Owners MANUAL

ISLANDER

DIESEL MOTORHOMES

NRV INC

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USING THIS MANUAL

SCOPE OF THIS OWNER'S MANUAL

Your new motorhome was shipped with a complete manufacturer documentation package. This Owner's Manual was included in that package. Also furnished in the manufacturer documentation package are the manuals and other publications supplied by the manufactureres of the various components built into your motorhome, such as the chassis, engine, each of the kitchen appliances, etc.

This owner's manual does not attempt to replicate the information already provided in the component manufacturers' literature. Rather, it is a general overview of your specific motorhome, with guidelines, instructions and information as pertains to your coach. Complete information is given for operation, care and maintenance of National R.V., Inc.-manufactured and/or -assembled components. Certain information from manufacturers' literature will be presented herein wherever appropriate. Likewise, throughout this manual the reader will be referred to the manufacturers' literature for more detailed information.

FINDING INFORMATION

We recommend that you completely read this entire owner's manual prior to operation of your new motorhome. Likewise, many manufacturers of components included with your unit recommend thoroughly reading their corresponding literature prior to operating that specific equipment.

It is our goal that this manual be easy to use, and that specific information be easy to find. The *Table of Contents* will be most useful in finding specific information. In general terms, information is provided grouped by subject, for example *Plumbing* or *Electrical*. In some cases, information pertaining to a particular component will be located in more than one place, if appropriate.

MARGIN ALERT SYMBOLS

In order to highlight pertinent information, this manual makes liberal use of *Alert Symbols*, located in the outside margins, which are intended to call your attention to certain important information. That information is provided with each alert symbol. These alert symbols, taken together, also function as an easy-to-use quick reference of important information. The different flavors of alert symbols are as follows:

The MFG INFO Symbol

The MFG INFO Alert Symbol

As mentioned above, most information regarding separately manufactured components may be found in the component manufacturers' literature. All component owner's manuals, operating manuals, warranty information and other publications is included in the Dcumentation Package you recieved with your new motorhome. In these instances, this alert symbol is used to let you know that pertinent information may be found in other documentation included in the package.

The REMINDER Alert Symbol

The REMINDER Alert Symbol

Sometimes useful operational tips, maintenance or storage suggestions or time saving suggestions are given along with this symbol. Usually these items do not pertain to hazardous or potentially damaging issues, as items of a more serious nature are assigned on of the more urgent alert symbols below.

The IMPORTANT Alert Symbol

The IMPORTANT Alert Symbol

Items that are important to the proper operation, care and maintenance of your coach are highlighted using this symbol. These and those accompanied by the alert symbols below are itmes which should be memorized and adhered to while operating, maintaining, using or storing your motorhome. Please become familiar with them.

The CAUTION Alert Symbol

The CAUTION Alert Symbol

Some information presented in this manual is very mportant in that not adhering to it may result in other problems, minor damage and/or inconvenience. In these cases, the CAUTION alert symbol is employed to draw your attention to the pertinent information.

The WARNING Alert Symbol

The WARNING Alert Symbol

WARNING symbols *must* be heeded at all times. The WARNING alert symbol is used where failure to adhere to the information provided may cause major equipment damage, personal injury or even death. Read and familiarize yourself with the information provided in the WARNING alerts prior to operating the specified equipment.

INTRODUCTION

THANK YOU!

The employees of National R.V., Inc. sincerely thank you for purchase of an Islander diesel motorhome. We understand that finally deciding on a particular motorhome to buy is the culmination of careful, extensive comparison among many different brands. We are proud and grateful that you chose ours from among the many fine products on the market.

STANDARDS COMPLIANCE

Your new motorhome has been designed and engineered to conform to American National Standards Institute (ANSI) A119.2 Standards on Recreational Vehicles or Z-240 Standards for Canadian Vehicles, and it complies with applicable Federal Motor Vehicle Safety Standards (FMVSS). These standards govern the installation of Plumbing, Electrical, LP-Gas and Safety components designed into your motorhome. The Compliance Seal either Recreation Vehicle Industry Association (RVIA) or Canadian Standards Association (CSA) is located to the left of the main entry door (outside wall) as you enter into the vehicle.

REPORTING SAFETY DEFECTS

National Highway Traffic Safety Administration Reporting Procedure:

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 National R.V. Inc.

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 National R.V. Inc.

To contact **NHTSA**, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 if you are in the Washington D.C. area) or write to:

NHTSA
U.S. Department of Transportation
Washington, D.C. 20590

Note: You can also obtain other information about motor vehicle safety from the Hotline.

UNRESOLVED PROBLEMS

National R.V. Inc. is committed to providing you with the finest Recreational Vehicle we possibly can. If questions arise, or a situation that the dealer cannot resolve, we encourage you to write or telephone our customer service personnel. A Limited Warranty - Dispute Resolution Notification Form is included in this manual for your convenience. National R.V. will do everything possible within the warranty guidelines to assist you. If you are having difficulties with a product that National R.V. Inc. warranty does not cover, we would also encourage you to inform us so we may assist you. National R.V. Inc. strives to make your ownership of this Recreational Vehicle a very pleasurable experience.

National R.V. Inc.
3411 North Perris Boulevard
Perris, California 92571
(909) 943-2635 - FAX (909) 943-6938

VEHICLE & CHASSIS IDENTIFICATION

Vehicle Serial Number

This *Manufacturer Tag* is located on the outside wall, to the left of the main entry door as you enter the vehicle. It provides the date the motorhome was built and the coach serial number.

MFD. BY _____

_____

DATE OF MFR.:MO. _____ /YR. _____

V.I.N. _____

P.A.# _____

MFR.ID# _____

Manufacturer Tag

Chassis Identification Number

Whenever you contact the factory, always refer to your RV model number, year and vehicle identification number (VIN). This information can be found on the *Federal Certification Tag* (shown below), located on the sidewall adjacent to the driver's seat. Use this National R.V. identification number in all your correspondence and whenever you order parts. This label is reproduced here and then fully discussed in a later section under Safe Motorhome Loading.

FEDERAL CERTIFICATION TAG

MFG BY:
DATE OF MFG:
INCOMPLETE VEHICLE MFG. BY:
DATE OF INC. VEH. MFR:

GVWR:	KGS (	LBS)
GAWR FRONT:	KGS (	LBS)
	WITH:	RIMS
	TIRES AT:	KPA COLD SINGLE
	(	PSI)
GAWR INTERMEDIATE:	KGS(	LBS)
	WITH:	RIMS
	TIRES AT:	KPA COLD DUAL
	(	PSI)
GAWR REAR:	KGS (	LBS)
	WITH:	RIMS
	TIRES AT:	KPA COLD SINGLE
	(	PSI)

This vehicle conforms to all applicable U.S. Federal Motor Vehicle Safety Standards in effect on:
V.I.N.
TYPE VEHICLE: MULTI-PURPOSE PASSENGER VEHICLE

The tires on this unit may be different from those shown above. Check tire sidewalls for maximum inflation pressures.
Replacement tires must be rated not less than the axle capacity (GAWR). NR1011

Federal Certification Label

WARRANTY & SERVICE

TAKING DELIVERY

You have made a sizable investment in the purchase of your Recreational Vehicle (**RV**) and are entitled to all the benefits and services contained in the warranty for your vehicle and separately warranted products. With your help, we intend to see that you fully receive those benefits and services. It is important that you become familiar with the proper procedures for obtaining service and parts, both in *and* out of warranty. Your dealer is instructed to provide you with orientation in these matters at time of delivery as a supplement to these instructions.

IMPORTANT

Inspect your motorhome immediately upon delivery so that any damage from shipment may be addressed right away.

Your motorhome is a product that has undergone a series of rigid inspections by highly qualified factory personnel throughout the manufacturing process. Finally, we perform a special Pre-delivery Inspection (**PDI**) to ensure all systems and components are functioning correctly. Then our final factory check is by our Quality Control **(QC)** inspectors before shipment to the dealer. However, this *is not* the last one before you take delivery. Your dealer has been advised to perform additional pre-delivery inspections and system checks, to condition and service your vehicle, and assist you in understanding and completing warranty forms.

ITEMS FURNISHED LOOSE

- This Owner's Guide for your vehicle.
- Warranties for your **RV** and separately warranted products.
- Operational and installation manuals, descriptive literature and parts list for separately warranted products, when applicable.
- 3" x 3" drain hose adapter and sewer hose.
- Two (2) sets of keys
- Two (2) fuel fill cap keys
- 6-Pin male connector plug
- Cigarette lighter
- Water filter wrench
- Awning pull-down rod and leg (arm) pegs

CUSTOMER RELATIONS

We are particularly interested in maintaining the best of customer relations. Only by having your complete confidence and satisfaction with our product and its service can we assure our continued success as manufacturers of quality recreational vehicles. We have found that continuing a pleasant and effective relationship through our dealers is equally as important as maintaining the technical excellence of our product. Your authorized dealer and our service department will cordially assist you in providing service, maintenance, selection of options, and instructions concerning the operation of your vehicle.

Most problems arise from misunderstandings concerning the definitions of warranty and service. Quite often confusion exists on how the motorhome was designed to function verses customer expectations. These problems can usually be solved at the dealer level. If your problems persist, we invite you to contact our factory service department at the following address:

National R.V. Inc.
3411 North Perris Boulevard
Perris, California 92571
(909) 943-2635 - FAX (909) 943-6938

We will make every effort possible to take actions that meet with your approval. Please understand that in most instances we will eventually refer you back to the local dealer with our recommendations. Our Service personnel are here to assist you and your dealer to ensure that your motorhome experience is enjoyable. National R.V. encourages our owners to use our service experts. In all your contacts with our Service Department, always refer to your **RV** model number, year, vehicle identification number (**V I N**) and date of purchase. National R.V., Inc. thanks you for your cooperation.

DEALER RESPONSIBILITIES

- Provide the customer with an adequate orientation and general knowledge concerning the operation and use of the containment systems and components, as well as the safety aspects concerning the use of those systems.
- Ensure that the customer receives a complete **Important Papers Packet** containing various *warranty cards* and registrations for his **RV** and those separately warranted products contained therein.
- Carefully review all warranty entitlements with the customer, pointing out the importance of mailing warranty cards and various registrations to manufacturers within thirty (30) days of taking delivery. Assist the customer in properly completing the forms if he so desires. Request that the customer read all warranty information at his convenience and contact you to clear up any provisions which are in question.
- Perform the Dealer Pre-Delivery Inspection (PDI), Checkout and Acceptance form as prescribed and then provide the customer with his copy of the com-

pleted form indicating Customer Acceptance and satisfaction of all items/ equipment listed therein.

- Inform the customer concerning insurance considerations for his protection.
- Instruct the customer on how to obtain local and out-of-area service on the **RV** and its' separately warranted products during and after warranty periods.

WARRANTY AUTHORIZATION

If it is necessary to have warranty work performed on your motorhome by an agency other than the factory or the selling dealer, *prior authorization* from the factory is required. This will eliminate misunderstandings and will *expedite* payment. Defects in items subject to severe wearing in the camping environment such as carpets, cushions, interior trims and paint, bumpers, etc. should be reported within thirty (30) days from date of purchase, so that they may be properly repaired and not excluded as normal wear and tear.

SEPARATELY WARRANTED ITEMS

- National R.V. makes every effort to select high quality equipment from reputable manufacturers; however, National R.V. assumes no responsibility or liability for defects in the workmanship or operation of separately warranted products. These products are usually backed by a nationwide factory authorized service system. Use of other than factory authorized service agencies may void your warranty for their product. Some **RV** dealers, at the time of need, may not be authorized service centers for certain separately warranted products, so we advise you to check with the dealer first to reduce delays. If the dealer is not an authorized service center for the product in question, he may assist you in obtaining authorized services.
- These products include, but not limited to, refrigerator, gas oven, microwave, television sets, VCR, furnace, stereos, awning, generators and hydraulic jacks. Not all these products may pertain to your particular coach.
- Copies of individual products warranties and lists of factory authorized service centers have been included in your **Important Papers Packet**.
- It must be understood that in order to obtain repairs or replacement of these items, the individual manufacturer's warranty cards must be submitted within thirty (30) days of date of purchase. *Note: This may not apply in your state.*
- If service or parts are required for these products, refer to the furnished list of factory authorized service centers. If the list is not available for the particular product, write or call the manufacturer concerned to obtain the location of the nearest authorized service center.

CHASSIS WARRANTY

The manufacturer of the chassis (and related parts) is responsible for the warranty repair of that portion of the vehicle. Any chassis warranty repairs or

authorization for repairs, must be approved by the chassis manufacturer. Please read and follow the chassis manufacturer guidelines as to their warranty procedures, scheduled maintenance and any limitations that might apply. Certain additions and modifications to the chassis by National R.V. Inc. are the responsibility of National R.V. Inc. Any additions or modifications to the chassis by the consumer may effect the warranty offered by the chassis manufacturer or National R.V. Inc. Any questions concerning whether the additions or modifications are covered by our warranty, should be directed to *Customer Assistance* at National R.V. Inc.

SPECIAL WARRANTY PROCEDURES

Special warranty procedures are used for certain electronic components installed in your motorhome. These items include televisions, stereo systems, microwaves, coffee makers, backup monitor systems and videocassette recorders (**VCR's**). It is very important that you follow the procedures outlined in the appropriate manuals as to warranty coverage and service procedures. Chassis components are not covered under National R.V. Inc. warranty. National R.V. Inc. *does not* authorize any of its selling dealers or repair centers to perform or authorize any repairs to the chassis.

WHEEL ALIGNMENTS

Your motorhome was factory aligned by our *state-of-the-art* alignment equipment. A copy of the *setting* at the time of shipment from our factory is enclosed in your owner's packet. *It is important to note that the front-end alignment changes as a vehicle is loaded and driven. We recommend that you periodically check your alignment to reduce any abnormal tire wear.*

IMPORTANT: Please note that National R.V. Inc. will cover no further alignments or adjustments.

TO OBTAIN WARRANTY SERVICE

Contact your local dealer during normal business hours for any warranty service. If you are traveling or have moved from the area of purchase, or are having difficulties in obtaining warranty service, call National R.V. and we will arrange for repairs under our warranty policy to be made at an appropriate vehicle service center. Please remember to keep all operation and owner's manuals, service centers lists, warranty stubs, parts lists and other related documents in the **RV** for handy reference. All records for maintenance and service should be kept current and filled-in for ready access.

EMERGENCY ROADSIDE ASSISTANCE

For after hours or emergency road service assistance, telephone **Coach Net** at **1-800-759-6999**. Coach Net *Customer Care and Emergency Road Service* is a benefit provided at no charge to you for the first year of ownership. Extended coverage is available after the first year at a modest cost. Service is pro-

vided by independent contracted providers and they are not agents of National R.V. Inc. You will find a helpful brochure describing the numerous benefit services available in your **Important Papers Packet.** Also, when you register your motorhome you will receive a customer identification (I.D.) card directly from Coach Net.

TO OBTAIN REPLACEMENT PARTS

Contact your selling dealer for parts assistance. If your dealer is unable to provide the parts contact National R.V. Inc. at **(909) 943-2635**.

INSURANCE COVERAGE

As with your automobile, it is important that you protect yourself and others with insurance coverage for personal liability, theft, collision, property damage, etc. Your dealer and/or auto insurance agent will assist you in obtaining appropriate insurance for your protection. There are numerous reliable insurance companies that specialize in providing insurance for recreational vehicles. *Do not* put off insuring yourself and vehicle for **RV** coverage.

One-Year/Three-Year LIMITED WARRANTY

This warranty covers all new **Motor Homes** Manufactured by NATIONAL RV Inc. which are retail sold in the United States and Canada after January 1, 2000.

WARRANTY COVERAGE: This warranty covers your motor home, which includes the structural components, plumbing, air-conditioning/heating, and electrical systems fabricated, assembled or installed by National RV Inc, to be free under normal use from manufacturing defects in material or workmanship.

The warranty covers the first retail purchaser and his or her transferee(s) and commences on the date of the original retail delivery or the date the motor home is first placed into rental, commercial or demonstrator use (whichever occurs first). The warranty covers the following period:

1. All defects in material or workmanship for a term of one year commencing on the aforementioned date or until the motor home has accumulated 18,000 miles of use as evidenced by the mileage shown on the odometer (whichever occurs first).
2. Structural defects for a term of three years commencing on the aforementioned date limited to; sub-floor structure, ceiling structure, wall structure and, exterior wall delaminations.

Selling dealer or manufacturer must be given written notice of any and all defects no later than 10 days after the expiration of the warranty term.

ITEMS COVERED UNDER SEPARATE WARRANTIES: Your motor home contains numerous appliances that are covered by their respective manufacturer warranties. Please refer to the individual owner's manuals provided at the time of delivery for all pertinent information. Items covered under separate warranties include but are not limited to; microwave, stove, furnace, refrigerator, water heater, roof-mounted air-conditioner, etc.

ITEMS NOT COVERED: The following items are not covered by this warranty:

1. Chassis components; drive train components, tires, portions of the automotive air-conditioning system, and batteries. These items are covered by the warranties of their respective manufacturers.
2. Any defect caused by; abuse, misuse, negligence, alteration or modification, improper maintenance or repairs, accidents, road hazards, exposure to natural elements, and or environmental conditions.
3. Fading of fabrics, drapes, and carpets caused by normal wear and exposure.
4. Motor homes in which there is evidence of odometer tampering.
5. Routine maintenance and service items i.e. fuses, light bulbs, wiper blades, lubricants, gaskets, etc.
6. Costs to transport motor home to and from dealer or manufacturing plant location, loss of time, loss of use, towing charges, vehicle rental, telephone charges, lodging, fuel charges, commercial loss, or any other incidental or consequential damages.
7. Fading or cracking of exterior decals/graphics caused by normal wear and exposure.
8. Water leak damage: If determined that the damage resulted from an improper installation or defective material coverage will be for a term of one year from the date of original purchase. It is the responsibility of the owner to periodically inspect and reseal the unit is so required. Water leak damage caused by failure to maintain the integrity of the seals will not be covered under the warranty.

Notice: Some states do not allow the exclusion or any limitation of incidental or consequential damages. Accordingly the above exclusions or limitations may not be applicable to you.

OWNER'S RESPONSIBILITIES: The owner is responsible for the periodic maintenance as described in the Owner's manual. The dealer under the warranty will perform minor adjustments during the first 90 days of the warranty term. The following are considered minor adjustments; cabinet door adjustment, entry door adjustment, driver/passenger chair adjustment, etc. After 90 days have expired minor adjustments unless a part requires replacing are the responsibility of the owner under normal maintenance.

It is the responsibility of the owner to notify the selling dealer, authorized repair facility or the manufacturer of any problem which occurs which he or she believes is covered by the warranty. The owner shall provide all the necessary information to effectuate a repair. The owner shall deliver the motor home to selling, authorized repair facility or manufacturer for all service performed under the warranty. If the selling dealer or authorized repair facility is unable to schedule an appointment for repairs within a reasonable period of time it shall be the owners responsibility to contact National RV's warranty department in order to make suitable arrangements.

DEALER'S RESPONSIBILITIES: It is the responsibility of the dealer to promptly and efficiently repair or replace any and all parts required to correct defects in material or workmanship.

FAILURE TO RESOLVE: In the event the selling dealer or authorized repair facility are unable to resolve a defect covered by the warranty, the owner shall contact National RV Inc. at the address listed herein and provide National RV Inc. with a written description of the defect and the attempts made to correct. The Customer Relations Manager will then contact you in order to resolve the matter. (For your convenience please use the form provided).

This warranty gives you specific legal rights, and you may also have additional rights under applicable statutes, which vary, from state to state.

National RV Inc. is not responsible for any undertaking, representation, promises or additional warranties express or implied made by any dealer or other person beyond those expressly covered within this warranty.

BRAND NAME: _____

MODEL: _____

SERIAL No.: _____

Limited Warranty
DISPUTE RESOLUTION FORM

NAME: _____ HOME PHONE: _____

ADDRESS: _____ WORK PHONE: _____

_____

_____

MODEL NAME: _____ MODEL YEAR: _____

VIN: _____ DATE PURCH.: _____

DEFECT DESCRIPTION: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

NUMBER OF ATTEMPTS TO CORRECT: _____

NAME CITY AND STATE OF AUTHORIZED DEALER, SERVICE AGENT ATTEMPTING PREVIOUS REPAIRS: _____

_____

_____ _____

DATE MAILED CUSTOMER SIGNATURE

Notes:

SAFETY CONSIDERATIONS

SAFETY NOTICES

The particleboard, hardwood plywood, or paneling used in the manufacture of your motorhome is made with urea-formaldehyde. Proper ventilation should reduce the risk of potential problems. The following required information is provided:

This product is manufactured with urea-formaldehyde resin and will release small quantities of formaldehyde. Formaldehyde levels in the indoor air can cause temporary eye and respiratory irritation, and may aggravate respiratory conditions or allergies. Ventilation will reduce indoor formaldehyde levels.

This Vehicle Like Many Other Vehicles May Contain Small Amounts Of One Or More Substances That Are Known To The State Of California To Cause Cancer, Birth Defects, Or Other Reproductive Harm.

EMERGENCY GUIDELINES

Smoke Detector

A smoke detector has been placed in the living area of your motorhome. It is battery operated and depends upon you for proper performance. *Note:Please install, check and maintain the 9-Volt battery.* A label is in place adjacent to the smoke alarm that attempts to remind the owner of the required service.

Test smoke detector operation after vehicle has been in storage, before each trip, and at least once per week during use.

LP-Gas Leak Detector

Your motorhome is equipped with an LP-Gas leak detector. The detector will sound an alarm if it detects the presence of LP-Gas inside the coach living space. For further information, Refer to the section titled *LP Gas System* later in this manual.

IMPORTANT

Both the CO detector and the LP-Gas detector operate on the coach batteries and will not function whenever the batteries are disconnected. ***Do not*** *disconnect the coach battery whenever your motorhome is occupied.*

Carbon Monoxide Detector

A carbon monoxide detector has been installed for your safety. Carbon monoxide is a colorless, odorless and *deadly* gas. The presence of carbon monoxide could be *fatal*. Always take the appropriate action when the detector sounds an alarm: If anyone has a headache or an upset stomach move immediately to a location that has fresh air, then seek medical attention immediately; If no one exhibits symptoms of discomfort associated with CO poisoning, simply proceed with this checkoff list.

- Immediately get fresh air into the motorhome.
- Operate the reset (TEST) button
- Turn off all LP-Gas appliances, vehicle, or other sources of combustion at once.
- Call a qualified technician and have the problem corrected before restarting any appliances, generator, the vehicle, or any other potential ignition and combustion source.

Fire Extinguisher

Your motorhome is equipped with a portable dry chemical fire extinguisher with a minimum UL rating 10-B:C. It is mounted on the wall close to the entry door or behind the driver's seat. This unit can be used to extinguish various categories of fires including oil, gasoline, grease, flammable liquid and electrical. Please read the Service/Inspection tag that is attached to your fire extinguisher and follow the instructions therein. If the dial indicator is not in the green area, the extinguisher will not work properly and it must be replaced.

Emergency Exit Facilities

RV's are required to have a minimum of two exits located remote from each other and so arranged as to provide a means of unobstructed travel to the outside. Please take the time to familiarize yourself on the alternate emergency exit located in the rear bedroom on the driver's side. *Note: It is clearly identified as* ***EXIT.*** It is equipped with either one or two handles that are colored Red. To gain egress, you must either pull or twist the handle(s), then push-out the window.

SAFETY WHEN TRAVELING

There are special things to know about safety belts and children. And there are different rules for babies and smaller children. If a child will be riding in your motorhome, then refer to the section for Children. Follow those instructions there for everyone's protection.

Your motor home was designed to be open and spacious. While this provides delightful aspects to traveling, it also requires additional safety awareness. All loose objects are potentially dangerous projectiles in the event of sudden stops and maneuvers. To eliminate this hazard, be sure all appliances are secured, closets, drawers and cabinet doors are provided with latches. Free standing dinette chairs are equipped with restraining belts, please use them.

Prior to each trip, check all open areas to see that gear has been stowed. Check all appliances, doors and drawers for proper locking or latching. All passengers should take their seats. Fasten the seat belt by engaging the buckle and adjusting the belt by pulling excess through clamping mechanism at the buckle so that the belt is snug and buckle is located for your comfort and easy access.

