ENTEGRA COACH®

ETHOS

2023 OWNER'S MANUAL

Without Compromise

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WARNING: Read all instructions in this manual and component manufacturer supplied information before using your RV.

This manual has been provided by your recreational vehicle manufacturer for the sole purpose of providing instructions concerning the operation and maintenance of this recreational vehicle. Nothing in this manual creates any warranty, either expressed or implied.

The owner's failure to provide required service and/or maintenance could result in the loss of warranty. Please review the limited warranty and the limited warranties that apply to specific components offered with this vehicle.

Instructions are included in the manual for operating various components which are optional on some RV's or may not be available on your particular model. **"If so equipped" does not indicate or imply that the component(s) or option(s) were at any time available, or can be retrofitted to your model.** In addition, the owner should refer to individual manufacturer's operating instructions contained in the owner's packet.

INTRODUCTION

Congratulations! on the purchase of your Entegra Coach motor home. We are excited to welcome you to our growing family. Only by insuring your confidence and satisfaction with our RVs and services can we have continued success as a manufacturer of family camping vehicles.

Entegra Coach recreation vehicles are manufactured for use as temporary living quarters for recreation, camping, travel, or seasonal uses. Our recreation vehicles are not intended for the hauling of cargo such as golf carts or any other equipment that has a fuel powered internal combustion engines. All Entegra Coach recreation vehicles are built with care, under our Quality Assurance program. It is our sincere wish that you have a lifetime of enjoyable experiences with your new Entegra Coach motor home.

Options and Equipment

The Entegra coach motor home is available in several sizes and models, so accessories and components may differ slightly between models. Some equipment described in this manual may not apply to your motor home.

Entegra Coach reserves the right to discontinue or change specifications or design at any time without notice, and to make additions or improvements without incurring any obligations upon itself to install these changes on its products previously manufactured. Recreation vehicles built for sale in Canada may differ to conform to Canadian Codes.

Dealer Responsibility

Dealers who are authorized to sell Entegra motor homes are also there to provide customer service after the sale. We work closely with them in an effort to keep you satisfied.

At the time of sale of the new motor home, your dealer is expected to explain or provide the following:

Provide orientation of the motor home, its systems, components and their operation (including a test drive). Request that you read all motorized warranty information and explain any provision not clearly understood.

- Complete and return the *Warranty Registration and Customer Delivery form* and the chassis manufacturer's *Chassis Manufacturer's Delayed Warranty Start form* to activate the applicable warranty coverage (mileage and date of purchase must be included on both forms). Retain copies of these forms in the motor home for any required warranty coverage as needed at home or while traveling.
- Ensure that you receive a complete Owner's Portfolio and review the individual manufacturer's limited warranty provisions with you. The dealer can assist in completing these forms and in locating any required component model or serial numbers.

Customer Relations

Entegra Coach has a network of independent dealers to make warranty and repair decisions to help ensure your continued satisfaction.

If a special circumstance occurs which requires information from Entegra Coach, we have asked your dealer's service personnel to make contact on your behalf. **This is why you should always talk to your dealer's service personnel first.**

- Phone number where you can be reached.
- 17-digit chassis Vehicle Identification Number (VIN) or 9-digit Serial Number.
- The current vehicle mileage.
- If applicable, the component description, serial number and model number.
- A detailed description of the concern.

Section 1: Warranty & Service

If problems arise after you have consulted with your dealer, you are invited to contact Entegra Coach Customer Service. We will work with your dealer to ensure that every effort to resolve the matter is made.

Obtaining Emergency Warranty Repair

If unable to locate an independent Entegra Coach dealer for warranty service, please contact Entegra Coach Customer Service for assistance. Our hours are M-F, 8 a.m. – 5 p.m. (closed holidays). For after-hours assistance contact Coach-Net. For further assistance, contact your selling dealer service personnel. If your dealer is closed, check with the campground personnel or the internet for an RV repair center. You or the repair center may be asked to return any part replaced during the warranty repair. Contact Entegra Coach Customer Service when available.

- **NOTE: Failure to contact Entegra Coach Customer Service, unauthorized or improper warranty repairs, or failure to return requested original parts may result in loss of reimbursement(s) and loss of warranty.**

To Contact Us

Entegra Coach Customer Service: Toll Free 800-283-8267
Or contact us on our website at service@entegracoach.com.

Our mailing address:
Entegra Coach Customer Service
P.O. Box 460
903 South Main Street
Middlebury IN 46540

Our shipping address:
Entegra Coach Customer Service
100 Bontrager Drive
Building # 42, Door # 4220
Middlebury IN 46540

To locate an independent Entegra Coach dealer call us at our toll-free number 800-283-8267.

ABOUT THIS MANUAL

This manual is a guide to operation of the features, equipment and controls in your recreation vehicle. If you find components vary significantly from what is described, please contact your dealer to ensure you have the correct information. Nothing in this manual creates any warranty, either expressed or implied, nor does it cover every possible detail of equipment, standard or option, installed on or in your recreation vehicle.

Information, illustrations and specifications in this manual reflect the most current available at the time of publication approval, are subject to change and not intended to indicate actual size.

This Owner's Manual and Warranty Packet are to be considered permanent components of the vehicle. Keep them in your recreation vehicle at all times for personal reference. If the recreation vehicle is sold, they should remain with the vehicle for the next owner.

WARRANTY PACKET

There are components that are excluded from the vehicle warranty, or are warranted separately by their own individual manufacturer's limited warranty. The Warranty Packet contains these component manufacturer supplied manuals or information sheets, warranty cards and/or registrations. Consult this information for questions regarding operating, maintenance, servicing instructions and warranty coverage. It is important you complete and mail warranty cards and registrations within the prescribed time limits to avoid loss of warranty coverage.

CHASSIS GUIDE

Throughout this manual, frequent reference is made to the vehicle's Chassis Guide. The Chassis Guide includes the owner's manual provided by the manufacturer of the chassis on which this motor home is built, warranty cards and/or registrations. It also includes pertinent information regarding the transmission, tires, etc. Consult the Chassis Guide for operating safety, maintenance, servicing instructions and warranty coverage. The Chassis Guide should be considered a permanent component of the vehicle and kept in the motorhome at all times for reference.

SAFETY ALERTS

Throughout this manual, certain items are labeled **NOTE, NOTICE, CAUTION, WARNING,** and **DANGER**. These terms will alert you to precautions that can involve risk to your vehicle or to your personal safety.

Read and follow them carefully. National Safety Associations and organizations require many of the instructions listed. Always use the appropriate safety gear when servicing or maintaining your recreation vehicle. Please call your dealer or our customer service representatives if you are unsure how to proceed.

These signal words indicate precautions and potential situations, which if not avoided, may result in personal injury, property damage, or damage to your recreation vehicle. These precautions are listed in the appropriate areas in this Owner's Manual, and in the information contained in the Warranty Packet, and on safety labels affixed to your recreation vehicle. Read and follow them carefully.

❖ **NOTE: Gives helpful information**

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

NOTICE

Indicates a potential situation that,if not avoided, may result in property damage or damage to your motorhome.

⚠ CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ WARNING

Indicates a potentially hazardous situation that, if not avoided, may result in death or serious injury.

⚠ DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This alert information is limited to the most extreme situations.

REPORTING SAFETY DEFECTS

In the United States: If you believe that your recreation vehicle has an alleged defect which could cause a crash or cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), in addition to notifying our Customer Service Department.

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 your vehicle manufacturer. For additional information, please refer to the NHTSA website at www.safercar.gov.

To contact NHTSA by phone:
Call the Department of Transportation (DOT) Vehicle Safety Hotline at 1-888-327-4236, and a NHTSA representative will record your complaint information (TTY: 1-800-424-9153 or 1-202-484-5238).

To Contact NHTSA by mail:
Office of Defects Investigations/CRD
NVS-216
1200 New Jersey Ave SE
Washington, DC 20590

In Canada: If you believe your vehicle has an alleged safety defect, you should contact Transport Canada and our Customer Service Department immediately.

To file a safety concern, you can complete an on-line form at https://tc.canada.ca/en/road-transportation/defects-recalls-vehicles-tires-child-car-seats/report-potential-safety-defect-vehicles-tires-child-car-seats, or call to speak with a defect investigator.

For additional information, please refer to the Transport Canada website at www.tc.gc.ca/recalls

To contact Transport Canada by phone:

1-800-DEFECTS

1-819-420-4300 (Ottawa-Gatineau area or internationally)

Toll free: 1-800-333-0510 (in Canada)

To contact Transport Canada by mail:

Transport Canada -ASFAD
330 Sparks Street
Ottawa, ON
K1A 0N5
www.tc.gc.ca/rappels
Téléphone: 819-994-3328 (dans la région de Ottawa-Gatineau et à l'extérieur du pays)
Sans frais: 1-800-333-0510 (au Canada)
Adresse postale :
Transports Canada -ASFAD
330, rue Sparks
Ottawa (Ontario) K1A 0N5

CUSTOMER RESPONSIBILITY

It is important you read and understand all instructions and precautions before operating the recreation vehicle. Even if you are an experienced RV'er we encourage you to thoroughly read this Owner's Manual, as well as the information contained in your Warranty Packet and Chassis Guide.

As technology advances, new improvements enter the RV industry every day, and each RV manufacturer has its own unique manufacturing process.

Familiarize yourself with the Limited Warranty applicable to your recreation vehicle. There are components that are excluded or warranted separately by their individual manufacturer's limited warranty (refer to the Warranty Packet or Chassis Guide).

As the new owner of the recreation vehicle, you are responsible for regular and proper maintenance performed in accordance with this manual and the OEM manuals. Regular and proper maintenance will help prevent conditions arising from neglect that are not covered by the limited warranty. It is your responsibility and obligation to return your vehicle to your dealer for repairs and service.

CHANGE OF ADDRESS/OWNERSHIP

Please notify our Customer Service Department as soon as possible of a change of address by writing or calling us. For notification of a change of ownership, please fill out the appropriate form located in this manual and email it to Customer Service along with documentation showing proof of ownership. Please include your current vehicle mileage.

SUGGESTIONS FOR OBTAINING SERVICE

To help ensure your dealer provides the level of service you expect, here are some suggestions we would like to make:

Contact your dealer at once
Do not wait until you are ready to use your RV. Your dealer may not be able to service it immediately and/or the repair may require parts be ordered. The dealer's service department is busiest on Mondays, Fridays and before holidays.

Prepare for the appointment
If you are having warranty work performed, be sure to have the right papers with you. Take your warranty folder and have your vehicle information available. All work to be performed may not be covered by the warranty. Discuss additional charges with the service personnel.

Prepare a list
Provide your dealer with a written list of specific repairs needed. It is important that you provide any vehicle repair history to the dealer's service personnel. Keep a maintenance log of your vehicle's service history. This can often provide a clue to the current issue.

Be reasonable with your requests
If you leave a list with several items and you need your vehicle returned back by a specific time, discuss the situation with the dealer's service personnel and list your items in order of priority. This may include making a second appointment for work not completed or parts that the dealer may need to order.

Don't expect to look over the technician's shoulder
Please don't be offended if you are told you cannot watch the work being done. Some insurance requirements forbid admission of customers to the service area.

Inspect the work performed
Check out the service or repair job when you pick up your vehicle. Notify the dealer's service personnel immediately of any dissatisfaction. If you cannot return the vehicle immediately for repair, make an appointment as soon as possible. Be aware that all service shops require notification of any issues with their repairs within a specified time limit. Make sure you are familiar with their repair policies.

OBTAINING SERVICE AT OUR CUSTOMER SERVICE FACILITY

Should your recreation vehicle be in need of service, and your dealer recommends that the repairs be made at our Customer Service facility, your recreation vehicle may be returned to us with the following guidelines*:

- You or your dealer must make a confirmed appointment 60 days prior to dropping off the recreation vehicle at our Customer Service facility.
- The holding tanks must be emptied and rinsed. We have a dumping station available for customer use.
- The propane system (if so equipped) and all electrical systems must be shut down and turned off. We are not responsible for discharged batteries or propane tanks.
- During the appropriate season, please ensure the RV has been winterized.
- Unless prior approval has been obtained from our Customer Service facility, all personal items must be removed from the area where you are requesting service repair and the refrigerator emptied. We are not responsible for loss of food items.
- All transportation costs are the responsibility of the owner. You may need to arrange for alternative accommodations for some types of repairs. Please be prepared accordingly.

**Our Customer Service facility occasionally utilizes local independent repair facilities. Your vehicle may be referred to or repaired by one of these local repair facilities.*

OBTAINING SERVICE FOR SEPARATELY WARRANTED ITEMS

Your selling dealer is responsible for servicing your recreation vehicle before delivery, and has an interest in your continued satisfaction. We recommend your dealer perform all inspection, warranty and maintenance services. Some dealers may be authorized service centers for those OEMs whose products are warranted separately and excluded from the **Limited Warranty.**

PARTS AND ACCESSORIES

Contact your authorized dealer for assistance in obtaining replacement parts or accessories. We do not sell direct to retail or non-authorized dealers. If the original part is no longer available, we will make every effort to provide an appropriate substitute.

AFTERMARKET ACCESSORIES

⚠ WARNING

Do not add any type of rack or frame to any motor home chassis or chassis part. The alteration to the length and/or weight distribution may result in unstable handling, be a safety hazard, or could damage the motor home components.

Installation of aftermarket accessory(s) may affect the Limited Warranty applicable to your recreation vehicle, damage your RV and/or cause a failure. Your RV manufacturer accepts no responsibility for results of work performed by unauthorized technicians.

If you wish to make changes, consult an authorized dealer or your RV manufacturer before contacting other resources. They may be able to refer you to a specialist for assistance.

2023 ENTEGRA MOTORHOME (CLASS B) LIMITED WARRANTY

THIS LIMITED WARRANTY COVERS:

- The Motorhome when it is used only for its intended purpose of recreational travel and camping;
- Only the first retail purchaser;
- Only those portions of the Motorhome not excluded under the section "What is Not Covered";
- The Motorhome only when sold by an authorized dealership; and,
- Only defects in workmanship performed and/or materials used to assemble those portions of the Motorhome not excluded under the section "What is Not Covered".

This Limited Warranty is not transferable.
When you request and accept the performance of warranty repairs under the terms of this Limited Warranty, you are accepting all terms of this Limited Warranty, including by way of example, warranty limitations and disclaimers, the forum selection clause and the clause reducing the time period when suit must be filed for breach.

LIMITATION AND DISCLAIMER OF IMPLIED WARRANTIES:
THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO:

- **THE DURATION OF THIS LIMITED WARRANTY;**
- **THE SCOPE OF COVERAGE THIS LIMITED WARRANTY PROVIDES;**
- **DEFECTS EXISTING AT THE TIME OF SALE THAT MANIFESTED THEMSELVES AND SURFACED DURING THE IMPLIED WARRANTY COVERAGE PERIOD; AND**
- **DEFECTS DISCOVERED AND REPORTED WITHIN THE DURATION OF THE IMPLIED WARRANTY. THERE ARE NO EXPRESS WARRANTIES OR ANY IMPLIED WARRANTIES ON THOSE PORTIONS OF THE MOTORHOME EXCLUDED FROM COVERAGE.**

NOTWITHSTANDING THE ABOVE PROVISIONS, ENTEGRA EXPRESSLY DISCLAIMS AND EXCLUDES ANY AND ALL IMPLIED WARRANTIES AND CONDITIONS, STATUTORY OR OTHERWISE, WHEN THE MOTORHOME IS USED FOR COMMERICAL, RENTAL OR BUSINESS USE OR WHEN THE MOTORHOME IS TITLED OR REGISTERED IN A BUSINESS NAME OR WHEN THE ENTEGRA IS SOLD IN CANADA.

There is no warranty of any nature made by Entegra beyond that contained in this Limited Warranty. No person has authority to enlarge, amend or modify this Limited Warranty. The dealer is NOT Entegra's agent. Entegra is not responsible for any undertaking, representation or warranty made by any dealer or others beyond those expressly set forth within this Limited Warranty. Some states and provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES:
THE FIRST RETAIL BUYER AND ANY SUBSEQUENT OWNER, ALONG WITH ANY PERSON WHO IS AN INTENDED OR UNINTENDED USER OR BENEFICIARY OF THE MotorHome, ARE NOT ENTITLED TO RECOVER ANY CONSE-

QUENTIAL OR INCIDENTAL DAMAGES CAUSED BY A DEFECT IN THE MOTORHOME. BY WAY OF EXAMPLE, CONSEQUENTIAL DAMAGES INCLUDE FUEL AND TRANSPORTATION EXPENSES TO DELIVER THE MOTORHOME TO A SERVICING DEALER, HOTEL ROOMS, LOST WAGES AND MOISTURE DAMAGE SUCH AS MOLD AND MILDEW AS WELL AS RUST AND CORROSION. THE EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES IS NOT DEPENDENT UPON WARRANTY REMEDIES SUCCESSSFULLY CURING ANY DEFECT; THE EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL SURVIVE ANY FAILURE OF THE LIMITED WARRANTY REMEDIES FULFILLING THEIR PURPOSE. Some states do not allow the exclusion or limitation of consequential or incidental damages, so the above exclusions may not apply to you.

COVERAGE TIME: The duration of this limited warranty is 2 years after the first retail owner takes delivery of the Motorhome from an authorized dealer OR 24,000 miles of use, whichever occurs first. If the dealer places the Motorhome in service before retail sale, the coverage period is 2 years after the dealer first placed the Motorhome in service OR 24,000 miles of use, whichever occurs first. **ANY ACTION FOR BREACH OF THIS LIMITED WARRANTY OR FOR ANY IMPLIED WARRANTY MUST BE COMMENCED NO MORE THAN 26 MONTHS AFTER THE BREACH.**

Entegra reserves the right to have new or remanufactured parts of similar quality used to complete any work, and to make parts and design changes from time to time without notice to anyone. Entegra reserves the right to make changes in the design or material of its products without incurring any obligation to incorporate such changes in any product previously manufactured. Entegra makes no warranty as to the future performance of the Motorhome, and this limited warranty is not intended to extend to the future performance of the Motorhome, or any of its materials, components or parts. In addition, the Motorhome owner's obligation to notify Entegra, or one of its independent, authorized dealers, of a claimed defect does not modify any obligation placed on the Motorhome owner to contact Entegra directly when attempting to pursue remedies under state or federal law.

If the Motorhome is not of the current or prior model year when the first retail owner takes delivery, the limited warranty ends 90 days after the first retail owner takes delivery of the Motorhome **OR** after the odometer reaches 5,000 miles, whichever occurs first. **ANY ACTION FOR BREACH OF THIS REDUCED LIMITED WARRANTY OR FOR ANY IMPLIED WARRANTY MUST BE COMMENCED NO MORE THAN 15 MONTHS AFTER THE BREACH.**

Unless prohibited by state or provincial law, repairs do not extend the time when you must commence an action for breach of warranty and shall not extend the warranty coverage period. This reduction in time may not apply to you because some states and provinces do not allow the reduction of the time to commence an action for breach of warranty. Any performance of repairs after the warranty coverage ends and any performance of repairs to those portions of your Motorhome excluded from coverage are "good will" repairs, whether or not Entegra was aware of the any such coverage lapse or warranty exclusion at the time of repairs. Such "good will" repairs do not alter the express terms of this limited warranty or extend the warranty coverage periods or the limitation period in this paragraph. Entegra is not required to notify you if authorized repairs are considered "good will" by Entegra. You should expect the need for warranty repairs. Entegra may use new and/or remanufactured parts and/or components to complete a repair. It is likely that warranty repairs were performed at the factory during assembly OR at the selling dealership after delivery of the Motorhome to your selling dealer. If you discover a defect or damage to the Motorhome when

you take delivery of your Motorhome, you MUST notify your dealer OR Entegra within 10 days of the date of purchase to have defect or damage repaired at no cost to you. Minor adjustments will be performed, free of charge, by the dealer within 90 days of your purchase; thereafter, such adjustments are your exclusive responsibility as normal maintenance.

REPAIR REMEDY: Entegra's obligation is to repair any covered defect discovered within the warranty coverage period provided: (1) you notify Entegra or an authorized dealer within 10 days of your discovery of a defect; **AND** (2) you deliver the Motorhome to Entegra OR an authorized dealership at your cost and expense.

BACK-UP REMEDY: If the primary repair remedy fails to successfully cure any defect after a reasonable number of repair attempts, your sole and exclusive remedy shall be to have Entegra pay an independent service shop of your choice to perform repairs to the defect OR have Entegra pay diminished value damages if the defect is incurable. You must exhaust both the repair remedy and the back-up remedy **AND** these remedies must fail to fulfill their essential purpose before you can seek any other remedies for breach of express or implied warranty.

THIS LIMITED WARRANTY IS NOT A WARRANTY THAT PROMISES OR EXTENDS TO FUTURE PERFORMANCE BECAUSE IT DOES NOT MAKE A REPRESENTATION ON HOW YOUR MOTORHOME WILL PERFORM IN THE FUTURE BUT REPRESENTS ONLY WHAT THE REMEDY WILL BE IF A DEFECT EXISTS.

HOW TO GET SERVICE: To obtain warranty service the owner must:

- Notify Entegra or an authorized Entegra dealer, within the applicable warranty coverage period designated above, that you are making a warranty claim;
- Provide the notification mentioned in (1), above, within ten (10) days of the discovery of a defect in material or workmanship; and,
- Promptly schedule an appointment with and take the Motorhome to Entegra or an independent, authorized dealer.
- If you need assistance, you may contact Entegra at 903 South Main Street, P. O. Box 460, Middlebury, Indiana 46540, Attn: Customer Service, (800) 283-8267.

WHAT IS NOT COVERED:

- Equipment and appliances installed after the Motorhome is assembled by Entegra;
- Motorhomes used for any rental, business and commercial purpose - If the Motorhome owner or user files a tax form claiming a business or commercial tax benefit related to the Motorhome, or if the RV is purchased, registered or titled in the name of any business association it shall be irrefutable that the Motorhome has been used for rental, commercial or business purposes;
- Any Motorhome sold or used outside of the United States, U.S. Territories or Canada;
- Any Motorhome not used solely for recreational travel and camping;
- Any Motorhome purchased through auction or wholesale;
- Any Motorhome purchased from a dealer that is not an authorized dealer;
- Normal wear, tear or usage, such as tears, punctures, soiling, mildew, rust, fading, or discoloration of exterior plastic or fiberglass, or soft goods, such as upholstery, drapes, carpet, vinyl, screens, cushions, mattresses and fabrics;
- The effects and damage caused by condensation or moisture;
- Mold;

- Any damage caused by mold;
- Items working as designed but that you are unhappy with;
- Damage caused by misuse, mishandling, neglect, abuse, failure to maintain the Motorhome in accordance with the owner's manual, or failure to perform other routine maintenance such as inspections, lubricating, adjustments, tightening of screws and fittings, tightening of lug nuts, sealing, rotating tires;
- Damage caused by accident, whether or not foreseeable;
- Damage caused by weather or corrosion due to the environment;
- Damage caused by theft, vandalism or fire;
- Damage caused by tire wear or tire failure;
- Defacing, scratches, dents, chips on any surface or fabric of the Motorhome; damage caused by infestation by insects or animals;
- Damage caused by off road use;
- Damage caused by overloading the Motorhome or any of its components or parts;
- Wheel alignment or adjustments to axles caused by improper maintenance, loading;
- Damage caused by road hazards;
- The leveling jacks/system:
- Any component, system or part warranted by another entity. Examples are, automotive chassis, (including the power train, steering, handling, braking, wheel balance, muffler, tires, tubes, batteries and gauges); generator; awning; inverter; converter; microwave; television; DVD/CD player; radio; speakers; television; refrigerator; range; water heater;, water pump; stove; carbon monoxide detector; smoke detector: propane detector; furnace; and, any air conditioner. The written warranty provided by the manufacturer of the component part is the direct and exclusive responsibility of that manufacturer).

