

# FOREST RIVER



## *Camping Trailer Owner's Manual*

***BEGIN THE JOURNEY!***



# Welcome Letter

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## Welcome Home!

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

Your Forest River tent camper 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 tent camper, 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 tent camper, 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 Tent Camper Warranty Registration Form.**

Be sure your dealer has installed the propane container bracket, as well as the propane container and regulator. Check that the connection has been made between the regulator and the propane manifold. Have your dealer explain the operation of filling the propane container as well as how to check the system for leaks.

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](http://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 tent camper 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 tent camper and its components, while providing you with the assurance that everything is in proper working order. If you are not familiar with tent camper towing, schedule a test drive with your dealer. Ask any questions you may have at this time.

Your tent camper was designed for short-term and recreational use. It was not designed to be used as a permanent dwelling. If you intend to use your camper as a permanent dwelling, it could cause your drapes, upholstery, and interior surfaces to deteriorate prematurely. This premature damage or wear, caused by permanent residency, may, under the terms of Forest River's warranty, be considered abnormal and abusive and **COULD REDUCE YOUR WARRANTY COVERAGE.**

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, located in the front of this manual, for information regarding warranty work and/or for the location of an appliance service center.

If you experience a camper problem 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 tent camper without written authorization from the Forest River Inc. Warranty or Service Dept. 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 camper. 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 tent campers.

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. tent camper Owner's literature packet.

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

**Travel Safely and...GO RV'ing!**

# **Limited Warranty**

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## **Fold Down Tent Camper**

### **SUMMARY OF WARRANTY**

Forest River Inc. warrants, only to the original purchaser, that the tent camper is free from defects in materials and workmanship. Warranty terms include service for 12 months from the original date of purchase for tent campers used only for non-commercial purposes. Forest River Inc. further warrants, to the original purchaser, that the roof, tent and frame are free from substantial defect, from the factory, in material and workmanship, for a period of five (5) years for parts, and three (3) years for parts and labor, from the date of purchase, under normal use conditions, effective with 1996 models. This warranty does not apply to any defect in the aesthetics or physical appearance of the unit, nor to normal deterioration of the soft trim and cosmetic items due to wear and exposure.

### **HOW TO OBTAIN WARRANTY SERVICE**

Defects in materials and workmanship of the camper during the first 12 months will be repaired free of charge, if the unit is returned, with both 'to and from' transportation charges prepaid, to an authorized Forest River Inc. dealer. Defects in material or workmanship of the roof, tent or frame of the camper, during the first three years of the five-year warranty period, will be repaired free of charge, if the part is returned, with prepaid 'to and from' transportation charges, to an authorized Forest River Inc. dealer. For the remainder of the five (5) year warranty period, warranty parts will be replaced, but necessary labor will be charged. If an authorized service center is not available in your area, refer to the information on the inside back cover to arrange prompt repairs to your camper.

### **EXCLUSIONS**

1. Forest River Inc. assumes no responsibility or liability for defects in workmanship or the operation of separately warranted products. These products may be warranted by the individual manufacturers and a copy of their warranties have been included in your owner's packet. Separately warranted products will not be serviced, repaired or replaced by Forest River Inc. If service or parts are required for these products, refer to the furnished list of factory-authorized service centers. If the list is not available for the particular products, write or call the manufacturer concerned to obtain the location of the nearest service center.
2. Forest River Inc. does not warrant components manufactured by others, including, but not limited to, tires, appliances, equipment, ranges, ovens, furnaces, batteries, axles, hubs, bearings, power converters, refrigerators, burners, floors, and brake systems. These parts may or may not be warranted by their manufacturers; however, Forest River Inc. assumes no obligations with regard to them.
3. This unit was expressly designed for use as a recreational vehicle and is not intended for use as a full-time stationary residence. Forest River Inc. makes no warranty with regard to normal and routine condensation.
4. Snow loads must be removed from the roof to avoid damage to the roof.
5. This warranty shall not apply to normal maintenance, such as greasing wheel bearings, tightening lug nuts, keeping the areas sealed, where extrusions meet panels, etc., that the tent camper will require, nor to any damages arising from abuse or the failure to have such maintenance performed.
6. Fabric items, such as canvas, canopies, window screening, vinyl windows, cushion and mattress covers, are not warranted against leakage, tears, punctures, shrinkage, fading or soiling but are warranted only against defective workmanship and materials. Installation of a roof air conditioner must be performed only at the designated area on the roof, by an approved Forest River Inc. dealer, or the roof, lifter system, and related components will not be warranted.

This product is a fold down tent camper and SHALL NOT be used for COMMERCIAL purposes OR RENTALS. Abuse, neglect, or operation over unimproved roads will void this warranty. Forest River Inc. makes no warranty with regard to any product not registered and normally used in the United States of America or Canada.

### **DISCLAIMER OR DAMAGES**

You and any other user of Forest River Inc. products and any person to whom this unit is transferred, and any person who is an intended or unintended beneficiary of this unit, shall not be entitled to any consequential or incidental damages, including, without limitation, loss of use of the unit, inconvenience, food, lodging, damage to personal property, lost income or earnings.

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

## **DISCLAIMER AND LIMITATIONS OF IMPLIED WARRANTIES**

Forest River Inc. limits all implied warranties of fitness for a particular purpose, and merchantability, to the warranty period of one year. No warranties, expressed or implied, extend beyond the one year warranty period. No person has the authority to extend, enlarge, or modify this warranty. No action to enforce this warranty may be commenced more than six months after expiration of the warranty period.

Some states do not allow limitations on how long an implied warranty may last, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## **FOREST RIVER'S OBLIGATION**

Forest River Inc. will remedy substantial defects in materials and workmanship caused by Forest River Inc. Forest River Inc. shall elect to remedy the defect by either repair, replacement or refund, at Forest River's discretion. Warranty service can only be obtained at Forest River's authorized dealers and service centers. All costs incurred in transporting this tent camper for warranty service shall be borne by you. Forest River Inc. shall remedy the defect within a reasonable time, not to exceed sixty (60) days, after delivery by you. All of Forest River's expenses in remedying the defect shall be borne by Forest River Inc.

## **YOUR OBLIGATIONS**

To validate this Warranty, be sure your dealer completed and returned the owner's registration within ten (10) days of purchase. The return of this registration form is a condition precedent to warranty coverage. Failure to return the completed form to Forest River Inc. will invalidate this warranty. You shall deliver this fold down tent camper for warranty service within a reasonable time, after discovery of the defect, and in no event after expiration of the Warranty period, as set forth above. All expenses incurred by you in obtaining warranty service shall be borne by you. You may obtain a list of authorized service centers to perform warranty service by contacting Forest River Inc. at the address below.

## **PARTS AND DESIGN CHANGES**

Forest River Inc. may make parts and design changes from time to time without notice and repairs or replacements may be made with new or different parts.

## **WARRANTY REGISTRATIONS**

Your warranty registration records should be completed and delivered to the manufacturers of component parts as they may be a condition of this warranty.

This Forest River Inc. Warranty is void unless your warranty registration is returned to Forest River Inc. at the address listed on the back cover of this Owner's Manual.

# **Limited Lifetime Warranty**

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## **Fold Down Camper Lifter System**

### **SUMMARY OF WARRANTY**

Forest River Inc. extends to the original retail purchaser (You) a limited warranty on its lifter system in Forest River Inc. recreational vehicles against defects in material or workmanship for the lifetime of the recreational vehicle.

### **COMPANY'S OBLIGATIONS**

If the lifter system is determined to be defective during the warranty term, Forest River Inc. will remedy the defect without charge within a reasonable time after receipt of written notice either by repair or replacement. Warranty service may be obtained from Forest River Inc. or its authorized dealers, or persons designated by Forest River Inc. In the event you have a defective lifter system repaired by an unauthorized service person and said repairs are covered by this Warranty, Forest River Inc. shall be liable only for costs of those repairs up to the amount that Forest River Inc. would have incurred if Forest River Inc. or an authorized dealer had made the repairs.

Warranty performance will commence within a reasonable time after Forest River's receipt of written notice of the defect and will be completed within a reasonable time, subject to availability of parts and scheduling.

### **ITEMS EXCLUDED FROM WARRANTY**

This warranty does not cover defects caused by:

1. Negligence in operation and maintenance.
2. Misuse of lifter system.
3. Damage not resulting from defect or malfunction (act of God).
4. Any damage that is caused by or related to any alteration of a Forest River Inc. lifter system.
5. Claims relating to unauthorized repairs, damage or defects.
6. Claims relating to the power lift system if unit is so equipped.

### **PURCHASER'S OBLIGATION**

You shall give written notice to Forest River Inc. at the address set forth herein within a reasonable time after discovery of the defect. This written notice should contain the following information:

1. Your name and mailing address.
2. Proof of date of purchase.
3. Model, year and serial number of the camper.
4. Name and address of dealer from whom the camper was purchased.
5. Description of the defect.

All costs incurred by you in transporting the Forest River Inc. system for warranty service shall be borne by you. No action to enforce this Warranty shall be commenced later than three (3) months after the expiration of the warranty period.

### **DISCLAIMER OF CONSEQUENTIAL OR INCIDENTAL DAMAGES**

Repair or replacement under this warranty is your exclusive remedy. Forest River Inc. shall not be liable for any incidental or consequential damage, resulting from any defect in the lifter system. 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.

### **LIMITATION AND DISCLAIMER OF IMPLIED WARRANTIES**

Forest River Inc. expressly limits all implied warranties to the warranty period. Forest River Inc. expressly disclaims, with respect to the Forest River Inc. lifter system, all implied warranties of merchantability and all implied warranties of fitness for a particular purpose after expiration of the warranty period. There is no warranty of any nature made by Forest River Inc. beyond that contained in this warranty. No person has authority to enlarge, amend, or modify this warranty.

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

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

### **PARTS AND DESIGN CHANGES**

Forest River Inc. may make parts and design changes from time to time without notice and repairs or replacements may be made with new or different parts.

All inquiries regarding this Warranty should be sent to the address listed on the back cover of this Owner's Manual.

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## ***Manufacturers' Warranties***

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For any components with separate warranties on your tent camper, be sure to check the literature supplied by the manufacturer to see if they require you to register your purchase with them to validate their warranty. These warranties generally apply only to the original purchaser of the tent camper. Forest River Inc. recommends that you send the various warranty registration cards or forms immediately before any time constraints on registration expire, possibly voiding your warranty.

Manufacturers' literature is supplied with the owner's information packet in newly delivered units. Only those products and options, which are installed on your camper, will be included in this packet. If you have questions regarding this literature, discuss them with your dealer during the pre-delivery inspection and report any literature shortage at that time.

### **General Warranty Information**

The appliances in your tent camper will provide home-like convenience while traveling. They have been designed and tested by their manufacturers for maximum service in a tent camper application. Each appliance in your camper is covered by Forest River's comprehensive warranty as well as being warranted by its respective manufacturer.

It is important that you review all the literature provided in the manufacturers' information packet. Fill out and mail any warranty registration cards or forms required by the appliance manufacturer at this time. Failure to do so could void your warranty. Be sure to have your dealer go over the operation of the appliances with you, and note any shortage of literature you may have at that time.

It is important also that you carefully read all the manufacturers' information provided regarding both operation and maintenance of the appliances. Pay close attention to all safety precautions given and be sure to follow them. Keep all literature, including this manual, with the tent camper for easy reference.

If service on any appliance is required, contact your dealer, or an authorized service representative of the appliance manufacturer. Appliances available in the camper include the range, refrigerator, water heater, and optional furnace. Operating instructions can be found in the literature provided with each appliance in the manufacturers' information packet.

### **NOTE:**

Be sure your dealer completes the retail pre-delivery inspection form and Warranty Registration form (refer to page 8) supplied with your camper, within 10 days of purchase, and that both you and the dealer sign and date them before returning them to Forest River to register your warranty.

## ***Dealer's Responsibilities***

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1. The selling dealership is responsible for inspecting both factory and dealer installed components for proper operation. This is known as the pre-delivery inspection and systems check.
2. Your dealer is required to provide a thorough and complete walk-through demonstration. This demonstration should provide a good understanding of how your new RV operates.
3. The owner's information packet should be presented at this time. This information should include all warranty cards, component information, operation and maintenance instructions relating to your new unit.
4. 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.
5. Your dealer should provide you with information concerning any need for service for your unit, 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.



# CUSTOMER INFORMATION

## Customer's Responsibilities

1. Regular and proper maintenance - As the owner, you have the responsibility 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 unit to a service center; sometimes a phone call is all that is needed. The service technicians can advise you.
2. Familiarize yourself with your RV. Observe all the component manufacturers' instructions regarding the use and service of their products.
3. Complete and send in all the warranty cards. Doing so may help you avoid conditions arising from neglect that are not covered under warranty.

### NOTE:

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.

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

1. 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.
2. Be sure to inspect the entire unit and note any service issues.
3. Locate all paperwork and ask any questions you may have before leaving the dealership.

### NOTE:

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 using your unit for the first time.

### NOTE:

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.

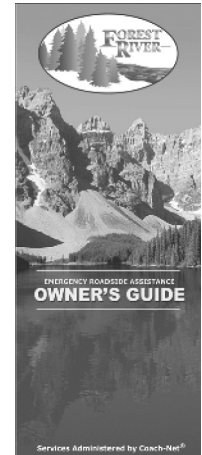
## Coach-Net®

# Coach-Net®

RV Technical & Roadside Assistance

When you take delivery of your new Forest River Inc. recreational vehicle, you are provided with an emergency roadside assistance service - free. We've teamed up with the largest RV emergency roadside assistance company in the country to give you immediate access to fast, dependable service when and where you need it. This is a comprehensive emergency roadside service that is available to you 24/7, around the clock.

For complete details regarding how to access your Forest River emergency roadside assistance and product support plan benefits, call 1-877-801-0333 or see the information in the back of this manual.



### 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 the manufacturer.

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 the manufacturer.

To contact NHTSA, you may either call the auto safety hot line, toll-free at 1-888-327-4236, for hearing impaired (TTY) call 1-800-424-9153. You may write to: NHTSA, 400 Seventh Street SW, Washington, D.C. 20590. You can also obtain additional information about vehicle safety from their website, <http://www.safercar.gov>.

### NOTE:

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 warranty repair reimbursement.

