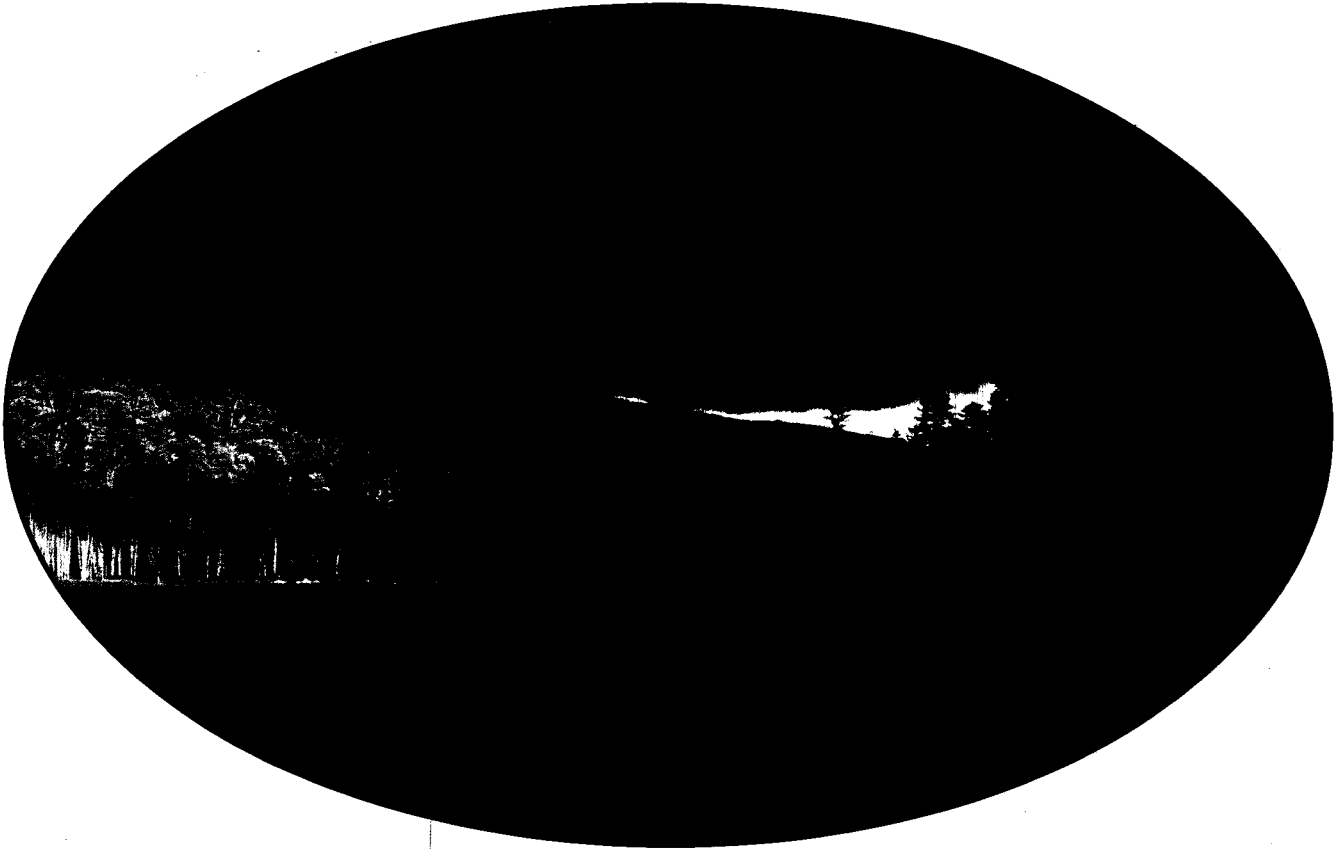


2001-2007



**Coachmen®**



Class A Gasoline  
Owner's Manual





	PAGE		
WELCOME TO "RV'ING" WITH COACHMEN.....	1	OBTAINING SERVICE.....	4
IMPORTANT SAFETY REGULATIONS.....	2-3	Prepare for the Appointment.....	4
INTRODUCTION.....	3	Prepare a List.....	4
TAKING DELIVERY OF YOUR RV.....	3-4	No Offense.....	4
OBTAINING SERVICE.....	4	Inspect the Work Properly.....	4
IMPORTANT DOCUMENTS.....	4-5	<b>IMPORTANT DOCUMENTS.....</b>	<b>4-5</b>
LOADING/WEIGHING.....	5-13	Vehicle Registration.....	4
SAMPLE WEIGHT SHEET.....	7	Licenses.....	4
TOWING.....	8	Insurance.....	5
DRIVING YOUR RECREATIONAL VEHICLE.....	8-13	<b>LOADING/WEIGHING.....</b>	<b>5-13</b>
CAMPING/LEVELING.....	13-16	Weight Definitions.....	5
DRIVING YOUR MOTORHOME.....	17	Weighing Your Motorhome.....	5
SLIDE ROOM OPERATION.....	18-20	Four Corner Weighing.....	6
AIR QUALITY.....	20-26	Weight Definitions.....	6
LIVING AREA.....	27	<b>WEIGHT SHEET.....</b>	<b>7</b>
BASIC UTILITY SYSTEMS.....	28-32	<b>TOWING.....</b>	<b>8</b>
PLUMBING SYSTEM.....	32-37	Hitch Types.....	8
LP GAS SYSTEM.....	37-40	<b>DRIVING YOUR RECREATIONAL VEHICLE.....</b>	<b>8-13</b>
APPLIANCES AND ACCESSORIES.....	40-48	Seat Belts.....	8-9
WINTERIZATION AND STORAGE.....	48-50	Seat Belt Laws.....	9
SAFETY DEVICES.....	51	Pulling Into Traffic.....	10
RV MAINTENANCE.....	51-54	Braking.....	10
ADDITIONAL SAFETY CHECKS.....	54-55	Upgrades.....	10
QUICK REFER. TROUBLESHOOTING GUIDE.....	56-59	Downgrades.....	10
MAINTENANCE SCHEDULE.....	60	Passing.....	10
REPORTING SAFETY DEFECTS.....	61	Swaying or Fishtailing.....	10
<b>IMPORTANT SAFETY REGULATIONS.....</b>	<b>2-3</b>	Cross Winds.....	11
Legend.....	2	Turning.....	11
Liquid Petroleum System and Appliances.....	2-3	Backing.....	11
<b>INTRODUCTION.....</b>	<b>3</b>	Cooling System.....	11
<b>TAKING DELIVERY OF YOUR RV.....</b>	<b>3-4</b>	Parking On A Grade.....	11
Dealer Responsibilities.....	3-4	Freeing a 'Stuck' Vehicle.....	12
Customer Responsibilities.....	4	Recovery Towing On The Road.....	12
		To Prepare Your RV For Towing.....	12
		Speed Control.....	13
		Tire Change.....	13
		Emergency Start Switch.....	13
		<b>CAMPING/LEVELING.....</b>	<b>13-16</b>
		Campsite Selection.....	13
		Set-Up.....	13
		Before you level your coach.....	14
		Leveling your coach.....	14
		Retracting your Leveling Jacks.....	15
		Manually operating your leveling jacks.....	15
		Manual override valves.....	15

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## WELCOME TO "RV'ING" WITH COACHMEN

Welcome to Coachmen's growing family of satisfied RV owners. Hours of relaxation, adventure and enjoyment await you in your new Coachmen RV. Thousands of Coachmen RV owners have been enjoying their purchase for many years.

This Owner's Manual has been prepared to help you and your family enjoy your new Coachmen RV by providing basic instructions for the operation and maintenance of the appliances, accessories and RV systems. Please read it carefully and follow the instructions. Also read and follow the instructions contained in the appliance and accessory manufacturers' instruction booklets provided with your RV.

If you have any questions regarding operation, maintenance or service, please contact Coachmen RV or your Coachmen dealer so we can assist you. Your complete satisfaction is of the utmost importance to your dealer and to Coachmen.

