



# EMBARK

2023 OWNER'S MANUAL



A subsidiary of Thor Industries, Inc.



# Table of Contents

## **SECTION 1: WARRANTY & SERVICE**

---

Introduction	2
About This Manual	5
Warranty Packet	5
Chassis Guide	5
Safety Alerts	5
Reporting Safety Defects	6
Customer Responsibility	7
Change Of Address/Ownership	7
Suggestions For Obtaining Service	7
Obtaining Service At Our Customer Service Facility	8
Obtaining Service For Separately Warranted Items	9
Parts and Accessories	9
Aftermarket Accessories	9
2023 Jayco Motorized Limited Warranty	10

## **SECTION 2: OCCUPANT SAFETY**

---

Secondary Means of Escape (Exit Window)	16
Fire Safety	17
Fire Extinguisher	17
Smoke Alarm	18
Combination Carbon Monoxide /Propane Alarm	18
Formaldehyde	20
Extended Or Full Time Usage	21
Cold Weather Usage	21
Condensation	21

## **SECTION 3: PRE-TRAVEL INFORMATION**

---

Vehicle Labels	22
Loading Your Motor Home	24
Trailer Plug	24
Weighing Your Motor Home	25

## **SECTION 4: VEHICLE OPERATION**

---

Vehicle Operation	28
Towing Behind Your Motor Home	28
Safe Haul System	30
Electric Trailer Brake Wiring	30
Step Well Cover	30
Entrance Step	31
Entrance Door	32
Keyless Entry	32
Driver and Passenger Seat	34
Seat Belts	35
Child Safety Restraint Systems	35
Vehicle Dash	37
Steering Wheel and Column Controls	37
Driver's Console Control Panel	38
Driving (Fog)Lights	39
Front In-Dash AM/FM and Navigation System	39
Outside Rearview Mirrors	39
Xite 360° Camera System	40
Climate Control System (Dash)	41
Campsite Hook-Up	42
Chassis Air Bags	42
Leveling System	43

# Table of Contents

Emergency Stopping	48
Emergency Towing	49
Front Axle Tire Alignment	49
Wheel Lug Nuts/Wheel Liners	50
Tires	50
Tire Pressure Monitor System (TPMS)	52
Changing A Tire	53
Awnings	53

---

## **SECTION 5: SLIDEOUT SYSTEMS**

Electric Slide Room(s)	56
------------------------	----

---

## **SECTION 6: ELECTRICAL SYSTEM**

The Electrical System	58
Vegatouch System	58
Testing The Campsite Power Connection	59
Inverter/Charger	60
12-volt DC System	61
Batteries	63
Automatic Transfer Switch (ATS)	65
120-Volt Circuit Breakers	65
Approximate Electrical Load Ratings	66
120-Volt 50 AMP AC Electric System	67
Generator	68
Starting the Generator	70
Generator Slide Tray	70
Solar Panel	71

---

## **SECTION 7: FUEL & PROPANE SYSTEM**

Fuel Safety	72
Exhaust Gas Fumes	73
Propane Gas System	73
Propane Use and Safety	76

---

## **SECTION 8: PLUMBING SYSTEM**

Plumbing System	80
Monitor Panel	80
Fresh Water System	80
Water Purification System	82
Exterior Docking Center	83
Water Heater - Tankless	89
Outside Shower	90
Faucets	91
Bathroom Tub / Shower	91
Shower Miser	91
Black/Grey Water System and Tanks	92
Black /Gray Tank Drains and Macerator System	94
Black Tank Flush	96
Macerator Toilet (if so equipped)	97
Toilet	98

---

## **SECTION 9: HEATING & COOLING**

Climate Control System	100
Power Roof Vent	100
Fireplace (if so equipped)	100

---

## **SECTION 10: APPLIANCES**

Cooking Safety	102
----------------	-----

## Table of Contents

Induction Cooktop	102
Microwave	103
Micro Hood	103
Refrigerator	104
Washer/Dryer	105
Central Vacuum System	105
<hr/> <b>SECTION 11: ELECTRONICS</b> <hr/>	
Antenna/Satellite System(s)	108
Satellite Dish (if so equipped)	111
Home Theater System(s)	112
Exterior Entertainment Center	112
Wi-Fi Booster (if so equipped)	112
<hr/> <b>SECTION 12: INTERIOR</b> <hr/>	
Cleaning The Interior	114
Sofa and Dinette	115
Pantry or Hutch (if so equipped)	117
Countertops	117
Flooring	118
Ceiling Fabric	119
Power Window Shades	119
Bed Storage	119
Power Bunk Bed (if so equipped)	120
<hr/> <b>SECTION 13: EXTERIOR</b> <hr/>	
Cleaning The Exterior	122
Cleaning The Diamond Shield Surface	124
Frame	124
Mud Flap	124
Engine and Generator Compartment Access	125
Exterior Roof and Sidewall Vents	125
Windows	125
Sealants	126
<hr/> <b>SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS</b> <hr/>	
Travel Checklist	128
Motor Home Storage	129
<hr/> <b>SECTION 15: ADDITIONAL INFORMATION</b> <hr/>	
Featured Components Quick Reference Chart	132
Vehicle Maintenance Record	134
Ownership Notification	136

**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 your Jayco recreation vehicle purchase. We are excited to welcome you to our growing RV family. We are committed to being the most respected name in RVs. Jayco recreation vehicles are manufactured for use as temporary living quarters for recreation, camping and travel uses, all as defined by the bylaws of the Recreation Vehicle Industry Association (RVIA).

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

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

We invite you to drop by our Visitors Center located in Middlebury, Indiana. To book a factory tour or check on available tour times, log on to <https://www.jayco.com> and click on the **ABOUT** heading. Select “Visit Us” from the drop down for factory tour information.

### **Options and Equipment**

Jayco recreation vehicles are available in several sizes and models, so accessories and components may differ slightly between models. Some equipment described in this manual may not apply to your recreation vehicle.

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

### **Dealer Responsibility**

Dealers who are authorized to sell Jayco 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.

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

### **Customer Relations**

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

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

## **SECTION 1: WARRANTY & SERVICE**

### **Please provide the following information when contacting us for assistance:**

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

### **An important note about alterations and warranties**

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

### **Obtaining Emergency Warranty Repair**

- Call 1-(800)-283-8267 or use our website dealer locator to find an authorized Jayco dealer in your area. Contact them for an appointment; they will handle all warranty repair billing and returned parts for you.
- If you cannot locate an authorized Jayco dealer near you, ask the campground staff for referrals or check the internet. Or contact Jayco Customer Service or your selling dealer for assistance in locating a repair facility.
- Contact the RV repair facility to discuss your situation and make an appointment. Ask how their billing will be handled. They may choose to bill Jayco directly; otherwise, you are expected to pay them.
- Have the RV repair facility inspect your RV. Either they or you must call Jayco Customer Service to discuss applicable warranty coverage prior to any repair work being performed.
- Jayco Customer Service will issue an authorization number upon warranty repair approval and advise if any original parts need to be returned.
- Once Jayco Customer Service has issued an authorization number, the RV repair facility may begin actual repair to your RV.
- Inspect the completed repair work thoroughly. If you are not satisfied, communicate that immediately to the RV repair facility management. Make sure you are satisfied with the repair before you pay or leave the premises.
- For reimbursement, either you or the RV repair facility must send a copy of your itemized repair bill and all requested return parts by UPS (regular ground, freight pre-paid) within 60 days of the completed repair date.

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

### **Obtaining weekend or after business hours repair assistance**

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

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

### To Contact Us

#### **Mailing address**

Jayco, Inc.  
Customer Service  
P.O. Box 460  
903 S. Main Street  
Middlebury IN 46540

#### **Shipping address**

Jayco, Inc.  
Customer Service  
100 Bontrager Drive  
Bldg 42 Door 4220  
Middlebury IN 46540

Phone (toll-free)

800-283-8267

Phone (local)

574-825-0608

Fax (toll-free)

866-709-9139

Brochure request

[info@Jayco.com](mailto:info@Jayco.com)

Parts email

[parts@Jayco.com](mailto:parts@Jayco.com)

Service email

[service@Jayco.com](mailto:service@Jayco.com)

Website

[www.Jayco.com](http://www.Jayco.com)

We welcome you to join our online community by following and engaging with us on our various social media pages.