EVENTS DISCHARGING ENTEGRA FROM OBLIGATION UNDER WARRANTY:

- Any rental, business or commercial use or purchase of the Motorhome;
- Any Motorhome titled or registered in a business name;
- Any Motorhome purchased or sold outside of, or used outside of the United States, U.S. Territories or Canada;
- Any Motorhome purchased through an auction or wholesale or by a non-authorized dealer;
- Owner neglect;
- Failure to provide routine maintenance;
- Alteration; off road use;
- Collision or accident, whether or not foreseeable;
- Acts of God, including weather;
- Damage or corrosion caused by the environment, theft, vandalism, fire, explosions, or overloading.

LEGAL REMEDIES: EXCLUSIVE JURISDICTION FOR DECIDING LEGAL DISPUTES RELATING TO AN ALLEGED BREACH OF WARRANTY OR ANY REPRESENTATIONS, OF ANY NATURE, MUST BE FILED IN THE COURTS WITHIN THE STATE OF MANUFACTURE, WHICH IS INDIANA. THIS LIMITED WARRANTY SHALL BE INTERPRETED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF INDIANA. UNLESS PROHIBITED BY STATE LAW, ALL CLAIMS, CONTROVERSIES AND CAUSES OF ACTION ARISING OUT OF OR RELATING TO THIS LIMITED WARRANTY, SHALL BE GOVERNED BY THE LAWS OF THE STATE OF INDIANA, INCLUDING ITS STATUTE OF LIMITATIONS, WITHOUT GIVING EFFECT TO ANY CONFLICT OF LAW RULE THAT WOULD RESULT IN THE APPLICATION OF THE LAWS OF A DIFFERENT JURISDICTION.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE AND PROVINCE TO PROVINCE. ALL ACTIONS OF ANY KIND RELATING TO THE MOTORHOME SHALL BE DECIDED BY A JUDGE RATHER THAN BY A JURY.

WARRANTY REGISTRATIONS: Your warranty registrations should be completed and delivered to the manufacturer of component parts. The selling dealership will assist you in completing and filling out the Entegra product warranty registration. Upon receipt of the product registration by Entegra, your Warranty will be registered. The failure to submit this warranty registration to Entegra will not affect your rights under this limited warranty as long as you can present proof of purchase, however, it can cause delays in obtaining the remedies offered by this limited warranty, and it may adversely affect any servicing facility's ability to provide proper repairs and/or part replacement. Note, tender and acceptance of a warranty registration does not alter the express terms of this limited warranty or any of its exclusions.

CARE AND MAINTENANCE: It is the Owner's responsibility to perform proper care and maintenance of the Motorhome and to assure correct load distribution. For details regarding this, please see your owner's manuals. Please review all manuals and contact your selling dealership, Entegra or supplier of the component part if you have questions.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS; YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

JAYCO, INC.
903 S. Main Street * P. O. Box 460 * Middlebury, IN 46540
Telephone: 800-283-8267

FIRE SAFETY

If a fire does start, follow these basic safety rules:

1. Evacuate the vehicle immediately and call 911.
2. After everyone is accounted for, check the fire to see if you can attempt to put it out.
3. If it is large, or the fire is fuel-fed, get clear of the vehicle and have the Fire Department handle the emergency.
4. Do not attempt to use water to put out the fire. Water can spread some types of fire, and electrocution is possible with an electrical fire.

Refer to the following sections for additional fire safety information.

- **Electrical Systems,** In case of an electrical fire.
- **Appliances,** In case of a grease fire.

FIRE EXTINGUISHER

Fire extinguishers are classified and rated by fire type, A, B and C. These classifications identify the kinds of fires or burning materials they are designed to fight.

Class A - Solid materials such as wood, paper, cloth, rubber and some plastics.

Class B - Liquids such as grease, cooking oils, gasoline, kerosene or other flammable liquids.

Class C - Electrical such as electrical wires or other live electrical equipment.

A dry chemical fire extinguisher has been installed by the entrance door. It is suitable for extinguishing small fires of the Class B or C type only.

We suggest you become thoroughly familiar with the operating instructions displayed on the side of the fire extinguisher.

❖ **NOTE: For information on how to use your fire extinguisher, refer to the fire extinguisher user's manual included in your warranty packet.**

Inspection and maintenance

Read and follow all instructions on the label and user's manual provided by the fire extinguisher manufacturer.

❖ **NOTE: Inspect the extinguisher at least once a week (more frequently if it is exposed to weather or possible tampering). This should also be done before beginning a vacation or during an extended trip.**

⚠ WARNING

Do not check the pressure, test or practice using the fire extinguisher by squeezing the trigger, even briefly. The fire extinguisher is not rechargeable or refillable. Once used, it will gradually lose pressure and will not be fully charged for use in an emergency.

⚠ DANGER

Do not turn the electrical power back on or plug in any appliances after the use of a fire extinguisher. Please refer to the fire extinguisher's user manual for further instructions on maintenance and clean up.

SMOKE ALARM

Your recreation vehicle is equipped with a smoke alarm that is listed for use in recreation vehicles. The smoke alarm will only work if it is operational and maintained. **Refer to the manufacturer's user guide for detailed safety and operating information.**

Smoke Alarms have a limited life and will wear out over time. Immediately replace the detector if it is not working properly, if it displays any type of problem, or within five years of use.

Though the alarm horn in this detector meets or exceeds current UL standards, it may not be heard for reasons that include (but not limited to): a closed or partially closed door, other noise from electronics, appliances or traffic.

⚠ WARNING

- **This smoke alarm will not alert hearing impaired residents**. Special alarms with flashing strobe lights are recommended for the hearing impaired
- Smoke Alarms cannot work without power. Battery operated units cannot work if the batteries are missing, disconnected or dead, if the wrong type of batteries are used, or if the batteries are not installed correctly.
- Only use the replacement battery recommended by the smoke detector manufacturer. The smoke detector alarm may not operate properly with other batteries. Never use a rechargeable battery as it may not provide a constant charge. Never disconnect the battery to silence the alarm.
- Smoke Alarms cannot detect fires if the smoke does not reach the Alarms. Anything preventing smoke from reaching the alarm may delay or prevent an alarm.
- Test the smoke alarm operation after the vehicle has been in storage, before each trip and at least once per week during use. Do not disconnect the battery or the alarm.
- Smoke Alarms are not foolproof and cannot prevent or extinguish fires.

COMBINATION CARBON MONOXIDE /PROPANE ALARM

Your recreation vehicle is equipped with a combination carbon monoxide (CO) / propane alarm that is listed for use in recreation vehicles. The combination carbon monoxide/propane alarm will only work if it is operational and maintained. **Refer to the manufacturer's user guide for detailed safety and operating information.**

⚠ WARNING

- Do not cover or obstruct the carbon monoxide/propane alarm with anything that could prevent gas from entering the alarm.
- This alarm is not designed to detect smoke, fire or gases other than carbon monoxide and propane.
- The carbon monoxide detector installed is intended for use in ordinary indoor locations of recreation vehicles. It is not designed to comply with Occupational Safety and Health Administration (OSHA) commercial or industrial standards.
- Do not disconnect the battery or the alarm.
- Individuals with medical problems may consider using warning devices that provide audible and visual signals for carbon monoxide concentrations under 30 PPM.
- This alarm will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.
- The ultimate responsibility for protection against toxic carbon monoxide fumes rests solely on you. Installing a carbon monoxide/propane alarm is just the first step in protecting your family from toxic carbon monoxide poisoning. The following symptoms are related to carbon monoxide poisoning and should be discussed with all members of the household:
- Mild exposure: Slight headache, nausea, vomiting, fatigue (often described as "flu-like" symptoms).
- Medium exposure: Severe throbbing headaches, drowsiness, confusion, fast heart rate
- Extreme exposure: Unconsciousness, convulsions, cardio-respiratory failure, death

The alarm is directly wired to the 12-volt electrical system, with continuous power being supplied by the recreational vehicle batteries. There is no 9-volt battery power supply. As a result, the alarm is always drawing a small amount of current from the recreation vehicle batteries. Although the current draw is slight, it could drain the batteries during extended storage periods. This condition is not likely to occur except during storage situations when the inverter cannot restore the battery charge. **If the battery cable is disconnected at the battery terminals, the combination alarm will not work.**

Carbon monoxide/propane alarm (alarm may vary from model shown)

Carbon monoxide (CO) is an insidious poison. It is a colorless, odorless and tasteless gas. Many cases of reported carbon monoxide poisoning indicate while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the recreational vehicle or calling for assistance. Young children and household pets may be the first affected.

Your combination carbon monoxide/propane alarm is designed to detect the toxic carbon monoxide fumes that result from incomplete combustion, such as those emitted from appliances, furnaces, fireplaces and auto exhaust.

This alarm is designed to sense the presence of carbon monoxide/propane gas, however there are other combustible fumes or vapors that may be detected by the sensor including

(but not limited to): acetone, alcohol, butane and gasoline.

These chemicals can be found in commonly used items such as deodorants, colognes, perfumes, adhesives, lacquer, kerosene, glues, wine, liquor, most cleaning agents and the propellants of aerosol cans.

High temperatures can activate glue and adhesive vapors. If you close up a recreational vehicle on a hot day, the chemicals used in its construction may be detected for months after the vehicle was constructed (for more information, refer to Sec. 2, Formaldehyde).

⚠ WARNING

- Actuation of this detector indicates the presence of carbon monoxide which can kill you.
- Never turn the 12-volt battery disconnect control to the off position and disconnect the battery cable to silence an alarm. The alarm will automatically sense when the level of carbon monoxide in the air reaches below dangerous levels. You should stay outside the vehicle in fresh air until the alarm is silenced. When the alarm sounds, do not stand too close to the alarm. The sound produced by the alarm is loud (85db) because it is designed to wake a person in an emergency. Prolonged exposure to the alarm at a close distance may be harmful to your hearing.

If the CO alarm sounds with a 4-chirp pattern:

1. Immediately move to fresh air—outdoors or by an open door or window. Do a head count to check that all persons are accounted for. Do not re-enter the premises, or move away from the open door or window until the emergency services responder has arrived, the premises have been aired out, and your CO Alarm remains in its normal condition.
2. Call your emergency services, fire department or 911.
3. After following steps 1-2, if the CO Alarm reactivates within a 24-hour period, repeat steps 1-2 and call a qualified appliance technician to investigate for sources of CO from fuel-burning equipment and appliances, and inspect for proper operation of this equipment. If problems are identified during this inspection have the equipment serviced immediately. Note any combustion equipment not inspected by the technician, and consult the manufacturers' instructions, or contact the manufacturers directly, for more information about CO safety and this equipment. Make sure that motor vehicles are not, and have not, been operating in an attached garage or adjacent to the residence.

If the Propane alarm sounds with constant beeps:

1. Immediately evacuate the from the RV.
2. Shut off propane gas supply at propane tanks or supply.
3. Do not touch any electrical switch in or near the RV
4. Do not start vehicle's engine.
5. Contact a qualified RV or gas technician for repairs.
6. Do not turn on gas supply unit the leak has been repaired.

Formaldehyde

Some components in the recreation vehicle contain formaldehyde-based adhesives that may release formaldehyde fumes into the air for an unknown period of time. Individuals who are allergic to formaldehyde gas fumes may experience irritation to eyes, ears, nose and throat. Indoor air quality may also be affected by leaving your vehicle closed for a period of time.

To aid in dissipation, ventilate the recreation vehicle by opening all windows and circulate the air with a fan.

This label is located inside the vehicle near the entry door. **The label should be left permanently affixed to the recreation vehicle**.

Extended Or Full Time Usage

Your new recreation vehicle has been built for enjoyment in a recreational manner. It is not intended for use as full-time quarters or a permanent residence. Continuous living in your vehicle could cause accelerated wear and damage to the various components.

⚠ CAUTION

Continuous or permanent living in your recreation vehicle may affect your warranty coverage and may void the "Limited Warranty" applicable to your vehicle.

Cold Weather Usage

When used in freezing or below freezing temperatures, the precautions should be taken:

- Fresh water and drainage systems - preparations to avoid freeze-ups.
- Propane gas (if so equipped) and sufficient power is needed for protection from possible freeze-ups on the propane gas regulator. Keep in mind that more frequent furnace operation will substantially increase battery draw and propane gas use.
- During cool weather usage, ventilation or addition of a dehumidifier may be required to reduce condensation.
- Check outside extrusions on compartment doors, locks, slide outs, windows, vents, etc., for frozen moisture before operating to avoid damage to parts.

Condensation

Condensation is a natural phenomenon. The amount of condensation will vary with climate conditions, particularly the relative humidity. Condensation occurs because there is water vapor present in the air. When the temperature reaches the "dew point" the water vapor in the air condenses and changes to a liquid form.

Proper ventilation or the use of a dehumidifier (customer supplied) will assist in controlling the condensation. Suggestions to eliminate warm moist air:

- Crack open windows and roof vents to allow warm moist air to escape.
- Open the bath roof vent (if so equipped) approximately ½" when showering.
- Use the range hood fan (if so equipped) when cooking or washing dishes.
- Avoid hanging wet towels (or clothes) inside the recreation vehicle to dry.
- If found in cabinets or closets, open the doors slightly to provide ventilation.

⚠ WARNING

Condensation may cause dampness, mildew, mold, staining and, if allowed to continue, it may result in damage to the recreation vehicle (damage caused by condensation is not warrantable). It can also lead to mold or mildew issues, which could be a health hazard.

❖ **Notes:**

VEHICLE LABELS

Decals and data plates used throughout the motor home aid in its safe and efficient operation; others give service instructions. Read all decals, data and instruction plates before operating your recreation vehicle. Any decal, data or instruction plate painted over, damaged or removed should be replaced.

Keep a record of the 17-digit chassis vehicle identification number (VIN), the 9-digit serial number, and your license number in the event theft or vandalism requires you to supply this information to the authorities.

⚠ WARNING

The factory-installed weight labels are specific to the recreation vehicle for which they are supplied and are not interchangeable. Do not remove these labels from your vehicle. If labels are missing contact your dealer or Customer Service for replacements.

- Do not exceed any applicable motor home weight ratings. Doing so could damage your motor home or affect handling and braking characteristics.
- Your motor home braking system is designed and rated for operation at GVWR not GCWR.

Weight Terms

GAWR - Gross Axle Weight Rating: The value specified by the vehicle manufacturer as the load-carrying capacity of a single axle system, as measured at the tire-to-ground interfaces. This is the total weight a given axle is capable of carrying.

GCWR - Gross Combined Weight Rating: The value specified by the motor home manufacturer as the maximum allowable loaded weight of the motor home in combination with its towed trailer or towed vehicle. The tongue weight of a towed vehicle/ trailer counts as part of the motor home cargo.

GVWR - Gross Vehicle Weight Rating: The value specified by the manufacturer as the maximum permissible weight of the fully loaded motor home.

OCCC - Occupant and Cargo Carrying Capacity: Is equal to the GVWR of the motor home minus the:

- weight of the motor home, as completed at the factory
- weight of all occupants, including the driver
- weight of all personal cargo
- weight of a full tank of chassis engine fuel
- weight of a full tank of propane (if applicable)

The full weight of potable water, including the water heater and the tongue weight of a towed vehicle/ trailer counts as cargo in or on the motor home. Additions to or other changes made to the motor home after it left the factory will affect (reduce) the OCCC.

UVW - Unloaded Vehicle Weight: The weight of this motor home as manufactured at the factory with fuel, engine oil and coolants and if applicable, the weight of a full tank of propane.

Weight and Capacity Labels

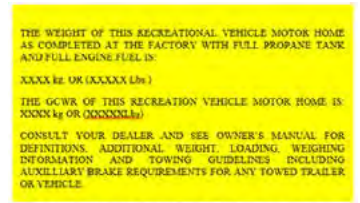
The following labels are located on the inward-facing surface of the main entry door of the motor home and on the lower sidewall left of the driver's seat.

OCCC Label (Occupant and Cargo Carrying Capacity)

The upper portion of this yellow label is federally required and indicates the total combined weight value of occupants and cargo that may be placed in or on your motor home as it was manufactured and weighed before leaving the factory.This label also indicates the number of safety seat belts that have been installed at the factory. Additions or other changes made to the motor home after it left the factory will affect (reduce) the OCCC.

MOTOR HOME OCCUPANT AND CARGO CARRYING CAPACITY
VIN: XXXXXXXXXXXXXXXXX
THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED
XXX kg OR (XXXX Lbs)
SAFETY BELT EQUIPPED SEATING CAPACITY: X
CAUTION
A FULL LOAD OF WATER EQUALS XXX kg OR (XXX Lbs.) OF CARGO @ 1 kg/L (8.3 Lb/gal)
AND THE TONGUE WEIGHT OF A TOWED TRAILER COUNTS AS CARGO

Upper Section Federal OCCC Weight Label


THE WEIGHT OF THIS RECREATIONAL VEHICLE MOTOR HOME AS COMPLETED AT THE FACTORY WITH FULL PROPANE TANK AND FULL ENGINE FUEL IS:
XXXX kg. OR (XXXXX Lbs.)
THE GCWR OF THIS RECREATION VEHICLE MOTOR HOME IS: XXXX kg OR (XXXXX lbs)
CONSULT YOUR DEALER AND SEE OWNER'S MANUAL FOR DEFINITIONS, ADDITIONAL WEIGHT LOADING, WEIGHING INFORMATION AND TOWING GUIDELINES INCLUDING AUXILLIARY BRAKE REQUIREMENTS FOR ANY TOWED TRAILER OR VEHICLE.

Lower Section Federal OCCC Weight Labels

The lower portion of the label is provided voluntarily and indicates the weight value of the motor home as it was manufactured and weighed before leaving the factory. This label also indicates the GCWR of the completed motor home.

The motor home towing and braking label is located on the rear bumper above the hitch receiver. Be sure to read and follow the guidelines and information stated on this label. Refer to the Chassis Guide for additional information.

⚠WARNING

The braking capacity of your motor home is not necessarily as great as its towing capacity. Separate braking systems should be used for control of a towed vehicle, (auto, trailer, boat etc.), behind the motor home. Braking requirements will vary by chassis type, chassis manufacturer and state law. Contact your chassis dealer or independent RV dealer for assistance to determine if a separate braking system is recommended and what limit(s) may apply for your towing combination and traveling safety.

The use of a reducing sleeve and smaller diameter draw bar or a longer draw bar in and on the hitch receiver will reduce the hitch weight rating and towing capacity. Use of a draw bar longer than 18-inches (457mm) is prohibited.

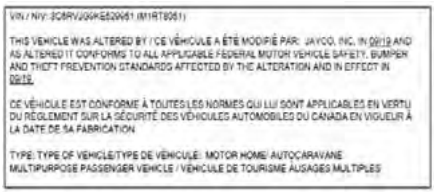
Consult your vehicle owner's manual(s) and your independent RV dealer for specific weighing instructions and towing guidelines.

Improper use of towing equipment and towing setups can cause loss of control that may lead to an accident resulting in death or serious injury.

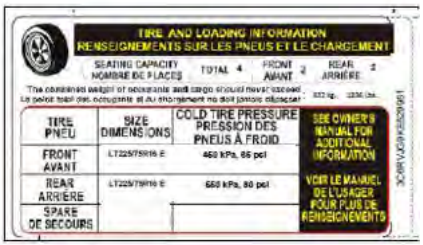
For more information: Consult a hitch specialist or your dealer for assistance when preparing your motor home for towing a vehicle or trailer.

Vehicle Alterer's Label

Required by the government to verify the RV complies with all motor vehicle standards for Canada and the United States. It includes the following information: Manufacturer name, VIN and the date.


VIN / NIV: 3G8RVJ09KE520951 (M1RT8051)
THIS VEHICLE WAS ALTERED BY / CE VÉHICULE A ÉTÉ MODIFIÉ PAR: JAYCO, INC. IN 09/19 AND AS ALTERED IT CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY, BUMPER AND THEFT PREVENTION STANDARDS AFFECTED BY THE ALTERATION AND IN EFFECT IN 09/19.
CE VÉHICULE EST CONFORME À TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU RÈGLEMENT SUR LA SÉCURITÉ DES VÉHICULES AUTOMOBILES DU CANADA EN VIGUEUR À LA DATE DE SA FABRICATION
TYPE: TYPE OF VEHICLE/TYPE DE VÉHICULE: MOTOR HOME/ AUTOCARAVANE MULTIPURPOSE PASSENGER VEHICLE / VÉHICULE DE TOURISME AUSAGES MULTIPLES

Tire and Loading Label provides information on the tire sizes, cold tire inflation pressures, the VIN and maximum cargo capacity. The maximum cargo capacity listed on the label does not include the weight of a full load of water.


TIRE AND LOADING INFORMATION
RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT
SEATING CAPACITY / NOMBRE DE PLACES: TOTAL 4 — FRONT / AVANT 2 — REAR / ARRIÈRE 2
The combined weight of occupants and cargo should never exceed ... kg ... lbs.
Le poids total des occupants et du chargement ne doit jamais dépasser ...
TIRE / PNEU | SIZE / DIMENSIONS | COLD TIRE PRESSURE / PRESSION DES PNEUS À FROID
FRONT / AVANT | LT225/75R16 E | 450 kPa, 65 psi
REAR / ARRIÈRE | LT225/75R16 E | 550 kPa, 80 psi
SPARE / DE SECOURS
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS
3G8RVJ09KE520951

Modified Roof Information Label (Canadian models only)

This label means a roof on a vehicle has been modified in whole or in part.

"This vehicle has a modified roof, and CMVSS 226 — EJECTION MITIGATION does not apply to this vehicle. / Ce véhicule a un toit modifié et la NSVAC 226 — RÉDUCTION DES RISQUES D'ÉJECTION ne s'applique pas à ce véhicule."

LOADING YOUR MOTOR HOME

⚠ WARNING

- Never load the motor home in excess of the GVWR or the GAWR for either axle. **Overloading your motor home may result in adverse handling characteristics and damage to the chassis.**
- **DO NOT EXCEED YOUR GVWR!** This means you should weigh your vehicle as loaded for your normal travel to determine the actual weight. If you exceed the GVWR, you MUST remove items from the motor home, or drain liquids, then re-weigh the vehicle to ensure you have achieved a safe weight.
- The actual weight of the vehicle, passengers, all options, liquids, the hitch weight of your towed vehicle and your personal cargo is important for you to know so you do not exceed the Gross Vehicle Weight Rating (GVWR) of the motor home. The volume of space available for storage may exceed the amount of available cargo capacity. Large storage compartments have been designed to accommodate normal camping items, which are bulky, but not necessarily heavy.

Store and secure all loose items inside the motor home before traveling. Overlooked items can become dangerous projectiles during a sudden stop.

Distribute cargo side-to-side so the weight on each tire does not exceed one-half of the GAWR for either axle. Make sure any tie down straps (if so equipped) on appliances or furniture are secure. Load heavy objects on the floor, or as low as possible.

⚠ WARNING

- Your recreation vehicle's load capacity is designated by weight, not by volume, so you cannot necessarily use all available space when loading the vehicle. Do not exceed your GVWR and ensure you are loading the vehicle as evenly as you can for the best possible handling. Ensure heavy items are secured so they do not shift during travel.
- Store items in areas designated for storage. Do not store anything in the areas reserved for the converter, electrical panels, furnace or water heater, etc.
- For traveling safety, it is important to make sure the tie down straps are secured on all appliances such as the toaster, coffee maker, etc. Vibration during travel will move the appliances, creating the potential for them to fall out of their cabinets possibly causing injury.

ROOF RACK

Refer to the roof rack manufacturer's owner's manual for detailed safety and user information.

⚠ WARNING

It is critical that you properly secure the bikes to the bike rack. You are responsible for securing items to your roof rack, checking the attachments prior to use, and periodically inspecting the products for adjustment, wear, and damage. You should read and understand all of the information supplied with your product prior to installation or use. The roof rack should only be used for accord to the manufacturer's guidelines and weight limits. Failure to properly attach and secure all items to the rack, or using the racks in any way other than specified, may result in property damage or serious injury.

