

# PHOENIX USA RV

*Owner's Manual*

VS20201221



**PHOENIX**  
*Cruiser*

**PHOENIX**TRX

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# **Customer Information**

## **Manufacturers Warranties**

The following list of components has been compiled to help you know which products installed on your recreational vehicle may have its own warranty. If you have any of these components on your RV, be sure to check the manufacturer's literature supplied with your RV Owner's Packet to confirm whether they require you to register your purchase with them to validate their warranty. These warranties usually apply only to the first owner of the recreational vehicle. We recommend that you send the various warranty registration cards immediately before any time constraints on registration expire.

Manufacturer's literature is supplied by each individual company according to the specific items used in the production of your RV. This information is part of the Owner's packet you received with your RV. Only those products which are used on your RV will be included in this packet. Inspect this literature with your dealer during the pre-delivery inspection and report any literature shortage to the dealer at that time.

### **APPLIANCES**

- Range
- Water Heater
- Microwave/Convection Oven
- Refrigerator
- Roof Air Conditioner
- Tank Heaters
- Furnace
- TV/DVD/CD

### **WATER AND DRAINAGE**

- Water Pump
- Faucet
- Toilet
- Propane Tank
- Regulator

### **US ELECTRICAL**

- 120VAC/12VDC Converter
- Inverter
- Generator
- Battery

### **MISCELLANEOUS**

- Fire Extinguisher
- Propane/CO Detector
- Smoke Detector

### **CHASSIS**

- Leveling/Stabilizer Jacks

### **NOTE:**

A component manufacturer is one who produces a product which is used in the production of your RV.

## **Taking Delivery**

There are two forms the dealer will complete concerning your new recreational vehicle, the PDI (Pre-Delivery Inspection Sheet) and the Warranty Registration form. If you do not have a copy in your owner's packet, request a copy of these forms for your records. A qualified dealer representative will perform a "walk through" demonstration which will provide you with important information regarding the operation of your RV. Be sure you fully understand the information given and the proper functioning of your RV. Your dealer will fully explain all the system functions and will supply component information for items used in the manufacture of your recreational vehicle.

## **Making a Service Appointment**

When you call to schedule your appointment, have the following information available.

- RV Identification Number.  
(17 Letters and digits, sometimes referred to as a serial number or VIN number).
- Date of Purchase.
- Description of the Problem.
- History of Repairs and Repair Center Location.
- Make, model # and year.

## **Dealer's Responsibilities**

- The selling dealership is responsible for inspecting both factory and dealer installed components for proper operation. This is known as the pre-delivery inspection and systems check.
- Your dealer is required to provide a thorough and complete walk-thru demonstration. This demonstration should provide a good understanding of how your new RV operates.
- The owner's information packet should be presented at this time. This information should include all warranty cards, component information, operation and maintenance instructions relating to your new RV.
- All component warranty forms should be discussed and/or completed at this time. Your selling dealer should assist you in understanding all limited warranty provisions to help you avoid loss of warranty for any reason.

Your dealer should provide you with information concerning any need for service for your RV, whether in or out of the area. They should provide contact numbers for the dealership both during and after hours along with contact information for Phoenix USA RV.

## **Customer's Responsibilities**

Regular and proper maintenance – As the owner, you have the responsibility to properly maintain your recreational vehicle. Be sure you have service performed in a timely manner. It is not always necessary to take your RV to a Service Center; sometimes a phone call is all that is needed. The service technicians can advise you.

Complete and send in all the warranty cards. Doing so may help you avoid conditions arising from neglect that are not covered under warranty.

### **Note:**

Modifications to your RV, without written authorization from Phoenix USA RV, could result in reduction or loss of warranty coverage. Contact your dealer before making any changes.

Read your warranties and review them with your selling dealer. The dealer's obligation is to educate you

regarding the proper and safe operation of your RV and all its components.

Locate all paperwork and ask any questions you may have before leaving the dealership.

### **Note:**

Use your recreational vehicle responsibly. Your RV was not designed to be used as a permanent housing, but for short-term and recreational use. If you intend to use your RV as permanent housing, it could cause premature wear on your appliances, furnace, water systems, carpet, drapes, upholstery, bedding, and interior surfaces. This premature wear caused by permanent residency may be considered abnormal or abusive use and could reduce or in some cases void your warranty coverage.

## **Reporting Safety Defects**

THE FOLLOWING IS ADDED AS A REQUIREMENT OF THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA).

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Phoenix USA RV.

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 Phoenix USA RV.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safecar.gov>; or write to Administrator, NHTSA, 400 Seventh Street SW, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from <http://www.safecar.gov>.

## **How to Contact Us**

Phoenix USA RV  
3504 Cooper Drive  
Elkhart, IN 46514  
Phone: (574) 266-2020 or toll free (877) 754-8535



## PHOENIX USA RV LIMITED WARRANTY

Congratulations on the purchase of your new motorhome! Phoenix USA RV, Inc. ("Phoenix") welcomes you to the family of Phoenix motorhome owners and hopes that you enjoy your new motorhome. This Limited Warranty covers important legal rights you have as the original retail purchaser of your Phoenix motorhome. **Please read this Limited Warranty carefully.** If you have any questions about the terms of this Limited Warranty, please contact Phoenix by phone at (574) 266-2020, email at [warranty@phoenixusarv.com](mailto:warranty@phoenixusarv.com), or mail addressed to Phoenix at 3504 Cooper Drive, Elkhart, Indiana 46514. Any warranty repairs performed on your motorhome are done pursuant to the terms and conditions of this Limited Warranty.

**WHAT THIS LIMITED WARRANTY COVERS:** This Limited Warranty covers:

- i. **only** the first retail owner of a **new** motorhome who uses the motorhome only for personal, family, or household use;
- ii. **only** those defects existing at the time of purchase which are brought to Phoenix's attention during the applicable period ("Warranty Period"), which shall be the earlier of: (a) ninety days from the date of purchase if the defect relates to custom paint; (b) one year from the date of purchase; or (c) the odometer reaches twelve thousand miles; and
- iii. **only** defects in workmanship performed and/or materials used to assemble those portions of your motorhome not excluded from coverage under the section "What This Limited Warranty Does Not Cover." "Defect" means the failure of workmanship or materials to conform with Phoenix's design and manufacturing specifications and tolerances.

**WHAT THIS LIMITED WARRANTY DOES NOT COVER:** This Limited Warranty does **not** cover:

- i. Damage to the motorhome due to condensation or rust and corrosion; normal wear and tear; exposure to elements including environmental factors such as airborne fallout, chemicals, tree sap, salt, ocean spray, and road hazards; or "Acts of God" such as hailstorms, windstorms, tornadoes, sandstorms, dust storms, lightning, floods, and earthquakes.
- ii. Damage from accidents, misuse, neglect, or improperly loading the motorhome.
- iii. The automotive chassis and any mechanical parts or systems of the chassis, including by way of example, the engine, drive-train, steering, ride and handling, braking, wheel balance, muffler, axles, tires, tubes, batteries and gauges.
- iv. Components and appliances in the motorhome covered by their own manufacturer's warranty, including but not limited to, refrigerator, microwave, stove, oven, generators, air conditioners, water heater, furnace, plumbing, and electrical components including audio and/or video equipment. Warranty information for those items is in your owner's manual and is also available from your reseller or by contacting Phoenix directly.
- v. Accessories and equipment added or changed after the motorhome leaves the factory.
- vi. Accessories and equipment that are working as designed, but which you are unhappy with the design.
- vii. Routine maintenance that is the responsibility of the owner.
- viii. Any motorhome sold or registered in a country other than the United States or Canada.
- ix. Any customized accessories, equipment, or component you had installed on your motorhome. An accessory, equipment, or component is "custom" if it is not generally offered by Phoenix as a standard feature or an option on the same year and model as your motorhome.
- x. Damage from off-road use.
- xi. Any motorhome used for commercial purposes, as a permanent or full-time residence, as a rental vehicle, or for any use other than recreational travel and camping. For purposes of this Warranty, it shall be deemed conclusive evidence of commercial purposes if: (a) the product is licensed, titled, registered, or insured in the name of any corporation, limited liability company, or any other form of business or commercial entity; or (b) if you have filed a federal, state, or provincial tax form claiming any business tax benefit related to the motorhome. "Full time" for the purposes of this Limited Warranty shall mean using the motorhome for 30 consecutive days or 18 days per month in two or more consecutive months. For any motorhome used for business or commercial purposes, **PHOENIX EXPRESSLY DISCLAIMS THE IMPLIED WARRANTY OF MERCHANTABILITY.**

**WHAT YOU MUST DO.** As a condition precedent to warranty coverage, you must complete, sign, and return the owner's registration within ten days of purchase to validate this Warranty. **FAILURE TO RETURN THE COMPLETED REGISTRATION TO PHOENIX WILL INVALIDATE THIS WARRANTY. You must present your motorhome for warranty service to Phoenix or an authorized reseller or service center within a reasonable time after discovery of the defect and in no event later than (i) ninety days from the discovery of the defect or (ii) the expiration of the Warranty Period, whichever comes first.** You are responsible for all costs and expenses in getting your motorhome to Phoenix or an authorized reseller or service center for warranty repairs. Warranty service shall, whenever possible, be scheduled by appointment in advance in order to avoid possible delays. Please contact Phoenix to obtain a list of those authorized to perform warranty service in your area. **YOU MAY NOT FILE SUIT WITHOUT PROVIDING WRITTEN NOTICE DESCRIBING THE DEFECTS IN THE MOTORHOME TO PHOENIX AT THE ADDRESS LISTED ABOVE AND PROVIDING PHOENIX WITH THIRTY DAYS FROM THE DATE IT RECEIVES THAT WRITTEN NOTICE TO PERFORM A FINAL REMEDY OF THE DEFECTS.**

**EXCLUSIVE REMEDY:** Provided that you have met your obligations under this Limited Warranty, Phoenix's sole and exclusive obligation is to repair any covered defects discovered within the Warranty Period (the "Repair Remedy"). Warranty repairs should be expected. Phoenix may use new or remanufactured parts or components of substantially equal quality to complete a repair. If the Repair Remedy fails to successfully cure any defect after a reasonable number of repair attempts, your sole and exclusive remedy (the "Backup Remedy") shall be to have Phoenix pay an independent service shop of your

your sole and exclusive remedy (the "Backup Remedy") shall be to have Phoenix pay an independent service shop of your choice to perform repairs to the defect OR if the defect is incurable, have Phoenix pay diminished value damages. Both the Repair Remedy and the Back-up Remedy must be exhausted and must fail of their essential purpose before you can seek other legal or equitable remedies for breach of this express warranty or for breach of any implied warranties. From time to time Phoenix may, in its sole discretion, decide to make repairs on your motorhome at no cost to you for issues not covered by this Limited Warranty. Such repairs of issues not covered by this Limited Warranty shall be considered goodwill repairs only, and do constitute a waiver of any right that Phoenix has under this Limited Warranty or applicable law. Further, any attempt by Phoenix or a reseller, dealer, or service center to resolve a complaint or request for warranty service for your motorhome shall not constitute a waiver of Phoenix's rights under this Limited Warranty or applicable law. **THIS WARRANTY IS NOT A WARRANTY THAT PROMISES OR EXTENDS TO THE FUTURE PERFORMANCE OF YOUR MOTORHOME BECAUSE PHOENIX MAKES NO REPRESENTATION ON HOW YOUR MOTORHOME WILL PERFORM IN THE FUTURE BUT INSTEAD REPRESENTS ONLY WHAT YOUR REMEDY WILL BE IF A DEFECT EXISTS.**

**LIMITATION AND DISCLAIMER OF WARRANTIES:** There is no warranty of any nature made by Phoenix concerning your motorhome beyond this Limited Warranty. **PHOENIX MAKES NO EXPRESS WARRANTIES OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THOSE PORTIONS OF THE MOTORHOME EXCLUDED FROM COVERAGE. PHOENIX FURTHER LIMITS ANY IMPLIED WARRANTY OF MERCHANTABILITY ARISING BY OPERATION OF LAW TO THE DURATION OF THE EXPRESS WARRANTY AND TO THOSE PARTS AND COMPONENTS OF THE MOTORHOME COVERED BY THE EXPRESS WARRANTY. PHOENIX EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND, AFTER THE EXPIRATION OF THE WARRANTY PERIOD, ALL IMPLIED WARRANTIES OF MERCHANTABILITY.** Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. The reseller or dealer that sold you the motorhome is **not** an agent of Phoenix, and Phoenix is not responsible for any representation or warranty made by any reseller or dealer beyond those expressly set forth in this Limited Warranty. No person has any authority to enlarge, amend, or modify the terms of this Limited Warranty.

**REDUCED STATUTE OF LIMITATIONS:** **NO ACTION RELATING TO THIS LIMITED WARRANTY OR YOUR MOTORHOME SHALL BE COMMENCED AGAINST PHOENIX LATER THAN (i) NINETY (90) DAYS AFTER EXPIRATION OF THE WARRANTY PERIOD; OR (ii) 15 MONTHS AFTER PURCHASE, WHICHEVER IS EARLIER.** Some states do not allow the statute of limitations to be reduced, so this provision may not apply to you. Unless otherwise prohibited by laws, repairs will not extend the Warranty Period nor the time to file suit against Phoenix.

**LIMITATION OF LIABILITY:** **YOU, AS THE FIRST RETAIL BUYER OF THE MOTORHOME, AND ANY PERSON WHO IS USING THE MOTORHOME OR BENEFITTING FROM ITS USE, SHALL NOT BE ENTITLED TO RECOVER FROM PHOENIX ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES RESULTING FROM ANY DEFECT IN THE MOTORHOME, INCLUDING FUEL AND TRANSPORTATION EXPENSES TO DELIVER THE PRODUCT TO THE RESELLER, DEALER, OR SERVICE CENTER FOR WARRANTY REPAIRS, 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 SHALL NOT BE DEPENDENT UPON WARRANTY REPAIRS SUCCESSFULLY CURING ANY DEFECT; THIS EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL SURVIVE ANY FAILURE OF THE LIMITED WARRANTY REMEDIES FULFILLING THEIR ESSENTIAL PURPOSE.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

**EVENTS DISCHARGING WARRANTOR FROM OBLIGATION UNDER THIS WARRANTY.** The following events discharge Phoenix's obligations under this Limited Warranty: misuse or neglect, including failure to provide reasonable and necessary maintenance; unauthorized alteration of the motorhome, including the use of a part not approved by Phoenix; an accident involving the motorhome; improper loading of the motorhome; using the motorhome as a permanent or full-time residence; using the motorhome for any commercial purpose; and leasing the motorhome.

**LEGAL RIGHTS AND REMEDIES.** THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE AND PROVINCE TO PROVINCE. **ANY LEGAL DISPUTES RELATING TO THIS LIMITED WARRANTY OR YOUR PHOENIX MOTORHOME MUST BE FILED IN FEDERAL COURT IN SOUTH BEND, INDIANA, OR, IF FEDERAL JURISDICTION DOES NOT EXIST, IN STATE COURT IN ELKHART COUNTY, INDIANA, AND YOU AGREE TO THE EXCLUSIVE JURISDICTION OF THOSE COURTS OVER ANY SUCH DISPUTES.** This Limited Warranty, and all legal disputes between you and Phoenix relating to the motorhome, are governed by the laws of Indiana without regard to Indiana's conflicts-of-laws principles. Phoenix reserves the right to change the parts and design of its motorhomes from time to time and without notice and with no obligation to maintain spare parts or make corresponding changes in its products previously manufactured.

# **Phoenix Cruiser RV Travel Club**

The Phoenix Cruiser RV Travel Club is an independently managed RV travel club that Phoenix USA RV is proud to support! When you purchase your new Phoenix USA RV motorhome, you will receive a complimentary 1-year membership on us.

Registration by customer is required.

To register, please go to Travel Club website at [phoenixcruisertravelclub.org](http://phoenixcruisertravelclub.org). Member benefits include monthly newsletter filled with information, tips, articles as well as access to private members only camp outs and the annual travel club reunion.

The Phoenix Cruiser RV Travel Club is a club with great spirit of friendship, so much so that we feel that we are a family. The club was originally formed for the owners of Falcon and Horizon campervans manufactured by the former International Vehicles Corporation. The company is no longer in business, but the club has continued and is now open to owners of any motorhome. They are now the official club for the motorhomes manufactured by Phoenix USA RV, Inc.