- Facebook: Jayco RV
- Instagram: @jaycorv
- YouTube: <https://www.youtube.com/user/jaycorvs>

Become a part of something bigger and join the Ascend Community. This virtual community comes together over stories of adventure, fun and family, spreading the word about the **RV lifestyle**.

- Apply now: <https://www.jaycofamily.com/partnerships/>

## **SECTION 1: WARRANTY & SERVICE**

### **ABOUT THIS MANUAL**

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

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

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

### **WARRANTY PACKET**

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

### **CHASSIS GUIDE**

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

### **SAFETY ALERTS**

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

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

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

❖ **NOTE: Gives helpful information**



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

**NOTICE**

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

 **CAUTION**

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

 **WARNING**

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

 **DANGER**

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

**REPORTING SAFETY DEFECTS**

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

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

However, NHTSA cannot become involved in individual problems between you, your dealer or your vehicle manufacturer. For additional information, please refer to the NHTSA website at [www.safercar.gov](http://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](http://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](http://www.tc.gc.ca/rappels)

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

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

Adresse postale :

Transports Canada -ASFAD

330, rue Sparks

Ottawa (Ontario) K1A 0N5

## **CUSTOMER RESPONSIBILITY**

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

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

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

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

## **CHANGE OF ADDRESS/OWNERSHIP**

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

## **SUGGESTIONS FOR OBTAINING SERVICE**

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

### **Contact your dealer at once**

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

### **Prepare for the appointment**

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

### **Prepare a list**

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

### **Be reasonable with your requests**

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

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

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

### **Inspect the work performed**

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

## **OBTAINING SERVICE AT OUR CUSTOMER SERVICE FACILITY**

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

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

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

## SECTION 1: WARRANTY & SERVICE

### **OBTAINING SERVICE FOR SEPARATELY WARRANTED ITEMS**

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

### **PARTS AND ACCESSORIES**

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

### **AFTERMARKET ACCESSORIES**

#### **WARNING**

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

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

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

**2023 JAYCO MOTORIZED LIMITED WARRANTY**

**THIS LIMITED WARRANTY COVERS:**

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

When you request and accept the performance of warranty repairs under the terms of this Limited Warranty, you are accepting all terms of this Limited Warranty, including by way of example, warranty limitations and disclaimers, the forum selection clause and the clause reducing the time period when suit must be filed for breach.

**LIMITATION AND DISCLAIMER OF IMPLIED WARRANTIES:**

THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO:

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

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

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

**DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES:**

**THE FIRST RETAIL BUYER AND ANY SUBSEQUENT OWNER, ALONG WITH ANY PERSON WHO IS AN INTENDED OR UNINTENDED USER OR BENEFI-**

## SECTION 1: WARRANTY & SERVICE

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

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

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

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

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

Unless prohibited by state or provincial law, repairs do not extend the time when you must commence an action for breach of warranty and shall not extend the warranty coverage period. This reduction in time may not apply to you because some states and provinces do not allow the reduction of the time to commence an action for breach of warranty. Any performance of repairs after the warranty coverage ends and any performance of repairs to those portions of your Motor home excluded from coverage are “good will” repairs, whether or not Jayco was aware of any such coverage lapse or warranty exclusion at the time of repairs. Such “good will” repairs do not alter the express terms of this limited warranty or extend the warranty coverage periods or the limitation period in this paragraph. Jayco is not required to notify you if authorized repairs are considered “good will” by Jayco. You should expect the need for warranty repairs. Jayco may use new and/or remanufactured parts and/or components to complete a repair. It is likely that warranty repairs were performed at the factory during assembly **OR** at the selling dealership after delivery of the Motor home to your selling dealer. If you discover a defect or damage to the Motor home when you take delivery of your Motor home, you **MUST** notify your dealer **OR** Jayco within 10 days of the date of purchase to have defect or damage repaired at no cost to you. Minor adjustments will be performed, free of charge, by the dealer within 90 days of your purchase; thereafter, such adjustments are your exclusive responsibility as normal maintenance.

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

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

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

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

- Notify Jayco or an authorized Jayco dealer, within the applicable warranty coverage period designated above, that you are making a warranty claim;
- Provide the notification mentioned in (1), above, within ten (10) days of the discovery of a defect in material or workmanship; and,
- Promptly schedule an appointment with and take the Motor home to Jayco or an independent, authorized dealer.

If you need assistance, you may contact JAYCO, INC. at 903 South Main Street, P. O. Box 460, Middlebury, Indiana 46540, Attn: Customer Service, (800) 283-8267.

**WHAT IS NOT COVERED:**

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

## **SECTION 1: WARRANTY & SERVICE**

- Any Motor home sold or used outside of the United States, U.S. Territories or Canada;
- Any Motor home not used solely for recreational travel and camping;
- Any Motor home purchased through auction or wholesale;
- Any Motor home purchased from a dealer that is not an authorized dealer;
- Normal wear, tear or usage, such as tears, punctures, soiling, mildew, rust, fading, or discoloration of exterior plastic or fiberglass, or soft goods, such as upholstery, drapes, carpet, vinyl, screens, cushions, mattresses and fabrics;
- The effects and damage caused by condensation or moisture;
- Mold;
- Any damage caused by mold;
- Items working as designed but that you are unhappy with;
- Damage caused by misuse, mishandling, neglect, abuse, failure to maintain the Motor home in accordance with the owner's manual, or failure to perform other routine maintenance such as inspections, lubricating, adjustments, tightening of screws and fittings, tightening of lug nuts, sealing, rotating tires;
- Damage caused by accident, whether or not foreseeable;
- Damage caused by weather or corrosion due to the environment;
- Damage caused by theft, vandalism or fire;
- Damage caused by tire wear or tire failure;
- Defacing, scratches, dents, chips on any surface or fabric of the Motor home; damage caused by infestation by insects or animals;
- Damage caused by off road use;
- Damage caused by overloading the Motor home or any of its components or parts;
- Wheel alignment or adjustments to axles caused by improper maintenance, loading;
- Damage caused by road hazards;
- The leveling jacks/system;
- Any component, system or part warranted by another entity. Examples are : the automotive chassis, (including the power train, steering, handling, braking, wheel balance, muffler, tires, tubes, batteries and gauges); generator; awning ; inverter; converter; microwave; television; DVD/CD player; radio; speakers; television; refrigerator; range; water heater.; water pump; stove; carbon monoxide detector; smoke detector; propane detector; furnace; and, any air conditioner. The written warranty provided by the manufacturer of the component part is the direct and exclusive responsibility of that manufacturer).

### **EVENTS DISCHARGING JAYCO FROM OBLIGATION UNDER WARRANTY:**

- Any rental, business or commercial use or purchase of the Motor home;
- Any Motor home titled or registered in a business name;
- Any Motor home purchased or sold outside of, or used outside of the United States, U.S. Territories or Canada;
- Any Motor home purchased through an auction or wholesale or by a non-authorized dealer;

- Owner neglect;
- Failure to provide routine maintenance;
- Alteration; off road use;
- Collision or accident, whether or not foreseeable;
- Acts of God, including weather;
- Damage or corrosion caused by the environment, theft, vandalism, fire, explosions, or overloading.

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

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

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

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

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

### **JAYCO, INC.**

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

## **SECTION 1: WARRANTY & SERVICE**

❖ Notes:

**SECONDARY MEANS OF ESCAPE (EXIT WINDOW)**

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

**Do not remove the EXIT window label from your RV**

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



**Exit Window Label**

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

**⚠ CAUTION**

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

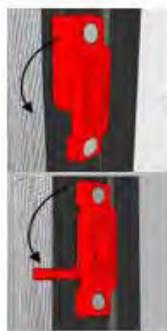
**❖ NOTE: All windows must be closed and locked while the RV is in transit.**

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



**Flip latch style (2 per window)**

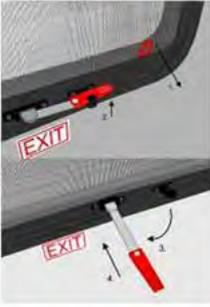
Push up on the front lip of the latch and the latch unfolds.  
Push up on the front lip of the latch again to unhook the latch from the window.  
When both latches are released, push out on the window which is hinged at the top. Exit the vehicle.  
The screen does not need to be removed from the window.



**Slider window latch style**

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

## SECTION 2: OCCUPANT SAFETY



### **Lever style latch**

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

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

## ***FIRE SAFETY***

---

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

1. 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 opening all windows and circulate the air with a fan.

