



Jayco® Generations of family fun.

EMBARK

2022 OWNER'S MANUAL



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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.

SECTION 1: WARRANTY & SERVICE

Congratulations! Thank you for selecting a Jayco recreation vehicle. We are excited to welcome you to our growing RV family. We are committed to being the most respected name in RVs. We invite you to drop by our Visitors Center located in Middlebury, Indiana. Jayco recreation vehicles are manufactured for use as temporary living quarters for recreation, camping and travel uses, all as defined by the bylaws of the Recreation Vehicle Industry Association (RVIA).

This recreation vehicle is not intended for use as a full-time residence or for commercial use. Commercial use means using the recreation vehicle as a business asset such as a mobile office or using the recreation vehicle for lease or rental purposes.

Jayco reserves the right to discontinue or change specifications or design at any time without notice and without incurring any obligation whatsoever. Recreation vehicles built for sale in Canada may differ to conform to Canadian Codes.

Factory Tours

To book a factory tour or check on available tour times (free admission, closed holidays) please log on to <https://www.jayco.com> and hold the mouse pointer on the **ABOUT JAYCO** heading (bottom of page). Select **“FACTORY TOURS”** from the drop down menu that opens.

Options and Equipment

Jayco recreation vehicles are 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 recreation vehicle.

Jayco 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

At the time of sale of the new recreation vehicle, your Jayco dealer is expected to:

- Deliver your recreation vehicle in the best condition possible. Your recreation vehicle must pass the dealer’s pre-delivery inspection (PDI), including all systems tests.
- Provide orientation of the recreation vehicle, its systems, components and operation.
- Request that you read all warranty information and explain any provision not clearly understood.
- Ensure you receive the Warranty Packet. Your dealer can assist you in completing the OEM warranty cards or registrations, and locate any required component model or serial numbers.
- Complete and return the “Warranty Registration and Customer Delivery Form” to Jayco within 10 days of delivery to activate the applicable warranty coverage.

The **Limited Warranty** is activated only after Jayco receives a signed and dated “Warranty Registration and Customer Delivery Form” from your dealer.

Customer Relations

Jayco has empowered its dealers to make warranty and repair decisions.

If a special circumstance occurs that requires information from Jayco, we have asked your dealer’s service management to make the contact on your behalf. **This is why you should always talk to your dealer’s service management first.**

- Customer name and current location.
- Phone number where you can be reached.

- 17-digit chassis Vehicle Identification Number (VIN) or 9-digit Serial.
- The current vehicle mileage (motorhomes).
- Your date of purchase.
- If applicable, the component description, serial number and model number.
- A detailed description of the concern.
- The name of your selling dealer.
- If different from above, the contact information for the RV repair facility you are contacting Jayco to discuss.

An important note about alterations and warranties

Installations or alterations to the original equipment vehicle as distributed by Jayco are not covered by the Jayco Limited Warranty. The special body company, assembler, equipment installer or up fitter is solely responsible for warranties on the body or equipment and any alterations (or any effect of the alterations) to any of the parts, components, systems or assemblies installed by Jayco. Jayco is not responsible for the safety or quality of design features, materials or workmanship of any alterations by such suppliers.

Obtaining Emergency Warranty Repair

1. Call 1-(800)-283-8267 or use our website dealer locator to find an authorized Jayco dealer in your area. Contact them for an appointment; they will handle all warranty repair billing and returned parts for you.
2. If you cannot locate an authorized Jayco dealer near you, ask the campground staff for referrals or check the local telephone yellow pages. Or contact Jayco Customer Service or your selling dealer for assistance in locating a repair facility.
 - Contact the RV repair facility to discuss your situation and make an appointment. Ask how their billing will be handled. They may choose to bill Jayco directly; otherwise, you are expected to pay them.
 - Have the RV repair facility inspect your RV. Either they or you must call Jayco Customer Service to discuss applicable warranty coverage prior to any repair work being performed.
 - Jayco Customer Service will issue an authorization number upon warranty repair approval and advise if any original parts need to be returned.
 - Once Jayco Customer Service has issued an authorization number, the RV repair facility may begin actual repair to your RV.
 - Inspect the completed repair work thoroughly. If you are not satisfied, communicate that immediately to the RV repair facility management. Make sure you are satisfied with the repair before you pay or leave the premises.

For reimbursement, either you or the RV repair facility must send a copy of your itemized repair bill and all requested return parts by UPS (regular ground, freight pre-paid) within 60 days of the completed repair date.

To expedite processing your warranty claim, include your name, address, phone number, RV 17-digit VIN and authorization number. If returning parts, include a copy of your return freight bill.

Obtaining weekend or after business hours repair assistance

If an authorized Jayco dealer is not located nearby, contact your selling dealer for assistance. If your dealer is closed, check with the campground staff or telephone yellow pages for an RV repair facility. Have the item repaired and contact Jayco Customer Service immediately the following business day.

Failure to contact Jayco Customer Service, unauthorized or improper warranty repairs, or failure to return requested original parts may result in loss of reimbursements and/or loss of warranty.

SECTION 1: WARRANTY & SERVICE

To Contact Us

Mailing address

Jayco, Inc.
Customer Service
P.O. Box 460
903 S. Main Street
Middlebury IN 46540
Phone (toll-free)
Phone (local)
Fax (toll-free)
Brochure request
Parts email
Service email
Website

Shipping address

Jayco, Inc.
Customer Service
100 Bontrager Drive
Bldg 42 Door 4220
Middlebury IN 46540
(800) 283-8267
(574) 825-0608
(866) 709-9139
info@Jayco.com
parts@Jayco.com
service@Jayco.com
www.Jayco.com

Jayco Travel Club

All owners of Jayco recreation vehicles are eligible for membership in the Jayco Travel Club.

The club promotes family camping and the active use of your RV with others who have similar interests in the RV lifestyle.

One “International Rally” is held each year in various locations around the United States and Canada. In addition, the club offers a variety of local and regional activities throughout the year.

By belonging to the Jayco Travel Club, you will find new ways to enjoy your RV and make friends all across the country.

For more information, please visit www.Jaycorvclub.com or call 1-800-262-5178.

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.

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. 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.

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 motorhome 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**, **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.

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.

WARNING

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

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:

819-994-3328 (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 (motorized only).

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 if applicable).

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 mail it to Customer Service along with documentation showing proof of ownership. Please include your current vehicle mileage (motorized only).

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 the 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...Finally, 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.

SECTION 1: WARRANTY & SERVICE

Please 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 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**.

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.*

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.

2022 JAYCO MOTORIZED LIMITED WARRANTY

THIS LIMITED WARRANTY COVERS:

- The Motor home when it is used only for its intended purpose of recreational travel and camping;
- Only the first retail purchaser;
- Only those portions of the Motor home not excluded under the section “What is Not Covered”;
- The Motor home only when sold by an authorized dealership; and,
- Only defects in workmanship performed and/or materials used to assemble those portions of the Motor home 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 MOTOR HOME EXCLUDED FROM COVERAGE.**

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

There is no warranty of any nature made by Jayco beyond that contained in this Limited Warranty. No person has authority to enlarge, amend or modify this Limited Warranty. The dealer is NOT Jayco’s agent. Jayco 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 MOTOR HOME, ARE NOT ENTITLED TO RECOVER ANY

SECTION 1: WARRANTY & SERVICE

CONSEQUENTIAL OR INCIDENTAL DAMAGES CAUSED BY A DEFECT IN THE MOTOR HOME. BY WAY OF EXAMPLE, CONSEQUENTIAL DAMAGES INCLUDE FUEL AND TRANSPORTATION EXPENSES TO DELIVER THE MOTOR HOME 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 ARE NOT DEPENDENT UPON WARRANTY REMEDIES SUCCESSFULLY 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 Motor home from an authorized dealer **OR** 24,000 miles of use, whichever occurs first. If the dealer places the Motor home in service before retail sale, the coverage period is 2 years after the dealer first placed the Motor home 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.**

The term of this limited warranty is 3 years for substantial defects to any “Structure Components”. Structure Components means materials and/or workmanship directly attributable to Jayco relating to the lamination of the fiberglass sidewall assembly, the lamination of the rear wall assembly, the lamination of the fiberglass front wall (wrap) assembly, sidewall/end wall/front and rear wall frame assembly (wood and aluminum), roof frame assembly (wood and aluminum), and floor frame assembly (wood and aluminum). Structure Components specifically excludes front and rear fiberglass caps and any other cosmetic fiberglass attachments, sidewall metal (unless the root cause is the wall structure); exterior roof material (EPDM rubber, TPO, etc.); floor covering (carpet, linoleum, hardwood tile, etc.); all sidewall, end wall, front and rear wall, roof and floor attachments, and delamination caused by water intrusion from lack of required exterior seal maintenance or other maintenance. Structure Components further excludes all items identified under “What is Not Covered” below.

Jayco 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. Jayco 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. Jayco makes no warranty as to the future performance of the Motor home, and this limited warranty is not intended to extend to the future performance of the Motor home, or any of its materials, components or parts. In addition, the Motor home owner’s obligation to notify Jayco, or one of its independent, authorized dealers, of a claimed defect does not modify any obligation placed on the Motor home owner to contact Jayco directly when attempting to pursue remedies under state or federal law.

If the Motor home is not of the current or prior model year when the first retail owner takes delivery, the limited warranty, including but not limited to the limited warranty for substantial defects to Structure Components, ends 90 days after the first retail owner takes delivery of the Motor home **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 Motor home excluded from coverage are “good will” repairs, whether or not Jayco was aware of 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. Jayco is not required to notify you if authorized repairs are considered “good will” by Jayco. You should expect the need for warranty repairs. Jayco 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 Motor home to your selling dealer. If you discover a defect or damage to the Motor home when you take delivery of your Motor home, you **MUST** notify your dealer **OR** Jayco 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: Jayco’s obligation is to repair any covered defect discovered within the warranty coverage period provided: (1) you notify Jayco or an authorized dealer within 10 days of your discovery of a defect; **AND** (2) you deliver the Motor home to Jayco **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 Jayco pay an independent service shop of your choice to perform repairs to the defect OR have Jayco 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.**

THIS LIMITED WARRANTY IS NOT A WARRANTY THAT PROMISES OR EXTENDS TO FUTURE PERFORMANCE BECAUSE IT DOES NOT MAKE A REPRESENTATION ON HOW YOUR MOTOR HOME 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 Jayco or an authorized Jayco 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 Motor home to Jayco or an independent, authorized dealer.

If you need assistance, you may contact JAYCO, INC. 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 Motor home is assembled by Jayco;
- Motor homes used for any rental, business and commercial purpose - If the Motor home owner or user files a tax form claiming a business or commercial tax benefit related to the Motor home, or if the RV is purchased, registered or titled in the name of any business association it shall be irrefutable that the Motor home has been used for rental, commercial or business purposes;

SECTION 1: WARRANTY & SERVICE

- Any Motor home sold or used outside of the United States, U.S. Territories or Canada;
- Any Motor home not used solely for recreational travel and camping;
- Any Motor home purchased through auction or wholesale;
- Any Motor home 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 Motor home 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 Motor home; damage caused by infestation by insects or animals;
- Damage caused by off road use;
- Damage caused by overloading the Motor home 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 : the 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 JAYCO FROM OBLIGATION UNDER WARRANTY:

- Any rental, business or commercial use or purchase of the Motor home;
- Any Motor home titled or registered in a business name;
- Any Motor home purchased or sold outside of, or used outside of the United States, U.S. Territories or Canada;
- Any Motor home 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 MOTOR HOME 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 Jayco product warranty registration. Upon receipt of the product registration by Jayco, your Warranty will be registered. The failure to submit this warranty registration to Jayco 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 Motor home 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, Jayco 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

SECTION 1: WARRANTY & SERVICE

Notes:

SECONDARY MEANS OF ESCAPE (EXIT WINDOW)

Your recreation vehicle has been equipped with a window(s) that serves as a secondary means of escape. The window(s) will allow a quick exit from the vehicle during an emergency if access to the main entrance door is not available. It is easily identified by the red latches and label.

Do not remove the EXIT window label from your RV:

When parking your recreation vehicle, make sure the egress window is not blocked by trees or other obstacles. Make sure the ground below the window is solid and can be used as an escape path.




Exit Window Label

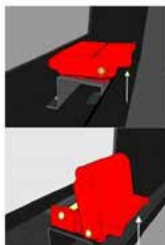
Practice opening the window before an emergency occurs, and make sure all occupants know how to operate it.

⚠ CAUTION

Exercise care when opening the exit window. If opened too far, it may come off the hinge. This may result in damage to the unit or window.

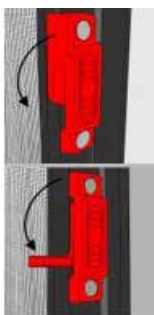
 **NOTE:** All windows must be closed and locked while the RV is in transit.

Your recreation vehicle may be equipped with one of the following exit window styles:



Flip latch style (2 per window)

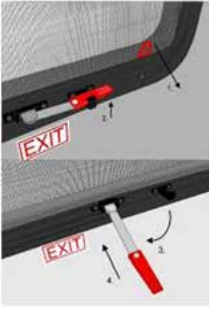
- Push up on the front lip of the latch and the latch unfolds.
- Push up on the front lip of the latch again to unhook the latch from the window.
- When both latches are released, push out on the window which is hinged at the top. Exit the vehicle.
- The screen does not need to be removed from the window.



Slider window latch style

- Pull the lever down to unlock the window.
- Slide the window to the right to open and exit the vehicle.
- The screen does not need to be removed from the window.

SECTION 2: OCCUPANT SAFETY



Lever style latch

Remove the screen by pulling the red tab (upper right arrow).

Pull the lever out from the sash clamps.

Swing the lever out so it is positioned straight out from the window. Push the lever (and window) out to open and exit the vehicle.

FIRE SAFETY

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

1. Call 911 and evacuate the vehicle immediately.
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.

- 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

The smoke alarm will only work properly if it is operational and maintained. They 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. **Be sure to read, understand and follow the information provided by the smoke alarm manufacturer, including information on the limited life of smoke alarms.**

Be aware the smoke alarm **is not fool proof and cannot detect fires if smoke does not reach it**. Anything preventing smoke from reaching the alarm may delay or prevent an alarm.

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
- 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.
- 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.

The smoke alarm is operational once the battery is correctly installed. It will not function if the battery is missing, disconnected, dead, the wrong type or not installed correctly. **It requires one standard 9V battery.** Refer to the user's guide, for correct battery and installation information,

The LED light will indicate the battery is functioning properly. When the production of combustion is sensed, the smoke detector sounds a loud alarm that continues until the air is cleared. The LED light will also give a visual indication of a sounding alarm.

SECTION 2: OCCUPANT SAFETY

When the battery becomes weak, the alarm will “beep” about once a minute indicating a low battery. This warning should last for 30 days. You **MUST** replace the battery once the alarms low battery warning (beep) starts to assure continued protection.

When the battery is removed from the alarm, the battery flag will pop up; the alarm cannot be installed to the mounting bracket without a battery.

To test, stand at arm’s length from the smoke alarm as the alarm horn is loud and may be harmful to your hearing. The test button will accurately test all functions. Never use an open flame to test the smoke alarm.

Do not remove the warning label located near the smoke alarm from your recreation vehicle:

Key Features:

- Silence Feature: Silences nuisance alarms
- Hinged cover allows for easy battery replacement
- Lighted Power and Alarm Indicator. LED indicates battery is connected.
- Test/Silence button – One touch button combines both features
- Low Battery indicator – Beeping signal indicates low battery.



Maintenance

Vacuum off any dust on the cover of the smoke alarm using a soft brush attachment. Test the smoke alarm once you have vacuumed. Never use water, cleaners or solvents to clean the smoke alarm as they may damage the alarm. Do not paint the smoke alarm.

Refer to and follow detailed safety, testing, troubleshooting and maintenance information found in the manufacturer’s user pamphlet located in your warranty packet.

COMBINATION CARBON MONOXIDE / PROPANE ALARM

Your recreation vehicle is equipped with a combination carbon monoxide (CO) / propane alarm (RV-COLP) that is listed for use in recreation vehicles. The combination carbon monoxide/propane alarm will only work if it is operational and maintained.

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.

Be sure to read, understand and follow the owner’s information from the manufacturer of the combination CO/propane alarm. This includes information regarding the limited life of the alarm.



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

⚠ 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

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.

A carbon monoxide/propane alarm is **NOT A SUBSTITUTE** for other combustible gas, fire or smoke alarms. This carbon monoxide alarm is designed to detect carbon monoxide gas from ANY source of combustion. It is not designed to detect smoke, fire or any other gas. Please note that there are hazards against which carbon monoxide detection may not be effective, such as natural gas leaks or explosions.

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

SECTION 2: OCCUPANT SAFETY

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).

What you should do if the alarm sounds

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.

CO Alarm State:

1. If CO gas reaches unsafe levels, alarm enters CO alarm state.
2. Horn sounds with (4) rapid chirps, then 4-second pause and red LED flashes rapidly.
3. Operate the SILENCE/TEST button to silence the alarm for 5 minutes.
4. The original alarm state resumes after 5 minutes if CO levels still exceed safe levels.
5. Call your emergency services (fire department or 911).
6. Immediately move to fresh air (outdoors or by an open door or window).
7. Do not re-enter the premises or move away from the open door or window until the emergency service responders have arrived, the premises have been aired out, and your alarm remains in its normal condition.

Propane Alarm State:

1. If propane gas exceeds 10% of the lower explosive limit for more than 30 seconds, alarm enters propane alarm state.
2. Horn sounds with constant beeps and the red LED will be ON.
3. Turn off all propane appliances and gas valve at LP tanks.
4. Ventilate the RV – open doors and windows
5. Alarm can be silenced for 5 minutes by pressing SILENCE/TEST button.
6. Red LED will flash each second while alarm is silenced.
7. Original alarm state resumes after 5 minutes if Propane levels still exceed the safe levels.
8. Do not touch any electrical switch in or near the recreation vehicle
9. Do not start vehicle's engine or generator

If your alarm reactivates within a 24-hour period, repeat steps 1-4 and call a qualified appliance technician to investigate for sources of carbon monoxide from fuel burning equipment and appliances, and inspect for proper operation of this equipment. Make sure that motor vehicle(s) are not, and have not been, operating in an attached garage or adjacent to the recreation vehicle.

If problems are identified during this inspection, have the alarm serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturer's instructions or contact the manufacturer directly for more information about carbon monoxide safety and this alarm.

Alarm features and functions

- Includes an 85db audible horn, two LEDs, and a SILENCE/TEST button.


Alarm States

- **Normal operation:** The Green LED is ON steady. Red LED OFF, Audible horn OFF.
- **Power OFF:** Both LEDs and the audible horn will be OFF.
- **Self Test:** Green LED OFF, Red LED ON/Flashing, audible horn 4 chirps followed by constant beeps.
- **CO alarm condition:** Green LED OFF, Red LED Flashing, audible alarm 4 chirps.
- **Propane gas alarm:** Green LED OFF, Red LED ON, audible alarm constant beeps.
- **Alarm Silenced (5 min. max.)** Green LED OFF, Red LED flashes each second, Audible horn OFF.
- **Low Battery (Below 8VDC):** Green LED flashes each minute, Red LED flashes each minute, audible horn chirps each minute.
- **End of life or other failure:** Green and Red LEDs will double flash every minute, audible horn chirps each minute. The alarm should be replaced as soon as possible.

Maintenance

Vacuum the alarm cover at least once a year. Clean the cover by hand using a cloth dampened in clean water. Dry with a soft cloth. Do not spray the front panel of the alarm with cleaning agents or waxes. This action may damage the sensor causing an alarm or cause the alarm to malfunction. Do not paint the face of the alarm.

Testing the combination carbon monoxide/propane alarm

 **WARNING**

Test the alarm operation after the motorhome has been in storage, before each trip and at least once per week during use.

The SILENCE/TEST button tests both sensors and battery voltage. The SILENCE/TEST button is located on the front of the alarm. Press and hold the test button for 1 second. The alarm performs 2 cycles of the CO horn pattern (4 rapid chirps followed by a 4 second pause) followed by 2 cycles of the Propane horn pattern (constantly beeping). Green LED is OFF, Red LED is ON/flashing.



NOTE: Pressing the test button does not check the sensor operation. Refer to the carbon monoxide/propane alarm manufacturers user's manual provided with your recreation vehicle for additional information on testing the sensors.

Repair or replace the combination carbon monoxide/propane alarm when the alarm no longer functions. As with any electronic product, it has a limited life. Alarms that do not work cannot protect you.

SECTION 2: OCCUPANT SAFETY



NOTE: The carbon monoxide/propane alarm manufacturer strongly recommends replacement of the detector five years after the date of purchase.

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.**

⚠ CAUTION

Product in this vehicle may contain formaldehyde, which may be an irritant to you. You may experience a greater concentration during high humidity and temperatures. Ventilate to remove. Consult your owner's manual for additional information.

DO NOT REMOVE THIS LABEL

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

⚠ 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.

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.

SECTION 2: OCCUPANT SAFETY

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, minus the weight of all occupants, including the driver, minus the weight of all personal cargo, minus the weight of a full tank of chassis engine fuel and, if applicable, minus the weight of a full tank of propane. 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.

SECTION 3: PRE-TRAVEL INFORMATION

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.

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 Federal Certification Label is 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, GVWR, GAWR (front/rear), tire and rim sizes and cold tire inflation pressures.

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.

MOTOR HOME OCCUPANT AND CARGO CARRYING CAPACITY
 VIN: XXXXXXXXXX
 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 Lbs/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:
 XXXXX kg OR (XXXXXX Lbs.)

CONSULT YOUR DEALER AND SEE OWNER'S MANUAL FOR DEFINITIONS, ADDITIONAL WEIGHT LOADING, WEIGHING INFORMATION AND TOWING GUIDELINES INCLUDING AUXILIARY BRAKE REQUIREMENTS FOR ANY TOWED TRAILER OR VEHICLE.

Lower Section Federal OCCC Weight Label

MAKE MODEL MANUFACTURE YEAR VIN:XXXXXXXXXX GVWR:XXXX kg GAWR:XXXX kg FRONT:XXXX kg REAR:XXXX kg TIRE SIZE:XXXX TIRE PRESS:XXXX TIRE RIM:XXXX	SERIAL SIZE/NUMBER/DOOR 6720X/20/150 15.5 X 6.5	SPEED/GEAR/INFL. PRESS./GEAR/1. FRONT 85 4.4 85 4.4
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Federal Certification Label

▲ 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.