The annual members' reunion is held in the fall. It is a five-day event and locations vary to encourage our members see the United States.

For more information on the club or to get in touch:

- Email the club regarding the newsletter at [newsletter@phoenixcruisertravelclub.org](mailto:newsletter@phoenixcruisertravelclub.org).
- Send a letter via the postal service to Newsletter Editor, P.O. Box 2160, 1058 Mercury Way, Crestline, CA 92325-2160
- Fill out the "Get in Touch" contact form found on the [Phoenixusarv.com](http://Phoenixusarv.com) website.



# Identification and Safety

## General Information

### LEGEND

Listed below are symbols and descriptions you will find throughout this manual. They are used to alert you to possibly dangerous or hazardous situations. When you see these symbols, please read them carefully and follow the instructions to help prevent damage to your RV and for your personal safety.



**DANGER – Danger! (Indicates a hazardous situation which, if not avoided, will result in death or serious injury.)**



**WARNING – Warning (Indicates a hazardous situation which, if not avoided, could result in death or serious injury.)**



**CAUTION – Caution (Indicates a hazardous situation which, if not avoided, could result in vehicle damage or minor to moderate injury.)**

## Vehicle ID Decals and Plates

RECREATIONAL VEHICLE SERIAL NUMBER, DECALS AND DATA PLATES

The recreational VIN (vehicle identification number) label is located inside the driver's door.

## Vehicle Serial Number Label

### NOTE:

Always give model, year, and the last 8 digits of the chassis VIN when ordering parts. The serial number is a combination of 17 letters and digits. We recommend keeping a copy of that information in a safe place, separate from the motorhome. In the event of theft or vandalism, you may be required to supply a copy of this information to the authorities.

A vehicle data card is also supplied with your coach, list manufacturer, model, and serial number information for major factory installed appliances and accessories. A separate copy of this information could be useful to you in event of theft, vandalism, disaster or when certain service functions may require it.

Decals and data plates placed throughout the RV aid in its safe and efficient operation; others give service instructions. Read all decals, data, and instruction plates before operating your motorhome. If any decal, data, or instruction plate has been removed, is damaged or painted over, it should be replaced.

## Safety Regulations and Propane

The following warnings are posted throughout your recreational vehicle to provide information on propane safety. They have been installed not only because of the requirement to do so, but also as a constant reminder to occupants of the recreational vehicle to exercise proper caution when using or being around propane appliances and equipment. We have listed them here so you may study them and be sure you and your family understand and follow them.

### **WARNING**

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

### **DANGER**

**Propane cooking appliances need fresh air for safe operation. Before operating: Open vents or windows slightly or turn on the exhaust fan prior to using the cooking appliance. Propane flames consume oxygen which must be replaced to ensure proper combustion. Improper use may result in death or serious injury.**

### **DANGER**

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

### **DANGER**

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

## DANGER

Do not fill propane container(s) to more than 80 percent capacity. A properly filled container will contain approximately 80 percent of its volume as liquid propane. Overfilling the propane container can result in uncontrolled propane flow, which can cause fire or explosion and result in death or serious injury.

## DANGER

### IF YOU SMELL PROPANE

1. Extinguish any open flames and all smoking materials.
2. Shut off the propane supply at the container valve(s) or propane supply connection.
3. Do not touch electrical switches.
4. Open doors and other ventilating openings.
5. Leave the area until the odor clears.
6. Have the propane system checked and leakage source corrected before using again. Ignition of flammable vapors could lead to a fire explosion and result in death or serious injury.

## WARNING

When using the LP quick connect outdoor cooking area:

1. The vehicle must be level and stabilized.
2. Do not violate manufacturers' instructions on required clearances for cooking appliances during use.
3. Do not store cooking appliances until cool to the touch.

## DANGER

If your RV is equipped with an airbag by the chassis manufacturer, the description and important safety information about the air bag system can be found in the chassis owner's manual. Whether or not an airbag is provided all occupants, including the driver should always wear their seat belts any time the RV is in motion. Failure to properly wear a seat belt or sitting in the RV where no seat belt is provided while the RV is in motion increases the risk of severe injury

## Using Seat Belts

Before you drive away, always fasten your seat belt and make sure all your passengers are using seat belts or child restraints. Also, remember to lock the vehicle's doors and turn on the childproof locks if children are in the vehicle.

Studies have shown that if you are in a crash while using seat belts, your chances of being hurt or killed are greatly reduced. Seat belts will move with you and lock up if a crash occurs. They keep you from being thrown from the vehicle and against parts inside of your vehicle. In addition of protecting you from injury as a driver, seat belts help you keep control of the vehicle. If you are struck from the side or make a quick turn, the force could push you sideways and therefore you cannot steer the vehicle if you are not behind the wheel. In many states it is illegal to drive or to be a front-seat passenger, without wearing seat belts.

Wear a seat belt all the time, not just on long trips or high-speed highways. More than half of the crashes that cause injury or death happen at speeds less than 40 mph and within 25 miles from home.

It is important to wear the seat belt correctly.

- A shoulder harness is worn across the shoulder and chest with minimal, if any slack. The shoulder harness should not be worn under the arm or behind the back. Wearing the harness the wrong way could cause serious internal injuries in a crash.
- The lap belt should be adjusted so that it is snug and lies low across your hips after fastening. If you have an automatic shoulder belt, be sure to buckle your lap belt as well. Otherwise, in a collision you could slide out of the belt and be hurt or killed.
- You should be seated upright with your back against the seat and feet on the floor. Improper seating positions, such as slouching or resting one's feet on the dashboard can result in reduced effectiveness of the vehicle's restraint system and possibly result in injury.
- Seat belts should be worn even if the vehicle is equipped with air bags. While air bags are good protection against hitting the steering wheel, dashboard or windshield, they do not protect you if you are hit from the side or rear

or if the vehicle rolls over. In addition, an air bag will not keep you behind the wheel in these situations.

- The law requires that all children under the age of 12 must be secured in the rear seat and wearing appropriate seat restraints while the vehicle is in motion.

Inspect the seat belts in your motorhome periodically to make sure they work properly and are not damaged; make sure there are no nicks, tears, or cuts in the belt material. Replace the motorhome seat belts as necessary. A qualified service technician should inspect all seat belt assemblies after a collision. Phoenix USA RV recommends that all seat belt assemblies used in vehicles involved in a collision be replaced.

## WARNING

**Failure to inspect and if necessary, replace damaged seat belts could result in severe personal injuries in the event of a collision.**

**If seat belt replacement is necessary, ensure mounting and fastening devices are torqued to manufacturer's specifications.**

## WARNING

**Do not occupy beds or any other seats that are not equipped with seat belts while the motorhome is in motion. Seat belts are designed for single occupancy. Do not use a seat belt for more than one person.**

## CAUTION

**Seat belts and seats can become hot in a vehicle that has been closed up in sunny and/or hot weather; they could burn the bare skin of a child. Check that seat covers and seat belt buckles are safe to the touch before seating children.**

## Safety Devices

### WARNING

**Never ignore alarms on safety devices. If the alarm sounds and you are not absolutely certain of the source, get everyone out the RV immediately.**

- Always have a plan of escape. Update and practice your escape plan every six months.
- Have a meeting and discuss the plan, showing everyone what to do, including guests.
- Do not waste time picking up valuables or getting dressed. Sometimes seconds count!
- Vacuum any dust off the alarms weekly.
- DO NOT spray cleaning agents or waxes directly onto the detector as it may cause damage to the sensor.

## Smoke Detector

- Smoke alarms may not have time to alarm before the fire causes damage, injury or even death.
- A smoke detector works for only detecting smoke, not fire.
- The alarm will sound only if smoke reaches the sensor.
- Check the batteries at least once a week while the RV is in use.
- This unit will not alert hearing-impaired residents. (Special alarms with flashing strobe lights are needed for the hearing impaired.)
- Smoke alarms have a limited life and are not foolproof.
- Never attempt to repair this unit; replace if faulty.
- Never disconnect the battery to silence the alarm.

## CO/Propane Detector

- The detector is designed to detect carbon monoxide from any source of combustion. It is not designed to detect smoke or fire.
- This detector senses propane in the air, not smoke or fire. It detects the presence of propane at the sensor; explosive gas may be present in other areas.

- Test alarm each week while RV is in use and before beginning a trip. Press the “TEST” button. If the alarm fails to sound, replace the unit immediately. DO NOT attempt to repair.
- For more information, consult the individual Owner’s Manual.

## **Backup Camera**

The backup camera is located in an elevated location on the rear wall, directly below the center running lights.

## **Fire Safety**

Fire safety is an important part of owning a RV. The following basic rules of fire prevention can help eliminate the possibility of a fire.

- Never store flammable liquids in the RV.
- Never leave cooking food unattended.
- Never smoke in bed and always use an ashtray.
- Never allow children to play with propane or electrical equipment.
- Never use an open flame as a flashlight.
- Have faulty or damaged wiring and electrical components repaired immediately.
- Never overload electrical outlets.
- Locate any propane leaks and have them repaired immediately.
- Keep cooking surfaces clean and free from debris.
- Don’t allow rubbish to accumulate.
- Never clean with a flammable substance.
- Spray fabrics annually with a flame retardant.

### **NOTE:**

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

### **NOTE:**

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

## **WARNING**

**Evacuate everyone from the RV immediately. DO NOT ATTEMPT TO USE WATER TO PUT OUT A FIRE. Water can spread some types of fire, and electrocution is possible. Leave the vehicle immediately and call the fire department. Propane regulators must always be installed with the vent facing downward. Regulators that are not in compartments have been equipped with a protective cover. Be sure the regulator vent faces downward, and the cover is kept in place to minimize vent blockage, which could result in excessive propane pressure causing fire and explosion.**

## **WARNING**

**Portable fuel burning equipment, including wood or charcoal burning grills and stoves, shall not be used inside the vehicle. Doing so may cause a fire, explosion, carbon monoxide poisoning, or asphyxiation. If you decide it is safe to fight a fire with an extinguisher:**

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

### **NOTE:**

Use the “PASS” method. Familiarize yourself and all RV occupants with this procedure:

1. Pull the pin (some extinguishers may have a cartridge you need to push).
2. Aim the nozzle at the base of the fire.
3. Squeeze the handle to release the extinguishing agent.
4. Spray the base of the fire. (If you aim at the flames, you will not extinguish the fire.)

## DANGER

Avoid inhaling the dry chemicals from the fire extinguisher. Although non-toxic, they could cause temporary irritation. When the fire is out, clean the area so soon as possible. The dry chemicals may cause surface damage if left too long. Do not use water to extinguish a fire. Water can spread some types of fire, and electrocution is possible.

Underwriter Laboratories classifies fires into three types:

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

## Tire Safety

Before using your RV, you should inspect all the tires for proper inflation, uneven wear on the tread, cracks, foreign objects, or other signs of wear or damage. Don't forget to inspect your spare tire (optional). If excessive or irregular tread wear, under-inflation or damage like scrapes, bulges, cracks, punctures, foreign objects embedded in the tire are present or if you are experiencing continuous pressure loss, the tire should be inspected by a trained tire technician.

Tires deteriorate over time even if they are not used or driven on. This deterioration can cause tires to fail even when there is no visible sign of damage. Lack of use, overloading, and underinflation can cause tires to deteriorate faster.

Regularly inspecting and replacing your tires can help prevent tire failure.

## CAUTION

### Safety First – Basic Tire Maintenance

Properly maintained tires improve steering, stopping, traction and load-carry capability of your vehicle. Under-inflated tires and overloaded vehicles are major causes of tire failure. Therefore, to avoid flat tires and other types of tire failures, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

## Understanding Tire Pressure and Load Limits

Finding your vehicle's Recommended Tire Pressure and Load Limits.

The tire information and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

1. Recommended tire size
2. Recommended tire inflation pressure
3. Gross Vehicle Weight Rating (GVWR – the maximum occupant and cargo weight a vehicle is designed to carry.)
4. Front and rear gross axle weight ratings (GAWR- the maximum permissible weight, including cargo, fluids, optional equipment and accessories that can be safely supported by each axle.)

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

### Understanding Tire Pressure and Load Limits

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and effects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure measured in pounds per square inch (psi), a tire requires to be properly inflated. (This number is

also expressed in kilopascals (kPa) which is a metric measurement system used internationally.)

Vehicle manufacturers determine this number based on the vehicle's design load limit, which is the greatest amount of weight a vehicle can safely carry, and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure". Tire pressure should always be measured when the tire is cold to get an accurate measurement. A cold tire is one that hasn't been driven on for at least three (3) hours. As you drive, your tires get warmer, causing the air pressure within the tire to increase. Therefore, you cannot get an accurate measurement of tire pressure unless the tire is cold.

### Checking Tire Pressure

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "Maximum permissible inflation pressure" on the sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions and for carrying the maximum weight limit of tire capacity.

#### NOTE:

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

1. Most tires naturally lose air pressure over time.
2. Tires can lose air suddenly if you drive over a pothole or strike the curb when parking.
3. With radial tires, it is usually not possible to determine under-inflation by visual inspection.

For your convenience, purchase a tire pressure gauge to keep in your vehicle.

## Tire Safety Tips

### Preventing Tire Damage

1. Slow down if you have to go over a pothole or other objects in the road.
2. Do not run over foreign objects in the roadways, and avoid striking the curb when parking.

## Tire Safety and Maintenance Checklist

1. Check tire pressure regularly (at least once a month) including the spare (optional).
2. Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
3. Remove bits of glass and any other foreign objects wedged in the tread.
4. Make sure your tire valves have valve caps.
5. Check tire pressure before going on a long trip.
6. Do not overload your vehicle. Check the tire information placard for the maximum recommended load for the vehicle.
7. If you are towing a car or trailer, remember that some of the weight of the loaded car or trailer is transferred to the towing vehicle.
8. Do not drive on a flat or severely under-inflated tire. Driving on a flat tire for even a short distance can ruin the tire even if there is no visible damage.
9. Using tire covers when your RV is stationary and properly maintaining your tires can help slow tire deterioration and prevent tire failure. Only use tire cleaners and protectants that are approved by the tire manufacturer. Many products marketed as tire cleaners or dressing/protectants are actually harmful to tire compounds.

### WARNING

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

### WARNING

**Be sure to use wheel nuts that meet chassis manufacturer's requirements/specifications as outlined in the chassis' owner's manual. Improperly torqued wheel nuts can cause the wheel to separate from the wheel mounting surface during operation. This could result in property damage, serious personal injury, or loss of life.**

## WARNING

Do not place a jack against the motorhome underbelly when changing a tire. To avoid damage to your RV, be sure the jack is placed firmly against the chassis frame.

## Fuel System Safety

### DANGER

Potentially explosive fuel vapor may be present at fuel filling stations and during refueling of equipment with the fuel transfer systems.

Never enter a fuel filling station or refuel equipment if your furnace or water heater is operating or if your refrigerator is operating on propane. Both the flame and the igniters in the burners of these appliances are sources of ignition and could cause an explosion. These appliances must be turned OFF before entering a fuel filling station or refueling equipment. Turning OFF the propane main tank valve only is not sufficient. The appliances must be OFF at their electrical operating switches.

### DANGER

#### NO SMOKING

Before dispensing fuel, turn off all engines, fuel-burning appliances, and their igniters (see operating instructions).

Do not dispense fuel within 20 feet (6.1 meters) of an ignition source.

Can cause ignition of flammable vapors, which can lead to a fire or explosion and result in death of a serious injury.

### DANGER

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

## DANGER

Flammable clean up materials should be used temporarily stored in a nonflammable, vapor tight container until proper disposal facilities are available. Do not store flammable clean up rags or materials inside the motorhome, inside any other vehicle or near any source of ignition

Be extremely careful when fueling your motorhome. Always shut OFF the engine, do not smoke, do not use cellular phones, and shut OFF all pilot lights before adding fuel. Fuel spills represent a serious fire hazard and should be cleaned up immediately. Never restart the engine or relight pilot lights while fuel vapor is present.

## Emergency Egress Window

The emergency egress window (exit window) is designed to allow for a quick exit if the main entry door is not available. All exit windows have red operational handles or levers. An exit window may be a large sectional pan an exit window or an entire exit window. It is important you know how to open and operate the exit window(s) in your motorhome before an emergency occurs.

