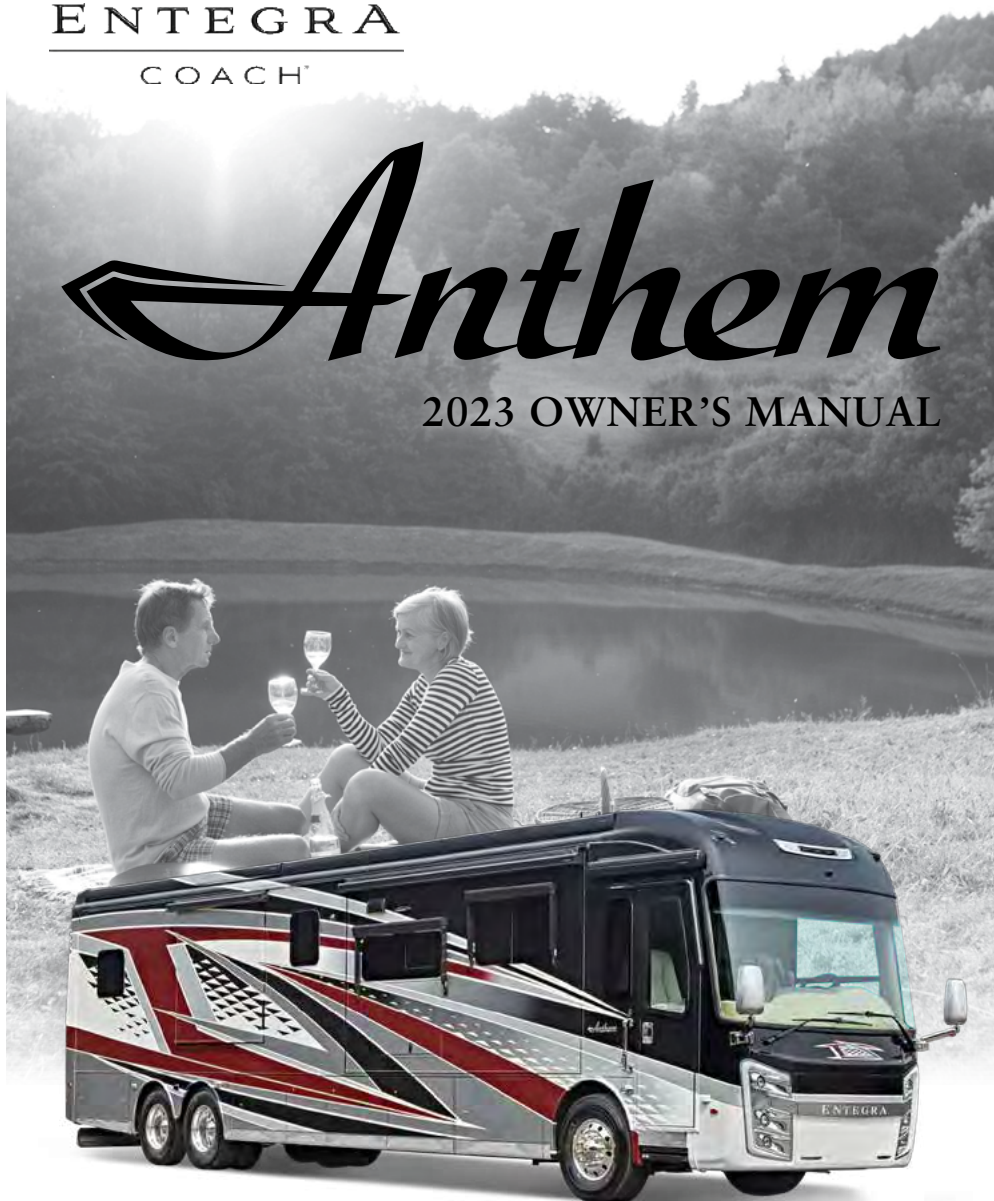




ENTEGRACOACH

Anthem

2023 OWNER'S MANUAL



2+3
YEAR | YEAR
WARRANTY

Without Compromise

A subsidiary of Thor Industries, Inc.

EntegraCoach.com/Anthem

TABLE OF CONTENTS

SECTION 1: WARRANTY & SERVICE

Introduction	2
About This Manual	4
Warranty Packet	4
Chassis Guide	4
Safety Alerts	4
Reporting Safety Defects	5
Customer Responsibility	6
Change Of Address/Ownership	6
Suggestions For Obtaining Service	6
Obtaining Service At Our Customer Service Facility	7
Obtaining Service For Separately Warranted Items	8
Parts and Accessories	8
Aftermarket Accessories	8
2023 Entegra Coach Motorized Limited Warranty	9
2023 Entegra Coach Motorized Structural Limited Warranty	13

SECTION 2: OCCUPANT SAFETY

Secondary Means of Escape (Exit Window)	18
Fire Safety	19
Fire Extinguisher	19
Smoke Alarm	20
Combination Carbon Monoxide /Propane Alarm	20
Formaldehyde	22
Extended Or Full Time Usage	23
Cold Weather Usage	23
Condensation	23

SECTION 3: PRE-TRAVEL INFORMATION

Vehicle Labels	24
Loading Your Motor Home	26
Trailer Plug	26
Weighing Your Motor Home	27

SECTION 4: VEHICLE OPERATION

Vehicle Operation	28
Towing Behind Your Motor Home	29
Safe Haul System	30
Electric Trailer Brake Wiring	30
Step Well Cover	31
Entrance Step	31
Entrance Door	32
Keyless Entry and Entrance Door	32
Driver and Passenger Seat	36
Seat Belts	36
Passive Keyless Start System	38
Vehicle Dash	41
E-Z Drive Steering Assist	41
Dash Instrument Panel	42
Driver Side Console Panel	43
Center Console Panel	43
Passenger Side Console Instrument Panel	44
Steering Wheel and Column Controls	44
Front In-Dash AM/FM and Navigation System	46
Delta Mobile 360° Camera System	47
Climate Control System (Dash)	47

TABLE OF CONTENTS

Campsite Hook-Up	50
Chassis Air Bags	50
Equalizer Hydraulic Leveling System	51
Valid Trueline Leveling System	55
Emergency Stopping	57
Emergency Towing	58
Front Axle Tire Alignment	58
Wheel Lug Nuts/Wheel Liners	58
Tires	59
Tire Pressure Monitor System (TPMS)	61
Changing A Tire	62
Awnings	62

SECTION 5: SLIDEOUT SYSTEMS

Electric Slide Room(s)	66
------------------------	----

SECTION 6: ELECTRICAL SYSTEM

The Electrical System	68
Power Cut Out Switches	68
Vegatouch System	69
Firefly Multiplex Lights and Shades	69
Testing The Campsite Power Connection	70
Inverter/Charger	71
12-volt DC System	73
Batteries	74
Automatic Transfer Switch (ATS)	76
120-Volt Circuit Breakers	77
Approximate Electrical Load Ratings	78
120-Volt 50 AMP AC Electric System	79
Power Cord Reel	80
Generator	81
Starting the Generator	82
Generator Slide Tray	83
Solar Panel	84

SECTION 7: FUEL SYSTEM

Diesel Fuel and Fill	86
Fuel Safety	87
Exhaust Gas Fumes	88

SECTION 8: PLUMBING SYSTEM

Plumbing System	90
Monitor Panel	90
Fresh Water System	90
Water Purification System	92
Universal Docking Center	94
Aqua-Hot Heating System	101
Outside Shower	105
Faucets	106
Bathroom Tub / Shower	106
Shower Miser	107
Black/Grey Water System and Tanks	107
Black /Gray Tank Drains and Macerator System	109
Black Tank Flush	111
Macerator Toilet (if so equipped)	113
Toilet	114

TABLE OF CONTENTS

SECTION 9: HEATING & COOLING

Climate Control System	116
Ceiling Fan	116
Fireplace (if so equipped)	116

SECTION 10: APPLIANCES

Cooking Safety	118
Induction Cooktop	118
Microwave	119
Micro Hood	119
Refrigerator	120
Portable Chest Cooler	121
Dishwasher	121
Washer/Dryer	122
Central Vacuum System	122

SECTION 11: ELECTRONICS

Winegard Roadtrip T4 In-Motion Satellite TV Antenna (If So Equipped)	124
Winegard Trav'ler Pro Satellite Dish (if so equipped)	125
Winegard Rayzar Automatic HD TV Antenna	125
Home Theater System(s)	126
Exterior Entertainment Center	126
Internet Connectivity	126

SECTION 12: INTERIOR

Cleaning The Interior	128
Sofa and Dinette	129
Pantry or Hutch (if so equipped)	131
Countertops	131
Flooring	132
Ceiling Fabric	133
Power Window Shades	133
Bed Storage	134
Safe	134

SECTION 13: EXTERIOR

Cleaning The Exterior	136
Cleaning The Diamond Shield Surface	138
Frame	138
Mud Flap	138
Engine and Generator Compartment Access	139
Exterior Roof and Sidewall Vents	139
Windows	139
Sealants	140

SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS

Travel Checklist	142
Motor Home Storage	143

SECTION 15: ADDITIONAL INFORMATION

Featured Components Quick Reference Chart	146
Vehicle Maintenance Record	147
Ownership Notification	148

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

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

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

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

INTRODUCTION

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

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

Options and Equipment

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

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

Dealer Responsibility

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

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

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

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

Customer Relations

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

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

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

SECTION 1: WARRANTY & SERVICE

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

Obtaining Emergency Warranty Repair

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

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

To Contact Us

Entegra Coach Customer Service: Toll Free 800-283-8267

Or contact us on our website at service@entegracoach.com.

Our mailing address:

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

Our shipping address:

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

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

ABOUT THIS MANUAL

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

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

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

WARRANTY PACKET

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

CHASSIS GUIDE

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

SAFETY ALERTS

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

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

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

SECTION 1: WARRANTY & SERVICE

❖ **NOTE: Gives helpful information**



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

NOTICE

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

CAUTION

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

WARNING

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

DANGER

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

REPORTING SAFETY DEFECTS

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

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign.

However, NHTSA cannot become involved in individual problems between you, your dealer or your vehicle manufacturer. For additional information, please refer to the NHTSA website at www.safercar.gov.

To contact NHTSA by phone:

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

To Contact NHTSA by mail:

Office of Defects Investigations/CRD
NVS-216
1200 New Jersey Ave SE
Washington, DC 20590

SECTION 1: WARRANTY & SERVICE

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

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

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

To contact Transport Canada by phone:

1-800-DEFECTS

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

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

To contact Transport Canada by mail:

Transport Canada -ASFAD

330 Sparks Street

Ottawa, ON

K1A 0N5

www.tc.gc.ca/rappels

Téléphone: 819-994-3328 (dans la région de Ottawa-Gatineau et à l'extérieur du pays)

Sans frais: 1-800-333-0510 (au Canada)

Adresse postale :

Transports Canada -ASFAD

330, rue Sparks

Ottawa (Ontario) K1A 0N5

CUSTOMER RESPONSIBILITY

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

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

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

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

CHANGE OF ADDRESS/OWNERSHIP

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

SUGGESTIONS FOR OBTAINING SERVICE

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

SECTION 1: WARRANTY & SERVICE

Contact your dealer at once

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

Prepare for the appointment

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

Prepare a list

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

Be reasonable with your requests

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

Don't expect to look over the technician's shoulder

Please don't be offended if you are told you cannot watch the work being done. Some insurance requirements forbid admission of customers to the service area.

Inspect the work performed

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

OBTAINING SERVICE AT OUR CUSTOMER SERVICE FACILITY

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

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

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

OBTAINING SERVICE FOR SEPARATELY WARRANTED ITEMS

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

PARTS AND ACCESSORIES

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

AFTERMARKET ACCESSORIES

 WARNING

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

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

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

SECTION 1: WARRANTY & SERVICE

2023 ENTEGRA COACH MOTORIZED LIMITED WARRANTY

WHAT AND WHO IS COVERED: This limited warranty covers: (i) the motorhome when it is used only for its intended purpose of recreational travel and camping; (ii) only the first retail purchaser and any second retail owner; (iii) only those portions of the Motorhome not excluded under the section “What is Not Covered”; (iv) the motorhome only when sold by an authorized dealership; and, (v) only defects in workmanship performed and/or materials used to manufacture or assemble those portions of the Motorhome not excluded under the section “what is Not Covered”. The Limited Warranty is not transferable beyond the second retail owner. The second retail owner’s warranty coverage period shall be the unexpired balance of the warranty coverage period the first retail owner received. The second retail owner should complete and submit a Product Registration that is within the Owner’s Manual.

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.

COVERAGE TIME: The duration of this warranty is 2 years after the first retail owner takes delivery of the Motorhome from an authorized dealer **OR** 24,000 miles of use, whichever occurs first. If the dealer places the Motorhome in service before retail sale, the coverage period is 2 years after the dealer first placed the Entegra 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.** If the Motorhome is not of the current or prior model year when the first retail owner takes delivery, the limited warranty ends 90 days after the first retail owner takes delivery of the Motorhome **OR** after the odometer reaches 5,000 miles, whichever occurs first. **ANY ACTION FOR BREACH OF THIS REDUCED LIMITED WARRANTY OR FOR ANY IMPLIED WARRANTY MUST BE COMMENCED NO MORE THAN 15 MONTHS AFTER THE BREACH.**

Unless prohibited by state or provincial law, repairs do not extend the time when you must commence an action for breach of warranty and shall not extend the warranty coverage period. This reduction in time may not apply to you because some states and provinces do not allow the reduction of the time to commence an action for breach of warranty. Any performance of repairs after the warranty coverage ends and any performance of repairs to those portions of your motorhome excluded from coverage are “good will” repairs, whether or not Jayco was aware of the any such coverage lapse or warranty exclusion at the time of repairs. Such “good will” repairs do not alter the express terms of this limited warranty or extend the warranty coverage periods or the limitation period in this paragraph. Jayco is not required to notify you if authorized repairs are considered “good will” by Jayco. You should expect the need for warranty repairs. Entegra may use new and/or remanufactured parts and/or components to complete a repair. Warranty repairs may have been performed to defects and/or damage to interior or exterior surfaces, trim, upholstery and other appearance items at the factory during assembly **OR** at the selling dealership after delivery of the Motorhome to your selling dealer - Repairs to defects and damage are performed at the factory or by the selling dealer during the inspection process. If you discover a defect or damage to the motorhome when you take delivery of your motorhome, you **MUST** notify your dealer **OR** Entegra within 10 days of the date of purchase to have defect or damage repaired at

SECTION 1: WARRANTY & SERVICE

no cost to you. Minor adjustments will be performed, free of charge, by the dealer within 90 days of your purchase; thereafter, such adjustments are your exclusive responsibility as normal maintenance.

