

VALENCIA

05/2006

The following information reflects product design, fabrication, and component parts at the time of printing. Four Winds International/Mandalay Luxury Division reserves the right, at anytime, to make changes in product design, material or component specifications at its sole option without notice. This includes the substitution of components of different brand or manufacturer name, which results in comparable performance.

Your actual motorhome may vary from this document as a result of optional equipment offered on this model and year of motorhome. In the case that you are not the initial retail owner of this unit, this document will not reflect modifications that may have been performed by previous owners. Photographs, line art, and diagrams contained herein may reflect both standard and optional equipment at the time of printing.

All information printed in this document is subject to change after the date of printing. As a result of product improvements, changes during model year production and/or transcription errors that may occur, information represented within the owner's manual and/or this document may not be the most current information available at the time of purchase. Please consult with your independent Valencia dealer to confirm this information.

VALENCIA LIMITED WARRANTY

WHAT IS COVERED

The Valencia, manufactured by the Mandalay Luxury Division of Four Winds International Corporation, Limited Warranty covers this recreation vehicle (hereafter "RV"), when used only for recreational travel and camping, for one (1) year, or the first fifteen thousand (15,000) miles of use, whichever occurs first. The warranty period begins on the date that the RV is delivered to the first retail owner by an independent, authorized Valencia dealer. In the event that a substantial defect in material or workmanship, attributable to Valencia, is found to exist during the warranty period, Valencia will repair or replace the defective material or workmanship, at its option, at no charge to the RV owner, in accordance with the terms, conditions and limitations of this Limited Warranty.

This Limited Warranty applies to the first retail owner and can be transferred to the second owner only. It is not transferable beyond the second owner of the RV. The second owner's warranty coverage period shall be limited to the remaining balance of warranty coverage that the first owner was entitled to under the terms of this Limited Warranty. Subsequent owners must complete the Warranty Registration Form contained in the Owner's Manual and send it to Valencia.

Valencia's obligation to repair or replace defective materials or workmanship is the sole obligation of Valencia under this Limited Warranty. Valencia reserves the right to use new or remanufactured parts of similar quality to complete any work. The RV owner's obligation to notify Valencia, or one of its authorized, independent dealers, of a claimed defect does not modify any obligation placed on the RV owner to contact Valencia directly when attempting to pursue remedies under state or federal law.

LIMITATIONS AND DISCLAIMER OF IMPLIED WARRANTIES

The following limitations and disclaimers apply to the original purchaser of the RV, any person to whom the RV is transferred and any person who is an intended or unintended user or beneficiary of the RV, and apply to all warranties set forth in this Limited Warranty

ANY IMPLIED WARRANTY ARISING BY WAY OF STATE OR FEDERAL LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS, ARE LIMITED IN DURATION TO THE LENGTH OF THIS LIMITED WARRANTY AND ARE LIMITED IN SCOPE OF COVERAGE TO THOSE PORTIONS OF THE RV COVERED BY THIS LIMITED WARRANTY. PERFORMANCE OF REPAIRS OR NEEDED ADJUSTMENTS IS THE EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY. Valencia makes no warranty of any nature beyond that contained in this Limited Warranty. No one has the authority to enlarge, amend or modify this Limited Warranty. The dealer is not Valencia's agent, but is an independent entity.

In addition, VALENCIA AND FOUR WINDS INTERNATIONAL CORPORATION SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES THAT MAY RESULT FROM BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY. THIS EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL BE INDEPENDENT OF ANY FAILURE OF THE ESSENTIAL PURPOSE OF ANY LIMITED WARRANTY, AND THIS EXCLUSION SHALL SURVIVE ANY DETERMINATION THAT THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY HAS FAILED ITS ESSENTIAL PURPOSE.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitations of incidental or consequential damages. Therefore, the above limitations may not apply to you.

LIMITED STRUCTURAL WARRANTY (36 MONTH/45,000 MILES)

Valencia by Four Winds International warrants to the first retail purchaser from an authorized dealer that the structural components of your Valencia RV will be free from substantial defects in material and workmanship for a period of thirty-six (36) months from the date of first retail purchase or for the first forty-five thousand (45,000) miles of usage, whichever comes first. This Limited Structural Warranty is only applicable to the first retail owner.

For the purpose of this Limited Warranty, "structural components" shall be limited to the framework structure of the coach sidewalls, front and back walls, roof, and floor.

Damage caused by misuse, abuse, collision, alterations, failure to properly maintain the exterior sealants, cosmetic defects, paint adhesion, separation due to water infiltration caused by lack of proper maintenance, improper repairs, and normal deterioration is not covered by this 36 month/45,000 mile Limited Warranty. Normal maintenance such as periodic resealing of the windows, molding, door, vents, awning, and other exterior mounted components are excluded from this coverage.

Valencia's obligation to repair or replace defective materials or workmanship is the sole obligation of Valencia under this Limited Structural Warranty. Valencia reserves the right to use new or remanufactured parts of similar quality to complete any work. Valencia reserves the right to perform appropriate structural repairs at the Indiana factory service center under the terms of this Limited Structural Warranty.

HOW TO GET SERVICE

To obtain warranty service, the owner must do all of the following:

- 1) Complete and return the Owner Registration Card within ten (10) days of purchase;
- 2) Notify Valencia, or one of its authorized, independent dealers, in writing, of any claimed defect within the warranty coverage period;
- 3) Provide the notification mentioned in (2), above, within ten (10) days of discovery of the defect; and
- 4) Promptly return the RV to an authorized dealer for repairs.

For warranty service, simply contact one of Valencia's independent, authorized service centers for an appointment, and then deliver your RV to the service center on the specified appointment date. If you need assistance, contact Valencia at:

Mandalay Luxury Division
PO Box 1486, Elkhart, Indiana 46515
Phone: (866) 919-4444 • Fax: (574) 522-4276 • Website: www.mandalaycoach.com

If two (2) or more service attempts have been made to correct any covered defect that you believe impairs the value, use or safety of the RV, you must, to the extent permitted by law, notify Valencia directly, in writing, of the unsuccessful repair of the alleged defect so that Valencia can become directly involved in making sure that you are provided service pursuant to the terms of this Limited Warranty.

Because Valencia does not control the scheduling of service work at any service center you may encounter delays in scheduling and/or the completion of work. All costs associated with transporting the RV for any warranty service shall be the sole responsibility of the RV owner.

WHAT IS NOT COVERED

This Limited Warranty does not cover any material, component, or part of the RV that is warranted by another entity, including by way of example, but not limited to the automotive chassis and power train, including the engine, drive train, steering, handling, braking, wheel balance, muffler, tires, tubes, batteries and gauges, generator, hydraulic jacks, inverter, range, carbon monoxide detector, furnace, roof air conditioner, refrigerator, audio/video equipment and microwave.

Minor adjustments such as adjustments to the interior or exterior doors, drawers, latches, etc. will be performed by the dealer during the first 90 days of warranty coverage. Thereafter, such adjustments are the owners' responsibility as normal maintenance.

In addition, by way of example only, this Limited Warranty does not cover any of the following: items that are added or changed after the RV leaves the Valencia manufacturing facility; any RV used for rental or other commercial purposes (Note: It shall be assumed the RV has been used for rental or business purposes if the RV is purchased or registered in a company name, or if the RV owner claims a tax benefit on a tax form); normal wear, tear or usage, such as fading or discoloration of fabrics or the effects of condensation inside the RV; items that are working as designed but you are unhappy with because of the design; problems related to misuse, including failure to maintain RV in accordance with the owner's manual, or failure to perform other routine maintenance; damage due to accident whether or not foreseeable, including any acts of weather, damage, or corrosion due to environment, rust, theft, vandalism, fire, or other intervening acts not attributable to Valencia; cost related to transportation, lodging, loss or damage to personal property, loss of owner's product, inconvenience, loss of income, rental vehicles; glass breakage; damage from misuse of equipment used for purposes other than intended design; damage resulting from tire wear or tire failure; defacing, scratches, dents, chips on any surface or fabric of the RV; damage caused by off road use, overloading the RV or alteration of the RV, or any of its components. Parts and labor for expendable service maintenance items including, but not limited to: wiper blades, bulbs, fluids and filters are excluded from warranty coverage.

It is the owner's responsibility to take any necessary preventative maintenance measures, as described in the care and maintenance section of the Valencia owners' manual, including periodic maintenance of exterior caulking and sealers. It is the responsibility of the owner to take necessary measures to prevent secondary damage from rainwater, plumbing leaks, condensation, and the natural accumulation of moisture in your recreation vehicle. Failure to do so may result in stains, damage, separation, and formation of mold to the floor, walls, upholstery, carpeting, furniture, drapes and other components. Mold is a natural growth given certain environmental conditions and is not covered by the terms and conditions of the Valencia Limited Warranty.

LEGAL REMEDIES/ARBITRATION

Four Winds International Corporation. participates in the Consumer Arbitration Program for Recreation Vehicles (CAP RV). This third party dispute resolution program is available, at no charge to you, to settle unresolved warranty disputes for recreation vehicles. This dispute resolution program reviews eligible product and service related complaints involving warranty covered components.

To find out more about the program, or to request an application/brochure, please call the Arbitration Administration office toll free at (800) 279 5343.

For recreation vehicles purchased in the State of California: The CAP RV program operates as a certified mechanism under the review of the California Arbitration Certification Program. You must utilize the arbitration program before claiming rights conferred by 15 USC section 2310 (Magnuson-Moss Warranty Act) or Civil Code section 1793.22(b) (Song Beverly Warranty Act). You are not required to use the program if you choose to seek redress by pursuing rights and remedies not created by those laws.

Any action to enforce any portion of this express, Limited Warranty, or any implied warranty, shall be commenced within one (1) year after expiration of the warranty coverage period designated above or as required by law. Any performance of repairs shall not suspend this one year limitation period from expiring. Any performance of repairs after the warranty coverage period has expired, or performance of repairs regarding any thing excluded from coverage under this Limited Warranty shall be considered goodwill repairs, and they will not alter the express terms of this Limited Warranty or extend the warranty coverage period or this limitation period. In addition, this warranty is not intended to extend to future performance, and nothing in this warranty, or any action of Valencia, shall be interpreted as an extension of the warranty or this limitation period.

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

Four Winds International Corporation
PO Box 1486, Elkhart, Indiana 46515
Phone: (574) 266-1111 • Fax: (574) 522-4276 • Website: www.fourwinds-rv.com

05/06 TC/JG

05/2006 TC/JG

**COMPLETE THIS REGISTRATION CARD WITH THE SELLING DEALER AND RETURN WITHIN
10 (TEN) DAYS OF THE PURCHASE DATE**

VALENCIA OWNER REGISTRATION CARD					
Date of Purchase		Valencia Serial Number		Model	
				Year	
Chassis Serial Number		Chassis Manufacturer		Mileage	
OWNER Mr. <input type="checkbox"/> Mrs. <input type="checkbox"/> Ms. <input type="checkbox"/>			DEALER		
Owner's Name (Last, First Middle)			Selling Dealer		
Address (Street or P.O. Box)			Address (Street or P.O. Box)		
City State Zip			City State Zip		
Country Telephone			Country Telephone		
Owner's Signature (MUST BE SIGNED)			Please type or print and mail this form within 10 (ten) days of purchase to: Mandalay Luxury Division P.O. Box 1486 Elkhart, Indiana 46515		

**COMPLETE THIS REGISTRATION CARD WITH THE SELLING DEALER AND KEEP IT FOR
REFERENCE WHEN WARRANTY SERVICE IS REQUIRED**

VALENCIA OWNER REGISTRATION CARD

Date of Purchase	Valencia Serial Number	Model	Year
Chassis Serial Number	Chassis Manufacturer	Mileage	

OWNER Mr. ☐ Mrs. ☐ Ms. ☐

DEALER

Owner's Name (Last, First Middle)

Selling Dealer

Address (Street or P.O. Box)

Address (Street or P.O. Box)

City State Zip

City State Zip

Country Telephone

Country Telephone

VALENCIA LIMITED WARRANTY TRANSFER APPLICATION

Date of Purchase Valencia Serial Number Model Year

Chassis Serial Number Chassis Manufacturer Mileage at Time of Transfer

PRIOR OWNER Mr. ☐ Mrs. ☐ Ms. ☐

NEW OWNER Mr. ☐ Mrs. ☐ Ms. ☐

Name (Last, First Middle)

Name (Last, First Middle)

Address (Street or P.O. Box)

Address (Street or P.O. Box)

City State Zip

City State Zip

Country Telephone

Country Telephone

New Owner's Signature (MUST BE SIGNED)

Selling Owner's Signature (MUST BE SIGNED)

DEALER INFORMATION

Name (Last, First Middle)

Address (Street or P.O. Box)

City State Zip

Country Telephone

Selling Dealer Signature (MUST BE SIGNED)

Mail Valencia Limited Warranty
Transfer Application to:

Mandalay Luxury Division
P.O. Box 1486
Elkhart, Indiana 46515

TERMS & REPRESENTATIONS

By your signature(s) on this form, and in order to induce Four Winds International/Mandalay Luxury Division to transfer the Limited Warranty, you represent the following:

That you have received and read a copy of the Valencia Limited Warranty.

All information provided by you on this application is true and correct.

You understand that you are purchasing a pre-owned recreation vehicle and Four Winds International/Mandalay Luxury Division does not make any representation as to its present condition.

ROADSIDE ASSISTANCE PROGRAM

A special peace-of-mind roadside assistance plan is provided free of charge by Mandalay Luxury Division for the first year of ownership. (Rental and lease back vehicles are excluded from this program.) Some companies will tell you customer satisfaction is a nine to five job, we know better!

When you take delivery of your new Valencia motorhome it's just the beginning of our exclusive around the clock Customer Care Roadside Assistance Program. Our extensive support program provides complete and fully paid roadside assistance, emergency road service (just show your card and go) and special support benefits that follow you wherever your travels take you.

Mandalay Luxury Division has teamed up with Coach Net, the largest RV emergency roadside service provider in the country, to give you immediate access to fast, dependable service when and where you need it. *To request service contact Coach Net at: 888-890-1738.*

EMERGENCY ROADSIDE ASSISTANCE

Simply show your Thor Industries Customer Care Card for payment of covered benefits with no out-of-pocket expense throughout the U.S. and Canada. (Includes one additional family car!)

24-HOUR TOLL FREE EMERGENCY/MESSAGE SERVICE

In the event of an emergency, stay in touch with family and friends with no cost emergency message service. Getting in an accident while traveling in your RV means you're stuck. Coach Net takes care of you by paying for a car rental, meals and lodging. Even helping with a plane ticket home!

FREE CUSTOM TRIP ROUTING AND FULL COLOR MAP SERVICE

Member Services provides trip routing with detailed full color maps.

TOLL FREE NATIONWIDE SERVICE APPOINTMENT ASSISTANCE

A "no-hassle" way of arranging a service appointment when and where you travel. We make an appointment for you; give you directions and the time that fits your schedule best. Want an appointment in a town you'll be visiting next week? We're just a phone call away!

SERVICE ASSISTANCE

Over 6,800 qualified service agencies throughout North America. A simple phone call gives you expert direction on where the closest qualified service agency is located. Free dispatch of on-site mechanical service in the event of a breakdown

- Free jump starts
- Free tire changes
- Free fuel delivery
- Free lock-out service

SERVICE NUMBERS FOR OWNER'S REFERENCE

For further details and instructions on how to access your Customer Care Benefits, please refer to your Comprehensive Member Benefit Guide which you will receive in the mail within 30 days from the date your registration card is received by Mandalay Luxury Division, or call (888) 890-1738. You may continue your Thor Industries Customer Care Benefits in following years at a special discount rate, as a continued benefit of the Thor Customer Satisfaction Program.

NOTE: The Customer Care Roadside Assistance Program is not available on rental vehicles or lease back vehicles.

INTRODUCTION

It's exciting taking ownership of a new purchase as substantial and full of nearly unlimited possibilities for the future as a motorhome. Thank you for choosing a Mandalay Luxury Division product.

We take your choice seriously. That's why we have engineered this vehicle to meet and, in many cases, exceed federal and state regulations and requirements for vehicles of this type. Our primary concern has been to provide our customers with a beautiful motorhome that is not only dependable and cost effective, but also safe.

To keep this vehicle at peak performance and to obtain the maximum pleasure from its use over an extended period, the owner must take a personal interest in its care and operation. Therefore, before operating it, we suggest that you review the entire contents of this manual.

The Owners Manual outlines the operation of the motorhomes various systems and offers many helpful hints that will enable you to obtain the most pleasure from this motorhome. Review both this manual and the chassis manufacturer's owner's manual with the dealer. Be sure to ask them any questions you have at that time. Also make sure to read all warranty and registration information carefully. Read all component manufacturers' owner's manuals, and validate any individual warranties by completing and mailing individual warranty cards as required. Refer to the chassis owner's manual supplied by the chassis manufacture for complete information on the care and maintenance of the chassis.

NOTE: Complete the Warranty Registration Card in this manual and return to us within 10 days from the date of purchase.

Always keep this owners manual with the motorhome for easy reference, making sure to observe all notes and warnings associated with the use of this motorhome.

The motorhome is thoroughly inspected prior to shipment to the dealer. However, to insure your complete satisfaction, the dealer must also perform an inspection of various components and operations based on a pre-delivery inspection list. Take this opportunity to cover the operation of all components of the motorhome with the dealer. This will help familiarize you with the motorhome and its operation, as well as assure you that the motorhome is in excellent working condition.

A road test by the dealer should be included as part of the pre-delivery inspection. The dealer can then check for and correct any steering problems before you take delivery of the motorhome. After this road test has been completed, front end alignment and/or vibrations will not be covered as part of the new vehicle warranty.

This motorhome has been designed for short term recreational use. It is not intended to be used as a permanent dwelling or as a rental vehicle. If you intend to use the motorhome as a permanent dwelling or rental vehicle, it could cause the carpet, drapes, upholstery, and interior surfaces to deteriorate prematurely. This premature wear caused by long term or permanent residency may, under the terms of the new vehicle warranty, be considered abnormal and abusive and could reduce your warranty coverage.

Should a problem develop for which you need assistance, contact your dealer. If the problem is automotive, the motorhome should be taken either to a chassis manufacturer service center or dealer. If the problem is with an appliance, check the appliance manufacture's information supplied with the motorhome for information regarding warranty work and/or location of appliance service centers.

If, when traveling, you experience a breakdown or problem while the motorhome is under warranty, and an authorized service center or dealer is not available, if possible, contact the dealer you purchased the motorhome from, or a Mandalay Luxury Division Technical Service Advisor at (866) 919-4444 before having any service work performed. By notifying Mandalay Luxury Division, you will be aware of what is covered under the terms of the warranty, as well as informing Mandalay Luxury Division of your problem.

NOTE: Any parts that require replacement, that are covered under the terms of the warranty should be retained and returned to your dealer along with your invoice. This way, they are able to check what has occurred, and also make sure you are properly reimbursed.

Repairs made without prior authorization may be subject to denial or partial reimbursement. Modifications made to the vehicle without proper authorization can result in reduction or loss of warranty coverage. Please make sure to contact your dealer before making such changes.

TABLE OF CONTENTS

VALENCIA LIMITED WARRANTY

WHAT IS COVERED	I
LIMITATIONS AND DISCLAIMER OF IMPLIED WARRANTIES	I
LIMITED STRUCTURAL WARRANTY (36 MONTH/45,000 MILES)	II
HOW TO GET SERVICE	II
WHAT IS NOT COVERED	III
LEGAL REMEDIES/ARBITRATION	IV
VALENCIA OWNER REGISTRATION CARD	V
VALENCIA OWNER REGISTRATION CARD (CUSTOMER COPY)	VII
VALENCIA LIMITED WARRANTY TRANSFER APPLICATION	IX
ROADSIDE ASSISTANCE PROGRAM	XI
INTRODUCTION	XIII

IDENTIFICATION & SAFETY

REPORTING SAFETY DEFECTS	1-1
MOTORHOME SERIAL NUMBER DECAL & DATA PLATES	1-1
MANUFACTURER'S WARRANTIES	1-2
SAFETY REGULATIONS FOR LP GAS SYSTEMS & APPLIANCES	1-3
FIRE SAFETY	1-4
FIRE EXTINGUISHER	1-5
CARBON MONOXIDE & SMOKE ALARM	1-6
LP GAS DETECTOR	1-9
SEAT BELTS	1-12
EGRESS WINDOW	1-14

CHASSIS OPERATIONS & PROCEDURES

NEW VEHICLE BREAK IN	2-1
BRAKES	2-1
WHEELS & TIRES	2-2
DAMAGED OR FLAT TIRES	2-2
WHEEL NUT TORQUES	2-3
WHEEL & TIRE BALANCING	2-3
FRONT SUSPENSION & ALIGNMENT	2-3
POWER PLANT & DRIVE TRAIN	2-4
ENGINE COOLING SYSTEM	2-4
ENGINE ACCESS	2-4
PROPER LOADING & WEIGHT DISTRIBUTION	2-5
WEIGHT INFORMATION LABEL	2-6
COMPUTING THE LOAD & LOAD DISTRIBUTION	2-7
DRIVING	2-8
HILLS, DALES & MAKING THE GRADE	2-9
TRAILER TOWING	2-9
TOWING PROCEDURES	2-10
EMERGENCY STOPPING	2-11

FUELING THE MOTORHOME	2-12
TRAVEL PREPARATION	2-12
MOTORHOME SYSTEM CHECK	2-13
FIRST SHORT TRIPS	2-14
 DASH CONTROLS & INSTRUMENT PANELS	
TRANSMISSION CONTROL PANEL	3-1
SHIFTER PANEL SWITCHES	3-3
DASH PANEL SWITCHES & CONTROLS	3-3
PASSENGER ARMREST SWITCHES	3-5
INSTRUMENT PANEL INDICATOR LIGHTS	3-6
TURN SIGNAL/LANE CHANGE/HIGH-LOW BEAM/CRUISE CONTROL LEVER	3-7
STEERING WHEEL ADJUSTMENT	3-8
REAR VISION SYSTEM	3-9
AUTOMATIC HYDRAULIC POWER LEVELERS	3-10
 INTERIOR CONTROLS & OPERATIONS	
MONITOR PANEL	4-1
SLIDEOUTS	4-3
WINDOWS	4-6
DOORS, DRAWERS & STORAGE COMPARTMENTS	4-6
SEATING, TABLES, & ADDITIONAL BEDS	4-7
ENTERTAINMENT SYSTEM	4-9
TELEVISIONS	4-9
VIDEO SELECTOR BOX	4-10
DVD/RECEIVER	4-11
TELEVISION ANTENNA	4-12
 EXTERIOR OPERATIONS	
ENTRY DOOR	5-1
POWER ENTRY STEP	5-2
STORAGE COMPARTMENTS	5-2
REAR LADDER/ROOF ACCESS	5-3
AWNINGS	5-4
 HEATING & AIR CONDITIONING	
DASH PANEL HEATER/AIR CONDITIONER	6-1
ROOF MOUNTED AIR CONDITIONERS	6-3
FURNACE	6-4
CEILING VENTS	6-4
 ELECTRICAL SYSTEMS	
SHORE CORD	7-1
CIRCUIT BREAKERS	7-2
GROUND FAULT CIRCUIT INTERRUPTER	7-3
POWER CONVERTER	7-4
POWER INVERTER (OPTIONAL)	7-5
ENTERTAINMENT INVERTER (OPTIONAL)	7-7
BATTERY ISOLATOR CONTROLLER	7-9
BATTERY DISCONNECT SWITCHES	7-9

BATTERY MAINTENANCE	7-10
BATTERY SAFETY	7-11
BATTERY CHARGING	7-11
12 VOLT FUSES	7-12
FUSE PANELS	7-13
GENERATOR	7-16

WATER SYSTEMS

FRESH WATER SYSTEM	8-1
WASTE WATER SYSTEM	8-4
TOILET	8-6
WATER SYSTEM WINTERIZATION	8-7
WATER SYSTEM MAINTENANCE & TROUBLESHOOTING	8-8
TANK CAPACITIES	8-8
SYSTEMS COMPARTMENT	8-9

LP GAS SYSTEMS

FILLING THE LP GAS TANK	9-2
LP GAS REGULATOR	9-3
HOSES, PIPES, TUBES & FITTINGS	9-5
LP GAS DETECTOR	9-5
LP GAS SAFETY PRECAUTIONS	9-9

CARE & MAINTENANCE

EXTERIOR PAINT	10-1
SEALS & ADHESIVES	10-2
FRAME	10-3
EXTRUSIONS & ALUMINUM SURFACES	10-4
TIRES & RIMS	10-4
TV ANTENNA	10-4
EXTERIOR LIGHTS	10-5
APPLIANCES, SINKS & COUNTERTOPS	10-5
PRE-FINISHED PANELS & WOOD SURFACES	10-6
WATER SYSTEM	10-6
ELECTRICAL SYSTEM	10-6
ROOF VENTS	10-6
ABS PLASTIC	10-7
WINTER PRECAUTIONS	10-7
STORAGE PREPARATION	10-8
MOLD	10-10
PERIODIC MAINTENANCE CHART	10-11
VENDOR CONTACT INFORMATION	10-12

IDENTIFICATION & SAFETY

REPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect that 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 the manufacturer.

To contact NHTSA, you may either call the Auto Safety Hot-line toll free at (888)-327-4236 or go to their website at www.nhtsa.dot.gov. You can also obtain other information about motor vehicle safety from these sources.

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 the manufacturer.

MOTORHOME SERIAL NUMBER DECAL & DATA PLATES

The motorhome serial number label is mounted on the inside wall next to the driver seat. Refer to the chassis owner's manual for the location of the chassis vehicle identification number on all motorized recreation vehicles.

IMPORTANT: Always give model, year, and the V.I.N. number information when ordering parts. Also, we recommend that you keep a copy of this information separate from the motorhome in the event that theft or vandalism requires you to supply a copy to authorities.

Decal and data plates are used throughout the motorhome to aid in its safe and efficient operation; others give service instructions. Read all decal, data, and instruction plates before operating the motorhome. When any decal, data, or instruction plate is damaged, painted over, removed, etc. it should be replaced.

MANUFACTURED BY: FOUR WINDS INTERNATIONAL INC. VEH. MFG. BY:		MODEL: SERIAL:		Offline: Received:	
<u>KG (LB)</u>	<u>TIRES</u>	<u>RIMS</u>	<u>COLD INFLATION PRESSURE</u>	<u>SINGLE</u>	<u>DUAL</u>
GVWR:					
GAWR FRONT:				<input checked="" type="checkbox"/>	
GAWR INTERM:				<input type="checkbox"/>	<input type="checkbox"/>
GAWR REAR:				<input type="checkbox"/>	<input checked="" type="checkbox"/>

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT IN:
V.I.N.: TYPE: MULTI PASSENGER VEHICLE

MANUFACTURER'S WARRANTIES

The following list of components has been compiled to help you know which products within the motorhome may have their own warranties. If you have any of these components within the motorhome, be sure to check the literature supplied by the manufacturer to see if they require that you register your purchase with them to validate their warranty. We recommend that you send the various warranty registration cards immediately before any time constraints on registration expire. Manufacturers' literature is contained in a separate packet furnished with the owner's manual on newly delivered units. Only those products and options which are within the motorhome will be included in this packet. Review the literature with your dealer during the pre-delivery inspection. Any shortages of literature should be reported to the dealer at this time.

APPLIANCE S		
Air Conditioner	Refrigerator	Ice Maker
Furnace	Water Heater	Home Theater System
Range	Televisions	DVD Player
Range Hood	Awnings	Washer/Dryer
Microwave Oven	Radio	Satellite System

ELECTRICAL		
120/12 volt Inverter	LP Gas Detector	Ceramic Space Heater
Generator	Battery	Converter
GFCI Recepts	Smoke Detector	
Fire & CO Detector		

WATER & DRAINAGE		
Toilet	Water Filter	
Water Pump	Water Faucets	

LP GAS		
Regulator	LP Gas Detector	
Gas Tank		

CHASSIS		
Air Conditioner	Back-up Monitor	Hydraulic Pumps
Cruise Control	Leveling Jacks	Batteries

SAFETY REGULATIONS FOR LP GAS SYSTEMS & APPLIANCES

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



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

WARNING: Cooking appliances need fresh air for safe operation. Before operation: Open overhead vent or turn the exhaust fan ON, and open windows.

This warning label has been located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen supply is limited due to the size of the motorhome, and proper ventilation when using the cooking appliances will avoid dangers of asphyxiation.

Over-filling the LP Gas container can result in uncontrolled gas flow which can cause fire or explosion. A properly filled container will contain approximately 80% of its volume as liquid LP Gas. An 80% automatic shut-off valve is installed on the LP Gas tank which will automatically prevent further filling when the gas volume has reached 80% of tank capacity.



CAUTION: This tank is equipped with an automatic valve designed to close at 80% liquid full. Always open 20% fixed liquid level bleeder gauge while filling. Stop filling if liquid appears before valve shuts off.



WARNING: All LP Gas is contained under pressure. Due to the dangerous potential of any compressed gas, it is mandatory that the following requirements for the use of this tank be followed: Tanks are to be installed, fueled and maintained in accordance with the state and local codes, rules, regulations or laws and in accordance with the NFPA Pamphlet 58, division IV.



WARNING: Only personnel trained in the handling of LP Gas may fill, test or repair the LP Gas system.



WARNING: *If you smell gas, extinguish any open flames, pilot lights, and all smoking materials. DO NOT touch electrical switches. Shut off the gas supply at the tank valve(s) or gas supply connection. Open doors and other ventilation openings (do not use the range hood). Leave the area until the odor clears.*

Have the system checked and leakage source corrected before using again. LP Gas regulators must always be installed with the diaphragm vent facing downward. Regulators that are not in compartments have been equipped with a protective cover. Make sure that the regulator vent faces downward and the cover is kept in place to minimize vent blockage which could result in excessive gas pressure causing fire or explosion.



WARNING: *Portable fuel burning equipment including wood or charcoal burning grills and stoves should not be used inside the motorhome because they may cause fire or asphyxiation.*

FIRE SAFETY

Fire safety is an important part of owning a motorhome. Make sure that everyone traveling in the motorhome is familiar with the location of exits, including emergency exit windows should an emergency arise. The following basic rules of fire prevention can help eliminate the possibility of a fire.

- Never store flammable liquids within the motorhome
- Keep cooking surfaces clean
- Never clean with a flammable liquid
- Never leave cooking food unattended
- Never smoke in bed, and always use an ashtray
- Never allow children to play with LP Gas or electrical equipment
- Never use an open flame as a flashlight
- Always repair faulty or damaged wiring and electrical components
- Never overload electrical circuits
- Locate and repair LP Gas leaks immediately
- Don't allow rubbish to accumulate
- Spray fabrics annually with a flame retardant

If a fire does start, make sure to follow these basic rules of safety:

1. Have everyone evacuate the motorhome as quickly as possible
2. After everyone is clear, check the fire to see if you can attempt to put it out. If it is large, or the fire is fuel fed, get clear of the motorhome and have the fire department handle the emergency.
3. DO NOT attempt to use water to put out the fire. Water can spread some types of fire, and electrocution is possible with an electrical fire.

FIRE EXTINGUISHER

Underwriter Laboratories classify fires into three types:

Class A

Fires in wood, paper, fabric, rubber, and certain plastics.

Class B

Flammable liquids such as grease, cooking oils, gasoline, or kerosene.

Class C

Electrical fires started from live electrical wires, from short circuits motors or switches.

The fire extinguisher, which is located by the entry door of the motorhome, is a chemical type suitable for extinguishing small fires of the class B or C type. Extinguishers are designed to put out fires in the initial stage, not when it is blazing out of control. If a fire cannot be approached within 10', the extinguisher will not be effective.

To fight a fire with an extinguisher, first remove the tamper tape which covers the discharge push button. Hold it upright and stand six to ten feet from the fire with a clear path to an exit. Press the button down all the way, aimed at the base of the fire and spray with quick motions from side to side.

Avoid inhaling the dry chemicals. Although non toxic, they could cause temporary irritation and vomiting. When the fire is out, clean up the area as soon as possible. The dry chemicals are non-corrosive, but some residue may cause surface damage if left too long.

In the case of an electrical fire, disconnect the battery and throw off the main circuit in the unit. It is important that everyone knows where to find the main circuit and how it operates. If the shoreline power cord is connected, disconnect it.