Towing and Braking Warning Label

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

LOADING YOUR MOTOR HOME

⚠ WARNING

- ❑ **Never load the motorhome in excess of the GVWR or the GAWR for either axle.** Overloading your motorhome 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.

TRAILER PLUG

If you choose to tow behind your RV, a chassis manufacturer supplied 7-way 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 may have both 4-way and 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.

SECTION 3: PRE-TRAVEL INFORMATION

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.

See the *Weight Terms* and *Loading Your RV* sections for important information on how towing a vehicle affects the motor home weight.

SECTION 3: PRE-TRAVEL INFORMATION

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 MOTORHOME 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.

When descending a long hill, shift the transmission into a lower gear and engage the auxiliary engine braking. If your motor home is equipped with an auxiliary engine brake, engagement is activated by a switch on the driver's console. 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 motorhome 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.

USING THE REAR HITCH

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.

▲WARNING:

YOUR MOTORHOME CHASSIS BRAKING SYSTEM IS RATED FOR OPERATION AT GVWR, NOT GCWR. CONSULT YOUR OWNER'S MANUAL(S) FOR SPECIFIC WEIGHING INSTRUCTIONS AND TOWING GUIDELINES. THE BRAKING CAPACITY OF YOUR MOTORHOME IS NOT NECESSARILY AS GREAT AS THE TOWING CAPACITY. SEPARATE BRAKING SYSTEMS MAY BE NECESSARY FOR CONTROL OF A TOWED VEHICLE. (AUTO, TRAILER, BOAT, ETC.) BEHIND THE MOTORHOME. IF THE TOWED VEHICLE MEETS OR EXCEEDS THE MINIMUM WEIGHT AS DETERMINED BY THE CHASSIS MANUFACTURER (THIS MINIMUM WEIGHT RATING WILL VARY BY CHASSIS AND CHASSIS MANUFACTURER), CONTACT YOUR CHASSIS DEALER OR MANUFACTURER FOR ASSISTANCE IN DETERMINING WHETHER A SEPARATE BRAKING SYSTEM IS RECOMMENDED AND WHAT LIMITS THERE ARE FOR YOUR TOWING COMBINATION AND TRAVELING SAFETY.

Towing and Braking Label

WARNING

- Total weight of your motorhome 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 motorhome.
- The total weight of your motorhome (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 motorhome.
- Your motorhome chassis braking system is rated for operation at GVWR, NOT GCWR.** Any trailer or vehicle being towed by your motorhome must have adequate brakes as required by all state (or province) and local regulations for towing with your motorhome, 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 *Trailer Plug* section for information on the trailer plug hook-up.

SAFE HAUL SYSTEM (IF SO EQUIPPED)

Your motor home may be equipped with a factory installed “Safe Haul” system. This is a supplemental braking system used when a vehicle is being towed behind the motor home. The motor home’s air supply is utilized to operate brakes on both the towed vehicle, and the motor home providing proportional braking between the coach and the tow vehicle. This will reduce the motor home braking distance and prevent a runaway vehicle should it become disconnected from the coach. Brakes are only applied to the tow vehicle when the brakes on the motor home are applied.



Rear Hitch

An air hose coupling (in the vicinity of the electrical harness connection) located at the rear of the motorhome supplies the air pressure to the tow vehicle controller.

Tow vehicle requirements



NOTE: A professional installer should be used to hook up the tow vehicle kit.

- A separate (customer purchased) kit must be installed on the tow vehicle.
- The kit should include a breakaway switch and switch cable (attached from the tow vehicle to the motor home) in case the tow vehicle detaches from the motor home.
- The kit should operate the tow vehicle brake pedal via air pressure when the motor home air brakes are applied, and should include an air hose that is connected from the tow vehicle to a coupler on the rear of the motorhome.
- An LED brake light switch may be included that mounts to the windshield of the tow vehicle and lights when the brakes are applied. This brake light is viewable through the backup camera.

SECTION 4: VEHICLE OPERATION

ELECTRIC TRAILER BRAKE WIRING

Your motor home may also include electric trailer brake wiring to the 7-way trailer connector at the rear of the RV for electric brakes. The customer must supply and install an electric trailer brake controller in the dash area to make use of the electric trailer brake system.

STEP WELL COVER

Electric powered step well cover

The step well cover can be extended or retracted using the “step cover” switch located on the passenger side console. The cover gives the passenger a flat “floor” to rest their feet on.

⚠ WARNING

- Make sure there are no obstructions when operating the step well cover. To avoid personal injury, do not operate the step well cover when standing in the step well.
- Do not hold the switch for longer than it takes to extend or retract the cover. Doing so may result in damage to the motor home.



NOTE: Some models may be equipped with a pullout storage drawer built into the stepwell.



ENTRANCE STEP

Your motor home is equipped with an electric entrance step. To operate, locate the “Step” control located on the passenger side console (the 12-volt battery disconnect switch must be ON). If the step encounters an immovable object, such as a curb, while being deployed, it will stop and shut down in that position. It will retract normally when the door is closed.

WARNING

LOOK BEFORE ENTERING OR EXITING YOUR MOTORHOME!

- When opening the door from the outside, make sure you are not obstructing the path of the entrance step. Step deployment takes approximately two seconds. Keep hands and fingers clear while extending or retracting.
- Look before you exit. Make sure the steps are fully deployed before exiting the motor home.** Stepping on a partially extended step can cause damage to the step frame.
- Turning the ignition switch to the “ON” position while the vehicle is parked will cause the step to retract. Visually confirm the step is fully extended prior to exiting the vehicle.

Step with Control Unit

Normal Operation/Automatic Mode

- Close the door. The step should retract and lock in the ‘up’ position (under step light is not on).
- Open the door. The step should extend and lock in the ‘down’ position with the under step light illuminated.



NOTE: In the event the entrance door is left open, the light will turn ‘off’ after 5 minutes.

Step Lock Function/Stationary Extended Mode

- If your step is equipped with an override switch, turn it to the ‘ON’ position. The step should remain extended with the under step light ‘off’ when the door is closed.
- With the step override switch turned ‘ON’, the step extended, and the entrance door closed, turn the vehicle ignition on. The ignition override system will go into effect and the step will automatically retract.

Turn the vehicle ignition off and open the door. The step will extend and lock in the down position. This is the ‘auto extend’ feature. When the vehicle ignition is turned on, the step will always activate with the door movement, regardless of the step switch position.

Refer to the manufacturer’s owner guide included in your warranty packet for detailed operating and safety instructions.

ENTRANCE DOOR

Always hold onto the entrance door when opening or closing it. Damage caused because you failed to do so is not covered by the **Limited Warranty**.

CAUTION

Make sure the entrance door is completely closed and locked when traveling. Locking the door helps prevent it from opening unintentionally and keeps intruders from your recreation vehicle.

SECTION 4: VEHICLE OPERATION

The entrance screen door may be equipped with a slide panel that allows access to the entrance door handle and locks. The entrance door may also be equipped with both a regular door lock and a dead bolt lock.

Keys

Several keys are provided when you purchase your vehicle. Most keys have an individual key number stamped on the plate. Record these key numbers and keep the information in a safe place. You can order a key blank from your dealer to have duplicate keys made. If you lose the keys, contact your dealer or a locksmith for assistance.



NOTE: Locks on entrance and baggage doors need biannual lubrication using a light coat of silicone spray. Conditions such as rain, salt, dust and pollution may increase the maintenance needs.

KEYLESS ENTRY

The keyless entry system allows a secure method to lock and unlock the entrance door. The keypad located next to the entrance door controls the keyless entry system. Programming your own personal **Authority Code** into the system will prevent unauthorized entry into your motor home by those who may know the factory default code. If a correct code is not entered after 20 button presses, the keypad will disable button recognition for one minute. This feature will prevent unauthorized access by entering random codes



NOTE: An **Access Code** is not required to lock the doors. Press and hold the (1/2) button. The keypad will beep and doors will begin to lock after two seconds.



Authority Code

The Authority Code is a unique 5-digit pass code that gives the system administrator (or owner) the ability to program transmitter key fob's and keypad access codes. The Authority Code does not allow for secure operations (like locking the door). It is only used to assign Access Codes. Retrieve the keypad Authority Code from the keyless entry system manual. If the keyless entry Authority Code is still set to the factory default, it should be changed for security purposes.

The **default Authority Code** = Five presses of the (7/8) button on the keypad.

Assigning a new Authority Code (required to assign a new Access Code)



NOTE: You will need a paperclip to use for programming the key pad.

1. Access the program wires located in the dash compartment on the passenger side of the motor home. Remove the (woodgrain) tray on the dash, by pulling up on the tray. It is held in place by either Velcro or plastic clips.

2. Locate the yellow or white wires with spade terminals and a label identifying them as the Program Wires.
3. Bend the paperclip, put one end into the spade terminal for the white wire, and the other end into the spade terminal for the yellow wire.
4. The keypad will beep for **3 seconds**.
5. Pull the paperclip out of both wires **before the keypad stops beeping**. The keypad is now in “Learn Mode”.



Program Wires

NOTE: Press the keypad only once regardless of whether you are selecting the first or the second digit on the keypad. For instance you would only press keypad (1/2) one time regardless whether you were selecting the 1 or the 2.

6. Enter a new 5-digit Authority Code. Each time you press a number on the keypad it will double beep. When you enter the fifth digit, the keypad will chirp (3) times.
7. Re-enter the Authority Code for confirmation. **A long beep indicates a failure to change the code.**
8. Test the new code to confirm it.
9. You have (2) minutes to complete this procedure. If you do not complete the process within with in the time limit, or if an error is made, the system will exit Learn Mode and a long chirp will sound indicating an error.
10. The keypad automatically leaves Lean Mode when the new code is set.

Assigning a new Access Code (Authority Code must be programmed first)

1. Press the (5/6) or third button for (5) seconds until the keypad beeps. The keypad back-light will flash indicating the keypad is in “Learn Mode”.
2. Enter the 5-digit Authority Code. If a correct Authority Code is entered, the keypad provides a constant beep that only stops when you assign a defined Memory Bank to store the new Access Code.
 - If you enter an incorrect Authority Code the keypad beeps for (1) second and leaves the “Learn Mode”.
3. Press and release the button that corresponds to the Memory Bank. For example, press (1/2) or the first button for Memory Bank #1, press (3/4) or the second button for Memory Bank #2. There are (4) Memory Bank locations corresponding to buttons (1/2), (3/4), (5/6) and (7/8).
4. Enter a 5-digit Access Code. The keypad chirps (3) times after you enter the fifth digit.
5. Re-enter the new Access Code for confirmation. The keypad chirps (3) times to confirm. A long beep indicates a failure to change the code.
6. Test the new code to confirm a successful change.
 - Up to (4) Access Codes can be assigned at any time.
 - Adding codes to Memory Bank positions with pre-existing codes will over write the previous code.
 - If an error is made at any point, or if the time runs out, the keypad will exit “Learn Mode”, beep for 1-2 seconds and not change anything.

SECTION 4: VEHICLE OPERATION

Secure Operation

Enter your 5-digit Access Code, keypad will double beep to indicate secure operation. After entering an Access Code, the keypad is enabled for (5) seconds and the next button pressed will initiate a secure operation.

Secure operations are:

(1/2) button unlocks entry doors

(3/4) button – **no function**

(5/6) button - **no function**


(7/8) button unlocks entry doors.

(9/0) Activates light for (5) minutes. Pressing (9/0) again while light is on will turn it off.

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.
- If equipped with 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.
- If equipped with power seats: keep hands and feet clear of the power seat while in operating the power feature.

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

6-Way Power Seat (if so equipped)

Use the controls to slide the 6-way power seat to the desired position. Release the control, and the seat will lock at that position. Features may include a 3-point adjustable seat belt, lumbar support, swivel, slide and reclining capabilities. (Not all of these features will be available in all motor home models).

To rotate the driver/passenger seat (if so equipped)

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.

STARTING AND STOPPING THE ENGINE

Refer to the Chassis Guide. The transmission indicator shift panel is located in the front driver's side instrument panel.

**Transmission Indicator
Shift Panel**



VEHICLE DISPLAY CONTROLLER (VDC) (IF SO EQUIPPED)

Your motor home may include one of the following vehicle operator interface systems that allows the driver to:

- Navigate the on-screen menu(s) and settings on the digital dashboard.
- Select menu(s) and settings with the rotary pushbutton knob.

The VDC controller is located on the driver's side armrest control.

The five pushbuttons perform the following functions:

SECTION 4: VEHICLE OPERATION

- **ATC:** Turns Automatic Traction Control On/Off.
- **STEERING WHEEL ICON:** Activates/deactivates the EZ Drive system.
- **LAYERS ICON (Pages):** Toggles between STANDARD, NAV and CAMERAS screens on the dash. **Tachometer/Speedometer is STANDARD.** When pressed, the Tach/Speedo display shrinks, speedometer moves to the left side, tachometer moves to the right side. The dash radio navigation feed (**NAV**) will now be displayed. To cycle to the CAMERAS screen press the button again, to return to the DIGITAL DASH screen press the button a third time.
- **HORN ICON:** Enables the vehicle Air Horn. Horns are operated by pressing the center of the steering wheel. Air horn and electric horn will both sound.
- **HEATER ICON:** Toggles outside mirror heat On/Off.



Knob Controller: To display the Cameras or the Navigation screen, push the knob upward and the screens on the dash will change. They will cycle through the Digital Dash, Navigation screen, and the outside Cameras. Each time you push the knob upward it will change the screen on the dash. Pushing it upward (3) times will return to the Digital Dash screen.



NOTE: The parking brake **must be released** in order to view the NAV screen. If parking brake is set, only the STANDARD screen will be displayed.

NOTE: The NAV screen on the digital dash is a duplication of the radio screen, located to the right of the steering wheel. Press the NAVI button on the radio screen to get the GPS map to appear. Menu selections and operations are performed on the radio screen. Zooming feature is done using the VDC controller knob. Find ZOOM in the settings menu in the lower left corner, then select ZOOM IN or OUT by pressing the knob.



STANDARD screen



NAV screen

Selecting Menus and Settings

Rotate the knob on the Video Display Controller to bring up different menus.

The different settings will appear in the lower left corner of the digital dash in the Selectable Display Area.

Rotary Knob: Rotating CW / CCW scrolls forward and backward through available selections. Press the knob to make a selection. The knob can also be moved left, right, up or down (like a joystick). Press the knob to make a selection.



NOTE: The Configuration and diagnostic menus are password protected with a pre-configured password from Spartan. These items are used for diagnostic purposes and are not something the end user would need to use.

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.

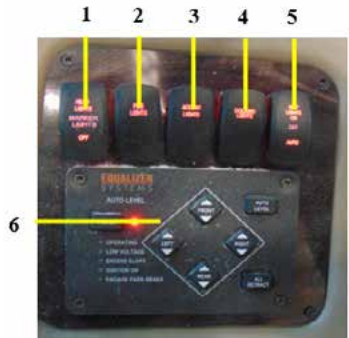
DASH INSTRUMENT PANEL

Left Panel

1. Headlights / Marker Lights
2. Fog Lights On/Off
3. Accent Lights On/Off *
4. Docking Lights On/Off **
5. Map Lights On/Off/Auto
6. Hydraulic Leveling System

*Entegra logo lights and "C" lights around the headlights and taillights

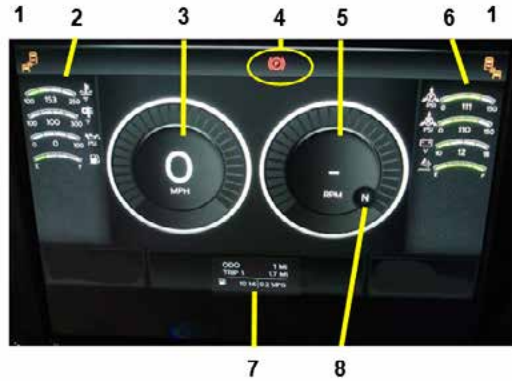
**Docking lights all 6 are activated with a single switch



SECTION 4: VEHICLE OPERATION

Center Panel

1. Blind Spot Warning Indicators
2. Gauges: Left Side
 - a) Water Temperature
 - b) Transmission Temp
 - c) Oil Pressure
 - d) Fuel Level
3. Speedometer
4. Park Brake Indicator
5. Tachometer
6. Gauges: Right Side
 - a) Front Brake Air Pressure
 - b) Rear Brake Air Pressure
 - c) Fuel Gauge
 - d) DEF level (Diesel Exhaust Fluid)
7. Selectable Display Area
8. Gear Indicator



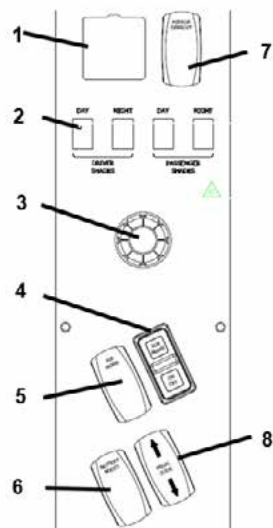
Right Panel

1. AM/FM/DVD/Backup Camera
2. Dash Climate Controls
3. Generator Start/Stop switch
4. HDMI/USB inputs (for radio display)
5. 12V Power Port



DRIVER SIDE CONSOLE INSTRUMENT PANEL

1. Outside Mirror Control
2. Power Shade switches
 - a) Day shade driver front
 - b) Night shade driver front
 - c) Day shade passenger front
 - d) Night shade passenger front
3. VDC controller for digital dash
4. Light switch
5. Air Horn
6. Battery Boost switch
7. Mirror Defrost switch
8. AUX Brake On/Off
9. Pedal Slide/Retract switch



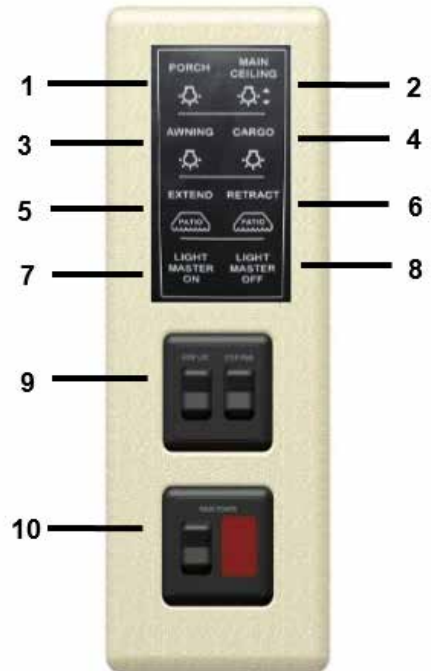
PASSENGER SIDE CONSOLE INSTRUMENT PANEL (TOP)

1. Passenger Front Day Shade
2. Passenger Side Day Shade
3. USB Charge Ports
4. Passenger Step Well Cover - Extend/Retract



PASSENGER SIDE CONSOLE INSTRUMENT PANEL (FRONT)

1. Porch Light
2. Ceiling Light - Entrance Door
3. Entrance Door Awning Light
4. Cargo Compartment Lights
5. Patio Awning - EXTEND
6. Patio Awning - RETRACT
7. Light Master ON
8. Light Master OFF
9. Entrance Step Power and Light
10. House Main Power with Indicator Light



SECTION 4: VEHICLE OPERATION

STEERING WHEEL AND COLUMN CONTROLS

Left Control Pad

Radio control buttons (arrows)

These buttons cycle radio station tuning up or down.

Cruise control function

The electronic cruise controls consist of an on/off button, set button, cancel button and resume button. Refer to the Chassis Guide for detailed information on the cruise control operation.

Bluetooth phone disconnect

The red phone button will disconnect the phone to end a hands free phone call.



Left Side Pad

Right Control Pad

Radio control buttons (arrows)

The buttons on the side operate volume and mute for the radio or phone.

Bluetooth phone call connect

The green phone button will connect a hands free Bluetooth phone call.

Windshield wiper/washer controls

Controls include wiper ON/OFF, HI/LO speed, and washer. To operate the wiper blades press the ON/OFF button (the key in the ignition must be ON).



Right Side Pad

⚠ WARNING

- ❑ Make sure the steering column is firmly locked in place before driving. Never adjust the steering column while the vehicle is moving.
- ❑ Do not use the cruise control when driving conditions do not permit maintaining a constant speed, such as in heavy traffic or on roads that are curvy, icy, snow-covered, slippery, or have a loose driving surface. Failure to follow this precaution could result in a collision or loss of vehicle control, resulting in personal injury or property damage.

Multi-Function Signal Lever

The multi-function signal lever located on the steering column controls the turn signals, and the headlight high/low beam. The headlight high beams are activated by pulling the turn signal lever toward the driver.

Hazard-Warning Flasher

The hazard signal control (emergency flashers) is located on the lower left hand side of the steering column. Press to activate and press again to turn off.

Pedal Retract/Extend

The pedal Retract/Extend is located on the driver's side armrest controls and is operated using a rocker switch.



Multi-Function Signal



Hazard Warning Flasher

Steering Wheel Tilt/Telescope

Your motor home will have one of the following steering wheel adjustments:

Manual

The steering wheel can be adjusted by using the manual lever located on the left side of the steering column. To adjust the tilt of the wheel, pull the lever towards you, then push the wheel toward the dash or pull it toward you. To adjust the telescope, push the lever towards the dash, then pull up on the wheel, or push it down. For more information, see the Chassis Guide.

Power

The steering wheel tilt/telescope is located on the driver's side armrest controls and are adjusted using rocker switches.



**Manual
Tilt and
Telescope
Lever**



**Power Tilt and
Telescope
Rocker Switches**

DRIVER'S CONSOLE CONTROL PANEL

Horns

If the coach has a digital dashboard, the AIR HORN button is located on the Vehicle Display Controller (VDC).

On models without the digital dashboard, the AIR HORN is a single switch.

Both are located on the driver's side armrest controls.

To enable the air horn, press the AIR HORN switch to the "ON" position. Press the center of the steering wheel and both the air and electric horns will sound. If the AIR HORN switch is in the "OFF" position, the normal electric horn will sound.



VDC Controller

Docking Lights

⚠ CAUTION

MAKE SURE THE DOCKING LIGHTS ARE OFF WHEN DRIVING THE VEHICLE! If the lights are activated with the rocker switch the lights will NOT automatically shut off.



NOTE: The two rear docking lights will light when the coach is shifted into reverse (even if switch is turned off). They will go off when the coach is shifted out of reverse.

To activate the docking lights

Depress the single "Dock Light" rocker switch on the left side driver console or the leveling system switch panel. Six docking lights will come on (2 on left side, 2 on right side, and 2 in rear).