Using the Combination Lap - Shoulder Belt

- Close and lock the entry door.
- Adjust the seat so you can sit up straight.
- Pick up the latch plate and pull the belt across you. Don't let it get twisted.
- Push the latch plate into the buckle until it clicks. If the belt stops before it reaches the buckle, tilt the latch plate and keep pulling until you can buckle it. If the belt is not long enough, see "Safety Belt Retrofit" at the end of this section.
- Make sure the release button on the buckle faces upward or outward so you would be able to unbuckle it quickly if you ever had to.
- To make the belt tight, pull down on the loose end of the belt.
- The belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones and you will be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or even fatal injuries.
- To unlatch the belt, just push the *red* colored button on the buckle.

Make sure the release button on the buckle faces upward or outward so you would be able to unbuckle it quickly if you ever had to.

A twisted belt can seriously injure you. In a crash, you wouldn't have the full width of the belt to spread impact forces. If a belt is twisted, make it straight so it can work properly, or ask your dealer to fix it. To unlatch the belt, just push the button on the buckle. The belt should retract out of the way.

Safety Belt Use During Pregnancy

Safety belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they don't wear safety belts. A pregnant woman should wear the lap belt, as low as possible throughout the pregnancy. The best way to protect the fetus is to protect the mother. When a safety belt is worn properly, it's more likely that the fetus won't be injured in a crash. For pregnant women, as for anyone, the key to making safety belts effective is wearing them properly.

Rear Seat Passengers

Not all-seating positions are equipped with safety belts due to the unique configuration of motor homes. Those seats not equipped with safety belts should *not be* occupied while the vehicle is in *motion*. A warning label adjacent to the seat identifies these seats.

While in transit, all occupants must sit in seats equipped with safety belts. The following instructions will describe how to wear safety belts properly.

IMPORTANT

It's very important for rear seat passengers to buckle up! Accident statistics show that unbelted people in the rear seats are hurt more often than those occupants who are wearing safety belts.

Children

Everyone in a vehicle needs protection! That includes infants and all children smaller than adult size. In fact, the law in every state and Canadian province specifies that children up to some specific age and weight must be restrained while in a vehicle.

Smaller Children and Babies

Smaller children and babies should always be restrained in a child or infant restraint. The instructions for the restraint will note whether it is the correct type and size for your child. A very young child's hip bones are so small that a regular belt will not stay low on the hip, as it should. Instead, the belt will likely end up over the child's abdomen. In a crash, the belt would apply force over

the child's abdomen, which could cause serious or fatal injuries. Be sure that any child small enough for one is always properly restrained in a child or infant retrained in a child or infant restraint.

Child Restraint systems are designed to be secured in the vehicle by lap belts and should be secured in accordance with the restraint system manufacturer's instructions. Accident statistics have shown that children are safer when properly restrained in a rear seating position than in a forward position.

Never hold a baby in your arms while riding in a vehicle. A baby doesn't weigh much —until a crash. During a crash a baby will become so heavy you can't hold it. For example, in a crash at only 25 mph (40 km/h), a 12 pound (5.5 kg) baby will suddenly become 250 pounds (110 kg) on your arms. Result: The baby would be almost impossible to hold. Always secure the baby in an infant restraint.

Child Restraints in the Rear Seat

- Pull out the vehicle's safety belts and run the lap part through or around the restraint. The child restraint instructions will provide the information. Tilt the latch plate to adjust the belt if needed.
- Buckle the belt. Make sure the release button faces upward or outward, so you'll be able to unbuckle it quickly, if ever required.
- To tighten the belt, pull up on the loose end of the belt while you push down on the child restraint.
- Push and pull the child restraint in different directions to be sure it is secure.
- To remove the child restraint, just unbuckle the vehicle's safety belt.

Larger Children

The vehicle's safety belts should be worn by children who have out grown child restraints. Accident statistics show that children are safer if they are restrained in the rear seat, but they need to use the safety belts properly. Children who aren't buckled up can be thrown out in a crash or can strike other people who are. Wherever the child sits, the belt should be worn low and snug on the hips, just touching the child's thighs. This applies belt force to the child's pelvic bones in a crash.

Safety Belt Retrofit

If the vehicle's seat belt will fasten around you, use it. But if a seat belt isn't long enough to fasten, your motorhome can be retrofitted with an extended-length seat belt. Your dealer or other authorized National R.V. service center will order a custom-length safety belt that will work properly and comfortably for you. Be sure to get extended safety belts for each seat you may occupy while travelling.

Never allow two children to wear the same belt. The belt can't properly spread the impact forces. In a crash, the two children can be crushed together and seriously injured. Only one person must use a seat belt at a time!

Checking Your Restraint System

Now and then, make sure all your belts, buckles, latch plates, retractors, and anchorage are working properly. Look for any loose parts or damage. If you see anything that might keep a restraint system from doing its job, have it repaired.

Replacing Safety Belts after a Crash

If you've had a crash, do you need new belts? After a very minor collision, nothing may be necessary. But if the belts were stretched (as they would be if worn during a more severe crash), then new belts may be required. If belts are

cut or damaged, replace them. Collision damage also may mean you will have to have safety belt parts, like the retractor replaced or anchorage locations repaired—even if the belt wasn't being used at the time of the collision.

AIR PRESSURE AND TIRE SAFETY

The tire designed for your R.V. is a very technical and precisely engineered product. To obtain the maximum safe use and best service out of your tires, it's helpful to understand the function of the tire. A tire is a "container" that holds air. It is the combination of air and tire that supports the vehicle and its contents. In addition, since the tire is the only contact that the vehicle has with the road surface, it must provide other functions such as traction for moving, stopping and steering as well as providing a cushion for the vehicle.

The Importance of Air Pressure

The most important factor in maximizing the life of your tires is maintaining proper inflation. Driving on any tire that does not have the correct inflation pressure for the load of the vehicle is dangerous and may cause premature wear, tire damage and/or loss of control of the vehicle.

A tire that is under-inflated will build up excessive heat that may go beyond the prescribed limits of endurance of the rubber and the radial cords. This could result in sudden tire failure. A tire that is under-inflated will also causes poor vehicle handling, rapid tire wear, and a decrease in its fuel economy.

Over-inflation will reduce the tire's footprint, or contact patch with the road, thus reducing the traction, braking capacity, and handling of the vehicle. A tire that is overinflated for the load that it is carrying will also contribute to a harsh ride, uneven tire wear, and will be more susceptible to impact damage. Maintaining correct tire inflation pressure for your vehicle's loaded axle weight is of the utmost importance and must be a part of regular vehicle maintenance.

Federal law requires that the tire's maximum load rating be molded into the sidewall of the tire. If you look on your tire's sidewall, you'll see the maximum load allowed for the size tire and load rating, and the cold air inflation pressure required to carry that stated maximum load. Utilizing less air pressure means the tire can carry a lesser load. Contact your tire manufacturer and request a *weigh / inflation chart* that shows weights that can be supported by various air pressures. The amount of air pressure you need to use is dependent on the weight of your fully loaded vehicle.

Dangers of Overloading

What are the risks of driving an overloaded vehicle? In addition to possible problems with tires, wheels, and springs, there can be problems of brake failure, drive train failure, and wheel bearing failure. Plus an overloaded RV uses more fuel, is harder to handle and can lead to driver fatigue. If any one component should fail, it could result in vehicle damage and/or loss of vehicle control. In addition to the above dangers, there are some states that require motor homes and RVs to utilize the Highway Patrols' weight scales to check for overloaded axle weights. Citations can be issued.

- *Torn or frayed belts may not protect you in a crash. They can rip apart under impact forces. If a belt is torn or frayed, get a new one right away. The model number on the replacement belt must be listed on the safety belt you want to replace.*
- *Motorhomes equipped with free standing dinette option: The chairs provided with this option are not designed to be occupied during operation of your motorhome. Note: Seat belts are not provided with these chairs and they do not meet FMVSS requirements.*

When to Check Air Pressure

Now that you have found what the correct air pressure per axle needs to be for your RV, you need to know when to check your air pressure. You should check your air pressure every two weeks or at least once a month and before any major trip. Your RV tires' air pressure should be checked every "drive" morning on long trips. On short trips of a day or less driving each way, your tires should be checked before you leave on your trip and again before you start your trip home. If your vehicle is stored for any length of time, air pressure should be checked prior to storage, but more importantly, when it comes out of storage.

Check your tires when they are "cool" and have not been driven on for more than a few miles. The stated "cold" inflation pressure is based on an approximate outside temperature of 68 degrees. If you must check your tires when they are warm or hot, allow for a slight increase in air pressure and make sure that they are within a couple of pounds of each other on the same axle. *Never let air out of a hot tire.*

It is recommended you purchase a quality *truck-style* air pressure gauge. Some newer RV wheels are such that a normal truck tire gauge needs to have a bend in it to reach the valve on the inside of the outside dual. Purchase one with a built-in offset, or use a good quality stainless steel valve extension. These can be used on any dual tire setup for ease in checking your pressure. Nothing should restrict you from checking your air pressure daily when you are driving your RV daily.

What if you don't check your air pressure? If you pick up a nail or screw while driving that creates a slow leak and causes some pressure loss, you might eventually spot it with a quick look if its a front tire. If its an outside rear dual, you might spot it with a long look. However, if it is an inside rear dual, the chances of spotting it without an air pressure check are very slim. If you begin driving without finding it, very quickly (in most cases, a few miles) your outside rear tire next to the low air pressure tire is going to heat up from carrying double its' load resulting in tire failure. Then you'll have two tires down on the same side and on the same axle, and a five-ton or more vehicle at any speed is difficult to bring under control. As you "preflight" check your vehicle every "drive morning," include an air pressure check of your tires. *Your life is worth the extra few minutes!*

TIRE CARE, REPAIR & REPLACEMENT

Changing a Flat Tire

Even the best drivers can drive over a nail and the best tires can pick up that nail or screw and go flat. Whenever this occurs, **do not** attempt to jack up the motorhome and change it yourself. Motorhome wheels and tires are extremely heavy and lug nut torque requirements make it advisable to summon professional help (Use your Coach Net card or call your auto club.). **Note: Your motorhome *is not* equipped with a spare tire or a jacking device. *Do not* use the leveling jacks as a lift for changing tires. This is extremely dangerous!**

Tire Repair

If you pick up an object that causes a flat with your RV tire, the repair must be made to the inside of the tire to be repaired properly. To do this, the tire needs to be dismounted and inspected on the inside of the casing for any other damage that the object may have caused. The tire should always be removed from the wheel to inspect for internal damage.

Tire Inspection

Your RV tires should be inspected thoroughly at least once a year, and any time you drive in rough or rocky terrain, or when you have your RV serviced. This inspection should include the outside and inside sidewalls, the tread area and the valves, caps and any valve extensions. Inspect for nails, cuts, bulges, aging, or fatigue cracks and weathering or ozone cracking. Also check between the duals for objects lodged between them. See a tire dealer at once if there is anything found to be in question.

On a regular basis, rub the palm of your hand across the face of the tread on your front tires to feel for any feathered wear from "toe" alignment problems. (Be careful since severe wear can expose steel belt edges that are very sharp.) A "toe" misalignment problem can be caused by impact with a "chuck" hole in the road. Bad "toe" wear can be hard to find visually, but can be felt very quickly with the hand. This type of alignment can wear the rubber off the tread of your tires in just a few hundred miles.

Wheel lug nuts must be re-tightened to proper torque specifications (350 ft./lbs. for aluminum wheels) at 50 miles and then at 500 miles of new vehicle operation (or after a wheel change) and at the intervals specified in the Maintenance Schedule. Failure to retighten wheel lug nuts as required could allow wheels to come off while the vehicle is in motion, causing loss of control and possible collision.

Tire Rotation

If correct air pressure and proper alignment rate are both continually maintained, tire rotation could never be needed. However, in other cases, tire rotation may be needed to help even out alignment or under-inflation problems. There are no restrictions as to the method of rotation with your RV tires. They can be rotated front to rear and side to side.

Proper Cleaning

Like the rest of your RV, it pays to keep your tires clean. Road oil will cause deterioration of the rubber and dirt build up will help hold the chemicals in the air next to the tire and will also deteriorate the tire. As with the cleaning of any rubber product, proper care and methods in cleaning must be used to obtain the maximum service years out of your tires. A soft brush and normal mild soap that you would use to clean your RV may be used. If you use a dressing product to "protect" your tires from aging, use extra care and caution. Tire dressings that contain petroleum products or alcohol may cause deterioration or cracking. In many cases, it is not the dressing itself that can be a problem, but the chemical reaction that the product can have with the antioxidant compound in the tire. Heat can add to the negative reaction. When these same dressing products are used on a passenger car tire that is replaced every three to four years, it is rare to see a major problem. However, in most cases, RV tires will last much longer due to limited annual mileage. And the chemical reactions have much longer to take effect.

Long-Term Storage of RV Tires

Rubber tires age faster when not being used. There are a few steps that you can take to reduce the aging effects from long-term RV storage. Before putting your RV into storage, thoroughly clean your tires and fill the air pressure to recommended maximum. Then cover the tires to prevent direct sunlight and ultraviolet rays. Failure to take these steps can lead to early deterioration and shorten the life of your tires.

The Life-span of an RV Tire

Miles alone cannot measure the life of a tire used on a RV. Your RV tire life depends on driving habits, driving conditions, and geography, as well as the age of your tires. You can determine the age of the tire by looking at the DOT number. The last digit on the right is the last digit of the year in which it was manufactured. For example, if your RV is a 1993 model with OE tires still on it, and the number 3 appears at the DOT, this means the tire was manufactured in 1993.

If the tires you have on your RV were being driven on a small commercial truck, they might last 80,000 to 120,000 miles and be replaced every two years. With the average (non-full timer) RV driving 5,000 miles per year, that could take close to 20 years to obtain. In this case, the age of the tire is more important than the amount of tread depth remaining. Just like your fan belt and radiator hose, the rubber in your tire ages as well. In cooler, clean air locations, the expected tire life will be longer than in high temperature, high smog areas. Of course, as your tires age, you should inspect them more frequently.

Selecting Replacement Tires

One of the most important RV equipment purchases that you will make will be the replacement tires on your RV. If you obtain good service with your first set of tires, chances are that they were matched well for your RV's weight needs and your type and area of driving. You will be sure only if you have weighed your loaded RV.

If there is reason to replace your tires with another size, be very careful with this selection. There are some basic areas of concern, such as the load rating of the new tire and the overall diameter of the new tire for vehicle clearance and speedometer reading.

Then there is the matching of the tires to the dual wheel offset for the dual spacing clearance and the load rating of the wheel. For example: buying a new tire with a higher load rating that might require 105 PSI would be of no advantage if your wheel is limited to 80 PSI. Be sure that the wheel width is compatible with the new size.

SAFE MOTORHOME LOADING

Load Definitions

Proper loading and weight distribution of your motorhome is of critical importance since this will affect drive handling and braking of the vehicle. Your motorhome chassis was designed to carry and/or tow a specific weight. Overloading or exceeding these limitations might place you in danger by reducing

your braking capacity. It also places undue stress on components and can lead to shortened service life or premature failure. However, before discussing loading and weighing, it is necessary to define some weight-related terminology as follows:

IMPORTANT

There are some critical areas to look for in selecting replacement tires. For the best information on doing this, you should see a tire dealer.

- **GVWR** *(Gross Vehicle Weight Rating)* means the 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.
- **GAWR** *(Gross Axle Weight Rating)* means the maximum weight that a specific axle is designed to carry. The sum of ratings may be more than GVWR to allow for load variations.
- **GCWR** *(Gross Combined Weight Rating)* means the value specified by the motorhome manufacturer as the maximum allowable loaded weight of this motorhome with its towed trailer or towed vehicle.
- **GTW** *(Gross Towed Weight)* means the maximum allowable loaded weight that this motorhome has been designed to tow.
- **MTW** *(Maximum Tongue Weight)* means the maximum vertical load that the towed vehicle applies to the hitch on the motorhome.
- **UVW** *(Unloaded Vehicle Weight)* means the 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. *Note: This weight is representative of a typical production example of this model vehicle.* Some variations from one vehicle to another are normal.
- **NCC** *(Net Carrying Capacity)* means the 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 or less that GVWR minus UVW).
- **GVW** *(Gross Vehicle Weight)* means the total gross weight of the motorhome, with accessories, full water, fuel, cargo plus driver and occupants. It is important to remember that GVW is not a limit or specification; it is the actual weight of your motorhome when fully loaded and driven onto the scales. (Note: the GVW must never exceed the GVWR.)

The *Weight Information Sticker* on your RV is normally located in the driver's overhead cabinet. This label will supply you with important weight information regarding the Net Carrying Capacity (NCC) of your vehicle. In addition, your motor home is labeled in accordance with *Federal Motor Vehicle Safety Standards* (FMVSS) to indicate safe limits which each axle and the total vehicle itself can be loaded to at a specific tire inflation pressure. This *Federal Certification Tag* can be found on the sidewall, to the left of the driver's seat. The tires, wheels, axles, axle bearings, springs, the vehicle frame or other components of the vehicle limit these maximum axle and load weight ratings. Every RV, even of the same make and model, will vary in actual loaded axle weights, because of differ-

*DO NOT exceed the **GVWR** or the **GAWR** of your motorhome. Exceeding these ratings of your motorhome:*

- ***WILL** reduce your warranty protection.*
- ***CAUSES** undesirable handling characteristics.*
- ***WILL** create a safety hazard.*

ent options and personal loads. While your Gross Vehicle Weight (GVW) should be below the GVWR; you must weigh your RV in a loaded condition to know its actual weight. Weigh the front axle, the total unit, and then the rear axle. If possible, also weigh the left and right sides. Once you know the total weight, and the weight on each axle, the tire load data chart will show you the correct cold inflation pressure per tire for each axle.

How Much Cargo Can I Carry?

You must decide what cargo you wish to carry based on how many people you are carrying and the actual weight of the liquids on board. It is recommended that the holding tanks be emptied before leaving the campground. The weight of optional equipment and owner add-ons must also be added to the unloaded weight of your vehicle. Most campgrounds have fresh water, so unless you are going to camp in primitive areas, it is seldom necessary to travel with a full water tank. 10-20 gallons will normally suffice for convenience while traveling.

Where to Weigh Your Vehicle

There are probably several certified public scales in your area. You will find public-access scales in a variety of places, such as moving and storage company lots, farm suppliers with grain elevators, gravel pits, recycling companies and large commercial truck stops. If you are not aware of a nearby public scale, check your telephone book yellow pages under the "scales-public" section or "weights". A nominal fee will be charged but it is money well spent.

How to Weigh Your Vehicle

Most of the scales will be a large platform design type that is long enough to handle a large truck and trailer. A few will be the single axle type. If the scales are the single axle design type, drive your front axle onto the scale and stop long enough for the weight to be obtained. Then pull forward until the rear axle is on the scale. To know the total weight of your unit, add the weights together.

If the scales are the platform design type, drive your front axle onto the platform scale and stop just before the rear tires reach the platform. In some cases, it may take a "spotter" working with you to tell you where to stop. After the front axle weight is obtained, drive the unit fully onto the center of the scale, stop and obtain the weight for your total unit. Then drive forward until the front tires are just off the scale and stop. Obtain the weight for the rear axle. *Note: For the best results, the axle that is off the scale should be level with the scale.*

If there is sufficient room to the sides of the scale, it would be helpful to obtain the right and left side weights of your RV. Again the RV should be as level as possible. When comparing the weights of your axles and/or sides, the total of the front and rear axles and the totals of the right and the left sides should match up closely with your total RV weight.

Important Loading Tips to Remember

It is recommended that you weigh your vehicle at a public scale to obtain a full wet load weight. The vehicle should not have personal belongings, food products, kitchen ware, or passengers and driver included in this weight. The vehicle should have a full tank of engine fuel, a full tank of liquid petroleum gas (LPG), and a full tank of fresh water. Normally the holding tanks will be empty if the water tank is full. It is **not** recommended that the vehicle travel with both water tank and holding tanks full at the same time. This condition will significantly reduce your vehicle's carrying capacity and **may** cause the vehicle to be overweight. Subtract your indicated wet weight from the **(GVWR)** printed on the certification label to find the maximum cargo and passenger load that can be safely carried.

The storage compartments on your vehicle have been made as large as possible to accommodate bulky items such as lawn chairs and barbecues, etc. It is very easy to overload these areas with "stuff". Often much of this "stuff" is not needed and *will* decrease your vehicle's carrying capacity to safely transport additional people and cargo. When loading your vehicle, always place heavy items in the lower compartments and lighter items in the overhead cabinets.

Before leaving on your first adventure it is recommended that you weigh your vehicle again to check your total **(GVW)** along with your total *personal cargo load* and *passenger load.* Your vehicle should be fully loaded the way you intend to use it.

Prepare a *loading list* that will help as a checkoff list before departures. Categorize the load so that stored items not often used can be easily located at a later date. This list may also be used to prioritize the weight of belongings to ensure your vehicle is not traveling in an overweight condition. You may find it necessary after weighing your vehicle a second time to redistribute your load, or it may become necessary to remove some load.

Don't forget the *passenger weight*. Weigh your RV, as it will be loaded when traveling. Be sure all passengers are siting in their favorite seat. If passengers choose different seating arrangements while the vehicle is traveling, the weight change will affect the front and rear Gross Axle Weight **(GAW)**. (Be sure the family pet is part of the load if you plan to take the pet with you.)

The *expendable loads* should be a separate category on your list. All food products, pantry stored food, refrigerator food, beverages, ice, and extra freezer or ice chest with ice. Also, campfire wood, bags of charcoal briquettes, and all expendable items that may leave with you on a journey, but may be consumed as you reach your journey's end.

Always empty the holding tanks before leaving the campground. If a dump station is not available, it is ***not*** recommended that the vehicle travel with a ***full*** fresh water tank when the holding tanks have stored wastewater in them.

The *hitch load* is the additional weight applied to the hitch of your motor home. A towed vehicle, boat trailer, or carrier rack is a hitch load that effects the **(GAWR)**, **(GVWR)** and **(GCWR)**.

Towing a Vehicle or Trailer

Probably the single most critical factor in trailer towing is the combined weight **(GCWR)** of your motorhome and tow vehicle. The total actual weight **(GVW)** of the RV and towed vehicle should not exceed this rating. While this figure has more to do with the drive train (engine, transmission, axle, and bearings) design limits, this additional weight can also affect the tires and how your RV handles. And finally, please don't forget to consider the actual tongue weight. This should not exceed Maximum Tongue Weight **(MTW)** rating of the hitch.

Emergency Towing of your RV

In an extreme emergency, your motorhome may be towed from the front end by a knowledgeable and experienced towing service. Special care must be taken to prevent any damage to the fiberglass front-end. **Do not** tow your motorhome from the rear, since it will cause serious overloading of the front-end components. **Do not** allow your motorhome to be towed without having the drive shaft disconnected from the transmission. *Note: Follow the chassis manufacturer's recommendations.*

*The factory installed trailer hitch on the Islander motorhome will safely tow a trailer or another vehicle whose weight does not exceed 7,000 pounds **(GTW)** and 500 pounds **(MTW)**. See your chassis manufacturer's owners guide for the **(GCWR)**.*

PRECAUTIONARY CHECKLISTS

The following is a recommended precautionary checklist that should be adhered to when operating your motor home. *Note: Consult your **Important Papers Packet** for other warnings from various manufacturers:*

IMPORTANT

- The starter should not be operated longer than 30 seconds at a time. If the engine fails to start always wait at least two minutes before trying again to protect the starter from overheating.
- Avoid extended or unnecessary idling of the engine (10 minutes or more), particularly at high engine speeds. This could produce excessive system temperatures that can damage your vehicle.
- It is recommended that the windows and door seams and joints sealants be checked every 6 months and resealed if necessary.

IMPORTANT

For any distance, It is strongly recommended that your motorhome be trucked with a flat bed towing service when necessary.

- Driving through water deep enough to wet the brakes can affect braking performance and cause the vehicle to pull to either side when the brakes are applied.
- If brake failure is indicated immediate repair service is necessary. Continued operation of the vehicle in this condition is dangerous.
- Do not use parking lights when the vehicle is in motion. Parking lights denote a parked vehicle.