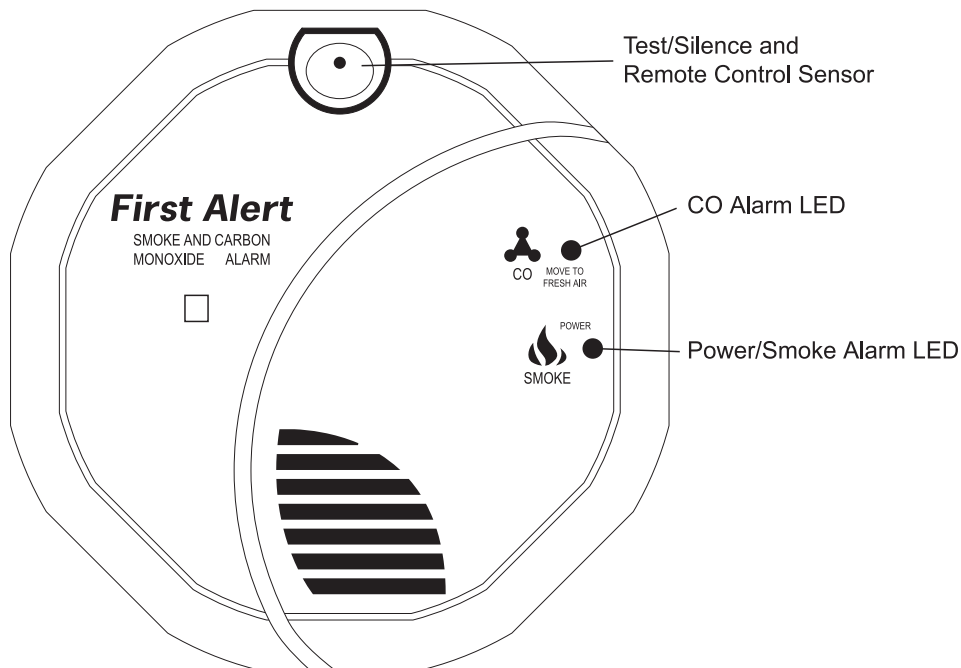
To keep the fire extinguisher in proper operating conditions:

1. Check Pressure monthly or more often. Check the nozzle for obstruction. Press the green pin below the nozzle. If it returns and sticks out from the extinguisher, it is operable. If the pin does not come back, discard extinguisher. Refillable models have a pressure gauge to check.
2. Check the Tamper Tape to make sure it is intact. DO NOT test the extinguisher, as even a partial discharge may cause leakage.
3. When checking the extinguisher for pressure, enter the date checked on the **Inspection Tag** furnished with the motorhome. Regular inspections will help insure the condition.
4. Agitate Dry Chemical every six (6) months, by inverting the bottle and lightly shaking for several seconds. This will help prevent the dry chemical from settling due to in-motion vibrations.

CARBON MONOXIDE & SMOKE ALARM



WARNING: This Smoke/Carbon Monoxide Alarm cannot operate without two, AA batteries. Removing the batteries for any reason, or failing to replace the batteries at the end of their service life, removes your protection. Refer to the manufacturers owner's manual for proper replacement batteries.



This combination Smoke/Carbon Monoxide Alarm has two separate alarms. The CO alarm is not designed to detect fire or any other gas. It will only indicate the presence of CO gas at the sensor. CO may be present in other areas. The smoke Alarm will only indicate the presence of smoke that reaches the sensor. The Smoke Alarm is not designed to sense gas, heat or flames.

NOTE: During normal operations the Power/Smoke LED flashes Green once per minute, and the CO LED is off.

PROGRAMMING THE ALARM

Refer to the Combination Carbon Monoxide & Smoke Alarm User's Manual within your Owner's Packet for detailed setup information.

TESTING PROCEDURE



WARNING: Never use an open flame of any kind to test this unit. The built-in test switch accurately tests the unit's operation as required by Underwriters Laboratories, Inc. (UL).



WARNING: DO NOT stand close to the alarm when the horn is sounding. Exposure at close range may be harmful to your hearing. When testing, step away when the horn starts sounding.



WARNING: *It is important to test this unit every week to ensure it is working properly. Using the test button is the recommended way to test this Smoke/CO Alarm.*

You can test this Smoke/CO Alarm two ways:

1. Manually: Press and hold the Test/Silence button on the alarm cover until alarm voice says "Testing" (typically 3-5 seconds).
2. Using Your Remote Control: Standing no further than 20 feet (6 meters) away from the Smoke/CO Alarm, aim the IR remote at the alarm and press the CHANNEL or VOLUME button until alarm voice says "Testing".

If the alarm does not respond to your remote control, there may be an obstruction between you and the alarm, you may be standing too far away, or your remote control may not be compatible.

During testing, you will see and hear the following sequence.

- The alarm voice will say "Testing". The horn will sound 3 beeps, pause, 3 beeps. The alarm voice will say "Warning, evacuate smoke in location. Evacuate." The Power/Smoke LED flashes Red and the CO LED will be off.
- Next the Horn will sound 4 beeps, pause, 4 beeps. The alarm voice will say "Warning, evacuate carbon monoxide in location. Evacuate". The Power/Smoke LED will be off and the CO LED flashes red.

Note: If the unit does not alarm, make sure the batteries are correctly installed, and test again. If the unit still does not alarm, replace it immediately.

CARBON MONOXIDE SAFETY PRECAUTIONS

Carbon Monoxide cannot be seen or smelled and can kill you. If alarm sounds: Turn off appliances, as well as other sources of combustion at once (furnace, water heater, stove, motorhome, automobile, etc.) and call the fire department. Get fresh air into the premises or vehicle. Have the problem corrected before starting any appliances or the vehicle.

Never run the engine unless you are sure that exhaust gases will be safely dispersed into the atmosphere. Always be sure that tail pipes remain unblocked and windows near the exhaust are closed.



WARNING: *DO NOT alter or modify any component of the exhaust system at any time. Inspect the exhaust system at regular intervals for damage. If you suspect or locate damage to the system, have it repaired immediately.*



WARNING: Never sleep while the engine is running. Be aware of carbon monoxide poisoning and its symptoms: Dizziness, Severe Headache, Vomiting, Weakness, Sleepiness, Muscular Twitching, and Throbbing in Temples. If anyone in the motorhome experiences any of these symptoms, shut off the engine, and immediately go outside into fresh air. Get medical attention as soon as possible.

MAINTENANCE

The following maintenance steps should be taken to ensure proper function of the detector.

- Test the detector at least once per week.
- Clean the detector at least once a month; gently vacuum the outside of the detector using the vacuums soft brush attachment.
- If detector becomes contaminated by excessive dirt, dust and/or grime, and cannot be cleaned to avoid unwanted alarms, replace the unit immediately.



WARNING: Never use water, cleaners or solvents to clean the detector.

NOTE: For battery maintenance and replacement procedures, refer to the manufacturer's owner's manual.

LP GAS DETECTOR

The LP Gas Leak Detector is powered at all times when the coach battery disconnect switch is in the ON position. When power is supplied to the detector the green indicator light will illuminate. After 60 seconds, the detector will begin monitoring the air in the motorhome for combustible vapors. The propane you use to cook, refrigerate, and heat is combustible. Should a leak occur, the detector will produce a pulsating alert sound when the gas reaches the detector. This alert will continue to sound until the gas has dissipated or until the reset button is pressed. When the alert sounds, open all doors and major windows to air out the motorhome and turn the gas off at the tank. Do not reenter the motorhome until the alert stops sounding. If the alert sounds a second time after the gas is turned back on, leave the gas off and have a qualified LP Gas Dealer or RV Service Center make the necessary repairs. The reset button only stops the alert from sounding for 60 seconds. This device is intended for detection of LP Gas ONLY.

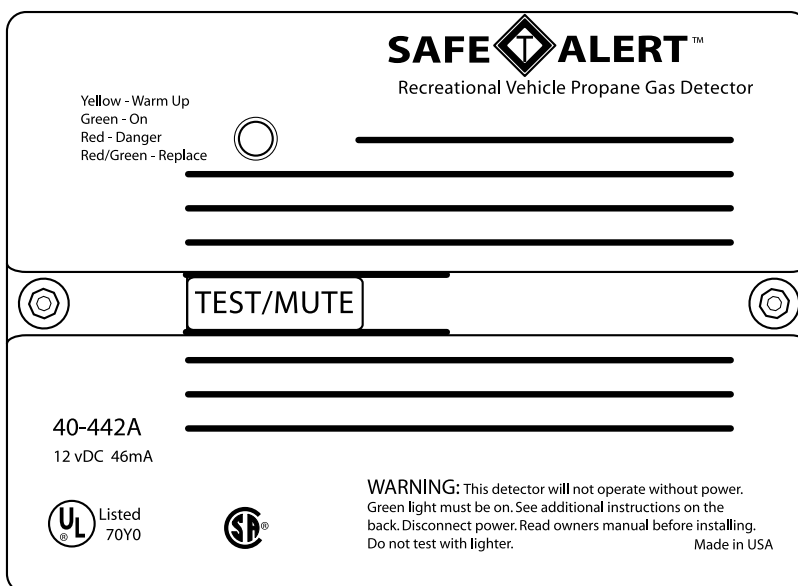
HOW TO TEST

Simply press the TEST switch any time during the warm-up cycle or while in normal operation. The LED should flash red and the alarm should sound. Release the switch. This is the only way you should test your detector. The test feature checks the full operation of the detector. If this detector does not test properly return it immediately for repair or replacement.



WARNING: Do not use a cigarette lighter to test the alarm.

NOTE: This test procedure should be repeated every week or every time the motorhome is taken on a trip, whichever occurs first. Call the detector manufacturer, if you have any questions about the LP Gas Detector.



CHECKING THE LP GAS SYSTEM FOR LEAKS

Road vibration can loosen LP Gas fittings. It is important to check the LP system for leaks at least every 5,000 miles, and whenever the tank is filled. It is also a good idea to have the entire LP Gas system checked annually by a qualified LP Gas service representative.

Use the following steps when checking the system for leaks:

1. Open all the windows and vents.
2. Open the gas tank service valve.
3. Use non-ammoniate, non-chlorinated soap solution, or an approved leak detection solution on all line connections (ammoniate soap solutions can cause cracking on copper or brass lines and fittings).
4. If a leak is detected, tighten the connection with two open end wrenches until bubbling stops. DO NOT over tighten, or use excessive force. If the leak continues, contact the recreation vehicle dealer, or a qualified LP Gas service representative to have an 11" Water Column Test performed.



WARNING: *Never check for leaks with an open flame. The scent of LP Gas (a garlic-like odor) is actually ethyl mercaptan, an additive that allows you to detect the presence of a leak, since LP Gas is naturally odorless. Do not rely upon being able to detect the smell of the gas, as the odor may fade.*

ABOUT THE LP GAS DETECTOR

Liquid Propane Gas (LP Gas) is heavier than air and will settle to the lowest point which is generally the floor of the coach. The detector is also sensitive to other fumes such as hair spray of which most contain butane as the propellant. Butane, like propane, is heavier than air and will settle to the floor level where it will be detected. When this occurs, press the reset button to stop the alert sound for 60 seconds.

Other combustibles which will be detected include alcohol, liquor, deodorants, colognes, perfumes, wine, adhesives, lacquer, kerosene, gasoline, glues, most of all cleaning agents and the propellant's of aerosol cans. Most are lighter than air in their vapor state and will only be detected when the coach is closed up. Glues and adhesives may exhaust hydrocarbon vapors for months after they are applied. They are easily activated by high temperatures.

The LP Gas Detector is powered by the motorhome coach batteries and/or the inverter. It draws less current than drawn by one instrument panel lamp. The detector will operate properly until the battery is drained down to 10 volts (a low battery condition is 10.4 volts). If the power source (battery and/or inverter) is disconnected, or if the power is otherwise interrupted, the detector will not operate.

The LP Gas Detector has a self check circuit which runs at all times when the detector is powered. In the event that the circuitry fails, a failure alarm will sound. It is a continuous series of short beep tones between long intervals and is distinctively different from the alert sound.

MOST COMMON CAUSES OF APPARENT MALFUNCTION

- **New Coach Odor:** The glues and other materials used in manufacturing the coach produce vapors which may be detected when the coach is closed up on a warm day. Air out the coach thoroughly.
- **Keeps Beeping:** The gas detector beeps about once every minute, even when it is turned off. The problem is a weak battery in the smoke detector which causes the smoke detector to produce short beeps which sound similar to the alert sound of the LP Gas Detector. This is a high pitch tone and bounces off the walls, making its location very hard to pinpoint. If the sound is not coming from the LP Gas Detector identify the source and refer to the sources section in this manual for means of repair.
- **Hair Spray Triggers the Detector:** Most aerosol hair sprays use butane gas as the propellant. Butane, like propane, is heavier than air and will settle to the floor level where it will be detected. The detector is doing its job as butane is combustible.
- **Other Gases:** Other gases which can cause the detector to respond with an alert include the vapors from any fuel, liquor, alcohol, deodorants, colognes, perfumes, wine, adhesives, lacquer, and most cleaning agents.
- **Slow Beep Rate:** This could be the failure alarm and will occur in the event that the circuitry fails. It is a continuous series of short beep tones between long intervals and is distinctively different from the alert sound.
- **After reviewing the above, if the problem still exists, contact MTI Industries for assistance.**

NOTE: The LP Gas Detector enters a cleaning and initializing mode every time it is powered. If turned off for less than 15 minutes, the LP Gas Leak Detector may produce several short “chirps” within the first 80 seconds of operation. This is normal.

SERVICE

See your Mandalay Luxury Division Dealer or a qualified LP Gas Service Center should service be required. If they are not familiar with this product, have them call the detector manufacturer for assistance. If service is not available in your area, call MTI Industries.

SEAT BELTS

All occupants must be furnished with and use seat belts while the motorhome is moving. However, it is not intended for all seats to be simultaneously occupied while the vehicle is in motion without regard to the total loaded weight of the vehicle.

Do not occupy beds or any other seats that are not equipped with safety seat belts while the motorhome is in motion. Do not use a seat belt on more than one person.

SEAT BELT OPERATION

- Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.
- Adjust the belt to the proper position; snug and as low as possible around the hips, not around the waist.
- To unfasten, push the release button and remove the tongue from the buckle.



WARNING: Pilot & co-pilot seats must be locked in a forward facing position with seat belts fastened while the motorhome is in motion. Avoid seat rotation while in transit.



WARNING: The sleeping accommodations in this vehicle are designed for occupancy only while the vehicle is parked. All occupants in this vehicle must be seated at a designated seating position and must wear seat belts at all times while this vehicle is in motion.



WARNING: Safety belts and seats can become hot in a vehicle that has been closed up in sunny weather; they could burn a small child. Check seat covers and buckles before you place a child anywhere near them.

MAINTENANCE

Inspect the safety belts periodically to make sure they work properly and are not damaged. Inspect the safety belts to make sure there are no nicks, tear or cuts. Replace if necessary. A qualified service technician should inspect all safety belt assemblies after a collision. Four Winds International/Mandalay Luxury Division recommends that all safety belt assemblies used in vehicles involved in a collision be replaced.



WARNING: Failure to inspect and if necessary replace the safety belt under the above conditions could result in severe personal injuries in the event of a collision.

CHILD RESTRAINTS

You are required by law to use safety restraints for children in the U.S. and Canada. If small children (generally children who are four years old or younger and who weigh 18 kg [40 lbs] or less) ride in your vehicle, you must put them in safety seats made especially for children.

NOTE: Check your local and state or provincial laws for specific requirements regarding the safety of children in your vehicle.



WARNING: *Rear-facing child seats or infant carriers should never be placed in the front seats.*

NOTE: Always follow the instructions and warnings that come with any infant or child restraint you might use.



WARNING: *Never let a passenger hold a child on his or her lap while the vehicle is moving.*

If the child is the proper size, restrain the child in a safety seat. Children who are too large for child safety seats (as specified by your child safety seat manufacturer) should always wear safety belts.

If the shoulder belt portion of a combination lap and shoulder belt can be positioned so it does not cross or rest in front of the child's face or neck, the child should wear the lap and shoulder belt.

BOOSTER SEATS

Children outgrow a typical convertible or toddler seat when they weigh 40 pounds and are around 4 years of age. Although the lap/shoulder belt will provide some protection, these children are still too small for lap/shoulder belts to fit properly, which could increase the risk of serious injury.

To improve the fit of both the lap and shoulder belt on children who have outgrown child safety seats, Four Winds International/Mandalay Luxury Division recommends use of a belt-positioning booster.

Booster seats position a child so that safety belts fit better. They lift the child up so that the lap belt rests low across the hips and the knees bend comfortably. Booster seats also make the shoulder belt fit better and more comfortably for growing children. Follow all instructions provided by the manufacturer of the booster seat.

NOTE: Check your local and state or provincial laws for specific requirements regarding the safety of children in your vehicle.



WARNING: *Never use pillows, books, or other objects to boost a child.*

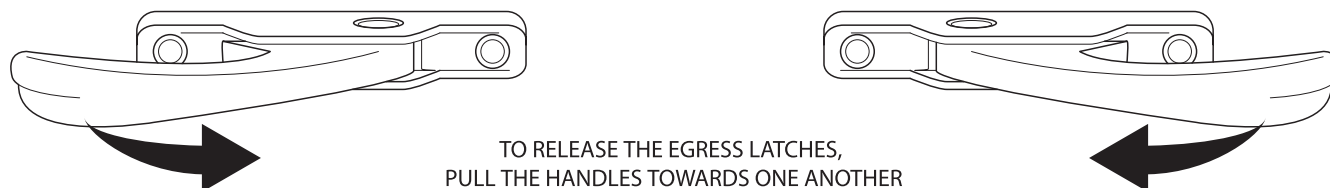


WARNING: *Do not leave children, unreliable adults or pets unattended in the motorhome.*

EGRESS WINDOW

An egress window is designated for use as an exit in the case of an emergency. Inside the motorhome the egress window is easily identified by the red locking handles. It is also marked as an "EXIT". The glass slider in the egress window operates the same as all other windows;

- To open the egress window, pull the latch handles towards you and then push outward on the window.



- To close the egress window, pull the window closed and push the handles to lock the window in place.

NOTE: The egress window should be opened twice a year to ensure proper operation. Over time, the rubber seal will tend to stick to the egress window. Occasional operation will help prevent the rubber seal from sticking.

CHASSIS OPERATIONS & PROCEDURES

The chassis is an integral part of the motorhome and with proper care and maintenance can provide many miles of reliable travel. The following section is for reference only, for detailed information regarding, product information and proper maintenance of the chassis, refer to the chassis manufactures owner's manual.

You as the owner are the key to keeping your motorhome in good operating condition, as well as being responsible for taking the proper precautions when attempting any repair or maintenance activities. If you are not sure what action to take, or uncomfortable with performing a maintenance or repair function, contact your dealer, or a designated chassis manufacturer servicing dealer. Check information supplied by chassis manufacturer for a service dealer near you.

NOTE: Make sure to read all chassis information supplied by the chassis manufacturer, paying particular attention to precautionary notes and warnings, as well as all maintenance procedures and schedules.

NOTE: The motorhome may have a Event Data Recorder, refer to the chassis owner's manual for further details.

NEW VEHICLE BREAK IN

Special procedures or schedules for breaking in your new motorhome are minimal. Make sure to follow the recommendations as outlined in the chassis owner's manual to ensure proper future performance and economy.

BRAKES

Operation and maintenance of the brake system is covered in the chassis owner's manual. Always be sure to keep your brakes in proper working condition, following the service schedule in the chassis literature, and the recommendations of your chassis service representative.

WHEELS & TIRES

The motorhome tires play an important role in the load carrying capacity of the vehicle. To ensure good tire life, check tires often. Inspect the general condition of the tires, as well as the air pressure.

Always check the air pressure when the tires are cold. Tires that are hot from traveling will show higher pressures. The maximum tire pressure and the load carrying capacity of the tire are imprinted on each tire sidewall as well as on the vehicle serial number I.D. tag. Always inflate the tires to their correct pressure. Do not over or under inflate. Under inflated tires will run hot, shorten the tire's life and decrease the motorhomes safe load limit. Over inflated tires will cause a rough and bouncing ride that could damage motorhome components or cargo. It is a good idea to always carry an accurate tire pressure gauge in the motorhome to make these checks. If pressure checks indicate that a tire is losing air, check for signs of valve leakage, penetration, or wheel and rim damage.

The way you drive can have a significant effect on the wear and life of tires also. High speeds, unusual use of the brakes, taking corners too quickly, quick starts, and surfaces in poor condition all can attribute to the early wear and failure of your tires.

DAMAGED OR FLAT TIRES



CAUTION: When replacing a tire, make sure to replace it with a tire of the same size and specifications.

If you notice damage to a tire such as a bulge, uneven wear, or damage by a foreign object or the road, have it inspected and repaired or replaced as needed. Remember that tires should be taken to an authorized tire repair facility.

If you experience a flat tire, it is recommended that you have qualified personnel with the proper equipment handle the problem. Due to the size and weight of a motorhome wheel and tire assembly, as well as the amount of torque needed to tighten wheel nuts securely, it is best to call in a professional. It is for this reason that a jack has not been included in this motorhome.

WHEEL NUT TORQUES



WARNING: Failure to torque wheel nuts as specified could allow wheels to come off while the motorhome is in motion, causing loss of control and possible collision.

Follow the schedule for regular wheel nut checks as outlined in the chassis manufacturer's owner's manual. If you suspect that the wheel nuts have loosened at any time, have the wheel nuts checked, and if necessary torque the nuts to the proper limits immediately.

If you suspect or notice wheel stud bolts are cracked or broken, they must be replaced, along with adjacent bolts that have probably also been weakened due to additional stress placed on them. You, as the owner of the motorhome, need to make frequent inspections of the wheels and tires, looking for signs of wear or damage. Avoid abusive driving such as impacting curbs and pot holes at high speeds.

NOTE: The proper way of tightening wheel nuts is with a torque wrench, not with an impact wrench or by hand. Because of the importance of having the proper torque on wheel nuts, you should have wheels mounted by authorized personnel with the proper tools.

WHEEL & TIRE BALANCING

Handling and tire wear can be enhanced by maintaining the proper balance of wheel and tire assemblies. It is important to have wheel and tire balancing checked on a regular basis. If you experience handling problems or abnormal tire wear, it may be easily corrected by proper balance. Specialized equipment is required to achieve proper balancing, and the motorhome should be taken to a shop that is qualified to perform this service.

FRONT SUSPENSION & ALIGNMENT

The term alignment refers to the adjustment angles on the steering axle, as well as, the suspension and the tracking of the rear axle. Many factors are considered when establishing proper alignment. Steering components, suspension, wheel bearings, and even proper loading all effect alignment.

Maintaining proper wheel alignment will result in increased steering ease and stability of the motorhome. As a result of proper alignment, tires and suspension will last longer and fuel economy can be increased. Any time you notice unusual tire wear or experience poor handling of the motorhome, it would be wise to suspect improper alignment along with the various other possibilities that might be causing the problem (check the chassis owner's manual). Always have the alignment of the motorhome checked and adjusted by a qualified service technician with the proper equipment to handle heavy vehicles.

NOTE: The front end alignment of the motorhome has been set by the motorhome chassis and body builder to the specification for the front and rear GVW of the motorhome. However, since alignment is affected by not only how much weight you add to the motorhome in the way of cargo and how you disperse the cargo, we advise you to have the motorhome alignment checked in the loaded condition (the way you would travel down the road). Not having the alignment set in the loaded condition could result in abnormal tire wear.

POWER PLANT & DRIVE TRAIN

Full operating and service information may be obtained by consulting the engine and drive train operating and service manuals provided by the chassis manufacturer. For maximum engine efficiency and long service life, always follow recommendations, as outlined by the chassis manufacturer. Regular visual inspections can help detect minor adjustments and needed maintenance. All other components of chassis should be inspected regularly per schedules set by chassis manufacturer.

ENGINE COOLING SYSTEM



WARNING: Ethylene glycol is a petroleum derivative which can ignite if exposed to high temperature, such as occurs on an exhaust manifold. The possibility of ethylene glycol igniting is increased if it is not diluted with water. It is important to properly dilute antifreeze with the proper mixture of water. Make sure to discuss the coolant needs of the motorhome with the chassis engine service representative.

The engine cooling system requires regular, periodic service to operate at maximum efficiency. The condition of the engine coolant, hoses, and clamps should be checked annually. Make sure to follow the cooling system recommendations as outlined in the chassis engine owner's manual. If you notice, or suspect cooling system problems, make sure it receives immediate attention. Proper and safe operation of the chassis engine cooling system and other chassis functions depends on maintaining the vehicle per the instructions and schedules published by the chassis and engine manufacturers.

ENGINE ACCESS

The engine fluid level checks which are located at the exterior rear of the motorhome, can be accessed by lifting the top half of the engine grate. For service personnel, additional access areas are located in the bedroom. The first location is in the wardrobe closet on the floor, remove the four screws to remove the access panel. The second access panel is located on the floor between the bed and the wardrobe closet. Remove the four mounting screws to remove the access panel.

PROPER LOADING & WEIGHT DISTRIBUTION

The motorhome has been designed to carry loads within specified limits. Exceeding these limits will greatly affect the handling of the motorhome, create an unsafe condition and may void warranties. These limitations are defined in three ways:

- **Gross Vehicle Weight Rating (GVWR):** Maximum permissible weight of this motorhome. The GVWR is equal to or greater than the sum of the Unloaded Vehicle Weight plus the Net Carrying Capacity.
- **Gross Axle Weight Rating (GAWR):** Maximum load carried by an axle: sum of rating may be more than GVWR to allow for load variations.
- **Gross Combined Weight Rating (GCWR):** Means the maximum allowable loaded weight of this motorhome with its towed trailer or towed vehicle.

NOTE: Check the weight ratings of the RV on the serial number identification tag.

Additional terms used when discussing weight and distribution include:


- **Gross Vehicle Weight (GVW):** The total loaded weight of the motorhome.
- **Gross Axle Weight (GAW):** The total axle weight under any given load condition.
- **Unloaded Vehicle Weight (UVW):** Weight of this motorhome as built at the factory with full fuel, engine oil, and coolants. The UVW does not include cargo, fresh water, LP Gas, occupants, or dealer installed accessories.
- **Net Carrying Capacities (NCC):** Maximum weight of all occupants including the driver, personal belongings, food, fresh water, LP Gas, tools, tongue weight of towed vehicle, dealer installed accessories, etc., that can be carried by this motorhome. (NCC is equal to GVWR minus UVW).

NOTE: When establishing the NCC, weigh the motorhome with both a full fresh water and LP Gas tank. Do not allow anyone to be in the motorhome when establishing this rating. To determine the allowable tow rate subtract the GVWR from the NCC.

NOTE: Do not assume that you can fill all tanks and storage areas and be within the GVWR. Weights of stored items and passengers will vary greatly and will affect total weight of the motorhome. For calculation purposes fresh water weighs 8.33 pounds per gallon. LP Gas weighs 4.5 pounds per gallon.

WEIGHT INFORMATION LABEL

A weight information label, similar to the following diagram, has been placed inside a wardrobe closet within the motorhome. These weights are based on calculations involving similar vehicles as yours and will not be the exact weight of the motorhome. Weigh the motorhome to determine the exact weights and carrying capacities.

		701 CR 15 PO Box 1486 Elkhart, IN 46516-9731								
MOTORHOME WEIGHT SPECIFICATIONS SPÉCIFICATIONS DE POIDS CONCERNANT LES MOTOR-HOMES										
PRODUCT: <small>Produit:</small>	SERIAL #: <small>N° de série:</small>									
MODEL: <small>Modèle:</small>	YEAR: <small>Année:</small>	CHASSIS VIN #: <small>N° d'identification du véhicule sur le châssis:</small>								
Gross Axle Weight Rating - GAWR <small>Maximum permissible load carried by an axle - (sum of rating may exceed GVWR).</small> Estimation du poids brut de l'essieu <small>Poids maximum permit pouvant être supporté par un essieu (le total de l'estimation peut excéder l'estimation du poids brut du véhicule).</small>		LBS - livres KG / kilos Front: Avant: Rear: Arrière:								
Gross Vehicle Weight Rating - GVWR <small>Maximum permissible weight of this fully loaded motorhome.</small> Estimation du poids brut du véhicule <small>Poids maximum permit de cet motor-home chargé à fond.</small>										
Gross Combined Weight Rating - GCWR <small>Maximum allowable load weight of this motorhome and any towed trailer or towed vehicle.</small> Estimation du poids brut combiné <small>Poids maximum de charge alloué pour cette motorhome et toute remorque ou voiture remorquée.</small>										
Unloaded Vehicle Weight - UVW <small>Weight of this motorhome as manufactured at the factory with full fuel, engine oil and coolants.</small> Poids du véhicule sans charge <small>Poids de cet motor-home tel que fabriqué à l'usine avec un plein d'essence, d'huile de moteur et des fluides de refroidissements.</small>										
Sleeping Capacity Weight Rating - SCWR <small>Motorhome manufacturer's designated number of sleeping positions multiplied by 154 pounds (70 kilograms).</small> Estimation du poids de capacité de couchage <small>Le nombre de position de couchage tel qu'indiqué par le fabricant du motor-home multiplié par 154 livres (70 kilogrammes).</small>										
Cargo Carrying Capacity - CCC <small>Equal to GVWR minus each of the following: UVW, Full fresh (potable) water (including water heater), full LP gas weight and SCWR. (Note: dealer installed equipment and towed vehicle tongue weight will reduce CCC)</small> Capacité de transportation de cargo <small>Égal à l'estimation du poids brut du véhicule moins chacun des suivants: le poids du véhicule sans charge, le poids du plein d'eau potable (incluant chauffe-eau), le poids du plein d'essence et l'estimation du poids de capacité de couchage. (Note: les équipements installés par le concessionnaire et le poids du véhicule remorqué sur la boule de remorque vont réduire la capacité de transportation de cargo.)</small>										
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Fresh water w/ water heater @ 8.33 lbs./gal.</td> <td style="width: 50%;">Gals.</td> </tr> <tr> <td>Eau potable avec chauffe-eau @ 1 kg/litre</td> <td>litres.</td> </tr> <tr> <td colspan="2" style="padding-top: 10px;">LPG capacity @ 4.2 lbs./gal</td> </tr> <tr> <td>Capacité d'essence @ 0.54 kg/litre</td> <td>litres.</td> </tr> </table>		Fresh water w/ water heater @ 8.33 lbs./gal.	Gals.	Eau potable avec chauffe-eau @ 1 kg/litre	litres.	LPG capacity @ 4.2 lbs./gal		Capacité d'essence @ 0.54 kg/litre	litres.	
Fresh water w/ water heater @ 8.33 lbs./gal.	Gals.									
Eau potable avec chauffe-eau @ 1 kg/litre	litres.									
LPG capacity @ 4.2 lbs./gal										
Capacité d'essence @ 0.54 kg/litre	litres.									
<p>WARNING: This information is intended as a guide only. Weights of individual vehicles may vary. Consult Owners Manual(s) for specific weighing instructions and towing guidelines including auxiliary brake requirements for any towed trailer or towed vehicle.</p> <p>Caution: Consulter le manuel du propriétaire pour les instructions spécifiques de pesage et les directions de remorquage incluant les exigences de freins auxiliaires pour toute remorque ou voiture remorquée.</p>										



CAUTION: Do not overload the motorhome.

COMPUTING THE LOAD & LOAD DISTRIBUTION

When loading the motorhome, give careful consideration to the weight of all items. Evenly distribute the weight of stored items from one side to the other. Do not store heavy items near the front or rear of the motorhome. Following these suggestions will benefit both the handling and ride of the motorhome, as well as increasing fuel economy.

It is recommended to empty the waste holding tanks before leaving on a trip, and as often as possible when traveling, to help reduce unnecessary weight while traveling. Try to carry only as much fresh water as you will use when traveling.

It is also important to keep in mind when traveling, that all items stored inside and outside the motorhome are secure, and all drawers and doors are secure. DO NOT add any type of rack or frame to any motorhome frame or chassis part. Alterations to the length and/or weight distribution may result in unstable handling, be a safety hazard, or could damage motorhome components. In any case, the motorhome warranty may be affected.

In order to properly compute the load and load distribution, you must know both actual scale weights, and the GAWR and GVWR found on the Federal Certification Label on the motorhome. Weigh with all passengers, equipment, luggage, and fluids on board as you plan to travel with. To weigh the motorhome properly, use the following procedure:

1. All passengers must be in their seats and the motorhome level. Place the front axle only on the scale. Check the weight against the front gross axle weight rating.
2. Pull forward so that both axles are on the scale. Check the weight against the gross vehicle rating.
3. Pull forward again so that only the rear axle is on the scale. Check the weight against the rear axle weight rating.

NOTE: The motorhome must be setting on level ground when weighing the front or rear axle separately. The weight distribution will be greatly affected if this is not done and the weights will be inaccurate.

Compare scale weights with capacities as shown in the following example: (This example is hypothetical only)

GVWR	14,500 lbs.
GVW	<u>12,570 lbs.</u> (Weight from Scale)
Carrying Capacity	1,930 lbs.
Front GAWR	5,000 lbs.
Front GAW	<u>4,000 lbs.</u> (Weight from Scale)
Front Axle Carrying Capacity	1,000 lbs.
Rear GAWR	10,000 lbs.
Rear Gaw	<u>8,890 lbs.</u> (Weight from Scale)
Rear Axle Carrying Capacity	1,110 lbs.

DRIVING

The motorhome is equipped with more than adequate brakes; however, the stopping distance may be much greater than that of an automobile. Keep this in mind at all times and be alert to changing road conditions.

It would be helpful to take the motorhome to a stadium parking lot and spend some time getting the feel of the wider and longer vehicle.

NOTE: Small fluorescent sports cones, available at sporting goods and toy stores, can be used to create turns and parking spaces. Dowels with small flags can be attached to make the cones more visible in the passenger's side rear view mirror. Afterwards, the cones can become an addition to your safety equipment.

Practice parallel parking, backing and turns. Have a person work with you, having them help guide you from both the passenger seat and a position outside using hand signals.

Another motorhome characteristic that needs to be taken into consideration immediately is the height. Read all "clearance" signs when approaching parking garages, drive-through windows and even underpasses on older highways. Also be careful of overhanging trees. Always use caution and when in doubt get out and look. Don't forget any added equipment that may protrude higher than the standard factory height.

Passing and pulling out into traffic in the motorhome is going to be different than driving your everyday vehicle. Generally speaking, it will take more time, thus, more distance to pass when it necessitates driving in an on-coming lane of traffic. It will take more time to clear an intersection from a dead stop. Allow more distance between vehicles.