## Warranty/Pre-Delivery (Sample) Forms



**FOREST RIVER, INC.**  
**CUSTOMER DELIVERY AND WARRANTY REGISTRATION FORM**  
 DEALER TO ASSURE THAT THIS FORM IS PROPERLY COMPLETED AND RETURNED TO FOREST RIVER, INC. WITH (10) WORKING DAYS AFTER POI AND DELIVERY IS PERFORMED.  
 SEND FORM TO FOREST RIVER, INC. 1803 CENTURY DRIVE GOSHEN, IN 46528-574-534-3167

**TOWABLES**

OWNERS NAME:		DEALERS NAME:		VIN #	
ADDRESS:	Street:	State:	City:	State:	ZIP:
DEL DATE:	PHONE #:	FOREST RIVER INC. SERIAL #		MODEL #	

**PLEASE MARK X IN BOX, LEAVE BLANK IF NOT APPLICABLE. DEALER / LEFT COLUMN, CUSTOMER / RIGHT COLUMN**

ELECTRICAL SYSTEM	RUNNING GEARFRAME
120 VOLT SYSTEM/CIRCUITS, BREAKERS, OPERATION	ALL FITTINGS/TIGHTENING SYSTEM LEAKS
120 VOLT AUXILIARY GENERATOR OPERATION	P-TRAPEVENTS TIGHT AND CONNECTED
12 VOLT CONVERTER CIRCUITS, FUSES, OPERATION	EXTERIOR
GROUND / FAULT CIRCUIT INTERRUPTOR (GFCI)	ENT. DOORS/COMP. DOOR/LOOK ALL KEYS
ALL INTERIOR LIGHTS, RECEPITS, SWITCHES	ENT. STEPS / LEVELS / SECURE TO FRAME / ALIGNED
ALL EXTERIOR LIGHTS, RECEPITS, SWITCHES	TRIM/SEALANTS, WINDOWS, ROOF, BODY
BATTERY SYSTEMS/CONNECT TESTED	WINDUP/UNWIND OPERATION
MONITOR PANEL OPERATION	AWAYING DEMONSTRATED/CANVAS CHECKED
PHONE/SATELLITE FUNCTIONS	FULL STATION SURV. DEMONSTRATE/OPERATION
AUDIO/VIDEO ENTERTAINMENT SYSTEM FUNCTIONS	STABILIZER JACKS DEMONSTRATED
CARBON MONOXIDE DETECTOR	EXTERIOR MAINTENANCE PROCEDURES EXPLAINED
SMOKE DETECTOR	SLIDE OUT(S) (IF APPLICABLE)
SHORE CORD INSPECTION AND OPERATION	OPERATION AND MANUAL OVERRIDE DEMONSTRATED
APPLIANCES	INTERIOR EXTERIOR SEALS CHECKED
FURNACE AND THERMOSTAT	HYDRAULIC OR ELECTRIC PUMPLINES CHECKED
RANGE/OVEN	SLIDE OUT TOPPER(S) CANVAS/OPERATION CHECKED
WATER HEATER	GENERAL
REFRIGERATOR	ALL ACCESSORIES (INCLUDING REMOTES) ARE IN UNIT
AIR CONDITIONER AND THERMOSTAT	WARRANTY FORMS COMPLETED AND REVIEWED
MICROWAVE	ALL REQUIRED LITERATURE IS IN UNIT
TV ANTENNA AND CABLE HOOK UP	ALL OWNERS MANUALS IN UNIT AND REVIEWED
ALL OPTIONAL APPLIANCES NOT LISTED	FIRE EXTINGUISHER INSTALLED
FOLDING CAMPER AND BUNK END UNITS ONLY	ALL FURNITURE APPEARANCE/FUNCTION CHECKED
COMPLETE SET UP/CLOSING AND LIFTER DEMONSTRATION	ALL FLOORING APPEARANCE/FREE OF DEFECTS
FIT AND FINISH AND CONDITION OF CANVAS	HANDLING/TOWING CHECKED, TEST DRIVE

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

**OWNER/DEALER INSPECTION REVIEW**

- EXTERIOR AND INTERIOR FIT AND FINISH
- OPERATED ALL APPLIANCES, OPTION EQUIPMENT AND ACCESSORIES (REVIEWED MAINTENANCE AND SAFETY OF LP GAS SYSTEM)
- EXPLAINED WEIGHT RATINGS, LIMITATIONS AND PROPER LOAD DISTRIBUTION, TOW VEHICLE GVWR, HITCH, SET UP, BRAKE CONTROL
- OPERATED ALL FRESH WATER AND PLUMBING COMPONENTS, INCLUDING PROPER WINTERIZATION AND DRAIN LOCATIONS
- COMPLETE REVIEW OF OWNERS MANUALS AND HIGHLIGHT OF SAFETY ISSUES

I have completed the above inspections on the family recreational 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 notes in the space:

DATE \_\_\_\_\_

PURCHASER'S SIGNATURE \_\_\_\_\_

DEALER'S SIGNATURE \_\_\_\_\_

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 explanation to all questions regarding the items listed during this delivery process.

# **CUSTOMER INFORMATION**

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## **Contact Us**

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### **Forest River Wants Satisfied Customers**

Your satisfaction and goodwill are important to both your RV dealer and to Forest River. If you experience a problem and you have exhausted all attempts to rectify the situation with your RV dealership, you may consider contacting the Forest River Warranty/Customer Service representative. Contact information is provided on the back inside cover of the Owner's Manual.

When calling, please have the following information ready:

1. Your I.D. number.
2. Name and location of your selling dealer.
3. The date of your purchase.
4. The nature of the problem.

## Coach-Net™ Roadside Assistance

### Emergency Roadside Assistance

When you take delivery of your new Forest River RV, you can travel worry-free knowing you have an RV technical expert and emergency roadside assistance just a phone call away. We've teamed up with one of the largest, independently owned emergency roadside assistance providers in the country to give you immediate access to fast, dependable service when and where you need it. Coach-Net RV Technical & Roadside Assistance has been included in your purchase - FREE for 1 year!

For further details regarding how to access your Emergency Roadside Assistance, please call 1-877-801-0333.

### BENEFITS

EMERGENCY ROADSIDE ASSISTANCE	✓
RV TECHNICAL ASSISTANCE HOTLINE	✓
RV SERVICE APPOINTMENT SERVICE	✓
EMERGENCY TRIP INTERRUPTION	✓
EMERGENCY MESSENGER SERVICE	✓
NATIONWIDE TRIP ROUTING	✓

### Benefits

- On-Site Emergency Roadside Assistance includes services such as towing, flat tire assistance, delivery of emergency fluids, jump start/battery boost and lockout/locksmith Winch out or extraction services required in order to tow the disabled vehicle are covered for one man, one truck for two hours or two men, two trucks for one hour up to 100 feet off a maintained road or in a commercial campground.
- RV Technical Assistance Hotline is staffed with certified technicians and factory-trained representatives who understand the unique needs of RVers. Having access to a RV expert who can guide you through many common operational issues over the phone is priceless.
- RV Service Appointment Assistance is a hassle-free way of arranging for a service appointment when and where you travel. We make an appointment for you and give you directions and a time that fits your schedule.
- Emergency Trip Interruption – Should your vehicle become disabled due to a collision more than 100 miles from home you may be reimbursed up to \$2000; reimbursement up to \$300 for the rental of an automobile, up to \$1000 for airline tickets, up to \$300 for meals and up to \$400 for hotel/motel lodging to the extent made necessary by the conditions of the emergency and subject to any limitations under applicable state law.
- Emergency Messenger Service – Stay in touch with family and friends with no cost emergency message service.
- Nationwide Trip Routing – Make your next trip more enjoyable with custom trip routing and full color maps. We provide easy-to-follow maps and directions, travel tips, and a list of interesting places to see and much more.

### Coverage

Coverage is available for one year on your new RV and one additional family automobile or truck identified as eligible for the plan. Assistance is available 24 hours a day, 7 days a week by calling the toll-free number on your ID Card. Services are available on a "sign & drive" basis throughout the U.S. and Canada, and services are available in Mexico but limitations apply.



Benefits and services provided by NMC -RV, Inc. This is a brief summary of the program benefits. Limitations, restrictions and exclusions apply. If there are any conflicts between this document and the Guide, the Guide shall govern.

# IDENTIFICATION AND SAFETY

## LEGEND

Listed below are symbols and descriptions you will find throughout this manual. 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** DANGER! (Indicates a hazardous situation which, if not avoided, will result in death or serious injury.) This sign is commonly RED.

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

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

## Vehicle ID Decals and Plates

### RECREATIONAL VEHICLE DATA PLATE

The camper serial number label is mounted on the front road side of the camper.

### Vehicle Serial Number Label

MANUFACTURED BY / FABRIQUE PAR: FOREST RIVER, Inc.		DATE: 5/12/14		THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.	
VIN: 1FV1L1V1XXXXXXXXXXXX		TYPE/TYPE: TRAREB		THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT ON THE DATE OF MANUFACTURE.	
GVWR/MGV: 1704 KG ( 3757 LB)		RPT178		CE VEHICULE EST CONFORME A TOUTES LES NORMES QUI LES SONT APPLICABLES EN VERTU DU REGLEMENT SUR LA SECURITE DES VEHICULES AUTOMOBILES DU CANADA EN VIGUEUR A LA DATE DE SA FABRICATION.	
Coupler Size: RPL01085		COLD INF. PRESSURE DE GOLF A FROID			
FRONT WEIGHT ( 1588 KG ( 3500 LB)	TIRE SIZE: ST205/73R14C	WHEEL: 14X5.5JJ	345PSI SINGLE DUAL	<input type="checkbox"/> HP SINGLE DUAL	
REAR WEIGHT ( 0 KG ( 0 LB)			<input type="checkbox"/> HP SINGLE DUAL	<input type="checkbox"/> HP SINGLE DUAL	
REAR WHEEL ( 0 KG ( 0 LB)			<input type="checkbox"/> HP SINGLE DUAL	<input type="checkbox"/> HP SINGLE DUAL	

#### NOTE:

Be prepared to supply model number, serial number and year when ordering parts or requesting specific information regarding your RV.

Forest River Inc. recommends that you keep a copy of this information separate from the camper in the event that theft or vandalism requires you to supply a copy to the authorities.

Decals and data plates, used throughout the camper, aid in its safe and efficient operation; others give service instructions. Read all decals, data, and instruction plates before using your new camper. If a decal, data, or instruction plate becomes damaged, painted over or removed, it needs to be replaced.

## Safety Regulations and Propane

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

Do not place propane cylinders inside the vehicle. Propane cylinders are equipped with safety devices that relieve excessive pressure by discharging propane to the atmosphere. Propane is highly flammable. Failure to comply may lead to fire or explosion and result in death or serious injury.

### ⚠ DANGER

Propane cooking appliances need fresh air for safe operation. Before operating: Open vents or windows slightly or turn on the exhaust fan prior to using the cooking appliance. Propane flames consume oxygen which must be replaced to ensure proper combustion. Improper use may result in death or serious injury. A warning label is located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen supplied is limited due to the size of the recreational vehicle, and proper ventilation when using the cooling appliance(s) will avoid dangers of asphyxiation.

### ⚠ DANGER

Do not use propane cooking appliances for comfort heating. Failure to comply may lead to carbon monoxide poisoning which can lead to death or serious injury.

### ⚠ DANGER

Do not store propane containers, gasoline, or other flammable liquids inside the vehicle as a fire or explosion may result.

# IDENTIFICATION AND SAFETY

## **⚠ DANGER**

A warning label is located near the propane container. This label reads:

## **⚠ DANGER**

Do not fill propane container(s) to more than 80 percent capacity.

A properly filled container will contain approximately 80 percent of its volume as liquid propane. Overfilling the propane container can result in uncontrolled propane flow, which can cause fire or explosion and result in death or serious injury.

## **⚠ 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 explosion and result in death or serious injury.

## **Safety Devices**

### **⚠ 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.

- 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.
- Do not waste time by picking up valuables or getting dressed. Sometimes seconds count!
- Vacuum any dust off the alarm weekly using the soft brush attachment.
- DO NOT spray cleaning agents or waxes directly onto the detector as it may cause damage to the sensor.

## **Smoke Detector**



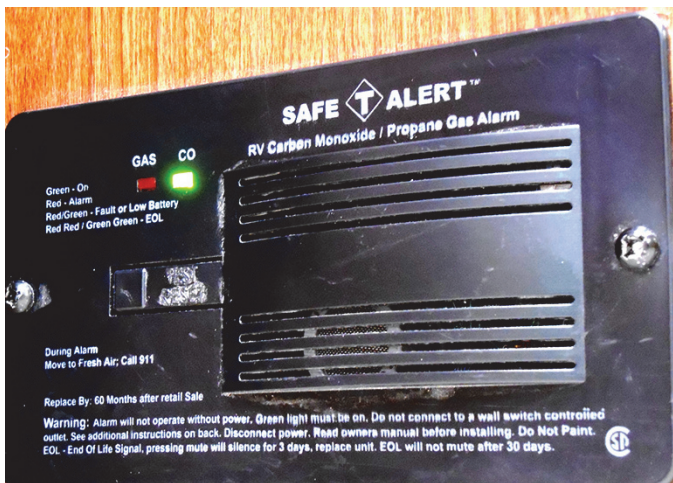
- Smoke alarms may not have time to alarm before the fire causes damage, injury or even death.
- A smoke detector works for only detecting smoke, not fire.
- The alarm will sound only if smoke reaches the sensor.
- Check the battery/s at least once a week while the RV is in use.
- This unit will not 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 this unit; replace if faulty.
- Never disconnect the battery to silence the alarm.

### **⚠ WARNING**

Smoke alarms may have an expiration date. Please consult the individual Owner's Manual or on-line at [www.forestriverinc.com](http://www.forestriverinc.com).

# IDENTIFICATION AND SAFETY

## CO Detector



- 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.
- This detector doesn't work without batteries. DO NOT remove batteries except for replacement.
- Test alarm 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. DO NOT attempt to repair.
- For more information, please consult the individual Owner's Manual or on-line at [www.forestriverinc.com](http://www.forestriverinc.com).

## Propane Detector



- This detector senses propane in the air, not smoke or fire or other gases. It detects the presence of propane at the sensor; explosive gas may be present in other areas.
- Test your propane detector weekly. If the alarm is located behind a closed door, it may not be heard.
- DO NOT attempt to repair the detector. If it fails the test, change batteries. If it still does not function properly, replace the entire unit.
- For more information, please consult the individual Owner's Manual or on-line at [www.forestriverinc.com](http://www.forestriverinc.com).

## 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.

1. Never store flammable liquids in the recreational vehicle.
2. Never leave cooking food unattended.
3. Never smoke in bed and always use an ashtray.
4. Never allow children to play with propane or electrical equipment.
5. Never use an open flame as a flashlight.
6. Have faulty or damaged wiring and electrical components repaired immediately.
7. Never overload electrical circuits.
8. Locate any propane leaks and have them repaired immediately.
9. Keep cooking surfaces clean and free from debris.
10. Don't allow rubbish to accumulate.
11. Never clean with a flammable substance.
12. Spray fabrics annually with a flame retardant.

### NOTE:

Be sure that everyone in your RV is familiar with the location of all exits, including exit windows.

### NOTE:

Make sure everyone is familiar with the location and proper operation of all fire extinguishers.