Operation and maintenance instructions regarding appliances in this manual were obtained from the manufacturers' booklets and are used with the permission of those various manufacturers. Coachmen Recreational Vehicle Company, LLC reserves the right to present edited portions of these materials.

Coachmen offers a wide variety of recreational vehicle models and choices of standard and optional equipment; therefore, certain descriptions in this manual may not apply to your RV. Ask your authorized dealer, or see the current brochure for information on the availability of standard or optional equipment.

Thank you for choosing our product. The entire Coachmen family wishes you many safe and enjoyable journeys in your new Coachmen RV.

Sincerely,  
The Coachmen Team





**⚠ WARNING!!!**

Never place or store LP gas containers, gasoline or other flammable liquids inside your RV due to the danger of fire and/or explosion. Additionally, LP gas containers are equipped with safety devices which relieve excessive pressure by discharging gas into the atmosphere which can lead to increased chances of explosion, suffocation or bodily injury when LP gas containers are stored in confined places (such as the interior of your RV).

**⚠ WARNING!!!**

DO NOT fill the LP gas tank yourself. Instead, take your RV to an authorized LP supplier for filling (instructions for filling are found at page 39 of this owner's manual). Make sure that the LP gas tank is not filled to more than 80 percent of its capacity. A properly filled tank will have approximately 80 percent of its volume as liquid petroleum. Overfilling an LP gas container may result in uncontrolled gas flow which can cause a fire or an explosion.

**⚠ WARNING!!!  
IF YOU SMELL GAS:**

1. Extinguish any 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 non-electrical ventilating openings
  5. Leave the area until odor clears
  6. Immediately call your gas supplier and have the gas system checked and leakage source corrected before relighting
- A warning label has been placed in your RV near the range which contains this information.

**⚠ WARNING!!!**

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. Be sure the regulator vent faces downward and the cover is kept in place to minimize vent blockage which could result in excessive gas pressure, fire and/or explosion.

**INTRODUCTION**

Congratulations on the purchase of your new Coachmen® Recreational Vehicle. We sincerely thank you for choosing our product. For your convenience, you'll find many useful tips for planning trips as well as basic operation and maintenance information for your Coachmen Recreational Vehicle systems and appliances in this Owner's information package as well as component manufacturer's manuals supplied with your unit.

Note: Because of individual tastes and the different floor plans offered, your vehicle may not have all of the components illustrated or described in this manual. Ask your dealer for details concerning the specifics of your vehicle.

**TAKING DELIVERY OF YOUR RV**

Your Coachmen® RV has been inspected by factory personnel throughout the manufacturing process. Our final factory check by quality control inspectors is not the last one. Your dealer performs additional pre-delivery inspections and systems checks, and helps you understand the Limited Warranty and complete any necessary forms.

**DEALER RESPONSIBILITIES INCLUDE:**

1. Orienting the customer to the recreational vehicle, its systems and components, and their operation.
2. Insuring the customer receives an Owner's package with registrations for the recreational vehicle and for separately warranted products, including operating and maintenance instructions.
3. Reviewing Limited Warranty provisions with the customer, assisting the customer in completing these forms if he wishes, and requesting that the customer read all warranty information as soon as possible, explaining any provisions not clearly understood.

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4. Instructing the customer how to receive local service and out-of-town service on the recreational vehicle and its separately warranted components, either in or out of warranty.

**CUSTOMER RESPONSIBILITIES**

As a new recreational vehicle owner, you have the responsibility for regular and proper maintenance. This will help you avoid conditions arising from neglect that are not covered by your Coachmen Recreational Vehicle Limited Warranty. Maintenance services should be performed in accordance with this Owner's Manual, the chassis Owner's Manual, and any other applicable manuals.

As the owner, it is your responsibility and obligation to return the recreational vehicle to an authorized dealer for repairs and service. Since the Authorized Dealer from whom you purchased your new recreational vehicle is responsible for its proper servicing before delivery and has an interest in your continued satisfaction, we recommend that inspection, warranty and maintenance services be performed by your selling dealer.

**OBTAINING SERVICE**

**PREPARE FOR THE APPOINTMENT**

If you're having warranty work done, be sure to have your serial number with you. All work to be performed may not be covered by the warranty; discuss additional charges with the service manager. Keep a maintenance log of your vehicles' service history. This can often provide a clue to the current problem.

**PREPARE A LIST**

Prepare a written list of issues or specific work you require to be done. Advise the Service Manager if work has been performed that is not listed on your maintenance log. It is important to keep the log accurate and up to date. Appointments are made according to the type of repair scheduled and the amount of time needed to complete the repair. If you add items after the appointment has been set, discuss the situation with the service manager and list your items in order of priority. Expect to make a second appointment for work not completed or for parts that may need to be ordered.

**NO OFFENSE**

Insurance requirements forbid the admission of customers to a service repair area.

**INSPECT THE WORK PROPERLY**

Inspect the completed repairs when you pick up your vehicle and notify the Service Manager of any dissatisfaction.

**IMPORTANT DOCUMENTS**

**VEHICLE REGISTRATION**

Always carry your vehicle registration, insurance policy card(s) and Owner Warranty registration. If you lend your vehicle, it is best to give the borrower a notarized letter authorizing him to be in possession of the vehicle.

**LICENSES**

Vehicle licensing laws vary from state-to-state. Check with your state license bureau or the nearest licensing branch office for the requirements of your state. Be sure to renew your driver's license if it has expired or will expire during your trip.

**NOTES**






## INSURANCE

Consult your insurance agent about personal liability, property damage, collision and theft of contents insurance for your new recreational vehicle. Always carry your insurance policy and/or card with you when you travel.

## LOADING/WEIGHING

A correctly loaded vehicle is necessary for safe operation. Distribute your cargo evenly from side-to-side and from front-to-back. Heavier items should be stored as centrally as possible, on or near the floor. They should be secured so they cannot slide during a sudden stop, possibly causing damage. (Loose cargo can alter the balance you had when you started.) Lighter items can be stored in overhead cabinets or other areas.

Remember to leave space and weight allowance for souvenirs and other items you may purchase during your travels. A properly loaded vehicle can help conserve fuel and can prevent excessive wear on your vehicle's automotive system.

## WEIGHT DETERMINATIONS

It is extremely important that you weigh your vehicle before you leave on a trip. Check the Gross Axle Weight Rating (GAWR) and the Gross Vehicle Weight Rating (GVWR) found on the Federal Sticker and the unit weight information sheet affixed to each vehicle. The Federal Sticker or certificate lists the unit Serial Number and the front and rear GAWR and GVWR and is located to the left of the driver's seat or on the driver's door jamb. We suggest that you record this sticker information in the space provided here to ensure that you always have the information close at hand.

GVWR _____	GAWR FRONT _____
GAWR REAR _____	WITH _____ TIRES
RIMS _____	AT _____ PSI COLD _____

## WEIGHING YOUR MOTORHOME

You can weigh your mini-motorhome at a grain elevator, sand and gravel dealer, or government weighing station. Keep in mind, you need to weigh your motorhome when it is fully loaded. There may be a small fee; however, it is an investment in safe traveling and peace of mind. Check your Yellow Pages for the address and telephone number of the weighing facility nearest you.

STEP 1—Drive only the front wheels of the unit onto the scale. Compare the weight to the front GAWR listed on the Federal Sticker.

STEP 2—Pull forward so that the front and rear axles are on the scale. Compare the weight to the GVWR listed on the Federal Sticker.

STEP 3—Pull forward so that only the rear axle is on the scale. Compare the weight to the rear GAWR listed on the Federal Sticker.

## NOTES




## FOUR CORNER WEIGHING

It is desirable to obtain the individual weights at each tire, (dual tires on the rear). This requires using scales which are capable of measuring each corner weight individually. The corner weights should not exceed 1/2 of the respective Gross Axle Weight Rating (GAWR) or the maximum load rating for the tire (or dual tires at the rear), which ever is less. The maximum load rating for the tire can be found embossed on the tire's sidewall.