Because the motorhome is longer and wider than other vehicles, more attention must be paid to cornering. Practicing in a stadium lot is helpful, as indicated earlier.

To assist with turning follow these steps:

Right Hand Turns:

- As the turn approaches, move as far to the left of your lane without crossing the center line.
- When you are prepared to make the turn, the left rear wheel should touch the center line of the lane and your hips should be parallel to the roadside curb of the corner in which you are turning into. This will aid in preventing a premature turn.
- Make the turn slowly checking the rear view mirrors frequently for proper clearance.

Left Hand Turns:

- Do not start turning until the center of the intersection is reached with your hips. If there are two lanes available, use the right hand lane. A vehicle on the left hand side is easier to see while turning.

HILLS, DALES & MAKING THE GRADE

Driving in hilly or mountainous terrain isn't any more difficult than driving on the flat plains of Kansas if the driver uses the vehicle properly. The main culprit of hilly or mountainous driving problems is overheating. Preventing problems is as simple as following your chassis manufacturer's driving instructions for this type of terrain. The main thing to remember is to reduce speed and drive in the appropriate gear, usually something other than drive.

TRAILER TOWING



WARNING: The motorhome fully loaded and the trailer, or towed vehicle, must not exceed the motorhome chassis' Gross Combination Weight Rating (GCWR). Consult with your selling dealer to determine the GCWR of the motorhome. Do not exceed the motorhomes Gross Combined Weight Rating (GCWR) or the hitch rating. The tongue weight, the weight pushing down on the hitch, must not exceed 10% of the hitch capacity.



WARNING: The towing vehicle's braking system is rated for operating at GVWR, NOT at GCWR. A separate functioning brake system is required for any towed vehicles or trailers weighing more than 1000 lbs when fully loaded. NEVER exceed the GVWR, or the GAWR specified on the motorhome certification label. Also NEVER exceed the weight ratings of the trailer hitch installed on the motorhome. Failure to heed any part of this warning could result in loss of control of the motorhome and towed vehicle or trailer and may cause an accident and serious injury. For specific towed vehicle braking requirements, consult the chassis owners manual.



CAUTION: Always use safety chains between the motorhome and the towed trailer or vehicle. Cross chains under the trailer tongue and allow slack for turning corners. Connect safety chains to the trailer or vehicle frame or hook retainers. Never attach chains to the bumper of a vehicle.



CAUTION: Tow bars or car dollies generally are made to travel in a forward direction only. Most towing equipment of this type is not designed for backing. Never attempt short back up distances with a tow bar or tow dolly. Damage to the motorhome, vehicle or towing device will result.

Four Winds International/Mandalay Luxury Division accepts no responsibility for damage to the chassis and other components resulting from towing loads greater than its designated class specifications. Also consider the gross combined weight rating of the motorhome before towing a trailer or vehicle. Towing an object such as a boat and trailer or a vehicle behind the motorhome results in added driving considerations that you must contend with.

TOWING PROCEDURES

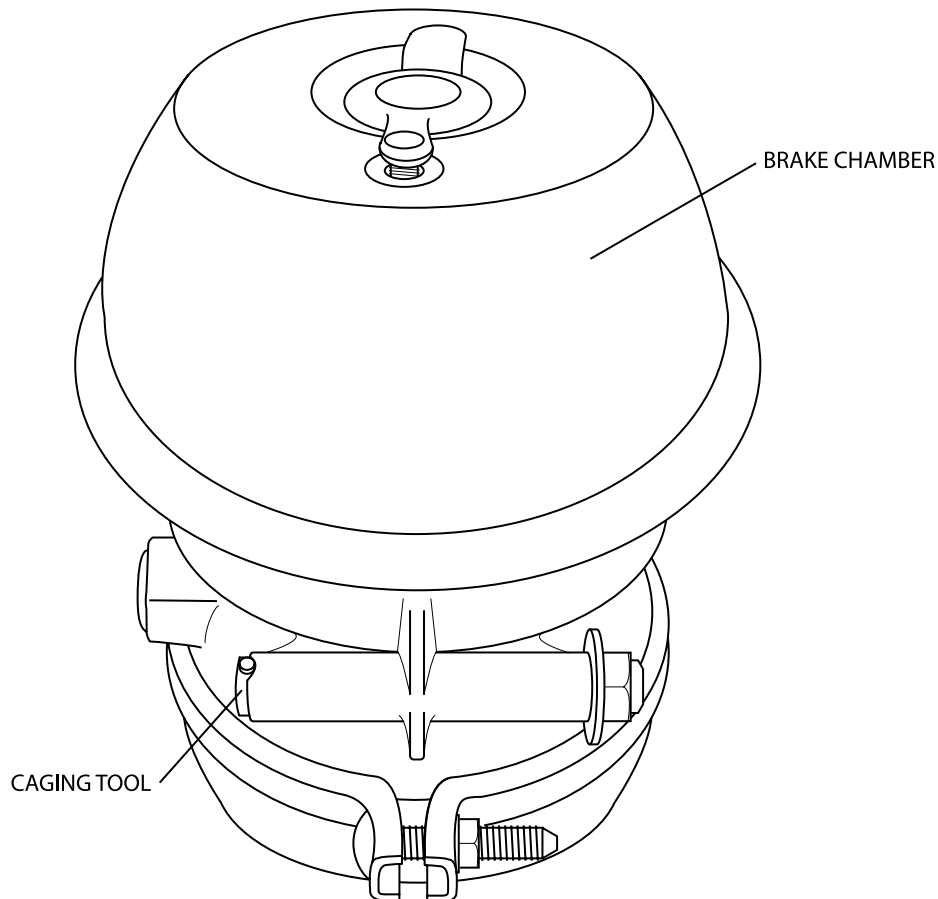
WARNING: In case the motorhome requires towing, ensure all precautions are followed. The drive shaft must be disconnected and the mud flap may need removed. The manufacturer **WILL NOT** cover damage to the motorhome caused by a towing company.



WARNING: Never tow the motorhome at a speed greater than 50 mph. Never allow anyone to ride in the motorhome while it is being towed. Make sure to review the chassis owner's manual for any additional requirements or cautions concerning the towing of the motorhome.

When the motorhome needs towed for service it is recommended to use a lowboy/landall type of trailer. If a tow truck is used it needs to have a support arm that goes under the motorhome and secures to the front axle. Inform the tow company of the axle weights and total weight of the motorhome. Other important information is the length of the motorhome, number of passengers and mile-post location.

If the motorhome loses air pressure, it will be necessary to disable the parking brakes for towing. Do not try to disable the brakes. The towing service will be qualified to cage the brakes properly for transit. The following drawing is for reference only.



If the motorhome needs to be towed:

- Secure any loose or protruding parts if the motorhome is damaged.
- Inspect the points of attachment on the disabled motorhome. If attachment points are damaged, select other attachment points at a substantial frame structural member.
- Never allow anyone to go under a motorhome while it is being lifted by towing equipment unless the disabled motorhome is adequately supported by safety stands.
- Do not tow the motorhome from the rear. Towing from the rear will severely overload the front tires and suspension possibly resulting in tire and/or front suspension failure. Rear frame extensions are not designed to support weight loads imposed by lifting the motorhome from the rear.
- If the rear wheels are disabled, place the motorhome on a flat bed trailer or use a heavy duty dolly under the rear wheels and tow the motorhome from the front.
- The drive shaft must be removed to prevent damage to the transmission. Secure the end caps to prevent losing or contaminating the needle bearings.
- The mud flap may need to be removed to prevent damage due to limited ground clearance.
- Review the chassis owner's manual for proper towing guidelines.
- Use an approved tow truck normally used for towing large vehicles.
- Tow with the parking brake released and the transmission in neutral.
- Make sure the front wheels are lifted at least four inches off the ground, and that the rear of the motorhome has adequate clearance.

EMERGENCY STOPPING

If an emergency ever requires you to be stopped, be sure to follow these guidelines:

1. Pull off the road as far as possible.
2. Select the Neutral position on the shift selector and apply the Parking Brake.
3. Turn on the hazard warning flashers.
4. Use three red warning indicators such as flares, reflectors, or lanterns as required by the Uniform Vehicle Code and Model Traffic Ordinance as follows:
 - a. Place the first indicator on the traffic side of the vehicle, directed at the nearest approaching traffic.
 - b. Place the second 100 feet behind the RV in the center of the lane and toward approaching traffic.
 - c. Place the third 100 feet in front of the RV in the center of the lane and away from the traffic approaching from behind.
5. Always stand off the road.

NOTE: Curves and/or hills may effect the safe placement of warning indicators.

FUELING THE MOTORHOME

For your convenience there are two fuel fills on the motorhome. They are located on both sides of the motorhome, towards the front of the unit. This allows access into filling stations from either side of the motorhome.

NOTE: Always remove the fuel cap slowly and pay close attention to the fuel recommendations outlined in your chassis literature.



WARNING: Be extremely careful when fueling the motorhome. Always shut off the engine, do not smoke, or 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 raw fuel is present. When weather gets cold or the motorhome has not been used for a while, a fuel anti-gel additive will be needed.

TRAVEL PREPARATION

Like any vacation trip, pre-planning will pay big dividends. In addition to routine trip preparations such as having newspaper delivery stopped and mail held at the post office, there are now more vehicle-related preparations than there are with an automobile.

CHASSIS CHECKS

Under Hood:

- Fluid levels (oil, power steering, radiator, transmission, windshield washer, etc.)
- Belts (tension and condition)
- Battery (electrolyte level if applicable, connections, charge)
- Hoses (clamps tight, condition, leakage)
- Seals, gaskets (leaks)

Exterior:

- Tire pressure/condition and lug nut torque
- Headlights, running and safety marker lights including brake and turn signal and also any trailer light connections
- Security of any auxiliary equipment such as TV and awning, etc.
- Windshield wiper blades
- Generator compartment
- Fresh and waste water connections/drains and supplies such as high pressure hose
- Liquid Petroleum Gas compartment/tank

Under Vehicle:

- Drive train condition, specifically leaks (U-joints, differential, transmission)
- Brakes, including lines, pads/shoes, seals
- Engine area for pan gasket or other leaks
- Anything unusual hanging or tangled with road debris such as tree limbs
- Tank condition (gas, fresh water, waste water)

Inside Driver's Compartment:

- Check operation of all systems, including: Wipers, windshield, horn, brakes, steering, transmission, heater, defroster, air conditioner, and seat adjustment.
- Also idle engine long enough to check cooling system and alternator operation. Be sure to turn on headlights and climate controls to see if alternator handles the additional drain on the electrical system (should not show discharge).

MOTORHOME SYSTEM CHECK

As an owner you now have the added responsibility to prepare the living quarters for a trip.

Preparations include:

- Filling fresh water tank. In winter make sure that system is freeze protected.
- Check list of food, utensils and clothing needs.
- Check storage of all items, making sure that everything is secured and that heavy items are stored low so they don't fall.
- Check operation of stove and refrigerator.
- Check paperwork such as owners registration card, vehicle registration, proof of insurance, driver's license and names/phone numbers of individuals you are to contact during the trip, such as ranger stations.



WARNING: Pay careful attention to where and what type of flammable materials you store. Certain storage areas are clearly labeled DO NOT STORE COMBUSTIBLE MATERIALS. Examples of spark producing areas, depending on the motorhome model, are: base kitchen cabinets, front dinette base, exterior refrigerator service compartment, as well as refrigerator cabinet. Please use discretion as to what potentially dangerous products your motorhome contains while traveling. Be sure all canisters and bottle tops are secure and leak free.

FIRST SHORT TRIP

Our suggestion is to take a weekend trip to a camp location that is close to home. Be sure to have a note pad and pen available to write down items you feel will be needed in the future as well as equipment that you may need to learn more about.

The experience gained from these short trips will assist you in determining the proper supplies and equipment you may need for your first long duration trip. It is understandably upsetting having to purchase a needed item on the road knowing that one is sitting at home unused.

Not all owner's need the same equipment or supplies. For one thing, North America presents a wide variety of climates and terrain. For another, personal needs and taste come into play.

Also, if most of your trips will be made in the summer and your shake down trip is made during some other season, there will be some adjustments to take into consideration. Talk to other owner's and learn from their experiences.

If you are an experienced owner it is still necessary to thoroughly read this manual. New and improved equipment is coming onto the market every day and, at the same time, not every motorhome manufacturer builds vehicles the same way.

This manual is packed with detail, however, after you have worked with the various systems during a couple of shake down trips, you will be capable of conducting a pre-trip check in less time than it takes to read this manual.

When preparing for your trip always consider vehicle weight when loading the motorhome.

Because of different options available, your motorhome may not include all of the systems in this manual.

DASH CONTROLS & INSTRUMENT PANELS

Thoroughly familiarize yourself with the various controls, instruments, and indicators located on the dash. Performance and safety can be enhanced by a driver who fully understands each one, and how to use them.

IMPORTANT: The following information is a quick reference guide for chassis functions, and is not a replacement for the chassis owner's manual. The chassis owner's manual furnished with the motorhome has complete information for operating and maintaining chassis functions.

NOTE: The appearance or placement of the gauges, instruments and controls may not exactly match the illustrations within the chassis owner's manual; however, the instructions for their use will still apply.

TRANSMISSION CONTROL PANEL

P (Park):

This button shifts the transmission into Neutral and engages the Park Pawl [in 1000 and 2400 transmissions only]. The "P" will only appear on the Monitor side, the Select side will be blank. Park or Neutral are used to start the motorhome.

NOTE: Refer to the Chassis Manufacturer's Operator's Manual regarding information for the Park Pawl.

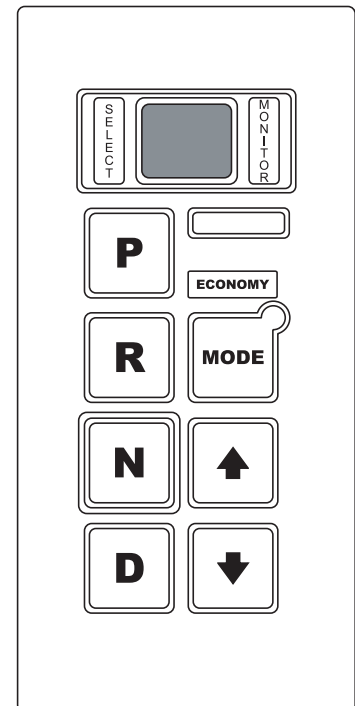


CAUTION: If Park is selected, and "P" does not display on the Monitor side, the Parking Brake must be set to prevent the vehicle from moving unexpectedly. The system should be checked and serviced.



CAUTION: On Park equipped transmissions, if the ignition is turned OFF without shifting to Park; a buzzer will sound and the display panel will illuminate and show the gear currently engaged. Shifting to "P" will engage the Park and turn OFF the display and buzzer.

NOTE: On PARK equipped transmissions, if the vehicle engine is OFF, the ignition ON, and the Park Pawl is not engaged (see Chassis Manufacturer's Operator's Manual for Park Pawl information), the Monitor will display "N" and a buzzer will sound regardless of the operator's selection. Shifting to "P" will engage Park and turn OFF the system.



R (Reverse):

Selection will display an “R”. This selection provides one range for backing the motorhome.

N (Neutral):

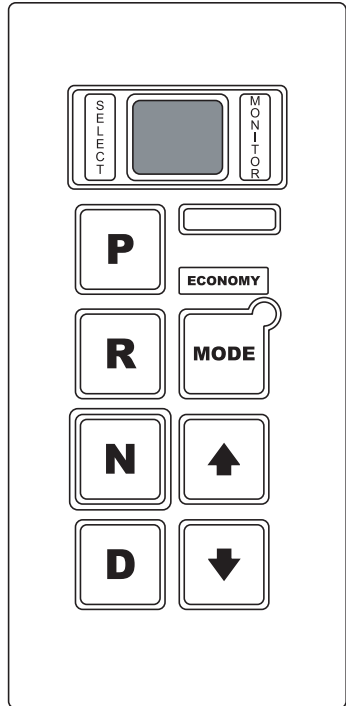
Selection will display an “N”. This selection shifts the transmission to Neutral. Neutral can be used to start the vehicle.



CAUTION: *If the transmission is in “N” and the operator leaves the driver’s seat, the motorhome Parking Brake must be set to prevent the motorhome from rolling.*

D (Drive):

This button shifts the transmission into Drive and allows the transmission to automatically shift through the full range of 1st through 5th gears. When Drive is initially selected, the Select and Monitor displays read “D1” indicating that drive has been selected and the transmission is in 1st gear. As the transmission automatically upshifts or downshifts, the Select/Monitor Display will show which gear the transmission is actually in - D1, D2, D3, D4, or D5.

**Manual Gear Selector (DOWN Arrow):**

When the transmission is in DRIVE, the Down Arrow allows the operator to manually downshift one gear at a time - 5th thru 1st. The Select Display will show which gear range has been selected; the Monitor Display will show the actual gear range the transmission is in 1 through 5, depending on and limited by the gear selected.

Manual Gear Selector (UP Arrow):

When the transmission is in 1, 2, 3 or 4, depressing the UP Arrow manually upshifts the transmission one gear at a time (i.e. increases the gear the transmission will be limited to) until D is selected. The Selector Display shows which gear has been selected, the Monitor Display will show which gear the transmission is actually in.

NOTE: The transmission will not upshift beyond the gear range selected. When DRIVE is selected the full range automatic shift capability is restored.

NOTE: Selecting DRIVE at any time during the downshift sequence cancels the manual-shifting function and allows the transmission to shift automatically.

Mode:

Selects between normal operation and economy (when economy is selected an indicator light will illuminate and the motorhome will shift differently to conserve fuel).

Service:

If the SERVICE display illuminates there is a fault in the SBW system. A qualified service technician should inspect the system as soon as possible.

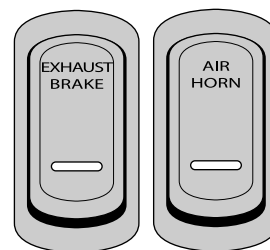
SHIFTER PANEL SWITCHES

Exhaust Brake:

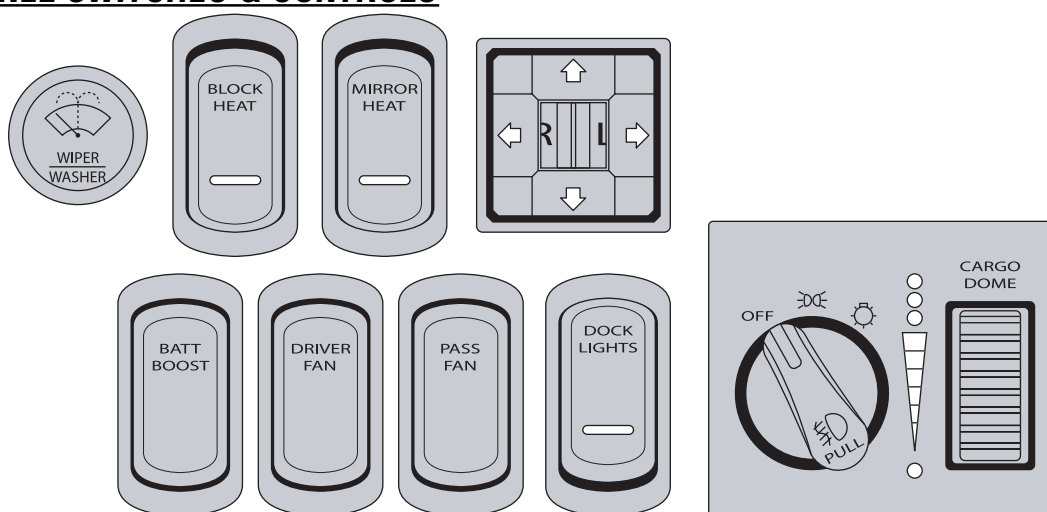
Enables or disables the engine braking aid. Refer to the Chassis Manufacturer's Operator's Manual for detailed information regarding the usage of the Exhaust Brake.

Air Horn (Optional):

Activates air horn system (press horn pad on steering wheel to sound air horn).



DASH PANEL SWITCHES & CONTROLS



Wiper/Washer

Activates the windshield wiper blades and controls the three speed settings: Low, High & Variable intermittent. Press the contort for washer fluid.

Block Heat:

Activates the motorhome engine block heater (for use in cold weather).

Mirror Heat:

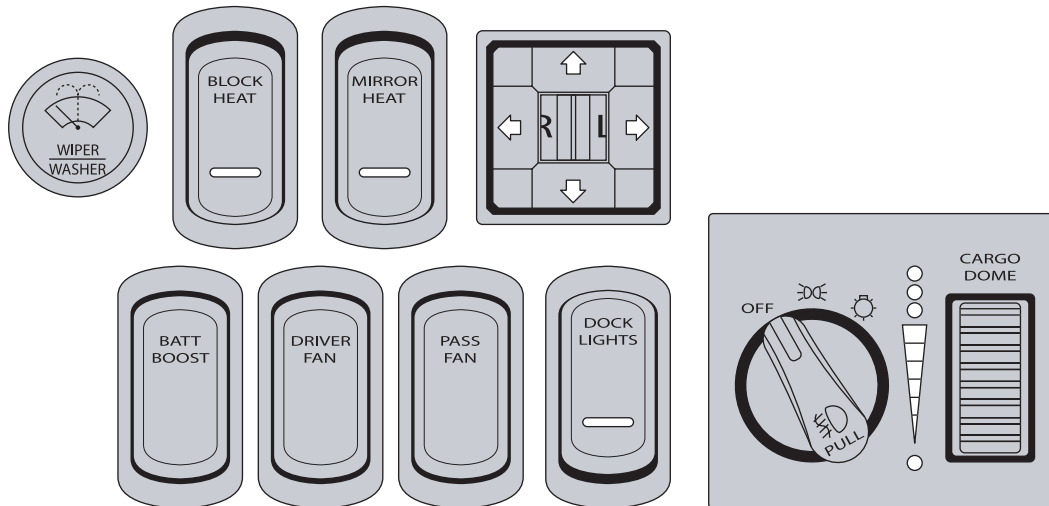
Activates heating element to defrost the outside rearview mirrors.

Mirror Control Button:

Used to adjust outside mirrors for visibility. Push the side selector left to adjust the curbside exterior mirror, or right to adjust the roadside exterior mirror.

Battery Boost:

Temporarily connects the coach and chassis batteries if either bank of batteries goes dead for some reason. This feature is designed to be used momentarily to start the engine. **DO NOT** hold the switch down for extended periods of time, overheating will occur causing serious electrical failure and damage to electrical components.

**Driver Fan:**

Provides power to the driver's side overhead fan.

Passenger Fan:

Provides power to the passenger side overhead fan.

Light Control Knob:

The control knob for the headlights, side marker lights, taillights, parking lights, license plate lights, fog lights and panel lights is located on the instrument panel. Control knob positions are as follows:

1. Off: All exterior lights are off.
2. Parklights: All exterior lights, excluding the headlights are illuminated.
3. Headlights: All exterior lights are illuminated.
4. Fog Lights: Headlights must be illuminated, then pull the control knob out to illuminate the fog lights.

Panel Light Dimmer Control Wheel:

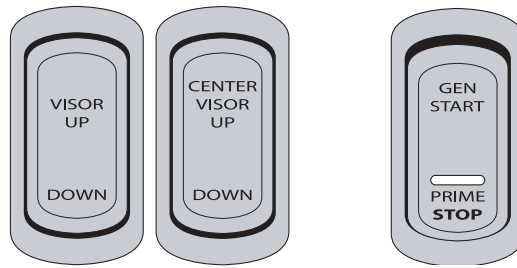
To increase or decrease the level of light intensity for the dash panel, rotate the control wheel up to increase, or down to decrease. Rotating the wheel up completely will illuminate the cargo dome lights.

Air Suspension Manual Dump Valve:

To dump the air suspension system, pull the lever to the right and hold to release the air within the system.



CAUTION: When releasing air from the the suspension system, ensure proper clearance around the motorhome. Keep persons and pets clear of the motorhome while performing this procedure. Never move the motorhome with the air suspension system depleted.

**Visor (Optional):**

Raises or lowers the driver side visor.

Center Visor (Optional):

Raises or lowers the center visor.

Gen Start/Prime/Stop:

Depress and hold the top of the switch to start the generator. Depress the bottom of the switch to stop the generator. Depress and hold the bottom of the switch to pre-heat the generator prior to starting.

PASSENGER ARMREST SWITCHES**Visor (Optional):**

Raises and lowers the passenger side power sun visor.

Porch Light:

Controls the exterior light on the door side of the motorhome.

Step Light:

Controls the entry step courtesy lighting.

Main Awning (Optional):

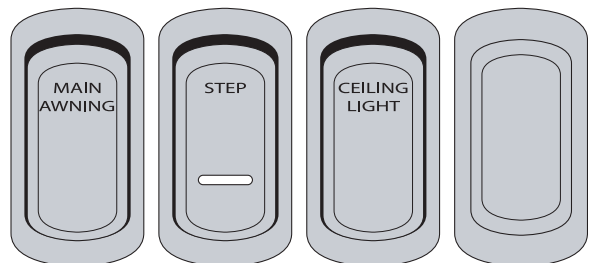
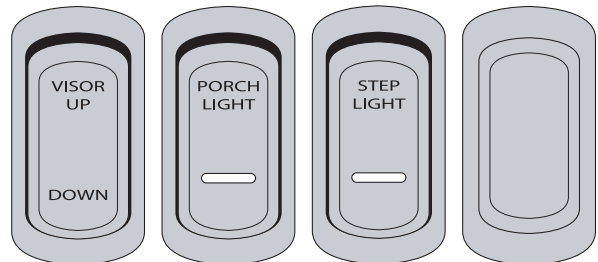
Extends or retracts the main patio awning.

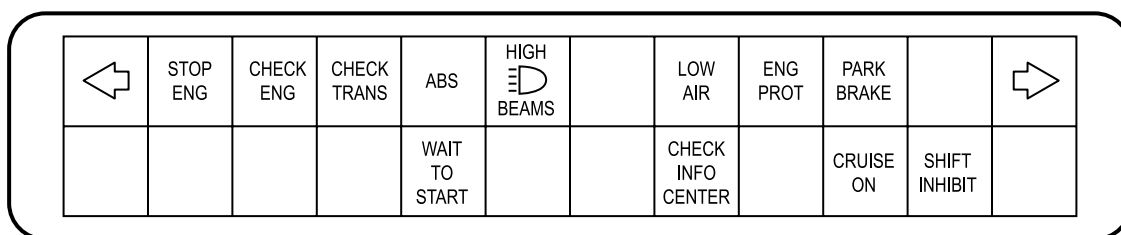
Step:

Activates power for the entry steps.

Ceiling Light:

Controls the front ceiling lights.



INSTRUMENT PANEL INDICATOR LIGHTS**Left Arrow:**

Illuminates and flashes when the left turn signal is activated.

Stop Engine:

Illuminates when the engine ECU (Electronic Control Unit) detects a fault within the engine. Shut the engine down immediately. Be sure to pull off the road out of the flow of traffic.

Check Engine:

Indicates that a fault code has been recognized by the engine ECU. If this light stays on have the unit serviced as soon as possible.

Check Transmission:

Indicates that a fault code has been recognized by the transmission ECU. If this light stays on have the motorhome serviced as soon as possible.

ABS:

Will illuminate and go off every time you start the motorhome as a self-test. If the light does not come on and go off after starting the coach or stays illuminated while driving, have the motorhome serviced as soon as possible.

Headlamp Symbol:

Illuminates when the high beams are in use. The fog lamps will not work when the high beams are on per federal regulation.

Low Air:

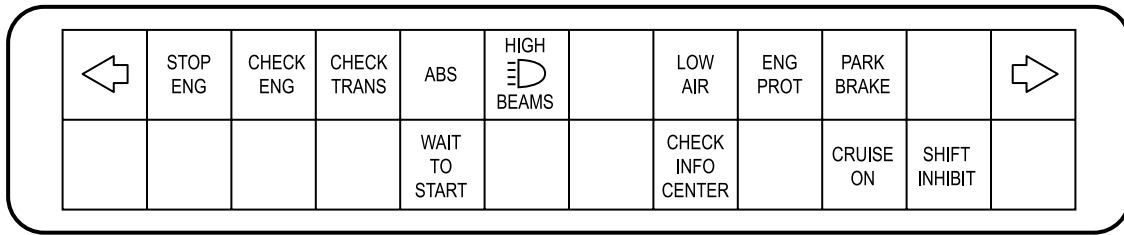
Illuminates when the air pressure is below 65 psi. The light will go off when the pressure reaches 65-76 psi.

Eng Prot:

Illuminates when the engine ECU senses that there is a potential problem which may cause damage to the engine. The engine will “derate” limiting horsepower and RPM to minimize damage that might occur.

Park Brake:

Illuminates when the ignition switch is in the ON position and the parking brake is set.

**Right Arrow:**

Illuminates and flashes when the right turn signal is activated.

Wait to Start:

Illuminates when the air intake pre-heater is on.

Check Info Center:

Illuminates when the Information Center is displaying an alarm condition or warning message.

Cruise ON:

Illuminates when the cruise control feature is engaged.

Shift Inhibit:

Illuminates when attempting to put the transmission into gear when the engine RPM is above 800 RPM. This could happen when the engine is in high idle mode to warm-up in cold weather. This feature will not let the transmission go into gear until the RPM drops below 800.

NOTE: For detailed information regarding these indicator lights and their meanings, refer to the chassis manufacturer's owner's manual.

TURN SIGNAL/LANE CHANGE/HIGH-LOW BEAM/CRUISE CONTROL LEVER

The lever on the left side of the steering column controls the turn signal with lane change feature, as well as the Headlamp high/low beam toggle and the cruise control.

Turn Signal/Lane Change:

The turn signal lever has four off-center positions, two positions upward (for right) and two downward (for left). To signal a turn, move the lever all the way up or down. These are latching positions. The lever will stay in one of these positions until the steering wheel returns back to center (OFF) as the turn is completed.

To signal a lane change, raise or lower the lever to the first resistance point. This is not a latching position. If released, the lever will quickly return to the center (OFF) position.

High-Low Beam:

To change the headlamps from low to high beams, pull the same lever used for turn signal operation up toward the driver and release the lever. This is a self-returning action. Repeating this toggle action will return to the low beams.

Cruise Control:



CAUTION: Do not use the cruise control system when driving conditions do not permit maintaining a constant speed, such as in heavy traffic or on roads that are winding, icy, snow covered, slippery, or with a loose driving surface. Failure to follow this precaution could cause a collision or loss of vehicle control, possibly resulting in personal injury or property damage.

A OFF/ON/RESUME-ACCELERATE switch allow the driver to select cruise control, drive with pedal, accelerate while in cruise control, or resume cruise speed after slowing down. A spring-loaded SET switch allows the driver to select the cruise speed.

NOTE: For detailed operating instructions refer to the chassis manufacturer's owner's manual.

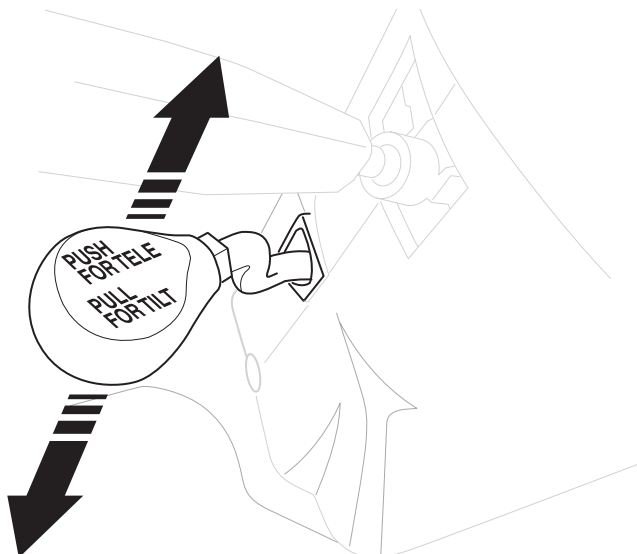
STEERING WHEEL ADJUSTMENT

Tilt:

To tilt the steering wheel, pull the adjustment lever UP and move the steering wheel to the new tilt location. Release the pedal and the steering wheel will lock in the new position.

Telescope:

To telescope the steering wheel, push the adjustment lever DOWN and move the steering wheel up or down. When the desired height is obtained, release the lever and the steering wheel will lock in the new position.