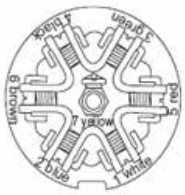
⚠ CAUTION

- Know your recreation vehicles weight limitations prior to loading the roof rack. Items stowed on the roof rack, should be included in the weight calculation when determining the maximum cargo weight load of your motor home.
- When loading the roof rack, evenly distribute the items on the rack. Avoid loading all the heavy items in one spot. Weight of the items should be evenly distributed.
- Make sure all items are secured to the roof rack. Periodically re-check the load to make sure it is still securely fastened and has not shifted.

TRAILER PLUG

If you choose to tow behind your RV, a chassis manufacturer supplied trailer plug (located at the hitch) is pre-wired into your motor home. Before hitching up to a trailer, please read *Using the Rear Hitch*, vehicle weight ratings, etc. Your motor home will have a 7-way trailer receptacles. Wiring to operate your towed vehicle brakes must be the same size in both the towed vehicle and the motor home.

White	1	Ground
Blue	2	Electric Brakes
Green	3	Running lights
Black	4	House batteries charge line
Red	5	Stop & left turn
Brown	6	Stop & right turn
Yellow	7	Back up Lights



7-way trailer plug-rear view

The connector plug may build up corrosion with extended use. It should be cleaned periodically to insure good electrical contact. Make sure the connector plug is kept clean and protected from road elements as you travel.

❖ **NOTE: a 12V circuit tester is recommended to verify trailer connections.**

WEIGHING YOUR MOTOR HOME

When your motor home is loaded you should have it weighed. The actual weight of the motor home, passengers, all options, liquids, the hitch weight of your towed vehicle and your personal cargo is important for you to know so you do not exceed the GVWR. There are two important factors when loading your motor home, total weight and balance.

It is imperative that you verify compliance within all applicable weight ratings. Overloading your motor home will void the **Limited Warranty** and the warranties of many component part manufacturers.

Periodically weigh your motor home at a public scale to determine proper load distribution. To obtain the side-to-side weights, there needs to be enough space on either side of the scale to accommodate the motor home being partially off the scale.

Different types or scales may require different procedures when weighting the motor home. The motor home must remain as level as possible on the scale (even if an axle is not physically on the scale). To obtain the side-to-side weights, make sure there is enough space on either side of the scale to accommodate the motor home being partially off the scale.

If a boat, trailer or other vehicle is being towed, it should be weighed separately. Combine this weight with the motor home's Gross Vehicle Weight (GVW) to ensure the total combined weight does not exceed the GCWR.

Once actual weights are obtained, compare them to the **Weight Information Label** weight ratings to ensure you are below the posted minimum ratings.

If there is a difference in the weights on one side of the vehicle as compared to weights on the other side, components (tires, wheels, brakes, springs, etc.) on the heavier side may be overloaded, although the total axle load is within the GAWR.

⚠ CAUTION

It is important to redistribute the load to avoid component failure as well as to improve the handling characteristics of the vehicle.

⚠ WARNING

Dump the gray and black water holding tanks before traveling to avoid carrying unnecessary weight. Full tanks can affect your fuel consumption, and depending on tank location, can affect your vehicle handling characteristics. If you cannot immediately empty your holding tanks, reduce your vehicle speed until you reach a dumping station.

❖ **Notes:**

VEHICLE OPERATION

Your motor home will travel safely and comfortably at highway speed limits. However, it will take longer than a passenger automobile to reach that speed. Allow more time to go around the vehicle you are passing. Avoid situations that might require sudden momentum changes as the length of the motor home affects your ability to quickly cut back into traffic. Swerves and sharp turns, especially at high speeds, could result in loss of control of the motor home.

The motor home has a longer turning radius. When turning, check the road clearance and be aware of others, especially if towing a vehicle behind your motor home.

Adverse weather conditions and extremes in terrain may affect the performance and handling of your vehicle. Do not operate the cruise control on icy or extremely wet roads, gravel roads, winding roads, in heavy traffic, or in any other traffic situation where a constant speed cannot be maintained. Use care when accelerating or decelerating on a slippery surface. Abrupt speed changes can cause skidding and loss of control.

❖ **NOTE: CALIFORNIA TIRE CHAIN NOTICE: YOUR MOTOR HOME MAY NOT BE OPERATED WITH TIRE CHAINS**

Braking and Stopping

Even though your motor home is equipped with brakes designed for its Gross Vehicle Weight Rating (GVWR) we suggest you practice stopping away from traffic until you become accustomed to your motor home's stopping distance. Your motor home is equipped with a third brake light that activates when the brakes are engaged.

See the chassis owner's manual for additional information. The transmission and engine will help in controlling downhill speed and can lengthen brake life. The distance required to stop the motor home is greater than an automobiles.

Driving through water deep enough to wet the brakes may affect stopping distance or cause the vehicle to pull to one side. Check the motor home's brake operation in a safe area to be sure they have not been affected. **Never operate any vehicle if a difference in braking efficiency is noticeable.**

⚠ WARNING

Your motor home chassis braking system is rated for operation at GVWR not GCWR.

Parking Brake

The parking brake should be engaged when the motor home is parked. Never drive your motor home with the parking brake engaged as this will reduce braking effectiveness and cause excessive driveline wear. Refer to your Chassis guide for more information on the parking brake.

TOWING BEHIND YOUR MOTOR HOME

⚠ CAUTION

Do not install a frame equalizing type hitch on your motorhome.

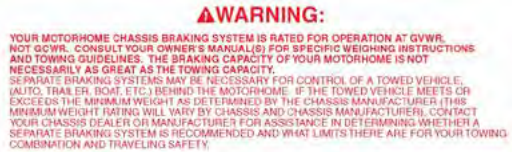
Towing will affect vehicle handling, durability and fuel economy. Exceeding any of the listed weight ratings will result in unacceptable overall vehicle performance. Your safety and satisfaction require proper use of correct equipment.

For maximum pulling load and vertical tongue weight, refer to the label located on the rear hitch. A hitch bar of appropriate strength and steel should be selected to meet the capacities of the towing receptor.

Always use safety chains between the motor home and the towed trailer or vehicle. Cross the chains under the tongue and allow for slack when turning corners. Connect the safety chains to the vehicle frame or hook retainers. Never attach the safety chains to the bumper.

Before descending a steep or long grade when towing a trailer or vehicle, reduce speed and shift the motor home into a lower gear to control vehicle speed. Avoid frequent or prolonged brake application, which can cause overheating or brake failure.

By definition the GCWR is "the maximum total weight rating allowed for a vehicle and any attachment, such as a trailer or towed vehicle. To determine the total allowable weight for a towed item, subtract the GVWR from the GCWR.



Towing and Braking Label

⚠ WARNING

- **Total weight of your motor home and any trailer or vehicle towed by it must not exceed the GCWR.** Do not assume that you can tow a vehicle that happens to be within the capacity of the hitch. By doing so, you may exceed the total GCWR of the motor home.
- **The total weight of your motor home (including cargo, passengers, fluids, etc.) in addition to the vertical (tongue) weight must not exceed the GVWR and/or any GAWR.** Once again, do not assume that you can tow a trailer or vehicle that happens to be within the vertical (tongue) weight capacity of the hitch. By doing so, you may exceed the GVWR and/or GAWR of the motor home.
- **Your motor home chassis braking system is rated for operation at GVWR, NOT GCWR.** Any trailer or vehicle being towed by your motor home must have adequate brakes as required by all state (or province) and local regulations for towing with your motor home, including areas you may be traveling through. **Failure to follow the towing guidelines may result in property damage or injury.**

In addition, a separate supplemental braking system must be installed if the towed trailer or vehicle meets or exceeds the minimum weight determined by the chassis manufacturer *(this minimum weight rating will vary by chassis and chassis manufacturer).*

Contact your dealer for assistance in determining whether a separate braking system is recommended for your towing and traveling safety. Failure to follow these instructions will create a safety hazard and may result in an accident.

Maintenance

Keep the hitch clean along with your general frame maintenance.

- At the beginning of the season, and monthly or thereafter, clean the inside of the receiver tube with a wire brush and spray with a silicone spray.
- Always remove the utility mount from the receiver when it is not in use. This will help prevent the utility mount from rusting to the tube.

- Periodically check the bolts for tightness. They need to be torqued to the proper setting (refer to your Chassis Guide).

Refer to the chassis manual for detail on hitch specifications and towing guidelines.

RUNNING BOARDS/REAR BUMPER ENTRY ASSIST

Running boards are located on both sides and serve as a step into and out of the vehicle. The rear bumper can be used for entry assist into the rear of the vehicle. When driving, snow, dirt, rocks and other debris can collect on the running boards and bumper. It is imperative to keep these areas clean when using them to enter or exit the vehicle.

⚠ CAUTION

Care should be taken when using the running boards and bumper as an entry assist if the surfaces are wet.

DRIVER AND PASSENGER SEAT

⚠ WARNING

- Do not adjust the seat while driving. After adjusting the seat, make sure that it is locked in position. To ensure that the seat is locked securely, try to move the seat forward or backward without using the adjusting lever or button. Do not put packages, pets or other objects between the driver's and front passenger co-captain's seat.
- **Reclining Seats**: To minimize the risk of personal injury in the event of a collision or sudden stop, always keep both the driver's captain and passenger co-captain seat backs in a nearly upright position while the motor home is moving. The protection provided by the seat belts may be reduced significantly when the seat back is reclined. Reclining the seats while the motor home is moving may result in serious injury.

❖ **NOTE: The driver's and front passenger seat must be locked in the forward facing position while the motor home is in motion.**

To rotate the driver/passenger seat

Depending on your model, you may have the ability to rotate the driver/passenger seats towards the rear of the motor home. To face the driver or front passenger seat toward the rear of the vehicle, pull the seat swivel release lever up and rotate the seat. To return the seat to the original position, rotate seat back to the driving position until you hear a click and the seat locks into position.

SEAT BELTS

⚠ WARNING

Seat belts should always be worn by anyone who drives or rides in this vehicle.

- Never use one seat belt for more than one occupant. Never carry more people in the motor home than there are seat belts.
- Only seats equipped with seat belts are to be occupied while the vehicle is in motion. While traveling, do not occupy beds or any seats that do not have seat belts.
- Be sure to lock all doors before driving. Locking the doors and using the provided seat belts will minimize the risk of injury or ejection in an accident.
- If you are pregnant, consult your health care professional for advice on seat belt use.

Always use seat belts. In an accident, injury to the driver and passengers may be reduced if seat belts are properly used. If your motor home is equipped with a booth dinette, hide-a-bed sofa, or easy bed sofa they will have two-point lap-seat belts installed. **Seat belts should be used in all seating positions.**

Maintenance and inspection of seat belts

The webbing used in seat belts may be cleaned with a mild soap or detergent solution. Allow the belts to dry in the shade and do not allow them to retract until fully dry.

Regularly check the seat belt buckles and release mechanisms for positive action and check automatic locking retractors for positive engagement.

If the seat belt webbing shows obvious cuts, protruding broken fibers or severe fading which indicates weakening by exposure to sunlight, the entire seat belt assembly should be replaced. Do not try to bleach or re-dye the belts. The resulting color may rub off and the webbing strength could be affected.

CHILD SAFETY RESTRAINT SYSTEMS

When transporting infants or small children, an appropriate child safety restraint system should always be used.

❖ **NOTE: All child safety restraint systems should always face the front or rear of the motor home. They should never be installed so the occupant is facing the side of the motor home.**

❖ **NOTE: Children too large for a child safety seat (per government specifications) should always wear a seat belt.**

⚠ DANGER

- Never allow a passenger to hold a child on their lap while the motor home is moving. The use of safety seats for children are required when transporting a child in your motor home. All child age and weight guidelines as specified by law should be strictly adhered to.
- Rear facing child seats or infant carriers, or child booster seats should never be placed in the front seats of the motor home.

Failure to follow these guidelines can result in serious injury or death.

⚠ WARNING

- Improper installation or failure to properly secure a child restraint may result in failure of the restraint.
- Follow the child restraint manufacturer's directions exactly when installing an infant or child restraint. Be aware of all warnings and safety information included with any infant or child safety restraint system.
- Never place a front or rear facing child restraint in the front seat of a vehicle. A deploying passenger front air bag can cause death or serious injury to a child 12 years or younger, including a child in a child restraint. A child restraint should only be installed in a rear seat.
- To ensure proper safety belt fit, always use booster seats for children who are size and age appropriate. Refer to the governmental safety regulations for child sizing charts.

Failure to follow these guidelines can result in serious injury or death.

VEHICLE DASH

⚠ WARNING

Do not set anything on, or attach anything to, the instrument panel or dash. Do not attach anything to the steering wheel cover. Failure to follow these warnings may restrict the driver's visibility or cause an object to strike and injure an occupant in the case of a collision or sudden stop.

Maintenance

To clean the vinyl/ABS dash, soak a soft cloth in a solution of mild detergent and water. Wipe off the dash. To rinse, dip a cloth in fresh water and wring it out well. Wipe off the detergent thoroughly.

REAR VISION CAMERA

The rear vision monitor gives a limited televised view of what is behind your motor home. The rear vision camera will aid you in backing up the motor home, and can be used for a greater field of vision when driving in heavy traffic. The monitor is operational whenever the engine is running.

For detailed operating and safety information, refer to the manufacturers user guide.

⚠ WARNING

- Camera/monitor system aids in the use of, but does not replace vehicle side/rear-view mirrors.
- Objects in camera/monitor view are closer than they appear. When backing up, proceed cautiously and be prepared to stop

CAMPSITE HOOK-UP

- Refer to *Electrical Systems* section before connecting the shore line power cord (when using full hook-up) OR before starting the generator or operating the vehicle on 12-volt power when dry camping.
- Refer to *Fuel & Propane System* section before using the LP system. Open the LP gas tank valve (if so equipped) slowly. There may be air in the lines and five to thirty seconds of time is needed to bleed air before LP vapor fills the lines.

- Refer to *Plumbing Systems* section before connecting the fresh water supply or turning ON the water pump or water heater.
- When using full hook-up, connect the sewer hose to the campsite sewer hook-up.
- If applicable, start the refrigerator and the cooling or heating system.

❖ **NOTE: For extended dry camping, management of all your resources is essential. Check your battery levels and conserve battery power, use it sparingly.**

EMERGENCY STOPPING

Always carry road flares or reflective warning signs. Pull off the roadway as far as possible for emergency stopping. Turn ON your vehicle hazard warning flashers. If traveling at night, use three red warning indicators such as flares, reflectors or lanterns as required by the Uniform Vehicle Code and Model Traffic Ordinance as follows:

1. Place the first warning indicator on the traffic side of the recreation vehicle, directed at the nearest approaching traffic.
2. Place the second warning indicator 100 feet behind the recreation vehicle in the center of the lane and toward approaching traffic.
3. Place the third warning indicator 100 feet in front of the recreation vehicle in the center of the lane and away from the traffic approaching from behind.

❖ **NOTE: Curves and/or hills may affect the safe placement of warning indicators.**

⚠ WARNING

For personal safety, always stand off the road and out of the way of traffic.

EMERGENCY TOWING

If your motor home ever needs to be towed, refer to the instructions in your Chassis Guide. Please contact an emergency road service provider or a qualified service facility for assistance,

Make sure the road service technician reads and is familiar with the information contained in your Chassis Guide regarding emergency towing.

⚠ WARNING

- Never allow anyone to go under the motor home while it is being lifted by towing equipment.
- Be aware of the strap locations. Misplaced straps could result in damage to the exterior of your unit. Damage resulting from misplaced straps is the responsibility of the towing company, and is not covered by the unit warranty.

FRONT AXLE TIRE ALIGNMENT

The term alignment refers to both the adjustment angles on the steering axle and suspension and tracking of the rear axle. Steering components, suspension, wheel bearings and even proper loading will affect the alignment.

We recommend you have the front suspension and steering alignment checked and adjusted after you have fully loaded the vehicle as part of the vehicle maintenance. Thereafter, it is your responsibility to have the alignment inspected periodically to maintain vehicle steering

performance and prevent uneven tire wear as part of your normal maintenance.

- ❖ **NOTE: Always have the alignment checked and adjusted by a qualified shop with the proper equipment to handle heavy vehicles.**
- ❖ **NOTE: A road test by the dealer should be included as part of the pre-delivery inspection. The dealer can check for and correct any steering problems before you take delivery.**

After this road test has been completed, front-end alignment and/or vibrations will not be covered as part of the new vehicle limited warranty.

Follow the Chassis Guide maintenance instructions for the front and rear axle for wheel and suspension maintenance, including the brakes and wheel bearings. Contact your Chassis manufacturer for assistance.

WHEEL LUG NUTS/WHEEL LINERS

⚠ WARNING

- Check and tighten the wheel lug nuts regularly to ensure they did not loosen during travel. Refer to your Chassis Guide for torque recommendations.
- Failure to tighten and maintain wheel lug nuts to the proper torque specification, could allow the wheels to come off while driving, resulting in serious injury or property damage in the event of a collision or loss of vehicle control.

Torque is the amount of rotating force applied to a lug nut, and can only be achieved by using a properly calibrated torque wrench and socket. ***Do not*** use a 4-way socket or any other type of wrench that does not measure the actual pressure applied to the lug nut.

- ❖ **NOTE: The proper method of tightening wheel lug nuts is with a torque wrench, not with an impact wrench or by hand. Because of the importance of having proper torque on the wheel lug nuts, you should always have the wheels mounted and properly torqued by a qualified technician using the proper tools.**

After your first trip, check the wheel lug torque periodically for safety according to your Chassis Guide. If you suspect the wheel lug nuts have loosened at any time, have them checked and torqued to the proper limits immediately.

Lugs should be checked:

- After winter storage
- After a wheel removal
- Before starting a trip
- Following extensive braking.
- **Check and re-torque after the first 10, 25 and 50 miles (16, 40 and 80 kilometers). Thereafter, check and maintain the torque according to the listed torque values.**

Refer to the Chassis Guide for torque guidelines.

Wheel Lugs

If you suspect or notice the wheel stud bolts are cracked or broken, they must be replaced, along with adjacent bolts that have probably also been weakened due to the additional stress placed on them.

Aluminum Wheels (if so equipped)

Clean the aluminum wheels with a cleaner that is designed for use on aluminum and apply an appropriate protection agent. Do not use abrasive cleaners. Wheels exposed to sea water or road chemicals should be cleaned as soon as possible. Be sure to use a sponge or chamois leather (brushes may damage the aluminum wheel surface).

❖ **NOTE: If your motor home is equipped with aluminum wheels, only the outer dual wheels are aluminum, the inner duals are steel wheels.**

TIRES

Read and understand the following before taking your first trip in your RV.

Routine maintenance on your RV is important. **To ensure your tires are operating safely, regular inspection of the tires and checking tire pressures is absolutely mandatory.**

Alignment, balance and bearing wear will affect tire wear. Make sure to look for cracking, bulging, uneven tread wear, etc.

⚠ CAUTION

Tire wear should be checked frequently. Once a wear pattern becomes firmly established in a tire it is difficult to stop, even if the underlying cause is corrected.

Tire Wear Diagnostic Chart

Wear Pattern	Cause	Action
Center Wear	Over Inflation	Adjust pressure to particular load per tire catalog.
Edge Wear	Under Inflation	Adjust pressure to particular load per tire catalog.
Side Wear	Loss of camber or overloading	Make sure load doesn't exceed axle rating. Align at alignment shop.
Toe Wear	Incorrect toe-in	Align at alignment shop.
Cupping	Out-of balance	Check bearing adjustment and balance tires.
Flat Spots	Wheel lockup & tire skidding	Avoid sudden stops when possible and adjust brakes.

Tire pressure

⚠ DANGER

Failure to follow proper inflation guidelines may result in tire failure, which, under certain circumstances can cause loss of vehicle control or accidents that may result in property damage, bodily injury and/or death.

You must follow the manufacturer's inflation guidelines for maximum load capacity; under-inflation is just as dangerous as over-inflation.

Proper inflation should be monitored closely. Failure to do so could result in the overheating of a tire causing a blowout. Inflation pressure should be as recommended by the tire manufacturer or as the federal label for the recreation vehicle indicates.

When you are using your Recreation Vehicle, check inflation pressure weekly. Pressure should be checked when the tires are cold. During travel, tires heat up and pressure increases. **Do not bleed air from hot tires or your tires may then be under-inflated.**

❖ **NOTE: Cold tire inflation pressure is defined as a tire that has not been used for three 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.**

⚠ WARNING

It is recommended that the tire pressure be checked at the beginning of each trip to obtain the maximum life of the tire. Follow the instructions listed on the Federal Certification label, to determine the correct tire pressure. Under-inflation may cause tire failures and swaying resulting in loss of control, injury, death or property damage.

CHANGING A TIRE

⚠ WARNING

- The motor home is very heavy. Raising the motor home to replace the tire should only be done with extreme caution by a qualified technician. The vehicle could slip, causing personal injury or death. **DO NOT ATTEMPT TO DO THIS YOURSELF.**
- When replacing a tire, make sure to replace it with a tire of the same size and specifications.

If you experience a flat tire on your motor home while driving, gradually decrease your vehicle speed (if possible), and move the motor home to a safe place on the side of the road. Contact your road service provider (if applicable) or a qualified service facility for assistance. **Do not attempt to change the tire or jack the motor home up yourself**.

Make sure the road service technician reads and is familiar with the Chassis Guide information regarding changing the tires. Make sure the wheel lug nuts have been tightened to the proper torque.

AWNINGS

The following is an overview on awning care. **Refer to the manufacturers user guide for additional details on set up and use.**

⚠ WARNING

- Awnings must be closed (and secured) while the RV is in transit.
- Keep clear of arm assemblies while opening, adjusting or closing the awning. Failure to obey this caution could result in injury and/or property damage.
- Always operate the awning according to the instructions.
- Keep the awning fabric and arms clean.

⚠ CAUTION

The effects of wind and rain on an awning are unpredictable and can cause severe damage to the awning and/or the recreation vehicle. Retract the awning:

- If wind or extended periods of rain are expected.
- If you leave the RV unattended for a length of time, to avoid unexpected climate conditions.

Awning Care

Keep your awnings clean and in good condition to prevent costly repairs.

- Keep the awning fabric clean. For detailed cleaning information, refer to the manufacturer's owner information.
- Do **not** use insecticides or other sprays near the awning fabric. These can cause stains, and could adversely affect the fabric's ability to repel water.
- Do **not** expose the awning to adverse environmental conditions, corrosive agents, or other harmful conditions.
- **Never** close the awning (for storage) when wet. The combination of moisture and dirt could result in mildew, discoloration, and stains. If it is necessary to roll up awning (temporarily) while it is wet, make sure you roll it out and let it dry (as soon as conditions allow) before rolling it up again.
- Do **not** allow dirt, leaves, or other debris to accumulate on the awning, which could cause abrasion and stains. Mildew could grow on dirt and organic debris, causing permanent discoloration, stains, and odors to the awning fabric.
- Do **not** use strong chemicals or abrasives to clean parts, as their protective surfaces will be damaged. Do **not** use abrasive or corrosive cleaners, mildew removers, or hard bristle brushes.

To clean the fabric:

- Open the awning.
  - Vinyl Fabric-use a soft brush, warm water with soap.
  - Acrylic Fabric-use a stiff brush, warm water with soap.
- Always use a natural soap, not a detergent.
- The water should be cold to lukewarm, never more the 100° F.
- Air-dry only.
- Never apply heat to the fabric.
- Make sure the fabric is dry before closing the awning.

THE ELECTRICAL SYSTEM

The RV electrical system is comprised of two independent electrical systems. One operates off of 12-volt DC power and the other off of 120-volt 60hz AC power. All installations have been made in compliance with industry standards applicable on the date of manufacture. Because the electrical equipment and associated circuitry are engineered into a dedicated system specific to your RV, do not make unauthorized changes or add fixed appliances to it. **Changes or additions made after delivery may result in a hazardous condition.**

Service and/or modification of the electrical system should only be performed by qualified electrical technicians using approved materials, components, and methods meeting current safety and code requirements. Consult your dealer's service department for assistance.