- 1) Before Traveling in your motorhome, review the locations and instruct all occupants on how to operate the exit window(s).
- 2) When pulling into your campsite, make sure the ground below each exit window is solid and there is a clear escape path directly outside the exit window(s) clear of trees or other obstacles.
- 3) Plan fire escape routes:
  - a) Decide who will exit through the exit window(s) first, and in what order.
  - b) The last person designated to exit the motorhome should be prepared to assist everyone exiting through the window.
  - c) Exit the motorhome as quickly as possible.
  - d) Designate a meeting place safely away from the motorhome.

## Operation

- 1) Remove window screens or other window obstructions and set aside, well out of the way of the egress window. Screens are removed by rotating the red tab located in the bottom corners of the screen.
- 2) Push the red handle towards the window frame and lift it to release from the latch. Egress window latches vary in style, but all will be clearly marked with an "EXIT" label and be red in color.
- 3) Rotate the handle until it is perpendicular to the window frame.
- 4) Push the handle, which opens the window. You may need to push on the window glass to free it from the window seal. Continue to push the handle until it is completely clear of the slot in the window frame.

## Exterior Ladder (optional)

### **LADDER CAPACITY IS 250 lbs. MAXIMUM**

- Exceeding the maximum capacity can lead to ladder collapse and possible personal injury.
- Always face ladder and use both hands to climb slowly.

If equipped, the exterior ladder provides access to the roof for inspection and maintenance of the roof and roof mounted items.

- When ascending and descending the ladder, ensure the ladder is clear of debris, such as water, ice, and other slippery substances.
- Always use both hands when ascending or descending the ladder.
- Always face the motorhome when ascending for descending the ladder.
- Always wear shoes that provide good traction, and do not wear sandals or other types of slip-on footwear when ascending or descending the ladder.
- Take into consideration the additional length the ladder adds to the motorhome when backing up or parking your motorhome.



## **WARNING**

**Do not climb on or walk on the roof while wet, icy, or snow covered. The roof could be very slippery causing you to fall, which can result in serious injury or death. Do not use the roof as an observation platform or storage area, as it is not designed for these purposes.**



# **Weighing, Loading and Towing**

## **Cargo Carrying Capacity**

Determining the weight of a vehicle includes more than understanding the load limits of the tires. A weight certification label, located in the driver's door jamb of the RV, will indicate the gross axle weight (GAWR). This is the most weight that can be safely supported by each axle. If there are multiple axles, the GAWR of each axle will be provided. Look in your Yellow Pages under gravel pits, storage companies, or recycling facilities to find certified scales. Call in advance to determine if they offer public weighing services, their fees, if any, and hours of operation.

### **NOTE:**

When establishing the cargo capacity, weigh with all water tanks as empty as possible. (Do not allow anyone to be in the RV when weighing the RV.)

### **NOTE:**

Cargo can be added to the vehicle up to the maximum weight specified on the weight label. The combined weight of the RV and its cargo cannot exceed the stated GVWR.

## **Weight Terminology**

GVWR – (Gross Vehicle Weight Rating) – the maximum permissible weight of the RV when fully loaded. It includes all weights, inclusive of all fluids, occupants, cargo, optional equipment and accessories. For safety and product performance do NOT exceed the GVWR.

GCWR – (Gross Combined Weight Rating) – the Pull maximum permissible loaded weight of your motor home and any towed trailer or towed vehicle. Actual GCWR of this vehicle may be limited by the sum of the GVWR and the installed hitch receiver maximum capacity rating; see hitch rating label for detail.

GAWR – (Gross Axle Weight Rating) – The maximum permissible weight, including cargo, fluids, optional equipment and accessories that can be safely supported by each axle.

UVW – (Unloaded Vehicle Weight)\* - the typical weight of the RV as manufactured at the factory. It includes all weight at the RV's axle(s), including full fuel, all fluids and LP Gas. The UVW does not include cargo, fresh potable water, additional optional equipment or dealer installed accessories.

\*Estimated Average based on standard build optional equipment.

CCC – (Cargo Carrying Capacity) \*\* - Is the amount of weight available for fresh potable water, cargo, passengers, additional optional equipment and accessories. CCC is equal to GVWR minus UVW. Available CCC should accommodate fresh potable water (8.3 lbs per gallon). Before filling the fresh water tank, empty the black and gray tanks to provide for more cargo capacity.

\*\*Estimated average based on standard build equipment

Each Phoenix USA RV recreational vehicle is weighed prior to shipping. A label identifying the unloaded vehicle weight of the actual RV and the cargo carrying capacity is applied to every Phoenix USA RV recreational vehicle prior to leaving our facilities.

Actual towing capacity is dependent upon your particular loading and towing circumstances, which includes the GVWR, GAWR, GCWR as well as adequate trailer brakes. Please refer to the Owner's Manual of your vehicle that is to be towed for further towing information.

## **Weighing your Motorhome**

In order to properly compute your load and load distribution, you must know both actual scale weights and the GAWR and GVWR found on the Weight Label on the motorhome. Weigh the motorhome with all anticipated passengers, equipment, luggage, and fluids onboard as if you were beginning your trip. You will also need to weigh the motorhome periodically to ensure you are maintaining the correct weight and load distribution.

To properly weigh your motorhome, follow this procedure:

1. With all passengers in their seats and the RV fully loaded and level, pull onto scales until the front axle ONLY is on the scale. Check the weight against the front gross axle weight rating.
2. Pull forward until both axles are on the scale. Check the weight against the gross vehicle weight rating.
3. Pull forward again so that only the rear axle is on the scale. Check the weight against the rear gross axle weight rating.

## CAUTION

**Properly inflated tires wear longer and contribute to safer handling. Check tire pressure only when the tires are cold (not used for at least 3 hours). See tire manufacturer's information for proper inflation guidelines. Inflating tires to the maximum allowed rating when not necessary may cause poor ride characteristics and adverse effects on your RV.**

At this point, if you have any overload or imbalance, redistribute the weight and reweigh the motorhome. When you become familiar with how to load and weigh your RV, make a list and diagram to carry with you for easy reference.

### **NOTE:**

Weight distribution is extremely important in the handling and wear of your motorhome. Remember to add the weight of any items purchased on your trip to the starting weight of your coach and to distribute the weight evenly. Also, keep in mind that if you make any major changes in the items you are carrying, it will be necessary to reweigh your RV.

## **Weighing Tips**

1. Cargo weight may vary greatly and will affect the total weight of your RV. Always weigh the RV at a certified weigh station equipped with platform scales. (Remember that wind and rain can cause weights to be inaccurate.)
2. Check the telephone directory or with local authorities for the location of weigh stations in your area. If you find that you have exceeded the GVWR of the RV, you will have to remove

items until you are within the specified limits. If you find that you have exceeded either of the GAWR's, you will need to redistribute the load within the RV to meet the specified limits.

3. To help ensure that items will be evenly distributed, plan ahead before loading your RV. Not only will the RV handle and ride better, you will also have reduced tire wear and increased fuel economy.
4. When weighing the RV, weigh both right and left hand sides separately. This will ensure that you have not overloaded one side or the other, affecting handling. DO NOT store heavy items near the front or rear of the RV as doing so could cause damage.
5. To help keep weight reduced, empty the holding tanks before leaving on a trip and as often as possible when traveling. Carry only as much water as you will need for traveling. If needed, the water tanks can be used to help balance the weight in the RV (a gallon of water weighs 8 pounds).
6. Secure all items stored inside and outside the recreational vehicle, and be sure all doors and drawers are securely latched or shut.

## **Loading Tips**

1. After you have determined what cargo makes up the allowable GVWR, make a loading diagram of your properly loaded RV.
2. Store emergency items, flashlights, flares, tools, electrical cords, first-aid kit, etc., in an easily accessible storage compartment, taking care to keep those items in a waterproof container.
3. When loading your RV, remember to distribute the weight evenly so you get the proper amount of weight on the axle(s) and hitch. Remember to also consider the weight of any items you may purchase on your trip.
4. Do not place heavy items in the overhead cabinets. They could shift and fall during travel.
5. Luggage and similar cargo stored inside the RV must be secured to prevent possible damage if it should become necessary to make a sudden stop.
6. Heavy items should be stored close to the floor in the center of the RV. Avoid loading heavy items near either end of the RV or on the rear

bumper. Adjust cargo, as needed, to keep the side to side wheel loads equal.

## **One Final Check**

After you have loaded your RV for your trip, weighed it, and made sure you are within the specified weight limits, there is one final check you need to perform. Starting on the outside of the vehicle, perform a visual, walk-around check.

Here are some things to look for:

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

The last thing you need to do before getting on the road, is to check the side view mirror position. If needed, have someone help adjust the mirror from the outside, while you view the mirror position from the driver's seat. Doing so will ensure that the mirror is in the correct position for your height. If your motorhome is equipped with a rear vision system, check it at this time also.

As you sit in the driver's seat, you will notice that you sit up higher, and further to the left than in a

passenger car. Your perspective of the road will also be different. Due to the driver's seat location, and the configuration of the motorhome, you will need to rely more on the outside mirrors than if you are driving a passenger car. Your motorhome is also longer than your car, therefore be extra observant and cautious when making turns, and when pulling into traffic.

## **WARNING**

**Swerves and sharp turns, especially at higher speeds, could result in loss of vehicle control.**

## **Before You Leave**

Become familiar with your coach and its features. This manual, the chassis manual, and the various appliance and accessory manuals contain important information about the use and care of your RV and its components. It is important that you read them carefully and keep them with your vehicle for future reference.

If you have not had experience driving vehicles larger than passenger vehicles, we recommend that you take several test drives around your neighborhood before your first camping trip. Doing so will help develop a feel for your RV's handling characteristics and gain experience in driving a larger vehicle. While on your test drive, practice parking and backing up. If available, also practice backing up using back up camera and monitor.

We also recommend that you make your first camping experience a short one and close to home. This will give you the opportunity to learn the use of the vehicle in actual camping conditions. Being close to home will also be more convenient if you need additional instruction from your local dealer. You will also discover which items you did not bring, that you may need or that would make your camping experience more comfortable and enjoyable.

## Towing a Boat, Trailer or Car

### **NOTE:**

Please refer to the vehicles owner's manual for towing capability and towing instructions for the vehicle being towed.

Before deciding whether to tow a car, boat, or trailer behind your motorhome, consider the following warnings regarding weights and braking ability:

1. DO NOT exceed the motorhomes GCWR (gross combined weight rating) or the hitch rating. You must include the weight of the fully loaded coach (with all occupants or allowing an average of 150 lbs. per person) and the towed vehicle combined. The combined weight must not exceed the GCWR. (DO NOT assume you can tow a vehicle which is within the capacity of the hitch without considering the fully loaded weight of the motorhome PLUS the weight of the towed vehicle. The two combined may exceed the total GCWR of the motorhome. Allow your selling dealer to determine the GCWR of your motorhome.
2. The tongue weight (the amount of weight or pressure pushing down on the hitch) MUST NOT exceed 10% of the hitch capacity. (Example: If your hitch capacity is 5,000 lbs. of pulling capacity, DO NOT exceed 500 lbs. of weight on the hitch; if your hitch capacity is 3,500 lbs., DO NOT exceed 350 lbs. of weight on the hitch, etc.) Check the tag of your hitch for pulling and weight limits.
3. Always use safety chains between your coach and the towed object. NEVER attach the chains to the bumper. Cross the chains under the trailer tongue and allow slack in the chains for turning corners.
4. NEVER attempt short back up distances when towing. Most towing equipment is designed to be pulled forward, not pushed backward. Doing so could result in damage to the motorhome, towed object, or the towing device.

### **NOTE:**

If your motorhome should require towing, consult your chassis manufacturer's owner's manual for the correct towing procedure.

### **Braking System**

Your motorhome braking system is rated for operating with the GVWR and GCWR. Do not exceed the chassis manufacturer's specified ratings.

### **WARNING**

**A separate functioning braking system is required for any towed vehicle or trailer weighing more than 1,000 lbs. when fully loaded.**

### **WARNING**

**Failure to heed any part of the above warnings could cause an accident, resulting in serious injury or death.**

# Leveling Jacks and Slide Room Operation

## Campsite Parking

It is best to arrive at the campground before dark, especially if you are unfamiliar with the campground and if you need to back into a site. Before parking on your site, inspect it for rocks, slopes, or uneven areas. When pulling onto your site, watch for posts, large rocks, low hanging limbs or other obstacles. If possible, pull into the site so the electrical outlets and plumbing connections are on the driver's side of the RV (most of your recreational vehicle's connections are on the driver's side). Doing so will enable the driver to maneuver the RV more easily into a position where it will not interfere with the connections. The driver will also be able to see any obstructions more clearly, which could interfere with the slide rooms or awnings when fully extended.

### **WARNING**

**Never expose hands or other parts of the body near hydraulic leaks. High pressure oil leaks may cut and penetrate the skin, causing serious injury.**

### **WARNING**

**Never lift the RV completely off the ground using only the leveling jacks. Doing so will create an unstable and unsafe condition. It could cause damage to the system as well as serious personal injury.**

### **WARNING**

**Never use the leveling jacks to raise the RV to change a tire or to perform any other type of repair work. Always use proper equipment or contact a professional.**

### **CAUTION**

**Keep people and pets clear of the RV while the leveling system in use.**

### **CAUTION**

**Park the RV on solid, level ground and clear the site of debris and obstructions. Avoid parking over holes or depressions in the ground. If parking on soft surfaces, utilize load distribution pads under each jack.**

#### **NOTE:**

If you have an automatic leveling system, do not allow people to walk around when attempting to level the RV. Doing so could disrupt the leveling jack's sensing mechanism.

## Leveling Jacks Operation

#### **NOTE:**

We recommend that your RV be plugged into a 120VAC receptacle or have the generator running, during jack and slide out operation. This will help ensure the battery maintains proper voltage during operation.

#### **Prior to Operation**

Operate the leveling system **ONLY** under the following conditions:

1. If equipped with optional Liquid Springs, the Liquid Springs switch must be in the "OFF" position when leveling the jacks or the leveling system will not operate properly.
2. The coach is parked in a reasonably level surface.
3. The coach "PARKING BRAKE" is engaged.
4. The coach transmission should be in the "park" position.
5. The ignition is in the OFF position.
6. Be sure all persons, pets and property are clear of the coach while leveling system is in operation. If you are operating an automatic system while the RV is occupied, all must stay seated during the leveling process.

## CAUTION

To avoid possible damage to the coach, or personal injury, carefully read, study, and understand the leveling system operational procedure as outlined in the leveling jacks' owner's manual before beginning the leveling operation.

Listed below, you will find general operating procedures for leveling jacks. While Phoenix USA RV uses several different types of leveling systems, the operation of each is similar. If the system you have varies from the procedure listed below, please refer to the leveling jacks' owner's manual that you received with your Phoenix USA RV owner's packet and follow those instructions.

### Auto Leveling

1. Place transmission in the recommended position for parking the vehicle and set the parking brake. Turn the coach engine off. Turn the ignition to the "Accessory" position.

#### NOTE:

One or two yellow level indicator lights on the leveling system touch panel can be on anytime the vehicle ignition is in the ON or ACC position and the park brake is set.

2. At this time, the operator may want to check the jacks and place a pad under each jack if the ground will not support the vehicle.
3. Press the "AUTO LEVEL" button one time. The AUTO LEVEL light will start to flash.

#### IMPORTANT:

During the Automatic Leveling procedures, pushing the "AUTO LEVEL", "AUTO STORE" or the "CANCEL" button the touch panel will stop the automatic leveling function.

### Automatically Retracting the Levelers

#### NOTE:

When the jacks are stored with the ignition in the ON position, the warning buzzer will sound until the jacks have retracted to the STORE position. If desired, the jacks can be stored with the ignition key in the accessory position. This will eliminate the warning buzzer while the jacks are retracting.

1. Press the "AUTO STORE" button. The store indicator light will flash. The front jacks will retract for 5 seconds before the rear jacks will begin to retract. As each jack retracts, its red WARNING light will go out. The system will automatically shut down 1 minute after the four-individual red "WARNING" lights are out. If any one red "WARNING" light does not go out, the system will continue to store for fifty minutes, then shut down regardless of the "WARNING" lights condition.