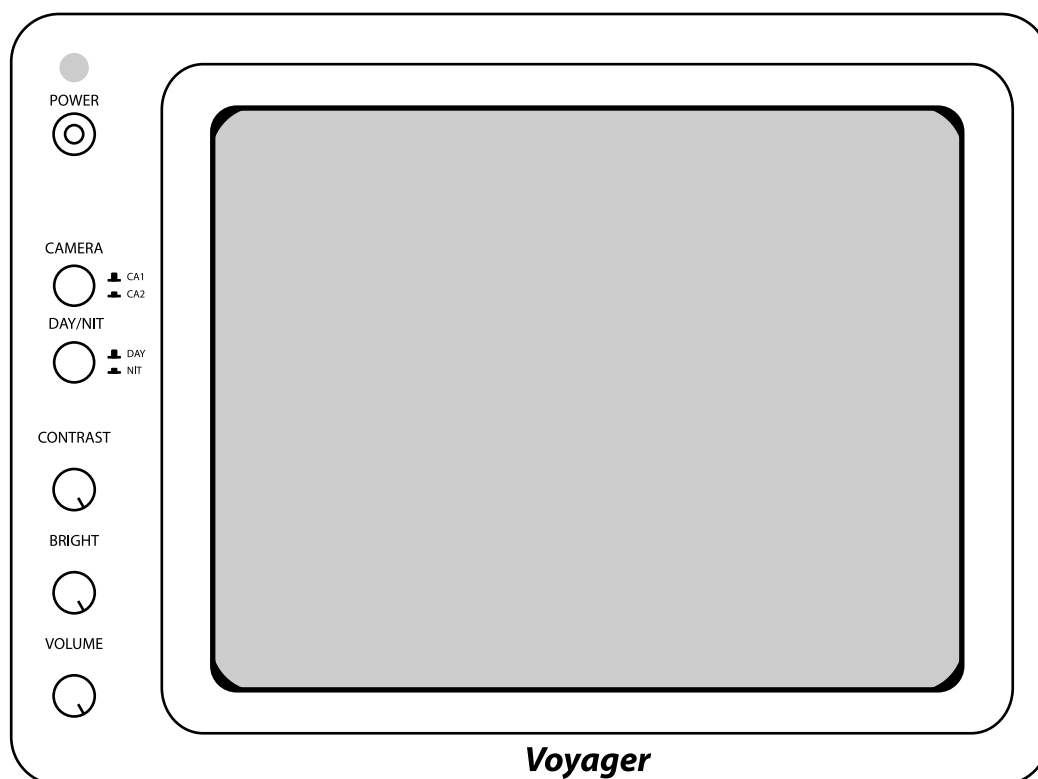
REAR VISION SYSTEM

This system gives a televised view of what is behind the motorhome. It is used as an aid in backing the motorhome, and can also be used for greater field of vision when driving in heavy traffic.

The motorhome ignition must be on to power the system. The picture is automatically activated when the motorhome is shifted in reverse. Push the standby switch down to receive the picture at any time. Push the switch out to receive in reverse gear only. Picture brightness can be controlled by rotating the reception switch. A contrast control is also provided to adjust the picture further. Adjust by rotating the switch.

Contrast and bright controls are provided to compensate for changes between day and night use. Push the light/darkness switch in for day use, push again to release for night use. Never operate the monitor in the on position for extended periods of time, this may result in an "image burn" on the monitor.

Make sure to check the mirrors when driving and backing, for a more complete field of vision. The camera is equipped with a wide angle lens that can initially present an image that may be deceiving. Make sure to practice backing in a safe place, using the monitor to become accustom to it's operation



AUTOMATIC HYDRAULIC POWER LEVELERS

The automatic hydraulic power leveling system allows quick and easy leveling of the motorhome from the driver's seat by utilizing the system touch panel. The following instructions are general operating instructions.

Auto Leveling Procedure:

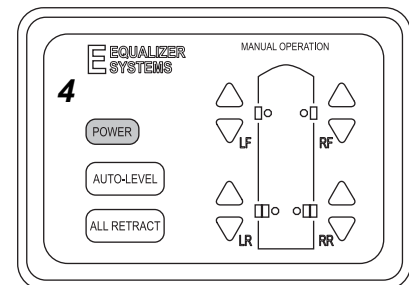
1. Place the transmission gear selector in the neutral position, apply the park brake, and block the wheels. Ensure the front tires are pointing forward and not to the left or right.

NOTE: The motorhome should be parked on a fairly level surface. Ensure that there are no obstructions in the extend or retract paths of the jacks. If the surface is soft due to saturation or heat, place boards under the jacks to distribute the weight over a larger area. Using a board which measures approximately 2' wide by 2' in length is recommended.

2. Turn the ignition switch to the accessory position and dump the air from the air suspension using the air dump lever.
3. Ensure the battery disconnect switch is in the ON position, and that the house batteries are charged.
4. Push the POWER touch pad to engage power (the button should illuminate).

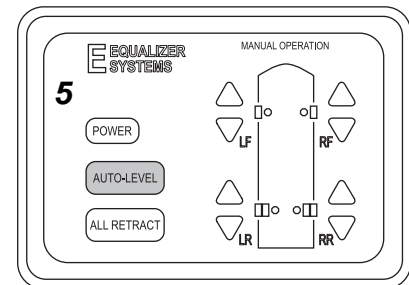


CAUTION: Keep all people and animals clear of the motorhome while operating the leveling system.



5. Press the AUTO-LEVEL™ touch pad.

NOTE: During the AUTO-LEVEL™ process, DO NOT allow excess movement in the motorhome during the AUTO-LEVEL™ operation. This could cause the system to not level properly.



6. When completed the panel will signal a successful Autolevel. After 10 minutes, the panel will enter sleep mode.
7. Turn the ignition to the OFF position.


NOTE: The null, or level position has been preset at the factory. However, if you want to change the setting, or if the motorhome has been dormant for more than 60 days you may need to reset the null. Refer to the automatic hydraulic levelers owner's manual for detailed information regarding the proper procedures to do this.

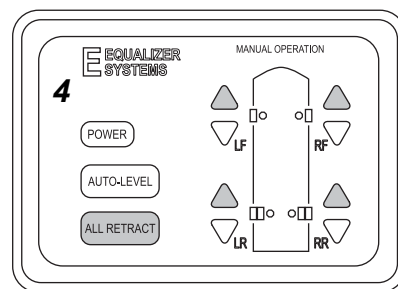
Auto Retraction Procedure:

1. The transmission must be in the neutral position and the park brake must be engaged.
2. Turn the ignition switch to the on position and allow the air suspension to fill (approximately 60 seconds). Once the air system is full, turn the ignition switch to the OFF position and then back to the accessory position.
3. Ensure the battery disconnect switch is in the ON position, and that the house batteries are charged.



CAUTION: Keep all people and animals clear of the motorhome while operating the leveling system.

4. Press the ALL RETRACT touchpad.
5. When the LED indicators for the UP  touch pads extinguish, the jacks are fully retracted.



NOTE: Full retraction may take up to 90 seconds.

NOTE: The arrows indicate the jack movement during the leveling process, not the motorhome movement.



CAUTION: Do not attempt to operate the system while the motorhome is in motion.



CAUTION: Block the frame and tires securely before attempting any maintenance under the vehicle. Do not use the leveling jacks or air suspension to support the weight of the vehicle while under the vehicle or changing tires.



CAUTION: Do not operate any system functions while anyone is under the motorhome.



CAUTION: Never place hands or other parts of the body near hydraulic leaks. Oil may penetrate skin causing severe injury or death. Wear safety glasses when inspecting or servicing the system to protect eyes from dirt, metal chips, or leaks, etc. Follow all other applicable shop safety practices.



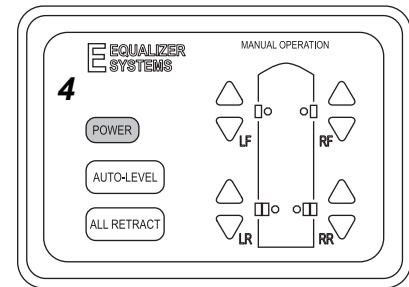
CAUTION: Ensure all slideout rooms are in the stored and locked position prior to leveling the motorhome.

Manual Leveling Procedure:

1. Place the transmission gear selector in the neutral position, apply the park brake, and block the wheels. Ensure the front tires are pointing forward and not to the left or right.

NOTE: The motorhome should be parked on a fairly level surface. Ensure that there are no obstructions in the extend or retract paths of the jacks. If the surface is soft due to saturation or heat, place boards under the jacks to distribute the weight over a larger area. Using a board which measures approximately 2' wide by 2' in length is recommended.

2. Turn the ignition switch to the Accessory position and dump the air from the air suspension using the air dump lever.
3. Ensure the battery disconnect switch is in the ON position, and that the house batteries are charged.
4. Push the POWER touch pad to engage power (the button should illuminate).



CAUTION: *Keep all people and animals clear of the motorhome while operating the leveling system.*

5. Using the down arrow touch pad, extend each jack until they come in contact with the ground. As you extend each jack, an LED light positioned on the panel will illuminate indicating the jack to be out of the stowed position.

NOTE: Jacks may be operated individually or in pairs as long as they are operated in the same direction.



WARNING: *DO NOT manually overextend individual jacks singularly. This may cause unwanted stress on the motorhome or the jacklegs.*



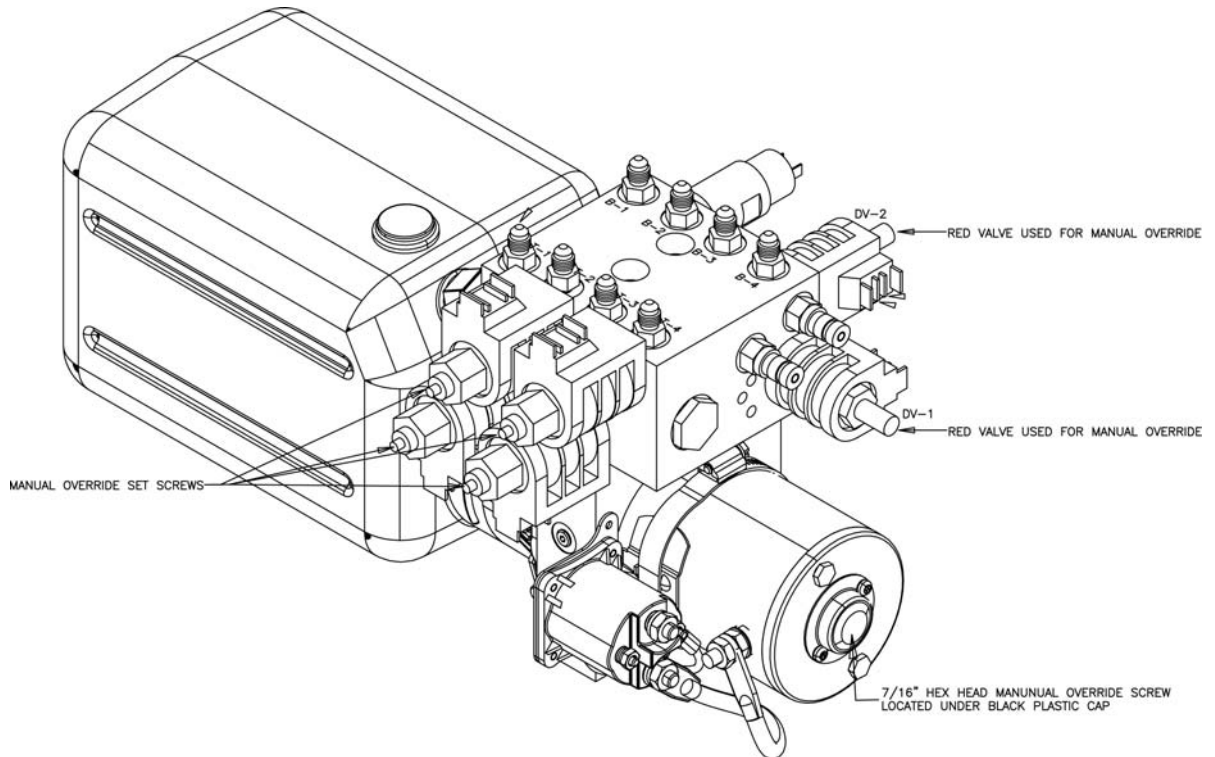
WARNING: *Do not attempt to lift the vehicle tires off of the ground. Do not over extend the rear jacks. If the weight of the motorhome is removed from the rear wheels, the motorhome may roll off the jacks.*

6. Utilizing levels mounted inside of the vehicle (not provided) level the vehicle by extending or retracting the jacks until the vehicle is level from front to rear.
7. Once level is achieved the power at the panel may be turned OFF and the ignition key returned to the OFF position.

Manual Retraction Procedure:

In the event of electrical failure, the jack leg(s) may be retracted manually by following the procedure below.

1. Locate the hydraulic pump in the front driver's side compartment bay.



2. The individual cartridge valves are clustered together on the side of the pump manifold. They are labeled 1 thru 4. Refer to the "Hose Color Identification" to select the proper cartridge valve. Locate the screws on the appropriate cartridge valve(s). Using a small flat blade screwdriver, turn the screw(s) clockwise until all the way in.

NOTE: The normal operating position of the screw(s) in the cartridge valve is the counter-clockwise "OUT" position. The only time the valves should be shifted manually is when attempting to operate the jack(s) via manual override.

3. Locate the red knurled knob on the directional valve DV2. This valve will be on the opposite side of the manifold from the cluster of cartridge valves. Pull the red knob out and turn ¼ turn. The knob will remain in the "OUT" position.

NOTE: The normal operating position of the red knob on the directional valve(s) is the "IN" position. The only time the valve should be shifted manually is when attempting to operate the jack(s) via manual override.

4. Remove the black plastic cap from the top of the motor. Use a small fat head screwdriver. Place the drill with the 7/16" (11mm) hex bit on the manual override shaft located at the top of the motor. Run drill in a clockwise direction at 2000 r.p.m. (minimum). The corresponding jack leg(s) will retract.

Hose Color Identification:

- | | |
|---|------------------------|
| • Jack #1 (Driver Front): Green = Extend | Green/Black = Retract |
| • Jack #2 (Driver Rear): Purple = Extend | Purple/Black = Retract |
| • Jack #3 (Passenger Rear): Grey = Extend | Grey/Black = Retract |
| • Jack #4 (Passenger Front): Red = Extend | Red/Black = Retract |

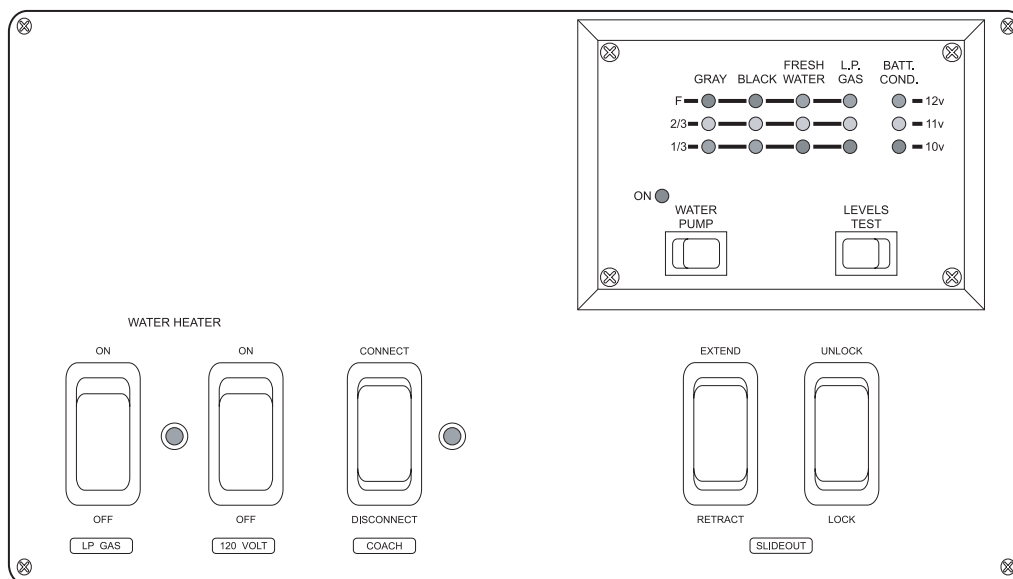


CAUTION: Following manual override operation, failure to return all valves to normal position may result in jack leg(s) drifting from their retracted (stowed) position. For cartridge valves, rotate the center screw fully counter-clockwise. For directional valves, rotate the red knob until it “snaps” back to the normal position.

INTERIOR CONTROLS & OPERATIONS

MONITOR PANEL

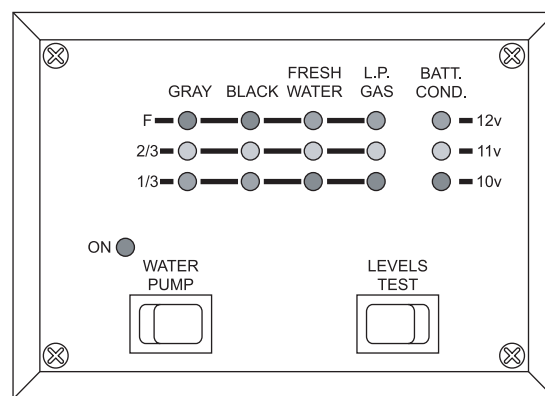
Located above the entry door, the monitor panel provides quick and easy access to several different motorhome systems. (Standard Panel for 36A & 37A Pictured Below)



Tank Capacities:

The monitor panel allows you to quickly check the levels in the fresh water and waste water tanks. Electrical sensors at various points on the tanks send signals to the monitor panel. To check fluid levels, press and hold the test switch designated for the tanks, and read the level indicators on the panel. The indicator is proportioned in thirds with each indicator LED light illuminating to the level that the tank contains. Indicator lights and their meanings:

- RED LED - Full
- YELLOW LED - 2/3 Full
- GREEN LED - 1/3 Full
- NONE - Empty



Sometimes, residue on the sides of a tank, or water with a low mineral content will give a false reading. Check the levels occasionally when you are sure of a tank's contents to double check the accuracy of the monitor panel.

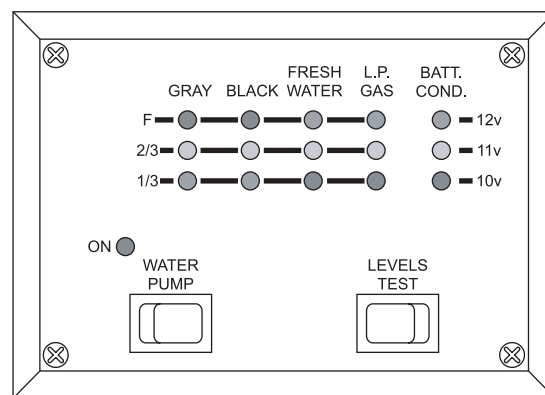
Tank Panel Switches:

Water Pump:

Turns the water pump ON or OFF (Refer to the “*Water Pump*” section under the heading “*Fresh Water System*” for more information).

Level Test Switch:

Press and hold to check tank levels as well as the LP Gas level.



Common Field Problems:

Inaccurate Holding Tank Level Readings:

The accuracy of two wire holding tank monitoring systems can be adversely affected by dirty tanks, unusual mineral content in the water, or improper holding tank probe location. These conditions can cause the monitoring system to have oversensitive (read higher than actual level) or under sensitive (read lower than actual level) readings.

Oversensitive Readings:

Oversensitive readings can occur as a result of scum buildup on the tank walls, abnormally high mineral content in the water, or incorrectly located holding tank probes. In these situations, the monitoring system indicates higher levels than are actually present in the holding tank. Certain cleaning products and food by-products can build up on the inside walls of the holding tanks, producing a layer of scum that can cause the monitoring system to read higher than the actual level. To correct this problem, the holding tanks should be cleaned periodically (consult dealer for cleaning instructions). If the problem persists after cleaning the holding tank, the ground probe can be moved farther away from the other tank probes. The increased distance between the ground probe and the other probes will decrease the sensitivity of the monitoring systems.

Under Sensitive Readings:

Under sensitive readings can occur if the mineral content of the water is abnormally low or if the holding tank probes are located incorrectly. In this case, the monitoring system indicates lower levels than are actually present in the holding tank. This problem can be corrected by moving the ground probe closer to the other probes. Moving the ground probe closer increases the sensitivity of the monitoring system.

The Ventline Adjustaboard™:

In response to requests from the field for a means to adjust monitor sensitivity without relocating holding tank probes, Ventline has developed the Ventline Adjustaboard™ (patent pending). This adjustable circuit board allows for field adjustments to monitor sensitivity. As tank conditions or water mineral content changes, the monitor circuitry may be made more or less sensitive as required.

Monitor Panel Switches:

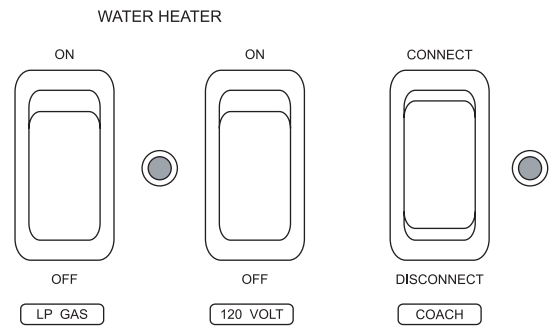
Water Heater LP:

Switches water heater to the LP Gas mode.

Water Heater 120 Volt:

Switches water heater to 120 Volt mode.

NOTE: The red indicator light between the two switches will illuminate when the water heater has failed to ignite after three attempts. The water heater will then go into a lock-out state. Turn the switch to the OFF position and the water heater will reset automatically.

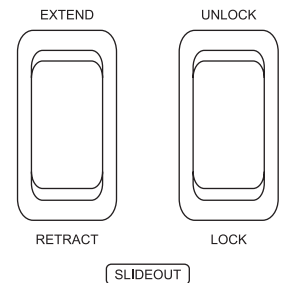


Coach Disconnect:

Connects or disconnects house batteries during usage or storage.

Slideout(s):

Operates the main living room slideout (36A & 37A). Two separate switch banks operate the kitchen slideout, and main living room slideout (38A).

**SLIDEOUTS**

CAUTION: The motorhome must be level prior to operating the slideouts. Failure to do so may result in structural damage to the motorhome.



CAUTION: Operating the room with any room-locking device in the locked position can cause personal injury and vehicle damage. It is the operator's responsibility to ensure that all room-locking devices are disengaged before operating the room.



CAUTION: Keep people and obstructions clear of room when operating. The Pilot and Co-Pilot seats must be in their most forward position, with seat backs in the vertical setting. Also, ensure there is adequate clearance to fully extend the room.



CAUTION: Extensive damage could occur to the slideout room and awning when extending the slideout room in snow, sleet, ice or freezing rain. In such conditions, if the slideout room is extended, clear the awning and ensure free movement prior to operating the slideout room.

NOTE: Erratic Operation of the slideout may be caused by low voltage to the hydraulic pump. Be sure to keep house batteries fully charged to prevent erratic operation.

Room Extension Procedure:

1. Level the motorhome.
2. Ensure there is proper clearance to fully extend the slideout.
3. Apply the parking brake and activate the coach battery disconnect switch.
4. Unlock the slidoute locks by pressing and holding the the LOCK SWITCH in the "UNLOCK" position.

NOTE: Rooms with travel locks require both locks to be fully retracted (unlocked) before power to the slideout switch is restored.

5. To extend the slideout press and hold the ROOM CONTROL SWITCH in the "EXTEND" position. When the slideout is fully extended, release the ROOM CONTROL SWITCH.

NOTE: Releasing the ROOM CONTROL SWITCH at any time during the extension process will halt the operation of the slideout.

Room Retraction Procedure:

1. Ensure proper clearance by clearing any obstruction in the slidoute area.
2. Apply the parking brake and turn the ignition to the Accessory position.
3. To retract the slideout, press and hold the ROOM CONTROL SWITCH in the "RETRACT" position. When the slideout is fully retracted, release the ROOM CONTROL SWITCH.

NOTE: When retracting slideouts, a delay may be present until the hydraulic pump builds enough pressure to pull the room in. Just continue to press the switch until the room retracts.

4. Lock the slidoute locks by pressing and holding the LOCK SWITCH in the "LOCK" position.

Manual Retraction Procedure:

In the event of electrical failure, the slideout(s) may be retracted manually by following the procedure below.

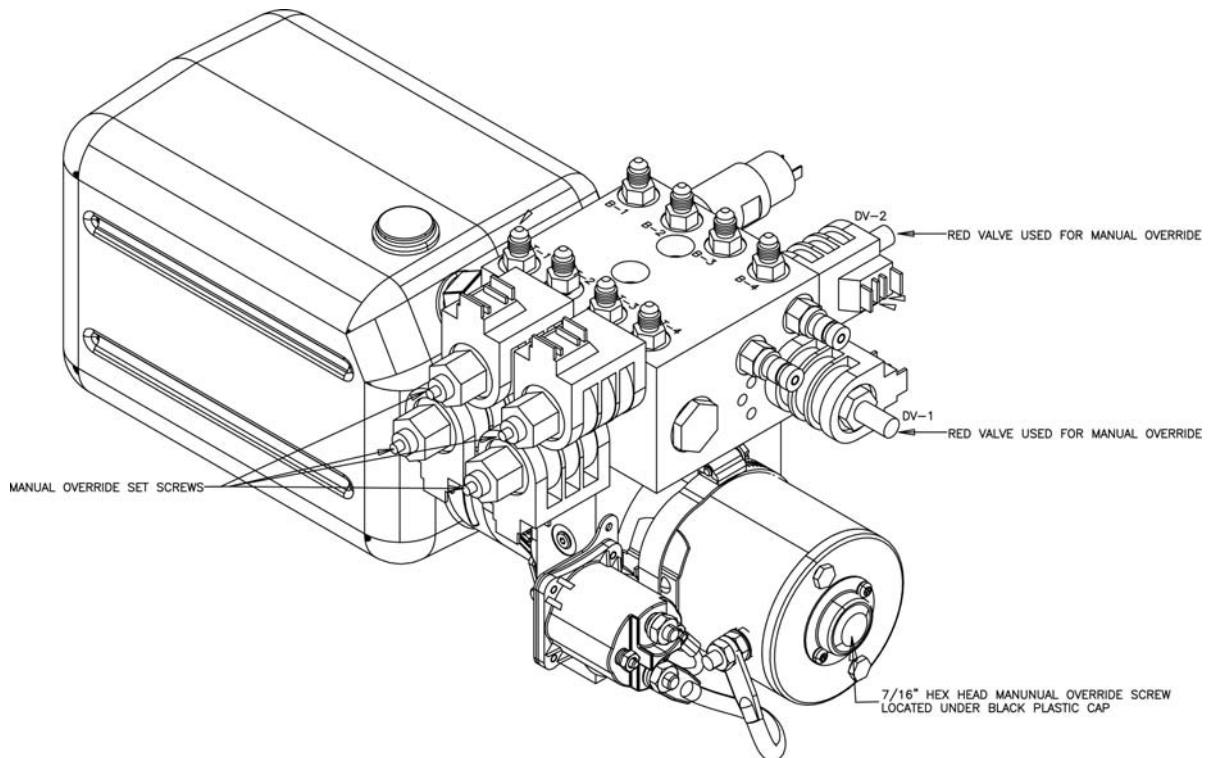
1. Locate the hydraulic pump in the front driver's side compartment bay.
2. The individual cartridge valves are clustered together on the side of the pump manifold. They are labeled 1 thru 4. Refer to the "Hose Color Identification" to select the proper cartridge valve. Locate the screws on the appropriate cartridge valve(s). Using a small flat blade screwdriver, turn the screw(s) clockwise until all the way in.

NOTE: The normal operating position of the screw(s) in the cartridge valve is the counter-clockwise "OUT" position. The only time the valves should be shifted manually is when attempting to operate the slideout(s) via manual override.

3. Locate the red knurled knob on the directional valve DV2. This valve will be on the opposite side of the manifold from the cluster of cartridge valves. Pull the red knob out and turn ¼ turn. The knob will remain in the “OUT” position.

NOTE: The normal operating position of the red knob on the directional valve(s) is the “IN” position. The only time the valve should be shifted manually is when attempting to operate the slideout(s) via manual override.

4. Remove the black plastic cap from the top of the motor. Use a small fat head screwdriver. Place the drill with the 7/16” (11mm) hex bit on the manual override shaft located at the top of the motor. Run drill in a clockwise direction at 2000 r.p.m. (minimum). The corresponding slideout(s) will retract.



Hose Color Identification:

- | | |
|--|------------------------|
| • Slide #1 (Driver Front): Green = Extend | Green/Black = Retract |
| • Slide #2 (Driver Rear): Purple = Extend | Purple/Black = Retract |
| • Slide #3 (Passenger Rear): Grey = Extend | Grey/Black = Retract |
| • Slide #4 (Passenger Front): Red = Extend | Red/Black = Retract |



CAUTION: Following manual override operation, failure to return all valves to normal position may result in slideout(s) creeping from their retracted (stowed) position. For cartridge valves, rotate the center screw fully counter-clockwise. For directional valves, rotate the red knob until it “snaps” back to the normal position.

WINDOWS

Windows that open in the motorhome are operated by sliding them back and forth or up and down, depending on the style and location of the window. To operate, pivot the latch to release it from the locked position, and slide the window to open. When closing, slide the window fully closed, and pivot the latch back to the fully locked position. The screens will also slide open if required for an emergency exit.

NOTE: Check window sealant during normal coach washing and as per the “Care & Maintenance” section of this manual.



WARNING: To avoid exhaust gas entry into the motorhome, keep windows closed when the chassis or generator engines are running.

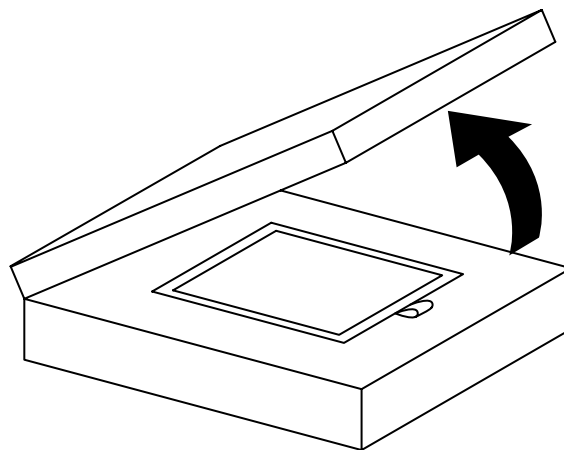
DOORS, DRAWERS, & STORAGE COMPARTMENTS

Cabinet and closet doors within the motorhome have door fasteners, or pneumatic stops, which prevent them from accidentally opening during travel. Drawers throughout the motorhome have travel stops which keep them from sliding out when in motion, under normal driving conditions.

Make sure before operating the motorhome that all cabinet doors and drawers are closed, and cabinet contents are secure. Retract and secure sliding doors in the bath area, as well as the bath door, to prevent noise and/or damage while traveling.

UNDER BED STORAGE:

There is a large storage area located under the bed. It is accessed by first lifting the mattress up, then locate the pull strap and lift the storage door up. Make sure before lifting, that there is nothing on the bed that will restrict its movement, or add extra weight. Pneumatic struts on both sides of the storage compartment aid both in lifting, and holding the mattress in the upright position. When storing items under the bed, be sure to leave space in the storage compartment for the struts when the bed is closed.



When closing the storage compartment door, there will be some resistance felt at first, because of the struts. Press down on the storage compartment door, and then lower the mattress.



WARNING: Keep hands and fingers clear of the storage door edges while closing, as to avoid pinch points.

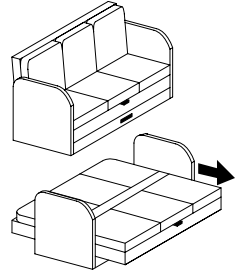
SEATING, TABLES & ADDITIONAL BEDS

Depending on the floor plan and the options selected for the motorhome, seating will include some combination of the following:

EASY BED SOFA (All Floor Plans) & LOVE SEAT (38C):

Sofa to Sleeper:

- Release the sofa locking mechanism by pushing the black handle, located under the center seat cushion, to the right.
- Pull out on the seat base until the seat base and backrest are flat.
- Fold the seat belts out of the way.



Sleeper to Sofa:

- Push the seat base towards the back rest until the locking mechanism engages.
- Position the seat belts for use.

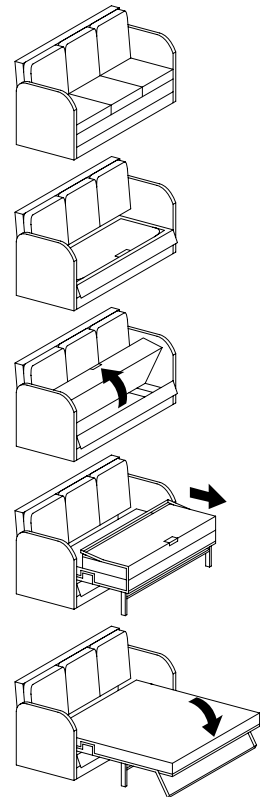
HIDE-A-BED SOFA (Optional):

Sofa to Sleeper:

- Remove the seat cushions.
- Release the lock on the right side of the metal bar, grasp the front metal bar and lift up, pulling out on the bar slightly until the leg of the bed is resting on the floor.
- Fold the seat belts out of the way.
- When the legs of the bed are on the floor another lifting bar will be exposed, grasping and pulling the lift bar will open the bed fully.

Sleeper to Sofa:

- Remove all bedding from the hide-a-bed.
- Grasping the foot of the hide-a-bed in the center using the metal lifting bar, lift the front portion of the lifting bar to raise and then lower the hide-a-bed back into the sofa base.
- Position the seat belts for use.
- Replace the seat cushions.



RECLINER (36A & 37A):

The recliner operates just like a standard household recliner. By pulling the footrest lever, the footrest will extend. Since a seat belt is not provided on the recliner it is not to be used while in transit.

EURO RECLINER WITH OTTOMAN (36A & 37A):

To recline, sit down, grasp the armrest and lean back to recline. Since a seat belt is not provided, do not use the Euro Recliner while in transit.

BOOTH DINETTE:

The dinette can also be converted into an additional bed if required, to convert; lift the table top off of the two support posts. Remove the support posts from the floor and lay them down between the seats. Insert the table top between the seats on the ledges provided. Loosen the seat cushion from the velcro fasteners and slide together to form the bed. Reverse this process when reconverting to the dinette configuration.

FREE STANDING BUFFET DINETTE (Optional):

Unhook the latch and slide table out to increase table space. Since the free standing dinette chairs are not permanently attached to the floor, and not equipped with seat belts, they should not be occupied while the recreation vehicle is in motion. These chairs should be stored securely while the vehicle is in motion.