### ⚠ WARNING

**Evacuate everyone from the recreational vehicle immediately.**

**DO NOT ATTEMPT TO USE WATER TO PUT OUT A FIRE. Water can spread some types of fire, and electrocution is possible.**

**Get everyone outside, and then determine if you should attempt to extinguish the fire. If it is a large fire or a chemical fire, DO NOT HESITATE!**

**Leave the vehicle immediately and call the fire department!**

**Propane regulators must always be installed with the diaphragm vent facing downward. Regulators that are not in compartments have been equipped with a protective cover. Be sure that the regulator vent faces downward and the cover is kept in place to minimize vent blockage, which could result in excessive propane pressure causing fire or explosion.**

# IDENTIFICATION AND SAFETY

## **⚠️ 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.

If you decide it is safe to fight a fire with an extinguisher:

- Remove the tamper tape which covers the discharge push button (do not shake).
- Hold it upright and stand six to ten feet from the fire with a clear path to an exit.
- Press the button down completely, aiming at the base of the fire, and spray with quick side to side sweeping motion.

### NOTE:

Use 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.)

## **⚠️ DANGER**

Avoid inhaling the dry chemicals from the fire extinguisher. Although non-toxic, they could cause temporary irritation. When the fire is out, clean the area as soon as possible. The dry chemicals may cause surface damage if left too long.

Do not use water to extinguish a fire. Water can spread some types of fire, and electrocution is possible.

Underwriter Laboratories classifies fires into three types:

- Class A: Fires in wood, paper, fabric, rubber and certain plastics.
- Class B: Flammable liquids such as grease, cooking oils, gasoline or kerosene.
- Class C: Electrical fires started from live electrical wires, shorted motors/switches.

### NOTE:

The fire extinguisher provided with the recreational vehicle is a chemical type suitable for extinguishing small fires of the class B or C type. Extinguishers are designed to put out a fire in its initial stage, not if it is blazing out of control. If a fire cannot be approached within 10 feet without the risk of causing personal harm, immediately evacuate the RV and call 911.

## **Tire Safety**

Use the following information to make tire safety a regular part of your vehicle maintenance routine.

## **⚠️ CAUTION**

### Safety First-Basic Tire Maintenance

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.

## **Understanding Tire Pressure and Load Limits**

### Finding Your Vehicle's Recommended Tire Pressure and Load Limits

The tire information and vehicle certification label contains information on tires and load limits. These labels indicate the vehicle manufacturers' 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 weight the axle systems are designed to carry.)

When taking the trailer out of storage, inspect the tires thoroughly and be sure there are no cracks in the grooves and no wires showing. Cracks in the sidewall could indicate interior damage or separations in the tire.

### Understanding Tire Pressure and Load Limits

Tire inflation pressure is the level of the 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. (This number is also expressed in kilopascals (kPa) which is a metric measuring system used internationally).

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



# IDENTIFICATION AND SAFETY

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.

## 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. The number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

### NOTE:

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 Safety Tips

### NOTE:

Preventing Tire Damage

- 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 try not to strike the curb when parking.

### ⚠ WARNING

#### Tire Safety Checklist

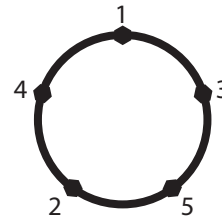
- Check tire pressure regularly (at least once a month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and any other foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- 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.

### ⚠ WARNING

#### Tire Tips

- Make sure all of the lug nuts are secure. Use a torque wrench. Do not guess.
- Inspect tires for uneven wear patterns on the tread, for cracks, for foreign objects or for other signs of wear or trauma.
- If you are towing a trailer, remember that some of the weight of the loaded trailer is transferred to the towing vehicle.
- Trailers should have the wheel bearings repacked after being in storage for long periods of time.

## Tighten Each Lug Nut In The Order Shown



### NOTE:

Start all lug nuts by hand to prevent cross threading. Wheel nut torque requirements vary depending on the size and manufacturer of the wheel. Always use the wheel manufacturer's recommendation but do not exceed 120 ft/lbs. on 1/2 inch studs. Unless otherwise specified by the wheel manufacturer, use a final torque of 85-95 ft/lbs.

### NOTE:

It is recommended that wheel bearings be repacked yearly.

TIRE AND LOADING INFORMATION			
The combined weight of Cargo should Never Exceed:			S E J 0 4 0 4 4 5
1184 Kgs or 2611 Lbs			
TIRE	SIZE	COLD TIRE PRESSURE	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
FRONT	ST235/80R16/E	80 PSI / 552 KPA	
REAR	ST235/80R16/E	80 PSI / 552 KPA	
SPARE	ST235/80R16/E	80 PSI / 552 KPA	

### ⚠ WARNING

Never exceed the wheel manufacturer's recommendations.

# IDENTIFICATION AND SAFETY

## ⚠️ WARNING

It is important to maintain proper wheel nut torque to provide safe and secure attachment of the wheel to the hub/drum.

## ⚠️ DANGER

Be sure to use wheel nuts that are compatible with the coin in the wheel. 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. Do not over torque.

## ⚠️ WARNING

Do not place a jack against the trailer underbelly when changing a tire. To avoid damage to your unit, be sure the jack is placed firmly against the chassis frame and place it as close to the spring hangers as possible.

## Air Pressure

Remember that the air pressure in your camper tires will not be the same as the pressure in your tow vehicle tires. Always inflate camper tires to the correct pressure. Do not over or under inflate. Under-inflated tires will run hot, shortening the tire's life and decreasing the camper's safe load limit. Over-inflated tires will cause a rough and bouncy ride that can damage the camper or the cargo. Cold tire inflation pressure is defined as a tire that has not been used for 3 or more hours, or has been driven less than one mile. Tire inflation pressure of a hot tire may show an increase of as much as 6 psi over a cold tire.

## Lug Bolts

It is also important to check the wheel lug bolts regularly for tightness. Each lug bolt should be torqued according to the following:

TORQUE STAGES		
1st Stage	Aluminum	45–50 ft/lbs
	Steel	60–65 ft/lbs
2nd Stage	Aluminum	90–95 ft/lbs
	Steel	70–75 ft/lbs

Check the lug bolts per the following schedule:

1. After the initial test, check again after the first 50 miles.

2. Recheck every 50 miles for the next 200 miles.
3. Thereafter, check before each trip.

Check the lug bolts following periods of excessive braking. Be sure the lug bolts are seated in the counter-sunk holes of the wheel and keep them free of rust. Refer to the axle manufacturers' operation and maintenance manual for additional information concerning the camper's wheels and lug bolts. (If the tire manufacturers' information differs from the above instructions, follow the tire manufacturers' directions.)

## Changing a Tire

Safety is the first consideration if it becomes necessary to change a tire while traveling. (If equipped with an optional spare tire, it will be mounted on the outside rear wall of the camper.) Use the following steps when changing a tire:

1. If the flat/damage occurs while driving, bring your tow vehicle and camper to a controlled and gradual stop.
2. Pull off the road as far as safely possible.
3. Turn on hazard warning flashers.
4. If the flat/damage occurs at night, use flares or warning lights also.
5. Use a block to stabilize the opposite wheel.
6. If the wheel has a hub cap, remove it.
7. Raise the camper slightly with a hydraulic or scissors style jack placed directly under the camper frame. Do not use a bumper style jack or place any jack under the bumper.
8. Loosen the wheel lug bolts.
9. Use the jack to raise the tire off the road.
10. Remove the lug bolts, keep them together, and store them in an easily accessible place.
11. Remove the wheel and replace with the spare wheel and tire.
12. Replace the lug bolts and tighten by hand.
13. Lower the wheel to the ground and tighten the lug bolts in the sequence previously outlined. (Recheck the torque at 50 miles, and every 50 miles thereafter, for the next 200 miles.)
14. Replace the hub cap, and store the old tire, jack, and all tools and safety equipment. After changing a flat, have it repaired or replaced as soon as possible. If you find yourself with a flat tire and no spare and you must leave the camper to find a replacement, be sure to solidly stabilize the camper to prevent it from moving or falling off the jack.

# WEIGHING, LOADING AND TOWING

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## Weight Terminology

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GVWR - (Gross Vehicle Weight Rating) - the maximum permissible weight of the fully loaded RV.

GAWR- (Gross Axle Weight Rating) - the allowable weight, including cargo, that can be safely supported by each axle.

GTW - (Gross Tongue Weight) - the weight of the tongue as it bears down on the hitch of the towing vehicle.

### NOTE:

Tongue weight should be determined with the camper fully loaded as it would be for travel. (Do not assume you can fill all tanks and all storage areas and keep within the GVWR.)

## Weighting Your Camping Trailer

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To weigh your camper properly, use the following procedure:

1. Level the trailer and make sure that it remains level throughout the weighing process.
2. To compute gross vehicle weight, pull the trailer onto the scales and weigh with both the axle and front jack resting on the scale. The difference between the weight of the camper fully loaded and empty is the rated personal cargo weight. If for example the GVWR of your camper is listed at 7040 lbs. and empty it weighs 4755 lbs., your personal cargo weight cannot exceed 2285 lbs. The GVWR must not exceed the GVWR found on the certification decal.
3. For tongue weight, rest only the hitch on the scale and weigh with the camper fully loaded for travel (Tongue weight = GVWR minus (GAWR\*# axles)).
4. To compute gross axle weight, pull forward so that only the camper axle is resting on the scale. If the weight exceeds the GAWR on the weight distribution information sticker, remove or redistribute the weight to meet the proper specification. The difference between gross vehicle weight and gross axle weight is the tongue weight.

If additional items are added to the camper after it has been weighed and the loading analysis completed, weigh each additional item using a bathroom scale before placing it in the camper. The total of these items are then added to the GVW originally determined.

Remember that by adding additional weight, you may be affecting the tongue weight of the trailer. The tongue weight is increased by moving cargo forward and decreased by moving cargo toward the rear. However, too much weight in the rear can cause sway, or handling instability.

Once you become familiar with loading your camper and know how to distribute the weight, make a list and a diagram you can use for future reference. Plan your loading and storage so that emergency items are easily accessed. Place heavier or breakable items on the camper floor for greater load stability. Make sure these items are well packed and secured to prevent movement. Take extra care not to overload the front and rear ends of the camper.

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.

## Towing Vehicle Requirements

When considering a towing vehicle, keep in mind certain requirements for safe and easy use:

1. Transmission - The transmission can be either manual or automatic, but an automatic transmission will control engine loads better.
2. Power - Be sure your tow vehicle has adequate power to tow your camper on the type of roads you will be using. Factors to consider are engine power, cooling capabilities, and axle ratio. Discuss the towing capability of your vehicle with both your recreational vehicle dealer and tow vehicle dealer.
3. Tires and Suspension - It is important to make sure that your tow vehicle tires and suspension have a sufficient rating to handle the additional capacity needed to tow a camper. Check with your tow vehicle dealer and your vehicle's Owner's Manual for the type of tires and tire pressures required. If your tow vehicle is equipped with air shocks, do not use the air shocks as a load leveling device to level the vehicle/camper combination.
4. Hitch - Your tow vehicle should be equipped with a hitch that has a rating at least equal to the GVWR. Be sure that it is installed per the hitch manufacturer's instructions and that it meets the tow vehicle's requirements for fit and performance. Also, be sure to install proper hitch wiring to supply 12-volt power to the tent camper for turn signal and brake light operations.
5. Sway Control - Install a sway control system that is compatible with both your hitch and tow vehicle. Have it installed and properly adjusted per the manufacturer's instructions.

# WEIGHING, LOADING AND TOWING

6. Safety Equipment - Install proper safety equipment such as towing mirrors. In most states, they are required by law. Most styles available are not permanent and can be easily installed and removed. Check with your dealer for correct types and methods of installation.

## **⚠WARNING**

**Some motorized vehicles are not good tow vehicles as they cannot adequately control sway in the vehicle being towed.**

## **Hitch**

Those units with a 2 5/16" ball require a class IV weight carrying hitch. It is very important to choose a hitch designed for attachment to your particular tow vehicle, and have it properly installed. Pay particular attention to tongue load limits of your tow vehicle and the hitch you purchase.

Choose a hitch that does not overload the axle on the tow vehicle. Be sure that the hitch ball is not below, or more than, three inches above the leveled camper tongue.

## **Weight Distribution Hitches**

Hitches can be installed on units with box tube A frames (i.e., not on C-channel A frames) with the following five stipulations:

1. Properly installed by a qualified, trained technician.
2. Match system with GVWR of the camper.
3. The camper is loaded per the manufacturer's recommendations.
4. Never exceed 15% of the GVWR on the ball hitch.
5. No weld on weight distributing hitch mounting brackets.

## **NOTE:**

Failing to follow any of the above five stipulations will void the frame warranty on your camper.

## **Wiring**

Along with your hitch, it is also necessary to install the proper electrical connection from the tow vehicle to your camper. A car end pigtail is supplied with leads of adequate length to allow connection to your tow vehicle wiring system. Be sure you use wiring of the correct gauge with sufficient slack between the camper and tow vehicle to allow for turning without dragging on the ground. Have your tow vehicle dealer, and/or hitch installer, assist you with the installation.

If your tow vehicle has a separate amber turn signal, it will require a special adapter to allow your camper lights to function properly. This adapter may be purchased from your dealer.

## **Wiring Code**

The wiring color code for connection is as follows:

**White** - Ground.

**Green** - Tail, clearance identification, and side marker lights.

**Red** - Left turn and stop.

**Brown** - Right turn and stop.

**Blue** - Optional electric brakes.

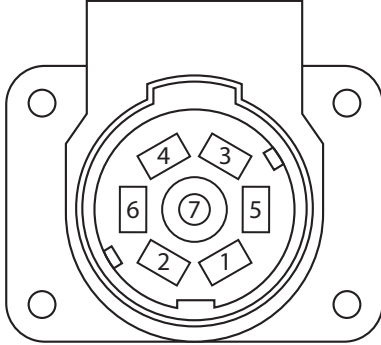
**Black** - Interior lights and accessory. (Connect directly to the tow vehicle battery using #10 wire and a 15 amp in-line fuse at the battery. Be certain the wire is properly routed away from the exhaust system and moving parts.)

Although your tent camper has been checked at the factory, we recommend that you visually check all lights to ensure they are functioning properly before leaving your dealer.

# WEIGHING, LOADING AND TOWING

## Electrical Hook-Up

Place the camper pigtail into the socket located on the tow vehicle. Be sure to allow enough slack to prevent separation during short turns. Check all lights for proper operation before pulling away.



#1 14 AWG white wire: clearance lights, tail lights - ground

#2 14 AWG blue wire: brakes - not used

#3 14 AWG green wire: clearance lights, tail lights - positive

#4 10 AWG black wire: connect to battery - positive

#5 14 AWG red wire: left turn signal, brake lights - positive

#6 14 AWG brown wire: right turn signal, brake lights - positive

#7 14 AWG yellow wire: back up lights, both left and right tail lights - positive

### NOTE:

Electric jacks are wired directly to the battery. Do not back feed through the converter.