- Law prohibits operating the hazard warning flasher system while moving on a highway.
- Inspection and service should be performed anytime a malfunction is observed or suspected.
- All passengers should be properly restrained in approved restraint systems whenever the vehicle is in motion.
- Do not adjust driver's seat belt while vehicle is in motion.
- Before beginning an extended vacation or trip in your RV, it is recommended that the fire extinguisher be checked for proper charge and inspected to assure proper operating condition.
- When performing maintenance on any gas fired appliance shut off gas at the tank. Perform a gas leak test on tank valves and check connections before relighting.
- Always check for sufficient overhead clearance before entering an area with low overhead clearance such as garages, drive-ins or and car washes, etc.
- Selected doors and windows have been designated as exits in case of emergency. They are marked with an exit label and the latches on the windows are red. Learn where the exits are and how to use them.

- Avoid inhaling exhaust gases as they contain carbon monoxide gas that is colorless, odorless and poisonous.
- The radiator cap should be removed only when checking coolant freeze point or for complete replacement with antifreeze coolant. Do not remove radiator cap until the radiator has cooled completely. Note: Use caution with a hot coolant system.

Notes:

DRIVER'S CONTROLS

MANUFACTURER DOCUMENTATION

All driver's controls, instruments and warning lamps are products that are covered in the documentation provided by their respective manufacturers, which are provided with the documentation package for your motorhome. Specifically with regards to the items discussed in this section, consult the following:

- Dynomax Chassis by Country Coach Owner's Manual
- Cummins Operation and Maintenance Manual, ISC Engine
- Allison World Transmission Operator's Manual

MFG INFO

Consult your Owner's and Operation Manuals for your Dynomax Chassis, Cummins ISC Engine, and Allison World Transmission.

For your convenience, summaries of the operation procedures and purpose of various instruments are provided here. However, National R.V., Inc. does not warrant the accuracy of the information provided here. It is important that the owner or operator completely read and familiarize him/herself with original manufacturer operation and maintenance documentation of each component or system *prior* to operation.

STEERING COLUMN

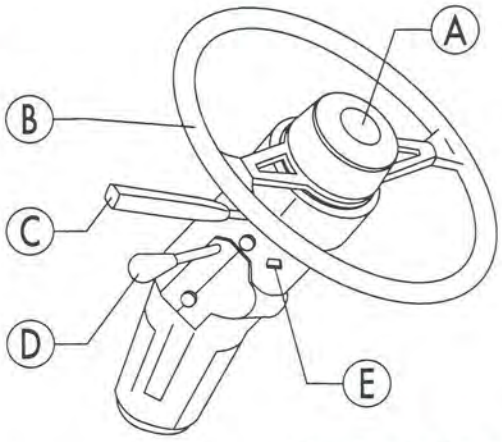
A. *Horn Button.* Push to honk horn. Switch on side console toggles between electric (city) and air (highway) horns.

B. *Steering Wheel.*

C. *Turn Signal/Hi-beam Lever.* Move either up or down to active right or left turn signals, respectively. Pull toward you to toggle headlights between hi- and low- beam.

D. *Tilt/Telescope lever.*

E. *Emergency flasher switch.* Pull to activate "hazard" warning lights.

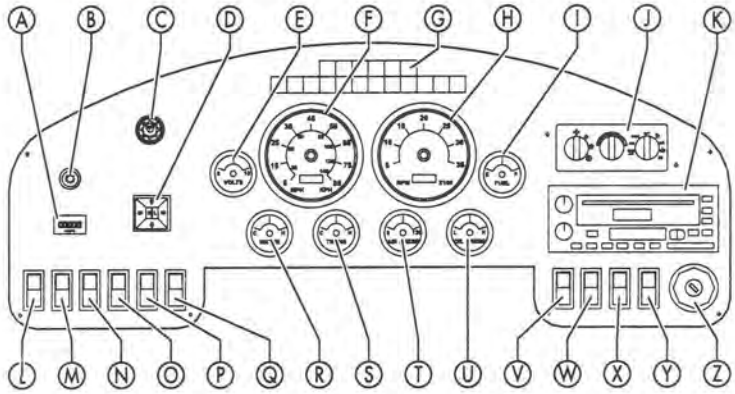


Steering Column

IMPORTANT

Familiarize yourself with all cockpit instruments and controls before attempting to drive your motorhome.

STANDARD INSTRUMENT PANEL



Instrument Panel

A. *Hour Meter.* Displays number of hours of operation for the coach generator.

B. *Dashlights Dimmer.* Dims instrument panel lights and gauges.

C. *Windshield Wipers.* Controls windshield wipers/washers.

D. *Mirrors.* For remote adjustment of the side-mounted electric mirrors. The center switch toggles between left | off | right, and the outer directional switches adjust the selected mirror.

E. *Volt Meter.*

F. *Speedometer.* Indicates vehicle speed in Miles per Hour (MPH) and Kilometers per Hour (KPH).

G. *Message Center.* See the section titled *Message Center* for further discussion.

H. *Tachometer.* Indicates engine speed in Revolutions per Minute (RPM)

I. *Fuel Gauge.* Indicates fuel level. Never run this or any diesel vehicle out of fuel.

J. *Dash Heat-AC Control.* See the section titled *Dash Heat-AC* for further discussion.

K. *AM-FM Stereo Cassette Player.* Refer to the manufacturer's documentation for operating instructions.

L. *Head Lights.* Turns on head lights.

M. *Drive Lights.* Turns on driving lights (located below headlights on front of coach).

N. *Generator:* Starts generator, turns generator off.

O. *Defogger.* Activates power mirror defog feature.

P. *Boost.* Temporarily connects the coach house batteries to the engine batteries in order to "jump start" the engine when the engine batteries are discharged.

Q. *Docking Lights.* Activates the docking lights, located on the side of the coach at the wheel wells.

R. *Water Temperature Gauge.* Displays the engine coolant temperature. Engine coolant temperature should always be within normal operating range.

S. *Transmission Temperature Gauge.* Displays the transmission fluid temperature. Transmission fluid temperature should always be within normal operating range.

T. *Air Pressure Gauge.* Displays air pressure, in Pounds per Square Inch (PSI), in the on-board compressed air system.

U. *Oil Pressure Gauge.* Displays engine crankcase oil pressure. Oil pressure would always be within normal operating range. If oil pressure falls below normal, shut down the engine and have it serviced immediately.

V. *Fan.* Activates cockpit fans: driver | off | both.

W. *Block Heat.* Activates the engine block heater.

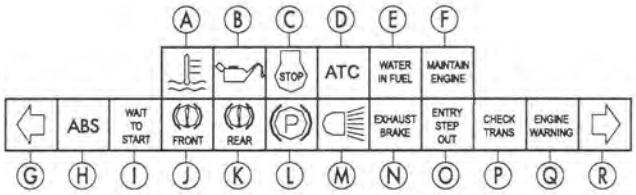
X. *Map Light.* Turns on the overhead map light.

Y. *Stereo TV.* Toggles the surround-sound speaker system between stereo input and TV input.

Z. *Ignition Keyswitch.* Turns on accessory power and starts engine.

MESSAGE CENTER

The message center warning lamps located on the instrument panel indicate various conditions from the engine, transmission, and chassis. Carefully read the operation/owner's manuals of each for full explanation and instruction.



Warning Lamp Cluster

A. RED *Engine Coolant Temperature.* Illuminates when engine coolant temperature is higher than normal operating range. The Engine Protection System will automatically derate engine action to avoid worsening of the condition. If the condition continues to worsen, the lamp will flash until the *stop* lamp (C) illuminates.

B. RED *Engine Oil Pressure.* Illuminates when engine oil pressure is lower than normal operating range. The Engine Protection System will automatically derate engine action to avoid worsening of the condition. If the condition continues to worsen, the lamp will flash until the *stop* lamp (C) illuminates.

C. RED *Stop.* If the coolant temperature or oil pressure are over or under their normal operating range, or if certain fault codes have been generated within the engine's control system, the Engine Protection System will illuminate the appropriate warning lamps. If the condition persists or worsens, this *stop* lamp will flash for 30 seconds before the engine is automatically shut down.

D. RED *ATC.* Your motorhome is equipped with *Automatic Traction Control.* This feature works in conjunction with the electronic ABS (anti-lock braking system) to assist in low-traction situations. In these cases, the ATC system will apply brakes to a spinning wheel so that the other wheel may use its traction to move the coach. The ATC engages automatically when needed, and illuminates this lamp to signal that it is employed.

E. AMBER *Water in Fuel.* Illuminates when a certain amount of water has accumulated in the bottom of the fuel filter housing on the engine. Do not start the engine if this lamp remains illuminated after key-on. Consult the Cummins ISC Engine Operation and Maintenance Manual for instructions to drain the water from the fuel filter housing assembly.

F. AMBER *Maintain Engine.* Flashes when the engine is in need of maintenance, usually an oil change. The maintenance period is set at the factory according to factory recommended service intervals. The lamp will flash for 12 seconds after key-on. The maintenance monitor will be reset when serviced by Cummins-authorized service personnel.

G. GREEN *Left Turn Signal indicator.* Illuminates when the left-hand turn signals are operating.

H. RED *Anti-lock Braking System.* Illuminates momentarily on start-up to signal that the ABS system is being checked for anomalies. Stays illuminated or illuminates during operation if problems arise within the ABS system. If the ABS lamp stays illuminated, seek qualified service immediately.

I. RED *Wait to Start.* Illuminates when the key is turned on but the air intake manifold is not warm enough to start the engine. An air intake heater warms the manifold automatically. Wait until the lamp extinguishes before trying to start the engine.

J. RED *Front Brakes.* Indicates that their is insufficient air pressure at the front brakes to safely operate them. Wait for air pressure to build sufficiently to extinguish the warning lamp before operating the vehicle.

K. RED *Rear Brakes.* Indicates that their is insufficient air pressure at the rear brakes to safely operate them. Wait for air pressure to build sufficiently to extinguish the warning lamp before operating the vehicle.

L. RED *Parking Brakes.* Indicates that the parking brake is set, and must be disengaged prior to moving the vehicle.

CAUTION

Warning lamps illuminate for specific reasons and are very important. Never ignore an illuminated warning lamp.

REMINDER

Some warning lamps are triggered by specific fault codes in the engine and/or transmission electronic control units. Read the manufacturer's documentation to familiarize yourself with the electronic systems of both the engine and transmission.

M. BLUE *Headlights.* Indicates that the headlamps are in "high-beam" mode.

N. AMBER *Exhaust Brake.* Your coach's engine is equipped with an automatically controlled exhaust brake. The *Exhaust Brake* lamp illuminates when the exhaust brake is engaged.

O. AMBER *Entry Step Out.* Indicates that the entry step is in the "out" or "extended" position. Retract the entry step prior to moving the vehicle.

P. RED *Check Transmission.* Indicates a problem with the Allison transmission system, and that the Electronic Control Unit (ECU) is taking action to protect the operator, vehicle and transmission. Lamp will illuminate momentarily on start-up to show that the status light circuits are working properly. If the *Check Transmission* lamp does not illuminate during ignition, or if the light remains on after ignition, the system should be checked immediately. Continued illumination of the *Check Transmission* lamp during vehicle operation indicates that the ECU has signaled a diagnostic code which should be checked by a qualified technician immediately. The ECU may restric shifting to prevent further damage or injury. Thoroughly read your Allison Operator's Manual for further information.

Q. AMBER *Engine Warning.* Operation anomalies within the Cummins ISC control system result in various fault codes that are kept in the engine control module's memory for diagnosis by Cummins service technicians. The *Engine Warning* lamp will illuminate when an engine fault requires repair at the first available opportunity.

R. GREEN *Right Turn Signal.* Illuminates when the right-hand turn signals are operating.

MFG INFO

Consult your Cummins ISC Engine Operation and Maintenance Manual and your Dynomax Chassis by Country Coach Owner's Manual (provided with your documentation package) for detailed information and instructions regarding your Cummins ISC diesel engine.

ENGINE OPERATION

Starting Your Engine

Before engine start-up, perform the engine pre-trip inspection and daily maintenance checks as required in your owner's manual. Set the parking brakes. Place the transmission in neutral. *Note: The engine should not start with the engine in gear.* Push the accelerator pedal to the floor once and then release it. Turn on the ignition switch. *Do not* apply a load to the engine or increase the engine speed until the oil pressure gauge reading is normal. If there is less than 18 psi, or if there is no oil pressure indicated, shut down the engine immediately to prevent serious damage. Do not operate the engine until the cause of the problem has been corrected.

Do not crank the engine for more than 30 seconds at a time; wait for two minutes after each try to allow the starter to cool. Failure to do so could cause starter damage.

Engine break-in Period

Your diesel engine must pass a full-load operation test on a dynamometer before shipment, thereby eliminating the need for an extended break-in period. Only an initial operational check is necessary. Proper operation and maintenance are key factors in obtaining the maximum life and economy of your vehicle engine. Please follow the directions in your Operation and Maintenance Manual for trouble-free engine operation.

Stopping the engine immediately after it has been operating under load can result in overheating and accelerated wear of the components. Follow the procedures as outlined in the chassis operator's manual.

Engine Shutdown

With the vehicle stopped, apply the parking brakes and then reduce the engine speed to low idle. Place the transmission range selector in (N) Neutral. If the engine has been operating at low loads, run it at low idle for thirty seconds before stopping. If the engine has been operating at high loads, run it at low idle for three minutes to reduce and stabilize engine temperatures before stopping. Turn off the ignition key to shut down the engine.

TRANSMISSION OPERATION

Your chassis is equipped with an Allison automatic MD Series transmission. The shifter selector is connected to the Electronic Control Unit (ECU), which process signals from the shifter and in turn controls the transmission. *NOTE: This transmission does not have a (P) Park position; therefore you must apply the Parking brake whenever you park your motorhome.*

A. *Digital Display.* During normal operation [when D (drive) is selected], the digital display shows the highest forward range attainable for the shift schedule in use. The display will also show certain selector-related fault codes in conjunction with lighting of the *Check Trans* lamp in the warning light cluster of the instrument panel. Consult your Allison World Transmission Operator's Manual for further discussion of the digital display as pertains to fault codes.

B. *Reverse.* Press this button to select reverse gear. Only shift from a forward gear to reverse after the coach has come to a complete stop, and engine speed is at idle.

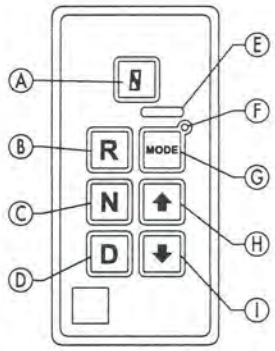
C. *Neutral.* Press this button to select neutral. Neutral is automatically selected upon starting the engine. Always select neutral before turning off the engine.

D. *Drive.* Press this button to select drive (forward). The highest forward range available will appear in the digital display window. The transmission will start out in the lowest available forward range and advance automatically to the highest range. Only shift into drive when the coach is at a stop and the engine speed is at idle.

E. *Mode ID.* Displays the name of the current pre-programmed shift schedule, if available. See *Mode Button*.

F. *Mode Indicator.* An LED which illuminates when a pre-programmed shift schedule is currently in operation.

G. *Mode Button.* Activates a pre-programmed shift schedule and illuminates the *Mode Indicator* LED. The name of the pre-programmed shift schedule will display in the *Mode ID.*



Transmission Shift Selector

H. *Up-Shift.* Requests a higher range. To be used *after* the Drive button has already been selected. Press again to request a still higher range. After a requesting a different range, the transmission will automatically shift to the desired range when conditions are appropriate (engine speed, coach speed).

H. *Down-Shift.* Requests a lower range. To be used *after* the Drive button has already been selected. Press again to request a still lower range. After a requesting a different range, the transmission will automatically shift to the desired range when conditions are appropriate (engine speed, coach speed). Downshifting is useful mostly on downhill grades, where compression braking is necessary to maintain a safe downhill speed.

MFG INFO

Consult your Allison World Transmission Operator's Manual and your Dynomax Chassis by Country Coach Owner's Manual for complete operation and maintenance instructions.

WARNING

Never select neutral at highway speeds, especially on a downhill grade, as compression braking from the engine will not be available when the transmission is in neutral.

The Transmission shift selector keys may also be used to perform certain maintenance and diagnostic checks. Consult your Allison and Dynomax documentation for complete information.

SIDE CONSOLE INSTRUMENTS

A. *Cigarette Lighter/12V DC Power Supply.* The cigarette lighter is provided with the package of "loose" items and documentation that came with your new coach. This port may also be used as a power supply for 12 volt DC appliances.

B. *Transmission Shifter Control.* Push-button operation of the automatic transmission. See the section titled *Transmission Operation* for further information.

C. *Leveling Jacks Control.* Remote operation of the hydraulic levelling jacks. Refer to the section titled *Leveling Your Motorhome* for complete instructions on operating the levelling system.

D. *Coach Level Indicator.* Dual-axis bubble levels for indicating coach levelness. To be used in conjunction with the levelling jacks to level the coach. For instructions on calibrating the level indicator, refer to the section titled *Levelling Your Motorhome*

E. *Air Dump Switch.* Two-position switch dumps air from air bag suspension so that coach may be leveled using the hydraulic leveling system.

F. *Parking Brake.* Activates the pneumatic parking brake. Pull to engage, push to disengage.

G. *Exterior Spotlight Control.* For remote operation of the exterior spotlight. See the section titled *Spotlight Operation* for complete instructions.

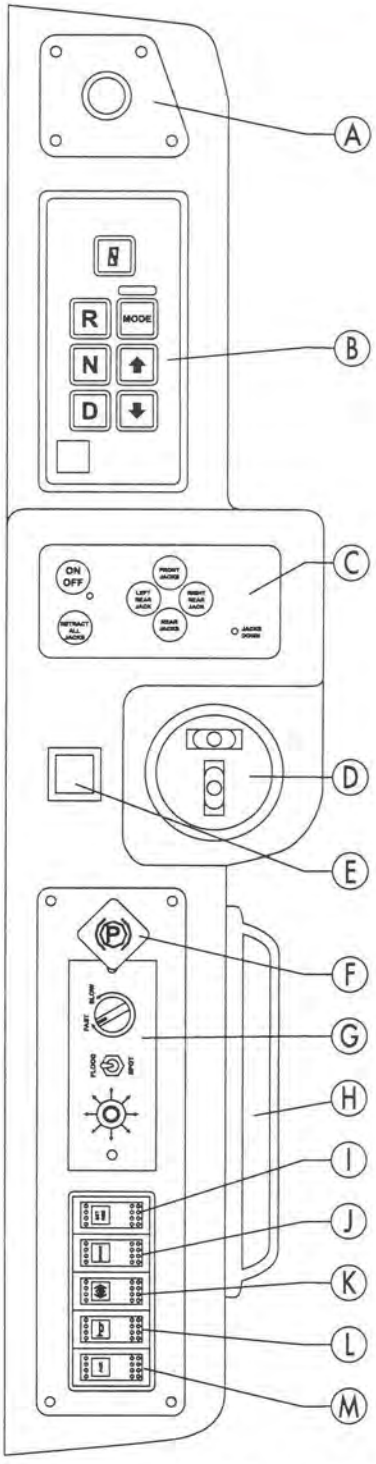
H. *Map Pocket.* For convenient storage of maps and other items which may require quick access from the driver's seat.

I. *Cruise Control Set/Resume.* Sets cruise control speed to the current speed, or resumes to previously set speed after braking.

J. *Cruise Control On/Off.* Activates and deactivates the cruise control system. Cruise control is a function of your engine's electronic fuel delivery system. Consult your chassis and/or engine owner's or operator's manuals for further information.

K. *Exhaust Brake.* Enables the engine exhaust brake. Consult your chassis and/or engine owner's or operator's manual for complete instructions.

L. *Horn Selection.* Toggles between the electric horn under the hood (for in-town use) and the air horn located on the roof (for highway use).



Side Console

M. *Auxiliary.* This switch is unused on stock/standard coaches, but is included for dealer installed options. If this switch is in use, your dealer will provide you with details and instructions on its purpose and operation.

REAR VIEW MONITOR

A. *Power.* 2-position push-button. "ON": camera/monitor is continuously operational when the ignition keyswitch is on. "STBY": camera/monitor switch on when the vehicle transmission is shifted into reverse, and remain off otherwise.

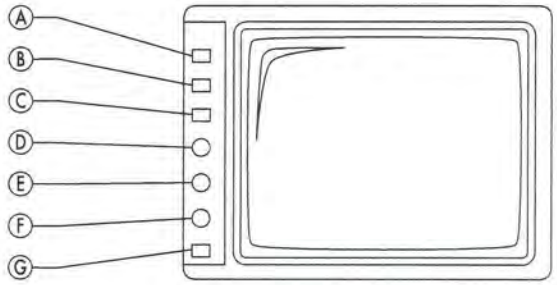
B. *Camera Position.* 2-position push-button. "UP": panoramic view, horizon level. "DOWN": direct view of area immediately behind coach.

C. *Input.* 2-position push-button. "A": rear-mounted camera. "B": unused.

D. *Contrast.* Radial dial. Adjusts picture contrast of monitor.

E. *Brightness.* Radial dial. Adjusts picture brightness of monitor.

F. *Volume.* Radial dial. Adjusts monitor volume.



Rear View Monitor

G. *Day/Night.* 2-position push-button. Toggles between modes of preset levels optimized for day or night operation.

CHASSIS AIR SYSTEM COMPONENTS

Air Brakes. Your motorhome is equipped with a dual air brake system that uses a single set of brake controls. Each system has its' own reservoir, plumbing and brake chambers. The primary system operates the service brakes on the rear axle, while the secondary system operates the service brakes on the front axle. There are two air pressure gauges located in the dash instrument cluster indicating the pressure in each tank, "F" (front) and "R" (rear). The light/buzzer will warn when the air pressure to too low. *Note:Your vehicle will not move until the air pressure has reached at least 60 pounds.*

Spring Brakes. The spring brake is automatically applied whenever the air pressure in the system is lost or the parking brake is applied.

Air Tanks. The chassis equipped air tanks have automatic heated drains located on the bottom of each tank. While driving your vehicle, the automatic ejectors will operate and dissipate moisture from the tanks.

Air Dryer. The air dryer keeps the air in the air brake system free of moisture and other contaminants, such as oil.

Air Dump System. The suspension air bags must first be deflated before you can level your motor home with the hydraulic power leveling system. A two-position air dump control switch is located in the Armrest Controls located next to the driver. *Note: Refer to the illustration previous page.*

Your motorhome is equipped with an air suspension system, do not move or drive the vehicle with the air suspension bags deflated. This could possibly cause personal injury or damage to your vehicle.

JACOBS EXHAUST BRAKE

It is recommended that on wet, slippery or icy roads that the Extarder not be left in the automatic mode. The On/Off switch should be in the Off position. Operation of the exhaust brake is recommended only when you have good traction with the road surface.

LEVELING YOUR MOTORHOME

IMPORTANT

The Jacobs exhaust brake is a vehicle-slowing device, not a vehicle-stopping device. It is not a substitute for the vehicle service brakes. Use of the exhaust brake for vehicle downhill control and slowing down on level terrain will allow the service brakes to remain cool and ready for any emergency.

The Hydraulic leveling system on your coach is designed and built to give you years of trouble free leveling and stabilizing operation. Please read and study the Operator's manual for complete details of operation.

Important Precautions

- Check potential jack contact locations before operating your system.
- *Do not* use the leveling jacks as a lift for changing tires or to support the vehicle while under the coach.
- Never expose your hands or other parts of the body near hydraulic leaks. High-pressure oil leaks may cut and penetrate the skin causing serious injury.
- Park your coach on reasonably solid surfaces or jacks may sink into the ground or blacktop. When on extremely soft surfaces, use some wood planking as load distribution pads under each jack.

WARNING

Failure to adhere to levelling instructions may result in serious injury and/or damage to your coach and surrounding structures. Carefully read this and the levelling system documentation furnished separately in your documentation package prior to operating the levelling system.

Deploying The Leveling Jacks

- Park your vehicle on reasonably level ground.
- Apply the parking brake.
- Place the transmission shift selector in neutral.
- Operate the Air Dump selector lever to drain the air from the suspension.
- Follow the leveling system manufacturer's instructions for leveling the coach using the control pad on the side console.