ROUND FREE STANDING TABLE (Optional):

Since the free standing dinette chairs are not permanently attached to the floor, and not equipped with seat belts, they should not be occupied while the recreation vehicle is in motion. These chairs should be stored securely while the vehicle is in motion.

ENTERTAINMENT SYSTEM

The entertainment system is comprised of several different pieces of audio/video equipment. These products are of the highest quality to provide the most enjoyment from the system. The following paragraphs will discuss the operations and usage of these components.

TELEVISIONS

The front television, located above the driver and passenger seats, is also referred to as the “Main TV”. When using the Video Selector Box to select the viewing source for the front television, use the selections under the Main TV heading.

The Main TV has also been equipped with lock-out circuitry. Simply stated, the ignition switch controls the power supply to this TV. Only when the ignition switch is in the OFF position will the Main TV operate.

The bedroom television is also referred to as “TV 2”. When using the Video Selector Box to select the viewing source for the bedroom television, use the sections under the TV 2 heading.

The TV's operate on 120V AC power. This power can be provided by shore power, the generator or the inverter.

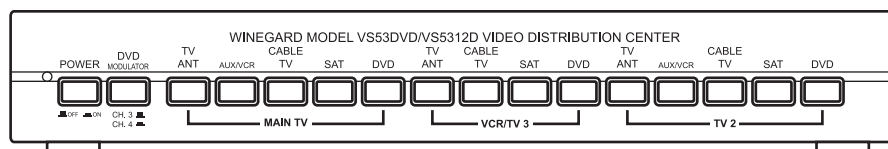
NOTE: Viewing time will be limited to the state of the house battery charge when using the inverter.

To view programming on the televisions, turn the TV to channel 3 and then follow the instructions for the Video Selector Box located later in this section.

To watch programs on the optional LCD front television with surround sound you will need to select video 4 on the remote as the television speakers act as the center speaker for surround sound.

NOTE: For other items such as television setup, external connections, brightness, etc. please refer to the individual components owner/operation manual.

VIDEO SELECTOR BOX



Viewing Signals from the Amplified TV Antenna on Main TV:

First press the TV antenna power button. This provides 12 Volt power to the TV antenna amplifier located inside the antenna housing. To view the TV antenna signal on the main TV, simply press the TV ANT button located above the area marked “MAIN TV”. Follow the same procedure for TV 2.

Note: The picture quality from your outdoor TV antenna varies depending on the location of the off-air TV station in relationship to your location. If picture quality is degraded, try turning the TV antenna Power button on the video distribution box OFF and ON.

Note: It is not necessary to press the TV antenna Power button for 12 Volt power to the 10dB amplifier inside the video distribution switch. After the unit is connected to a 12 Volt power source, the video distribution switch automatically provides power to the internal 10dB amplifier.

Viewing Signals from Satellite on Main TV:

Press the SAT button above the area marked “Main TV”. Follow the same procedure for TV 2.

Viewing Signals from Cable on Main TV:

Press the Cable TV button above the area marked “Main TV”. Follow the same procedure for TV 2.

Note: To view cable TV signals, you must be connected to a Cable TV input on the outside of the motorhome. Cable TV inputs are available at many of today’s campgrounds.

Viewing Signals from the VCR on Main TV:

Press the AUX/VCR button above the area marked “Main TV”. Follow the same procedure for TV2.

Viewing Signals from Auxiliary Sources such as Games, Camcorders, etc. on Main TV:

Press the AUX/VCR button above the area marked “Main TV”. Follow the same procedure for TV2.

NOTE: If a VCR is used, it must be disconnected from the AUX/VCR input on the Video Switch Box and the Auxiliary equipment connected in its place.

Viewing signals from DVD on Main TV:

Press the DVD button above the area marked "Main TV". Follow the same procedure for TV2.

Note: When viewing DVD signals at the two TV set locations, it is necessary to turn the TV set to channel 3 or 4 and depress the DVD modulator button on the front of the video distribution switch to the appropriate channel 3 or 4 setting. If you are in an area with local broadcasting on channel 3, select channel 4 to view DVD signals. You will have better picture quality and less co-channel interference.

Recording:

To record programming from the Antenna, Satellite Antenna, Cable TV or Auxiliary, simply press the appropriate button above the section marked AUX/VCR.

To record programming from the TV antenna to your VCR, press the TV ANT button above the AUX/VCR section on the video distribution switch.

To record programming from the Satellite antenna to your VCR, press the SAT button above the AUX/VCR section on the video distribution switch.

To record programming from Auxiliary device to your VCR, press the AUX/VCR button above the AUX/VCR section on the video distribution switch.

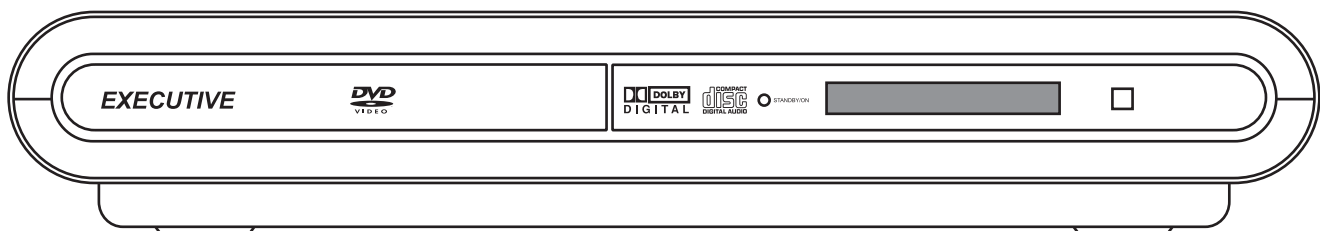
To record programming from Cable TV to VCR, press Cable TV button above AUX/VCR section on the video distribution switch.

NOTE: To record Cable TV signals, you must be connected to a Cable TV input on the outside of the motorhome. Cable TV inputs are available at many campgrounds.

DVD/RECEIVER

The DVD Receiver provides a compact design with high quality sound and video. Operating on 120 Volt AC from the house electrical system, use of the generator, inverter or shore power are required to power the DVD/VCR Receiver.

NOTE: The Executive DVD/Receiver 5.1 surround sound function will only operate with the front TV location. Refer to the manufacturer's operation's manual for detailed information and set-up procedures.



TELEVISION ANTENNA



WARNING: Prior to raising the antenna, visually inspect for any obstructions or overhead electrical wires. Damage to the antenna, severe shock, personal injury or death can occur from inadequate clearance.

To Raise the Antenna:

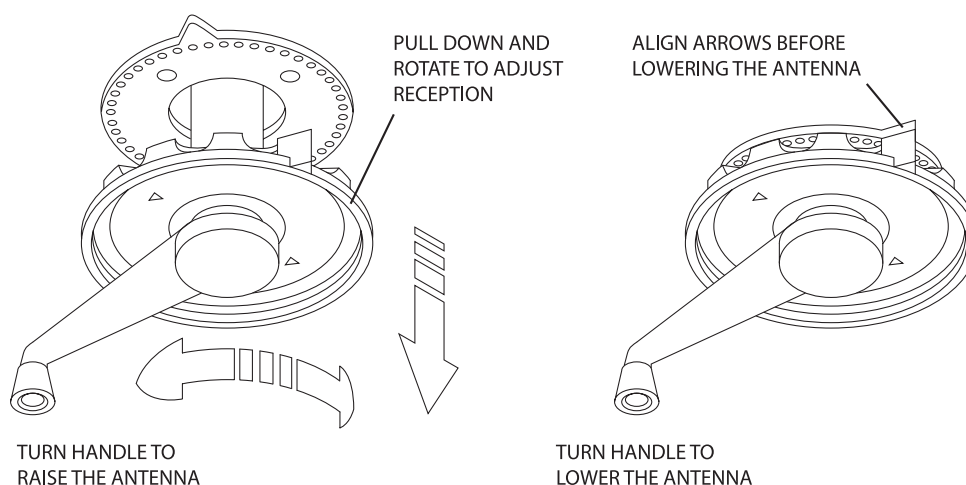
- Rotate the crank handle clockwise to raise the antenna.
- Pull down on the outside directional wheel and rotate the antenna until the best picture is obtained.



WARNING: Do not move the motorhome with the antenna in a raised or partially raised position. Damage to the antenna, the worm gear, or the motorhome roof may result.

To Lower the Antenna:

- Pull down on the directional wheel and align the arrows together.
- Rotate the crank handle counterclockwise to lower the antenna fully into the cradle. Ensure the antenna is properly stowed before traveling.

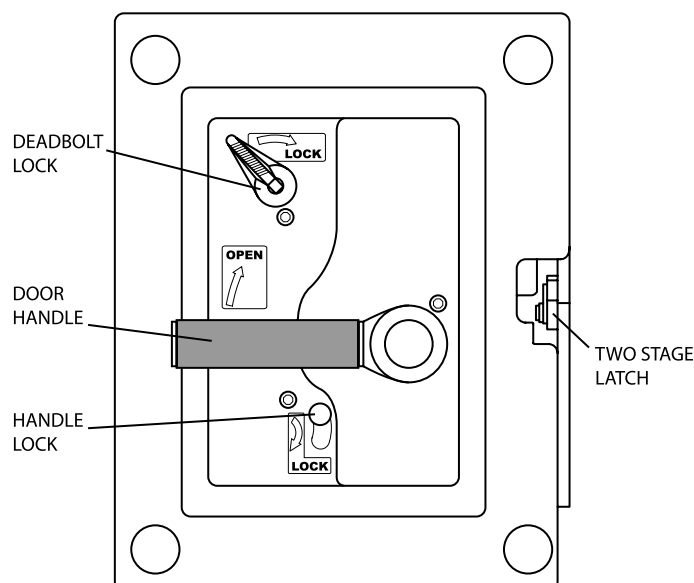


EXTERIOR OPERATIONS

ENTRY DOOR

The entry door is designed to provide security and comfort while traveling in the motorhome. The entry door utilizes three separate locks for these reasons. The first locking system is the door handle, the second is the independent deadbolt lock, and the third lock is the automatic air lock. When the motorhome shift selector is placed in **D** (DRIVE) or **R** (REVERSE), the entry door will automatically engage the air lock mechanism. This lock's primary feature prevents accidental opening of the entry door while in transit. Secondly, the lock also improves the seal around the door, reducing wind and exterior noise from entering the motorhome while traveling. The lock will automatically disengage when the shift selector is placed in the **N** (NEUTRAL) position. An audible noise will be heard when the air lock mechanism engages and disengages.

The entry door is equipped with a movable latch system. This latch system is designed to keep the latch from binding if parked on an uneven surface causing the door to become wedged within the door frame. The door latch also incorporates a primary and secondary latching system. This ensures secure and safe latching.



NOTE: Separate keys for both the latch and deadbolt locks are provided. Keep a record of the key numbers in a safe place, should it become necessary to have duplicates made.

SCREEN DOOR

The screen door can be used with the entry door, or independently while parked. A sliding panel on the screen door permits access to the latch handle on the outer door to prevent unnecessary handling of both doors.

POWER ENTRY STEP



WARNING: *Make sure before exiting the motorhome, that the step is activated and/or extended. Due to the height of the motorhome, you may accidentally slip or fall if attempting to exit without the use of the step. If the step will not operate, use extra care when exiting. Never activate the step when someone is using it, and be sure to keep hands, feet, children, and pets away from the mechanism when activated.*

When the power step is activated, it extends and retracts automatically when the door is opened or closed. There are two ways to control the operation of the step:

Switch Panel: Power to the step, provided by the chassis batteries, may be turned ON or OFF with the rocker switch located just inside the door. When ON, the step will extend whenever the door is opened, and retract when the door is closed. The step may be kept in the extended position by turning the switch OFF after the step is lowered. To maintain the battery life this switch should be turned OFF while in storage.

Ignition Switch: When the ignition switch is in the ON position, the power step is automatically retracted. This will prevent accidentally driving with the step extended. If the motorhome is parked, and the ignition switch is in the ON position, ensure the step

STORAGE COMPARTMENTS

The motorhome is equipped with numerous exterior storage compartments. The storage compartment doors are equipped with gas struts which assist with opening and holding the doors in the open position, if these struts become weak, contact your dealer for proper replacement. If the wrong size strut is used it could cause damage to the door.

Do not overload outside storage compartments with heavy densely packed items. Remember that any weight added to the motorhome effects the overall vehicle weight. Also remember to check side to side weights, since putting an extremely heavy item on one side or the other will effect proper load distribution.

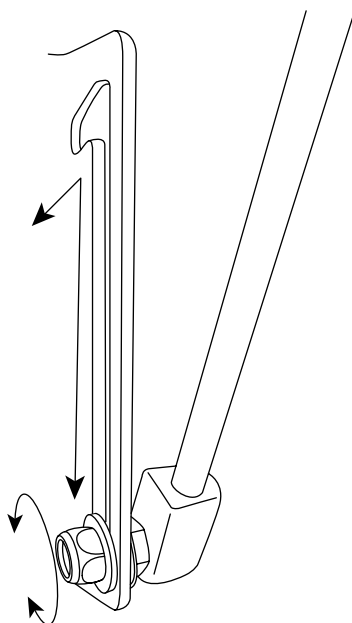
Keep any emergency items stored in outside storage compartments easily available, where they can be reached without unloading the entire contents of the compartments.

NOTE: Make sure that all compartment doors are closed, latched, and contents secure before starting and moving the motorhome.



CAUTION: *When closing the storage doors make sure that hands and fingers are clear of hinges and pinch points*

On compartment doors located under the slideout rooms there are adjustable gas struts, which will allow the door to open at two different angles. One position can be used to open the door at 90° from the closed position (when slideout is extended), and the other setting is to open the door greater than 90° from the doors closed position.



To adjust the gas struts, loosen the strut anchor nut, located on the strut bracket, and position the strut in the desired bracket inlet. Tighten the strut anchor nut. Repeat procedure for the other gas strut as well. Do not close the compartment door until both gas struts are secure and in the same inlet setting.

REAR LADDER/ROOF ACCESS

The exterior rear ladder provides access to the roof for maintenance of the roof and roof mounted items only. When ascending and descending the ladder, ensure the ladder is clear of debris, such as water, ice and other slippery substances. 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.



WARNING: Do not climb on or walk on the roof while wet. 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.



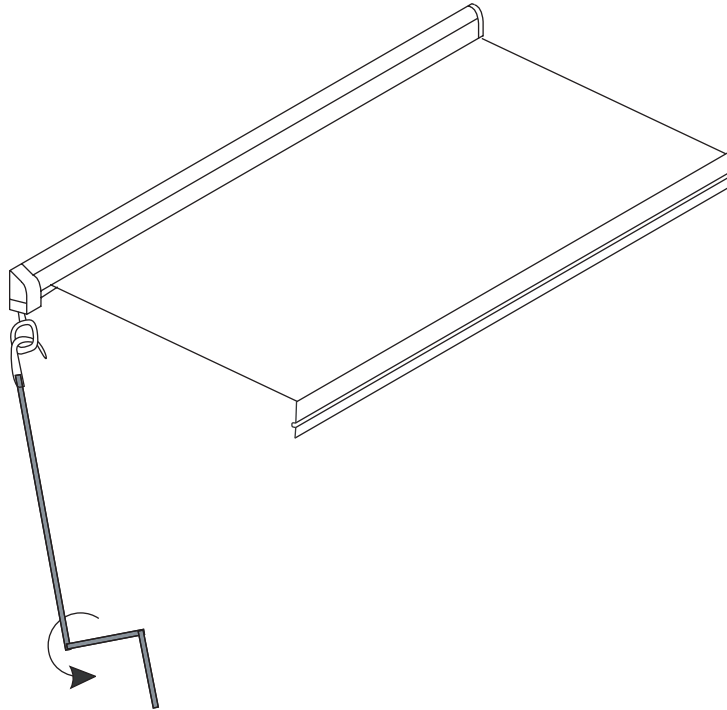
WARNING: The rear ladder maximum weight capacity is 250 lbs.

AWNINGS

MANUAL ENTRY DOOR AWNING (Optional):

To Extend:

- Place the hook of the crank into the eye of the gear.
- Turn gear counter-clockwise to unroll the awning.



To Retract:

- Place the hook of the crank into the eye of the gear.
- Turn gear clockwise to roll awning up (case is self locking).

NOTE: For detailed information regarding the Entry Door Awning refer to the manufacturer's operation's manual.

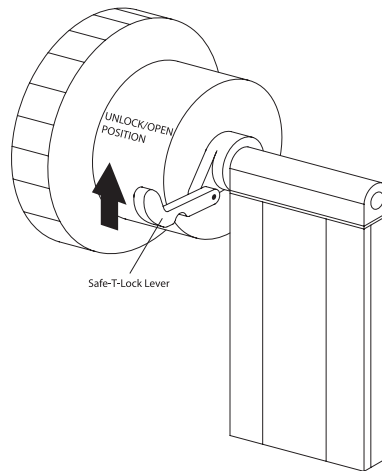
SLIDE OUT AWNING:

The Slideout Topper will automatically open and close as the slideout room opens and closes. Because the awning is level, water may puddle on top of the canopy. As the slideout room is closed and the awning rolls up, these puddles may spill over the sides of the awning.

NOTE: For detailed information regarding the Slideout Topper Awning refer to the manufacturer's operation's manual.

MANUAL PATIO AWNING:**To Extend:**

- Release both travel straps (one on each arm, about midway up) by squeezing the travel strap buckle to pull both pieces apart.
- Using the provided awning rod, rotate the Safe-T-Lock lever up to the UNLOCK/OPEN position.



- Hook the awning rod into the pull strap loop securely and pull the awning out. Once extended, slide the pull strap to the right and wrap the strap around the awning arm.

NOTE: Prior to closing, remove tie downs and screen if used. Ensure that the travel strap and buckle are clear of the back channel.

To Retract:

- Unwrap the pull strap from the awning arm and slide it slightly to the left.
- With one hand, firmly grip the awning pull strap and gently pull down, while at the same time, using the awning rod to rotate the Safe-T-Lock to the UNLOCK/CLOSE position.
- While holding the pull strap firmly, hook the awning rod into the pull strap loop and slowly allow the awning to retract, controlling the speed with the awning rod in hand.
- Once the awning has fully retracted, reconnect the travel straps and tighten by pulling on the loose end of the strap.

NOTE: If threatening weather approaches, you need to retract all awnings. If the awnings are rolled up wet, open them back up as soon as possible to allow them to dry. Do not drive during periods of high winds.

NOTE: For detailed information regarding the Patio Awning refer to the manufacturer's operation's manual.

AUTOMATIC PATIO AWNING (OPTIONAL):

To Extend:

- Press and hold the remote switch (located on the front of the passenger arm rest) in the extend position until the awning is fully open or utilize the remote control.

NOTE: Do not press more than one “EXTEND” button at the same time. Awning will not work and/or may cause control box fuse to blow.

To Retract:

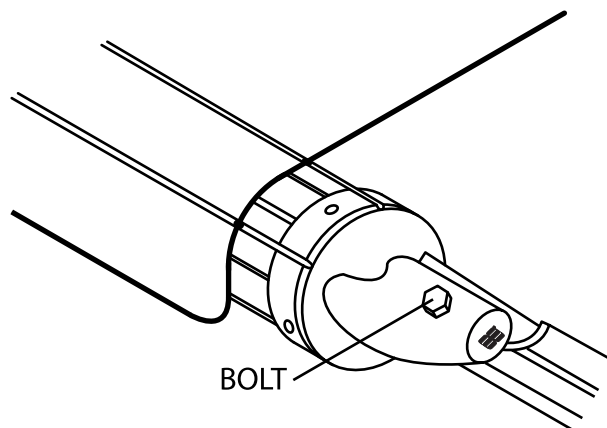
- Press and hold the remote switch in the retract position. When awning is fully closed release the switch.

NOTE: Do not press more than one “RETRACT” button at the same time. Awning will not work and/or may cause control box fuse to blow.

NOTE: In the event of power loss or awning motor failure the Automatic Patio Awning can be retracted as explained below. If you do not feel comfortable performing this procedure, contact the nearest authorized service center for assistance. Do not drive the motorhome with the awning in the extended position.

Manually Closing the Automatic Awning:

- Two people will be needed to perform this procedure.
- Slide the provided pull strap into the utility slot of the Fabric Roller Tube Assembly.
- Make sure that one person is securely holding onto the pull strap, while the other person removes the bolt in the top of the right top casting. Once the bolt is removed the FRTA will want to roll in on its own. This is why it is very important to hold the strap securely.



- While holding the strap, let the FRTA slowly retract until it is in the closed position.
- Once the awning is in the closed position, align the hole where the bolt was removed and reinstall to secure the awning. The bolt must be reinstalled to prevent the awning from opening during travel.

NOTE: The awning must be serviced by a Dometic Service Center or a qualified service technician before attempting to open the awning after this procedure has been performed.

NOTE: If threatening weather approaches, you need to retract all awnings. If the awnings are rolled up wet, open them back up as soon as possible to allow them to dry. Also, do not drive during periods of high winds.

NOTE: For detailed information regarding the Automatic Patio Awning refer to the manufacturer's operation's manual.

HEATING & AIR CONDITIONING

DASH PANEL HEATER/AIR CONDITIONER



WARNING: The air conditioning system contains refrigerant 134a under high pressure and should be serviced by qualified personnel only. Improper service methods could cause serious personal injury.

The motorhome is equipped with the industry's highest performance integrated heating/air conditioning system. While this system is much more powerful than those used in passenger cars, it is not capable of heating and cooling the entire motorhome. This system is designed to provide windshield defrost as well as heating and cooling for the front seat occupants only. By following the operating instructions and tips, this heater/air conditioner will provide many years of comfort and dependable service.

The heater/air conditioner unit is located beneath the dash on the passenger side of the vehicle with heating and cooling coils located on the outside of the firewall. In most modes of operation the unit takes fresh air from outside, and heats or cools it before discharging into the motorhome. Only when operated in the MAX A/C mode does the system take air from inside the motorhome.

Control Panel Operation:

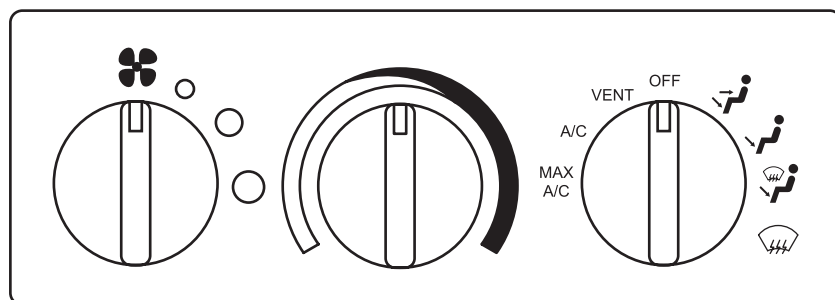
The control panel enables the driver to control the temperature, volume and direction of the air discharged from the heating/air conditioning system.

Blower Control:

One of the best ways of controlling temperature is by changing the speed of the blower. The blower knob (left of center) provides 4 speeds in any mode except OFF.

Temperature Control:

The center knob controls the temperature of the discharge air. Turn the knob to the right (red area) for warmer air, and to the left (blue area) for cooler air.



A/C CONTROL PANEL

Operating Features:

The air conditioning system is designed to operate in all modes except VENT, FLOOR and OFF. This provides significant moisture, dust and pollen removal for enhanced passenger comfort. Use MAX A/C and HI blower for quick cool down. A lower blower speed produces cooler air. Close all windows and vents to hot, humid outside air.

NOTE: The A/C will not function if the outside air temperature is below approximately 40° Fahrenheit.

NOTE: In the event control vacuum is lost, the system is designed to discharge through the defrost vents.

Air Distribution – Mode Control:

To achieve the maximum comfort in the motorhome, the air must be directed where it is needed. The mode switch (right of center) gives the driver the ability to select where the air will flow.

**MAX
A/C**

Air is drawn from the passenger compartment (Recirculated Air) and discharged through the dash louvers. These louvers can be adjusted for maximum comfort. This setting should be used to reduce interior humidity.

A/C

Outside air (Fresh Air) is drawn into the system and discharged through the dash louvers.

VENT

Outside air is drawn into the system and discharged through the dash louvers. For enhanced passenger comfort, upper-level ventilation air is also discharged through the defrost opening.

OFF

The blower motor does not operate in this mode. The fresh air inlet door closes, minimizing outside air infiltration into the vehicle.



Outside air is drawn into the system and discharged through the dash louvers, floor and defrost outlets. The A/C system operates in BI-LEVEL mode.



Outside air is drawn into the system and discharged through the floor outlets. In some models a small amount of air is directed to the windshield for defrost. The A/C system does not operate in FLOOR mode.



Outside air is drawn into the system and discharged through the floor and defrost outlet. The A/C system operates in MIX mode to provide windshield defogging.



Outside air is drawn into the system and discharged through the defrost outlets. The A/C system operates in DEFROST mode to provide windshield defogging.

NOTE: The discharge air will heat up faster if the blower is operated on lower speeds, until the engine is hot. For windshield de-icing use DEFROST mode.

Care & Service:

Keep the condenser and radiator free of bugs and debris. During periods of little use, operate the A/C system monthly to keep the compressor lubricated. Periodically inspect belts and hoses for wear and proper tension.

Warranty/Service:

If repairs are necessary during the terms of the motorhome warranty, please contact the nearest authorized Mandalay dealer for service. In the event repairs are necessary during transit, contact Mandalay Customer Service. Certain individual parts of the Heating and Air Conditioning System such as the compressor, dryer and condenser are covered under the chassis manufacturer warranty.

NOTE: Components covered under the Valencia Limited Warranty must be Original Equipment Manufacturer (OEM) parts. The installation of after market components, or unauthorized repairs may void the warranty.

ROOF MOUNTED AIR CONDITIONERS

The motorhome is equipped with two roof mounted air conditioner's. These air conditioner's operate from 120 Volt AC only, either from shore power or the on-board generator. Air conditioner functions are controlled by the air conditioner thermostat.

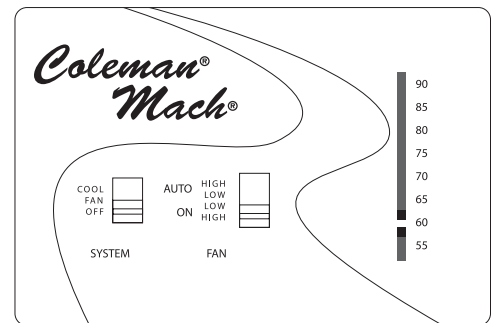
Return Air Filters:

Clean the return air filters as needed for the environment in which they operate. The return air filters are inside the air intake vent covers located on the motorhome ceiling. Never operate the air conditioners without the return air filters in place. Doing so may result in the build-up of dirt on the evaporator core affecting the performance of the air conditioner.

To Clean:

- Remove the vent cover and filter.
- Wash the filter and cover in warm soapy water.
- Rinse the filter and cover thoroughly with fresh water. Allow to dry.
- Reinstall the filter and cover

NOTE: Do not use harsh chemicals or solvents to clean the filter.



FURNACE

The furnace and all related components are 12 Volt DC operated, using LP Gas as the fuel source. The furnace functions are controlled by the furnace thermostat.

The following items must be done for the furnace to operate.

1. The LP Gas tank must be filled and the house batteries should be fully charged.
2. The LP Gas valve located on the LP Gas tank must be in the open position.
The valve should only be opened or closed by hand. If the valve cannot be turned by hand, have the valve checked by a qualified service technician.
3. All power to the appliance should be ON. Breakers and 12 Volt fuses are located at the foot of the bed.
4. Set the thermostat to the desired function and temperature setting.

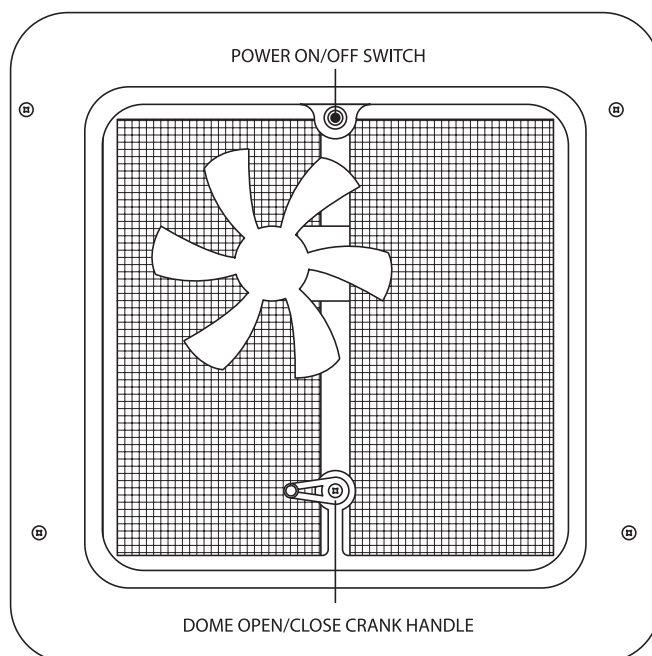
NOTE: This appliance is equipped with an electric ignition device which automatically lights the burner. Do not try to light the burner by hand.

CEILING VENTS

Vents are provided in the recreation vehicle to circulate fresh air and exhaust odors.

Bathroom Exhaust Vent:

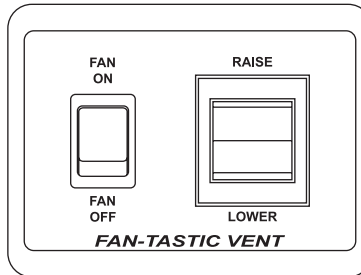
The power bath vent has dual controls to operate both opening and closing, as well as the exhaust fan. A hand crank controls opening and closing and adjustment of the vent cover, while a push button turns the exhaust fan ON and OFF. Make sure to turn the fan off before closing the vent. Also be sure to remove any debris that falls into the vent that may restrict operation.



Kitchen Exhaust Vent (Optional):

The optional kitchen vent ceiling fan is a three-speed fan which can extract air from the motorhome. To operate the fan use the following guidelines:

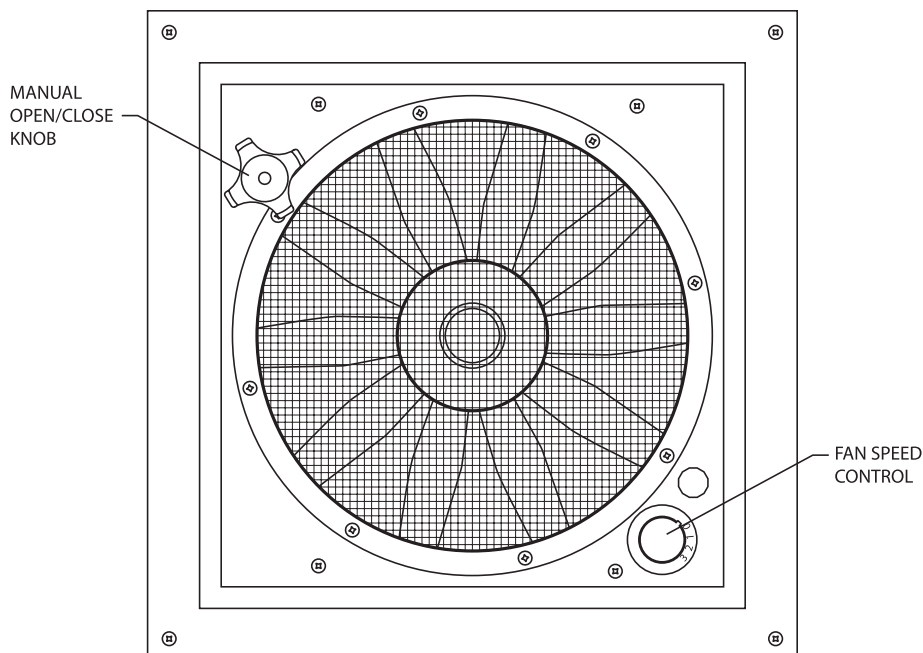
- Turn the wall switch to the ON position, 12 Volt DC power is required for the fan to operate.



- Open the dome approximately 3" or more, by pressing the RAISE/LOWER switch, or by turning the Manual OPEN/CLOSE knurled knob. The fan has a built in safety switch that will not allow the motor to operate unless the dome is partially open.
- Turn the fan speed control dial to the desired performance level (0 - Off, 1 - Low, 2 - Medium, 3 - High). By selecting the "0" setting, the fan acts as a vent only.
- Open a window or door for airflow.

NOTE: For best results, close all other roof vents and open one window, or door the greatest distance from the vent ceiling fan.

NOTE: Do not leave the vent cover open while the motorhome is stored or unattended for extended periods of time.



ELECTRICAL SYSTEMS

The electrical power supply provided for the motorhome is a dual operating system with 120 Volt AC and/or 12 Volt DC.

The 120 Volt power may be provided by either connecting the motorhome to an outside power source when parked, or by use of a motorhome generator. When the 120 Volt system is operational, power also passes through a system inverter, allowing the full use of all 12 Volt functions in the motorhome.