To read more about the various components incorporated into the RV electrical system, please refer to the information contained in your Warranty Packet.

Consult the Chassis Guide for information pertaining to the chassis drivetrain electrical system.

Electrical System Maintenance

Before working on the electrical system:

- Make sure the inverter/charger (if so equipped) is turned "off" before disconnecting batteries.Disconnect the shore power cord.
- If equipped with a generator, turn off the generator and disable the automatic generator start functionality.
- Turn off the battery disconnect switch (if so equipped).
- Turn off the 120V main circuit breaker.
- Disconnect the negative 12VDC battery terminal from the battery.

⚠ WARNING

Use caution when using metal tools. If a tool contacts a battery terminal or metal connected to it, a short circuit could occur which could cause personal injury, explosion or fire.

GFCI CIRCUIT BREAKERS

Ground fault current interrupter breakers have been engineered into the electrical system, and are designed to reduce the possible injury caused by electric shock. The breakers will protect against short circuits or circuit overloads.

FIREFLY MULTIPLEX SYSTEM

The Firefly multiplex system controls numerous components in your motor home. Some of these include the air conditioner, generator, tank heaters, water pump, awning and lighting.

The MAIN POWER switch located at the mid-ship door area must be turned ON to enable the multiplex system.

The multiplex switch panels are backlit and when a switch is selected, it will light up indicating it is ON. Pressing the switch a second time turns it OFF.

Refer to the Firefly manual detailed operating instructions.

TESTING THE CAMPSITE POWER CONNECTION

The campsite 120-volt power receptacle(s) should always be tested for proper functionality prior to plugging the recreation vehicle shore power cord into it.

Campsite 120-volt power receptacles can be tested using a digital multimeter or a dedicated

circuit analyzer. Dedicated circuit analyzers plug directly into the campsite power receptacle and minimally test for open neutral, open ground, and correct polarity.

⚠ WARNING

Do not hook the power cord to any receptacle until you have verified proper polarity and grounding.

DO NOT plug the shore power cord into a campsite receptacle(s):

- That has reverse polarity
- That has non-functioning ground circuits
- That shows outward signs of heat damage.

Doing so may result in property damage or serious injury. Plugging the shore power cord into an incorrectly wired power source could damage the recreation vehicle electrical system and result in severe or fatal injury. Damage or injury resulting from connection to malfunctioning or improperly wired power sources is not covered by your recreation vehicle warranty.

DO NOT

- Do not use any cheater plug, adapter or extension cord to reconfigure incoming AC power or break the continuity of the circuit connected to the grounding pin.
- Do not connect the power cord into an outlet that is not grounded, or adapt the power cord plug to connect it to a receptacle for which it is not designed.
- Do not remove the grounding pin to connect to a non-grounded receptacle. Removal of the ground pin disables an important safety feature designed to prevent shock and electrocution hazards.
- Do not connect the power cord to an extension cord. Use of an improper extension cord will cause overheating of the cord as well as potentially causing premature failure of the AC equipment.
- The power cord must be fully extended when in use and not left coiled in the electrical compartment or on the ground. A power cord left coiled may potentially create enough heat to melt its protective casing.

It is the responsibility of the owner of the electrical receptacle to ensure that the receptacle is properly wired and grounded. **Reverse polarity and/or improper grounding of your RV can cause property damage or serious personal injury.**

Connecting the Power Cord

Always test the external power source (i.e., the campsite power receptacle or electrical box) with a ground monitor before connecting your power cord to it. If the ground monitor indicates 'reverse polarity' or an 'open ground' DO NOT connect the power cord.

To help prevent power surges from damaging the connected loads, please follow these instructions when hooking up to the external power source:

1. Turn off the load center main 120-volt circuit breaker.
2. Carefully extend the entire length of the power cord (approximately 25'-35') from the electric cable hatch to the external power source.
3. Plug the power cord into the receptacle. Be sure all the power cord prongs are properly plugged into the receptacle.
4. Return to your RV and turn on the load center main circuit breaker.

The shore power cord should be unplugged when the recreation vehicle is left unattended. When you are ready to leave, reverse the power cord connection process. Use care to prevent damaging the power cord electrical connection pins when connecting or disconnecting the shore power cord. Grasp the plug to remove the power cord from the outlet; do not unplug it by pulling on the cord.

Maintenance
Inspect the power cord for cuts, cracks and worn insulation. Have the power cord replaced immediately if these symptoms are noticed.

INVERTER

A factory installed inverter converts 12-volts DC to useable 120-volts AC and supplies AC power to the appliance plugged into it. It is important that you familiarize yourself with the inverter function and operation. The inverter should be "off" when not in use.

❖ **NOTE: The inverter is not intended for use, nor should be used, with any medical device(s). The inverter may, however, be used with some CPAP machines, depending on the CPAP model. Consult your CPAP machine's instruction manual before use to ensure proper operation.**

The inverter has a remote display panel which provide many features:

- Power Button: Press to turn on; hold to turn off
- Select Button: Cycles between display states: Input Voltage, Output Voltage, Output Power, Sleep, Error Code (if applicable)
- Power Indicator: Lights up green when the inverter is on
- Fault Indicator: Flashes red when an error has occurred
- Shore Indicator: Lights up yellow when AC input is detected
- Low Battery Warning Indicator: Lights up red when the battery is nearing the end of its charge
- Sleep: Lights automatically dim after 30 seconds

❖ **NOTE: Remote display operates exactly the same as the display mounted to the inverter.**

Maintenance
There are no customer serviceable parts inside the inverter case and the manufacturer's warranty will be void if the case has been removed. The inverter cooling fins and the cooling fan should be kept clear of any obstructions.

Refer to the Inverter manufacturers' manual in your warranty packet for further operating instructions, error codes, changing inverter settings and safety information.

12-VOLT DC SYSTEM

Your motor home lighting is powered by 12-volt electricity. The 12-volt DC system is composed of components that will operate when the following conditions are met:

- The house batteries power all interior 12-volt components including the lighting fixtures, water pump, 12-volt motors, 12-volt appliances, etc., when the motor home is not connected to a 120-volt power source.
- 12-volt DC power is supplied when the shore power cord is plugged into a 120-volt external power source. House batteries will be charged also in most situations.
- Power is supplied by the chassis alternator when the chassis engine is running.

12-Volt Fuse Panel

⚠ WARNING

Replacement fuses must be of the same voltage, amperage rating and type. **Never use a higher rated replacement fuse;** doing so may cause a fire by overheating the RV wiring.

The 12-volt fuse panel is labeled to indicate fuse sizes, positions and the components powered. Fuses are located in the load center.

Replacing a Fuse

Before replacing a fuse, always turn off the electrical components protected by it.

1. Disconnect the shore power cord.
2. Inverter should be OFF.
3. Remove the fuse panel cover to check fuses.
4. Pull the fuse straight out of the fuse block.
5. Insert a new fuse of the same specified voltage, amperage rating and type in the original location.

The fuse panel label should be kept permanently affixed to your recreation vehicle. Fuses will not offer complete protection of the electrical system in the event of a power surge or spike.

12-Volt DC Outlet

There may be one or more 12-volt DC power outlets in your recreation vehicle. When the 12-volt DC outlet is used as a power source for an electric appliance, make sure the appliance operates on 12-volt DC power and that it consumes less than 60 watts (5 amps) of power.

⚠ WARNING

Keep the protective dust cap on the 12-volt DC outlet when not in use to prevent ingestion of foreign material and potential short circuit conditions.

BATTERIES

⚠ WARNING

- **Do not store anything inside the battery compartment(s)** or near the batteries that could touch the battery or battery cable terminals. Contact with the battery or battery cable terminals could cause an electrical short circuit, discharge the batteries, or start an electrical fire.
- **Keep sparks, cigarettes and flames away from the batteries as the hydrogen gas they create may explode.** Do not connect a booster battery or other power source that outputs more than 14.2-volts DC to the RV batteries. Use adequate ventilation when charging or using batteries in an enclosed space.
- Remove metal jewelry and always wear eye protection when working around batteries.
- **Do not allow battery electrolyte (acid) to come into contact with skin, eyes, fabric or painted surfaces.** Electrolyte is a sulfuric acid solution that could cause serious personal injury or property damage. If your hands, eyes, clothes or the painted surface of your RV are exposed to electrolyte, flush the exposed area thoroughly with water. If electrolyte gets in your eyes, immediately flush them thoroughly with water and get prompt medical attention.
- **Make sure the inverter/charger is turned "off" before disconnecting the negative battery cable from the battery bank**. Keep the batteries out of the reach of children.

House Batteries

Unless a battery has been fully discharged, house auxiliary batteries are normally charged in one of two ways:

- When the power cord is plugged into 120-volt shore power or when the generator is operational, the inverter/charger functions as a battery charger and will automatically charge the house batteries when required.
- The chassis alternator charging system supplies power to the house auxiliary batteries when the engine is running and the chassis batteries are sufficiently charged.

See the Chassis Guide for information on the chassis batteries and the drivetrain electrical system.

The battery voltage for house and auxiliary batteries is typically monitored on one of the selectable touch screens.

A fully charged battery will read 12.65 volts DC with a specific gravity of 1.265 at 80°F (32°C). A battery is considered discharged at 11.89 volts DC or when it has a specific gravity of 1.120 or less. When voltage drops to 11.89 volts, irreversible battery damage can occur.

Dry Camping

House auxiliary and chassis batteries should be fully charged prior to dry camping. When disconnected from 120-volt shore or generator power (i.e., while dry camping or tailgating) all electrically operated appliances and accessories must be used sparingly. During this period these appliances and accessories are being powered by the house auxiliary batteries directly, and/or indirectly through the inverter/charger.

If excessive amounts of power are drawn from the house auxiliary batteries, either as small applied loads over an extended period of time or as high applied loads for a short period of time, they will become deeply discharged. Permanent battery damage will occur after repeated deep discharge cycles.

General usage information (using estimated ratings)

12-volt loads drawn from the battery bank(s) while operating 120-volt appliances through the inverter/charger can approach 300 amps on a single inverter/charger equipped motor home, and 700 amps on a dual inverter/charger equipped motor home. Complete battery discharge will occur quickly when inverter/charger loads are applied.

Batteries discharge at a faster rate the deeper they become discharged. To minimize battery discharge:

- When disconnected from 120-volt shore or generator power and not requiring the operation of 120-volt appliances or equipment, turn the inverter/charger OFF on the touchscreen.
- Custom configure your inverter/charger's control panel on the touchscreen (see the inverter/charger owner's manual) to best meet your power usage profile.

Battery Inspection and Care

Batteries are all sealed AGM types, maintenance free. Check the external condition of the batteries periodically. Look for cracks in the cover and case.

Battery storage instructions

To prevent house auxiliary battery discharge when your motor home will not be connected to shore power for extended periods of time, it is recommended you turn "off" the 12-volt battery disconnect switch, or (main power switch in the stepwell), **and** disconnect each battery bank at the negative battery cable running to the chassis frame.

During storage, it is important to check the voltage of your batteries at least monthly using the inverter/charger remote control panel if the negative battery cables remain connected. Check with a multi-meter when the battery negative cables aren't connected. Re-charge all batteries to 12.65 volts as needed. If you remove the batteries from the motor home, store them in a dry, cool area.

Battery Replacement

If house batteries need to be replaced, only deep cycle batteries of the same size and type should be installed. Refer to the Chassis Guide for information on chassis battery replacement.

Battery Disconnect Solenoid Switch (House Battery Disconnect)

The battery disconnect solenoid switch, or "main power switch," is located near the entrance door on the front of the passenger's console. This switch lights up red when turned on.

Battery Disconnect Switch

- **NOTE: The combination carbon monoxide/propane alarm is connected to a constant 12-volt power source. The carbon monoxide/propane alarm remains operational when the battery disconnect solenoid switch, or "main power switch," is in the "OFF" position.**

The power steps at the entrance door will also continue to work with these switches in the "OFF" position.

Battery Isolation Manager

Your motor home is equipped with a Battery Isolation Manager (BIM) that monitors the battery voltage of both the chassis and house batteries over long periods of time. If it senses a charging voltage it connects the two batteries together. If the charge system is overbur-

dened, it isolates both batteries. When batteries have reached a float charge state for (1) hour, the batteries are isolated to prevent overcharging. It will reconnect if either battery drops to approximately 80% charge and the other is being charged. If batteries are not being charged they will be isolated to prevent an electrical draw in one system from depleting the other battery.

The "Battery Boost" switch is a manual override of the Battery Isolation Manager. It can be used in an emergency (when chassis or house batteries are discharged) to start the chassis engine or the generator.

To operate, press and hold the Battery Boost start switch located on the driver's left side console. While the battery boost switch is pressed, use the ignition key to start the chassis engine or the generator switch to start the generator. Release the battery boost switch once the engine or generator has started.

If your chassis and house batteries are too discharged to start the engine or generator with this method, they need to be recharged with the on-board inverter/charger or by connecting the motor home to shore power.

Automatic Transfer Switch (ATS)

Your motor home is equipped with an Automatic Transfer Switch with built in reverse polarity protection. The ATS is microprocessor controlled and will automatically detect which power source is being used (generator or shore power) and allow power from that connection only. You will not have to plug and unplug power to the coach if you decide to run the generator.

If you plug into shore power, the ATS will pass power to the motor home. If the generator is started, it will override the shore power input (called generator dominant) and supply the RV with electrical power from the generator. When the generator is shut down, shore power is restored.

There may be a slight flicker of the lights when the ATS changes over from one to the other, but there is no real interruption of power.

The ATS will disconnect from shore power completely if the power coming in is not high enough quality (i.e. either low/high voltage, or low/high frequency).

When the generator is operating, it powers the inverter/charger which in turn functions as a multi-stage battery charger to charge the house auxiliary and chassis batteries.

Refer to and follow safety information found in the manufacturer's troubleshooting guide found in your warranty packet.

❖ **NOTE: The generator requires 12-volt power from the house auxiliary batteries to start, and draws fuel to operate from the chassis fuel tank. If the fuel level in the chassis fuel tank drops to or below ¼ full, the generator will shut "off" and cannot be re-started until the fuel tank is filled to above ¼ full. Use the prime function to clear air from the fuel lines.**

120-Volt Circuit Breakers

The 120-volt AC circuit breakers located inside the load center protect all 120-volt wiring and components from circuit overloads and short circuits. Should a circuit overload or short circuit occur the circuit breaker protecting the affected circuit will "trip" preventing the flow of electricity through that circuit.

If a circuit breaker trips, shut off the appliance on that circuit (i.e., power converter, etc.) and allow the circuit breaker to cool down for a brief period of time. After it cools down, reset the circuit breaker by moving its lever "off" and then back to the "on" position. If the circuit breaker re-trips or frequently trips, contact your dealer to have the electrical problem diagnosed and repaired.

A circuit breaker identification label is permanently attached to the inside surface of the 120-volt Load Center.

⚠ CAUTION

Circuit breakers and fuses will not offer complete protection of the electrical system in the event of power surge or voltage spike.

Replacement

Only replace circuit breakers with those of the same specified type, voltage, and current rating. **Never replace a circuit breaker with one listed at a higher amperage rating.** Please contact your dealer for repair assistance when replacing circuit breakers.

⚠ WARNING

Replacement circuit breakers must be of the same voltage, amperage rating and type. Never use a higher rated replacement circuit breaker; doing so may cause a fire by overheating the RV wiring.

Maintenance

At the beginning of the camping season, inspect the circuit breakers and replace as needed. Test by turning each circuit breaker "off" and back "on". Circuit breakers are wearable parts and must be replaced as needed as part of your RV maintenance. If you have any questions, contact your dealer.

A label is provided to explain the function of every 120-volt circuit breaker. This label is located on or near the appropriate load center or sub-panel and must remain permanently affixed to the recreation vehicle.

APPROXIMATE ELECTRICAL LOAD RATINGS

12 VOLT SYSTEM	
Exterior Entertainment Center	5-7 AMPS
Fan	1.5 AMPS
Furnace	12.0 AMPS
Generator Start	95.0 AMPS*
Illuminated Switch	.125 AMP
Inverter	variable
Leveling System	95.0 AMPS*
LP Detector	.125 AMP
Light; LED	1.7 AMPS
Light; Vanity	4.2 AMPS
Lights; Aisle	1.0 AMP
Lights; Baggage Compartment / Shower	1.4 AMPS
Lights; Decorative Wall / Map / Porch	1.5 AMPS
Lights; Double -12"	2.0 AMPS
Lights; Double -18"	2.5 AMPS

Power Awning	10.0 AMPS*
Power Vent	5.0 AMPS
Refrigerator	3.0 AMPS
Step Cover	10.0 AMPS*
TV Plate/Antenna Booster	1.0 AMP
Water Heater	6.0 AMPS
Water Pump	7.0 AMPS

*Momentary Load

12 Volts: Labeled watts divided by 12 = Power consumed in AMPS

120 VOLT SYSTEM	
Air Conditioner	18 AMPS
Coffee Maker	6-12 AMPS
Converter (each)	8 AMPS
DVD System	3 AMPS
Fireplace	15 AMPS
Hair Dryer or Curling Iron	10-14 AMPS
Microwave	15 AMPS
Satellite Receiver	2 AMPS
TV	2-4 AMPS
Vacuum Cleaner	8 AMPS
Washer/Dryer	12 AMPS
Water Heater	12 AMPS

120 Volts: Labeled watts divided by 120 = Power consumed in AMPS

STARTING THE GENERATOR

Your motor home has a touchscreen to control the generator and manual switches located in the door area. There is a secondary switch located on the generator itself. An hour meter that keeps track of generator hours used is located on the touchscreen and a separate hour meter on the generator.

To Manually Start the Generator

1. At either "START/STOP" switch, press and hold the start portion of the switch to start the generator. Depending on the outside temperature the start process can take up to 15 seconds. Once the generator starts running, release the switch.
2. An LED above the start switch will light when the generator is running.
3. For better performance and engine life, especially in colder weather, let the generator engine warm up for two minutes before turning "ON" 120-volt appliances.

For more information on generator operation and maintenance, refer to the manufacturer's owner's manual.

Automatic Generator Start (AGS)

Your motor home models is equipped with an Automatic Generator Start system (AGS). The controls are built into the touchscreen system. When enabled, the Automatic Generator Start system will automatically start and stop the generator according to operator or factory pre-selected parameters.

Refer to the AGS Start section or the *Touch Screen User Guide* (in your warranty packet) will give detailed instructions on the Automatic Generator Start.

GENERATOR

Your motor home is equipped with an LP or a fuel powered generator. The generator produces 120/240-volt power compatible with the motor home electrical system. It can power the entire motor home when 120/240-volt shore power is not available.

⚠ WARNING

CARBON MONOXIDE IS DEADLY! Do not run the generator when your motor home is indoors or in a confined space.

DO NOT use the AGS AUTO ON or QUIET ON modes (if so equipped) when your motor home is indoors or in a confined space.

Asphyxiation or carbon monoxide poisoning hazards exist whenever generator exhaust gasses can accumulate.

MOVING PARTS AND ELECTRICITY can cause severe personal injury or death. To reduce exposure to these hazards, **always disable AGS (if so equipped) before:**

- Sleeping in vehicle, unless vehicle has a working CARBON MONOXIDE detector.
- Parking vehicle in garage or confined space.
- Parking vehicle for storage.
- Servicing vehicle for storage.
- Servicing generator.
- Servicing batteries.
- Servicing appliances or electrical systems.
- Fueling the vehicle.

Before Starting the Generator

1. Make sure the carbon monoxide detector is working.
2. Turn off air conditioners and all other 120-volt appliances.
3. Check for fuel, exhaust and coolant leaks.

STOP the generator immediately if there is a fuel, exhaust or coolant leak. Have all leaks repaired prior to placing the generator back in service.

⚠ CAUTION

Excessive usage can overheat and damage the generator starter motor. Do not engage the starter motor for more than 20 seconds at a time. If the generator does not start after the first attempt, wait at least two minutes before beginning another start sequence. If the generator does not start after a third attempt, refer to the generator owner's manual for additional information.

Transfer switch

For more information, see the *Automatic Transfer Switch (ATS)* section..

❖ **NOTE: The diesel (or gas) generator requires 12-volt power from the house auxiliary batteries to start, and draws diesel fuel (or gas) to operate from the chassis fuel tank. If the fuel level in the chassis fuel tank drops to or below 1/4 full, the generator will shut off and cannot be re-started until the fuel tank is filled to above 1/4 full.**

Maintenance

During periods of extended storage:

4. Add a diesel fuel additive to the chassis fuel tank to prevent algae growth (only with a diesel fueled generator).
5. Completely fill the chassis diesel fuel tank to prevent water condensation and rust in the tank (only with a diesel fueled generator).
6. Cover the end of the generator exhaust pipe with screen to prevent bug and rodent intrusion.

With the exception of simple items, such as normal maintenance (i.e., oil changes, etc.), all service work should be done by an authorized repair facility. Improper adjustments can damage the generator and electrical appliances and can result in a safety hazard. **Follow the generator owner's manual for maintenance intervals and recommendations.**

Exercising Your Generator – When storing the generator for extended periods of time, it is important to run the generator regularly to keep it in good working order. Lack of exercise can cause moisture build-up in the fuel system resulting in poor performance.

For more information on generator operation and maintenance, refer to the generator owner's manual.

SOLAR PANEL

⚠ CAUTION

Adding solar panels or equipment will affect the carrying capacity of your recreation vehicle. Vehicle weight ratings should be considered before adding these components.

Solar panels produce 12-volt DC electricity when exposed to sunlight. Energy produced by the solar panels is used to charge the house auxiliary and chassis batteries.

Controller

The controller is capable of charging two battery banks – house and chassis. A status LED indicates connectivity of batteries. Battery charging and operating parameters are adjusted using the Firefly Vegatouch touchscreen.

Refer to the manufacturer's operation manual in your warranty packet for more detailed information.

Maintenance

Clean the solar panel upper surface regularly using a soft cloth or sponge with water and a mild detergent. Do not use harsh chemicals or abrasive brushes that might damage the panels' upper translucent surface.

For additional information, refer to the manufacturer's manuals for the controller and monitor.

❖ **Notes:**

FUEL SAFETY

⚠ DANGER

Automotive fuels can cause serious injury or death if misused or mishandled. If you have further questions, consult your dealer or Customer Service for assistance.

- Always shut OFF the vehicle engine while refueling.
- Do not bring or store fuel or other flammable liquids inside the motor home as a fire or explosion may result.
- Before refueling, extinguish all smoking materials and any open flames.
- Before refueling, always turn OFF all spark producing appliances (i.e., water heaters, furnaces, etc.).
- Do not overfill the fuel tank(s). The pressure in an overfilled fuel tank may cause leakage and lead to fuel spray and/or fire.
- Fuel spills represent a serious fire hazard, and should be cleaned up immediately.
- Never restart an engine or re-light any pilot lights while raw fuel is present.

FAILURE TO COMPLY COULD RESULT IN FIRE, DEATH OR SERIOUS INJURY.

Fuel Selection

Some generators are fueled by the same system used to fuel the chassis engine. Check the generator manufacturer and the chassis manufacturer information to help determine the type of fuel best suited for this dual application.

Fuel Filler Cap

⚠ WARNING

Do not replace the fuel fill cap with one of a different type. Only use a cap specified for your motor home. Use of a substitute cap may create excessive fuel system pressure, resulting in fuel station damage and improper operation in a collision.

Remove the fuel fill cap by slowly turning it counterclockwise, waiting for any “hiss” noise to stop, and then unscrew the cap all the way. To close the fuel fill cap, securely turn the cap clockwise until you hear clicking sounds.

Filling the fuel tank

⚠ DANGER

All pilot lights, appliances and their igniters (see operating instructions) should be turned off before refueling of motor fuel tanks.

These can cause ignition of flammable vapors, which can lead to a fire or explosion.