## Brakes

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

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.

### **WARNING**

The safety brake-away switch must be in the engaged position before towing the camper.

## Connecting The Hitch

When attaching the camper coupler to the tow vehicle hitch, use the following steps:

1. Raise the coupler by cranking the jack handle clockwise.
2. Back the tow vehicle up until the ball on the hitch is directly under the coupler. Have someone assist you using pre-determined hand signals. Be sure this person is in view at all times and proceed slowly and cautiously.
3. Lift the coupler latching lever.
4. Lower the coupler onto the hitch ball by cranking the jack handle counter-clockwise. Allow the coupler to properly settle onto the hitch ball.
5. Close the coupler latching lever, making sure it is fully locked in place.
6. Raise the jack post as high as needed by cranking counter-clockwise.
7. Fold the cranking handle down against the jack post.



## Safety Chains

After you have the camper coupler properly attached to the hitch ball, the safety chains must be attached. Safety

# WEIGHING, LOADING AND TOWING

regulations require the safety chain to be crossed under the tongue and hitch to prevent the tongue from dropping to the ground in the event of a hitch or coupler failure.

## Attaching Safety Chains

1. Cross the safety chains under the tongue and hitch.
2. Attach the hooks to the chain attachment loops provided on the tow bar portion of the hitch or to the vehicle frame.
3. Be sure the chain slack length is equal on both sides and that it is sufficient to allow the vehicles to turn at their minimum radius without the chains dragging on the pavement.

### **⚠WARNING**

**Do not attach the safety chains to the vehicle's bumper.**

### **⚠WARNING**

**Do not attempt to repair a damaged chain. If the safety chain has been damaged, it must be replaced.**

### **⚠WARNING**

**Extending the rear bumper or adding rear supports to carry toolboxes, bikes, motorcycles or other heavy equipment may seriously overload the frame, trailer brakes, axle, wheels and tires. In addition, rear-end load reduces the hitch weight and can cause severe fishtailing.**

## Driving and Towing Tips

Now that you are familiar with load limits and weight distribution, as well as hitching your tent camper to the tow vehicle, follow these driving and towing tips, which will make trips with your camper both safer and more enjoyable.

- When learning how to tow your new camper, find a spot that has space to practice accelerating, turning, braking, and backing up.
- A set of RV mirrors on your tow vehicle increases visibility and is required by law in many states. Most styles are not permanent and can be easily installed and removed. Keep the mirrors properly adjusted and check them often.
- Before leaving on a trip, inspect your hitch, brakes, and tires. Be sure everything is connected properly and functioning correctly.
- Understand that the camper wheels do not follow in the same track as the tow vehicle wheels. When turning, pull ahead a sufficient distance to allow for the additional tail swing of the camper.
- The additional weight of the tent camper affects accelerating and braking distances. Accelerate slowly and smoothly. When pulling into traffic, be sure there is enough distance to merge safely. Keep a safe distance between yourself and the traffic ahead. When applying the brakes, allow extra time to slow down or stop safely. The heavier your camper, the greater the distance required to bring it to a stop. A panic stop can cause the camper to jack-knife, which can result in damage to both your vehicles and/or cause an accident.
- Always drive within the speed limit. Reduce speed if you encounter gusty winds, heavy traffic, or unusual road conditions.
- When backing up, use your mirrors to check for obstructions. If needed, have someone help guide you. Be sure this person is always in view and at a safe distance from the camper.
- Avoid sudden movements when changing lanes. Always check your mirrors and signal your intention before passing.
- When driving on steep grades, select the correct transmission range and drive at proper speeds. Down-shifting will allow the engine to help control your speed and relieve the extra strain on your brakes. Continuous application of the brakes can cause them to overheat and could result in a temporary loss of braking. Never exceed the appropriate speed when driving in low gear. Excessive speed in a lower gear can overheat the tow vehicle's transmission, which can lead to transmission failure.
- If you encounter driving conditions that put additional strain on the engine, it may be necessary to turn off the tow vehicle's air conditioning to improve engine cooling.
- Do not drive with your foot resting on the brake pedal. Doing so will cause abnormally high brake temperatures and lining wear, which will result in increased stopping distance.
- If your tow vehicle is equipped with cruise control, do not use it on wet or icy roads, in congested traffic, or on winding roads.
- If a large truck or a bus passes you, the air from the vehicle may push the rear of the camper to the right, causing the front of the camper to sway. You may compensate for this additional sway by steering slightly toward the passing vehicle until the sway is corrected.
- If the camper should become disconnected from the tow vehicle while driving, the safety chains will keep the camper attached. Slow down and come to a controlled stop at the side of the road. Reattach the safety chains, remembering to cross them under the tongue and hitch.

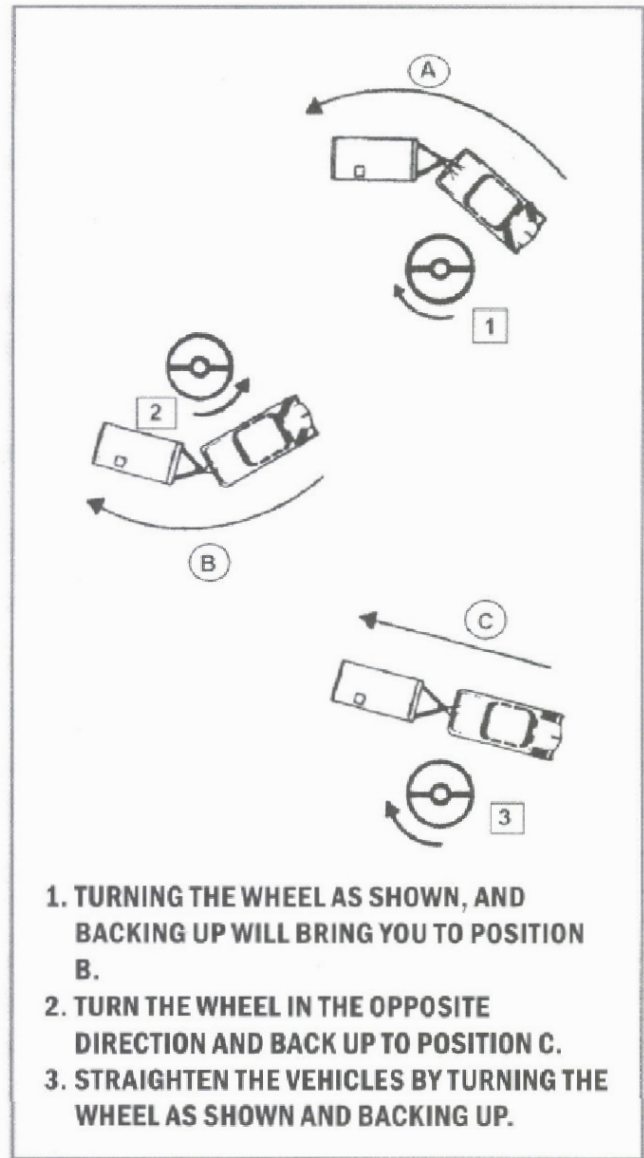
# WEIGHING, LOADING AND TOWING

## Backing Up

Backing up with an attached camper presents a new set of driving rules. When backing up, it is important to proceed slowly. If the camper turns the wrong direction, stop and consider how to correct the error. The following pointers should help you with your initial attempts at backing up.

- Concentrate on the back of the camper.
- When your tow vehicle and camper are in a straight line, hold the bottom of the steering wheel, and turn it in the direction you want the camper to go.
- Back up, when possible, to the left. You will be able to see the movement of the camper easier.
- Be sure you have a clear line of vision in the mirror.
- When the camper is proceeding in the direction you want it to go, allow the tow vehicle to 'follow'. Turn the steering wheel sharply to bring the camper and tow vehicle back to a straight line. When you have both vehicles in a straight line, straighten the front wheels of the tow vehicle before proceeding.

Practice is the best method of becoming proficient at handling your camper. Take time to practice and become comfortable when towing your camper.



# WEIGHING, LOADING AND TOWING

## Pre-Travel Check

### General

Whether departing from your home, rest area, or campsite, you should perform these pre-travel checks inside and outside your camper.

### Vinyl Tent

Be sure the tent is dry before storing the camper. While camping, a leaky seam may be sealed by rubbing candle wax or bee's wax into stitch holes.

### Tires

Should be inspected before each trip. Replace a tire when it is worn to 1/16" depth in two or more adjacent grooves, when the indicators appear in two or more adjacent grooves at three locations around the tire. Check tire for uneven wear, road damage, foreign objects or excessive peeling or bulging. When purchasing a new tire, be certain it is the same size and has the same ply rating and load range as the old tire. DO NOT mix radial ply with bias or bias-belted tires.

Each morning, inspect tire condition and pressure on your RV and tow vehicle. Heat generated by surface friction will increase the tire's air pressure approximately six to nine psi; therefore, do not bleed air out of a hot tire. Inflate to recommended pressure as indicated on the tire or in the tire manufacturer's instruction booklet.

### NOTE:

Proper tire inflation is extremely important.

### Wheel Lugs

### NOTE:

Must be tightened before departure, then every 50 miles for the first 200 miles during your initial trip, and after each tire change. Thereafter, tighten lugs periodically and before using the unit after storage period.

### Wheel Bearings

See Care and Maintenance section.

### Hitch

Should be inspected to be sure it has not loosened. Must have safety pin or lock in coupler.

### 3-Way Tongue Jack

Must be raised as far as possible or removed and stored.

### Propane Bottles

Connections should be secured and the service valve closed.

### NOTE:

Some states prohibit vehicles equipped with propane bottles from using tunnels. A few other states prohibit traveling with the service valve open. Check the regulations of the states through which you intend to travel.

### Safety Chains

Must be properly attached to the tow vehicle.

### Stabilizing Jacks

Should be properly stored under the frame. Crank up and tighten securely.

### Pigtail

Should be properly connected to the tow vehicle's electrical system.

### Lights

Should be tested on the RV unit and the tow vehicle, including brake lights, turn signals, warning flashers, clearance lights, tail lights and tow vehicle headlights. Ensure interior lights are turned off before lowering the roof to prevent damage to the canvas during transit. Check storage compartment light and turn off as battery pack or tow vehicle will energize.

### Power Cord

120-volt Shoreline must be unplugged from the external source, pushed into its compartment and the cord hatch secured.

### Water Fill

Hoses must be disconnected and the caps secured.

### Vents

Should be closed and secured.

### Interior Doors and Drawers

Should be closed and secured. Loose items should be lashed down or stored away.

### Upper Door

Must be disengaged from the lower door and secured by the ceiling turn buttons.

### Refrigerator or Ice Box Door

Should be secured with the travel latch.

### Galley Cabinet

Must be lowered securely to avoid interference with the bunk.

### Bunk Trays

Must be pushed in. Store bunk support rods and bunk bows.



# WEIGHING, LOADING AND TOWING

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## Exterior Access Doors and Hatches

Should be closed and locked.

## Step

Optional self-storing step in stored position.

## Roof

Must be lowered and all latches secured.

## Door

Should be locked.

## Loading Tips

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- 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.
- When loading your RV, remember to distribute the weight evenly so you get the proper amount of weight on the axle(s) and hitch. Remember to also consider the weight of any items you may purchase on your trip.
- 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 unit. 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.

## Packing For Travel

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Following is a list of items you may find useful to take along:

- First aid kit
- Spare fuses  
12-volt automotive type
- Tool kit  
Phillips, square head and regular slotted screw drivers, pliers and crescent wrench, a bubble level, open-end wrenches (that fit the water and gas line fittings), a good tire pressure gauge, electrical tape and a flashlight.
- Water hose  
Minimum of 25 feet, used to fill water tank and to connect to city water.
- Extension cord  
Three or four prong-MUST be rated for the load for which your recreational vehicle was designed, either 30 or 50 amp.

- Holding tank chemicals
- Registration and insurance information (for recreational vehicle and tow vehicle)
- Spare set of keys
- Three pieces of 2" thick x 6" wide x 10" long pieces of wood  
For leveling the vehicle in uneven camping areas. Even if you have leveling jacks built in, they may come in handy. The wood can also be used as chocks to help prevent the unit from rolling forward or backward if you are parked on an uneven site.
- Throw rug  
Protect the entry area carpet.
- Emergency Contact Phone Numbers

## One Final Check

After you have loaded your unit 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:

1. All exterior storage doors and hatches are securely shut and latched.
2. Tail lights, brake lights, headlights and turn signal lights are functioning properly.
3. City water hose is disconnected and stowed. The connection cap has been tightly secured.
4. Holding tank valves are closed and dump outlet cap is securely fastened, and sewer hose is stowed.
5. Power cord is unplugged and stored.
6. TV/satellite antenna is lowered (if equipped).
7. Tire pressure is within specified limits. (Always check tire pressure when tires are cold-at least three hours after being driven on.) Releasing air from a heated tire is dangerous.
8. Lug nuts are tight and wheel covers are secure.
9. All liquid levels are adequate (chassis engine oil, transmission fluid, engine coolant, battery fluid and windshield washer solution).
10. Roof vents are closed.
11. Fresh water tank, sewage holding tank, and propane tank are at correct levels.
12. Entrance door is securely closed and locked, and entry step is retracted.
13. Check the campsite for items left behind and that you left it clean and safe for the next campers.

## ***Prolonged Occupancy***

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***

### **Care of Your Vinyl Tent Fabric**

Some tent fabrics are coated with vinyl to allow easier cleaning of the exterior surface. Vinyl coated fabric cannot breathe, and condensation may form on the fabric side. The tent may appear to be leaking. This situation can be corrected by opening the zippered windows slightly to ventilate the interior of your camper, allowing the condensation to evaporate.

### **Condensation**

Recreational vehicles are built according to government standards, which regulate the industry, and according to RVIA standards, which are more severe than government standards.



Follow these tips to help avoid excessive moisture in your camper:

1. Open the roof vent when cooking and/or slightly open the kitchen vinyl window.
2. Use the power vent when bathing or showering. The power vent can also function as an attic fan to recirculate the air.
3. Never use a humidifier. Vaporizer use should be minimal.
4. Turn on the air conditioner briefly, after cooking or bathing, to help eliminate moisture.

Condensation is a natural occurrence. The amount of condensation will vary with the climactic conditions, particularly, relative humidity. Condensation occurs when

water vapor is present in the air. When the temperature reaches the 'dew point', the water vapor in the air condenses, becoming liquid. Properly ventilating your unit helps control condensation. Condensation causes dampness, mildew, staining and, if left unchecked, may cause damage to paneling, ceiling, fabrics, furniture, or personal belongings.