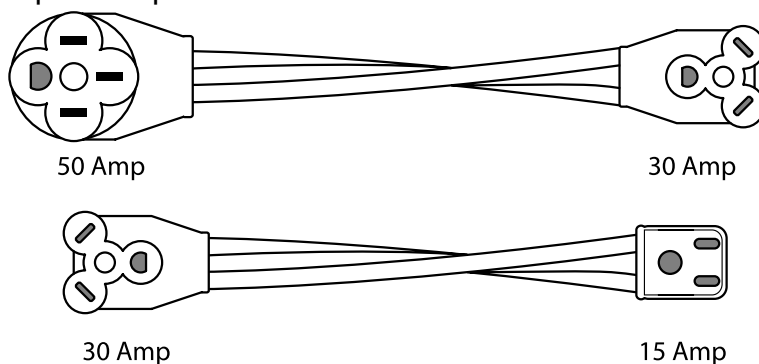
120 Volt appliances in the motorhome include the refrigerator, ice maker (optional), air conditioning, TV's, VCR, DVD player, microwave oven, inverter, washer/dryer (optional), and water heater. The refrigerator and water heater also have the option to run on LP Gas when 120 Volt is not available. All other lights and functions are supplied with 12 Volt power.

When it is not possible to access 120 Volt power, the 12 Volt system functions can be supplied by the coach batteries. The chassis battery is protected by a battery isolator controller to prevent discharge from excessive electrical consumption when motorhome is not running. The coach batteries are recharged by the power inverter when the motorhome is attached to an outside 120 Volt power source, or by the generator when it is running, and by the chassis alternator when the chassis engine is running.

SHORE CORD

A 50 amp shoreline power cord is provided to connect the motorhome to a grounded external power source. The shore cord is located in a compartment on the roadside of the motorhome behind the rear wheels. There is a porthole in the bottom of the compartment to allow the power cord to be in use while leaving the storage compartment door closed.

If 50 amp service is not available, connect the proper electrical adapters to the shore cord. Only UL approved adapters are to be used. The most common adapter is a 50-30 amp adapter. Another common adapter is a 30-15 Amp adapter. This type of connector adapts the 30 Amp shore cord to a 20 Amp shore power outlet.



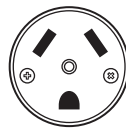
Always connect the adapter to the shore cord prior to making the connection to the outlet. Never use a two-wire extension cord, a cheater adapter with the ground pin removed, or install a lower amperage plug on the power cord in place of the molded plug.

When connecting or disconnecting from a grounded external power source, always turn off the shore power breaker to the power supply outlet. This will prevent accidental shock and flashing of electrical contacts. After connecting the motorhome to the grounded external power source, wait a few minutes for the inverter/charger to stabilize charging of the batteries before starting large AC loads such as the air conditioners.

NOTE: Shown below are the three types of shore power outlets which are most commonly used throughout the United States.



50 Amp



30 Amp



15-20 Amp



WARNING: Connecting the shore cord to a non-grounded or improperly grounded power source can result in dangerous and possibly fatal electric shock. Due to the potential danger in failing to heed this warning, the motorhome manufacturer cannot be responsible should damage, injury, or death result from failure to connect the power cord to a properly grounded power source.



WARNING: If shore power service is limited to 15 or 10 amps, use of light duty extension cords and electrical adapters will create a Voltage loss through the cord and at each electrical connection. Line Voltage loss and the resistance at each electrical connection can be a hazardous combination. Damage to sensitive electronic equipment may result.



WARNING: The motorhome is designed to be connected to a 50 amp service which provides 240 Volts. The 240 Volts comes from two separate 120 Volt lines that are in the shore power cord. The motorhome should never be connected to any power source that will provide anything more than 120 Volts on either line coming in. Failure to follow this will result in serious damage to internal items that are plugged in.

CIRCUIT BREAKERS

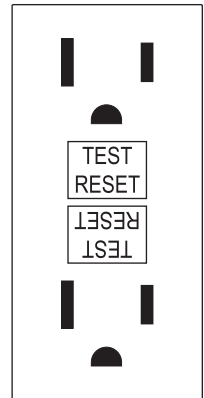
The 120 Volt system is protected by circuit breakers which automatically shut the circuit off if the circuit load is too heavy, or a short circuit occurs. If a circuit breaker has been tripped, do not reset the breaker until the cause of the problem is identified and corrected.

The generator also has one or two circuit breakers, and a DC fuse on the generator control panel. If an interruption in generator operations occurs, check to see if any of these have been tripped. Consult the manuals provided with the generator before attempting maintenance on the generator.

NOTE: Some electrical appliances may have their own circuit breakers. If there is an interruption in electrical service of an appliance, consult the manual for that appliance to determine what action to take.

GROUND FAULT CIRCUIT INTERRUPTER

The 120 Volt outlet in the bath is 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 have 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 exist.



NOTE: The GFCI receptacle should be tested initially when the motorhome is purchased and at least monthly thereafter.

To Test the Circuit, use the Following Procedure:

1. Make sure power is on to the circuit. A test light or a 120 lamp will work.
2. Push the test button.
3. The red reset button should pop out.
4. All power should be interrupted to outlets that are protected by the GFCI.
5. Verify by plugging in a light at these outlets, and pushing in the reset button. If the red reset button does not pop out after pushing the test button, or GFCI circuit continues to trip, or if the power is not interrupted to the test light, immediately turn off power at the circuit breaker panel and have a qualified electrician check it out.



WARNING: Even with the GFCI protection, persons with 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.

POWER CONVERTER

The converter is used to switch 120 Volt AC from an external supply, or from the generator, to 12 Volt DC to power interior lights and other 12 Volt DC accessories. If the converter does not sense 120 Volt AC, it automatically switches to the house batteries. When connected to 120 Volt AC, it will again automatically switch from the house batteries to the 120 AC power source.

While the converter is in operation an audible hum will be heard when near the converter. The converter will run warm, and this is normal. If the converter becomes too hot it will automatically shut down. After sufficient cooling, the converter will then turn back on.

NOTE: Never store items within the converter compartment. Limiting the ventilation around the converter is the usual cause of the converter overheating.

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 charge level back to a maintenance level to keep the battery fully charged.

If for any reason you charge a battery with a source outside the motorhome, make sure to follow the rules of battery maintenance and safety outlined in this section. Also observe these additional safety precautions related to battery charging.

1. Disconnect the battery from the motorhome.
2. Check electrolyte before charging. Be sure that each cell is properly filled with distilled water.
3. Make sure to use care when connecting and disconnecting the cables from charger. A poor connection can cause an electrical arc, which can result in an explosion.
4. Remove the battery vent caps before charging, and make sure that the electrolyte does not splash out as a result of charging too quickly.
5. Check literature supplied by the battery manufacturer, and follow warnings or cautions outlined.

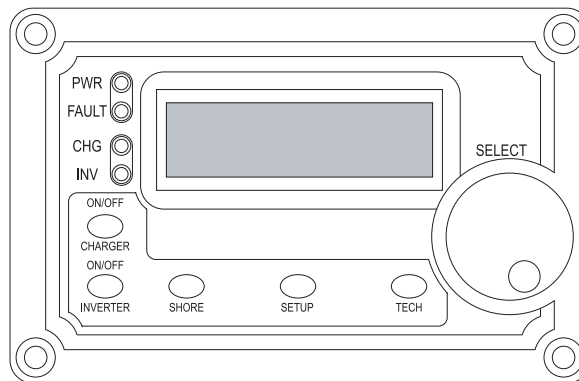
POWER INVERTER (OPTIONAL)

The inverter takes 12 Volt DC from the house batteries and turns it into 120 Volt AC. It also takes 120 Volt AC when the motorhome is connected to shore power and transforms it into 12 Volt DC to recharge the house batteries.

There are two modes of operation associated with an inverter/charger:

1. Inverter Mode: 12 Volt DC from the coach batteries is transformed into 120 Volt AC for use with household electrical appliances.
2. Charger Mode: 120 Volt AC is taken directly from shore power (or other AC sources) and passed directly to household appliances. At the same time, the incoming 120 Volt AC is also converted to 12 Volt DC to recharge the house batteries.

A remote control located above the entry door allows you to customize the operating parameters of the inverter/charger, thus maximizing performance and increasing the life of the batteries. The remote also controls all of the operating and programming functions. The inverter/charger owner's manual outlines all of the functions in an easy to use format.



NOTE: The following is a brief overview of the remote control. For more information refer to the manufacturer's operation's manual.

Rotary Knob:

Used to move between menus to select program options. Turn clockwise to increase selections and counterclockwise to decrease selections. Push the knob to "save" the selection displayed in the LCD screen.

Inverter ON/OFF:

Used to switch the inverter function ON and OFF. The green "INVERTER" LED turns ON and OFF with the switch.

Charger ON/OFF:

Used to switch the charger function ON and OFF. The green "CHARGER" LED turns ON and OFF with the switch.

Soft Keys:

Press the soft keys to access the required function. Then use the rotary knob to scroll through the selections. Press the rotary knob to save the selection. Options include:

- **Shore**

Sets the appropriate breaker size for the incoming shore power and is used to control the amount of AC amps the battery charger uses from HOT 1 IN. Selection options are 5, 10, 15, 20, 30, and 50 amps.

- **SETUP**

Configures the inverter/charger. Options include:

- Search - Used to set the watts at which the inverter will come out of sleep mode.
- LBCO - (Low Battery Cut Out) - Used to set the DC Voltage level to shut down the inverter to protect the batteries from over discharge.
- Battery Size - Used to select the approximate battery bank capacity.
- Battery Charge Rate - Used to set the maximum charge rate during bulk, absorption or float charge.
- Battery Type - Used to select battery type for the battery charge profile.
- Contrast - Used to adjust the LCD contrast.
- AC Dropout Voltage - Used to select the AC threshold (60, 90, and 100 Volt AC) where the inverter transfers from AC line to inverter mode.

NOTE: Additional information for “setup” is in the manufacturer’s operation’s manual.

- **TECH**

Reserved for future, this feature is used for troubleshooting the inverter/charger.

The inverter only supplies power to specific outlets within the motorhome. Those outlets are listed below:

- Bedroom Vanity Outlet
- Kitchen Outlets
- Flush Floor Outlets
- Microwave Outlets,
- Rear Television, Front Television and Entertainment System

If for any reason you charge a battery with a source outside the motorhome, make sure to follow the rules of battery maintenance and safety outlined in this section. Also observe these additional safety precautions related to battery charging.

1. Disconnect the battery from the motorhome.
2. Check electrolyte before charging. Be sure that each cell is properly filled with distilled water.
3. Make sure to use care when connecting and disconnecting the cables from charger. A poor connection can cause an electrical arc, which can result in an explosion.
4. Remove the battery vent caps before charging, and make sure that the electrolyte does not splash out as a result of charging too quickly.
5. Check literature supplied by the battery manufacturer, and follow warnings or cautions outlined

NOTE: For detailed information regarding inverter functions and usage, refer to the manufacturer's operations manual.

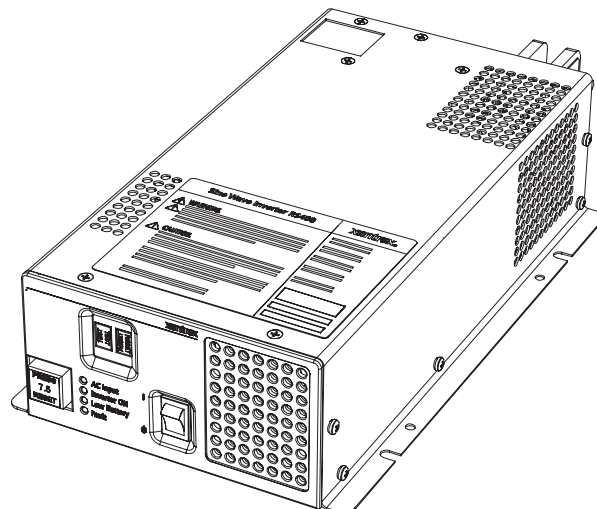
ENTERTAINMENT INVERTER (OPTIONAL)

The entertainment inverter converts 12 Volt DC power from the batteries to 120 Volt AC power. In terms of output the inverter provides 400 watts of sine wave power for operating the TV's and entertainment system only.

In shore power mode, the inverter is connected to shore power and the TV's and entertainment system is powered from the AC input power (shore cord or generator).



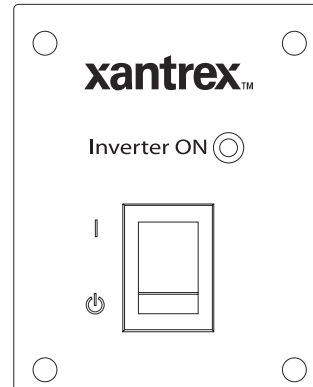
WARNING: When the ON/STANDBY switch is in the STANDBY position with the inverter connected to shore power, AC voltage will be present at the output of the inverter.



There are two control switches for the inverter. The main switch is located on the inverter, in the inverter compartment, and a remote switch is located above the entry door on the systems panel.

NOTE: When shore power is present, the inverter remote switch will not change the operation of the inverter.

NOTE: If you are disconnected from shore power with the inverter switch in the ON (I) position and the remote switch is in the STANDBY position, the inverter will draw some current from the battery (about 1 mA). To eliminate the draw, ensure both switches are in the STANDBY position.



To Operate the Inverter in Invert Mode:

1. Disconnect the inverter from shore power.
2. Turn the ON/STANDBY switch on the inverter to the ON position. The inverter ON light illuminates. Then turn the remote switch to the ON (I) position.
3. Operate the TV's and entertainment system.

To Operate the Inverter in Shore Power Mode:

1. Connect the inverter to shore power. The AC input light on the inverter illuminates. The ON/STANDBY switch on both the remote switch and inverter can be either ON or in the STANDBY position.
2. Operate the front TV and entertainment system.

NOTE: The inverter transfers the appliances to shore power whenever shore power is connected, regardless of the position of the ON/STANDBY switch.

NOTE: For detailed information regarding inverter functions and usage, refer to the manufacturer's operation's manual.

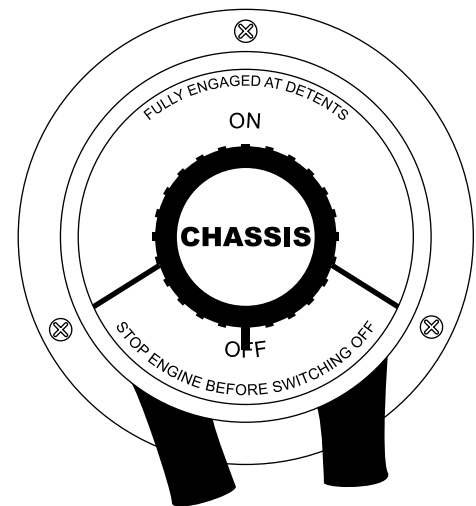
BATTERY ISOLATOR CONTROLLER

The battery isolator is designed to protect the coach batteries and chassis batteries from discharging each other. This is done by separating the two sets of batteries until a charging source is available. Once a charging source of at least 13.3 Volts has been detected, the isolator controller will then connect both sets of batteries so they will charge. There are three possible charging sources that will provide the necessary Voltage to connect the batteries. The three charging sources are; the chassis alternator, the generator which will power the inverter, and shore power which will also power the inverter. The inverter has a built in charger that will work off both generator and shore power to charge the batteries. Unless the controller senses a charge from one of the above sources the two sets of batteries will not be connected. Some additional characteristic of the isolator system include:

1. Delays connecting the coach batteries to the charging system for approximately 15 seconds to allow the alternator time to reach full charging ability.
2. If the charging Voltage drops below 12 Volts for a period of 4 seconds due to low idle speed and/or excessive load, the isolator will disconnect the coach batteries until the Voltage returns to a level of 13.3 Volts for about 10 seconds.
3. In the event the automotive battery is low or fully discharged, it will be necessary to press and hold the auxiliary start button located on the dash. By pressing the auxiliary start button, power from the coach batteries will assist with starting the motorhome.

BATTERY DISCONNECT SWITCHES

The battery disconnect switches allow you to easily disconnect the coach and chassis batteries from electrical circuits, preventing unwanted discharge during short periods of non-use. For long periods of non-use: Walk through the RV and manually shut off all 12 Volt powered items by their independent power switch, then turn the coach and chassis disconnect switches to the OFF position. The coach switch is a part of the systems panel in an overhead cabinet above the passenger seat. The chassis switch is located within the battery compartment.



There are three main uses for the battery disconnect switches:

1. Prevent unwanted discharge of batteries during extended periods of storage.
2. Prevent shorts or fire hazards while working on the 12 Volt electrical system.
3. Can help protect the batteries in the case of overcharging.

When activating, place the switch for the desired battery system in the ON position. This battery system will now be operational.

The disconnect switches must be in the ON position while plugged into shoreline power to charge the batteries.

Place the coach switch in the OFF position to disconnect 12 Volt circuits.

NOTE: It is not necessary or advisable to use the battery disconnect switches as a substitute for turning off the various 12 Volt applications available in the motorhome.

NOTE: If 12 Volt functions are not working, be sure to check that the battery disconnect switch has been placed in the ON position.

BATTERY MAINTENANCE

The batteries for the motorhome are located on the passenger's side in a rear storage compartment designated for the batteries. This compartment is water tight for the proper storage of batteries.

It is important to make sure that the batteries are kept charged. Take time to turn off all lights or other 12 Volt functions when not in use. Connect the motorhome to a 120 Volt power supply when possible, instead of draining the batteries.

The charge condition of the batteries can be checked with the monitor panel. To check, press and hold monitor test switch while reading the charge level on the battery gauge. Charge levels indicated are divided into sections from weak through fully charged.

Checking the condition of a battery at regular intervals is very important and will help insure its proper operation. Here are some recommendations for checking and servicing batteries.

1. Keep the battery mounted securely. Vibrations cause early failure of many batteries.
2. Check the electrolyte level of the batteries at regular intervals.
3. Keep the battery terminals clean.
4. Check the outside of the battery for cracks. If you find cracks replace the battery.
5. Watch for overcharging.
6. Make sure the battery hold downs and carrier are kept clean and free of corrosion.

When removing a battery, disconnect the battery ground terminal first. When installing a battery, always connect the grounded terminal 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.

NOTE: The coach battery disconnect must be in the ON position in order to charge the batteries.

NOTE: Deep cycle batteries require a slow charge, resulting in charge times which may exceed 18 hours. When charging the deep cycle batteries, use shore power and allow the inverter to charge the batteries to a full charge.

BATTERY SAFETY



WARNING: Always wear safety glasses when working with batteries.

WARNING: BATTERIES CAN EXPLODE! Do not smoke or expose any battery to electric sparks or flame. Batteries when charging or discharging generate hydrogen. Hydrogen and air is 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.

WARNING: Before doing any work on electrical systems, disconnect battery cable and the 120 Volt power cord. Do not reconnect the cables until all work has been completed. This will avoid the possibility of shorting or causing damage to electrical components or shock to the servicing person.

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

BATTERY CHARGING

If for any reason you charge a battery with a source outside the motorhome, make sure to follow the rules of battery maintenance and safety outlined in this section. Also observe these additional safety precautions related to battery charging.

1. Disconnect the battery from the motorhome.
2. Check electrolyte level before charging. Be sure that each cell is properly filled with distilled water.
3. Make sure to use care when connecting and disconnecting the cables from charger. A poor connection can cause an electrical arc, which can result in an explosion.
4. Remove the battery vent caps before charging, and make sure that the electrolyte does not splash out as a result of charging too quickly.
5. Check literature supplied by the battery manufacturer, and follow warnings or cautions outlined.

12 VOLT FUSES

Interior 12 Volt System:

A 12 Volt DC distribution panel is located next to the 120 Volt circuit breakers. The panel contains circuits with replaceable fuses for protection of the motorhome 12 Volt lines. If any line is loaded beyond the capacity of its fuse, the fuse will “blow”. A portion of the 12 Volt 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 larger fuse than indicated.

If the reduction of load on the line does not stop the “blowing” of the fuse, there may be a “short” somewhere along the 12 Volt line, or at a non-fused 12 Volt component on the line. Check the 12 Volt line and any components along the line. Locate the “short” and take necessary steps to repair it. If you cannot locate the problem, have a qualified electrician check it out.

It is a good idea to keep additional fuses on hand in the motorhome. Replacement fuses are available at most service stations, hardware and automotive supply stores. Remember that the replacement fuse must be the same amperage rating as the original.

Automotive 12 Volt System:

The primary point to keep in mind about the unit's 12 Volt system is that the automotive chassis alternator supplies power to both the automotive systems as well as any coach battery and directly to the motorhome living quarters while the vehicle's motor is running. Thus, of primary concern to you is the condition of the motorhomes electrical system and especially the alternator.

The alternator compensates for electrical usage in the motorhome, the power drawn by the appliances, lights, fans and other 12 Volt powered items as well as the charging of the automotive and coach batteries.

If the alternator isn't keeping pace with the draw on the motorhomes electrical system, while driving down the road, it means you are working in a negative mode: more power is being used than the unit is putting out.

This means that you are taking power out of the batteries. If you draw too much power from the batteries there may not be enough power left in the battery to start the motorhome or run any of the appliances when you stop for a break or for the night.

So, always be aware of the alternator's output. Also check the monitor panel frequently to see that the coach batteries are at full charge. To insure an accurate reading, utilize a 12 Volt tester on the batteries.

The alternator will charge at a higher rate right after the vehicle has been started, replacing the power that was used to start the vehicle, but the charging should quickly go back to “normal” and hold its own even when you turn on lights or appliances.

When stopped at a campsite that allows you the use of the shoreline, the 120 Volt electrical system will recharge your coach battery.

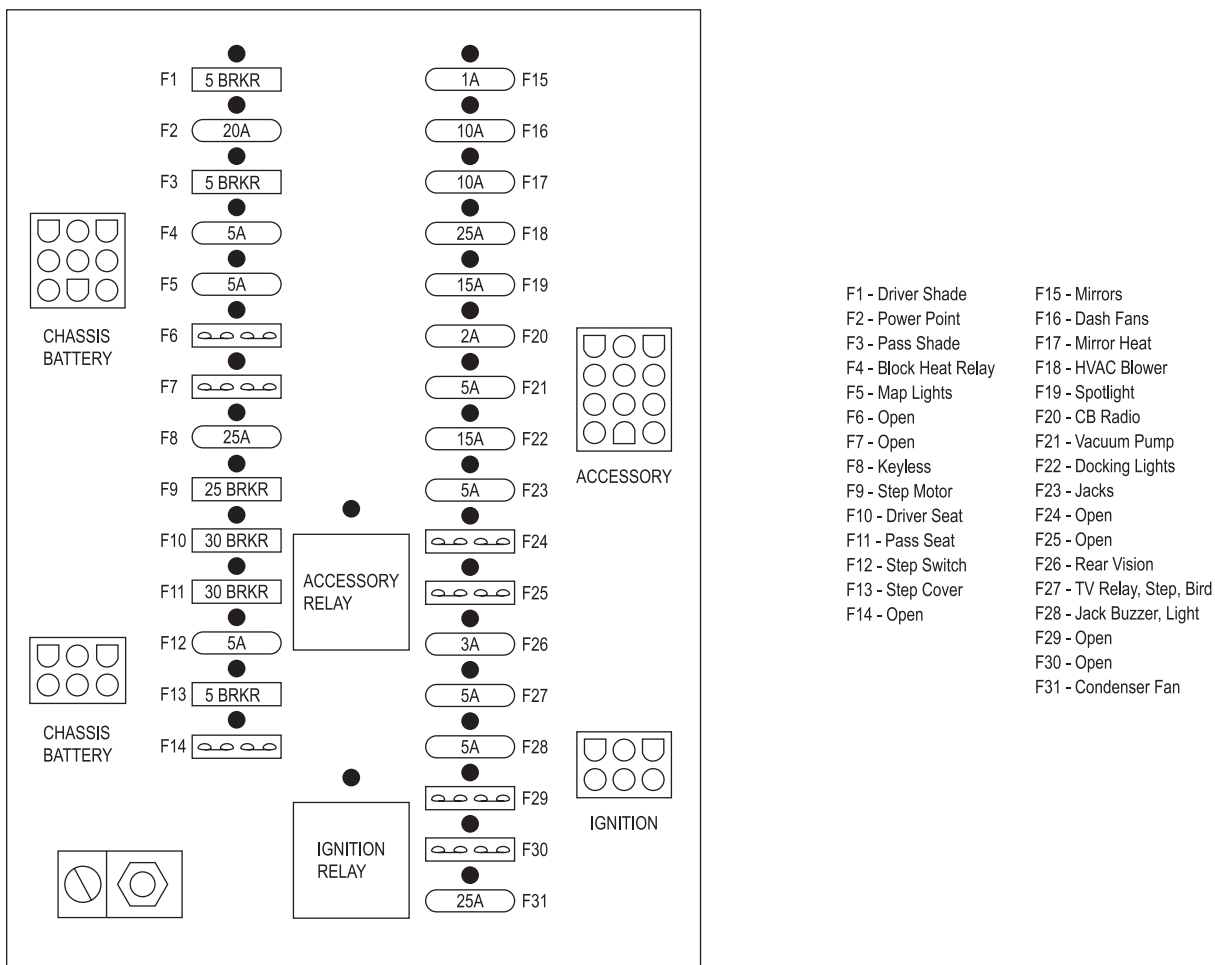
When checking coach battery condition, turn on several interior lights to place a load on the battery. Under heavy usage in warm weather, check the fluid level of the batteries often. Low battery fluid level is very harmful to the battery's longevity.

If the alternator shows a discharge while the motor is running, turn off appliances or lights to see if a charge comes on or if the alternator indicates not charging. Then apply a drain on the system to see if a discharge returns. If a discharge persists, contact your dealer.

FUSE PANELS

Dash Fuses:

The in dash fuse panel is located under the dash on the wall. A circuit board with blade type fuses and breakers will be visible. The fuse and breaker locations are labeled below.



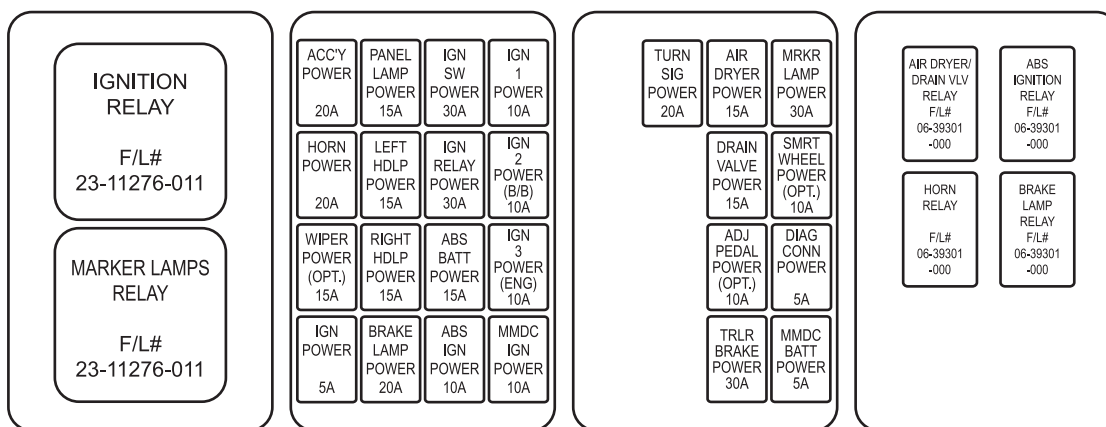
Exterior Fuses:

Located in the inverter compartment bay is the exterior 12 Volt Fuse Panel. The six slots might not all be used depending on equipped options.

12 VOLT				
#	GA	COLOR	FUSE	POWER TO
1	14	GREEN	15	DRIVER CARGO LIGHTS
2	14	YELLOW	15	PASS CARGO LIGHTS
3	14	ORANGE	15 BRKR	CORD REEL
4	10	RED	30	SYSTEMS HEAT
5	10	GRAY	15	FREEZER
6	18	RED/BLACK	5	COACH BATT SIGNAL

Also located within the inverter bay, is a Freightliner fuse panel. The following diagram is for reference only.

NOTE: Refer to the chassis manufacturer's operations manual for information regarding chassis fuse panels throughout the motorhome.



Bedroom Fuse Panels:

Located at the foot of the bed are the 120 Volt Breaker Panel and the 12 Volt Fuse Panel. Each panel has its own labels for identification, and are shown below for reference.

NOTE: Options selected for your motorhome will determine the type of 120 Volt Breaker Panel. The sequence of labels may vary from the diagram and your 120V Breaker Panel. Not all labeled items within this diagram are available for your motorhome.

STANDARD LOAD PANEL

50	50	15	20	15	20	15	15	15	15	15	15
MAIN	MAIN	MICROWAVE	FRONT AIR	WASHER DRYER	REAR AIR	GENERAL RECEP'S	TV RECEP'S	CONVERTER	WATER HEATER	GFCI RECEP'S	CENTRAL VACUUM
										KITCHEN RECEP'S	BLOCK HEATER

CONNECTIONS FOR OPTIONAL ENERGY MANAGEMENT PANEL

15	15	15	15	15	20	50	50	15	20	15	15	15	15
KITCHEN RECEP'S	BLOCK HEATER	CONVERTER	WATER HEATER	WASHER DRYER	REAR AIR	MAIN	MAIN	MICROWAVE	FRONT AIR	GENERAL RECEP'S	TV RECEP'S	GFCI RECEP'S	CENTRAL VACUUM

STANDARD LOAD PANEL FOR OPTIONAL INVERTER

50	50	30	20	15	20	15	15	15	15	15
MAIN	MAIN	INVERTER	FRONT AIR	WASHER DRYER	REAR AIR	GENERAL RECEP'S	BLOCK HEATER	WATER HEATER	GFCI RECEP'S	CENTRAL VACUUM

SUBPANEL
(FROM INVERTER)

15	15	15
MICROWAVE	TV RECEP'S	KIT. RECEP'S

OPTIONAL INVERTER LOAD PANEL WITH OPTIONAL ENERGY MANAGEMENT

15	15	15	15	20	50	50	30	20	15	15
CENTRAL VACUUM	WATER HEATER	GFCI RECEP'S	WASHER DRYER	REAR AIR	MAIN	MAIN	INVERTER	FRONT AIR	GENERAL RECEP'S	BLOCK HEATER

#	GA.	COLOR	FUSE	CIRCUIT
1	12	RED	15	WATER PUMP
2	14	GRAY	15	DRIVERSIDE FRONT
3	12	VIOLET	15	FRONT CEILING LIGHTS
4	14	BROW	15	PASS SIDE REAR
5	14	BLUE	15	DRIVERSIDE REAR
6	14	ORANGE	15	APPLIANC
7	18	RED	5	RADIO
8	16	GREEN	7.5	TV BOOST/SATELLITE
9	18	ORANGE	5	MONITOR/CO & LP DET
10	14	RED	15	AWNING
11	14	BLACK	15	PASS SIDE FRONT
12				
13				
14				
15				

GENERATOR

The generator is located behind the large access door on the front cap. Two latches secure the door for travel and when unlatched will let the door open from the top with hinges on the bottom. There are two pressurized cylinders to help with opening and also to hold the door from falling to the ground.

The generator does not slide out, however all of the controls and fluid check areas are easily reached from the front of the unit. With the proper care and maintenance, the generator should provide many years of dependable use.

NOTE: Prior to operating the generator, be sure to read and understand the generator owner's manual provided by the manufacturer.

There are two locations from which you can start the generator. The first is the control panel on the generator itself, the second is located on the dash.

The generator comes with a standard fuel safety feature that will engage when the motorhome fuel tank reaches approximately $\frac{1}{4}$ of a tank. When engaged, the generator will not run until the fuel tank is filled. The safety feature will automatically disengage allowing normal operation of the generator.

GENERATOR SAFETY:

- Never operate the motorhome, generator engine, or the engine of any vehicle, longer than necessary when the vehicle is parked.
- DO NOT simultaneously operate generator and a ventilator which could result in the entry of exhaust gas. When exhaust ventilators are used, we recommend that a window on the opposite side of the unit "up wind" of exhaust gases be opened to provide cross ventilation. When parked, orient the vehicle so that the wind will carry the exhaust away from the vehicle.
- DO NOT open nearby windows, ventilators, or doors into the passenger compartment, particularly those which can be "down wind", even part of the time.
- DO NOT operate the generator when parked, so that vegetation, snow, buildings, vehicles, or any other object could deflect the exhaust under or into the vehicle.
- DO NOT touch the generator when running, or immediately after shutting off. Heat from the generator can cause burns. Allow the generator to cool before attempting maintenance or service.
- DO maintain the generator at the scheduled intervals so it will be ready when you need it.
- DO check your operating fluids in-between scheduled maintenance checks.
- DO periodically check under the generator for any objects that could have hit or been lodged against the generator during driving.

WATER SYSTEMS

The motorhome plumbing system has the dual ability to be self-contained with on-board storage, or use facilities provided by an external pressurized source. In either case, the components of the system operate like those in your home. Components of the plumbing system consist of strong, lightweight, corrosion-resistance 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 SYSTEM

External Hookup:

Water provided from outside the motorhome is pressurized by the system from which it is delivered. When you connect the motorhome to an outside source, the fresh water tank and water pump are kept separate from the remainder of the system by in-line check valves. To connect the motorhome to an outside source of water:

1. Run a potable water hose through the porthole in the bottom of the systems compartment.
2. Attach one end to the water supply and the other end into the city water connection inside the systems compartment.
3. Turn the lever on the bypass valve to the city water position.
4. Turn the outside source on. Open various faucet's in the motorhome gradually to clear the air from the lines. Close the faucet's when the water flows freely.

NOTE: Do not turn the water pump ON when using water from an external supply.

Fresh Water Tank:

When an outside source of water is unavailable, water can be drawn from the fresh water storage tank for use in the motorhome. To fill fresh water tank proceed as follows.

1. Attach a potable water hose to the city water connection inside the systems compartment, and an outside water supply.
2. Turn the lever on the bypass valve to the fresh tank position.
3. Begin filling the fresh water tank.
4. When the tank is full, turn off the water supply.