FAILURE TO COMPLY COULD RESULT IN FIRE, DEATH OR SERIOUS INJURY.

Use care when fueling your motor home. If you spill fuel on the motor home, clean it up immediately. Fuel can dull or soften paint and damage other surfaces.

EXHAUST GAS FUMES

⚠ WARNING

- Avoid inhaling exhaust gases as they contain carbon monoxide, which is a potentially toxic gas that is colorless and odorless.
- If you are in a parked motor home with either the engine running or a generator running there is a potential for exhaust fumes to filter back into the motor home.

To avoid breathing exhaust gases, follow these precautions:

- Do not run the engine in confined areas, such as a closed garage, any longer than needed to move your motor home in or out of the area.
- Windows should be closed while driving or running the generator (if so equipped) to avoid drawing dangerous exhaust gases into the motor home.
- If you suspect that exhaust fumes are entering the passenger compartment, have the cause determined and corrected as soon as possible.

If you must drive under these circumstances, close all the windows, and adjust the heating or cooling system to force outside air into the motor home (set the blower on high speed).

The best protection against carbon monoxide entry into the motor home is a properly maintained ventilation system and an active carbon monoxide detector. To allow for proper operation of the motor home ventilation system, keep the ventilation inlet grill(s) clear of snow, leaves or other obstructions at all times.

Maintenance

It is recommended that the exhaust system and vehicle body be inspected by a qualified motor home service center:

- Each time the engine is ready for an oil change.
- Whenever a change in the sound of the exhaust is noticed.
- Whenever the exhaust system, underbody or rear of the vehicle is damaged.

For more information refer to your Chassis Guide.

PROPANE GAS SYSTEM

Propane or LP (liquefied petroleum) gas is an efficient form of energy when proper handling and safety precautions are observed. The propane system in your motor home furnishes the fuel for most appliances. Propane is heavier than air and tends to flow to lower areas and will sometimes pocket in these low areas, such as the floor. Your motor home is equipped with a propane alarm (refer to *Safety Precautions*, Combination Carbon Monoxide (CO)/ Propane Alarm).

⚠ WARNING

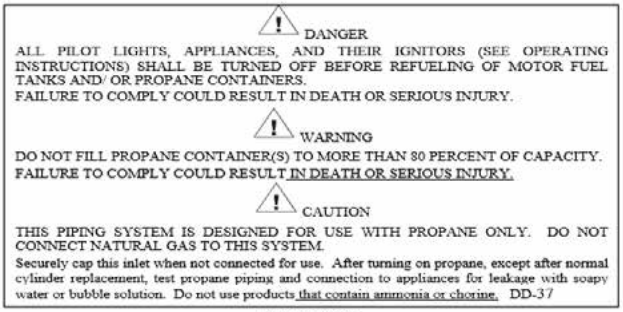
Propane cylinders should not be placed or stored inside the vehicle. LP-gas cylinders are equipped with safety devices that relieve pressure by discharging gas into the atmosphere.

The propane fuel system is comprised of numerous components such as the propane container, hoses, propane gas regulator, piping and copper tubing to each appliance.

Your motor home has been carefully tested at the factory and by your selling dealer for leakage. Travel vibrations can loosen fittings. Have the vehicle propane system checked at all connections soon after the purchase of your vehicle, and after the initial filling of the propane tanks. **Continued periodic checks of the propane system at 5,000 miles of travel (or at least once a year) by a qualified propane service representative as part of your normal maintenance is recommended**. Hand tighten the LP gas system valves only, do not use a wrench or pliers as over tightening may damage the valve seals and cause them to leak.

❖ **NOTE: All propane lines have been checked with air pressure at the time of manufacture. Dealers are required to recheck and adjust pressure before retail delivery.**

The following label should be kept permanently affixed to the motor home:



Propane Label

Propane Gas Container

Propane is a true gas compressed into a liquid form. As the fuel is released from the container, it changes to vapor which is then used for the operation of the appliances. Propane will not run through the appliances in the liquid state. A permanently mounted A.S.M.E. approved propane container is located under the floor of the motor home.

❖ **NOTE: Tanks are to be installed, fueled and maintained in accordance to State and Local codes, rules, regulations or laws.**

Propane expands 1½ percent for every ten degrees of increase in temperature. It is imperative to leave sufficient space inside the container to allow for natural expansion of gas during warmer weather.

Servicing or Filling

⚠ WARNING

- **Always shut OFF the engine while refueling**. Do not smoke and do not operate other ignition sources while refueling.
- **When the propane container is disconnected from the main supply hose** and the P.O.L. connection, install the P.O.L. plastic cap that is attached to the container.
- **If you suspect your propane container has been overfilled, contact your dealer or a qualified propane technician for assistance immediately**. Do not attempt to service a propane container overfill yourself.

Because the container is not removable, the motor home will need to be driven to a qualified propane facility for servicing or filling.

Only the authorized gas service technician(s) should be near the motor home while the propane tank is being filled. The new propane container must be carefully purged for proper appliance performance and operation. The propane tank must **NEVER BE OVERFILLED.** Replace all protective covers and caps on the propane system and/or container after filling. Make sure the valve is closed and the compartment door is securely latched.

LP fill

LP Gas Container Overfill

Never allow your propane tank to be filled above the maximum safe level as indicated by the fixed liquid level gauge.

Do not allow the visible gauge to be used for filling. Overfilling the propane container above the liquid capacity indicated on the container, could allow liquid propane to enter the system that is designed for vapor only creating a hazardous condition.

The following warming label has been placed by the propane container.

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

Propane System Label

LP Regulator

The regulator has the only moving components in the propane system. Its sole function is to reduce the pressure from the propane containers to a safe and consistent low operating pressure. If the pressure is too high, it affects performance and safety; if the pressure is too low, your appliances will not operate correctly.

Contact your dealer or qualified propane service technician for optimum performance (this adjustment should always be made with a properly calibrated manometer).

Refer to your Warranty Packet for more information on the LP gas system components.

PROPANE USE AND SAFETY

Propane is a colorless and odorless gas that, in the liquefied stat ant (usually a sulfur compound) is added as a warning agent. If you smell propane within the vehicle, quickly and carefully perform the procedure listed on the propane system label. This label has been placed in the vehicle near the range for models equipped with a propane system.When a propane container is low, there may be a concentration of an onion or garlic-like odor, which can be mistaken for a propane gas leak. After the propane container has been refueled, the odor will usually disappear. If not, turn off the valve(s) and have the propane system inspected by your dealer or qualified propane service representative.

DANGER
IF YOU SMELL PROPANE
1. Extinguish any open flames, pilot lights 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 odor clears.
6. Have the propane system checked and leakage source corrected before using again.

Ignition of flammable vapors could lead to a fire or explosion and result death of serious injury.

Propane System label

Propane Leak Test

Leaks may be found easily with a soapy water solution. Do not use a solution containing ammonia or chlorine when locating leaks. These products are corrosive to copper gas lines and brass fittings, which could result in deterioration of the copper and brass components. Apply the soapy solution to the outside of the gas piping fittings. If a leak is present, the soapy solution will “bubble” at the leak point. If a leak is indicated, shut off the propane

system valve(s) and contact your dealer or qualified propane service representative immediately.

⚠ DANGER

Never use an open flame to test for a propane leak. Do not check for leaks using products that contain ammonia or chlorine; these products can cause cracks to form on the metal tubing and brass fittings.

Using the Propane System

Use the following steps for propane operation:

1. Close ALL burner valves, controls and pilot light valves.
2. Open the main valve in the propane tank slowly to avoid a rush of propane vapor through the excess flow valve, causing propane "freeze-up." Should you experience propane "freeze-up", close the main valve and wait 15 minutes before trying again.
3. Listen carefully as propane begins to flow. If a hissing noise is heard for more than one or two seconds, close the main valve and contact your dealer to have the propane system tested.
4. Light the appliances as needed and directed in the appliance manufacturer's owner manual located in the Warranty Packet.

Keep the propane container valves closed at all times unless you are using the propane gas system or are having the propane container filled.

Make sure that you read and fully understand ALL safety requirements for handling and operation of the propane system.

The propane system must be handled with care. If you have any questions or concerns, consult with your dealer and/or the specific appliance manufacturer.

If you have double cylinders on your recreation vehicle, use only one at a time. Otherwise, the propane supply will be drawn equally from both cylinders until the supply has been totally exhausted. Using one cylinder until it is empty and then using the second cylinder will allow you to fill the empty cylinder at your convenience without running out of propane.

Cooking With Propane Gas

⚠ WARNING

- Do not turn gas range burner controls to ON and allow gas to escape before lighting.
- Do not use portable fuel burning equipment (i.e., wood and charcoal grills or stoves) inside the recreation vehicle.

Unlike homes, the amount of oxygen supply is limited due to the size of the recreation vehicle. Proper ventilation when using the cooking appliance(s) will help avoid the danger 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.

FAILURE TO COMPLY MAY RESULT IN DEATH OR SERIOUS INJURY.

These warning labels are located in the cooking area to remind the user to provide an adequate supply of fresh air for combustion.

Cooking / Comfort Heating Label

Ensure a supply of fresh air (Canada units only)

Calculating Propane Gas Usage

Most RV gas appliances are operated intermittently, and each has a different BTU rating. You will need to consider this when planning your propane supply and consumption. Unless there is heavy use of hot water, the water heater consumption of propane is minimal. During cool temperature or high wind conditions, furnace consumption can be extremely high.

To calculate your propane supply, take the BTU ratings for your propane appliances and divide that into the BTU availability. Each gallon of propane gas (3.785 liters) produces about 91,500 BTU's (96,528 kilojoules) of heat energy.

Propane consumption chart

The following chart provides average propane consumption information.

Appliance	Average BTU Consumption per Hour	Kilojoules/Hour
Water Heater	8,800	9,280
Refrigerator	1,200 – 1,500	1,270 – 1,580
Furnace	35,000 – 40,000	36,930 – 42,200
Range/oven	7,100	7,490
Range, rear burner	6,500	6,860
Range, front burner	9,000	9,490
Outside Grill	10,000	10,550

Traveling With Propane

❖ **NOTE: Some states prohibit propane appliance operation during travel, especially in underground tunnels. Know the laws for the areas where you travel.**

⚠ DANGER

All pilot lights, appliances and their igniters (see operating instructions) should be turned off before refueling of motor fuel tanks and/or propane containers.

These can cause ignition of flammable vapors, which can lead to a fire or explosion.

FAILURE TO COMPLY COULD RESULT IN FIRE, DEATH OR SERIOUS INJURY.

Use care when fueling your motor fuel tanks and/or propane containers. Make certain your propane tank is properly fastened in place.

PLUMBING SYSTEM

There are two different water systems in your recreation vehicle:

- The fresh water system consists of the fresh water holding tank, faucets and connections, water pump, water heater, tub/shower. On some models, it may also include the water purification system or outside shower assembly (if so equipped).
- Depending on your model, the waste water system consists of the wastewater and sewage holding tank(s), drains and toilet. Models with a cassette toilet will only have the wastewater system.

Plumbing System Maintenance

- Check all fittings, pressure and waste, for leaks before each trip or before vehicle storage as part of your normal maintenance:
- Inspect all faucets, the water purification system (if so equipped) and sink connections (including drain baskets or filters).
- Inspect connections at the water pump and water heater (if so equipped).
- At the end of every trip, you should drain any unused water from the fresh water system.

Typically, there are labels affixed to the exterior of the recreation vehicle sidewall that indicate the locations of the water system drains and fills. Be aware some drain valves may be located inside the vehicle (once the exterior label is found, go inside to find the drain corresponding location).

Refer to the manufacturer's operating manual included in your warranty packet for the detailed operating, sanitizing, and winterizing information for each water system component.

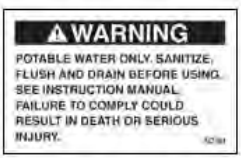
FRESH WATER SYSTEM

All water contains contaminant and mineral particles that can cause fresh water system odors. Untreated well water is a major source of water system odors. The fresh water (potable water) system needs periodic sanitization to take care of all the components in the plumbing system to discourage the growth of bacteria and other organisms that can contaminate the water supply.

⚠ WARNING

- DO NOT drink water deemed microbiologically unsafe or of unknown quality.
- Avoid traveling with full fresh, black or grey water holding tanks. The weight of holding tank contents in not calculated into the RV cargo carrying capacity. Traveling with full tanks could cause you to exceed the individual tire ratings and/or the RV GAWR or GVWR. Traveling with full tanks can also affect your vehicle handling characteristics.

Do not remove the potable water label from your recreation vehicle.



Potable Water Label

You should use a non-toxic drinking water hose dedicated only to supplying the recreation vehicle with fresh water. To reduce the chance of contamination, prevent the non-toxic drinking water hose from coming into contact with the ground.

❖ **NOTE: If needed, sanitize the water system prior to travel.**

Water Pressure Regulator (customer supplied)

⚠ CAUTION

A water pressure regulator is recommended to prevent damage to the plumbing system or components. To prevent damage when using the city water connection, a 45 lb. (315 KPa) rated water pressure regulator is recommended.

Excessive pressure from the water supply source may be encountered in some parks, especially in mountain regions when using the fresh water inlet or black tank flush. Water pressure regulators are available to protect your recreational vehicles plumbing system against such high pressure.

Fresh Water Holding Tank

⚠ CAUTION

- Do not cap, block or modify the fresh water tank overflow tubes in any way. Enough water pressure can build up during the filling process to damage the plumbing system if the overflow tubes are obstructed.
- Be careful not to overfill the fresh water holding tank. It can pressurize the tank, causing leakage and water damage and void the warranty. DO NOT leave the tank unattended while filling.

There may be several ways to fill the fresh water tank depending on the model. For details of each method, refer to the *Utility Center* or *Water Connection* section. There are plastic overflow tubes in the fresh water holding tank which allow water to flow out of the water tank. Occasionally, you may see water coming from the overflow tubes when the fresh water holding tank is filled. This is normal and can be a result of the recreation vehicle being parked on an incline, or the motion caused by starting or stopping during travel.

12-volt Water Pump

There must be sufficient 12-volt DC power to run the water pump when your recreation vehicle is not hooked up to city water. Once activated, the water pump (also known as the demand pump) will self-prime, and provide water. The water pump continues to run until maximum pressure is achieved and shut off. The water pump will automatically re-start when it senses a drop in the water pressure. The pump is designed for . Using the pump continuously or with high pressure will shorten the life of the pump and is not covered in your warranty.

Some cycling may occur, depending on the volume of water being released. The water pump is engineered with a check valve to prevent water from back flowing into the fresh water supply tank.

❖ **NOTE: The water pump switches should be in the OFF position when the recreation for any amount of time.**

Maintenance

Periodically check the in-line water pump strainer for accumulated debris. To clean, shut off the water pump, unscrew the clear cap, remove the re-useable metal strainer, clear any debris, then reinstall.

Normal pump maintenance consists of checking and cleaning of the strainer, normal sanitizing and winterizing and occasionally checking all plumbing hardware and fittings for tightness. Lack of sanitizing can lead to premature pump failure and poor performance over time. Scale build-up on the diaphragm and valves, can cause low flow and leak back (occasional pump cycling with no faucets open or tank filling up when hooked up to city water).

For additional information on the care and operation of the pump, read the safety and operating information in the pump manufacturer's owner's manual.

Water Pump Switch

Most water pump switches illuminate when the water pump is activated. Typical switch locations are in the back of the unit or on the monitor panel, or the switch may be art of a touchscreen system (if so equipped). When the water pump switch is ON the pump runs until 45 lbs. of pressure has been achieved. The red light will stay on.

WATER PURIFICATION SYSTEM

The canister filter is the primary filter used for the complete water system. If the water supply has not been used for some time, allow the water to flow for several minutes to flush the system.

⚠ CAUTION

- Do not allow water in the canister housing to freeze.
- Remove the filter before using anti-freeze to winterize the system or chlorine solution to sanitize the system.
- Flush canister housing thoroughly before it is put back into service after winterizing or sanitizing.
- For best results replace filter every 6-12 months.
- Do not use carbon cartridges where water is microbiologically unsafe or of unknown quality.
- Maximum operating pressure is 125 psi (8.75 bar).
- Maximum water temperature is 125° F (52° C).

Filters should be replaced at the beginning of each camping season or if they have come into contact with contaminated water. When not in use, the water filter cartridge should be stored out of freezing temperatures. RV antifreeze will damage the water filter cartridge. Filter locations will vary by model. They are typically located in a compartment behind the utility center (if so equipped).

Filter housing

To Replace Canister Filter Cartridge

1. Turn off water supply using two valves located on the water lines on each side of the canister. Water pump should be OFF.
2. Place drip pan below filter housing to catch any spillage.
3. Press the red button on top of the filter housing to release pressure.
4. Using a spanner wrench, rotate the filter housing. Unscrew the housing completely, dump water out and remove the filter (dispose of the old filter properly).
5. Clean the inside of the filter housing with mild detergent. Thoroughly rinse and wipe clean.
6. Remove the O-ring from the groove in the housing and wipe clean. Coat with petroleum jelly.
7. Replace the O-ring in the groove, making sure it is properly seated.

8. Install the new filter cartridge.
9. Replace the canister housing (hand tighten is normally sufficient).
10. Turn on the water supply, turn the pump ON, open a faucet and check for leaks. Turn the pump OFF afterwards.

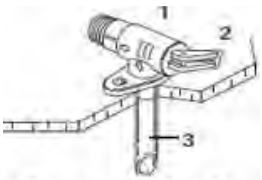
❖ **NOTE: There is *no bypass* feature on a canister style water filter. The water filter *must* be removed before sanitizing or winterizing the RV.**

Each new recreational vehicle is winterized with RV antifreeze before it is shipped to the dealer. To use the water purification system, full system canister water lines need to be flushed of antifreeze and then the filter installed in the canister before use.

Refer to the manufacturer's owner's manual and the label on the water filter cartridge for further information.

DRAINING THE FRESH WATER SYSTEM

A recreational vehicle with a demand pressure pump system will have low-point drains attached to the water lines. These low-point drains will release water in the supply lines by opening the valves and all faucets.



Pressure relief/drain valve

To drain the permanent fresh water supply lines:

1. Turn the water heater power OFF.
2. Drain the Truma Combi tank. It is equipped with its own pressure relief valve.

❖ **NOTE See the Truma Combi Operating Manual for important safety and operating detail.**

3. The valve next to the pressure relief valve will drain the tank.
4. Open all faucets.

⚠ WARNING

Risk of scalding injury from hot water and/or tampering with the pressure relief/drain valve.

- Never actuate the pressure relief/drain valve as long as the Combi furnace is still hot.
- Do not place a plug or reducing coupling on the outlet part of the valve. If you use a discharge line, allow the valve and the line to drain completely.

5. Open the "fresh tank drain" valve located on the underside of the vehicle close to the water tank.
6. Open the low point drain valves. There is a label on the outside of the RV to indicate where the drains are located.
7. Drain the sink by removing the drain cap.
8. Turn ON the water pump and allow it to run as needed.
9. If the water heater has bypass valves, set them to the BYPASS configuration (refer to the Water Heater Bypass section).
10. Operate the toilet flush lever until water stops flowing.

Some water may remain in the lines. If the recreation vehicle will be exposed to cold temperatures, it must be winterized to protect the plumbing system and components. Damage to the water lines and components due to freezing is not covered by warranty. Refer to the

Sanitizing/Winterizing the Plumbing System for details.

❖ **NOTE: To empty the fresh water tank, locate the drain valve under the vehicle chassis close to the tank location. This will empty the tank only.**

Fresh water drain valve

FRESH WATER SYSTEM

Utility Center

Your motor home is equipped with a utility center to assist you in using the fresh water system more effectively. The utility is located in the access door on the front of the (driver side) sofa base.

Water valve settings indicated on the utility center label:

City Fixtures - Allows you to access water from all faucets using a pressurized water source (referred to from here on as "city water").

City Fill Tank - Allows you to fill your fresh water tank using city water.

Country Fill - Allows you to siphon fill your fresh water tank (using the 12-volt water pump) when you do not have access to city water.

Normal - If the RV is not connected to city water, allows you to pump water from the fresh water tank to all faucets using the 12-volt water pump.

Sanitize/Winterize Lines – Allows you to sanitize or winterize the water lines.

Sanitize Tank – Allows you to sanitize the fresh water tank.

❖ **NOTE: Install the city water connection inlet cap when the city water connection is not being used.**

❖ **NOTE: A short hose is supplied with your motor home for use in sanitizing or winterizing the water lines in your RV. It can also be used to siphon fill the fresh water tank when no city water is available. One end of this hose has a fitting that will screw onto the city water connection inlet allowing the other end to be put into a container of fresh water, sanitizer or RV antifreeze (refer to *Sanitizing/Winterizing the Plumbing System*).**

❖ **NOTE: The City Water Connection should be unplugged (i.e., the non-toxic drinking water hose disconnected) when the motor home is unattended for any amount of time. If something would happen to the water system, this may help limit water damage to a smaller area.**

Water Control Valve Operation

City Fixtures: Use this setting if the motor home can be hooked up to an external pressurized water source (referred to as "city water"). If needed, sanitize the water system prior to travel.

City Water Fill with City Water Connection label

1. Move the water heater bypass valves (if equipped) to the NORMAL position (supply line valves ON).
2. Remove the city water connection inlet cap and attach a non-toxic drinking water hose to the city water connection inlet and the other end to a pressurized water source (such as a faucet or spigot).
3. Place the utility center valves in the "CITY FIXTURES" position.
4. Turn ON the water at the external water source.
5. Enter the motor home and open the cold water supply faucets to bleed air from the water lines. When the water lines are nearly full, you may experience some "air pockets". Allow these to escape before closing the cold water supply faucets.
6. Turn the water heater power switch ON .The water will be heated on demand.
7. The City Water Fill inlet when connected to a pressurized fresh water source sends water through the water lines and fixtures without the use of the pump.

❖ **NOTE: The fresh water connection should be disconnected (i.e., the non-toxic drinking water hose disconnected) when the recreation vehicle is left unattended for any amount of time. If something would happen to the water system, this may help limit water damage to a smaller area.**

To disconnect

8. Shut OFF the water at the external water source and disconnect the hose.
9. Disconnect the non-toxic drinking water hose from the city water connection inlet and reinstall the city water connection inlet cap.

City Fill Tank: Use this setting to fill the water tank from a pressurized water source. **If needed, sanitize the water system prior to travel.**

10. Set the bypass valves to the NORMAL position (supply line valves ON
11. Remove the city water connection inlet cap. Attach a non-toxic water hose to the city water connection and the other end to a pressurized water source.
12. Place the utility center valves in the "CITY FILL TANK" position.
13. Turn ON the water at the external source. Water will flow into the fresh water tank.

During the filling process, periodically check the fresh water tank level using the monitor panel located in the command center. DO NOT OVERFILL THE WATER TANK. When the fresh water tank is full, it is normal to see water running from the fresh water overflow tubes onto the ground.

To disconnect

Shut OFF the water at the external water source.

Disconnect the non-toxic drinking water hose and reinstall the city water inlet cap.

Country Fill: This setting is used to siphon fill the water tank from a water container when dry camping and a pressurized water source is unavailable. **If needed, sanitize the water system prior to travel.**

1. Set the bypass valves to the NORMAL position (supply line valves ON).
2. Remove the city water connection inlet cap and attach one end of the short hose supplied with the motor home to the city water connection inlet, and the other end into a container of fresh water.
3. Place the utility center valves in the "COUNTRY FILL" position.
4. Turn water pump ON. Water should begin to be drawn out of the container and into the fresh water tank. To aid siphoning place the container on a flat surface approximately 2 feet off the ground. All low point drains must be off in order to create a siphon.

During the filling process, periodically check the fresh water tank level using the monitor panel located in the command center. When the fresh water tank is full, it is normal to see water running from the fresh water overflow tubes onto the ground.

To disconnect

Shut OFF the water pump. Disconnect the short water hose and reinstall the city water connection inlet cap.