### **NOTE:**

Condensation is not a result of a defect. Damage from condensation remains the responsibility of the owner.

### **NOTE:**

Always ventilate and dry tent (with bows and braces in place), as soon as possible, after each exposure to moisture. **Mildew is always the result of negligence.**

### **NOTE:**

To avoid possible damage to the finish, do not use solvents, rubbing compound or an abrasive cleaner or cloth to clean your vinyl tent.

### **NOTE:**

Do not use hand-held high pressure spray devices, such as those at car washes, as they will damage the tape and painted surfaces on the camper.

For heavily soiled spots, a very soft bristled brush can be used. Before using any cleaner or chemical on the camper, test a small area first. After washing, rinse the entire camper thoroughly to remove any soap residue as it can stain the paint. Use towels or a chamois to dry the camper.

To avoid moisture from entering through breaks, possibly causing problems with interior walls and components, damage to fiberglass or aluminum should be taken care of immediately. Cover breaks in the sidewall with plastic, sealing the edges with tape until proper repairs can be made.

## ***Propane***

### **General Information**

The propane system in your tent camper furnishes fuel for cooking, optional heating, and hot water. Propane can also be used as an alternate energy source for refrigeration. Propane is a clean, efficient, and safe form of energy when proper handling and safety precautions are observed. It enables you to enjoy a comfortable lifestyle when other forms of energy are not easily utilized.

Propane is stored as liquid in a special storage tank. The tank is mounted on the frame at the front of the camper near the hitch. The tank can be enclosed with an optional vinyl propane bottle cover. The cover protects the tank from the elements and objects which may strike the tank while the camper is being towed. Double propane bottles and cover are also optional features.

# LIVING QUARTERS

Propane is stored in the tank under extreme pressure, leaving space in the tank to allow for expansion into vapor. The vapor is reduced in pressure by passing through a regulator. This reduction in pressure is a two-step process which ensures consistent pressure for use, regardless of outside temperatures, weather, or altitude.

## Propane Containers

Propane containers are tested to withstand pressures in excess of anticipated normal usage. Additionally, every propane container has a built-in safety filling feature. The containers are designed to be filled only to 80% of capacity with propane. Filling the container to only 80% naturally allows 20% for vapor space. The extra space allows vapor withdrawal through the QCC1 Acme connection and also allows expansion space for the liquid. If the tank were completely full, a rise in outside temperature could result in relief valve discharge of propane.



## Attaching the Propane Container to the Camper (20 lb. Bottle)

1. Attach the propane container bracket to the 'A' frame using the two ¼ inch 20 NC hex head bolts provided.
2. Place the propane container into the bracket and tighten the clamp ring. Be sure the container is properly seated.
3. Attach the regulator assembly to the service valve. (It is left-hand threaded.)
4. Slowly tighten the QCC1 Acme connection. **DO NOT OVER-TIGHTEN.** This is a machined, male, brass fitting which seats against a female fitting.
5. Be sure the regulator vent faces downward and that the regulator cover is kept in place to minimize vent blockage.
6. Before opening the service valve, allowing propane to flow into the system, be sure all propane appliances are turned off.

7. Open the tank service valve **slowly** and check all connections for leaks as outlined further in this section.
8. Follow the manufacturer's instructions carefully when lighting a propane appliance.

### **⚠ WARNING**

**Vent blockage can result in excessive propane pressure, which can cause fire or explosion. Keep the regulator protective cover in place to minimize this danger and protect the regulator from the elements.**

### **⚠ WARNING**

**Never use a propane tank different than the one furnished with your camper. If the tank must be replaced, check with your dealer for correct tank specifications and replacement procedure. Keep the tank securely mounted in its proper position. Use all the hardware provided to ensure proper support and position.**

### **⚠ WARNING**

**Keep the tank service valve accessible at all times. In an emergency, it may be necessary to quickly access the valve to shut off the propane flow.**

## Filling Propane Containers

Before removing the propane container for refilling, or doing any work on the propane system, extinguish all open flames and smoking materials.

### Procedure for Filling Propane Containers

1. Turn off all propane appliances and extinguish their pilot lights.
2. Close the service valve on the propane tank and remove the QCC1 Acme connection, which has a left-handed thread and must be turned clockwise to remove. Never use a wrench to close the service valve. If leaking occurs when closing by hand, have the valve repaired or replaced.
3. Cap or seal the valve inlet to prevent the entrance of dust and dirt.
4. Loosen the clamp ring bolt and remove the container from the camper. Always transport the propane bottle in the upright position. Never transport, install, or use a vertical tank in a horizontal or upside down position.
5. Take the container to a qualified propane supplier.
6. Have supplier connect the fill nozzle to your tank fill connection.

7. Even though the tank is equipped with an automatic 80% shut-off, which prevents over-filling beyond 80% tank capacity, have the supplier monitor the 20% liquid level gauge and stop the filling process if liquid does appear.

## **⚠WARNING**

**Be sure the tank is not filled beyond the 80% liquid level. If the tank has been over-filled, make sure the propane supplier bleeds out the excess. Over-filling the propane container does not allow for the necessary 20% vapor expansion space. The absence of this space can result in uncontrolled propane flow which can cause fire or explosion.**

## Two-Stage 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.

## **⚠WARNING**

**Never alter the position of the regulator. Propane regulators must always be installed with the diaphragm vent facing downward. Keep the regulator cover in place to minimize vent blockage, which could result in excessive propane pressure, causing a fire or explosion.**

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.

## Regulator Freeze-Up

The term 'regulator freeze-up' is a misleading one. Regulators and propane do not freeze. However, the moisture that can be contained in the propane can freeze as the propane expands and cools and it passes through the regulator.

This moisture, in the form of ice, can build up and partially or totally block the passage of the propane through the regulator. Freezing can also occur when outside temperatures are low enough to contribute to the freezing of the moisture in the propane.

# LIVING QUARTERS

The source of the moisture is varied. It can occur at the refinery or propane plant, in the cars used to transport the propane, or even within your own propane tanks. Moisture in a propane tank can also occur when a tank service valve is left open, allowing moist air to enter and become trapped.

A two-stage regulator helps to reduce the possibility of freeze-up due to its larger orifice size and the fact that heat is transferred through the walls of two regulators instead of just one.

There are several steps which can be taken to inhibit or prevent ice from forming inside the propane tank:

- Be sure that your propane tank is free of moisture before refilling.
- DO NOT overfill the propane tank.
- Keep the service valves on an empty tank closed.
- If freezing does occur, have your propane dealer purge the propane tank before refilling.
- Add anhydrous methanol or another approved propane antifreeze or de-icing agent to the propane tank.
- Keep the regulator covered at all times.

If freeze-up does occur, NEVER attempt to thaw with an open flame. A small light bulb can sometimes be used to provide heat and aid the thawing process. Once thawed, take proper steps to prevent a reoccurrence. Have the system checked by your propane supplier to determine the source of moisture and correct the problem.

## Other Cold Weather Factors:

Since the colder propane in the tank requires heat from the surrounding air to vaporize, remember that as outside temperatures drop, the BTU value of the propane is lessened. The lowering of the BTU value can significantly affect the performance of the system.

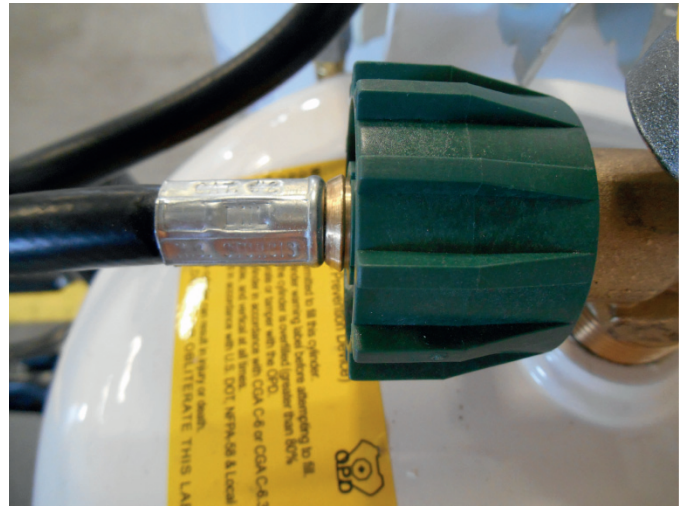
You can help ensure proper performance by keeping your propane tanks as full as possible in cold weather and reviewing the BTU/hr. rating plates on propane appliances for proper propane management.

## 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 tent camper.

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.

## Checking Propane System For Leaks



Road vibration can loosen propane fittings and connections. It is important to check your propane system for leaks at least every 5,000 towing miles and whenever the tank is filled.

Making an inspection of propane components a regular part of your campsite set-up can help to identify potential problems before they occur. It's a good idea to have your entire propane system checked annually by a qualified propane service technician.

Use the following steps when checking the system for leaks:

1. Open all the windows and roof vent.
2. Open the propane tank service valve.
3. Use a non-ammonia, non-chlorinated soap solution, or an approved leak detection solution, on all line connections (ammoniated soap solutions can cause cracking on copper or brass lines and fittings). Bubbles are formed by escaping propane, indicating a leak.
4. If a leak is detected, tighten the connection with two open-end wrenches until bubbling stops. Do not over-tighten or use excessive force. If leak continues, contact your dealer, or a qualified propane service representative. DO NOT use tools to tighten tank service valves.
5. Check propane piping where contact with the frame could cause cracking or damage due to vibration or road shocks.

### **⚠ WARNING**

**Never check for leaks with an open flame. Also, never attempt propane repairs without the proper knowledge and tools to accomplish the job.**

### **NOTE:**

Forest River does not recommend, and strongly advises against, anyone other than a certified propane service technician perform propane repairs.

### **NOTE:**

Propane is naturally odorless. An additive, which creates a garlic-like odor, is ethyl mercaptan. The addition of this chemical odor allows the detection of the presence of a leak.

## Propane Safety Precautions

Warning labels and decals used in your camper are located in areas where the potential for a dangerous situation is present. They have been installed not only because of the requirement to do so, but also as a constant reminder to occupants of the camper to exercise proper caution when using or being around propane appliances and equipment.

Be sure that you, your family and all guests who may be using the propane appliances understand and follow all of the precautions.

### **⚠ WARNING**

**Do not store propane or any other type of combustible containers inside the tent camper. Propane containers are equipped with safety devices which relieve excessive pressure by discharging propane to the atmosphere.**

### **⚠ WARNING**

**Use extreme caution when performing any service work in, or maintenance to, the camper that a nail, screw, or drill bit doesn't puncture a propane line.**

### **NOTE:**

Do not remove the warning labels and decals, located inside your camper. If one should be lost, damaged or painted over, replace it as soon as possible.

# LIVING QUARTERS

## Electrical System

### 12-Volt System

- 12-volt functions of the camper include both the interior and exterior lighting, as well as the optional water pump, furnace, and refrigerator.
- 12-volt power for exterior camper lights is supplied by the tow vehicle through the pigtail connection. Interior 12-volt lighting can also be supplied by the tow vehicle, but prolonged use will deplete the tow vehicle's battery.
- A power converter in the camper (optional) converts 120-volt electricity from an external source into 12-volt power for operation of the interior lights and furnace (if applicable). The refrigerator is wired so it can operate on 12-volt battery power alone.
- While traveling, 12-volt operation of the (optional) refrigerator is possible through the tow vehicle pigtail connection. (Do not operate the refrigerator using the tow vehicle pigtail connection while camping.) If you will be stopping for more than one hour while operating the refrigerator in 12-volt mode from the tow vehicle, switch operation of the refrigerator over to propane to prevent draining the tow vehicle battery.

### 120-Volt System

The camper can be hooked up to an external 120-volt power source for operation of the convenience outlets and 120-volt operation of the optional refrigerator. **For models with a power cord storage compartment:** To attach to an outside power source, open the cap on the power cord storage compartment, and pull out to extend the cord. A cutout on the cap allows you to replace the cap over the cord to keep water and dirt from entering the cord storage compartment.

**For models with a removable power cord:** Your Coachmen Pop-Up Camper is equipped with a power converter. The camper can be hooked up to an external 120-volt power source for operation of the convenience outlets and 120-volt operation of the optional refrigerator or air conditioner. All models are equipped with a power cord storage compartment. To attach an outside power source, open the cap on the power cord inlet and attach the removable cord provided. The power cord is 25 feet in length and designed for 30-amp service.



### Shore Line Cord

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

#### **⚠ WARNING**

**Never use a two wire extension cord and adapter without proper grounding or put an ungrounded plug on your power cord in place of the molded 30-amp plug.**

#### **NOTE:**

Due to the potential danger in failing to heed this warning, Forest River's warranty of fitness and merchantability, as well as any other expressed warranties made in connection with this sale, shall not be effective or actionable should damage, injury, or death result from failure to connect the power cord to a properly grounded power source.

#### **NOTE:**

Some electrical appliances may have their own circuit breakers. If there is an interruption in electrical service involving an electrical appliance, consult the appliance's owner's manual to determine what action to take.

## Fuses and Circuit Breakers

### Bulbs and Fuses

There is a fuse panel located at the converter. Be sure to check for the cause of a blown fuse before replacing it. Never replace a fuse with a fuse of a higher amperage.

#### NOTE:

If your camper is equipped with a shower, an additional fuse is located at the fuse panel.

#### **⚠ WARNING**

**Turn off all interior lights when closing the camper for storage or towing. Heat from interior light bulbs, when the camper is closed, is a fire hazard.**

An electrical short along the line can cause a fuse to blow. Locate the short and take the necessary steps to repair it. If you cannot locate the problem, have a qualified electrician locate it for you.

Exterior 12-volt electrical components such as the brake and tail lights, are fused through the electrical system of the tow vehicle. Check the tow vehicle's Owner's Manual for the location of, and proper method of replacing, 12-volt fuses and components.

#### Tip:

1. Consider keeping a supply of replacement fuses and bulbs handy. Remember that the replacement fuse or bulb must be the same amperage rating, type, or equivalent as the original.
2. Replacement fuses and bulbs are available at most campground stores. They may also be available at gas stations, hardware stores, or automotive supply stores.

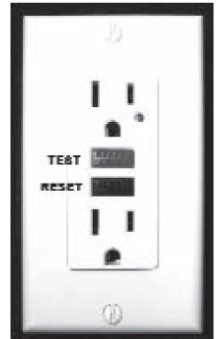
## Ground Fault Circuit Interrupter

The 120-volt patio outlet is 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 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 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. The circuit breaker in the main panel, which supplies power to the circuit, will trip if either of these conditions exist. The GFCI receptacle should be tested initially when the camper is purchased and every month thereafter.

To test the circuit, use the following procedure:

- Be sure power to the circuit is on.
- Push the test button.
- The red reset button should pop out.
- All power should be interrupted to outlets protected by the GFCI.
- Verify by plugging in a light at these outlets and pushing in the reset button.
- If the red reset button does not pop out after pushing the test button, or the GFCI circuit continues to trip, immediately turn off the power at the circuit breaker panel and have a qualified electrician check it out.