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

BACK-UP REMEDY: If the primary repair remedy fails to successfully cure any defect after a reasonable number of repair attempts, your sole and exclusive remedy shall be to have Entegra pay an independent service shop of your choice to perform repairs to the defect **OR** have Entegra pay diminished value damages if the defect is incurable. You must exhaust both the repair remedy and the back-up remedy **AND** these remedies must fail to fulfill their essential purpose before you can seek any other remedies. **THIS LIMITED WARRANTY IS NOT A WARRANTY THAT PROMISES OR EXTENDS TO FUTURE PERFORMANCE BECAUSE IT DOES NOT MAKE A REPRESENTATION ON HOW YOUR MOTORHOME WILL PERFORM IN THE FUTURE BUT REPRESENTS ONLY WHAT THE REMEDY WILL BE IF A DEFECT EXISTS.**

LIMITATION AND DISCLAIMER OF IMPLIED WARRANTIES: THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO: (i) THE DURATION OF THIS LIMITED WARRANTY; (ii) THE SCOPE OF COVERAGE THIS LIMITED WARRANTY PROVIDES; (iii) DEFECTS EXISTING AT THE TIME OF SALE THAT MANIFESTED THEMSELVES AND SURFACED DURING THE IMPLIED WARRANTY COVERAGE PERIOD; AND (IV) DEFECTS DISCOVERED AND REPORTED WITHIN THE DURATION OF THE IMPLIED WARRANTY. THERE ARE NO EXPRESS WARRANTIES OR ANY IMPLIED WARRANTIES ON THOSE PORTIONS OF THE MOTORHOME EXCLUDED FROM COVERAGE. **NOTWITHSTANDING THE ABOVE PROVISIONS, ENTEGRA EXPRESSLY DISCLAIMS AND EXCLUDES ANY AND ALL IMPLIED WARRANTIES AND CONDITIONS, STATUTORY OR OTHERWISE, WHEN THE MOTORHOME IS USED FOR COMMERCIAL, RENTAL OR BUSINESS USE AND WHEN THE ENTEGRA IS SOLD IN CANADA.** There is no warranty of any nature made by Entegra beyond that contained in this Limited Warranty. No person has authority to enlarge, amend or modify this Limited Warranty. The dealer is NOT Entegra's agent. Entegra is not responsible for any undertaking, representation or warranty made by any dealer or others beyond those expressly set forth within this Limited Warranty. Some states and provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES: **THE FIRST RETAIL BUYER AND ANY SUBSEQUENT OWNER, ALONG WITH ANY PERSON WHO IS AN INTENDED OR UNINTENDED USER OR BENEFICIARY OF THE MOTORHOME, ARE NOT ENTITLED TO RECOVER ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES CAUSED BY A DEFECT IN THE MOTORHOME. BY WAY OF EXAMPLE, CONSEQUENTIAL DAMAGES INCLUDE FUEL AND TRANSPORTATION EXPENSES TO DELIVER THE MOTORHOME TO A SERVICING DEALER, HOTEL ROOMS, LOST WAGES AND MOISTURE DAMAGE SUCH AS MOLD AND MILDEW AS WELL AS RUST AND CORROSION. THE EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES ARE NOT DEPENDENT UPON WARRANTY REMEDIES SUCCESSFULLY CURING ANY DEFECT; THE EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL SURVIVE ANY FAILURE OF THE LIMITED WAR-**

SECTION 1: WARRANTY & SERVICE

RANTY 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.

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

WHAT IS NOT COVERED: Equipment and appliances installed after the Motorhome is assembled by Entegra; Motorhomes used for any rental, business and commercial purpose - If the Motorhome owner or user files a tax form claiming a business or commercial tax benefit related to the Motorhome, or if the RV is purchased, registered or titled in the name of any business association it shall be irrefutable that the Motorhome has been used for rental, commercial or business purposes; any Motorhome sold or used outside of the United States, U.S. Territories or Canada; any Motorhome not used solely for recreational travel and camping; any Motorhome purchased through auction or wholesale; any Motorhome purchased from a dealer that is not an authorized dealer; normal wear, tear or usage, such as tears, punctures, soiling, mildew, rust, fading, or discoloration of exterior plastic or fiberglass, or soft goods, such as upholstery, drapes, carpet, vinyl, screens, cushions, mattresses and fabrics; the effects of condensation or moisture from condensation inside the RV; mold or any damage caused by mold to the interior or exterior; imperfections that do not affect the use of the Motorhome for its intended purpose of recreational use; items working as designed but that you are unhappy with; damage caused by misuse, mishandling, neglect, abuse, failure to maintain the Motorhome in accordance with the owner's manual, or failure to perform other routine maintenance such as inspections, lubricating, adjustments, tightening of screws and fittings, tightening of lug nuts, sealing, rotating tires; damage caused by accident, whether or not foreseeable; damage caused by weather or corrosion due to the environment; damage caused by theft, vandalism or fire; damage caused by tire wear or tire failure; defacing, scratches, dents, chips on any surface or fabric of the Motorhome; damage caused by infestation by insects or animals; damage caused by off road use, overloading the Motorhome or any of its components or parts; wheel alignment or adjustments to axles caused by improper maintenance, loading or damage from road hazards, including off road travel; wheel damage or balancing.

Also, this limited warranty does not cover the leveling jacks/system and does not cover any material, component, system or part that is warranted by another entity, including, by way of example, the: automotive chassis, (which includes 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 or any air conditioner. The written warranty provided by the manufacturer of the component part is the direct and exclusive responsibility of that manufacturer).

EVENTS DISCHARGING ENTEGRA FROM OBLIGATION UNDER WARRANTY: The following, by way of example, discharge Entegra from any express or implied warranty obligation to repair or replace any defect: any rental, business or commercial use or purchase of the Motorhome; any Motorhome purchased or sold outside of, or used outside

SECTION 1: WARRANTY & SERVICE

of, the United States, U.S. Territories or Canada; any Motorhome purchased through an auction or wholesale or by a non-authorized dealer; owner neglect; failure to provide routine maintenance; alteration; off road use; collision or accident, whether or not foreseeable; acts of weather; damage or corrosion caused by the environment, theft, vandalism, fire, explosions, or overloading.

LEGAL REMEDIES: EXCLUSIVE JURISDICTION FOR DECIDING LEGAL DISPUTES RELATING TO ALLEGED BREACH OF WARRANTY, OR ANY REPRESENTATIONS OF ANY NATURE, MUST BE FILED IN THE COURTS WITHIN THE STATE OF MANUFACTURE, WHICH IS INDIANA. THIS LIMITED WARRANTY SHALL BE INTERPRETED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF INDIANA. UNLESS PROHIBITED BY STATE LAW, ALL CLAIMS, CONTROVERSIES AND CAUSES OF ACTION ARISING OUT OF OR RELATING TO THIS LIMITED WARRANTY, SHALL BE GOVERNED BY THE LAWS OF THE STATE OF INDIANA, INCLUDING ITS STATUTE OF LIMITATIONS, WITHOUT GIVING EFFECT TO ANY CONFLICT OF LAW RULE THAT WOULD RESULT IN THE APPLICATION OF THE LAWS OF A DIFFERENT JURISDICTION. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE AND PROVINCE TO PROVINCE. ALL ACTIONS OF ANY KIND RELATING TO THE MOTORHOME SHALL BE DECIDED BY A JUDGE RATHER THAN BY A JURY.

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

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

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

ENTEGR A COACH

903 S. Main Street * P. O. Box 460 * Middlebury, IN 46540

Telephone: 800-283-8267

SECTION 1: WARRANTY & SERVICE

2023 ENTEGRA COACH MOTORIZED STRUCTURAL LIMITED WARRANTY

WHAT AND WHO IS COVERED: This limited warranty covers: (i) the structure of the motorhome when it is used only for its intended purpose of recreational travel and camping; (ii) only the first retail purchaser and any second retail owner of the Motorhome; (iii) only defects in workmanship and/or materials used to manufacture or assemble the structure of the Motorhome; (iii) the structure of the motorhome only when the Motorhome is sold by an authorized dealership; and, (iv) only the steel or aluminum frame structure for the sidewalls (excluding slide outs), roof and rear and front walls. The Structural Limited Warranty is not transferable beyond the second retail owner. The second retail owner's warranty coverage period shall be the unexpired balance of the warranty coverage period the first retail owner received. The second retail owner should complete and submit a Product Registration that is within the Owner's Manual.

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.

COVERAGE TIME: The duration of this Structural limited warranty is 5 years after the first retail owner takes delivery of the Motorhome from an authorized dealer. If the dealer places the Motorhome in service before retail sale, the coverage period is 5 years after the dealer first placed the Entegra in service. Unless prohibited by state or provincial law, repairs do not extend the time when you must commence an action for breach of warranty and shall not extend the warranty coverage period. This reduction in time may not apply to you because some states and provinces do not allow the reduction of the time to commence an action for breach of warranty. Any performance of repairs after the warranty coverage ends and any performance of repairs to those portions of your motorhome excluded from coverage are "good will" repairs, whether or not Jayco was aware of the any such coverage lapse or warranty exclusion at the time of repairs. Such "good will" repairs do not alter the express terms of this limited warranty or extend the warranty coverage periods or the limitation period in this paragraph. Jayco is not required to notify you if authorized repairs are considered "good will" by Jayco. You should expect the need for warranty repairs. Entegra may use new and/or remanufactured parts and/or components to complete a repair.

REPAIR REMEDY: Entegra's sole and exclusive obligation is to repair any covered defect discovered within the warranty coverage period provided: (1) you notify Entegra or an authorized dealer within 10 days of your discovery of a defect; **AND** (2) you deliver the Motorhome to Entegra OR an authorized dealership at your cost and expense. **BACK-UP REMEDY:** If the primary repair remedy fails to successfully cure any defect after a reasonable number of repair attempts, your sole and exclusive remedy shall be to have Entegra pay an independent service shop of your choice to perform repairs to the defect **OR** have Entegra pay diminished value damages if the defect is incurable. You must exhaust both the repair remedy and the back-up remedy **AND** these remedies must fail to fulfill their essential purpose before you can seek any other remedies. **THIS LIMITED WARRANTY IS NOT A WARRANTY THAT PROMISES OR EXTENDS TO FUTURE PERFORMANCE BECAUSE IT DOES NOT MAKE A REPRESENTATION ON HOW YOUR MOTORHOME WILL PERFORM IN THE FUTURE BUT REPRESENTS ONLY WHAT THE REMEDY WILL BE IF A DEFECT EXISTS.**

LIMITATION AND DISCLAIMER OF IMPLIED WARRANTIES: ANY IMPLIED WARRANTY IS LIMITED TO: (i) THE SCOPE OF COVERAGE THIS LIMITED WARRANTY PROVIDES; (ii) DEFECTS EXISTING AT THE TIME OF SALE THAT MANIFESTED THEMSELVES AND SURFACED DURING THE IMPLIED WARRANTY COVERAGE PERIOD; AND (iii) DEFECTS DISCOVERED AND REPORTED WITHIN THE DURATION OF THE IMPLIED WARRANTY. THERE ARE NO EXPRESS WARRANTIES OR ANY IMPLIED WARRANTIES ON THOSE PORTIONS OF THE MOTORHOME EXCLUDED FROM COVERAGE. NOTWITHSTANDING THE ABOVE PROVISIONS, ENTEGRA EXPRESSLY DISCLAIMS AND EXCLUDES ANY AND ALL IMPLIED WARRANTIES AND CONDITIONS, STATUTORY OR OTHERWISE, WHEN THE MOTORHOME IS USED FOR COMMERCIAL, RENTAL OR BUSINESS USE AND WHEN THE ENTEGRA IS SOLD IN CANADA. There is no warranty of any nature made by Entegra beyond that contained in this Limited Warranty. No person has authority to enlarge, amend or modify this Limited Warranty. The dealer is NOT Entegra's agent. Entegra is not responsible for any undertaking, representation or warranty made by any dealer or others beyond those expressly set forth within this Limited Warranty. Some states and provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES: THE FIRST RETAIL BUYER AND ANY SUBSEQUENT OWNER, ALONG WITH ANY PERSON WHO IS AN INTENDED OR UNINTENDED USER OR BENEFICIARY OF THE MOTORHOME, ARE NOT ENTITLED TO RECOVER ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES CAUSED BY A DEFECT IN THE MOTORHOME. BY WAY OF EXAMPLE, CONSEQUENTIAL DAMAGES INCLUDE FUEL AND TRANSPORTATION EXPENSES TO DELIVER THE MOTORHOME TO A SERVICING DEALER, HOTEL ROOMS AND LOST WAGES. 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.

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

WHAT IS NOT COVERED: Motorhomes used for any rental, business and commercial purpose - If the Motorhome owner or user files a tax form claiming a business or commercial tax benefit related to the Motorhome, or if the RV is purchased, registered or titled in the name of any business association it shall be irrefutable that the Motorhome has been used for rental, commercial or business purposes; any Motorhome sold or used outside of the United States, U.S. Territories or Canada; any Motorhome not used solely for recreational travel and camping; any Motorhome purchased through auction or wholesale; any Motorhome

SECTION 1: WARRANTY & SERVICE

purchased from a dealer that is not an authorized dealer; damage caused by weather or corrosion due to the environment; damage caused by theft, vandalism or fire; damage caused by off road use; and, damage caused by overloading the Motorhome.

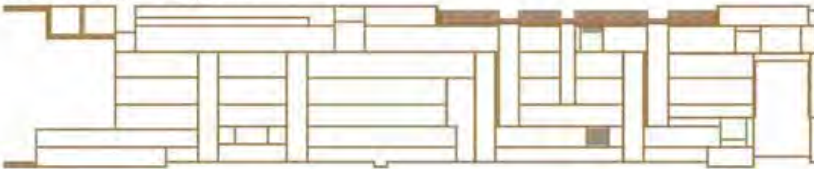
EVENTS DISCHARGING ENTEGRA FROM OBLIGATION UNDER WARRANTY: The following, by way of example, discharge Entegra from any express or implied warranty obligation to repair or replace any defect: any rental, business or commercial use or purchase of the Motorhome; any Motorhome purchased or sold outside of, or used outside of, the United States, U.S. Territories or Canada; any Motorhome purchased through an auction or wholesale or by a non-authorized dealer; owner neglect; failure to provide routine maintenance; alteration; off road use; collision or accident, whether or not foreseeable; acts of weather; damage or corrosion caused by the environment, theft, vandalism, fire, explosions, or overloading.

LEGAL REMEDIES: EXCLUSIVE JURISDICTION FOR DECIDING LEGAL DISPUTES RELATING TO ALLEGED BREACH OF WARRANTY, OR ANY REPRESENTATIONS OF ANY NATURE, MUST BE FILED IN THE COURTS WITHIN THE STATE OF MANUFACTURE, WHICH IS INDIANA. THIS LIMITED WARRANTY SHALL BE INTERPRETED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF INDIANA. UNLESS PROHIBITED BY STATE LAW, ALL CLAIMS, CONTROVERSIES AND CAUSES OF ACTION ARISING OUT OF OR RELATING TO THIS LIMITED WARRANTY, SHALL BE GOVERNED BY THE LAWS OF THE STATE OF INDIANA, INCLUDING ITS STATUTE OF LIMITATIONS, WITHOUT GIVING EFFECT TO ANY CONFLICT OF LAW RULE THAT WOULD RESULT IN THE APPLICATION OF THE LAWS OF A DIFFERENT JURISDICTION. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE AND PROVINCE TO PROVINCE. ALL ACTIONS OF ANY KIND RELATING TO THE MOTORHOME SHALL BE DECIDED BY A JUDGE RATHER THAN BY A JURY.

Roof frame structure depiction



Floor frame structure depiction



Side wall structure depiction



ENTEGRA COACH

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:



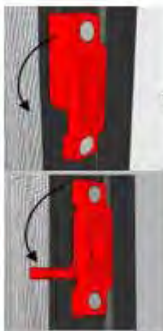
Flip latch style (2 per window)

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.



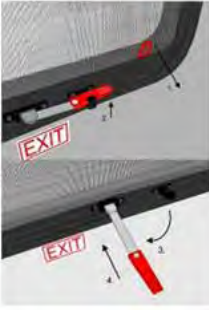
Slider window latch style

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

Refer to the following sections for additional fire safety information.

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

FIRE EXTINGUISHER

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

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

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

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

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

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

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

Inspection and maintenance

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

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

⚠ WARNING

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

⚠ DANGER

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

SMOKE ALARM

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

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

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

⚠ WARNING

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

COMBINATION CARBON MONOXIDE /PROPANE ALARM

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

⚠ WARNING

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

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

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

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

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



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

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

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

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

WARNING

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

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

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

If the Propane alarm sounds with constant beeps:

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

FORMALDEHYDE

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

SECTION 2: OCCUPANT SAFETY

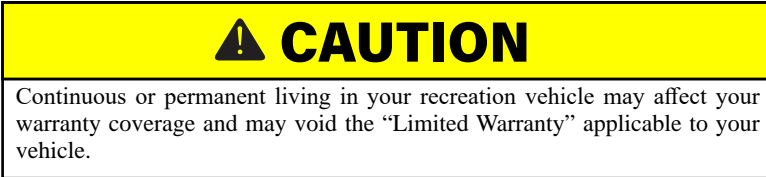
To aid in dissipation, ventilate the recreation vehicle by the air with a fan.