SECTION 4: VEHICLE OPERATION

Docking lights stay on if they are activated with the rocker switch.

The docking lights also can operated using the key fob (if so equipped) and will time out and turn off after 10 minutes.

If your coach is equipped with the Passive Start system, the docking lights can also be turned ON and OFF using a button on the special key fob.



NOTE: If you turn on the docking lights with the Passive Start key fob, you will not be able to turn off the docking lights with the console switch. Likewise if you turn on the docking lights with the console switch, you will not be able to turn them off using the key fob. You must turn them on and off using the same device.

Map Lights

The map light control(s) are located on the driver and passenger consoles. The map lights can also be turned ON or OFF at the light assembly. When the control is set on automatic, the lights will automatically turn on when the motor home entrance door is opened. Lights are located above the driver and passenger seats.

DRIVING (FOG)LIGHTS

Your motor home is equipped with driving lights (fog lights) to increase your driving visibility. To activate these lights, depress the “Fog Lights” control in the front instrument panel to the left of the steering wheel.

Daytime Running Lights (DRL)

The daytime running lights are activated when the ignition key is turned ON and the headlamp control is in the OFF or “parking lamps” position.

WARNING

Always remember to turn ON your headlamps at dusk, nighttime or during inclement weather. The daytime running light system does not activate your tail lamps and generally may not provide adequate lighting during these conditions. Failure to activate the vehicle headlamps under these conditions may result in a collision.

FRONT IN-DASH AM/FM AND NAVIGATION SYSTEM

The front in-dash AM/FM and Navigation system is also Sirius Satellite radio ready. You will need to purchase your own Sirius subscription to activate this feature. Refer to the manufacturer’s owner’s manual for detailed operating instructions.

COIN TRAY AND CUP HOLDERS

You motor home has a coin tray (this is NOT an ashtray) and cup holders located in the front dash console.

WARNING

Do not use the coin tray as an ashtray.

OUTSIDE REARVIEW MIRRORS**⚠ CAUTION**

Adjust the outside rearview mirrors before driving.

After adjusting the front driver's seat, adjust the outside rearview mirrors to your driving preference. Have someone help you adjust the mirrors in the desired direction for maximum rear visibility before driving. During travel, vibration may loosen the fitting holding the mirror(s), causing them to change position. As part of your regular motor home maintenance, check and adjust the mirrors to the desired position.

Power Remote Mirrors (if so equipped)

You can adjust the power remote mirrors when the ignition key is in the ON position.

1. Move the control knob to the side you want to adjust.
2. Press the control arrows in the direction you want the mirror to move.
3. Return the control knob to the center to lock the mirror(s) into place.

The power remote mirrors also contain heating elements to defog or de-ice the mirrored glass if needed. To activate this feature, use the "Mirror Heat" control located on the driver's side console next to the mirror control joystick.



**Remote Mirror Control /
Mirror Heat Control
(appearance may vary
by model)**

NOTE: Depending on models, the mirror control joystick and the Mirror Defrost toggle switch may be separated from each other. The Mirror Defrost switch may be renamed Mirror Heat.

XITE 360° CAMERA SYSTEM

Your motor home may be equipped with the Xite 360° Camera System. This system has (6) cameras mounted around the RV. Side rear-view cameras are located on both sides of the front cab. Four high definition (HD) cameras are mounted at the front and rear of the RV, and one mid-way on each side of the RV. These cameras can be operated individually or when combined provide an overhead "birds eye" view above the RV.

All cameras are active when the coach is in motion.

The cameras will display on the right side monitor screen of the dash. Cameras can also be displayed on the electronic dash by selecting the Layers button on the top right of the VDC control (located on the driver's side armrest control). The Layers button alternates the screens on the electronic dash each time the button is pressed. Screens alternate in this order: standard dash screen first, navigation screen second and the camera screen third. Pressing the button again reverts back to the dash screen.



Layers Button

SECTION 4: VEHICLE OPERATION

Additionally, the camera views can be displayed on any TV in the RV. The cameras double as surveillance cameras when the vehicle is parked. If your motor home has the alternate VDC controller, push the knob upward to scroll through the different dash screens. (Digital Dash, Navigation, and Cameras). Each time you push the knob upward the screen will change. Three pushes will return to the Digital Dash screen.



Alternate VDC Controller

Automatic Switching

The cameras have automatic switching and operate in the following manner. When the right turn signal is operated, the camera on the right side mirror will turn on. When the left turn signal is operated, the camera on the left side mirror turns on. Cameras turn off when the signal turns off. When you select reverse, a split screen shows the backup camera along with the 360 overhead view.



Backup camera view left half, "Birds Eye" 360 view on the right

NOTE: Some models may include dynamic parking lines.

Camera Controls

To select a specific camera or to turn off the automatic switching, touch the screen below the radio. The screen controls will appear at the bottom of the screen (touch the HD button on the screen). Touching the **padlock** icon (lock) turns off the automatic switching and locks the current camera screen. Press the **padlock** again (unlock) to turn automatic switching back on and unlock the camera screen. Press the **LEFT** button to turn on the camera on the left mirror. Press **RIGHT** button to turn on the camera on the right mirror.

8 Icons - bottom of screen (dashed box) left to right (1-8) control the following HD cameras:

1. Driver side camera
2. Passenger side camera
3. Rear (backup) camera
4. Front camera
5. Driver/Passenger sides together
6. Driver/Passenger sides with Rear camera
7. Front, Rear, and Driver/Passenger cameras
8. 360° overhead view of the vehicle

The Driver/Passenger side cameras (1 and 2) do not look straight out the side of the vehicle. They are angled slightly toward the rear of the vehicle to allow you to see what is beside and to the rear of the vehicle (in the case of towing a vehicle or trailer).

If you have the camera screens displaying on the TV screens in the coach, you cannot change camera views at the TVs. You must change views using the camera control screen, or through the Vegatouch system.



Camera Control Screen

CLIMATE CONTROL SYSTEM (DASH)

Your motor home has been equipped with an integrated heating / air conditioning system. It provides windshield defrost, heating and cooling for the front seat occupants only, and is not capable of heating and cooling the entire motor home. Refer to the manufacturer's manual for detailed operating instructions and tips. System Layout

The heater / air conditioner unit is located beneath the dash in the center or right side of the vehicle (viewed from driver seat). In most modes of operation the unit draws in fresh air from the outside and heats or cools it before discharging the treated air into the vehicle. Only in the **MAX A/C** mode does the system draw air from inside the vehicle.

Operating Features

The air conditioning system operates in all modes except VENT, FLOOR, and OFF. This provides significant moisture, dust and pollen removal for enhanced passenger comfort.

Dash Mounted Climate control



NOTE: When outside ambient temperatures are below approximately 40° F, the A/C compressor may cycle rapidly. Use FRESH AIR mode instead of A/C in these temperature conditions to cool the interior air temperature. For operational safety in the event of the loss of vacuum, the HVAC system is designed to discharge air through the defrost vents to provide continuous windshield defogging.

Blower Motor

Blower motor switch (left side or top) has (4) positions, OFF (0), slow to fast (1-4).








Temperature Control

Center switch controls heating and cooling. Maximum cooling is all the way to blue side of the switch, maximum heat all the way to the red side.

Air Distribution – Mode Control

To achieve the maximum comfort in your motor home, the air must be directed where it is needed. The mode switch (right side or bottom) gives the driver the ability to select where the air will flow.

SECTION 4: VEHICLE OPERATION

- A/C ON/OFF: Green button with the star icon next to it. Turns the air conditioning On and Off. MAX A/C Air is drawn from the passenger compartment (re-circulated air) and discharged through the dash louvers. This position provides maximum cooling. Because MAX A/C does not allow fresh “outside” air into the passenger compartment, it may cause fogging of the windows, and/or stale air, when used for prolonged periods of time. Switch to A/C mode periodically if these conditions occur. 
- RECIRC AIR: Green button with the arrows in a circle. Recirculates the air inside the cabin. Used for faster passenger cool down.. Disengage RECIRC AIR to enable FRESH AIR mode. 
- VENT (PANEL MODE): Outside air is drawn into the system and discharged through the dash louvers only. 
- BI-LEVEL (VENT/FLOOR): Outside air is drawn into the system and discharged through the dash louvers and floor outlets. The A/C system operates in BI-LEVEL mode. 
- FLOOR: Outside air is drawn into the system and discharged through the floor outlets. 
- MIX: Outside air is drawn into the system and discharged through the floor and defrost outlets. The A/C system operates in MIX mode to provide windshield defogging. 
- DEFROST: Outside air is drawn into the system and discharged through the defrost outlets. The A/C system operates in DEFROST mode to provide windshield defogging. 

NOTE: Any repairs to the climate control system must be authorized by Entega Coach or the chassis manufacturer. Refer to and follow the manufacturer’s owner’s manual for safety and service information.

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 (if so equipped) or operating the vehicle on 12-volt power when dry camping.
- Refer to *Fuel & LP 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

CHASSIS AIR BAGS

Check the inflation pressure of the chassis air bags weekly when using the motor home and prior to traveling.

Driving with partially filled air bags will create an unsafe environment and can damage your motor home. Refer to your Chassis Guide for more information on the air bags.

WARNING

Make sure the chassis air bags are completely filled before driving your motor home.

HYDRAULIC LEVELING SYSTEM

WARNING

FAILURE TO ACT IN ACCORDANCE WITH THE FOLLOWING WARNINGS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH!

- The leveling system is designed only for leveling the unit and should never be used to provide service for any reason under the motor home such as changing tires or servicing the system. It is not recommended that you change a tire yourself.
- Check that potential jack contact locations are clear of obstructions or depressions.
- Keep people clear of the motor home prior to turning the leveling system on and while the leveling system is in operation.
- Never expose hands or other parts of the body near hydraulic leaks. High-pressure oil leaks may cut and penetrate the skin causing serious injury.
- After starting the leveling cycle, it is important that occupants do not move around in the motor home until the vehicle is level. Failure to remain still during the leveling cycle can affect the leveling jack system sensors.
- Never lift the wheels off of the ground when leveling the motor home.
- Do not move the motor home while the jacks are still in contact with the ground or extended. Damage to the vehicle could occur.
- Do not rely solely upon warning lights to determine the position of the leveling jacks. It is the operator's responsibility to check that all the leveling jacks are fully raised in the travel mode before moving the motor home.

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


Leveling your motor home is important for the following reasons

- The water drainage systems are designed with proper slope and must be level for proper operation.
- The appliances perform best when level.

Before operating the leveling system, the motor home:

- Must be parked on a reasonably level surface.
- Must have the parking brake engaged.
- Must have the transmission gear selector in NEUTRAL.
- Engine should **not** be running

SECTION 4: VEHICLE OPERATION



NOTE: The slideout room should be extended (with the air suspension fully aired up) before leveling jacks are deployed. Wheels **MUST** be straight. When the coach is leveled, air bags are dumped of air which lowers the fenders below the tops of the wheels. If the wheels are not straight, fenders and/or tires **WILL** be damaged. **DO NOT DUMP AIR FROM AIR BAGS UNLESS WHEELS ARE STRAIGHT!**


Operating the Leveling System

Auto Leveling Operation

- **Baseline Zero Point Calibration:** “Baseline zero point” is the term used to define the point at which the motor home interior floor is level in the “X” and “Y” plains.

The base line zero point has been preset from the factory. If the coach is not level following an attempt to auto level, you will need to reset the baseline zero point.

Setting the baseline zero point



NOTE: You do not need to have jacks deployed to set the baseline zero point.

1. Push and release the POWER keypad button to engage power. The LED next to the POWER button should be RED when power is on.
2. Level the coach by deploying jacks manually (using the DOWN keypad button, extend each jack until the coach is level) or by parking the coach on a level site.
3. Use a bubble level on a flat surface in the **center** of the coach as a reference.
4. Level the coach in both the “X” and “Y” plains (fore-aft and side to side).
5. Once level, turn the POWER off at the panel.
6. Depress and hold the AUTO-LEVEL keypad button.
7. Continue to hold the AUTO-LEVEL button and press and release the POWER button and listen for a series of beeps.
8. After the panel has beeped 5 to 6 times, release the AUTO-LEVEL button (the keypad will continue to beep as long as the AUTO-LEVEL button is held). The new baseline zero point has been set and the panel will maintain this setting.
9. Press and release the ALL RETRACT button to retract the jacks to the stowed position.

Power On: Push and release the POWER button to engage power. The LED next to the POWER button should be RED when power is on. You will need to have the ignition key in the “off” position to extend the jacks. If you attempt to extend individual jacks by pressing the ON button or all jacks with the AUTO-LEVEL button, you will hear a “deny” tone from the keypad.

- **Auto Level:** Press the AUTO-LEVEL button and release. The system will send out a continuous series of beeps, the “OPERATING” LED will flash RED to let you know auto level is operating and will automatically level the coach. When completed, the keypad will signal a successful level with a dual-level tone. The keypad may be left on once level has been achieved. The keypad will enter “sleep mode” after five minutes of inactivity.

- **Retracting the Jacks:** The Equalizer System provides the ability to retract the jacks using the ALL RETRACT button or the UP button for each individual jack.
- All jacks will automatically retract and return to stowed position when the ALL RETRACT button is pressed and released. The pump will run in retract mode for 60 seconds (or 90 seconds, depending on your specific system) to ensure the jacks are fully stowed. You may allow the system to run for the entire programmed time and stop automatically, or you may stop the ALL RETRACT by pressing any button on the keypad.

Manual Operation

Power on: Push and release the POWER keypad button to engage power. The LED next to the POWER button should be RED when power is on. If you attempt to extend individual jacks by pressing the DOWN keypad button or all jacks with the AUTO-LEVEL button, you will hear a “deny” tone from the keypad.

- **Planting the Jacks:** Using the DOWN keypad button, extend each jack until they contact the ground (this is referred to as “planting” the jacks).
- As you extend the jacks, the LED lights on the keypad will indicate the jacks are out of the “stowed” position. Jacks may be operated individually or in pairs.
- **Do not manually overextend individual jacks. This may cause unwanted stress on the coach or the jacks.**
- **Leveling the Coach:** Use a bubble level in the center of the coach as a reference. Level the vehicle by using DOWN or UP keypad buttons until the vehicle is level. Jacks may be operated individually or in pairs as long as they are operated in the same direction.
- Do not attempt to lift the vehicle off of the tires. The keypad may be left “on” once level has been achieved. The keypad will enter “sleep mode” after five minutes of inactivity.
- **Retracting the Jacks:** The Equalizer System provides the ability to retract the jacks using the ALL RETRACT button or the UP button for each individual jack. All jacks will automatically retract and return to stowed position when the ALL RETRACT button is pressed and released.
- The pump will run in retract mode until all of the jacks are fully stowed (plus an additional 5 seconds) up to a maximum of 60 seconds. You may stop the ALL RETRACT by pressing any button on the keypad. Your coach is equipped with air suspension, and it is recommended that you start your coach before pressing ALL RETRACT allowing the chassis air to build. This will ensure adequate air supply to the chassis air valves.



Hydraulic Control Panel

NOTE: There are specific instances when manual extension of one (or more) jack is inhibited (deny tone when DOWN is depressed). This situation is caused by the “anti-twist” protocol in the software contained in the control box. The “anti-twist” protocol denies jack extension if the system senses that a specific corner of the coach is approximately 3 degrees higher than the rest. You will be able to extend other jacks to overcome this slope. If the system incorrectly senses excessive slope, this can be overcome by re-setting the baseline zero point. **This will allow manual extension of all jacks. Remember to re-set the baseline zero point after manually leveling the coach.**


SECTION 4: VEHICLE OPERATION

Helpful Hints

- The ALL RETRACT function is a timed event. Pressing ALL RETRACT will cause the pump to run in retract mode for 60 seconds (or 90 seconds, depending on your specific system).
- Your leveling system is a microprocessor-controlled system. Proper and adequate battery voltage and permanent chassis ground are essential.
- Your system may be equipped with a manual override option. Refer to the procedure for proper operation of this option. It is better to review this procedure prior to its actual use.
- If a jack comes out of the stowed position while traveling, the system panel will automatically activate and return the jack to the stowed position.

Panel Indicator LED

There are a total of ten (10) LED indicators on the Equalizer Keypad. The functions of these indicators are detailed below.

 CAUTION	
□	If the LOW VOLTAGE, ENGAGE PARK BRAKE, IGNITION ON or EXCESS SLOPE LEDs illuminate, you have an “error” condition that must be corrected prior to operating the jacks.
□	Make sure suspension air bags have deployed after retracting jacks. Visually check front and rear wheel wells for clearance.

During typical operation, the LEDs on the bottom left hand corner of the keypad should NOT be illuminated. The only LED that should light is the “OPERATING” LED, which should flash during operation.

POWER LED	ON Red when power is ON OFF when power is OFF FLASH every 5 sec. in Sleep Mode
JACK LED (4 each)	ON Red when Jack(s) are deployed OFF when jack(s) are stowed OPERATING LED FLASHING Red w/Auto Level or All Retract OFF when keypad is idle or “sleeping”
LOW VOLTAGE LED	ON Red when voltage is below 10.5 volts dc OFF when voltage is above 10.5 volts dc
ENGAGE PARK BRAKE LED	ON Red when park brake is not set OFF when park brake is set
IGNITION ON LED	ON Red when ignition is in the ON position OFF when ignition is OFF
EXCESS SLOPE LED	ON Red following an Auto Level attempt, if system cannot overcome slope OFF when slope is not excessive

For complete instructions, troubleshooting and safety information refer to the manufacturer’s manual online at <https://equalizersystems.com/service-and-support/operation-and-installation-manuals/>

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.

SECTION 4: VEHICLE OPERATION



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 or following extensive braking. Refer to the *Wheel Lug Torque Chart*.

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.

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.

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.

SECTION 4: VEHICLE OPERATION

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 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.

TOWABLE PRODUCTS ONLY

- Towable recreation vehicles are equipped with special trailer (ST) tires that have a maximum speed rating of 65 MPH (104 km/h). **You should not exceed this speed rating.** Exceeding the tire speed rating may result in tire failure, which could lead to an accident causing serious injury or death.

TIRE PRESSURE MONITOR SYSTEM (TPMS)

Your motor home is equipped with a Tire Pressure Monitoring System (TPMS). The system has sensors installed on the rims inside the tires. The system is capable of measuring and displaying tire pressures and tire temperatures.

TPMS sensors are installed and pre-programmed from the factory.

TPMS Display

The TPMS fault sensor is located in the lower left corner of the digital dash just above the selectable display area.

The TPMS menu is located on the selectable display, which is accessed with the VDC controller. Rotate the knob cycles through the menus, select the TPMS screen, and press the knob on the controller to switch between tire pressure and temperature.

Refer to the Comprehensive User Guide (in your warranty packet) for more detailed information on sensor programming or troubleshooting the TPMS system.

WARNING

FAILURE TO ACT IN ACCORDANCE WITH THE FOLLOWING WARNINGS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH!

- The TPMS system is designed to monitor tire pressure and temperature. It is not designed to provide warning of sudden critical tire damage and blowout caused by external effects. The driver should react promptly to any warning and correct the problem.
- Tires can fail for other reasons besides low pressure, high temperature or overloading. Always be on the alert for other tire problems indicated by unusual noises, vibrations, uneven tread wear, or bulges on the tires. If any of these symptoms occur, have the tires inspected immediately by a tire professional.

CHANGING A TIRE

WARNING

- The motor home is very heavy. Raising the motor home to replace the spare 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.**
- Do not use the hydraulic leveling jack system to support the motor home while under the vehicle or changing tires. The hydraulic leveling system is designed as a leveling system only. Do not use the hydraulic leveling jack system as a jack or in conjunction with a jack. It is highly recommended that, should a tire change be required, it be performed by a knowledgeable, trained professional. Attempts to change tires while supporting the motor home with the hydraulic leveling jack system could result in damage to the motor home and risk causing serious injury or death.
- When replacing a tire, make sure to replace it with a tire of the same size and specifications (refer to your Chassis Guide for assistance).

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;** this is why a jack and a spare tire have not been included with the motor home.

SECTION 4: VEHICLE OPERATION

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 as outlined in your Chassis Guide.

AWNINGS (IF SO EQUIPPED)

Awning Care

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

- Periodically check that the fasteners are tight. Tighten if necessary.
- Keep the awning fabric clean. For detailed cleaning information, refer to the manufacturer's owner information.

⚠ 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.

Your recreation vehicle may include one or more of the following options:

- Power window awnings
- Slide out awnings
- Power awning over entrance door

Power switches to operate the awnings are typically found in the control panel above the entrance door or if your RV has a touchscreen, the awning controls may be located there.

Electric Patio Awning with Remote Control



NOTE: Electric awnings requires connection to a 120-volt power source. Make sure you have sufficient power available before operating your awning (refer to Electrical Systems, Calculating electrical load).

In Motion Detector (if so equipped)

Some patio awnings are equipped with a motion detector. If the patio awning experiences extreme or excessive movement, it will automatically retract to the travel mode position.

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

Girard Awnings (if so equipped) – refer to the manufacturer's owner manual located on a CD and USB flash drive included in your warranty packet. This manual includes troubleshooting, service and repair information.

ELECTRIC SLIDE ROOM(S)

The mechanical components of the slide out room(s) are gear driven and designed to work on 12 volts DC.

⚠ WARNING

Make sure the interior slideout room path and the slideout room itself is clear of people and objects before operating. Keep away from the slide rails and gear assembly when the room is in motion. They may pinch or catch on loose clothing causing personal injury. **Failure to follow these instructions could result in serious injury or death.**

⚠ CAUTION

The following guidelines should be used when using your slideout room:

- ❑ **DO NOT OVER EXTEND OR RETRACT THE SLIDE OUT ROOM.** Release the switch immediately once the room has been fully extended or retracted. Do not wait until you hear the motor stop. Over extending or retracting the slide out room may result in damage to the stop rod and bracket.
- ❑ **Do not place excessive weight** in the slideout room. It can cause the slideout room to malfunction and cause damage to the slideout.
- ❑ Do not over extend/retract the slide out room. Release the switch immediately once the room has been fully extended/retracted. Over extending/retracting the slide out room may result in damage to the stop rod and bracket.
- ❑ Additional support jacks are not needed under the slideout. Damage can occur to your slideout room from improper use of aftermarket support jacks.