#### NOTE:

The GFCI outlet is not a substitute for good electrical safety. It does not protect against contact of the hot and neutral wire at the same time. The GFCI does not protect any circuit other than the one to which it is connected.



# PLUMBING

## Fresh Water

Fresh water can be supplied to your camper in two ways. You can utilize water from an internal supply that you carry with you, in the camper's fresh water tank, or from an external pressurized source.

Access the exterior pressurized water source by connecting to the source with a clean garden hose, used **ONLY** for connecting fresh water to the camper.

Components of the camper's water system consist of strong, light-weight, corrosion-resistant materials, which provide long life and easy cleaning. By following the instructions for water system use as outlined in this manual, you can expect efficient operation with a minimum of maintenance.

## Water Center Panel

### Fresh Water Tank

Your internal water supply tank is filled through a gravity fill spout located on the side of the camper. Two styles of fill spouts are used. To fill the style equipped with a hinged lid, slide the locking lever to the side to release and lift the protective cover.

The other style has a cap that screws off for access. In either case, water can be added to the tank by use of a bucket or hose. It is a good idea to use a different color hose for filling the fresh water tank than the one used for drainage so that you will know at a glance which one is safe to use. If using a container such as a bucket to fill the tank, be sure it is clean and safe, and label it so it will be used only for this purpose.



**NOTE:**  
Always fill the tank with clean, drinkable water from a known safe source.

**NOTE:**  
Be sure to close the lid on the gravity fill spout to maintain system security.

**NOTE:**  
Water can be drawn from the onboard supply tank by turning on the faucet.

**NOTE:**  
When the system is filled, check for any leakage.

### Draining the Water Tank

Water in the supply tank can be drained by opening the drain cock located beside the water tank. Lift the drain cock handle to drain the tank. Push the handle back down to close the valve. The drain valve for campers with tanks below the floor is located under the camper beside the gravity fill spout.

### Pressurized Water Supply

To utilize water from an external pressurized source (city water), proceed as follows:

1. Be sure the galley (kitchen) faucet is in the OFF position.
2. Remove the cap from the city water connection, located on the outside wall near the sink.
3. Connect a good quality hose to both the camper connection, and the connection at the city water supply. Remember to use hoses of different colors for obtaining water and draining lines to avoid possible contamination of your water system.
4. Turn the city water supply on. Open the kitchen faucet. Be sure there are no kinks in your hose which could restrict the water flow.

**NOTE:**  
A check valve in the system prevents the water from filling the internal water storage tank.

## Traveling with Water

When traveling, you may want to drain the tank or keep the quantity of water to a minimum. This will reduce the total weight of the RV for travel. The location of the fresh water and the waste water tank drain valves will vary from unit to unit, but is generally located beneath the unit near the respective tank.

Water in the tank can be drained by turning the drain cock perpendicular (vertically) to the RV body. To close the valve, turn the lever parallel (horizontally) to the RV body.

**NOTE:**  
When draining the tanks, be sure the water pump is off.

**NOTE:**

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

**NOTE:**

When leaving the RV for extended periods, it is advisable to shut off the water supply at the park spigot.

## **Water Pump**

When using water from the fresh water tank, the system must be pressurized. A self-priming 12V DC pump is provided to handle this function. A pump ON/OFF switch is located on the backside of the dinette next to the converter. Turn the switch to the ON position to activate the pump. Once activated, the pump will turn itself on automatically whenever a faucet or valve is opened, creating a demand for water. Once the water flow is shut off, the pump will also shut off.



Sometimes, when using the pump for the first time after filling the fresh water tank, the water flowing from the faucet will sputter until all the air has been cleared from the water line. This is normal and does not indicate a problem with the pump. When using the internal water supply, the pump should be left on since it only runs when there is a demand for water from the system. The water pump is equipped with a screen to trap debris and should be cleaned out periodically.

**⚠ CAUTION**

**Do not turn the water pump on when using water from an outside pressurized source.**

### **Filling the System**

If your camper is equipped with a shower, allow the entire system (water tank, water heater, and water lines)

to fill with water before using the water heater. When using water from either an internal or external source, open the faucets to allow water to flow through the system. When the flow becomes steady and free of air, turn the faucets off. Be sure that the water heater has been filled before lighting the pilot.

**NOTE:**

When using the internal water supply, you may want to add water to the tank to replace the water used during the initial start-up process of allowing all components of the system to fill. This process will use a substantial amount of water from your water storage tank.

### **Drainage**

The sink drain is a direct connection to the drain fitting on the side of the camper. As water is used, it should be drained through a hose directly into the campsite septic system, or if not available, into a bucket for proper disposal.

**NOTE:**

Be a responsible camper. Do not allow water you have used (water from your gray or black holding tanks) to drain directly onto the ground.

## **Sanitizing Portable Water System**

Sanitize the system before initial use, after extended periods of non-use, and anytime there is a suspicion that the system has been contaminated.

To sanitize the system, use the following procedure:

1. Place one ounce of liquid household bleach (5% sodium hypochlorite solution) in your RV's fresh water tank for each ten gallons of capacity. (If your tank holds 30 gallons, put 3 ounces of bleach in the tank.)
2. With the tank empty and all faucets and drains closed, pour the solution into the fresh water tank.
3. Complete filling the tank with fresh water.
4. Operate the galley (kitchen) pump faucet until water flows freely.
5. Again add fresh water to the tank until the water level reaches the fill spout.
6. Allow the system to stand undisturbed for at least three hours.
7. Drain the system by opening the galley faucet and the supply tank drain cock while flushing the system with water of drinking quality.
8. Continue flushing the system, allowing water to flow for several minutes.
9. Close the tank drain valve and the faucet. Refill the system with water of known drinking quality.

# PLUMBING

## NOTE:

If the taste or odor of the chlorine solution used to sanitize the system lingers, pour a solution of 5 gallons of water mixed with a quart of vinegar into the tank. Agitate the solution in the tank by towing the camper then allow it to sit in the tank for another day or two. Drain the tank, fill and flush with fresh water, and refill with fresh water of drinking quality.

If you are unsure of the quality of the drinking water you are adding to your system, you can disinfect it by using 8 drops of household bleach for each gallon of water added.

## Draining the System

The water system should be drained when not in use. To drain, proceed as follows:

1. Open the galley faucet and the supply tank drain valve.
2. When the tank is drained, pump the galley faucet several times to expel any water in the faucet and supply line.

For models with a shower, additional draining requirements will include the water pump and the water heater. There are also additional low point drain valves on the water lines of some models. Check the water lines on your camper for any low point drains that may need to be opened to completely drain the system. In addition, ask your dealer about drainage requirements for your particular camper model.

## Toilet

A cassette Porta Potti is available on some camper models. The type of Porta Potti varies, but commonly, it is constructed of high quality plastic for durability and easy cleaning and maintenance. It consists of two sections, a permanently installed toilet system and a slide out waste holding tank (cassette). The toilet section includes a seat and cover, flush and valve blade opener, toilet tissue compartment and holder, waste level indicator, built-in toilet fluid storage compartment, a drip tray, a drain tube assembly and level indicator for the fresh water tank, and a fresh water tank.

The cassette section is located underneath the toilet and is easily removable for cleaning through an access door. A rotating pour spout, automatic holding tank vent, air release valve, blade, carrying handles and hand grips are incorporated into the cassette.

Other features include a safety sensor switch which guards against adding water to the bowl without the cassette in proper position.

The Porta Potti you have may operate differently from the one described in this manual. For complete operating, cleaning, maintenance, and winterizing/storage instructions, refer to the instructions supplied with the

Porta Potti that came with your camper. Pay particular attention to any notes or cautions associated with its use. Also be sure to complete and return warranty registration information to the manufacturer.

## 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.

## NOTE:

Before using the compressed air method, you will need a special adapter known as a blowout plug. This plug allows compressed air to be delivered through the city water fill. This small, inexpensive adapter is available at most RV supply stores.

### **⚠ WARNING**

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

## Winterizing With Compressed Air

1. Purchase 2 gallons of RV non-toxic antifreeze.
2. Drain the fresh water tank and empty the waste water holding tanks.
3. Turn the water heater bypass valve to the bypass position. (This valve is located near the water heater incoming lines at the rear of the water heater. The water heater is usually located in a base cabinet in the kitchen, and it may be necessary to remove an access panel to reach the bypass valve.)
4. Drain the water heater.
5. If you have a water filter system installed, remove the filter from the assembly and discard. (You will need to purchase a new one and install it when de-winterizing your unit.)
6. Open all faucets, including shower head sprayer (if applicable), toilet flushing device and any other water lines that are closed.
7. Turn on the water pump for at least 30 seconds to clear any water from the lines.
8. Connect an air hose with an adapter (blowout plug) to the city water fill connection.
9. Set the pressure to no greater than 30 lbs. (pounds) and blow out the water lines until no water can be seen coming out of the fixtures and lines.
10. Pour RV antifreeze into drains, p-traps, toilet and tanks.

**NOTE:**

Do not attempt to start the water heater or use the plumbing system after the system has been winterized. Dewinterize. Flush and sanitize the water system prior to use.

**Winterizing With Antifreeze Only**

1. Purchase 4-6 gallons of RV approved, non-toxic antifreeze.
2. Drain all tanks, fresh water and sewage tanks.
3. Turn water heater bypass valve to bypass position.
4. Drain water heater.
5. If you have a water filter system installed, remove the filter from the assembly and discard. (You will need to purchase a new one and install it when de-winterizing your unit.)
6. Fill the tank above minimum water pump operation level with the RV antifreeze. (Use of a long funnel may be helpful.)
7. Turn the pump switch 'ON' and open the cold water side of all faucet fixtures. Leave the faucets open until the antifreeze (generally pink in color) flows out of the faucets. Repeat for the hot water side.
8. Flush toilet until antifreeze is visible inside the bowl and pour one gallon of antifreeze down the toilet to winterize the black holding tank.
9. Pour antifreeze down each shower and kitchen sink to fill p-traps.
10. To winterize gray tank(s), pour one gallon down each related sink drain.

**Dewinterizing Your RV****NOTE:**

Do not attempt to turn on the water heater or use the plumbing system once the system has been winterized. Dewinterize the water system, flush and sanitize prior to use.

1. Drain all holding tanks (fresh water and sewage).
2. Attach garden hose to fresh water fill connection and fill tank.
3. Turn 'ON' pump switch and open cold water side of all faucet/shower fixtures. Leave open until the water runs clear (no pink residue). Repeat for the hot water side.
4. Flush toilet until clear water runs into the bowl.
5. Dump tanks again.
6. Sanitize the water system. (Refer to that section in this manual.)
7. IF a water filter has been installed, drain the lines, remove the assembly, clean and reinstall using a new filter.

When ready to use the water heater, turn the by-pass valve to the open position to allow water to enter and fill the water heater tank.

## ***Water System Maintenance and Troubleshooting***

Most problems can be greatly reduced, if not altogether eliminated, by following a schedule of planned inspections and maintenance. Neglecting proper maintenance procedures is the usual cause of most water system problems and is easily recognized as such.

In addition to neglect, road vibrations and shocks, as well as excessive pressure from some city water sources, are the other main causes of most water system damage. It is important to inspect all plumbing joints and fillings often for cracks and leaks. Water leaking from a plumbing joint can cause considerable damage if left unchecked.

A leak in the fresh water system should be suspected any time the pump is running and all faucets and valves are closed. When the leaking fitting has been identified, attempt to stop the leak by tightening. **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 preventing proper connection and 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 the plumbing system will normally be all that is necessary to prevent damage caused by freezing. Freezing damage can harm any component of the system, including the water tank, pump, water heater, and all piping. Also discuss with your dealer any additional precautions that should be taken to winterize your camper's plumbing system. Due to the differences in climates, your winter maintenance needs may change as you travel.

Read the literature supplied with plumbing components, such as the 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 handle the job.

# APPLIANCES

Due to the variety of floor plans 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, by chance, 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 handy 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 unit, 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.

## Range

– See manufacturer's owner's manual.

### General

Your camping trailer will have a two or three burner range, which is a propane appliance.

### Lighting The Range

Be certain the propane bottle service valve is OPEN. Light a match and hold it close to the range burner then turn the burner's control knob to full ON.

Air in the line may cause a blowing sound and may extinguish the match. When the line is free of air, the burner should light readily. Adjust the burner flame with the control knob.

### **⚠ WARNING**

**It is not safe to use cooking appliances for comfort heating.**

### **⚠ WARNING**

**Use of cooking pans larger than burner diameter could cause damage to the stove box by trapping heat in the stove top.**

Cooking appliances need fresh air for safe operation. Do not use large pans which could restrict the burner efficiency and spread the flame away from the burner and cook top.

Before operation:

1. Open overhead vent.
2. Open window.

This warning label has been located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen supplied is limited due to the size of the recreational vehicle, and proper ventilation when using the cooking appliance(s) will avoid dangers of asphyxiation. It is especially important that cooking appliances not be used for comfort heating as the danger of asphyxiation is greater when the appliance is used for long periods of time.

### Care Of Range

– See manufacturer's owner's manual.

Allow the range top to cool then clean it with hot, soapy water. Use a damp cloth to clean surfaces. Grease splatters, which may bake onto the surfaces, should be wiped off before they have time to harden. Use a toothpick to clean clogged burner orifices. DO NOT use metal objects, such as an ice pick or wire, to unclog burners. They may distort the opening and adversely affect burner operation. Read the manufacturer's manual for details on the operation and care of the range.

### NOTE:

Prolonged use of the range may cause moisture to form on the inside of the canvas and vinyl walls. Condensation may also form on the inside of the camper during heavy rain or when the outside temperature drops. This condition can be controlled by opening a window on the downwind side of the camper or opening the roof vent.

## Refrigerator

### Care Of The Refrigerator

Remove food and ice after each trip. Clean interior with warm water and liquid dish soap. Wipe dry with soft, dry cloth. DO NOT use abrasive cleaning material; it will scratch interior surfaces. Prop the door open during periods of non-use.

To defrost refrigerator remove frozen food and ice. Turn off the thermostat. Place a pan of hot water inside the compartment to speed up the defrosting process. Dry the interior with a clean cloth.

### 12v / 120v / Propane Refrigerator

The propane and electric controls are located in the rear of the refrigerator and are accessible through the doors in the outside wall of the vehicle. To remove the doors, turn the black buttons on the lower corners 90° counter-clockwise to release.

Refer to the manufacturer's operation manual supplied with the appliance.

Keep items to be stored in your RV refrigerator or ice box in your home refrigerator or freezer until you are ready to leave. This will reduce the cooling load on your RV's refrigerator or ice box and help keep perishable foods fresh longer. Always store food in sealed containers or suitable wrapping. During travel, use the door latch.