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



EXTENDED OR FULL TIME USAGE

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



COLD WEATHER USAGE

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

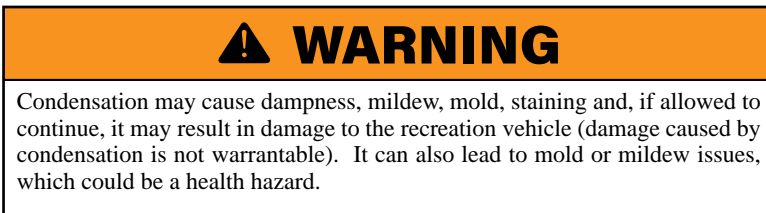
- Fresh water and drainage systems - preparations to avoid freeze-ups.
- During cool weather usage, ventilation or addition of a dehumidifier may be required to reduce condensation.
- Check outside extrusions on compartment doors, locks, slide outs, windows, vents, etc., for frozen moisture before operating to avoid damage to parts.

CONDENSATION

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

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

- Crack open windows and roof vents to allow warm moist air to escape.
- Open the bath roof vent (if so equipped) approximately 1/2" 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.



VEHICLE LABELS

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

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

⚠ WARNING

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

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

Weight Terms

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

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

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

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

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

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

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

Weight and Capacity Labels

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

SECTION 3: PRE-TRAVEL INFORMATION

OCCEC 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 OCCEC.

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

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

MOTOR HOME OCCUPANT AND CARGO CARRYING CAPACITY
 VIN: 000000000000000000000000
 THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED:
 XXXX 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 (5.3 Lb/gal)
 AND THE TONGUE WEIGHT OF A TOWED TRAILER COUNTS AS CARGO

Upper Section Federal OCCEC 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 XXXXX 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 OCCEC Weight Labels

⚠ WARNING

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

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

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

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

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

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.

REEP 9916		0001			
FABRICANT REEP	0000 4517	PRES./COLD INFL. PRESS./GDM/L FRODO			
EXTR. PNEU. #					
GAWR/FRE. KG		TIRE/PNEU.	RIMS/LIANTE		
5000 220 / FRONT/DEVANT	8725/208100 35 X 8 JJ				
00000 INT/CESTRAL					
5000 220 / REAR/ARRIERE	8725/208100 35 X 8 JJ		0000		
			0489		
TYPE OF VEHICULE/TYP DE VEICULE:					
00 0000 00000 00000000000000000000		00 0000 00000000000000000000000000			
00 0000 00000 00000000000000000000		00 0000 00000000000000000000000000			
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"> 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 </td> <td style="width: 50%;"> 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 </td> </tr> </table>				00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000	00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000
00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000	00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000 00 0000 00000 00000000000000000000				

Federal Certification Label

LOADING YOUR MOTOR HOME

⚠ WARNING

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

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

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

⚠ WARNING

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

TRAILER PLUG

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

SECTION 3: PRE-TRAVEL INFORMATION

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. Refer to the manufacturer owner's manual for detailed operating instructions.

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.

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.

CAUTION

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

VEHICLE OPERATION

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

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

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

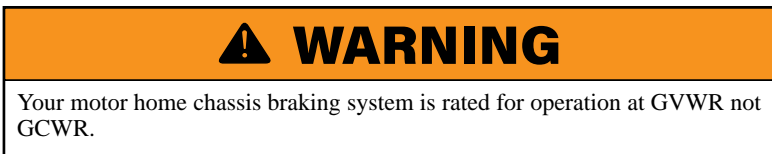
❖ **NOTE: CALIFORNIA TIRE CHAIN NOTICE: YOUR MOTOR HOME MAY NOT BE OPERATED WITH TIRE CHAINS**

Braking and Stopping

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

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.**



Parking Brake

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

TOWING BEHIND YOUR MOTOR HOME

CAUTION

Do not install a frame equalizing type hitch on your motor home.

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

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

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

Maintenance

Keep the hitch clean along with your general frame maintenance.

- ❑ At the beginning of the season, and monthly or thereafter, clean the inside of the receiver tube with a wire brush and spray with a silicone spray.
- ❑ Always remove the utility mount from the receiver when it is not in use. This will help prevent the utility mount from rusting to the tube.
- ❑ Periodically check the bolts for tightness. They need to be torqued to the proper setting (refer to your Chassis Guide).
- ❑ Refer to the chassis manual for detail on hitch specifications and towing guidelines.

SAFE HAUL SYSTEM

Your motor home is 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.



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.

ELECTRIC TRAILER BRAKE WIRING

Your motor home will 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.

SECTION 4: VEHICLE OPERATION

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.

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 MOTOR HOME!

- 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

- 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.

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.

Maintenance

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 AND ENTRANCE DOOR

The keyless entry system allows two methods of securing your motor home. The key fob allows you to lock/unlock the entry door and the baggage compartment doors. The exterior keypad allows secure entry into your motor home by requiring a code for entry.

Refer to the manufacturer's Keyless Entry Manual for detailed information.

Entrance Door

The entrance door includes a manual keyed lock with a separate dead-bolt. The grab bar has a built in key pad that you can personalize your own 5-digit code.



Unlocking/Locking the Entrance Door

To unlock the door, use one of the following methods:

- Unlock/Lock the door using your key fob.
- Unlock/Lock from the multiplex system.
- Unlock/Lock the deadbolt and the door handle lock with the use of keys.
- Unlock/Lock by entering your personalized 5-digit code on the keypad.
- Lock by pressing and holding the (1) button for 2 seconds on the outside grab handle key pad.
- Press the ENTRY DOOR UNLOCK/LOCK button through the Vegatouch system app on your smartphone.

❖ **NOTE:** If you lose the key fob, the key fob battery is dead, or the antenna that searches for the key fob is bad, you can still gain entrance to the coach by using the key or any of the above mentioned methods.

SECTION 4: VEHICLE OPERATION

Key Fob(s)

Key Fobs are programmed for your coach from the factory. Key Fob functions are as follows:

Button	Function
Lock	Locks the entry door and disables baggage door access.
Unlock	Unlocks the entry door with first press, and enables baggage door access with a second press. This also activates the dome light output for 60 seconds.
Panic	Holding the button for two seconds activates the Panic feature.
Docking Lights	Toggles dock lights on/off .



❖ **NOTE:** If the docking lights are turned ON with the key fob, you must turn them OFF with the key fob. The switch in the cockpit will not work. Likewise, if you turn the lights ON with the switch in the cockpit, you must turn them OFF with the switch. The key fob button will not work.

❖ **NOTE:** While the engine is running, only the entry unlock function of the fob transmitter remains activated, other functions are deactivated

❖ **NOTE:** The key fob WILL NOT unlock the deadbolt. The deadbolt key will be needed to lock/unlock the deadbolt when outside the coach.

Programming the Key Fob(s)

In the event that a key fob is added or replaced, all key fobs must be paired to the coach. Prior to programming the key fobs, have all of the key fobs available that you want to program. All fobs must be programmed at the same time. Those not reprogrammed will be erased and become non-functional.



1. Gain access to the key fob programming switch located in overhead cabinet above steering wheel.
2. Inside the compartment, locate the switches mounted to a switch bezel. Switches are labeled KEY FOB and KEYPAD AUTH CODE.
3. Press the KEY FOB switch toward the KEY FOB lettering (3) times within 5 seconds.
4. The programming mode is enabled when you hear the programming module relays inside the compartment click (2) times.
5. Once you have enabled programming mode, you have approximately 10 seconds to press any single button on each remote key fob you wish to program.
6. The key fob(s) are now ready to perform all the button functions on the key fob.

Keyless Entry

Standard Keypad Operation

❖ **NOTE:** The porch light will turn on for 30 seconds upon any button press.

Opening a locked coach:

- Enter your personal five-digit code
- Listen for 2 very soft beeps
- Press and release button:

(1) to unlock the entry door only

(2) to unlock the entry door and storage bay

doors

(3) to unlock storage bay doors only

Locking an open coach:

- Simply press and hold the (1) button until you hear one loud beep. This indicates the front door and all electrically operated storage bay doors have been locked and the coach's alarm system has been activated.

❖ **NOTE: An Access Code is not needed to lock the doors.**

When locking/unlocking your coach with the keypad, the alarm system is turned On/Off automatically.

- When unlocking the coach, two beeps indicate the coach is unlocked and the alarm disabled.
- An error exists and the alarm is NOT set if you hear three (3) quick beeps.
- The alarm will sound if the door is forced open or a window is broken.



Authority Code

The Authority Code is a unique 5-digit pass code that gives you the ability to program the keypad Access Code(s). Changing the Authority Code will erase all previous Access Codes, and resets Memory Bank 1 with a code that is the same as the new Authority Code. **The default Authority Code:**

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5
Button 4	Button 4	Button 4	Button 4	Button 4

The Authority Code does not enable secure functions such as locking and unlocking doors.

❖ **NOTE: The Authority Code should be changed when you purchase your motor home. Failure to change the code will allow access to your motor home by anyone knowing the factory default code.**

Programming the Authority Code

1. Gain access to the keypad authority code switch located in the overhead cabinet above steering wheel.
2. Inside the compartment, locate the switches mounted to a switch bezel. Switches are labeled KEY FOB and KEYPAD AUTH CODE.
3. Press the KEYPAD AUTH CODE switch toward the lettering on the switch bezel. The keypad will begin beeping.
4. The keypad will beep for 3 seconds; flip the switch back to its original position before the keypad stops beeping. The keypad is now in "Learn Mode".
 - While in "Learn Mode", each button push provides a double chirp and the backlight will flash.
 - The keypad automatically leaves "Learn Mode" when a new code is set.



SECTION 4: VEHICLE OPERATION

5. Enter a new 5-digit Authority Code (keypad double chirps after each button press). The keypad chirps (3) times after you enter the fifth digit.
6. Re-enter the new Authority Code for confirmation. The keypad will chirp (4) times to indicate successful completion. **A long beep indicates a failure to change the code.**
7. Make a note of the new Authority Code. Test the Authority Code by programming a new Access Code.

Authority Code				
Digit 1	Digit 2	Digit 3	Digit 4	Digit 5

Access Code

The Access Code is a unique 5-digit code that will unlock the motor home doors when entered on the keypad. Up to (5) separate access codes can be programmed into the keyless entry system. **The default Access Code is:**

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5
Button 1	Button 2	Button 3	Button 4	Button 4

Assigning a new access code

1. Press button 3 for (5) seconds until the keypad beeps. Keypad backlighting will flash indicating the keypad is in "Learn Mode".
2. Enter the 5- digit Authority Code
 - If you enter an incorrect Authority Code, the keypad beeps for (1) second and leaves "Learn Mode".
 - 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.
3. Press and release the button that corresponds to the Memory Bank. For example, press button 1 for Memory Bank #1, press button 2 for Memory Bank #2. There are (4) Memory Bank locations corresponding to buttons 1, 2, 3 and 4.
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 overwrite the previous code.
 - If an error is made at any point, or if time runs out, the keypad will exit "Learn Mode", beep for 1-2 seconds and not change anything.

Use the following chart to keep track of new Access Codes and Memory Bank locations.

Memory #	User	Digit 1	Digit 2	Digit 3	Digit 4	Digit 5
Button 1						
Button 2						
Button 3						
Button 4						

DRIVER AND PASSENGER SEAT

⚠ WARNING

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

Power Seat

Use the controls to slide the power seat to the desired position. Depending on your model, seat controls may be located on the seat or on the door. 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

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

SEAT BELTS

⚠ WARNING

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

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

SECTION 4: VEHICLE OPERATION

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

Maintenance and inspection of seat belts

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

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

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

CHILD SAFETY RESTRAINT SYSTEMS

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

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

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

DANGER

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

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

WARNING

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

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

Booth Dinette (if equipped)

⚠ WARNING

The dinette table should be lowered and secured with the safety strap whenever adding a child safety seat to the dinette seat.

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



Table Warning Label

If your child requires a child safety restraint system (seat), it can be installed in the forward or rear facing booth dinette according to the instructions of the safety seat manufacturer. The seat must be secured with the dinette seat tether strap.

Installing the Child Safety Seat

- ❖ **NOTE: Be sure to read, understand and apply all child seat information provided by the seat manufacturer. Make sure the tether strap is securely and correctly attached to the child safety seat.**

Locate the child seat tether anchors (brackets). The anchors will be marked with a child seat symbol. Attach the snap on the strap of the child restraint seat to the corresponding anchor. Adjust the strap so the seat is securely in place. The seat must have both lower straps securely in place. Repeat the process on the upper straps of the child seat.



Child Seat anchor symbol



PASSIVE KEYLESS START SYSTEM

Your motorhome includes the Passive Keyless Start (PKS) system, which will start the engine without using a key in the ignition. An antenna mounted behind the dash communicates with the electronic key fob when attempting to turn on or start the vehicle. The PKS system includes two pre-programmed key fobs.

When key fob is in proximity (we recommend your cupholder or pocket), the push-button ignition switch can be used to change between the different operational modes. The different modes are:

- ❑ OFF – Vehicle electrical power is off.
- ❑ ACCESSORY – Accessory devices such as the radio and HVAC controls are active and can be utilized.
- ❑ IGNITION – All electrical devices necessary to start and operate the vehicle are active and can be utilized.
- ❑ START – The engine starter motor is actively engaged in starting the engine. During engine starting, accessory devices are deactivated to provide maximum electrical power to the starter motor.
- ❑ RUN – After the engine starts, all accessory and ignition devices are active. The vehicle can be driven.



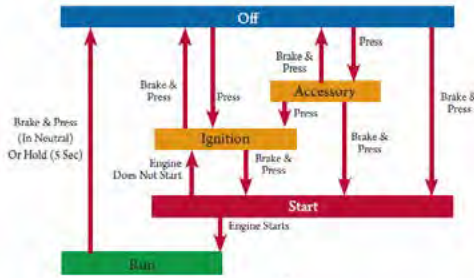
Engine Start

SECTION 4: VEHICLE OPERATION

The push-button ignition switch includes a LED indicator lamp that provides feedback to the driver during ACCESSORY and IGNITION modes. To help reduce driver distraction, the lamp is not illuminated during RUN mode.

- AMBER LAMP – When the system is in ACCESSORY or IGNITION mode, the push-button lamp will be AMBER to indicate the vehicle electrical power is on.
- GREEN LAMP – The push-button lamp will be GREEN to indicate an authorized key fob has been found. As a safety precaution, the operator must depress the service brake pedal before attempting to start the engine. When the brake pedal is depressed, the system searches for the presence of an authorized key fob. If an authorized key fob is found, the LED lamp will be solid GREEN as long as the brake pedal is depressed. The solid GREEN lamp indicates the engine can be started.

If an authorized key fob is not found, the lamp will flash GREEN three times to indicate the missing key fob. The brake pedal must be released and depressed again once an authorized key fob is moved within the range of the antenna.



To turn vehicle power on:

1. Press the button once to turn on ACCESSORY mode (requires authorized key fob).
2. Press the button a second time to turn on IGNITION mode.
3. Press the button a third time to turn electrical power back off.

Alternate power on method:

1. Press the button once while the brake pedal is depressed to go straight to IGNITION mode (requires authorized key).

To start the engine:

The engine can be started from OFF, ACCESSORY, or IGNITION modes

1. Assure the park brake is applied, and the transmission is in neutral.
2. Depress the brake pedal
3. GREEN lamp comes on to indicate presence of an authorized key.
4. Press and HOLD the button to crank the engine
5. Once the engine starts, release the button and brake pedal.

If the button or the brake pedal are released before the engine starts, the system will stay in IGNITION mode.

Turn off the engine:

1. 1) Bring the vehicle to a stop.
2. Place the transmission in neutral
3. Apply the park brake
4. Press the button and engine turns off
5. Release the brake pedal

The transmission must be in neutral and the brake pedal must be depressed to turn the ve-

SECTION 4: VEHICLE OPERATION

hicle off in this manner. This prevents turning the engine off by accidentally pressing the button while driving.

In case of an emergency, the engine can be turned off regardless of transmission gear or brake pedal position by holding the button for 5 seconds. This method turns the engine off regardless of transmission gear and brake pedal position. Use only if the engine cannot be shut down normally.

Cold weather start:

For cold weather starts, the engine will perform a pre-heat cycle in IGNITION mode that aids in starting. The Wait-To-Start indicator in the dash will be on while the pre-heat cycle is active.

1. Press the button twice to activate IGNITION mode OR press the button once while depressing the brake pedal to go straight to IGNITION mode.
 - a. The Wait-to-Start indicator will turn on, indicating the pre-heat cycle is active.
2. Wait for the indicator to turn off
3. Depress the brake pedal
4. GREEN lamp comes on to indicate presence of an authorized key fob.
5. Press and HOLD the button to crank the engine.
6. Once the engine starts, release the button and brake pedal.