NOTE: The slideout rooms should be extended (with the air suspension fully aired up) before leveling jacks are deployed. Wheels **MUST** be straight. When the coach is leveled, air bags are dumped of air which lowers the fenders below the tops of the wheels. If wheels are not straight, fenders and/or tires **WILL** be damaged. This is a very expensive repair to make. **DO NOT DUMP AIR FROM AIR BAGS UNLESS WHEELS ARE STRAIGHT!**

Operating the slideout rooms

Each slideout is equipped with a separate control switch. The control switch(s) for both coach (front) slideout rooms are located in the entrance door overhead control panel and/or on the VegaTouch screen on models with touchscreens.

To extend the slideout rooms, press and hold “EXTEND” on the extend/retract switch. The slideout rooms will not extend unless this switch is held down. Release the switch *immediately* once it is fully extended or retracted do not let it go beyond the stop. Press and hold “RETRACT” on the extend/retract switch again to reverse the process.

SECTION 5: SLIDEOUT SYSTEMS

If the slideout rooms will not extend or retract, contact Customer Service or a reputable dealer service facility. **Do not attempt to service the slideout system yourself.**

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.

For motorized vehicles, 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.

IN CASE OF AN ELECTRICAL FIRE

⚠ WARNING

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

EVERYONE SHOULD EVACUATE THE RV IMMEDIATELY:

- Switch the 120-volt main circuit breaker to the "off" position. **It is important that everyone knows where to find the main circuit breaker and how it operates.**
- Disconnect the negative battery cable(s) at the battery.
- Disconnect the power cord from the shore power receptacle.
- Turn "off" the generator (if so equipped).

Always have faulty or damaged wiring and electrical components repaired immediately.

NOTE: The touchscreen system may require periodic updates and/or downloads. The age of your device or hardware configuration changes may prevent your device from accepting or installing a new system update. If you receive notification that an upgrade is available, please contact Fire Fly Integrations for further information (<http://www.fireflyint.com>). Version number information for your touchscreen is found on the Settings screen of your touchscreen.

FIREFLY MULTIPLEX LIGHTS AND SHADES

The Spyder/Firefly multiplex system controls most interior/exterior lighting and power day/night shades in the RV.

The MAIN POWER switch located at the stepwell 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.

Depending on your model, the switches may be wired into the electrical system and do not use batteries. Some switch panels are wireless and uses a coin cell battery on the back of the switch panel. Over time, this battery will require replacement. Contact your dealer should you require maintenance on the switch panel.

POWER CONTROL (ENERGY MANAGEMENT) 50A SYSTEM

Key features of the Power Control System include:

- Helps use 50 Amp service where 30 Amp service is available. Limits total current to 30 Amps when 50 Amp service is not available.
- Minimizes circuit breaker tripping
- Monitors current draw for the entire RV including loads added by the owner.
- Learns controlled appliance current draw.
- Allows (2) air conditioners to run on 30 Amp service when other appliances are not in use. Panel has built-in relays to control (2) air conditioners.
- Has built in 120VAC sense circuitry so it does not draw on the battery when shore power is available.
- All relays are normally closed allowing full operation of appliance in case of fault.

Operation

This system monitors incoming power and has the ability to turn off a few select loads. It manages incoming power and avoids tripping the shore circuit breaker.

When plugged into full 50 Amp shore power, or if the generator is running, the system does nothing as there is ample power available to operate all circuits in the RV.



50A System Panel

When the RV is plugged into a 20 Amp or 30 Amp power supply, the system will attempt to keep the total coach 120 VAC current draw under a threshold to prevent tripping the shore circuit breaker. The AC Amp readout on the display tells how much current is flowing through the system so you can compare it to the shore power the coach is connected to. When 30A is illuminated on the display, press the “Select” button and toggle between 20A

SECTION 6: ELECTRICAL SYSTEM

and 30A service. The status window illuminates each of the appliances that it controls. If the indicator is not lit, that means the PCS system has temporarily removed power to prevent the circuit breaker from tripping.

The system has the ability to turn off the following electrical items:

- Electric Water Heater.
- The (3) air conditioner systems (front, rear, and mid coach).

For additional information, contact Customer Service.

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 up 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
- With 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.

SECTION 6: ELECTRICAL SYSTEM

INVERTER/CHARGER

Your motor home may have multiple 12-volt DC to 120-volt AC inverter/charger(s) installed that are designed to temporarily run selected 120-volt appliances from house auxiliary battery power.

The inverter/charger(s) is located between the chassis frame rails in the cargo storage area, the controls are operated from the touchscreen. 120-volt circuit breakers protecting inverter/charger output circuits are located in the sub-panels(s) the front cabinet. Circuit breaker labeling near the sub-panels indicate which appliances can be operated from inverter/charger power. Refer to *Power Cut Out Switch* section for location of inverter disconnect switches.

Inverter/charger 120-volt AC output is a pure sine wave type. The inverter/charger will operate most appliances, tools and other 120-volt AC equipment.

The inverter/charger also functions as a multi-stage 12-volt power converter/battery charger when the motor home is connected to 120-volt shore power or when the generator is running. In this mode the inverter/charger charges the house auxiliary batteries. Chassis batteries can also be charged either from shore power or using the generator.



NOTE: The inverter can be controlled through the Vega Touch system. Refer to the touch screen user guide in your warranty packet or online at <http://www.fireflyjnt.com> for specific instructions.

⚠ WARNING

The inverter/charger generates heat while operating and needs unrestricted air flow for proper cooling. Do not store anything around or on top of the inverter/charger that would restrict air flow around it.

Inverter/Charger Remote Controls

To enable automatic inverter operation during power blackout or brownout conditions leave the inverter/charger(s) in “INVERTER” mode at all times. The inverter/charger is in “INVERTER” mode when the green “INV” light on the remote control panel is illuminated.

When in “INVERTER” mode the inverter/charger(s) will be on standby when the motor home is connected to 50 amp 120-volt AC shore power or when the generator is operating. All connected appliances operate off of shore power or generator power during this time. If shore power is interrupted and the generator isn’t running, the inverter/charger(s) will automatically activate providing 120-volt AC power to connected appliances. See the inverter/charger owner’s manual for additional information.

Inverter/Charger battery charging function

The inverter/charger functions as a multi-stage battery charger when the motor home is connected to 120-volt AC shore power or when the generator is operating. The inverter/charger automatically senses auxiliary battery condition and applies the appropriate battery charging profile.

In the event the motor home auxiliary batteries become *completely* discharged, the inverter/charger will be unable to sense battery voltage and will not begin its charge sequence. To manually initiate charging, turn the chassis ignition key to the “on” position for a short period of time. If the batteries do not charge, or fail to hold a charge, they may be defective. See the inverter/charger owner’s manual for additional battery charging information.

NOTE: Leaving the inverter/charger in the “on” position when the motor home is in prolonged storage (no 120-volt AC shore power connected) will drain the auxiliary batteries even though all 120-volt AC appliances are turned off.

Inverter/Charger fault conditions

Certain fault conditions will cause the inverter to shut down. These conditions include:

- High or low battery
- Power consumption overload
- Inverter overheating
- Inverter internal fault

Refer to the inverter/charger owner’s manual for fault code diagnosis and resolution.



Inverter

NOTE: High battery voltage may be caused by excessive or unregulated voltage from solar panels and/or other external battery charging sources.

Inverter/Charger 12-volt DC circuit breaker

Each inverter/charger and its 12-volt wiring are protected by a replaceable high current fuse typically located on the frame rail near the auxiliary battery bank or in the battery box. A 2000 watt inverter/charger will be protected by a 300 amp fuse and a 3000 watt inverter/charger will be protected by a 400 amp fuse.

Inverter/Charger integral 120-volt AC circuit breakers

The inverter/charger is equipped with integral 120-volt AC circuit breakers located on the inverter/charger metal case. In overload conditions these circuit breakers will trip and interrupt inverter/charger 120-volt AC input and/or output.

After correcting the overload condition, reset these circuit breakers to resume inverter/charger 120-volt AC operation. Refer to the inverter/charger owner’s manual for additional information.

For complete detailed operation and safety information refer to the manufacturer’s owners guide found in your warranty packet. Follow all safety information displayed in the manual.

12-VOLT DC SYSTEM

The majority of 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:

- Power is supplied by the chassis alternator when the chassis engine is running.
- 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.
- The house batteries power many 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.

SECTION 6: ELECTRICAL SYSTEM

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 motor home 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 motor home 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

Your motor home is equipped with L-16 deep cycle batteries. Unless a battery has been fully discharged, house auxiliary batteries are normally charged in one of two ways:

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

See the Chassis Guide for information pertaining to the chassis batteries and the drive-train 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

SECTION 6: ELECTRICAL SYSTEM

of time, they will become deeply discharged. Permanent battery damage will occur after repeated deep discharge cycles.

Battery Reserve Capacity

Typically, a four battery bank of 6-volt CG-2 deep cycle batteries connected in a series/parallel arrangement to create 12-volts, has a 75 amp discharge rate reserve capacity (RC) rating of around 420 minutes.

This same house auxiliary battery bank will have a 25 amp discharge rate reserve capacity (RC) rating of around 1530 minutes. If your motor home has an eight battery bank of 6-volt CG-2 deep cycle batteries, the reserve capacity minutes listed above are doubled.

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.

For more information on the house batteries, contact the battery manufacturer.

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.

There may be a second rocker switch located at the driver console labeled "HOUSE". The House and Main Power switches both perform the same function and are used to disconnect the motor home from house auxiliary battery power during periods of storage and/or during



Battery Disconnect Switch



House Power

electrical system service. Certain models will not include the “HOUSE” power 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 overburdened, 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.

Auxiliary (Battery Boost) Start System

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 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

SECTION 6: ELECTRICAL SYSTEM

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 (diesel or gas powered) requires 12-volt power from the house auxiliary batteries to start, and draws (diesel or gas) fuel to operate from the chassis fuel tank. If the fuel level in the chassis fuel tank drops to or below $\frac{1}{4}$ full, the generator will automatically shut "off" and cannot be re-started until the fuel tank is filled to above $\frac{1}{4}$ full.

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.

Maintenance

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.

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
Refrigerator	6 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

SECTION 6: ELECTRICAL SYSTEM

120-VOLT 50 AMP AC ELECTRIC SYSTEM (IF SO EQUIPPED)

The 50 amp 120-volt 60hz AC electrical system can be powered by an outside 120/240-volt 60hz utility service like those commonly found in campgrounds or by 120/240-volt 60hz generator power. The entire system is designed to operate on 2 legs of 120-volt power at a maximum current flow of 50 amperes per leg.

Exposure to voltages higher or lower than a nominal 120-volts, will damage or shorten the service life of the electrical system and appliances. The 50 amp 120-volt 60hz AC electrical system can be powered by an outside 120/240-volt 60hz utility service like those commonly found in campgrounds or by 120/240-volt 60hz generator power.

The following electrical components will only operate when connected to 120-volt power: air conditioner(s), refrigerator, microwave oven, television(s), home theater system(s), water heater, washer, dryer, fireplace, electric stove, and appliances plugged into convenience receptacles. These components will create a surge on the inverter.

WARNING

- Circuit breakers and fuses will not offer complete protection of the electrical system in the event of power surge or voltage spike.
- Make certain the external power source you connect the power cord to is a properly wired **50 amp NEMA 14-50** RV receptacle and not 240 volt AC.
- PLUG INTO 50-AMP SERVICE ONLY.**

50 amp Power Cord

WARNING

- Do not hook up the power cord to any receptacle until you have verified proper polarity and grounding. Polarity indicators can be purchased in most electrical and hardware stores.
- 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.

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 recreation vehicle can cause personal injury or death.

The 50-amp external utility power cord is commonly referred to as the “shore” power cord. It is designed to mate and properly function with 50-amp “shore” power receptacles available at most campgrounds.

The shore power cord is designed to continuously carry the 50-amp current flow required to power each leg of the electrical system. It also creates a critical ground connection between the vehicle electrical system and the campground shore power receptacle.

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.**

Regularly inspect the shore power cord for cuts, cracks, worn insulation and other damage. Have the power cord replaced immediately if problems exist.

Calculating 50 amp Electrical Load (if so equipped)

When connecting appliances to the electrical system, 120-volt power usage is limited to 50 amps per electrical system leg for a total of 100 amps. Operating appliances collectively places an added load on your 120-volt electrical system.

A circuit breaker "trip" may occur if you overload the recreation vehicle and/or campground electrical system. The amperage rating of individual appliances can be calculated by dividing appliance wattage consumed (normally listed on the appliance) by nominal design voltage (120 for a 120-volt appliance). For example: 1200 watts divided by 120-volts equals 10 amps.

POWER CORD REEL (IF SO EQUIPPED)

WARNING

- Before connecting shore power, it is advisable to turn off electrical power at the source, or the unit main breaker.
- Damage to electrical components caused by electrical spike, improper ground or polarity to the unit is not covered by your recreation vehicle warranty.
- Use of an aftermarket surge protecting device between the unit shoreline and the electrical source is strongly recommended.

Electrically powered cord reel (if so equipped)

If your recreation vehicle is equipped with a powered cord reel, extend the shore power cord using the extend/retract switch located in the same compartment near the cord reel. After extending the shore power cord, connect the cord to the campground shore power receptacle.

Disconnecting and stowing the shore power cord

Reverse the applicable process (manual or powered cord reel) to disconnect, retract, and stow the power cord.

Refer to and follow all safety information found in the manufacturer's product manual included with your warranty packet.

GENERATOR

Your motor home may be equipped with an LP or diesel powered generator. In certain gasoline engine motor homes, the generator will be gasoline powered as well. 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.

Automatic Generator Start (AGS) (if so equipped)

If your motor home is equipped with a Vegatouch system, it may include an AGS screen to program your generator to automatically start and stop at specified times. The AGS button is located on the home screen of the Vegatouch display. Please refer to your *Vegatouch User Guide* in your warranty packet or online at <http://www.fireflyint.com>.

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 automatically shut off and cannot be re-started until the fuel tank is filled to above 1/4 full.

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.

Maintenance

During periods of extended storage:

1. Add a diesel fuel additive to the chassis fuel tank to prevent algae growth (only with a diesel fueled generator).
2. Completely fill the chassis diesel fuel tank to prevent water condensation and rust in the tank (only with a diesel fueled generator).
3. 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.

STARTING THE GENERATOR

Depending on your model, your motor home may have a touchscreen to control the generator, or manual switches located at the Command Center panel. There may also be secondary switches located on the dash, in an overhead cabinet, or on the generator itself. A digital hour meter that keeps track of generator hours used is located either on the touchscreen or on a separate hour meter on the Command center panel.

To Manually Start the Generator

1. At either "START/STOP" switch, press and hold the the generator. Depending on the outside temperature the start process can take up to 15 seconds. Once the generator starts running, release the "START/STOP" 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) (if so equipped)

Some motor home models may be 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

SECTION 6: ELECTRICAL SYSTEM

or factory pre-selected parameters.

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

GENERATOR SLIDE TRAY

The generator is mounted on a manual slide tray below the windshield at the front of the motor home. You must release this slide tray before manually pulling it open to access the generator and components in the tray.

⚠ CAUTION

To maintain the adjustment of the generator door, pull on the bottom instead of the sides or top of the door.

To access the generator slide tray:

1. Open the fuse compartment directly under the driver's side window.
2. Pull the "T" handle inside the compartment to release the generator slide tray.
3. Pull on the bottom front of the generator slide.
4. To close the generator slide tray, push the slide tray back in until it locks.



NOTE: Do not use the generator slide tray for storage.

For additional information contact your dealer or Customer Service.

SOLAR PANEL (IF SO EQUIPPED)

Solar panel(s) automatically produce 12-volt DC electricity when exposed to direct sunlight. Energy produced by the solar panel(s) is used to trickle charge the house auxiliary batteries. There are no user selectable controls for the solar panel(s).

Controller

The controller is capable of charging two separate (isolated) batteries. A status LED indicates charging progress. Battery charging and operating parameters are adjusted using the 5 Settings Dip Switches.

Battery 1 is connected at the bottom left, solar input power is connected at bottom center, and Battery 2 is connected at bottom right. The small ribbon cable goes to the Remote Meter display. The controller is typically found in the same outside compartment with the power cutoff switches. Refer to the manufacturer's operation manual in your warranty packet for more detailed information.



Solar Panel Control
(location may vary by model)

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.

Solar Panel Battery Monitor

The solar panel battery monitor is typically located in the passenger side overhead entry door control panel. This monitor features a 4 digit display and custom icons. Provides comprehensive system information including voltage, current, and temperature. A status LED indicates charging progress and controller operating state. Three battery state-of-charge LEDs provide quick reference to the level of charge on the system battery. Soft buttons allow for easy navigation of the meter menus. It also features self-diagnostics and error reporting for troubleshooting.



Solar Panel Battery Monitor

Refer to the manufacturer's manuals for the controller and the monitor which are included in your warranty packet.

REPLACING LIGHT BULBS

Replacement light bulbs must be the same type, voltage and wattage that is listed on the lamp fixture. Use of incorrectly sized bulbs can overload lamp circuits and may create a fire hazard by overheating the fixture.

Before replacing a bulb, be sure the light is off.

SECTION 6: ELECTRICAL SYSTEM

Notes:

DIESEL FUEL AND FILL

It is critical to understand the danger associated with fuel. Take time to become educated about the properties of fuel and use it safely.

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 because 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

Use diesel fuel only. The diesel generator and the Aqua Hot system (if so equipped) are fueled by the same system used to fuel the motor home chassis engine. Consider the fuel requirements of the generator and the Aqua Hot system (if so equipped) when making a decision on the type of fuel to use.

DEF Fluid

Diesel engines (since 2010) require the use of DEF fluid (Diesel Exhaust Fluid) to aid in burning particulate matter in the exhaust and reduce emissions to nitrogen and water. This DEF fluid is kept in a separate heated tank and is required for the normal operation of the diesel engine. The DEF tank is typically located in one of the exterior compartments and will have a blue cap with “DEF” written on it. There will be a series of warnings at the dash before running out of DEF fluid. If the vehicle is allowed to run out of DEF fluid, engine power is intentionally reduced and speed will be limited to 5 MPH until the tank is re-filled.

 **NOTE:** Check the diesel generator and chassis manufacturer’s information to help you determine the type of diesel fuel best suited for this dual application.

CAUTION

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

SECTION 7: FUEL & PROPANE SYSTEM



NOTE: If your motor home is equipped with an Aqua Hot Heating system, it may be fueled the chassis diesel tank(s). If fueled from the chassis diesel tank(s) the fuel consumption of this system should be considered when planning your fuel supply to insure you will have adequate fuel to run your system. The fuel feed for the Aqua Hot system is positioned in the fuel tank so that when the fuel supply for the system is exhausted, you will still have fuel remaining to operate your motor home. For additional information refer to the Aqua Hot owner's manual.

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 because 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

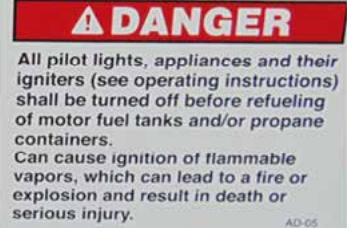
⚠ WARNING

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 counter-clockwise, 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

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 the 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 (IF SO EQUIPPED)

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 cooking, heating, hot water and can be an alternative energy source for refrigeration. 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).

SECTION 7: FUEL & PROPANE SYSTEM


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:

 DANGER
ALL PILOT LIGHTS, APPLIANCES, AND THEIR IGNITORS (SEE OPERATING INSTRUCTIONS) SHALL BE TURNED OFF BEFORE REFUELING OF MOTOR FUEL TANKS AND/ OR PROPANE CONTAINERS. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.
 WARNING
DO NOT FILL PROPANE CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY. FAILURE TO COMPLY COULD RESULT <u>IN DEATH OR SERIOUS INJURY.</u>
 CAUTION
THIS PIPING SYSTEM IS DESIGNED FOR USE WITH PROPANE ONLY. DO NOT CONNECT NATURAL GAS TO THIS SYSTEM. Securely cap this inlet when not connected for use. After turning on propane, except after normal cylinder replacement, test propane piping and connection to appliances for leakage with soapy water or bubble solution. Do not use products <u>that contain ammonia or chlorine.</u> DD-37

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.



1-Propane fill valve; 2-Propane gauge
ASME tank

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 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 warning 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

SECTION 7: FUEL & PROPANE SYSTEM

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

Propane Regulator

WARNING

Propane regulators must always be installed with the regulator vent facing downward. Regulators that are not located in baggage compartments have been equipped with a protective cover. Make sure the regulator vent faces downward and (if applicable) the cover is in place to minimize vent blockage that could result in excessive gas pressure causing fire or explosion.



NOTE: Regulator appearance and type may vary by model.

Single stage regulator

Some models are equipped with a single stage regulator.

Two stage regulator

The two-stage 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. The first stage reduces the container pressure to 10-13 lbs. The second stage reduces the 10-13 lbs. of pressure further to an operating pressure of 11" W.C. (water column) or 6.35 oz. of outlet pressure to your appliances.

The second stage is adjustable and will need to be adjusted by your dealer or qualified propane service technician for optimum performance (this adjustment should always be made with a properly calibrated manometer).

If the pressure is too high, it affects performance and safety; if the pressure is too low, your appliances will not operate correctly.

If your recreation vehicle is equipped with the "automatic" two-stage regulator, with both cylinders full of propane, turn the lever on the regulator towards the cylinder you wish to use first. This will be the "supply" cylinder and the other the "reserve". Slowly open both cylinder valves. The indicator on top of the regulator will turn bright green. When the cylinder becomes empty, the indicator will change to bright orange. Turn the regulator lever to the side of the "reserve" cylinder and the green signal should return. You may now remove the empty cylinder to have it refilled without interrupting the flow from the full bottle. After filling the cylinder, connect the pigtail hose and slowly open the bottle valve.

Refer to the manufacturer's pamphlet included in your warranty packet and follow all safety instructions and warnings listed.

PROPANE USE AND SAFETY

Propane is a colorless and odorless gas that, in the liquefied state, resembles water. An odorant (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.

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

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

⚠ 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 to-

SECTION 7: FUEL & PROPANE SYSTEM

tally 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.

SECTION 7: FUEL & PROPANE SYSTEM

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.

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

This label should be kept permanently affixed to your recreation vehicle.



Refueling Warning Label

SECTION 7: FUEL & PROPANE SYSTEM

Notes:

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, outside shower assembly (if so equipped), water heater, tub/shower, and water purification system (if so equipped).
- The waste water system consists of the waste water and sewage holding tank(s), drains and toilet.

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.
- At the end of every trip, you should drain any unused water from the 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 and winterization to take care of all the components within the plumbing system and help discourage the growth of bacteria and other organisms that can contaminate the water supply.

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.