**NOTE:** If any of the corner weights exceed 1/2 of the listed GAWR or tire ratings, relocate the passengers and/or redistribute or remove a portion of the cargo until the weight is within the proper limits for all four corners of the vehicle.

## WEIGHT DEFINITIONS

**GVWR** (GROSS VEHICLE WEIGHT RATING) is the maximum permissible weight of this fully loaded motorhome.

**GAWR** (GROSS AXLE WEIGHT RATING) is the allowable weight, including cargo, which can safely be supported by each axle.

**UVW** (UNLOADED VEHICLE WEIGHT) is the weight of this motorhome as manufactured at the factory with full fuel, engine oil, and coolants. The UVW does not include cargo, fresh water, propane, occupants, or dealer installed accessories.

**NCC** (NET CARRYING CAPACITY) is the maximum weight of all occupants, including the driver, personal belongings, food, fresh water, accessories, etc., that can be carried by this motorhome.

**GCWR** (GROSS COMBINATION WEIGHT RATING) means the maximum allowable loaded weight of your motorhome and any towed trailer or towed vehicle. Actual GCWR of this vehicle may be limited by the sum of the GVWR and the installed hitch rate capacity, See hitch rating label for detail.

**SCWR** (SLEEPING CAPACITY WEIGHT RATING) the manufacturer's designated number of sleeping positions multiplied by 154 pounds (70 kilograms)

**CCC** (CARGO CARRYING CAPACITY) is equal to the GVWR minus each of the following: UVW, full fresh (potable) water weight (including water heater), full propane weight and SCWR

## NOTES




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**MOTORIZED - UNIT WEIGHT INFORMATION SHEET**

11/15/05

This motorhome is designed to allow for a wide variety of uses from extended trips with two people to short trips with multiple people. Accordingly, this unit allows ample room for sleeping, seating, fluids and cargo. While the customer is the beneficiary of this design, the customer also bears the responsibility to select the proper combination of passengers, cargo load and towed vehicle without exceeding the chassis weight capabilities. Seat belts are required to be worn in most states, and should always be used for passenger safety. Seat belts have been provided at most seating locations to allow convenience in selection which seat to occupy. However, it is not intended that all seating positions equipped with seat belts may be occupied while vehicle is in motion, without regard to other weight factors.

**DO NOT EXCEED THE CARGO CARRYING CAPACITY OF THIS VEHICLE**

**PRODUCT: MIRADA-MH 300QB-F    YEAR: 2007    MODEL: 792    SER#: 1TCA0792971800225  
VIN#: 1F6LF53Y860A04058**

**FRONT GAWR: 6000 LBS.    REAR GAWR: 11000 LBS.    TAG GAWR: 0 LBS.**

**\*ACTUAL WEIGHTS AS MANUFACTURED\***

**LEFT FRONT: 2560 LBS.    LEFT REAR: 4430 LBS.    LEFT TAG: LBS.  
RIGHT FRONT: 2560 LBS.    RIGHT REAR: 3750 LBS.    RIGHT TAG: LBS.**

- 15,700 LBS. GVWR (GROSS VEHICLE WEIGHT RATING) is the maximum permissible weight of this fully loaded motorhome.
- 13,300 LBS. UVW (UNLOADED VEHICLE WEIGHT) is the weight of this motorhome as manufactured at the factory with full fuel, engine oil, and coolants. The UVW does not include cargo, fresh water, propane, occupants, or dealer installed accessories.
- 2,400 LBS. NCC (NET CARRYING CAPACITY) is the maximum weight of all occupants, including the driver, personal belongings, food, fresh water, accessories, etc., that can be carried by this motorhome.
- 26,000 LBS. GCWR (GROSS COMBINATION WEIGHT RATING) means the maximum allowable loaded weight of this motorhome and any towed trailer or towed vehicle. Actual GCWR of this vehicle may be limited by the sum of the GVWR and the installed hitch rate capacity. See hitch rating label for detail.

NET CARRYING CAPACITY (NCC) COMPUTATION		
GVWR.....	15,700	7,120.1
Minus UVW.....	13,300	6,031.7
<b>NCC for this motorhome.....</b>	<b>2,400</b>	<b>1,088.4</b>

SCWR (SLEEPING CAPACITY WEIGHT RATING) is the manufacturer's designated number of sleeping positions multiplied by 154 pounds (70 kg) (frames).  
 CCC (CARGO CARRYING CAPACITY) is equal to the GVWR minus each of the following: UVW, full fresh (potable) water weight (including water heater), full propane weight and SCWR.

CARGO CARRYING CAPACITY (CCC) COMPUTATION:		LBS.	(KG.)
GVWR.....		15,700	7,120.1
Minus UVW.....		13,300	6,031.7
Minus fresh water weight of 81.3 gallons @ 8.3 lb/gal (3.8kg/gal).....	675	308.9	
Minus Propane weight of 18.9 gallons @ 4.5 lb/gal (2kg/gal).....	85	37.8	
Minus SCWR of 4 persons @ 154 lb/person (70kg/person).....	See table below		

CCC (@ various vehicle occupancy)

# of Occupants	weight @ 154 lbs/person		CCC	
	LBS.	(KG.)	LBS.	(KG.)
1 Occupant(s)	154	69.8	1,486	673.9
2 Occupant(s)	308	139.6	1,332	604.0
3 Occupant(s)	462	209.5	1,178	534.2
SCWR 4 Occupant(s)	616	279.3	1,024	464.3

\*Dealer installed equipment and towed vehicle tongue weight will reduce CCC

**ALL WEIGHTS ARE APPROXIMATE** and provided to assist the operator in the proper loading of this vehicle.  
**WARNING: CONSULT OWNER MANUAL(S) FOR SPECIFIC WEIGHING INSTRUCTIONS AND TOWING GUIDELINES INCLUDING AUXILIARY BRAKE REQUIREMENTS FOR ANY TOWED TRAILER OR TOWED VEHICLE.**

**NOTES**

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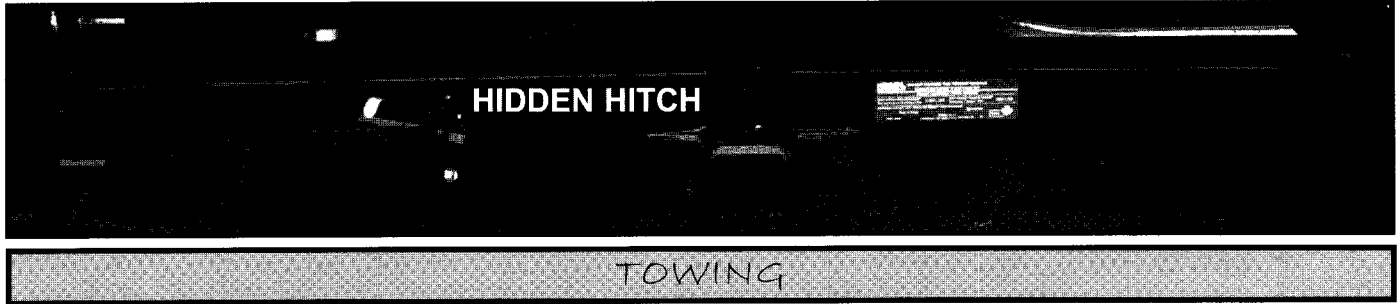
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If your RV is equipped with an optional hitch towing package, do not exceed the Gross Combined Weight Rating (GCWR) as stated in the chassis manufacturer's owner's manual, or the rated capacity of the installed hitch (whichever is less).

### HITCH TYPES

#### STANDARD

<u>CLASS</u>	<u>TYPE</u>	<u>MAX. G.T.W.</u>	<u>MAX T.W.</u>
I	Weight Carrying	2000 lbs	200 lbs
II	Weight Carrying	3500 lbs	300 lbs
III	Weight Carrying	5000 lbs	500 lbs
IV	Weight Distributing	10000 lbs.	1000 lbs
V	Weight Distributing	14000 lbs.	1700 lbs.

(G.T.W.=Gross Trailer Wt. T.W.=Tongue Wt.)

