannot tell if your tires are underinflated just by looking.



U.S. Department of Transportation
**National Highway Traffic Safety
Administration**



www.safercar.gov

(B) Propane Overview

PROPANE OVERVIEW

Propane is a colorless and odorless gas that, when under pressure, is in a liquefied state. If you smell propane in or around your RV, quickly and carefully perform the procedure listed on the safety labels affixed to your RV or listed below.

The propane gas system in your RV supplies fuel for the gas range/oven, water heater, furnace, and refrigerator (while in gas mode). When used and handled properly, this system is safe and economical and provides modern living conveniences wherever you travel.

Strictly adhere to all propane warnings printed on propane appliances and devices. Hand tighten the main propane gas system valves only, do not use a wrench or pliers as over tightening may damage the valve seals and cause them to leak.

The propane system is comprised of numerous components such as the propane tank, hoses, propane gas regulator, and piping and copper tubing lines to each appliance. As part of your normal maintenance routine (at least once a year), have a qualified propane service technician perform an inspection of your entire propane system, including a system pressure test.

When your RV is in storage, it's recommended that you turn OFF the gas supply to the unit.

MONITORING PROPANE LEVELS

The amount of propane remaining in the propane tank can be monitored by pressing the appropriate monitor buttons on the monitor panel or main multiplex system panel (if equipped).

REFILLING THE PROPANE CONTAINERS

Propane containers (also referred to as LP bottles) are used for the storage and delivery of propane gas. Propane containers are filled by weight, expressed in pounds. For filling, a qualified propane facility is required, and containers must be removed from the RV.

New propane containers are filled with an inert gas, which must be carefully purged before filling with propane.

PROPANE REGULATOR

The regulator reduces the pressure of the propane vapor from the pressure in the tank to the pressure required for use at the appliances. The regulator seldom requires service. Always protect it from the elements and extreme temperatures.

The regulator has been preset by the manufacturer and adjustment should not be necessary. However, if adjustment is required, do not attempt to adjust it yourself. Adjustment must be made with special equipment and by a qualified propane service technician. Have the regulator checked annually or sooner if you suspect a problem. The correct line pressure should be 6 to 8 oz., or 10 to 14 inches of water column.

A two-stage regulator performs the pressure reducing function as previously described. This is accomplished in two stages. Two regulators are used in the same body to reduce the pressure of the propane in the tanks for use by the appliances in the camper.

The high pressure regulator (first stage) is used to reduce the pressure to approximately 10 to 13 PSI (ounces per square inch) before sending it along to the low pressure regulator (second stage). The second stage regulator reduces the pressure further to 11 inches water column, or 6.35 PSI.

The two-stage regulator does not have to work as hard since the second stage receives consistent pressure rather than inlet pressure, which varies. The result is a safer and more efficient system and helps to eliminate problems such as freeze-up and pilot outages.

Because air is required for proper operation of the regulator, it is very important that the regulator vent be kept free of dirt and debris. For this reason, it is necessary to keep the vent facing downward and the regulator covered to protect it from contamination. A toothbrush can be used to clean the vent if it becomes clogged by foreign matter.

During cold weather, it's important to keep ice from forming in the regulator. Ice can prevent the flow of propane to your appliances. Have your propane supplier add anhydrous methanol when filling your tank for use during cold weather. Regulator freeze-up can occur in any weather if there is moisture in the tank or if the tank has been over-filled. Always use moisture-free propane. If moisture has

entered the tank, have the tank purged, or have anhydrous methanol added by an authorized propane supplier.

PROPANE SYSTEM HOSES AND FITTINGS

The propane hose provided with your camper is designed to withstand pressures far exceeding those of the propane system. However, sunlight and ozone contribute to the deterioration of the hose, creating the need for frequent inspection of the hose for wear.

The average life of a propane hose is approximately 2 to 3 years. Inspect the hose before each camping season and when having the tank filled. Look for signs of deterioration such as cracks or loss of flexibility. Protect the hose from the direct rays of the sun, if possible, to help slow down the aging process. When the hose is replaced, always replace it with a hose of the same type and rating (check with your dealer).

Fittings are used to connect the various hoses and system components to each other. The QCC1 Acme connection at the end of each propane supply hose is the fitting that you will be disconnecting when removing a tank for refilling. It is made of brass, and pipe sealants are not necessary to prevent leaking. It also has a left-handed thread, which means turn it clockwise to remove and counter-clockwise to tighten.

If leakage is observed at the QCC1 Acme connection and normal tightening of the fitting does not correct the problem, it will be necessary to replace the entire hose assembly.

The QCC1 Acme connection was designed to help restrict the flow of propane in the event of a regulator failure or hose malfunction. Due to the flow restricting device inside of the fitting, it can sometimes restrict the flow of fuel to the various appliances within the RV.

If it appears that propane flow to your appliances has been restricted, the following procedure should be used to help eliminate the problem:

1. Be sure all the appliances have been turned off (including pilot lights if applicable) and that there is no propane flowing into the system.
2. Be sure that the system is free of leaks .
3. Open the propane tank service valve slowly, (DO NOT SNAP IT OPEN). If opened too quickly, due to the sudden pressure fluctuation, the excess flow control valve may mistakenly sense that the system has been damaged and shut off the propane.

4. Wait for at least 15 seconds before lighting any pilot light or appliance.

Following this procedure should create a normal flow of propane by allowing the excess flow control to settle in slowly. On models equipped with optional double tanks and optional automatic changeover, both hoses from the individual propane tanks are connected by a tee, to the regulator. This tee contains a disc check valve that prevents the propane from escaping when an empty tank is disconnected to be refilled.

EXTERIOR PROPANE CONNECTION

Your camper may be equipped with an exterior propane connector. This connector allows for the attachment of a portable barbeque that can use the camper's propane. This connection is for a 'low-pressure' appliance. Regular portable BBQ's are not designed for low-pressure use. Some portable BBQ's can be converted to low- pressure by changing the propane valve to a low- pressure valve.

PROPANE WARNINGS

The following warnings are posted throughout your recreational vehicle to provide information on propane safety They have been installed not only because of the requirement to do so, but also as a constant reminder to occupants of the recreational vehicle to exercise proper caution when using or being around propane appliances and equipment. We are listing them here so you may study them and be sure that you and your family understand and follow them.

▲ 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 appliances. Gas flames consume oxygen, which should be replaced to ensure proper combustion. Improper use may result in death or serious injury.

▲ WARNING

When using this outdoor cooking area the vehicle must be level and stabilized. Do NOT violate manufacturers' instructions on required clearances for cooking appliances during use. Do NOT store cooking appliances until cool to the touch. Can lead to a fire and explosion and result in death or serious injury.

▲ WARNING

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.

⚠ WARNING

Do NOT place propane containers inside the vehicle. Propane containers are equipped with safety devices that relieve excess pressure by discharging propane to the atmosphere. Propane gas is highly flammable. Can lead to a fire or explosion and result in death or serious injury.

⚠ WARNING

This propane piping system is designed for use with propane only. Do NOT connect natural gas to this system. Securely cap inlet when not connected for use. After turning on propane, except after normal container replacement, test propane piping and connections to appliances for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine to test for leaks. May lead to a fire or explosion, which could result in death or serious injury.

⚠ WARNING

ALWAYS have an authorized propane supplier fill your propane tanks. When the propane container is being filled, Do NOT smoke, strike a match or ignite a lighter. A spark or flame could ignite fumes. Also, be sure all burner and pilot flames are extinguished and the supply valve is closed.

⚠ WARNING

If you detect a sulfur or 'rotten egg' odor, Do NOT turn on any appliances. Shut off all operating appliances. Extinguish any open flames, including cigarettes. Do NOT touch any electrical switches. Open windows and doors and exit the vehicle. Shut OFF the propane.

⚠ WARNING

To avoid possible problems, have your propane system checked at least once a year by an authorized service center and after each extended trip.

⚠ WARNING

NEVER test for a leak by lighting a match or having an open flame where you suspect a leak. Take to an authorized propane service center.

⚠ DANGER

NEVER use any other type of propane container than the one furnished with your RV. If the tank must be replaced, check with your dealer for specifications.

⚠ DANGER

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. Be sure the regulator cover is kept in place to minimize vent blockage that could result in excessive propane pressure, causing fire or explosion.

⚠ DANGER

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.

⚠ DANGER

Do NOT use gas cooking appliances for comfort heating. May lead to carbon monoxide poisoning, which can lead to death or serious injury.

⚠ DANGER

All pilot lights, appliances and their igniters (see operating instructions) shall be turned OFF before refueling of motor fuel tanks and /or propane containers. May cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury.

⚠ DANGER

Do NOT attempt to make repairs to the propane system or appliances except for simple maintenance and occasional tightening of a connection. ALWAYS take your vehicle to an authorized dealer for propane problems.

⚠ DANGER

Do NOT turn on the propane supply if you smell or suspect that there is a leak.

(C) Precautions and Equipment

SAFETY PLANNING

- ALWAYS have a plan of escape. Update and practice your escape plan every six months.
- Have a meeting and discuss the plan, showing everyone what to do including guests.
- Examine the escape window and be familiar with its operation.
- Do NOT waste time by picking up valuables or getting dressed. Sometimes seconds count!

⚠ WARNING

NEVER ignore alarms on safety devices. If the alarm sounds and you are not absolutely certain of the source, get everyone out of the recreational vehicle immediately.

⚠ WARNING

Smoke, propane and CO alarms may have an expiration date.

SMOKE ALARM

Your RV is equipped with a smoke alarm that is listed for use in recreational vehicles.

A smoke alarm works for only detecting smoke, not fire and the alarm will sound only if smoke reaches the sensor. Smoke alarms may not have time to alarm before the fire causes damage, injury or even death.

This unit will not alert hearing-impaired residents. (Special alarms with flashing strobe lights are needed for the hearing impaired.)

Smoke alarms have a limited life and are not foolproof. Never attempt to repair a smoke alarm; replace if faulty. Never disconnect the battery to silence the alarm.

⚠ WARNING

Test smoke alarm operation after vehicle has been in storage, before each trip, and at least once per week during use. Failure to do so may result in death or serious injury.

CO DETECTOR

Your RV is equipped with a carbon monoxide detector that is listed for use in recreational vehicles.

The carbon monoxide detector is designed to detect carbon monoxide from any source of combustion. It is NOT designed to detect smoke, fire or any other gases.

Some carbon monoxide detectors are hard-wired and some have batteries that require periodic inspection and replacement. Detectors that require batteries, do not work without batteries. NEVER remove batteries except for replacement.

Test the detector each week while RV is in use and before beginning a trip. Press the 'TEST' button. If the alarm fails to sound, replace the unit immediately with the same model or with one that is listed for RV application. DO NOT attempt to repair.

⚠ WARNING

Test the CO detector operation after vehicle has been in storage, before each trip and at least once per week during use. Failure to do so may result in death or serious injury.

PROPANE DETECTOR

Your RV is equipped with a propane detector that is listed for use in recreational vehicles.

The propane detector senses propane in the air, not smoke or fire or other gases. It detects the presence of propane at the sensor but explosive gas may be present in other areas.

Some propane detectors are hard-wired and some have batteries that require periodic inspection and replacement. Detectors that require batteries, do not work without batteries. NEVER remove batteries except for replacement.

Test the detector each week while RV is in use and before beginning a trip. Press the 'TEST' button. If the alarm fails to sound, replace the unit immediately with the same model or with one that is listed for RV application. DO NOT attempt to repair.

The detector alarm may sound at times when no propane is present due to household product use, such as aerosol hair spray, certain cleaners, adhesives, alcohol, etc.

⚠ WARNING

Test the Propane detector operation after vehicle has been in storage, before each trip and at least once per week during use. Failure to do so may result in death or serious injury.

⚠ DANGER

If the propane detector senses the presence of propane, the light will turn from green to red, accompanied by an audible alarm. If the alarm sounds:

1. Immediately evacuate all occupants from the recreational vehicle.
2. Shut OFF the propane supply at the container valve(s) or propane supply connection.
3. Extinguish any open flames, pilot lights and all smoking material.
4. Do NOT touch any electrical switches.
5. Open doors and windows to ventilate.
6. Do NOT use the range hood or other power vents.
7. The alarm will continue to sound as long as propane is detected or until turned off.

FIRE SAFETY

Fire safety is an important part of owning a recreational vehicle. The following basic rules of fire prevention can help eliminate the possibility of a fire:

- NEVER store flammable liquids in the recreational vehicle.
- NEVER store combustible materials near a propane-burning appliance.
- ALWAYS safely secure privacy curtains away from a propane-burning appliance.
- NEVER leave cooking food unattended.
- NEVER smoke in bed and always use an ashtray.
- NEVER allow children to play with propane or electrical equipment.
- NEVER use an open flame as a flashlight.
- Have faulty or damaged wiring and electrical components repaired immediately.
- NEVER overload electrical circuits.
- Locate any propane leaks and have them repaired IMMEDIATELY.
- Keep cooking surfaces clean and free from debris.
- NEVER allow rubbish to accumulate.
- NEVER clean with a flammable substance.
- Spray fabrics annually with a flame retardant.
- Be sure that everyone in your RV is familiar with the location of all exits, including exit windows.
- Make sure everyone is familiar with the location and proper operation of all fire extinguishers.

⚠ WARNING

In case of fire:

- EVACUATE EVERYONE FROM THE RECREATIONAL VEHICLE IMMEDIATELY.
- DO NOT ATTEMPT TO USE WATER TO PUT OUT A FIRE.
- TURN OFF PROPANE SOURCE IF YOU CAN SAFELY ACCESS.
- UNPLUG THE POWER SUPPLY IF YOU CAN SAFELY ACCESS.
- DISCONNECT THE GENERATOR IF YOU CAN SAFELY ACCESS.
- CALL LOCAL EMERGENCY SERVICES OR 911.

⚠ WARNING

Portable fuel burning equipment, including wood or charcoal burning grills and stoves, shall NOT be used inside the vehicle. Doing so may cause a fire, explosion, carbon monoxide poisoning, or asphyxiation. Failure to do so may result in death or serious injury.

FIRE EXTINGUISHER

A fire extinguisher is provided with your RV. Please become thoroughly familiar with the location and operating instructions displayed on the side of the fire extinguisher.

When using a fire extinguisher, utilize the 'PASS' method. Familiarize yourself and all RV occupants with this procedure:

- Pull the pin (some extinguishers may have a cartridge you need to push).
- Aim the nozzle at the base of the fire.
- Squeeze the handle to release the extinguishing agent.
- Spray the base of the fire. (If you aim at the flames, you won't extinguish the fire.)

It's recommended that you inspect the fire extinguisher for proper charge before each trip and at least once a month in accordance with National Fire Protection Association (NFPA). If the extinguisher is past its expiration date, it must be replaced with the same type and size as the one originally supplied in your recreational vehicle.

NOTICE

The provided fire extinguisher is only designed to clear a path to an exit in the event of a fire.

⚠ WARNING

Avoid inhaling the dry chemicals from the fire extinguisher. Although non-toxic, they could cause temporary irritation and may damage surfaces.

EMERGENCY EGRESS WINDOW

The emergency egress window allows for emergency exit if the main entry door is not accessible. All exit (egress) windows have red operational handles or levers. An exit window may be a large sectional pane of an exit window or an entire exit window. Learn and practice how to open and operate the egress window before an emergency occurs.

NOTICE

It is important you know how to open and operate the exit windows in your recreational vehicle before an emergency occurs. Please consult your dealer for location and complete operation of your exit windows.

(D) Compliance and Regulations

FORMALDEHYDE

Forest River uses only the highest quality and safest building materials when constructing your RV. All components are certified as CARB II Compliant.

Certain building products such as particle board, fiberboard and hardwood plywood are manufactured with an adhesive containing urea-formaldehyde. These products have been known to emit formaldehyde into the air.

Other products containing formaldehyde or urea-formaldehyde resins are some carpets, draperies, upholstery, fabrics, deodorizers, cosmetics and permanent-press fabrics. Formaldehyde is also a by-product of combustion and is produced by cigarettes and gas appliances.

The concentration of formaldehyde in the indoor air depends upon the quantity and emission rates of all the emitting products in the structure compared to the volume of indoor air and the fresh air ventilation rate. As with other indoor pollutants, ventilation should reduce formaldehyde levels.

If you have any questions regarding the health effects of formaldehyde or other air pollutants, please consult your physician or local health department.

▲ WARNING

This product, including its component parts, can expose you to chemicals including formaldehyde, carbon monoxide, etc. that are known to the State of California to potentially cause cancer, birth defects, or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

CARB PHASE 2 COMPLIANCE

All Forest River products meet the California Air Resources Board's (CARB) stringent CARB 93120 P2 and TSCA Title VI emission standards for formaldehyde emissions from composite wood products.

(E) Prolonged Occupancy

PROLONGED OCCUPANCY

NOTICE

Your recreational vehicle was designed for recreational use and short-term occupancy. If you expect to occupy your RV for an extended period of time, be prepared to deal with condensation and the humid conditions that may be encountered.

CONDENSATION AND HUMIDITY

Condensation is the change of water from its gaseous form (water vapor) into liquid water. Just as moisture collects on the outside of a glass of cold water during humid weather, moisture can condense on the inside surfaces of your RV. This condition is increased due to the small volume of space and the airtight construction of your RV.

Condensation can infiltrate the insulation, motors, and working parts of appliances or plumbing pipes to name a few. Even though you may not see condensation, it may be inside the walls, cupboards or under the floor, so it is best to take every precaution to avoid it occurring. Generally, an area that is dark, and where moisture can accumulate, is the most likely spot for mold to grow.

It is especially important when storing your RV or if you do not anticipate using it for an extended period of time to air it out. Empty the refrigerator and freezer and dry them completely. Dry the inside of the shower and shower head.

Check for any leaks at the kitchen sink, toilet and bathroom sink. It's also a good idea to check your RV periodically to ensure there is no condensation forming on the windows, which would indicate there is too much moisture in your RV.

If you see signs of excessive condensation, take the necessary steps to remove the moisture to prevent possible damage to the contents or the RV itself.

Below are tips to help contain humidity in your recreational vehicle:

- Keep indoor humidity below 60% (ideally between 30 and 50%) relative humidity. Relative humidity can be measured with a moisture or humidity meter. The meter is a small, inexpensive (\$10-\$50) instrument available at

- most hardware stores. Some larger campground stores may also have the meters.
- Consider using a small dehumidifier to help rid the RV of moisture.
 - Avoid allowing wet clothing to hang, creating a potential breeding ground for mold.
 - When showering or bathing, open the roof vents or turn on a fan to allow steam and moisture to escape. Wipe down the shower walls to prevent water evaporation.
 - Be sure there are no obstructions in any vents and that all vents are properly sealed. Pay particular attention to appliances that produce moisture, such as air conditioners, shower, oven vents, and clothes dryer vents.
 - Try using the microwave oven instead of the stovetop to boil water or soups for long periods. If you choose to use the stove to boil water or soup, open a window or a vent slightly (even in cold weather) to provide a passage for the air to flow. This will also help restrict the humidity.
 - Try to recirculate the air by using vent fans or small oscillating fans or your furnace fan. If condensation occurs, keep the windows clean in order to prevent the growth of mold and mildew.
 - Do not use a ceramic heater as it provides no air movement, which will not aid in ridding the RV of condensation.

When it rains, water may collect in the bottom of the window frame and drain out the weep holes, made for that purpose. If your RV is not level, the water may not drain out properly. This could cause water damage to the window or wall and could breed mold due to condensation.

If you have water and/or mold damage caused by sewage or other contaminated water, it is best to call in a professional who has experience cleaning living spaces damaged by contaminated water.

MOLD

Some people are sensitive to molds. For these people, molds can cause nasal stuffiness, throat irritation, coughing or wheezing, eye irritation, or skin irritation. People with mold allergies may have more severe reactions. Immunocompromised people and those with chronic lung illnesses may develop serious infections in their lungs when they are exposed to molds.

▲ WARNING

Controlling condensation inside your RV is the best way to avoid not only mold or mildew, but dampness as well, both of which can cause damage to your RV and/or its contents. Damage caused by mold or mildew is a maintenance issue and is not warrantable. You, as the owner, are responsible for proper maintenance of your RV. Controlling humidity inside your RV will help to prevent damage which may occur due to neglect.

(A) General Information

ELECTRICAL GENERAL INFORMATION

The electrical power supply provided for the recreational vehicle is a dual system, operating with 120VAC (electrical power like you find in your home) and/or 12VDC (battery power). The electrical equipment and associated circuitry are engineered into a dedicated system specific to your RV. All installations meet or exceed industry standards applicable on the date of manufacture.

POWER CORD

A 30 Amp or 50 Amp power cord is provided to connect the RV to a grounded power source. The electric utility service connection is located on the driver's side near the rear of the coach.

The power cord is stored inside the electric utility service compartment. (Depending upon the type of RV you have, the power cord could be either permanently mounted or detachable.)

NOTICE

Many campgrounds have limited electric service that may not be adequate to power your RV. The best way to know what electric service is available is to call your campground ahead of time.

NOTICE

The power available at campgrounds and the quality of connection can vary widely. In order to protect your investment, we recommend using a quality surge protector. The voltage at a campsite's outlet should register between 105 volts and 135 volts to prevent damage to the electrical system.

⚠ DANGER

Connecting the power cord to a non-grounded or improperly grounded power source can result in a dangerous and possibly fatal electric shock.

CONNECTING TO AN OUTSIDE POWER SOURCE

1. At the RV's power center, turn OFF the main 120VAC circuit breaker.
2. Carefully extend the entire length of the power cord to the external power source at the campsite (or generator).

3. Plug the power cord into the receptacle. Make sure that all of the power cord prongs are properly seated into the receptacle.
4. Return to your RV and turn ON the main 120VAC circuit breaker.

⚠ DANGER

ADAPTERS/REDUCERS:

Many aftermarket devices are available that connect to the power cord on your RV, allowing it to be plugged into a lesser power supply. Using an adapter or reducer to connect your RV to a lesser power source than the RV was designed to use requires you to shut off some appliances in the RV in order to keep the demand lower than the power available.

PLUGGING YOUR RV INTO A POWER SOURCE LESS THAN IT WAS DESIGNED FOR SIGNIFICANTLY INCREASES THE RISK OF FIRE.