The Passive Start System will allow you to start the coach without a key, however there are circumstances that could keep the engine from starting.

- There **MUST** be a functioning key fob within 3-4 feet of the dash.
- The Passive Start System uses the chassis batteries for the fundamental functions. If these batteries are dead or if the main fuse blows the coach will not start. The batteries must be charged or the circuit issue fixed.
- The Passive Start System requires minimum air pressure to sense when the brake pedal is pushed so the coach will start when the ENGINE START button is pressed. If the air pressure is below a certain PSI value, the ENGINE START switch will not work. To ensure the coach will start, a Low Air Start Override (LASO) momentary rocker switch has been added that will signal the system to look for a key fob. If it finds an authenticated key fob, the ENGINE START button will enable regardless of how much air is in the system. This LASO momentary rocker switch is located next to the diagnostic port under the steering wheel on the kick panel by the driver's left foot.



- **Low Air Start Override (LASO) Switch Operation:** Press and hold the LASO momentary rocker switch with one hand and when the ENGINE START switch lights up, press and hold the ENGINE START button with your other hand and the engine should start. Release the ENGINE START switch, and then release the LASO momentary rocker switch. The coach should remain running. To turn the vehicle OFF, step on the brake press the ENGINE START switch.

❖ **NOTE: The LASO rocker switch is only needed when air pressure in the system is too low to start the coach normally.**

SECTION 4: VEHICLE OPERATION

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.

E-Z DRIVE STEERING ASSIST

E-Z Drive is an electrically controlled steering assist system. Its function is to make the steering of the vehicle easier in various conditions, such as a strong crosswind, or a steeply crowned road. The system can assist the driver when driving in conditions that are not optimum.

⚠ WARNING

- E-Z Drive is **NOT** an electronic cruise control system.
- E-Z Drive requires constant steering input when the vehicle is in motion.

Operating the E-Z Drive System

E-Z Drive is enabled when ignition is ON. If a setting was saved in the system, it will retain that setting when the engine is restarted. E-Z Drive must be selected in order to make adjustments for road or wind conditions.

Scroll up or down on the steering wheel center control pad until the E-Z Steering display is visible in the selectable display area (lower left corner of the instrument cluster). Use the E-Z Steer setting to set the amount of effort required to steer the vehicle. A lower setting means that less effort is required; a higher setting means that more effort is required.

Press **Up** or **Down** to increase or decrease the amount of effort required, and press **OK** to save the setting.

In the event of a malfunction, the system will disconnect from the steering automatically. The system deactivates and the coach reverts to standard steering.

For further information please contact Entegra customer service or your dealer. In the unlikely event of a malfunction, the system is designed to disconnect from the steering automatically. The system deactivates and the coach reverts to standard steering.

For further information please contact Entegra customer service or your dealer.



MIN
No bars filled in



HALFWAY
Bars filled in
midway



MAX
All bars filled in

DASH INSTRUMENT PANEL

Lower Left Dash

1. Parking Brake
2. Headlight Switch
 - a. Auto Running Lights
 - b. Off
 - c. Parking Lamps
 - d. Low Beams
 - e. Fog Lights (pull out)



Center Panel – 15" GIC (Standard View)

For detailed operating and safety information for the GIC, refer to the manufacturer's user guides – Spartan GIC Operation Manual.

1. Engine coolant temperature
2. Transmission oil temperature
3. Engine oil pressure
4. Fuel level
5. Speedometer
6. Tachometer
7. Transmission gear
8. Pneumatic pressure in the secondary (front) service brake circuit
9. Pneumatic pressure in the primary (rear) service brake circuit
10. Chassis battery voltage display
11. DEF level
12. Selectable display area
13. Message center
14. OnGuardACTIVE Collision Mitigation System (Cornerstone ONLY)
15. Clock, heading, outside temperature and odometer



SECTION 4: VEHICLE OPERATION

DRIVER SIDE CONSOLE PANEL

Refer to your Comprehensive User Guide for additional console control information.

1. **Transmission Control Pad:** “Select” indicates selected gear. “Monitor” indicates actual operating gear. Depressing “D” always selects the 6th gear as the desired gear. Specific gears can be selected by using the “Up” and “Down” arrows. The MODE button engages the Economy Mode which keeps the transmission in a higher gear longer than normal. While this increases fuel economy, it decreases power. This mode is intended to be used on fairly level terrain. Using it when climbing steep inclines will diminish the coach’s climbing ability.
2. **Phone Charger**
3. **Cup Holder with LED Light**
4. **Gen Start Switch**
5. **Battery Boost Switch:** Connects the chassis batteries with the house batteries. This is done to either start the engine if the chassis batteries are dead, or start the generator if the house batteries are dead.
6. **Dome Lights Switch:** Operates both lights in the cockpit area above driver and passenger.
7. **Tag Dump Switch:** Automatically dumps the air in the tag axle air bags when the transmission is in the reverse mode while in Auto function. To disengage this automatic reverse function, press the switch to the “Off” position. Press and hold the tag dump button to continue deflating the tag axle air bags.
8. **Power Window Switch (Cornerstone ONLY):** Operates the driver window with the ignition “On”.



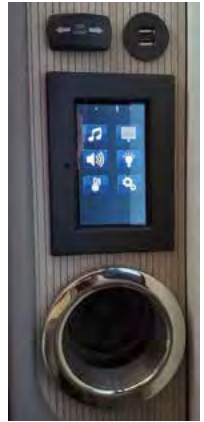
CENTER CONSOLE PANEL

For detailed operation, refer to the manufacturer’s user guide – Valid Infotainment System Operation Manual.



PASSENGER SIDE CONSOLE INSTRUMENT PANEL

1. **Passenger Stepwell Cover Extend / Retract:** Step cover button to extend or retract stairwell cover. Press top of switch to “Open” and bottom to “Close”
2. **USB Charge Ports**
3. **Center Console Interface Touchscreen Panel:** For detailed operation, refer to the manufacturer’s user guide – Valid Infotainment System Operation Manual.
 - a. Radio
 - b. Volume
 - c. Temperature
 - d. Shades
 - e. Lights
 - f. Settings
3. **Cup Holder with LED Light**



STEERING WHEEL AND COLUMN CONTROLS



1/27/21

Left Control Pad

Headlamp Flash

- When the headlamps are ‘OFF’ and this button is pressed, the headlamps will turn on for as long as the button is held. The opposite occurs if the headlamps are ‘ON.’

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.

Phone Answer/End (top side paddle)

- On the left steering wheel pod, pull the top paddle toward you to answer or initiate a call.
- Push the top paddle away from you to decline or end a call.



SECTION 4: VEHICLE OPERATION

Engine Brake (lower side paddle)

- On the left steering wheel pod, pull the bottom paddle toward you to enable or disable the engine brake.
- Push the bottom paddle away from you to change the engine brake level to low, medium or high.

Center Control Pad

Screen View – toggles between three instrument cluster views

- Standard View
- Navigation View
- Camera View

Home – returns the GIC to the Main screen

OK (Enter) - make a selection

Back - go back one screen

Up - scroll up in a list of selections

Down - scroll down in a list of selections

Left/Right – scan/seek to next within media sources

Source – changes between media sources

Right Control Pad

Marker Lamp Flash

- When the marker lamps are 'ON' and this button is pressed, the marker lamps will turn 'OFF' for as long as the button is held. The opposite occurs if the marker lamps are 'OFF.'

Wiper High/Low

- Press to activate wipers. When initially turned on, the wipers will be at low speed. Pressing the button, a second time shifts the wipers to high speed. Every time the button is pressed, the wipers alternate between low and high speed.

Wiper Wash

- Press to pump and squirt fluid onto the windshield. If pressed when the wipers are off, the wipers will complete approximately 3 cycles and then turn off again.

Wiper Automatic/Off

Air Horn

Volume Increase/Decrease (top side paddle)

Media Mute & ON/OFF (lower side paddle)



⚠ 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. Pull to activate and press again to turn off.

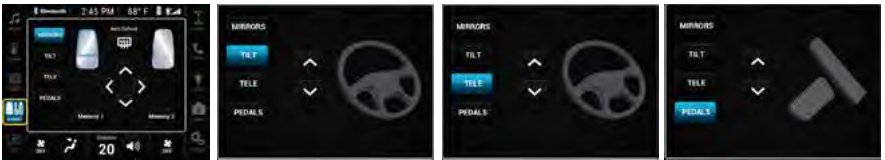


Steering Wheel Tilt/Telescope (Tele) and Pedal Retract/Extend

Through the Center Console Interface (CCI), use the Controls screen to control the positioning of the items listed below:

- Steering wheel tilt: Press **Tilt** to set the vertical position of the steering wheel.
- Steering wheel telescope (distance from driver's seat): Press **Tele** to set the horizontal distance of the steering wheel from the dash.
- Floor pedals: Press **Pedals** control to adjust the distance of the gas and brake pedals from the floor.

For detailed operation, refer to the manufacturer's user guide – Valid Infotainment System Operation Manual.



Steering Wheel Tilt/Telescope (Aspire Only)

The steering column can be adjusted by using the foot pedal located on the left side of the steering column. To adjust the tilt and telescope of the column, push the pedal down, move to the desired location, then release the pedal. For more information, see the Chassis Guide.



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 your Comprehensive User Guide, and the manufacturer owner's manual for detailed operating instructions.

SECTION 4: VEHICLE OPERATION

DELTA MOBILE 360° CAMERA SYSTEM

Your motor home is equipped with the Delta Mobile 360° Camera System. It provides an 360° surround view system utilizing digital radar and digital HD cameras. The system displays the surrounding area of the vehicle and alerts the driver to objects that are detected within the coverage area of the system.

WARNING

The driver is responsible to adequately check for obstacles by visually checking for objects around the vehicle, to maintain control of the vehicle, and to keep the vehicle operating in a safe manner. The Delta Mobile 360° Camera System is not to be used as the sole method of checking the surrounding area for obstacles.

This system has (6) high definition (HD) cameras mounted around the coach.

- (1) Front
- (1) Rear
- (2) Driver Side
- (2) Passenger Side.

These cameras can be operated individually or when combined provide an overhead “birds eye” view above the RV. The cameras will display at the top of the Center Console Interface (CCI) and the instrument cluster. **Refer to the manufacturer owner’s manual included in your Owner’s Portfolio for detailed operating instructions.**

Camera Controls

To select a specific camera or to turn off the automatic switching, touch the camera screen. The screen controls will appear on the screen (touch the HD button on the screen). Touching the **padlock** icon (lock) locks the current camera screen. Press the **padlock** again (unlock) to unlock the camera screen.

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

1. Rear view and 360° overhead view (side-by-side)
2. 360°overhead view
3. Rear (backup) camera
4. Front camera
5. Driver front camera
6. Driver rear camera
7. Passenger front camera
8. Passenger rear camera

CLIMATE CONTROL SYSTEM (DASH)

Your motor home has been equipped with an integrated heating / air conditioning system with dual zones. 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** or **RECIRCULATION** mode does the system draw air from inside the vehicle.

Operating Features

The HVAC system has dual zone blower and temperature control. The dual zone blower control is only available in vent (Panel Mode). The dual zone temperature is available in all modes except Defrost. Recirculation can be enabled in Panel Mode, Bi-Level, and Floor. Max AC enables Recirc, Panel Mode, max blower, and AC.

- ❖ **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.**

The system can be operated through the Center Console Interface (CCI) screen, the Passenger Climate Controls Touchscreen or the Bergstrom Main Controls.

Center Console Interface (CCI)

- Driver and passenger climate is controlled with the climate control screen. Press the climate icon on the left of the screen.
- The driver and passenger can control their own heat and fan settings.
- The vent settings are shared.
- Select **Sync** to synchronize the driver and passenger heat and fan settings. The button remains blue when the settings are synchronized.
- To remove the Sync setting, press the button to deselect it, or move the sliders on the passenger fan or heat setting.



Passenger Climate Controls Touchscreen

The passenger's side provides the following adjustments:

- **Main Climate Screen:** Use the Main Climate screen to adjust the heat, circulation settings, and to navigate to driver or passenger climate controls.
- 1. **Vent Settings:** Use the vent settings to adjust air flow for both driver and passenger.
- 2. **Adjust Circulation / Cooling Settings:** Use these buttons to adjust the circulation / cooling settings.
 - Press Sync to synchronize the heat and fan settings between the driver and passenger.
 - Press Recirc to recirculate the air within the cabin. When this setting is off, air is drawn in from outside.
 - Press Max to maximize the cooling effect of the air conditioning. This setting turns on AC and Recirculation, sets the temperature control to the coldest setting, and sets fan speeds to high.
 - Press AC to turn on the air conditioning.



- ❖ **Note: Air conditioning is available only if the engine is running and the fans are turned on.**
- 3. **Navigate To Driver Or Passenger Controls:** Press the Driver or Passenger icon

SECTION 4: VEHICLE OPERATION

to go to the driver or passenger climate controls.

- **Passenger Temperature Control:** Passenger Heat and Fan Heat and fan settings can be controlled for both the driver and passenger with the passenger touchscreen.
 1. Driver or passenger selection - selected item is highlighted
 2. Fan adjustment
 3. Heat adjustment



Bergstrom Main Controls

Blower Speed Adjustment Knob

Temperature Adjustment Knob with center A/C pushbutton

Air Direction Adjustment Knob with center Recirc pushbutton



Blower Speed

- Driver only if Sync is disabled and panel is selected
- Both sides if Sync is enabled or bi-level, floor, floor/defrost or defrost is selected

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.

- Driver side only if Sync is disabled
- Both sides if Sync is enabled

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 gives the driver the ability to select where the air will flow.

- **RECIRC AIR** - Recirculates the air inside the cabin. Used for faster passenger cool down. Disengage RECIRC AIR to enable FRESH AIR mode. Recirc not available in MIX or DEFROST modes.
- **VENT (PANEL MODE)** - Air is drawn into the system and discharged through the dash louvers only. Dual zone blower and temperature available.
- **BI-LEVEL (VENT/FLOOR)** - Air is drawn into the system and discharged through the dash louvers and floor outlets. Dual zone temperature available.
- **FLOOR** - Air is drawn into the system and discharged through the floor outlets. Dual zone temperature available.
- **MIX** - Fresh air is drawn into the system and discharged through the floor and defrost outlets. Dual zone temperature available.
- **DEFROST** - Fresh Outside air is drawn into the system and discharged through the defrost outlets. The A/C system automatically operates in DEFROST mode to provide windshield defogging. Temperature set to max heat. Passenger temperature control disabled.



❖ **NOTE: Entegra Coach or the chassis manufacturer must authorize any repairs to the climate control system. Refer to and follow the manufacturer 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 or operating the vehicle on 12-volt power when dry camping.
 - 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.

EQUALIZER 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.

❖ **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!**

Auto Level Operation

- **Power On:** Push and release the power button to engage power. The LED light next to the power button should be lit RED when power is on. You will need to have the ignition key in the off position to extend the jacks (most applications). If you attempt to manually extend jacks or all jacks with the Auto Level button, you will hear a deny tone from the keypad if the ignition key is in the on (engine run) position (most applications). Also depending on if the park brake disable is connected and the park brake is released you may not be able to extend jacks.
 - **Auto Level:** Press the Auto Level button and release. The system will send out a continuous series of beeps and the “Operating” LED will be on to let you know Auto Level is operation and will automatically level the coach. Do not move around or exit the coach during this operation, doing so will fault out the operation or result in an incomplete leveling/stabilization operation. When completed, the Keypad will signal the successful completion with a dual-stage tone. The Keypad may be left on once level has been achieved. The Keypad will enter “sleep mode” after five minutes of inactivity.
- ❖ **Note: Auto Level will be denied if the jack indicator lights are on. To clear this press all, retract then perform Auto Level.**

- **Setting the Null:** Null is the term used to indicate the levelness of the coach. A Null setting should have been performed by the installer. If the coach is not level following an attempt to Auto Level, you will need to level the coach and reset the null.

Use a bubble level on a flat surface in the center of the coach as a reference. You do not need to have the jacks deployed to set the null.