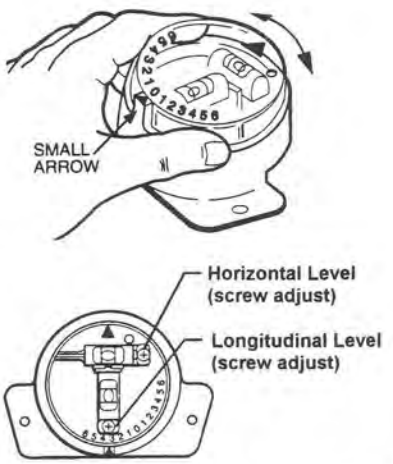
Retracting The Leveling Jacks

- Retract your jacks following the manufacturer's procedures.
- Ensure the Do Not Move Coach light indicator and audible warning has gone off.
- Place the Air Dump selector lever back to the automatic position to reinflate the air suspension system.
- Place your foot on the service brake, before removing the parking brake.

CHASSIS LEVEL INDICATOR

The Bubble Level indicators are used in conjunction with the Hydraulic Leveler operation, above. Refer to the illustration and follow the Calibration Procedure as follows:

- Level your motorhome side-to-side and front-to-rear using a carpenter's level placed on the living room floor.



Leveling Bubble Operation

- Turn the clear dial so the "0" is aligned with the small stationary gold arrow. Through the hole in the clear cover, adjust the screw until bubble is centered in vial. This horizontal vial indicates your side-to-side level.
- Rotate the clear cover until the hole aligns with the rear screw on the front-to-rear vial. Adjust screw until bubble is centered in vial. This longitudinal vial indicates your front-to-rear level.

The numbers indicated on clear dial is that height in inches required to level your vehicle. When operating the power levelers, the vehicle is level when both bubbles are centered in their respective vials.

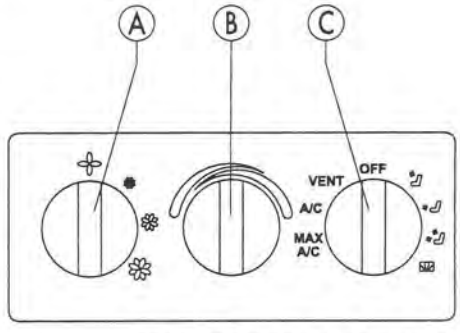
DASH HEAT & A/C

A. *Blower Fan Control.* Provides 3 Speeds of Operation in any mode.

B. *Air Temperature Control.* Controls the temperature of the discharge air. Turn the knob to the red area for warmer air and to the blue area for cooler air.

C. *Air Distribution Mode Switch.* Provides the driver the ability to direct airflow:

- Max A/C - Air is drawn from the passenger compartment, through the A/C condenser, and discharged through the dash louvers.
- A/C - Outside air is drawn through the A/C condenser and discharged through the dash louvers.
- Vent - Fresh outside air is drawn into the system.

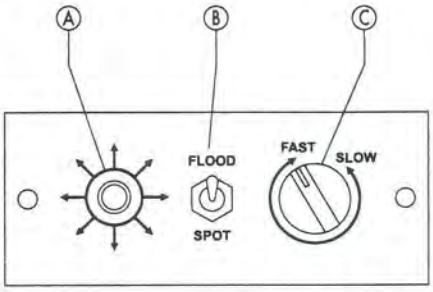


Dash Heat & A/C Controls

- Off - Closes the fresh air inlet door.
- BI-level Mode - Outside air is drawn into the system and is discharged through the dash louvers, floor and defrost outlets.
- Floor Mode - Outside air is drawn into the system, through the heater core, and is discharged through the floor outlets.
- Mix Mode - Outside air is drawn through the heater core and discharged through the floor and defrost outlets.
- Defrost Mode - The A/C system operates and directs air to the windshield for defogging.

SPOTLIGHT OPERATION

Your motorhome is equipped with an exterior spotlight, mounted at top center of the front cap, which can be remotely controlled from the driver's seat. The spotlight controls are on the side console next to the parking brake.



Spotlight Controls

A. *Directional Joystick.* Use to guide the spotlight beam in the desired direction.

B. *Flood/Spot Toggle.* Toggles between a wide floodlight beam and a concentrated spotlight beam.

C. *Speed Control.* Adjusts the pan speed of the spotlight.

MFG INFO

Consult the spotlight manufacturer's owner's manual for complete instructions.

OVERHEAD ACCESSORIES

The overhead area of the cockpit contains some driver-related appliances, such as the sun-visors and cockpit fans. The sun visors are fully adjustable in any direction. The cockpit fans are operated via the *fan* button on the dash instrument console.

Contained within the cockpit overhead cabinets are the Television, VCR, CD changer, and theater sound speakers. Consult the documentation from each of the individual manufacturers of this equipment (included in your documentation package) for complete operating instructions. The *Stereo/TV* switch on the dash instrument console toggles the input to the theater sound speakers between the dash stereo and the television.

COMPUTER WORKSTATION

Located near the kick panel on the passenger side are various ports for the computer workstation. These include a standard 12V AC outlet (enabled under shore power or generator power only), and 12V DC power plug, and a telephone cable connection.

ELECTRICAL SYSTEMS

OVERVIEW

The Electrical system provides power for lights, appliances, air conditioning and other equipment in your motorhome. There are three basic electrical power systems built-in to meet your RV electrical requirements under different situations as follows:

- A 12-Volt Direct Current (DC) house system - battery and Inverter/Charger supplied
- A 120/240-Volt Alternating Current (AC) system - supplied from Shore Power, Generator or Inverter/Charger.
- A 12-Volt Direct Current (DC) automotive system - battery supplied

REMINDER

Familiarize yourself with the three separate power systems, which equipment each powers, and when each is appropriate to use.

ELECTRICAL UTILITY COMPARTMENT

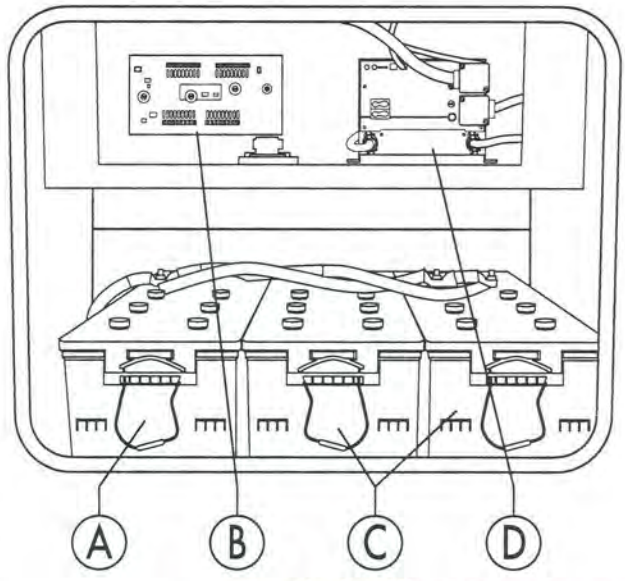
The electrical utility compartment is located on the Co-Pilot's side of the coach, second compartment from the rear (adjacent to the service compartment). Contained in the electrical utility compartment are the following components of the various electrical systems:

A. *Chassis Battery.* Provides power to chassis automotive systems, running lights, etc.

B. *12-volt Distribution.* Controls switching, surge protection and routing of power to the various onboard systems. See full schematic later in this section.

C. *House Batteries.* Supply power to the house electrical systems.

D. *Inverter/Charger.* Charges batteries when connected to shore power or the generator is running.



Electrical Utility Compartment

Located in the Engine Service Compartment, to the left of the Electrical Utility Compartment is the main battery disconnect switch, which kills power from the house batteries to the rest of the coach. 12-Volt DC House system

Auxiliary RV Batteries

All interior lights, furnace motor, exhaust fan, water pump and other interior electrical equipment, operate on the 12-Volt DC system provided by two 8-D 12-volt auxiliary storage batteries (connected in parallel) and the Inverter/Charger when connected to 120-Volt shore power cord or on-board electrical generator.

Battery charging is done automatically by the vehicle's alternator while traveling. Alternatively, whenever connected to 120-Volt AC source (either shore-power or the on-board generator), all batteries will be automatically charged.

The electrolyte level of batteries in your motorhome, when connected to 120-Volt AC shore power (campground or park) receptacle for an extended period of time should be checked at least once a week. Use distilled water only.

Charging the battery produces hydrogen gas that is explosive when mixed with air. Do not disconnect the battery cables or produce a spark by any means close to the battery while it is charging. Do not allow electrolyte solution to contact your skin or eyes. The electrolyte is a sulfuric acid that could cause serious personal injury. Wear eye protection whenever you are working with batteries. Be sure to check the liquid level regularly and when adding water use distilled water to promote longer battery life.

12-Volt D.C. Fuses & Breakers

Your motorhome is fused, to protect all 12-Volt DC circuits, as follows:

- A 300-AMPERE (AMP) inline fuse protects the main cable between the auxiliary battery and the Inverter/Charger.The 12-Volt DC fuses in the main distribution panel protect all interior lighting and equipment circuits. If any fuse blows, replace it with one of equal rating. *Note: These fuses are located in the 12-Volt DC Power Distribution Panel, see illustration found the Maintenance Section.*
- A 5-AMP fuse located inside the main distribution panel protects both the carbon monoxide detector and propane gas leak detector that is installed in your motorhome.
- The dash AM/FM Cassette Stereo has one (1) or two (2) fuses, depending on manufacturer, located behind on the backside of the case.
- Rear observation system (Backup camera) - The inline fuse is located on the cable going from the back of the monitor into the overhead cabinet. *Note: To check or change this fuse, pull wire cable from the overhead until the fuse holder is visible.*
- Please be aware that 12-Volt DC circuit breakers are Type III and must be reset manually with a push button or lever. *Note: Familiarize yourself with the location of these breakers and the method of resetting them.*

MFG INFO

Consult the chassis manufacturer's manual for additional fuse locations.

12-Volt DC Power Distribution Panel

The 12-Volt DC Power Distribution Panel is also known as the Battery Control Center (BCC). This panel is located in the outside behind the rear wheels. The Battery Control Center (BCC) is a centralized power supply system that does switching, fusing and distributing of the 12-Volt DC power. Both the chassis and auxiliary batteries are connected to this panel. Whenever a fuse "blows", there will be a small red light glowing that indicates an open circuit exists. (Only replace this fuse with one of the same rating). If the on-board generator or leveling jacks lose main power, then the 150-Amp circuit breaker in the BCC must be reset using the small trip lever. Note: See fuse panel drawings at the end

of this section for identification. Do not attempt to modify or add options to this panel! Only a qualified service technician should do servicing.

Emergency Start (Booster) Switch

The 12-Volt *booster switch* is located in the driver's dash and when activated operates a 12-Volt solenoid in the BCC located in the rear. This operation temporarily connects the auxiliary RV battery to the engine battery to assist in starting either the vehicle's engine or on-board generator. Whenever the vehicle's battery is in a low-discharged condition, it may become necessary to perform the boost operation.

Battery Disconnect Switches

The *battery disconnect* switch located by the entry door is used to operate the auxiliary battery disconnect relay in the BCC, see the engine service compartment illustration in the *Maintenance* section for location and identification. Operate this switch only when you want to disconnect the auxiliary battery during periods of motorhome storage or during service. There is also an engine battery disconnect switch located in the engine service compartment.

REMINDER

Get into the habit of checking the readings on the Monitor/Control Panel whenever you pass by it. It is always good to have a current idea of tank levels.

Interior Lighting

All interior lights operate only on 12-Volt DC. When the bulbs burn out replace them with the same type bulb. A number on the base identifies each bulb, generally an automotive type bayonet socket bulb or slim-line fluorescent tube. Automotive bulbs may be purchased from service stations or auto supply stores, but the florescent tubes will have to be purchased from a RV dealer or supply store. *Note:See Maintenance and Specifications Section for bulb chart information.*

Power Cord Reel

Islander is connected to shore power by use of a power-fed 50-amp cable. The power cord is found inside the electrical hookup compartment, located next to the pumbing service compartment at the rear Pilot's side of the coach. The switch for operation of the power cord reel is found inside the plumbing service compartment, at the upper left corner of the compartment. The cord is power-fed in both directions. Make sure it is not tangled, twisted or obstructed as it is wound back into its storage canister.

Solar Panels

Solar electric modules produce DC electricity when exposed to light. When not in use over a period of time, the house battery will naturally self-discharge. Your solar electric charging system provides a small trickle charge method of keeping your RV battery charged during storage. The solar panels function automatically and will operate whenever they are exposed to sufficient sunlight. Note:This trickle charge is not large enough to operate any appliances and should not be depended upon when your coach is in use.

120-VOLT AC APPLIANCE SYSTEM

120-Volt AC Power Availability

120-Volt AC power is available in your motor home when you are plugged into an approved 50-AMP, 120/240-Volt park receptacle or through the power cord and transfer switch. Your motorhome is equipped with a four-pronged, 25 foot, 50-AMP supply cord that is stored in the exterior compartment. When connected to a 120-Volt AC power source, both the 120-Volt AC outlets and the inverter-charger will become energized. The auxiliary RV battery is automatically recharged from the 12-Volt power Inverter/Charger, without ever overcharging. Note:You still must check your battery electrolyte levels to maintain a complete charge and avoid damaging batteries.

120-Volt AC Circuit Breakers

- Circuit breakers are installed to protect the 120-Volt AC wiring in your motorhome. The breakers are located in the power distribution panel. This main electrical panel (breaker box) is located in the bedroom. Please familiarize yourself with its' location. If a circuit breaker should "trip" and open a circuit, locate and remove the cause for overload and then "reset" the breaker.
- Ground Fault Circuit Interrupters (GFCI) are designed to protect people from shock hazards. They are used in your motorhome with 120-Volt AC receptacles that are near water sources or "wet" areas like bath compartment, outside patio on the exterior of the vehicle and the kitchen location by the galley sink. This device is not a substitute for proper grounding of your vehicle. *Note:Test the device regularly as described on the receptacle label. If it does not work properly, have it replaced by a qualified electrician.*

Automatic Transfer Relays

IMPORTANT

It is necessary to allow ample free space around the Inverter/charger housing for air circulation.

The automatic transfer relay is located adjacent to the power inlet receptacle. This electrical device will automatically disconnect the shore-power input whenever the on-board generator is started. A second automatic transfer relay is built into the inverter/charger. When AC power is present, the unit automatically transfers the electrical loads to the source of power. It also switches the inverter/charger to the *charge* mode.

Power Inverter/Charger

Whenever your motorhome is connected to 120-Volt AC power source or to the on-board generator, the inverter/charger provides energy to all interior lights, fan motors, and water pump. Selected 120-Volt AC convenience receptacles obtain power from this unit to operate from battery power, such as the microwave oven and front television. The galley, patio, bath lavy and dinette GFCI receptacles are also inverter/charger powered. The inverter/charger housing itself will become warm from use, therefore avoid storing any materials in this compartment. A remote monitor panel is located inside the coach near the galley area for monitoring inverter/charger functions.

The Inverter/Charger is circuit breaker protected. Whenever it becomes

necessary, the breakers are located on the front of the unit and can be reset by pushing the button back in. Also, the main on/off power switch can be found in the same location.

12-VOLT DC AUTOMOTIVE SYSTEM

Consult the chassis manufacturer's Owner's Manual for complete information regarding the automotive electrical system.

System-Powered Components

The chassis or vehicle 12-Volt DC electrical system includes the following:

- Headlights
- Instrument panel lights
- Engine ignition switch
- Automotive heater & air conditioning fans
- License and backup lights
- Starter motor
- Remote control mirrors
- Cab lighting
- Turn indicators & hazard warning lights
- Windshield wipers and washers
- Cigarette lighter/12-Volt DC outlet
- Clearance lamps
- Electrical dash gauges
- In dash radio memory
- Cruise control
- Horn
- Windshield fans

GENERATOR SYSTEM

The generator is located on a convenient slide-out caddy at the front of the motorhome. The entire front group, including lower skirt and headlight assemblies, slides out with the generator. To slide the caddy out, fold the spring-loaded license plate frame forward and reach through the access cavity behind it. The release latch will be a horizontal metal bar (see picture). Push upward on the bar to release the caddy. There is also a safety pin to hold the caddy securely in place during travel. This pin is located along the lower driver's side of the generator, directly behind the fiberglass skirt. You may have to kneel on both knees to reach it. To retract the generator caddy, manually push it back into the coach until the latch engages. Reinsert the pin into its slot before travelling.

The latch to release the generator caddy is behind the fold-down license plate bracket.

With the generator caddy extended, you have access to the generator's fluid level check/fill caps and other service points. A comprehensive set of instructions on the operation, care and maintenance of the generator set is supplied with each vehicle. Please read and understand these instructions *completely* before attempting to operate or service this equipment. The generator in your Islander motorhome is diesel-powered, drawing fuel from your motorhome's engine fuel tank. An hour meter at the generator control switch makes it convenient to log the

CAUTION

Never operate the vehicle while the generator caddy is extended. Make sure it is retracted, the latch engaged, and the safety pin installed before travelling.

MFG INFO

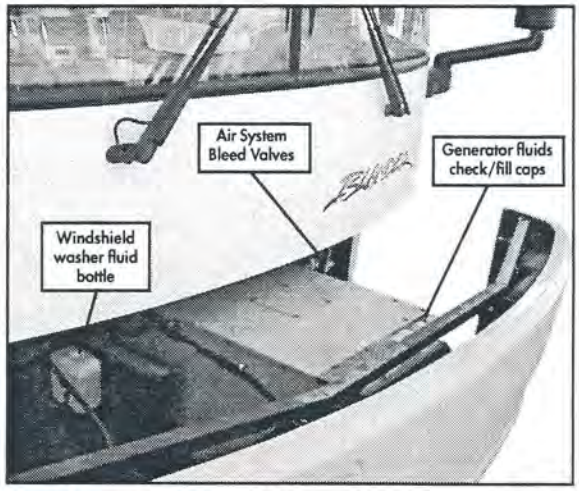
See your Onan Generator Owner's Manual for complete operation and service information.

IMPORTANT

A generator set, like any other Electromechanical device, can pose dangers to life and limb if improperly maintained or imprudently operated. The best safeguards against accidents are to be mindful of the potential dangers and to always use common sense. In the interest of safety, some general precautions relating to operation of a RV generator are presented.

number of run-hours that the generator has, so that routine servicing can be scheduled.

Allow only thoroughly qualified specialists to install and replace exhaust system components and have the system inspected frequently. Be careful when parking your RV to avoid obstructing the generator exhaust outlet. The exhaust gases must discharge freely; otherwise, carbon monoxide may deflect under and into the vehicle or enter through open doors, windows or vents. Also make sure that your exhaust can't be discharged toward neighboring RV campers or any occupied building. *Note: Be especially watchful for exhaust gas accumulation under calm windless conditions.*



The generator slides out on a caddy for easy access.

WARNING

LETHAL EXHAUST GAS - An engine discharges deadly carbon monoxide as part of the exhaust when operating. Carbon monoxide (CO) is particularly dangerous in that it is an odorless, tasteless and nonirritating gas, but it can cause death if inhaled for even a short time.

Remember that the function of a generator set is to produce electricity and that wherever electricity is present, there is the potential danger of *ELECTROCUTION*. To reduce risk of injury or damage:

- Take the same precautions with electrical appliances in your RV that you would observe in your home.
- Keep away from electrical circuits and wiring while the generator set is running, and have electrical service performed only by a qualified electrician.
- Make sure unqualified persons, especially children, cannot gain access to your generator set.
- Keep the compartment door securely latched at all times.
- Never touch electrical leads of appliances with wet hands, or when standing in water, or on wet ground, as the chance of electrocution is especially prevalent under such conditions.

Keep the compartment and generator set clean and free of debris to minimize the chance of fire. Also remember that hot exhaust gases and exhaust system parts could start grass fires. Keep away from hot engine and generator parts to avoid burning yourself.

WARNING

HIGH VOLTAGE!

Remember that the function of a generator set is to produce electricity and that wherever electricity is present, there is the potential danger of ELECTROCUTION

Start-up Checklist

- Check engine oil level and if necessary, fill to dipstick FULL mark.
- Check the fuel supply and ensure LP-Gas valve is turned on.
- Check that tail pipe is clear and piping is tight and in good condition.
- Check that both the air inlet and outlet is free of any obstruction.
- Turn off all electrical loads by switching them to the off position or setting main circuit breakers to off.

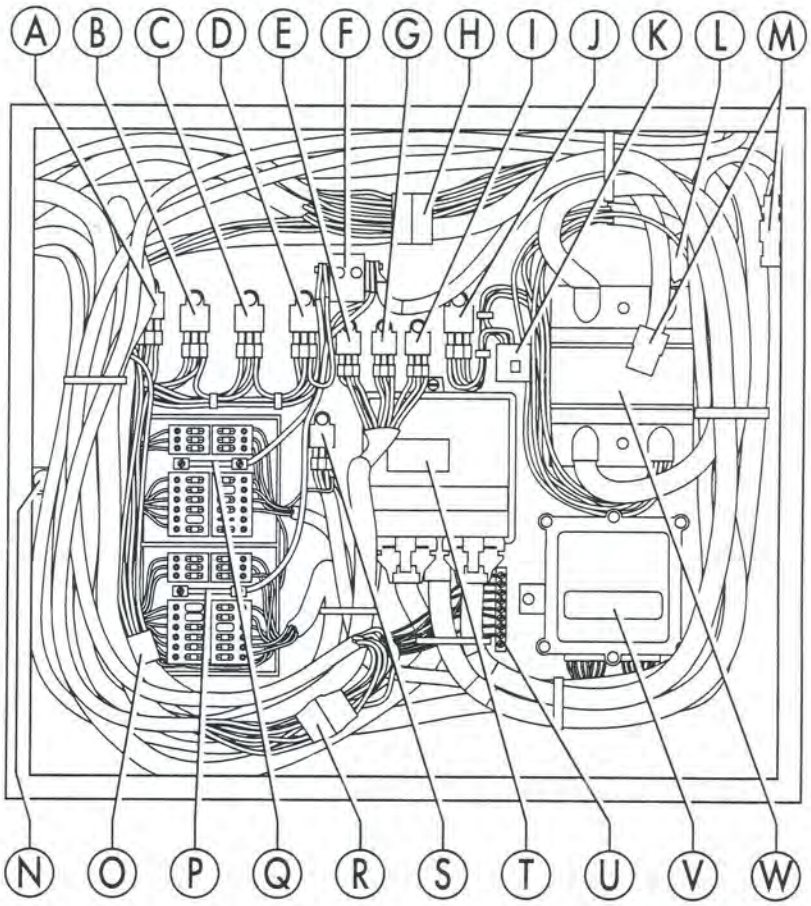
- Refer to the generator Owner's Manual for cranking instructions.
- Let the engine warm up for about 5 minutes to allow internal temperatures to stabilize.
- Carefully inspect the engine-generator for fuel, oil and exhaust leaks.
- Turn on the loads or circuit breakers.

Start-Stopping Procedure

Depress the Start/Stop switch in the start position and hold in this position until the engine is running, then release. Normally, the engine will start within five seconds; however, if it fails to start after cranking for ten seconds, release the switch and wait for a few seconds before activating the start switch again. This procedure will allow the automatic choke to reset in the full choke position. Whenever possible allow for a brief cooling period by running the set at low or no load for a few minutes just prior to shutdown. To stop depress the switch in the stop position and hold until the set comes to a complete halt.

FORWARD ELECTRICAL COMPARTMENT

The forward electrical compartment is located in the Pilot's side of the coach near the front, below the Pilot's window. Housed within this compartment are various chassis and drive train control modules. Fuse identification charts are included on the following page. Any repairs to the electrical system should be performed by a qualified service technician.



Forward Electrical Enclosure

A. Turn signals/hazard flashers module.
B. Air conditioner clutch relay.
C. Air conditioner fan controller relay.
D. Exhaust brake relay.
E. Dockling lights relay (blu)
F. Ignition solenoid
G. Air conditioner/heater blower relay.
H. Harness connector, chassis (DC1 & DC2).
I. Windshield wipers relay.
J. ABS blink relay.
K. Blink code switch.
L. Harness connector, transmission (AT).
M. Receptacles for diagnostic equipment.
N. Compressed air supply chuck.
O. Harness connector, chassis relays.
P. Fuse panel, batter (CP). See section titled *Fuse Panels* for fuse identification.
Q. Fuse panel, ignition (IP). See section titled *Fuse Panels* for fuse identification.
R. Harness connector, power distribution.
S. Neutral solenoid (jacks) relay (required on earlier chassis only).
T. Electronic Control Unit (ECU)
U. Electrical ground buss.
V. Vehicle Interface Module (VIM).
W. ABS brake module.