**Note:** Carrying capacities may vary by hitch manufacturer. The above chart is to be used as a guide only. Please consult the hitch manufacturer for more information concerning your specific needs.

### DRIVING YOUR RECREATIONAL VEHICLE

Get to know how your vehicle handles. Power steering and power brakes help make driving your motorhome as effort-less as possible. Keep in mind it is longer, higher, wider and heavier than the family automobile, and the driving compartment is located forward of the front wheels.

Before leaving on a trip, practice making right and left turns, braking, backing and accelerating. Your vehicle is designed to travel at maximum legal highway speeds, under ideal conditions. Under less than ideal conditions, your vehicle should be operated at reduced speed and it should never exceed the posted legal speed limits.

#### **SEAT BELTS**

Seat belts are an important safety feature of your vehicle. For your protection, fasten all seat belts while your motorhome is in motion. Adjust the belt low on the abdomen and as snugly as comfort will allow, for greatest safety. Never use a belt for more than one person at a time. **CAUTION:** All occupants should be furnished with and use seat belts while the vehicle is in motion. Do not occupy the beds while traveling as safety protection is not provided.

<b>NOTES</b>



For your safety, our seat belts meet the FMVSS standards as stated by the government.



**DRIVER & PASSENGER SEATS**

Some driver and passenger chairs slide, swivel and recline; others may slide and swivel or slide only. Have a dealer demonstrate the operation of the drivers' seat in your RV.



**SEAT BELT LAWS**

Since seat belt laws differ from state to state, be sure to familiarize yourself with the law in the state(s) you plan to visit. Some states have laws that pertain only to the driver and other states have laws that also regulate seat belt use for passengers. Canada also differs from province to province.

**NOTES**




### **PULLING INTO TRAFFIC**

One of the most important safety practices for the RV driver is to make directional changes slowly. A rapid lane change may cause an accident, but a very-deliberate lane change permits the other driver to give a blast on his horn, and/or take evasive action. Check for oncoming traffic in all directions. Signal before entering the flow of traffic. Always accelerate slowly and smoothly; the weight of your motorhome makes quick acceleration not only difficult but potentially unsafe.

### **BRAKING**

Allow a safe distance to stop; follow no closer than one vehicle length for each 10 mph. Pump the brake pedal lightly to stop on wet or icy roads. If you start to slide, turn the wheel in the direction of the slide. Do not "slam on" the brakes; a sudden stop may increase the slide. Gradual braking, permitted by keeping good distance between vehicles, helps prevent rear-end collisions.

Added weight requires increased braking distances, and motorhome owners must be particularly aware of brake fade hazards. Brake fade is overheating of brake surfaces to the point where friction is greatly diminished or lost. The result is a brake pedal that is firm to the foot but produces little or no stopping action.

Proper use of brakes will prevent fade. It normally occurs while traveling on downhill grades that require frequent brake application in order to hold speed to the desired level. In an RV, the brakes may become superheated after several applications and an accident may occur. To avoid this problem, use lower gears to retard vehicle speed to the point where only occasional brake application is necessary.

### **UPGRADES**

To avoid engine overheating when climbing a steep grade, reduce speed and shift the transmission to a lower gear. Because RV's climb hills more slowly than most passenger cars it's important to practice good manners and avoid holding back faster traffic. Not only does it improve the image of the RV owner, it reduces hazards. Also, it's simply good manners to drive slightly to the right, so other drivers can more easily see around your motorhome. The RV owner who hugs the center line tends to create animosity behind him.

### **DOWNGRADES**

When you are going downhill, reduce your speed and shift the transmission to a lower gear to assist in braking on long or steep downgrades.

### **PASSING**

Avoid sudden maneuvers when passing a slower-moving vehicle. Remember that additional time and distance are required to pass safely. Wait until the road is clear of oncoming traffic for at least 1/2 mile. Check the outside rearview mirrors and signal lane changes before passing other vehicles. When you have safe clearance, signal lane change and return to your original lane.

### **SWAYING OR FISHTAILING**

If this happens while you are towing a vehicle, accelerate slightly and then gradually slow down. If your unit still sways, pull off the road and check the following:

1. towing equipment,
2. distribution of cargo,
3. tire pressure, and
4. mini-home front-end alignment and suspension.

### **NOTES**




### CROSS WINDS

When traveling against strong cross winds, it is best to reduce speed. Remember to steer slightly into the wind when you feel your RV drifting with the cross wind. The key is not to oversteer in this situation.

### TURNING

Pull several feet farther ahead before turning. This will compensate for the extra width and length of your motorhome and will help you avoid hitting curbs or parked vehicles.

### BACKING

Remember that your motorhome is higher, wider and longer than other vehicles you may own, so it is extremely important that you back the unit slowly. Because visibility is somewhat restricted, backing the unit may require stationing someone beside the unit to guide the driver.

### COOLING SYSTEM

1. Equipment such as flashing lights and sirens, spare tires, or any other accessories should not be installed in the grille area forward of the radiator or air cleaner air inlet. Doing so restricts proper air flow through the radiator and engine compartments.
2. For proper engine cooling, do not alter, change the locations of, or remove the original equipment fan and shroud.
3. Maintain a 50/50 antifreeze to water ratio when adding or modifying the heater system or auxiliary heater system. A 60/40 antifreeze to water ratio may be necessary during winter months in very cold climates. For the remainder of the year, however, a 50/50 ratio should be maintained.
4. Radiator and heater hoses which are added or replaced should be EPDM/NOMEX composition.

If your motorhome's engine overheats, pull well off the road. Shift to Park (P) and run the engine with your foot resting lightly on the accelerator pedal. If the engine does not cool within 2 to 3 minutes, turn it off and locate the problem. Engine temperature problems may be avoided if you climb long grades and descend moderately steep grades in second gear; climb steep grades in first gear and if your unit has auto air conditioning, turn it off.

### PARKING ON A GRADE

Parking vehicles on an upgrade or downgrade is not recommended. If it is necessary in an emergency, always apply the foot brake, then set the parking brake before moving the shift lever to Park (P). When preparing to move the vehicle, move shift lever out of Park before releasing the parking brake.

If this sequence is not followed, you may not be able to move the shift lever out of Park. If this torque lock does occur, you may need to have another vehicle assist you in relieving the pressure on the shift lever. On severe grades it may be necessary to have a passenger place wheel chocks behind the tires of your motorhome.

Use the foot brake or parking brake and Park (P) position to hold the vehicle on an upgrade. Using a driving gear to hold the unit may cause the engine or transmission to overheat. DO NOT idle the engine for more than one minute with the transmission in gear.

### WARNING!!!

DO NOT race the engine or spin the wheels; prolonged efforts to free a stuck vehicle may result in overheating and transmission and axle failure.

### NOTES




**⚡ WARNING !!!**

DO NOT exceed the maximum speed listed in the chassis manufacturer's manual for first and second gear — excessive engine speed will overheat the transmission, which may cause early transmission failure.

**⚡ WARNING !!!**

DO NOT use any auto speed control when conditions are not suitable for maintaining a constant speed, such as in heavy or varying traffic, in strong winds, or on slippery, winding or unpaved roads. Never shift to Neutral (N) when using the speed control; it will cause the engine to over-speed. Use only properly installed, FCC-approved radio transmitting equipment (such as CB radios). Use of other transmitting equipment may cause the cruise control to malfunction.

**FREEING A 'STUCK' VEHICLE**

To pull your vehicle out of the snow, sand or mud, apply slight pressure to the accelerator pedal and move the gear selector lever rhythmically between first gear and Reverse (R). If possible, keep the front wheels pointed straight ahead. Avoid sharp turns. Once the unit starts to move, do not stop until it is on firm ground.

**RECOVERY TOWING ON THE ROAD**

If your RV needs to be towed the following guidelines should be used:

1. The vehicle **MUST** be towed only from the front. See **Chassis Operators Manual**.
2. Be prepared to give the tow truck operator the following information when you call:
  - Length and height of motorhome.
  - Chassis Manufacturer gross vehicle weight rating.
  - Axle weight ratings.