#### NOTE:

When traveling, thermal expansion may cause a jack to extend slightly. When the "AUTO STORE" button has been used to retract the jacks, the system will automatically retract any jack that extends due to thermal expansion.

#### IMPORTANT:

If power to the system is interrupted after starting a store procedure, the store procedure should be reinitiated, and the jacks should be completely retracted with all four red WARNING lights out prior to traveling.

#### IMPORTANT:

During Automatic Store procedures, pushing the "AUTO STORE" or the "CANCEL" button on the touch panel will stop the automatic store function.

## WARNING

Do not move the vehicle while the leveling jacks are still in contact with the ground or in the extend position. Moving the vehicle with the leveling jacks extended can cause severe damage to the jacks and or the vehicle and create a driving hazard. Do not rely solely upon warning lights. It is the operator's responsibility to check that all jacks are fully retracted into store/travel position.

2. The vehicle can be moved as soon as the red warning lights are out, the jacks are in the store/travel position and the green "TRAVEL" light is on.

**IMPORTANT:**

If a red warning light and buzzer come on while traveling, the jacks should be checked as soon as a safe parking location is found.

3. If jacks cannot be retracted by the above procedure see MANUAL JACK RETRACTION Section.

**Manually Extending the Leveling Jacks**

1. Place transmission in the recommended position for parking the vehicle and set the parking brake. Turn the ignition to the "Accessory" position.
2. Place pads under the jack feet if the ground will not support the vehicle on the jacks.
3. The vehicle may be leveled using the manual EXTEND (UP/ARROW) buttons on the right half of the panel. If a yellow LEVEL SENSING light is on, that side, end, or corner of the vehicle is low. It is best to level the vehicle side to side first, if needed, before front to rear.

Jacks will extend (or retract) in pairs to raise (or lower) a side or end of the vehicle.

Any jack not used for leveling can be extended to the ground. This provides additional stability against wind and activity in the vehicle. Jacks used to stabilize the vehicle after leveling is complete should lift the vehicle slightly after touching the ground

**IMPORTANT:**

**Do not continue to push and EXTEND button for more than ten (10) seconds after that pair of jacks are fully extended.**

4. When leveling is complete, turn the ignition switch to the "OFF" position.

**Manually Retracting the Leveling Jacks**

The solenoid valves on the power unit valve assembly are equipped with a manual valve release. Use the manual valve release for retracting only if the "AUTO STORE" button on the control panel will not retract the jacks for travel.

**NOTE:**

**Assemblies can have different combinations of large and/or small valves.**


**WARNING**

**Keep away from the wheels, do not crawl under the vehicle, keep a safe distance in front and rear of the vehicle. The vehicle may drop and/or move forward or backward without warning as the valve release is operated.**

1. Locate the manual valve release on each solenoid valve. The solenoid valves are located on the power unit/valve assembly.
2. Allow clearance for the vehicle to lower.

**IMPORTANT:**

**Only open the valves enough to retract the jacks. DO NOT turn valve release nuts on the small valves more than 4 and ½ turns. Turning the nuts more could damage the valves.**

**Large valves with valve release nuts will need the release nut turned approximately 2 full turns. More than 2 full turns may damage the valve.**

**Large and small valves may be equipped with a valve release cam. The cam might be rotated in any direction on the valve. Pushing the release cam in the wrong direction may damage the valve.**

3. Retract the front jacks by slowly opening the two center valves.
4. Repeat the process for the rear jacks by opening the two outer valves.

**A ¼" Nut Driver has been incorporated into the Breather Cap. See Leveling Jacks manual in Owner's Packet for further information.**

5. Check that all four jacks are now retracted.
6. Close the valves by turning the manual valve releases clockwise or move the valve release cam to the closed position.

**IMPORTANT:**

**Once the valve release nut is snug. DO NOT tighten the valve release nut past this point as internal damage may occur to the solenoid.**

7. The system should now be repaired before using again.

**See leveling jack's manual in owner's packet for diagram of Valve Release Cam Operation.**

## Slide Room Operation

Phoenix USA RV vehicles are equipped with electric slide out systems. In this manual you will find general information that will pertain to all operations, and in addition, some more brand specific information. If the following procedure does not apply to your RV, please consult the slide room manufacturer's owner's manual that you received with your RV and follow those directions.

### **NOTE:**

We recommend that your RV be plugged into a 120VAC receptacle or have the generator running, during jack and slide out operation. This will help ensure that the battery maintains proper voltage during operation.

### **Before Beginning Slide Room Operation**

Before extending the room, check the exterior of the RV to be sure the room will not hit anything outside when it is fully extended and the interior to be sure the slide room travel is from obstruction.

### **NOTE:**

For optimum performance, the slide out system requires full battery current and voltage. The battery must be maintained at full capacity. If the battery is fully charged and you still do not have power, check the terminals and other connections at the battery.

## **DANGER**

**Do not perform any maintenance work on your slide out system without first disconnecting the battery. Failure to do so could result in serious personal injury or death.**

### Extending the Slide Room

After completing the inspection as itemized in the previous paragraphs:

1. Level the unit.
2. Press and hold the IN/OUT switch in the OUT position until the room is fully extended and stops moving.

### **NOTE:**

It is important to continue to press the slide-out switch for a few seconds after the room is fully extended until the motor shuts off. The control will sense that the room has stopped and will shut off the motor after a few seconds.

3. Release the switch, which will lock the room into position.

## **WARNING**

**Never move the coach with the slide room/s extended.**

### **NOTE:**

Always check for debris on the roof of the slide room before retracting. Also, check for debris on the awnings before retracting.

### Retracting the Slide Room

Take the same safety precautions as previously stated for extending the room, and:

1. Be sure there are no obstructions on the floor of the coach or in the path of the room as it is coming in.
2. Ensure there is no visible dirt or debris in the track of the slide room or under it. Trapped dirt or debris could cause damage to your carpet or floor.
3. Press and hold the IN/OUT switch in the IN position until the room is fully retracted and stops moving.

### **NOTE:**

It is important to continue to press the slide-out switch for a few seconds after the room is fully retracted until the motor shuts off. The control will sense that the room has stopped and will shut off the motor after a few seconds.

4. Release the switch, which will lock the room into position.



## **Electronic Manual Override**

**NOTE:**

See Slide-Out Manual in Owner's Packet for locations of the mode button and LEDs.

1. Press the mode button on the controller six times and hold on the seventh for five seconds to enter electronic manual override mode.
2. Use the extend/retract switch to move both motors in or out.

**NOTE:**

Over-current and short circuit detection are still enabled. Electronic manual override provides 12V directly to both motors.

3. To exit the mode, push and hold the mode button until the LEDs begin to blink simultaneously. Exiting the override mode resets the motor positions (you will have to resync motors).

**NOTE:**

During this override procedure the motors are not synchronized. Visually watch the room: if one side is moving significantly slower than the other (or not at all) then immediately stop and use the "Motor Disengagement Procedure". (See Slide-Out Manual in Owner's Packet for information on Disengagement Procedure).

 **WARNING**

**When the slide room is in, immediately take your coach to the nearest dealer. Never drive with the slide room out.**

# Living Quarters

## Prolonged Occupancy

Your RV was designed for recreational use and short-term occupancy. If you expect to occupy your RV for an extended period of time, be prepared to deal with condensation and the humid conditions that may be encountered.

## Condensation and Humidity

Condensation is the change of water from its gaseous form (water vapor) into liquid water. Just as moisture collects on the outside of a glass of cold water during humid weather, moisture can condense on the inside surfaces of your camper. This condition is increased due to the small volume of space and the airtight construction of your camper.

### **WARNING**

**Mold occurs when condensation is left for prolonged periods of time and is extremely difficult to kill. Controlling condensation inside your RV is the best way to avoid not only mold but dampness as well, both of which can cause damage to your RV and/or its contents.**

Condensation can infiltrate the insulation, motors, and working parts of appliances or plumbing pipes, to name a few. Even though you may not see condensation, it may be inside the walls, cupboards or under the floor, so it is best to take every precaution to avoid it occurring. Generally, an area that is dark, and where moisture can accumulate, is the most likely spot for mold to grow.

It is especially important when storing your RV or if you do not anticipate using it for an extended period of time to air it out. Empty the refrigerator and freezer and dry them completely. Dry the inside of the shower and shower head.

Check for any leaks at the kitchen sink, toilet, and bathroom sink. It is also a good idea to check your RV periodically to ensure there is no condensation

forming on the windows, which would indicate there is too much moisture in your RV.

If you see signs of excessive condensation, take the necessary steps to remove the moisture to prevent possible damage to the contents or the RV itself.

Below are tips to help contain humidity in your coach:

1. Keep indoor humidity low, if possible, below 60% (ideally between 30 and 50%) relative humidity. Relative humidity can be measured with a moisture or humidity meter. The meter is a small, inexpensive (\$10-\$50) instrument available at most hardware stores. Some larger campground stores may also have the meters.
2. Consider using a small dehumidifier to help rid the RV of moisture.
3. Avoid allowing wet clothing to hang, creating a potential breeding ground for mold.
4. When showering or bathing, open the roof vent or turn on a fan to allow steam and moisture to escape. Wipe down the shower walls to prevent water evaporation.
5. Be sure there are no obstructions in any vents and that all vents are properly sealed. Pay particular attention to appliances that produce moisture, such as air conditioners, shower, oven vents, and clothes dryer vents.
6. Try using the microwave oven instead of the stovetop to boil water or soups for long periods. If you choose to use the stove to boil water or soup, open a window or a vent slightly (even in cold weather) to provide a passage for the air to flow. This will also help restrict the humidity.
7. Try to recirculate the air by using vent fans or small oscillating fans or your furnace fan. If condensation occurs keep the windows clean to prevent the growth of mold and mildew.
8. Do not use a ceramic heater as it provides no air movement, which will not aid in ridding the RV of condensation.

## WARNING

Damage caused by mold or mildew is a maintenance issue and is not warrantable. You as the owner, are responsible for proper maintenance of your RV. Controlling humidity inside your RV will help to prevent damage which may occur due to neglect.

### NOTE:

If you have water and/or mold damage caused by sewage or other contaminated water, it is best to call in a professional who has experience cleaning living spaces damaged by contaminated water.

## DANGER

DO NOT bring or store propane cylinders, gasoline, or other flammable liquids inside the vehicle. A fire or explosion could result.

## DANGER

DO NOT fill container(s) to more than 80% capacity. Overfilling the propane tanks can result in uncontrolled propane flow which can result in an explosion.

## DANGER

NEVER use any other type of propane container than the one furnished with your RV. If the tank must be replaced, check with your dealer for specifications.

## DANGER

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

## DANGER

DO NOT rely upon being able to smell propane leaks as the odor may not be strong enough to detect.

## DANGER

DO NOT use butane or butane mixtures in your propane tank. When you fill your tanks, be sure to use propane only.

## DANGER

DO NOT make repairs to the propane tank supply at the propane tank (or source). Except for simple maintenance and occasional tightening of a connection, always take your vehicle to an authorized dealer for propane problems.

## DANGER

Do not turn on the propane supply until the propane leaks have been repaired.

## DANGER

Do not attempt to adjust or repair the regulator. Adjustments and repairs require specialized training and tools. Contact a qualified propane service technician. Failure to follow these instructions could result in fire or explosion.

## DANGER

Do not modify your propane system. Do not remove components or replace with components that are not of equal value. The propane system in your RV furnishes the fuel for cooking, heating, and hot water. Propane can also be used as an alternate energy source for refrigeration. It is a clean, efficient, and safe form of energy when properly handled and safety precautions are observed.

## WARNING

Always have an authorized propane supplier fill your propane tanks. When the propane container is being filled. **DO NOT** smoke, strike a match or ignite a lighter. A spark or flame could ignite fumes. Also be sure all burner and pilot flames are out, and the service valve is closed.

## WARNING

If you detect a sulfur or “rotten egg” odor, **DO NOT** turn on any appliances. Extinguish any open flames, including cigarettes. **DO NOT** touch any electrical switches. Open windows and doors and exit the vehicle. Shut off the propane.

The propane is stored with extreme pressure in the tank with space in the tank for expansion into vapor. When the vapor is reduced in pressure, it is a two-step process, which ensures consistent pressure for use, regardless of outside temperatures, weather, or altitude.

## Propane Regulator

Propane is under high pressure in the tank. The purpose of the regulator is to reduce the pressure inside the tank to allow for safe use.

## WARNING

To avoid potential problems, have your propane system checked at least once a year by an authorized service center and after each extended trip.

## DANGER

**NEVER** test for a leak by lighting a match or having an open flame where you suspect a leak. Take to an authorized service center.

## Regulator Freeze-Up

The term “regulator freeze-up” is a misleading one. Regulators and propane do not freeze. However, the moisture that can be contained in the propane will freeze as the propane expands and cools passing through the regulators. This freezing of the moisture in the propane can build up and partially or totally block the passage of the propane through the regulator. The source of the moisture is varied. It can occur at the refinery or propane bulk plant, in the carts used to transport the propane, or even within your own propane tanks. Moisture in a propane tank can occur when a tank service valve is left open, allowing moist air to enter, and become trapped. A two-stage regulator helps reduce the possibility of freeze-up because of its larger orifice size and the fact that heat is being transferred through the walls of two regulators instead of only one.

Tips to help regulator freeze-up:

1. Be sure your propane tank is free of moisture before refilling.
2. **DO NOT** overfill the propane tank.
3. Be sure to keep the service valve on an empty tank closed.
4. If freezing occurs, have your propane dealer purge the tank before refilling.
5. Check with your dealer to determine which deicing agent is approved to add to the propane tank.
6. Keep the regulator covered at all times.

## Other Cold Weather Factors

As outside temperatures drop, the BTU value of the propane is lessened. The colder propane in the tank requires heat from the surrounding air to vaporize. This lowering of BTU value can significantly affect the performance of the system. Keeping your propane tanks as full as possible in cold weather and reviewing the BTU/hr rating plates on propane appliances will help ensure proper propane management.

## Propane Detector

### DANGER

If the detector senses the presence of propane, the light will turn from green to red, accompanied by an audible alarm. If the alarm sounds:

1. Immediately evacuate all occupants from the RV.
2. Extinguish any open flames, pilot lights and smoking material.
3. DO NOT touch any electrical switches.
4. Shut off the propane supply at the tank.
5. Open doors and windows to ventilate.
6. DO NOT USE THE RANGE HOOD OR OTHER POWER VENTS.
7. The alarm will continue to sound if propane is detected or until turned off.

#### NOTE:

The alarm may sound at times when no propane is present due to household product use, such as aerosol hairspray, certain cleaners, adhesives, alcohol, etc.

## Electrical System Control

### DANGER

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

#### NOTE:

The electrical power supply provided for the RV is a dual system operating with 120VAC and/or 12VDC. The 120VAC power may be provided by either connecting the RV to an outside power source when parked, or by use of a recreational vehicle generator. When the 120VAC system is operational, power also passes through a system converter, allowing the full use of all 12VDC functions in the RV. Some 120VAC functions in the RV may include:

- Refrigerator
- Roof mounted air conditioner/s
- TV
- Microwave/Convection Oven
- Converter
- Electrical Outlets

- Some Lights
- DVD or Surround Sound System

Some refrigerators also have the option of running on propane when 120VAC power is not available. When not connected to 120VAC power, the 12VDC system functions can be supplied by the batteries. Batteries are recharged by the power converter when the RV is attached to an outside 120VAC power source, or by the generator. (Be sure you turn the power switch ON. The generator will not charge the batteries or otherwise operate when the power switch is in the Off position.)

For more information consult the individual owner's manual.

## Connecting to an Outside Power Source

A 30 amp or 50 amp power cord is provided to connect the RV to a grounded power source. The electric utility service connection is located on the driver's side near the rear of the coach.

### WARNING

The campsite 120 volt power receptacle(s) should always be tested for proper functionality prior to connecting your motorhome's shoreline power cord to it. Do not hook up the shoreline power cord to any receptacle until you have verified proper polarity and grounding.

Do not plug the shoreline power cord into the campsite receptacle:

1. That has reverse polarity.
2. With non-functioning ground circuits.
3. That shows outward signs of heat or other damage.