1. To set the null, first press the POWER button on the keypad to activate the unit. The LED light next to the Power button should be lit RED when the power is on.
 2. Level the coach by deploying jacks manually, or by simply parking the coach on a level site. Once the coach is level, turn the POWER off at the panel.
 3. While holding down the AUTO LEVEL button, press and release the POWER button. This should cause the keypad to make a series of beeps.
 4. After the Keypad has beeped 5 to 6 times, release the AUTO LEVEL button and you will get a confirmation beep. (The Keypad will continue to beep if the Auto Level button is held) The new null has been set and the panel will store/remember this setting.
 5. Press and release the ALL RETRACT button to retract the jacks to the stowed position.
- **Retracting the Jacks:** Use the All Retract button to retract the jacks prior to travel. This system does provide the ability to retract the jacks using the UP buttons for each pair of jacks. However, these buttons are not intended to be used for retracting the jacks to their stowed position prior to travel. The Up arrows are to be used only for retracting the jacks to help level the coach. The All Retract button must be pressed to ensure the system is ready/safe for travel. All jacks should automatically retract and return to stowed position when the ALL RETRACT button is pressed and released. The pump will run in retract for approximately 5 seconds after the last jack has been fully retracted- or until a time limit of 90 seconds has been reached.

Manual Operation

- **Power on:** Push and release the Power Keypad button to engage power. All lights will come on then most will go out. The LED light next to the Power button should be lit RED when power is on. You will need to have the ignition key switch in the off position to extend the jacks. If you attempt to extend jacks by pressing the Down Keypad buttons or all the jacks with the Auto-Level button, you will hear a “deny” tone from the keypad if the ignition key is in the improper position. Also

SECTION 4: VEHICLE OPERATION

depending on if the park brake disable is connected and the park brake is released you may not be able to extend jacks.

- **Planting the Jacks:** Using the Down Keypad buttons, extend the jacks until they contact the ground (this is referred to as “planting” the jacks). As you extend the jacks, an LED light on the Keypad will indicate the jack(s) is out of the “stowed” position. Jacks may only be operated in pairs using the manual keypad buttons.
- **Leveling the Coach:** Use a bubble level on a flat surface in the center of the coach. Level the vehicle by using the Down or Up Keypad buttons until the vehicle is level. Jacks may be operated only in pairs. Press the power button to turn off the control panel (Keypad).

❖ **Note: Do not manually overextend individual jacks. This may cause unwanted stress on the coach or the jacks.**

- **Retracting the Jacks:** To retract push and release the Power Keypad button to engage power. Press the all Retract button to retract the jacks prior to travel. This system does provide the ability to retract the jacks using the UP buttons for each pair of jacks. However, these buttons are not intended to be used for retracting the jacks to their stowed position prior to travel. The Up arrows are to be used only for retracting the jacks to help level the coach. The All Retract button must be pressed to ensure the system is ready/safe for travel. All jacks should automatically retract and return to stowed position when the ALL RETRACT button is pressed and released. The pump will run in retract for approximately 5 seconds after the last jack has been fully retracted- or until a time limit of 90 seconds has been reached. Check/test the following: If you have properly installed the ignition disable circuit, the jacks will not extend if the ignition key is in the on (engine run position). And the ignition on LED should come on. When you turn the key off the LED should go out and allow extension. This is a required connection/step. Failure to properly connect this could create an unsafe condition and may void the warranty.

Helpful Hints

- 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

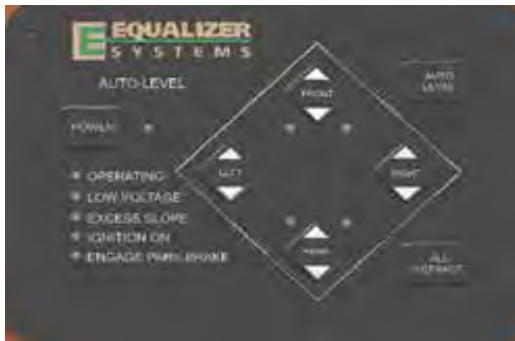
CAUTION

- 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.

SECTION 4: VEHICLE OPERATION

During typical operation, the LED's 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 SLEEP MODE Flashes every 1 second
Jack LED	ON Red when Jack(s) are deployed OFF when Jack(s) are stowed
Operating LED	ON Red w/Auto Level or All Retract OFF when keypad is idle or sleeping
Low Volatage LED	ON Red when voltage is below 10.5 VDC OFF when voltage is above 10.5 VDC
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



Hydraulic Control Panel

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/>

VALID TRUeline LEVELING SYSTEM

WARNING

Failure to act in accordance with the following warnings may result in property damage, 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.
- Ensure all jack locations are clear of debris, 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.
- 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 motor home wheels off 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.
- Failure to operate the vehicle without sufficient air pressure may cause damage or personal injury.**
- Failure to power off the electrical system power and release air pressure may cause damage or personal injury.**

The leveling and electronic ride height system uses electronics to control the air suspension for ride control when traveling, and to control the air suspension for leveling when stationary.

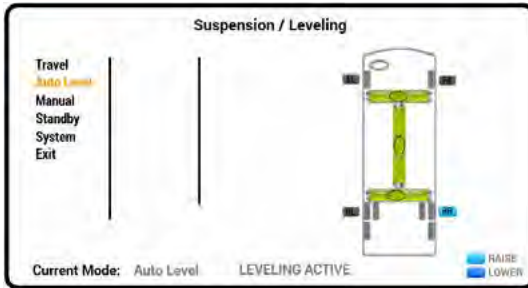
The stationary leveling features have both an automatic and manual mode. Auto mode levels the coach using the air suspension with the touch of a button. Manual mode allows each corner to be individually raised and lowered to manually level the coach. Manual mode can be used with confidence, as the system does not allow the coach chassis to be twisted beyond allowable limits.

The ride height of the vehicle can be adjusted when traveling. Normal ride height is automatically selected by default. However, the ride height of the coach can be raised or lowered as needed. For example, high-ride may be selected to negotiate uneven terrain; likewise, low-ride may be selected to give additional clearance to the top of the vehicle.

SECTION 4: VEHICLE OPERATION

The Trueline Leveling System is controlled via the graphical instrument cluster (GIC) interface. There are three main leveling operating modes – auto level mode, manual level mode, and travel mode.

- The Trueline Leveling System is on when the ignition is on. The leveling mode and status is displayed on the bottom of the screen.
- All of the following operations can be carried out in the main leveling window.



Leveling System

Key features of the stationary leveling system include:

- The system has both an AUTO and a MANUAL mode allowing four-point manual control of all leveling actuators.
- A slope indicator warns when terrain is too steep for leveling.
- Three digital bubble level indicators show exact vehicle position.
- A twist indicator which warns the operator before potential coach damage can occur.
- Low voltage detection prevents problems associated with low battery power.
- Fault indication provides immediate, accurate diagnosis and troubleshooting.
- There is a built-in speaker for audible alerts.
- Coach can be parked on an angled surface and remain level.

Electronic Ride Enhancement System

Key features of the Electronic Ride Enhancement System include:

- Ride height can be adjusted while traveling.
- Suspension automatically adjusts for changing road conditions.
- Four-corner height sensing with selective averaging.
- Confirmation of travel ride height eliminating guesswork.
- Warning alarm when suspension is low
- Step height can be adjusted when leveling is complete
- Reduces excessive roll during cornering, and pitch during acceleration and braking.
- Normal ride height is automatically selected by default. Ride height can be raised or lowered as needed. High ride may be selected to negotiate uneven terrain; low ride may be selected to gain additional clearance to the top of the RV.

For detailed operating and safety information for the GIC, refer to the manufacturer's user guides – Spartan GIC Operation Manual and Spartan-Leveling Features GIC Operation Guide.

SECTION 4: VEHICLE OPERATION

Additionally, the Valid Truline Leveling System can be operated through the Center Console Interface (CCI). **The stationary air leveling feature has both an automatic and manual mode.**

- In Auto Level mode, the vehicle can be leveled with the touch of a button.
- In Manual Level mode, each corner can be individually raised and lowered to manually level the vehicle. Manual Level mode can be used with confidence, as the vehicle chassis will not be twisted beyond allowable limits.
- In Travel mode, the vehicle maintains normal ride height by default. However, the height of the vehicle can be raised or lowered as needed. For example, high ride may be selected to negotiate uneven terrain, or low ride may be selected to give additional clearance to the top of the vehicle.



For detailed operation, refer to the manufacturer's user guide – Valid Infotainment System Operation Manual.

EMERGENCY STOPPING

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

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

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

⚠ WARNING

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

EMERGENCY TOWING

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

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

WARNING

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

FRONT AXLE TIRE ALIGNMENT

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

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

❖ **NOTE: Always have the alignment checked and adjusted by a qualified shop with the proper equipment to handle heavy vehicles.**

❖ **NOTE: A road test by the dealer should be included as part of the pre-delivery inspection. The dealer can check for and correct any steering problems before you take delivery.**

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

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

WHEEL LUG NUTS/WHEEL LINERS

WARNING

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

SECTION 4: VEHICLE OPERATION

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

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

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

Lugs should be checked:

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

Refer to the Chassis Guide for torque guidelines.

Wheel Lugs

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

Aluminum Wheels (if so equipped)

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

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

TIRES

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







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

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


CAUTION

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

Tire Wear Diagnostic Chart

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

Tire pressure


DANGER

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

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

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

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

❖ **NOTE:** Cold tire inflation pressure is defined as a tire that has not been used for three or more hours, or has been driven less than one mile. Tire inflation pressure of a hot tire may show an increase of as much as 6 psi over a cold tire.

WARNING

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

TIRE PRESSURE MONITOR SYSTEM (TPMS)

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.

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 manufacturer's user guide for more detailed information on sensor programming or troubleshooting the TPMS system.

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.

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

⚠ WARNING

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

⚠ CAUTION

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

- 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.

SECTION 4: VEHICLE OPERATION

Awning Care

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

- Keep the awning fabric clean. For detailed cleaning information, refer to the manufacturer's owner information.
- Do **not** use insecticides or other sprays near the awning fabric. These can cause stains, and could adversely affect the fabric's ability to repel water.
- Do **not** expose the awning to adverse environmental conditions, corrosive agents, or other harmful conditions.
- Do **not** allow the corner of the entry door to contact the awning fabric. Otherwise, premature wear or tearing of awning fabric could occur.
- Never** close the awning (for storage) when wet. The combination of moisture and dirt could result in mildew, discoloration, and stains. If it is necessary to roll up awning (temporarily) while it is wet, make sure you roll it out and let it dry (as soon as conditions allow) before rolling it up again.
- Do **not** allow dirt, leaves, or other debris to accumulate on the awning, which could cause abrasion and stains. Mildew could grow on dirt and organic debris, causing permanent discoloration, stains, and odors to the awning fabric.
- Do **not** use strong chemicals or abrasives to clean parts, as their protective surfaces will be damaged. Clean awning hardware (as needed) with a mild surface cleaner.
- Apply silicone spray lubricant as needed to the moving parts on the fabric roller tube assembly.
- Lubricate all pins and sliding surfaces of the arm assemblies with silicone spray, as needed.
- Do **not** use abrasive or corrosive cleaners, mildew removers, or hard bristle brushes on the awning fabric.

Vinyl awning fabric is durable and water resistant. Wrinkling is a normal characteristic, which may be more noticeable when the awning is retracted, and after prolonged periods of stowage (rolled up). Leave the awning open during warm weather to minimize wrinkling. A slight "travel line" may appear where the door roller (if installed) contacts the fabric. This is normal and does **not** affect the integrity of the fabric.

To clean the fabric:

- Open the awning.
- Mix 1/4 cup soap with five gallons of fresh water. Always use a natural soap, not a detergent. The water should be cold to lukewarm, never more the 100° F.
- Liberally drench the fabric with cleaning solution.
- Close the awning and allow the cleaning solution to soak for five minutes.
- Open the awning and thoroughly hose off the top and bottom of the fabric with clean water. Repeat if necessary.
- Remove the solution **COMPLETELY** from the awning fabric.
- Make sure the fabric is dry before closing the awning. Air-dry only. Never apply heat to the fabric.

Your recreation vehicle may be equipped with one or more of the following features:

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

Power patio awning

Controls to operate the awnings are found on the multiplex touchscreen.

Power Awnings

Each power awning will have its own control. Operating the control will extend or retract the awning.

❖ **NOTE: Do not overextend the awning. If the awning or awing skirt show signs of overextending, retract the awning until it is in the appropriate position.**

- Most power awnings give you the ability to manually adjust the awning pitch (slope). This will help with water runoff and pooling. When adjusting the awning slope, be aware of entrance door and window clearances. Coming into contact with a door or window can damage or tear the awning fabric.
- Before retracting the awning, make sure there is not pooled water or debris on the awning.
- When preparing to travel, make sure the awning is completely retracted and secured. Turn off any light strips (if applicable).
- Make sure all power sources to the awning have been disabled. Test the awning prior to leaving to make sure it does not extend.

Most power awnings have a manual override in the event the awning will not retract.

Refer to the manufacturer's user guide for detailed safety, operating and troubleshooting information.

SECTION 4: VEHICLE OPERATION

Notes:

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 SLIDEOUT 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 switches for all slideout rooms are located in the entrance door overhead control panel and on the touch screen control system.

In order to operate the slideout rooms, the Park Brake must be set. 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.

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.**

SECTION 5: SLIDEOUT SYSTEMS

Notes:

THE ELECTRICAL SYSTEM

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

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

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

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

Electrical System Maintenance

Before working on the electrical system:

- Make sure the inverter/charger 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.

POWER CUT OUT SWITCHES

Your motor home is equipped with controls that will turn off power to specific areas. The controls are typically located in an exterior compartment.

INVERTER– There is a disconnect switch for the inverter. The dial in the OFF position will interrupt power.

LEVELING JACKS – Shuts off power to the hydraulic leveling system.

HOUSE POWER – Shuts off power to the Spyder/Firefly system (interior lights and shades), macerator, freezer, slideout control, etc.)

BATTERY LINK – Shuts off power to emergency start or battery boost link between the engine and the house batteries.

GENERATOR AND FENDER COMPT – Shuts off power to the electrical compartment under the driver side window and power to the generator.

Breaker Switches

- ❖ **NOTE: Press the button on the switch to turn it OFF. A reset lever will pop out from the side of the switch to indicate power has been interrupted. Push the lever back in to re-engage power.**

SECTION 6: ELECTRICAL SYSTEM

There are two breakers with yellow levers in the rearmost compartment. The breaker is OFF when the lever is in the “O” position.

The top breaker disconnects the chassis batteries from everything except the solar panels.

The bottom breaker disconnects the house batteries from the chassis batteries (leveling, generator, etc.).

Breakers with red button located in passenger side compartment



Breaker OFF



Breakers at rear of coach

VEGATOUCH SYSTEM

Your RV is equipped with a Firefly Vegatouch touchscreen coach control system. The touchscreens (based on model and floor plan) offer a clean and simple interface for controlling different features or systems. Your particular model may not include every option or system.

The following systems/components **ARE** controllable from the touchscreen:

- Tank monitors
- Battery voltage for both house and chassis batteries
- Lighting (interior and exterior)
- Generator operation (start, stop, prime and preheat)
- AC and DC Power including inverters
- Water Pump, Water Heater
- Heating, Air Conditioning and vent fans
- Awnings and Slide-outs
- Settings for the touchscreen (time, date, clock, background, etc.)

❖ **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.

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.

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.

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.

WARNING

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

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

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

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

DO NOT

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

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

INVERTER/CHARGER

Your motor home has a multiple 12-volt DC to 120-volt AC inverter/charger installed that is designed to run selected 120-volt appliances from house auxiliary battery power.

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.

The inverter/charger 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 under the bed. Circuit breaker labeling near the sub-panels indicate which appliances can be operated from inverter/charger power.

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 run-

ning. 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 is controlled through the Vega Touch system. Refer to the touch screen user guide in your warranty packet or online at <http://www.fireflyint.com> for detailed 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 in “INVERTER” mode at all times.

When in “INVERTER” mode the inverter/charger 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 will automatically activate providing 120-volt AC power to connected appliances.

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.

- ❖ **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

- ❖ **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 near the auxiliary battery bank in the battery box. The 2000 watt inverter/charger is protected by a 300 amp fuse.