MONITOR PANEL

Your motor home may be equipped with a monitor panel outside the coach at the outside wet bay. The monitor panel has representations of the tanks it can monitor (fresh, black, grey), a switch to operate the water pump, and a switch to turn on a light in the wet bay.

Levels are indicated in percentage increments. A full tank will say "Full", and empty tank will say "Empty".

The tanks will read levels constantly so you can tell at a glance how full each one is. This monitor is linked to the one inside the coach on the Vega Touch screen. Levels can be checked from two locations, inside or outside the RV

Vegatouch System

The touchscreen system in the RV includes a tank monitor screen that shows tank levels by percentage also. If the tanks are empty, they will read 0%, if they are full they will read 100%. The horizontal bars will fill in according to what percentage the tanks are indicating. There is also a switch to operate the water pump on this screen.

Refer to the Vegatouch User Guide included in your warranty packet or online at <http://www.fireflyint.com> for specific instructions.

SECTION 8: PLUMBING SYSTEM

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.
- Never travel with full fresh, black or grey water holding tanks.

Water Pressure Regulator (customer supplied)

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.

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.


Fresh Water Holding Tank

There may be several ways to fill the fresh water tank depending on the model. For details of each method, refer to the *Fresh Water Connections* or the *Utility Center* sections. 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.

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.

City Water Fill



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

To fill the fresh water tank using the “fresh water inlet” (located in the utility center).

1. Make sure the water tank drain, and hot & cold water lines (faucets) are closed.
2. Remove the fresh water connection inlet plug and connect the short hose on the utility center to the fresh water connection inlet. Connect the long hose on the reel to a pressurized fresh water source.

NOTE: Depending on your model, the fresh water hose may connect directly to the fresh water inlet at the utility center.

1. Move the “city water / fresh tank fill valve” to the FILL TANK position.
2. Move the “Aqua-Hot water heater bypass valves” to the NORMAL position (supply valves to the water heater ON, center valve OFF).
3. Make sure the siphon valve (clear hose behind the utility panel) is pointing away from the clear hose.
4. Turn ON the water at the water source.
5. Open the cold water supply faucets to bleed the air from the water lines. When the water lines are nearly full, you may experience some “air pockets”. Allow them to escape before closing the cold water supply faucets.



To disconnect from the fresh water source

1. Shut OFF the water at the water source.
2. Move the “city water / fresh tank fill valve” back to the vertical CITY WATER position.
3. Disconnect the hose (on the reel) and reinstall the “fresh water connection inlet” plug.

NOTE: Install the “fresh water connection inlet” plug whenever the “fresh water connection inlet” is not being used.

Dry camping: (direct fill the fresh water tank)

When you do not have access to a pressurized water source, you can fill the water tank from a container of water by using the direct fill method.


Direct filling the fresh water tank:

The fresh water tank can be directly filled with unfiltered water. Connect a non-toxic hose to a pressurized water source. Unscrew and remove the black cap, and insert the non-toxic hose into the direct fill inlet on the tank. Turn on the water and fill the tank. Water can also be dumped directly into the tank using a water container and funnel using this same inlet. The tank includes a window to monitor water level.

The water tank is located in a compartment on the passenger of the motor home.



SECTION 8: PLUMBING SYSTEM



NOTE: This method of filling the water tank is *NOT* recommended if filtered water is required. However, if you fill the tank with unfiltered water, all water from the fresh water tank goes through the whole house canister filter. So as long as you have a water filter in the canister you will end up with filtered water. The *only* method to fill the fresh water tank with filtered water is by using the fresh water connection inlet and the city water / tank fill valve on the docking (utility) center panel.


12-volt Water Pump and Water Pump Switches

Your motor home is equipped with water pump switches located on the Vegatouch screen and the exterior monitor panel. Either switch will control the water pump.

Once activated, the water 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.

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.

When you want to use water in your motor home and it is not hooked up to city water, you will need sufficient 12-volt DC power to run the water pump.



NOTE: The water pump switches should be in the OFF position when the motor home is left unattended for any amount of time.

Maintenance


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 more information, refer to the water pump manufacturer's user guide.

Water Purification System (if so equipped)

Primary water filter: The canister filter is the primary filter used for the complete water system. It is located at the docking (utility) center of the motor home. If the water supply has not been used for some time, allow the water to flow for several minutes to flush the system.



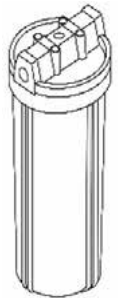
NOTE: When not in use, the water filter cartridge should be stored out of freezing temperatures. RV antifreeze will damage the water filter cartridge.

⚠ CAUTION

- ❑ Do not allow water in the canister housing to freeze.
- ❑ Remove the cartridge filter before using anti-freeze to winterize the system or chlorine solution to sanitize the system.
- ❑ Flush filter canister thoroughly before it is put back into service after winterizing or sanitizing.
- ❑ For best results replace filter every 6-12 months (or at the beginning of each camping season).
- ❑ 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).

To Replace Canister Filter Cartridge

1. Unscrew the two thumbscrews on the utility center panel and remove the panel. Or, on other models the canister is attached to the utility center panel. Water pump should be OFF.
2. Turn water supply to the filter canister OFF with the valve located behind the utility center panel (at the top). Refer to the *Universal Docking Center* section.
3. Place drip pan below filter housing to catch any spillage.
4. Press the red button on top of the canister to release pressure.
5. Using a spanner wrench (supplied), rotate the filter canister. Remove the canister containing the filter cartridge.
6. Dump water out of canister and remove the filter cartridge inside and dispose of properly.
7. Clean the interior of the canister with mild detergent. Thoroughly rinse and wipe clean.
8. Remove the O-ring from the groove in the canister and wipe clean. Recoat with petroleum jelly.
9. Replace the O-ring in the groove, making sure it is properly seated.
10. Install the new filter cartridge in the canister.
11. Replace the canister (hand tighten is normally sufficient).
12. If you are using pressurized City Water without the water pump, make sure to turn OFF the Water Pump Backflow Valve (located next to the water pump). If you are using the water pump to circulate water, this valve should be ON. (Refer to *Universal Docking Center* section Fresh Water Connections)
13. Turn water supply to the canister ON (using the valve behind the utility panel) and turn the pump ON. Open a faucet and check for leaks.
14. Turn the pump OFF. Replace the panel and the two thumbscrews (if equipped).



Filter Canister



Water supply shutoff to the canister water filter shown ON



Secondary water filter: (if so equipped)

The secondary (cartridge) water filter supplies water to the refrigerator and the drinking faucet (if so equipped). This filter is typically located at the utility center. RV antifreeze and sanitizer will damage the water filter cartridge. The water pu-

SECTION 8: PLUMBING SYSTEM

rification system manufacturer has supplied a (reusable) plastic bypass hose with fittings on either end that is designed to replace the water filter cartridge when the motor home is being winterized or sanitized. Store the hose when it is not in use.

- Do not allow water to freeze in the filter.
- Remove the cartridge before using antifreeze to winterize or chlorine solution to sanitize the system.
- Flush thoroughly before it is put back into service after winterizing or sanitizing or if the system has not been used for some time.
- For best results replace the filter every 6 months or as needed.

Replacing the secondary water filter cartridge

1. Turn off water supply to the filter. Turn the black valve (next to the cartridge filter) OFF. Water pump should be OFF.
2. Place a cloth under the filter housing to catch any spillage.
3. Relieve pressure on the line (by depressing the drinking water faucet or the paddle on the refrigerator door) before removing the filter.
4. Unscrew the two fittings from each end of the old filter or the bypass hose.
5. Remove bypass hose or filter cartridge (dispose of filter properly).
6. Install new filter screwing it on the two fittings in the utility center.
7. Turn on the water supply black valve and the water pump to check for leaks.
8. Make sure if you are using the pump, the Water Pump Backflow Valve is turned ON.



Water supply shutoff to the cartridge water filter (shown OFF)

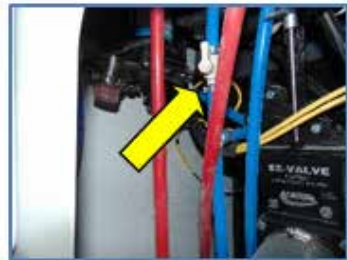
For more information

Refer to the water purification manufacturer's information in the Owner's Warranty Packet.

Draining the Fresh Water System

To drain the fresh water holding tank and supply lines:

1. Make sure the "city water / fresh tank fill valve" is in the City Fill position.
2. Make sure the "winterize intake valves" are set to NORMAL
3. Make sure your "water heater bypass" valve is set to NORMAL.
4. Open the "fresh tank drain".
5. Open the "low point drains".
6. Turn on the outside shower faucet.
7. Turn ON the Water Pump Backflow Valve if using the water pump. It should be OFF when using pressurized City Water.
8. Turn ON the water pump and allow it to run as needed.
9. Open all kitchen and bath faucets.
10. Operate the toilet flush lever until water stops flowing.



Pump Backflow Valve

When you are finished draining the fresh water system, reverse steps 4-9 and dump the grey and black water holding tanks.

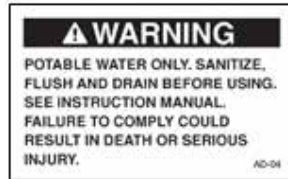
EXTERIOR DOCKING CENTER

When using the fresh water system, always use a non-toxic drinking water hose dedicated only to supplying fresh water. To prevent contamination, keep the drinking water hose from coming into contact with the ground. Install the city water connection inlet cap when the fresh water connection is not being used.

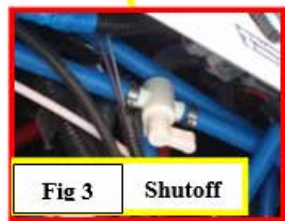
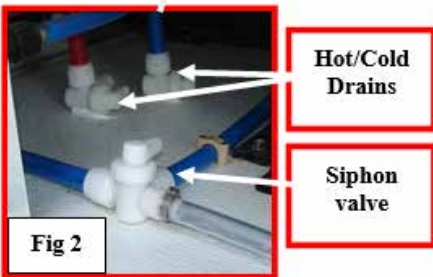
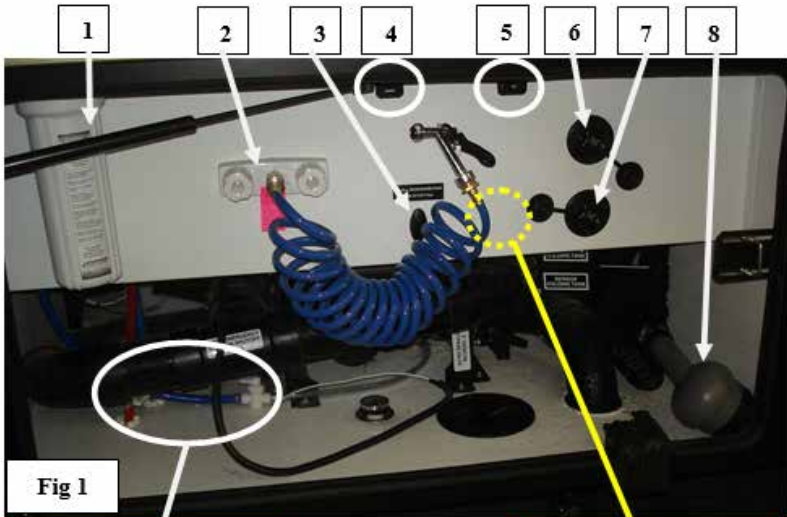
The fresh water connection should be disconnected (i.e., the non-toxic drinking hose disconnected) when the recreation vehicle is unattended for any amount of time.

Do not remove this label from your motor home:

Potable Water Only Label
(Label appearance may vary)



The exterior utility center allows you to access the plumbing system functions at one central location. It contains the following:



Sanitizing and Winterizing Controls

SECTION 8: PLUMBING SYSTEM

⚠ CAUTION

Never leave the motor home unattended while filling the fresh water system.

1. Canister water filter
2. Outside shower and quick disconnect hose
3. City Water / Tank Fill Valve
4. Pump Switch
5. Macerator ON/OFF switch
6. Black Tank Flush inlet (*See Black Tank Flush*)
7. Fresh Water Connection inlet
8. Macerator hose and dump connector

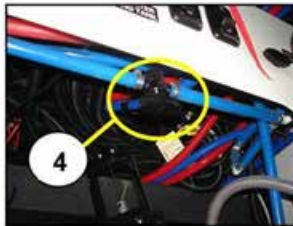
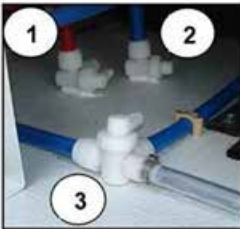
Fresh Water Connections

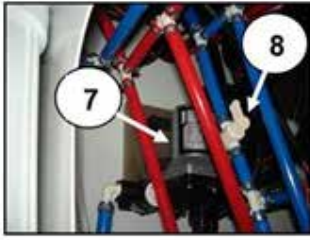
There are three types of direct fresh water connections located at the exterior utility center:

- Fresh water connection inlet
- Black tank flush (*see Black Tank Flush*)
- Clear hose (sanitize / winterize)

The utility center has a water shutoff valve located behind the utility center panel (Fig 3).

1. Hot water line drain valve (left side of utility center)
2. Cold water line drain valve (left side of utility center)
3. Siphon valve with clear hose attached for sanitizing and winterizing (left side of utility center)
4. Water supply valve to canister water filter (upper right of utility center)
5. Drain on floor of utility center
6. Macerator Bypass dump valve (center of utility center)
(*See Black and Gray Tank Drain section*)
7. Water pump and strainer (left wall of utility center)
8. **Water Pump Backflow Valve:** Located beside the pump on the left wall of the utility center. It must be turned ON when using the pump to circulate water through the *water lines* of the RV. Must be OFF when using pressurized City Water to circulate water through the water lines. If it is ON when using City Water, it can backfill the fresh water tank through the water pump causing it to overflow. If you are using pressurized water to fill the tank, this valve has no effect ON or OFF.
9. Macerator Emergency Cutoff valve (center of utility center)
(*See Black and Gray Tank Drain section*)





Sanitizing the Plumbing System

When to sanitize:

- When your motor home 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. Level the motor home and drain the fresh water system (see *Draining the Fresh Water System*).
2. Close all low point drains, including the drains for hot/cold water lines at the utility center (Fig 2).
3. Turn water supply OFF to canister water filter (Fig 3). The valve is located behind the utility center panel. Remove the filter cartridge from the water purification system canister (Fig 1), re-attach the empty canister. See *Water Purification System* for additional information on removing the filters. Turn the water supply valve (Fig 3) ON.

Chlorine should be kept out of the water filter.



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

4. 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.

If a 100 ppm concentration is required, use 1/2 cup of household bleach with one gallon of water to prepare the chlorine solution. One gallon of the solution should be used for each 15 gallons of tank capacity.

5. To sanitize the fresh water tank: Open the water tank compartment of the RV. Remove the cap from the tank water fill and pour the sanitizer solution into the fresh water tank. Replace the cap.



Fresh Water Tank

6. Fill the fresh water tank using one of the following methods:

Method 1: Remove the cap and fill the tank using a water hose. Monitor the water level using the water level guide.

Method 2: Attach the fresh water hose to a pressurized water source. Connect the other end of the hose to the City Water Inlet. Turn the Tank Fill / City Water valve on the utility center to TANK FILL (horizontal). Turn on the water until the tank is full.

SECTION 8: PLUMBING SYSTEM

7. When the water tank is full:

Method 1: Remove the water hose and replace the cap on the water tank.

Method 2: Shut off pressurized water source, disconnect water source, and remove the hose from the City Water inlet.

8. Turn off power to the water heater. Switches are located in a bathroom cabinet. Bypass the water heater. Sanitizer must be kept out of the water heater. Set the bypass valves to the BYPASS position (two supply valves OFF, middle valve ON). The 3 valves are located near the water heater.
9. Turn Water Pump Backflow Valve ON (when using the pump).
10. Turn the pump switch ON.
11. Open the hot and cold water line faucets one at a time (kitchen, lavatory, shower and outside shower) until water begins to flow continuously and a chlorine smell is noticeable. Close the hot and cold water faucets.



NOTE: The shower hose must be connected to the outside shower.

12. Turn the pump OFF.
13. Let the solution remain in the system for at least four hours when disinfecting with 50 PPM residual chlorine. If a shorter time period is desired, then a 100 PPM chlorine concentration should be permitted to sit in the system for at least one hour. For complete fresh water tank sanitization, driving your motor home for a short distance will allow the sanitizing solution to splash around all sides of the tank.
14. After the required sanitization period, drain the chlorine solution from the fresh water system (see *Draining the Fresh Water System*).
15. Re-fill the fresh water tank. Verify that the city water valve is in the horizontal (fill tank) position (Fig. 1). Refer to Step 6 above to fill the fresh water tank.
16. Turn water source OFF. Set the city water valve back to the vertical (city water) position. Water source should attach to the City Water inlet. Turn the water source ON. Water Pump Backflow Valve should be turned OFF. Open all faucets (including outside shower) to flush all the water lines with fresh water (pump is not used for this). Water heater bypass should still be set to BYPASS (to prevent water from entering the water heater).
17. Drain the fresh water system again (see *Draining the Fresh Water System*). Re-fill the fresh water tank with potable water. Turn the water heater bypass valves to the NORMAL position (hot & cold supply valves ON, middle valve OFF) to allow water into the Aqua-Hot water heater. Detach the outside shower hose.



NOTE: 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.

The following steps must be done before flushing the system with the vinegar solution:

- Water filter from the canister filter has been removed at the utility center.
- Aqua-Hot water heater is bypassed before flushing the system with the vinegar solution.

Re-flush the system with the vinegar solution through the faucets (steps 11 to 13) until chlorine smell is gone. Then flush the system again with fresh water. **ONLY** after the vinegar solution has been flushed out of the lines with fresh water, replace the water filter and set the water heater bypass valves back to the normal position (hot & cold supply valves ON and middle valve OFF).

Winterizing the Plumbing System

Preparing your motor home for colder weather or storage is very important for most states and Canada. Failure to prepare your motor home may cause water supply lines and the water heater to freeze. **Repairs due to freezing are not covered under the terms of the “Motorized Limited Warranty” applicable to the motor home.**

No commodity or product should be added to the fresh water system to ensure freeze protection other than RV antifreeze.

Winterizing the Aqua-Hot System: Aqua-Hot requires RV antifreeze in the potable water chamber to insure the heating coil is protected from freeze damage. The motor home antifreeze winterizing feature is located in the outside utility center. **Refer to the Aqua-Hot owner’s manual for additional details.**



NOTE: Appliances (refrigerator, dishwasher or clothes washer) must be winterized. Refer to the appliance owner’s manual for possible additional information or contact your Dealer or Customer Service for assistance.

When to winterize:

- At the end of the camping season.
- When the motor home will be exposed to temperatures at or below, 32°F (0°C).

The preferred method for winterizing your motor home is to use RV antifreeze in the plumbing system.

⚠ 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.
- 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. Use only RV antifreeze.**

⚠ CAUTION

If the motor home is going to be stored in a non-temperature controlled environment with a risk of temperatures reaching 32°F (0°C) or lower, the demand (power) system with RV antifreeze ***must*** be used in the motorhome plumbing system as directed in this manual (this would include appliances such as the washer, dishwasher and the residential refrigerator).

SECTION 8: PLUMBING SYSTEM

Winterizing with antifreeze

This method adds antifreeze to the water lines for freeze protection for temperatures 32°F (0°C) and below. A second person will make this job easier.

1. Close all the faucets in the coach (including outside shower). Attach the shower hose to the outside shower quick connector.
2. Close the fresh water tank drain and all other low point drains. Include the hot/cold water line drain valves at the utility center (Fig. 2).
3. The City Water valve should be set to the vertical (city water) position (Fig. 1).
4. Water heater bypass valves should be set to the BYPASS position. Middle valve ON and the two supply valves to the water heater OFF
5. Place the clear hose from the utility center (Fig. 2) into a container of RV antifreeze (requires about 2 gallons). The clear hose is located at the utility center. The dashed circle in (Fig 1) indicates an item behind the utility center panel.
6. Siphon valve should be turned so it is in-line with the clear plastic hose.
7. Turn the water pump ON (Fig. 1) and antifreeze will be drawn out of the container and into the water lines as each fixture is opened in the motor home. To aid siphoning, place the antifreeze container on a flat surface approximately 2 feet off the ground.

Winterizing the Macerator System (if so equipped)

1. Ensure that all tanks are empty.

2. Pour RV antifreeze into the toilet and down into the black water tank. At time of printing, quantity of antifreeze to be put into the black tanks was not determined. Check with Customer Service for proper amount to use.



NOTE: Use a container (bucket) for capturing system fluid!



Macerator Bypass

3. Turn the macerator pump ON.
4. Run the pump until antifreeze begins to discharge from the dump connector attached to the flex hose.
5. Turn the macerator pump OFF.
6. Drain the flex hose by holding it at a sloped angle to drain excess water and return the hose to the storage location.
7. As an added safety measure, open and drain the Macerator Bypass Valve.

Completing the Winterizing with antifreeze

8. After all of the water lines/appliances have been winterized, turn the pump OFF and disconnect the shower hose from the outside shower.
9. Turn the siphon valve so it points away from the clear hose (Fig 2). Valve is located behind the large panel on the utility center.
10. Open the drain valve on the fresh water tank and leave it open.
11. Add a cup of antifreeze in all the drain p-traps.
12. Remove the clear hose from the container of RV antifreeze and clean.



NOTE: To reduce the chance of contamination, prevent the clear hose from coming into contact with the ground or the water fittings.

13. Wipe the antifreeze out of the sinks, shower, and toilet using a soft, dry cloth.

To De-Winterize the Fresh Water System

Close the fresh water drain valve. Fill the fresh water tank with fresh water and rinse the RV antifreeze from each faucet or appliance that was protected with the RV antifreeze.

Fill the fresh water tank using one of the following methods:

Method 1: Connect a pressurized water source to the City Water inlet.

The city water valve (Fig 1) should be turned to the Tank Fill position (horizontal). Turn water source ON and fill the tank.

Method 2: Open the water tank compartment on the DOOR SIDE of the RV. Remove the fill cap from the water tank. Insert a hose (connected to a fresh water source) into the water tank. If there is a drain valve for the tank, it should be turned OFF. Turn water source ON and fill the tank.

Turn off and disconnect the water source. Turn the pump ON. Turn the Water Pump Backflow valve ON. Purge all antifreeze out of the water lines by opening all faucets (including outside shower).