Doing so may result in property damage or serious injury. Damage or injury resulting from a connection to a malfunctioning or improperly wired power source is not covered by warranty.

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 motorhome can cause equipment damage, personal injury, or death.

## WARNING

Make sure the circuit breakers at the electrical power source are in the off position before connecting or disconnecting your shoreline power cord. The shoreline power cord must be fully extended when in use, and not left coiled in the electrical compartment or on the ground.

### Battery Disconnect Switch

All Phoenix USA RV models come equipped with a battery disconnect ON/OFF switch. This switch when in the "OFF" position disconnects the battery(s) from all 12 volt items in the coach. If the switch is turned to the "OFF" position your 12 volt items will not function. Be sure to turn the switch to the "ON" position to use your 12 volt items. Please refer to individual manuals on what items in your coach are 12 volt. The switch is located inside the coach near the entry step.

#### NOTE:

Turn all appliances off before turning the battery disconnect switch to the "OFF" position.

#### NOTE:

Do not switch to "OFF" position while the engine is running.

#### NOTE:

While the battery disconnect switch is in the "ON" position and your engine is running your battery(s) will be charging.

#### NOTE:

While the Battery Disconnect Switch is in the "ON" position and your coach is plugged into 110v your battery(s) will be charging.

## WARNING

### Available Power

The power available at campgrounds and the quality of connection can vary widely. To protect your investment, we recommend using a quality surge protector. Many campgrounds have limited electric service that may not be adequate to power your RV. The best way to know what electric service is available is to call your campground ahead of time.

### Adapters/Reducers

Many aftermarket devices are available that connect to the shore cord on your RV, allowing it to be plugged into a lesser power supply. Using an adapter or reducer to connect your RV to a lesser power source than the RV was designed to use requires you to shut off some appliances in the RV to keep the demand lower than the power available. **PLUGGING YOUR RV INTO A POWER SOURCE LESS THAN IT WAS DESIGNED FOR SIGNIFICANTLY INCREASES THE RISK OF FIRE.**

Because of the increased risk of fire or electrical damage, we recommend that you do not use an adapter or reducer to plug your RV in to, be aware that many if not all these products are not certified by Underwriters Laboratories™ or any other safety testing firm. It is therefore up to you to ensure that any adapter or reducer you use is properly sized for the electric load and adequately constructed to protect you and your family from the risk of fire or electric shock.

### Extension Cords

Phoenix USA RV recommends that you do not use extension cords to power your RV. If you choose to use an extension cord, be sure it is properly rated for the electric load and is in good condition before each use. Damage to an extension cord is often not visible and can only be detected through the use of special equipment and expertise that most consumer do not have. Never use an extension cord longer than 50 feet, when the cord has gotten wet, or a cord that has been pinched or shows any signs of damage.

**PHOENIX USA RV SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY OF WHATEVER SORT FOR ANY DAMAGE, PERSONAL INJURY, OR DEATH ASSOCIATED WITH THE USE OF AN ELECTRICAL ADAPTER OR REDUCER OR EXTENSION CORD.**

## **Batteries**

The batteries are located in a separate compartment on the exterior of the coach. Be sure you know the location of your batteries before leaving the dealership. It is important to keep the batteries fully charged at all times. Take time to turn off all lights or other 12VDC conveniences when not in use. To prevent draining the batteries, connect the motorhome to a 120VAC power source whenever possible.

The charge condition of the batteries is displayed on the monitor panel, generally located in the control center, mounted on the wall. To check, press and hold the monitor test switch while reading the charge level on the battery gauge. Charge levels indicated are divided into sections from weak to fully charged.

## **Battery Maintenance**

While Phoenix USA RV may not have installed your battery(s), we want to provide you with the following information. Battery maintenance is important. Checking the condition of a battery at regular intervals will help ensure its proper operation. Here are some recommendations for checking and servicing the battery(s).

### **NOTE:**

Some batteries are not serviceable; consult the manufacturer's information on the battery you own.

1. Keep the battery mounted securely. Excessive vibration can cause early battery failure.
2. Check the electrolyte level of the auxiliary batteries at regular intervals. Keep each cell filled with distilled water to just above the plates. Once the plates have dried out, they cannot be reactivated, and the capacity of the battery is reduced in direct proportion to the area of plate surface that has become dry. This kind of damage can occur quickly.
3. Keep the battery clean. Corroded terminals make poor contact. Battery sulfating occurs when the battery has been standing in a discharged condition over a long period of time or when the battery has been operated continually in a state of partial discharge.
4. Check the outside condition of the battery. Look for cracks in the case or vent plugs. If the case is cracked, the battery must be replaced. If the vent plugs are cracked, they must be replaced.

5. Watch for over-charging. Three ways to spot over-charging are:
  - Active material on the vent cap (heavy deposit of black lead-like material on the underside of the vent cap).
  - Excessive use of water.
  - By testing voltage regulator output.
6. Make sure the battery hold downs and carrier are kept clean and free of corrosion.

### **NOTE:**

When removing a battery, disconnect the ground battery clamp first. When installing a battery, always connect the grounded battery clamp last. When a battery needs to be replaced, make sure to replace it with a battery of the same characteristics as the original equipment. Consult your dealer for advice on battery replacement.

The battery disconnect switch is used to disconnect the house battery during storage. If your battery disconnect switch is a toggle switch, it must be in the "USE" position. If your switch is a rotary switch, it must be in the "ON" position. If the switch is not in use or on, you will not have power to your battery.

## **Battery Safety**

### **WARNING**

**Always shield your eyes when working near batteries. Batteries can explode. Do not smoke or expose battery to electric spark or flame. When charging or discharging, batteries generate hydrogen. Hydrogen and air are a very explosive mixture.**

### **WARNING**

**Do not short across the battery terminals. The spark could ignite the gases. Do not wear metal jewelry or a watch when working on a battery.**

### **DANGER**

**Disconnect the battery cable and the 120 volt power cord before working on electrical system. Do not reconnect the cables until all work has been completed.**

## DANGER

**Battery electrolyte is a corrosive, poisonous sulfuric acid. Avoid contact with skin, eyes, clothing, or any painted surface.**

### **Battery Charging**

The converter also operates as a battery charger when it is connected to a 120 volt power source. If the battery is below its full charge, the converter charger will begin operation at a rate that reflects the level of discharge. When the battery is again fully charged, the converter charger drops its charging level back to a maintenance level to keep the battery fully charged. Battery charging is fully automated. When charging a battery remotely (outside the RV), follow these safety precautions:

## DANGER

- 1. Disconnect the battery from the RV.**
- 2. Check electrolyte status before charging. Be sure each cell is properly filled with distilled water.**
- 3. Use care when connecting and disconnecting the cables from chargers. A poor connection can cause an electrical arc, which can result in an explosion.**
- 4. Remove the battery vent caps before charging and be sure that the electrolyte solution does not splash out as a result of charging too quickly. NEVER attempt to open a maintenance free battery.**
- 5. Read the literature supplied by the battery manufacturer and follow all their warnings or precautions as stated in their manual.**
- 6. For more information, please consult the individual owner's manual.**



## **Trickle Charger**

The white switch next to the left side or right side of the steering column is a trickle charger for the Ford chassis battery located under the hood. The 12V battery is isolated from the rest of the functions of the coach so that it is very difficult to make the Ford battery drain. There are two ways the Ford battery could be drained 1.) The engine is not started up for a very long time (more than a few months – we recommend starting the engine monthly.) 2.) The key is left in the “accessory on” position with the headlamps or radio turned on for many hours. The Ford chassis has a minder that turns off the headlamps automatically if the engine is off and the key is not in the ignition.

To use the trickle charger, first, the Ford battery must be dead or dying. For example, trying to turn over engine results in a “clicking” sound or not sound at all. Second, you must put the key in the ignition and turn it forward to the “accessory on” position. Make sure headlamps and the A/C blower are turned off. Third, make sure the battery disconnect switch for the motorhome is in the “On” position and that they have adequate charge. Running the generator or plugging in the motorhome, will ensure there is enough power to charge the Ford battery. Finally, pressing the white button a single time will enable a solenoid to trickle charge the Ford battery. After an hour or two you should be able to crank the engine.

## **Power Converter/Inverter**

The converter is used to switch 120VAC electricity from an external supply or from the generator to 12VDC electricity. Under normal conditions, the converter requires no maintenance. If the converter does not have a 120VAC supply to convert to 12VDC, it automatically switches to batteries into the electrical circuit to power 12VDC functions. When reconnected to a 120VAC power source, it will again operate from that source.

### **NOTE:**

The converter will run warm, which is normal. If, however, it gets too hot, it will turn itself off. After it

cools it will come back on. In most cases, shut down occurs due to poor ventilation.

### **NOTE:**

A slight hum during operation is also normal for the converter. If you have no 12VDC power and no hum, check to see if 120VAC power to the converter has been interrupted.

If you have an inverter, the inverter will take over when 120VAC power is not available.

## **CAUTION**

**Keep converter and inverter area clear of obstacles and clutter. They must have adequate ventilation to avoid overheating.**

## **WARNING**

**The factory-installed inverter is not intended for use with medical device(s).**

## **Fuses and Circuit Breakers**

### **Ground Fault Circuit Interrupter**

The 120VAC outlet in some possible wet locations are equipped with a protective circuit interrupter. The ground fault circuit interrupter (GFCI) is designed to break the flow of current to the protected outlet when an imbalance of current is detected. Imbalances include electrical leakage in an appliance, such as a shaver or hair dryer, that has developed a weak spot in electrical insulation. The possibility of electrocution exists when using a faulty appliance while at the same time being in contact with an electrical ground, such as water, plumbing, or the earth.

If an imbalance is detected, the GFCI will trip and shut off power to the outlet. Even with GFCI protection, the electrical shock will still be felt, but to a lesser degree. It also does not protect against short circuits or system overloads. Circuit breakers in the main panel, which supply power to the circuit, will trip if either of these conditions exists. The GFCI receptacle should be tested initially when the RV is purchased and at least monthly thereafter.

## DANGER

**Even with GFCI protection, persons with severe heart or other health problems may still be seriously affected by an electrical shock. The GFCI outlet is not a substitute for good electrical safety. It does not protect against contact of the hot and neutral wire at the same time. (The GFCI does not protect any circuit other than the one to which it is connected.)**

To test the circuit, use the following procedure:

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

### **Circuit Breakers**

The 120VAC system is protected by circuit breakers. These breakers automatically trip if the circuit load is too heavy or a short circuit occurs. If a circuit breaker has been tripped, do not reset the breaker until the cause of the problem is identified and corrected.

- The generator may have one (4.0 KW) or two (5.5 KW & larger) breakers and a DC fuse on the generator control panel. If an interruption in generator operation occurs, check to see if any of these have been tripped; consult the manuals provided with the generator before attempting maintenance on the generator. For more information, please consult the individual owner's manual.

### **12 Volt Fuses**

The distribution panel contains circuits with replaceable fuses for protection of RV 12VDC lines. If any line is loaded beyond the capacity of its fuse, the fuse will blow. A portion of the 12VDC load on the line must

be turned off to reduce the total load on the line to a level below the capacity of the fuse. Replace the fuse with the same size fuse. DO NOT replace with a large fuse than indicated.

If this reduction of load on the line does not stop the blowing of the fuses, there may be a short somewhere along the 12VDC line or at a non-fused 12VDC component on the line. Locate the short and take necessary steps to repair. If you cannot locate the problem, call a qualified RV technician.

#### **NOTE:**

Keep additional fuses on hand in the RV. Replacement fuses are available at gas stations, hardware stores, or automotive supply stores. Remember that the replacement fuse must be the same amperage rating as the original fuse.

#### **NOTE:**

Your RV may also be equipped with an inverter which is used to generate 120VAC power from 12VDC battery. For more information, consult the individual owner's manual.

# **Plumbing**

## **General Information**

A RV plumbing system has the dual ability to be self-contained with onboard storage or use facilities provided by an external pressurized source. The freshwater system consists of those items which are used to deliver water for your use. The wastewater system is made up of the drains and tanks which store the plumbing system consist of strong, lightweight, corrosion-resistant materials that provide long life and easy cleaning. By following the instructions outlined here, you can expect efficient operation with a minimum of maintenance

## **Fresh Water**

Potable (fresh) water is supplied by either the freshwater tank aboard the RV or from an outside source, connected through the city water connection. When using the freshwater tank, the water is pumped through the water lines by means of the water pump. When utilizing an exterior source, such as a campsite water supply, the pump is not needed as the water is already pressurized and will flow through the water supply lines within the trailer.

## **Water Center Panel**

### **External Hook-Up**

Water provided from outside the RV is pressurized by the system from which it is delivered. When connecting your motorhome to an outside source, the freshwater tank and the water pump are kept separate from the remainder of the system by in-line check valves.

#### **NOTE:**

DO NOT turn the pump on if the freshwater tank is empty. Doing so could cause damage to the pump or a blown circuit may occur.

### **Attaching to an Outside Source of Water**

1. Remove the cap from the fresh water inlet on the side of the recreational vehicle.
2. Attach one end of the fresh water hose to the outside source of water.
3. Connect the other end of the hose to the RV city water inlet.
4. Turn on the outside source of water. Gradually open the hot and cold water at the sinks and tub to clear air from the lines. Close the faucets when the water is flowing freely. Water heater bypass valves should be set to Normal mode.

#### **NOTE:**

Do not turn on the water pump when using water from an external source. Only use the water pump when obtaining water stored in your fresh water tank.

### **To Disconnect from the Outside Water Source**

1. Turn off the outside source of water.
2. Disconnect the hose from the supply valve and the recreational vehicle inlet.
3. Remove the hose and store.

#### **NOTE:**

Do not leave water on when leaving RV for an extended period longer than a few hours.

4. Reinstall the cap on the RV inlet.

When an outside source of water is unavailable, water can be drawn from the fresh water storage tank in the RV.

### **Filling the Fresh Water Tank**

1. Remove the water fill cap.

#### **NOTE:**

Do not leave unattended while filling.

2. Water can now be added directly to the tank through the fill spout by use of a known clean hose or bucket, used only for this purpose.
3. When the tank is full, replace water fill cap. The fill cap is for filling the tank. The city water fill connects to campsite water.

#### **NOTE:**

Water from the fresh water tank is obtained by use of the water pump when filling the hot water tank and water lines. Remember, traveling with full water tanks, both fresh water tank and waste tank, should be kept as empty as possible while still maintaining your desired level of comfort.

## **Traveling with Water**

When traveling, you may want to drain the tank or keep the quantity of water to a minimum. This will reduce the total weight of the RV for travel. The location of the fresh water and the waste water tank drain valve will vary from RV to RV, but is generally located beneath the motorhome near each respective tank. They may also be located inside, designated by a Low Points Drain Label. Water in the tank can be drained by turning the drain valve handle perpendicular (vertically) to the coach body. To close the valve, turn the lever parallel (horizontally) to the coach body.

### **NOTE:**

A gallon of water weighs approximately 8 lbs. If you add 30 gallons of water to your fresh water tank, multiplying 30 gallons by 8 lbs. will result in at least 240 pounds of extra weight.

## **Monitor Panel/Command Center**

### **Checking Water Tank Levels**

While there are several different styles of monitor panels, they all serve the same purpose. They measure and display information, regarding levels for water, batteries and LP.

The monitor panel allows you to quickly check the levels in fresh water and waste water tanks. Electrical sensors at various points on the tanks send signals to the monitor panel.

To check the fluid levels, press and hold the TEST SWITCH and read the level indicators on the panel. The indicator is proportioned in quarters (or in some cases, thirds) with each light displaying the level contained within the tank.

### **NOTE:**

Residue on the sides of a tank or water with a low mineral content can result in a false reading. Help prevent this from occurring by keeping your tanks clean.

Check the levels when you are sure of a tank's contents, and compare it to the reading on the monitor panel. If you are concerned about the accuracy of the monitor panel, have it checked at your local service center.

## **Water Pump**

### **Plumbing System**

The motorhome plumbing system has basically two water systems: the fresh water system and the waste water system. Potable (fresh) water is supplied by either the fresh water tank you have onboard your coach or by connecting to the city water fill at the campground.