Because of the increased risk of fire or electrical damage, we recommend that you do not use an adapter or reducer to plug your RV into a lesser power source than it was designed for. If you choose to use an adapter or reducer, be aware that many if not all these products are not certified by Underwriters Laboratories or any other safety testing firm. It is therefore up to you to ensure that any adapter or reducer you use is properly sized for the electric load and adequately constructed to protect you and your family from the risk of fire or electric shock.

EXTENSION CORDS:

Forest River recommends that you do NOT use extension cords to power your RV. The use of extension cords can create a risk of fire. If you choose to use an extension cord, be sure it is properly rated for the electric load and is in good condition before each use. Damage to an extension cord is often not visible and can only be detected through the use of special equipment and expertise that most consumers do not have. NEVER use an extension cord longer than 50 feet, when the cord has gotten wet, or a cord that has been pinched or shows any signs of damage.

FOREST RIVER SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY OF WHATEVER SORT FOR ANY DAMAGE, PERSONAL INJURY, OR DEATH ASSOCIATED WITH THE USE OF AN ELECTRICAL ADAPTER OR REDUCER OR EXTENSION CORD.

⚠ DANGER

Disconnect the battery cable and the 120VAC power cord before working on electrical system. Do NOT reconnect the cables until all work has been completed.

BASIC TROUBLESHOOTING TIPS

No power to RV:

- Verify RV's power cord is plugged in correctly to properly rated (30 Amp or 50 Amp) shore power outlet.
- Verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Verify RV's 120VAC main circuit breaker is NOT tripped.
- Verify park hook-up circuit breaker is NOT tripped.
- If plugged in at home, verify breaker has NOT tripped.
- Verify surge protector is functioning correctly if being used.
- If using a generator, verify 120VAC circuit breaker on generator is NOT tripped or turned OFF.
- If using a generator, verify shore line cord is plugged into dedicated generator outlet if necessary.

BASIC TROUBLESHOOTING TIPS

Interior lights flicker or are dim:

- Low battery. Verify battery is fully charged on monitor panel. It might be necessary to charge battery. If possible, plug RV into 120VAC shore power.
- Low battery. Verify sufficient water level in battery.
- Poor battery connection. Verify battery cables are clean and tight.
- Converter overwhelmed. Open the cover to cool down and reduce electrical load by turning OFF some 12VDC lights.
- Verify 12VDC fuses are NOT blown at power converter.
- Possible converter malfunction. Have converter checked by authorized service center.
- Loose or defective bulb(s). Tighten or replace as needed.

(B) 120VAC Electrical System

120VAC ELECTRICAL SYSTEM

The 120VAC power is most commonly provided to your recreational vehicle by either connecting the RV to an outside power source when parked or by using a RV generator. When the 120VAC system is operational, power also passes through a system power converter, allowing the full use of all 12VDC functions in the RV. Some 120VAC functions in the RV may include:

- Residential refrigerator
- Ice maker
- Roof-mounted air conditioner(s)
- Television(s)
- Microwave
- Converter
- Electrical outlets
- Some lights
- DVD and most multi-media

When not connected to 120VAC power, the 12VDC system functions can be supplied by the battery. Batteries are recharged by the power converter when the RV is attached to an outside 120VAC power source or by the generator. (Be sure you turn the power switch ON; the generator will not charge the batteries or otherwise operate when the power switch is in the OFF position.)

If equipped, an on-board inverter can also supply limited 120VAC power by utilizing, and converting, the on-board batteries' 12VDC power. See the inverter section of this manual for details.

NOTICE

Prior to supplying 120VAC power to the RV (generator or shore power), make sure all 120VAC appliances are turned OFF.

GROUND FAULT CIRCUIT INTERRUPTER

The 120VAC outlets in some possible wet locations are equipped with a protective circuit interrupter. The ground fault circuit interrupter (GFCI) is designed to break the flow of current to the protected outlet when an imbalance of current is detected. Imbalances include electrical leakage in an appliance, such as a shaver or hair dryer, that has developed a weak spot in electrical insulation. The

possibility of electrocution exists when using a faulty appliance while at the same time being in contact with an electrical ground, such as water, plumbing, or the earth.

If an imbalance is detected, the GFCI will trip and shut off power to the outlet. Even with GFCI protection, the electrical shock will still be felt, but to a lesser degree. It also does not protect against short circuits or system overloads. Circuit breakers in the main panel, which supply power to the circuit, will trip if either of these conditions exists. The GFCI receptacle should be tested initially when the recreational vehicle is purchased and at least monthly thereafter.

To test the circuit, use the following procedure:

1. Make sure power to the circuit is ON.
2. Push the test button.
3. The reset button should pop out.
4. All power should be interrupted to outlets protected by the GFCI.
5. Verify by pushing in the reset button. If the button does not pop out after pushing the test button or GFCI circuit continues to trip, immediately turn OFF power at the circuit breaker panel and have a qualified electrician service it.

⚠ DANGER

Even with GFCI protection, persons with severe heart or other health problems may still be seriously affected by an electrical shock. The GFCI outlet is not a substitute for good electrical safety.

CIRCUIT BREAKERS

The 120VAC system is protected by circuit breakers. These breakers automatically trip if the circuit load is too heavy or a short circuit occurs. If a circuit breaker has been tripped, do not reset the breaker until the cause of the problem is identified and corrected.

Once the cause has been identified and corrected, allow for a brief cooling period and then move the breaker to the OFF position and then back to the ON position to reset. If the breaker is continually tripped and no overload is evident, have the system checked for a short in the wiring or the appliances.

PARK FUSES AND BREAKERS

Most campgrounds are equipped with a fuse or circuit breaker at the receptacle. It is recommend shutting OFF this circuit breaker before engaging or disengaging the power cord. This protects the park's wiring, as well as the power cord on your

vehicle from electrical damage. If electrical power fails, contact the park attendants and have them check the fuse or breaker for your supply receptacle.

BASIC TROUBLESHOOTING TIPS

No power to kitchen, bath or outside receptacle:

- Make sure RV's battery disconnect is ON.
- Check circuit breakers at RV's power center. The 120VAC circuit breaker may be OFF or tripped.
- Check park electrical hook-up for power or a tripped breaker.
- GFCI receptacle may be tripped and requires a reset.
- Electrical circuits may be overloaded with excessive appliances causing breakers or GFCI to trip.

(C) 12VDC Electrical System

12VDC ELECTRICAL SYSTEM

The 12VDC power of your recreational vehicle is provided by the 12-volt auxiliary battery and the 12-volt power converter.

POWER CONVERTER

The power converter is designed to switch 120VAC electricity from an external supply or from the generator to 12VDC electricity. Under normal conditions, the converter requires no maintenance. If the converter does not have a 120VAC supply to convert to 12VDC, it automatically switches the batteries into the electrical circuit to power 12VDC functions. When reconnected to a 120VAC power source, it will again operate from that source.

Switching from 120VAC power to 12VDC power is automatic when the power cord is plugged in or the generator is on. This powers the 12VDC panel board and the connected circuits are protected by the installed fuses.

The converter has reverse battery circuitry to prevent damage if the battery is accidentally connected in reverse. There are two 30-amp AC fuses located in the front of the converter, which are accessed by removing the louvered grill located next to the power distribution center. These fuses protect the power converter from accidental shorting of the power cables at the battery or reverse polarity caused by accidental cross connecting the battery. Remember BLACK or RED is POSITIVE (+), WHITE is NEGATIVE (-).

Battery charging is automatic when plugged into 120VAC power. Although the converter is an excellent battery charger, the converter does not require a battery to be connected to it for proper operation.

The power converter has a cooling fan that will run at appropriate times to cool the converter. The converter will run warm, which is normal. If it gets too hot, it will turn itself off. After cooling, it will come back on. In most cases, converter shut down occurs due to poor ventilation. A slight hum during operation is also normal for the converter. If you have no 12VDC power and no hum, check to see if 120VAC power to the converter has been interrupted or verify that the fuses on the power converter panel have not blown.

⚠ CAUTION

Keep converter/inverter area clear of obstacles and clutter. They must have

adequate ventilation to avoid overheating.

BASIC TROUBLESHOOTING TIPS

Converter is overheating or not working correctly:

- Verify adequate power to RV. Is RV plugged in to 120VAC?
- Verify 12VDC fuses are NOT blown at power converter.
- Verify battery connections are NOT reversed. This will cause a blown 12VDC fuse.
- Verify battery is fully charged on monitor panel. It might be necessary to charge battery.
- Verify converter has adequate air flow to prevent overheating.
- Excessive electrical loads can reduce operation efficiency. Reduce load if necessary.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

INVERTER

Your RV may be equipped with a factory installed inverter that converts 12VDC to 120VAC. It supplies continuous AC power to appliances connected to its output (generally a residential-type refrigerator and select circuits).

The inverter should be turned OFF when the RV is in storage. If the inverter is powered ON, be sure to turn it OFF and disconnect the battery power cables before performing any 120VAC service work. If the inverter is not functioning, check both the circuit breaker protecting the inverter input and the fuse located on the inverter.

⚠ DANGER

The inverter supplies 120VAC power to connected appliances. Disconnect the battery cable and the 120VAC power cord before working on electrical system. Do NOT reconnect the cables until all work has been completed.

BASIC TROUBLESHOOTING TIPS

Inverter is overheating or not working correctly:

- Verify adequate power to RV. Is RV plugged in to 120VAC?
- Verify 12VDC fuses are NOT blown at power converter.
- Verify battery is fully charged on monitor panel. It might be necessary to charge battery.

- Verify inverter has adequate air flow to prevent overheating.
- Verify GFCI that appliance is plugged into has NOT tripped.
- Verify 120VAC circuit breaker is turned ON and NOT tripped.
- Excessive electrical loads can reduce operation efficiency. Reduce load if necessary.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

12VDC FUSES

A 12VDC interior fuse panel is installed in the Power Distribution Center to protect the interior circuits. All the electrical circuits in your camper have fuses to protect them from short or overload. If something electrical in your camper stops working, the first thing you should check for is a blown fuse. Determine from the chart, or the diagram on the fuse panel, which fuse or fuses control that component. Check those fuses first, then check all fuses before deciding that a blown fuse is not the cause. Replace any suspect fuse(s) and check the component's operation.

Do not install fuses with amperage ratings greater than that specified on the label. Replacing a fuse with one that has a higher rating greatly increases the chances of damaging the electrical system. If you do not have a replacement fuse with the proper rating for the circuit, install one with a lower rating until you can preplace it with the properly rated fuse. If the replacement fuse of the same rating blows in a short time, indications are that there is probably an electrical problem with your camper. Leave the blown fuse in that circuit and have your camper checked by your Forest River dealer.

(D) Batteries

BATTERIES

Your RV has a customer-supplied battery(s) that serves many functions. The battery(s) for your RV will be located in a separate compartment or in a battery box located on the 'A' frame. It is important to be sure the batteries are kept charged. Take time to turn off all lights or other 12VDC conveniences when not in use. Connect the recreational vehicle to a 120VAC power source - shore power or generator - when possible to prevent draining the batteries.

The charge condition of the battery(s) is displayed on the monitor panel, generally located in the Control Center mounted on the wall. To check, press and hold the monitor test switch while reading the charge level on the battery gauge. Charge levels indicated are divided into sections from weak to fully charged.

NOTICE

Maintaining fully charged batteries is a critical factor in fully utilizing and enjoying your RV's various features.

HOUSE BATTERIES

The house battery supplies power to the 12VDC equipment located in the living area of the recreational vehicle. House batteries are specially designed for RV use. They provide longer lasting power than standard automotive starting batteries and will withstand the frequent drain-and-recharge cycles that occur during normal use.

Some 12VDC functions in the RV may include:

- Interior 12VDC lighting
- Range exhaust fan
- Propane furnace fan
- Fresh water pump
- Monitor panel
- Roof vent fans

BATTERY CHARGING

The power converter also operates as a battery charger when the RV is connected to a 120VAC power source or a generator. If the battery is below its full charge, the converter charger will begin operation at a rate that reflects the level of discharge. When the battery is again fully charged, the converter charger drops its charging level back to a maintenance level to keep the battery fully charged. Battery charging is fully automated by the power converter.

Average battery charge rate will depend on several variables such as condition of the battery(s), temperature, and the length of time the battery(s) is connected to the converter.

When your RV is connected to a tow vehicle with an appropriately designed 7-way connection, the house battery will be charged by the tow vehicle while driving.

BATTERY MAINTENANCE

While Forest River may not have installed your battery, we want to provide you with the following information. Battery maintenance is important. Checking the condition of a battery at regular intervals will help ensure its proper operation.

Here are some recommendations for checking and servicing the batteries:

- Keep the battery mounted securely. Excessive vibration can cause early battery failure.
- Check the electrolyte level of the auxiliary batteries at regular intervals. Keep each cell filled with distilled water to just above the plates. Once the plates have dried out, they cannot be reactivated and the capacity of the battery is reduced in direct proportion to the area of plate surface that has become dry. This kind of damage can occur quickly.
- Keep the battery clean. Corroded terminals make poor contact. Battery sulfating occurs when the battery has been standing in a discharged condition over a long period of time or when the battery has been operated continually in a state of partial discharge.
- Check the outside condition of the battery. Look for cracks in the case or vent plugs. If the case is cracked, the battery must be replaced. If the vent plugs are cracked, they must be replaced.
- Watch for over-charging. Three ways to spot overcharging are:
 1. Active material on the vent cap (heavy deposit of black lead-like material on the underside of the vent cap).
 2. Excessive use of water.
 3. By testing voltage regulator output.

Make sure the battery hold downs and carrier are kept clean and free of corrosion.

Battery maintenance should only be performed by a qualified service center.

NOTICE

Some batteries are not serviceable; consult the manufacturer's information on the battery you own.

NOTICE

When removing a battery, disconnect the ground battery clamp first. When installing a battery, ALWAYS connect the grounded battery clamp last. When a battery needs to be replaced, make sure to replace it with a battery of the same characteristics as the original equipment. Consult your Forest River dealer for advice on battery replacement.

BATTERY DISCONNECT

If equipped, the 12VDC battery disconnect switch is used to disconnect the RV's 12VDC electrical system from the batteries to avoid battery drain by electrical items that are hooked directly to the batteries.

Turn the battery disconnect ON to allow the battery to provide 12VDC power to your RV. Turn the battery disconnect OFF to prevent the battery from providing 12VDC power to your RV. To prevent battery discharge from the effects of parasitic battery draw, OFF is the recommended battery disconnect position when your RV is in storage.

NOTICE

Turn the master battery disconnect switch ON when entering the RV and keep in ON during travel to ensure that batteries are charged and 12VDC electrical systems remain operational.

LITHIUM BATTERIES

Some Forest River products offer Lithium batteries in place of lead-acid batteries. There are several advantages to Lithium batteries including faster charge rate, increased AMP hours, lower battery weight, longer warranty terms, voltage consistency and fewer maintenance requirements.

A potential disadvantage of Lithium batteries is that damage may occur when they are charged in sub-freezing temperatures. Various built-in heating devices may allow for safe charging of a Lithium battery. Please consult the individual owner's

manual, the battery manufacturer's web site, or your dealer for specifics on the safe operation of your RV's equipment.

BATTERY SAFETY

⚠ WARNING

ALWAYS shield your eyes when working near batteries. Batteries can explode. Do NOT smoke or expose battery to electric spark or flame. When charging or discharging, batteries generate hydrogen. Hydrogen and air is a very explosive mixture.

⚠ WARNING

Do NOT short across the battery terminals. The spark could ignite the gases. Do NOT wear metal jewelry or a watch when working on a battery.

⚠ DANGER

Battery electrolyte is a corrosive, poisonous sulfuric acid. Avoid contact with skin, eyes, clothing or any painted surface.

⚠ CAUTION

This battery area/compartiment is designed for the use of non-vented batteries only. Do NOT place a battery that requires venting into this area/compartiment. Vented batteries can release poisonous and flammable gases. Can lead to a fire or explosion and result in death or serious injury.

(E) Solar

SOLAR OVERVIEW

Your Forest River RV may be equipped with solar panel preparation or a more advanced solar panel kit.

A properly designed solar power system allows you to take your RV off the grid while still using your refrigerator, lights and other appliances for extended periods. Solar panels convert the sun's energy into direct current (DC) electricity, and this charges your RV's batteries, storing the electricity. Many features and equipment on your RV operate on the 12VDC power supplied by the batteries. A power inverter, if equipped, converts this 12VDC power to 120VAC (alternating current) in order to run many of your larger RV appliances such as air conditioner, microwave, etc.

SOLAR PREP

If equipped, a solar connection (plug-in) will be mounted on the exterior sidewall or roof of your RV. This quick connect is wired to the location of your on-board battery. An aftermarket solar panel kit can be purchased to plug into this connection and provide charging power to your on-board battery. If you are unsure of your RV's equipment, please consult your Forest River dealer for details.

NOTICE

Many aftermarket "all-in-one" solar panel kits are of a low amperage variety that only provide limited battery charging capability. Make sure to fully understand your personal goals for your RV's solar system to best determine whether a potential solar power kit will provide sufficient charging capacity.

SOLAR PANEL KIT

If equipped, a solar panel kit provided with your RV might include a solar panel, solar controller and applicable wiring and cables. A solar panel kit will provide the basics you need for charging your RV battery. Additional batteries, inverter, transfer switch, charger and a fuse block are NOT usually part of a factory installed solar panel kit. If you are unsure of your RV's equipment, please consult your Forest River dealer for details.

SOLAR SYSTEM

If equipped, a solar system includes more components (such as an inverter, transfer switch, battery charger, and fuse block) so you can run 120VAC appliances and electronics, charge your battery, and connect both shore and solar power to your RV's breaker panel. If you are unsure of your RV's equipment, please consult your Forest River dealer for details.

It is recommended to utilize a certified solar system dealer for purchase and installation of aftermarket solar equipment.

SOLAR PANELS EXPLAINED

Solar panels are made up of individual solar cells that convert sunlight into energy. That energy comes in the form of photovoltaic (PV) electricity, which is used to charge and replenish the RV's batteries which, in turn, provide direct current (DC) power. With a more elaborate solar system, several panels are joined together, creating a 'solar array.' Solar panels can be permanently installed on the RV's roof or be of a free-standing, portable design.

SOLAR CHARGE CONTROLLER EXPLAINED

The solar charge controller is a required and critical component in an RV solar system. The controller maintains the life of the battery by preventing overcharging. When the batteries are low, the controller provides a full flow of current from the solar panels to replenish the battery banks. When the batteries achieve a 100% charge, the controller limits the current flowing from the solar panels to the batteries.

BATTERY REQUIREMENT

An RV's solar system battery requirements will depend on the energy consumption of the RV. The more appliances you plan to run, the higher your electrical consumption and the more batteries required. Multiple RV batteries can be wired together to form a 'battery bank', providing either higher voltage (wired in series) or greater capacity (connected in parallel).

The total power a solar system can supply is limited by the battery capacity.

⚠ DANGER

When installing a battery, or additional battery, for a solar system, the battery storage compartment shall be vapor resistant to the interior of the vehicle and ventilated directly to the exterior of the vehicle. A vented battery should NEVER be installed in a compartment, hood or housing containing spark or flame-producing equipment.

INVERTER REQUIREMENT

The RV battery generally provides 12VDC power for many of the features and equipment of the RV. Some larger RV appliances require 120VAC (like in your home). Making this conversion from 12VDC to 120VAC is the primary role of a RV power inverter. If the RV does not have 120VAC power supplied by shore power or a generator, an inverter is required to power on-board 120VAC appliances.

(F) Generator

GENERATOR OVERVIEW

Some Forest River recreational vehicles are equipped with a 120VAC power generator to run major appliances when not connected to shore power. The generator (if applicable) may have one (4.0 KW) or two (5.5 KW & larger) breakers and a DC fuse on the generator control panel. If an interruption in generator operation occurs, check to see if any of these have been tripped; consult the manuals provided with the generator before attempting maintenance on the generator.

Some coaches are manufactured with an Automatic Transfer Switch which automatically switches the 120VAC feed to the Energy Management System Module from shoreline to generator and back as you choose which way to power the recreational vehicle. You simply decide whether to plug into a 120VAC shoreline or start the generator and the Automatic Transfer Switch will do the rest. If the generator is accidentally started while plugged into shore power, the box will sense the generator's incoming power, contact points inside the box will switch and cut off the shoreline connection and establish the generator connection. This protects the system from a possible overload from dual power sources. If not equipped with an Automatic Transfer Switch, your RV's power cord will need to be plugged directly into the generator outlet.

Some coaches are manufactured with an Automatic Generator Start system. The AGS is designed to automatically start your coach generator, based on the inside temperature of the coach or a low battery condition. These features allow you to leave pets and important items in your coach while you enjoy a day away and be confident your coach will stay cool and comfortable. The AGS includes settings for 'Quiet Time' so you can comply with park and rally rules. The AGS does not interfere with your air conditioner controls or the manual generator start/stop switches in your coach.

NOTICE

Prior to storage, adding a fuel stabilizer to the generator will aid in preventing condensation and fuel varnishing. Follow all component manufacturer's instructions on care and maintenance.

Review and follow all operational and safety precautions provided by the generator's manufacturer, written warning labels and provided in the manufacturer owner's manual.

- Do NOT operate the generator while sleeping. You would not be aware of exhaust gases entering the RV or be alert to symptoms of carbon monoxide poisoning.
- NEVER store anything in the generator compartment. Always keep the generator compartment clean and dry.
- Do NOT operate the generator in an enclosed building or in a partly enclosed area such as a garage or storage unit.
- Do NOT operate the generator when the RV is parked in high grass or brush. Heat from the exhaust could ignite dry vegetation.
- Do NOT operate the generator longer than necessary when the vehicle is parked. This will help to reduce exhaust gases near the RV.
- Do NOT simultaneously operate generator and a ventilator fan, which could result in the entry of exhaust gas. When ventilator fans are used, open a window on the opposite side of the RV to provide cross ventilation.
- When parked, orient the vehicle so that the prevailing winds will carry the exhaust away from the RV.
- Do NOT open nearby windows, ventilators, or doors into the passenger compartment, particularly those which can be 'down wind,' even for short periods of time.
- Do NOT operate the generator when parked in close proximity to vegetation, snow, buildings, vehicles, or any other object could deflect the exhaust under or into the vehicle.
- Do NOT touch the generator when running, or immediately after shutting OFF. Heat from the generator can cause burns. Allow the generator to cool before attempting maintenance or service.
- NEVER sleep in the RV with the generator running!
- Before using the generator, inspect the exhaust system. Do NOT use it if the exhaust system is damaged. Test the carbon monoxide alarm every time you use the RV. If the CO alarm sounds, immediately move everyone to fresh air and ventilate the RV. Shut the generator OFF and do not operate it until it has been inspected and repaired by a qualified technician.