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



### **EXTENDED OR FULL TIME USAGE**

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

<p><b>CAUTION</b></p> <p>Continuous or permanent living in your recreation vehicle may affect your warranty coverage and may void the "Limited Warranty" applicable to your vehicle.</p>
--

### **COLD WEATHER USAGE**

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

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

### **CONDENSATION**

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

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

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

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

### **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

**OCCE 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 OCCE.

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 (8.3 Lb/gal)  
 AND THE TONGUE WEIGHT OF A TOWED TRAILER COUNTS AS CARGO

### Upper Section Federal OCCE Weight Label

THE WEIGHT OF THIS RECREATIONAL VEHICLE MOTOR HOME AS COMPLETED AT THE FACTORY WITH FULL PROPANE TANK AND FULL ENGINE FUEL IS:

XXXXX 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 OCCE 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.

REP. MFR.	LUNARII		08/11
FABRICANT RESP.			
IDENT. P/NR. NO.	9556 4517	ICES/OMNIBUS	PRES./COLD INFL. PRES./COLD/FRIGID
GAWR/FRONT	5000 2270	TIRE/PNEU	PRES./PC 87K
5000 2270	FRONT/DEVANT	87225/5R150 15 X 6 JJ	88 488
50000	INT./CENTRAL		0000
5000 2270	REAR/ARRIERE	87225/5R150 15 X 6 JJ	88 488
TYPE OF VEHICLE/TYPE DE VEHICULE:		TRAILER/CHASSI MONTÉ	
LES VEHICULES CHASSIS AL. APPLICABLE / LE		LES VEHICULES CHASSIS A TIRER LES HOMMES EN	
TRAILER WITH PROPANE TANKS/CHASSIS AND		LE CHASSI AVEC LES TIRER EN HOMME EN	
PERMANENT PRESSURES UNDER THE CANADIAN		SUR LE CHASSI DE VEHICULES A TIRER EN	
MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT		DE CANADA ET DES CHASSIS EN HOMME A LA DATE	
ON THE DATE OF MANUFACTURE/EN VIGUEUR		DE SA MANUFACTURE - CANADA	

### 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**

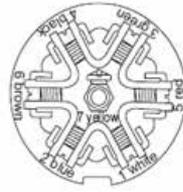
- Your recreation vehicle's load capacity is designated by weight, not by volume, so you cannot necessarily use all available space when loading the vehicle. Do not exceed your GVWR and ensure you are loading the vehicle as evenly as you can for the best possible handling. Ensure heavy items are secured 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

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



**7-way trailer  
plug-rear view**

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

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

### **WEIGHING YOUR MOTOR HOME**

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

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

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

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

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

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

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

### **⚠ CAUTION**

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

** WARNING**

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

## **SECTION 3: PRE-TRAVEL INFORMATION**

❖ Notes:

**VEHICLE OPERATION**

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

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

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

❖ **NOTE: CALIFORNIA TIRE CHAIN NOTICE: YOUR 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.**

** WARNING**

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

**Parking Brake**

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

**TOWING BEHIND YOUR MOTOR HOME**

** CAUTION**

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

## SECTION 4: VEHICLE OPERATION

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.

### **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**

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

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

#### **Authority Code**

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

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

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

❖ **NOTE: You will need a paperclip to use for programming the keypad.**

1. Access the program wires located in the dash compartment on the passenger side of the motor home. Remove the tray on the dash by pulling up on the tray.
2. Locate the yellow and white wires with spade terminals and a label identifying them as the Program Wires.



## SECTION 4: VEHICLE OPERATION

3. Bend the paperclip, put one end into the spade terminal for the white wire, and the other end into the spade terminal for the yellow wire.
4. The keypad will beep for **3 seconds**.
5. Pull the paperclip out of both wires **before the keypad stops beeping**. The keypad is now in "Learn Mode".



Program Wires

- ❖ **NOTE: Press the keypad only once regardless of whether you are selecting the first or the second digit on the keypad. For instance you would only press keypad (1/2) one time regardless whether you were selecting the 1 or the 2.**
6. Enter a new 5-digit **Authority Code**. Each time you press a number on the keypad it will double beep. When you enter the fifth digit, the keypad will chirp (3) times.
  7. Re-enter the **Authority Code** for confirmation. **A long beep indicates a failure to change the code.**
  8. Test the new code to confirm it.
  9. You have (2) minutes to complete this procedure. If you do not complete the process within with in the time limit, or if an error is made, the system will exit Learn Mode and a long chirp will sound indicating an error.
  10. The keypad automatically leaves Lean Mode when the new code is set.

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

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

### Secure Operation

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

(1/2) button unlocks entry doors

(3/4) button – **no function**

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

(7/8) button unlocks entry doors.

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

### ***DRIVER AND PASSENGER SEAT***

#### **WARNING**

- Do not adjust the seat while driving. After adjusting the seat, make sure that it is locked in position. To ensure that the seat is locked securely, try to move the seat forward or backward without using the adjusting lever or button. Do not put packages, pets or other objects between the driver's and front passenger co-captain's seat.
- **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.

**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.**

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.



**Table Warning Label**



**Child Seat anchor symbol**



## 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.

### STEERING WHEEL AND COLUMN CONTROLS

#### Left Control Pad

##### Radio control buttons (arrows)

These buttons cycle radio station tuning up or down.

##### Cruise control function

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

##### Bluetooth phone disconnect

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



Left Side Pad

#### Right Control Pad

##### Radio control buttons (arrows)

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

##### Bluetooth phone call connect

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

##### Windshield wiper/washer controls

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



Right Side Pad

# ⚠ WARNING

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

### Multi-Function Signal Lever

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

### Hazard-Warning Flasher

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

### Pedal Retract/Extend

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

### Steering Wheel Tilt/Telescope

The steering column can be adjusted by using the manual lever 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.



Multi Function Signal



Hazard Warning Flasher



Manual Tilt and Telescope Lever

## **DRIVER'S CONSOLE CONTROL PANEL**

### Horns

The AIR HORN is a switch located on the driver's side console.

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

### Docking Lights

## **⚠ CAUTION**

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

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

To activate the docking lights Depress the "Docking Light" rocker switch on the headlight switch panel. Six docking lights will come on (2 on left side, 2 on right side, and 2 in rear). The docking lights stay on if they are activated with the rocker switch.

### Map Lights

The map light switch is located on the headlight switch panel in the dash. When the control is set on automatic, the lights will automatically turn on when the motor home entrance door is opened. Lights are located above the driver and passenger seats.

## SECTION 4: VEHICLE OPERATION

### **DRIVING (FOG)LIGHTS**

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

### **Daytime Running Lights (DRL)**

The daytime running lights are activated with the following requirements:

- the ignition key is turned ON
- the headlamp control is in the OFF or “parking lamps” position
- the park brake has been released.

## **⚠ WARNING**

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

### **FRONT IN-DASH AM/FM AND NAVIGATION SYSTEM**

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

### **OUTSIDE REARVIEW MIRRORS**

## **⚠ CAUTION**

Adjust the outside rearview mirrors before driving.

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

### **Power Remote Mirrors (if so equipped)**

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

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

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



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

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

### ***XITE 360° CAMERA SYSTEM***

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

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

Additionally, the camera views can be displayed on any TV in the RV. The cameras double as surveillance cameras when the vehicle is parked.

If your motor home has the alternate VDC controller, push the knob upward to scroll through the different dash screens. (Digital Dash, Navigation, and Cameras). Each time you push the knob upward the screen will change. Three pushes will return to the Digital Dash screen.

#### **Automatic Switching**

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

❖ **NOTE:** Some models may include dynamic parking lines.

#### **Camera Controls**

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

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

1. Driver side camera
2. Passenger side camera
3. Rear (backup) camera
4. Front camera
5. Driver/Passenger sides together



**Layers Button**



**Alternate VDC Controller**

## SECTION 4: VEHICLE OPERATION

6. Driver/Passenger sides with Rear camera
7. Front, Rear, and Driver/Passenger cameras
8. 360° overhead view of the vehicle

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



**Camera Control Screen**

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

### **CLIMATE CONTROL SYSTEM (DASH)**

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

#### **System Layout**

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

#### **Operating Features**

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



**Dash Mounted Climate control system**

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

#### **Blower Motor**

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

### Temperature Control

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

### Air Distribution – Mode Control

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

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

❖ **NOTE: 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 *Fuel & Propane System* section before using the LP system. Open the LP gas tank valve (if so equipped) slowly. There may be air in the lines and five to thirty seconds of time is needed to bleed air before LP vapor fills the lines.
- Refer to *Plumbing Systems* section before connecting the fresh water supply or turning ON the water pump or water heater.
- When using full hook-up, connect the sewer hose to the campsite sewer hook-up.
- If applicable, start the refrigerator and the cooling or heating system.