### **NOTE:**

When connecting to city water, (water from the faucet at the campground), use only a water hose which was manufactured and labeled for potable (drinkable) water. This will ensure the hose will not affect the taste of the water and that the hose has been sanitized for that purpose. To be sure you maintain sanitary drinking and cooking water, never use the hose for any other purpose. You can purchase this type of hose at almost any camping store.

### **NOTE:**

When connected to city water, be sure your water pump switch is in the OFF position. The pump is not needed when connected to city water, since that fresh water source is already pressurized. Use the pump only when obtaining water from your onboard fresh water tank and you are disconnected from any exterior water source. When using your onboard water, be sure your water switch is in the ON position.

### **Water Pump**

The RV water pump operates on 12 volt power and is totally automatic, when the pump switch is in the ON position. Operation begins when a faucet is turned ON, provided you are not connected to a city water fill.

When a faucet is turned ON, the pump automatically draws water from the onboard fresh water tank. The pump supplies the pressure needed to move the water through the water lines.

Before turning the water pump ON:

- Ensure there is adequate water in the fresh water tank.
- Be sure the water heater BYPASS valves are set to NORMAL MODE, allowing water to enter.

- Open all faucets, both HOT and COLD, including any tub and/or shower faucets.

Turn the pump switch ON, and allow the pump to fill the water lines and hot water tank. After water is running in a steady stream from all faucets, turn the faucets to OFF. The water pump should stop operation automatically when all faucets are closed. The pump should now run "ON DEMAND" when the faucet is opened and stop when the faucets are closed.

## CAUTION

**Never operate the water pump if the freshwater tank is empty. Damage to the pump may occur.**

## Sanitization

Sanitize the system before initial use, after extended periods of no-use, at least once a year during continuous use, and if there is suspicion that the system has been contaminated.

To sanitize the system: For more information, please consult the individual owner's manual.

Remove or by-pass water filter, if equipped.

1. Prepare a chlorine solution using a gallon of water and ¼ cup of liquid household bleach (5% sodium hypo-chlorinate solution). Use one gallon of solution for each 15 gallons of tank capacity.
2. With an empty tank and all faucets and drains closed, pump into the tank, via the potable tank fill, either with manual or electric water pump, or pour ½ cup of bleach (1/4 cup per 15 gallons of capacity) into the hose before connecting it to the water source. The water source pressure will push the chlorine and water into the tank, making the correct solution when the fresh water tank is full.
3. Completely fill the tank with fresh water.
4. Switch on the water pump. Open all faucets, one at a time, until all air is purged and the water flows freely.
5. Add fresh water to the tank until the water level reached the fill spout.

6. Allow solution to stand in tank undisturbed for at least three (3) hours.
7. Drain the system by opening all faucets and the fresh water tank drain valve while flushing the system with fresh water of drinking quality.
8. Continue flushing the system, allowing the water to flow for several minutes.

Close the tank drain valve and all faucets. Refill the system with water of known drinking quality.

## Waste Water/Holding Tanks

The waste water system in your motorhome can be described as two separate systems: A gray water system, which consists of the drain lines and holding tank for waste water from the sinks and tub, and a black water system, which includes the holding tank and drain for toilet wastes. Each system is self-contained and allows disposal of waste water at designated dump stations at your convenience.

Components of the gray water system have drain traps. Both tanks (black tank for toilet waste and gray tank for sinks and showers) are vented to equalize air pressure and disperse odors to the outside, caused by drain water and waste. At times, the rocking movement of the coach while driving, may empty the drain traps of their water and allow odors from the gray water tank to enter the motorhome.

Residue in the drain water lines can also produce odors. To combat gray water holding tank odors, an RV approved deodorizing agent should be used. An agent that dissolves grease and fats and contains a detergent will help keep the tanks and lines clean and free flowing. You can obtain the deodorizer at most campgrounds and at stores that carry camping supplies.

### **If Connecting To A Campsite Sewer Inlet:**

1. DO NOT open termination valves until tanks are ¾ full.
2. DO NOT keep black water valve open while parked.

### **NOTE:**

Solid waste is not flushed directly into the sewer system. Only liquid waste is drained. Therefore, you must allow water to accumulate in the tank and give

the chemicals time to break down the solids before emptying the tank.

**NOTE:**

Always keep enough water in the waste tank to cover the bottom. Doing so will help prevent waste from solidifying, which will prevent the waste from being flushed from the system. If draining the gray water tank directly into the sewer inlet while parked, be sure to close the termination valve for a period of time before leaving, allowing water to accumulate in the tank for use in flushing the drain line and flexible hose.

Each tank has a separate drain line and dump valve, which permits dumping tanks individually or together. Each tank should be emptied often and ONLY at dump stations designated for this purpose. Dump stations can be found at most campgrounds and are well marked, and at most truck stops. Many service stations, particularly along interstate highways, also have these facilities. Campground directories list dumping station locations across the nation.

If possible, dump holding tanks before a trip to reduce the gross vehicle weight. It is very important that you keep enough water in the black water tank to cover the bottom to prevent hardening of any waste residue that may remain. Never dump black water tank until it is  $\frac{3}{4}$  full. (Check the tank level on your monitor panel.) This practice ensures that enough water is in the tank to flush all waste into sewer line. If necessary, fill the tank to the  $\frac{3}{4}$  mark with additional water before draining.

Never put anything in the holding tanks other than normal drain water, body waste, and biodegradable products. Paper wrappers, gum, cigarettes, etc., no matter how small, should NEVER be placed into either the gray or black tanks as doing so could cause damage to your plumbing system and/or tanks.

**NOTE:**

You can find biodegradable paper products at most stores that sell camping supplies and at campgrounds that have a store on the premises. You can also find

chemical substitutes for deposit into the waste tanks if you prefer.

**NOTE:**

It is important to note that harmful and toxic materials can accumulate if the holding tanks are not regularly drained and thoroughly rinsed. It is also important to use holding tank deodorizing and cleaning agents in the waste water tanks to reduce odors and keep the lines open and free flowing.

**To Empty the Holding Tanks**

For more indepth information on emptying your tanks, please refer to the individual owner's manual located in your packet.

**Black Tank**

1. Ensure universal nozzle is securely attached to dump station! Refer to "Attach to Dump Station" in the individual owner's manual.

**NOTE:**

TIP for cleaner storage: Emptying the black water tank first, allows gray water to cleanse the system.

2. Open black water tank gate valve
3. Turn pump on.
4. Do not leave unit unattended.

**NOTE:**

Tip: The hose expands as fluid moves to dump station and contracts when tank is empty.

5. Turn pump off.
6. Close black water tank gate valve.

**Gray Tank**

1. Ensure universal nozzle is securely attached to dump station! Refer to "Attach to Dump Station" in the individual owner's manual.
2. Open gray water tank gate valve.
3. Turn pump on.
4. Do not leave unit unattended.
5. Turn pump off.
6. Close gray water tank gate valve.
7. Repeat steps 2-6 for secondary gray tanks.

**NOTE:**

Keeping the black water tank clean allows the monitor panel to accurately assess the status of the tank. Always clean up the dump site before leaving. Never empty your holding tanks directly on the ground, a roadway, river, or stream. Do not pollute!

## Toilet

The toilet installed in your RV is connected to the pressurized fresh water system. A single lever, located on the side or a foot pedal, controls flushing and the flow of water into the bowl.

- To add water to the toilet before using, push the flush lever until the desired water level is reached. (As a general rule, more water is required only when flushing solids.)
- To flush the toilet, push the lever all the way down and hold until the sewage leaves the toilet.
- Release the flush lever. A small amount of water should remain in the bowl. To add more water to the bowl, hold the lever HALFWAY down until the bowl has the desired amount of water.
- Be sure to hold the flush lever down long enough to release the contents of the bowl, but only as long as necessary as this will result in excessive water usage.
- Unnecessary, frequent flushing of the stool will quickly deplete your fresh water supply and fill your holding tank. If the black water tank becomes full, you will no longer be able to flush the stool until the tank is drained. Be sure all occupants and guests understand this operation.
- Always use deodorizing agents, specifically designed for use in holding tank systems, and a good biogradable tissue paper. These products are available directly from your dealer or any store that sells camp supplies.

NEVER use chlorine or caustic chemicals such as drain openers or laundry bleach in your toilet.

NEVER allow foreign objects (non-dissolving items) to be flushed through the toilet.

Don't allow a problem to go unsolved. If you should detect a problem, take steps to correct it immediately. It's also a good idea to carry a few spare parts which could correct a small problem if one should develop. These parts can be obtained from your dealer or larger campground stores.

Refer to the toilet manufacturer's information in your Owner's packet to determine which part you may

need, its correct name, and part number. (If you have a toilet different than the one described, follow the toilet manufacturer's recommendations for cleaning and maintenance.)

## Winterize and De-winterization

When storing your RV through periods of freezing weather in an unheated environment, it will be necessary to winterize the water system. Damage to the water system components will result if the proper winterization steps are not taken.

### **NOTE:**

The water heater is to be off and cool before winterizing. Reference water heater owner's manual. Before using the compressed air method, you will need a special adapter known as a Blowout Plug. This plug allows compressed air to be delivered through the City Water Connection. This small, inexpensive adapter is available at most RV supply stores.

## **WARNING**

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

### **Winterizing With Compressed Air**

1. Purchase 2-3 gallons of RV non-toxic antifreeze.
2. Drain the fresh water tank and empty the waste water holding tanks.
3. Turn the water heater bypass valve to the bypass position by opening the bypass valve and closing the Hot and Cold valves. (These valves are located near the water heater incoming lines at the rear of the water heater. The water heater is usually located in a base cabinet in the kitchen. It may be necessary to remove an access panel to reach the bypass valve.) Drain the water heater. Reference water heater owner's manual.
4. If equipped with a water filter system, remove and discard the filter cartridge and immediately reinstall the canister. A new filter will be required when de-winterizing.
5. Open all interior and exterior fixtures including, but not limited to, low point drain.

6. Turn on the water pump for at least 30 seconds to clear any water from the lines.
7. Set air pressure to no greater than 30 PSI. Remove SCREEN from City Water Connection. Connect an adapter (Blowout Plug) to the City Water Connection.
8. Connect air hose and blow out the water lines until no water can be seen coming out of all interior and exterior fixtures, appliances, and lines.
9. Disconnect Blowout Plug from City Water Connection, reinstall Screen, close all fixtures, fittings, and low point drains.
10. If equipped with black tank flush system, connect air to the black tank flush inlet and flush water from that system. There is no screen for black tank flush system.
11. Pour one quart RV antifreeze into each interior and exterior (if equipped) drains, p-traps, and tanks.
12. Pour ½ gallon antifreeze into each toilet, close toilet flush valve and pour one inch of antifreeze so the valve is covered with antifreeze.

**NOTE:**

It may be necessary to bypass the refrigerator/ice-maker line. Consult with your dealer to determine if this applies to your model.

**NOTE:**

Do not attempt to start the water heater or use the plumbing system after the system has been winterized.

**Winterizing with Antifreeze Only**

1. Purchase 4-6 gallons of RV approved, non-toxic antifreeze.
2. Drain all tanks (fresh water and wastewater holding tanks).
3. Turn water heater bypass valve to bypass position by opening the Bypass Valve and closing the Hot and Cold Valves. Valve handle in line with water line is open valve position and perpendicular to water line is closed. (These valves are located near the water heater incoming lines at the rear of the water heater. The water heater is usually located in a base cabinet in the

kitchen. It may be necessary to remove an access panel to reach the bypass valve.)

4. Drain water heater. Reference water heater owner's manual.
5. If equipped with a water filter system, remove and discard the filter cartridge and immediately reinstall the canister. A new filter will be required when de-winterizing.
6. Apply antifreeze to inlet of water pump by either: A. Turn nearby valve, if equipped, and put the winterization hose into bottle of antifreeze. B. Remove water line from pump inlet, then connect short piece of hose that is put into bottle or antifreeze.
7. Turn the pump switch "ON" and open the cold-water side of all interior and exterior faucet fixtures. Leave the faucets open until the antifreeze (generally pink in color) flows out of the faucets. Repeat for the hot water side.
8. Flush toilet until antifreeze is visible inside the bowl and pour one gallon of antifreeze down the toilet to winterize the black holding tank. If equipped, operate toilet sprayer until antifreeze is observed.
9. Pour one quart RV antifreeze into each interior and exterior (if equipped) drains, p-traps, toilet, and tanks.
10. Pour ½ gallon antifreeze into each toilet, close toilet flush valve and pour one inch of antifreeze so the valve is covered with antifreeze.
11. If equipped with black tank flush system, pump antifreeze into Black Tank Flush inlet with a hand pump (available from your RV dealer).

**De-winterizing Your RV**

**NOTE:**

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

1. Drain all holding tanks (fresh water and sewage).
2. Attach garden hose to freshwater fill and fill tank.
3. Turn "ON" water pump.



4. Open cold-water side of all faucet/shower fixtures. Leave open until the water runs clear (no pink residue). Repeat for the hot water side.
5. Flush toilet until clear water runs into bowl.
6. Dump tanks again.
7. Sanitize the water system. (Refer to that section in this manual).
8. If a water filter has been installed, drain the lines, remove the assembly, clean, and reinstall using new filter.

When ready to use the water heater, turn bypass valve to open position or allow water to enter and fill the water heater tank.

## **Holding Tanks**

Due to vast array of floor plans and the necessary re-arranging of plumbing systems, locations will vary, but in general, the holding tanks are located approximately beneath the bathroom area. Drain valves and drain hose storage are usually located on the driver's side.

The storage tanks are constructed of strong, lightweight polyethylene, which minimizes both weight and maintenance.

Each tank has a separate drain line and dump valve, which permits dumping tanks individually or together. Each tank should be emptied often at dump stations designated for this purpose. These dump stations are found at most campgrounds and are well marked. Many service stations, particularly along interstate highways, also have these facilities. Campground directories list dumping station locations across the nations.

If possible, dump holding tanks before a trip or as soon as possible to reduce the gross vehicle weight and prevent damage to the tanks during travel. Enough water should be kept in the black water tank to cover the bottom to prevent hardening of any residue that may remain. Never dump black water tank until it is  $\frac{3}{4}$  full. This practice ensures that enough water is in the tank to flush all wastes into sewer line. If necessary, fill the tank to the  $\frac{3}{4}$  mark with additional water before draining.

Never put anything in the holding tanks other than normal drain water, wastes and biodegradable products. Paper wrappers, gum, cigarettes, etc., no

matter how small, should NEVER be placed into either the gray or black tanks.

### **NOTE:**

You can find biodegradable paper products at most stores that sell camping supplies and at campgrounds that have a store on the premises. You can also find chemical substitutes to deposit into the waste tanks if you prefer.

### **NOTE:**

It is important to note that harmful and toxic materials can accumulate if the holding tanks are not regularly drained and thoroughly rinsed. It is also important to use holding tank deodorizing and cleaning agents in the wastewater tanks to reduce odors and keep the lines open and free flowing.

## **Empty the Holding Tanks**

For more in-depth information on emptying your tanks, please refer to the individual owner's manual located in your packet.

### **Black Tank**

1. Ensure universal nozzle is securely attached to dump station! Refer to "Attach to Dump Station" in the individual owner's manual.

### **NOTE:**

TIP for cleaner storage: Emptying the black water tank first, allows gray water to cleanse the system.

2. Open black water tank gate valve
3. Turn pump on.
4. Do not leave unit unattended.

### **NOTE:**

Tip: The hose expands as fluid moves to dump station and contracts when tank is empty.

5. Turn pump off.
6. Close black water tank gate valve.

### **Gray Tank**

1. Ensure universal nozzle is securely attached to dump station! Refer to "Attach to Dump Station" in the individual owner's manual.
2. Open gray water tank gate valve.
7. Turn pump on.
8. Do not leave unit unattended.
9. Turn pump off.
10. Close gray water tank gate valve.

11. Repeat steps 2-6 for secondary gray tanks.

**NOTE:**

Keeping the black water tank clean allows the monitor panel to accurately assess the status of the tank. Always clean up the dump site before leaving. Never empty your holding tanks directly on the ground, a roadway, river, or stream. Do not pollute!

## **Water System Maintenance And Troubleshooting**

As with any mechanical system, your plumbing is subject to the development of problems. Most of these problems can be greatly reduced, if not eliminated, by following a schedule of planned inspections and maintenance. Neglect of proper maintenance procedures is the usual cause of most water system problems.