NOTICE

Depending on model, the on-board generator can share the same fuel supply as the chassis. As a precaution, the fuel supply to the generator will turn OFF when the chassis fuel tank reaches one-quarter full.

HIGH ALTITUDE AND EXTREME TEMPERATURES

If you travel at high altitudes or in extreme temperatures, your generator can lose power. In such lower-density air conditions, you can't operate as many electrical devices as you could under normal operating conditions.

Power decreases 3.5% for each 1,000 feet above an altitude of 500 feet. For example, to operate at 4,500 feet (4,000 feet above rated generator altitude), multiply 3.5% x 4 (4,000 ft) = 14% power loss. Then multiply .14 x your generator's power rating: 4,000 watts x .14 = a loss of 560 watts at that altitude.

Power decreases in extreme temperatures by 1% for each 10 °F (5.5 °C) above 77 °F (25 °C).

GENERATOR EXERCISE

Regular exercising of the generator heats up the alternator windings and removes or expels excess moisture. In sets equipped with brushes, exercising helps prevent corrosion buildup on slip rings. Running the generator also brings fresh fuel to the carburetor on gasoline and diesel generators.

Ideally, generators should run two hours every month. Once started, add as much load as possible (i.e., air conditioner, heat pump, hair dryers, other appliances). The objective is to place a 50 to 70 percent load on the generator.

Depending on your location in North America, gasoline can start to deteriorate in as little as 30 days. If you are unable to exercise or use your generator every month, treat the entire fuel tank with gasoline stabilizer and run the generator for two hours at 50 to 70 percent load in order to circulate the treated fuel through the entire fuel system.

BASIC TROUBLESHOOTING TIPS

Generator fails to crank, cranks slowly, or won't start:

- Low battery. Verify battery is fully charged. It might be necessary to charge battery.
- Poor starting battery connections. Verify connections are clean and tight.
- Verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Verify 12VDC fuses are NOT blown at power converter and/or genset.
- Verify 120VAC breakers are NOT blown at power converter and/or genset.
- Load connected. Disconnect load before starting.
- Low fuel level in the generator.
- Low fuel level in the motorhome (less than 1/4 tank) which prevents generator from receiving fuel.
- Low oil or possible incorrect oil viscosity.
- Varnished carburetor needs to be cleaned. See manufacturer Owner's Manual.
- Generator is experiencing excessive temperature or excessive altitude.

Circuit breaker trips:

- Overloaded circuit. Turn off some electric load and reset circuit breaker.

No electricity in coach:

- Verify 12VDC fuses are NOT blown at power converter and/or genset.
- Verify 120VAC breakers are NOT blown at power converter and/or genset.
- Verify, if necessary, the shore line cord is plugged into the dedicated generator outlet.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

(G) Multiplex Control Center

MULTIPLEX OVERVIEW

Select Forest River recreational vehicles are equipped with multiplex wiring systems. A multiplex system uses low-voltage, digital signals to control the electrical and electro-mechanical devices within your RV via an intuitive, user-friendly touchpad. Control functions vary from unit to unit, depending upon the standard and optional equipment available. However, in its typical configuration, a multiplex system could allow the user to monitor and operate these features from the main touch screen panel:

- Lighting and fan controls
- Climate (HVAC) controls
- Holding tank level monitoring
- Water heater and water pump on/off
- Electrical system monitoring; both AC and DC
- Battery monitoring and charging
- Inverter settings and controls
- Generator on/off
- AGS (Automatic Generator Start) settings and controls
- Slide room and awning control

Depending on the model and floorplan of your RV, it may be supplied with a multiplex control system from a variety of manufacturers. However, every multiplex system is designed to be intuitive to operate. Basic operation involves these steps:

1. Ensure power is ON, either from 12VDC or 120VAC (shore or generator power). Make sure battery disconnect is ON.
2. With a power source ON, locate the main system panel. Some system panels will automatically 'turn on' when power is present, while other panels will require the user to press a button on the panel or touch the display.
3. Select the feature or feature menu you want to control. Some panels will have feature icons along one edge of the panel, while other panels will have feature icons displayed on the panel's touchscreen.
4. With the feature menu selected, operate the control. For example, turn the lights ON or OFF, raise or lower the temperature, turn the generator ON or OFF, operate slide rooms or awnings.
5. Return to the main menu by either pressing the 'Home' icon, located along the bottom edge of the panel, on the touch screen, or on some panels, press a return arrow on the display.

(A) Plumbing General Information

PLUMBING OVERVIEW

An RV's plumbing system has basically two water systems: the fresh water system and the waste water system. The fresh water system consists of those items which are used to deliver water for your use while the waste water system is made up of the drains and tanks which store and remove water that has been used.

Components of the plumbing system consist of strong, lightweight, corrosion-resistant materials that provide long life and easy cleaning. By following the instructions outlined within this manual, you can expect efficient operation with a minimum of maintenance.

MAINTENANCE AND TROUBLESHOOTING

Road vibrations and shocks, as well as excessive pressure from some city water sources, are the main physical causes of water system damage. It is important to inspect all plumbing joints and fittings often for cracks and leaks. If left unchecked, water leaking from a plumbing joint can cause considerable damage.

A leak in the fresh water system should be suspected if the water pump is running and all faucets and valves are closed. When the leaking fitting has been identified, attempt to stop the leak by tightening the fitting. **DO NOT** over-tighten. Plastic fittings rarely need to be tightened with a wrench. If these fittings leak after tightening by hand, disconnect the fitting and check for dirt, scale, or other foreign substances which may be causing the leak. Clean the fitting thoroughly and reinstall. If leaking persists, shut off the water supply until the fitting can be properly replaced. Check with your dealer for the correct method of replacement and replacement parts.

Proper winterization procedures of plumbing systems will normally be all that is necessary to prevent the damage caused by freezing. Freezing damage can harm any component of the system, including the water tanks, toilet, water pump and all piping. Be sure to follow the winterization procedures outlined in this manual. Also be sure to discuss with your dealer or repair center any additional precautions that should be taken to winterize your RV's plumbing system. Local climates vary and winter maintenance needs may be affected.

Be sure to read the literature supplied with plumbing components, such as the water pump, for troubleshooting tips. Also remember that it is possible for an electrical problem to cause water system problems. Lack of power to the pump can be caused by a variety of reasons.

If you are unsure of how to locate and/or repair a plumbing problem, it is best to have your dealer or a qualified plumber who is familiar with the RV water system to inspect the system and perform any repairs needed.

NOTICE

If your faucet is exhibiting low or diminished water flow, disassemble the faucet and clean the aerator (filter screen) thoroughly.

BASIC TROUBLESHOOTING TIPS

Limited or no water flow at a faucet:

- If utilizing on-board water, verify water pump is ON.
- If utilizing on-board water, verify there is water in Fresh Water Tank.
- If utilizing City Water connection, verify spigot is turned ON.
- Verify faucet aerator is clean and NOT clogged.

(B) Plumbing Equipment

MONITOR PANEL/COMMAND CENTER

While there are several different styles of monitor panels, they all serve the same purpose. They measure and display information regarding levels for water, batteries, and LP.

The monitor panel allows you to quickly check the levels in the fresh water and waste water tanks. Electrical sensors at various points on the tanks send signals to the monitor panel.

Check the levels when you are sure of a tank's contents and compare it to the reading on the monitor panel. If you are concerned about the accuracy of the monitor panel, have it checked at your local service center.

When depressing the monitor switch, indicator lights for the black (waste), grey (sink and shower) and fresh water, (for drinking and cooking) tank will illuminate, indicating the existing condition of each component. The battery level is a digital display that reflects the battery voltage when the switch is depressed.

Erroneous indications when checking water levels can be caused by water with low mineral content. Level is measured by a very low electrical signal traveling through the liquid. Water that is low in mineral content may not conduct the signal properly. This condition may be infrequent, but be aware it can exist. Check the panel reading when the fresh water tank is filled. Material trapped on the sides of the holding tanks may give a full reading when the tank is actually empty. Use of a spray to wash out the tank following dumping should help prevent this condition.

If the sensor probes mounted in the tanks get coated with grease, the monitor panel may indicate falsely or not at all. Avoid pouring grease, oils, or similar substances down drains or the toilet. If this is unavoidable, the holding tank(s) should be washed out with a soapy water solution.

NOTICE

Residue on the sides of a tank or water with a low mineral content can result in a false reading. Help prevent this from occurring by keeping your tanks clean.

BASIC TROUBLESHOOTING TIPS

Holding tank monitor lights delivering false or no readings:

- Debris may be built up on sensors. Add water to assist in flushing tank or utilize Black Tank Flush if equipped.
- Debris may be built up on sensors. Clean level gauge sensor probes with a black tank “sensor cleaner”.

BASIC TROUBLESHOOTING TIPS

The monitor panel is showing that the battery is fully charged but there is insufficient 12VDC power (low battery):

- The monitor panel does NOT accurately register the battery level if the battery is being charged when the reading is attempted. It will read "CHARGING". Make sure to unplug the tow vehicle 7-way cord and the RV's shore line power cord for accurate reading.

WATER PUMP

The RV water pump operates on 12VDC power and is totally automatic when the pump switch is in the ON position. Operation begins when a faucet is turned ON, provided you are not connected to an outside water source. When a faucet is turned ON, the pump automatically draws water from the onboard fresh water tank. The pump supplies the pressure needed to move the water through the water lines. The water pump switch is generally located on the monitor panel.

Before turning the water pump ON at the beginning of a camping trip:

- Ensure there is adequate water in the fresh water tank.
- Be sure the water heater bypass valves are set to a NORMAL mode that allows water to enter the water heater.
- OPEN all faucets, both hot and cold, including any tub and/or shower faucets.

Turn the pump switch ON and allow the pump to fill the water lines and hot water tank. After water is running in a steady stream from all faucets, turn the faucets OFF. The water pump should stop operation automatically when all faucets are closed. The pump should now run 'ON DEMAND' when a faucet is opened and stop when the faucets are closed.

The pump is NOT equipped with a dry tank shutoff switch. Turn the pump switch OFF if water in tank becomes depleted or when system is not in use.

When the faucet is initially opened, the water may sputter for a few seconds. This is normal and no cause for alarm. The water flow will become steady when all air is bled from the water lines. If a faucet is opened part way, allowing water to flow slowly, the pump may pressurize the plumbing faster than the water is being released, causing the pump to cycle on and off.

The water pump is equipped with a screen to trap debris and should be cleaned out periodically.

NOTICE

When connected to an outside (city) water source, be sure your water pump switch is in the OFF position. The pump is not needed when connected to city water, since that fresh water source is already pressurized. Use the pump only when obtaining water from your onboard fresh water tank and you are disconnected from an outside water source.

WATER PUMP CARE AND OPERATION

Frequent pump cycling may be caused by excessive pressure created by one or more of the following within the plumbing system:

- Low flow from partially open faucet.
- Clogged water filters.
- Flow restrictors in faucets and showerheads.
- If replacing pipe/tubing, be sure it is at least ½" I.D. (inside diameter) for main lines.

To minimize cycling, consider removing plumbing restrictions or install an accumulator after the pump. Cycling should be minimized to prevent pulsing flow and to achieve maximum pump life.

The water pump supplied with your RV is designed to deliver a smooth, consistent flow of water at all ranges of operation while drawing only a low current.

⚠ CAUTION

NEVER operate the water pump if the fresh water tank is empty. Damage to the pump may occur.

BASIC TROUBLESHOOTING TIPS

Water pump will not turn on or operate properly:

- Verify RV's battery disconnect is ON allowing 12VDC power to flow.

- Verify water pump switch is turned ON at control panel.
- Verify 12VDC water pump fuse is NOT blown.
- Low battery. Verify battery is fully charged on monitor panel. It might be necessary to charge battery. If possible, plug RV into 120VAC shore power.
- Low battery. Verify sufficient water level in battery.
- Verify there is water in fresh water tank.
- Verify there are NO kinks in water lines.
- Verify water pump strainer (filter) is NOT clogged with debris.
- Verify attached winterization valves are CLOSED so pump draws water from fresh water tank.
- Verify water system is NOT under pressure from city water source being utilized and turned ON.
- Verify there is NOT frozen water in plumbing system.
- Pump will not shut off? Check for plumbing leaks.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

WATER FILTER

If equipped, your recreational vehicle might have a water filtration system connected to the cold water lines throughout the unit. It uses a flow-through filter that removes chlorine, cloudiness, and sediments, resulting in clear, odorless and taste-free clean water for drinking, cooking, and personal care.

If you are unsure of your RV's equipment, please consult your Forest River dealer.

NOTICE

The life expectancy of many water filters is 12 months. Extremely hard water or excessive usage of the water filter system can reduce the life expectancy of your filter. Reduced water pressure is often a sign that your water filter is in need of replacement.

NOTICE

ONLY use the supplied water filter wrench when **REMOVING** the water filter canister. Hand-tighten the water filter canister when installing. Use of the water filter wrench when installing the canister can result in permanent damage to the canister and filtration system.

NOTICE

When installing the water filter canister, carefully verify that the canister O-Ring is installed and seated correctly to avoid a water leak.

(C) Sanitization

SANITIZATION

To ensure complete disinfection of the potable water system, it is recommended that the following procedure be followed on a new system, one that has not been used for a period of time, or one that could have become contaminated.

1. Determine the amount of common household bleach needed to sanitize the system based on the fresh tank size. The requirement is for 2 ounces of bleach per 15 gallons of tank size. If you have a 60 gallon fresh water tank, divide 60 by 15 (which is 4) and multiply by 2 (to get 8). A 60-gallon tank will require 8 ounces of bleach.
2. Mix the bleach with water in a container such as a gallon jug. If the tank is filled through a pressurized fitting, pour the bleach into the hose before attaching the hose to the city water fill.
3. Pour the bleach solution into the tank and fill the tank with potable water.
4. Open all faucets (Hot & Cold) allowing the water to run until the odor of chlorine is detected. Allow four (4) hours of contact time to disinfect completely. Doubling the solution concentration allows for a contact time of one (1) hour.
5. Drain the fresh water tank. Refill the tank and flush the system until the odor has decreased. The residual chlorine odor and taste is not harmful.

This process can be found in the water pump component Owner's Manual.

(D) Fresh Water System

FRESH WATER SYSTEM OVERVIEW

Potable (fresh) water is supplied by either an outside water source (water spigot) connected through the recreational vehicle's City Water connection inlet, or the fresh water tank aboard the RV. When utilizing the fresh water tank, the water is pumped through the RV's water lines by the on-demand water pump. When utilizing an outside water source (city water connection), the pump is not needed as the water is already pressurized and will flow through the water supply lines within the RV.

CONNECTING TO AN OUTSIDE WATER SOURCE

Water provided from an outside water source is pressurized by the system as it is delivered.

When connecting to an outside water source, use only a water hose which was manufactured and labeled for potable (drinkable) water. This will ensure the hose will not alter the taste of the water and that the hose has been sanitized for that purpose. To be sure you maintain sanitary drinking and cooking water, never use the hose for any other purpose. You can purchase this type of hose at almost any camping store.

When you connect your RV to an outside water source, the fresh water tank and the water pump are kept separate from the remainder of the system by in-line check valves.

Connecting to an outside water source:

1. Remove the cap from the City Water Connection inlet on the side of the recreational vehicle.
2. Attach one end of the fresh water hose to the outside water source.
3. Connect the other end of the fresh water hose to the City Water Connection inlet.
4. Turn ON the outside water source.
5. The water heater bypass valves should be set to NORMAL operation that allow the water to flow freely into the water heater.
6. Gradually OPEN the hot and cold water faucets at the sinks and tub to clear air from the lines.
7. CLOSE the faucets when the water is flowing freely.

Disconnecting from an outside water source:

1. Turn OFF the outside water source.
2. Disconnect the hose from the outside water source and the City Water Connection inlet.
3. Remove the hose and store it.
4. Reinstall the cap on the City Water Connection inlet.

NOTICE

To avoid possible damage to your vehicle's components, an after-market, in-line regulator is recommended to maintain a water pressure less than 45 PSI.

NOTICE

If your RV is not equipped with an on-board water filter, an after-market, in-line water filter installed on your fresh water hose is recommended to cleanse the potable water entering your RV.

NOTICE

Turn OFF the outside water source before leaving your RV unattended.

NOTICE

Do NOT turn on the water pump when using water from an outside water source. Only use the water pump when obtaining water stored in your on-board fresh water tank.

UTILIZING THE ON-BOARD FRESH WATER TANK

When an outside water source is unavailable, water can be drawn from the on-board fresh water storage tank in the RV. Depending on your unit's particular equipment, the tank is filled through a gravity-controlled water intake on the exterior of the vehicle or through a fresh water fill connection that attaches to your water supply hose.



(L) Fresh water fill connection. (R) Gravity-controlled water intake.

Filling the Fresh Water Tank:

- Remove the fresh water tank fill cap on the side of the recreational vehicle.
- Water can now be added directly to the tank through the water intake using a known clean hose or bucket, used only for this purpose.
- When the fresh water tank is full, replace the fill cap.

NOTICE

Do NOT turn the water pump on if the fresh water tank is empty. Doing so could cause damage to the water pump or a blown circuit may occur.

▲ CAUTION

Do NOT leave the unit unattended while filling tank. Overfilling the tank may cause damage to your RV.

▲ WARNING

Potable water only. Sanitize, flush, and drain water tank before using. See owner's manual for instructions, care, and maintenance information. Failure to maintain tank can result in death or serious injury.

BASIC TROUBLESHOOTING TIPS

Fresh Water Tank will not fill with water:

- Verify on Monitor Panel that Fresh Water Tank is not already full.
- Water pressure is too high creating back flow in fill hose.
- Water supply hose needs to be pushed further into fill hose.
- Verify that you are using Fresh Water Tank connection - NOT the City Water connection.

TRAVELING WITH WATER

When traveling, you may want to drain the fresh water and waste tanks or keep the quantity of water to a minimum. Traveling with full water tanks will add weight to your coach, cause additional wear, and decrease fuel mileage. A gallon of water weighs approximately 8.3 lbs. If you add 30 gallons of water to your fresh water tank, multiplying 30 gallons by 8.3 lbs. will result in at least 249 pounds of extra weight.

The location of the fresh water tank drain valve will vary per model but is generally located beneath the RV near the respective tank. Please contact your Forest River dealer for specifics on the drain locations and methods for activating the fresh water tank drain valve installed on your recreational vehicle.

When draining the fresh water system, be sure to open faucets, water heater drain and system low-point drains to remove all fresh water from the system.

NOTICE

When draining the fresh water tank, be sure the water pump is OFF.

DRAINING THE FRESH WATER SYSTEM

During storage or in preparation for winterizing your RV, it will be necessary to drain the water from the fresh water system which includes the water supply lines and the on-board fresh water tank.

⚠ CAUTION

Before draining your fresh water system, turn OFF the water heater and allow the water in the fresh water system and water heater tank to cool down to room temperature.

To drain your fresh water system:

1. Turn OFF your water heater prior to draining the fresh water system.
2. Be sure that all water in the fresh water system and water heater holding tank has cooled down to room temperature.

3. OPEN all faucets, including the outside shower.
4. Set the water heater bypass valve to BYPASS position to prevent water from entering the water heater tank.
5. OPEN the fresh water tank drain allowing water to run out. Generally, the fresh water tank drain can be found on the bottom side of your RV's underbelly enclosure directly under your fresh water tank.
6. OPEN the low-point drains for both the Hot and Cold water lines. Generally, these drains can be found extending thru the bottom side of the RV's underbelly enclosure.
7. Turn ON the water pump and allow it to remove the water from the fresh water lines as needed.
8. REMOVE the water heater drain plug.

(E) Waste Water System

WASTE WATER GENERAL INFORMATION

The waste water system in your RV can be described as two separate systems. A gray water system, which consists of the drain lines and holding tank for waste water from the sinks and tub, and a black water system, which includes the holding tank and drain for toilet wastes. Each system is self-contained and allows disposal of waste water at designated dump stations at your convenience.

Due to the vast array of floor plans and the necessary rearranging of plumbing systems, locations will alter, but in general, the holding tanks are located approximately beneath the bathroom and kitchen areas. Drain valves and drain hose storage are usually located on the driver's or off-door side of the unit.

UNPLEASANT ODORS

Components of the gray water system have drain traps and all tanks are vented to equalize air pressure and disperse odors to the outside.

NOTICE

At times, the rocking movement of the coach while driving may empty the drain traps of their water and allow odors from the gray water tank(s) to enter the RV. To solve this problem, simply pour 2 cups of water down the drain to refill the drain trap.

Residue in the drain water lines and black waste tank can also produce odors. To combat water holding tank odors, an RV approved deodorizing agent should be used. An agent that dissolves grease and fats and contains a detergent will help keep the tanks and lines clean and free flowing. You can obtain the deodorizer at most campgrounds and at stores that carry camping supplies.

EMPTYING THE HOLDING TANKS

Each holding tank has a drain line and dump valve, which permits dumping tanks individually or together. Each tank should be emptied often and ONLY at dump stations designated for this purpose. Dump stations can be found at most campgrounds and truck stops. Many service stations, particularly along interstate

highways, also have these facilities. Campground directories list dumping station locations across the nation.

If possible, dump holding tanks before a trip to reduce the gross vehicle weight. It is very important that you keep enough water in the black water tank to cover the bottom to prevent hardening of any waste residue that may remain. Never dump the black water tank until it is 3/4 full. (Check the tank level on your monitor panel.) This practice ensures that enough water is in the tank to flush all wastes into the sewer line. If necessary, fill the tank to the 3/4 mark with additional water before draining.

Never put anything in the holding tanks other than normal drain water, body waste, and biodegradable products. Paper wrappers, gum, cigarettes, etc., no matter how small, should NEVER be placed into either the gray or black tanks as doing so could cause damage to your plumbing system and/or tanks.

If connecting to a campsite dump station sewer inlet:

- Do NOT open termination valves until tanks are 3/4 full.
- Do NOT keep black water valve open while parked.