ISLANDER REMOD
FORWARD FUSE PANEL

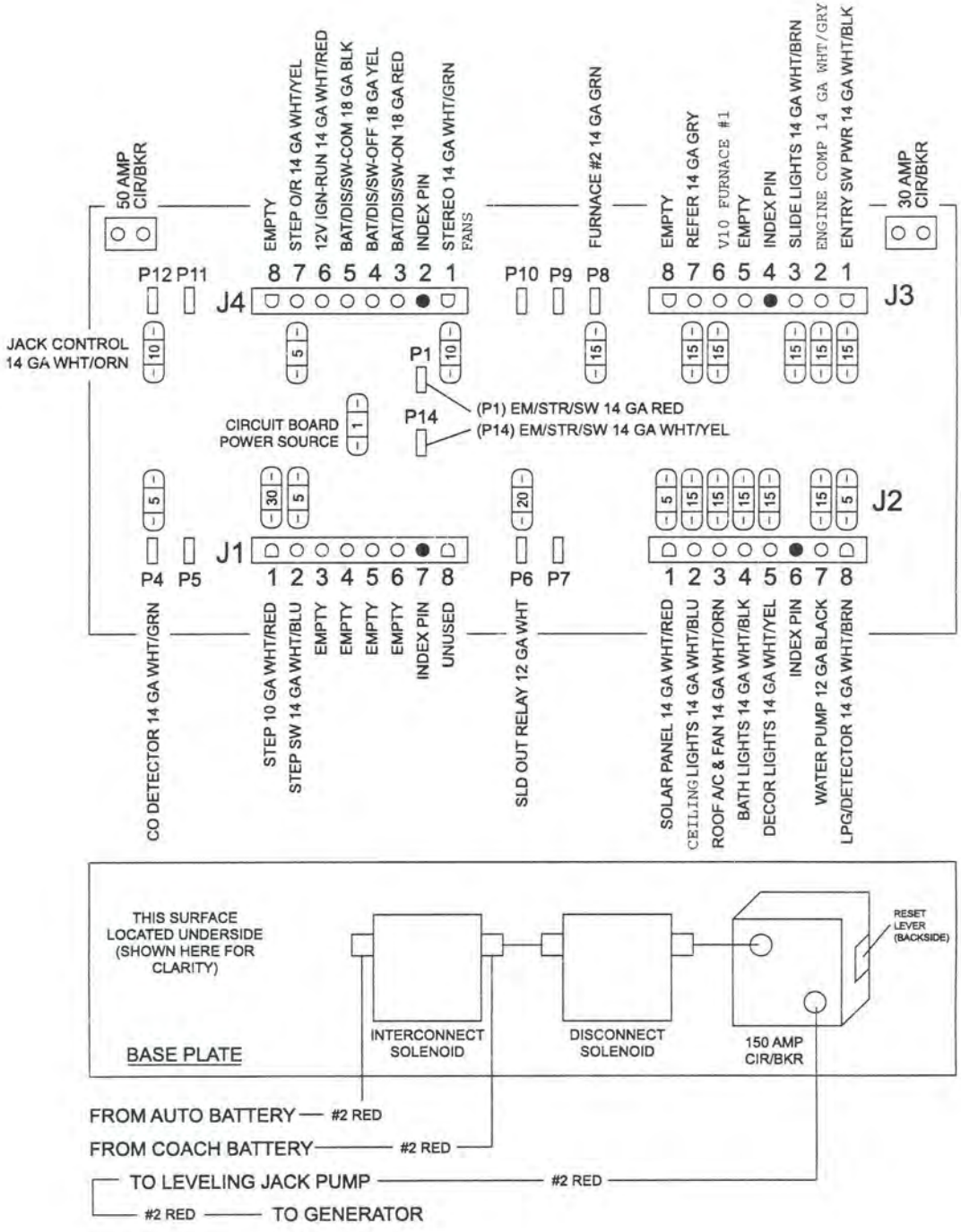
1	A/C-BRK 12 GA BLACK (96C)	-20-	-10-	JACKS(IGN) 16 GA YLLW (PJ)	10
2	ABS 12 GA RED (13)	-10-	-20-	ALARM/TV(IGN) 14 GA BL (67)	11
3	ABS 12 GA RED (14)	-10-	-10-	STEP/JACK 14 GA RED (68)	12
4	ECU/VIM 16 GA WHITE (75)	-7.5-	-10-	MIRRORS 14 GA WHITE (78)	13
5	ALT/BU 16 GA PURPLE (79)	-7.5-	-20-	WIPERS/WASH 10 GA GRN(74)	14
6	GAUGES 16 GA YELLOW (34)	-7.5-	-15- BRK	A/C-HTR 10 GA RED (83)	15
7	A/C-FAN 12 GA RED (84)	-7.5-	-20-	B/U CAMERA 14 GA RED	16
8	A/C-PMP 12 GA RED (83)	-20- BRK	-10-	N/A	17
9	REC PMP 12 GA BLK (134); AIR DRY 12 GA YELLOW (245)	-20-	SPARE	SPARE	18

1	TURN/HAS 12 GA BLK (63C)	-20-	-20-	DASH/CLEAR 12 GA RED (62)	6
2	BLOCK HEATER 14 GA ORA (23)	-7.5-	-20-	CITY HORN 12 GA RED (81)	7
3	DCKNG LGHTS 14 GA BLK	-20-	-7.5-	BRAKE L. SW 12 GA PURP (111)	8
4	IGN SW HOT 12 GA YLW (50)	-20- BRK	-20-	REEL MOTORS 10 GA WHT	9
5	H.L. SW HOT 12 GA RED (61)	-20- BRK	SPARE	SPARE	10

11	POWER SEAT 10 GA GRN	-30-	15 BRK	12 VDC OUTLET 14 GA RED	16
12	AUX OUT 14 GA RED	-15-	-15-	STEREO MEM 14 GA YLW (10)	17
13	SPOT LGHT 14 GA YLW(27)	-15-	-15-	MAP LGHT 14 GA BLU (14)	18
14	DRIVE LGHTS 14 GA BLU (26)	-15-	-7.5-	CBRADIO 14 GA VIO PURP (15); ALARM BAT 14 GA RED	19
15	STEP SLIDE 14 GA ORG	-15-	SPARE	SPARE	20

MAIN POWER DISTRIBUTION PANEL

Located in the electrical service compartment, on the Co-Pilot's side of the coach, second compartment from the rear. Located above the batteries is a fold-down access door, behind which is the panel.



ELECTRICAL SYSTEM SAFETY

As delivered, your RV electrical system has been engineered and checked for performance and safety. Circuit breakers and fuses are installed to protect electrical system circuits from overloading. *Do not* make unauthorized changes to circuitry or add-on fixed appliances yourself. If alterations are required, consult your dealer and he will assist you in obtaining a safe installation.

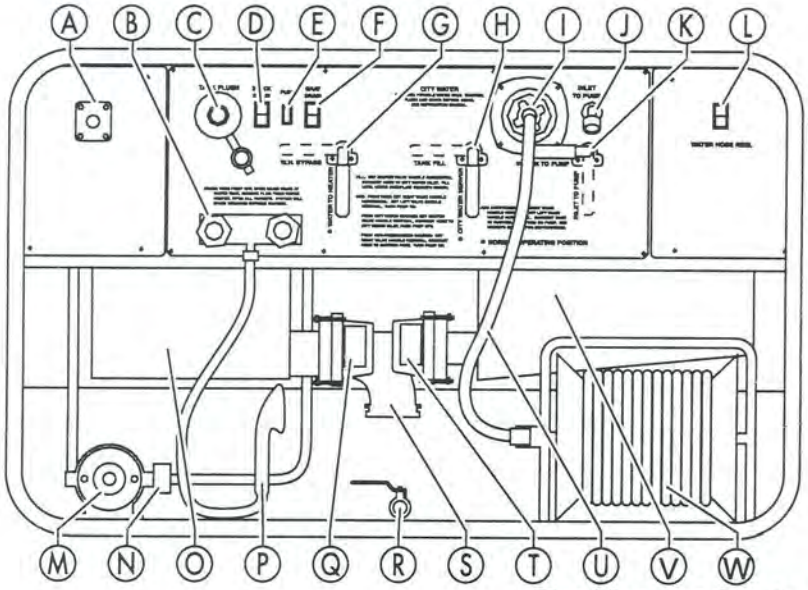
An approved power supply cord is attached to the vehicle for hookup to a 120-Volt AC outlet or the vehicles on-board generator. The power cord has a four-pin plug that provides proper grounding through the rounded pin. Grounding is for your protection from electrical shock; therefore, do not use any adapter or extension cord that will break the continuity of the grounding circuit. *Never* remove the grounding pin or connect to a non-grounded receptacle.

Never operate your RV's 120-Volt AC system with an inadequate ground. If you can feel a shock (even a small one) from the vehicle while standing on the ground, you should immediately disconnect the power cord and locate the trouble. Ground continuity should be continuous from any electrical appliance or the vehicle frame to the distribution panel board (breaker box) through the round pin on the power supply cord, then to the park receptacle and finally earth ground.

Notes:

PLUMBING SYSTEMS

PLUMBING SERVICE COMPARTMENT



Plumbing Service Compartment

A. *Power cord reel switch.* Operates power cord reel which is located in the compartment to the immediate left.

B. *Outdoor shower faucet.* This is also your lowest point fresh water system drain.

C. *Black tank flush inlet.* See procedures for flushing the black tank in a later section.

D. *Black tank drain switch.* Operates automatic black tank dump valve.

E. *Pump switch.* On | Off. Operates the fresh water pump for flushing, filling and purging procedures. Never run the pump for prolonged periods without water in the system.

F. *Gray tank drain switch* Operates the automatic grey tank dump valve (S).

G. *Water heater bypass valve.* To either include or or exclude the water heater from the water system. Used primarily in winterizing (see appropriate section).

H. *Tank fill/city water valve.* Selects between filling the fresh water holding tanks or using city water directly.

I. *City water inlet.* Fresh water connection port with built in pressure regulator. (3/4" swivel hose fitting).

J. *Antifreeze inlet.* See winterizing procedures.

K. *Pump input selector valve.* Toggles between tank-to-pump (for using tank water) and inlet-to-pump (for using city water).

L. *Water hose reel switch.* Operates hose reel.

M. *Water pump.* Provides water pressure to the coach's fresh water system. Operates automatically, and with the pump switch.

N. *Water pump filter.*

O. *Black holding tank.*

P. *Outdoor shower hose.* With shower head.

Q. *Black tank dump valve.* Electrically activated by the black tank drain switch (D).

WARNING

Be sure to use a water hose that is Drinking Water Safe *when filling the fresh water tank.*

IMPORTANT

Excessive pressure from water supply systems may be encountered in some parks, especially in mountainous regions. Damage to your plumbing system can occur. A water pressure regulator has been installed to provide protection of your system against high pressure. The recommended operating pressure setting is 40-50 PSI.

R. *Fresh water tank drain valve.*

S. *Main drain.* Black and gray tanks drain through this fitting, which accepts the provided drain hose. Keep capped when not in use.

T. *Gray tank dump valve.* Electrically activated by the gray tank drain switch (F).

U. *30" service hose.* Connects to city water fill port with 45-degree connector, and to hose caddy with quick-coupler.

V. *Gray holding tank.*

W. *Water hose reel.* Automatically winds in hose when water hose reel switch (L) is depressed. Guide hose in by hand to ensure a level, even wind.

WATER SERVICE OPERATION

The water service entrance manifold can be found in the plumbing service compartment located on the roadside of your motorhome. This manifold consists of three selector valves (see drawing in section titled *Plumbing Service Compartment)*), and a water pressure regulator. Various water transfer functions can be performed, depending on the position of these valve handles as follows:

- Tank To Pump / Inlet To Pump selector valve is used when winterizing, (normal handle position is up for Tank To Pump).
- Tank Fill / City Water Serve selector valve is used to fill your water tank, (normal handle position is down for City Water Serve).
- Water Heater Bypass / Water to Heater selector valve is used when winterizing, (normal handle position is down for water flow to the heater).

Use the following procedures for performing different operations with your water system:

Filling Fresh Water Tank

1. Turn off the water pump and the water supply valve (faucet).
2. Wash down the area around the connections.
3. Connect one end of the 30" service hose to the ¾" swivel hose connection found on the Water Service Entrance plate labeled City Water. Connect the other end to the hose reel. Connect the hose reel hose to the city water hookup.
4. Ensure the center Tank Fill selector valve handle is horizontal (in the up position).
5. Turn on the water supply valve. Monitor the water level in the tank using the gauge on the Monitor Panel inside the coach.
6. When the tank is full, water will spill out the tank vents. Shut off the supply valve, return the center Tank Fill selector valve to the down (vertical) position, and disconnect the hose.

Using City Water

1. Turn off the water pump and the campground water supply valve.
2. Connect one end of the 30" service hose to the ¾" swivel hose connection

found on the Water Service Entrance plate labeled City Water. Connect the other end to the hose reel. Connect the hose reel hose to the city water hookup.

3. Ensure that the Tank Fill/ City Water Service selector valve handle is vertical (in the down position).
4. Turn on the campground supply valve, your city water system is ready for use.
5. Remember to shut off the campground supply valve and disconnect the hose before moving your RV.

Using Tank Water

1. Check that the water tank has an adequate supply of fresh, potable water.
2. Set the right handle (horizontal) to Tank To Pump and the left handle (vertical) to Water to the Heater.
3. Turn on the water pump. Your fresh water system is ready for use.

Using Water From Container

1. Set the right handle (vertical) to Inlet to Pump.
2. Place approved water hose into clean potable water container and use the "on-board" water pump to pump the water into the system.

Draining the Fresh Water System

Water system drains are located at or below the floor of the motor home so that water lines may be drained of water for sanitizing or winterizing. (Some models use the outside shower faucets as the low-point system drain). The water heater has a separate built in drain plug that can be removed, (see manufacturer's instructions).

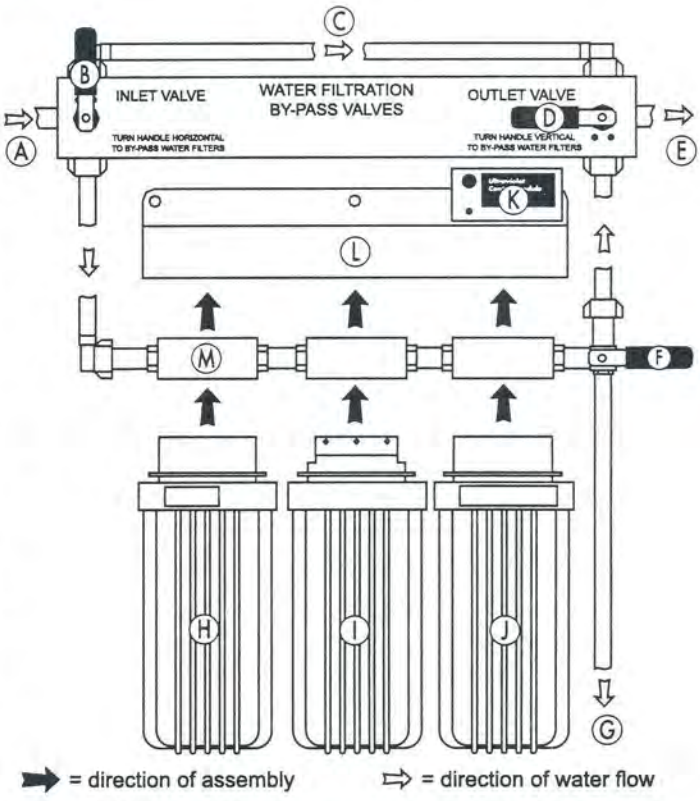
1. Level the motorhome, side-to-side and front-to-rear.
2. Turn off the water pump and the water heater, and make sure that the stove and oven burners are off.
3. Open all fixture valves inside the coach. Note: The system will drain through the outside shower hose.
4. Open the water tank drain valve.
5. Remove the drain plug in the water heater.
6. Operate the water pump for approximately 30 seconds to remove water between the tank and pump, then shut off.
7. The (optional) washing machine and refrigerator icemaker must be drained according to their manufacturer's instructions.
8. Remove the water filter under the galley and drain.
9. Check all interior plumbing fixtures, including the toilet flush valve, for trapped water.

10. Any water remaining in the system may be removed by attaching a blowout plug adapter to the fill connection and then blowing compressed air through the water lines.
11. Turn off all drain valves and plumbing fixtures when the system is completely drained. *NOTE: For winterizing, see the section on* Winterization.

4-STAGE FILTRATION SYSTEM

Cutting-Edge Technology

Islander's 4-stage water filtration system represents the cutting edge of on-board water treatment technology. In the first stage, a fine-mesh filter removes suspended solids and particulates from the water. The second stage uses granular active carbon for removal of unpleasant color, taste and odors. Activated carbon is also used in stage three, this time in a tight block matrix which traps extremely fine particulates and microorganisms. Finally, in the fourth stage, water is passed through a chamber illuminated by an ultra-violet (UV) lamp. UV light destroys any bacteria, viruses, and other microorganisms which may be present in your water supply.



Islander's 4-stage Water Filtration System

What results from this process is clean, safe, great-tasting water. Keep in mind that the filtration system treats *all* of the water that is used throughout the system, even that which goes to the water heater, and faucets.

Some components of the water treatment system are very fragile, such as the UV lamp. Handle with care.

Your Documentation Package contains an Owner's Manual for the water treatment system. Carefully read the Owner's Manual for information regarding operation of the system, including when and how to change filter elements and the UV lamp. Instructions for operation of the valve and bypass system, which not covered in your water treatment system Owner's Manual, are included in the next section. Instructions for winterizing the water treatment system are included in the section on winterization of the water system, toward the end of this section.

Filtration System Components

A. *Fresh Water Inlet.* Fresh water enters the filtration system directly from the fresh water holding tank or city water entry.

B. *Inlet Valve.* Controls flow of water either through the filtration system or through the bypass.

C. *Bypass Water Flow.* Water may be diverted around the system for various reasons.

D. *Outlet Valve.* toggles water leaving the system from either the filters or the bypass.

E. *Water Outlet.* Sends water toward the coach water fixtures.

F. *Drain Valve.* Diverts filtered water either to the Drain Outlet or the Outlet Valve.

G. *Drain Outlet.* Drains water to the ground underneath the coach.

H. *Stage 1 Filter.* Removes suspended solids and particulate.

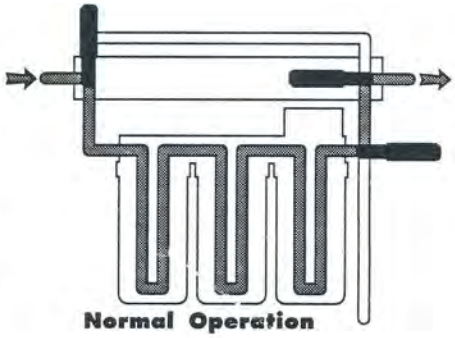
I. *Stage 2 Filter.* Granular Activated Carbon Filter removes odors and bad taste.

J. *Stage 3 Filter.* Tight Block Matrix Activated Carbon Filter further removes odors, bad taste, micro-organisms.

K. *Stage 4 UV Lamp.* Disinfects water by destroying bacteria, viruses and other micro-organisms.

L. *Mounting Bracket.* Supports the various components of the filtration system.

M. *Filter Manifold (3X).* Holds filter canisters, directs water flow.

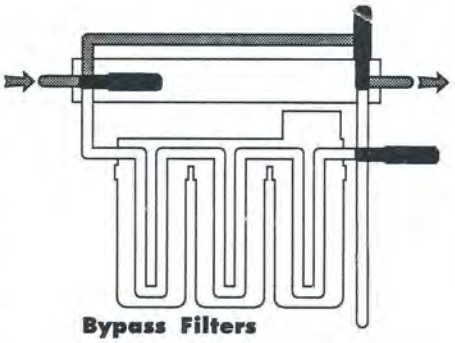


Normal Operation

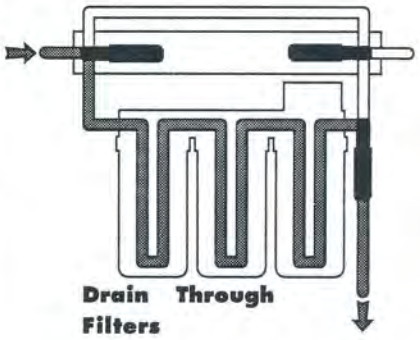
Bypassing The Filtration System

Certain situations may warrant bypassing the filtration system. Flow through the filtration system is controlled by the three 3-way valves, *Inlet, Outlet,* and *Drain.* These three valves can be set to operate in three modes: *Normal, Bypass,* and *Drain. Normal* is of course normal operation, wherein fresh water flows through the filtration system and on to the various water fixtures throughout the coach. *Bypass* mode still supplies water to the entire coach, however it is routed around the filtration system. *Drain* mode is used to run fresh water through the filter system, then drain it to the outside of the coach.

The diagrams at right illustrate the valve handle positions for each of the three valves during each mode. Each is a *three-way* valve, meaning that it has either one inlet and two possible outlets, or two possible inlets and one outlet.



Bypass Filters



Drain Through Filters

FRESH WATER SYSTEM

Fresh water in your motorhome is supplied either through the on-board water tank system or directly from an outside source. When using the water tank, the 12-volt pump will supply the required water pressure to operate the system. When using *city water*, turn your pump off, the water pressure required to operate your fixtures will be supplied by the city water hook-up.

City Water Supply

Connect the flexible potable water hose from the hose reel to the city water service and connect the 30" hose to city water entry fitting. Turn on the city water and you will receive pressure to the vehicle's water system. The on-board water pump should be turned off when connected to the city water service. The flexible hose used to supply water to your motorhome water system or to fill your fresh water tank should be drinking water safe and made with Federal Food and Drug (FDA) approved material.

Reactivating a Previously Drained Fresh Water System

After the water tank has been filled, a 12-Volt DC electric water pump supplies water to all the plumbing fixtures. Once the water pump switch at the monitor panel is turned on and air purged from the system, the water pump is totally automatic and self-priming, operating on demand when any fixture is turned on. When the pump is first turned on, upon delivery or after the system has been drained, purge all air from the lines and water heater by turning on all plumbing fixtures. Note: Be sure to purge system of trapped air before lighting the water heater.

Water Pump Operation

After the system has been purged, turn off all fixtures. The water pump should automatically switch off when fixtures are turned off. If the pump switches on and off voluntarily while you are not using any water, inspect your water system for leaks. Turn the switch off when the system is not in use or the vehicle is unattended. Note: Do not operate the pump when the water tank is empty or when the motor home is not in use, damage to the water pump can occur!

Protection of Interior Water Lines

Be careful not to store heavy items such as canned foods, tools, etc. in areas where they contact water piping and could possibly cause damage due to road conditions and shifting of the load.

SANITIZING THE WATER SYSTEM

Sanitize the on-board water storage system upon first delivery, after long periods of non-use and after any suspected contamination. There are various commercial solutions approved for RV use available for sanitizing the system.

Water System Sanitizing Procedure

1. Water filter bypass valves must be set properly to bypass the filters. This

ensures that chlorine residue will not be left in the filter elements, which could result in a chlorine taste in your water.

1. Prepare a chlorine solution using one gallon of water with 1/4 cup of household bleach, (5% sodium hydrochlorite solution). With tank empty, add one gallon of solution into tank for each 15 gallons of capacity. Note:This solution may be poured into the water tank through a special fitting located on the tank. Remove the threaded cap, add the solution and replace cap.
2. Complete filling the tank with fresh water. Open faucets to release air. Pressurize system with pump until water flows and a distinct odor of chlorine can be detected in the water discharged. Turn off pump.
3. Allow water to stand for three or four hours.
4. Drain the entire system including the water heater. See instructions on "Water Drains".
5. Flush the entire system with fresh water and drain. All plumbing lines and the water heater may be flushed through the outside water connection.
7. Drain the tank and again flush with potable fresh water.