(This information is found on the vehicle certification label located to the left of the drivers seat.)

3. It is recommended you use an **UNDERLIFT** type towing assembly for safe towing.

**TO PREPARE YOUR RV FOR TOWING:**

1. Secure any loose protruding body parts of the disabled vehicle.
2. Secure any heavy loose items in the interior.
3. Turn off all LP gas appliances and LP gas tank valve.
4. Do not allow anyone to ride in the towed vehicle.

**⚡ WARNING !!!**

Do not allow your motorhome to be towed without having the tow truck operator read this section and/or related sections of the Chassis Operators manual.

**NOTE:**

COACHMEN INDUSTRIES DOES NOT ASSUME RESPONSIBILITY FOR DAMAGE INCURRED DURING TOWING.

**NOTES**






## SPEED CONTROL

If your motorhome is equipped with a cruise control device, it may be used to maintain constant speeds at over 30 mph. The speed controls may be on the turn signal lever or on the spokes of the steering wheel. Despite the varying locations, the basic operation of each is similar. However, certain speed control devices have specific differences, so it is important that you very carefully read the instructions in the Chassis Operator's Manual.

## TIRE CHANGE

Due to the high torque of lug nuts on the chassis wheels, as well as the size and weight of the tires/wheels, it is recommended that only professional tire/wheel service centers or specialized road side assistance companies change or rotate your tires/wheels.

## EMERGENCY START SWITCH



Your vehicle is equipped with an emergency start switch, located on the dashboard. This switch allows you to switch to the coach battery to start the engine in the event of a low chassis battery. To activate the emergency start, push and hold in the emergency switch, then start the engine. Once the engine has started, release the switch.

## CAMPING/LEVELING

### CAMPSITE SELECTION

There are many campground guides that will assist you in making your selection. Many campgrounds accept reservations, and during peak seasons, and it is wise to make a reservation. If possible, arrive early so you can inspect and choose your campsite during the daylight hours.

During the winter months it is desirable to take advantage of natural windbreaks like trees, bushes or any similar type of windbreak. This will cut down the possibility of cold drafts that can affect the comfort level of your unit.

### SET-UP

It is very important that your unit is level. Having your RV level allows your refrigerator and drainage systems to operate properly (both function by gravity).

To determine levelness, place a level on the bottom of the refrigerator's freezer compartment or in a normally level location inside the vehicle. You may wish to permanently attach levels (available at your dealer) on the front and/or back and sides of the RV. This will allow you to tell at a glance if you've stopped on a level site and will help speed the leveling process.

### NOTES




## BEFORE YOU LEVEL YOUR COACH

- Parking brake must be set and transmission must be in "park" ("neutral" for diesel coaches) before jacks will operate.
- Check leveling site to make sure obstructions have been cleared away for proper jack operation.
- Selecting a site: When the coach is parked on an excessive slope the leveling requirements may exceed the jack lift stroke capability. If the coach is parked on an excessive slope, the coach should be moved to a more level surface before the leveling system is deployed.

### CAUTION!!!

Keep people clear of coach prior to turning the leveling system on and while leveling system is in use.

### CAUTION!!!

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

### CAUTION!!!

If your coach is equipped with a slide out(s) always level your unit first, and then operate the slide out room(s). When retracting the slide(s), always retract the room(s) first then retract the leveling jacks. Following this procedure will produce the least amount of stress on your chassis.

### CAUTION!!!

Please read your Lippert Components owners' manual (the manufacturer who built and designed your motor home) for further leveling and slide out room operating information and safety features.

### WARNING!!!

THIS IS A LEVELING SYSTEM ONLY AND IS NOT INTENDED TO LIFT YOUR COACH'S TIRE OR TIRES COMPLETELY OFF THE GROUND. ATTEMPTING TO LIFT YOUR COACH COMPLETELY OFF THE GROUND (FOR EXAMPLE, TO USE THIS LEVELING SYSTEM TO CHANGE A TIRE) COULD CAUSE DAMAGE TO THE SYSTEM AND SERIOUS INJURY TO THE PARTIES INVOLVED. IF A TIRE SHOULD REQUIRE CHANGING PLEASE HAVE THE PROPER EQUIPMENT AND CONTACT A PROFESSIONAL.

## LEVELING YOUR COACH

1. Turn on the ignition and start the coach. Your leveling control will start a self check sequence indicated by the lights on the panel blinking in a rotating pattern. It will turn off when it has finished its self check.
2. Push the "On/Off" button on control panel. The system is now operational and the "On/Off" LED will turn on.
3. Check to see that the engage parking brake light is not illuminated. If so, engage the parking brake. (Your coach will have to be in neutral or park to operate the system).
4. Push the "AUTO" button. The automatic leveling system will begin its leveling procedure. Please avoid movement in the coach during automatic leveling as it can cause errors in the results. It will signal that it has completed the process by illuminating the center green "LEVEL" light. Check to make sure that all jacks are on the ground. Also check to make sure that no tire is off the ground. If so, your leveling process is complete. If further adjustments are needed, refer to the "Manual Operation" section.
5. You can then turn the system off by pushing the "On/Off" button again.

## NOTES





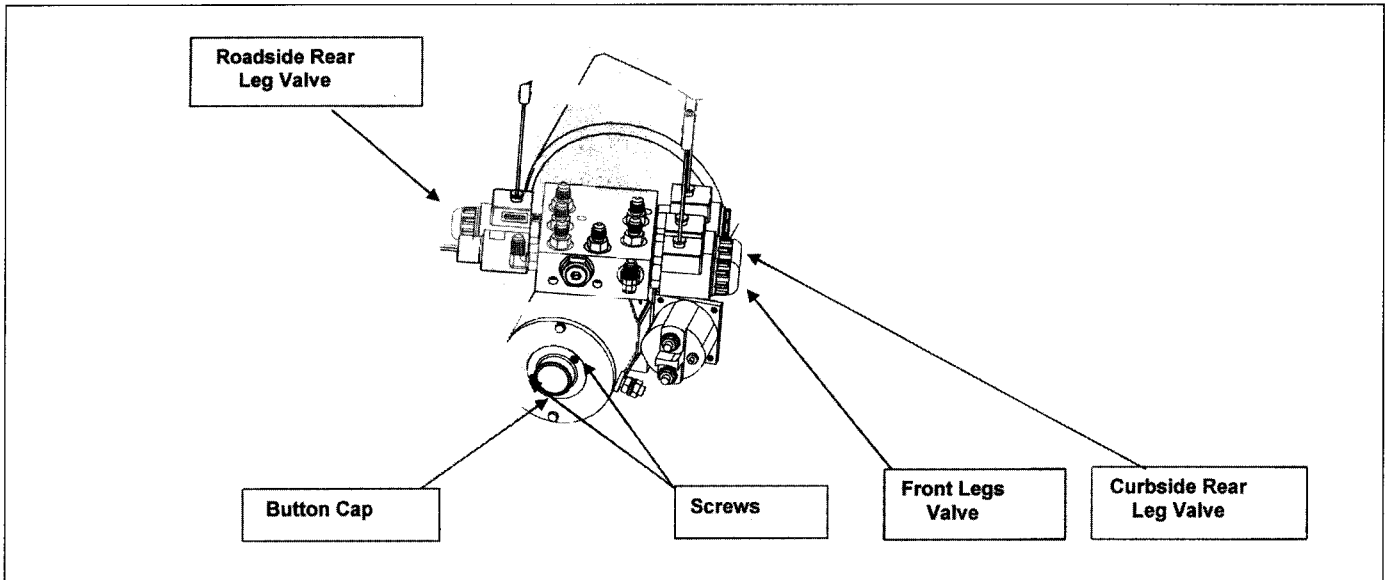

To use the MOV's:

1. Remove the button cap from the end of the electric motor. First remove the two inner most Phillips head screws from the top of the motor. The button cap can now be removed from the electric motor. You should now see a 7/16" over ride nut on the end of the electric motor shaft.