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

### **CHASSIS AIR BAGS**

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

## **SECTION 4: VEHICLE OPERATION**

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.

## **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 System is a controlled air management system that automatically levels an RV equipped with an air bag suspension. Vehicle and step height can be adjusted after leveling.

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

### **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.

**AUTO LEVEL:** is used to automatically level the vehicle when it is stationary.

**MANUAL LEVEL:** allows the operator to raise or lower each corner of the vehicle individually with the air suspension. Up to (2) corners can be operated at the same time, or all corners can be raised or lowered at once. Manual mode can be used with the ignition either ON or OFF, and when the vehicle is traveling at low speeds (up to 5mph).

**TRAVEL MODE:** is operational when the vehicle is in motion. This mode initiates by default when the parking brake is released or if the vehicle begins moving. It is recommended the operator enter this mode before the vehicle begins moving.

- ❖ **NOTE:** The leveling system collects information on the ground speed of the vehicle, so the operational mode can change depending on the speed of the vehicle. In MANUAL mode, the coach can be driven up to 5mph, but if the speed increases to 6 mph the system will switch to TRAVEL mode.

### **Accessing the Leveling System**

The leveling system is accessed via the Video Display Controller (VDC) and the Graphical Instrument Cluster (GIC) interface and is integrated into the digital dashboard. The selectable display area is located in the lower left corner of the digital dash layout.

- ❖ **NOTE:** In order to activate the Leveling System in the Selectable Display area, either the parking brake must be set or vehicle speed must be 0 mph.

### **Auto Level Operation**

Auto level uses the air suspension to level the vehicle. When activated, the system detects the lowest corner of the vehicle and levels (lowers) the remaining corners to that position. If the system determines it cannot lower the vehicle to that level, any corners that are low will be raised to the level of the highest corner. Once auto leveling completes, the system goes into low power mode. The leveling system will store the ride height of the vehicle and when ignition is turned OFF the system will go to sleep. After 2 hours in low power mode the system automatically awakens and checks to see if leveling is required. If no leveling is necessary it goes back to sleep. If leveling is necessary the system restores the ride height to the stored height.

### **Auto Level Selection**

- The ignition should be ON and the air system at full pressure.
- The parking brake is engaged.
- The front wheels are pointing straight ahead.

## SECTION 4: VEHICLE OPERATION

Rotate the VDC knob in the Selectable Display to find SUSPENSION/LEVELING.

The Suspension/Leveling menu displays PRESS FOR OPTIONS and the current mode the leveling system is in (in this case TRAVEL). Press the VDC knob to select OPTIONS.

In the menu that appears next rotate the VDC knob until **Auto Level** is selected. Press the knob on the VDC to begin the auto leveling process.

The menu will display PRESS FOR OPTIONS along with AUTO LEVEL and the status at the right will indicate "LEVELING..."

Auto leveling can be halted at any time by pressing the knob on the VDC.

While Auto Level is running, press the VDC knob and the menu will now display **Travel, Exit Auto, More**. Rotate the VDC knob to highlight **Exit Auto** and press the VDC knob. Auto leveling will cease.

❖ **NOTE: Movement in the vehicle should be kept to a minimum during auto leveling as this can disrupt the leveling sensors.**

### Change height of a leveled vehicle

The vehicle can be lowered or raised to adjust entry doorstep height. Ignition should be ON and air system at full pressure.

Scroll the main menu using the VDC knob until it displays SUSPENSION/LEVELING. Press the knob to select options. Scroll through the list of items in the Options menu and press the knob to select **More**.

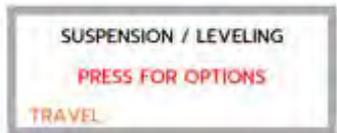
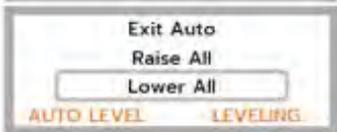
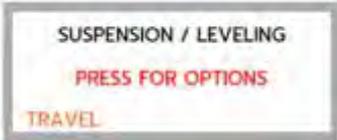
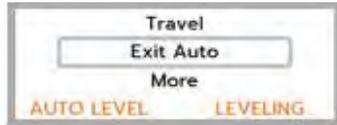
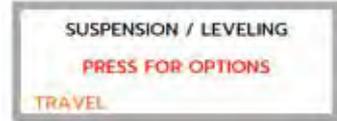
Scroll on the next menu to find **Lower All** and **Raise All**. Select the operation you need to adjust the coach level.

❖ **NOTE: If the system is unable to level the vehicle, the SLOPE status will be displayed and the system goes into low power mode. The system has determined that it would need to exceed the factory set height limits to level the vehicle. Auto Level can be selected to try leveling again, but if the SLOPE status comes on again it is not possible to level the vehicle on that surface and the vehicle should be moved to a more level location. SLOPE indicator is located to the right of the drawing of the chassis with the levels.**

### Manual Level Selection

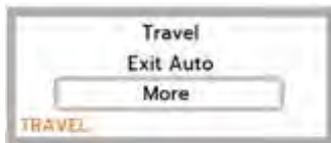
Use the VDC controller to scroll to the SUSPENSION/LEVELING menu.

The Suspension/Leveling menu displays PRESS FOR OPTIONS and the current mode the leveling system is



in (in this case TRAVEL). Press the VDC knob to select **OPTIONS**.

To access manual mode, rotate the VDC knob to highlight **More** from the main menu. Press the VDC knob to select it. This will open the **More** screen.



### Manual Mode Leveling

The **More** screen display is a large screen which will fill a large portion of the digital dash. The first part of the menu displays (6) items which are: **Travel, Auto Level, Manual, Standby, System, and Exit.**



Selecting **Manual** will open a secondary menu with (9) items relating to axle locations around the coach. Selecting one of those items opens a third menu with (3) selections: **raise, lower and back.**

The current selected mode (**Manual**) is displayed in the lower left corner of this display. These menu choices will allow you to level the coach manually: all 4 corners individually, left side, right side, or all 4 corners at the same time.

There is a graphic representation of the vehicle with (3) bubble levels. Two of the levels represent the front and rear axles, and the center level represents leveling the coach from front to rear. Optimum leveling occurs when all (3) have the bubbles centered in their respective tubes.

- In **Manual Mode**, the entire vehicle may be raised or lowered while parked or moving slowly (under 5 mph). Above 5 mph, the system reverts to **Travel Mode**.
- Manual Mode** can be used with the ignition either ON or OFF.
- Wheels must be pointing straight ahead.
- If the system detects an excessive amount of twist in the vehicle frame during manual adjustments, a **TWIST** status indicator will light to the right of the graphic outline of the vehicle. The system will not allow any further actions that may cause more twisting.
- To recover from a **TWIST** condition, perform an Auto Level, or manually raise or lower the low or high corners to un-twist the frame.
- If the system detects that the corner height is exceeding factory set height limits (either low or high), the corner will not raise or lower.

### Travel Mode (Ride Height) Operation

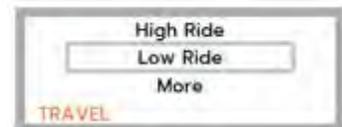
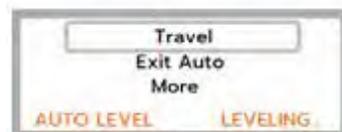
Travel Mode is used when the vehicle is in motion above 5 mph. This mode controls the vehicle's air suspension system. There are (3) factory defined levels: **high ride, low ride, and travel height.** When the system is in **Travel Mode**, the suspension will go to **travel height**.

#### Travel Mode

Turn the ignition ON.

The menu will now display **PRESS FOR OPTIONS** along with the current status. Press the VDC knob to select options.

Rotate the VDC knob to highlight **travel**, and press the VDC knob to select it.



## SECTION 4: VEHICLE OPERATION

Select either **high ride** or **low ride** from the menu that appears next. (**Low Ride** for clearance at top of coach, **high ride** for rough terrain)

These modes are used only under predefined speeds. At higher speeds, the vehicle goes to the normal ride height and **high** and **low** options are not available. The manufacturer sets the predefined speeds for using **high** and **low** ride heights.