To empty your holding tanks:

1. Make sure all sewer drain tank valves are CLOSED before removing the RV drain cap.
2. Remove the cap from the RV drain termination and connect the sewer drain hose.
3. Attach the other end of the flexible sewer drain hose to the dump station inlet. Be sure both ends of the flexible sewer drain hose are securely attached.
4. Drain the black water tank first by pulling the termination valve handle away from the valve body to the OPEN position. Be sure to allow sufficient time for the tank to completely drain.
5. Rinse the tank with several gallons of water by depressing the stool pedal, hand flush handle, or use the black tank flush, if equipped. CLOSE the valve on the stool and let it fill before releasing to the tank. This creates additional force to flush the tank more completely.
6. Drain the gray water tank by pulling the termination valve handle away from the valve body to the OPEN position. Draining the gray tank last uses the water in the tank to rinse the drain lines and flexible sewer drain hose.
7. When the tanks are empty, starting at the RV's termination, "lift and walk" the remaining water out of the drain hose toward the dump station inlet.
8. CLOSE all of the termination valves by pushing the handles back to the closed positions.

9. Remove the flexible sewer drain hose from the RV drain termination and wash it thoroughly with clean water. Remove the other end from the dump station inlet and replace it in its storage compartment.
10. Secure the sewer hose storage cover.
11. Replace the caps on both the RV outlet and the dump station inlet.
12. Never empty your holding tanks directly on the ground, a roadway, river, or stream.
13. ALWAYS clean up the dump site before leaving.

NOTICE

If your RV has a Macerator System, the steps for emptying your holding tanks will vary. Please refer to the Macerator System section for complete instructions.

Solid waste often will not flush directly into the sewer system. Liquid waste typically drains the best. Therefore, you must allow water to accumulate in the black tank and give the chemicals time to break down the solids before emptying the tank. Always keep enough water in the waste tank to cover the bottom. Doing so will help prevent waste from solidifying, which will prevent the waste from being flushed from the system. If draining the gray water tank directly into the sewer inlet while parked, be sure to close the termination valve for a period of time before leaving, allowing water to accumulate in the tank for use in flushing the drain line and flexible hose.

⚠ CAUTION

Keep drain valve closed to minimize the presence of sewer gases. Sewer gases can be present when RV is connected to campground sewage hookup. May lead to illness or personal injury.

GUIDELINES TO TROUBLE-FREE OPERATION

- NEVER put anything in black water tank other than biodegradable RV toilet paper. You can find biodegradable paper products at most stores that sell camping supplies and at campgrounds that have a store on the premises. You can also use RV Waste Tank Chemical solutions for deposit into the waste tanks if you prefer.
- DO NOT put automotive antifreeze, household toilet cleaners, household drain cleaners, or any solid material into the waste water system.
- ALWAYS use chemicals in the black water system made especially for this purpose.
- When cleaning components of the waste water system, use ONLY cleaners made for RV systems.
- ALWAYS keep the drain cap in place and termination valves closed.

- After every third time the holding tanks are emptied, fill and flush both tanks with clean, fresh water a couple of times to keep them clear and clean.
- It is important to note that harmful and toxic materials can accumulate if the holding tanks are not regularly drained and thoroughly rinsed. It is also important to use holding tank deodorizing and cleaning agents in the waste water tanks to reduce odors and keep the lines open and free flowing.
- Keeping the tanks and level gauges clean allows the monitor panel to accurately assess the status of the tank.

NOTICE

Remove the waterless trap before using mechanical drain-cleaning devices. Waterless trap can be damaged.

BASIC TROUBLESHOOTING TIPS

Black tank will not drain:

- Check termination valve for proper operation.
- Buildup of waste debris in tank. Add water to assist in flushing tank or utilize Black Tank Flush if equipped.
- Buildup of tissue in tank. Use black tank chemicals to break down wastes.
- Always use a minimum amount of biodegradable toilet paper.
- Always use plenty of water when flushing.

HEATING PADS

The holding tanks on your recreational vehicle, if equipped, are heated with a 12VDC heating pad to prevent freeze-ups during cold weather. These pads monitor and maintain the holding tank fluids once powered ON with the switch typically found in the RV's control panel.

The built-in sensor in the heat pad, when the switch is in the ON position, will activate the tank heater as soon as the contents in the tank drop to an approximate temperature of 45°F. When the liquid within the holding tank is heated and rises to approximately 64°F, the tank heater will automatically deactivate, awaiting the fluids to again drop to 45°F and repeat the cycle.

If the ambient outside temperature rises and remains above freezing, or when the tanks are empty, switch the power to OFF.

NOTICE

Fluids must be present inside the holding tank for the tank heaters to properly function.

(F) Toilet and Black Tank Flush

TOILET

The toilet installed in your recreational vehicle is connected to the pressurized fresh water system. A single lever, located on the side or a foot pedal, controls flushing and the flow of water into the bowl.

- To add water to the toilet before using, push the flush lever until the desired water level is reached. (As a general rule, more water is required when flushing solids.)
- To flush the toilet, push the lever all the way down and hold until the sewage leaves the toilet.
- Release the flush lever. A small amount of water should remain in the bowl. To add more water to the bowl, hold the lever HALFWAY down until the bowl has the desired amount of water.
- Be sure to hold the flush lever down long enough to release the contents of the bowl, but only as long as necessary, as this will result in excessive water usage.
- Unnecessary, frequent flushing of the stool will quickly deplete your fresh water supply and fill your holding tank. If the black water tank becomes full, you will no longer be able to flush the stool until the tank is drained. Be sure all occupants and guests understand this operation.
- ALWAYS use deodorizing agents, specifically designed for use in holding tank systems, and a good biodegradable tissue paper. These products are available directly from your dealer or any store that sells camp supplies.
- NEVER use chlorine or caustic chemicals, such as drain openers or laundry bleach, in your toilet.
- NEVER allow foreign objects (non-dissolving items) to be flushed through the toilet.

NOTICE

For proper operation of the toilet flush ball, routine cleaning and lubrication with a silicone spray is required. See component owner's manual for care and maintenance.

NOTICE

For proper water flow into the toilet bowl, routine cleaning of the water line screen is required. See component owner's manual for care and maintenance.

MACERATOR PUMP

A Macerating Pump (if equipped) works much like a household garbage disposal. Located at the termination of the RV's waste tank drain lines, the macerator grinds and liquefies black water waste, then pumps it through a heavy-duty discharge hose. In addition, it pumps gray tank waste through the discharge hose. There is no need for a constant slope or cumbersome hose supports.

To empty your holding tanks utilizing your factory installed Macerator Pump:

1. Make sure all sewer drain tank valves are CLOSED.
2. Remove the macerator pump hose and nozzle from its storage compartment.
3. Remove the termination cap from the macerator pump hose nozzle.
4. Attach the hose nozzle to the dump station sewer inlet.
5. Drain the black water tank by pulling the termination valve handle away from the valve body to the OPEN position.
6. Turn the macerator pump ON with the exterior switch.
7. Allow the macerator pump to empty the black tank. An audible change to the sound of the motor and a change in the diameter of the pump hose will signify that the tank has emptied.
8. Rinse the black tank with several gallons of water by depressing the stool pedal, hand flush handle, or use the black tank flush (if equipped). Close the valve on the stool and let it fill before releasing to the tank. This creates additional force to flush the tank more completely.
9. Allow the macerator pump to empty the black tank of the flushing water. An audible change to the sound of the motor and a change in the diameter of the pump hose will signify that the tank has emptied.
10. CLOSE the black tank drain by pushing the valve handle toward the valve body.
11. Drain the gray water tanks by pulling the termination valve handle(s) away from the valve body to the OPEN position. Draining the gray tank last uses the water in the tank to rinse the drain lines and flexible sewer pump hose.
12. Allow the macerator pump to empty the gray tanks. An audible change to the sound of the motor and a change in the diameter of the pump hose will signify that the tanks have emptied.
13. Turn the macerator pump OFF with the exterior switch.
14. Starting at the RV's termination, "lift and walk" the remaining water out of the pump hose toward the dump station inlet.
15. CLOSE the gray tank drains by pushing the valve handle(s) toward the valve body.
16. Starting at the RV's termination, for a second time, "lift and walk" the remaining water out of the pump hose toward the dump station inlet.

17. Remove the macerator pump hose from the dump station inlet and replace the termination cap on the nozzle.
18. Replace the macerator pump hose in its storage compartment.
19. NEVER empty your holding tanks directly on the ground, a roadway, river, or stream.
20. ALWAYS clean up the dump site before leaving.

BLACK TANK FLUSH

After black tank dumping, some solids may be left at the bottom of the black water tank as well as on the tank sidewalls. The black tank flush (if equipped) is designed to help rinse and flush the black tank.

To utilize the black tank flush:

1. Completely empty your black waste tank at an approved dump station. Leave the black tank valve OPEN.
2. Connect a garden hose reserved for this task to the black tank flush outlet on your RV and to the dump station water supply. For sanitary reasons, do not use your fresh water hose for the black tank rinse.
3. Turn ON the water supply and let it run for several minutes to help remove solids left in the tank.
4. During the flushing process, be sure the black tank valve remains OPEN and the flexible sewer drain hose remains connected between the RV's sewer drain outlet and the dump station inlet.

NOTICE

Do NOT use the black tank flush unless the black water tank termination valve is in the OPEN position. Improperly following this procedure, may result in an unsanitary condition leading to illness or personal injury.

(G) Winterization and De-Winterization

WINTERIZATION AND DE-WINTERIZATION

When storing your recreational vehicle through periods of freezing weather in an unheated environment, it will be necessary to winterize the water system. Damage to the water system components will result if the proper winterization steps are not taken.

Forest River recommends using a certified Forest River dealer to winterize your recreational vehicle.

Only use non-toxic RV antifreeze when performing a winterizing procedure.

ANTIFREEZE WINTERIZATION PROCEDURE

1. Level the RV.
2. Drain the fresh water tank and all waste water holding tanks.
3. OPEN all low-point drains to allow on-board water to run-out.
4. Turn OFF the water heater at the water heater switch panel and at the power center breaker (if applicable) and allow water in the water heater to cool down to room temperature.
5. Turn water heater bypass valve to BYPASS position. Never put non-toxic RV antifreeze into your water heater.
6. Relieve the pressure on the water heater by opening the HOT water side of your kitchen faucet until the water runs out.
7. Drain water heater by removing the water heater drain plug.
8. Shut OFF the water supply line to the refrigerator's water/ice maker, dishwasher and clothes washer, if equipped. Follow the winterization procedures for these appliances provided within their respective owner's manuals.
9. If equipped with a water filter system, make sure the filter cartridge is removed and re-install the canister.
10. CLOSE all low-point drains.
11. Apply non-toxic RV antifreeze to inlet of water pump by either:
 1. Turn winterization valve to winterization mode (if equipped) and put the winterization hose into a bottle of non-toxic RV antifreeze.
 2. Turn winterization valve to winterization mode and connect a hose to the winterization port (if equipped) and put the hose into a bottle of non-toxic RV antifreeze.

3. Remove water line from pump inlet, then connect a short piece of hose to the pump and put the hose into a bottle of non-toxic RV antifreeze.
12. Turn the water pump switch ON and open the cold water side of all interior and exterior faucet fixtures. Leave the faucets OPEN until the antifreeze flows out of the faucets, then CLOSE.
13. Repeat for the hot water side.
14. Flush toilet until antifreeze is visible inside the bowl. If equipped, operate toilet sprayer until antifreeze is observed.
15. When antifreeze is fully added, turn the water pump switch OFF.
16. Pour approximately one cup of non-toxic RV antifreeze down each drain for the galley sink, lavatory sink, and shower/tub. This fills the drain trap pipes to prevent holding tank odors from entering the RV during storage.
17. Using a hand pump, add antifreeze to the black tank flush (if equipped) inlet. As an alternative, blow out the black tank flush line using compressed air at a maximum capacity of 70 PSI.
18. Clean excess antifreeze in sinks, showers and tubs to prevent staining.

DE-WINTERIZATION PROCEDURE

1. Drain the fresh water tank and all waste water holding tanks.
2. With a garden hose fill the fresh water tank.
3. Install the water heater drain plug and close the water heater pressure relief valve.
4. Turn the pump switch ON and open the cold water side of all interior and exterior faucet fixtures. Leave the faucets OPEN until the antifreeze is flushed out of the water lines revealing clear water, then CLOSE.
5. Repeat for the hot water side.
6. Turn the water heater bypass valve to NORMAL and fill the water heater tank.
7. Flush toilet until clear water is visible inside the bowl. If equipped, operate toilet sprayer until clear water is observed.
8. Drain the fresh water tank and all waste water holding tanks again.
9. Sanitize the water system per the instructions found in this manual.
10. If a fresh water filter has been installed, drain the water lines, remove the assembly, clean and reinstall using a new water filter.
11. If equipped, OPEN the water supply line to the refrigerator's water/ice maker, dishwasher and clothes washer.

▲ WARNING

Never use automotive antifreeze in your fresh water system. Automotive antifreeze is toxic and not for use in potable (drinkable) water systems.

RESIDENTIAL REFRIGERATORS

When winterizing your RV, special care should be given to a Residential Refrigerator that has an ice maker or water dispenser. Please reference the refrigerator Owner's Manual for specific winterizing instructions. However, make sure to:

1. Turn OFF the water supply to the refrigerator.
2. Remove and discard the water filter, if applicable.
3. Using a large container, engage the water dispenser for several minutes to purge the water line.
4. Remove and discard all the ice from the ice bin. Keep the ice maker turned ON for 24 hours. This allows enough time for the ice maker to complete any harvest cycles and use up the remaining water in the water line. You might hear a buzzing sound during this time.
5. Disconnect the water supply line that is connected to the back of the refrigerator. Be prepared to capture remaining water in the water line with a large container.
6. Remove all food and beverages.
7. Thoroughly wipe down the entire inside of the refrigerator and freezer sections. This includes all bins, drawers, shelves and walls.
8. Completely dry all interior surfaces.
9. Remove any remaining ice cubes from the ice bucket and turn the ice maker to the OFF position.
10. Unplug the refrigerator.
11. Leave the doors open to help with air circulation.

WATER HEATER

The water heater is to be OFF and cool before winterizing. Please reference the water heater Owner's Manual for specific winterizing instructions.

OTHER APPLIANCES

A clothes washer, dish washer or any other water storage appliance requires winterization. Please refer to the appliance Owner's Manual for specific winterizing instructions. If no instruction is given for winterizing, winterization of appliance with antifreeze method is recommended.

(A) Terminology and Definitions

WEIGHT TERMINOLOGY

GVWR (Gross Vehicle Weight Rating) - Is the maximum permissible weight of the RV when fully loaded. It includes all weights, inclusive of all fluids, occupants, cargo, optional equipment and accessories. For safety and product performance do NOT exceed the GVWR.

GAWR (Gross Axle Weight Rating) - The maximum permissible weight, including cargo, fluids, optional equipment and accessories that can be safely supported by each axle.

NOTICE

The tires and axles do not support 100 percent of your towable RV's weight. A percentage of your RV's weight will be on the tow vehicle or tongue/landing jack and that needs to be accounted for when comparing the GVWR of the RV to your tire and axle weight capacity.

UVW (Unloaded Vehicle Weight) - Is the weight of the RV as manufactured at the factory. It includes all weight at the RV's axles, including all fluids and LP Gas. The UVW does not include cargo, fresh potable water or dealer installed accessories.

CCC (Cargo Carrying Capacity) - Is the amount of weight available for fresh potable water, cargo, additional optional equipment and accessories. CCC is equal to GVWR minus UVW. Available CCC should accommodate fresh potable water (8.3 lbs. per gallon). Before filling the fresh water tank, empty the black and gray tanks to provide for more cargo capacity.

NOTICE

Actual towing capacity is dependent upon your particular loading and towing circumstances, which includes the GVWR, GAWR and GCWR. Please refer to the Tow Vehicle Owner's Manual for further towing information.

⚠ WARNING

Double trailering or modifications to the frame of the RV, including rear bumper, will void the frame warranty.

CARGO CARRYING CAPACITY

Determining the weight of a vehicle includes more than understanding the load limits of the tires. A weight certification label, located on the forward half of the road-side of the RV, will indicate the gross axle weight rating (GAWR). This is the most weight that can be safely supported by each axle. Certified scales can generally be found at a gravel pit, storage company, recycling facility or large truck stops. Call in advance to determine if they offer public weighing services, their fees if any, and hours of operation.

Each Forest River RV is weighed at the manufacturing facility prior to shipping. A label identifying the unloaded vehicle weight of the actual RV and the cargo carrying capacity is applied to every Forest River RV prior to leaving our facilities.

The load capacity of your RV is designated by weight, not by volume, so you cannot necessarily use all available space when loading your RV.

RECREATIONAL VEHICLE TRAILER CARGO CARRYING CAPACITY
VIN: 4X4FVGH27R123456

THE WEIGHT OF CARGO SHOULD NEVER EXCEED
1707 kg or 3763 lbs

CAUTION:
A full load of water equals 376 kg or 830 lbs of cargo @ 1 kg/L (8.3 lbgal)

RECREATIONAL VEHICLE TRAILER CARGO CARRYING CAPACITY
Capacité de transport de chargement de caravane de véhicule de récréation
CARGO-CARRYING CAPACITY IS DETERMINED WITH THE FRESH WATER TANKS FULL AND THE WASTE TANKS EMPTY
Capacité de chargement est calculée avec les réservoirs d'eau douce pleins et les réservoirs d'eaux usées vides

Dry weight/Poids Sec:	5524 KG	VIN/VIN:	4X4FVGH27R123456
Cargo carrying capacity:	1336 KG	Capacité de transport de chargement:	1336 KG
Calculated with the fresh water tanks full	Cold: 354 KG	Calculé avec les réservoirs d'eau douce pleins	Froid: 354 KG
Hot:	23 KG	Chaud:	23 KG
Mass of waste water tank full:	376 KG	Masses de réservoirs d'eaux usées pleins:	376 KG

TIRE AND LOADING INFORMATION

The combined weight of Cargo should Never Exceed: 1707 Kgs or 3763 Lbs

TIRE	SIZE	COLD TIRE PRESSURE	SEE OWNER'S
FRONT	ST235/80R16	80 PSI / 552 KPA	MANUAL FOR
REAR	ST235/80R16E	80 PSI / 552 KPA	ADDITIONAL
SPARE	ST235/80R16E	80 PSI / 552 KPA	INFORMATION

RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

Le poids du chargement ne doit jamais dépasser 1707 Kgs or 3763 Lbs

AXE	DIMENSION	PRESSION DES PNEUS À FROID	VOIR LE MANUEL DE L'USAGER
AVANT	ST235/80R16	80 lb/ps2 552 KPA	POUR PLUS DE RENSEIGNEMENTS
ARRIÈRE	ST235/80R16E	80 lb/ps2 552 KPA	
DE SECOURS	ST235/80R16E	80 lb/ps2 552 KPA	



4X4FVGH27R123456
Dry Weight: 12178 lbs



VG123456
Dry Weight: 12178 lbs

MANUFACTURED BY / FABRIQUÉ PAR: FOREST RIVER TRAILERS, INC. DATE: 03/24/2017
 VIN/VIN: 4X4FVGH27R123456 VG123456
 GVWR/GV: 7200 KG 15800 LBS TYPE/TY: TRA/REM
 COOLER SIZE: 12.5 SAH

FRONT/AVANT	GAWR/GAW	TIRE SIZE	AXLE TYPE	COLD INFL PRESS/PRESS DE GONFL A FROID
()	3103 (6840 LB)	ST235/80R16E	16	552 KP SINGLE DUAL (80 PSALPC) <input checked="" type="checkbox"/> <input type="checkbox"/>
INTERMEDIATE	0 (0 LB)			0 KP SINGLE DUAL (0 PSALPC) <input type="checkbox"/> <input type="checkbox"/>
REAR/ARRIÈRE	3103 (6840 LB)	ST235/80R16E	16	552 KP SINGLE DUAL (80 PSALPC) <input checked="" type="checkbox"/> <input type="checkbox"/>

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT ON THE DATE OF MANUFACTURE.

CE VEHICULE EST CONFORME A TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU REGLEMENT SUR LA SECURITE DES VEHICULES AUTOMOBILES DU CANADA EN VIGUEUR A LA DATE DE SA FABRICATION.

(B) Weighing Your Recreational Vehicle

WEIGHING YOUR RECREATIONAL VEHICLE

In order to properly compute your load and load distribution, you must know both actual scale weights and the GAWR and GVWR found on the Weight Label on the RV. Weigh the RV with all anticipated equipment, luggage, and fluids onboard as if you were beginning your trip. You will also need to weigh the RV periodically to ensure you are maintaining the correct weight and load distribution.

To properly weigh your towable recreational vehicle, follow this procedure:

1. With full fuel tanks and a typical passenger load, weigh the tow vehicle separate from the RV. Record this UNLOADED TOW VEHICLE WEIGHT.
2. Before weighing the RV, fill the propane tanks. If you plan to travel with fresh water onboard, the fresh water tank should also be filled to the level you intend to carry when traveling. Your waste tanks should be empty.
3. Hitch the RV to the tow vehicle and pull onto the scale so that ONLY the tow vehicle is on the scales. Record this as the tow vehicle's LOADED TOW VEHICLE WEIGHT.
4. **IMPORTANT: The LOADED TOW VEHICLE WEIGHT of the tow vehicle MUST BE LESS than the tow vehicle's listed GVWR.** If you exceed the tow vehicle's listed GVWR, you must remove or shift weight off the RV's hitch accordingly.
5. Subtract the UNLOADED TOW VEHICLE WEIGHT from the LOADED TOW VEHICLE WEIGHT to calculate the RV's HITCH WEIGHT.
6. For safe towing, the recommended HITCH WEIGHT for a travel trailer should be approximately 10% - 15% of the total TRAILER WEIGHT. The recommended HITCH WEIGHT for a fifth wheel should be approximately 15% - 25% of the total TRAILER WEIGHT.
7. Proper care and consideration should be taken when weighing/loading a Sport Utility Trailer to allow for excessive cargo weight in the rear.
8. Drive the tow vehicle AND the trailer fully onto the scale and record the weight as the GROSS COMBINED WEIGHT. The GROSS COMBINED WEIGHT minus the UNLOADED TOW VEHICLE WEIGHT equals the TRAILER WEIGHT.
9. **IMPORTANT: The TRAILER WEIGHT MUST BE LESS than the recreational vehicle's listed GVWR.** If you exceed the RV's listed GVWR, you must remove weight accordingly.
10. Pull forward until ONLY the trailer's axles are on the scale. Record this weight as the AXLE WEIGHT.