**⚡ WARNING!!**

Care must be taken during the next step to prevent bodily injury or death. The next step will allow fluid to transfer from the legs to the reservoir. This procedure will allow the coach to descend. Keep all personnel and equipment clear of the coach. Make sure no one is under the coach prior to this procedure. Do not have any body parts or equipment positioned such that the coach will descend on it.

2. After verifying all personnel and tools are clear of the coach, press the rubber cap on the valve for the front legs valve. The front end of the coach will start to descend. Only allow the coach to descend for 2 inches.
3. Push and hold the rubber cap on the Roadside Rear valve. Allow the coach to descend for 2 inches.
4. Push and hold the rubber cap on the Curbside Rear valve. Allow the coach to descend for 2 inches.



5. Repeat procedures 2-4 until the weight of the coach is transferred off the jacks and onto the suspension and tires.
6. This procedure will retract the front legs. Using a 7/16 socket attached to a drill, spin the override nut clockwise while holding the button on the front legs valve. Stop when the legs are fully retracted.
7. This procedure will retract the roadside rear leg. After the front legs are retracted, press the button on the roadside rear leg valve and spin the override nut clockwise. Stop when the leg is fully retracted.
8. This procedure will retract the curbside rear leg. After the front legs are retracted, press the button on the curbside rear leg valve and spin the override nut clockwise. Stop when the leg is fully retracted.
9. Replace the button cap on the electric motor and securely tighten the Phillips head screws.

**NOTES**






## SLIDE ROOM OPERATION

### DESCRIPTION

The Lippert Above Floor Slideout System is a rack and pinion style slide system. Utilizing a bi-directional electric motor to actuate the drive shaft, the slideout room is extended and retracted from the same source. The actuator has a built-in automatic braking feature. The Lippert Above Floor Slideout System is designed as a negative or positive ground system.

There are no serviceable parts within the electric motor. If the motor fails, it must be replaced. Disassembly of the motor voids the warranty.

Mechanical portions of the slideout system are replaceable. Contact Coachmen Service Parts or your dealer, to obtain replacement parts.

### ABOVE FLOOR AND FLUSH FLOOR SLIDEOUT SYSTEMS

The Lippert Above Floor Slideout System is intended for the sole purpose of extending and retracting the slideout room. Its function should not be used for any other purpose or reason than to actuate the slideout room. To use the system for any other purpose may result in damage to the coach and/or cause serious injury or even death.

Before actuating the system, please keep these things in mind:

1. Parking locations should be clear of obstructions that may cause damage when the slideout room is actuated.
2. Be sure all persons are clear of the coach prior to the slideout room actuation.
3. Keep hands and other body parts away from slideout mechanisms during actuation. Severe injury or death may result.
4. To optimize slideout actuation, park coach on solid and level ground.

### PRIOR TO OPERATION

Prior to operating the Lippert Above Floor Slideout System, follow these three(3) guidelines:

1. Coach should be parked on the most level surface available.
2. The PARKING BRAKE should be engaged.
3. The transmission must be in PARK.

### NOTES




## OPERATING SYSTEM

### **WARNING!!!**

FAILURE TO ACT IN ACCORDANCE WITH THE FOLLOWING MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

### EXTENDING SLIDEOUT ROOM

1. Level Unit and remove safety travel locks (if provided)
2. Be sure all persons are clear of the coach prior to slideout actuation.
3. Verify the battery is fully charged and hooked up to the electrical system.
4. Keep hands and other body parts away from slideout mechanism during actuation.
5. Press and hold the IN/OUT switch in the OUT position until room is fully extended and stops moving.
6. Release switch, which will lock the room into position.

**NOTE:** Only hold OUT switch until room stops

### RETRACTING SLIDEOUT ROOM

1. Verify the battery is fully charged and hooked up to the electrical system.
2. Be sure all persons are clear of the coach prior to slideout actuation.
3. Keep hands and other body parts away from slideout mechanism during actuation.
4. Press and hold the IN/OUT switch in the IN position until room is fully retracted and stops moving.
5. Release the switch. This will lock the room into position. Reinstall safety travel locks (if provided)

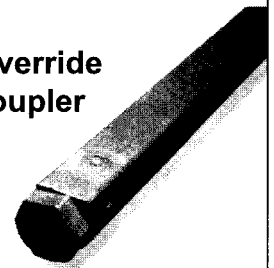
**NOTE:** Only hold IN switch until room stops.

### AURORA FLUSH FLOOR SLIDEOUT

#### MANUAL OPERATION (MAIN SLIDEOUT ROOM)(FIG.5)

1. Prior to Manual Operation, be sure slideout area is clear of any obstructions that may impede the extension or retraction of the slideout room, including transit bars.
2. Locate the override shaft on the driver's side wheel well behind the front tire or in front of the rear tire.
3. Push and hold the manual override switch on monitor panel
4. Using a 15/16 socket and ratchet, manually crank the slideout room in.

**Fig. 5 Manual Override Cross Shaft Coupler**



**Aurora Flush Floor (Below Floor) Slideout**

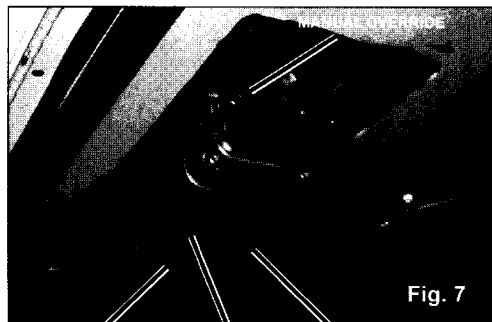
### MIRADA/AURORA ABOVE FLOOR MAIN/SECONDARY SLIDEOUT

#### AURORA ABOVE FLOOR SECONDARY (WARDROBE/GALLEY) SLIDEOUT (FIG. 7)

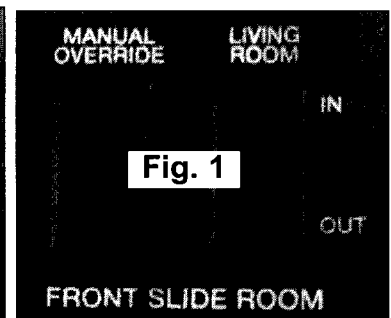
- Remove the ABS motor cover attached to the bottom of the floor. This is located inside the compartment door under the slideout room.

- Push and hold the manual override switch on monitor panel

- Manually crank the room in by the 3/4 hex nut located on the motor/gearbox assembly.



**Fig. 7**  
MOTOR BRAKE WIRE (BROWN) POSITIVE WIRE (RED) GROUND WIRE (BLACK)



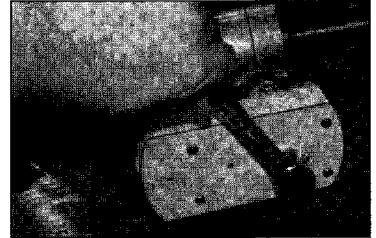
**Fig. 1**

**FRONT SLIDE ROOM**



### MIRADA/AURORA ABOVE FLOOR BEDROOM SLIDEOUT ROOM MANUAL OPERATION

1. Lift the mattress platform and remove the carpeted cover to access the motor/gearbox assembly.
2. Push and hold the manual override switch on the monitor panel.
3. Manually crank the room in with the hex nut located on the motor/gearbox assembly.



SHOULD YOU REQUIRE ADDITIONAL ASSISTANCE, PLEASE DO NOT HESITATE TO CALL COACHMEN CUSTOMER SERVICE AT 800-453-6064.

## AIR QUALITY

### FORMALDEHYDE EMISSIONS

**Some of the construction materials used in recreational vehicles emit formaldehyde in low concentrations.** Formaldehyde is a colorless, strong-smelling gas that is normally present at low levels in both indoor and outdoor air. However, temporary eye, nose, and throat irritation, headache, nausea, and a variety of asthma-like symptoms, including shortness of breath, have been reported as a result of formaldehyde exposure at elevated exposure levels. While the severity of such symptoms is generally mild, formaldehyde can affect people differently. Some people are very sensitive while others may not have any noticeable reaction to the same level. Elderly persons and young children and anyone with a history of asthma, allergies, or lung problems may be at greater risk. If you can smell formaldehyde in your coach, you should ventilate it immediately. If you are extremely sensitive to formaldehyde, you may not wish to use a recreational vehicle. Research is continuing as to the possibility of any long term effects of exposure to formaldehyde.