- The refrigerator requires 24 hours of running time to cool down.
- If the refrigerator has been out of use for an extended period, make sure all air vents are free from obstruction and check for propane leaks using soapy water.
- Never cover or partially cover the air vents with cardboard or anything else.
- Remember to level the vehicle when stopping for more than about an hour; otherwise, the cooling unit could be permanently damaged due to overheating if it is left on.

For recommended maintenance, refer to the appliance's instruction booklet.

### **⚠ WARNING**

Turn on only one energy source at a time.

## Furnace

– See manufacturer's owner's manual.

The RV furnace is a propane appliance. Heat is discharged into the unit directly through the furnace grill. To operate the furnace, first remove the cabinet front. Turn the main propane valve control knob to the OFF position.

Set the thermostat above room temperature. A slight delay will occur before the blower starts. Allow the blower to run for five minutes for combustion chamber purge cycle. After five minutes, set thermostat below room temperature. Turn the main propane valve control knob to ON position. Set thermostat above room temperature. Allow 30 seconds for ignition to occur after the blower comes on. If burner does not ignite, return main propane valve control knob to OFF. Set thermostat to OFF.

### NOTE:

If after three attempts with no ignition, go to shut-down and contact a qualified service agency. Do not continue to cycle furnace through thermostat in an attempt to get ignition.

### Care Of Furnace

Your furnace should be inspected before use at least annually by a qualified service agency. Particular attention should be given to the combustion chamber gaskets, soot in vent and main burner. Check your furnace's owner's manual (supplied with furnace) for more information and before operation of furnace.

### **⚠ WARNING**

DO NOT use catalytic or open flame heaters in your unit. This includes wood and charcoal grills and stoves. The use of this equipment inside the vehicle may cause fires. These devices, either portable or permanently installed, consume oxygen from the interior space and may contaminate the air with toxic fumes. These fumes may cause nausea, dizziness or death.

## Water Heater

– See manufacturer's owner's manual.

The water heater is a propane appliance capable of heating water to a preset temperature. The water heater features an electric ignition. When the system is connected to city water, fill the water heater by opening a hot water faucet. When filling the fresh water tank, turn the water pump ON and open a hot water faucet. In either case, when water flows steadily, turn the faucet OFF. Any air still in the tank can be removed by opening the relief valve in the outside access compartment.

Do not turn on water heater switch until heater tank is full. Damage will occur to the water heater if turned on when empty!

See manufacturer's directions for use and care of water heater.

# CARE AND MAINTENANCE

## General Information

Periodic maintenance of your tent camper is necessary not only to protect your investment, but also to retain the dependability, safety, and appearance that will provide you with many seasons of trouble-free operation. Preventative maintenance will pay for itself many times over by preventing problems before they occur.

Many repair costs are greatly increased by ignoring small problems, which can affect other parts and/or systems of your tent camper.

If a situation arises involving a maintenance or cleaning activity and you are unsure of the proper procedure, contact your dealer. It is our goal to help keep you informed, and help you understand how to keep your tent camper properly maintained.

## Exterior

### Fiberglass and Aluminum Siding

The care of fiberglass and aluminum siding is essentially the same care as automotive finish.

- Wash your tent camper on a regular basis, using warm water and a mild detergent.
- Take care to avoid spraying water directly into the furnace or refrigerator vents (if so equipped) when washing the tent camper.
- Remove bird droppings, tree sap, insects, and tar, as soon as possible, to avoid staining the camper finish.
- Wash and wax fiberglass and aluminum at least three times a year with an automotive type liquid or paste wax. Follow the directions for use as outlined by the product manufacturer. When washing and waxing your camper, do so out of the hot sun and when the exterior surfaces are cool. Storing the tent camper out of the direct sun is an excellent way to help preserve exterior finishes.

Any finish will deteriorate with time. Dulling and fading can be increased by exposure to extreme sunlight, air pollutants, and excessive moisture. Surface weathering of fiberglass does not change the strength of the fiberglass.

Regularly washing the exterior surface is the best insurance against deterioration, such as fading, yellowing, or chalking.

If surface deterioration has occurred, check with your dealer for the steps required to restore the finish. In extreme cases, buffing or painting may be necessary.

Small cracks in the fiberglass can usually be repaired by using a fiberglass filler. Allow the filler to harden, sand, then repaint with gelcoat. (Check with your dealer for further instructions and product information.)

To avoid moisture from entering through breaks, physical damage to fiberglass or aluminum should be repaired immediately before possibly causing problems with interior walls and components. Cover breaks in the sidewall with plastic, sealing the edges with tape until proper repairs can be made.

### ⚠ CAUTION

**Do not use rubbing compound or any abrasive cleaner or cloth on the camper. If using a tar or insect remover, be sure it is safe for use on painted surfaces.**

### Seals and Adhesives

It is important to maintain the seals and adhesives on your tent camper. Doing so will help prevent moisture from entering and destroying tent camper components. When washing your tent camper, inspect the seals and body moldings for signs of drying out and wear. Be aware that weather, sun, and road vibration will have an effect on seals, causing them to dry, crack, or separate. Check the camper's condition at least twice a year. Clean off all dirt, and check for cracks in the sealant around the vents and extrusions. Use a polyurethane sealant, or a marine type caulk, to reseal if needed.

### NOTE:

It is important to frequently check the seals in order to help prevent moisture from entering the camper, causing rot, mold and mildew. This is especially important for campers being stored outside. If you are unsure how to perform the seal maintenance, consult your dealer for the correct method for renewing the seals, or, if you prefer, have your dealer perform the seal maintenance for you.

### ⚠ WARNING

**Under the terms of your tent camper warranty, failure to maintain tent camper seals, through regular maintenance, can lead to severe damage of tent camper components and may be considered neglect or abusive treatment. Under those conditions, damages of this nature are not warrantable.**

### Frame

Check the condition of the frame regularly. To help avoid rust, keep the frame clean and repaint as necessary. It is important to keep underbody components clean especially if you are towing the tent camper in the winter in areas where road salt is used.

## Wheels and Tires

In areas where the camper is subjected to hot sun for prolonged periods, shading the tires by covering them can reduce tire sidewall cracks from forming. Spraying tire sidewalls with a silicone spray can also help keep them from drying out. Check the condition of the wheels regularly. Keep them clean and repaint as necessary to avoid rust. Check the tightness and condition of lug bolts regularly.

## Brakes and Wheel Bearings

Check brake adjustment and lining regularly, and adjust as needed per the manufacturer's instructions. Also check the wheel bearings regularly and keep lubricated. If needed, repack with grease and replace the cotter pins.

## Jack Post, Dolly Wheel, and Coupler

Keep threads and moving parts lubricated, and check their condition regularly. Grease the release lever and coupler socket to ensure proper operation and fit.

## Propane System

The propane system should be checked regularly for leaks and road damage. Have a qualified propane service technician check the entire propane system, including regulator pressure, annually, or sooner, if you suspect a problem, using proper equipment.

## Tent Maintenance

### Tent Material

To help prevent water damage, it is important to seal all stitched areas.

1. All vinyl tents need to get wet one or more times to seal the needle holes. Your tent is sewn with a special thread that swells up and seals the holes after it has been wet.
2. You will need to precondition your tent before camping by spraying water on the tent until thoroughly wet.
3. Begin this procedure by setting up the camper as you would when camping. Be sure all windows are zipped closed and the storm door window is closed and secure.
4. Remove all cushions and drapes and store them in a dry place.
5. Saturate all seams with water and check inside the camper for any seam leaks. Make sure that any moisture in the interior resulting from this process is removed if present.
6. Allow the tent to dry, making sure it is completely dry before putting it away.

7. If leaking should reoccur after prolonged use, you may consider resealing the stitching with one of the recommended tent sealing products on the market or paraffin. Once the sealing process is completed, retest for leaks using the steps listed above.

## Tent Vinyl Maintenance

All vinyl tents need to be dampened with water, one or more times, to seal the needle holes. Your tent may leak the first time it gets wet. This is normal. The tent is sewn with special thread which expands when wet and helps to seal the needle holes.

Seal all seams before the first trip, and each year thereafter, to prevent water damage to the interior of your camper. It's a good idea to include a wax candle in your field maintenance kit to seal small leaks which may develop while you are camping. (If you use a candle for emergency lighting, be sure to observe proper fire safety precautions. Have your camper fire extinguisher nearby, and be sure you and your guests know how to operate it.)

Your plastic windows have a -20° F cold crack. Do not crank your tent up to the maximum height in extremely cold weather (0° F). Doing so could shatter your windows.

To avoid damage from mold or mildew, allow a wet tent to dry completely before closing the camper. If you must close the camper with the tent wet, be sure to protect all the cushions and drapes from dampness by storing them in a dry, protected area.

## Crank-Up Lift System

To help protect your Limited Warranty, you must perform general maintenance and regular inspections. Failure to provide proper service maintenance is easily recognized as it is reflected in the condition of your camper.



Power-Winch System



# CARE AND MAINTENANCE

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Refer to your power winch owner's manual for operating and maintenance information.

## **Inspect and Service Yearly**

1. Clean and recoat lifter posts externally with a rust prohibitive, non-drying lubricant.
2. Annually grease zerks on front, bottom and top of master tube.
3. Lubricate springs annually by raising the roof to the UP position. At each segment of the telescoping post, lubricate with 30-weight oil, taking care to inject the oil into the opening between the posts. To help avoid tent damage, immediately remove any excess oil on the external portion of the post.

## **Interior**

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### **Appliances, Sink and Countertop**

Clean the sink, countertop, and appliances with hot soapy water, or a good liquid cleaner. Avoid using abrasive cleaners. DO NOT place hot pots or pans directly on countertops as they can burn or loosen the countertop surface.

Never use steel wool on a stainless steel sink. When cleaning stainless steel, use a mild cleanser, gently scrub the sink in the direction of the grain, and rinse well. Rinse after each use and wipe dry.

After each trip, remove food and ice from the refrigerator. Prop the door open slightly to keep the interior dry and free of mold, mildew, and odors. Read and understand all instructions provided with your appliances, and follow the manufacturer's instructions. Pay particular attention to all cautions or warnings.

### **Cushions**

Fabrics are durable and stain resistant. Use a foam-type upholstery cleaner for general cleaning and stain removal. Fabrics can be further protected by applying a fabric conditioner at least once a year, such as "Scotchgard."

### **Curtains**

For best results, all curtains and drapes should be professionally dry cleaned. You can help avoid accumulation of dirt between cleanings by vacuuming, or lightly brushing, curtain fabric frequently.

### **Vinyl Floor Covering**

Damp mop with water and detergent; rinse thoroughly. DO NOT use abrasive cleaners.

### **Wood Surfaces and Pre-Finished Panels**

Keep the wood products in your tent camper looking like new for the life of the unit by treating the cabinetry and wood surfaces with a good furniture polish. Clean pre-finished panels with a spray-type furniture polish. Avoid constant exposure to direct sunlight, which can cause wood to fade and dry out.

### **Water System**

Regularly check all hoses, fittings, and connections for leaks and signs of wear. Keep the system sanitized, and take care to winterize during cold weather. DO NOT allow water to remain in the system for extended periods.

The fresh water inlet line, between the fresh water tank and the galley faucet, is protected by a screen filter. The screen is located where the fresh water access line attaches to the pump. This screen should be removed and cleaned at least once a year or whenever water flow through the kitchen faucet seems restricted. If debris has clogged the inlet filter, be sure to also clean the fresh water tank per the instructions outlined in this manual.

### **Electrical System**

Under normal circumstances, the electrical system requires minimal maintenance. If you experience electrical problems with your tent camper, have it checked by a qualified electrician.

### **Bed Slides**

Lubricate frequently with silicone to ensure easy operation.

### **Roof Vent**

Frequently check the roof vent for debris which may block air flow or jam the cranking mechanism. Lubricate the mechanism with light oil.

### **ABS Plastic**

Various components of the tent camper are constructed of strong, lightweight ABS plastic. If it becomes necessary to remove a stain, a solution of mild soap and water is generally all that's needed. Tougher stains may require stronger cleaners, but before using an untried product, be sure to read the label to determine if the product is recommended for use on plastics.

Avoid abrasive cleaners (even liquid and cream types), alcohol based products, and solvents such as acetone and MEK (methyl ethyl ketone). Gasoline and kerosene should not be used for cleaning purposes. They have a damaging effect as well as being a fire hazard.

## **⚠ CAUTION**

Damage caused by solvents, alcohol, and oil-based products may not be immediately noticeable. They can cause the plastic to weaken and become prone to stress cracking.

## **Wintertime Use and Storage**

### **Water System**

Units with above floor water tanks have a dinette storage lid which can be left open to allow warmer air to circulate around the water tank. If the camper has water tanks below the floor, store water in plastic containers in a heated area.

### **Food Storage**

Since heat rises, canned goods and other foods packed in water should be stored in top cupboards (only when the camper is in storage, never when traveling). They may also be stored in the refrigerator as it is insulated against the cold. Store dry foods, and other items that are not damaged by freezing, in the lower storage areas.

### **Propane System**

It is important to remember that heating with propane consumes propane rapidly, so refill tanks immediately to avoid running out of fuel.

### **Heating**

## **⚠ WARNING**

Use only the camper furnace to heat the camper as it is properly vented to the outside. Never use the range for heating. Carbon monoxide poisoning, asphyxiation or fire could occur.

### **Condensation**

Cooking produces large amounts of moisture in the form of steam and condensation. To allow moisture to escape, open a roof vent or unzip a window.

### **Winter Storage Tips**

Certain precautions must be taken to protect your camper during winter storage. Consider using the tips listed below. (It's a good idea to consult your dealer regarding any special requirements for storage in your particular geographic location.)

1. Park the camper on a level surface.
2. Clean and dry the camper thoroughly, both inside and out, including the refrigerator, sink and shower.
3. Be sure electrical switches and appliances are turned off.
4. Do not leave a battery in the camper for the winter. It will discharge within 30 to 45 days and could freeze if not kept fully charged.
5. Be sure all doors and vents are closed securely. Cover exterior appliance vents to prevent moisture, insects, or vermin from entering during storage.
6. Periodically check the interior of the camper to be sure leaks have not developed which could cause damage to interior components.
7. Keep the tires inflated to the correct pressures.
8. If stored outside, keep the camper free of snow and ice accumulation.
9. Drain the water system. Consult your dealer before using any type of water system antifreeze in your camper. Your tent camper dealer can advise you of the type of nontoxic antifreeze to use and how to completely flush and sanitize the water system before using it after winterizing.

## **⚠ DANGER**

Automotive antifreeze is toxic and not safe to use in your drinking water system.

### **NOTE:**

It is best to store your camper inside a protected area; however, if it is to be stored outside, be sure to check and reseal all roof joints before storing and again in the spring.