11. **IMPORTANT: The AXLE WEIGHT of the recreational vehicle MUST BE LESS than the recreational vehicle's listed GAWR.** If you exceed the RV's listed GAWR, you must remove or shift weight accordingly.

If your recreational vehicle has dual axles, you can get a weight for each axle by stopping on the scale with the first axle on the scale and noting the weight. Then drive so that both axles are fully on the scale and note that weight as well. (Weigh masters are accustomed to this procedure and, if you explain what you intend to do, will usually help you with this.)

At this point, if you have any overload or imbalance, redistribute the weight and reweigh the RV. When you become familiar with how to load and weigh your RV, make a list and diagram to carry with you for easy reference.

Weight distribution is extremely important in the handling and wear of your RV. Remember to add the weight of any items purchased on your trip to the starting weight of your RV and to distribute the weight evenly. Also, keep in mind that if you make any major changes in the items you are carrying, it will be necessary to reweigh your RV.

Use packing material around breakable items such as plates and glasses if you will be traveling over rough roads or terrain. It is a good idea to use non-skid materials under heavier items to help prevent breakage or load shifting.

Resist the temptation to carry more supplies than you need. It is important to remember that the weight of items you purchase while traveling must be added to the camper weight, and you may need to rearrange items to maintain correct load distribution.

WEIGHING TIPS

- Cargo weight may vary greatly and will affect the total weight of your recreational vehicle. Always weigh the recreational vehicle at a certified weigh station equipped with platform scales.
- If you find that you have exceeded the GVWR of the recreational vehicle, you will have to remove items until you are within the specified limits. If you find that you have exceeded either of the GAWR's, you will need to redistribute the load within the recreational vehicle to meet the specified limits.
- To help ensure that items will be evenly distributed, plan ahead before loading your RV. Not only will the recreational vehicle handle better, you will also have reduced tire wear and increased fuel economy.
- **DO NOT** store heavy items near the front or rear of the RV as doing so could cause damage.

- To help keep weight reduced, empty the holding tanks before leaving on a trip and as often as possible when traveling. Carry only as much water as you will need for traveling. If needed, the water tanks can be used to help balance the weight in the RV (a gallon of water weighs 8.3 pounds).

To avoid overloading, you must understand that the GVWR is the most weight your RV was designed to carry. The GVWR is the weight of the entire contents of the RV as measured at the axles and on the tongue or hitch.

▲ CAUTION

DO NOT EXCEED THE GVWR OF THIS RV. This information is listed on the "Trailer Weight Information" sticker located on the driver's side (or road side) front corner of the RV.

TOW VEHICLE REQUIREMENTS

Your tow vehicle's towing capacity **MUST** be greater than the Gross Vehicle Weight Rating (GVWR) of your RV.

Contact your automotive dealer to confirm the towing capacity of your vehicle, whether you are buying a new tow vehicle, or will tow your RV with one that you already own. Some automotive manufacturers publish brochures that discuss towing considerations. Ask your automotive dealer how to obtain a copy of this information. Verify that the weight ratings listed in the brochure are for your exact vehicle.

A popular towing guide resource for RV consumers can be found at <https://www.trailerlife.com/trailer-towing-guides/>

(C) Selecting a Campground

SELECTING A CAMPGROUND

Selecting a campground is one of the first things you should consider when planning your next camping adventure. Below are some tips to help you choose the best campground for your needs:

- Decide how long you intend to stay at the campground. If you intend to stay for a prolonged period of time, a reservation would ensure your stay at the campground of your choice and that your site is reserved, no matter what time you arrive. As with most reservations, a deposit may be required to hold your space. Most campgrounds provide a 'drop box' where they will place your paperwork if you will be arriving after hours. Your campsite should be marked on the campground map, and many times, included will be local places of interest, shopping locations, and restaurants in the area.
- Ask about available discounts such as Military, Good Sam, First Responder or any other camping club discount.
- Understand the check-in and check-out times. You might be able to check-in early or check-out late with a small fee.
- You will want to know the cancellation and refund policies.
- Be sure to understand the campground Pet Policies in advance. Are they "pet friendly"? Are there restrictions on breeds or sizes? What are the leash policies? Are there designated pet areas?
- If you have a preference, you may request that your campsite be close to the pool, playground, lake, showers or campstore, if available. Or, you may prefer to park away from those more populated areas.
- If you have researched prior to your trip, you will know what type of amenities the campground has to offer and will be able to make a decision based upon your personal wants or needs. Amenities to consider include:
 - Is there an on-site restaurant?
 - Is there a general store?
 - Is there a bathhouse?
 - Are there golf cart rentals? Do I need a reservation for a golf cart rental?
 - Is there a swimming pool and what are the pool policies?
 - Are there other water sports available? Are reservations required for water sports rentals?
 - What other recreational activities are available? Are reservations required?

- Are there special kid programs or events and what time are they scheduled?
- Are picnic tables provided at each campsite?
- Some other potential campground policies to consider might be:
 - Alcohol restrictions.
 - Quiet hours.
 - How many guests are allowed?
 - How many cars are allowed at your campsite?
- Be sure the campground you choose offers the correct electrical hook-up needed for your recreational vehicle. It will likely be either a 30 Amp or 50 Amp electrical service.
- Be sure the campsite you choose has the available service hook-ups you desire. Water hook-ups, television cable and sewer hook-ups are NOT available at all campsites.
- Determine if the campground can accommodate the size of your recreational vehicle. Know the length of your recreational vehicle before making a choice. Smaller, older parks may not be able to accommodate larger recreational vehicles.
- Ask if the parking site for your recreational vehicle is a “pull-in” or “back-in” site. If you have a problem backing your RV, or if you will be arriving after dark to an unfamiliar campground, you may want to request a pull-in site. Definitely request a pull-in site if you are towing an object behind your recreational vehicle. Keep in mind, during peak traveling seasons, reservations may be the best way to ensure you get the type of campsite you need.
- Ask if the campsite is grass, gravel or concrete pad.

Thorough planning and proper selection of a campground and campsite is the best way to make sure your trip starts off on a positive note.

(D) Hitching Your Recreational Vehicle

HITCHING YOUR RECREATIONAL VEHICLE

Choosing the correct hitch for use with your RV will enhance the stability and maneuverability of your unit and tow vehicle combination. Forest River recommends you consult with your Forest River dealer for assistance in selecting the proper hitch, weight distribution (for trailers) and sway control systems (for trailers) for your application.

Pay particular attention to the relationship between the tongue load limits of your tow vehicle and the hitch that you purchase.

EMERGENCY BREAKAWAY SWITCH

The emergency breakaway switch is an important safety device that provides a means of automatically slowing and stopping your RV should 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 RV.

The breakaway switch is powered by the (customer supplied) 12VDC battery on the trailer. Make sure that the battery is correctly installed and fully charged before travel.

SAFETY CHAINS

Safety chains are included with every travel trailer and are frequently required by state law when towing a travel trailer.

- Hook the safety chains to the loops provided on the tow vehicle hitch. ALWAYS cross the chains UNDER the trailer tongue as they are extended to the hitch for attachment.
- The right chain attaches to the left side and left chain attaches to the right side. This will form a cradle that catches the hitch coupler should it become loose.
- If the chains are too long and drag the ground, simply twist them until the desired link is obtained. Do NOT attach safety chains by looping them around the hitch ball.

BRAKES AND BRAKE CONTROL

Your brakes are wired to the tow vehicle through the electrical pigtail, allowing evenly distributed braking power to both the tow vehicle and the RV.

A brake control is a customer-supplied device that is installed in the tow vehicle that activates the RV's electric brakes, if so equipped. Your RV brakes should work in synchronization with your tow vehicle brakes. Never use your tow vehicle or RV 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 RV. Additionally, you may have to make small adjustments occasionally to accommodate changing loads and driving conditions.

Consult your dealer regarding the types of brake controllers available and proper installation of the controller on your tow vehicle. Have him or her explain electric brake operation, and its proper use, as well as the importance of the load resistor and safety break-away switch.

Test the brakes and adjust them as necessary per the instructions of the brake controller manufacturer. Proper adjustment of the brakes can help to avoid dangerous swaying or jack-knifing on slippery pavement or during an emergency stop.

Before leaving on a trip, check for proper braking action on a short road test. Apply the brakes several times at different speeds and pressures. If wheel lock-up occurs, the brake shoe adjustment is too tight. If no camper brake action is occurring, brake shoe adjustment is too loose. Do not exceed a speed of 30 mph during this road test. Refer to the Brake/Axle Owner's Manual for adjustment procedures and a troubleshooting guide.

SPECIAL TRAVEL TRAILER HITCHING EQUIPMENT

A weight distributing hitch is a customer-supplied receiver hitch attachment designed to distribute the tongue weight of the trailer across the trailer and the tow vehicle for increased control. It consists of the hitch receiver, which attaches to the tow vehicle, and spring bars that provide the necessary leverage for load distribution. A hitch of this type, properly installed and matched to your tow vehicle, will provide a level ride that can improve braking and steering control, as well as reduce towing strain.

Another consideration when choosing a hitch is the addition of a customer-supplied sway control system. Friction and cam-action are the two main types of

sway control systems available. A properly installed sway control system enhances safety by preventing sway or fishtailing while towing. Be sure to discuss the addition of sway controls with your dealer and hitch supplier when making the decision to purchase a hitch for your tow vehicle.

NOTICE

For improved stability and reduced wear on your RV's components, it's important that your recreational vehicle is completely level once it is hitched to your tow vehicle. This is primarily accomplished with proper selection of correctly designed hitch pins for a travel trailer or slight adjustments to your fifth wheel king pin.

TRAVEL TRAILER HITCHING PROCEDURE

To safely tow your travel trailer, we recommend having a weight distributing hitch that accepts a ball mount with a 2 5/16" trailer ball. It is very important to choose a hitch that is rated to safely tow your RV based on the GVWR, designed for the particular tow vehicle, and have it properly installed.

The front tongue of the travel trailer A-frame is raised and lowered using a crank jack. If equipped, some Forest River trailers have an electric jack that will raise and lower the front of the unit.

1. Place wheel chocks behind the RV's tires.
2. Lift the front tongue of the trailer with the jack until the hitch coupler is high enough to clear the tow vehicle hitch ball.
3. Back the tow vehicle to the trailer until the hitch ball is directly under the coupler.
4. Set the parking brake on the tow vehicle.
5. Raise (or open) the coupler locking latch.
6. Lower the tongue of the trailer with the jack so that the coupler covers the hitch ball.
7. Lower (or close) the coupler locking latch to lock the coupler on the ball.
8. Secure the latch in place with a padlock or pin.
9. Connect the wire harness power cord between the tow vehicle and the RV.
10. Connect the emergency breakaway switch to the tow vehicle.
11. Connect the safety chain end connectors to the tow vehicle hitch plate.
12. Install customer-supplied weight distribution bars and sway control, if applicable. Refer to the hitch manufacturer's directions for proper hook-up and adjustment.
13. Lift the tongue jack leg all the way up to provide adequate road clearance.
14. Verify that all leveling jacks and stabilizer jacks are retracted.
15. Remove and store the wheel chocks.

16. Check all lights on the RV and tow vehicle for proper operation.
17. Pull forward and check the operation of the RV brakes with the hand control to assure proper operation. Refer to manufacturer specifications on setting the brake control.

⚠ DANGER

This unit may become unstable and/or unsafe if towed without proper weight distribution and sway control systems. These should be installed as per the weight distribution and sway control manufacturers' instructions. Your Forest River dealer will be a valuable resource in selecting the proper weight distribution and sway control systems for your unit.

FIFTH WHEEL HITCHING PROCEDURE

1. Place wheel chocks behind the RV's tires.
2. Adjust the front landing gear jacks until the fifth wheel kingpin is level with the hitch in tow vehicle.
3. Lower the tailgate on truck.
4. Release the hitch lock handle on the tow vehicle.
5. Back up slowly while lining up the tow vehicle so the hitch is 12" - 16" of accepting the fifth wheel kingpin.
6. Close and latch tailgate.
7. Back truck slowly until fifth wheel kingpin engages the hitch and automatically locks.
8. Engage the hitch lock and secure with a padlock or pin.
9. Connect the wire harness power cord between the tow vehicle and the RV.
10. Connect the emergency breakaway switch to the tow vehicle.
11. Check all the lights on the RV and tow vehicle for proper operation.
12. Completely raise the front landing gear jacks to provide adequate road clearance.
13. Raise all stabilizer jacks and leveling jacks to provide adequate road clearance.
14. Remove and store the wheel chocks.
15. Pull forward and check the operation of the RV brakes with the hand control to assure proper operation. Refer to manufacturer specifications on setting the brake control.

Most Forest River fifth wheels have power (either electric or hydraulic) front landing gear jacks that are easily operated with the push of a button to raise or lower the fifth wheel. The front landing gear jacks also have a convenient manual

operation in case of a power failure. To manually operate the front landing gear jacks:

1. To lift the fifth wheel for hitching or unhitching, drop each of the landing gear legs and foot pads by removing the lock pin.
2. Insert the pin in the hole that places the pad closest to the ground. This will compensate for variations in terrain. If parked on a level surface, keep both sides pinned in the same position.
3. Open the cover on the side of the RV and insert the hand crank into the alignment tube until the end engages the crank shaft.
4. Turn the crank handle counter-clockwise to raise the fifth wheel and clockwise to lower.
5. When retracting the jacks, raise them as far as possible with the crank handle.
6. Remove the lock pin and raise the pad tube, re-pinning in the highest possible position.
7. Remove and store the jack crank handle. Close and secure the access door.

TOWING

Before heading out on your first camping trip practice turning, stopping and backing in low traffic areas or large parking lots. When towing an RV, you are taller, heavier, longer and require more time and distance to stop than normal driving.

Weather and road conditions will require additional adjustments to speed. Anticipate dips and depressions in the road, slowing down well in advance. It will take longer than a passenger vehicle when passing so allow for extra time to execute a pass. Take dips and bumps slowly and be certain the RV wheels have passed the point before accelerating. Anticipate the need for slowing down or stopping well in advance to allow for additional braking distance. Swerves and sharp turns, especially at high speeds, could result in loss of control.

When descending a long hill, it is recommended that you shift your tow vehicle into a lower gear. The tow vehicle transmission and engine will help in controlling downhill speed and lengthen brake life.

When turning, the tires of the RV will not follow the same path as your tow vehicle tires. If possible, allow for this by safely pulling the tow vehicle out into the intersection further than you would normally so that the RV clears the curb or other roadside obstructions.

A popular towing guide resource for RV consumers can be found at <https://www.trailerlife.com/trailer-towing-guides/>

(E) Before You Leave Home

BEFORE YOU LEAVE HOME

Before you leave home, become familiar with your recreational vehicle and its features. This manual and the various appliance and accessory manuals contain important information about the use and care of your RV and its components. It is important that you read them carefully and keep them with your vehicle for future reference.

If you have not had experience driving or towing vehicles larger than passenger vehicles, we recommend that you take several test drives around your neighborhood before your first camping trip. Doing so will help develop a feel for your RV's handling characteristics and gain experience in driving/towing a larger vehicle. While on your test drive, practice parking and backing up. If available, also practice backing up using your back up camera and monitor if applicable.

We also recommend that you make your first camping experience a short one and close to home. This will give you the opportunity to learn the use of the vehicle in actual camping conditions. Being close to home will also be more convenient if you need additional instruction from your local dealer. You will also discover which items you didn't bring, that you may need or that would make your camping experience more comfortable and enjoyable.

LOADING TIPS

Weight distribution is extremely important for safe towing.

- When loading your RV, remember to distribute the weight evenly so you get the proper amount of weight on the axles and hitch. Remember to also consider the weight of any items you may purchase on your trip.
- The recommended tongue weight on a travel trailer should be between 10% and 15% of the total weight.
- The recommended tongue weight on a fifth wheel should be between 15% and 25% of the total weight.
- Proper care and consideration should be taken when loading a Sport Utility Trailer to allow for excessive cargo weight in the rear.
- Do NOT place heavy items in the overhead cabinets. They could shift and fall during travel.
- Luggage and similar cargo stored inside the RV must be secured to prevent possible damage if it should become necessary to make a sudden stop.

- Heavy items should be stored close to the floor in the center of the RV. Avoid loading heavy items near either end of the RV or on the rear bumper. Adjust cargo, as needed, to keep the side to side wheel loads equal.
- After you have determined what cargo makes up the allowable GVWR, make a loading diagram of your properly loaded RV.
- Store emergency items, flashlights, flares, tools, electrical cords, first-aid kit, etc., in an easily accessible storage compartment, taking care to keep those items in a waterproof container.

NOTICE

If connecting your RV to an outlet at your home while loading and preparing your RV for travel, operating your RV's equipment (especially the AC) will likely require more power than the rating of a single outlet. You might trip a breaker in your home's electrical system if trying to power your RV's on-board equipment.

NOTICE

Depending on environmental conditions, when preparing your RV refrigerator for travel, anticipate that it might take 8-10 hours to bring your RV refrigerator to a sufficiently cold temperature.

⚠ DANGER

Forest River recommends that you do NOT use extension cords to power your RV. The use of extension cords can create a risk of fire. If you choose to use an extension cord, be sure it is properly rated for the electric load and is in good condition before each use. Damage to an extension cord is often not visible and can only be detected through the use of special equipment and expertise that most consumers do not have. Never use an extension cord longer than 50 feet, when the cord has gotten wet, or a cord that has been pinched or shows any signs of damage.

WHAT TO PACK

CAMPING EQUIPMENT CHECKLIST

MUST HAVE ITEMS:

- Flashlights and/or lanterns
- Spare 12VDC fuses of various sizes
- Water hose - 25' minimum

- Pressure regulator for water hose
- In-line water filter
- Sewer hose and fittings/adapters
- Holding tank chemicals and sanitizer
- Tire lug wrench
- Tire pressure gauge
- Spare set of keys
- Stackable leveling blocks
- Wheel chocks
- Wood blocks for jack legs foundation
- Jumper cables
- Extension cord(s)
- Emergency flares
- Biodegradable RV toilet paper
- Throw rug/mat for entrance
- Clothes line
- Charcoal
- Firewood - pick up at campground
- Fire poker
- Grill brush
- Grilling tools
- Hot dog/marshmallow roasting sticks
- Lighter and/or matches

SUGGESTED ITEMS:

- Awning lights
- Folding camp table
- Bungee cord(s)
- Rope
- Small shovel
- Small ax and/or hand saw
- Portable gas grill
- Portable gas burner and gas bottles
- 50' of coax cable for TV connection

PERSONAL GEAR CHECKLIST

MUST HAVE ITEMS:

- Emergency contact phone numbers.
- Registration and insurance information.
- Gloves - work and/or latex.
- Shampoo and conditioner.
- Soap or body wash.
- Toothbrush and toothpaste.
- Deodorant.
- Hairbrush.
- Razors and shaving cream.
- Hand sanitizer.
- Wash clothes.
- Bath towels.
- Pool towels.
- Pillows.
- Sheets.
- Comforter.
- Extra blankets.
- Phone charger.
- Sunscreen.
- Bug spray.
- Fly swatter.
- Sunglasses.
- Dinner plates - permanent and disposable.
- Bowls - permanent and disposable.
- Cups - permanent and disposable.
- Coffee mugs.
- Silverware - permanent and disposable.
- Napkins.
- Paper towels.
- Cutting board.
- Cutting knives.
- Spatula.
- Stirring and serving spoons.
- Sponges.
- Plastic wrap.
- Aluminum foil.
- Dish towels.
- Baking dishes.
- Serving dishes.
- Pots and pans.
- Table cloth with retainer clips.
- Pot holders.
- Coffee maker, coffee and filters.

- Salt, pepper, seasonings.
- Cooking oil.
- Dish soap.
- Zip loc bags.
- Can opener.
- Bottle opener.
- Scissors.
- Garbage can and garbage bags.
- Indoor broom and dustpan.
- Cooler.
- Camping chair.
- Pocket knife.

SUGGESTED ITEMS:

- Laundry detergent.
- Cordless vacuum.
- Pet food, supplies and equipment.
- Rain gear.
- Toaster.
- Binoculars.
- Bicycle(s).
- Bluetooth speaker.
- Board games.
- Basketball, soccer ball, other.
- Fishing poles and tackle box.
- Baseball glove, bat, ball.
- Portable air pump.
- Food storage containers.
- Water pitcher.
- Whisk.
- Ladle.
- Tongs.
- Body lotion.
- Anti-bacterial wipes.
- Lip balm.
- Water bottle.
- Sun hat or visor.
- Meat thermometer.
- Measuring cups.
- Measuring spoons.
- Wine bottle opener.

FIRST AID KIT CHECKLIST

- Adhesive bandages
- Absorbent compress gauze pads
- Roller bandages
- Antibiotic ointment
- Antiseptic wipes
- Burn treatment
- Aspirin
- Ibuprofen/pain-relief
- Insect sting relief
- Sunscreen
- Lip balm
- Antihistamine to treat allergic reactions
- Poison ivy treatment
- Blunt tip (paramedic) scissors
- Sewing needle with heavy-duty thread
- Cold compress
- Latex gloves
- Medical adhesive tape
- Tweezers
- Oral thermometer
- Safety pins
- Blister treatment
- Aloe vera
- Hand sanitizer
- Hand soap
- Small mirror
- Throat lozenges
- First aid manual
- Cotton swabs
- Bug spray

TOOL KIT CHECKLIST

- Screwdrivers - slotted, Phillips, square head
- Carpenter's bubble level
- Tape Measure

- Tire pressure gauge
- Electrical tape
- Duct tape
- Plastic zip ties
- Razor knife
- Volt meter
- Hammer
- Pliers - standard and needle nose
- Crescent wrench
- Open-ended wrenches of various sizes
- Socket set
- Battery operated screw gun and charger
- Screw bits - slotted, Phillips, square head
- Various screw gun drive sockets

ONE FINAL CHECK

After you have loaded your RV for your trip, weighed it, and made sure you are within the specified weight limits, there's one final check you need to perform. Starting on the outside of the vehicle, perform a visual, walk-around check.