**Reduced or limited ventilation may allow formaldehyde and other contaminants to accumulate in the indoor air.** Ventilation is available in your recreational vehicle through screened windows, roof vents, power roof vents and range vents. Additional ventilation to dilute the indoor air may be obtained by ventilation systems available through your dealer. In addition, aftermarket products such as air purifiers are readily available and can be very effective.

**High temperatures and humidity may raise formaldehyde levels.** Proper ventilation is essential while traveling or camping in your RV. If your recreational vehicle will be used in extreme summer temperatures, use your air conditioner to control indoor temperature levels. When storing your RV in extreme summer temperatures, be sure your RV is properly ventilated. Always allow your RV to "air out" or ventilate before leaving on a trip.

### CONDENSATION

Condensation is the natural process by which a gas or a vapor condenses to a liquid form. RV owners typically encounter this process when water vapor condenses to water when there is too much moisture in the air and not enough air movement. Although your Coachmen RV is modern, tightly constructed and well insulated, condensation can occur inside the coach. Certain amounts of condensation are normal and should be expected, especially on cool surfaces such as windows, roof vents and metal door frames. However, the owner must take steps to avoid condensation by minimizing humidity and promoting proper air circulation. Unusual or excessive condensation can cause severe water damage to the coach, its insulation and its contents.

NOTES





## CONTROLLING CONDENSATION

- **MOISTURE MANAGEMENT GUIDE:** Follow the recommendations set forth in the Moisture Management Guide, located in this section of the owner's manual.
- **QUICK ACTION:** If leaks or spills occur indoors, clean them up quickly. Drying areas quickly reduces the chance for moisture damage and possible mold growth.
- **REPAIR:** Regularly clean and repair any items installed on the roof. Check for debris or blockages in the vents. (If roof vents are properly maintained and sealed, yet you still have water dripping from the vents, it could be condensation.) Be sure all seals are tight and check for loose screws or moldings.
- **LOWER THE HUMIDITY INSIDE YOUR RV:** Keep indoor humidity below 60 percent relative humidity (ideally between 30 to 50 percent). In cold climates, relative humidity may need to be at 35% or less to avoid window condensation issues. Relative humidity can be measured with a humidity meter (a "hygrometer"), which is available at most hardware stores, electronics stores and building supply stores. The hygrometer is an inexpensive way to avoid costly water damage repairs.

### **CAUTION!!!**

Condensation may occasionally appear on cool surfaces such as roof vents and metal door frames and may also appear as water, fog, frost or ice on the inside of windows. The owner must be aware of evidence or possible excessive or unusual condensation and/or trapped water, such as: continuous or frequent condensation, water stains on the ceiling, warped moldings or trims, water running down the walls, dripping from fixtures, softened walls, softened ceiling materials, damp carpet, damp or ineffective insulation, paint failure, mold, mildew and/or damage to furniture. Should any of these conditions occur, be sure to check all of the normal functions of your RV for other possible causes (for example, leaks, plumbing, seals, the windows and the roof). Further, if any of these conditions occur, it is recommended that you take steps to repair any damage and to prevent further damage from occurring. Left unchecked, repairs for water damage could become very costly, and preventable damage is not covered under your warranty.

### **NOTE:**

Even if it is raining or snowing, opening a vent for more air circulation will decrease moisture. Ventilated air from outside is drier than interior air.

### **NOTE:**

If you follow these guidelines and continue to experience an excessive amount of moisture, it is recommended that you use a dehumidifier in your RV. If the RV is used the majority of the time in a hot and/or humid climate, it may be difficult to keep relative humidity below 60%. Although a dehumidifier may help, it is important to check the condensation (water) collection bucket regularly or discharge the condensation (water) directly into a drain.

### **CAUTION!!!**

Keep in mind that your RV is a confined space and, unlike a permanent dwelling, has limited venting capacity. Activities such as cooking, dish washing, cleaning, laundry and bathing add moisture to the air. When performing these activities, remember to keep your RV well ventilated to allow moisture to escape. You will decrease the risk of excessive condensation by being aware of these causes and taking these precautions.

## NOTES






- 5.0 Storage of Your RV
- 6.0 Modifications of Your RV
- 7.0 Wet Areas
- 8.0 Additional Resources

**⚠ CAUTION!!!**

These suggestions are intended to minimize moisture-related issues with your RV. To maintain the value of your investment, please read and follow your owner's manual and the suggestions provided below. Contact your manufacturer if you have any questions.

**1.0 Interior Care of Your RV**

Signs of excessive moisture can be obvious, such as water droplets forming on surfaces or wet carpet. Conversely, signs of excess moisture can be subtle, such as condensation forming on metal surfaces. When symptoms appear it is important to timely determine the cause of the excess moisture and take appropriate corrective action to prevent moisture related damage.

**1.1 Control Relative Humidity**

Monitoring and controlling relative humidity within the RV is one of the most important steps to minimize the risk for moisture-related damage. Relative humidity should be at 60% or less (and ideally between 30% and 50%). Relative humidity can be monitored utilizing a portable hygrometer, a small device that measures temperature and relative humidity. Inexpensive Hygrometers are available at hardware stores, electronic stores or building supply stores.

Use exhaust fans, the air conditioner, and /or a portable de-humidifier to manage moisture inside the RV to maintain relative humidity at 60% or less. In cold climates, relative humidity may need to be at 35% or less to avoid window condensation issues.

If the RV is used the majority of the time in a hot and/or humid climate, it may be difficult to keep relative humidity below 60%. A dehumidifier will help, but it is important to check the condensation (water) collection bucket regularly or discharge the condensation (water) directly to a drain.

**1.2 Avoid Drastic Thermostat Setbacks**

Cooler surface temperatures increase the potential for condensation and surface mold growth. To minimize the opportunity for condensation to form on interior surfaces, maintain a comfortable temperature in your RV, and avoid night-time setbacks of 10 degrees or more. Drastic setbacks that reduce the indoor air temperature quickly can increase the chance for airborne moisture to condense on cool surfaces such as windows. If you are away from your RV for an extended number of days, we recommend that you do not set the temperature back without taking other measures to manage relative humidity, including operating a de-humidifier with a continuous drain.

**1.3 Manage Window Condensation**

Window condensation issues can be identified by water or ice-build up, usually at the base of the window. The majority of these problems can be addressed by managing moisture generated inside the RV. Minor condensation issues are not unusual, especially for RV's used in colder climates.

**NOTES**

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The key is to manage this small amount of moisture if evident by wiping the surface, and as discussed in 1.1 above, maintaining a reasonable relative humidity within the unit.

To help minimize window condensation, use exhaust fans vented to the outside, avoid drastic changes in thermostat settings, do not use 'vent-free' heaters and use window coverings wisely. For example, make sure to open curtains or blinds during the day to allow air to circulate and warm the window surface.

#### **1.4 Carpet Care and Moisture Management**

To keep your carpet serviceable and looking new for years to come, the carpet should be cleaned when it shows signs of discoloration or traffic patterns. A steam cleaning system should be used to clean the carpet unless otherwise noted in your owner's manual or warranty information. To manage moisture from the cleaning process, the cleaning system needs to be capable of extracting the excess water from the carpet after it has been cleaned. Important: Be sure the carpet is thoroughly dry before closing up the RV for storage. Water from the cleaning process can cause significant damage to the RV if the carpet is not completely dry before closing up the RV for an extended period.

#### **1.5 Cleaning Tile and Wood Floors**

Please refer to your owner's manual or warranty information for cleaning instructions for the tile or wood floor installed in your RV. Most floors only require a mild detergent and warm water for cleaning. More water on the floor is not always better for cleaning. Use a damp cloth to clean on a regular basis rather than wet mopping each time.