Once all the antifreeze is out of the water lines, turn pump OFF, replace the canister water filter, sanitize the system as necessary.

De-Winterize the Macerator Toilet: Press either button to flush and return to normal condition.

De-Winterize the Macerator System: Emptying the black tanks for the first time in the spring, will discharge antifreeze in the macerator pipe and flex hose.

SHOWER MISER (IF SO EQUIPPED)

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.

SECTION 8: PLUMBING SYSTEM

- 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.

WATER HEATER

WARNING

- ❑ Hydrogen gas may result if you have not used the water heater for two weeks or more. **HYDROGEN GAS IS EXTREMELY FLAMMABLE.** To reduce the risk of injury under these conditions, open the hot water faucet for several minutes at the kitchen sink before you use any electrical appliance connected to the hot water system. If hydrogen is present, you may hear what sounds like air escaping through the pipe as the water begins to flow. Hydrogen gas may be present even after water has been drained from the water heater tank. Open the faucet at the sink and allow the system to vent for five to ten minutes. Do not smoke or have any open flame near the open faucet while venting. On DSI water heater models, make sure the switch is OFF.
- ❑ Do not alter the operation or change the design/construction of your water heater. For your safety, only factory authorized parts should be used on your water heater. Accessories marketed for recreation vehicles, such as an “add-on” electric heating elements, are not recommended by the manufacturer. Such items are not approved to be installed and could create an unsafe condition and will void all warranties.
- ❑ **If you smell propane gas then STOP!** and follow the procedures listed in the *Propane System* section before attempting to operate the water heater.

The water heater manufacturer has preset the sensing limit to maintain the water temperature when the water heater is activated. Read the safety and operating information provided in the manufacturer’s manual located in your warranty packet before attempting to activate the water heater. Operating Instructions

Make sure the water heater is filled with water before use as even momentary operation of the water heater without water in it may result in damage to the tank heating element and/or controls. Always open both the hot and cold water faucets when filling the fresh water tank to allow air pockets to be forced out of the water heater. **Double check the bypass valves,** make sure they are set properly.

Water Heater Switch (if so equipped)

The “propane GAS” switch enables propane operation of the water heater, and the “ELECTRIC” switch enables electric operation.


NOTE: Water heaters in certain models will ONLY have a single LP Gas water heater switch. These units will not heat water electrically.

Water Heater Bypass

Use the factory installed water heater bypass, available in most floor plans, to avoid filling the entire water heater with RV antifreeze. See the *Utility Center* section for details on using the bypass system.

High Altitude Derating

Operation of the water heater at high altitudes may require derating. If the water heater is not properly derated, lack of sufficient oxygen for combustion may produce improper burner operation. Pilot outage caused by burner lift-off or sooting from a yellow burner may occur, indicating the possibility of carbon monoxide. You may also notice a lack of efficiency in heating the water because of incomplete combustion of the burner at these higher altitudes. Consult with the local propane company, your dealer or the water heater manufacturer for proper derating of the water heater. Change out of the orifice (derating) should be done by the dealer or a qualified service agency.



NOTE: It is important that once the RV has returned to lower elevation (below 4500 feet) any high altitude derating or other adjustments be reversed for proper operation of the water heater.

Pressure and Temperature Relief Valve

⚠ WARNING

Do not place a valve between the pressure and temperature (P&T) valve and the tank. Do not remove or plug the relief valve under any circumstances.

The temperature and pressure relief valve is designed to open if the temperature of the water within the heater reaches 120° F, or if the water pressure in the heater reaches 150 pounds. When this pressure is reached, the pressure relief valve will open and water will drip from the valve.

This “weeping” or dripping will continue until the pressure is reduced to below 150 pounds, and the valve closes. This condition is normal and does not indicate a defective relief valve. One way to reduce the frequency of this occurrence is to maintain an air pocket at the top of the water heater tank. This air pocket will form in the tank by design; however, it will be reduced over time by the everyday use of your water heater. To replenish this air pocket:

1. Turn off the water heater.
2. Turn off the cold water supply line.
3. Open a faucet in the recreation vehicle.
4. Pull out the handle of the pressure relief (P&T) valve and allow water to flow from the valve until it stops.
5. Release the handle on the P&T valve - it should snap closed.

Close the faucet and turn on the cold water supply. As the tank fills, the air pocket will develop. Repeat this procedure as often as needed to reduce the frequency of the weeping P&T valve.

Draining and Winterization

If the recreation vehicle is to be stored over the winter months, the water heater must be

SECTION 8: PLUMBING SYSTEM


drained to prevent damage from freezing. Damage to the water heater caused by freezing is not warrantable. It is recommended the water heater be drained and bypassed during the winterization process, **particularly if introducing RV antifreeze into the plumbing system. Never drain the water heater when it is HOT or UNDER PRESSURE.**

OUTSIDE SHOWER AND COURTESY LIGHT

A handheld shower assembly with both hot and cold water is available in the utility center for washing or rinsing. The coiled hose for the shower has a quick connect fitting that attaches between the shower control knobs. Be sure the 12 volt power for the water pump is on, or the city water connector has water available to it.

Water should **always** be turned off using the hot / cold control knobs rather than turning off the water with the lever on the shower head. Turning off the water with the shower head lever can create a condition where the hot and cold water will mix through the outside shower faucet, thereby reducing the temperature of the hot water. It can appear as though the hot water heater is not working properly.

After the water has been allowed to drain from the shower head, replace it in the exterior universal docking center.




NOTE: Any remaining water in the shower hose will drip or run out; this is not a leak but performs as intended.

The **courtesy light** is operated with a rocker switch located on the utility center panel.

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 through the plumbing pipes 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.

BLACK/GREY WATER SYSTEM AND TANKS

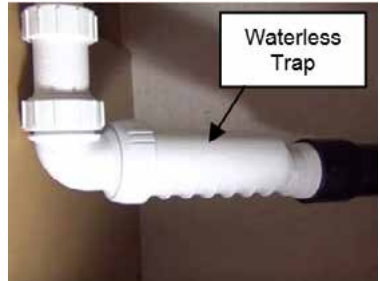
Water from the sinks and shower flows into the gray water (or wastewater) holding tank. Water from the toilet will flow into the black water (or sewage) holding tank (see Black/Grey Water Holding Tanks).

Drain Pipes with P-Trap (if so 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 so 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.

SECTION 8: PLUMBING SYSTEM

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.

CAUTION

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

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 $\frac{3}{4}$ 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 /GRAY TANK DRAINS AND MACERATOR SYSTEM

Depending on your model, the gray tank drain and black tank drain (also referred to as dump valves) may be located in the exterior utility center. These valves may have either an electric switch control and/or a manual handle.

Always drain the black water holding tank first so the following wastewater can help rinse any solids or debris from the dump outlet and sewer hose.

Macerator Pump System

Your motor home is equipped with a macerator pump system used to discharge waste from the gray and black waste tank. The system has a 1-1/2-inch diameter flexible hose that runs from the pump and attaches to a separate compartment on the exterior of the motor home. Not all models are equipped with an external storage compartment. The system when powered on can discharge waste (uphill if necessary) up to a distance of 150 feet.

⚠ WARNING

Before operating the macerator pump, make sure the external dump hose is properly attached at the motor home and at the dump station. The hose is under pressure and therefore waste is discharged under pressure. **Failure to follow instructions can lead to possible injury or property damage. The use of this system for anything other than intended will void the warranty.**

⚠ CAUTION

Water can accumulate in the flexible hose and dump connector of the macerator system. When winterizing the RV, antifreeze must be added to the macerator system. Refer to the Winterizing section.

Open the hose compartment and pull out the 1-1/2 inch flexible hose with the attached dump connector. The dump connector includes two connections: a small removable cap for attaching a 3/4 inch garden hose, or a larger 3-inch removable cap which allows it to be attached to the sewer outlet at the dump station.

Using the macerator system

1. To make drainage easier, level the motor home.
2. Attach the dump connector to the 3-inch sewer outlet at the dump station, or to a 3/4-inch garden hose and run the hose to a dumping location.
3. Empty the tanks one at a time. Empty the black tank first followed by the gray tank so waste water from the gray tank will help rinse solids or debris from the dump connector and flex hose.
 - **Electric system:** To open the black or grey tank drain valve, press the corresponding tank drain (rocker) switch. To close the valve, press the switch again.
 - **Manual system:** To open the black or grey tank drain valve, pull the corresponding T-handle out. Close the tank drain by pushing in the T-handle in.
4. Turn the Macerator power switch ON at the utility center panel and the macerator pump will begin sending waste through the dump hose. **Make sure the sewer hose is connected before turning the macerator on.**
5. When the tank is empty, turn the macerator power switch OFF. Close the black tank drain valve.
6. Select the gray drain valve.
7. Turn the Macerator Power Switch ON.



Dump Station Connector



Garden Hose Connection

SECTION 8: PLUMBING SYSTEM

- When tank is empty, turn the macerator power switch OFF. Close the gray tank drain valve.
- Unhook the dump connector, rinse it out and replace the hose and connector back into the storage compartment.

The black tank flush inlet can also be used with this system (refer to the *Black Tank Flush* section).

Macerator Bypass Valve

In the event the macerator pump malfunctions, there is a macerator bypass valve. Depending on your model, this valve may be located in the utility center, in the compartment with the black/gray tank valves or under the motor home (accessible through the generator compartment). This bypass will dump the waste (using gravity flow) from the black/gray tanks to a 3-inch sewer hose connection.

To operate:

- Attach a 3-inch sewer hose to the bypass connection, and to a sewer outlet at a dump station.
- Empty the tanks one at a time. Black tank should be emptied first followed by the gray tank so waste water from the gray tank will help rinse solids or debris from the dump outlet and hose.
- Pull the black tank dump valve located.
- Pull the manual macerator bypass valve to open it and the black tank will empty by gravity flow.
- Close the black tank dump valve, and then close the macerator bypass valve.
- Open the gray tank dump valve, and then open the macerator bypass valve.
- When finished, make sure both black and gray tank dump valves are closed, shut off the macerator bypass valve, and disconnect the sewer hose from the motor home and at the dump station.
- Clean and store the sewer hose.
- Replace the dust cap on the macerator bypass.

The black tank flush inlet can be used with the macerator bypass (refer to the *Black Tank Flush* section).

Macerator Emergency Cutoff

The macerator system includes an emergency cutoff valve that stops the flow of waste through the flexible 1-1/2-inch macerator hose. The valve is at the back of the utility center (**Fig A**). The handle for the cutoff should be pulled UP for NORMAL operation. To engage the cutoff, push the valve handle DOWN.

Refer to the macerator manufacturer's owner manual included in your warranty packet, for additional information on operation, safety, troubleshooting and winterizing. Contact your RV dealer for assistance in the purchase and installation of a sewer hose and/or sewer hose extension (if needed).



Macerator Bypass



Fig A

**Macerator Cutoff
Normal Position**

BLACK TANK FLUSH (IF SO EQUIPPED)

The black tank flush (no fuss flush) inlet is typically located on the utility center panel (if so equipped) labeled as “Tank Flush”. For models not equipped with a utility center, the inlet is located on the side of the recreation vehicle. The location may vary depending on your model. Attach a garden hose (connected to a pressurized fresh water source) to the black tank flush inlet. The water goes directly into the black water holding tank sprayer connection, allowing you to remove debris and preventing accumulation. A check valve is incorporated in the plumbing lines to prevent back flow. Flush the black water tank each time the grey and black water holding tanks are dumped or as needed.



NOTE: Utility center (if so equipped) valve positions do not affect the tank flush function. It does not matter where they are positioned when operating the tank flush.

1. Dump the black water tank (see Gray Tank Drain & Black Tank Drain) and leave the black tank drain valve open.
2. Connect a garden hose from the water supply source to the black tank flush.
3. With the water source turned ON, flush the black water holding tank until the water running out of the black tank drain valve is clear (not discolored or cloudy).
4. Disconnect the garden hose and close the black tank drain valve. Fasten the sewer hose housing dust cap back on the tank flush inlet.

⚠ WARNING

Do not use the same hose to fill your fresh (potable) water tank that is used for the black tank flush.

⚠ CAUTION

- The black tank drain valve must be OPEN any time there is a hose (water supply) connected to the black tank flush.
- Do not leave any hose (water supply) connected to the black tank flush when it is not in use.

MACERATOR TOILET (IF SO EQUIPPED)

The toilet is a toilet with a built in macerator and pump system. Generally, more water is required only when flushing solids. If there is not a sufficient amount of water used during flushing, waste materials may not evacuate properly from the toilet drain line to the sewage holding tank and a clogged sewage tank or sewage pipe(s) could eventually occur.

CAUTION

- It is important to prevent solid waste buildup. Follow the toilet manufacturer's recommended instructions each time after emptying the black water holding tank.
- To help prevent toilet blockage, always use RV grade single-ply toilet paper. Do not flush paper towels, diapers, sanitary napkins or other foreign objects down the toilet. To avoid damage to the toilet, only flush organic material and toilet paper
- 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.

Operation

Normal Flush – Press and release right button.

Starts an add water and macerate sequence that runs the motor and adds water twice for maximum cleansing and minimum water usage. Sequence ends with a small amount of water added to the bowl to provide an odor trap. Recommended for flushing solids and toilet paper.

Water Saver Flush – Press and release left button

Only recommended for flushing liquids and small amounts of toilet paper.

Empty Bowl

Press both buttons simultaneously and release. This empties the bowl and leaves it dry for travel. Press either button once to add water, run motor and return to normal use.

Sleep Mode

- Lighting turns off after 8 hours of non-use
- In sleep-mode, the switch LEDs will turn OFF until next use.
- Pushing either button will return lighting to full brightness.

Lighting

- Night Lighting: Blue backlighting of the buttons provides identification at night. Buttons shut off to preserve power if not used for an extended period.
- Full Tank Lockout: For the safety of your system, the toilet will not flush when the Full Tank Sensor senses a full tank (LED is red).
- Emergency Override: If the tank is full (LED is red) and an emergency flush is needed, press and hold either flush button of (6) seconds to slush toilet. **CAUTION:** This may cause overfilling of a waste tank and system back up will flash.

Symbol

- Symbol not lighted: toilet system is OFF or not receiving power.
- Symbol is Green: toilet system is ON and the holding tank is less than full.
- Symbol is Yellow: toilet system is ON and the holding tank is at least half full.
- Symbol is Red: toilet system is ON and the holding tank is full.
- Diagnostic LED warning lights during over-ride (lower left on the screen)

Cleaning

- Use only non-abrasive, non-petroleum products to clean the pump.
- Never use household cleaners, which can contain bleach, in the toilet system. Household toilet bowl cleaners contain harsh acids. Bleach, petroleum-based products, strong acids and abrasives can cause irreversible damage to the toilet system and components.


Winterizing

- Use only propylene glycol based, non-toxic antifreeze when storing the toilet during freezing conditions.
- Never use automotive antifreeze or windshield washer solvent to winterize.
- Make sure that both the entire supply and discharge systems are thoroughly winterized to ensure complete protection for your system.

Refer to the manufacturer's pamphlet in your warranty packet for additional details, functions and maintenance guidelines.

TOILET (IF SO EQUIPPED)

Prior to using the sanitation system, it is strongly recommended to flush the toilet several times to release sufficient water into the holding tank. Generally, more water is required only when flushing solids.

 CAUTION	
<ul style="list-style-type: none">□ It is important to prevent solid waste buildup. Follow the toilet manufacturer's recommended instructions each time after emptying the black water holding tank.□ To help prevent toilet blockage, always use RV grade single-ply toilet paper. Do not flush paper towels, diapers, sanitary napkins or other foreign objects down the toilet.□ 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.	

The toilet system will perform better when water is run for ten to fifteen seconds after flushing to ensure that the waste will proceed to the bottom of the tank.

If there is not a sufficient amount of water used during flushing, the waste materials may not evacuate properly from the drain line to the tank. Clogged tanks and pipes could eventually occur. For added convenience and better sanitation system performance, it is advisable to always have four to six inches (10 - 15 cm) of water in the toilet. It is important to add enough water to prevent solid waste buildup. The following guidelines will help to prevent solid waste buildup.

Sewage (black) tank preparation

1. Release one to two quarts (1 or 2 liters) of water into the toilet bowl.
2. Follow the directions on your (approved RV) toilet chemical bottle (customer supplied), by placing 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.

Cleaning and Maintenance

The toilet should be cleaned regularly for maximum sanitation and operational efficiency.

For detailed information refer to the manufacturer's operator manual.

SECTION 8: PLUMBING SYSTEM

Notes:

CLIMATE CONTROL SYSTEM

All controls for the heating/cooling climate control system are incorporated into the touch screen system. For specific operating instructions for heating/cooling controls, refer to the touch screen user guide included in your warranty packet or online at <http://www.fireflyint.com>.

The air conditioner/heat pump heats and cools from a single unit. The heating unit will not replace a furnace for heating your motor home in cold weather. It is designed to warm the coach during cool or mild temperatures. Both the heating and cooling unit are controlled by a single thermostat which is controlled through the Vegatouch screen.

In the cooling mode, the temperature drop from inlet to supply will be 15 to 20 degrees. In the heating mode the temperature rise from inlet to supply will be 25 to 40 degrees unless the outdoor temperature has dropped sufficiently to cause the freeze switch to activate. In that case, the rise will be only 10 to 20 degrees. Any deviations from these norms are cause to examine the system for dirty air filters or outdoor coil.

Parking the vehicle in a shaded area, keeping windows and doors shut and avoiding the use of heat producing appliances in the vehicle will help to reduce the heat gain.

⚠ CAUTION

Do not operate the heat pump for extended periods of time without the filter installed. Lint, grease, dirt, etc. that are normally stopped by the filter are now accumulating in the cooling coil. This leads to loss of air volume, icing up of the cooling coil, and could result in serious damage to the operating components of the heat pump.

Maintenance

The only required maintenance on the heat pump is cleaning and replacing the filters. The filters can be cleaned and reused. It is recommended that filters be cleaned and changed at least every 2 weeks when the heat pump is in operation. Refer to the manufacturer's owner's manual for additional information on changing the filter.

Power Vent Fans

The power vent fans may also be controlled by the touch screen system. These fans can be located in the kitchen and bathrooms. For further information refer to the manufacturer's owner manuals for each of the power vents for specific features.

POWER ROOF VENT (IF SO EQUIPPED)

The 12-volt DC attic fan (or 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.

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

SECTION 9: HEATING & COOLING

Control pad (if so equipped)

The attic fan may be controlled by a control pad. The dome can be raised or lowered with the UP/DOWN buttons, and the speed of the fan is controlled by the ARROW buttons. It is also equipped with a rain sensor that will close the vent automatically when it rains. The rain sensor can be turned on/off by holding the DOWN button for 3 seconds.



Attic Fan Control



NOTE: For RV models with touch screens, the powered roof vent(s) may be controlled on one of the selectable screens on the touch screen.

HEATING SYSTEM(S)

Aqua-Hot Heating System (if so equipped) - See Section 8; Plumbing Systems

In-Dash Climate Control System - See Vehicle Operation - Climate Control System

FIREPLACE (IF SO EQUIPPED)

Your recreational vehicle may include an electric fireplace insert. For detailed operating and safety information, refer to the manufacturer's user guide included in your warranty packet.

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 (if so equipped)

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.

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.

SECTION 10: APPLIANCES

Cooking With Propane (if so equipped)

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.

INDUCTION COOKTOP (IF SO EQUIPPED)

Induction cooktops are more efficient than gas or electric cooktops. The cooking surface heats through magnetic induction. Cookware for induction cooking should be magnetic (steel or cast iron) and have a flat bottom. Cookware made from aluminum, corning ware, Pyrex, or glass will not work by just placing them on the surface, but can be used if they are placed on top of a magnetic interface disk which will function as a conventional hot plate. Stainless steel cookware may or may not work. If there is a doubt as to whether a certain pan or skillet will work, check it with a magnet. If the magnet clings to it, it will probably work with the induction cooktop; if it doesn't or clings weakly it probably won't work.

CAUTION

Aluminum foil should **NEVER** be used with an induction cooktop. It can permanently melt to the cooktop cracking the surface or causing permanent damage.

WARNING

Touching a hot pan or cooking vessel can still cause burns. Use pot holders or oven mitts to remove hot pans from the cooktop.

Induction cooktops are much safer to use than electric or gas.

- The stovetop stays cool, no burned fingers or hands if you touch the surface.
- Only the cooking vessel gets hot.
- The cooking surface only works when there is a magnetic pan (or interface disk) in place on it. Sensors detect the amount of ferrous material in the area of the magnetic field and if it is not the size of a small pan it won't turn on.
- Induction cooktops will not heat up the kitchen.
- Very rapid temperature increases can be achieved and very fine adjustments can be made.

Refer to manufacturer's manual for detailed operating and cleaning instructions.

MICRO HOOD

WARNING

Whenever the stove in the RV is being used: The Micro Hood **MUST** be turned on. **Failure to do so can create an asphyxiation hazard.**

The microwave oven in your RV is equipped with a Micro Hood vent. This micro hood vent pulls moisture out of the kitchen air while using the microwave helping to prevent mold and mildew. It will also pull out the fumes from the gas stove, which prevents gas inhalation and possible fire risks. Fumes and moisture are vented outside the RV through the Micro Hood.

The vent has an inner flap with two snaps. This flap can be snapped shut when the vehicle is in motion, or during storage to keep insects, debris, snow, rain, etc. from entering the

recreational vehicle.

Anytime the stove inside the recreational vehicle is being used, **this flap MUST be un-snapped and the range hood turned ON to vent fumes outside the vehicle.**

REFRIGERATOR

NOTE: Make sure you are connected to a 120-volt power source.

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.

⚠ CAUTION

The ice maker should be turned off and the ice tray emptied when power to your motor home has been shut off. With no power, the ice will melt and water will “pool” in the refrigerator door. When power is restored, the vibration will cause this water to run out of the door and on to the motor home floor.

Contact your dealer or Customer Service for details on winterizing your refrigerator. 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. Unplug refrigerator or 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.

There is no need for routine condenser cleaning in normal operating environments. If the environment is particularly greasy or dusty, or if there is significant pet traffic, the condenser should be cleaned every 2 to 3 months to ensure maximum efficiency.

If you need to clean the condenser:

- Remove the base grille.

SECTION 10: APPLIANCES

- Use a vacuum cleaner with a soft brush to clean the grille, the open areas behind the grille and the front surface area of the condenser.
- Replace the base grille when finished.

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.

PORTABLE CHEST COOLER (IF SO EQUIPPED)

The following is an overview of the portable chest cooler. For complete details on features, operation, other safety information, and troubleshooting, refer to the manufacturer's user's guide found in your warranty packet.