Here are some things to look for:

- All exterior storage doors and hatches are securely shut and latched.
- Tail lights, brake lights, headlights and turn signal lights are functioning properly.
- City water hose is disconnected and stowed. The connection cap has been tightly secured.
- The awning is closed.
- Holding tank valves are closed and dump outlet cap is securely fastened and sewer hose is stowed.
- Power cord is unplugged and stored.
- TV/satellite antenna is lowered (if equipped).
- Roof vents are closed.
- Fresh water tank, sewage holding tank, and propane tank are at correct levels.
- Entrance door is securely closed and locked and entry step is retracted.
- Check rear view mirrors adjustment, inside and outside.
- Check the campsite for items left behind and that you left it clean and safe for the next campers.
- Turn off living area water pump.
- Check that refrigerator door is closed and latched if equipped.

- Check that nothing heavy is stored in overhead or high cabinets, which could fall out and cause injury. Heavy items should be stored in lower cabinets.
- Stow galley flip up shelf and pedestal tables.
- Check that counter tops, range top, and shelves are clear of even small items that could become projectiles during an emergency braking or an accident.
- Be sure all LPG controls on the appliances are turned off.
- Check that any internal stowage is securely held in place.
- Check that lights and switches are set in positions safe for travel.

The last thing you need to do before getting on the road is to check the side-view mirror position. If needed, have someone help adjust the mirror from the outside, while you view the mirror position from the driver's seat. Doing so will ensure that the mirror is in the correct position. Due to the configuration of the RV, you will need to rely more on the outside mirrors than if you were driving a passenger car. Your RV is also longer than your car, therefore be extra observant and cautious when making turns and when pulling into traffic.

If your RV is equipped with a back-up camera (or rear vision) system, check it at this time.

(F) Winter Camping Precautions

WINTER CAMPING PRECAUTIONS

When using your RV in freezing or below freezing temperatures, these precautions should be taken:

- Make proper preparations to avoid freeze damage of the fresh water and drainage systems.
- Propane regulator freeze-ups can occur in any weather if there is moisture in the tank or if the tank has been over-filled. Always use moisture-free propane fuel and make sure the tank is not filled beyond 80% of capacity.
- Prepare for more frequent furnace operation that will increase battery draw and propane use.
- During cold weather it is very important to continue utilizing your vents and vent fans. This will keep the humid air inside moving to the outside.
- Keeping the RV tightly closed during cold weather will increase condensation. During cool weather usage, the use of a dehumidifier (customer supplied) may be required to reduce condensation.
- To avoid damage due to cold weather, check the exterior extrusions for frozen moisture before operating or using the RV's compartment doors, locks, slide rooms, windows, vents, etc.

(A) Upon Arrival

UPON ARRIVAL

Upon arriving at the campground, get a map of the campground at the registration office and locate your campsite. It's best to arrive at the campground before dark especially if you are unfamiliar with the campground and if you need to back into a site.

Check-in can be a good time to get your firewood and fill your fresh water tank with water if your campsite does not have a water source.

If you're new to RV camping, ask the personnel at the registration office if they provide an escort service for first-timers. A seasoned staffer will guide you to your site and assist you in getting parked and leveled.

Depending on the campground and the size of your RV, you might consider unhooking your RV and taking your tow vehicle or walking to your campsite in order to survey the site assigned to you. Does it offer sufficient space for your RV? Where are the most level spots? Locate all of the connections. Are there obstructions for your awning or slide rooms? Be aware of low hanging branches that can damage your RV, taking into consideration any windy conditions that might exist. Will you be able to drive through your site or will you have to back in?

CAMPSITE PARKING

Before parking on your site, inspect it for rocks, slopes or uneven areas. When pulling onto your site, watch for posts, large rocks, low-hanging limbs, or other obstacles. If possible, pull into the site so the electrical outlets and plumbing connections are on the driver's side of the recreational vehicle (most of your recreational vehicle's connections are on the driver's side). Doing so will enable the driver to maneuver the recreational vehicle more easily into a position where it will not interfere with these connections. The driver will also be able to see any obstructions more clearly, which could interfere with the slide rooms or awnings when fully extended.

⚠ CAUTION

Park the recreational vehicle on solid, level ground and clear the site of debris and obstructions. Avoid parking over holes or depressions in the ground. If parking on soft surfaces, utilize load distribution pads under each jack.

At the campsite, there will be basic steps to setting up your RV:

1. Choose a level location on the campsite that is close as possible to the campsite hook-ups.
2. Make sure your on-board house battery disconnect is turned ON so that the RV has 12VDC power.
3. Safely level the RV. See "Leveling And Stabilizing" for detailed instructions.
4. Chock the wheels securely to keep the RV stable on the site.
5. Disconnect your Tow Vehicle.
6. If equipped, lower the stabilizing jacks onto wood blocks until they firmly engage.
7. Connect the water hose to both the external source (spigot) and the City Water connection. An in-line regulator is suggested to maintain a water pressure less than 45 PSI. A water filter is suggested to cleanse the potable water.
8. Verify that the waste tank gate valves are CLOSED. Remove the RV drain termination cap and connect the flexible sewer hose to the termination. Ensure the locking tabs are secured by rotating securely into place.
9. Attach the other end of the flexible sewer drain hose to the dump station sewer inlet.
10. If you have a sewer support system, set it up allowing a slight slope from the RV to the dump station inlet.
11. Turn ON the LP gas.
12. OPEN the entrance step.
13. Extend slide rooms and awning(s) after verifying there are no obstructions to extension.
14. Verify that the main 120VAC breaker in your RV's power center is turned OFF.
15. Connect the power cord to shore power. A 30 Amp or 50 Amp power cord is provided to connect the RV to a grounded power source. Make sure the campground circuit breaker is turned ON.
16. Return to inside the camper and turn the main 120VAC breaker in your RV's power center ON.
17. Set the thermostat to the desired temperature for air conditioner/furnace operation.
18. OPEN a roof vent and turn on the fan (if applicable) to create air exchange.
19. Turn ON the refrigerator and place it into Electric mode.
20. Verify that the water heater bypass is set to the NORMAL position and that the water heater tank is full of water.
21. Turn ON the water heater.
22. Connect television coax cables to the campsite outlets if available.
23. If applicable, raise your television antenna. Turn ON the signal amplifier if using over-the-air antenna signal.
24. Set up the remaining features as needed.

(B) Leveling and Stabilizing

LEVELING YOUR RECREATIONAL VEHICLE

Proper leveling of your RV at your campsite is critical to the safe and efficient operation of your recreational vehicle and its appliances.

It is recommended that owners carry leveling blocks for those places where finding a level spot is difficult. These are available in most camping supply stores or can be ordered online. As an alternative, you can use varying lengths of 2" X 8" wood blocks for leveling. Ensure the ground is not soft and will support the weight of the trailer and its jacks.

MANUAL LEVELING

If your RV does not have an automatic leveling system, a manual leveling process might be required. If you are unsure of your recreational vehicle's equipment, please consult with your selling Forest River dealer. Before beginning the leveling process, choose an area of the site that is as level as possible. With smaller units, it's usually easy to move back and forth in your campsite until you are reasonably level.

Using a carpenter's bubble level, the ideal place to measure the level of your RV is on a countertop, in the refrigerator or on the main floor.

If your campsite requires a leveling procedure:

- Keep the RV hitched to the tow vehicle.
- Level the RV from side-to-side utilizing the leveling blocks stacked on top of each other to achieve the appropriate leveling height. Place them in front of the RV tires and pull the RV up on top of the blocks.
- Once it is level side-to-side, lower the tongue jack (travel trailer) or landing legs (fifth wheel) onto wood blocks.
- Place wheel chocks or wood blocks in front and behind the wheels so the RV can't move.
- Uncouple the RV from the tow vehicle and move the tow vehicle clear of the RV.
- Level the RV from front-to-back utilizing the tongue jack (travel trailer) or front landing legs (fifth wheel).

AUTOMATIC LEVELING

NOTICE

It's recommended that your RV be plugged into a 120VAC receptacle or have the generator running during leveling operation. This will help ensure the battery maintains proper voltage during operation.

Some larger units are equipped with an automatic leveling system that eliminates the need to perform a manual leveling operation. An automatic leveling system makes selecting a parking site easier and faster by reducing the effect of uneven ground. An automatic leveling system raises the affected low corners of the RV to make leveling "set up" faster and easier for you.

⚠ CAUTION

To avoid possible damage to the coach, the leveling system, or personal injury, carefully read, study and understand the leveling system operational procedure as outlined in the leveling jack owner's manual before beginning the leveling operation.

⚠ CAUTION

When the coach is parked on an excessive slope, the leveling requirements may exceed the jack lift stroke capability. If possible, move the coach to a more level surface before beginning the leveling process.

⚠ CAUTION

Keep people and pets clear of the recreational vehicle while the leveling system is in use.

⚠ WARNING

NEVER lift the recreational vehicle completely off the ground using only the leveling jacks. Doing so will create an unstable and unsafe condition.

⚠ WARNING

NEVER expose hands or other parts of the body near hydraulic leaks. High pressure oil leaks may cut and penetrate the skin, causing serious injury.

⚠ WARNING

NEVER use the leveling jacks to raise the recreational vehicle to change a tire or to perform any other type of repair work. ALWAYS use proper equipment or contact a professional.

BASIC TROUBLESHOOTING TIPS

Auto leveling is not operating correctly:

- Verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Low battery. Verify battery is fully charged on monitor panel. It might be necessary to charge battery.
- Low battery. Verify sufficient water level in battery.
- Insufficient power. Connect to shore power if possible.
- Verify 12VDC fuse in power center is NOT blown.
- Verify remote mini breaker has NOT tripped.
- Refer to error codes, if applicable, in manufacturer Owner's Manual.
- Verify parking brake is fully engaged (motorized only).

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

STABILIZING YOUR RECREATIONAL VEHICLE

Many recreational vehicles that do not have an automatic leveling system might be equipped with stabilizing jacks. These jacks can be a manual crank-type jack or a 12VDC electric powered jack.

They are designed to reduce vehicle motion due to movement inside the RV after the unit is leveled and ready for use. These are NOT designed to lift the RV or bear excessive weight, only help stabilize the RV from movement.

To operate, lower the stabilizing jacks onto a 2" X 8" wood block placed directly under the stabilizer jack foot pad until the jack is firmly engaged. Be sure all of the stabilizing jacks have the same amount of pressure on them so that you do not put the RV into a twisted position. Doing so, could cause the unit and its components to not function correctly.

NOTICE

Stabilizing jacks are not designed or intended to be used to level a recreational vehicle.

If your recreational vehicle is equipped with an automatic leveling system, your unit will likely not have stabilizing jacks. The automatic leveling system also provides the stabilization of your RV. If you are unsure of the equipment on your recreational vehicle, please consult your Forest River dealer for an explanation and demonstration.

NOTICE

Be sure all jacks are retracted in the up (travel) position before moving your RV.

(C) Slide Room Operation

SLIDE ROOM OPERATION

Most Forest River recreational vehicles are equipped with hydraulic or electric slide out systems, or a combination of both. In this manual, you will find general information that will pertain to all operations.

NOTICE

We recommend that your RV be plugged into a 120VAC receptacle or have the generator running during slide room operation. This will help ensure that the battery maintains proper voltage during operation.

BEFORE BEGINNING SLIDE ROOM OPERATION

Before extending the slide room:

- Ensure that your RV is completely level and/or stabilized so that slide rooms function correctly.
- Check the exterior of the RV to be sure the slide room will not hit anything outside when it is fully extended.
- Perform a visual inspection UNDER the slide room floor to make sure nothing has accidentally gotten under the slide room floors that might cause damage to the main coach floor or slide room mechanism during operation.
- Remove any applicable travel locks.
- For best results, do NOT allow anyone in the slide room when being extended.

Before retracting the slide room:

- Check for debris on the roof of the slide room.
- Check for debris on the floor of the main coach before retracting.
- If your RV is equipped with slide room “floor protection”, make sure to apply them BEFORE retracting your slide rooms.
- Check the interior of the RV to be sure the slide room will not hit anything as it retracts.
- For best results, do not allow anyone in the slide room when being retracted.

For optimum performance, the slide out system requires full battery current and voltage. If possible, the RV should be hooked up to 120VAC shore power, so the converter operates. The battery must be maintained at full capacity. If the battery is fully charged and you still do not have power, check the terminals and other connections at the battery.

NOTICE

Always check for debris on the roof of the slide room before retracting.

AUTOMATED SLIDE ROOM OPERATION

Most slide room operations are initiated by pressing and holding the slide room rocker switch or button on a key pad that is typically found on a system control panel or on a wall adjacent to the slide room.

After completing the inspection as previously itemized, follow these steps to extend the slide room:

- Turn the battery disconnect switch “ON”.
- Locate the rocker switch or touch pad button labeled SLIDE ROOM, which is generally mounted on the control center on the wall.
- Press and hold the EXTEND/OUT switch or button until the room is fully extended.
- Once extended, immediately release the switch or button. Failure to do so could cause damage to the slide assembly.

To retract the slide room, take the same safety precautions as previously stated for extending the room and:

- Be sure there are no obstructions on the floor of the coach or in the path of the room as it is coming in.
- Ensure there is no visible dirt or debris in the track of the slide room or under it. Trapped dirt or debris could cause damage to your carpet or floor.
- Press and hold the RETRACT/IN switch or button until the room is fully retracted.
- Once retracted, immediately release. Failure to do so could cause damage to the slide assembly.

MANUAL SLIDE ROOM OPERATION

In the event of a power failure or low battery, the slide room may be operated manually. See manufacturer's Owner Manual for detailed instructions.

NOTICE

In the event of a power failure, first check the slide room fuse in the fuse panel or the slide room mini breaker.

⚠ WARNING

Following manual override operation of any hydraulic slide room system, failure to return all valves to normal position may result in the room drifting from the retracted (closed) position.

⚠ WARNING

NEVER drive or move the coach with the slide room(s) extended.

STORAGE

During extended stays, move the slide room in and out once or twice a week to help keep the seals and internal moving parts lubricated. If you intend to store your RV for an extended period of time, store it with the slide room(s) in the RETRACTED position.

⚠ WARNING

The weight capacity of a slide room is determined by the amount of seating available for the slide room occupants. Exceeding the slide room weight capacity can cause damage and/or failure of the slide room assembly.

SUPPLIER FAQs

Lippert In-Wall (Schwintek) FAQs: <https://support.lci1.com/in-wall-slide-out>

Lippert Through-Frame FAQs: <https://support.lci1.com/through-frame-selections>

BASIC TROUBLESHOOTING TIPS

Slide room is not operating when button is activated:

- Verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Low battery. Verify battery is fully charged on monitor panel. It might be necessary to charge battery.
- Low battery. Verify sufficient water level in battery.
- Insufficient power. Connect to shore power if possible.
- Verify 12VDC fuse in power center is NOT blown.
- Verify auto-resetting fuse is NOT blown.
- If the slide room has a travel lock, verify it has been removed or disengaged. Refer to error codes, if applicable, on In-Wall slide out systems.
- Verify parking brake is fully engaged (motorized only).

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

(D) Breaking Down To Go Home

BREAKING DOWN TO GO HOME

At the campsite, there will be basic steps to breaking down camp when preparing to go home:

1. Turn OFF the water heater.
2. Dump and flush all tanks if connected to a full-service campsite. Dump and flush the waste tanks at an appropriate dump station if not available on campsite. Chemically treat the tanks for storage.
3. CLOSE the holding tank gate valves and secure the drain termination cap.
4. Disconnect and clean the sewer hose and place it in storage.
5. Disconnect television coax cables.
6. Raise stabilizer jacks and/or leveling jacks. Store leveling blocks and wooden foot pads if applicable.
7. Disconnect the water hose from the RV and the external water source. Replace the connection cap. Store the hose.
8. Turn OFF the LP gas supply.
9. Snap the range hood vent closed if applicable.
10. Turn OFF remaining appliances including air conditioner, furnace, televisions, radios, fireplaces.
11. Prepare refrigerator as required for traveling.
12. Turn OFF water pump.
13. Lower television antenna and/or satellite if applicable. Turn OFF signal amplifier.
14. Lower roof vents and exhaust fans. Turn OFF.
15. Close all windows and secure blinds/shades.
16. Verify that all free-standing equipment and furniture inside the RV is secured into place.
17. Verify that all interior passage doors, shower doors, sliding mirror doors, etc. are secured and latched.
18. Verify that all cabinet doors and drawers are secured and latched.
19. Close the awning(s). Secure in place if required.
20. Turn OFF the main 120VAC breaker in the power center.
21. Turn OFF 12VDC interior lights.
22. Clean debris from slide out roofs. Verify there are no internal obstructions to retraction. Close the slide outs. Install travel locks on the slide outs if required.
23. Disconnect the power cord from the shore power. Store the power cord and surge protector.

24. Connect your tow vehicle.
25. Remove the wheel chocks.
26. Close and lock all exterior compartment doors.
27. Verify that all taillights, brake lights, headlights and turn signal lights are functioning properly.
28. Check the campsite for items left behind. Make sure that you left it clean and safe for the next campers.
29. Close the entry step.
30. Close the entry door securely and lock for travel.

When you get home:

1. Drain the water heater.
2. Drain the fresh water system.
3. Disconnect the on-board house battery.
4. Empty the refrigerator of all perishable food.
5. Prop refrigerator door open to prevent mildew.

(A) Exterior

GENERAL INFORMATION

Due to the variety of floorplans available at Forest River and the various shapes and sizes of recreational vehicles, we offer many different features and components, designed to accentuate the comfort, convenience and luxury of your RV. Therefore, all of those components cannot be listed in this section. While we will attempt to touch on the major ones, please keep in mind your best resource is the specific component owner's manual that came with your Owner's Packet. It will detail the product used in the manufacture of YOUR recreational vehicle. (If you don't have the manual you need, many times you can find it on-line, where you will have the option of reading it or printing it for your future use. Be sure you have the model and serial number of your specific appliance readily available, so you get the most accurate information.)

Many components in your RV are warranted by its manufacturer. It is very important that you review all the literature provided in the Forest River Owner's Packet that came with your recreational vehicle. Fill out and mail any warranty registration cards required by the component manufacturers. If you have any questions regarding the operation of the component, contact your selling dealer. Also, please notify your dealer of any shortage of literature you may have.

It is important that you read all the manufacturer's information provided, regarding both operation and maintenance of the component. Pay close attention to all safety precautions given and follow them closely. Keep all literature, including this manual, with the recreational vehicle for easy reference. If service is required, contact your dealer or an authorized service representative of the component manufacturer. For your convenience, most manufacturers have toll-free service telephone numbers.

AWNING(S)

Awnings provide shade from the sun and protection from certain weather conditions. Most patio awnings operate from the RV's 12VDC electrical supply. For 12VDC operated awnings, the house battery switch, generator, or shore power will need to be ON prior to operating the awning.

Some Forest River recreational vehicles are equipped with optional slide room topper awnings that automatically open and close with the slide room. When fully extended, water may gather on top of the canopy. This water will spill over the

sides of the awning when the slide room is retracted. Before retracting the slide room, be sure to remove any leaves, twigs or other debris that may cause damage to the slide room components.

The following pictures show the awning overextended. Notice the fabric has rolled down the backside of the awning cylinder and the curtain is rolled to the top.



The following pictures show the awning with the fabric in the correct location. Once you fully extend your awning, quickly push the retract switch until the fabric looks like below. This will cause the rain to not pool behind the cylinder.



NOTICE

NEVER leave the awning(s) unattended while extended or damage may occur.

BASIC TROUBLESHOOTING TIPS

Power awning is not operating:

- Verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Low battery. Verify battery is fully charged on monitor panel. It might be necessary to charge battery.
- Low battery. Verify sufficient water level in battery.
- Insufficient power. Connect to shore power if possible.
- Verify 12VDC fuse in power center is NOT blown.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

AXLES AND SUSPENSION

Depending on the brand and model, Forest River towable units may have one, two or three axles with a wide variety of weight specifications and features. Axle specifications can be found on the RV's weight label. Your axles require maintenance and should be serviced routinely according to manufacturer's instructions.

Most Forest River brands are designed with a very reliable leaf-spring suspension system that will provide years of safe, comfortable towing. However, some brands do offer upgraded suspension systems that will enhance your towing experience.

Please consult with your Forest River retailer for equipment details.

BACKUP CAMERA

Your RV may be equipped with an optional Backup Camera rear vision system or a prep package for Backup Camera installation. If equipped, the installation typically includes a rear-view camera or a camera prep feature mounted at the top of the unit's rear wall. A camera monitor would be mounted and viewed inside the tow vehicle.

Please consult with your Forest River dealer for equipment details.

CABLE

Your Forest River recreational vehicle may be equipped with cable television connections. Attach the cable source to the cable jack on the RV exterior. The TV Antenna booster must be OFF for the cable signal to reach to the TV location.

Please consult with your Forest River dealer for equipment details.

SATELLITE EQUIPMENT AND CONNECTIONS

Your Forest River recreational vehicle may be equipped with satellite dish equipment and/or connections. Attach the satellite dish source to the satellite jack on the RV exterior.

Please consult with your Forest River dealer for equipment details.

REAR LADDER

If equipped, the exterior rear ladder provides access to the roof for inspection and maintenance of the roof and roof mounted items.

- When ascending and descending the ladder, ensure the ladder is clear of debris, such as water, ice, and other slippery substances.
- Always use both hands when ascending and descending the ladder.
- Always face the RV when ascending and descending the ladder.
- Always wear shoes that provide good traction, and do not wear sandals or other types of slip-on footwear when ascending or descending the ladder.
- Take into consideration the additional length the ladder adds to the RV when backing up or parking.

▲ CAUTION

Ladder capacity is 250 lb. maximum. Exceeding the maximum capacity may lead to ladder collapse and possible personal injury. ALWAYS face ladder and use both hands to climb slowly. Failure to comply can result in a fall hazard and result in personal injury.

EXTERIOR SHOWER

The exterior shower/wash station feature allows you to do things such as rinse off sand or salt after a swim, rinse off muddy boots, or bathe your pet outside the RV.

If using water from the on-board fresh water tank, the water pump must be turned ON for the exterior shower to provide water.

NOTICE

Don't forget to winterize your outside shower, if equipped.