❖ **NOTE: The fresh water tank can also be directly filled using the tank fill (located inside of the motor home). See *Fresh Water Holding Tank* in this section.**

Normal Setting: Allows you to use the water system when dry camping. The water pump circulates water from the fresh water tank to all the fixtures. **If needed, sanitize the water system prior to travel.**

1. Set the bypass valves to the NORMAL position (supply line valves ON.
2. Place the utility center valves in the "NORMAL" position.
3. Turn the water pump ON (make sure you have sufficient 12-volt power).
4. Water will be pumped from the fresh water tank to all faucets.
5. Enter the motor home and open the cold water supply faucets to bleed air from the water lines. When the water lines are nearly full, you may experience some "air pockets". Allow these to escape before closing the cold water supply faucets.
6. Turn the appropriate (12-volt GAS or 120-volt ELECTRIC) storage water heater power switch ON. Turn the water heater power switch. Water will be heated on demand.

Sanitize / Winterize Lines: This setting is used for drawing RV antifreeze into the water lines of the motor home. When the fresh water tank drain and the low point drains are closed, a siphon is created in the water lines allowing antifreeze to be pulled into the water lines. This setting will not allow antifreeze into the fresh water tank. See Sanitizing/winterizing the Plumbing System.

Sanitize Tank: This setting is used to sanitize the fresh water tank. When the fresh water tank drain and the low point drains are closed, a siphon is created in the water lines allowing sanitizer to be pulled into the fresh water tank from an external container. See *Sanitizing/winterizing the Plumbing System.*

Fresh Water Holding Tank

⚠ CAUTION

- Do not cap, block or modify the fresh water tank overflow tubes in any way. Enough water pressure can build up during the filling process to damage the plumbing system if the overflow tubes are obstructed.
- Be careful not to overfill the fresh water holding tank. It can pressurize the tank, causing leakage and water damage and void the warranty. DO NOT leave the tank unattended while filling.

Direct access to fill the fresh water tank is typically located in the sofa base. The exact location of the fill may vary depending on the model. Remove the cap for direct filling of the water tank.

Water tank direct fill

The fresh water tank can also be filled using the city tank fill setting on the utility center.

To empty the fresh water tank, locate the drain valve under the vehicle chassis close to the tank location. This will empty the tank only. To drain the entire water system, the low point drains must be used.

Water Heater Bypass

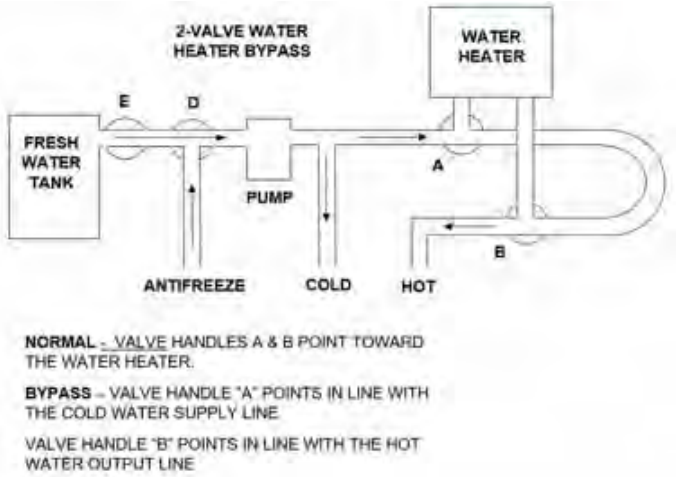
Most models have a factory installed water heater bypass that enables you to avoid filling the water heater with RV antifreeze. The 2-Valve Bypass is typically located in close proximity to the water heater, and can be accessed through the opening on top of the (driver side) sofa base. A and B must be open to allow water into the water heater.

Normal Mode operation allows water to flow into the water heater. Both hot and cold bypass valve handles should be pointed toward the water heater connections.

operation diverts the flow of water around the water heater, keeping water out of the water heater. Hot water bypass valve handle should point inline with the (red) hot water outlet line. Cold water bypass valve handle should point inline with the (blue) cold water inlet line.

Water heater Bypass Access

Water heater Bypass Access shown in NORMAL mode



Water Purifier

Access to the water purifier is through the (rear) opening on top of the driver side bed base. For additional detail, refer to the *Water Purification Section.*

- **NOTE: There is *no bypass* feature on a canister style water filter. The filter cartridge *must* be removed before sanitizing or winterizing the RV (See the *Water Purification System* section).**
- **NOTE: The inside of the filter housing should be cleaned with a mild detergent, then thoroughly rinsed and wiped clean after sanitizing and winterizing.**

Sanitizing the Plumbing System

Before sanitizing the plumbing system

- The Water Heater must be bypassed.
- The Water Purifier must have the filter removed.

Failure to do so could result to damage to the water heater and/or water filter.

When to sanitize

- When your recreation vehicle is new.
- At the beginning and end of each season.
- When the water system becomes contaminated or every three months of use.

How to Sanitize

1. Use the main switch or pump switch to turn off the power to the water-pump assembly.
2. Set the water heater bypass valves to the **BYPASS** position
3. When possible, park the RV on level ground and drain the fresh water system and fresh water tank (see *Draining the Fresh Water System).*
4. Close the low point drain valves and the fresh water tank drain valve.
5. If the RV has a cartridge type water purifier, the filter must be removed.

Preparing to Sanitize

Prepare a chlorine solution using 1/4 cup of household bleach (sodium hypochlorite solution) to one gallon (3.785 liters) of water in a container. Prepare one gallon of solution for every 15 gallons of tank capacity. This will result in a residual chlorine concentration of 50 ppm in the water system and should remain in system for at least 4 hours.

If a 100 ppm concentration is prepared, use ½ cup of household bleach with one gallon of water. One gallon of the solution should be used for each 15 gallons of tank capacity. Allow to remain in system for at least 1 hour.

❖ **NOTE: Fresh water tank sizes vary by model. Contact your dealer or customer service for your specific tank size.**

6. Place the utility center valves in the SANITIZE TANK position.
7. Attach the short hose supplied with your motor home to the fresh water connection inlet on the exterior of your motor home. Place the other end of the hose in a container holding the sanitized solution. To assist the syphoning process set the container on a flat surface approximately (2) feet above ground level.
8. Remove the hose (or funnel) and container used to pour the chlorine solution
9. Attach a hose (can be your drinking water hose) to the fresh water connection inlet and attach the other end of the hose to a potable pressurized water source.
10. Turn on the pressurized water source and finish filling the fresh water tank.
11. After the recommended amount of sanitizing solution is in the tank, the water tank is full, **and water filter has been removed from the canister**, turn the water pump ON which sends sanitizer into the water lines.
12. Open all hot water faucets one by one until water begins to flow continuously and a chlorine smell is noticeable. Include the shower faucet.
13. Close the hot water faucets and repeat opening all cold water faucets one by one until you smell chlorine. Include shower faucet and toilet.
14. Turn OFF the water pump.
15. Let the solution remain in the tank and lines for at least four hours when disinfecting with 50-PPM residual chlorine, and for at least one hour if using a 100-PPM chlorine concentration.

❖ **NOTE: To thoroughly sanitize the fresh water tank, the unit should be driven around for a period of time allowing the solution to splash the sides and top of the tank.**

16. After the required period, drain the chlorine solution from the fresh water system and the fresh water tank. See *Draining the Fresh Water System.*

Rinse the system with fresh water:

1. Using a hose or funnel in the tank fill, fill the fresh water tank full of clean (potable) water.
2. Power to water heater should be OFF
3. When the fresh water tank is full, turn the pump ON to send water through the lines. Water heater bypass valves should still be set to **BYPASS**.
4. Run water through all faucets (hot and cold, including the shower) until chlorine smell is gone. Turn faucets off, turn pump OFF.
5. Drain the fresh water system again (see *Draining the Fresh Water System*).
6. **Set water heater bypass to NORMAL:** Allows water into the water heater.
7. Refill the fresh water tank with fresh water again, turn the water heater power ON.

If a chlorine taste lingers in the water, flush the water system with a solution consisting of one-quart vinegar to five gallons of clean water. Re-flush as necessary. The vinegar solution may damage the water heater or the water filter, so both must be bypassed again before performing this operation.

Follow the steps outlined in *Draining the Fresh Water System* with one exception: do not drain the water heater.

- Water heater bypass valves set to BYPASS
- Remove the cartridge water filter.

After draining the system:

1. Water heater power should be OFF. Water heater bypass valves should be set to **BYPASS.**
2. Put the vinegar solution into the fresh water tank. Pour the vinegar solution into the tank fill using a hose (or funnel).
3. Continue filling the fresh water tank with of clean (potable) water.
4. Run water through all faucets (hot and cold, including the shower) until chlorine smell is gone. Turn the pump ON to send water through the lines.
5. Close all faucets. Turn pump OFF.
6. Drain the system again, but do not drain the water heater.
7. Close low point drains and fresh water tank drain.
8. Refill the fresh water tank with clean potable water.
9. Open faucets and check that the chlorine taste is gone.
10. Drain the system one more time (See *Draining the Fresh Water System*).
11. Remove water filter canister, insert the filter, and reattach canister to the mount. **Water heater bypass valves set to NORMAL**.
12. Refill the fresh water system with clean water. When the water heater is full of water, turn the water heater power ON.
13. To verify water heater is full of water, turn on hot water faucets, turn pump ON. When you get a steady stream of water through the hot water faucets, it should be full. Turn off the pump and faucets.

⚠ CAUTION

Freezing can result in severe damage to the plumbing components and the Combi furnace. Damage due to freezing or an unsuitable winterizing fluid is not covered by the manufacturer's warranty. Winterize the Combi furnace:

- At the start of the winter season
- Before traveling to a location where freezing conditions are likely.
- If the furnace will be stored under freezing conditions or for an extended period of time.

Winterizing the Plumbing System

Preparing your recreation vehicle for colder weather or storage is very important for most states and Canada. Failure to prepare your RV may cause water supply lines and the water heater to freeze. The RV should be winterized at the end of the camping season or when it will be exposed to temperatures that will fall at or below 32°F (0°C). Repairs due to freezing are not covered by warranty.

- **NOTE: The winterization process may vary slightly due to different plumbing configurations between models.**
- **NOTE: Appliances must be winterized. Refer to the manufacturer's manual for possible additional information or contact Customer Service for assistance.**

❖ **NOTE: The water heater must be drained to prevent damage from freezing. The water heater should be drained and bypassed during the winterization process particularly if introducing RV antifreeze into the plumbing system. Do not drain the water heater while it is hot or under pressure! Antifreeze should be kept out of the water heater.**

If you chose to perform the winterization process yourself, read and understand the following information before starting. Contact customer service or your dealer for questions about this process. It may be easier to winterize the RV with another person to assist you.

The preferred method to winterize your recreation vehicle is by using RV antifreeze in the plumbing system.

Winterizing with Antifreeze

Requires non-toxic RV antifreeze in the water lines and does not require any special tools. Use **ONLY RV ANTIFREEZE** in your fresh water system for freeze protection. No other product or commodity should be used.

⚠ WARNING

Automotive antifreeze (ethylene glycol) and windshield washer antifreeze (methanol) are poisonous. Never use these products in your fresh water system. These products are harmful and may be fatal if swallowed.

❖ **NOTE: Antifreeze should never enter the water heater, RV water filter, refrigerator, refrigerator water filter, or fresh water tank.**

1. Turn water heater power OFF. Turn water heater gas valve (if so equipped) OFF (outside of the RV).
2. When possible, park the RV on level ground and drain the fresh water plumbing system. See *Draining the Fresh Water System*
3. Water heater should be empty after performing Step 2. Water heater bypass valves set to **BYPASS**. Refer to *Water Heater Bypass Section*. Water is prevented from entering the water heater
4. Cartridge water purifier filter should be removed.
5. Make sure the “fresh water tank drain” and “low point drains” are closed.
6. Close the fresh water tank shutoff valve.
7. Move the valves to the “Sanitize/Winterize Lines” position. The low point drains must be closed for the antifreeze to siphon through the lines.
8. Attach the short hose supplied with the motor home to the fresh water connection inlet and insert the other end of the hose into a gallon container of RV antifreeze. To assist the siphoning process, put the container on a surface approximately two feet above ground level.
9. Turn the water pump ON. If the water pump fails to self-prime, temporarily open the low point drains. Close the low point drains as soon as the water pump primes (RV antifreeze will begin draining out) and before continuing to the next step.
10. Open the hot water line on all the faucets (kitchen, lavatory, shower and outside shower) until RV antifreeze begins to flow continuously.
11. Appliances should also be winterized.
12. Close the faucet hot water lines and repeat with the cold water lines on all the faucets.
13. Flush the toilet a couple of times until you see antifreeze in the bowl.

When you are done adding RV antifreeze

14. Turn the water pump OFF. Turn siphon valve OFF. Remove the clear hose from the container of RV antifreeze. Leave the water tank shutoff valve closed to keep antifreeze out of the fresh water tank. See *Water Heater Bypass Diagram*.
15. Pour 1 cup of RV antifreeze into the sink drain P-trap.
16. To prevent staining, wipe RV antifreeze out of the sinks, shower (or tub) and toilet using a soft, dry cloth.

❖ **NOTE: In the spring when flushing antifreeze out of the water lines, make sure to turn the water tank shutoff valve back ON. After flushing out water lines the water filter should be re-installed.**

Air Pressure Method

⚠ WARNING

- Never apply air pressure to the water system with any of the valves in the closed position. Air pressure applied to a closed valve, faucet or low point drain could potentially damage the seals and cause water leaks. If you have questions, consult with your RV dealer. Using RV antifreeze is the preferred method of winterization.
- **Recommended pressure is 30 PSI, Exceeding this pressure may rupture water line couplings and void your warranty.**

This method uses compressed air to blow out any remaining water in the system after initially draining water using drain valves. Tools required would be an air compressor and a blowout plug.

1. Turn off the water heater gas valve typically located outside the RV. Water heater power should be OFF.
2. When possible, park the RV on level ground and drain the fresh water plumbing system. See *Draining the Fresh Water System.*
3. Water heater bypass should be set to **NORMAL**. This allows air to flow through the water heater.
4. RV water filter cartridge should be removed for winterizing. Refer to *Water Purification System* section.
5. Open the fresh water tank drain valve to avoid pressure build up in the fresh water tank.

❖ **NOTE: Filters should be replaced at the beginning of the camping season or if they have come into contact with contaminated water or antifreeze.**

6. Run the pump until it is dry (approximately 15 to 20 seconds). Operating the pump longer than that with no water can damage the pump.
7. Open the fresh water tank drain valve to avoid pressure build up in the fresh water tank.
8. Open all faucets in the RV Including the shower.
9. Attach a blowout plug to the city water inlet on the outside of the RV. Refer to *Fresh Water Connections*.
10. Attach the air hose to the blowout plug. Set compressor to **30 PSI**.
11. Blow air into the water lines through the blowout plug and the City Water Inlet to evacuate all water from the lines.
12. Continue blowing out the water lines for approximately 5 to 10 minutes.
13. Pour one cup of RV antifreeze in all the drain P-traps (sinks and shower).

14. After RV water lines have been blown out, remove the air hose and the blowout plug from the City Water Inlet.

Winterize the Black Tank Flush (if so equipped)

1. Connect the blowout plug to the black tank flush inlet on the outside of the RV.
2. Connect the air hose to the blowout plug. Set the compressor to **30 PSI maximum.**
3. **Make sure the black tank has been emptied**. Open the black tank drain valve.
4. Blow air into the flush inlet for 30 to 60 seconds.
5. Disconnect the compressor and blowout plug.
6. Close the black tank drain.

TRUMA® TANKLESS WATER HEATER (IF SO EQUIPPED)

Your recreation vehicle may be equipped a Truma® Combi furnace with supplementary indirect water heating. Refer to the *Truma Furnace/Water Heater* section, along with the manufacturer's owner manual, for important operating and safety information.

FAUCETS

The bathroom, kitchen and outside shower faucets operate much the same way as the faucets in your home. Make sure there is sufficient water available and the 12-volt water pump is turned ON before operating.

❖ **NOTE: There may be air in the water plumbing lines which needs to be bled out before a steady stream of water comes from the faucet.**

BATHROOM TUB / SHOWER

Keep the water heater and holding tank capacities in mind when using the fresh water system. The used water will drain into the grey water holding tank.

- Be sure the water heater is ON and had sufficient time to heat the water.
- If dry camping, be sure your 12-volt water pump is ON.

Unlike your home, the recreational vehicle does not contain a water pressure balance valve. If someone is using the shower, it is recommended that the fresh water system **NOT BE USED** until they are finished.

⚠ WARNING

Water temperatures over 125°F (49°C) can cause severe burns instantly therefore, be careful when using hot water. **Always test the water temperature before showering or washing.**

The shower faucet may include a vacuum breaker for the shower. There are two purposes for this breaker:

- To prevent siphoning water through the hose from another fixture.
- To prevent water from being retained in the hose.

The showerhead DOES NOT have a complete shut-off valve (the complete shut-off is at the faucet). The showerhead may drip slightly in the OFF position after use; this is normal and does not indicate a leak or defect.

Maintenance

Refer the manufacturer's user guide or label instructions for detailed cleaning information. The tub/shower walls are made of ABS plastic material. Use a mild detergent soap and warm water to clean. Do not use gritty or abrasive particle soaps or scouring compound to clean ABS plastic. Avoid using "Citrus" or biodegradable cleaners which contain "D-Limonene." They will damage plastic materials.

SHOWER MISER

The Shower Miser is a device attached to your inside shower that helps to conserve water especially when you are dry camping and are restricted to the amount of water available in your fresh water tank and don't have ready access to a water supply.

The device is installed on the incoming water line for the shower and will circulate water from your water heater, back into your fresh water tank until the water in the shower comes up to temperature. This prevents needlessly dumping your limited supply of water waiting for the shower to heat up.

Operation

The device consists of a small valve and a blue plastic "dot" below the shower handle.

When the small valve (on the Shower Miser) is in the closed (OFF) position, wasted cold water is directed to the fresh water tank. No water will flow through the shower head. The blue "dot" will be dark blue when cold water is running through the shower plumbing. When the water is up to temperature, the blue "dot" will change color from a dark blue to white which indicates the water flowing into the shower is now hot. Turn the small valve the opposite direction (to ON) and turn on the shower valve so water flows out of the showerhead. The color change is obvious so there is no question when the water is at a comfortable temperature.

As you shower, the small Shower Miser valve can be turned OFF while you use the soap, so water will divert into the fresh water tank instead of down the drain, and it keeps the water up to temperature, so when you turn the Shower Miser valve back ON, you immediately have hot water to rinse with.

The Shower Miser system may vary depending on your model.

Filling the fresh water tank

Shower Miser will also fill the fresh water tank from inside the RV when hooked up to a pressurized water source.

- A pressurized water source must be connected to the RV and turned ON.
- Check the tank monitor to see how much fresh water is in the tank.
- Turn the lever on the Shower Miser to bypass the showerhead (OFF).
- Turn the cold water shower valve fully ON.
- Watch the tank monitor as the fresh water tank fills.
- When tank is full, turn the cold water shower valve OFF.

⚠ CAUTION

When using the Shower Miser with pressurized city water hookups the fresh water tank can overflow on to the ground.

BLACK/GREY WATER SYSTEM AND TANKS

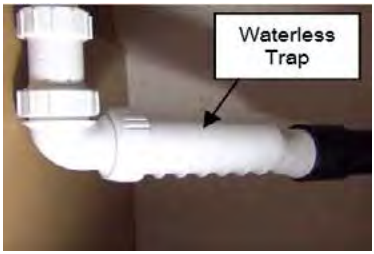
Water from the sinks and shower flows into the gray water (or wastewater) holding tank. Water from the toilet will flow into the black water (or sewage) holding tank (see *Black/Grey Water Holding Tanks)*.

Drain Pipes with P-Trap (if equipped)

The drain pipes may be equipped with a "P-trap" installed to help prevent odors from escaping into the RV. During travel, water from the P-traps may spill and permit odors into the RV. By adding water and using a RV approved deodorizing agent you will dissolve the contents faster and will keep the drain lines and tanks clean and free flowing. These chemicals are available at an RV supply store or your dealer.

Drain Pipes with Dry Sealing Valve (if equipped)

Your RV may be equipped with a dry sealing valve that prevents the escape of odors from your waste system and eliminates the need for P-traps. Should the RV drain piping system become clogged, it is important that the dry valve be removed before passing a mechanical cleanout tool through the piping to open the drain. Passing a cleanout tool through the waterless valve may cause damage to the internal seal that may potentially allow sewer gases to escape into the RV interior. The waterless trap can be unscrewed from the water lines.



A label has been placed near the location of the waste valve that reads as follows:

REMOVE WATERLESS TRAP BEFORE USING MECHANICAL DRAIN CLEANING DEVICES

Sewer Hose Storage

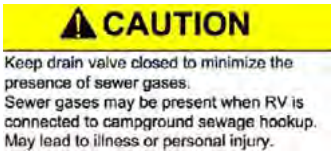
Depending on your RV model, the sewer drain hose may be stored in an exterior compartment marked "Sewer Hose" or it may be located in the hollow square tube bumper. The bumper has removable plastic end caps, and the hose slides inside the hollow bumper.

Vents

Vent pipes and vents release air from the grey and black water holding tanks. On most models the exterior vent cap is attached to the roof and must be kept clear of obstructions to perform as intended.

On some models, the vent pipe may be part of the drainage system referred to as a "wet vent" where water flows downward as air flows upward in the same pipe.

Some models are equipped with a side vent system. On these models this label will be next to the termination valve. This label should not be removed from your recreation vehicle.



Black/Grey Water Holding Tanks

Dump the gray and black water holding tanks before traveling to avoid carrying unnecessary weight. The weight of the holding tank contents is not calculated into the RV cargo carrying capacity. Traveling with full holding tank(s) could cause you to exceed the individual tire ratings and/or the RV GAWR or RV GVWR. Potential damage to suspension components, such as springs, tires and axles, could result.

If you are dry camping and cannot immediately empty your holding tanks, reduce your vehicle speed until you reach a dumping station. When connected to the sewer drain line at a campground, keep the black tank drain valve closed until the holding tank is at least ¾ full. This will provide sufficient water to assist in complete draining of the black water holding tank. Repeat as needed.

⚠ WARNING

Never travel with full black or grey water holding tanks. This not only wastes your fuel but depending on the location of the tank(s), it can affect your tow vehicle handling characteristics.

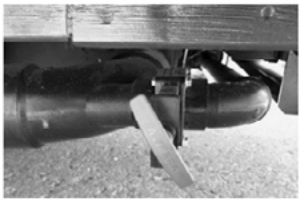
⚠ CAUTION

- Never leave the black tank drain in the open position continuously when connected to the campground sewer system. Leaving the drain open will allow the liquid to drain out increasing the potential for a blockage in the tank. Keeping the drain in the closed position will prevent debris from accumulating in the tank.
- Do not add automotive antifreeze or caustic chemicals, such as laundry detergents, into the holding tanks. Although these products may have a deodorizing effect, they may damage the plastic and rubber parts of the plumbing system or the components

Before using the recreation vehicle, or after dumping the grey and black water holding tanks, always add the proper amount of deodorant to the black water tank to prevent odors and help break down holding tank contents (unless winterizing). Follow the deodorant bottle or package instructions. Driving to a disposal site will normally loosen any accumulated waste debris or solids from the sides of the holding tanks.

BLACK AND GREY TANK DRAINS

There are labels on the exterior of the recreation vehicle indicating the location of the grey and black tank drains (also called dump valves). Depending on your model, you may have one or two valves. With one valve, the gray and black tank will release contents simultaneously. With the 2-valve set up, it is recommended that you release the black tank first, followed by the grey tank. This will help rinse and debris from the outlet and sewer hose. To make drainage easier, level the RV.