NOTE: Never leave the hose unattended while you are filling the fresh water tank.

NOTE: There is an overflow line that will drain onto the ground if the tank is filled beyond capacity. Always fill the tank with potable water from a known safe source using a hose designated for potable water.

Water Pump:

The self contained water system is a demand only system. This means the system must be pressurized. A self-priming 12 Volt DC pump is provided to handle this function. This means that the water pump will run whenever there is a need for water. If the pump runs when all faucet's are closed, there may be a leak in the system. If this happens turn the pump OFF, and have the systems checked by a qualified service center. When initially starting up the self contained water system, follow this procedure:

1. Make sure the tank is filled with water.
2. Open all the faucet's in the motorhome, both hot and cold.
3. Place the pump control switch to the ON position. There are two water pump switches, one in the systems compartment and the other is located on the monitor panel. Both switches must be ON for the water pump to operate.
4. Allow time for the hot water tank to fill. Shut off each faucet as the flow becomes steady and free of air. When the last faucet is shut off, the pump should also shut off
5. The system is now ready for use.

NOTE: When filling the system, you may want to add additional water to the tank to replace the water used when filling the hot water tank and water lines.

Draining the Fresh Water System:

1. Turn the water pump OFF.
2. The fresh water tank low point drain valve is located in the systems compartment. Water in the tank can be drained by turning the drain cock to the open position.

NOTE: When draining the entire on-board fresh water system, make sure to open all faucet's, the water heater drain, and the system low point drains to remove all fresh water from the system.

3. When the system is finished draining, close all drains before filling again.

NOTE: When traveling, you may want to drain the tank, or keep the quantity of water to a minimum. This reduces the total weight of the motorhome for travel.

Sanitizing the Fresh Water System:

Disinfecting the water system with chlorine bleach protects you and others from bacteriological or viral contamination from any common water source. The fresh water system should be disinfected prior to the first usage of the system, if the motorhome has not been used in a long time, and once every three months.

The following items will be required to perform this procedure:

Prepare a chlorine bleach solution using 1 gallon of water and $\frac{1}{4}$ cup of chlorine bleach. Use one gallon of solution for every 15 gallons of tank capacity. Example: Add 6 gallons of solution to a 90 gallon tank.



- 1 - Battery powered drill (do not use an electric drill)
- 1 - Drill powered water pump
- 2 - Four foot sections of $\frac{1}{2}$ " inside diameter hose
- 2 - Female hose ends for $\frac{1}{2}$ " hose with $\frac{3}{4}$ " threaded end (compression style)
- 1 - Male hose end for $\frac{1}{2}$ " hose with $\frac{3}{4}$ " threaded end (compression style)

1. Install one male and one female hose end to one of the four foot sections of hose. When completed, the section of hose will have a male hose end on one side and a female hose end on the other side.
2. Connect this hose to the outlet side (usually marked with an arrow) of the pump. The other end of the hose will connect to the city water fill, located on the motorhome.

NOTE: Prior to attaching the hose to the city water fill, remove the pressure regulator first, otherwise the pump will not be able to push the water past the regulator. The hose will attach to where the regulator use to be.

3. Install one female hose end to the other four foot section of hose.
4. Connect this hose to the inlet side of the pump. The end of the hose that does not have a hose end will go into the container to pump out the solution.
5. Attach the battery drill to the pump insuring that the drill rotation matches the rotation needed to work the pump.
6. Using the drill, pump the solution from the container into the fresh water tank. Then remove the pump/drill apparatus and close the fresh water system.
7. Switch the water pump to the ON position. Open each faucet, in turn, and run the water until you smell a distinct chlorine bleach odor. Do not forget the hot water, tub and shower faucets.
8. Allow the system to stand for four hours.
9. Turn the water pump ON and drain the system of solution by opening all faucet's. Fill the fresh water tank and flush the system with potable water repeatedly, until the water system no longer smells or tastes of chlorine.

WASTE WATER SYSTEM

The waste water system in the motorhome can be described as two separate systems. A gray water system that consist of the drain lines and holding tank for waste water from the sink and tub, and a black water system which includes the holding tank and drain for toilet waste. In some cases the bathroom lavatory may drain into the black tank. Each system is self contained, and allows disposal of waste at designated dump stations at your convenience.

Components of the gray water system have drain traps, and both tanks are vented to equalize air pressure and disperse odors caused by drain water and wastes outside. Sometimes, the rocking movement of the motorhome while driving may empty the drain traps of their water, and allow the odors of the gray water tank to come into the coach. Residue in the drain water lines can also produce odors. To combat gray water holding tank odors, an approved deodorizing agent should be used. An agent that dissolves grease and fats and contains a detergent will help keep tank drain lines clean and free-flowing.

Holding Tanks:

Both holding tanks are located under the bathroom area. The drain valves are located in the systems compartment on the driver side of the motorhome.

Each tank has a separate drain line and dump valve, which permits dumping tanks individually or together. Each tank should be emptied often at a dump station designated for this purpose. Most national, state, and private campgrounds have dumping facilities. Many have hookups on the campsite, while some have portable dump collectors. Many service stations, particularly along interstate highways, also have these facilities. Many campground directories list dumping station locations across the nation.

If possible, dump holding tanks before a trip, to reduce the gross weight of the vehicle. Enough water should be kept in the black water tank to cover the bottom, to prevent hardening of any residue that may remain.

Do not dump black water tank until it reaches $\frac{3}{4}$ full. This practice makes sure that enough water is in the tank to flush all waste into sewer lines. If necessary, fill tank to the $\frac{3}{4}$ mark with additional water before draining.

Never put anything into the holding tanks other than normal drain water, waste, and biodegradable products. Paper wrappers, gum, cigarettes, etc., no matter how small they might be, should never be placed into either the gray or black tanks.

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.

NOTE: Always remember to clean up the dumpsite before leaving. NEVER empty your holding tanks directly on the ground, a roadway, river or stream. DO NOT POLLUTE.

To Empty the Holding Tanks:

1. Remove the sewer drain hose from its storage compartment inside of the systems compartment.
2. Remove the cap from the vehicle sewage drain, and connect the drain hose to it.
3. Attach the other end of the flexible drain line to the dump station inlet. Make sure both ends of the flexible drain lines are securely attached.
4. Drain the black tank first, by pulling the termination valve handle toward you. Make sure to allow sufficient time for the tank to completely drain, and then rinse the tank with several gallons of water by flushing the stool. Close the valve on the stool and let it fill before releasing the tank. This creates additional force to flush the tank more completely.
5. Drain the gray water tank by pulling the termination valve handle toward you. Draining the gray water tank last, with its soapy water helps to further rinse the drain and flexible hose.
6. When tanks are emptied, close termination valves by pushing handles back to the closed position.
7. Remove flexible drain hose and wash it thoroughly with clean water. Remove the other end from the dump station inlet, and replace it in the storage compartment. Secure the sewer hose storage cover, and replace the caps on both the motorhome outlet and the dump station inlet.

The following guidelines will help to ensure trouble free operation:

- Never put anything in the black water tank other than toilet paper specifically for Recreation Vehicle systems.
- Do not put automotive antifreeze, household toilet cleaners or drain cleaners, or any solid material into the waste water system.
- Always use chemicals in the black water system that are made especially for this purpose.
- When cleaning components of the waste water system, use cleaners made for Recreation Vehicle systems.
- Always keep the drain cap in place, and termination valves closed.
- After every third time the holding tanks are emptied, fill and flush both tanks with clean fresh water a couple of times to keep them clear and clean.

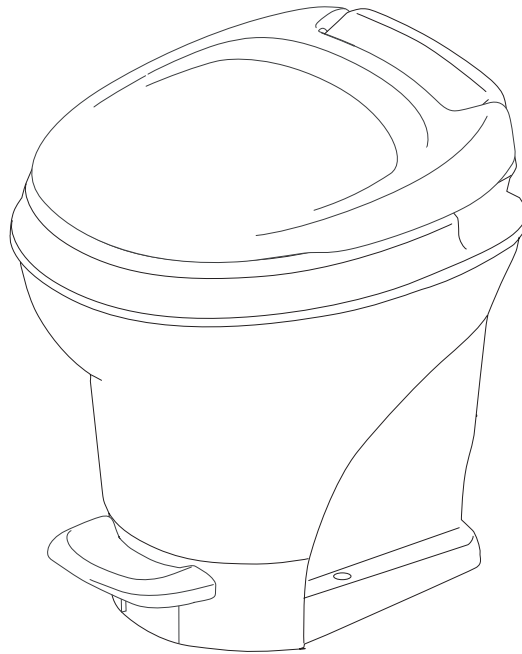
NOTE: If connecting to a campsite sewer inlet, **DO NOT** open termination valves until tanks are $\frac{3}{4}$ full. **DO NOT** keep black water valve open while parked. Wastes are **NOT** flushed directly into the sewer system. Only liquid waste is drained, therefore, water must accumulate, and chemicals in tank need time to break down solids before they can be released. If draining gray water tank directly into sewer inlet while parked, make sure to close termination valve for a period of time before leaving, allow some water to accumulate in tank to use for flushing drain line and flexible hose.

TOILET

The toilet operates from either the fresh water tank or city water supply. The water pump must be turned ON when not connected to a city water supply.

Operation:

- To add water to the toilet, depress the foot lever halfway to the floor.
- To flush the toilet, depress the foot lever completely to the floor until rinse clears the bowl.
- Release foot lever by allowing it to snap back, which permits positive sealing around the flush ball. A small amount of water should remain in the bowl.



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 can be drained.

Cleaning:

The toilet should be cleaned regularly for maximum sanitation and operational efficiency. Clean the toilet bowl with a mild bathroom cleaner. DO NOT use chlorine or caustic chemicals, such as drain opening types, as they will damage the seals.



WARNING: Most chemical mixtures for holding tank odor control are poisonous. Follow the product manufacturer's directions and warnings when using any holding tank additive.

NOTE: Refer to the Thetfords Toilet Owner's Manual for detailed information regarding usage and maintenance of the toilet.

WATER SYSTEM WINTERIZATION

If you intend to store the motorhome through periods of sub-freezing weather in an unheated environment, it will be necessary to winterize the water system. Damage to water system components will result if proper winterization steps are not taken.

- Level the motorhome for good system drainage.
- Drain the waste water tanks (black then gray following drainage guidelines).
- Turn the water pump switch OFF.
- Open all faucet's, and the water heater drain.
- Open low point drains on the water lines, including the exterior shower.
- Drain the fresh water tank.
- When all lines are drained, close the water tank valve, all faucet's, the water heater drain, and the low point drains on water lines.
- Turn the water heater bypass valve ON so the tank does not fill with antifreeze.
- Remove the water filter (if installed) and replace with bypass cap to protect the filter.
- If unit is equipped with an ice maker, turn OFF the water valve.
- Position antifreeze container so siphon hose can be connected to the winterizing connection.
- Turn valve to position which will allow the water pump to pump antifreeze from the container.
- Turn on the water pump and let each faucet run until antifreeze flows freely from both the hot and cold supply lines. Also, run the shower and toilet until antifreeze is visible.
- If motorhome is equipped with a washer/dryer turn the washer ON and let run until antifreeze is visible and continue to run for 15-20 seconds. Turn the cycle selector to rinse cycle to ensure the antifreeze gets into the pump to protect it.
- Turn OFF the water pump.
- Pour one cup of antifreeze in every drain to protect the P-traps.
- Before using the system again in warmer weather, completely flush the systems with water, flush the toilet, and sanitize the entire fresh water system. When using the motorhome during cold weather, and water in a tank or drain line should happen to freeze, you should take immediate steps to thaw it before damage to the system occurs. DO NOT continue to use the water system components if such a condition exists. If damage has occurred, make sure to have it repaired before using again.

WATER SYSTEM MAINTENANCE & TROUBLESHOOTING

As with any mechanical system, the plumbing is subject to the development of problems. Most of these problems can be greatly reduced if not altogether 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. Water leaking from a plumbing joint can cause considerable damage if left unchecked.

A leak in the fresh water system should be suspected whenever the pump is running and all faucet's and valves are closed. When the leaking fitting has been identified, attempt to stop the leak by tightening. DO NOT over tighten. Plastic fittings rarely need to be tightened with a wrench. If these fittings leak after being tightened by hand, disconnect the fitting and check for dirt, scale, or other foreign substance which may be causing the leak. 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 correct method of replacement, and replacement parts.

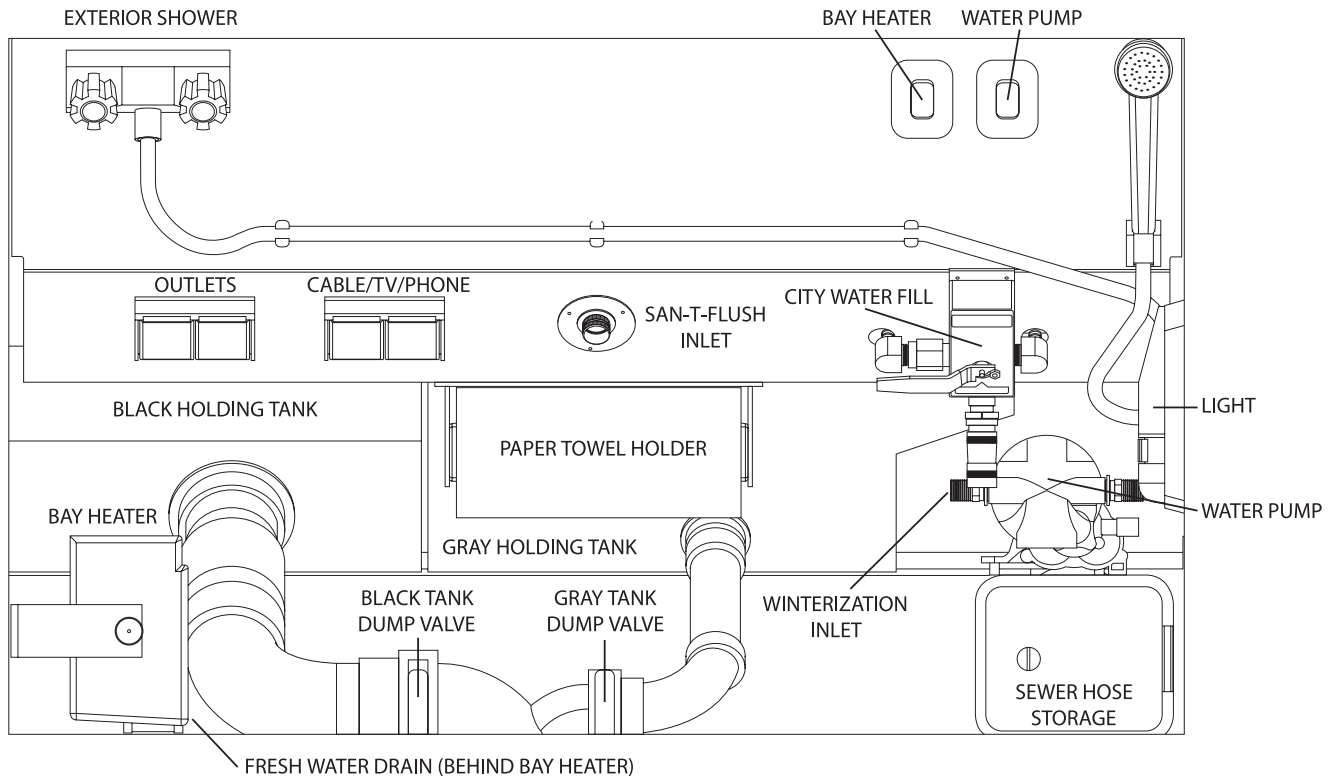
Proper winterization procedures of plumbing systems will normally be all that is necessary to prevent the damage caused by freezing. Freezing damage can harm any component of the system, including the water tanks, toilet, pump, and all piping. Be sure to follow the winterization procedures outlined in this manual. Also be sure to discuss any additional precautions that should be taken to winterize the water systems with your dealer. Local climates vary; and winter maintenance needs may be affected.

Be sure to read the literature supplied with plumbing components, such as the 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, contact your dealer.

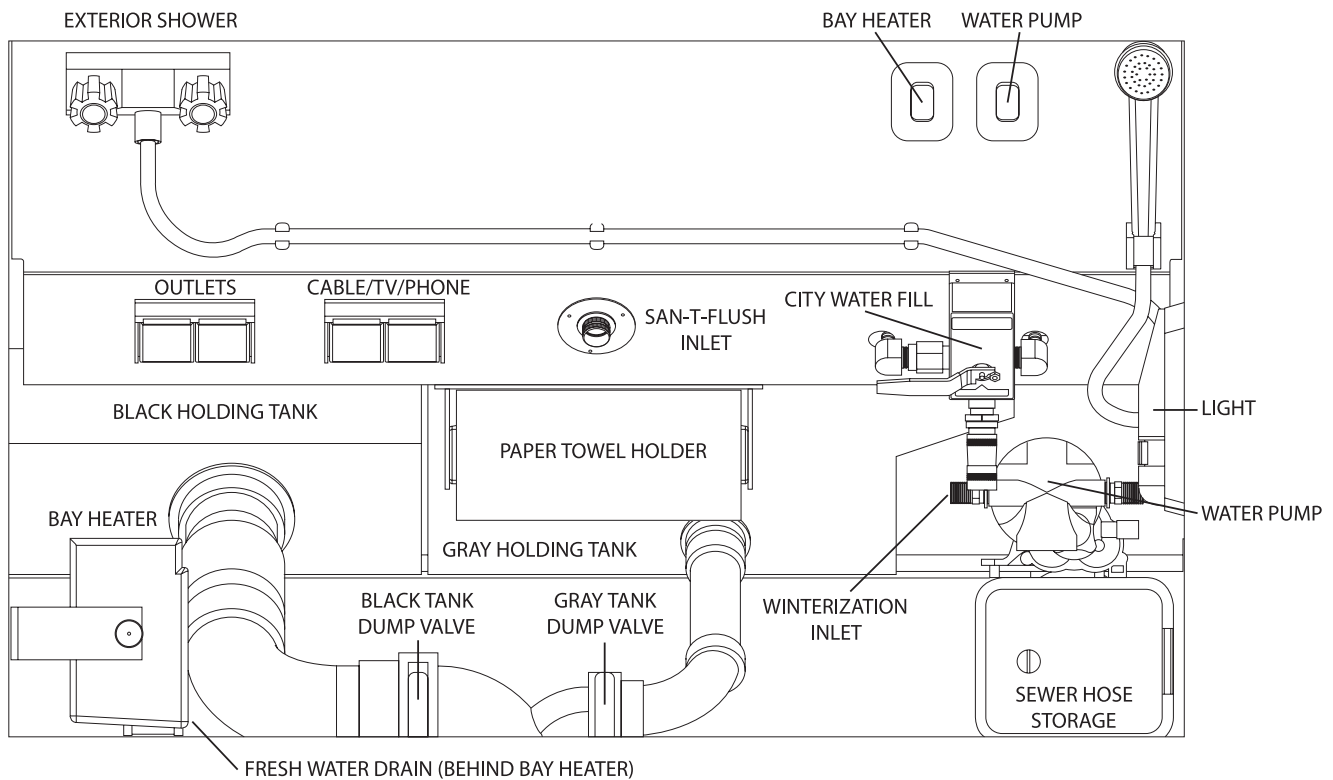
TANK CAPACITIES

* Capacities are approximate and specifications are subject to change without notice.

	36A	37A	38A
FRESH WATER HOLDING TANK	90 gallons	90 gallons	90 gallons
BLACK HOLDING TAN K	48 gallons	48 gallons	48 gallons
GRAY HOLDING TANK	47 gallons	47 gallons	47 gallons
LP GAS TANK	162.5 LB.	162.5 LB.	162.5 LB.

SYSTEMS COMPARTMENT

- **Exterior Shower**
Provides hot or cold water to the exterior of the motorhome.
- **Heater Switch**
Provides power to the bay heater.
- **Water Pump Switch**
Provides power to water pump.
- **120 Volt Outlets**
- **Cable/TV Hook-up**
When available, provides cable and/or satellite to interior of motorhome.
- **Phone Jack Hook-up**
Supplies phone service to motorhome interior when available.
- **San-T-Flush Inlet**
Inlet to clean black tank.
- **City/Fresh Tank Water Fill Valve**
Two way directional valve which controls city water between filling the fresh water tank and direct interior usage.
- **Compartment Light**
Manual ON/OFF light that provides light to service bay.



- **Bay Heater**
Used to maintain compartment ambient temperature above freezing.
- **Black Tank Dump Valve**
Pull T-handle out to dump solid waste from the black tank.
- **Gray Tank Dump Valve**
Pull T-handle out to dump waste water from the gray tank.
- **Winterization Inlet**
Antifreeze inlet for winterization.
- **Water Pump**
Provides water pressure when not connected to a pressurized exterior system.
- **Fresh Tank Drain Valve**
Turn handle to the left to drain excess water from the fresh tank.
- **Sewer Hose Storage**
Place the sewer hose here when not in use.

LP GAS SYSTEMS



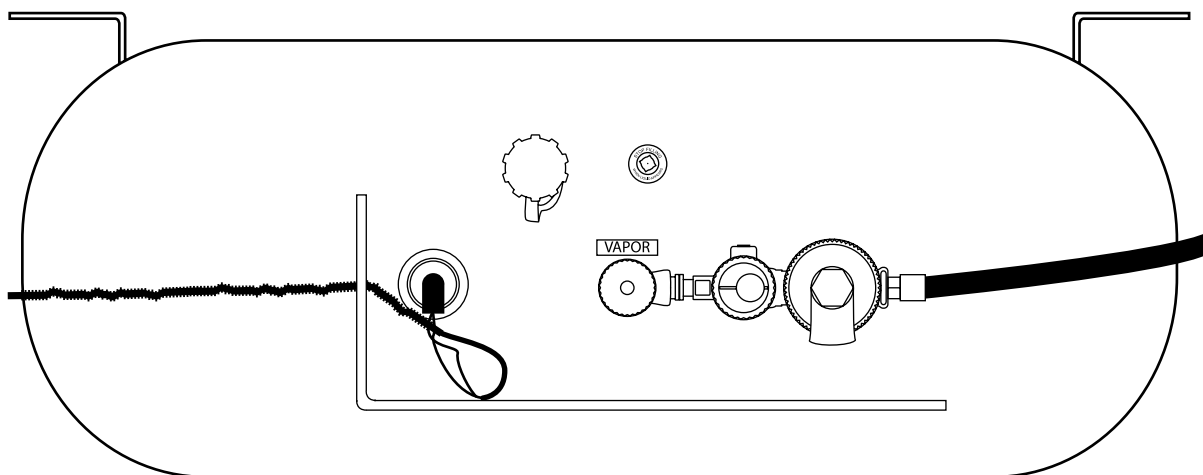
WARNING: LP Gas is highly volatile and extremely explosive. Do not use matches or a flame to test for leaks. Use only approved LP Gas leak testing solution for leak detection. Unapproved solutions can damage copper tubing and brass fittings. Never attempt to adjust LP Gas regulators. Only qualified personnel should perform any maintenance or repair to the LP Gas system.

The liquid petroleum (LP) gas system furnishes the fuel for cooking, heating, and hot water. LP Gas can also be used as an alternate energy source for refrigeration. LP Gas is a clean, efficient, safe form of energy when proper handling and safety precautions are observed.

The gas is stored under extreme pressure in the tank, with space in the tank to allow for expansion into vapor. This vapor is reduced in pressure by passing through a regulator. This reduction in pressure is a two step process which assures consistent pressure for use, regardless of outside temperatures, weather, or altitude.

NOTE: For detailed information regarding LP Gas, and it's use consult a qualified LP Gas service representative.

NOTE: Even though the tank is equipped with an automatic 80% shut-off which prevents over-filling beyond 80% tank capacity, it is a good idea to have the supplier monitor the 20% liquid gauge, and stop the filling process if liquid does appear.



FILLING THE LP GAS TANK

1. Before entering the LP Gas bulk plant or service station, make sure all pilot lights are extinguished. Shut off gas to all appliances by closing the LP Gas main shut off valve.
2. Extinguish open flames and smoking materials.
3. Never remove the LP Gas tank from the motorhome. Always drive the motorhome to the gas supplier to fill.
4. Have the supplier connect the fill nozzle to the tank fill connection.
5. Always remember to close the supply valve, and open the 20% liquid level valve.
6. Never use a wrench to close the service or the 20% liquid level valve. If when closing by hand, leaking occurs, have the valve repaired or replaced.
7. Drive at least one mile from the LP Gas supplier before relighting pilot lights or appliances. This will allow any minimal leakage which occurred while filling the tank to dissipate. DO NOT light pilot lights if you continue to smell LP Gas. Shut off the Supply Valve. Allow the motorhome to ventilate for 30 minutes. If you still detect LP Gas odor, have the source of the leak located and repaired.

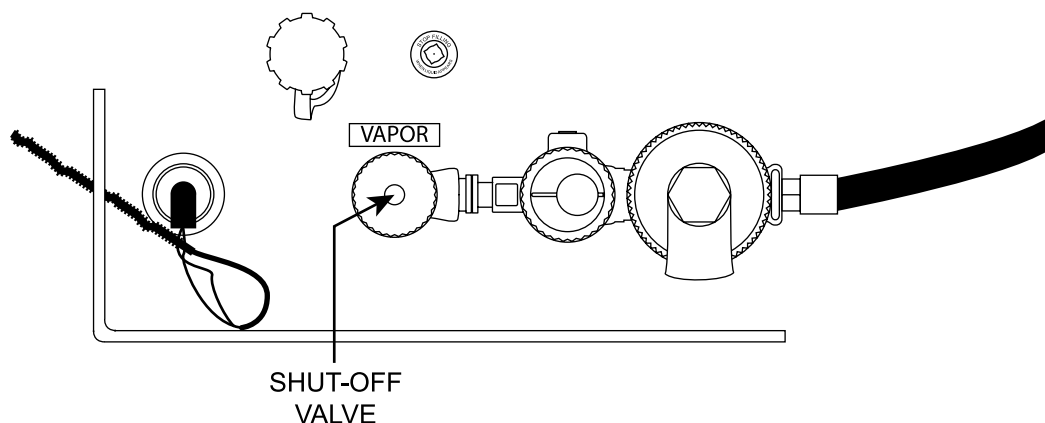
Never use any other tank than the one furnished with the motorhome. If the tank must be replaced, check with your dealer for correct tank specifications and replacement procedure.



WARNING: Make sure that the tank is not filled beyond the 80% liquid level. If the tank has been over-filled, make sure the LP supplier bleeds out the excess. Over-filling the LP Gas container does not allow for the necessary 20% vapor expansion space that can result in uncontrolled gas flow which can cause fire or explosion.



WARNING: Make sure the tank service valve is accessible at all times. In an emergency, it may be necessary to shut off the valve quickly.



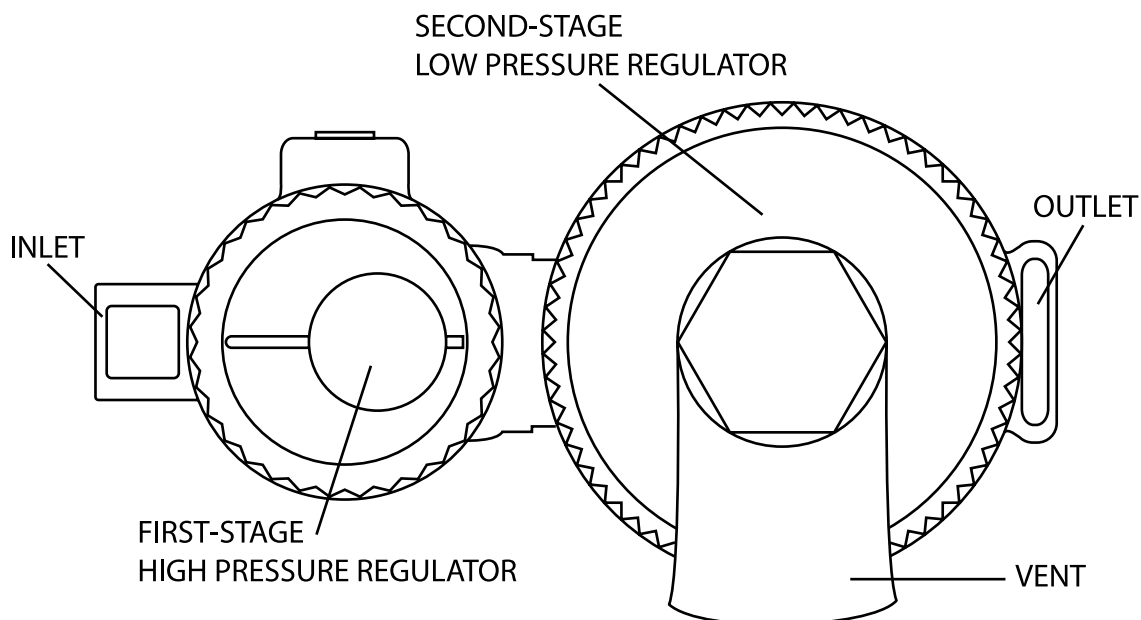
LP GAS REGULATOR

The regulator reduces the pressure of the LP Gas vapor from the pressure in the tank, to the pressure required for use at the appliances. This reduction in pressure is performed by a two-stage regulator. Two regulators are used in the same body to reduce the pressure of the LP Gas in the tank for use by the appliances in the motorhome. The regulator seldom requires service, but it should always be protected from the elements and extremes of hot and cold.

The high pressure regulator (first stage) is used to reduce the pressure to approximately 10 to 13 PSI before sending it along to the low pressure regulator (second stage). This second stage regulator reduces the pressure further to 11 inches water column, or 6.35 ounces per square inch. The two stages regulator does not have to work as hard since the second stage receives consistent pressure rather than inlet pressure which varies. The result is an efficient safer system that helps to eliminate problems such as freeze up and pilot outage.

The regulator has been preset by the manufacturer of the regulator, and adjustment should not be necessary. If adjustment should be required however, DO NOT attempt to adjust it yourself. Adjustment must be made with special equipment by a qualified LP Gas service technician. Have the regulator checked annually, or whenever you suspect a problem. The correct line pressure should be 6 ¼ oz. or 11 inches of water column.

Because air is required for proper operation of the regulator, it is very important that the regulator vent is kept clean and free of dirt and debris. This is why it is necessary to keep the vent facing downward and the regulator covered to protect it from contamination. A toothbrush can be used to clean the vent if it becomes clogged by foreign matter.



During cold weather, it is important to keep ice from forming in the regulator, which will shut off the flow of LP Gas to the appliances. Have the supplier add a hydrous Methanol when filling the tank for use during cold weather. Regulator freeze-up can occur in any weather if there is moisture in the tank, or if the tank has been over-filled. Always use moisture-free LP Gas, and make sure the tank has not been filled beyond 80% of capacity. If moisture has entered the tank, have the tank purged, or have hydrous methanol added by an authorized LP supplier.

If you believe a regulator has been damaged or otherwise is not functioning, have it replaced by a qualified LP Gas service representative.



WARNING: Never alter the positioning of the regulator. LP Gas regulators must always be installed with the diaphragm vent facing downward. Also make sure to keep the regulator cover in place to minimize vent blockage which could result in excessive gas pressure causing fire or explosion. Do not rely upon being able to smell LP Gas leaks, as the odor may not be sufficiently strong to detect.

REGULATOR FREEZE-UP

The term regulator freeze-up is a misleading one. Regulators and LP Gas do not freeze. However, the moisture that can be contained in the gas will freeze as the gas expands and cools passing through the regulator. This freezing of the moisture in the gas can build up and partially or totally block the passage of the gas through the regulator. Freezing can also occur when outside temperatures are low enough to contribute to the freezing of the moisture in the gas.

The source of the moisture is varied. It can occur at the refinery or gas bulk plant, in the rail cars used to transport the gas, or even within the motorhome LP tank. Moisture in an LP tank can occur when a tank service valve is left open, allowing moist air to enter and become trapped.

A two-staged regulator helps to reduce the possibility of freeze-up because of its larger orifice size, and the fact that heat is transferred through the walls of two regulators instead of just one.

There are several steps that can be taken to inhibit or prevent this from happening:

1. Make sure that the LP tank is free of moisture before refilling.
2. DO NOT overfill the LP tank.
3. Make sure to keep the service valve on an empty tank closed.
4. If freezing has occurred, have your LP dealer purge the LP tank before refilling.
5. Add a hydrous methanol or other approved LP antifreeze or de-icing agent to the LP tank.
6. Keep the regulator covered at all times.

NOTE: If freeze-up does occur, shut off the LP Gas at the tank. A frozen regulator may permit LP Gas to flow at high pressure, resulting in leaks at appliances or in the lines. If freeze-up does occur, **NEVER** attempt to thaw with an open flame. A small light bulb can sometimes be useful to provide heat and aid the thawing process. Once thawed, be sure to take the proper steps to prevent a reoccurrence. Have the system checked by your LP supplier if freeze-up continues.

Remember that as outside temperatures drop, the BTU value of the LP Gas is lessened, since the colder liquid LP in the tanks requires the heat from the surrounding air to vaporize. This lowering of BTU value can significantly affect the performance of the system. You can help insure proper performance by keeping your LP tanks as full as possible in cold weather, and reviewing the BTU/hr plates on LP appliances for proper LP management.

HOSES, PIPES, TUBES AND FITTINGS

The hoses, pipes, tubes, and fittings used in the LP system are designed to withstand pressures far exceeding those of the LP system. However, because environment and time can both contribute to the deterioration of these components, they must be inspected for wear at regular intervals. Be sure to inspect the hose before each season and when having the tank refilled. Look for signs of deterioration such as cracks or loss of flexibility. When replacing the hose or other LP components, make sure to always replace them with components of the same type and rating (check with your dealer).