If the leveling system is turned OFF or in any other mode besides **travel**, the system will automatically turn on and switch to **travel mode** if the park brake is released or the vehicle exceeds the maximum set speed.

If the park brake is released before travel ride height is achieved, the system sounds a tone every second until normal ride height is reached or until the park brake is set.

### **CAUTION**

- The time required to achieve ride height varies with vehicle design.
- It is the operator's responsibility to ensure that the vehicle is at adequate height before driving. If the vehicle is too low, severe damage can result to the fenders when the wheels are turned.

When **travel mode** is entered from **auto** or **manual mode**, a tone sounds until ride height is achieved. The tone also sounds if **high ride**, **low ride**, or standard ride mode are set, and will continue until desired ride height is achieved. The vehicle should not be moved while the tone is sounding.

It is inadvisable to negotiate uneven terrain in low ride mode.

The automatic ride height system will not attempt to make changes while the vehicle is cornering or braking.

### **Low Ride Height Warning**

The indicator “not at ride height” will display and a chime will sound for 3 seconds if the following conditions are present:

- Vehicle ride height is below a predefined limit
- The system is in **manual** or **travel mode**
- The park brake is OFF.

This indicates the suspension is below a safe height and fender damage could occur when turning the wheels.

### **Status Messages** (on the **more** screen)

**Twist:** Twist limits have been reached during manual leveling.

Refer to previous page for explanation of recovering from a twist condition or if the system will not raise or lower a corner.

**Park:** The **PARK** indicator illuminates if the park brake is on. It flashes if an attempt to level the vehicle is made without engaging the park brake. It will flash if the park brake is set and the vehicle is in gear. It will stop flashing when the vehicle is placed in neutral with the park brake set.

**Slope:** Leveling is not possible because the ground has excess slope. Move the vehicle to another location. Refer to the **auto level** section.



### Info Screen

Accessed by pressing the **more** screen on the main menu.

The Info screen displays part numbers for the leveling system components. Used mainly by service personnel.



### Diagnostics Screen

Displays current diagnostic messages within the leveling system.

The vehicle operator will be alerted to any diagnostic messages by the presence of this icon on the main screen.



Diagnostic messages are displayed in order of occurrence.



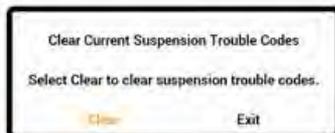
**WARNING**

If the **TROUBLE** indicator is on, the suspension may be inoperative. **DO NOT DRIVE THE VEHICLE, CALL FOR ASSISTANCE!**

- ❖ **NOTE:** When contacting the service department about a diagnostic message, write down any information displayed on the More screen for all diagnostic messages present. This will help diagnose the problem if the message list has been cleared in the meantime.

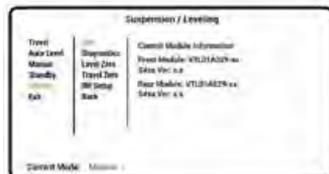
### **Clear Diagnostic Messages**

Press the VDC knob. Select **clear** to erase the messages. Select **exit** to leave the messages intact and leave the dialog screen.



**Level Zero, Travel Zero, and RH Setup (Ride Height)** are used by service personnel.

For complete instructions refer to the leveling system manufacturer's manual included in your warranty packet.



## **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.

## SECTION 4: VEHICLE OPERATION

### **WARNING**

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

### ***EMERGENCY TOWING***

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

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

### **WARNING**

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

### ***FRONT AXLE TIRE ALIGNMENT***

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

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

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

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

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

**WHEEL LUG NUTS/WHEEL LINERS****⚠ WARNING**

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

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

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

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

Lugs should be checked:

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

Refer to the Chassis Guide for torque guidelines.

**Wheel Lugs**

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

**Aluminum Wheels (if so equipped)**

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

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

**TIRES**

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

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

## SECTION 4: VEHICLE OPERATION

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.

### 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 than 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 includes the following options:

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

Power switches to operate the awnings are found on the multiplex touchscreen and entry door switch.

## SECTION 4: VEHICLE OPERATION

### **Power Awnings**

Each power awning will have its own control switch. Pressing and holding the switch will extend or retract the awning. The awning will stop when the switch is released.

❖ **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 adjust the awning pitch (slope). This will help with water runoff and pooling. When adjusting the awning scope, 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.

***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.
- 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 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.

### **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**

## SECTION 6: ELECTRICAL SYSTEM

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.

### **TESTING THE CAMPSITE POWER CONNECTION**

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

Campsite 120-volt power receptacles can be tested using a digital multimeter or a dedicated circuit analyzer. Dedicated circuit analyzers plug directly into the campsite power receptacle and minimally test for open neutral, open ground, and correct polarity.

## **⚠ WARNING**

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

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

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

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

### **DO NOT**

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

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

### **Connecting the Power Cord**

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

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

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

**The shore power cord should be unplugged when the recreation vehicle is left unattended.**

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

### **Maintenance**

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

## **INVERTER/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 running. In this mode the inverter/charger charges the house auxiliary batteries. Chassis batteries can also be charged either from shore power or using the generator.

- ❖ **NOTE: The inverter 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.

## **SECTION 6: ELECTRICAL SYSTEM**

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.

### **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.

#### Dry Camping

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

If excessive amounts of power are drawn from the house auxiliary batteries, either as small

applied loads over an extended period of time or as high applied loads for a short period of time, they will become deeply discharged. Permanent battery damage will occur after repeated deep discharge cycles.

### **General usage information (using estimated ratings)**

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

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

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

### **Battery Inspection and Care**

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

### **Battery storage instructions**

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

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

### **Battery Replacement**

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

### **Battery Disconnect Solenoid Switch (House Battery Disconnect)**

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

- ❖ **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.**



**Battery Disconnect Switch**

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

### **Battery Isolation Manager**

Your motor home is equipped with a Battery Isolation Manager (BIM) that monitors the battery voltage of both the chassis and house batteries over long periods of time. If it senses a charging voltage it connects the two batteries together. If the charge system is overburdened, it isolates both batteries. When batteries have reached a float charge state for (1)

## SECTION 6: ELECTRICAL SYSTEM

hour, the batteries are isolated to prevent overcharging. It will reconnect if either battery drops to approximately 80% charge and the other is being charged. If batteries are not being charged they will be isolated to prevent an electrical draw in one system from depleting the other battery.

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



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

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

### **AUTOMATIC TRANSFER SWITCH (ATS)**

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

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

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

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

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

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

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

### **120-VOLT CIRCUIT BREAKERS**

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

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

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

### **CAUTION**

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

#### **Replacement**

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

### **WARNING**

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

#### **Maintenance**

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

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

### **APPROXIMATE ELECTRICAL LOAD RATINGS**

<b>12 VOLT SYSTEM</b>	
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

## SECTION 6: ELECTRICAL SYSTEM

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

### **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.

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.

#### **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.

### **GENERATOR SLIDE TRAY**

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

## **CAUTION**

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

To access the generator slide tray:

1. Open the fuse compartment directly under the driver's side window.
2. Pull the "T" handle inside the compartment to release the generator slide tray.

## **SECTION 6: ELECTRICAL SYSTEM**

3. Pull on the bottom front of the generator slide.
4. To close the generator slide tray, push the slide tray back in until it locks.

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

**For additional information, contact your dealer or Customer Service.**



## **SOLAR PANEL**

### **⚠ 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.**

**FUEL SAFETY**

**⚠ DANGER**

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

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

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

**Fuel Selection**

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

**Fuel Filler Cap**

**⚠ WARNING**

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

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

**Filling the fuel tank**

**⚠ DANGER**

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

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

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

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

**EXHAUST GAS FUMES**

**⚠ WARNING**

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

To avoid breathing exhaust gases, follow these precautions:

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

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

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

**Maintenance**

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

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

**For more information refer to your Chassis Guide.**

**PROPANE GAS SYSTEM**

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

**⚠ WARNING**

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

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

## SECTION 7: FUEL & PROPANE SYSTEM

Your motor home has been carefully tested at the factory and by your selling dealer for leakage. Travel vibrations can loosen fittings. Have the vehicle propane system checked at all connections soon after the purchase of your vehicle, and after the initial filling of the propane tanks.