Black/Grey Tank Drain and Valve

1. Remove the sewer hose housing dust cap and attach the sewer hose (customer supplied).
2. Place the end of the sewer hose into the approved dump station.
3. Open the black tank dump valve (depending on your model the valve may be located under the RV, or on the utility center). Close the dump valve when the black water holding tank is empty.
4. Open the grey tank dump valve (depending on your model the valve may be located under the RV or on the utility center). Close the dump valve when the grey holding tank is empty.
5. Remove, clean and store the sewer hose.
6. Close the sewer hose housing dust cap.

You can locate dump stations throughout the United States and Canada in Woodall's, Rand McNally Camp Guide, Good Sam Camp Guide, KOA Kampgrounds Camp Guide and various other publications. Some fuel stations also have dump stations. Please contact your RV dealer for assistance in the purchase and installation of a sewer hose or sewer hose extension (if needed).

Sewage (black) tank preparation

⚠ WARNING

It is important to add enough water to prevent solid waste buildup. Follow the directions listed below and in the manufacturer's operator manual.

1. Release one to two quarts (1 or 2 liters) of water into the toilet bowl.
2. Follow the directions on your RV-approved toilet chemical bottle (customer supplied) and put the recommended quantity of holding tank chemical into the toilet bowl.
3. Flush the toilet and allow at least two gallons (8 liters) of water to flow into the holding tank.

Waste (grey) holding tank preparation

No special preparation is required, however, placing a small quantity of chemicals into this tank, such as baking soda or an approved RV chemical, will reduce odors from food particles in the system.

Cleaning and Maintenance

The toilet should be cleaned regularly for maximum sanitation and operational efficiency. Use only RV approved chemicals. Do not use chlorine (undiluted) or caustic chemicals, such as laundry bleach or drain opening types, in the toilet system. These products damage the seals in toilets and dump valves.

AIR CONDITIONER

Cooled air enters the RV through the grill. Make sure you have sufficient power available before operating the air conditioner. Do not operate the air conditioner without the return air filter. Operating the system without the filter allows the lint and dirt that is normally stopped by the filter to accumulate on the cooling coil of the air conditioner. This also will lead to a loss of air volume, possible equipment damage and an expensive cleaning process.

Roof Mount

A special foam gasket is placed between the roof material and the sub frame of the air conditioner to guard against water leakage. The air conditioner is subjected to wind pressures along with motor vibration during normal operation. Inspect the mounting bolts for tightness to ensure there is no leakage or looseness at least annually. Re-tighten bolts when they are loose. **DO NOT** over tighten these bolts as it may damage this gasket. The air conditioner gasket is a wearable part that eventually will need to be replaced. To gain access to the bolts, remove the filtered panel cover on central air systems or the entire air box on non-central air conditioners.

Heat Pump Operation (if so equipped)

Set the thermostat for either electric or gas heat. On the electric setting, the heat pump will become the primary heat source as long as the interior temperature of the RV has not dropped 5° below the thermostat set point. If this occurs, the thermostat will automatically activate your gas furnace.

The furnace will continue as the heat source until the thermostat set point has been satisfied. At that point, the heat pump will again become the primary heat source.

For RV models with a touch screen system, the heating cooling controls are included on the touch screen selectable screens.

For additional information refer to the manufacturer's owner's manual included in your warranty packet or consult your dealer.

POWER ROOF VENT

The 12-volt DC powered roof vent allows fresh air to circulate through the recreational vehicle. Do not leave the attic fan open when the recreational vehicle is stored or unattended for long periods. High winds, other unusual conditions or obstructions may prevent the dome from closing; the resulting leakage could cause non-warrantable damage.

To use your fan most effectively, close all vents and slightly open a window on a shaded side of your recreation vehicle. You are directing the air flow by opening a window.

The roof vent is controlled by either a switch.

For additional safety and operating information, refer to the manufacturer's manual.

TRUMA® FURNACE/WATER HEATER

Your recreational vehicle is equipped with a Truma® Combi furnace with supplementary indirect water heating.

Refer to the manufacturer's manual for detailed operating and safety information.

⚠ WARNING

Danger of combustion, personal injury and damage to the RV!

- Keep the area around the appliance free from combustible materials, gasoline and other flammable liquids or vapors.
- Switch **OFF** the appliance and gas supply:
  - If you smell gas
  - If anything appears out of the ordinary
  - If you move the RV
  - Before entering a gas station
  - Before entering a tunnel

Danger of over-temperature and toxic exhaust gases!

- Use with LP gas (propane) only. Butane or any mixtures containing more than 10% butane must not be used.
- Keep the area in front of the warm air outlets free of combustible or heat-sensitive materials. Do not put any material into the warm air outlets.
- Check that furnace vent (and air intake) terminal(s) are not obstructed in any way during all seasons.
- Danger of hot surfaces. The temperature of the exhaust gases can reach 320 °F (160 °C). Do not touch the area around the wall cowl and do not lean any objects against the wall cowl or the RV.
- Shut OFF the Combi furnace when refueling or pumping gas.

⚠ CAUTION

Damage to the Combi furnace caused by freezing!

- The Combi furnace does not have a frost-protection function. If the heating is not used and there is a risk of freezing, all water must be drained from the water container
- Water in pipes, faucets and appliances could freeze. Considerable damage may result.
- Before you fill water into appliances and parts that transport water, you must heat the installation area sufficiently so that water cannot freeze.

Selectable Modes of Operation

Heating mode

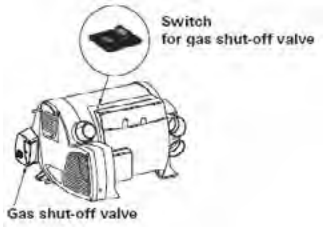
The furnace automatically selects the proper operating level based on the difference between the desired temperature set at the control panel and the current room temperature. If there is any water in the water container, it will be heated automatically. The water temperature will not be regulated, but it will reach a maximum of 162 °F (72 °C).

Hot water mode (only if water container contains water)

Hot water mode is ideal if only hot water is required. The lowest burner setting suffices for heating water. In hot water mode, the burner will switch off as soon as the water reaches the temperature selected in the CP plus control panel. Both modes of operation can be combined.

Switch For Gas Shut-Off Valve

This switch shuts off the power to the safety gas shut-off valve and with this the gas supply to the Combi furnace. To make sure that the gas supply to the furnace is off, turn the switch to the OFF position.



Switch positions of the switch for gas shut-off valve:

Off = gas shut-off valve is closed

On = gas shut-off valve is open

Your recreation vehicle has an exterior gas shut off valve. In the event you smell gas, all people and pets should exit the vehicle immediately. Turn off the exterior gas valve until the source of the smell has been determined, and any problems have been resolved.

Pressure Relief/Drain Valve

- **NOTE: The pressure relief/drain valve pro¬vides both the pressure relief function and a drain function.**
  - The pressure relief/drain valve is a safety component and must not be removed for any reason other than replacement.
  - The pressure relief/drain valve is not serviceable; if defective, it must be replaced. It must be replaced by a certified service technician.
  - It must only be replaced by the Truma pressure relief/drain valve rated for 65.25 psi (4.5 bar) which is CSA certified and registered. Tampering with the pressure relief/drain valve will void the warranty.

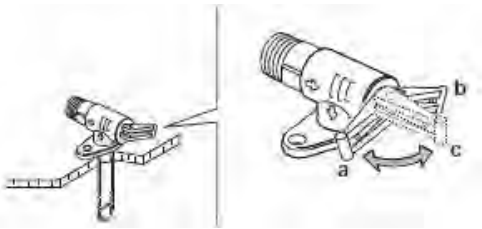
Opening the Truma pressure relief/drain valve

- **NOTE: Damage can occur to the Combi and the RV due to an obstructed drainage socket! The drainage socket must be unob¬structed and kept clear of obstructions such as slush, ice, or leaves to ensure that water can drain properly. No warranty claims for frost dam¬age will be accepted.**

Move the lever so that it is in the "draining" position. Water will drain from the hot water container via the drainage socket.

a,b = lever in "valve closed during furnace operation" position

c = lever in "draining" position



Closing the Truma pressure relief/drain valve

Move the lever so that it is in the "closed" position.

Refer to the manufacturer's manual for additional operating and safety information on the pressure relief/drain valve.

Filling the Water Container

- **NOTE: Damage to the water container! The water pressure on the inlet side must be limited to 40.6 psi (2.8 bar); otherwise internal components of the appliance will be damaged. On (city) water connections with a pressure higher than 40.6 psi (2.8 bar) a pressure regula¬tor is strongly recommended.**

1. Close the pressure relief/drain valve, if open
2. Close open bypass lines, if present
3. Turn on the fresh water supply or switch on the water pump

4. Fill the plumbing system:
   - Open all water-release points, e.g. cold and hot water faucets, showers, toilets.
   - Once water flows, the plumbing system is ventilated and filled. Close all water-release.

Switching On the Furnace

For the furnace to work properly, there must be enough LP gas (propane >11 in. wc) and 12 VDC power.

Switch on the furnace's 12 VDC power supply.

1. If necessary, fill the water container with water (refer to "Filling the water container"). If no hot water is needed, the Combi furnace can be operated without being filled.
2. Make sure the supply of LP gas is turned on at the tank.
3. Make sure the gas shut-off valve is switched on.
4. Use the CP plus control panel to switch on the Combi.

⚠ WARNING

Scalding injuries caused by hot water!

- Water temperatures over 125 ºF (49 ºC) can cause severe burns or scalding and in extreme cases even death.
- Before using a hot water faucet or using the shower, mix with cold water and allow the hot water to run until the water temperature no longer increases.

There may be a variation between the temperature delivered from the Combi furnace and the temperature at the faucet due to water conditions or the length of pipe from the Combi furnace. The presence of a flow restrictor in the hot water line may limit the water flow.

- If using hot water, use the CP plus control panel to select the desired water temperature level.
- To obtain the desired water temperature at the faucet or in the shower, mix cold and hot water.
- Make sure that the water temperature has stabilized before any person or animal enters the shower.

⚠ WARNING

Scalding injuries caused by hot air!

- Ventilation area can reach 250 ºF (121 ºC) at the warm air outlet and can cause severe burns or scalding, and in extreme cases even death.
- Always check the air temperature before varying the air throttle position.

Winter Operation

To operate the Combi furnace in potentially freezing conditions, the following are required:

1. There must be sufficient LP gas (propane; fuel inlet pressure 11 – 13 in. wc (27.4 – 32.4 mbar) in the tank.
2. For hot water operation, the water container must be filled. You must leave the furnace powered ON whenever freezing might occur.

❖ **NOTE: Winter operation will not protect the recreation vehicle's entire plumbing system.**

Shutdown

Switching off the furnace

- Switch off the Combi furnace using the CP plus control panel. Due to internal processes, it may take some time until the furnace is completely shut down.
- If the Combi furnace and any other gas-powered device is not needed anymore, turn off the LP gas supply.
- Switch off the Combi furnace's electrical power supply.

If the RV is being put into storage, or if you switch off the Combi furnace during freezing temperatures, refer to "Winterizing".

Draining the water container

⚠ CAUTION

Damage to the Combi furnace caused by freezing!

- The Combi furnace does not have a frost-protection function. The water container must be drained if the recreation vehicle will not be used whenever there is a risk of frost.
- No warranty claims are accepted by the manufacturer of the Combi furnace for frost/freeze damage

To make sure that all water drains properly from the water container, place a big enough vessel underneath the drainage socket of the pressure relief/drain valve (> 2.64 gallons (10 liters).

- Use the main switch or pump switch to switch off the power to the water-pump assembly.
- Turn off or disconnect the city water connection, if present.
- Open all water release points, e.g. cold and hot water faucets, showers, toilets.
- Open the pressure relief/drain valve

The water container will drain via the drainage socket of the pressure relief/drain valve.

Decalcifying and cleaning the water container

❖ **NOTE: Truma recommends decalcifying and cleaning the water container at least twice a year for hygienic reasons. Only use specialized and suitable products. Do not use chlorine-based products. Read and follow the instructions of the decalcifying agent's manufacturer.**

1. For decalcifying the water container, fill the water container with citric acid and let it work for some time.
2. Fill citric acid into the fresh water supply and dilute it with fresh water according to the supplier's specification.
3. Add more than 2.64 gallons (10 liters) of water to fill up the water container of the Combi furnace.
4. Drain the mixture of citric acid and water from the water container (refer to "Draining the water container") and flush it with fresh water (refer to "Filling the water container").
5. In order to avoid growth of micro-organisms, regularly heat the water in the boiler to 158 °F (70 °C) as follows:
   a. Select energy mode "LP gas" on CP plus control panel.
   b. Select the hot water level "boost" on CP plus control panel.

c. When the water temperature is reached (the display does not flash anymore), leave the heating switched on for another 30 minutes without withdrawing water from the system. The residual heat in the device will heat the water to up to 158 °F (70 °C).

COOKING SAFETY

In Case Of a Grease Fire

⚠ WARNING

Do not attempt to use water to put out the fire. Water can spread some types of fire, and electrocution is possible with an electrical fire.

Grease is flammable. Never allow grease to collect around top burners or on the cook top surface. Wipe up spills immediately. Refer to Section 2 – Safety Precautions, for fire safety and fire extinguisher information.

Cooking With Propane

See the *Propane System section* for important safety instructions. Refer to the manufacturer's owner's manual for detailed operating and safety instructions for all propane appliances.

COOKTOPS

For detailed operating and safety information, refer to the manufacturer's user guide.

⚠ WARNING

- During and after use, do not touch or let clothing or other flammable material come in contact with the top burners or heating elements, burner grates or areas near the top burners or oven until they have had sufficient time to cool. These areas can get hot enough to cause burns.
- Never leave cooking food unattended. Turn pan handles inward, but not over the tops of the other range burners. Ensure that pans used are large enough to contain the food and avoid boil-overs. Heavy splattering or spills left on the cooktop can ignite and cause burns.
- If using glass, glass/ceramic, ceramic, earthenware or other glazed utensils or cookware verify it is safe for use on the top burners.
- **Do not cover the oven vent openings while the oven is in operation**. Restricting the flow of combustion air will create an asphyxiation hazard.

⚠ CAUTION

Never use oven cleaners, chlorine bleach, ammonia or glass cleaners with ammonia. Always allow the cooktop to cool before cleaning.

Cleaning instructions

Refer to the manufacturer's user guide included for detailed cleaning instructions.

General Cleaning

- **To avoid damage and possible burns, be sure the appliance is off and all parts are cool *before* handling or cleaning.**
- Use care to avoid steam burns if a wet sponge or cloth is used to wipe spills on a hot surface.
- Some cleaners can produce noxious fumes if applied to a hot surface.
- To prevent staining or discoloration, clean appliance after each use.
- If a part is removed, be sure it is correctly replaced.

- If a spillover occurs while cooking, immediately clean the spill from the cooking area while it is hot to prevent a tough cleaning chore later. Using extreme care, wipe spill with a clean, dry towel.

Gas Drop-In Cooktops Your model is equipped with either a 2 burner cooktop. The 2 burner match-light cooktop has two 6500 BTU/H burners with control panel.

Refer to manufacturer's user guide for detailed operating and cleaning information.

MICROWAVE

⚠ CAUTION

- To prevent damage, remove the turntable from the microwave when traveling.
- Make sure you are connected to a 120-volt power source.

⚠ WARNING

Never use the microwave cavity for storage. The microwave cavity should always be empty when not in use.

For details on operation, cleaning and safety information, refer to the manufacturer's user guide.

General Cleaning Microwave and Convection Microwave

IMPORTANT: Before cleaning, make sure all controls are off and the microwave oven is cool. Always follow label instructions on cleaning products.

To avoid damage to the microwave oven caused by arcing due to soil buildup keep cavity, microwave inlet cover, cooking rack supports, and area where the door touches the frame clean.

Clean with mild soap, water and a soft cloth or sponge, or as indicated below.

- Grease filters: mild soap and water or dishwasher.
- Door and exterior: mild soap and water, or glass cleaner applied to paper towel.
- Control panel: sponge or soft cloth and water.
- Stainless steel (on some models): mild soap and water, then rinse with clean water and dry with soft cloth, or use stainless steel cleaner.
- Turntable: mild soap and water or dishwasher.
- Rack(s): mild soap, water and washcloth. Dishwasher cleaning is not recommended.

Convection Microwave

The convection microwave bridges the gap between microwaving your food and conventional cooking. Make sure there is sufficient 120-volt power before operating the convection microwave (see *Calculating Electrical Load).* or details on operation and safety information, refer to the manufacturer's user guide.

LP GAS GRILL HOOKUP

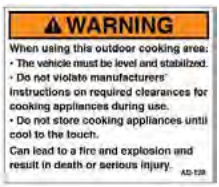
⚠ WARNING

- Be sure to read, understand and follow all information supplied with your recreation vehicle concerning the use of propane before operating the BBQ grill. The propane hose must be correctly connected before lighting the grill. Failure to follow instructions supplied by the grill manufacturer, or use of any components other than those originally supplied with the grill, could result in death or serious injury.
- **If you smell gas: Shut off gas to the appliance, extinguish any open flame and open lid. If odor continues, immediately call your gas supplier or your fire department.**
- The BBQ grill is intended for use outside of the recreational vehicle. **Never use a gas grill inside a compartment or inside of the recreational vehicle.**
- The BBQ grill must be **COMPLETELY COOLED** before storing. Storing the BBQ grill before it is completely cool may result in serious injury or property damage.

⚠ DANGER

Always open the grill lid before turning on gas and lighting burner, failure to open the lid before lighting could cause an explosion causing property damage, injury, or even death.

❖ **NOTE: Outdoor cooking warning label should not be removed from the RV.**



Gas BBQ Grill Prep

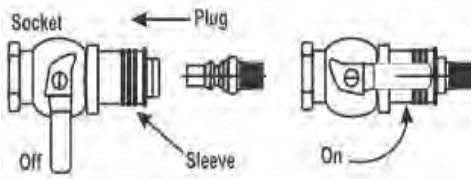
Your recreation vehicle is equipped with a propane "quick-coupler" connection for easy installation of the BBQ grill.

Attaching the "Quick Coupler" Connection

The "quick coupler" is directly connected to the RV propane system. The "quick-coupler" connection is equipped with a positive shut-off valve.

Place the "quick coupler handle in the OFF position and push back the sleeve. The valve handle must be OFF to make the connection.

1. Insert the plug and release the sleeve.
2. Push the plug until the sleeve snaps forward, locking the plug into the socket.
3. Turn the handle ON to allow propane to flow to the drop in stove.



Quick Coupler Connection

REFRIGERATOR

The refrigerator is not intended for quick freezing or cooling. We recommend stocking it with pre-frozen or pre-cooled food when possible. The shelves should not be covered with paper or plastic and the food items should be arranged so air can circulate freely. Keep the area at the back of the refrigerator clean and free of debris. Check for obstructions in the exterior refrigerator vent area (i.e., spider webs, bird nests, etc.). Use a soft cloth to dust off the debris.

For optimum efficiency and performance, it is recommended the refrigerator be checked at least twice a year as part of the routine maintenance.

For detailed operating and safety information, refer to the manufacturer's user guide.

Cleaning Your Refrigerator

The following are general cleaning guidelines. For detailed information on cleaning your specific refrigerator, refer to the manufacturer's user guide.

Cleaning the Interior

1. Disconnect power.
2. Hand wash, rinse, and dry removable parts and interior surfaces thoroughly. Use a clean sponge or soft cloth and a mild detergent in warm water.
3. Inside the refrigerator, use a warm water and baking soda solution consisting of approximately 1-tablespoon (15ml) baking soda to 1 quart (1 liter) of water. This solution cleans and neutralizes odors. Rinse and wipe dry.
4. Leave an open box of baking soda in the refrigerator and freezer to help prevent odors.

❖ **NOTE: Do not use abrasive or harsh cleaners such as window sprays, scouring cleansers, flammable fluids, cleaning waxes, concentrated detergents, bleaches or cleansers containing petroleum products on plastic parts, interior and door liners or gaskets. Do not use paper towels, scouring pads, or other harsh cleaning tools.**

Cleaning the Exterior

Painted metal exteriors: wash with a clean sponge or soft cloth and a mild detergent in warm water.

Stainless steel exteriors: wash with a clean sponge or soft cloth and a mild detergent in warm water. Do not use appliance wax, polish, bleach, or other products containing chlorine on stainless steel. Stainless steel can be cleaned with a commercially available stainless steel cleaner. A spray-on stainless steel cleaner works best.

IMPORTANT: Do not allow the Stainless Steel Cleaner and Polish to come into contact with any plastic parts such as the trim pieces, dispenser covers or door gaskets. If unintentional contact does occur, clean plastic part with a sponge and mild detergent in warm water. Dry thoroughly with a soft cloth.

For silver-accented plastic parts, wash with soap or other mild detergents. Wipe clean with a sponge or damp cloth. Do not use scouring pads, powdered cleaners, bleach or cleaners containing bleach as these products can scratch and weaken the paint finish.

WINEGARD CONNECT 2.0

The Winegard Connect is an integrated system that works together for faster speeds and increased range from Wi-Fi sources. It has the following features:

- Expands your Wi-Fi coverage to receive signal inside your RV from farther away.
- Advanced Wi-Fi protected access (WPA and WPA2-PSK), guest network access, double firewall protection (SPI and NAT), and denial-of-service (DoS) attack prevention.
- Use Wi-Fi Calling or VoIP to make phone calls when cell coverage is weak.
- Connect all of your devices instantly when you connect to a new network. Easy step-by-step on screen instructions. Set up your secure network once and you are done.

Refer to the manufacturer's user guide for detailed information on set up and using the system.

❖ **Notes:**

CLEANING THE INTERIOR

To keep the value of your recreation vehicle, perform regular maintenance using the proper materials and procedures. Using the wrong cleaner may result in damage to the surfaces in your vehicle. Check with the manufacturer's information for the recommended cleaning agent. If in doubt, check to see if the cleaner will cause damage by testing a small area out of sight or contact your dealer for assistance. Do not use flammable liquids or sprays to clean the recreation vehicle.

Décor Glass (if so equipped)

Use a glass cleaner to remove smudges, smears and spots. If there is decorative etching on the décor glass, use care when cleaning around that area.

Furniture Upholstery

Vacuum the furniture upholstery regularly using a soft brush attachment to remove any loose dirt or debris.

Fabric (if so equipped)

It is recommended the fabric be professionally cleaned if it becomes stained or soiled. The professional cleaner should be made aware the fabrics that may have been treated to be fire resistant. For more information, refer to the specific furniture manufacturer's care instructions.

Ultraleather™ (if so equipped): It is recommended the Ultraleather™ be professionally cleaned if it becomes stained or soiled. For more information, refer to the specific furniture manufacturer's care instructions.

Leather (if so equipped): Periodic vacuuming, using a dry cloth to wipe up spills immediately, and using a damp cloth on problem areas, will help to keep your leather furniture in good condition. Leather surfaces can vary, as do the cleaning methods. Refer to the furniture manufacturer's recommendation, or consult a cleaning professional.

It is recommended you do not use any cleaners containing oils, waxes or silicones. Cleaners containing silicone can eventually destroy the finish on the leather. Cleaners containing oils or waxes should not be used as they leave residues on the surface of the leather, which can attract more dirt and eventually lead to cracking.

Window Treatments

Fabric – Drapes and Valances: Dust occasionally with a vacuum and soft brush attachment. It is recommended the fabric be professionally cleaned if it becomes stained or soiled. The professional cleaner should be made aware the fabrics that may have been treated to be fire resistant.

Window Shades

Shades should be vacuumed periodically to remove dust. Using your vacuum cleaner's upholstery brush on low suction will remove most dust and dirt from the shade. Refer to the shade manufacturer's owner's manual for additional and detailed information.

To remove stuck on dust or stains refer to the following guide.

Solar Shields: Use a sponge or soft brush and water to remove stains. A mild cleaning solution can be used to remove tougher stains. Rinse after cleaning by wetting a clean cloth in fresh water, wringing our any excess and wiping the areas where the cleaner was used.