SECTION 6: ELECTRICAL SYSTEM

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.

12-VOLT DC SYSTEM

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

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

12-Volt Fuse Panel

WARNING

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

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

Replacing a Fuse

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

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

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

12-Volt DC Outlet

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

WARNING

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

BATTERIES

⚠ WARNING

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

House Batteries

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

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

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

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

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

SECTION 6: ELECTRICAL SYSTEM

Dry Camping

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

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

General usage information (using estimated ratings)

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

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

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

Battery Inspection and Care

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

Battery storage instructions

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

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

Battery Replacement

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

Battery Disconnect Solenoid Switch (House Battery Disconnect)

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

- ❖ **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 Disconnect
Switch**

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.

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

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

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

AUTOMATIC TRANSFER SWITCH (ATS)

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

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

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

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

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

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

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

SECTION 6: ELECTRICAL SYSTEM

120-VOLT CIRCUIT BREAKERS

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

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

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

CAUTION

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

Replacement

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

WARNING

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

Maintenance

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

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

APPROXIMATE ELECTRICAL LOAD RATINGS

12 VOLT SYSTEM	
Exterior Entertainment Center	5-7 AMPS
Fan	1.5 AMPS
Furnace	12.0 AMPS
Generator Start	95.0 AMPS*
Illuminated Switch	.125 AMP
Inverter	variable
Leveling System	95.0 AMPS*
LP Detector	.125 AMP
Light; LED	1.7 AMPS
Light; Vanity	4.2 AMPS
Lights; Aisle	1.0 AMP
Lights; Baggage Compartment / Shower	1.4 AMPS
Lights; Decorative Wall / Map / Porch	1.5 AMPS
Lights; Double -12"	2.0 AMPS
Lights; Double -18"	2.5 AMPS
Power Awning	10.0 AMPS*
Power Vent	5.0 AMPS
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

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.

SECTION 6: ELECTRICAL SYSTEM

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

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

Extend the shore power cord by pulling it off 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

Disconnect the shore power cord and use the switch to rewind and stow the cord. Refer to and follow all safety information found in the manufacturer's product manual included with your warranty packet.

SECTION 6: ELECTRICAL SYSTEM

GENERATOR

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

WARNING

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

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

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

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

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

Before Starting the Generator

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

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

CAUTION

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

Transfer switch

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

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

Maintenance

During periods of extended storage:

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

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

To Manually Start the Generator

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

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

Automatic Generator Start (AGS)

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



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

SECTION 6: ELECTRICAL SYSTEM

GENERATOR SLIDE TRAY

Your motor home is equipped with a pneumatic power slide mechanism that extends and retracts the generator. The switch to extend and retract the power slide tray is located in the fender fuse compartment (below the driver side window).

⚠ CAUTION

- ❑ The ignition key must be turned ON (**ENGINE NOT RUNNING**) to extend or retract the generator slide tray.
- ❑ **KEEP CLEAR OF THE GENERATOR AND SLIDE MECHANISM DURING EXTENDING OR RETRACTING.**
- ❑ **If the ignition key is turned OFF with the slide extended, it will NOT close automatically.**
- ❑ Make sure there is an unobstructed path at least 3 feet in front of the motor home.
- ❑ The slide is held closed with air pressure when the engine is running. If the slide is not closed completely, (i.e. left open a few inches) and the engine is started, it is possible for air pressure to pull the slide closed. **KEEP FINGERS AND HANDS AWAY FROM THE SLIDE IF NOT CLOSED COMPLETELY.** The slide should **ALWAYS** be retracted completely using the switch in the fender fuse compartment.
- ❑ Do not use the generator slide tray for storage.

1. Make sure there is an unobstructed path at least 3 feet forward of the motor home. Set the parking brake.
2. Check the air gauges on the chassis dash panel to confirm there is at least 90 pounds of air pressure. If necessary, turn ON the chassis engine and build up air pressure. Turn OFF the chassis engine once proper air pressure is reached.
3. Push button to put the ignition to the ON position.
4. The switch is a momentary switch. You must press and hold the switch in the **EXTEND** position to open the generator slide. If you release the switch, the slide stops moving. If you press **EXTEND** again, the slide continues opening. Release the switch when the slide is fully extended.



Retracting the generator slide:

Keep clear of the generator and slide mechanism during retraction.

1. Ignition must be turned to the ON position.
2. Press and hold the switch in the **RETRACT** position.
3. The generator slide will begin closing. If the switch is released while the slide is closing, it will stop until the **RETRACT** switch is pressed and held again. Release the switch once the slide is completely closed.
4. Turn OFF the ignition key once the slide is retracted.

For additional information consult your dealer or contact Customer Service.

SOLAR PANEL

 CAUTION

Adding additional solar panels or equipment will affect the carrying capacity of the motor home. Vehicle weight ratings should be considered before adding these components.

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

Controller

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

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

Maintenance

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

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

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.

⚠ CAUTION

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

Fuel Selection

Use diesel fuel only. The diesel generator and the Aqua Hot system 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 when making a decision on the type of fuel to use.

DEF Fluid

Diesel engines 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.**
- ❖ **NOTE: Your motor home is equipped with an Aqua Hot Heating system, it is fueled by the chassis diesel tank. Fuel consumption of this system should be considered when planning your fuel supply. 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 as a fire or explosion may result.
- Before refueling, extinguish all smoking materials and any open flames.
- Before refueling, always turn OFF all spark producing appliances (i.e., water heaters, furnaces, etc.).
- Do not overfill the fuel tank(s). The pressure in an overfilled fuel tank may cause leakage and lead to fuel spray and/or fire.
- Fuel spills represent a serious fire hazard, and should be cleaned up immediately.
- Never restart an engine or re-light any pilot lights while raw fuel is present.

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

Fuel Selection

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

Fuel Filler Cap

WARNING

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

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

Filling the fuel tank

DANGER

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

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

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

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

EXHAUST GAS FUMES

⚠ WARNING

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

To avoid breathing exhaust gases, follow these precautions:

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

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

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

Maintenance

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

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

For more information refer to your Chassis Guide.

SECTION 7: FUEL 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, water heater, tub/shower. On some models, it may also include the water purification system or outside shower assembly (if so equipped).
- Depending on your model, the waste water system consists of the wastewater and sewage holding tank(s), drains and toilet. Models with a cassette toilet will only have the wastewater system.

Plumbing System Maintenance

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

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

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

MONITOR PANEL

Your motor home is equipped with a tank monitor system. The Vega Touch touchscreen system in the RV includes a tank monitor screen that also shows tank levels by percentage. 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 Vega Touch User Guide included in your warranty packet or online at <http://www.fireflyint.com> for specific instructions.

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.

SECTION 8: PLUMBING SYSTEM

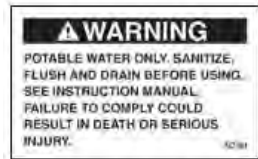
WARNING

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

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

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

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



Potable Water Label

Water Pressure Regulator (customer supplied)

CAUTION

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

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

Fresh Water Holding Tank

CAUTION

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

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

12-volt Water Pump

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

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

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



Maintenance

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

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

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

Water Pump Switch

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

WATER PURIFICATION SYSTEM

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

⚠ CAUTION

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

SECTION 8: PLUMBING SYSTEM

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

To Replace Canister Filter Cartridge

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



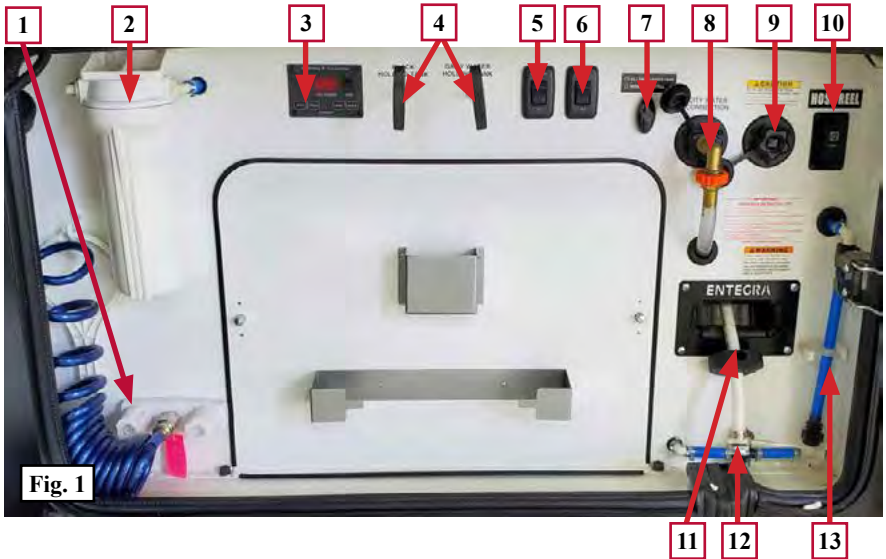
Filter housing

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

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

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

UNIVERSAL DOCKING CENTER



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

1. Outside shower & quick disconnect hose
2. Canister water filter
3. Touchscreen monitor panel with pump switch
4. Black and grey tank dump valves (switches may be manual depending on model)
5. Macerator ON/OFF switch
6. Utility center light switch
7. City Water / Tank Fill valve
8. Fresh water connection inlet (with short hose connected; if so equipped)
9. Black tank (sewer) flush inlet (See *Black Tank Flush*)
10. Hose rewind switch (if so equipped)
11. Long fresh water hose on a reel (if so equipped)
12. Drinking water shutoff valve (refrigerator and drinking faucet inside RV)
13. Drinking water cartridge filter location (bypass tube in place)

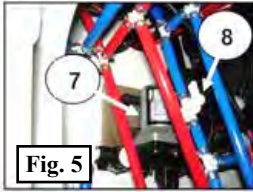
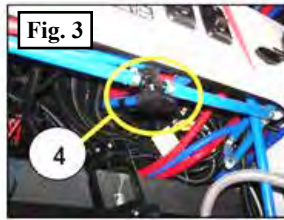
Fresh Water Connections

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) located behind the large panel on the utility center

SECTION 8: PLUMBING SYSTEM

The utility center also has important connections located behind the removable access panel. To access these connections, turn the two thumbscrews on each side of the panel ¼ turn and lift the panel away from the utility center. The following controls are located behind the removable panel



Reference photos above

1. Hot water line drain valve (Fig. 2 located on left side of utility center)
2. Cold water line drain valve (Fig. 2 located on left side of utility center)
3. Siphon valve with clear hose attached for sanitizing and winterizing (Fig. 2 located on the left side of utility center)
4. Water supply valve to canister water filter (Fig. 3 center of utility center)
5. Drain on floor of utility center Fog (Fig. 4)
Macerator Bypass dump valve (Fig. 4 located in center of utility center) (See *Black & Gray Tank Drain* section)
6. Water pump and strainer (Fig. 5 located at left wall of utility center)
7. **Water Pump Backflow Valve.** Must be ON when using the water pump, **must be OFF when using City Water.** If this valve is left ON when using pressurized City Water to supply water to the water lines in the RV, it can backfill the fresh water tank through the pump causing the tank to overflow. When filling the water tank from a pressurized source, the valve can be ON or OFF. (Fig. 5)
Macerator Emergency Cutoff valve (Fig. 5 located on left side of utility center) (See *Black & Gray Tank Drain* section)

Water system features may vary by model. Your model may or may not include the following:

- The short hose, the long hose on the reel, or the hose rewind switch
- Dump valves for black and gray tanks may be electric or manual.
- Separate drinking water faucets.

Sanitizing the Plumbing System

When to sanitize

- When your motor home is new.
- At the beginning and end of each season.
- Every three months of use.
- If the water system becomes contaminated

Preparing to sanitize

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

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

How to sanitize

1. Turn the water heater OFF. Level the motor home and drain the fresh water system (see Draining the Fresh Water System).
2. Close all low point drains. This includes the drains for hot/cold water lines located behind the large panel on the utility center (**Fig 2**).
3. Turn water supply OFF to canister water filter (**Fig 3**). The valve is located behind the large 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. Replace the small cartridge filter (**Fig 1**) with the blue bypass tube provided. Turn the water supply valve (**Fig 3**) ON. **Chlorine should be kept out of these filters.** Water filters are located at the outside docking (utility) center.

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

4. Fill the fresh water tank using one of the following methods:
 - Remove the cap and fill the tank using a water hose. Monitor the water level using the water level guide. When the tank is full, remove the hose and replace the cap on the water tank.
 - Attach the fresh water hose from the hose reel to a pressurized water source. The short hose at the utility center should connect 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. Monitor the tank level while filling; DO NOT OVERFILL THE TANK. When the tank is full, shut off pressurized water source, disconnect water source from the hose reel, press and hold the HOSE REEL RE-WIND switch (**Fig 1**) to retract the hose back onto the reel (release the switch when the end of the hose gets to the panel).
 - Depending on the model, the fresh water hose may connect directly to the fresh water inlet at the utility center. When the tank is full, shut off water source and remove the hose from the city water inlet.
5. At utility center, place the city water valve to the vertical (city water) position. At the cartridge filter location on the utility panel (**Fig.1**), turn the drinking water valve (Item 14) OFF to prevent sanitizer from entering the refrigerator and the drinking faucet at the kitchen sink (valve is shown OFF). The valve color will be either black or blue.
6. Sanitizer must bypass the Aqua Hot water heater. Set the bypass valves to the BYPASS position (two supply valves OFF, middle valve ON). The (3) valves are located with the Aqua Hot water heater outside the RV
7. Pump Backflow valve should be turned ON (**Fig. 5**) behind the removable panel on the utility center. Turn the pump switch ON.



Aqua Hot Bypass valves shown in the normal position

SECTION 8: PLUMBING SYSTEM

8. 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.**

9. Turn the pump OFF.

10. Let the solution remain in the system for at least four hours when disinfecting with 50 PPM residual chlorine. If a shorter time is desired, a 100 PPM chlorine concentration should be used for at least one hour.

❖ **NOTE: 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.**

11. After the required sanitization period, drain the chlorine solution from the fresh water system (see *Draining the Fresh Water System*).

12. Re-fill the fresh water tank. Verify that the city water valve is in the horizontal (fill tank) position (**Fig. 1**). Refer to Step 4 to fill the fresh water tank.

13. Turn water source OFF. Set the city water valve back to the vertical (city water) position. Water Pump Backflow valve (**item 8**) must be turned ON. Remove the hose from the water source. Turn the water pump ON. 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. Drinking water valve (**Fig 1 Item 14**) should be OFF.

14. 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 and cold supply valves ON, middle valve OFF) to allow water into the Aqua Hot water heater. Detach the outside shower hose. Turn the drinking water valve ON (**Fig 1 Item 14**).

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 removed at the utility center.
- The small cartridge water filter replaced with the bypass tube.
- The black (or blue) drinking water valve (**Fig. 1**) at the cartridge water filter is OFF.
- Aqua Hot water heater bypassed before flushing the system with the vinegar solution.

1. Re-flush the system with the vinegar solution following Steps 1–11 only replacing the sanitizing solution with the vinegar solution.

2. Run the vinegar solution through the system until chlorine smell is gone.

3. Drain the vinegar solution from the system.

4. Then flush the system again with fresh water.

5. 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 to fill the fresh water tank.

6. Turn water source OFF. Set the city water valve back to the vertical (city water) position. Water Pump Backflow valve (**item 8**) must be turned ON. Remove the hose from the water source. Turn the water pump ON. 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. Drinking water valve (**Fig 1 Item 14**) should be OFF.

7. 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 and cold supply valves ON, middle valve OFF) to allow water into the Aqua Hot water heater. Detach the outside shower hose.
8. Replace the water filters,
9. Turn the drinking water valve back ON.

Winterizing the Plumbing System

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 motor home plumbing system as directed in this manual. This includes appliances such as the washer, dishwasher and the refrigerator.

Preparing your motor home for colder weather or storage is very important. 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.

- ❖ **NOTE:** Appliances (refrigerator, dishwasher or clothes washer) must be winterized. Refer to the appliance owner’s manual for additional information or contact your Dealer or Customer Service for assistance.
- ❖ **NOTE:** The drinking water shutoff valve (item 14) controls water flow to the drinking faucet in the kitchen (if equipped) and to the residential refrigerator. Leaving this valve ON during winterization will allow antifreeze to flow to the kitchen drinking water faucet and to the refrigerator. The refrigerator manufacturer recommends not putting antifreeze in your refrigerator. Refrigerator water lines should be blown out with air and the refrigerator water filter removed before turning this valve OFF. With the valve turned off, antifreeze will not flow into the refrigerator.
- ❖ **NOTE:** 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 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**.