Hydrogen gas may result if you have not used the water heater for two weeks or more. Hydrogen gas is extremely flammable. To reduce the risk of injury under these conditions open the hot water faucet for several minutes at the kitchen sink. If hydrogen gas is present you probably will hear an unusual sound like air escaping through the pipe as the water begins to flow. ***Do not smoke or have any open flame near the open faucet.***

WASTE DRAINAGE SYSTEM

Your waste drainage system is designed to provide adequate safe storage and disposal for liquid waste. Two separate waste tanks are provided. The solid waste or black tank, located directly beneath the toilet, holds the toilet waste. The liquid waste (gray tank) holds waste from your sink, lavatory and shower.

While staying in a RV Park or campground that has "on site" sewer connections you will want to keep the dump valve on the solid waste closed and add enough water into the holding tank to prevent the solids from building up in the tank. When using the water saver toilet you will want to raise the water in the bowl to a desired level to insure adequate water supply to move the solids from the toilet to the holding tank and to avoid build-up under the toilet.

While you are on the road and in a self-contained mode you will again need to keep a small amount of water in the solid waste holding tank. The amount required will be less, because as you travel, vehicle movement will keep the tank water sloshing to help prevent any build-up. When using the water saver toilet you will want to keep the water level in the bowl to a low level so water does not slosh out on the carpet. When ready to use, raise the water level to a desired level. *Note:Waste-holding tanks should only be dumped at a waste disposal station or sanitary sewer connection.*

Waste tank draining procedures

1. Be certain that both termination valves are closed.
2. Carefully remove the sewer drain cap.
3. Securely attach sewer hose adapter to the drain outlet. Be certain the hose is securely attached to the adapter.
4. Insert hose outlet into sewer inlet.

5. Open the solid waste termination valve in a slow continuous motion. *Note: Sudden opening or closing of the valve may cause waste in the tank and line to surge, and inadvertently disconnect the hose from the drain valve.* After draining, connect the fresh water hose to the tank flush inlet and run water for a few minutes to clean the tank's interior.
6. Close the solid waste termination valve after draining.
7. Open the gray tank termination valve. After dumping, follow up with a fresh water rinse. Add several gallons of fresh water through sink. Open valves to drain (as above) to complete the dumping procedure.
8. Close both termination valves.
9. Remove sewer drain hose, clean and stow.
10. Replace sewer drain cap.

IMPORTANT

While staying in a park with *on-site* sewer connections, do not leave the valve on the solid waste holding tank open. (Dump the tank as necessary following the procedures above).

Disposal Stations

Most government and privately owned parks have either a central dump facility or offer campsite hook-ups for sewage. By referring to various camping publications you will find lists of many dump facilities throughout the U.S. Some major oil companies offer dump facilities at selected service stations, (get their dump station list). Plan ahead and you will have very little inconvenience in proper waste disposal.

Cleaning the Holding Tanks

There are numerous waste tank chemicals on the market. These chemicals assist in breaking down the solids and have components that mask waste odors. Unwanted solids can build-up in waste tanks due to using too little water and not flushing the tank out properly after each use. If you wish to dump a partially full tank, it is better to fill the remaining space with water first, to provide the volume necessary for complete system evacuation or flushing.

The dumping of toilet waste (raw sewage) into other than regular facilities or sewer systems is universally prohibited.

Flushing the Solid Waste Tank

1. Empty the holding tank in the usual manner at an approved dumping station.
2. After emptying the solid waste tank leave the holding tank valve open.
3. Attach the 30" service hose and the 45-degree adapter to the connection marked FLUSH.
4. Begin flushing and let the water run for approximately one minute.
5. When finished turn off water supply, let tank drain, close valve and install cap.
6. Try to keep water connection fittings from coming in contact with the drain hose to reduce chances on contamination.
7. Always rinse the sewer drain before storing.
8. Wash your hands when completed.

Porcelain RV Toilet

To add water to the toilet before using, lift or raise the flush lever until desired water level is reached. Generally more water is required only when flushing solids. To flush toilet, push lever all the way down for 4-8 seconds until sewage leaves toilet. Release flush 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. Clean the toilet bowl with a mild bathroom cleaner. Do not use chlorine or caustic chemicals. At the end of the season, the toilet should be winterized for storage, by either draining or using potable water safe antifreeze in the system. *Note: Refer to the operating manual for complete instructions.*

WINTERIZING

Your fresh water tank and hold tanks are automatically warmed whenever the furnace is operational. The heated line to the tank compartment is intended to keep the tanks from freezing in cold weather. During inoperation, however, cold weather may cause trapped water to freeze and expand, causing severe damage to several areas of the plumbing system. To avoid this costly damage during periods of inoperation in cold weather, winterize your coach by doing the following:

Drain All Plumbing Systems

1. Drain the fresh water system by opening the valve from the fresh water tank, the low point water line drains (outside shower and filter system drain) and removing the threaded plug from the water heater.
2. The outside shower valves must be opened and the hose and showerhead drained.
3. Clean out and drain your holding tanks.
4. Set the filtration system valves to bypass and drain. Remove all three filter canisters from water treatment system.
4. Turn water pump switch on, allow pump to run dry for 30 seconds and then switch off.
5. Any water remaining in the system may be removed by attaching a blowout plug adapter to the fill connection and then blowing compressed air through the water lines.
6. Leave all faucets and valves closed during storage. Before operating the RV again, be sure to sanitize the water system in accordance with the instructions provided earlier in this section.

IMPORTANT

Use only toilet tissue, cleaner, deodorizer or sanitizer that is specifically designed for R.V. sanitation systems. These products contain special chemicals to properly breakdown the solid waste matter and tissues.

IMPORTANT

Do not dispose of sanitary napkins or other nondissolving items in the toilet.

Fresh Water System

Winterization constitutes removing water from the water lines and fixtures and then introducing a 100% non-diluted, non-toxic antifreeze solution into the water supply system. *Note: The antifreeze solution is not to be placed in any appliance, such as the water heater, fresh water tank, water filters or icemakers!*

IMPORTANT

When you decide that draining the fresh water system is not satisfactory winterizing, and you wish to fill the system with antifreeze, be sure it is of a type approved for potable water systems.

1. Drain the water tank and the fresh water system by using the procedures as outlined.
2. Turn off the water heater and then remove the drain plug from the water heater and drain.
3. If your motorhome is equipped with an icemaker*, turn off the petcock and drain the icemaker line.
4. Turn the Water Heater selector valve ninety degrees, to bypass the water heater.
5. Turn the Winterizing selector valve ninety degrees, to disconnect the water tank and engage the anti-freeze inlet to pump or suction port.
6. Add the polypropylene base RV antifreeze (potable type) to the fresh water system by attaching a hose to the Inlet to Pump and introducing the anti-freeze solution into the water system following the instructions found on the container.
7. Activate the toilet valve and hold open until colored fluid of the antifreeze shows.
8. Turn on cold water valve at the kitchen sink (slowly) until the colored fluid shows, then turn off. Repeat this procedure with the hot water valve.
9. Repeat above steps for each water outlet including the lavatory, shower and outside shower.
10. Disconnect the hose used to install the antifreeze solution.
11. The residual anti-freeze from the running the faucets should be enough to protect the p-traps. You're now ready for a safe winter!

Do not use ethylene glycol, methanol-based automotive type antifreeze, or any other poisonous chemicals. These chemicals are harmful and could be fatal if ingested.

**Note: Not all options may be available on your motorhome.*

Refrigerator with IceMaker

A red tag warning notice is attached on the water supply line to the icemaker. (This tag can be accessed via the exterior refrigerator access door.) Don't forget to winterize your icemaker if you plan to put the motorhome into winter storage or continue its use in temperatures below freezing (32° F) without the use of a heat strip/tape (on the water solenoid valve and its outlet tube). The icemaker should be drained to prevent component damage and leaks. Note: Refer to detailed instructions provided by the refrigerator manufacturer.

LP GAS SYSTEM

ABOUT LPG

Your motor home is equipped with a *Liquefied Petroleum Gas* (LPG or LP Gas) system to provide energy for comfort heating, cooking, hot water and refrigeration. LP-Gas is a colorless, highly flammable fuel. Butane and Propane are the two most common types of LP-Gas. Both will work equally well in your motorhome. Butane can only be used in warmer climates since it will not vaporize in temperature 30 degrees Fahrenheit and below. Propane can be used in colder areas, as it will vaporize down to minus 44 degrees Fahrenheit.

Each gallon of LP-Gas contains about 92,000 British Thermal Units (BTUs) of energy. To determine how long a gallon of LP-Gas will last, total up the BTU inputs from all your LP-Gas appliances being used. (This information is found on the appliance nameplates.) The total inputs divided into 92,000 will tell you how many hours a gallon of LP-Gas will last. Allowances must be made for the actual time various appliances will be used.

LPG SYSTEM COMPONENTS

Tank-Mounted Components

A. *Sight gauge.* Indicates level of fuel in tank.

B. *Wiring harness.* Sends tank level information to monitor panel.

C. *Vapor release valve.* Used during refueling.

D. *Auto-stop fill valve.*

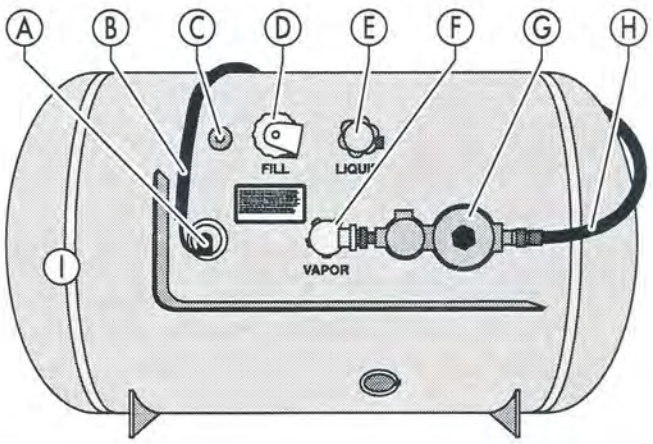
E. *Liquid tank fill inlet.*

F. *Main shut-off valve.*

G. *Two-stage regulator assembly.* Regulates pressure in the fuel delivery hoses.

H. *LP gas hose.* Carries fuel to distribution manifold.

I. *LP gas tank.* 34 gallon capacity.



Typical LPG tank installation
(Regulator cover removed for clarity)

IMPORTANT

LP-Gas tanks are typically shipped from the factory filled with compressed gas to eliminate internal moisture. Before filling the tank for the first time, it must be purged.

About LPG Tanks

Under-floor mounted LP-Gas tank(s) are built to the American Society of Mechanical Engineers (ASME) standards for pressure vessels. All valves, gauges, hoses and fittings are inspected, tested and listed by a nationally recognized listing agency. The tank is located outside your motorhome below the floor, see pictured illustrations as shown. Fuel level indication is monitored at the tank and in the galley at the monitor panel.

Filling the LPG Tank

An over-filled tank is unsafe and can cause damage to the LP-Gas regulator(s).

Before filling your LP-Gas tank, turn off all pilot lights and their igniters, then close the main tank valve(s). *Note: Only an authorized LP-Gas dealer should do the filling or refueling.* A safety relief valve found on all tanks will discharge liquid LP-Gas if the pressure in the tank exceeds safe limits. Keep all open flames and cigarettes away from this area. As the outside temperature rises, the LP-Gas expands, increasing in-tank pressure that could cause it to discharge through the safety relief valve. When the tanks are filled to the proper level, a safe expansion space remains for the gas. This assures that gas withdrawal through the piping system is LP vapor only.

CHECKING FOR LEAKS

Upon delivery and periodically thereafter check your gas system for possible leaks. Although the entire distribution system and its attached appliances have undergone extensive factory testing for leaks, connections and fittings can develop leaks due to road vibrations. Usually you can detect these leaks by their strong "garlic-like" odor. If you encounter this odor, *turn off all open flames immediately* and commence a systematic search for leaks throughout the gas system. Use a bubble solution or soapy water; *never use a match!*

Use two wrenches on connections and fittings with opposing torque to prevent twisting of copper tubing. If the leak does not show up in the manifold or copper tubing distribution system, then check all the appliances. If at this time the odor still persists, turn off the main valve(s) at the LP-Gas tank and all appliance pilots. Ventilate the motor home and check with your LP-Gas dealer or your authorized National R.V. dealer for professional help.

LP-GAS LEAK DETECTOR

An LP-Gas detector has been installed in your motorhome to aid in the detection of leaked LP-Gas. For your safety, please read and follow the operating instructions. The activation of this device indicates the presence of LP-Gas that can cause an explosion and/or fire. This normally indicates a leak in the LP-Gas piping or an LP-Gas appliance. Evacuate the vehicle immediately and open doors and windows. Turn off the main valve at the LP-Tank. Extinguish immediately all open flames. Do not activate any electrical switches. If you can not locate the source of LP-Gas, contact your authorized RV Service Center for help. *Do not re-enter the vehicle until it has been aired out and the problem corrected. Note: LP-Gas is heavier than air. Leaking gas tends to flow to low places, same as water.*

OPERATION OF LPG APPLIANCES

Check to be sure all appliances control valves are in the off position. Familiarize yourself with the operation of each gas-fired appliance by reading the instruction manuals provided. When all appliances are turned off, including their pilots, the LP-Gas system is ready to use. Turn the main valve to full open to supply gas to all appliances. Each appliance can now be lit or started. Note: For initial lighting of the LP-Gas appliances, air in the lines must first be purged before any gas will flow through the burners. Most all appliances are automatically lit with a built-in spark or electronic ignition device and are not required to be lit by hand. The other appliances can now be started following the operational instructions found on each appliance.

If your vehicle is equipped with an LP-Gas Oven, the pilot light in the range top valve can be turned to pilot on. Light the oven pilot with a match or a hand-held spark igniter, then rotate the knob to the desired setting. Note:This valve should be turned off when refueling or traveling.

Do not use a detergent containing ammonia or chlorine when testing gas lines for leaks, as they may cause a chemical reaction causing corrosion to the gas lines, resulting in dangerous leaks. Use mild soapy water for testing lines. Never use an open flame to test for gas leaks. Be sure to shut off the main LP Gas supply valve(s) when the vehicle is not in use.

SAFETY IN USING LP-GAS

Leaks

You should check for leaks at the connections on the LP-Gas system soon after the initial filling of the LP-Gas tank. Your vehicle was manufactured to provide you with full access to all gas line connections. Leaks can be found easily with a soapy water solution applied to the outside of the gas piping connections, (If bubbles form, a leak exists). Shut off the main gas valve at the LP-Gas tank if a leak is detected. Never light a match or allow any open flame if leaking gas is suspected.

IMPORTANT

Some baggage doors, when open may block proper ventilation of an LP-gas appliance, such as the furnace. Moreover, the hot exhaust may damage the door's finish. A warning label is installed to remind you of this. Do not leave this door open while the furnace is in operation.

Re-Fueling

The ASME tank mounted beneath the floor is equipped with an automatic *stop fill* device for your protection. Important instructions on the tank tell LP-Gas dealer how to fill the tank.

Your LPG piping system is designed for use of liquefied petroleum gas *only*. DO NOT CONNECT NATURAL GAS OR ANY OTHER FUEL TO THIS SYSTEM.

Securely cap inlet(s) when not connected for use. After turning on gas, except after normal container replacement, test gas piping and connections for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine.

Do not fill containers to more than 80% of capacity.

All pilot lights, appliances and their igniters (see operating instructions included with each appliance) shall be turned off during refueling of motor fuel tanks and/or LP-Gas containers.

IMPORTANT CONSUMER SAFETY INFORMATION

LPG containers shall not be placed or stored inside the vehicle. LPG containers are equipped with safety devices which relieve excessive pressure by discharging excess gas to the atmosphere.

The following warning label has been located in the cooking area to remind the user to provide an adequate supply of fresh air for combustion:

WARNING:

IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING. COOKING APPLIANCES NEED FRESH AIR FOR SAFE OPERATION. BEFORE OPERATION:

1. **OPEN OVERHEAD VENT OR TURN ON EXHAUST FAN AND,**
2. **OPEN WINDOW**

Unlike homes, the amount of oxygen is limited due to the size of the recreational vehicle, and proper ventilation when using the cooking appliance(s) will avoid dangers of asphyxiation. It is especially important that cooking appliances not be used for comfort heating as the danger of asphyxiation is greater when appliance is used for extended period of time.

Overfilling the LP-Gas container can result in uncontrolled gas flow, which can cause fire or explosion. A properly filled container will contain approximately 80 percent of its volume as a liquid LP-Gas. Note: 20 percent of the tank area must remain empty to allow gas to vaporize.

- Portable fuel-burning equipment, including wood and charcoal grills and stoves, shall not be used inside the recreation vehicle. The use of this equipment inside the recreational vehicle can cause fires or asphyxiation.
- Do not bring or store LP-Gas containers, gasoline, or other flammable liquids inside the vehicle because a fire or explosion can result.
- A warning label has been located near the LP-Gas container.This label reads: DO NOT FILL CONTAINER (S) TO MORE THAN 80 PERCENT OF CAPACITY.

The following label has been placed in the vehicle near the range area:

IF YOU SMELL GAS:

1. **EXTINGUISH ALL OPEN FLAMES, PILOT LIGHTS AND ALL SMOKING MATERIALS.**
2. **DO NOT TOUCH ELECTRICAL SWITCHES.**
3. **SHUT OFF THE GAS SUPPLY AT THE TANK VALVE (S) OR GAS SUPPLY CONNECTION.**
4. **OPEN DOORS AND OTHER VENTILATING OPENINGS.**
5. **LEAVE THE AREA UNTIL ODOR CLEARS.**
6. **HAVE THE GAS SYSTEM CHECKED AND LEAKAGE SOURCE CORRECTED BEFORE USING AGAIN.**

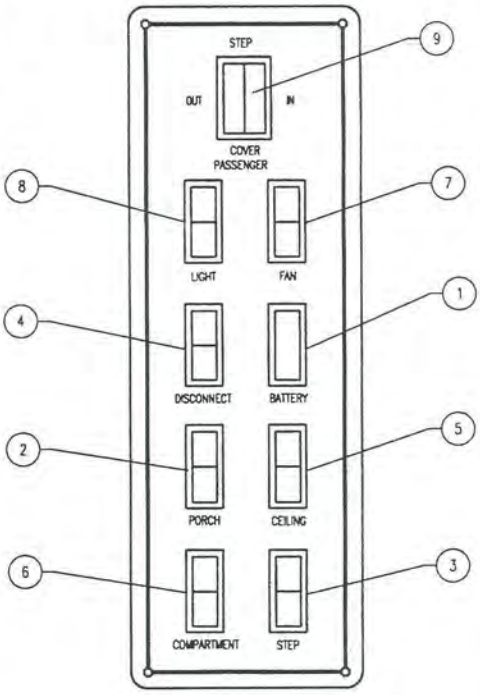
LP-Gas regulators must always be installed with the diaphragm vent facing downward. Regulators that are not in compartments have been equipped with a protective cover. Make sure that regulator vents face downward and that all covers are kept in place to minimize vent blockage that could result in excessive gas pressure causing fire or explosion. *Note: the manufacturer has preset the regulator(s) and they require no adjustment.*

Notes:

INTERIOR COMPONENTS

OVERVIEW

While your motor home was designed to provide you years of service with a minimum of effort, routine care and maintenance will provide extended life and keep your RV fresh looking. Information in this section explains the operation of some interior components found within your motorhome and then describes in detail the care and maintenance of your interior furnishings.



Switch Panel-Side Entry Door

MAIN ENTRY SWITCH PANEL

1. House (Auxiliary) Battery Indicator Light
2. Porch Light - on/off Switch
3. Entry Step - on/off Switch (out=step light remains off)
4. Auxiliary Battery Disconnect Switch
5. Ceiling Mood Lighting - on/off Switch
6. Exterior Storage Compartments Lights - on/off Switch
7. Passenger Side Dash Fan - on/off Switch
8. Overhead mood lighting
9. Power Stepwell Cover Switch

AUTOMATIC ELECTRIC ENTRY STEP

Your motorhome is equipped with an automatic electric step at the main entry door. When the main switch is in the ON position the step will extend and retract each time the door opens and closes. Note:The entry step is powered from the chassis battery and will operate even when the 12-Volt DC disconnect switch is off. While parked, turning the switch to the off position will leave the step extended or retracted. If the engine is started with the step extended and the door closed the step will retract regardless of the position of the wall switch. If you park too close to obstructions like curbing, proper operation of the step may be impeded. The entry step will automatically shutdown if the tread strikes an object while extending. By closing the door, the step retracts without damage.

STEPWELL COVER

Islander is equipped with a powered stepwell cover. Please activate this cover into position whenever you are travelling. It not only provides a floor for the front passenger, but also will prevent an accident by closing off the entry stepwell.

FORCED AIR FURNACES

There are two forced-air furnaces installed in your motorhome. The front (main) furnace supplies heat to the forward registers. While the rear (auxiliary) furnace heats the bathroom, rear bedroom and the holding tank compartment. These appliances are equipped with an ignition device that automatically lights the burner. *Do not* try to light the burners by hand. *Note: Ensure that the valve power switch (accessed from the outer door) is in the on position by following the manufacturer's operating instructions.* Both of these units are controlled by the central aisle way thermostat.

ROOF AIR CONDITIONERS

The roof air conditioners will only operate when the power cord is plugged into *shore power* or the *on-board generator* is running. Both air conditioners are ducted into a built-in ceiling plenum and the cold air discharge is via a series of round registers located in the ceiling. Each unit has a return air grille with an enclosed air filter. Periodically remove the filter and wash it with soap and warm water. After it is dry, return and replace it. The ability of the system to maintain the desired inside temperature depends on the heat gain of the RV. For the best performance we suggest parking in a shaded area and keeping windows and doors shut. Also, keep window coverings drawn and heat producing appliance use to a minimum will be beneficial in cooling. Like the furnaces, the air conditioners are controlled at the central aisle way thermostat in the Comfort Control Center (CCC) .

Failure to follow these instructions could result in serious injury or death.

WATER HEATER

The water heater is an LP-Gas fired appliance. Before lighting, purge the air out of the water heater tank by filling with water. This is accomplished by turning on the hot water faucet at the galley sink until water flows continuously. Your water heater has an electronic spark ignition and requires no matches to light. To operate, simply turn on the water heater switch found in the monitor control panel. If it fails to operate properly, then it may be in a *lockout condition* due to high water temperature. Wait until the water cools, reset by placing the switch in the off position for at least 30 seconds, then return back to the on position.

INTERIOR CONTROL CENTER

Conveniently located in the hallway near the galley is the Interior Control Center, which includes the control modules for many of the various household systems and appliances:

A. *CO detector*

B. *Monitor Panel.*

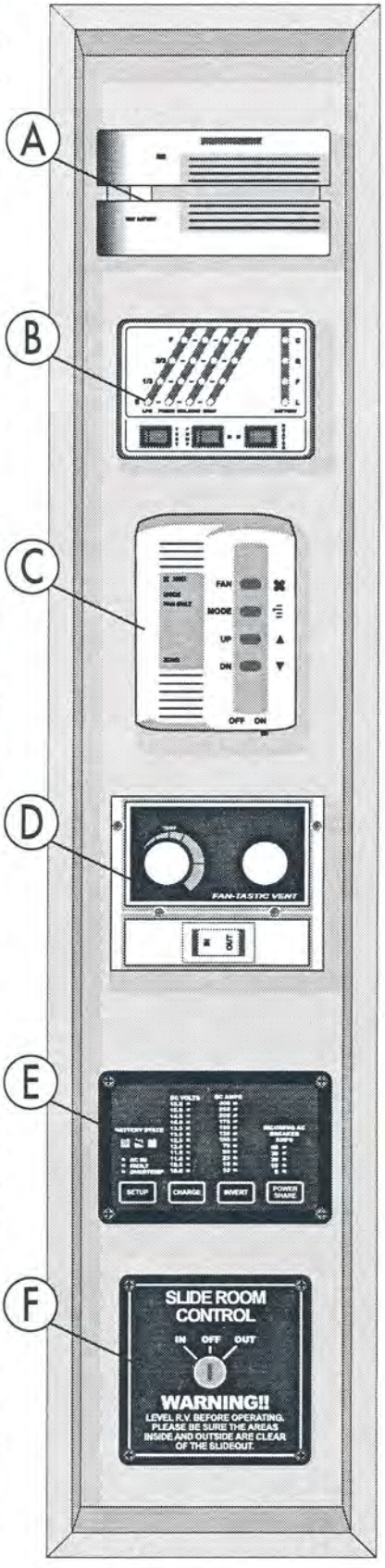
C. *Comfort Control Center.*

D. *Roof Vent/Fan Control.*

E. *Inverter-Charger Monitor.*

C. *Slide Room Control.*

The following sections discuss each of these in greater detail:



CO detector

This device sounds an alarm to alert you of the presence of carbon monoxide gas inside your motorhome. Carbon monoxide is an extremely dangerous, potentially fatal, tasteless and colorless gas. See the section on *Safety Considerations* for further information on CO gas and what to do in the case of its presence. This detector is powered by batteries which must be checked regularly using the "test battery" button, and replaced promptly when needed.