Road vibrations and shocks, as well as excessive pressure from some city water sources, are the main physical causes of water system damage. It is important to inspect all plumbing joints and fittings often for cracks and leaks. If left unchecked, water leaking from a plumbing joint can cause considerable damage.

A leak in the fresh water system should be suspected if the pump is running and all faucets and valves are closed. When the leaking fitting has been identified, attempt to stop the leak by tightening the fitting. DO NOT over-tighten. Clean the fitting thoroughly and reinstall. If leaking persists, shut off the water supply until the fitting can be properly replaced. Check with your dealer for the correct method of replacement and replacement parts.

Proper winterization procedures of plumbing systems will normally be all that is necessary to prevent the damage caused by freezing. Freezing damage can harm any component of the system, including the water tanks, toilet, pump, and all piping. Be sure to follow the winterization procedures outlined in this manual. Also be sure to discuss with your dealer or repair center any additional

precautions that should be taken to winterize your RV's plumbing system. Local climates vary and winter maintenance needs may be affected.

Be sure to read the literature supplied with plumbing components, such as the water pump, for troubleshooting tips. Also Remember that it is possible for an electrical problem to cause water system problems. Lack of power to the pump can be caused by a variety of reasons.

If you are unsure of how to locate and/or repair a plumbing problem, it is best to have your dealer or a qualified plumber who is familiar with the RV water system to inspect the system and perform any repairs needed.

# Appliances

## General Information

Due to the variety of floorplans available from Phoenix USA RV and the various shapes and sizes of RV's, we use many different brands of appliances designed to fit into the designated space in each RV. Therefore, all appliances cannot be listed in this section. While we attempt to touch on the major ones, please keep in mind that your best resource is the specific appliance manual that came with your owner's packet. It will detail the product used in the manufacture of YOUR recreational vehicle. (If, by chance, you do not have the manual you need, many times you can find it on-line from the product's manufacturer. Be sure you have the model and serial number of your specific appliance handy, so you get the most accurate information.)

Each appliance in your RV is warranted by its manufacturer. It is very important that you review ALL the literature provided in the Phoenix USA RV owner's packet that came with your RV. Fill out and mail any warranty registration cards required by the appliance manufacturers. If you have any questions regarding the operation of the appliances in your RV, contact your selling dealer. Also, please notify your dealer of any shortage of literature you may have.

It is important that you read all the manufacturer's information provided, regarding both operation and maintenance of the appliance. Pay close attention to all safety precautions given, and follow them closely. Keep all literature, including this manual, with the RV for easy reference. If service on any appliance is required, contact your dealer or an authorized service representative of the appliance manufacturer. For your convenience, most appliance manufacturers have toll free service telephone numbers.

## Kitchen

### Range

#### **WARNING**

##### **To Prevent Fire or Smoke Damage:**

- 1. Keep area around appliance clear and free from combustible materials, gasoline, and other flammable vapors and materials.**
- 2. If appliance is installed near a window, take proper precautions to prevent curtains from blowing over burners.**
- 3. Never leave any items unattended on the cooktop. The hot air from the vent may ignite flammable items and may increase pressure in closed containers, which may cause them to burst.**
- 4. Avoid use or storage of aerosol cans near an appliance. Many are explosive when exposed to heat and may be highly flammable.**
- 5. Do not leave plastic items on the cooktop as they may melt or soften. If this occurs, discard the container and contents as the food could be contaminated.**

Read all instructions before using this appliance. The following instructions are based on safety considerations and must be strictly followed to eliminate the potential risks of fire, electric shock or personal injury. Have your appliance installed and properly grounded by a qualified installer and according to the installation instructions. Have the installer show you the location of the gas shut off valve and how to shut it off in an emergency. To ensure proper operation, and avoid possible injury or damage to the RV, do not attempt to adjust, repair, service, or replace any part of your appliance. All other servicing should be referred to a qualified installer or service center. Always disconnect power to appliance before servicing.

## WARNING

Never turn exhaust fan on with the filter screen removed. Exposed fan blades pose an injury threat. Dirt and grease deposits which are normally trapped by the filter are free to build up in the range hood/convection microwave oven exhaust fan duct, creating a fire hazard.

## DANGER

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

## WARNING

The propane burners are operated using propane. Cooking appliances need fresh air for safe operation. Before operating this appliance:

- Open an overhead vent or turn on an exhaust fan and
- Open a window

## DANGER

Unlike homes, the amount of oxygen supplied is limited due to the size of the RV, and proper ventilation when using the cooking appliance(s) will avoid dangers of carbon monoxide poisoning or asphyxiation.

### Lighting Surface Burners

The most common type of RV range is a two or three burner built-in range. It may lite manually or by using a piezo ignition, which means there is no pilot light for the range. Be sure the main propane valve on the propane tank is in the "ON" position. For more information, consult the individual owner's manual.

## DANGER

If the burner does not light within 4 seconds or if the flame should go out during cooking, turn the burner off. If propane has accumulated and a strong propane odor is detected, open a window, and wait 5 minutes for the propane odor to dissipate before re-lighting the burner.

### **NOTE:**

If the appliance has not been operated for a period of time, surface burners may be difficult to light due to air in the propane line.

### **Piezo/Electronic Ignition**

1. Push and hold the control knob down and turn it to the big flame symbol.
2. Continue holding the control knob down while pushing the electronic ignition button.
3. After ignition and appearance of flames at the burner continue holding the control knob down for another 8 seconds before release.
4. If the attempt to light the burner fails repeat steps 1-3.
5. To increase or decrease the height of burner flames turn the burner control knob to either the larger or smaller flame.
6. To turn the burner off, turn the burner knob to the marked "OFF" position.

## WARNING

When the recreational vehicle is not in use or while traveling, turn all knobs to the off position and turn off the main propane supply.

## Microwave/Convection Oven

### General Use

For more information, please consult the individual owner's manual.

- Do not attempt to defeat or tamper with safety interlocks.
- Do not allow residue to build up on sealed surfaces.
- Do not hit or strike the control panel with hard objects.
- Do not subject the oven door to strain or weight.
- Do not operate an empty oven.
- Do not use recycled paper products as they may contain impurities which may cause sparks or fires.

- Do not operate the oven if door seals are damaged, if the door is bent, or if door hinges are loose or broken.
- Do not attempt to dry clothing, newspapers or other material in the oven.

## **Refrigerator**

### **NOTE:**

Most RV refrigerators operate on the absorption system. In an absorption refrigeration system, ammonia is liquified in the finned condenser coil at the top rear of the refrigerator. The liquid ammonia then flows into the evaporator (inside the freezer section) and is exposed to a circulation flow of hydrogen gas, which causes the ammonia to evaporate, creating a cold condition in the freezer. When starting the refrigerator for the first time, the cooling cycle may require up to four hours of running time before cooling unit is fully operational.

### **Leveling**

Leveling is one of the requirements for proper operation with absorption refrigerators. Any time the vehicle is parked for several hours with the refrigerator operating, the vehicle should be comfortably leveled to prevent loss of cooling. If the refrigerator is operated when it is not level and the vehicle is not moving, liquid ammonia will accumulate in sections of the evaporator tubing. This will slow the circulation or in severe cases completely block it, resulting in a loss of cooling. When the vehicle is moving, the rolling and pitching movement of the vehicle will help to keep the liquid ammonia from accumulating.

### **Automatic Energy Selector System**

The refrigerator may be equipped with an automatic energy selector system, either a 2 way or 3 way system. This system can be set, by the user, to be fully automatic (when AUTO mode is selected) or to operate on propane only (AUTO mode is OFF) or DC (battery). If the user turns the refrigerator on AUTO mode, the AES system will automatically select the most suitable energy source available, either 120 volt, propane, or DC.

### **Auto Mode**

When on AUTO mode, the control system will automatically select between 120 volt (AC) and propane or (on a 3 way system) DC current has priority over both. (If the CHECK indicator lamp is on, the lamp will not turn off until the ON/OFF button is pressed OFF and then ON again.)

### **Propane Mode**

This mode provides propane only. The control system activates the ignition system and attempts to light the burner for a period of approximately 45 seconds, at 2 minute intervals. If unsuccessful, the CHECK indicator lamp will illuminate. If the CHECK indicator lamp is illuminated on the control panel, the controls have failed to ignite the burner. To restart an ignition attempt when the CHECK lamp is illuminated (or turn off the CHECK lamp), press the ON/OFF button to OFF and back ON again. The control system activates the ignition system and makes three attempts to light the burner. If, after three attempts, it fails to ignite, restart the ignition sequence by again pressing the ON/OFF button to OFF and then back to ON.

### **DC MODE**

When DC mode is chosen, the refrigerator will operate by pulling power from the battery. In most cases, the refrigerator controls will continue to operate when the battery is down to 9.6V DC, causing a drain on the battery. WHEN IN AUTO MODE, IF THE REFRIGERATOR FAILS TO OPERATE, REFER TO THE MANUFACTURER'S USER MANUAL PROVIDED WITH THE PHOENIX USA RV OWNER'S PACKET. For more information, please consult the individual owner's manual.

### **Purging Air From The Line**

If the refrigerator has not been used for a long period of time or if the propane tanks have just been refilled, air may be trapped in the supply lines. Purge the air from the lines by pressing the ON/OFF button to OFF and then back to ON 3-4 times. If repeated attempts fail to start the propane operation, check to make sure the propane tanks are not empty and that all manual shutoff valves in the lines are open.

**NOTE:**

Do not continue to reset propane operation if the CHECK indicator lamp continues to be illuminated after several tries. If the problem persists, please contact a service center for assistance.

 **WARNING**

When refueling or parked near gasoline pumps, shut off all propane appliances. Failure to heed this warning could cause a fire or explosion, resulting in death or severe personal injury as well as damage to the camper and/or surrounding area.

## Heating and Cooling

### Furnace

 **WARNING**

Before operating the furnace, check the location of the exterior furnace vent to be sure it will not be blocked by the opening of any door on the camper (or by exterior items such as a bush or a tree).

**Tips to ensure continued safe operation of the furnace:**

1. Inspect furnace venting. Venting must be free of obstruction and soot.
2. Periodically observe the main burner flame to ensure it is burning with a hard blue flame. If the flame appears yellow or lazy, shut the furnace down. The burner may need to be cleaned or replaced.
3. Keep the furnace area clear of any combustible materials, gasoline, or other flammable vapor and liquids.

**NOTE:**

To properly observe burner operation, the furnace must be removed. This should only be done by your dealer or qualified service center.

 **WARNING**

Do not install screens over the vent for any reason, as doing so can cause unsafe furnace operation.

 **WARNING**

Should overheating occur or the propane supply fails to shut off, shut off the manual propane valve to the appliance before shutting off the electrical supply.

 **DANGER**

Be sure the furnace and all ignition systems are off during refueling and while the vehicle is in motion.

 **DANGER**

Read the furnace manufacturer's user manual. If the information in the manual is not followed exactly, a fire or explosion may result, causing property damage, personal injury, or loss of life. For more information, please consult the individual owner's manual.

 **DANGER**

**If You Smell Propane:**

- Extinguish any open flame.
- Evacuate all persons from the vehicle.
- Shut off the propane supply at the propane container or source.
- Do not touch any electrical switch or use the phone or radio in the vehicle.
- Do not start a generator.
- Contact the nearest propane supplier or qualified service center for repairs.
- If you cannot reach a propane supplier or qualified service center, call the fire department.

## **WARNING**

**Do not turn on the propane supply until the propane leak(s) has been repaired. You, as the owner/user, should inspect the furnace monthly during the heating season for presence of soot on the vent. The presence of soot indicates incomplete combustion. Operating the furnace under this condition could lead to serious property damage, personal injury, or loss of life. If soot is observed on the vent, immediately shut the furnace down and contact a qualified service center.**

### **Thermostat**

Many factors influence the ambient temperature inside your RV. The purpose of a thermostat is to keep the air temperature at the level you have selected.

There are several things you can do to help manage the inside temperature to avoid over-stressing your heating and cooling appliances.

### **Heating**

1. Check to be sure there are no gaps in windows or doors that would allow loss of heat.
2. Have your furnace checked to ensure it is operating at its highest capacity.
3. Keep all vents free of obstruction.

Setting the temperature and leaving the thermostat on AUTO will allow the device to detect changes in temperature. While some people lower the temperature at night or when leaving the RV, when you return and reset the thermostat, the furnace or air conditioner has to run longer to reach the new temperature you set. It is recommended to set it at a comfortable temperature and leave it.

### **Cooling**

1. Park the RV in the shade.
2. Use window shades, blinds or curtains.
3. Keep windows and doors shut or minimize usage.
4. Avoid the use of heat producing appliance.
5. Installing window awnings will reduce heat gain by removing direct exposure to the sun.

Starting the air conditioner in the morning and giving it a head start on the expected high outdoor ambient temperature will greatly improve its ability to maintain the desired indoor temperature.

Whether using the HEATING or the COOLING function of your thermostat, condensation is always an issue. Keeping your RV at a constant temperature helps keep condensation at a minimum. For more information on the effects of condensation on your RV, refer to the Living Quarters section.

### **Air Conditioner**

Your RV vehicle may be equipped with an optional roof-mounted air conditioner. It operates on 120VAC power is located in the living/dining area and also in the bedroom area of some models. Check with your dealer for additional information.

Refer to the air conditioner manufacturer user's manual for complete operating and service instructions. Efficiency when using the air conditioning can be increased by closing all windows and curtains and parking your RV in the shade. Air conditioning consumes a large portion of the electric power available in the RV and efficient operation can be an important consideration.

Even though your RV is equipped with 30 or 50 amp capabilities, be aware that some campgrounds may offer less than 30 amp service. Check with the campground before utilizing excessive power, which may create a fire hazard or trip breakers, in either the RV or the outside power source.

#### **NOTE:**

Always turn off the air conditioner (and all electrical appliances) before disconnecting the RV from its 120VAC power source.

#### **NOTE:**

If you cover the outside portion of your air conditioner during periods of storage, be sure to remove protective cover before reusing.

#### **NOTE:**

The air conditioner owner's manual states that no excessive exterior air should be allowed to enter the RV during air conditioner operation. An open door or window can lead to the exterior warm, humid air to

condense onto cold surfaces around the Air Conditioner.

## **Water Heater**

### **NOTE:**

Carefully follow the water heater manufacturer's detailed instructions regarding the correct operation of your water heater. Failure to do so could void your warranty.

### **NOTE:**

Water heaters require very little care. However, the most common cause of problems with your water heater is initiating operation before the tank is filled with water. Even running it for a brief period of time without water will damage the electric heating element.

### **NOTE:**

Prior to operating the RV's water heater for the first time, be sure there is water in the water heater tank. Be sure that the water heater bypass valve, if installed, is open to allow water flow into the tank. Next, connect the RV to a water source or turn on the onboard water pump. Open a hot-water tap and wait until water is flowing from the tap, the water heater tank is full, and it is safe to operate the water heater.



**Do not store or use gasoline or other combustible materials or liquids near or adjacent to the water heater or any other appliance.**

### **Automatic Shut Off**

The water heater is equipped with high temperature limit switch, which will shut down the water heater if the temperature reaches above 180 degrees fahrenheit. If the limit switch should fail, the water heater is equipped with a pressure relief valve which is designed to open if the temperature of the water reaches 210 degrees fahrenheit or if excessive pressure builds up. The valve will close automatically once the pressure falls below 50 PSI. Until the pressure falls below 50 PSI, dripping may occur. This is normal and indicates the pressure relief valve is functioning properly by releasing pressure, causing temporary dripping.

### **Winterizing**

For more information, please consult the individual owner's manual for water heater.

### **NOTE:**

If your water heater plumbing system is equipped with a bypass kit, use it to close off the water heater, drain it completely and leave it closed (in the bypass position). If you are introducing antifreeze into the system, be aware that it can be very corrosive to the anode rod causing premature failure and leaving heavy sediment in the tank (if so equipped).

### **Water Odor**

Odor from the water is not a warranty or service issue. Many water supplies contain enough sulphur to produce a "rotten egg" odor. It is not harmful, only unpleasant. The solution is to chlorinate the water. You may add about 6 ounces of common household liquid bleach per 10 gallons of water in the tank.