SECTION 8: PLUMBING SYSTEM

Winterizing With Antifreeze

- ❖ **NOTE: THE AQUA HOT WATER HEATER NEEDS TO BE WINTERIZED WITH ANTIFREEZE. Refer to the Aqua Hot water heater section for instructions on winterizing. Aqua Hot requires the bypass valves be turned OFF thus allowing antifreeze into water heater.**

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 behind the utility center removable panel (**Fig. 2**).
3. The plastic cap should be on the long hose stored on the hose reel (if so equipped).
4. The City Water valve should be set to the vertical (city water) position (**Fig. 1**).
5. Tankless water heater (Aqua Hot) bypass valves should be in the NORMAL position (**Fig. 4**). The three black (or white) valves are located with the Aqua Hot water heater. Aqua Hot requires antifreeze for proper winterizing.
6. Place the clear hose from the utility center (**Fig. 2**) into a container of RV antifreeze (requires about 2 gallons). The clear hose is typically located behind the large panel on the utility center.
7. Siphon valve should be turned so it is in-line with the clear plastic hose.
8. Turn the Pump Backflow valve ON (**Item 8 next to the pump**).
9. 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.

- ❖ **NOTE: Water system features may vary by model.**

Completing the Winterizing with Antifreeze

10. After all of the water lines/appliances have been winterized, turn the pump OFF and disconnect the shower hose from the outside shower.
11. 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.
12. Open the drain valve on the fresh water tank and leave it open.
13. Add a cup of antifreeze in all the drain P-traps.
14. 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.**

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

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. Check with Customer Service for additional information on the quantity of antifreeze required.

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

3. Turn the macerator pump ON.
4. Run the pump until antifreeze begins to discharge from the dump connector attached to the flex hose.



Macerator Bypass

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. Open and drain the Macerator Bypass Valve as an added safety measure.

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.

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:

- Connect the short hose to the city water connection inlet on the utility center. Attach the long hose on the hose reel to a pressurized fresh water source. The city water valve (**Fig 1**) should be turned to the Tank Fill position (horizontal). Turn the Pump Backflow valve OFF. Turn water source ON and fill the tank.

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

- 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. Pump Backflow valve must be turned ON when using the pump. Turn the pump 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, remove the cartridge filter bypass tube and replace the cartridge drinking water filter (**Fig. 1**). Sanitize the system as necessary.

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

SECTION 8: PLUMBING SYSTEM

AQUA-HOT HEATING SYSTEM

The following is an overview of the system operation. Please read the manufacturer's owner's manual before operating this appliance. The Use and Care Guide is included in your warranty packet.

WARNING

- The Aqua-Hot's Exhaust is HOT! DO NOT park in areas where dry conditions exist underneath the vehicle, (e.g., in a dry, grassy field) as a fire may result! DO NOT operate the Aqua-Hot's diesel-burner inside an enclosed building! The heater must be switched OFF when refueling.
- DO NOT** operate the diesel-burner and/or the electric heating element without the antifreeze and water heating solution in the Aqua-Hot's boiler tank; doing so will cause serious damage to the heater.
- DO NOT OPERATE THE ENGINE PRE-HEAT FEATURE WHILE DRIVING THE VEHICLE!**

❖ **NOTE:** If your motor home is equipped with an Aqua Hot Heating system, it may be fueled from either an LP tank or from 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.

The Aqua-Hot system serves as the **water heater** and a **heating system** for your motor home.

Engine Preheat System

The engine preheat system is responsible for heating the motor home's engine block to make it easier to start up when cool weather conditions exist.

The **Aqua-Hot engine preheat** switch is located on the Vegatouch pad and is used in conjunction with either the **diesel hot water** or **electric hot water** switches also located on the Vegatouch pad. (Refer to the *Vegatouch User Guide* included in your warranty packet or online at <http://www.fireflyint.com>).

When the engine preheat system is activated, engine coolant is circulated through the Aqua-Hot boiler tank, where heat from the antifreeze and water heating solution is transferred to the motor home's engine coolant. The heated engine coolant is then transported back to the engine where it transfers heat to the engine and gradually warms it.

Along with the engine preheat system is a "motor aide" feature. This motor aide feature uses the circulation of the motor home's engine to transport the engine coolant from the Aqua-Hot boiler tank to the motor home's warm engine and back to the boiler tank. Through this process the boiler tank is kept heated, reducing the time required to bring the tank to operating temperature for interior heat and continuous hot water. The motor aide feature is part of the engine preheat system and requires no action on the user's behalf to function.

Activating the Aqua-Hot Heating System

Diesel Hot Water: Turn the **Diesel Hot Water** switch **ON** (located on Vegatouch pad). This activates the diesel-burner and the indicator light located on the diesel-burner switch.

Allow 10-20 minutes for the system to reach operating temperature. Note that the diesel-burner is the **primary heat source** for heating both the interior and the domestic hot water (when cool ambient temperatures exist and/or high demand for hot water).

Electric Hot Water: When the motor home is connected to shore power or when using the generator, the Aqua-Hot electric heating element has the ability to function in order to provide heat for the boiler tank. The electric heating element is a **secondary heat source** for heating both the interior and the domestic hot water during low heating demand situations (moderate ambient temperatures and/or low demand for domestic hot water).

❖ **NOTE: To use electric heat you must be plugged into shore power or have the generator running to operate.**

Turn the **electric hot water** switch **ON** (located on Vegatouch pad). This activates the 120 Volt-AC electric heating element and the indicator light located on the **electric hot water** switch. Allow 1-2 hours for the system to reach operating temperature.

❖ **NOTE: Both the diesel-burner and the electric heating element are thermostatically controlled. Either, or both heating sources will automatically maintain the temperature of the antifreeze and water heating solution between approximately 160°F and 190°F (±5). To heat the motor home/domestic hot water, choose the desired heat source(s) and leave the switch(s) (i.e., diesel hot water and/or electric hot water) ON.**

Zone Thermostat Operation

Interior Room Thermostat: Set each zone on the Comfort Control Center thermostat to the desired temperature. Whenever a zone “calls for heat,” the circulation pump and interior heat exchanger fans will be activated. These devices together, will supply warmth to each interior heating zone. The Aqua-Hot must be at operating temperature in order for the zones to function. For more information please see the “Comfort Control Center” explanation of this section and the *Vegatouch User Guide*.

Tank Thermostat: Adjust the thermostat for bay heating to a minimum of 40°F. This will prevent freezing of the domestic water storage system.

Using the Domestic Hot Water System

When the Aqua-Hot is at operating temperature, the domestic water (hot/cold water lines) is automatically heated as it is being used. Because the Aqua-Hot does not store any hot water, open any hot water faucet, and a continuous supply of hot water will be present within seconds. This hot water feature is **continuous** and is accomplished by the Aqua-Hot’s hot water heating system. **The diesel-burner switch on the interior switch panel must be ON in order to obtain a continuous supply of hot water (e.g., during showers).** You may have to also activate the electric element switch for **maximum** hot water capacity.

❖ **NOTE: The Aqua-Hot’s “Domestic Water Priority System” disables the interior zone heating fans and the zone circulation pumps whenever domestic hot water is being used on a continuous basis. Once the demand for continuous domestic hot water ceases, the Aqua-Hot will enable the fans and the pumps to operate and provide heat to the heating zones.**

❖ **NOTE: Please see the Aqua-Hot Operational Flow-Chart in the Operating Instructions section of the Aqua-Hot manufacturer’s owner’s manual for additional operating information.**

SECTION 8: PLUMBING SYSTEM

Maintenance (Aqua-Hot) Refer to Aqua-Hot owner's manual for detailed maintenance and safety information.

WARNING

DO NOT operate the diesel-burner and/or the electric heating element without the antifreeze and water heating solution in the Aqua-Hot's boiler tank; doing so will cause serious damage to the heater. Propylene Glycol that is "generally recognized as safe" by the FDA must be utilized for the antifreeze and water heating solution

Monthly Maintenance: Check the Aqua-Hot's antifreeze and water heating solution to ensure that it is at the proper level. This can be accomplished by visually checking the coolant level in the Aqua-Hot's expansion tank.

DANGER

When the Aqua-Hot is at maximum operating temperature, the coolant will be very **HOT!** If the Aqua-Hot's heating system is accessed, scalding by hot vapor or coolant could result! Before cleaning or servicing, disconnect all power supplies!

Note that the coolant level should be checked **only** when the Aqua-Hot is at maximum operating temperature (i.e., immediately after the diesel-burner cycles OFF). When the Aqua-Hot is at maximum operating temperature, the antifreeze and water heating solution should be at the level marked "HOT" on the expansion tank.

Replenishing the Antifreeze and Water Heating Solution: If the antifreeze and water heating solution needs to be replenished, remove the expansion tank cap and fill the tank to the "HOT" level mark. When refilling, open the air release valve located on the expansion tank connection to release air pockets (reference Aqua-Hot Owner's manual). Hold the valve open until all air is released. If necessary, refill the expansion tank again. Be sure the valve is closed when finished by hand-tightening. Reference the Aqua-Hot Owner's manual to determine the correct ratio of antifreeze to water, the proper type of antifreeze, and the water quality recommendations for the antifreeze and water heating solution.

Annual Maintenance

It is ideal to have the diesel-burner tuned-up annually. A tune-up should consist of a new fuel nozzle and fuel filter (reference the Aqua-Hot Owner's Manual). To ensure maximum diesel-burner performance, always use the recommended fuel nozzle and fuel filter when replacing these parts.

Reference the Aqua-Hot's service and parts manual for spare parts information and detailed replacement instructions.

Winterization

- ❖ **NOTE: See the Aqua-Hot Owner's Manual for detailed instructions for winterization of the Aqua-Hot appliance.**
- ❖ **NOTE: Aqua-Hot can continue to be used for interior zone heating once the domestic water heating system has been drained and winterized. This is due to the fact that the heating portion of the Aqua Hot is separate from the domestic water system, and uses a special "boiler" antifreeze which is not part of the winterization process.**

⚠ WARNING

Not winterizing the Aqua-Hot when freezing temperatures are present will result in serious damage to the Aqua-Hot's domestic water heating system. Be sure to use an FDA approved, "GRAS" rated antifreeze for winterization.
YOU CANNOT BLOW DOMESTIC WATER COIL OUT WITH AIR TO WINTERIZE AQUA-HOT.

Sanitizing the Water Lines

Aqua-Hot systems contain copper tubing and are **NOT** compatible with prolonged exposure to liquid bleach or hypochlorite bleach (referred to as "sanitizer"). Sanitizer must **NOT** be allowed into the Aqua-Hot system. **Bypass the Aqua-Hot system when sanitizing the water lines.** There are 3 bypass valves next to the boiler tank.

Winterizing the Domestic Water Heating System

The Aqua-Hot's Domestic Water Heating System must be completely drained of domestic water any time the heater is stored where freezing temperatures may be experienced. (Domestic Water system refers to the hot/cold water lines in the RV which feed in and out of the Aqua-Hot system)



**Aqua Hot Bypass
Configurations may vary
by model**

Antifreeze MUST be allowed to enter the Aqua-Hot system. DO NOT BYPASS the Aqua-Hot system when winterizing.

1. Turn the Aqua-Hot water heater power OFF. Level the motor home and drain the fresh water system (see *Draining the Fresh Water System*).
2. The City Fill / Tank Fill valve (on the docking (utility) center) should be turned to the City Fill position (vertical).
3. Your motor home is equipped with a sanitize/winterize intake valve with clear plastic hose located in the utility center (or wet bay). (Refer to the *Universal Docking Center* section).
4. Place the clear plastic hose into an adequate supply of FDA-approved "GRAS" RV Antifreeze. Verify the intake valve positions are set for winterize (refer to *Winterizing Plumbing System*).
5. Turn the water pump ON and antifreeze will be siphoned into the plumbing system.
6. Open and close all interior and exterior water faucets, one at a time, until only pure RV Antifreeze is present. Perform this procedure for all the hot and cold faucets in the RV and the outside shower.
7. Turn the pump OFF. Remove the clear plastic hose from the container of antifreeze and reset the sanitize/winterize intake valve back to the normal position.

De-Winterizing the Domestic Water Heating System

For de-winterization, completely fill the fresh water storage tank. Set the Tank Fill/City Fill valve (at docking (utility) center) to City Fill position. Turn the water pump ON and open and close all interior and exterior water faucets, one at a time, until only clear water is present/visible. Reference Aqua-Hot Owner's Manual.

Troubleshooting (Aqua-Hot)

For detailed troubleshooting information and error codes for your Aqua Hot system refer to the manufacturer's owner manual provided in your warranty packet

SECTION 8: PLUMBING SYSTEM

Heating

The Aqua-Hot system serves as the **water heater** and a **hot water heating system** for your motor home.

Water Heater

For hot water use, select and turn on one of the heating modes on the Aqua-Hot switch. Be sure there is power to the Aqua-Hot appliance and water in the system. Allow sufficient time for the appliance to heat the water. To run water at the faucets, make sure the 12-volt pump is on or the city water connection is hooked up and the supply faucet is in the on position.

Heating Your Motor Home - Comfort Control Center

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

To heat the motor home, set the desired temperature on the Climate Control screen and select the mode you wish to use on the Aqua-Hot control switch. To determine which mode you wish to use on the Aqua-Hot, consider that the diesel burner will provide more BTUs for heating in colder weather while the electric can warm the unit in cool temperatures that require less demand for heat. **Engine preheat mode** will also circulate hot water through the system and can be used to heat your motor home while in transit. In cold weather, you may need to use the Diesel Burner mode to bring the heating temperature up to heating temperature. The engine preheat mode will normally keep the motor home at a comfortable temperature. Note that, in extreme cold temperatures, the diesel burner may be needed to supplement heating of the antifreeze heating solution.

OUTSIDE SHOWER

A handheld shower assembly with both hot and cold water is included for use outside of your recreational vehicle. It may be located in a separate outside shower compartment or at the utility center (if so equipped).

1. Be sure the water heater is ON and had sufficient time to heat the water.
2. If dry camping, be sure the 12-volt water pump is ON.
3. Remove the handheld shower from its holder.
4. Turn ON the hot and cold faucet knobs, and adjust the water temperature as desired.
5. To activate the handheld shower turn ON the sprayer head attachment (some models). To turn off the water, ***always*** close the hot/cold control (faucet) knobs. The lever on the shower head will not completely stop the flow of water; this is intentional to allow for draining. After the water has been allowed to drain from the shower head, return it to the outside shower storage. Any remaining water in the shower hose will drip or run out; this is not a leak but performs as intended. If you are dry camping, turn the water pump OFF.

Turning off the water with the shower head lever can also 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.

❖ **NOTE: The shower head may be removed from the hose so that it will drain faster. If you remove the shower head, be sure to reassemble it prior to storage.**

❖ **NOTE: When putting the shower assembly back into the storage compartment, make sure the hose is not pinched or the shower head is positioned in a way it can be damaged.**

FAUCETS

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

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

BATHROOM TUB / SHOWER

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

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

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

⚠ WARNING

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

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

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

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

Maintenance

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

SECTION 8: PLUMBING SYSTEM

SHOWER MISER

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

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

Operation

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

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

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

The Shower Miser system may vary depending on your model.

Filling the fresh water tank

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

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

CAUTION

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

BLACK/GREY WATER SYSTEM AND TANKS

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

Drain Pipes with P-Trap (if 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.

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

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

Black/Grey Water Holding Tanks

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

If you are dry camping and cannot immediately empty your holding tanks, reduce your vehicle speed until you reach a dumping station. When connected to the sewer drain line at a campground, keep the black tank drain valve closed until the holding tank is at least $\frac{3}{4}$ full. This will provide sufficient water to assist in complete draining of the black water holding tank. Repeat as needed.

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.