## **⚠ WARNING**

If you choose to store your camper under a tarp, damage to the roof/fiberglass can occur if the tarp is too dark in color and is not properly vented when stored in extreme heat or direct sunlight.

# CARE AND MAINTENANCE

## Care and Maintenance Charts

### Before Each Trip

Item	Procedure
Tent Material	Clean and rinse thoroughly and allow to dry.
Appliances	Remove food and ice from refrigerator after each trip.
Weight and Distribution	Keep unit within specified load limits and proper weight distribution.

### Each Month

Item	Procedure
Fiberglass Exterior	Wash with warm water and mild detergent.
Seals and Adhesives	Inspect and reseal as necessary.
Appliances	Check for obstructions and dirt on exterior appliance vents.
Safety Equipment	Check fire extinguisher pressure and conditions.
Wood Surfaces	Clean pre-finished panels and wood.

### Every 3 Months

Item	Procedure
Doors	Lubricate door hinges and step components with WD40.
Brakes	Check operation and for uneven wear.

### Every 6 Months

Item	Procedure
Fiberglass Exterior	Wax with liquid or paste wax. Check condition of body moldings and reseal as needed.
Roof	Inspect and reseal as necessary.
Water and Drainage	Check hoses, fittings and connections for leaks or signs of wear.
Lifter System	Lubricate.
Axles	Mounting bolts should be torqued to specific foot pounds.
Wheel Bearings	Repack wheel bearings.

### Yearly

Item	Procedure
Roof	Lubricate roof vent mechanism with light oil.
Doors	Lubricate door locks and strike pocket, including exterior storage and access doors.
Water and Drainage	Winterize system, if needed, due to weather conditions.

### As Required

Item	Procedure
Tent Material	Remove stains from vinyl with Oxy-Clean. Seal leaks in tent vinyl as required.
Windows	Clean windows with plastic polish used for auto convertible top windows.
Propane System	Check for leaks and road damage.
Water and Drainage	Sanitize system and check fresh water inlet line screen.
Electrical	Perform maintenance on converter per converter manual. Check and service battery (if so equipped).
Bunks	Lubricate bunk slides with silicone.
Wheel Bearings	Repack wheel bearings.
Brakes	Check operation and for uneven wear.

## Propane System

Your camping trailer is equipped with one of the finest propane/methane detectors. For your safety, follow the enclosed directions.

### NOTE:

Always follow the operation and safety instructions of the propane appliance's manufacturer.

# CARE AND MAINTENANCE

## **⚠ WARNING**

### Limitations Of Propane/Methane Detectors

- This detector will not work without power. Examples are: an open circuit breaker, a faulty power line connection, a blown or missing fuse.
- This detector will only indicate the presence of propane or methane at the sensor. Explosive gas may be present in other areas. Do not test with butane. Sensor damage could occur!
- This detector may not be heard. The alarm loudness is designed to meet or exceed regulatory standards; however, the alarm may not be heard if detectors are located in remote locations or behind closed doors. The alarm may not be heard by persons who are hard of hearing.
- This detector is not a smoke or fire detector; it is not suitable as a smoke or fire detector.
- This detector is not suitable for installation in hazardous areas as defined in the national electrical code.

### How to Take Care of Your Detector

This detector has been designed to be as maintenance-free as possible. To keep your detector in good working order, you must:

- Test the detector weekly.
- Observe the color of the indicator light on the front panel of the detector at frequent occasions and during your weekly test.
- Vacuum the dust off the detector cover at least once a year (more frequently in dusty locations) using the soft brush attachment of your vacuum.
- Clean the detector cover when dirty. Hand wash using a cloth dampened in clean water. Dry with a soft cloth.
- DO NOT SPRAY CLEANING AGENTS OR WAXES directly onto the front panel. This action may damage the sensor and cause the detector to malfunction.

### Operation

#### POWER ON Warm Up:

- When power is first applied, the Yellow LED will flash for three minutes while the detector is warming up.
- At the end of that time, the LED will turn Green indicating full operation.
- If the detector has detected unsafe levels of propane, it will immediately go into alarm.

## **⚠ CAUTION**

This detector cannot alarm during the three minute warm up cycle.

### Testing

## **⚠ WARNING**

Test the operation of this detector after the vehicle has been in storage, before each trip and at least once per week during use.

Simply press the Test switch any time during the warm up cycle or while in normal operation. The LED should flash RED and the alarm should sound. Release the switch. This is the only way you should test your detector. This test feature checks the full operation of the detector. If this detector does not test properly, return the detector immediately for repair or replacement.

### Alarm

The Red LED will flash and the alarm will sound whenever dangerous levels of propane are detected. The detector will continue to alarm until the propane clears or the Mute switch is pressed.

### Procedures To Take During An Alarm

1. Turn off all propane appliances (stove, heaters, furnace) and extinguish all flames and smoking material. Evacuate, leave doors and windows open.
2. Turn off the propane/CNG tank valve.
3. Determine and repair the source of the leak. Seek professional help if necessary.

## **⚠ CAUTION**

Do not re-enter until the problem is corrected.

### Alarm Mute

This feature is activated by pressing the TEST/MUTE button when the detector is in alarm.

1. The Red LED will continue to flash and the alarm will beep every 30 seconds until the propane level has dropped to a safe level, then
2. The LED will flash Green until the end of the Mute cycle, and/or
3. Return to Red and beep four times if high propane levels return before the end of the Mute cycle, then
4. Return to normal (solid Green) or resound the alarm in approximately two minutes if dangerous levels of propane remain in the area.

# CARE AND MAINTENANCE

## Malfunction Alarm

The microprocessor will activate the malfunction alarm when it detects a fault in the detector's operation. The LED will alternately flash Red and Green while the sounder beeps twice every 15 seconds. The Mute switch will not function. REMOVE THE DETECTOR IMMEDIATELY AND RETURN IT FOR REPAIR OR REPLACEMENT.

## Low Power Operation

This detector will operate normally down to 7V DC. Do not operate this detector below 7V DC.

## Troubleshooting Guide

Problem	Cause/Solution
No LED	Faulty power connections, reverse polarity, bad or missing fuse or dead battery.
No sound in test	Defective - return immediately
No Red LED in test	Defective - return immediately
Alarms after warm up with no propane present	Contaminated sensor from an extended storage period. Press Test/Mute switch.
Red/Green LED constant alarm no reset	Defective - return immediately

## Led And Sounder Signals

Color	Detector Operation	Sounder
Yellow Flashing	Warm-Up Cycle	Off
Solid Green	Normal	Off
Flashing Red	Alarm	Continuous
Flashing Green	Mute Cycle	Off
Flashing Red	In Mute Cycle	Beep Every 30 Seconds
Red/Green Alternating	Malfunction	2 Beeps Every 15 Seconds

## Specifications

Power Supply	12 vDC
Operational Voltage	7-16 vDC
Current Draw	46 mA @ 13.5 vDC
Operational Temperature	-31°F to 150°F -35°C to 66°C
Relative Humidity	15% to 93%
Audible Output	85 db @ 10 feet

Visual Alarm Signal	Blinking Red
Visual Mute Signal	Blinking Green
Visual Malfunction Signal	Alternating Red/Green
Alarm Trigger	< 25% of the LEL of Propane and Methane
Confirmation Circuit	8 Seconds 40-441 3" x 3.5" x 1.38" 40-442 6.5" x 3.5" x 1.38" Alternate Case 40-442 4.8" x 3.5" x 1.3"
Case Material	Geon 3700
Flame Rating	94 5V
Warranty	1 Year Limited
Testing Laboratory	Underwriters Laboratories
Standard	1484 Rev. 2 Propane Detectors For Residential/RV Use

## Effects of Formaldehyde

### Formaldehyde From Building Materials

Certain building products such as particle board, fiberboard and hardwood plywood are manufactured with an adhesive containing urea-formaldehyde. These products emit a small quantity of 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.

### **WARNING**

Formaldehyde levels in the indoor air can cause temporary eye and respiratory irritation and may aggravate respiratory conditions or allergies.

## WaterPur™ Water Treatment System

To help you choose quality water treatment products, the Water Quality Association developed its Gold Seal program. WQA tests water treatment equipment and awards the Gold Seal only to those systems that meet or exceed industry standards for performance, capacity and integrity in removing a variety of drinking water contaminants. WQA Gold Seal testing and validation is available for drinking water treatment units. It provides the following assurances:

1. Performance Testing — measures contaminant reduction capabilities over the life and capacity of the unit.
2. Structural Integrity — measures durability under pressurization beyond the usual demands of home water systems, simulation 10 years of normal use.
3. Materials Safety — confirms a product does not add anything harmful to the water being treated.
4. Literature Review — verifies clarity and accuracy of product literature sales and advertising copy, installation and maintenance instructions, and product labeling.

Gold Seal labeled products must meet the Water Quality Association's Code of Ethics standards. Only the Water Quality Association can award the Gold Seal, and only products meeting comprehensive industry standards can earn it.

For more information, write:  
Water Quality Association  
4151 Naperville Rd.  
Lisle, IL 60532-1088  
(a not-for-profit organization)  
Visit their website at [www.wqa.org](http://www.wqa.org).



The WaterPur™ system filters all water going into your RV, not just drinking water, thereby protecting your complete plumbing system from contaminants, providing filtered cold and hot water, and providing filtered water to your bathroom. It also:

- Removes over 99% of chlorine (taste and odor)
- Removes over 99% of turbidity
- Removes over 99% of Giardia and Cryptosporidium
- Does not channel, fluidize, or bypass like a granular activated carbon filter
- Does not permit the passage of cultivated bacteria like a granular activated carbon filter
- Does not contain silver nitrate or any other pesticide or harmful chemical
- Is constructed from all NSF listed materials
- Is rated for 10,000 gallons or one year
- Has a flow rate of 2.5 gallons per minute

The WaterPur™ cartridge is made of activated carbon particles fused into a uniform block, providing micron filtration. Service life is greatly extended by a 15 micron

polypropylene prefiltration medium and a layer of 5 micron polypropylene melt blown intermediate filtration medium.

The replaceable cartridge, which is the heart of The WaterPur™ system, has been tested to meet the material requirements of NSG Standards 42, 53 and 58. It has been tested to meet the performance requirements of NSF Standard 42 for Class 1 Chlorine reduction and Standard 53 for Class 1 Turbidity and Cyst reduction.

Sanitize prior to using your RV's fresh water system with The WaterPur™ CC1-10CLW12 installed; the entire system should be sanitized and rinsed. When sanitizing, make sure The WaterPur™ filter cartridge is not in the filter housing.

- Place one ounce of household bleach (such as Clorox) in your RV's fresh water tank for each ten gallons of capacity. (If your tank holds 30 gallons, put 3 ounces of bleach in the tank.) Fill your RV's fresh water tank with potable water.
- SLOWLY open the faucets in the RV and allow water to flow until you smell chlorine at each faucet, and then close the faucet. DO NOT PERMIT THE CHLORINATED WATER TO SPLASH ONTO CLOTHES, WALLS, COUNTERS OR FLOORS. Allow the system to sit overnight.
- Drain the fresh water tank and fill with potable water. Run the faucets until the chlorine smell is gone. Repeat as necessary.
- Shut off the fresh water pump or disconnect from your city water supply. Open the kitchen faucets to remove pressure. Place a shallow pan beneath The WaterPur™ housing by turning counter-clockwise, being careful not to spill the water in the housing. Empty the water from the housing.
- Unwrap the WaterPur™ cartridge and place it in the housing (either side up). Make certain that the 'O' Ring is properly seated, and reattach the housing to the filter cap by turning clockwise. Tighten the housing firmly by hand. DO NOT over-tighten.
- Close the kitchen faucets and either turn on your fresh water pump or your city water supply. Check for leaks at the filter housing. Tighten if necessary. Open the kitchen faucet and allow water to flow for ten minutes. Your WaterPur™ system is now ready to deliver fresh-tasting, filtered water to all of the faucets in your RV.

To winterize your RV's water system, remove The WaterPur™ cartridge from the housing and follow manufacturer's directions for de-winterizing, then replace The WaterPur™ cartridge. The cartridge should be replaced every 12 months or 10,000 gallons, whichever comes first.

An easy way to remember to do this is to replace the cartridge when you de-winterize in the spring. Replace The WaterPur™ cartridge only with a genuine WaterPur™ cartridge available from your Forest River Inc. dealer.

# CARE AND MAINTENANCE

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Operational Note: The WaterPur™ cartridge is not to be autoclaved or steam sterilized. Use the WaterPur™ cartridge with microbiologically safe water. Activated carbon filters are not designed to kill or remove bacteria or viruses. Actual results obtained will vary with various combinations of organic contaminants, changes in pH or other conditions encountered in actual use. All information presented is based on data believed to be reliable. It is offered for evaluation and verification, but is not to be considered a warranty of any kind. The contaminants removed by The WaterPur™ cartridge are not necessarily in your water. Some jurisdictions tax, regulate, or restrict devices making health related or aesthetic claims. WaterPur™ makes no claims in those jurisdictions.

## Warranty

The WaterPur™ system is warranted against defects in material and workmanship for a period of one year from date of purchase. Warranty does not cover damage due to abuse, neglect, improper installation, exposure to pressure or temperature above or below stated operating parameters, or improper winterizing.

The Seller makes no other warranties of any kind, expressed or implied, concerning this product, including warranties of merchantability or fitness for a particular purpose except that this product should be capable of performing as described in this manual.

Seller's obligation for this product's performance below specifications shall be limited solely to the replacement of product proven defective, at the Seller's sole discretion. Determination of suitability of product of uses contemplated by Buyer shall be the sole responsibility of Buyer. Use of this product constitutes Buyer's acceptance of this limited liability.

## Description:

The WaterPur™ model CCI-10CLW12 is a Household Class, Group 2, water filtration device designed for installation in recreational vehicles. It has a micron rating of 1 micron, a capacity of 10,000 gallons of chlorine removal at 2.5 gallons per minute. This capacity was determined under WQA Standard S-200 Test Conditions and may vary with local water characteristics.

The cartridge consists of activated carbon particles fused into a uniform block with enhanced absorptive capacity and efficiency. The cartridge flows in a radial outside-to inside direction providing increased dirt capacity and low pressure drop (8 psid @ 1 gpm service flow, maximum differential pressure of 100 psid and a collapse pressure of 200 psid).

Unlike granular activated carbon (GAC) filters, the extruded carbon will not channel or bypass due to the extreme uniformity of its extruded activated carbon core. Service life is greatly extended by a layer of 15 micron polypropylene spun-bonded prefiltration medium and a second layer of 5 micron polypropylene melt blown filter medium.

Maximum cartridge operating pressure is 125 psid and maximum operating temperature is 1250° F. Minimum operating temperature is 400° F. The housing and cartridge are constructed of 100% NSF listed materials.

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# **NOTES**

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