Monitor Panel

Your monitor control panel is designed to give you instant systems information at your fingertips. It indicates the levels of your fresh water supply, both gray and solid waste holding tanks, LP-Gas tank liquid level(s) and the condition of your RV battery. (Simply press the indicated rocker switch to obtain a level reading.) Also, the on/off switches to your water heater and pump can be found in this panel. Note:Additional water pump switches are located in the bathroom and the plumbing service access bay.

Comfort Control Center

The thermostat controls both furnaces as well as both roof air conditioners. Turn the unit on by switching the on/off switch to the *on* position.

To operate the furnaces: Push the MODE push-button until the FURNACE indicator on the

Liquid Crystal Display (LCD) is illuminated. Adjust or set the desired temperature. Depress the FAN and MODE push buttons simultaneously to select the second furnace. Then adjust or set the desired temperature as above. For a complete explanation of the thermostat, please refer to the user's guide and operating instructions. See the section titled *Forced Air Furnaces*, as well as your furnace manufacturer's documentation for further information.

To operate the air conditioners: Push the MODE push-button until the COOL indicator on the Liquid Crystal Display (LCD) is illuminated. Depress and release the FAN push button to set your desired fan speed. Adjust or set the desired temperature. After a delay of approximately 2 minutes the AC compressor will come on and the cooling process will begin. Depress the FAN and MODE push buttons simultaneously to select the rear air conditioner. See the section titled *Roof Air Conditioners*, as well as your roof air conditioner manufacturer's documentation for further information.

Roof Vent/Fan Control

MFG INFO

Consult the manufacturer's documentation that is provided for your furnace.

Located in the galley ceiling is a high-capacity exhaust fan that has a built-in safety switch that will not allow it to operate unless the dome is partially opened. This fan will either draw outside air into the motorhome, or exhaust interior air to the outside. The fan control/thermostat mounted on the wall will allow for both a manual and automatic operation. The left rotary knob is a variable speed rheostat with infinite settings from blue to red (low to high speed) The source of airflow is determined by whatever window(s) or door is open. There is a RAIN SENSOR built into the fan that will automatically close the dome whenever it is activated. When your RV is not in use, it is suggested that the right rotary switch be left in the *off* position.

Always make sure that exhaust vents for the furnace, water heater, refrigerator, etc. are free of obstruction by walls, debris or open luggage compartment doors.

Inverter-Charger Monitor

With the remote electrical systems monitor panel, you have important AC & DC systems and Inverter/Charger information available in the convenient galley area location. A remote on/off power switch with bright and easy to read indicators provide you with: low battery indicator, inverter/charger status, DC volts indicator, overload indicator, AC input indicator, and DC amp indicator

Slide Room Control

MFG INFO

Refer to the DOMETIC Duo-Therm Air Conditioner owner's manual and other documentation for complete operating instructions.

The electric slide-out in your coach is designed to give you years of trouble free operation and reflects the latest state of the art technology. A 12-Volt DC motor and driveshaft operates the room, powered by the house (auxiliary) battery. A specially designed control gives you full control of room movement **in** or **out**. To extend the room, rotate the key lock switch to **out** position. Then release it when the room is fully extended. In reverse, rotate the switch to the **in** position and release it when fully retracted. In case of emergency, the slide-out system is equipped with a *manual override* that allows you to extend or retract the room in the event of loss of power. First, the slide-out controls must be disconnected to operate the system override. Next, you must locate and actuate the brake release lever on the main motor housing, then manually retract the room by turning the shaft with a wrench. Note: For complete procedures, please read, study and understand the slide mechanism manufacturer's operation manual before operating your slide-out system.

MFG INFO

Consult the manufacturer's documentation that is provided for your water heater.

- Always make sure that the coach is level before operating the slide-out room. Note: See Section 4, Power Leveler operating instructions.
- Always make sure there are no obstructions blocking the path of the room when it is moving.
- Always make sure that the room path is clear of people and objects before operating.
- Always keep arms, legs and loose clothing away from the slide rails when the room is in motion.The gear assembly may pinch or catch on loose clothing causing personal injury.

MFG INFO

Refer to the DOMETIC refrigerator owner's manual and other documentation for complete operating instructions.

REFRIGERATOR

The refrigerator was specifically designed for RV use, wherein it applies the absorption principle of operation.

Before operating the refrigerator, make sure the vehicle is level and follow the operating instructions supplied with your refrigerator. Turn on the gas supply to the refrigerator and then select the MODE of operation.

This refrigerator is equipped with an Automatic Energy Selector (AES) **control system, which can automatically select the most suitable energy source which is available, either 120-Volt AC, or LP-Gas operation. The user to can set the system to be fully automatic** (AUTO) MODE, **or if so desired, to the LP-Gas only** (GAS) MODE. **The thermostat on the refrigerator controls both the gas and electric operation, thereby eliminating the necessity of resetting each time a different energy source is employed.**

REMINDER

Your refrigerator will cool more efficiently if there is sufficient room for air to circulate around items inside.

IMPORTANT

When starting the refrigerator for the first time or restarting later, the cooling cycle may require up to four hours of running time before the cooling unit is fully operational.

RANGE, COOKTOP & HOOD

Cooktop Burner Operation

The LP-Gas range or cooktop is operated much like the gas range in your house. Turn the appropriate burner knob counter-clockwise to the On or Lite/Hi. *Do not* attempt to light more than one burner at a time. Then turn the Spark knob clockwise one click. If it fails to light, try again. To extinguish the top burner flame, turn the appropriate burner knob clockwise to *off*. *Note: Please review the Section on LP-Gas System Operation for safety considerations.*

Range Oven Operation

If your vehicle is equipped with an LP-Gas Oven, then the pilot light will be a control valve in the range top that can be turned to pilot *on*. Light the oven pilot with a match or a hand-held spark igniter, then rotate the knob to the desired setting.

MFG INFO

Refer to the ATWOOD/WEDGEWOOD cooktop/oven owner's manual and other documentation for complete operating instructions.

Range Hood

The range hood is used to eliminate cooking odors and exhaust hot cooking vapors. It is built into the Microwave/Convection Oven mounted over the Range Top. It will work when there is 120-Volt AC power available form either shorepower, on-board generator or Inverter/Charger. The filters require periodic cleaning, follow the manufacturer's instructions.Also, available is a surface light. Press

IMPORTANT

The pilot control valve should be turned off when refueling or traveling.

once for bright light, *twice* for night-light or *three times* to turn the light *off. Note: The ceiling 12-Volt DC Power Roof exhaust fan may be used whenever 120-Volt AC power source is not available.*

Consult the manufacturer's documentation that is provided for your microwave oven.

MICROWAVE/CONVECTION OVEN

This appliance is identical to the one found in your kitchen at home. It is wired to operate whenever a 120-Volt AC source is available or it will operate from the Inverter/Charger. Please read your owner's manual and observe all the safety precautions therein, including the following:

It is important to provide adequate ventilation when using the gas cooking appliances to prevent the danger of asphyxiation.

- Do not attempt to operate the microwave oven with the door open since it could result in harmful exposure to microwave energy. It is important not to defeat the safety interlocks.
- Do not place any object between the oven front face and the door or allow soil or cleaner residue to accumulate on sealing surfaces.
- Do not operate the oven if it is damaged. It is important that the oven door close properly and that there is no damage to the door, hinges, latches, seals or sealing surfaces.
- Do not use metal, foil or twist ties in your oven. Arcing is a microwave term for sparks in the oven. If this occurs read your manual and correct the problem before proceeding.
- The oven should not be adjusted or repaired by anyone except properly qualified service personnel.

If improperly used, a microwave oven can be very dangerous. Thoroughly read and adhere to all safety procedures.

TELEVISIONS & VCR

Both televisions and the VCR operate only when 120-Volt AC power is available. The source of power could be shore-power, on-board generator power, or Inverter/Charger. When the automotive ignition switch is on or the engine is running, the front TV is locked-out since it is illegal to drive the vehicle with the television on. The VCR and Video Selector are located in the passenger front overhead cabinet. The VCR is comparable to home models and plays or records standard VHS cassette tapes. The Video Selector is a push-button type that will accept three inputs and provide three outputs. You can select various video sources, either outside cable, TV antenna, VCR, or even AUX input from your personal equipment. The choice is yours! You can watch different programs on each TV set at the same time.

Both the TV and VCR came with separate owner's manuals. Full operation and maintenance information is included in the manufacturers' documentation.

TV Antenna & Satellite Dish

Your Islander is equipped with a combination digital satellite system (DSS) dish and television antennae. If you subscribe to a digital satellite service provider, such as DirecTV, you will recieve a variety of crystal clear programming through your DSS dish. The antennae feature allows you to also recieve broadcast programming from local UHF and VHF channels.

Included in the information packet that came with your motorhome is the antennae system's owner's manual. Refer to the owner's manual for complete instructions on correctly adjusting and operating the unit for best reception.

IMPORTANT

To prevent damage, ensure that the TV antenna is down before driving away.

Home Theater Sound System

A Home Theater Sound System is installed for your listening pleasure. To activate this system, flip the toggle switch in the dashboard to the TV position, *see Driver's Controls* section. The audio from front overhead TV will now play through the "in-dash" stereo speaker system. Simply press the right half of Stereo switch on dash and tune stereo to 89.1 FM. Adjust Stereo volume no higher than 50% and adjust TV volume to desired level.

STEREO/RADIO/CASSETTE

The stereo radio cassette can be found in the bedroom adjacent to the bed. It has an built-in alarm clock and auxiliary (AUX) inputs. The radio, cassette and alarm functions similar to those found in your home. When using the AUX inputs, do not connect speaker wires from a radio or similar device to these, as it might damage the unit. This input is intended for signal level inputs from either a stereo VCR or CD player. Do not use the cassette deck if temperature is below freezing and never use 120-minute cassettes in the deck. *Note: For complete operating instructions refer to the manufacturer's owner's manual.*

MFG INFO

Consult the manufacturer's documentation that is provided for your stereo/radio/cassette player.

WASHER/DRYER (OPTION)

The washer/dryer is a compact space saving combination unit that is located in the wardrobe. The removable drain screen which protects the pump from lint and foreign matter needs to be cleaned periodically. When it is not installed, your motorhome comes prepared with the electrical and plumbing pre-installed for future installation. *Note: Please read and follow the instructions provided in the Owner's Manual supplied for the washer/dryer.*

U-LINE ICEMAKER (OPTION)

MFG INFO

Consult the manufacturer's documentation that is provided for your washer/dryer.

The icemaker operates on 120-Volt AC power only. It will only work when there is 120-Volt AC power source available from either shore-power, on-board generator or the (optional) Inverter/Charger. The icemaker requires no external water drain and uses very minimal electrical power. It receives filtered water from the filter located under the galley. There is a separate petcock provided when required to shut-off the water supply for maintenance or service. The on/off switch and the temperature controller are both located behind the front grill. For details of operation, follow instructions provided in the user's manual supplied with the icemaker.

MFG INFO

Consult the manufacturer's documentation that is provided for your ice maker.

MISCELLANEOUS APPLIANCES

Additional appliances provided with your motor home include the built-in coffee maker, hair dryer and Dust Buster vacuum. This equipment will only work on 120-Volt AC power and they operate identical to those typically found in your home. They will not be discussed here. *Note: For further information or details of operation, please review the information supplied with these products.*

TELEPHONE JACK

Telephone jacks are located in the living room, at the co-pilot's seat computer workstation hookup, and at the bedroom nightstand. These are connected to a shore phone connection jack in the electrical service bay with the outside TV cable hookup. This phone jack can be connected to land telephone lines at home or in various campgrounds.

INTERIOR ENGINE ACCESS

The engine compartment may be accessed from the top side from under the rear bed. Loosen the bed frame latch and lift the bed base. Spring assist cylinders should hold the cover in place during servicing.

STEPWELL COVER

The front entry door model motorhome is equipped with a powered stepwell cover. Please activate this cover into position whenever you are traveling. It not only provides a floor for the front passenger, but also will prevent an accident by closing-off the entry stepwell.

CARE AND MAINTENANCE

Doors and Paneling

The interior cabinetry may be cleaned with a damp cloth. Periodically apply a coating of furniture polish to preserve the finish. Rub a good quality wood treatment into the solid wood cabinet doors. Clean vinyl-covered decorator paneling with a liquid household cleaner. *Do not* use solvents or abrasive cleaners as these could damage the decorated surfaces.

Vinyl and Velour Cleaning

Use upholstery cleaner or a mild soapy solution. *Do not* use an abrasive cleaner.

Carpet Covering

Vacuum the carpets after each trip. Clean any spills immediately; the longer they remain on the carpet, the deeper they set and the more difficult to remove. Remove stains with standard household carpet cleaner. *Do not* use ordinary soap or detergent since it tends to leave a residue that attracts dust and hastens soiling. For stubborn stains, see your carpet-cleaning specialist for advice.

Ceiling Fabric

Vacuum frequently using a rotating brush attachment to agitate the pile helps in maintaining a soil-free surface. For cleaning and spot removal, we recommend the use of commercially available cleaners such as Woolite Carpet Cleaner, Chem-Dry or Bridgeport RTU Fabric Prespray (or equivalent). *Note: Follow the instructions as noted on the product label.*

Draperies and Upholstery

Keep your upholstery looking fresh and clean by treating it like any upholstered furniture in your home. The fabrics used in your motorhome are not washable and should be dry-cleaned only. *Do not launder.* Seat covers may be spot-cleaned with a foam type spot remover. If overall cleaning becomes necessary have them dry-cleaned by professionals.

Table and Counter Tops

High quality decorative laminate counter surfaces have been selected for their durability and good looks. Regular cleaning with mild detergent will keep the surface like new. For general purpose cleaning it is recommended to use any mild liquid dish washing detergent, diluted 25 to 1, in warm water, do not use them full strength. *Do not* use scouring pads to clean. *Do not* use counter tops as a cutting board. The tops can be scratched. *Do not* place hot pots and pans directly on the surface.

Lavatory and Shower Cleaning

Wash with mild soap and water. Do not use abrasive cleaners, scouring pads, or solvents as they can damage and dull the finish. Fiberglass polish may be used. Follow the instructions on the container.

Fixtures and Appliances

Please follow the manufacturer's instructions for cleaning and maintaining the microwave, refrigerator and range top. *Note: The exhaust fan over the range has filters installed, which must be cleaned periodically by following the instructions found with the microwave.*

Corian® Countertops

Most dirt and stains can be cleaned with soapy water or ammonia-based cleaner. Watermarks can be wiped with a damp cloth and then towel dried. Difficult stains should be cleaned with Soft Scrub®** or diluted bleach and a white Scotch-Brite®** pad. For further information, see Corian®** care and maintenance guide included in **the Important Papers Packet.**

Ceramic Tile Care

Usually just cleaning with a solution of vinegar and water is all that's required. *Never* use abrasive cleaners or steel wool.

**Not all options may be available on your motorhome.*

***Clorox and Soft Scrub are registered trademarks of the Clorox Company. Scotch Brite is registered trademark of the 3M Company. Corian is a registered trademark of Dupont Company.*

Notes:

EXTERIOR COMPONENTS

OVERVIEW

While your motor home was designed to provide you years of service with a minimum of effort, routine care and maintenance will extend the service life of your RV and protect your investment. Information provided in this section discusses some exterior components found on your motorhome and then describes in detail the operation, care and maintenance of those items. Vibration occurs through normal use of your motorhome. Screws may need tightening periodically. Use a weatherproof sealer around all windows and door frames as needed. Lubricate locksets, latches and hinges with graphite. If your motorhome is located at a beach or is otherwise exposed to continuous wet weather, more frequent lubrication may be required. Whenever a problem is encountered that is not covered here, it may be necessary to contact your authorized dealer for further assistance.

EXTERIOR FIBERGLASS

REMINDER

Proper care of exterior surfaces of your motorhome not only keeps it looking its best, it also maximizes the longevity of all components.

Your motorhome has an exterior that is both rugged and functionally beautiful. Its smooth aerodynamic finish is resistant to dents and scratches. By keeping the motorhome cleaned and waxed the fiberglass exterior will maintain its original luster indefinitely. *Do not* use abrasives on exterior decals. The use of a wax or a polish with an ultraviolet protector aids in preventing deterioration of the exterior fiberglass. *Note: Only professionals should repair damaged surfaces. Your dealer or our factory will often be able to repair the damage. If not, check with your local automotive body shops.*

MOLDED PLASTIC PARTS

Some of the exterior panels on your motorhome are Thermoformed or molded plastic parts. These engineered polymers can with proper care and attention retain their brand new look for a long, long time. Centrex®* is a weatherable polymer designed to resist color fading from exposure to sunlight. For normal cleaning needs the following commercial products are safe when properly used: Fantastik®*, Ivory Soap®* (liquid or flake), Formula 409®*, Simple Green®*. For heavy-duty cleaning needs, the following is suggested: Soft Scrub®*, household ammonia, and/or mineral spirits *Note: Avoid acetone or products that contain ketones or chlorinated hydrocarbons since these could damage the surface.*

**Centrex is a registered trademark of Bayer Corporation. Fantastik is a registered trademark of Dowbrands, Inc.. Formula 409 and Soft Scrub are registered trademarks of the Clorox Company. Ivory Soap is a registered trademark of Proctor & Gamble Company. Simple Green is a registered trademark of Sunshine Makers, Inc.*

ENTRY DOOR & SCREEN

The Entry Door to your motorhome is equipped with two locks and a separate screen door. When leaving your vehicle unattended, it is recommended that you engage the dead bolt lock for extra security. Be careful while opening your door until the door safety latch is securely in place. A gust of wind may catch the door and slam it against your vehicle. The entry screen door has its' own hinge and can be opened separately by pulling it away from the magnet catch. Lubricate the door hinges and moving parts with light oil at regular intervals. Use powdered graphite to lubricate both door locksets. Clean the screen door as you would at home.

ROOF & ROOF FIXTURES

The fiberglass roof top is extremely slippery when wet.

The roof of your Islander motorhome is clad in a rugged, flexible gel-coated fiberglass sheeting. Coat all seams and around roof vents once a year with a good quality RV roof sealer. Note: Refer to sealant specification chart in *Maintenance Section*. Be sure the sealer used is recommended for use with your roof material. These materials are available from your dealer or RV store. The roof of your motorhome when walked on, will feel soft and have some flex or give, this is normal. Small rocks or other items wedged into the soles of your shoes can damage the rubber membrane. Be sure to brush them off before walking on the roof. *Keep your roof clean.*

Exercise extreme caution when using the rear ladder and when walking on the roof. Both the ladder and roof surface can be extremely slippery when wet. The use of chairs on the roof is not recommended. Do so at your own risk!

For normal cleaning, standard household products such as 409, Fantastic or mild detergent are sufficient. For stubborn stains, a rag dampened with mineral spirits is recommended, (do not soak). An alternative would be using *20 Mule Team Borax* and a soft bristle brush. When cleaning, rinse thoroughly with clean water to avoid residue buildup on the roof or streaks on sidewalls of the vehicle. Try not to park where fruit or tree sap may stay on the roof for extended periods of time because it may result in unremovable stains. *Note: A Special cleaner and conditioner is available through our Parts Department.*

EXTERIOR COMPARTMENTS

IMPORTANT

Do not use cleaners or conditioners containing petroleum solvents harsh abrasives or citric-based cleaners on your coach's roof.

Numerous spacious storage compartments provide a safe and secure location to stow all manner of items of luggage. All of these compartments are provided with locks except for the LP-Gas tanks, which are required by law to be readily accessible in case of emergency. Access is gained simply by depressing the center button which releases the latch, then rotate handle clockwise 90 degrees to open compartment. Please review the Safety Section concerning tips for proper loading procedures. Remember that the loaded weight of your vehicle (GVW) can not exceed the (GVWR). Also your cargo should be placed to maintain your motorhome in balance, both side-to-side and front-to-rear while not exceeding either axle rating, (GAWR). Your exterior compartments *are not* 100 percent watertight in all weather conditions. Therefore, it is recommended that your important articles susceptible to moisture damage be stored *inside* of the vehicle.

AWNINGS & SLIDE TOPPERS

- Whenever an awning is wet while rolled up, as soon as conditions allow, roll it out and let it dry before rolling up again. *Note: This will help prevent mildew and rotting.*
- Always ensure that the patio awning is extended high enough before opening the entry door.
- When operating the window awning, grasp the loop on the pull strap and pull down to extend the awning and then hook the loop onto the window strap hanger.
- The SlideTopper awning will automatically open and close as your slide-out room opens and closes. It was designed to protect the top of your RV slide-out room from weather and debris. *Note: Always check for and remove debris on the awning before retracting the slide-out room.*
- It is not intended to be 100 percent waterproof, due to drips and condensation. Because the awning canopy is level, water may collect on the top. As the slide-out room is closed and the awning rolls up, these puddles will spill over the sides of the awning.
- **Complete operating instructions for your awnings are provided in the** Important Papers Packet **supplied with your motorhome.**

IMPORTANT

Do not release the strap as the awning is under tension, as it may snap back against the vehicle.

Do not operate your Slide Topper in snowing or freezing-rain conditions. Such use will prevent the awning from retracting with the slide room and possibly damage the awning and (or) room.

WASHING THE EXTERIOR

Before washing the exterior, be sure windows are closed and locked. Close all doors and vents, lock storage compartments so water will not get into them. Wash the exterior with a mild soap solution, rinse thoroughly and dry. Never use strong alkaline cleaners and abrasives. Do not spray water directly into refrigerator grille, furnace vents, window weep holes and other similar openings.

Wash the windows with warm soapy water and dry with soft cloths. Commercially available cleaning products like Windex (or equivalent) is fine when used at proper dilution ratios. Avoid using any abrasive cleaning tools or rough pads. These can scratch the glass and the painted aluminum frames.

SEALANTS

The sealants used in the fabrication of your motorhome will eventually require maintenance. Inspect around the doors, windows, moldings and roof components on a regular basis. If any defects are discovered they should be repaired immediately. Cracked or peeling sealants need to be scraped or removed, then clean the surface with mineral spirits and dry. Reapply the recommended sealer to those prepared surfaces. Proper sealants can be obtained through your dealer or the National R.V. Parts Department.

IMPORTANT

Inspect your coach thoroughly for possible leaks before the winter season or placing the vehicle in storage. National R.V. Inc. can not be held responsible for any damage when a coach is left unattended for extended periods of time.

TIRES

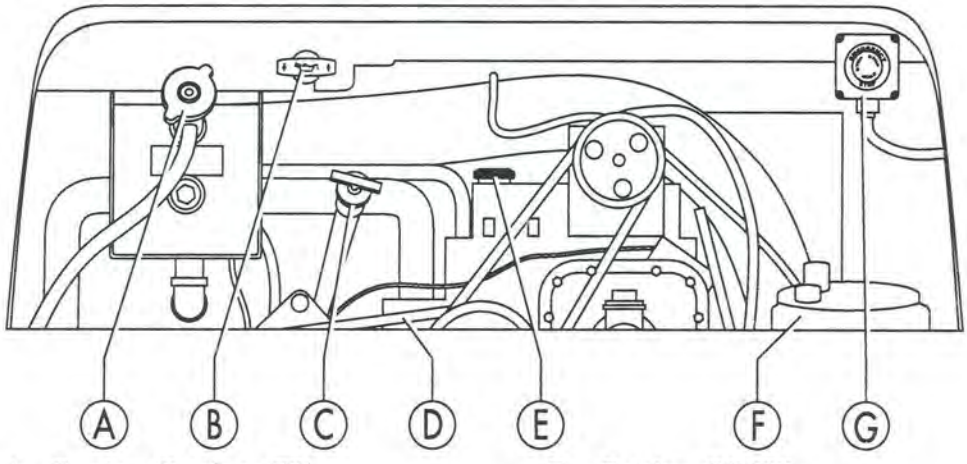
To avoid sidewall cracking, apply a liberal coating of automotive wheel dressing twice a year. For proper tire rotation, changing of flat tires and jacking instructions please refer to chassis owner's manual. *Note: It is recommended that you call a road service company to change flat tires. These companies have the proper equipment and know how to do the job safely.*

MAINTENANCE

The maintenance information provided here is a supplement to your chassis manufacturer's maintenance schedule and by no means is a replacement. Please provide the required scheduled maintenance because it is deemed essential to the life and performance of your vehicle. Use only the recommended fuels, lubricants, fluids and service parts. The Service Interval Chart presented here is provided to assist you in the care and maintenance of your motorhome. The time spent performing this service on a regular basis should provide your RV with extended service life. Remember when you are encountering difficulties, consult your servicing dealer or call the National R.V. Service Center for assistance.