NOTE: Before using your cooler for the first time, and occasionally after use, clean the inside and outside using a damp cloth.

⚠ WARNING

- Never clean the cooler under running water or in dish water.
- Do not use abrasive cleaning agents or hard objects during cleaning as these can damage the cooler.
- Never use brushes, scouring pads or hard or pointed tools to remove ice or to loosen objects which have frozen in place.
- **Always pull out the main plug before you clean and service the cooler.**
- Manufacturer recommends against the use of an extension cord because of potential safety hazards. However if you must use one it **MUST** be UL or CSA listed with a 10Amp (minimum) 120VAC electrical rating.
- Refer to the table in the manufacturer's user guide (in your warranty packet) for a chart on selecting an extension cord.
- **ALWAYS** uncoil and extension cord to avoid heat retention and possible melting.
- **DO NOT** use power strips or 2 way splitters.
- **Under NO CIRCUMSTANCES** should you attempt to splice extension cord wires.

The following guidelines should be followed to assure you are getting the maximum performance from your cooler:

- Do not allow frost to build up on the inside of the cooler. To defrost, remove the contents of the cooler, switch off the device and leave the cover open. Wipe off any water with a clean cloth.
- Allow hot food to cool down first before you place it into the cooler.
- Do not open the cooler more often than necessary.
- Defrost the cooler once a layer of ice forms.
- Avoid unnecessary low temperature.



Cooler has the following features:

- 3 Level battery monitor for protecting the vehicle battery.
- Programmable turbo mode for rapid cooling.
- Display with temperature gauge. (turns off automatically at low battery voltage)
- Temperature adjustment with 2 buttons in steps of 1°C or 2°F
- Detachable handles
- Lid hinges can be reversed to open from the opposite side
- Can be operated on 12VDC or 24VDC
- The cooler can refrigerate or freeze food products.
- The cooler is designed for mobile use and can be carried by two detachable handles.
- The cooler can withstand a short term inclination of 30°.

DISHWASHER (IF SO EQUIPPED)

The following is an overview of the drawer dishwasher operation. For details on operation, cleaning and safety information, refer to the manufacturer's user guide.

1. **Load dishes** – Remove all food scraps and load the dishes.
2. **Add detergent. Check rinse aid.**
3. **Press the power button**
4. **Select a wash program** – The length of the wash program will appear on the electronic display (models with LCD only).
5. **Select ECO (optional)**
6. **Check** – Ensure there is nothing obstructing the spray arm. The drain filter must be level with the filter plate.
7. **Start** – Close the drawer and press the II button.
8. **Finish** – Six “beeps” indicates the end of the wash program. At the end of the wash program, the drying fan will continue to run for a set time or until the drawer is opened. It is normal for some water to remain in the drain filter area after the program is complete.

NOTE: Your dishwasher may have a “knock to pause” feature. By knocking firmly twice on the front door of the dishwasher you can pause the dishwasher. Wait for 3 short and 1 long tone before opening the drawer. Typically you knock toward the upper right portion of the dishwasher door. Don't force the door open, wait until the cycle stops. To resume washing close the door and press the Play/Pause button

SECTION 10: APPLIANCES

Child Lock

Disables all buttons and locks the drawer closed.

ACTIVATE: press and hold the button with the 5 pointed star (STAR). Hold the STAR button until you hear 2 tones and the lock indicator will light up.

DEACTIVATE:

(If the drawer is open) Press and hold the STAR button until you hear a tone. The lock indicator will turn off. (If the drawer is closed) knock 3 times on the door.

Keylock

Disables all buttons

ACTIVATE: Press and hold the STAR button until you hear 1 tone. Lock indicator will light up.

DEACTIVATE:

(If the drawer is open) Press and hold the STAR button until you hear a tone. The lock indicator will turn off. (If the drawer is closed) knock 3 times on the door.

Contact your Dealer or Customer Service for details on sanitizing and winterizing.

WASHER/DRYER (IF SO EQUIPPED)

If your motor home is equipped with a stackable washer/dryer set, make sure you have sufficient power available before operating the washer or dryer (refer to calculating electrical load). **Make sure you are connected to a 120-volt power source.**

Refer to the manufacturer owner's manual included in your Owner's Portfolio for detailed safety, operating and care instructions.

A dryer vent opening must be cut into the sidewall of the RV if installing a dryer. Look for the dryer vent label on the wall in the location where the dryer will be installed. Instructions on how to cut the dryer vent hole and install the vent in the wall of the RV are included in your documentation packet.



Dryer Vent Label

Contact your Dealer or Customer Service for details on sanitizing and winterizing.

⚠ WARNING

- Gas dryers should **NEVER** be installed in your recreation vehicle. Dryer prep has been designed for electric dryer operation **ONLY**.
- Never place items in the washer that are dampened with gasoline or other flammable fluids. No washer can completely remove oil.
- Do not dry anything that has ever had any type of oil on it (including cooking oils).

Doing so can result in death, explosion, or fire

⚠ CAUTION

Do not operate a dryer in the recreation vehicle unless the dryer is properly vented.

CENTRAL VACUUM SYSTEM (IF SO EQUIPPED)

Central Vacuum System

The following is an overview of the central vacuum system operation. For detailed operating and safety instructions, refer to the manufacturer's user guide.

The central vacuum system installed cleans virtually any surface with no electric cords and has a variety of attachments for many cleaning needs. Make sure you have 120-volt AC power available before operating your central vacuum system (refer to *Electrical Systems*, calculating electrical load).

To operate the central vacuum system lift the vacuum cover, and attach your vacuum hose and cleaning attachment. The central vacuum will automatically activate. It has a large disposable bag that will need to be checked periodically and replaced after usage. The disposable bag is located inside the exterior cargo compartment.

 WARNING

- DO NOT PICK UP ANYTHING THAT IS BURNING OR SMOKING, SUCH AS CIGARETTES, MATCHES, OR HOT ASHES. RV damage, personal injury, or death may result from vacuuming up burning or smoking material.
- DO NOT PICK UP FLAMMABLE OR COMBUSTIBLE LIQUIDS SUCH AS GASOLINE, OR USE IN AREAS WHERE THEY MAY BE PRESENT. RV damage, personal injury, or death may result from vacuuming up flammable or combustible material

SECTION 10: APPLIANCES


Notes:

ANTENNA/SATELLITE SYSTEM(S)

Your motor home may be equipped with one or more of the following:

Satellite TV Antenna (if so equipped)

The stationary and/or in-motion satellite TV antenna enables you to toggle between satellites while stationary or in-motion using a remote control (if you subscribe to multi-satellite programming).



NOTE: All dome satellite systems are motorized single dish / single LNB mechanisms. They can only point toward and receive programming from one satellite at a time. The automatic satellite dish is compatible with DISH Network® and DIRECTV® standard definition programming and DISH Network HD programming.

The following is an overview of the satellite operation and functions. Refer to the manufacturer's user guide for detailed operating instructions.

Your unit is preset for DIRECTV receivers. To change this setting, refer to the manufacturer's operation manual.

Operating your in-motion antenna

1. Turn on receiver and television set. The antenna must be connected to a receiver that is plugged into 120 VAC.
2. Verify that you are getting the receiver's menu screens on the television. These screens are available with or without the dish finding the signal. Refer to the antenna manufacturer's operation manual for details of receiver set up.
3. Turn the power switch on for the antenna. The dish should start moving, making one or two revolutions before it stops to acquire GPS. This can take a few moments or up to 10-15 minutes. Normal operation will be less than a minute.
4. Once the unit has acquired GPS, the dish will begin its search. The dish will pause on the signal long enough to determine which satellite it has found. If it moves off the signal, it is in an effort to verify the signal and should return to the signal shortly.
5. After the unit has verified that it has the correct satellite, it will continue to track the signal.
6. If the vehicle does not move for six minutes, the unit will toggle to its alternate satellite, then toggle back to the primary satellite and "go to sleep". If the vehicle begins movement in a straight line at 10 mph, the unit will resume tracking mode.
7. If you do not have a signal, see "Troubleshooting" during power up in the manufacturer's operation manual.

Modes of Operation

Whether stationary or in-motion during satellite signal acquisition, the unit enters tracking mode. In this mode, the unit will actively follow the satellite as the vehicle travels, even if the vehicle is stationary for the first six minutes. Tracking mode ends when the antenna has finished its search and the vehicle has not moved for six (6) minutes. The antenna will resume tracking mode if it detects movement in a straight line at 10 mph or more.

In sleep mode, the unit is at rest. The antenna enters sleep mode six (6) minutes after a successful search if stationary, or six (6) minutes after the vehicle stops moving.

SECTION 11: ELECTRONICS

Recovery from Signal Interruption

While traveling, the signal will be interrupted when the line of sight to the satellite is blocked. Signal is acquired again after line of sight is restored. If signal is interrupted for more than 15 seconds, the system automatically enters the search routine. The length of time for the TV picture to recover depends on the receiver model you are using.



NOTE: You must drive in a straight line at 10 mph or more when starting to operate in motion.

Toggle In-Motion

The satellite antenna will automatically toggle between the primary and alternate satellites for your service provider. For toggling in-motion, you may notice a slight delay in satellite switching which could cause a loss in picture. This is normal.

Picture loss should be no longer than three seconds. If the alternate satellite the antenna is trying to toggle to is blocked for more than 25 seconds, the system automatically enters the search routine.



NOTE: Use your on-screen guide to locate your channel rather than "channel surfing". This will result in smoother operation.

Operating your SD (stationary) antenna

1. Turn on receiver and television set. **The antenna must be connected to a receiver that is plugged into 120 VAC.**
2. **Verify that you are getting the receiver's menu screens on the television.** These screens are available with or without the dish finding the signal.
3. **Turn the power switch on for the antenna.** The dish will detect if it is already on a satellite signal. If it detects a signal, the dish will move to check its alternate satellite and then move back to the original satellite signal that is on.
4. If no signal was detected, the dish will begin its search to locate the primary satellite. Once the dish locates a signal, it will pause long enough to identify which satellite it has located. This may or may not be visible on your receiver's point dish screen.
5. After the unit has verified that it has the correct satellite, it will move to check the alternate satellite and move back to the primary satellite to complete the search routine.
6. **If you do not have signal, see *Troubleshooting* in the manufacturer's owner's manual.**



NOTE: Because the antenna uses information from the last location that it was on a signal, satellite acquisition may take longer if the dish is inactive over long distance traveling.

DIRECTV must be set to the "two" satellite, oval dish setting. Refer to your receiver manual. DISH Network receivers must have the check switch set to "SW64".

Satellite Dish (if so equipped)

The following is an overview of the automatic multi satellite TV antenna operation. For detailed operating instructions, including receiver set up, refer to the manufacturer's user guide.

When you press "POWER," the antenna will automatically begin searching for satellites. The instructions assume that the antenna is already in the stowed position.

1. Press and hold "POWER" for two seconds or until the TRAV'LER interface displays "POWER ON." Once the unit has been powered on, release "POWER."
2. The interface screen will display the type of satellite dish on the top line.
3. The antenna will enter the search mode as part of its normal operation and will display "Searching" on the bottom line.
4. The antenna will find its home position and begin to look for a satellite. Upon finding a satellite, the antenna will fine-tune or "peak" on the signal.
5. In automatic search mode, the antenna will lock onto three different satellites: 99°, 101°, and 103°. The antenna will display an asterisk for each satellite found.

If the receiver is already set up in the RV, you are now ready to watch TV.



NOTE: If you want to turn off the power to the antenna after it has locked onto satellites, press "POWER" and "SELECT" at the same time.

Before traveling, make sure to press "POWER" and wait for the antenna to start to power up; then press "POWER" again to initiate the stow sequence. See below for information on stowing before traveling.

User Menu for Manual Operation

The interface includes a user menu for some advanced features. The options most commonly used are the ability to change the dish type, check software/hardware versions, change desired satellite configuration, or manually move the dish.

WARNING

Improper use of the user menu could cause damage to the antenna and/or vehicle. Do not enter the user menu for regular operation.

The antenna is not meant for use while traveling. To stow the unit for travel, press "POWER" one time. The unit will stop what it is doing and return to the stowed position. The interface will not turn off unless the antenna is successfully stowed. Visually inspect that the antenna is in the stowed/travel position before traveling. Do not move the vehicle until the antenna is stowed.

Emergency Manual Stow

If unable to stow the antenna, it may be necessary to use emergency manual stow. Emergency manual stow is meant as a last resort and is not meant for common usage! To use emergency manual, stow, unplug the interface box. Then, remove the black plastic bolt from the back of the mount. Insert a 3/8 socket extension into this auxiliary drive. Turn the auxiliary drive clockwise to lower the unit. Do not use a drill!

SECTION 11: ELECTRONICS

Emergency Power Off

The antenna comes with an emergency power off feature. To activate it, press and hold “POWER” and then press “SELECT” while still holding “POWER”. The antenna will stop and turn off. If the emergency power off feature is used, the antenna may not be in a safe position for travel. Do not move the vehicle until the unit is stowed.

Automatic HDTV Antenna (if so equipped)

Your recreation vehicle is equipped with an exterior automatic aiming **fixed height** high definition TV antenna. This antenna automatically rotates 360° and is capable of receiving any Over-The-Air (OTA) high definition television signals being broadcast in your receiving area (UHF & VHF). The antenna is controlled through the use of a control plate located inside the RV above the entrance door.



Winegard Rayzar Automatic
Amplified Domed HDTV

NOTE: A channel scan must be run to search for and tune in local TV channels. This feature is built into each TV and is not the same as pressing the channel up/down button on the TV remote control. Your TV manual will explain how to perform a channel scan.

NOTE: The antenna is a fixed height (7" tall and 15.5" in diameter) and cannot be lowered or raised. Trees and foliage will interfere with receiving a strong HDTV signal.

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

You can download the Winegard TV Signal Finder app for your iPhone or Android device from either Google Play Store or Apple App Store. This app will show you all TV signals in your area and the direction to point your antenna to receive the OTA signals. It covers signal area up to 70 miles and gives names and channel numbers for the stations.

Automatic HDTV Antenna

Quick start guide – Typical use:

1. Power on the antenna by pressing the **ON/OFF** button (**B**).
2. Press the **SEARCH** button to initiate a search. Within 2-3 minutes, the antenna will point where maximum reception is found (**G**).
3. Program the TV Channels:
 - Go to Channel Setup on your TV menu.
 - Select the Over-The-Air (OTA) antenna.
 - Do not select Cable.
 - Select Channel Search or **Channel Scan**. This will program the stations in your area into the TV. Do this whenever the antenna is re-positioned.



Antenna Power
Supply

- A. **On/Off LED:** Green LED lights when antenna amplifier is turned on and system is in Antenna Mode.
- B. **On/Off Button:** Used to turn the antenna on and off. When turned ON it is in Antenna Mode and will receive Over-The-Air (OTA) signals. When turned OFF it is in Cable Mode and will receive campground (park) cable signals (provided you have the park cable attached to the cable input connector on the antenna control panel).
- C. **Positional LEDs (Green and Red):** 8 green/red LEDs in a circular pattern. Top of wall plate represents the front of RV, bottom is back of RV.



- If (2) green LEDs are lit, the antenna is positioned between those positions.
 - If both the red and green LEDs are lit on the same spot, that indicates the current antenna position and optimal pointing location.
 - Refer to the **Search Button** for more information.
- D. **Front Coaxial TV Connection:** Connection for cable TV. There is an additional connection on the rear of the antenna control panel.
- E. **Rotate Buttons:** Fine tune a channel that may be pixelating or weak. Manually point towards a known antenna location.
- F. **Readout Display (2 Digit):** Will show the number of TV frequencies found at the current position. This is the number of RF Signals available and will differ from the amount of virtual channels scanned on a TV because of multi-casting. Typically, a TV scan will result in 2x to 3x more channels than RF Signals.
- G. **Search Button:**
- Initiates a new search after powering antenna on.
 - Press and hold the search button for 2 seconds to clear the memory and start a new search.
 - The system will also clear all search results each time antenna is powered off.
 - Typical search will take 2 to 3 minutes. A red LED cycles through the 8 positional LEDs to indicate the antenna is moving and which direction it is moving. After the search is complete, the antenna automatically goes to the position that results in the most watchable TV channels.
 - The display will show number of frequencies seen at that position. Both the green and the red LEDs will light to indicate successful search. Additional red LEDs will light to show channels found in alternate positions.
 - Pressing search moves antenna to next best location. Continue pressing search to cycle through all other positions with additional channels until it returns to first search location. Pressing and holding the search button clears the memory and starts a new search.

Sleep Mode

When the system is powered on, and no buttons are pressed for 3 minutes the system enters Sleep Mode. The power LED will remain lit and the antenna amplifier will be on allowing you to watch TV. All other LEDs will be off. Press any button on the antenna control panel to exit Sleep Mode.

SECTION 11: ELECTRONICS

Troubleshooting

If the readout displays “HS” (in manual mode), the antenna has reached the operational limit and needs to rotate the other direction.

Pressing the Search and Counter Clockwise Rotate button at the same time will reset the system. Performing a reset can also clear error messages. The following is a list of possible Error Codes (and resolutions) that can appear on the 2-digit readout during use.

- E1** **Cause:** Short in coax between control panel and antenna
Action: Check all cables and connections then perform RESET function on control panel or disconnect 12 volts.
- E2** **Cause:** No antenna detected
Action: Check all cables and connections to antenna.
- E3** **Cause:** Motor movement error
Action: Antenna may still function. If problem persists, contact Winegard Technical Service.
- E4** **Cause:** Tuner error. Controls and antenna will still function.
Action: Perform RESET function on control panel. If problem persists, contact Winegard Technical Service.
- E5** **Cause:** Factory Mode
Action: Perform RESET to exit Factory Mode and return to normal operation. If the above steps do not resolve the issue or another persists, please contact Winegard Technical Service at 1-800-788-4417 or email help@winegard.com.

Refer to the Winegard owner manual information found in your warranty packet for detailed instructions on operation and troubleshooting for your automatic antenna and satellite system.

Manual HDTV Antenna (if so equipped)

Your recreation vehicle is equipped with an exterior **fixed height** high definition TV antenna. This antenna manually rotates 360° and is capable of receiving any Over-The-Air (OTA) high definition television signals being broadcast in your receiving area. The enclosure base for the antenna (inside the RV on the ceiling) will have a knob that can rotate a full 360° to adjust for the best signal coming to the antenna.

The antenna base (on the ceiling inside the RV) has a large knob that must be pushed upward to unlock the antenna. The knob can then be rotated 360° and when released locks the antenna in place.

To scan for local TV stations it is recommended to turn the antenna fully counter-clockwise until it hits the hard stop (Travel Position). The antenna will be pointing toward the rear of the RV.

Travel Position

This antenna has a travel position when you are ready to move your RV. Rotate the handle counter-clockwise (indicated by the arrow on the ceiling plate) until the antenna hits a hard stop and will not rotate further. Turn off the antenna power supply.



NOTE: A channel scan must be run to search for and tune in local TV channels. This feature is built into each TV and is not the same as pressing the channel up/down button on the TV remote control. Your TV manual will explain how to perform a channel scan. (You may have to manually rotate the antenna if no channels are found and do a second channel scan).

You can download the Winegard TV Signal Finder app for your iPhone or Android device from either Google Play Store or Apple App Store. This app will show you all TV signals in your area and the direction to point your antenna to receive the OTA signals. It covers signal area up to 70 miles and gives names and channel numbers for the stations.

NOTE: The antenna is a fixed height (8.4" maximum) and cannot be lowered or raised. Trees and foliage will interfere with receiving a strong HDTV signal.

Antenna Power Supply

For good station reception, the antenna power supply must be turned ON to view local HDTV television stations. Turning the antenna power supply ON sends 12-volt DC through the cable to the TV roof antenna turning the antenna amplifier ON. Over-The-Air (OTA) HDTV signals are then fed to the TV through the coax cable connected to the antenna plate.

The antenna power supply plate is typically located on the wall behind the main TV or it may be in the overhead compartment above the entrance door. Turn the antenna power supply OFF to view cable television or to use the DVD player. The ON/OFF switch is located on the wall plate for the antenna connection. An LED will light to indicate antenna power is ON.



Antenna Power Supply

SATELLITE DISH (IF SO EQUIPPED)

Your motor home may be equipped with the automatic multi-satellite TV antenna.

The following is an overview of the antenna operation. For detailed operating instructions, including receiver set up, refer to the manufacturer's user guide.

When you press "POWER," the antenna will automatically begin searching for satellites. The instructions assume that the antenna is already in the stowed position.

1. Press and hold "POWER" for two seconds or until the TRAV'LER interface displays "POWER ON". Once the unit has been powered on, release "POWER".
2. The interface screen will display the type of satellite dish on the top line.
3. The antenna will enter the search mode as part of its normal operation and will display "Searching" on the bottom line.
4. The antenna will find its home position and begin to look for a satellite. Upon finding a satellite, the antenna will fine-tune or "peak" on the signal.
5. In automatic search mode, the antenna will lock onto three different satellites: 99°, 101°, and 103°. The antenna will display an asterisk for each satellite found.

If the receiver is already set up in the RV, you are now ready to watch TV.

NOTE: If you want to turn off the power to the antenna after it has locked onto satellites, press "POWER" and "SELECT" at the same time.

Before traveling, make sure to press "POWER" and wait for the antenna to start to power up; then press "POWER" again to initiate the stow sequence. See below for information on stowing before traveling.

SECTION 11: ELECTRONICS

User Menu for Manual Operation

The interface includes a user menu for some advanced features. The options most commonly used are the ability to change the dish type, check software/hardware versions, change desired satellite configuration, or manually move the dish.

WARNING

Improper use of the user menu could cause damage to the antenna and/or vehicle. Do not enter the user menu for regular operation.

The antenna is not meant for use while traveling. To stow the unit for travel, press “POWER” one time. The unit will stop what it is doing and return to the stowed position. The interface will not turn off unless the antenna is successfully stowed. Visually inspect that the antenna is in the stowed/travel position before traveling. Do not move the vehicle until the antenna is stowed.

Emergency Manual Stow

If unable to stow the antenna, it may be necessary to use emergency manual stow. Emergency manual stow is meant as a last resort and is not meant for common usage! To use emergency manual, stow, unplug the interface box. Then, remove the black plastic bolt from the back of the mount. Insert a 3/8 socket extension into this auxiliary drive. Turn the auxiliary drive clockwise to lower the unit. Do not use a drill!