Run the chlorinated water throughout the system, opening each faucet one at a time until you smell the chlorine. Operate the water system for a couple hours, allowing the chlorine to take care of the problem; however, then you must remove the chlorine by flushing the system with fresh water. You may need to do this more than once. If this process does not remove the smell from the water, you may need to replace the anode rod. You may also consider adding a filtering system as a preventive measure.

### **Sanitization**

For more information, please consult the individual owner's manual of the water heater.

### **Turn Off Water Heater**

1. Turn switch to OFF position.
2. Turn off electrical power to the appliance.
3. Turn off propane supply.
4. If vehicle is to be stored or heater is going to be turned off while subject to freezing temperatures, drain the water heater.



## **Storage and Draining**

If your RV will be stored during winter months, drain the water heater to prevent damage from freezing.

1. Turn off electrical power to water heater either at the switch or the breaker.
2. Shut off propane supply to water heater.
3. Turn off water pump on main water system.
4. Open both hot and cold water faucets.

Refer to water heater manual regarding draining and/or winterizing your water system.

## **Entertainment/Electrical**

### **Television**

Due to the large selection of televisions used in the manufacturing of Phoenix USA RVs, it is impossible to list all of them in this manual. Therefore, you will find general information that will be applicable to most all televisions.

For more detailed information regarding the specific television installed in your RV, please refer to the television manufacturer's user guide included with your Phoenix USA RV Owner's packet.

### **Converter/Battery Charger**

The power converter is designed to supply the normal 12VDC filtered power for all 12VDC operated devices. Although the converter is an excellent battery charger, the converter does not require a battery to be connected to it for proper operation. Average charge rate will depend on several variables such as condition of the battery(s), temperature, and the length of time the battery(s) is connected to the converter.

#### **NOTE:**

When installing a battery(s), always observe polarity. Connecting a battery with reverse polarity will blow the power converter output fuses.

# Care and Maintenance

## General Information

Periodic maintenance and cleaning of your RV are necessary to retain the dependability, safety and appearance that will provide you with many miles of trouble-free operation as well as protecting your investment.

Keep good records of maintenance functions performed and be sure to follow all owner obligations as may be required by the chassis manufacturer to keep your warranty in force.

It is also important to note that operating conditions will affect service timetables. Driving in extreme conditions, such as heavy dust, continuous short trips, or start-and-stop heavy traffic, means that the length of time between service appointments will be shortened. Discuss service timetables with both your dealer and chassis service representative.

Preventative maintenance will pay for itself many times over by catching or preventing problems before they occur. Many repair costs are greatly increased by ignoring problems when they are small ones, allowing them to build into larger problems and possibly voiding your warranty due to neglect, misuse, or abuse. If left unattended, small problems may also begin to affect other parts and systems of the RV.

## Fiberglass

The care of all fiberglass is basically the same as any automotive finish. Any finish will deteriorate with time. Dulling and fading can be increased by exposure to extreme sunlight, air pollutants and excessive moisture. Regular washing will help prevent this from occurring. If surface deterioration, such as yellowing or chalking, occurs, consult with your dealer for proper procedures.

- Wash the exterior monthly with warm water and a mild detergent.
- Avoid spraying water directly into refrigerator and furnace vents.
- Immediately remove bird droppings, tree sap, insects, and tar to avoid staining.
- Wax at least once a year with a standard liquid or paste wax.

- Prolonged storage of the RV should be in a sheltered environment when possible.

### **NOTE:**

Physical damage to fiberglass should be addressed immediately to avoid moisture entering through breaks and causing problems with interior walls components. Cover breaks in the fiberglass with plastic, sealing the edges with tape until proper repairs can be made.

## Seals and Adhesives

It is important to maintain the seals and adhesives to prevent moisture from entering and destroying RV components. When washing your RV, inspect the seals for signs of drying out and wear. Be aware that weather and road vibration will have an effect on seals, causing them to dry, crack or separate. If you are unsure what to look for, have your dealer instruct you regarding the correct method for renewing the seals, or you may prefer to have the dealership inspect and re-seal your RV if necessary.

### **NOTE:**

Failure to maintain seals through regular maintenance can lead to damage and may be considered abusive treatment under terms of your RV warranty.

## Water Pump

### Water Pump Care and Operation

Frequent pump cycling may be caused by excessive pressure created by one or more of the following within the plumbing system:

- Low flow from partially open faucet.
- Water filters not on separate feed lines.
- Clogged water filters.
- Flow restrictors in faucets and showerheads.
- Long lengths of small I.D. (inside diameter) lines.
- If replacing pipe/tubing, be sure it is at least ½" I.D. (inside diameter) for main lines.

To minimize cycling, consider removing plumbing restrictions or install an accumulator after the pump. Cycling should be minimized to prevent pulsing flow and to achieve maximum pump life.

The water pump supplied with your RV is designed to deliver a smooth, consistent flow of water at all ranges of operation while drawing only a low current.

### **Windows and Doors**

Check the seals around the windows regularly (at least every 6 months) if sealant is present. Follow the above instructions for care and maintenance of window and door seals and repair as necessary and if applicable.

Adjust and lubricate latches and moving parts annually to ensure windows remain operative. Also check the condition and operation of door locks, adjusting and lubricating, as necessary.

Vinyl seals around windows and doors should be cleaned regularly and kept flexible by using a silicone spray and lubricant. Be sure to follow the directions on the product container.

### **Frame/Extrusions/Aluminum Surfaces**

Check the condition of the frame regularly. Keep it clean and repaint as necessary, to help avoid rust.

It is especially important to keep underbody components clean when driving your RV in the winter, in areas where road salts are used. To help avoid surface pitting, clean, and wax all extrusions, when waxing RV sidewalls. Special aluminum cleaners are available to restore the original luster to aluminum surfaces. Be sure to follow the instructions as outlined on the product package.

### **Roof**

Inspection of roof components at least twice a year, is very important to make sure seams and seals are not cracked or worn. Proper maintenance of seals is necessary to keep moisture from entering and causing severe damage such as rot, mold, and mildew. If you encounter dry, cracked, or weathered seals, re-seal or replace,

as necessary. Check with your dealer for the type of caulk required for your roof and correct methods of resealing or replacing.

## **WARNING**

**Use caution when storing items on the roof. If a factory installed roof rack and/or ladder are present, the roof has been reinforced. If you have an after-market roof rack or ladder, use extreme caution when on the roof.**

### **Propane System**

To ensure proper operation, have the propane system checked frequently for leaks and road damage. The entire system, including regulator pressure, should be checked annually or sooner if you suspect a problem. Have the system checked by a qualified propane service technician using proper equipment. The method of checking the system for leaks and propane safety precautions can be found in the identification and Safety section.

#### **NOTE:**

Line pressure for propane appliances should be checked at least every six months. Most propane suppliers have equipment to test the lines. The optimum line pressure for all RV propane appliances is 11 inches of water column pressure.

### **Lights**

Check the operation of exterior lights often. Check clearance, turn signal, brake, and back-up lights to be sure they are working correctly. Replace any cracked, broken, or missing light covers to avoid moisture infiltrations and possible damage to the electrical system.

## **Generator Safety**

### **Electrical**

#### **WARNING**

Exercise extreme care and caution when handling the generator and its components. Carelessness can be dangerous and even fatal.

Never touch any electrical leads, equipment, or appliances when your hands or clothes are wet or when you are standing on wet ground or in water.

Do not attempt to repair the generator yourself. Have all service and repairs performed at an authorized service center only.

Never check the generator oil level while the generator engine is running.

#### **WARNING**

Always verify that appliances are turned off before starting or stopping the generator. Do not start the generator while it is under load. Ensuring all appliances are in the off position will help prolong the life of the appliances.

### **Asphyxiation**

#### **WARNING**

All internal combustion engines produce carbon monoxide (CO) gas fumes when running. The gas is poisonous, colorless, odorless, tasteless and is lighter than air.

- Do not run the generator and an intake vent fan at the same time. This could draw gases into the motorhome.
- Do not open windows or vents on the side where the generator exhaust pipe is located.
- Park so the wind carries exhaust gases away from the motorhome. Be aware of potential gas fumes from other nearby vehicles.
- Do not operate the generator if there are any obstructions such as vegetation, snow, buildings etc., which could deflect gas fumes under or into the motorhome.

## **Storage Tips**

### **Winter Precautions**

- Water systems – In severe cold, it is wise to monitor the water temperature in the tank and take steps to drain and winterize if necessary. It is also a good idea in severe cold to open lower cabinet doors in the kitchen and bath to allow warm air to circulate around water fixtures. To minimize freezing damage, insulate drain lines exposed to the outside.
- Food storage – If left in an unheated RV for a period of time, canned goods and other foods packed in water should be stored as high as possible since heat rises. Refrigerators can also be used for storage, even when unplugged, as they are well insulated.
- Heating – Use only the RV furnace for heating as it is properly vented to the outside. NEVER USE THE RANGE FOR HEATING AS FIRE, CARBON MONOXIDE OR ASPHYXIATION COULD RESULT.
- Condensation – Moisture can collect on inside surfaces during cold weather when inside humidity is high. While the trailer is in use, a family can vaporize up to three gallons of water daily through daily living. Consider using a dehumidifier to remove moisture. Refer to Living Quarters section for additional tips regarding condensation.
- Check and reseal the underbelly of your RV to prevent leaks, rodent intrusion, etc.

### **Storage Tips**

1. Park your RV on a level surface.
2. Winterize the chassis and the generator (optional) as outlined in the chassis and the generator owner's manual.
3. Clean your RV thoroughly inside and out, as previously outlined in this section.
4. Turn off all electrical switches and appliances.
5. Close all shades and curtains. Consider protecting the curtains from sun fade by placing foil or paper between the windows and the screens.
6. Be sure all windows, doors and vents are securely closed. Cover exterior appliance vents to

prevent moisture and insects from entering during storage.

7. Check the interior of the RV periodically to be sure that leaks have not developed or that condensation has not formed, causing damage to interior components. Condensation can most readily be observed as moisture accumulation on windows and mirrors. To reduce the possibility of condensation, air out the RV occasionally during storage.
8. Be sure that both the chassis and auxiliary batteries have the proper electrolyte level and that they are fully charged. A discharged battery will freeze and crack the case. In storage, a battery will gradually lose charge after 30-45 days, even when disconnected by the battery disconnect switch. We recommend that you check the battery for charge once a month. If the charge is 80% or less, it must be recharged. You may wish to remove the battery and store it in a heated area. However, even warm, the battery level must be maintained.
9. Be sure the tires are inflated to correct pressure and check periodically.
10. Keep the roof free from snow and ice. Check it periodically and after a heavy snowfall.

Winterize the water systems and protect exterior hoses and lines from freezing. Follow the winterizing procedure outlined in the Plumbing section. Also follow all component manufacturer instructions regarding their particular products. (If their procedure differs from this manual, follow the component manufacturer instructions.)

## **Heating Pads (optional)**

1. When outside temperature is near freezing, simply turn ON the holding tank heater 12VDC power switch and/or plug in the 120VAC power cord.
2. There must be liquid in the holding tank, pipes, and elbows when heaters are ON.
3. The tank heater immediately starts protecting your holding tank from freezing up.
4. The thermostat on the heater will turn ON the tank heater as soon as the tank temperature drops to 44 degrees Fahrenheit (7 degrees Celsius). The tank heater immediately starts

protecting your holding tank. When the temperature in the holding tank rises to 64 degrees Fahrenheit (18 degrees Celsius), the tank heater will automatically turn OFF.

5. If using a generator or other power source, which exceeds the heaters voltage requirements, turn the heater OFF and/or unplug the power cord to avoid eventual damage to the heater's thermostat.

**NOTE:**

Tank heaters are thermostatically controlled. This product has been tested and designed to be used as a heating device for RV wastewater holding tanks made of standard grade plastics. Please refer to the individual owner's manual for more information on this product.

## Care and Maintenance Charts

### Storage Preparations

When storing your RV for the winter, certain precautions need to be taken to protect your RV. Be sure to talk with your local dealer concerning any special requirements, for storage, in your particular geographic location. The following steps are general, and your dealer can help you choose those which are most appropriate for your needs.

### Before Each Trip

Item	Procedure
Tires and Wheels	Check lug nuts are tightened to specified value. Check tire pressure.
Windows and Doors	Check vinyl seals when washing exterior. Check seals for damage and repair as needed. Lubricate door hinges and step components with a spray lubricant. Adjust and lubricate window latches with a spray lubricant. Lube all door locks and strike pockets.
Water and Drainage	Check drainage system for leaks and road damage.
Electrical System	Check GFCI circuits.
Appliances	Remove food and ice from refrigerator after each trip.
Safety Equipment	Test all detector components.
Weight Distribution	Keep within specified load limits.

### Monthly

Item	Procedure
Fiberglass Exterior	Wash with warm water and mild detergent.
Water and Drainage	Check hoses, fittings and connections for leaks and wear.
Appliances	Check for obstructions and dirt on exterior appliance vents.
Safety Equipment	Check fire extinguisher pressure and condition.
Wood Surfaces	Clean prefinished panels and wood with wood cleaner.

### Every 6 Months

Item	Procedure
Fiberglass Exterior	Wax with liquid or paste wax.
Roof and Roof Components	Inspect and reseal as needed.
Brakes	Check operation and uneven wear.

### Yearly

Item	Procedure
Roof and Roof Components	Lubricate roof vent mechanism with light oil and clean completely.
Propane System	Have qualified service center check pressures and complete system.
Water and Drainage	Winterize system depending on local conditions.
Safety Equipment	Clean all detector components.
Bearings	Repack wheel bearings yearly.

### As Required

Item	Procedure
Propane System	Check for leaks and road damage.
Water and Drainage	Sanitize system.
Electrical System	Maintenance on generator per generator manual. Check and service battery(s).
Seats	Lubricate all mechanisms and inspect for proper operation.
Chassis and Components	Follow chassis lubrication and maintenance procedures.
Bearings	Repack wheel bearings yearly.
Brakes	Check operation and uneven wear.

## **Effects of Formaldehyde**

### **Formaldehyde from Building Materials**

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

Other products containing formaldehyde or urea-formaldehyde resins are some carpets, draperies, upholstery, fabrics, deodorizers, cosmetics, and permanent-press fabrics. Formaldehyde is also a by-product of combustion and is produced by cigarettes and gas appliances.

The concentration of formaldehyde in the indoor air depends upon the quantity and emission rates of all the emitting products in the structure compared to the volume of indoor air and the fresh air ventilation rate. As with other indoor pollutants, ventilation should reduce formaldehyde levels.

Limited Warranty or the Phoenix USA RV Structural Limited Warranty.

### **WARNING**

**Operating, servicing, and maintaining a passenger vehicle or recreational vehicle can expose you to chemicals including exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash hands frequently when servicing your vehicle.**

**For more information go to:**

[www.P65Warnings.ca.gov/passenger-vehicle](http://www.P65Warnings.ca.gov/passenger-vehicle)

### **WARNING**

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

### **WARNING**

**Operating, servicing, and maintaining a passenger vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.**

**For more information go to:**

[www.P65Warnings.ca.gov/passengervehicle](http://www.P65Warnings.ca.gov/passengervehicle).

#### **NOTE:**

Chemical off gassing is not a defect in your motorhome and is not covered by the Phoenix USA RV



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Some products described or displayed in this manual may be optional equipment, and not included with your coach. Any special equipment, modifications, or additions made by, or at the request of, the customer, or any subsequent owner, whether made at the factory or in the field, are not covered in this manual. We reserve the right to change the construction, or material, of any part, at any time, without incurring the obligation to install such changes on previously manufactured motorhomes.

The Owner's Manual was current at the time of printing; however, products are continually being upgraded and improved; therefore, some differences may occur between the description in this manual and the product/s in your coach. If differences do occur, follow the component manufacturer's instructions provided with your Phoenix USA RV motorhome Owner's Packet.

Revised 1/1/2021

 **WARNING**

**This vehicle is neither an off road vehicle, nor an all terrain vehicle. If equipped with 4WD, the feature provides some limited off-road traction capabilities in situations in which the driving surface is relatively level, obstruction-free, and otherwise similar to on-road driving conditions. Operating it under other than those conditions could subject the vehicle to excessive stress which might result in damage NOT ELIGIBLE FOR REPAIR UNDER WARRANTY.**