Continued periodic checks of the propane system at 5,000 miles of travel (or at least once a year) by a qualified propane service representative as part of your normal maintenance is recommended. Hand tighten the LP gas system valves only, do not use a wrench or pliers as over tightening may damage the valve seals and cause them to leak.

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

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

 **DANGER**

ALL PILOT LIGHTS, APPLIANCES, AND THEIR IGNITORS (SEE OPERATING INSTRUCTIONS) SHALL BE TURNED OFF BEFORE REFUELING OF MOTOR FUEL TANKS AND/ OR PROPANE CONTAINERS.  
FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

 **WARNING**

DO NOT FILL PROPANE CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY.  
FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

 **CAUTION**

THIS PIPING SYSTEM IS DESIGNED FOR USE WITH PROPANE ONLY. DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.  
Securely cap this inlet when not connected for use. After turning on propane, except after normal cylinder replacement, test propane piping and connection to appliances for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine. DD-37

**Propane Label**

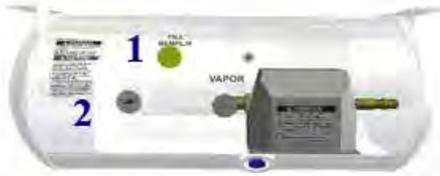
### **Propane Gas Container**

Propane is a true gas compressed into a liquid form. As the fuel is released from the container, it changes to vapor which is then used for the operation of the appliances. Propane will not run through the appliances in the liquid state.

A permanently mounted A.S.M.E. approved propane container is located under the floor of the motor home.

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

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



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

## SECTION 7: FUEL & PROPANE SYSTEM

### Servicing or Filling

# **WARNING**

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

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

Only the authorized gas service technician(s) should be near the motor home while the propane tank is being filled. The new propane container must be carefully purged for proper appliance performance and operation. The propane tank must **NEVER BE OVERFILLED**.

Replace all protective covers and caps on the propane system and/or container after filling. Make sure the valve is closed and the compartment door is securely latched.

### LP Gas Container Overfill

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

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

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



### **WARNING:**

**DO NOT FILL CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY.  
FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.**

**OVERFILLING THE PROPANE CONTAINER CAN RESULT IN UNCONTROLLED PROPANE  
FLOW, WHICH CAN CAUSE FIRE OR EXPLOSION.**

**A PROPERLY FILLED CONTAINER CONTAINS APPROXIMATELY 80 PERCENT OF ITS  
VOLUME AS LIQUID PROPANE.**

### **Propane System Label**

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

### Propane Regulator

# **WARNING**

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

❖ **NOTE: Regulator appearance and type may vary by model.**

### Single stage regulator

Some models are equipped with a single stage regulator.

### Two stage regulator

The two-stage regulator has the only moving components in the propane system. Its sole function is to reduce the pressure from the propane containers to a safe and consistent low operating pressure. The first stage reduces the container pressure to 10-13 lbs. The second stage reduces the 10-13 lbs. of pressure further to an operating pressure of 11" W.C. (water column) or 6.35 oz. of outlet pressure to your appliances.

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

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

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

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

## ***PROPANE USE AND SAFETY***

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

### Propane Leak Test

Leaks may be found easily with a soapy water solution. Do not use a solution containing ammonia or chlorine when locating leaks. These products are corrosive to copper gas lines and brass fittings, which could result in deterioration of the copper and brass components. Apply the soapy solution to the outside of the gas piping fittings. If a leak is present, the soapy solution will "bubble" at the leak point. If a leak is indicated, shut off the propane system valve(s) and contact your dealer or qualified propane service representative immediately.



**▲ DANGER**

IF YOU SMELL PROPANE

1. Extinguish any open flames, pilot lights and all smoking materials.
2. Shut off the propane supply at the container valve(s) or propane supply connection.
3. Do not touch electrical switches.
4. Open doors and other ventilating openings.
5. Leave the area until odor clears.
6. Have the propane system checked and leakage source corrected before using again.

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

**Propane System Label**

### **DANGER**

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

#### **Using the Propane System**

Use the following steps for propane operation:

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

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

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

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

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

#### **Cooking With Propane Gas**

### **WARNING**

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

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

**It is especially important that cooking appliances not be used for comfort heating, as the danger of asphyxiation is greater when the appliance is used for long periods of time.**

**FAILURE TO COMPLY MAY RESULT IN DEATH OR SERIOUS INJURY.**

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

**⚠ DANGER**

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

**⚠ WARNING**

Gas cooking appliances need fresh air for safe operation. Before operating:  
Open vents or windows slightly or turn on exhaust fans prior to using cooking appliance. Gas flames consume oxygen, which should be replaced to ensure proper combustion. Improper use can result in death or serious injury.

**TO ENSURE A SUPPLY OF FRESH AIR TO OCCUPANTS, OPEN VENTILATORS WHEN FUEL BURNING RANGE, FUEL BURNING CARRY-OV APPLIANCE, AND/OR FUEL BURNING LIGHTS ARE IN OPERATION. COOKING APPLIANCES SHOULD NOT BE USED FOR SPACE HEATING PURPOSES.**

**DE MANIÈRE À ASSURER UNE ALIMENTATION EN AIR FRAIS AUX OCCUPANTS, OUVRIER LES VENTILATEURS LORSQUE LA CUISINIÈRE, LES APPAREILS DE CHAUFFAGE PORTABLES ET/OU LES LAMPES DE COMBUSTION D'HUILE SONT EN FONCTIONNEMENT. LES APPAREILS DE CUISSON NE DOIVENT PAS SERVIR AU CHAUFFAGE DES LOCAUX.**

JA-110

**Ensure a supply of fresh air (Canada units only)**

**Cooking / Comfort Heating Label**

**Calculating Propane Gas Usage**

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

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

**Propane consumption chart**

The following chart provides average propane consumption information.

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

**Traveling With Propane**

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

**⚠ DANGER**

All pilot lights, appliances and their igniters (see operating instructions) should be turned off before refueling of motor fuel tanks and/or propane containers. These can cause ignition of flammable vapors, which can lead to a fire or explosion.

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

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

## **SECTION 7: FUEL & PROPANE SYSTEM**

❖ Notes:

## ***PLUMBING SYSTEM***

---

There are two different water systems in your recreation vehicle:

- The fresh water system consists of the fresh water holding tank, faucets and connections, water pump, 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.

### **WARNING**

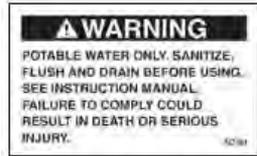
- DO NOT drink water deemed microbiologically unsafe or of unknown quality.
- Avoid traveling with full fresh, black or grey water holding tanks. The weight of holding tank contents is not calculated into the RV cargo carrying capacity. Traveling with full tanks could cause you to exceed the individual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

## SECTION 8: PLUMBING SYSTEM

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.

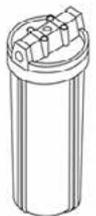
### **⚠ CAUTION**

- 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).

**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.



Filter housing

## SECTION 8: PLUMBING SYSTEM

- 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).
- Clean the inside of the filter housing with mild detergent. Thoroughly rinse and wipe clean.
- Remove the O-ring from the groove in the housing and wipe clean. Coat with petroleum jelly.
- Replace the O-ring in the groove, making sure it is properly seated.
- Install the new filter cartridge.
- Replace the canister housing (hand tighten is normally sufficient).
- Turn on the water supply, turn the pump ON, open a faucet and check for leaks. Turn the pump OFF afterwards.