Emergency Power Off

The antenna comes with an emergency power off feature. To activate it, press and hold “POWER” and then press “SELECT” while still holding “POWER”. The antenna will stop and turn off. If the emergency power off feature is used, the antenna may not be in a safe position for travel. Do not move the vehicle until the unit is stowed.


ENTERTAINMENT CENTER(S)

Home Theater System

The home theater system includes BluRay DVD/CD, and HD television.

The coach home theater system and the bedroom system operate separately.

Make sure there is sufficient 120-volt power available before operating the television entertainment system (refer to *Sec. 6 Electrical Systems*, Calculating electrical load).



NOTE: Any TV that may be visible to the driver whether it be a front TV or one mounted in the bunk area above the driver, will not operate with the ignition ON. The AC outlets for these TV locations are disabled as a safety feature. Normal operation resumes when the ignition is OFF and parking brake is engaged. The bedroom television will operate while the motor home ignition is ON if the motor home has a 120-volt AC power source available.

Refer to the home theater system individual component manufacturer’s information for detailed operating instructions.

EXTERIOR ENTERTAINMENT CENTER (IF SO EQUIPPED)

The exterior entertainment center is located on the curbside of the unit. You can access the entertainment center by opening the exterior cargo door to the stationary open position.

Refer to the individual component manufacturer's information for detailed operating instructions.

WI-FI BOOSTER (IF SO EQUIPPED)

Your recreation vehicle may be equipped with an electronic Wi-Fi booster. This booster will repeat and boost any accessible Wi-Fi signal within range.

Winegard Connect 4G1 The three long antennas are dedicated to long-range Wi-Fi signal reception. The two smaller antennas support the integrated 4G LTE modem that will link to a 4G LTE network if Wi-Fi is unavailable. The small connection box mounts inside your RV and requires 120 VAC power from your RV. An Ethernet cable connects from the roof antenna unit to the connection box.

Refer to the Wi-Fi Booster manufacturer's manual for detailed operating, setup and safety information located in your warranty packet.



Winegard 4G1

SECTION 11: ELECTRONICS

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 out 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.

SECTION 12: INTERIOR

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.

CAUTION

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

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.

Quik Panel Wall Panels (if so equipped)

Quik Panels are used on certain Entegra motorhome models and may be treated and cleaned as a high quality painted surface. All Quik Panels are sealed or glazed and can be cleaned with a soft cloth and mild soap and water (such as dish soap).

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.



NOTE: Oil based soaps and cleaners are not recommended. No abrasive cleaners or alcohol cleansers should be used. If other cleaner solutions are used, first try on a spot in an inconspicuous area.

SOFA AND DINETTE

⚠ WARNING

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

Your motor home may be equipped with one of the following sofa styles.

Easy Bed Sofa

The easy bed sofa should comfortably seat two to three adults. It converts to a bed by lifting at the front of the sofa seat section and pulling it towards you. The sofa back will follow and pivot down into a horizontal position. To reconvert back to an upright sofa, reverse the process (make sure to pull the seat belts out into their usable positions). Refer to the furniture manufacturer's care instructions for this product.

Hide-A-Bed Sofa

To make the hide-a-bed sofa into a bed, remove the seat cushions and pull the strap located at the front of the sofa seat bottom out towards you firmly and gently. To convert the hide-a-bed back into the upright sofa position, reverse the process (make sure to pull the seat belts out into their usable positions). Be sure to hold the sofa strap firmly to ensure the hide-a-bed sofa does not suddenly drop shut. Refer to the furniture manufacturer's care instructions for this product.

Love Seat

The love seat adds to your motor home seating capacity. It should seat up to two adults comfortably. Refer to the specific furniture manufacturer's care instructions for this product.

Dinette Table

The dinette table can be extended by standing at the end of the table, firmly holding both sides of the table, and pulling the table towards you. To return the table to the stowed position, reverse this process pushing it in until the table locks in place.

Booth Dinette (if so equipped)

The booth dinette can be converted to a bed by lowering the table top to make the bed base.

To convert dinette to a bed:

- Remove the cushions from the dinette.
- Grasp the table top at the rounded end, and lift the rounded end up at an angle (A).
- The table top will separate from the bracket attached to the wall.
- Pull the table top away from the wall, toward you slightly.
- Lower the table top down between the seats (B).
- Place the extra cushion on the table top between the 2 seats.
- Replace the seat cushions.

To convert back to a table:

- Remove cushions.
- Lift table top back up to the bracket.

SECTION 12: INTERIOR

- Hold the table top at an angle (A).
- Push the table top back toward the wall.
- Bracket should latch, put the table top to a level position.

Free Standing Dinette Chairs (if so equipped)

Two free standing chairs and two folding chairs are included in the free standing table/chair package. When traveling in the motor home, it is recommended the free standing chairs be fastened securely at the dinette table, and the folding chairs be secured in a closet or storage area.

WARNING

Do not allow occupants to occupy the free standing dinette chairs while the motor home is in transit.

PANTRY OR HUTCH (IF SO EQUIPPED)

Your recreation vehicle may have a pantry or hutch that you can use for storage. Make sure all items stored in the pantry or hutch are secured to prevent shifting during travel. This cabinetry has been designed to accommodate the normal camping items which may be bulky but not necessarily heavy. **Remember your recreation vehicle's load capacity is designed by weight, not volume, so you cannot necessarily use all available space.**

If your pantry or hutch has sliding pantry shelves, they have been equipped with a locking mechanism to keep them in place during transit. To secure the shelf in place, push it all of the way in until the latch tab clicks into place. Always pull out slightly on the shelf to make sure that it is stationary and secure in the transit position. To release the shelf, push in on the tab and pull the shelf slowly towards you.

WARNING

Your RV'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.

COUNTERTOPS

To prevent permanent damage

- Always use hot pads or trivets under hot pans, dishes, or heat producing appliances.
- Heat will damage the **solid surface** countertops.
- Use a cutting board to prevent unnecessary damage to the countertops. Do not cut directly on the solid surface 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 Quartz.

For additional information on the removal of difficult stains or surface damage repair, refer

to the countertop manufacturer's user guide.

Laminate Countertops (if so equipped)

Glass rings, food spills, water spots and smudges usually wipe off with a damp sponge. Stubborn stains can be removed with a general-purpose spray cleaner. Some stains can be removed by squeezing fresh lemon juice over the stain and allowing the juice to soak for approximately forty-five minutes. After 45 minutes, sprinkle baking soda over the lemon juice and rub with a soft cloth.

Solid Surface Countertops (if so equipped)

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.

Quartz Countertops (if so equipped)

- Quartz** will absorb heat from the pan. Resin in the countertop can withstand temperatures of 150°. Do not place a hot pan (from stove or oven) on a quartz countertop as it will burn or cause permanent damage. Heat will damage the **solid surface** countertops.
- Quartz** is highly scratch resistant and stain resistant but prolonged exposure to sunlight can eventually damage a **Quartz** countertop.



NOTE: Only have a professional fabricator repair any countertop damage.

Cleaning your countertop

To keep quartz countertops clean, wipe up spills immediately before they have a chance to dry. Use mild dishwashing soap and a soft cloth. For dried spills a non-abrasive sponge (designed for nonstick pans) works well along with a little elbow grease. Keep a *plastic* putty knife handy for scraping off gum, nail polish, paint or other messes.

Remove cooking grease using a degreasing product that will loosen then remove the grease. Follow cleanser manufacturer instructions. For stains like permanent markers moisten a cloth with Goo Gone (or similar) and rub into the stain. Rinse with warm water. A general deep cleaning is recommended at regular intervals using a nonabrasive surface cleaner on the countertop. Let it sit for 10 minutes and wipe with a non-abrasive sponge.

- Never use abrasive cleansers and avoid scouring pads.** If you need a gentle cleanser to remove stains make sure it is specifically designed for Quartz.
- Do not use nail polish remover, turpentine, drain cleaner and dishwashing rinsing agents. You may use *diluted* bleach or a mild bleach cleanser, but oven cleaners or concentrated bleach should never be used. If they come in contact with the counter top, rinse immediately with water.

FLOORING

Carpet

Vacuum your carpet regularly. It is important to remove loose soil and debris while it is on the surface. Heavily traveled areas (i.e., walkways, areas in front of the furniture) may be protected with small throw rugs to prolong the life of the carpet.

Prompt attention to spots and spills is essential. Remove as much of the spill as possible. Absorb wet spills as quickly as possible by blotting repeatedly with white paper or cloth towels.

Refer to the manufacturer's guide for detailed cleaning information, or contact a cleaning professional.

Vinyl Flooring (if so equipped)

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.).

Ceramic Tile (if so equipped)

Vacuum the ceramic floor tiles regularly to remove dirt and other gritty particles, then damp mop or sponge with an all-purpose, non-oil based cleaner. Heavily trafficked tile may require more intensive cleaning. Refer to the manufacturers guide or contact a cleaning professional for detailed cleaning information.

Grout, the material used between the tiles is porous, and sealing it will simplify maintenance in the future. The ceramic tile manufacturer recommends applying a sealer at least twice a year for maximum stain protection. Sealers may be purchased at most local home centers or floor-covering stores.

DO NOT:

- Use cleansers containing acid or bleach for routine maintenance.
- Use wax cleaners, oil-based detergents or sealants to maintain your tile (sealants may be used on grout joints and natural stone).
- Use ammonia (it will discolor grout).
- Use harsh cleaning aids like steel wool pads or scouring pads containing metal.
- Use a cleaning agent that contains color on unglazed ceramic tile or natural stone.

DO:

- Test scouring powders on a small area first (not recommended for natural stone).
- Use a sealer on grout joints.
- Have any damaged or broken tiles replaced only by a qualified contractor.

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.

POWER WINDOW SHADES (IF SO EQUIPPED)

Power day shades have been installed for the windshield area of your motor home.

To extend the shades, locate the appropriate switch and momentarily press the down arrow on the switch. To retract the shade, momentarily press the up arrow of the switch. Pressing the down or up arrow on the switch a second time will stop shade operation.

NOTE: Operation of front windshield power shades may be limited or disabled when the chassis ignition key is turned to the "ON" position. This feature prevents unintended shade extension while driving.

Refer to the manufacturer's owner guide included in your warranty packet for operation, troubleshooting and warranty information.

SLEEP NUMBER® MATTRESS (IF SO EQUIPPED)

For detailed instructions on finding your sleep number, and care information, refer to the manufacturer's user guide included in the Owner's Portfolio.

BED STORAGE

Additional storage has been provided under the bed. To access the storage area, grasp the ledge at the foot of the bed and lift carefully. ***The bed platform must be held when raised.***

It is recommended that two people retrieve stored items from under the bed so that one person may hold the platform, and the other to retrieve the stored items from under the bed. Lower the platform slowly to close it. **DO NOT DROP THE PLATFORM.**

⚠ WARNING

- Before lifting, be sure there is nothing on the bed that will restrict its movement or add extra weight.
- Use caution when opening or closing the bed to keep hands and fingers at the end ledge provided (not on the side or farther back than necessary).**
- Exercise extreme caution when opening the bed storage platform. Platform must be held open (unless equipped with a prop rod or gas struts) and slowly lowered until closed.
- The bedroom electric slide room system may be located under the bed. Use care not to obstruct the slide room system when using the under bed storage.
- Failure to comply with these guidelines can result in serious injury or property damage.**

Certain models may be equipped with a **prop rod or gas struts** to assist with easy access to under bed storage.

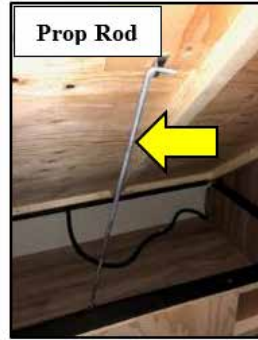
Prop Rod (if so equipped)

If your model is equipped with a prop rod:

- With the help of a second person, raise the bed platform.
- Release the prop rod from its holder.

SECTION 12: INTERIOR

- Put the end of the rod in the bracket under the bed platform.
- To lower the platform, release the prop rod from the bracket under the bed platform, re-attach the prop rod to the holder on the bed base,
- Lower the platform slowly until closed.



Gas Struts (if so equipped)

On certain models, the bed platform may be equipped with gas struts to assist with easy access to storage area.

- Grasp the ledge at the foot of the bed and lift carefully.
- Two gas struts will hold the bed platform open allowing access to the storage area.
- To close, carefully push down on the bed, slowly easing it to the closed position.

POWER BUNK BED (IF SO EQUIPPED)

Your motorhome may be equipped with a power bunk bed. It may include a wood ladder that hooks on to the side of the bed in order to access the upper bunk. **UPPER BUNK MUST BE AT THE LOWEST POSITION TO USE THE LADDER.**

The upper bunk has preset limits as to how far it can be raised and lowered. The lower bunk is fixed in position and does not move.

Operation:

To operate the bed insert the key, and turn it to the ON position. Press the UP or DOWN arrow button. When upper bunk is positioned where you want it, turn the key to the OFF position. Remove the key to prevent accidental movement of the bed. The bunk bed ladder must be positioned firmly in place.



⚠ WARNING

- There should be no people, pets or objects on or below the bunk while raising or lowering it
- Never ride on the bunk while the vehicle is in motion.
- Exercise extreme care when entering or exiting the bunk bed and using the ladder
- Do not allow horseplay on the bed and prohibit jumping on the bed.
- Make sure the ladder is anchored properly to the bed.
- Never allow more than one person on the ladder at a time.
- Children should always be supervised when using the ladder or when entering or exiting the bunk bed.
- Weight limit of the upper bunk bed and bunk ladder is 300 lbs. maximum. Do not exceed the weight limit of the bunk ladder or the bunk bed itself.
- Failure to comply with these guidelines may result in serious injury or property damage.

SAFE (IF SO EQUIPPED)

Your recreational vehicle may be equipped with a safe. The safe is intended to help to safeguard valuable items. You are solely responsible for any liability from loss of personal property that is placed within the safe. Refer to the manufacturer's user guide in your Warranty Packet for information on the use and care of your safe.

Typical safe locations are:

- In the bedroom overhead cabinet behind the television
- Mounted to the floor of the closet

ENTRY DOOR OVERHEAD CONTROL PANEL



SECTION 12: INTERIOR

BATHROOM WATER HEATER SWITCHES



CLEANING THE DIAMOND SHIELD SURFACE

Your motor home is equipped with a protective Diamond Shield surface located on the front lower cap area, hood edges, generator door, under the entry door grab handle and door lock. When cleaning the surface, do not use harsh or abrasive cleaners or detergents. The manufacturer of the Diamond Shield surface does not recommend the use of any of the dry wash types of cleaners as they are intended for non-porous surfaces, and paint protection films are a porous material. Car wash type soap is recommended.

Bugs should be washed off as soon as possible. One bug cleaner recommended by Diamond Shield is Bug Magic.

Use EXTREME care if using a pressure washer, as too high of a pressure or misuse of pressure washer may cut or tear the film. Pressure washer damage **IS NOT** covered under Diamond Shield's warranty. The application of ANY products over Diamond Shield such as vinyl bras, banners, etc. will void the Diamond Shield warranty.

Diamond Shield recommends the use of 303 Aerospace Protectant™ or Protect All www.protectall.com **especially** before any trips. Both of these products replenish and provide UV screening protection, repel dust, soiling and staining, and should be applied every time you clean the front of your motor home. For minor scuffs Diamond Shield recommends the NOVUS line of products. Diamond Shield recommends Mothers or Maguire's Liquid wax. DO NOT USE wax designed for specific colors. It is recommended to wax the Diamond Shield surface at least 3-4 times per year and prior to putting your motor home into storage.



NOTE: The use of a protective covering (bra) is not recommended and will void the limited lifetime warranty of the diamond shield protective surface (see Cleaning the Diamond Shield Surface).

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.

MUD FLAP

Your motor home is equipped with rear wheel mud flaps and/or a deluxe full-width mud flap, periodically check and remove dirt or debris buildup from the mud flaps.

! CAUTION

The mud flap(s) should never be tilted towards the exhaust pipe when the motor home is not in motion or when the motor home is moving in reverse. Caution should be used when parking the motor home to assure the mud flap does not become caught or hung up on stationary items on the ground. This could result in damage to the mud flap(s).

ENGINE AND GENERATOR COMPARTMENT ACCESS

WARNING

- ❑ Do not operate the motor home unless the engine hood, engine access cover, and generator compartment hood are securely closed and locked.
- ❑ Keep people and pets clear of the rear of the coach while operating the engine compartment door. Keep hands and other body parts clear of the door, hinges and mechanism. Failure to act in accordance to these warnings may result in serious personal injury.

Engine compartment

The exterior engine compartment access door is operated manually. Lift the door open by grasping the ventilation fins on the engine compartment and pulling toward you and while lifting up. The engine compartment door will swing up.

To close, pull down on the engine compartment door until it swings into place and closes.

Generator compartment hood and tray

To access the components located in the generator compartment refer to *Electrical Systems; Generator and Generator Slide Tray*.

HINGES, LOCKS AND LATCHES (INTERIOR AND EXTERIOR)

Lubricate with a high quality silicone lubricant every three months or sooner if necessary. Salty air or dusty environments will require more frequent maintenance.

EXTERIOR ROOF AND SIDEWALL VENTS

Inspect the roof vents, including sealants for cracks and keep them clean. Inspect the refrigerator and 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).

Window glass

The window glass can normally be cleaned with a sponge and water. Use glass cleaner to remove wax, oil, grease, dead insects, etc. After washing the glass, wipe it dry with a clean, soft cloth.

SEALANTS

⚠ CAUTION

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 color), 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. A quick walk around the motor home before leaving may help prevent potential problems during trips.
- Have the sealant replaced if you notice any cracks, peeling, voids, gaps, breaks, looseness or any sign of physical deterioration.
- 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 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.

SECTION 13: EXTERIOR

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 (or campsite):

- 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 (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 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. Do not travel with propane system on.
- **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.

SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS

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 & 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 & 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).

SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS

- 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.

QUICK START GUIDE

Camp Setup / Tear Down

When setting up camp, please follow these steps:

- Before plugging into shore power, turn off the breaker at the campsite post.
- Extend the slide out rooms (always check for proper clearance first).
- Make sure tires are straight. Extend jacks after slide out rooms are extended.

When packing and leaving camp, please follow these steps:

- Start engine to build air pressure. (Use high idle-cruise on and hold resume).
- Retract jacks to inflate air bags. Check for tire clearance.
- Retract slide outs after unit has reached standard ride height.
- Lock all appliance doors.
- Turn off breaker at campsite post before unplugging unit.

While traveling, please keep these in mind:

- Make sure the main power switch is turned on.
- If traveling with food, turn the inverter on to use the refrigerator. Remember to turn the inverter off before storing unit or when not in use.
- You should only have to use the generator if you want to use roof A/C units.
- The engine alternator will maintain the house batteries during travel.

Entegra Coach Emergency Contact Information

Monday – Friday: (800) 283-8267 (8 AM – 5 PM)

After Hours Emergency: (574) 361-0034

Comfort Control Settings

Zone Classification

- Zone 1
 - Front A/C on “cool”
 - Front heat pump on heat “electric”
 - Heat exchangers – at dash, kitchen base, and hutch/entertainment center base on heat “gas”

SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS

- Zone 2
 - Middle A/C on “cool”
 - Middle heat pump on heat “electric”
 - In-floor heat, on heat “gas”
- Zone 3
 - Rear A/C on “cool”
 - Rear heat pump on heat “electric”
 - Heat exchangers – at rear wall and under lavatory sink on heat “gas”
- Basement – one heat exchanger on rear basement wall, thermostat located on top passenger side of rear basement wall

Entertainment Center Set-Up

Entegra satellite wiring is set up for two options:

1. Install receiver at main TV utilizing the HDMI output on the wall plate. This signal will then be distributed to all four TVs on HDMI 2. You may also place a second receiver in the bedroom connected directly to that TV.
2. Install receiver at main TV and utilize coax output to the selector box. This will also provide satellite to all TVs through the selector box.

All TVs will have off-air antenna and park-cable capabilities.

FEATURED COMPONENTS QUICK REFERENCE CHART

Your recreation vehicle may be equipped with some of the items listed below. This is a partial listing and it is not intended to cover all components. All information is the latest available at the time of publication. Jayco reserves the right to change any of the following information without notice.

Component	Manufacturer	Website
Air Conditioner	Coleman-Mach	www.airxcel.com/coleman-mach
Antenna, TV	Winegard	www.winegard.com
Awning	Lippert Components Carefree of Colorado Dometic	www.lci1.com www.carefreeofcolorado.com www.dometic.com
Camera, Back up/side view	ASA Electronics Rear View Safety	www.asaelectronics.com www.rearviewsafety.com
Electronic components/systems	See manufacturers' user guide	
Entrance Step	Lippert Components	www.lci1.com
Fan, Exhaust 12V	Atwood Maxx Fan	www.atwoodmobile.com www.airxcel.com/maxxair/products/fans
Fireplace	Twinstar Furrion	www.twinstarhome.com www.furrion.com
Furnace	Atwood	www.atwoodmobile.com
Generator	Onan	www.power.cummins.com/rv
Inverter	Magnum Energy	www.magnumenergy.com
Leveling Jack System	Equalizer Systems Lippert Components	www.equalizersystems.com www.lci1.com
Microwave	See manufacturers' user guide	
Outside Shower / Utility Center	B & B Molders	www.bandbmolders.com
Propane Tank	Manchester Tank	www.mantank.com
Propane/Carbon Monoxide Alarm	See manufacturers' user guide	
Propane Regulator	Manchester Tank	www.mantank.com
Range/stove/cooktop	Atwood Suburban	www.atwoodmobile.com www.airxcel.com/suburban/products/cooking
Range hood	Ventline Inc.	www.ventline.com
Refrigerator	Norcold	www.norcold.com
Safety Alarms	See manufacturers' user guide	
Satellite System	Winegard	www.winegard.com
Tank Sprayer/BLK	B & B Molders	www.bandbmolders.com

SECTION 15: ADDITIONAL INFORMATION

Thermostat	Coleman-Mach	www.airxcel.com/coleman-mach
Toilet	Thetford Corp.	www.thetford.com
Water Heater, Tank DSI Water Heater, Tankless	Atwood Greenbrier Girard Systems	www.atwoodmobile.com www.greenrvproducts.com
Water Pump, 12V	Shurflo East	www.shurflo.com

SECTION 15: ADDITIONAL INFORMATION

Notes:

Jayco
Ownership Notification
Fax Form To: (800) 825-7876

ATTENTION!

Federal record keeping laws require that we maintain a file of owners of our product. Your cooperation in filling out this form 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 _____