WARNING

Never travel with full black or grey water holding tanks. 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 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.
8. When tank is empty, turn the macerator power switch OFF. Close the gray tank drain valve.
9. 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:

1. Attach a 3-inch sewer hose to the bypass connection, and to a sewer outlet at a dump station.
2. 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.
3. Pull the black tank dump valve located.
4. Pull the manual macerator bypass valve to open it and the black tank will empty by gravity flow.
5. Close the black tank dump valve, and then close the macerator bypass valve.
6. Open the gray tank dump valve, and then open the macerator bypass valve.
7. When finished, make sure both black and gray tank dump valves are closed, shut off



Dump Station Connector



Garden Hose Connection



Macerator Bypass

SECTION 8: PLUMBING SYSTEM

the macerator bypass valve, and disconnect the sewer hose from the motor home and at the dump station.

8. Clean and store the sewer hose.
9. 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).



Fig A

**Macerator Cutoff
Normal Position**

BLACK TANK FLUSH

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.**

❖ **NOTE: To help insure debris does not clog the tank sprayer orifices, use "TANK FLUSH" every time the waste holding tank is emptied.**

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.

⚠ 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.

⚠ WARNING

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

Winterize the BLACK TANK FLUSH

1. Black tank should be empty prior to winterizing.
2. Rinse the black tank prior to blowing it out with air.
3. Attach the 4" sewer hose to the dump connector under the RV.
4. Open the waste gate valve for the black tank (under the RV).

❖ **NOTE: If the RV has a macerator system, you need to open the bypass valve for the macerator under the RV. This will allow the black tank to drain through the 4" sewer hose.**

5. Attach a garden hose to the TANK FLUSH inlet at the utility center.
6. Attach the other end of the hose to a pressurized water source. Turn water on.
7. Flush tank until water appears clear in 4" sewer hose.
8. Turn off water, disconnect the hose from faucet, disconnect hose from tank flush.
9. Connect the blowout plug to the Black Tank Flush inlet at the utility center panel.
10. Colored valves have no effect on the black tank flush inlet.
11. Connect the air hose to the blowout plug. Set the compressor to **30 PSI maximum**.
12. Open the black tank drain gate valve, macerator bypass valve is open also.
13. Blow air into the flush inlet for 30 to 60 seconds.
14. Disconnect the air hose, compressor and blowout plug.
15. Close the black tank drain gate valve and close the macerator bypass valve.

Draining the Spray Port

With fixtures and drain valves open in the RV to drain the water lines, connect the blue-coiled hose to the brass quick connect fitting at the Spray Port.

1. Remove the spray nozzle from the other end of the hose.
2. Hold the open end of the hose near the ground and any water in the line should drain out.
3. Disconnect the hose from the fitting, and store in the RV.
4. Close the port cover.



Spray Port

Winterizing the Spray Port with Antifreeze (if so equipped)

1. As you are putting antifreeze into the water lines, attach the hose to the Spray Port.
2. Have a container close by to capture antifreeze.
3. Pull the trigger on the spray nozzle until antifreeze comes out (into the container).
4. Release the nozzle and disconnect the hose from the port.
5. Rinse out the hose before storing it.

SECTION 8: PLUMBING SYSTEM

MACERATOR TOILET (IF SO EQUIPPED)

The macerator toilet is equipped with a built in macerator and pump system. It is designed to help eliminate waste build up and clogs in the drain line system and holding tanks.

⚠ 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 for (6) seconds to flush 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

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

- ❑ 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 manual for important safety and operating information.

CEILING FAN

WARNING

Be careful to avoid placing any object in the path of the ceiling fan blades!

Turn the ceiling fan ON/OFF using a switch typically located on the wall, or in an overhead cabinet. The 2-speed ceiling fan is controlled by the pull chain switch. The sequence of operation for the pull chain switch is: OFF, High, Low, OFF. The slide switch (located on the fan) controls the direction of operation (down for forward, up for reverse). **Stop the fan first before reversing the operation direction!**

- ❖ **NOTE:** During cooler temperatures, set your fan to "low," and set the fan to turn clockwise to pull warm air from the ceiling back towards the floor. In the summer, the fan should turn counterclockwise to keep air moving.

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

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.

SECTION 9: HEATING & COOLING

Notes:

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.

INDUCTION COOKTOP

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 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 safety, operating and cleaning instructions.

MICROWAVE

CAUTION

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

WARNING

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

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

General Cleaning Microwave and Convection Microwave

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

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

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

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

Convection Microwave

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

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 motorhome 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. 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.
- 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.

SECTION 10: APPLIANCES

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.

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

The portable chest cooler operates on 12VDC, and can both refrigerate and freeze food products. **For detailed operating and safety information, refer to the manufacturer's user guide.**

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

WARNING

- 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 disconnect power 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.
- 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.

DISHWASHER

Your recreational vehicle includes a single Dish Drawer Dishwasher. There are six convenient wash programs to suit any load from delicate to heavy. For detailed operating and safety information, refer to the manufacturer's user guide included in your warranty packet.

WASHER/DRYER

Your motor home is equipped with a washerdryer 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.

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

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:

WINEGARD ROADTRIP T4 IN-MOTION SATELLITE TV ANTENNA (IF SO EQUIPPED)

The Winegard Roadtrip T4 In-Motion Satellite TV Antenna is a fully automatic roof mounted antenna that finds satellite orbital locations making it easy to watch your favorite TV shows away from home. It has the following features:

- Watch TV Anywhere** - Watch LIVE programming while traveling down the road. Or record while on the go to watch later. The RoadTrip T4 in-motion satellite antenna delivers DISH, DIRECTV, and Bell TV programming.
- Simple Setup and Operation** - **Simple one button on/off operation. The Road-Trip T4 quickly locks on to satellites anywhere in the U.S. for reliable signal, giving you unlimited TV viewing with no data overages or buffering.**
- Multi-TV Viewing** - Two coax outputs allow you to add an additional receiver for two TVs.

WARNING

- Do not paint this antenna. Painting the RoadTrip® T4 antenna will void your warranty. Ensure all jack locations are clear of debris, obstructions or depressions.
- Improper use of the user menu could cause damage to the antenna and/or vehicle. Do not enter the user menu for regular operation.

Satellite TV Antenna

The in-motion satellite TV antenna enables you to toggle between satellites while stationary or in-motion.

- ❖ **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.
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.

SECTION 11: ELECTRONICS

❖ **NOTE: Because the T4 antenna uses information from the last location where it was on signal, satellite acquisition may take longer if the dish is inactive over long distance traveling.**

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.

Recovery from Signal Interruption

When the T4 dome is blocked (example: while going through a tunnel, under a bridge, by a building, etc.) programming will not be available. Once the block is removed, the programming will return.

Refer to the antenna manufacturer’s operation manual for details of receiver set up.

WINEGARD TRAV’LER PRO SATELLITE DISH (IF SO EQUIPPED)

Your motor home may be equipped with the automatic multi-satellite TV antenna. It has the following features:

- **Just Like Home** - Winegard Trav’ler antennas view multiple satellites at the same time for a viewing experience just like home, providing the ability to get all programming on all TVs at the same time for maximum viewing pleasure.
- **Reimagined Control System** - Cloud connectivity for over-the-air updates. OLED screen provides more information with greater resolution and visual clarity. Better search efficiency.
- **Pairs with Winegard** - Connected App - Powered by Bluetooth® technology. Search with a GPS-enabled mobile device for faster satellite acquisitions. Monitor search sequences and access enhanced diagnostics.

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

WINEGARD RAYZAR AUTOMATIC HD TV ANTENNA

The Winegard Rayzar Automatic HD TV Antenna is designed to be used directly with a television. It has the following features:

- **Automatic Aiming Antenna** - No manual aiming or cranking. Fully automatic, simple operation. Manual tuning over-ride option also available to reposition antenna when looking for a specific channel broadcast from an alternate location that was not found during initial search
- **High Performance Antenna Design** - Utilizes state-of-the-art amplifier embedded directly at the elements where 100% of the signal is amplified. Ultra low noise figure of 1.0 dB provides maximum RF gain to receive more channels with little to no pixelation or picture loss. Enhanced dual band VHF/ UHF reception means you won’t miss out on channels that other compact UHF-only antennas do.
- **Sleek Design** - Built like no other antenna, the Rayzar Automatic is housed in a sleek, attractive low profile dome and protects antenna elements/circuitry for long lasting durability. Permanent roof top installation makes the antenna always ready for use. Compact footprint requires minimal roof space.

To fully understand how the Rayzar Automatic antenna functions, it is important to understand how Digital TV signals are broadcast. Whenever in a new location or after re-positioning the antenna a channel scan is required to receive any new/ additional channels. During

the channel scan, the TV will automatically detect Digital TV stations and program those to your TV. Each “channel” on a frequency may also likely have sub-channels that will show up on the TV as a “8.2”, “8.3”, etc. The Rayzar Automatic antenna is identifying all the TV frequencies being broadcast, but only the TV can determine the number of sub-channels. Because of this, the number displayed on the control panel of the Rayzar Automatic is the number of TV frequencies found that are determined to be watchable. The actual number of channels scanned into your TV will vary, depending on the number of sub-channels on each frequency.

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

HOME THEATER SYSTEM(S)

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 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. 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

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.

INTERNET CONNECTIVITY

Your recreation vehicle is equipped with a Winegard WIFI Ranger which consists of an Indoor Router Unit (Spruce) mounted inside the RV and an Outdoor Router Unit (Denali) mounted on the roof.

The Spruce is a mobile router by WiFiRanger and requires 120VDC power from your RV. Both 2.4GHz and 5.8GHz WiFi reception and broadcast make the Spruce versatile. The router also has Gigabit LAN ports for connecting hardwired computers and devices. A USB 2.0 port is included for tethering Cellular hotspots and aircards. This modem allows you to connect to Cellular internet, sharing data with all computers and devices connected to the WiFiRanger Denali (requires data plan for Cellular internet – supported data plans shown here).

The Denali is an outdoor router by WiFiRanger. The outdoor router has 2.4GHz WiFi reception and broadcast. The Denali has a maximum wireless range of 1.5mi. The router has a 100Mbps LAN port for connecting to Spruce

Refer to the Wi-Fi Booster manufacturer’s manual for detailed operating, setup and safety information.



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.

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

CAUTION

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

ABS Plastics

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

SOFA AND 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.

Hide-a-Bed Sofa or Sofa Sleeper

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.

Jack Knife or 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.

Trifold Sofa

The trifold sofa offers very similar features to a traditional hide-a-bed. The following illustrations detail converting the sofa into a bed.

1. Remove the tri-fold sofa pillows and set aside.
2. Using the strap handle, pull the sleeping surface up, then out.
3. While sleeping surface is up, fold out legs. Extend the sleeping surface until grounded.
4. Once sleeping surface is grounded, fold head board down flat.



Dinette Table

Depending on your model, 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 tabletop 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.

SECTION 12: INTERIOR

- 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.
- 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)

WARNING

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

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

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 countertops.
- Use a cutting board to prevent unnecessary damage to the countertops. Do not cut directly on the countertop.
- Avoid harsh chemicals such as drain cleaners, oven cleaners, etc.
- Do not let cleaners with bleach set on the top. Wipe them off promptly.

- Run cold water when pouring hot/boiling water into the sink.
- Use coasters under all glasses, bottles and cans.
- Do not store toiletry products directly on your countertop surface. Hair products, perfumes, colognes, nail products, creams, lotions and potions have a tendency to spill or leak and go overlooked. Even though the counter top is sealed, a substance that remains on the surface for an extended period may stain the countertop.

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

Solid Surface Countertops

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

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

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

Solid surface sink maintenance

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

FLOORING

Vinyl Flooring (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.

SECTION 12: INTERIOR

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


Power shades have been installed for the windshield area of your motor home and all the windows throughout. All of the power shades can be operated through the Firefly Touchscreen. Additionally, the power shades in the cab area can be controlled through the Central Control Interface (CCI) in the middle of the dash.

❖ NOTE: Operation of front windshield power shades may be limited or disabled when the chassis ignition key is turned to the “ON” position. The icon must be held for the operation. 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.

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 can retrieve the stored items from under the bed. Lower the platform slowly to close it. **DO NOT DROP THE PLATFORM.**

 WARNING	
<input type="checkbox"/>	Before lifting, be sure there is nothing on the bed that will restrict its movement or add extra weight.
<input type="checkbox"/>	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).
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	<u>Failure to comply with these guidelines can result in serious injury or property damage.</u>

Some models are equipped with **gas struts** to assist with easy access to under bed storage.

Gas Struts

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.

SAFE

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

SECTION 12: INTERIOR

Notes:

CLEANING THE EXTERIOR

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

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

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

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

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

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

Washing

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

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

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

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

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

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

SECTION 13: EXTERIOR

During cold weather

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

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

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

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

Waxing

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

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

CAUTION

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

Polishing your recreation vehicle

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

Damaged paint

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

Cleaning plastic parts

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

 **CAUTION**

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

Chrome parts

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

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.**

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.

SECTION 13: EXTERIOR

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.
- 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 electrically operated. The switch to operate the access door is typically located inside the last storage compartment on the passenger side of the vehicle. To operate the engine compartment door, press and hold open on the momentary switch. Continue holding the switch until the compartment door is completely open. To close the compartment door, press and hold the switch until the door is completely closed.

❖ **NOTE: Letting go of the switch will stop the door immediately. To continue opening or closing, press and hold the switch again.**

Generator compartment

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

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

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

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

You or your dealer must:

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

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

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

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

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 and test all safety detectors.** If needed, replace any drained or discharged batteries. If you have a defective or damaged safety detector, replace it immediately.
- Inspect the leveling jacks for operation. If needed, perform maintenance as per the manufacturer's information.
- Test all exterior and interior lights. Replace any bulbs that are burnt out.
- Prepare the chassis portion of the motor home for the camping season in accordance with the Chassis Guide.**
- Wash the exterior of the motor home. Do a sealant inspection and repair as necessary.
- De-winterize and sanitize system.
- If you are towing a vehicle, connect it to the motor home and test all connections and lights (if applicable).**
- Test brakes for proper operation.**
- Fill the fresh water tank. Disconnect, drain and store the garden hose on the bracket.*
- Check the seat belt buckles and release mechanisms for positive action and secure connections.

Before leaving the campsite:

- Check the area under the motor home after overnight parking and look for fuel, water, oil or other fluid leaks. If leaks are detected, find the cause and correct it immediately.*

SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS

- 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.

SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS

Notes:

FEATURED COMPONENTS QUICK REFERENCE CHART

Your motorhome may be equipped with some of the items listed below. This is a partial listing and it is not intended to cover all components in your motorhome. All information is the latest available at the time of publication. Entegra Coach 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
Aqua-Hot System	Aqua-Hot	www.aquahot.com
Awning	Carefree of Colorado Girard	www.carefreeofcolorado.com www.girardrv.com
Camera, Rear/side view	Ramco Engineering Riverpark	www.ramco-eng.com www.riverparkinc.com
Carbon Monoxide Alarm	See manufacturers' user guide	
Ceiling Fan	Trusty Products	www.trusty-products.com
Chassis	Spartan	www.spartanchassis.com
Climate Control (in dash)	Evans Tempcon	www.evanstemcon.com
Cooktop	Furrion	www.furrion.com
Diamond Shield	Diamond Shield	www.diamond-shield.com
Dishwasher	Fisher Paykel	www.fisherpaykel.com
Electronic components/ systems	See manufacturers' user guide	
Fireplace	Furrion	www.furrion.com
Freezer	Coolfreeze	www.dometic.com
Generator	Onan	www.power.cummins.com/rv
Inverter	Magnum Energy	www.magnumenergy.com
Leveling Jack System	Equalizer Systems	www.equalizersystems.com
Microwave	Samsung Whirlpool	www.samsung.com www.whirlpool.com
Power Fan	Fantastic Fans	www.dometic.com
Refrigerator	Whirlpool	www.whirlpool.com
Satellite System	Winegard	www.winegard.com
Toilet	Thetford Saniflo	www.thetford.com www.saniflo.com
Vacuum	Dirt Devil	www.dirtdevil.com
Washer/dryer	Whirlpool	www.whirlpool.com
Vega Touch System	Firefly Integrations	www.fireflyint.com
Water Pump	Shur-Flo	www.shurflo.com
Window Shades	United Shade MCD Innovations	www.unitedshade.com www.mcdinnovations.com

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

ATTENTION!

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