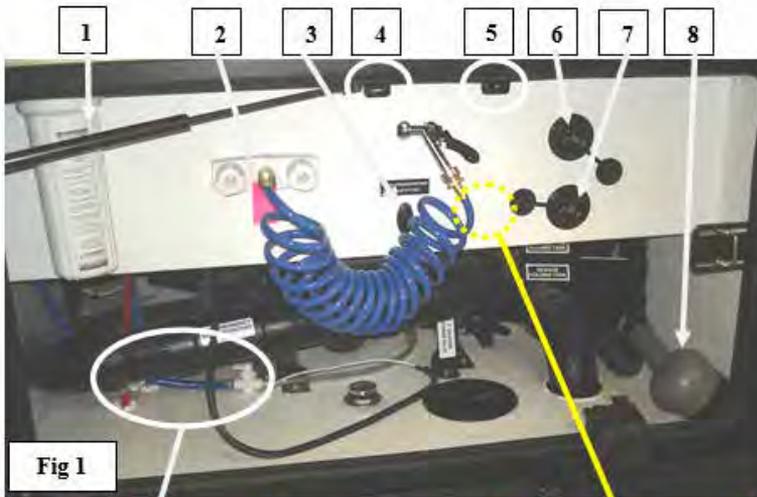
❖ **NOTE: There is no bypass feature on a canister style water filter. The water filter must be removed before sanitizing or winterizing the RV.**

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

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

### **EXTERIOR DOCKING CENTER**

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



### **SANITIZING and WINTERIZING CONTROLS**

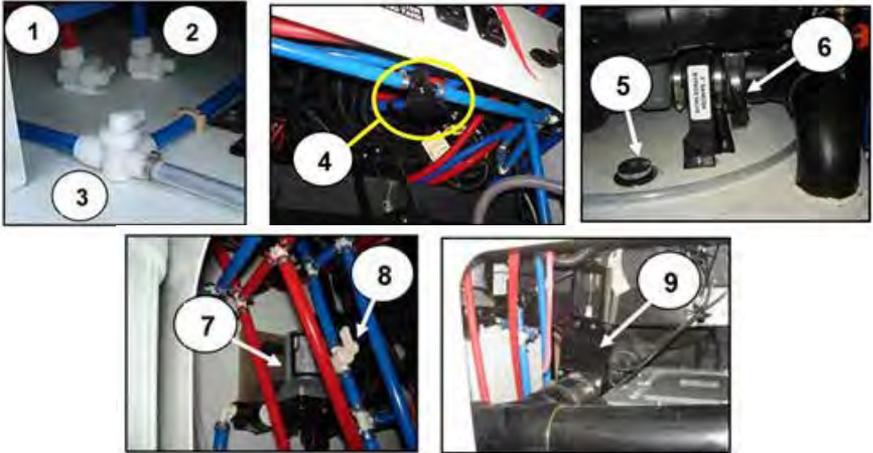
1. Canister water filter
2. Outside shower and quick disconnect hose
3. City Water / Tank Fill Valve
4. Pump Switch
5. Macerator ON/OFF switch
6. Black Tank Flush inlet (*See Black Tank Flush*)
7. Fresh Water Connection inlet
8. Macerator hose and dump connector

### Fresh Water Connections

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

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

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



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

## SECTION 8: PLUMBING SYSTEM

### Sanitizing the Plumbing System

When to sanitize:

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

### **Preparing to sanitize**

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

If a 100 ppm concentration is prepared, use 1/2 cup of household bleach with one gallon of water. One gallon of the solution should be used for each 15 gallons of tank capacity. Allow to remain in system for at least 1 hour.

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

### **How to sanitize:**

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

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

4. To sanitize the fresh water tank: Open the water tank compartment of the RV. Remove the cap from the tank water fill and pour the sanitizer solution into the fresh water tank. Replace the cap.
5. 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 water hose and replace the cap on the water tank.
  - Attach the fresh water hose to a pressurized water source. Connect the other end of the hose to the City Water Inlet. Turn the Tank Fill / City Water valve on the utility center to TANK FILL (horizontal). Turn on the water until the tank is full. When the tank is full, shut off the pressurized water source, disconnect the hose from the water source (first), and then from the City Water inlet.
6. Turn off power to the water heater. Bypass the water heater. Sanitizer must be kept out of the water heater. Set the bypass valves to the BYPASS position (two supply valves OFF, middle valve ON). The 3 valves are located near the water heater.
7. Turn Water Pump Backflow Valve ON (when using the pump).
8. Turn the pump switch ON.
9. 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.**

10. Turn the pump OFF.
11. Let the solution remain in the system for at least four hours when disinfecting with 50 PPM residual chlorine. If a shorter time period is desired, then a 100 PPM chlorine concentration should be permitted to sit in the system for at least one hour.

❖ **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.**

12. After the required sanitization period, drain the chlorine solution from the fresh water system (see *Draining the Fresh Water System*).
13. Re-fill the fresh water tank. Verify that the city water valve is in the horizontal (fill tank) position (Fig. 1). Refer to Step 6 above to fill the fresh water tank.
14. Turn water source OFF. Set the city water valve back to the vertical (city water) position. Water source should attach to the City Water inlet. Turn the water source ON. Water Pump Backflow Valve should be turned OFF. Open all faucets (including outside shower) to flush all the water lines with fresh water (pump is not used for this). Water heater bypass should still be set to BYPASS.
15. Drain the fresh water system again (see *Draining the Fresh Water System*). Re-fill the fresh water tank with potable water. Turn the water heater bypass valves to the NORMAL position (hot & cold supply valves ON, middle valve OFF) to allow water into the Aqua-Hot water heater. Detach the outside shower hose.

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

- Follow the steps outlined in *Draining the Fresh Water System* with one exception; do not drain the water heater.
- Water heater bypass valves (if so equipped) should be set to BYPASS; close valves A&B and open valve C. Do not remove the water heater drain plug.
- Full system canister water filter, remove the canister, take out the filter, and reattach the empty canister.

### **After draining the system**

1. Water heater power should be OFF (both switches: electric and LP gas). Water heater bypass valves (if applicable): A&B should be closed, valve C open.
2. Open the water tank compartment of the RV. Remove the cap from the tank water fill and pour the vinegar solution into the fresh water tank. Replace the cap.
3. 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 water hose and replace the cap on the water tank.
  - Attach the fresh water hose to a pressurized water source. Connect the other end of the hose to the City Water Inlet. Turn the Tank Fill / City Water valve on the utility center to TANK FILL (horizontal). Turn on the water until the tank is full. When the tank is full, shut off the pressurized water source, disconnect the hose from the water source (first), and then from the City Water inlet.
4. Run water through all faucets (hot and cold, including outside shower) until chlorine smell is gone. Turn the pump ON to send water through the lines.
5. Close all faucets including outside shower. Turn pump OFF.
6. Drain the system again. **Water heater bypass valves:** leave valves A&B closed and

## SECTION 8: PLUMBING SYSTEM

- valve C open. Do not remove water heater drain plug.
7. Close low point drains and fresh water tank drain.
  8. Refill the fresh water tank with clean potable water. Use the gravity fill, pour water directly into the gravity fill inlet on the outside of the trailer.
  9. Open faucets and check that the chlorine taste is gone.
  10. Drain the system one more time (see *Draining the Fresh Water System*).
  11. Remove full system canister, insert the filter, and reattach canister to the mount. For **water heater bypass valves**: Open valves A&B, close valve C.
  12. Refill the fresh water system with clean water. When the water heater is full of water, turn the water heater power 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 would include appliances such as the washer, dishwasher and the residential refrigerator).

Preparing your motor home for colder weather or storage is very important for most states and Canada. Failure to prepare your motor home may cause water supply lines and the water heater to freeze.

The motor home should be winterized at the end of the camping season or when the motor home will be exposed to temperatures that will fall at or below 32°F (0°C). **Repairs due to freezing are not covered by warranty.** A second person will make this job easier.

**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 preferred method is to winterize the plumbing system with RV antifreeze. Please read, understand and follow all instructions before beginning to winterize your motor home.**
- ❖ **NOTE: The tank water heater must be drained to prevent damage from freezing. The water heater should be drained and bypassed during the winterization process particularly if introducing RV antifreeze into the plumbing system. DO NOT DRAIN THE WATER HEATER WHILE IT IS HOT OR UNDER PRESSURE! Antifreeze should be kept out of the water heater.**

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

## ⚠ WARNING

- Never apply air pressure to the water system with any of the valves in the closed position. Air pressure applied to a closed valve, faucet or low point drain could potentially damage the seals and cause water leaks. If you have questions, consult with your RV dealer. Using RV antifreeze is the preferred method of winterization.
- **Automotive antifreeze (ethylene glycol) and windshield washer antifreeze (methanol) are poisonous. Never use these products in your fresh water system. These products are harmful and may be fatal if swallowed. Use only RV antifreeze.**

### Winterizing with antifreeze

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

### Winterizing the Macerator System (if so equipped)

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

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

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



**Macerator Bypass**

### **Completing the Winterizing with antifreeze**

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

## SECTION 8: PLUMBING SYSTEM

12. Remove the clear hose from the container of RV antifreeze and clean.

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

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

### To De-Winterize the Fresh Water System

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

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

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

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

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

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

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

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

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

## WATER HEATER - TANKLESS

Your RV is equipped with a tank less water heater. The tankless water heater uses less LP gas than storage tank model water heaters since it only uses energy when hot water is demanded. There is no pilot light to burn when no hot water is needed. The tankless water heater supplies an unlimited supply of hot water on demand (once lines are purged of standing water). As hot water is used, the cold water enters the heater. A water flow sensor detects the flowing water and automatically ignites the burner. Water circulates through the heat exchanger and is heated to the set temperature. When the tap is closed, the unit shuts down.