Day/Night Shades: Clean with a mild cleaning solution using a sponge or paper towel. Wipe down with water after cleaning and dry thoroughly before raising the shade. Do not use spot remover, household cleaners or detergents to remove soiled spots, as these may cause damage to fabric or loss of color from fading.

Mini Blinds: A simple dry rag may do the trick. If they are especially dirty, you can use cold or warm water to clean them; never use hot water.

Fill a spray bottle with water and a tiny amount of soap. Then spray a lint-free towel with the mixture and use the towel to wipe down each slat. While cleaning, try not to bend the slats. They can also be soaked in a bathtub to loosen up any debris so the slats can be wiped down easily.

Roller Shades: Clean by using soapy water or a mild cleaning solution on spots. Try a small area first because harsh household cleaners or detergents may cause damage to fabric or loss of color. It is recommended to dust the rails and fabrics of the shades on a regular basis. Shades should be kept in the closed or up position when not in use to maintain pleat retention and minimize dirt and soil build-up.

- ❖ **NOTE: If your recreation vehicle must be stored for an extended period of time, store shades in the up position and cover your windows with additional protection (I.E. Cut out cardboard).**

Cabinetry and Tables

To keep hardwood doors, cabinet fronts and hardwood tables looking like new regularly dust with a soft cloth dampened with a cleaning polish or mild detergent solution. Avoid using ammonia based products or silicone oils as they may cause damage if used over a long period of time.

The finish is durable and resistant to most household spills. However, spills should be wiped up promptly to avoid potential problems. Excessive prolonged exposure to direct sunlight, high temperatures and high humidity can cause damage to both the finish and the wood itself.

Interior Wall Panel

To clean, use a mild solution of soap and lukewarm water with a soft sponge or cloth. Wipe dry with a soft, clean cloth.

Putty sticks can be used to cover scratches on the wood surface wall panels. These can be obtained from local hardwood stores and lumberyards. Contact your dealership service department for assistance in repairing décor paneling.

⚠ CAUTION

Do not use abrasive cleaners as they may cause the vinyl to scratch and become dull. Do not use cleaners that contain bleach

ABS Plastics

Dust and wipe clean with soft, damp cloth or chamois, wiping gently. Do not use gritty or abrasive particle soaps or scouring compound to clean ABS plastic. Avoid using “citrus” or biodegradable cleaners that contain “D-Limonene” as they may damage plastic materials.

SOFA AND TABLE

Your motorhome is equipped with a removable table and side sofas that convert into a sleeping area.

⚠ WARNING

Always use seatbelts if sitting in the sofa or dinette while the motorhome is in transit

Removable Table

⚠ CAUTION

Do not sit on or lean on the table. It is intended for use as a table only

To remove the table, firmly grasp both sides of the tabletop and lift up until the table legs are no longer seated in the tabletop base. It may be easier to have (2) people to remove the table (someone at each end). Set the table aside for storage, or if you are setting up the sleeping area, the tabletop can be placed on the bedrails.

Firmly grasp the table leg collar at the floor, and twist counter-clockwise to loosen it. Twist the leg counter-clockwise until you feel resistance. Continue to turn the leg counter-clockwise until you feel a click and the blades match up with the hole. Pull up on the leg to remove it from the floor collar. Store the table legs in the passenger side sofa base.

Installing the table (if so equipped)

Place the table leg on the base, lining up the blade holes with the blade. Push the leg down and twist the table leg clockwise until you feel some resistance. Continue to turn the table leg clockwise until it clicks into place. Twist the collar at the base to tighten.

Firmly grasp the tabletop on both sides and gently set it down on the table legs lining up the leg with the base. It may be easier to have (2) people set the tabletop on the legs. Push down lightly on the tabletop to endure that it is firmly in place.

Converting to sofa(s) into a sleeping area (if so equipped)

Remove the table. Store the table legs in the passenger side sofa base.

Locate the bedrails in the driver side sofa base. Pull the rail(s) from the sofa base and place the end in the bedrail support on the passenger side sofa base. The sofa tabletop may be placed on the center bedrails for storage.

⚠ CAUTION

Make sure the bedrails are securely seated in the bedrail support before and after adding the tabletop.

Bedrails

Bedrail Support

With the bedrails firmly In place, unfold the sofa cushions extending the sofa backs across the bedrails.

Headrest (if so equipped)
The sofa base(s) may be equipped with an adjustable headrest. To extend the headrest, lift up on the top rail of the headrest until the bracket(s) lock firmly in place. To retract the headrest, press the bracket release on the back of each bracket and push the headrest back in place.

Headrest

Headrest Support Bracket

COUNTERTOPS

To prevent permanent damage

- Always use hot pads or trivets under hot pans, dishes, or heat producing appliances.
- Heat will damage countertops.
- Use a cutting board to prevent unnecessary damage to the countertops. Do not cut directly on the countertop.
- Avoid harsh chemicals such as drain cleaners, oven cleaners, etc.
- Do not let cleaners with bleach set on the top. Wipe them off promptly.
- Run cold water when pouring hot/boiling water into the sink.
- Use coasters under all glasses, bottles and cans.
- Do not store toiletry products directly on your countertop surface. Hair products, perfumes, colognes, nail products, creams, lotions and potions have a tendency to spill or leak and go overlooked. Even though the counter top is sealed, a substance that remains on the surface for an extended period may stain the countertop.

For additional information on the removal of difficult stains or surface damage repair, refer to the countertop manufacturer's user guide.

Solid Surface Countertops

Soapy water, ammonia based cleaners (not window cleaners as they can leave a waxy build up that may dull the surface) or commercially available solid surface cleaners will remove most dirt and residue from all types of finishes. A damp cloth followed by a dry towel will remove watermarks.

Difficult stains can be removed from the matte finish with a green Scotch Brite® pad and a mild abrasive cleaner. Disinfect the surface periodically with diluted household bleach (one part water to one part bleach).

For cuts and scratches, sand the matte finish lightly with (220) fine grit sandpaper until the cut or scratch is gone. Restore finish with a green Scotch Brite® pad and mild abrasive cleaner.

Solid surface sink maintenance

Occasionally, clean the solid surface sink by filling one-quarter full with a 50/50 water/bleach solution. Let soak for 15 minutes, and then wash sides and bottom of sink as solution drains.

FLOORING

Vinyl Flooring

Periodically vacuum or sweep to remove dirt and gritty particles. Although most common spills will not permanently stain the vinyl floors, they are usually easier to remove if wiped up before they set. Blot with a paper towel and wipe clean with a damp cloth. Do not use dish detergents or vinegar and water because they will dull your floor.

To care for the vinyl floor covering, use a damp mop with water and a mild cleaner on the entire floor. DO NOT SOAK THE FLOORING. Use care to avoid wetting the carpet edges. To avoid problems of "yellowing" linoleum, the flooring manufacturer recommends avoiding cleaners that contain oil based solvents (i.e. lemon oil, Murphy's Oil Soap, etc.).

CEILING FABRIC

The ceiling fabric is made from padded vinyl fabric. Wash with mild detergent and water. Use a soft bristle brush for stubborn soil. Rinse and dry. Some household cleaners and solvents remove plasticizers from vinyl, making them brittle. Abrasive cleaners may mar or scratch the surface. Always test a small hidden area before applying cleaners to the vinyl surface.

❖ **Notes:**

CLEANING THE EXTERIOR

To protect your recreation vehicle's exterior finish, wash it often and thoroughly. You may wash and wax your new recreation vehicle 60 days after purchase. The exterior paint needs time to cure before any wax is applied to the exterior surface. Careful maintenance for the first 60 days will assure a long lasting durable finish.

Your RV is exposed to many environmental conditions that have an adverse affect on the paint finish:

- Road Salt and Sodium Chloride
- Road Tar / Bugs
- Bird Droppings / Tree Sap
- Industrial Fallout / Acid Rain/Pollution
- UV Exposure and Moisture

The most common problems resulting from these conditions are corrosion, staining, and chemical spotting. Generally, the longer the foreign material remains in contact with the exterior finish the more extensive the damage. These problems can be minimized by regularly scheduled washing and polishing. Wash your recreation vehicle as soon as possible if it becomes contaminated with foreign material.

Avoid parking under trees or near ocean sea salt. Ice or snow should be brushed off, not scraped, from the painted surface. Avoid gravel roads.

Anti-freeze, gasoline or washer solvents if spilled on the painted surface should be rinsed off with water immediately. Bugs and bird droppings should be rinsed off daily.

Washing

Commercial washing should be avoided. Wash with cold water using a mild liquid soap. Dry wiping with a dry cloth is not recommended.

Make sure the RV's surface temperature is cool, under 90 F, and out of direct sunlight. A shaded area is ideal for washing your vehicle as direct sunlight causes water spotting. Use a mild soap, detergent or car wash shampoo. Try to avoid combination wash-n-wax products as these waxes can cause build up and are designed for smaller surfaces. Have two dedicated sponges or wash mitts: one for the paint finish and one for the wheels and under carriage. Brushes or wash mitts made of plastic bristles are acceptable for use on tires and wheel wells, but are not intended for use on the paint finish. Avoid using such items on painted surfaces as they will damage the finish. Wash the wheels and wheel wells first as this removes heavy dirt and debris and prevents it from splattering on panels. Wet the entire area down to remove loose dirt and grime, then hand wash one area at a time using your dedicated paint finish sponge or wash mitt. Wash from the top and work your way down, rinsing frequently to minimize grit abrasion. Follow with a final rinse of water. This process will remove most contamination from the RV's surface.

For stubborn stains such as road tar or bug stains, use an ammonia based glass cleaner or a small amount of rubbing alcohol on a damp cloth followed immediately by warm soapy water, and rinse with clean water. This may not dissolve the road tar, but it will loosen tar and bug stains and remove them from the surface.

Do not use solvent based cleaners on bird droppings or tree sap as these are water based stains. They can be dissolved using ammonia based glass cleaner, warm soapy water and a little "elbow grease". After removing stubborn stains immediately rinse with clean water.

Drying the RV is just as important as washing it. Tap water and well water contain many chemicals that could water stain your RV's finish.

We suggest using a damp natural or synthetic chamois. There are other drying products such as lint-free micro-fiber towels that work just as well.

During cold weather

Salt and other chemicals that are spread on winter roads in some geographical areas can have a detrimental effect on the recreation vehicle's underbody.

If your recreation vehicle is exposed to these conditions, spray the underbody with a high-pressure hose every time you wash the exterior of your recreation vehicle.

Take special care to remove mud or other debris that could trap and hold salt or moisture. After washing your recreation vehicle, wipe off all water drops from the rubber parts around the slideout and doors.

❖ **NOTE: When the slideout or door is frozen, opening it by force may tear off or crack the rubber gasket that is installed around the slideout or door. Pour warm water on the gasket to melt the ice (wipe off the water thoroughly after opening the slideout or door). To prevent the weather stripping from freezing, treat it with a silicone spray.**

Waxing

Wax your recreation vehicle once or twice a year, or when painted surfaces do not shed water well. Use a soft cloth to apply a small amount of wax to the painted surfaces. After the wax has dried, polish the recreation vehicle with a dry, soft cloth.

Do not wax your recreation vehicle in direct sunlight. Wax it after the surfaces have cooled. Do not apply wax to any area having a flat black finish as it can cause discoloration. If the finish has been stained with wax, wipe off the area with a soft cloth and warm water. When waxing the area around the various openings, do not apply any wax on the weather strip. If it is stained with wax, the weather strip cannot maintain a weatherproof seal around the opening.

⚠ CAUTION

- Do not use waxes containing high-abrasive compounds. Such waxes remove rust and stains effectively from the paint work, but they are also harmful to the luster of the painted surface since they scrape off the coating. Further, they are detrimental to glossy surfaces, such as the grille, garnish, moldings, etc. Do not use gasoline or paint thinners to remove road tar or other contamination to the painted surface.
- Do not use a buffer and a buffing compound as it may damage the exterior surface. Please contact a professional paint body shop for assistance.

Polishing your recreation vehicle

If painted surfaces have been severely damaged and have lost their original luster and color tone, polish the surface lightly with a fine polishing compound. Avoid limiting your polishing to the damaged surface only; polish a somewhat wider area, moving the polishing cloth in one direction. After polishing, flush the compound from the surface and apply a coat of wax to regain a beautiful luster.

Damaged paint

To prevent corrosion, touch up small cracks and scratches in the paint coat as soon as possible with touch-up film or paint. Carefully check the body areas facing the road and the tires for damage to the paint coat caused by flying stones, etc.

Cleaning plastic parts

Use a sponge or chamois to clean plastic parts. Use warm water and a soft cloth or chamois to remove any white residue from dark colored plastic surfaces. Do not use a scrubbing brush, other hard tools, or wax containing abrasives as they may damage the plastic surface.

⚠ CAUTION

Do not allow plastic to come into contact with brake fluid, engine oil, grease, paint thinner, or battery acid. These will damage plastic. Use a soft cloth and a mild detergent solution to wipe away any such contact.

Chrome parts

To prevent chrome parts from spotting or corroding, wash with water, dry thoroughly, and apply a non-abrasive automotive wax. If the chrome is severely damaged or pitted, use a commercially available chrome polish product.

FRAME

Frames receive heavy abuse from road conditions such as sand, pebbles, objects in the highway, and/or ice inhibiting chemicals, all of which will cause chipping and a blasting effect on the painted surface. Frames will show signs of rust much sooner when exposed to salty air. Periodically rinse off the frame (or as use requires) removing road grime, tar, oil, mud or salt.

Refer to your Chassis Guide for the chassis manufacturer's maintenance instructions.

EXTERIOR ROOF AND SIDEWALL VENTS

Inspect the roof vents, including sealants for cracks and keep them clean. Inspect the holding tank vents for blockages from bird nests, spider webs, leaves, etc. All exterior access doors and vents need to be kept clean and free of obstructions (i.e., insect nests, mud daubers, etc.) while the appliances are in use.

WINDOWS

⚠ WARNING

To avoid exhaust gas entry into the motor home, keep windows closed when the chassis or generator engines are running.

Any ventilating window may permit water inside, especially during heavy rainstorms or while driving. This is normal and water should only be seen in the lower track portion of the window frame. Condensation will also cause water to accumulate on windows and in the tracks. Ensure that the escape window latches are properly adjusted (the window will pop open if not adjusted tight enough).

EXTERIOR LADDER

Your recreation vehicle is equipped with an exterior roof ladder. **Refer to the manufacturers User Manual for important use and safety details.**

⚠ WARNING

LADDER CAPACITY MAXIMUM 330 lbs. (150 kg)

- **DO NOT** exceed the ladder maximum weight rating.
- The maximum rating includes the person's weight **PLUS** weight of items carried
- Maximum of 1 person on the ladder.
  When climbing:
  - Always face the ladder.
  - Climb slowly with weight centered between side rails.
  - Keep a 3 point contact on the ladder at all times (3 Point contact - two hands and a foot or two feet and one hand).
- Keep hands free.
  - Use of accessories such as lanyards to keep carried items tethered will keep hands free and prevent falling items.
  - Heavy or bulky items should be brought up only after reaching the roof.
- Do not use the ladder if damaged in any way.

Failure to follow these guidelines could result in death or serious injury.

SEALANTS

⚠ CAUTION

- Failure to properly maintain or reseal your recreation vehicle may result in serious water damage to the roof and other parts of the recreation vehicle. This damage is not covered by the Limited Warranty.
- To check the exterior sidewall sealants, use a stepladder placed safely alongside the vehicle. Do not prop a ladder against the body of the RV as it may damage the exterior finish.

Sealants perform a very important function and should be inspected closely and regularly maintained. We incorporate many different types of sealants, including butyl/putty, black butyl-encapsulated foam, silicone (clear and colored), roof sealant and foam. In general, sealants do not have “set” lifetimes. Varying environmental factors affect the pliability and adhesiveness of sealants.

You or your dealer must:

- Inspect all sealants, a minimum of every six months. Make sure to check the roof and all four sides of the recreation vehicle including al moldings, doors, vents and exterior attachments. A quick walk around the recreation vehicle before leaving may help prevent potential problems during trips and vacations.
- Have the sealant replaced if you notice any cracks, peeling, voids, gaps, breaks, looseness or any sign of physical deterioration. Reseal at least one time each year as preventative maintenance.
- Always use the same type of sealant that was removed. Your dealer service or parts manager can help you obtain the correct sealant(s).

The sealants may become damaged due to road vibration, ultraviolet exposure, air pollution, freezing temperatures and exposure to other elements. Repair deteriorated sealants immediately to prevent damage. Cap seal all trim and openings at least once after the first year and thereafter as cracks, peeling, lifting and shrinkage occur.

If you notice water inside the recreation vehicle, immediately have the dealer check for the source of the leak. Failure to correct the leak may result in serious damage to your recreation vehicle, and this damage may not be warrantable.

If you have questions and/or need assistance with sealing your recreation vehicle, consult with your recreation vehicle dealer.

❖ **Notes:**

TRAVEL CHECKLIST

Following is a preliminary list of items that need to be checked before leaving your home or campsite. This is a general list, which you may want to customize as you determine your own needs. Refer to your Chassis Guide for information on chassis pre-trip inspections and maintenance.

Safety

- ☐ Make sure you follow all safety precautions noted in this owner's manual and in any manufacturer's operators manual when preparing to travel.

Before leaving home:

- ☐ Make sure all fluids are at proper levels (engine oil, transmission fluid, engine coolant, power steering fluid and windshield washer fluid).
- ☐ Check the fuel gauge and lights on the motor home. **Have someone observe the operation of all exterior lights while you activate the controls. Check the turn signal and high beam indicators on the instrument panel.**
- ☐ Examine the tires for excessive tread wear or uneven wear patterns. Check for stones, nails, glass or other objects lodged in the tread. Inspect for tread cuts or sidewall cracks.
- ☐ **Check tire pressure and correct according to manufacturer specifications.**
- ☐ **Check wheel nuts for tightness.**
- ☐ Inspect and work all interior and exterior latches and locks and lube if necessary.
- ☐ Make sure the batteries are fully charged and installed correctly.
- ☐ Turn ON the motor home 12-volt battery disconnect switch.
- ☐ Inspect the power cord and carefully clean the contacts if necessary. Plug in the power cord to an appropriate power source.
- ☐ Turn on the interior lights and check outlets for polarity. If needed, replace any blown fuses. Check the circuit breakers and test the GFCI circuits.
- ☐ **Inspect and turn on the propane gas system (**if so equipped). If you have any questions, contact your independent dealer or a qualified propane gas service representative for assistance. If the propane system is functioning properly, test any pilot lights or direct spark ignition features.
- ☐ **Inspect and test all safety detectors.** If needed, replace any drained or discharged batteries. If you have a defective or damaged safety detector, replace it immediately.
- ☐ Inspect the leveling jacks for operation. If needed, perform maintenance as per the manufacturer's information.
- ☐ Test all exterior and interior lights. Replace any bulbs that are burnt out.
- ☐ **Prepare the chassis portion of the motor home for the camping season in accordance with the Chassis Guide.**
- ☐ Wash the exterior of the motor home. Do a sealant inspection and repair as necessary.
- ☐ De-winterize and sanitize system.
- ☐ **If you are towing a vehicle, connect it to the motor home and test all connections and lights (if applicable).**
- ☐ **Test brakes for proper operation.**
- ☐ Fill the fresh water tank. Disconnect, drain and store the garden hose on the bracket.
- ☐ Check the seat belt buckles and release mechanisms for positive action and secure connections.

Before leaving the campsite:

- ☐ Check the area under the motor home after overnight parking and look for fuel, water, oil or other fluid leaks. If leaks are detected, find the cause and correct it immediately.
- ☐ Turn off propane tanks (if so equipped).
- ☐ Empty black and gray holding tank, rinse as needed.
- ☐ Retract any awnings and secure them for transport.
- ☐ Close all the roof vents.
- ☐ Close windows and latch blinds.
- ☐ Disconnect the cable TV and phone hookups and lower the TV antenna.
- ☐ Turn off the interior lights, water heater, furnace and water pump.
- ☐ Secure any loose, heavy or sharp objects in the motor home or exterior compartments.
- ☐ Disconnect the power cord and ensure it is stored correctly.
- ☐ Disconnect any water connections.
- ☐ Water pump and water heater (if applicable) turned off.
- ☐ Fasten all interior and exterior doors securely; lock them (if applicable). Latch drawers, cabinets and doors.
- ☐ Move slideout(s) in and lock it in place (if applicable).
- ☐ Walk around your motor home one last time to make sure everything is stored away and the baggage compartments are closed and locked.
- ☐ Refrigerator door locked.
- ☐ Furnace turned off.
- ☐ Make sure the leveling jacks are retracted to the travel position.
- ☐ Retract step.
- ☐ Secure and lock the entrance door.

MOTOR HOME STORAGE

Properly preparing your motor home for storage during periods of non-usage will prevent problems from arising. It will also make it easier to get started again for the following camping trip or season. To prevent costly freeze-ups, winterize the plumbing system when it will not be in use for an extended period of time, especially if it is stored in colder climates.

Prior to storage:

- ☐ Prepare the chassis for storage in accordance to the Chassis Guide. Remember to use fuel additives and supplements if recommended.
- ☐ Wash and wax the exterior of the vehicle. Do a sealant inspection and repair as necessary.
- ☐ Inspect and clean tires. Check for wear, cracks and inflation pressure.
- ☐ Inspect and seal off any area that offers an entry point for rodents, birds or insects. Cover all external outlets (i.e. furnace, vents etc.). Damage from birds, rodents, insect, etc., is not covered under the “Motorized Transferable Limited Warranty” applicable to your motor home.
- ☐ Close all windows, roof vents and range hood vent.
- ☐ Turn the furnace thermostat(s) to the OFF position (if equipped).
- ☐ If your motor home is equipped with a gas/electric DSI range, light a range gas burner to consume any gas remaining in the lines. Once the flame extinguishes itself, turn the burner valve OFF.
- ☐ Drain all water lines. Make sure the motor home is winterized.
- ☐ Winterize the toilet and appliances (dishwasher, refrigerator, clothes washer).

- ☐ Drain and flush all holding tanks (fresh water, gray water, black water and/or hot water tanks).
- ☐ Adding fuel stabilizer to the generator will aid in preventing condensation and fuel varnishing.
- ☐ Turn OFF the motor home 12-volt battery disconnect switch.
- ☐ Turn OFF the inverter mode at remote.
- ☐ Disconnect the batteries to prevent battery discharge.
- ☐ Remove all perishables from the refrigerator/freezer. Defrost, wash and dry the interior of the refrigerator/freezer and prop (or block) the doors open so air can circulate and prevent mildew.
- ☐ Remove all perishables from the cabinets. Leave the cabinets and doors ajar to allow air circulation and prevent mildew and musty odors.
- ☐ Lubricate locks and hinges on exterior doors.

While the motor home is being stored

If the vehicle is stored outside in areas of heavy snow, you should periodically brush the snow off to prevent excessive accumulation and prevent possible roof damage.

❖ **Notes:**

VEHICLE MAINTENANCE RECORD

Make:	
Model:	
Model Year:	
Vehicle Serial#:	
Engine:	
Engine Serial#:	

Service Date	Mileage	Work Performed	Performed By	Notes

Entegra
Ownership Notification
Email Form To: unitfile@jayco.com

ATTENTION!

Federal record keeping laws require that we maintain a file of owners of our product. Your cooperation in filling out this from will be appreciated.

Change of Owner **Transfer of Limited Warranty**
(If Applicable - see limited warranty for details)

Model Information:

Serial#: _____

Chassis #: _____ Odometer Reading _____
(Motorized only)

New Owner Information:

Purchased Date: _____

Name: _____

Address: _____

City: _____ State/Province: _____ Zip Code_____

Phone # _____ E-Mail Address _____

Previous Owner Information:

Purchased Date: _____

Name: _____

Address: _____

City: _____ State/Province: _____ Zip Code_____

Phone # _____ E-Mail Address _____

❖ **Notes:**