(B) Interior

GENERAL INFORMATION

Due to the variety of floorplans available at Forest River and the various shapes and sizes of recreational vehicles, we offer many different features and components, designed to accentuate the comfort, convenience and luxury of your RV. Therefore, all of those components cannot be listed in this section. While we will attempt to touch on the major ones, please keep in mind your best resource is the specific component owner's manual that came with your Owner's packet. It will detail the product used in the manufacture of YOUR recreational vehicle. (If you don't have the manual you need, many times you can find it on-line, where you will have the option of reading it or printing it for your future use. Be sure you have the model and serial number of your specific appliance readily available, so you get the most accurate information.)

Many components in your RV are warranted by its manufacturer. It is very important that you review all the literature provided in the Forest River Owner's packet that came with your recreational vehicle. Fill out and mail any warranty registration cards required by the component manufacturers. If you have any questions regarding the operation of the component, contact your selling dealer. Also, please notify your dealer of any shortage of literature you may have.

It is important that you read all the manufacturer's information provided, regarding both operation and maintenance of the component. Pay close attention to all safety precautions given and follow them closely. Keep all literature, including this manual, with the recreational vehicle for easy reference. If service is required, contact your dealer or an authorized service representative of the component manufacturer. For your convenience, most manufacturers have toll-free service telephone numbers.

ANTENNA AND SATELLITE

Your recreational vehicle may be equipped with a digital antenna, which provides crystal clear digital HD reception of over-the-air channels in addition to superior reception range. The digital antenna is equipped with a built-in amplifier for maximum VHF and UHF programming and can be turned ON or OFF with a power switch. An indicator light will illuminate when the switch is ON and the signal amplifier is active.

Many antennas have additional features such as Satellite and Wi-Fi reception and/or enhancement.

NOTICE

If your RV is equipped with a crank-up style antenna, be sure to completely lower it before traveling.

TELEVISION - AUDIO VISUAL - MULTIMEDIA

Due to the large selection of televisions used in the manufacturing of Forest River RVs, it is impossible to list all of them in this manual.

BASIC TROUBLESHOOTING TIPS

Poor or no TV reception:

- Verify TV is turned ON and correct INPUT is selected.
- Verify TV antenna power booster switch is turned ON.
- Verify TV has been programmed (scanned) to receive channels.
- Verify connections are tight at TV and wall plate.
- Verify antenna is turned ON and raised if necessary.
- Verify antenna is pointed in proper direction.
- Verify antenna is NOT obstructed.

(C) Appliances

GENERAL INFORMATION

Due to the variety of floorplans available at Forest River and the various shapes and sizes of recreational vehicles, we use many different brands of appliances, designed to fit into the designated space in each recreational vehicle. Therefore, all appliances used cannot be listed in this section. While we will attempt to touch on the major ones, please keep in mind your best resource is the specific appliance's manual that came with your Owner's packet. It will detail the product used in the manufacture of YOUR recreational vehicle. (If you don't have the manual you need, many times you can find it on-line, where you will have the option of reading it or printing it for your future use. Be sure you have the model and serial number of your specific appliance readily available, so you get the most accurate information.)

Each appliance in your RV is warranted by its manufacturer. It is very important that you review ALL the literature provided in the Forest River Owner's packet that came with your recreational vehicle. Fill out and mail any warranty registration cards required by the appliance manufacturers. If you have any questions regarding the operation of the appliances in your RV, contact your selling dealer. Also, please notify your dealer of any shortage of literature you may have.

It is important that you read all the manufacturer's information provided, regarding both operation and maintenance of the appliance. Pay close attention to all safety precautions given and follow them closely. Keep all literature, including this manual, with the recreational vehicle for easy reference. If service on any appliance is required, contact your dealer or an authorized service representative of the appliance manufacturer. For your convenience, most appliance manufacturers have toll-free service telephone numbers.

⚠ DANGER

All pilot lights, appliances, and their igniters (see operatic instructions) shall be turned OFF before refueling of motor fuel tanks and/or propane containers. May cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury.

⚠ WARNING

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 uncontrollable propane flow, which could lead to a fire or explosion and result in death or serious injury.

⚠ WARNING

This propane piping system is designed for use with propane only. Do NOT connect natural gas to this system. Securely cap inlet when not connected for use. After turning on propane, except after normal cylinder replacement, test propane piping and connections to appliances for leakage with soapy water or bubble solution. Do NOT use products that contain ammonia or chlorine to test for leaks. May lead to a fire or explosion, which could result in death or serious injury.

RANGE/OVEN

If equipped, the oven and/or cooktop can be used for general baking. It requires propane gas to operate. Some models require a pilot to be lit while others light electronically using 12VDC.

Please consult the Range/Oven component Owner's Manual for use, care and maintenance instructions.

SUPPLIER FAQs

Suburban (Airxcel) Range/Oven

FAQs: <https://www.airxcel.com/rv/suburban/service-support/faqs>

⚠ DANGER

Do NOT use gas cooking appliances for comfort heating. May lead to carbon monoxide poisoning, which can lead to death or serious injury.

⚠ DANGER

Do NOT turn the control knob "ON" and allow propane to escape before lighting the match.

⚠ 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 appliances. Gas flames consume oxygen, which should be replaced to ensure proper combustion. Improper use may result in death or serious injury.

⚠ WARNING

Do NOT store combustible material in this area. May cause a fire, which could result in death or serious injury.

⚠ WARNING

Do NOT operate this appliance unless the privacy curtain is secured away from the appliance or removed. May cause a fire, which could result in death or serious injury.

⚠ WARNING

NEVER turn exhaust fan on with filter screen removed. Exposed fan blades pose an injury threat. Dirt and grease deposits which are normally trapped by the filter are free to build up in the range hood exhaust duct, creating a fire hazard.

⚠ WARNING

When the recreational vehicle is not in use, turn all knobs to the OFF position and turn OFF the main propane supply. When using the oven, do NOT cover bottom or entire rack with aluminum foil.

INDUCTIVE COOKTOP STOVE

An induction cooktop stove, if equipped, requires special induction-ready cookware which can be purchased anywhere cookware is sold. Since the induction stovetop depends on magnetic material to produce heat, copper, stainless steel, or aluminum cookware will not get warm.

MICROWAVE/CONVECTION OVEN

If equipped, microwaves operate on 120VAC power and may contain a built-in range hood for ventilation. To use the microwave, you must have 120VAC power supplied by a shore line connection or generator.

The following items should not be put into a microwave: glass jars, paper bags, Styrofoam plates or cups, plastic containers, metal utensils, bread wrapper wire ties, metallic rim dishes and aluminum foil.

Please consult the Microwave component Owner's Manual for use, care and maintenance instructions.

BASIC TROUBLESHOOTING TIPS

Microwave not operating:

- Verify microwave is plugged into a 120VAC outlet.
- Verify microwave door is completely closed.
- Verify 120VAC circuit breaker is turned ON and not tripped.

- Verify GFCI receptacle is NOT tripped.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

REFRIGERATOR

Your recreational vehicle is likely equipped with either an absorption style “RV” refrigerator that operates with propane gas and 120VAC or a “residential style” 120VAC refrigerator. If you are unsure of your RV’s equipment, please consult your Forest River dealer for details.

ABSORPTION STYLE RV REFRIGERATOR

Many RV refrigerators operate on the absorption system. In an absorption refrigeration system, ammonia is liquefied in the finned condenser coil at the top rear of the refrigerator. The liquid ammonia then flows into the evaporator (inside the freezer section) and is exposed to a circulation flow of hydrogen gas, which causes the ammonia to evaporate, creating a cold condition in the freezer.

The refrigerator will operate most efficiently when:

- The RV is level.
- The refrigerator is allowed 8-10 hours to cool prior to loading and using.
- The items placed in the refrigerator are cold or already frozen.
- Altitude limits are not exceeded. See manufacturer instructions for details.

SUPPLIER FAQs

Norcold Refrigerator FAQs:

<https://norcold.com/gas-absorption-refrigerators-faq/>

RESIDENTIAL STYLE REFRIGERATOR

Your recreational vehicle may be equipped with a “residential style” refrigerator similar to what you would have in your home.

This refrigerator operates off of the 120VAC electrical system in your recreational vehicle. In order to operate, the refrigerator requires either the shoreline to be plugged in, the generator running, or inverter power.

The inverter is intended to power your 120VAC residential refrigerator primarily when driving your vehicle. The house batteries will drain quickly if the refrigerator

is powered from the inverter when the tow vehicle engine is not running or you're not plugged into shore power/generator. Always make sure the inverter is turned ON to properly power your refrigerator if there is not a 120VAC connection or generator power available.

NOTICE

Your refrigerator, if equipped with an ice maker, will require winterization and sanitizing. In addition, there are special instructions for storage and draining. Please see the manufacturer owner's manual for details.

12VDC REFRIGERATOR

Your recreational vehicle may be equipped with a "12-volt" refrigerator that does not operate on propane gas or 120VAC. In order to operate, the refrigerator requires 12VDC power that is provided by the on-board battery(s). When plugged into shore power or utilizing a generator, the power converter will charge the on-board batteries to maintain charge and supply power to a 12VDC refrigerator.

SUPPLIER FAQs

Norcold Refrigerator FAQs:

<https://norcold.com/ac-dc-refrigerators-faq/>

NOTICE

Depending on the brand and model of your refrigerator and Forest River RV, the 12VDC refrigerator is likely to have a remote power switch to turn it OFF and ON. If you are unsure of the function of your refrigerator or the location of a remote power switch, please consult your Forest River dealer for details.

BASIC TROUBLESHOOTING TIPS

Refrigerator not working or cooling properly:

- Verify applicable control buttons are correctly set.
- Verify RV's 120VAC circuit breakers and GFCI receptacle are NOT tripped.
- Verify RV's 12VDC fuses are NOT blown.
- Verify refrigerator is plugged into 120VAC outlet if applicable.
- If using 12VDC, verify house batteries have adequate charge. Check voltage on monitor panel to verify battery is fully charged. It might be necessary to charge battery. If possible, plug RV into 120VAC shore power.
- Verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Verify refrigerator unit is level.

- If using propane gas, verify gas tanks are NOT empty and are turned to ON position. Both LP tanks need to be turned ON to allow auto change over to work properly.
- Allow sufficient time for proper cool down (normally 8-10 hours) and load with pre-cooled food.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

Please consult the Refrigerator component Owner's Manual for use, care and maintenance instructions.

WATER HEATER

Forest River recreational vehicles come with a wide variety of water heaters. Most common are a traditional tank water heater with a dual-source (gas/electric) operation.

A popular alternative is a tankless, hydronic heating system that transfers heat by circulating fluid through a closed system of pipes. These hydronic systems can be fueled by a 120VAC electric heating element, a diesel burner, or the vehicle's engine.

NOTICE

Some tankless, hydronic water heaters use the same fuel supply as the chassis. As a precaution, the fuel supply to the water heater will turn OFF when the chassis fuel tank reaches one-quarter full.

Water heaters require very little care. However, the most common cause of problems with your water heater is initiating operation before the tank is filled with water. Even running it for a brief period of time without water will damage the electric heating element.

Prior to operating the RV's water heater for the first time:

1. OPEN the water heater bypass valve to allow water to flow into the tank.
2. Next, connect the RV to a water source or turn ON the onboard water pump.
3. Be sure there is water in the water heater tank.
4. Turn ON the gas supply and electrical power to the water heater.
5. OPEN a hot water tap and wait until water is flowing with no air in the line.
6. When water is flowing from the tap, the water heater tank is full and it is safe to operate the water heater.

Please consult the Water Heater component Owner's Manual for use, care and maintenance instructions.

SUPPLIER FAQs

Suburban (Airxcel) Water Heater

FAQs: <https://www.airxcel.com/rv/suburban/service-support/faqs>

Truma Water Heater FAQs:

<https://www.truma.net/support-and-resources/frequently-asked-questions>

NOTICE

Your water heater will require winterization and sanitizing. In addition, there are special instructions for storage and draining. Please see the manufacturer owner's manual for details.

⚠ DANGER

Do NOT store or use gasoline or other combustible materials or liquids near or adjacent to the water heater or any other appliances.

BASIC TROUBLESHOOTING TIPS

Water heater not working or producing hot water:

- Will not ignite – verify power switch is turned ON at control panel.
- Will not ignite – verify 120VAC circuit breaker (if equipped) is turned ON and NOT tripped.
- Will not ignite – verify LP gas supply is not empty and source is turned ON. Both LP tanks need to be turned ON to allow auto change over to work properly.
- Will not ignite – reset gas and/or electric reset buttons that may have tripped from high temperature.
- Will not ignite – verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Will not ignite - verify there are no obstructions in exterior burner tube and exhaust.
- No hot water – verify there is a functioning water source: Either the city water connection or the on-board fresh water tank (with a functional water pump) must be available to supply water.
- No hot water – verify winterization valves are CLOSED so water pump can draw water from fresh tank.
- No hot water – verify water heater bypass valves are in NORMAL (or OFF) mode to allow a supply of water.

- Low water temperature – verify electric element switch is turned ON at outside panel (Suburban only).
- Leaking Pressure Relief Valve - this is usually a normal occurrence and NOT an area of concern. See manufacturer's Owner's Manual for details.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

WASHER/DRYER

If equipped, your recreational vehicle may have a stackable or combination Washer/Dryer for additional traveling convenience.

If your recreational vehicle is not equipped with a Washer/Dryer, plumbing lines may be located inside a wardrobe or storage cabinet (depending on model) for installation.

Please consult the Washer/Dryer component Owner's Manual for use, care and maintenance instructions.

NOTICE

Your washer will require winterization and sanitizing. In addition, there are special instructions for storage and draining.

DISHWASHER

If equipped, your recreational vehicle may have a Dishwasher for additional traveling convenience.

Please consult the Dishwasher component Owner's Manual for use, care and maintenance instructions.

NOTICE

Your dishwasher will require winterization and sanitizing. In addition, there are special instructions for storage and draining. Please see the manufacturer owner's manual for details.

(D) Heating and Air Conditioning

FURNACE

Forest River recreational vehicles come with a wide variety of furnaces. Most commonly used are propane gas fueled that require 12VDC power to electronically light.

A popular alternative is a hydronic heating system that transfers heat by circulating fluid through a closed system of pipes. These hydronic systems can be fueled by a 120VAC electric heating element, a diesel burner, or the vehicle's engine.

New furnaces sometimes emit smoke and an odor during the first initial use due to paint burning off the heating chamber. Do not mistake this for a malfunctioning furnace.

Please consult the Furnace component Owner's Manual for use, care and maintenance instructions.

SUPPLIER FAQs

Suburban (Airxcel) Furnace FAQs:

<https://www.airxcel.com/rv/suburban/service-support/faqs>

⚠ CAUTION

Only used factory installed appliances for heating your recreational vehicle. After market appliances, like space heaters, can be unsafe and potentially lead to a fire.

⚠ WARNING

Do NOT store combustible material in this area. May cause a fire, which could result in death or serious injury.

⚠ WARNING

Before operating the furnace, check the location of the furnace vent to be sure it will not be blocked by the opening of any door on the recreational vehicle (or by exterior items such as a bush or a tree).

⚠ WARNING

Do NOT install screens over the vent for any reason. Doing so can cause unsafe furnace operation.

⚠ WARNING

Should overheating occur or the propane supply fails to shut off, shut OFF the manual propane valve to the appliance before shutting off the electrical supply.

⚠ DANGER

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.

⚠ DANGER

Be sure the furnace and all ignition sources are off during propane refueling and while the vehicle is in motion.

⚠ DANGER

Read the furnace manufacturer's user manual. If the information in the manual is not followed exactly, a fire or explosion may result, causing property damage, personal injury, or loss of life.

BASIC TROUBLESHOOTING TIPS

Furnace does not ignite, cycles frequently, blows cold air:

- Verify thermostat is set to HEAT and turned ON.
- Verify FAN is set to AUTO.
- Verify propane tank is NOT empty and that valves are turned ON. Both LP tanks need to be turned ON to allow auto change over to work properly.

- Verify 12VDC furnace fuse in power converter is NOT blown and replace if necessary.
- Verify adequate 12VDC power to furnace. Check voltage on monitor panel to verify battery is fully charged. It might be necessary to charge battery. If possible, plug RV into 120VAC shore power.
- Low battery. Verify sufficient water level in battery.
- Verify RV's battery disconnect is ON allowing 12VDC power to flow.
- Verify return air grill is unobstructed. Remove anything stored in furnace compartment that could block airflow.
- Verify exhaust tube has NO obstructions.
- Verify heat outlet registers are OPEN and register openings are unobstructed.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

AIR CONDITIONER

Your recreational vehicle may be equipped with a roof-mounted air conditioner. It operates on 120VAC power and is located in the living/dining area and also in the bedroom area of some models. Your RV may have come factory equipped with the wiring and necessary bracing for the insertion of an air conditioner (A/C Prep). Check with your Forest River dealer for additional information.

Air conditioning consumes a large portion of the electric power available in the recreational vehicle and efficient operation can be an important consideration. A roof air conditioner, at best, can cool the air it intakes by 20 degrees F. In order to maximize efficiency of your air conditioning system, please follow the cooling tips listed in the next section.

Even though your recreational vehicle is equipped with 30 Amp or 50 Amp capabilities, be aware that some campgrounds may offer less than 50 Amp or 30 Amp service. Check with the campground before utilizing excessive power, which may create a fire hazard or trip breakers in either the recreational vehicle or the outside power source.

Please consult the Air Conditioner component Owner's Manual for use, care and maintenance instructions.

SUPPLIER FAQs

RVP/Coleman (Airxcel) A/C FAQs:

<https://www.airxcel.com/rv/coleman-mach/service-support/faqs>

Dometic A/C FAQs:

<https://www.dometic.com/en-us/us/products/climate/air-conditioners/rv-air-conditioners/faqs>

NOTICE

If you notice poor air flow or cooling when using the air conditioner, the most common reason is a dirty air filter. It is recommended that the air conditioner air filter is inspected and cleaned, or changed if necessary, after every 2 weeks of use.

NOTICE

For most efficient operation of the air conditioner, do NOT allow excessive exterior air to enter the RV during air conditioner operation. An open door or window can lead to the exterior warm, humid air to condense onto cold surfaces around the air conditioner.

NOTICE

ALWAYS turn off the air conditioner (and all electrical appliances) before disconnecting the RV from its 120VAC power source.

BASIC TROUBLESHOOTING TIPS

A/C will not turn on or does not operate properly:

- Verify thermostat is set to COOL and turned ON.
- Verify 120VAC circuit breaker is turned ON and NOT tripped.
- Verify air conditioner filter is clean and unobstructed.
- There might be a leak in the Air Distribution Box allowing warm outside air to mix with the cool air. Reseal if necessary.
- Verify condenser coil is NOT blocked, damaged or dirty.
- Close blinds, avoid heat-producing appliances, keep entry door closed, utilize awning to improve cooling.

SEE OWNER'S MANUALS FOR OPERATION AND DETAILED TROUBLESHOOTING

THEMOSTAT AND TEMPERATURE

Many factors influence the ambient temperature inside your RV. The purpose of a thermostat is to keep the air temperature at the level you have selected.

There are several things you can do to help manage the inside temperature to avoid over-stressing your heating and cooling appliances.

To maintain proper heating:

- Check to be sure there are no gaps in windows or doors that would allow loss of heat.
- If possible, park the RV so the front or rear of the RV takes the brunt of wind force.
- Have your furnace checked to ensure it is operating at its highest capacity.
- Keep all vents free of obstruction.
- Ensure vents are not blowing directly on the thermostat or thermostat sensor.

Setting the temperature and leaving the thermostat on AUTO will allow the device to detect changes in temperature. While some people lower the temperature at night or when leaving the RV, when you return and reset the thermostat, the furnace or air conditioner has to run longer to reach the new temperature you set. It is recommended to set it at a comfortable temperature and leave it.

To maintain proper cooling:

- If possible, park the RV in a shaded area.
- Use window shades, blinds or curtains.
- Keep windows and doors shut or minimize usage.
- Avoid the use of heat producing appliances.
- Installing window awnings will reduce heat gain by removing direct exposure to the sun.
- Ensure vents are not blowing directly on the thermostat or thermostat sensor.

Starting the air conditioner in the morning and giving it a head start on the expected high outdoor ambient temperature will greatly improve its ability to maintain the desired indoor temperature.

Whether using the HEATING or the COOLING function of your thermostat, condensation is always an issue. Keeping your RV at a constant temperature helps keep condensation at a minimum. For more information on the effects of condensation on your RV, refer to the “Prolonged Occupancy” section.

Toy Haulers General Information

GENERAL INFORMATION

Forest River is a leader in the manufacturing of RVs designed with cargo loading ramps that combine luxury RV living quarters with a large cargo area typically found in the rear of the RV. Many of these “toy haulers” offer fuel transfer systems. All of these Sport Utility Trailers have special features, requirements and limitations that deserve special consideration and attention.

PROPER LOAD DISTRIBUTION

It's a requirement that ALL towable RV's remain within GVWR and GAWR limits after being loaded for travel. However, proper load distribution is of particular importance for toy haulers.

Since, these trailers are designed to carry a variety of very heavy vehicles and cargo in the cargo storage area (or garage), special consideration must be given to how these items are loaded. With most of the storage areas located at the rear of the vehicle, the biggest concern is maintaining the correct hitch or pin weight percentage. Vehicles loaded incorrectly can have too little weight resting on the hitch or pin and can become unstable when towing. Keep the loaded tongue weight between 10% and 15% of the total weight for travel trailers and between 15% and 25% of total weight for fifth wheels. By maintaining the correct hitch percentage and staying within the limits of the GVWR and GAWR you can help insure a safe towing experience with your toy hauler.

Always load vehicles and heavy cargo items in the cargo area as far forward as possible. Strategically store smaller items throughout the RV in order to maintain the correct hit or pin weight percentage.

▲ WARNING

Do not exceed the RV's GVWR and GAWR. Do not exceed the tow vehicle GVWR, GAWR, GCWR or hitch rating. Failure to move cargo or remove cargo to keep within the weight limits can result in damage and/or loss of stability when towing which could result in serious injury or death.

CARGO RAMP DOOR

The cargo ramp door gives you complete access to the cargo area. When lowered, the cargo ramp door allows you to easily load bicycles, small motorcycles

and ATVs, other small vehicles and various rolling cargo.

The cargo ramp door is spring assisted to allow easy open and closing of the door. Although these high tensile, steel springs greatly reduce the effort required to open and close the door, care must be taken when operating the door.

When the cargo ramp door is lowered for use, make sure the lowered edge of the door rests entirely on a flat, level surface and that the corners of the door are adequately supported by the ground.