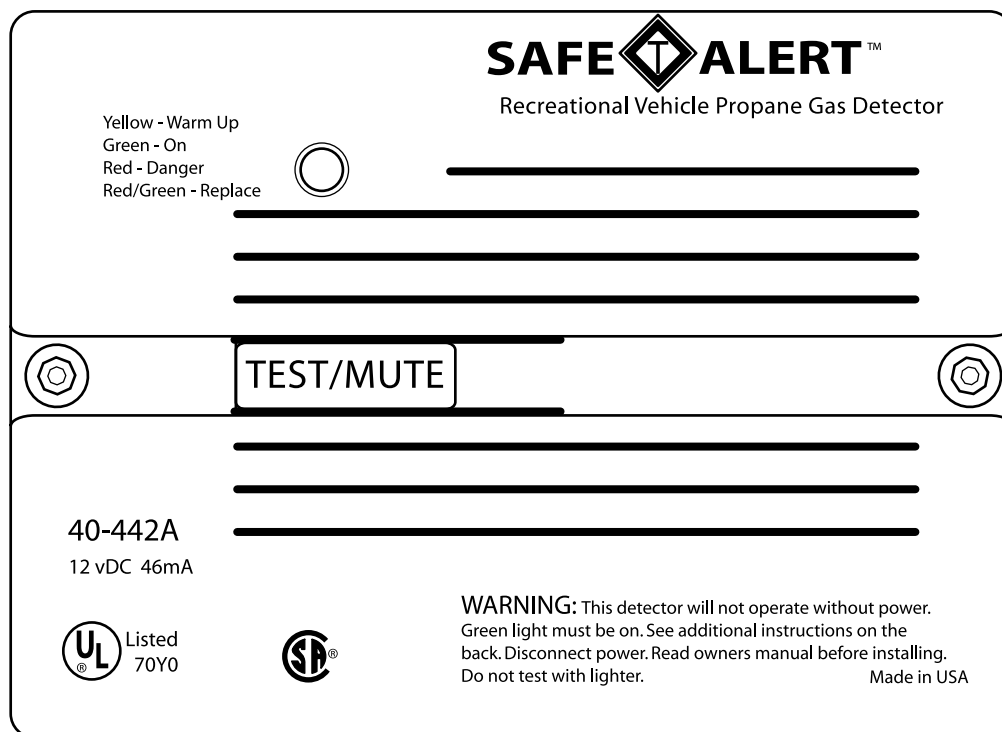
Fittings are used to connect the various system components to each other. The P.O.L. fitting at the end of the LP supply hose is made of brass so that pipe sealants are not necessary to prevent leaking. It also has a left-handed thread, which means that it is turned clockwise to remove, and counter-clockwise to tighten. The P.O.L. fitting has been designed to help restrict the flow of LP Gas in the event of a regulator failure, or hose malfunction.

LP GAS DETECTOR

The LP Gas Leak Detector is powered at all times when the coach battery disconnect switch is in the ON position. When power is supplied to the detector the green indicator light will illuminate. After 60 seconds, the detector will begin monitoring the air in the motorhome for combustible vapors. The propane you use to cook, refrigerate, and heat is combustible. Should a leak occur, the detector will produce a pulsating alert sound when the gas reaches the detector. This alert will continue to sound until the gas has dissipated or until the reset button is pressed. When the alert sounds, open all doors and major windows to air out the motorhome and turn the gas off at the tank. Do not reenter the motorhome until the alert stops sounding. If the alert sounds a second time after the gas is turned back on, leave the gas off and have a qualified LP Gas Dealer or RV Service Center make the necessary repairs. The reset button only stops the alert from sounding for 60 seconds. This device is intended for detection of LP Gas ONLY.

HOW TO TEST

Simply press the TEST switch any time during the warm-up cycle or while in normal operation. The LED should flash red and the alarm should sound. Release the switch. This is the only way you should test your detector. The test feature checks the full operation of the detector. If this detector does not test properly return it immediately for repair or replacement.



WARNING: Do not use a cigarette lighter to test the alarm.

NOTE: This test procedure should be repeated every week or every time the coach is taken on a trip, whichever occurs first. Call the detector manufacturer, if you have any questions about the LP Gas Detector.

CHECKING THE LP GAS SYSTEM FOR LEAKS

Road vibration can loosen LP Gas fittings. It is important to check the LP system for leaks at least every 5,000 miles, and whenever the tank is filled. It is also a good idea to have the entire LP Gas system checked annually by a qualified LP Gas service representative.

Use the following steps when checking the system for leaks:

1. Open all the windows and vents.
2. Open the gas tank service valve.
3. Use non-ammoniate, non-chlorinated soap solution, or an approved leak detection solution on all line connections (ammoniate soap solutions can cause cracking on copper or brass lines and fittings).
4. If a leak is detected, tighten the connection with two open end wrenches until bubbling stops. DO NOT over tighten, or use excessive force. If the leak continues, contact the recreation vehicle dealer, or a qualified LP Gas service representative to have an 11" Water Column Test performed.



WARNING: Never check for leaks with an open flame. The scent of LP Gas (a garlic-like odor) is actually ethyl mercaptan, an additive that allows you to detect the presence of a leak, since LP Gas is naturally odorless. Do not rely upon being able to detect the smell of the gas, as the odor may fade.

ABOUT THE LP GAS DETECTOR

Liquid Propane Gas (LP Gas) is heavier than air and will settle to the lowest point which is generally the floor of the coach. The detector is also sensitive to other fumes such as hair spray of which most contain butane as the propellant. Butane, like propane, is heavier than air and will settle to the floor level where it will be detected. When this occurs, press the reset button to stop the alert sound for 60 seconds.

Other combustibles which will be detected include alcohol, liquor, deodorants, colognes, perfumes, wine, adhesives, lacquer, kerosene, gasoline, glues, most of all cleaning agents and the propellant's of aerosol cans. Most are lighter than air in their vapor state and will only be detected when the coach is closed up. Glues and adhesives may exhaust hydrocarbon vapors for months after they are applied. They are easily activated by high temperatures.

The LP Gas Detector is powered by the motorhome coach batteries and/or the inverter. It draws less current than drawn by one instrument panel lamp. The detector will operate properly until the battery is drained down to 10 volts (a low battery condition is 10.4 volts). If the power source (battery and/or inverter) is disconnected, or if the power is otherwise interrupted, the detector will not operate.

The LP Gas Detector has a self check circuit which runs at all times when the detector is powered. In the event that the circuitry fails, a failure alarm will sound. It is a continuous series of short beep tones between long intervals and is distinctively different from the alert sound.

MOST COMMON CAUSES OF APPARENT MALFUNCTION

- **New Coach Odor:** The glues and other materials used in manufacturing the coach produce vapors which may be detected when the coach is closed up on a warm day. Air out the coach thoroughly.
- **Keeps Beeping:** The gas detector beeps about once every minute, even when it is turned off. The problem is a weak battery in the smoke detector which causes the smoke detector to produce short beeps which sound similar to the alert sound of the LP Gas Detector. This is a high pitch tone and bounces off the walls, making its location very hard to pinpoint. If the sound is not coming from the LP Gas Detector identify the source and refer to the sources section in this manual for means of repair.
- **Hair Spray Triggers the Detector:** Most aerosol hair sprays use butane gas as the propellant. Butane, like propane, is heavier than air and will settle to the floor level where it will be detected. The detector is doing its job as butane is combustible.
- **Other Gases:** Other gases which can cause the detector to respond with an alert include the vapors from any fuel, liquor, alcohol, deodorants, colognes, perfumes, wine, adhesives, lacquer, and most cleaning agents.
- **Slow Beep Rate:** This could be the failure alarm and will occur in the event that the circuitry fails. It is a continuous series of short beep tones between long intervals and is distinctively different from the alert sound.
- **After reviewing the above, if the problem still exists, contact the detector manufacturer for assistance.**

NOTE: The LP Gas Detector enters a cleaning and initializing mode every time it is powered. If turned off for less than 15 minutes, the LP Gas Leak Detector may produce several short “chirps” within the first 80 seconds of operation. This is normal.

SERVICE

See your Mandalay Luxury Division Dealer or a qualified LP Gas Service Center should service be required. If they are not familiar with this product, have them call the detector manufacturer assistance. If service is not available in your area, call the detector manufacturer.

LP GAS SAFETY PRECAUTIONS**IF YOU SMELL GAS:**

1. Extinguish any open flames, pilot lights and all smoking materials.
2. DO NOT touch any electrical switches.
3. Shut off the gas supply at the tank valve(s) or gas supply connection.
4. Open all doors and other ventilating openings. (DO NOT USE THE RANGE HOOD).
5. Leave the area until the odor clears.
6. Have the system checked by a trained professional before using again.

Be careful when doing any work or maintenance in the motorhome, that you do not puncture a gas line with a nail, screw, or drill bit.

Warning labels and decals are used throughout the motorhome in locations where the potential for a dangerous situation is present. They have been installed not only because of the requirement to do so, but also as a constant reminder to occupants of the motorhome to exercise proper caution when using or being around LP Gas appliances and equipment. Make sure that you and your family understand and follow all of them. Never remove these warning labels and decal's. If one should be lost, it should be replaced as soon as possible.



WARNING: DO NOT store LP Gas containers inside the motorhome. LP Gas containers are equipped with safety devices which relieve excessive pressure by discharging gas to the atmosphere.

CARE & MAINTENANCE

Periodic maintenance and cleaning of the motorhome is 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.

Make sure to read and follow all the maintenance tips and schedules that appear in this manual. Keep accurate records of maintenance functions performed, and perform all owner obligations as may be required by the chassis manufacturer to keep the 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 service durations 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 due to the fact a small problem can begin to affect other parts and systems of the motorhome if left unattended.

If a situation arises involving maintenance or a cleaning activity for which you are not sure of the proper procedure, do not hesitate to contact your dealer, or chassis service representative for information.

EXTERIOR PAINT

The exterior painted finish on the motorhome is of the finest quality. Proper maintenance will assure a long lasting durable finish.

NOTE: Do not wax or polish the exterior for the first 60 days.

Pressure Washing:

Extreme caution should be used when using a pressure washer to wash the motorhome, as severe damage to the paint could result. The tip of the pressure washer should never be adjusted to a "pin point" type spray. A fan type spray which disburses the water over a larger area should be used. Also, if the pressure is adjustable set it to the lowest setting. The spray tip should remain approximately 30" away from the surface of the motorhome to ensure safe cleaning.

NOTE: Do not use rubbing compound or other abrasive cleaners on the motorhome exterior. If using a tar and/or insect remover, insure it is safe for painted surfaces and decal's.

Precautionary Measures:

- Avoid parking under trees or near ocean salt spray.
- Ice or snow should not be scraped from the painted surface: Brush off.
- If the motorhome sets more than 24 hours, remove any front protective covering (bra) while not being driven.
- Commercial washes should be avoided. Wash with cold water using a mild liquid soap. Dry wiping with a dry cloth is not recommended.

Driving:

- Avoid gravel roads.
- Anti-freeze, gasoline, or window solvent spilled on painted surfaces should be rinsed off with water immediately.
- Rinse off bugs and bird droppings daily with water.

Any exterior finish will deteriorate with time. Dulling and fading can be increased by prolonged exposure to extreme sunlight, air pollutants, and excessive moisture. Surface weathering of fiberglass will not diminish structural integrity. Regular monthly washing and polishing of exterior surfaces is the best insurance against surface deterioration such as fading, yellowing, or chalking.



CAUTION: Take care to avoid spraying water directly into refrigerator and furnace vents when washing the motorhome.

If surface deterioration is apparent, contact a Valencia dealer for assistance with finish restoration. Physical damage to the fiberglass, such as cracks, holes, and chips, must be attended to immediately to avoid moisture from entering and causing problems with interior walls and components. Cover these areas with plastic, sealing the edges with tape until proper repairs can be made.

SEALS & ADHESIVES

It is important to maintain the seals and adhesives of the motorhome to prevent moisture from entering and destroying the motorhome components. When washing the motorhome, inspect the seals for signs of dry rot and wear. Be aware that weather, sun, 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, and also show you the correct method for renewing the seals. All exterior seals should be checked and resealed as needed at least every 6 months. This also includes the individual roof components as well. The rubber seals around the slideout opening can be wiped with 100% silicone spray to help prevent cracking. Check with your dealer for the type of caulking required, different areas require different types of seals.

Inspection of roof components at least twice a year is very important to make sure 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, or mildew. If you encounter drying, cracked, or weathered seals, make sure to reseal as necessary. Use a self leveling sealer to repair voids/cracks in the roof sealant.

NOTE: It is especially important to check the seals before and after periods of extended storage or non-use. Fall and spring inspections are recommended.



WARNING: Some products may contain hazardous materials which require special handling. Read labels carefully. Follow all of the product manufacturer's safety requirements.

NOTE: If the roof should somehow be punctured, cover the puncture to seal out moisture, and have it repaired as soon as possible (check with your dealer).

Check the clear exterior trim sealant around windows at regular intervals. Follow previous instructions for checking the condition of seals and repairing as necessary. Make sure that the windows remain operative by adjusting and lubricating latches and moving parts annually. Also check the condition and operation of the door locks, adjusting and lubricating as necessary. Use powdered graphite or light oil to lubricate moving parts on doors and windows. Vinyl seals around windows and doors should be cleaned regularly, and kept supple by use of a silicone spray.

Keep screens and window slides clean and free of debris, to maintain proper operation, and avoid component road damage. Test the operation of all windows occasionally to make sure they are working properly, including closing flush and locks holding tight. Check with your dealer if you are unsure about the correct methods of lubrication and adjustment.

NOTE: Be aware that moisture can accumulate in locks and hinges of windows and doors, causing damage or faulty operation. Do not force the operation of these components in sub-freezing weather.



WARNING: Failure to maintain seals through regular maintenance can lead to damage of motorhome components, and may be considered abusive treatment under the terms of the motorhome warranty.

FRAME

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 the motorhome in the winter in areas where road salts are used.

EXTRUSIONS & ALUMINUM SURFACES

Clean and wax all extrusions when waxing the motorhome sidewalls, to help avoid surface pitting. Special aluminum cleaners are available to restore the original luster to aluminum surfaces. Make sure to follow the instructions for use as outlined on the product package. Chrome surfaces can be restored with special chrome polish if regular cleaning methods are not successful. Again, make sure to follow product instructions for use.

TIRES & RIMS

Using soap, water, and a medium bristle brush will keep the sidewall clean and the whitewall looking bright.

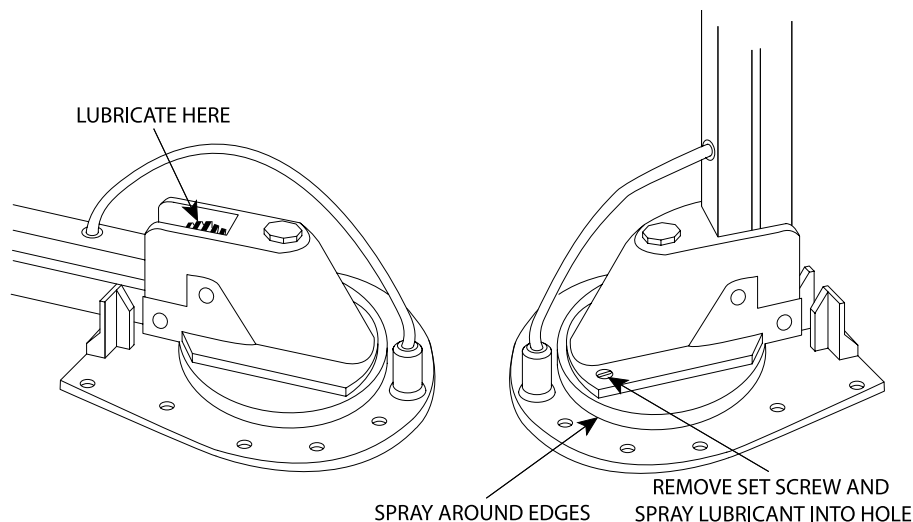
To keep the rims of the motorhome looking their best, follow these simple steps:

1. Rinse the wheel with high-pressure water to remove any debris, grit or dirt particles.
2. Use a 100% cotton cloth dipped in a mild soap solution to help remove stuck on dirt and grease.
3. Rinse the remaining soap residue from the wheel.
4. Dry the wheel thoroughly with a 100% cotton cloth.

NOTE: For more information regarding the care and maintenance of the motorhome rims contact Accuride Corporation at 800-869-2275.

TV ANTENNA

To lubricate the elevating gear, apply a liberal amount of silicone spray lubricant to the elevating gear with the lift in the down position. Run the lift up and down a few times to distribute the lubricant over the gears.



If rotating the antenna becomes difficult, normal operation can be restored by lubricating the bearing surface between the rotating gear housing and the base plate. Any spray type silicone lubricant may be used.

Elevate the antenna and remove the set screw from the rotating gear housing (see illustration). Spray lubricant into hole and around the edges of the gear housing. Rotate the gear housing until the lubricant coats the bearing surfaces and the antenna rotates freely.

EXTERIOR LIGHTS

Make sure to check the operation of all exterior lights often. Check identification, clearance, turn signal, brake, and backup lights to make sure they are working correctly. Replace burnt out bulbs as soon as possible.

APPLIANCES, SINKS & COUNTERTOPS

Clean with hot soapy water or a good liquid cleaner. Avoid using abrasive cleaners. Never use steel wool on stainless steel, since the steel particles left in the sink can rust and become unsightly. When cleaning stainless steel with a mild cleanser, rub gently with the grain, and rinse well. Rinse after each use and wipe dry.

Be sure to remove all food and ice from the refrigerator at the end of each trip. Prop the door open slightly to keep the interior dry, and free of mold, mildew, and odors.

Make sure to read all literature provided with each of the appliances, and follow the maintenance instructions included. Pay particular attention to any cautions or warnings included. Also read the rest of this manual, following the instructions for the care and use of appliances.

NOTE: Do not place hot pans directly on countertop surfaces. Extreme heat can cause scorching, and may also deteriorate the bonding agents which secure the countertop to the base cabinets.

PRE-FINISHED PANELS & WOOD SURFACES

Treat cabinetry and wood surfaces as you would any fine furniture product in your home. Proper care and maintenance of wood products will keep them looking like new for many seasons of use.

Clean pre-finished panels with a spray-type furniture polish. Avoid getting wood surfaces wet. Do not use abrasive cleaners around wood finishes. Clean regularly with a soft cloth and cleaner designed for wood products such as lemon oil or any oil based wood cleaning product. Avoid constant exposure to direct sunlight which can cause fading and drying of wood surfaces.

WATER SYSTEM

Check all hoses, fittings, and connections regularly for leaks and signs of wear. Make sure to keep the system sanitized, and take care to winterize during cold weather (see instructions elsewhere in this manual). Do not allow water to remain in system for extended periods of time.

ELECTRICAL SYSTEM

The electrical system requires minimal maintenance under normal circumstances. Most electrical maintenance in the motorhome involves the chassis and auxiliary batteries. Keeping the batteries properly maintained will help to eliminate many frustrating electrical problems. Make sure to refer to the index for the location of electrical and battery maintenance information elsewhere in this manual.

The generator is another area in which simple preventive maintenance can “head off” problems before they happen. Read the manual supplied with the generator for the care and maintenance required on a regular basis. The first scheduled maintenance should be at 50 hours, followed thereafter with regular service intervals of 150 hours.

If you experience electrical problems with the motorhome, make sure to have it checked by a qualified electrician.

ROOF VENTS

Check roof vents regularly for debris that may block air flow or jam the cranking mechanism. Lubricate the cranking mechanism with light oil.

ABS PLASTIC

Many components of the motorhome are constructed of strong, lightweight ABS plastic. Sometimes, it may be necessary to remove stains, or generally clean. A mild solution of soap and water will clean many stains and should be used initially. Tougher stains may require stronger cleaners, but be sure to read the label to determine if the product is recommended for use on plastics.

Avoid abrasive cleanser (even the liquid and cream types), alcohol based products, and solvents such as acetone and MEK. Gasoline and kerosene should not be used because of the damaging effect they have on the plastic surface, as well as the fire hazard they present. Often the damage caused by solvents, alcohol, and oil or citrus based products may not be immediately noticeable, but the plastic is made weaker, and prone to stress cracking.

WINTER PRECAUTIONS

Water Systems – If the fresh water storage tank is located inside the coach, the normal heating of the coach during cold weather should be enough to insure its not freezing. In severe cold weather (40°F or Lower) however, it is wise to monitor the water temperature in the tank, and take appropriate steps to drain and winterize if necessary. In severe cold it may be necessary to open lower cabinet doors at night in both the bath and kitchen areas to keep warmer air circulating around water fixtures.

If you are going to leave the coach unheated for any length of time in severe cold conditions, it is best not to keep water in the fresh water tank. It may work best to carry cooking and drinking water with you in plastic jugs instead.

If you will be using your motorhome when conditions fall below the freezing level, it will be necessary to protect the drainage system components from damage by the addition of an approved antifreeze solution as outlined on the product directions. Drain lines which are exposed outside the motorhome are especially susceptible to freezing, and steps should be taken to protect them from damage.

Food Storage – In the event the motorhome is left for a period of time without the furnace in operation, canned goods and other foods packed in water should be stored as high as possible, since heat rises. They might also be stored in the refrigerator as insulation against the cold. Store dry foods, and other items that are not damaged by freezing, in the lower storage areas.

LP Gas System – Make sure to use an LP Gas that will vaporize properly in the colder temperatures. Check with your LP Gas representative for the proper fuel, and reread the information on LP Gas selection in the LP Gas section of this manual (check the Index for the location).

NOTE: It is important to remember that heating with LP consumes gas rapidly, so refill the tank immediately when low, to avoid running out completely.

Heating – Use ONLY the furnace to heat the motorhome. It is properly vented to the outside.



WARNING: Never use the range for heating - Asphyxiation could result.

Condensation – Cooking produces large amounts of moisture. Not just steam from pots and pans, but also as a product of combustion. Make sure to use the exhaust vents and open a window slightly to control the humidity. At night, leave a roof vent and/or a window slightly open.

STORAGE PREPARATION

When storing the motorhome for the winter (or other extreme conditions), certain precautions need to be made to protect it until you open it again for use. Make sure to talk with your local dealer concerning any special requirements for storage in your particular geographic area. The following steps are general, and your dealer can help you choose those that are most appropriate for your needs.

- Make sure to park the motorhome on a level surface.
- Make sure to winterize the chassis as outlined in the chassis owner's manual, and also the 120 Volt generator as outlined in the generator's owner's manual.
- Clean the motorhome thoroughly, as previously outlined, including the refrigerator.
- Make sure all electrical switches and appliances are turned off.
- Close all the drapes and curtains, and protect the curtains from sun fading by placing foil, or paper between the windows and the screens.
- Make sure all windows, doors, and vents are closed securely. Cover exterior vents on appliances to prevent moisture and insects from entering during storage.
- Check the interior of the motorhome periodically while in storage to make sure leaks have not developed, or condensation formed that can cause damage to interior components. Condensation can most readily be observed as moisture accumulation on windows and mirrors. To reduce condensation, make sure to air the motorhome out occasionally during storage.

- Be sure that both the chassis and coach batteries have the proper electrolyte level and that they are fully charged (specific gravity of 1.260). A discharged battery will freeze and crack the case, ruining the battery. In storage, a battery will lose charge gradually over a 30 to 45 day period, even when disconnected by use of the battery disconnect switch. We recommend that at least monthly the batteries be checked for charge. If the charge is 80% (specific gravity of 1.235) or less, it must be recharged. You may wish to remove the batteries from the motorhome and store them in a heated area. However, even when warm, the battery charge level must still be maintained. A warm battery accepts charge much more readily however, than a cold one. Make sure to follow all precautions associated with battery care and maintenance outlined in the electrical section of this manual.
- Store with as much fuel as possible in the fuel tank to limit condensation buildup.
- Check engine coolant, making sure antifreeze is sufficient for local temperature extremes.
- Make sure the tires are inflated to correct pressures.
- Store the windshield wiper arms and blades inside the motorhome.
- Let the engine run for a period of time until it is warm. Change the oil and oil filter.
- Run the air conditioner during the final engine warm up to ensure the compressor seal is lubricated.
- If snow accumulates on the motorhome, try to remove it as often as you can.

A primary concern when winterizing the motorhome is to make sure the water systems are protected against damage caused by freezing. Follow the water system winterizing procedure outlined in the Water and Drainage section of this manual (check the index for location).

NOTE: Be sure to read the rest of this manual, and follow any additional information on storage, cleaning and winterizing procedures.

MOLD

What are molds?

Molds are microscopic organisms that naturally occur in virtually every environment, indoors and out. Outdoors, mold growth is important in the decomposition of plants. Indoors, mold growth is unfavorable. Left unchecked, molds break down natural materials, such as wood products and fabric. Knowing the potential risks is important for an owner to protect their investment.

What factors contribute to mold growth?

For mold growth to occur, temperatures, indoor or outdoors, must be between 40° and 100° Fahrenheit and also have a source of moisture, such as humidity, standing water, damp materials, etc. Indoors, the most rapid growth occurs with warm and humid conditions.

How can mold growth be inhibited?

By controlling relative humidity, the growth of mold and mildew can be inhibited. In warm climates, use of the air conditioner will reduce the relative humidity. Vents are located in the bathing and cooking areas and constant use is advised during food preparation and bathing, even during cold weather. Additionally, opening a window during these activities will assist in ventilation. In extremely humid conditions, the use of a dehumidifier can be helpful.

NOTE: If using a dehumidifier, please read and follow all manufacturer instructions and recommendations to the use and cleaning of the dehumidifier.

Effects of Prolonged Occupancy:

The motorhome was designed primarily for recreational use and short-term occupancy. If you expect to occupy the motorhome for an extended period, be prepared to deal with condensation and the humid conditions that may be encountered. The relatively small volume and tight compact construction of modern recreation vehicles mean that the normal living activities of even a few occupants will lead to rapid moisture saturation of the air contained in the trailer and the appearance of visible moisture, especially in cold weather.

Condensation:

Just as moisture collects on the outside of a glass of cold water during humid weather, moisture can condense on the inside surface of the motorhome during cold weather when relative humidity of the interior air is high. This condition is increased because the insulated walls of a recreation vehicle are much thinner than house walls. Estimates indicate that a family of four can vaporize up to three gallons of water daily through breathing, cooking, bathing, and washing. Unless the water vapor is carried outside by ventilation, or condensed by a dehumidifier, it will condense on the inside of the windows and walls as moisture, or in cold weather as frost or ice. It may also condense out of sight within the walls or the ceiling where it will manifest itself as warped or stained panels. Appearance of these conditions may indicate a serious condensation problem. When you recognize the signs of excessive moisture and condensation in the motorhome, action should be taken to minimize their effects. For tips on controlling condensation see the *"Tips To Controlling Condensation"* section.

NOTE: The motorhome is not designed, nor intended, for permanent housing. Use of this product for long term or permanent occupancy may lead to premature deterioration of structure, interior finishes, fabrics, carpeting, and drapes. Damage or deterioration due to long-term occupancy may not be considered normal, and may under the terms of the warranty constitute misuse, abuse, or neglect, and may therefore reduce the warranty protection.

Due to the physical size of a recreation vehicle, moisture condensation can be more of a problem in a motorhome than in the average home. However, utilizing proper condensation reduction techniques will greatly reduce the possibility of issues relating to condensation problems.

Therefore, it is imperative that roof vents, windows, and/or range hood vents are opened while cooking, using the shower, washing or drying clothes, or any other steam or moisture-generating activity. Opening vents or windows on opposite sides or ends of the motorhome is an effective method of creating a "cross-flow" of air movement, and assisting in the reduction of water or steam within the living quarters. Use of dehumidifiers may be advisable or required in high humidity climates, dependent on the cooking or water use habits of the motorhome owner. Any water spills from showers, sinks, open windows, or leaks must be dried immediately utilizing dehumidifiers, fans and vacuum sweepers rated for wet use, to prevent further damage to the vehicle and contents. Professional carpet cleaning water extraction services are recommended to remove moisture from carpeting. Parking the motorhome in a shaded area during the summer will also reduce the resultant condensation from operating the air conditioner during high humidity and high temperature situation. Avoid over-filling closets and always load the drawers and cabinets in a manner, which allows air circulation. Clothes must be completely dry prior to storage and should be hung loosely in closets to allow air circulation within the closet. Dirty laundry must be stored in well-ventilated areas and must not lie around while wet or damp. The clothes dryer must be vented to the exterior of the motorhome.

Reduction of condensation will also diminish the possibility of the motorhomes insulation from becoming damp and dropping in efficiency.

TIPS TO CONTROLLING CONDENSATION:

To avoid condensation problems, try to follow these tips to help alleviate excess moisture.

- Allow excess moisture to escape to the outside when bathing, washing dishes, hair drying, laundering, and using appliances and non-vented gas burners.
- Always use the vent hood when cooking.
- Keep the bathroom door closed and the vent or window open when bathing and for a period of time after you have finished.
- Do not hang wet clothes in the motorhome to dry.
- In hot weather, start the air conditioner early as it removes excess humidity from the air while lowering the temperature.
- Keep the temperature as reasonably cool during cold weather as possible. The warmer the vehicle, the more cold exterior temperatures and warm interior temperatures will collide on wall surfaces, thus creating condensation.
- Use a fan to keep air circulating inside the vehicle so condensation and mildew cannot form in dead air spaces. Allow air to circulate inside closets and cabinets (leave doors partially open). Please keep in mind that a closed cabinet full of stored goods prevents circulation and allows the exterior temperature to cause condensation.

The natural tendency would be to close the vehicle tightly during cold weather. This will actually compound the problem. Simply put, you need to remove some of the warm air, and allow some cool outside air to get inside the vehicle, so the furnace will not recycle the humid interior air.

Use fluorescent lights and minimize prolonged use of incandescent lights, which produce heat and contribute to condensation in the roof above the ceiling lights.

PERIODIC MAINTENANCE CHART

ITEM	EACH TRIP MONTHLY EVERY 3 MONTHS EVERY 6 MONTHS YEARLY AS REQUIRED						PROCEDURE
Fiberglass Exterior		▲					Wash with Warm Water & Mild Detergent
				▲			Wax with Liquid or Paste Wax
Roof & Roof Components				▲			Inspect & Reseal as Needed
					▲		Lubricate Roof Vent Mechanism with Light Oil & Clean
Windows & Doors		▲					Check Vinyl Seals when Washing Exterior
			▲				Check Seals for Damage & Repair as Needed
			▲				Lubricate Door Hinges & Step Components
					▲		Adjust & Lube Window Latches
					▲		Lubricate Door Locks & Strike Pocket, Include Exterior Storage Doors
Seals & Adhesives		▲					Inspect & Reseal as Needed
LP Gas System						▲	Check for Leaks & Road Damage
					▲		Qualified Service Technician Inspection
Water Drainage		▲					Check Hoses, Fittings & Connections for Leaks & Signs of Wear
	▲						Check Drainage System for Leaks & Road Damage
						▲	Sanitize Fresh Water System
					▲		Winterize System Depending on Local Seasonal Conditions
Electrical System		▲					Check GFCI Circuits
						▲	Generator Maintenance as Outlined in Generator Manual
							Check & Service Batteries
Appliances	▲						Remove Food & Ice from Refrigerator
		▲					Clean Fan Blades & Wash Filter on Range Exhaust Hood
		▲					Check for Obstructions & Dirt on Exterior Appliance Vents
Safety Equipment					▲		Clean CO, Smoke & LP Detectors
	▲						Test All Detectors
		▲					Check Fire Extinguisher Pressure & Condition
Carpeting	▲						Vacuum
						▲	Clean
Wood Surfaces		▲					Clean Pre-Finished Panels & Wood
Seats						▲	Lubricate all Mechanisms & Inspect for Proper Operation
						▲	Check all Seat Belt Buckles, Release Mechanisms & Belt Webbing
Chassis Components						▲	Follow Chassis Lubrication & Maintenance Procedures & Schedules
Weight & Distribution	▲						Properly Load and Verify Specified Load Limits & Weight Distribution

VENDOR CONTACT INFORMATION

A & E Awnings	.800-216-5115
ASA	.800-688-3135
Atwood Mobile Products	.800-825-4328
Dometic	.800-544-4881
Equalizer Systems	.800-846-9659
Esco	.574-264-4756
Evans	.800-878-7147
Fantastic	.800-521-0298
First Alert	.800-323-9005
Flexsteel	.574-831-4050
Guardian	.800-333-1322
Hehr Windows	.574-935-5122
Intellitec Products	.800-251-2408
KIB Enterprises	.574-262-0578
Kwikkee Products	.800-736-9961
Magnum Energy	.425-353-8833
Manchester Tank	.800-877-8265
Mor/Ryde	.574-293-1581
MTI Industries	.800-383-0269
Nappanee Window	.574-773-5667
Norcold	.800-543-1219
Onan	.800-888-6626
RV Products	.316-832-0269
Sharp	.800-237-4277
Shurflo	.800-854-3218
Sony	.800-442-7717
Splendide	.800-356-0766
Thetford	.800-354-4135
Trimark	.800-477-0343
Velvac	.800-783-8871
Viracon	.800-533-0482
Visteon	.800-847-8366
Winegard	.800-288-8094
Xantrex	.800-670-0707
 Freightliner LLC	 .800-385-4357