ENGINE COMPARTMENT

The compartment door at the rear of the coach allows easy access to most routine engine maintenance components, such as fluid level indicators. Consult the following sections of this manual as well as the owner's manuals for your engine, transmission and chassis for complete instructions.



A. Engine Coolant Fill.
B. Engine Oil Check.
C. Transmission Fluid Check/Fill.
D. Serpentine Drive Belt.
E. Engine Oil Fill.
F. Air Filter Assembly.
G. Emergency Stop

MFG INFO

Consult your "Cummins Operation and Maintenance Manual, ISC Engine," for complete information regarding your Cummins diesel engine.

Engine Coolant

Consult your Cummins manual for detailed information regarding your engine coolant. Engine coolant level should be checked daily at the surge tank, located behind the engine access cover. The coolant system should be flushed and new coolant installed if the engine overheats, if foaming is observed in the radiator, or if the cooling system becomes contaminated. Also, coolant should

be changed, as part of proper maintenance, according to the recommended interval stated in your Cummins manual.

Cummins Engine Company recommends using either a 50/50 mixture of good-quality water (maximum calcium magnesium 170 ppm, chloride 40 ppm, sulfur 100 ppm) and fully formulated antifreeze, or fully formulated coolant when filling the cooling system. The fully formulated antifreeze coolant must meet TMC RP 329 or TMC RP 330 specifications. Never introduce sealing additives or soluble oils to the cooling system, as they may damage the engine.

Do not attempt to remove the radiator cap when the engine is hot. Hot engine coolant will be under pressure, and will spray upon removal of the cap, resulting in serious injury. Check coolant level at the surge tank before the engine is hot.

Engine Oil

Engine oil level should be checked daily or with each fuel fill-up. Additionally, engine oil should be changed according to the recommended intervals found in the Cummins ISC Engine Operation and Maintenance Manual. Note that the Cummins manual recommends shorter intervals if your engine is operated in extreme cold or hot climates, dusty environments or in frequent start/stop conditions. When changing oil, use the recommended oil filter: Fleetgard® part no. LF3000 or Cummins part no. 3318853.

To check the oil level in the engine open the rear access and pull the dipstick located above the radiator. To add oil to the engine remove the filler cap next to the dip stick. Cummins Engine Company recommends the use of a high-quality SAE 15W-40 heavy duty engine oil, such as Cummins Premium Blue®, that meets the American Petroleum Institute (API) performance classification CG-4/SF or CF-4/SF.

Transmission Fluid

MFG INFO

Consult your "Allison On-Highway MD/HD/B Series Transmissions (WTEC III Controls) Operator's Manual, World Transmission," for complete information regarding your transmission.

Your Allison World Transmission is equipped with an oil level sensor (OLS) which allows you to obtain a fluid level indication by using the shift selector keypad. Alternately, your transmission fluid level may be checked manually. The procedures for cold-checking (emergency use only), hot-checking (recommended), and using the OLS are outlined in your Allison Operator's Manual.

Allison recommends using Dexron III transmission fluids for on-highway applications. See your Allison Operator's Manual for fluid recommendations for severe duty applications. Both proper fluid level and fluid quality (cleanliness and integrity) are very important to the proper operation of your transmission, as well as prevention of costly damage. Transmission fluid level should be checked, and its appearance inspected, on a regular basis. Your Allison Operator's Manual states recommended intervals for these fluid checks as well as regular transmission service and fluid changes. Read and understand this and all sections of your Allison Operator's Manual to properly understand your transmission, how it functions, and how to keep it properly maintained.

Belts & Hoses

Belts and hoses should be given at least a cursory inspection at every refuelling, and a more thorough inspection every 30,000 miles (check your Cummins Manual(. Check for cracks, tears, loose clamps and other damage.

Check the serpentine drive belt for intersecting cracks. Transverse (across the belt width) cracks are acceptable. Longitudinal (direction of belt length) cracks that intersect the transverse cracks are *not* acceptable. Replace the belt if it is frayed or has pieces of material missing.

Air Cleaner

The Air Cleaner Assembly houses the air filter. The air filter clears dirt and debris from air before it enters the engine. Over time, trapped debris will begin to restrict airflow as well as deteriorate filtering capability, and the filter must be changed. Operation in particularly dirty and dusty situations may hasten the need to change the filter. A "Filter Minder", located in the Service Compartment, indicates when the filter needs changing. Consult your engine and chassis owner's manuals for procedures and part numbers.

MFG INFO

Consult your "Dynomax 'Islander' Series Chassis by Country Coach Owner's Manual" for complete information regarding all components of your motorhome chassis.

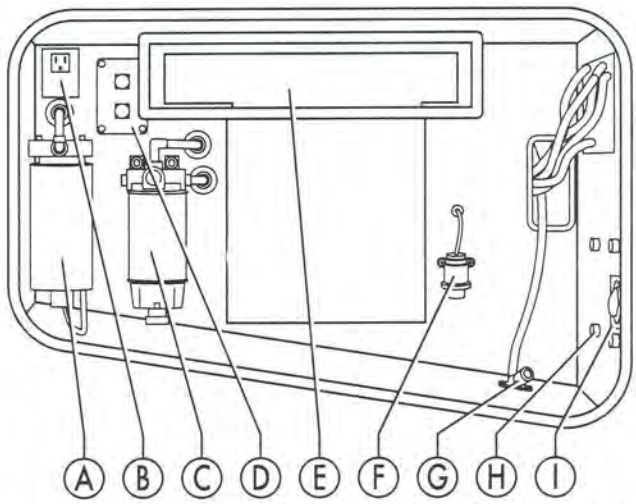
Emergency Stop Switch

An Emergency Stop Switch is located in the upper-right corder of the engine service access compartment. This is an engine killswitch. Remember that engine coolant, engine oil, belts, hoses, and air filters must all be checked while the engine is turned off. Transmission fluid, however, is normally checked with the engine running. This switch will stop the engine in the event of an emergency while working in the engine area.

SERVICE COMPARTMENT

The Service Compartment is located on the Co-Pilot's side at the rear end of the coach. Contained within the Service Compartment are:

A. Secondary Fuel Filter
B. Block Heater Receptacle
C. Fuel/Water Separator
D. Diagnostic Ports
E. Engine Air Intake/Air-Water Separator
F. Air Filter Minder
G. Compressed Air Coupler
H. Resettable Breakers (4)
I. Battery Disconnect Switch



Service Compartment

The following sections describe each item in the Service Compartment in further detail.

Fuel Filters

Cummins Engine Company recommends the use of ASTM No.2D fuel. The use of No.2 diesel fuel will result in optimum engine performance. Your Cummins manual provides information on alternative fuels for your engine.

CAUTION

Due to the precise tolerances of diesel injection systems, it is extremely important that fuel be kept clean and free of dirt or water, which can cause severe damage to both the fuel pump and the fuel injectors.

Located in the service compartment are the two fuel filters: the fuel/water separator, which fuel flows through first, and the secondary fuel filter, which fuel flows through before entering the engine's injection pump. The fuel filter/water separator should be checked on a daily basis and drained if necessary. Consult your Cummins manual for procedures for draining water from the fuel-water separator. The elements of both the fuel/water separator and the second-

ary fuel filter should be changed every 10,000 miles. Consult your Cummins Manual for procedures and part numbers.

Block Heater Receptacle

IMPORTANT

Connecting the block heater receptacle to a coach generator outlet is not recommended. The generator is an inadequate source of electricity for the block heater.

The block heater warms the engine block and fluids enough to facilitate starting the engine in frigid temperatures. The block heater is activated by the block heater switch on the instrument panel in the cockpit. That switch will only activate the block heater if it is plugged in to this receptacle.

Diagnostic Ports

Do not attempt to use the diagnostic ports yourself. Seek authorized service.

Both your Cummins ISC Engine and your Allison World Transmission have on-board electronic control units which monitor and regulate their internal functions. These ports are provided so that authorized service personnel may connect their specialized diagnostic equipment to the electronic control units in order to determine the cause of a problem and determine a suitable repair.

Air Filter Minder

Never run the engine without an air filter element in the air cleaner housing. Serious damage to your engine may result.

Air enters the engine through an external intake and passes through a duct in the service compartment on its way to the air filter. Air entering the engine must be free of dirt and debris. A "Filter Minder", conveniently located in the service compartment next to the air intake, indicates when the filter needs to be changed (the filter is located in the air cleaner assembly in the engine compartment; refer to your chassis owner's manual for instructions and part numbers). During normal operation, the indicator in the Filter Minder window is yellow. If the indicator is red, it is time to replace the filter. After a filter has been replaced, reset the Filter Minder by pushing the rest button at its end.

Compressed Air Coupler

The compressed air outlet located in the service compartment is a convenient source of compressed air from the engine's compressor. Air may be used to add air to the tires, run pneumatic tools and equipment, or to blow away debris from coach storage compartments or campsites.

Electrical Switch Gear

Located on the right-hand wall of the service compartment are the main battery disconnect and four resettable breakers. The breakers are:

120A Grid Heater #1
120A Grid Heater #2
60A Start solenoid
105A Ignition solenoid to front panel

The batteries are located next door in the compartment directly forward of the service compartment.

OTHER SERVICE AREAS

Batteries

Check and maintain the chassis and coach batteries regularly. Check the fluid level (when not sealed) in the battery cells monthly. Remove corrosion around terminals by rinsing with baking soda. After cleaning, coat terminals with grease to retard corrosion.

Tires

Visually inspect the tires daily and have the air pressure checked regularly. Tire pressure lower than recommended will reduce tire life. Higher pressures will tend to give a harsher ride. Always keep tires inflated as recommended by the tire manufacturer.

Brakes

Your Dynomax "Islander" Series Chassis by Country Coach is equipped with air brakes at each wheel. No hydraulic brake fluid is used. The pneumatic braking system does require periodic maintenance, however. Consult your Dynomax "Islander" Series Chassis Owner's Manual for complete information on proper maintenance and servicing of your brake system.

Windshield Washer

To check the liquid in the windshield washer reservoir, pull out the generator caddy at the front of the motorhome (see instructions in the *Electrical Systems: Generator* section) and observe the liquid level in the washer reservoir located on the co-pilot's side frame rail. Washer fluid may be added to the reservoir by removing its top.

Air System Moisture Ejection

Compressed air from the air compressor is delivered to the air dryer where moisture is removed. Accumulated moisture is regularly expelled from the air dryer onto the ground beneath the coach. This accounts for the occaisonal air discharge heard.

Asses the effectiveness of air dryer operation every 6,000 miles or six months (whichever comes first) by checking for moisture in the compressed air system. Low-point air system drain valves are located on the pilot's side firewall. Pull out the generator caddy (see instructions in the *Electrical Systems: Generator* section) to access the valves. Open the valves and look for the presence of water as air escapes. If moisture is present, the desiccant cartridge may require replacement. Have the desiccant cartridge inspected and/or replaced by an authorized service technician.

LAMPS & BULBS SPECIFICATIONS

Interior

Cockpit map light	#906 12V DC
Flourescent cieling lts	GE F15T8/CW 12V DC
Bath vanity lights	#1141 12V DC
Bedroom reading lights	CM912 or #921 12V DC
Dinette decor light	CEC 1141 12V DC
Directional reading lights	#1139 12V DC
Refrigerator light	Phillips 10-watt 12V DC
GE microwave/convection light	40S11n/1 (40-watt) 120V DC

Exterior

Headlights, hal. hi-beam	#9003 (60/55W) 12V DC
Headlights, hal. hi-lo	#9003 (60/55W) 12V DC
Turn signals front	T 3157
Turn signals sides	Sylvania 3157 12V DC
Stop/turn/tail lights	Sylvania 3457 12V DC
Back-up lights	Sylvania 3156 12V DC
License plate courtesy	DE 1895 12V DC
Side marker lights	C194 12V DC
Front clearance lights	C194 12V DC
Rear clearance lights	C194 12V DC
Porch light	CEC 93 12V DC
Entry step light	C194 12V DC
Hood light	#1141 12V DC
Fog/driving lights	HR E13 40281 BT178 12V DC
Exterior compartment lights	#1141 12V DC
Third brake light (center)	WBL 122 12V DC
Spotlight	GE 4700 12V DC
Docking Lights	GE H9406 12V DC

EXTERIOR SEALANT SPECIFICATIONS

Windshield/gasket	Sikaflex 255FC
Roof components	Colorimetric Silicone Sealant
Exterior components	Colorimetric Silicone Sealant
Holding tank fittings	Carlisle 502-LSW
LP-Gas, black pipe threads	Rectorseal No 5
Fresh water fittings	Teflon tape

SERVICE INTERVAL CHART

Description	W	M	Q	S	A	ET	SS	ES	SI
Chassis Service									●
Inspect battery, check electrolyte level	●					●			
Inspect tires & check air pressure	●					●			
Check exterior lighting for proper operation				●			●		
Check & inspect safety equipment: LP-Gas and CO detector, fire extinguisher, smoke alarm, GFI receptacles		●						●	
Inspect generator exhaust system		●				●	●		●
Inspect all seatbelts for any damage					●				
Inspect LP-Gas system for leaks		●					●	●	
Sanitize water system			●				●		
Flush black tank, add chemicals						●			●
Clean stove hood and A/C filters			●						
Inspect & clean LP-Gas appliancevents refrigerator, water heater and furnaces.				●			●	●	
Service appliances as required: generator, refrigerator, roof A/C units							●		●
Wash exterior of vehicle			●			●			
Wax & polish exterior					●				
Inspect, check & repair all sealants: doors, windows, moldings and roof				●			●	●	
Inspect & lubricate slide-room drive shaft/roller areas and rubber seals			●				●		
Lubricate doors, window tracks and key lock sets				●			●	●	
Vacuum & clean carpets		●							
Clean drapery, fabrics & upholstery				●			●		

W=weekly
M=monthly
Q=quarterly
S=semi-annual
A=annual

ET=every trip
SS=start of season
ES=end of season
SI=special interval (at either a specified mileage or hourrs of operation.

TROUBLESHOOTING CHART

The following should assist you in the safe and proper operation of your motorhome. Also, look at the various manufacturers' operating manuals for detailed maintenance and troubleshooting instructions for the specific appliance or component.

COMPLAINT/PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
12 Volt DC appliance failure	Insufficient voltage	Check monitor panel for adequate battery voltage; if voltage is too low, turn the generator or shore power ON and recharge the battery. With 120 volt AC power ON, try turning the appliance in question on again.
	Blown Fuse	Check the battery control center (BCC), look for a *red glow*, indicating a bad fuse, and replace it.
	Tripped Circuit Breaker	Reset manual breaker. see *Electrical System Operation* section of this manual for details.
	Defective Appliance	Check the appliance manufacturer's owner's manual for specific troubleshooting suggestions. If needed, take the appliance to your authorized servicing dealer for repair or replacement.
120 Volt AC appliance failure	Insufficient voltage	Low *shore power* voltage due to line loss. Try running appliances from the on-board generator. Check battery voltage readings at the inverter/charger remote panel indicator.
	Tripped Circuit Breaker	Try resetting the breaker at the main distribution panel or press the reset buttons at the inverter/charger.
	Defective Appliance	Check the appliance manufacturer's owner's manual for specific troubleshooting suggestions. If needed, take the appliance to your authorized servicing dealer for repair or replacement.
No Fresh Water	Empty water tank	Verify that the water selector valve in the plumbing service compartment is turned to *City Water*. Check tank level at monitor panel, then fill tank if low.
	Water pump not operating	Verify that pump switch is on, and check battery voltage at the monitor control panel. Check the battery control center for a blown fuse, replace if necessary. Take to your authorized servicing dealer.
	Filters Clogged	The filter elements of the water treatment system may need changing if they have become clogged with filtered sediment and are restricting flow. Consult flitration system owner's manual.
	Filter bypass valves set incorrectly	Check the filtration system bypass valves to make sure they are not configured to drain. They must be configured for either normal operation or bypass operation. (see *Plumbing Systems* section)

Generator Not Working	No Fuel	Check fuel tank level at dash panel. Fuel level may be below the generator's fuel pickup. Fill fuel tank.
	Blown Fuse	Check fuse on generator, replace if necessary.
Engine, Transmission or Chassis	Any problem	Check your chassis, engine and/or transmission owner's manuals for operating details and troubleshooting tips. Take to your authorized servicing dealer.
	Defective generator	Take to your authorized servicing dealer for repairs.

MAINTENANCE RECORD

Date	Mileage	Service Performed

STORAGE & COLD WEATHER OPERATION

GENERAL STORAGE NOTES

Information in this section will provide tips for placing your vehicle into storage and how to operate under cold weather conditions. These are just guidelines, you might want to contact your authorized dealer for further suggestions suitable for your local climate conditions.

Storage Checklist

- Wash and wax the exterior of your vehicle.
- Drain and flush the holding tanks and drain the water system.
- Storage in a garage or building would be desirable, if available.
- Park your motorhome on flat, level ground in a protected environment.
- Purchase of a motorhome tarpaulin or fabric covering will help protect your investment.
- Block front and rear wheels and leave the parking brake in the ON position.
- Check the vehicle and auxiliary batteries for charge. Clean battery terminals, if required.
- Check engine oil, transmission fluid and coolant levels. Refer to the chassis owner's manual for instructions.
- Prep the electrical Generator following the manufacturer's instructions.
- Thoroughly clean the interior of your motorhome, including all fixtures and appliances.
- Remove all perishable food from the refrigerator and the galley.
- Clean both the refrigerator and freezer, leave the doors slightly ajar. Note:An open box of baking soda will help absorb any odors.
- Turn off the service valve(s) on LP-Gas tank.
- Turn off all LP-Gas appliances including water heater, refrigerator, stove and furnaces.
- Turn off the water pump, water heater and icemaker switches.
- Turn off the master battery disconnect switch.

Do not operate the engine or generator while your vehicle is parked inside a garage or other enclosed structure. Injury or death can result from carbon monoxide asphyxiation.

- Cover or close off all exterior appliance vents to prevent entrance by rodents or insects. Note: Be sure to remove these coverings before reusing your appliances.
- Close all shades and apply window coverings to reduce the effects of fading on carpets and upholstery. Note: Don't forget to cover the windshield.
- Close and lock all windows and doors and set your alarm, if required.
- Start and run the engine and air conditioner for about 15 minutes every 30 days.

Additional Tips for Extended Storage

- Drain old engine oil and replace with a new filter and oil.
- Add an antioxidant additive to the fuel tank to keep the fuel from deteriorating.
- Remove the vehicle and auxiliary batteries and place them in storage, as unused batteries will discharge themselves.
- Check your tire pressure and install covering for your tires, when not stored inside a garage. Note: Rubber tires age faster when not used and coverings will eliminate direct ultraviolet sun rays on tires to reduce the sidewall cracking.
- Cover the roof air conditioner shrouds and refrigerator vent cover, if your motorhome is not completely covered.
- Slight openings of vents will allow air circulation without worry of water entering. Leaving an air freshener agent will minimize odors from plastics and other materials.
- Check for cracked or peeled sealants around doors, windows and moldings. Replace as necessary following the instructions in Exterior Components Section. Spraying silicone on mechanisms will minimize effects of corrosion.

Starting Up After Storage

If you prepared your motorhome for storage properly then start-up again should be easy. Basically reverse operations from the storage checklists are performed as follows:

- Inspect the outside of your RV. Look for any damage or animal nests in the wheel well areas or engine compartment.
- Remove all tarpaulins and coverings. Look for any water damage.
- Check the engine oil, transmission fluid and coolant levels.
- Install the batteries if removed. Refill the electrolyte solution if low, and recharge batteries as required.
- Check the air pressure in the tires and inspect for damage.
- Start the engine and verify all instruments and gauges are working properly.

- Prepare the generator for operation by following the instructions in the manufacturer's operation manual. Start and run the generator. Look for any leaks.
- Inspect all appliance vents for debris, insects or nests. Ensure all covering have been removed. Then start-up all appliances and verify proper operation.
- Sanitize the fresh water system as per the instructions found in the Plumbing System Section. Fill the water tank and start-up the system again. Check the monitor panel operation and all levels are proper.
- Test the CO Detector, verify the operation of the LP-Gas detector and smoke detector.

COLD WEATHER OPERATION

Although your recreational vehicle has been designed for year around recreational use, extreme cold weather conditions may render the RV temporally uninhabitable and may necessitate taking supplemental steps to assure maximum comfort levels are maintained. To prevent potential freezing of water or drain lines, it may become necessary to supplement the RV heating system installed in your motorhome. Also, it may become necessary to add anti-freeze to the holding tanks and blanket insulation materials to any piping susceptible to freezing in storage areas or exposed to the elements. Note: Keep in mind that your motorhome is not designed to be a permanent dwelling for long term use in freezing and sub-freezing temperatures.

NEVER USE THE RANGE OR OVEN FOR SUPPLEMENTAL COMFORT HEATING: The range or oven should only be used while cooking and then only with adequate ventilation by opening a roof vent or window. All other gas appliances in the RV are vented to the outside and are safe to use continuously. Do not use charcoal grills or any other fuel-burning appliance for comfort heating inside the vehicle. They could cause a fire or cause asphyxiation. Note: All supplemental heating devices must be installed in accordance with the manufacturer's installation instructions and all applicable codes and regulations.

Winter Traveling Tips

- Check your automotive radiator solution to ensure that the antifreeze mix is as recommended for the anticipated temperature.
- Keep your diesel fuel tank full of fuel to prevent condensation.
- Make use of the engine block heater when 120-Volt AC power is available.
- Service and prepare your generator for cold weather operation as per the manufacturer's instructions.
- Stay where 120-Volt AC electricity is available, since even fully charged batteries last only about 15 hours in freezing weather. If shore power is not available, run your generator to recharge the batteries.
- Check water levels and make sure that batteries are fully charged. Batteries will self-discharge quickly if not used for a period of time. Note: Remember that battery water (electrolyte) will freeze at low temperatures.
- If 120-Volt AC is not available, use as little electricity as possible.
- Leave cabinet doors slightly open at night to allow air to circulate in and around the interior.

IMPORTANT

Operate the furnaces to keep the temperature in your motorhome above freezing. Note: The furnace supplies heat to both the interior of your motor home and the water tank and holding tank compartment simultaneously. This will keep your water system and the holding tanks from freezing.

- During cold weather, a common cause of furnace failure is insufficient power from the batteries. Note: Keep your batteries fully charged.
- To receive full benefits of your heating system, do not block furnace heat registers.

Controlling Condensation

Condensation is the excessive humidity inside your motorhome that occurs during wet or winter conditions. Because cold air holds less moisture than warm air, the air immediately adjacent to the cold outside walls and windows cools down and causes water vapor to condense into moisture droplets that fog up your windows while the warmer inside surfaces remain dry. You can control or reduce the effects of condensation during cold weather by taking the following steps:

- Provide adequate ventilation by occasionally opening a roof vent or window slightly.
- Keep the interior air circulating by operating fans to bring in drier outside air and improve overall circulation by cross-flow circulation.
- Operate the range hood fan and the ceiling exhaust fan while cooking. Use the bath vent and fan when bathing to carry out the steaming vapors.
- Use a small dehumidifier to reduce condensation when extremely cold weather makes outside ventilation impractical.
- Positive air ventilation while driving is accomplished by setting the dash heater/air conditioning controls to **VENT** position.

Winterizing the Water System

Complete winterizing procedure is found in the Plumbing System Operation Section.

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