The tankless water heater does not require an anode rod to prevent corrosion, or a by-pass valve for winterizing. It is not affected by high altitudes.

The output temperature of the water depends on the temperature of the inlet water AND the amount of hot water that is drawn. If the inlet water temperature is over 65 ° F, the tankless water heater will generate water in the range of 105°F to 120°F (on low flame) depending on the water flow selected by the user.

### **Operating Tips**

The tankless water heater can be operated in two different ways.

- Operate like a Tank Water Heater. Turn on the hot water and add cold water to achieve the desired Hot water temperature.
- Select the desired temperature by adjusting the temperature setting up (^) or down (v). The UCP settings are from 95° (F) to 124° (F). The unit will maintain the set temperature. The recommended and Factory setting is 115° (F) or 46° (C).

### For normal operation:

1. Turn on the power. The panel will light and display the current temperature at the inlet of the unit.
2. Press a temperature selection arrow (up or down) to see the current set temperature.
3. Adjust the set temperature to your preference.
4. Turn on a faucet.



## **⚠ WARNING**

It is dangerous to operate a Tankless Water Heater unattended. This may occur accidentally if a sufficient leak develops in the water system or if a faucet is left open. The tankless water heater will automatically turn off after operating for 20 minutes and displays Error “En” on the Display.

### Winterization

Freezing of the water heater and its plumbing components will result in severe damage not covered by warranty. Follow the recommendation(s) below if the unit is to be stored in a freezing environment for a long period of time. At the start of the winter season or before traveling to a location where freezing conditions are likely, the unit must be winterized.

The very small amount of water present in the heat exchanger **DOES NOT** require the installation of a bypass kit. Refer to the *Winterization* section for details.

### **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.

## SECTION 8: PLUMBING SYSTEM

### **FAUCETS**

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

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

### **BATHROOM TUB / SHOWER**

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

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

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

### **⚠ WARNING**

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

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

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

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

### **Maintenance**

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

### **SHOWER MISER**

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

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

### **Operation**

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

When the small valve (on the Shower Miser) is in the closed (OFF) position, wasted cold water is directed to the fresh water tank. No water will flow through the shower head. The blue "dot" will be dark blue when cold water is running through the shower plumbing. When

the water is up to temperature, the blue “dot” will change color from a dark blue to white which indicates the water flowing into the shower is now hot. Turn the small valve the opposite direction (to ON) and turn on the shower valve so water flows out of the showerhead. The color change is obvious so there is no question when the water is at a comfortable temperature.

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

### **Filling the fresh water tank**

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

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

## **⚠ CAUTION**

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

## **BLACK/GREY WATER SYSTEM AND TANKS**

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

### **Drain Pipes with P-Trap (if 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:



## SECTION 8: PLUMBING SYSTEM

### 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.

#### CAUTION

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

#### Black/Grey Water Holding Tanks

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

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

#### WARNING

Never travel with full black or grey water holding tanks. 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.



**Garden Hose Connection**



**Dump Station Connector**

## SECTION 8: PLUMBING SYSTEM

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 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).



**Macerator Bypass**



**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.

 <b>CAUTION</b>
<ul style="list-style-type: none"><li><input type="checkbox"/> The black tank drain valve must be OPEN any time there is a hose (water supply) connected to the black tank flush.</li><li><input type="checkbox"/> Do not leave any hose (water supply) connected to the black tank flush when it is not in use.</li></ul>

 <b>WARNING</b>
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.

## SECTION 8: PLUMBING SYSTEM

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.

## **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.

### **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.

### **POWER ROOF VENT**

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

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

The roof vent is controlled by either a switch or touch screen.

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

**Cooking With Propane**

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

**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 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.

### 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:

## **ANTENNA/SATELLITE SYSTEM(S)**

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

### **Satellite TV Antenna**

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

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

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

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

### **Operating your in-motion antenna**

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

### **Modes of Operation**

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

### **Recovery from Signal Interruption**

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

## SECTION 11: ELECTRONICS

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

### **Toggle In-Motion**

The satellite antenna will automatically toggle between the primary and alternate satellites for your service provider. For toggling in-motion, you may notice a slight delay in satellite switching which could cause a loss in picture. This is normal. Picture loss should be no longer than three seconds. If the alternate satellite the antenna is trying to toggle to is blocked for more than 25 seconds, the system automatically enters the search routine.

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

### **Operating your SD (stationary) antenna**

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

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

❖ **NOTE: DIRECTV must be set to the “two” satellite, oval dish setting. Refer to your receiver manual. DISH Network receivers must have the check switch set to “SW64”.**

### Satellite Dish

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

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

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

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

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

Before traveling, make sure to press “POWER” and wait for the antenna to start to power up; then press “POWER” again to initiate the stow sequence.

### User Menu for Manual Operation

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

## **WARNING**

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

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

### Emergency Manual Stow

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

### Emergency Power Off

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

### Manual HDTV Antenna

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

The antenna base (on the ceiling inside the RV) has a large knob that must be pushed upward to unlock the antenna.

### Antenna Power Supply

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



Rayzar Z1 manual HDTV antenna with ceiling knob



Antenna Power Supply

## SECTION 11: ELECTRONICS

The antenna power supply plate is typically located on the wall behind the main TV or it may be in the overhead compartment above the entrance door.

Turn the antenna power supply OFF to view cable television or to use the DVD player. The ON/OFF switch is located on the wall plate for the antenna connection. An LED will light to indicate antenna power is ON.

### **SATELLITE DISH (IF SO EQUIPPED)**

Your motor home may be equipped with the automatic multi-satellite TV antenna. The following is an overview of the antenna operation. For detailed operating instructions and receiver set up, refer to the manufacturer's user guide.

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

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

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

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

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

### **User Menu for Manual Operation**

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

## **WARNING**

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

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

### **Emergency Manual Stow**

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

### **Emergency Power Off**

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

### **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.

### **WI-FI BOOSTER (IF SO EQUIPPED)**

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

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

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



## **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 – one on each side on the driver and passenger side. To extend the shades, locate the appropriate switch on the console panel and hold the switch down. To retract the shade, hold the switch up.

**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**

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

Some models may be equipped with a **prop rod** to assist with easy access to under bed storage.

**Prop Rod** If your model is equipped with a prop rod:

- With the help of a second person, raise the bed platform.
- Release the prop rod from its holder.
- Put the end of the rod in the bracket under the bed platform.
- To lower the platform, release the prop rod from the bracket under the bed platform, re-attach the prop rod to the holder on the bed base.
- Lower the platform slowly until closed.



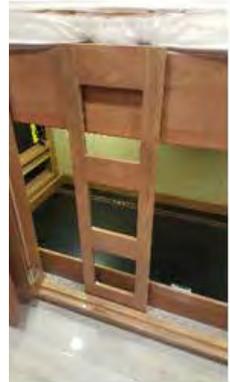
**POWER BUNK BED (IF SO EQUIPPED)**

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

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

**Operation**

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



**⚠ WARNING**

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

## 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](http://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.

### CAUTION

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

## ***ENGINE AND GENERATOR COMPARTMENT ACCESS***

### WARNING

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

### **Engine compartment**

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

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

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

## ***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:**

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

## **SECTION 14: TRAVEL/CAMPING/STORAGE CHECKLISTS**

### **Before leaving the campsite:**

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

### **MOTOR HOME STORAGE**

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

#### **Prior to storage:**

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

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

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

## SECTION 15: ADDITIONAL INFORMATION

Water Heater, Tank DSI	Atwood Greenbrier	<a href="http://www.atwoodmobile.com">www.atwoodmobile.com</a>
Water Heater, Tankless	Girard Systems	<a href="http://www.greenrvproducts.com">www.greenrvproducts.com</a>
Water Pump, 12V	Shurflo East	<a href="http://www.shurflo.com">www.shurflo.com</a>



## **SECTION 15: ADDITIONAL INFORMATION**

❖ Notes:

**Jayco  
Ownership Notification  
Email the form to [unitfile@jayco.com](mailto: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 \_\_\_\_\_