⚠ CAUTION

Safe operation and use of your cargo ramp door requires the following:

- Keep all body parts clear of the cargo ramp door while opening and closing.
- Do NOT lower the cargo ramp door into a ditch or gully.
- Do NOT operate if the cargo ramp door begins to be heavy to lift.
- Be sure your cargo does not exceed the capacity of your cargo ramp door as posted on the vehicle.

LOADING AND UNLOADING

When loading or unloading your RV, make sure to have the RV hitched to your tow vehicle and place wheel chocks or appropriately sized wood blocks in front and behind the tires to securely hold the RV in place.

Loading motorized cargo can be difficult and there are various hazards when driving your motorized cargo into the garage area. Take the following steps to aid in reducing the risks associated with transporting, storing, or occupying the RV with motorized equipment and vehicles.

- Wear personal protective equipment such as helmet, leather boots, appropriate gloves and eye protection while loading/unloading motorized cargo.
- NEVER stand in the path of equipment when loading/unloading.
- Keep body parts completely clear of the ramp door hinge pinch area at all times.
- Inspect the cargo ramp door and garage floor for cracks, damage, oil or other debris that may cause slippage.
- Remove carpet from section where fueled vehicles or motorized equipment will be stored.
- Take steps to reduce the ramp loading angle to make it easier and safer to load/unload your cargo. Position the RV to take advantage of any changes in

terrain that will help reduce the ramp loading angle. Also, raising the front of the RV will lower the back of the RV and can reduce the ramp loading angle.

- Do NOT unload a motorized vehicle by driving down the cargo ramp backwards. Stand in front of the vehicle while pushing it down backward in line with the ramp. Apply the brakes to control the unloading speed.

▲ WARNING

Carefully inspect your cargo loading ramp for any oil or grease that might contribute to your motorized cargo slipping or losing traction while using the ramp. A loss of traction may cause a sideways spin resulting in the cargo slipping off the side of the ramp and possible falling causing serious bodily injury or death.

CARGO TIE DOWN INSTRUCTIONS

Many motorcyclists find themselves with new dilemmas that they have probably never experienced in the past. One of these dilemmas is trying to tie down their bike securely to keep their expensive motorcycle safe during transport in their new Forest River Toy Hauler. However, there are only a few tried and true methods to make sure a motorcycle/toy can be transported as safe and secure as possible.

Here is a list of the basic equipment needed for securing a motorcycle for transportation/hauling: (4) high strength/ good quality ratchet straps (2) ratchets and (2) cam buckle straps will do; however, the preferred method is via (4) ratchet straps and (4) soft loops. (Soft loops are special straps that keep the hooks of your cam/ratchet straps away from your bike to prevent scratching during the trip.)

- Once the bike is in the trailer, wrap a soft loop around the base of the LEFT side handle bar and place the hook end of one strap through the soft loop.
- Once that is done, secure the other hook end of the strap to a secure spot in your trailer (preferably on an angle). Then pull the slack out of the strap and ratchet it a few times. Repeat this procedure for the RIGHT side handle bar.
- Once both ratchet straps are in place, tighten each snugly so that the bike will sit in the upright position on its own.
- At the rear of the bike, find a stable member (part) and wrap a soft loop around it. Then proceed to secure the straps to the bike in the same fashion as was done in the front.
- To ensure stability, periodically check the strap tightness and the condition of the straps along with the load itself before and during the trip.
- (Optional) The use of a wheel chock is a great security feature for your bike. If you choose to use one, position the straps so that they are pulling the bike inward towards the wheel chock.

NOTICE

Each bike is a little different so there isn't one single spot to wrap the soft loop that is the same for every bike.

⚠ CAUTION

Do NOT compress the front forks, serious damage may occur to the suspension of the bike (see the bike's owner's manual).

⚠ WARNING

Make sure that you read the instructions regarding load distribution and hitch weight. Each Toy Hauler has weight restriction in the cargo area. Please note the weight sticker in the garage is the maximum weight allowed. Your total carrying capacity cannot all be placed in the garage as it will cause the unit to have a light hitch weight, which could result in an accident and cause injury or death. Forest River is not responsible for how a unit is loaded. Follow instructions regarding the proper weight distribution.

PATIO ACCESSORIES

If equipped, some cargo ramp doors can also be used as a patio with the addition of a patio railing kit. This self-storing design provides additional entertaining space on your toy hauler ramp door. You will need to support the door with the supplied cables, engage the safety clips, extend the patio hand railings and properly lock everything into place.

A patio step deck is a popular feature offered on some Forest River toy haulers.

A patio three-season room is a popular feature offered on some Forest River toy haulers.

FUEL TRANSFER SYSTEM

Included on many Forest River toy hauler models, a fuel transfer system allows you to transport a supply of gasoline for use in motorcycles, snowmobiles, ATVs, or other vehicles and equipment. This system will often consist of a fuel tank, fuel tank filler, fuel gauge, fuel transfer pump, fuel transfer valve, and hose with fill nozzle. Depending on your model, there might be a master pump switch and/or an emergency shut-off switch that would be located on the frame rail near the fuel transfer pump. A grounding wire with a metal clip is supplied and should always be used to reduce the possibility of static electricity discharge between the fuel station and the equipment being fueled.

To fill the fuel transfer system tank, remove the fuel filler cap and fill the tank with the grade of gasoline required by your equipment. When replacing the fuel fill cap, be sure it seats squarely and turn it firmly to lock it on the fill pipe neck.

⚠ WARNING

ALWAYS use the grounding wire when fueling vehicles and equipment from the on-board fuel transfer system to reduce the possibility of a spark being caused by static electricity.

ELECTRIC BED LIFT SYSTEM

Many Forest River toy haulers come equipped with a rear cargo area electric bed lift system. This system typically includes sleeping accommodations for one or two beds. The bottom beds in some models also can be converted to dual sofas. The bed lift system is activated by pushing a button or switch that raises and lowers the bed/sofa to the desired height.

(A) Care and Maintenance General Information

GENERAL INFORMATION

Periodic maintenance and cleaning of your recreational vehicle are necessary to retain the dependability, safety and appearance that will provide you with many miles of trouble-free operation as well as protecting your investment.

Keep good records of maintenance functions performed and be sure to follow all owner obligations as may be required by the chassis manufacturer to keep your warranty in force.

It is also important to note that operating conditions will affect service timetables. Driving in extreme conditions, such as heavy dust, continuous short trips, or start-and-stop heavy traffic, means that the length of time between service appointments will be shortened. Discuss service timetables with your dealer service representative.

Preventative maintenance will pay for itself many times over by catching or preventing problems before they occur. Many repair costs are greatly increased by ignoring problems when they are small ones, allowing them to build into larger problems and possibly voiding your warranty due to neglect, misuse or abuse. If left unattended, small problems may also begin to affect other parts and systems of the recreational vehicle.

FIBERGLASS EXTERIOR

The care of all fiberglass is basically the same as any automotive finish. Any finish will deteriorate with time. Dulling and fading can be increased by exposure to extreme sunlight, air pollutants and excessive moisture. Regular washing will help prevent this from occurring. If surface deterioration, such as yellowing or chalking, occurs, consult with your dealer for proper procedures.

- Wash the exterior every 90 days with warm water and a mild detergent.
- Do NOT use a pressure washer to wash the exterior of your RV. This may cause damage to your RV.
- Avoid spraying water directly into refrigerator and furnace vents.
- Immediately remove bird droppings, tree sap, insects and tar to avoid staining.
- Wax at least once a year with a standard liquid or paste wax.

- Prolonged storage of the RV should be in a sheltered environment when possible.

“Black streaks” on the side of your RV's exterior are caused by a combination of rain, dirt and deteriorated sealant. Preventing "black streaks" is not possible. However, keeping your exterior washed and waxed often will make them much easier to remove. Your Forest River dealer sells many products effective in the care of your exterior and removal of "black streaks".

NOTICE

Physical damage to fiberglass should be addressed immediately to avoid moisture entering through breaks and causing problems with interior walls and components. Cover breaks in the fiberglass with plastic, sealing the edges with tape until proper repairs can be made.

EXTERIOR PAINT (IF EQUIPPED)

You cannot prevent external influences like humidity, changes in temperature, sunlight, road salt, industrial gases, bird droppings, tree sap etc. from attacking a vehicle's coating. Without regular adequate paintwork aftercare, the gloss will soon fade, and the coating will lose its resistance to external influences. The answer to this problem is adequate paintwork maintenance with aftercare products to preserve the value of the car's coating.

Before polishing or waxing the paint coating of your RV, it is essential that it should first be washed thoroughly. Never use polish or wax in full sunlight, as the warm surface of the paint work is more sensitive and therefore more difficult to work on.

On a newly painted unit, carefully clean the exterior with ONLY clear water (no additives) for the first 8 weeks. It is critical to allow for an adequate “cure” time and also for all residual solvents to escape from the paint. After 8 weeks, the paint will have fully cured, and approved cleaning additives may be used.

If your RV develops a slight haze on the paintwork (e.g., on vehicles in near-new condition), it can be removed with high-gloss polish. Apply the mild polish to the cleaned paintwork and leave to dry. Remove with soft chamois leather or cotton wool. Afterwards, it is advisable to apply a high-gloss hard wax to preserve the shine.

When washing your painted RV, make sure the RV's surface temperature is under 90 ° F and is not in direct sunlight. Rinse the entire coach to remove all loose dirt and grime. Never hold a pressure washer close to the surface of the RV. Use a fan

type spray nozzle on your water hose, making sure that the water coming out of the sprayer has a fan and not a single straight stream.

Most car stores offer mild car wash shampoos that are safe for clear coat finishes. We recommend using baby shampoo as it will not leave a film on the coach. Adding ½ of a cup of food grade vinegar to the water will boost the cleaning ability of any cleaner and also soften the water. This also helps to minimize water spots. Do not use dish soap, detergents with degreasing agents, or industrial cleaners as they can cause damage to the finish. Use a 100% cotton or Lamb's wool pads or wash mitts for washing the painted surfaces of your RV. Use a different mitt for washing the wheels and undercarriage. Change water in your wash bucket often or place a "dirt guard" in bottom of the bucket to keep the cleaning pad or wash mitt free of dirt and debris.

NOTICE

Absolutely no brushes should be used on the painted surface of your RV. Use of a brush will cause damage to the finish. Forest River does not recommend the use of any type or material of brush even though it may be marketed as "RV Safe" or "Approved". Damage caused by inappropriate maintenance is not covered under warranty as expressed in the Forest River Limited Written Warranty.

Drying your RV is just as important as washing it. Today's tap-water and well-water contain many chemicals that could water-stain your RV's finish. After washing, dry your RV with the squeegee or a clean 100% leather chamois. You can also use fresh Microfiber towels for drying. Please use caution as these towels are made partially with polyester (which is plastic) which can break down over time from extended use and washing, eventually causing damage to the clear coat finish.

EXTERIOR ALUMINUM METAL

A recreational vehicle with an aluminum exterior has a baked on enamel finish. Washing frequently with an automotive or RV wash solution will help avoid staining from dirt and debris. Always rinse the RV with clean, warm water prior to washing to remove any loose dirt.

Waxing the exterior two times a year with a high quality, automotive paste wax will help preserve the finish. Be sure to use a soft cloth to clean and wax using special care on and around vinyl graphics.

Do NOT use products containing ammonia or caustic harsh cleaners as they may cause discoloration to the painted surface. Do NOT use high-pressure washers, rotating brushes, such as in car washes, and power buffers. Use of these products

can damage graphics or paint finishes. Do NOT dry wipe surfaces. Do NOT use rubbing compounds.

“Black streaks” on the side of your RV's exterior are caused by a combination of rain, dirt and deteriorated sealant. Preventing "black streaks" is not possible. However, keeping your exterior washed and waxed often will make them much easier to remove. Your Forest River dealer sells many products effective in the care of your exterior and removal of "black streaks".

SEALS AND ADHESIVES

It is important to maintain the seals and adhesives to prevent moisture from entering and destroying recreational vehicle components. When washing your RV, inspect the seals for signs of drying out and wear. Be aware that weather and road vibration will have an effect on seals, causing them to dry, crack or separate. If you are unsure what to look for, have your dealer instruct you regarding the correct method for renewing the seals, or you may prefer to have the dealership inspect and reseal your RV if necessary.

NOTICE

Failure to maintain seals through regular maintenance can lead to damage and may be considered abusive treatment under terms of your recreational vehicle warranty.

WINDOWS AND DOORS

Check the seals around the windows regularly (at least every 6 months) to verify if sealant is present and complete. Follow the above instructions for care and maintenance of window and door seals and repair as necessary if applicable.

Adjust and lubricate latches and moving parts annually to ensure windows remain operative. Also, check the condition and operation of door locks, adjusting and lubricating as necessary.

Vinyl seals around windows and doors should be cleaned regularly and kept flexible by using a silicone spray or lubricant. Be sure to follow the directions on the product container.

FRAME/EXTRUSIONS/ALUMINUM SURFACES

Check the condition of the frame regularly. It is especially important to keep underbody components clean when driving your recreational vehicle during the

winter in areas where road salts are used. To help avoid surface pitting, clean and wax all extrusions. Special aluminum cleaners are available to restore the original luster to aluminum surfaces. Be sure to follow the instructions as outlined on the product package.

ROOF

Inspection of roof components at least every six months 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 severe damage such as rot, mold or mildew. If you encounter dry, cracked or weathered seals, reseal or replace as necessary. Check with your dealer for the type of caulking required for your roof and correct methods of resealing or replacing. A mild household soap solution and a soft brush can be used to clean most roofs.

NOTICE

The manufacturers of some Rubber and TPO roof membranes provide warranty coverage that extends beyond the standard limited warranty coverage of Forest River, Inc. Please see details of the respective component warranties.

NOTICE

If your roof should become punctured or ripped, cover the puncture or tear to seal out moisture and have it repaired immediately.

⚠ WARNING

Use extreme caution when inspecting, cleaning or performing maintenance on your roof.

PROPANE SYSTEM

It is important to have your RV's entire propane system inspected every six months by a qualified service center.

⚠ DANGER

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.

LIGHTS

Check the operation of exterior lights each time the vehicle is prepared for a trip. Check clearance, turn signal, brake and back-up lights to be sure they are working correctly. Any bulbs which fail to light should be checked and replaced, when necessary, with a new bulb of the same size. A failure of more than one light, such as both taillights not operating, may indicate a burned-out fuse. Check fuse and replace with one of the same rating when necessary. Replace any cracked, broken or missing light covers to avoid moisture infiltration and possible damage to the electrical system.

WINTER PRECAUTIONS AND STORAGE TIPS

When storing your RV for the winter, certain precautions need to be taken to protect your RV. Be sure to talk with your local Forest River dealer concerning any special requirements, for storage, in your particular geographic location. The following steps are general and your dealer can help you choose those which are most appropriate for your needs.

- Park your RV on a level surface.
- Close all slide out rooms.
- Clean your recreational vehicle thoroughly, inside and out.
- Remove all food products.
- Moisture can collect on inside surfaces during cold weather when inside humidity is high. Consider using a dehumidifier or other condensation-removing product to remove moisture. To reduce the possibility of condensation, air out the RV occasionally during storage.
- Consider placing insect and/or rodent prevention products inside the RV.
- Turn OFF all electrical switches and appliances.
- Turn OFF the propane supply at the tank.

- Close all shades and curtains.
- Be sure all windows, doors and vents are securely closed.
- Cover exterior appliance vents to prevent moisture and insects from entering during storage.
- Check the interior of the RV periodically to be sure leaks have not developed or that condensation has not formed, causing damage to interior components.
- Be sure that the batteries are maintained properly before and during storage. A discharged battery will freeze and crack the case. In storage, a battery will gradually lose charge after extended storage, even when disconnected by the battery disconnect switch.
- Be sure the tires are inflated to correct pressure and check periodically.
- Cover tires to prevent deterioration.
- Keep the roof free from snow and ice. Check it periodically and after a heavy snowfall.
- Winterize the water systems and protect exterior hoses and lines from freezing. Follow the winterizing procedure outlined in the Plumbing section.
- Follow all component manufacturers' winterizing instructions regarding their particular products. (If their procedure differs from this manual, follow the component manufacturer's instructions.)

CLEANING THE INTERIOR

The interior of each recreational vehicle has been designed for comfort, convenience, durability, and appearance. Proper knowledge of the care and maintenance of your interior will add to your pleasure as well as the long life of your RV.

UPHOLSTERY

All material should be professionally dry cleaned to remove any overall soiled condition.

For seating, spot clean with mild soap and water. Air dry or dry quickly with warm setting of a hair dryer. For stubborn stains, use mild solvent (e.g. Fantastic or Formula 409). Seating can be cleaned by conventional methods using commercial dry-cleaning solvents. This material cannot be machine washed.

Use mild detergent for coffee, tea, red wine, liquor, soft drinks, milk, ketchup, steak sauce, soy sauce, mayonnaise, butter, salad oil, chocolate, cosmetic foundation, lipstick, face cream, suntan oil/lotion, shoe polish, and urine.

Use a mild cleaning fluid (Woolite) on stains like machine oil and on more stubborn stains when mild detergent is not enough.

BATH

To clean your fiberglass shower stall unit, use warm water and a liquid detergent. Do not use abrasive cleaners; they may scratch and dull the surface of your fiberglass unit. Restore dulled areas by rubbing with an automotive-type liquid cleaner, and then put the soft glow back into the sides of your unit with a light application of liquid wax. **DO NOT** wax the shower floor as it may become slippery leading to a fall.

COUNTER AREA

Your RV countertops can be cleaned with common household cleaners. For most residues, you can clean your countertops with warm soapy water, an ammonia-based household cleaner, or a dedicated countertop cleaner.

Avoid cleaning countertops with window cleaners. They leave a waxy build-up that dulls the surface.

SINKS

Cleaning sinks can be accomplished using a mild liquid detergent on a soft cloth.

VINYL OR TILE FLOORING

The amount of daily usage will determine how often cleaning is required. Sweep as necessary with a soft broom. Care must be taken if you use a vacuum cleaner. Do not use vacuum cleaners with “beater bars.” Wipe over with a clean damp mop or cloth which should be rinsed frequently in clean water. Remember that all floors can be slippery when wet. When necessary, wash with a solution of clean water and mild detergent or domestic floor cleaning emulsion. Rinse thoroughly and soak up residual water. For additional luster, buff with a dry cloth. Spots, marks, and spillages should be wiped up as soon as possible.

Do not use wire or nylon wool scouring pads, furniture polish, spirit-based polish, powder, liquid abrasive cleaners, bleach, or strong detergents. Always follow the manufacturer’s instructions. Check that the cleaner/polish is suitable for use with cushioned vinyl floor coverings.

(B) Care and Maintenance Checklist

CARE AND MAINTENANCE

Maintaining your recreational vehicle is a critical responsibility for all owners.

Many of the requirements of vehicle maintenance should be performed by your local Forest River dealer. The list below represents an overview of basic requirements for all units, but your local dealer can provide a comprehensive list of requirements for your particular vehicle to ensure a long and satisfying ownership experience.

PERFORM BEFORE EACH USE:

- Verify that loaded weight is within specifications.
- Verify that loaded weight is evenly distributed.
- Verify awning operation.
- Verify leveling equipment operation.
- Check draining systems for leaks and road damage.
- Check GFCI circuits for operation.
- Inspect 120VAC breakers and 12VDC fuses.
- Verify all appliance operation.
- Test all safety alarms for operation; replace batteries if necessary.
- Check fire extinguisher pressure and condition.
- Check operation of all clearance lights, brake lights, turn signals and hazard lights.
- Check tire pressure including spare.
- Inspect tires for dry rot and adequate tread depth.
- Verify that slide room wipe seals and bulb seals are in place and functioning.
- Verify slide room movement, adjustment and operation.
- Inspect appliance exterior vents for dirt and obstructions; clean if necessary.
- Inspect and test generator (if applicable) for operation.
- Inspect battery(s), clean and verify fluid levels.

PERFORM EVERY 3 MONTHS:

- Check tire pressure including spare tire.
- Inspect tires for dry rot and adequate tread depth.
- Verify that slide room wipe seals and bulb seals are in place and functioning.
- Inspect slide out wipe seals and bulb seals for shrinkage, damage and deterioration.

- Inspect appliance exterior vents for dirt and obstructions; clean if necessary.
- Wash exterior with warm water and mild detergent.
- Roll unit forward or backward to avoid flats spots on tires.

PERFORM EVERY 6 MONTHS:

- Verify slide room operation, adjustment and movement.
- Clean roof per manufacturer's instructions.
- Inspect and repair/replace seals as necessary on moldings, walls and caps.
- Inspect and repair/replace roof seals
- Inspect interior for water leaks.
- Clean window weep holes.
- Inspect window seals for damage and repair/replace as needed.
- Inspect baggage doors for proper closure, adequate seal and any water leaks.
- Perform any appliance maintenance per manufacturer's instructions.
- Clean toilet filter if applicable.
- Open and inspect interior compartments for water leaks or water damage.

PERFORM EVERY 12 MONTHS:

- Inspect and test generator (if applicable) for operation.
- Inspect battery(s), clean and verify fluid levels.
- Wax exterior walls and caps with liquid or paste wax/polymer.
- Clean and lubricate roof vent mechanisms.
- Apply reconditioner to slide room wiper seals and bulb seals.
- Silicone exposed slide room hydraulic cylinder rods.
- Adjust and lubricate window latches.
- Clean and lubricate exterior steps, jacks and jack legs.
- Clean and lubricate exterior locks, gears and hinges.
- Have qualified service center check propane system pressure.
- Winterize depending on local conditions.
- Perform generator maintenance, if applicable, per manufacturer instructions.
- Clean carpet and other interior appointments.
- Clean all detector and alarm components.
- Inspect chassis paint for minor rust and scratches; touch up as needed.
- Check all wheel nut torque values at a certified service center.



Follow the River

www.forestriverinc.com



Forest River Interactive Mobile Manuals

Download your Forest River mobile app or visit our dynamic online manual to enhance your ownership experience. These interactive options provide incredible ease and insight into use, maintenance and enjoyment of your Forest River product. Ranging from “How-To” videos, pictures and illustrations of various components, systems and features to fully searchable content, answers are always just a click away.



Visit www.forestriverinc.com/manuals or scan the QR Code to access even more information on your Forest River product. Never be without your manual again!