#### **1.6 Storage & Other Isolated Areas within the RV**

Storage areas are more difficult to condition since the areas are isolated from the main body of the RV. The surfaces of these areas are more at risk for condensation and surface mold growth. To minimize this risk, clean storage areas regularly, and allow an air space between stored items and the exterior wall to promote air circulation.

#### **1.7 Use of Un-vented Combustion Equipment**

Un-vented combustion equipment, such as propane stove tops are a source of moisture within the RV. For every gallon of fuel consumed, approximately one gallon of water vapor is evaporated into the air. Whenever possible, operate an exhaust fan in combination with the use of any un-vented combustion appliance within the RV. Water vapor and other combustion byproducts should be vented to the exterior of the RV. The RV owner should strictly follow use and maintenance instructions for safe operation of any combustion equipment, particularly un-vented equipment.

### **2.0 Exterior Care of Your RV**

The exterior shell of the RV is the primary weather and moisture barrier. Over the life of the vehicle, the shell will require regular care and maintenance in accordance with the owner's manual. The shell includes the roof, sidewalls, windows, doors, and under-floor of the vehicle. Particular attention needs to be devoted to ensure these components are maintained to ensure a tight barrier against bulk water intrusion.

The shell should be inspected periodically for tears, gaps, and the condition of sealants in accordance with your owner's manual. Areas that require maintenance should be re-sealed utilizing a similar, high quality sealant used by the manufacturer.

Particular attention should be devoted to ensure the slide out(s) are functioning properly. Each time a slide out is used it should be inspected to ensure proper operation and sealing. The slide out gaskets should also be inspected to ensure proper sealing when the slide out is operated.

NOTES



### 3.0 Use of Your RV

It is important to remember that the square footage of an RV is significantly less than that of a single family residence. This fact alone will elevate the relative humidity because there is less volume of air to help absorb or dissipate the humidity. For example, showering and cooking create a lot of humidity in a small area. In these instances, use of an exhaust fan and opening windows should reduce the relative humidity, particularly when living in the RV for an extended period.

### 4.0 Severe Environments

Prolonged use of your RV in severe environments - for example in extremely cold or hot-humid climates, will require extra care and maintenance to avoid moisture-related issues.

In both extremely cold and hot and/or humid climates, more attention needs to be focused on controlling relative humidity within the RV. It also may require the use of a portable dehumidifier to manage relative humidity within an acceptable range. This is discussed further in section 1.0.

If you have any questions about moisture-related issues in the environment you plan to use the RV in for a majority of the time, contact your manufacturer's representative.

### 5.0 Storage of Your RV

During those periods when your RV is not in use, care must be taken to ensure moisture sources are addressed. Ideal storage of your RV would be in an enclosed, climate controlled environment. When storing your RV, the following steps should be taken to ensure moisture is controlled:

- a. Turn off all water sources;
- b. Turn off all combustion appliances;
- c. Drain the water tank(s);
- d. Drain the water heater;
- e. Open all closets, cabinet doors and drawers;
- f. Close all windows and entrance doors;
- g. Open a vent or a window enough to allow for some limited ventilation air flow, but not so far as to allow snow or rain to enter;
- h. When storing the RV in high humidity climates (ambient relative humidity is greater than 60% year round), add a dehumidifier drained to the exterior to control humidity inside the RV during storage; and

## NOTES




**6.0 Modifications to your RV**

Consult with your manufacturer for guidance prior to making any modifications to your RV. It is important that changes be completed by a qualified service firm to ensure moisture intrusion or accumulation problems do not occur.

**7.0 Wet Areas**

Areas that are exposed to water spills or leaks should be dried as soon as possible and definitely within 24-48 hours. Drying areas quickly reduces the chance for moisture damage and possible mold growth, which can begin to form colonies in 48 hours. A variety of methods can be used to help the drying process:

- Remove excess water with an extraction vacuum
- Use a dehumidifier to aid drying
- Use portable fans to move air across the surface
- Because moisture is key to mold issues, treat all signs of condensation and spills seriously and deal with promptly. Failure to deal with a moisture issue promptly may cause more severe issues where none initially existed, or may make a small problem much worse.
- Learn to recognize signs of mold - don't paint over or cover up suspicious discoloration until you are sure it is not mold. The affected surface must first be cleaned and dried; residual staining may be painted;
- Be sure to understand and eliminate the source of moisture accumulation as a part of the clean-up. Otherwise, the same issues will simply reoccur; and
- Small amounts of mold should be cleaned as soon as it appears. Small areas of mold should be cleaned using a detergent/soapy solution or an appropriate household cleaner. Gloves should be worn during cleaning. The cleaned area should then be thoroughly dried. Dispose of any sponges or rags used to clean mold.

**8.0 Additional Resources**

If you are interested in more information on moisture management, here are some resources to review:

A Brief Guide to Mold, Moisture, and Your Home, by the U.S. Environmental Protection Agency, Office of Air and Radiation Indoor Environments Division (6609 J) 1200 Pennsylvania Ave., NW, Washington, DC 20460 EPA Publication #402-K-02-003

- Moisture Problems in Manufactured Homes: Understanding Their Causes and Finding Solutions, by the Manufactured Housing Research Alliance, 2109 Broadway, Suite 200, New York, NY 10023. (212) 496-0900
- Mold in Residential Buildings, by the National Homebuilder's Association Toolbase Technote July 2001 c/o NAHB Research Center, 400 Prince George's Blvd, Upper Marlboro, MD 20774. 301-249-4000
- Mold Remediation in Schools and Commercial Buildings, by the U.S. Environmental Protection Agency, Office of Air and Radiation Indoor Environments Division (6609J) 1200 Pennsylvania Ave., NW, Washington, DC 20460 EPA Publication #402-K-01-001

**AIR QUALITY**

State-of-the-art construction and energy conservation methods have been used in manufacturing your recreational vehicle. These improvements have substantially reduced air infiltration and air exchange, making them almost airtight. Therefore, regular airing of your unit is recommended, especially during periods of high temperature, high humidity, and after prolonged storage.

<b>NOTES</b>



LIVING AREA

**DINETTE/BED AND SOFA/BED**

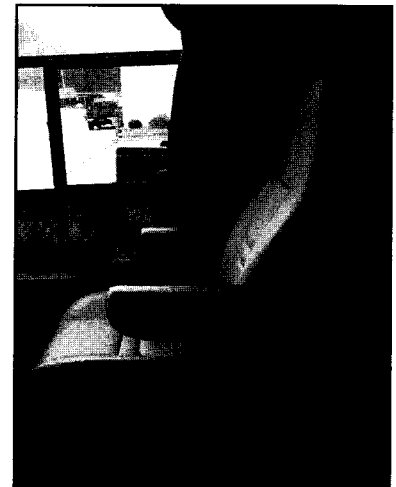
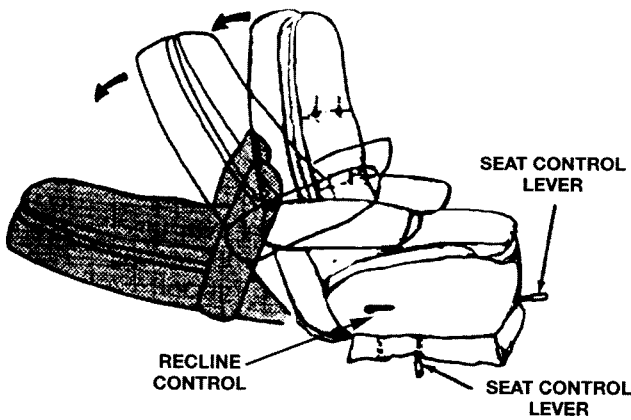
There are many variations of dinette/beds and sofa/beds. For information regarding the specific operation of the one(s) in your RV, please check with your selling dealer.



**SEATING**

**Driver and Passenger Chairs**

Some driver and passenger chairs slide, swivel and recline; others may slide and swivel or slide only. Have your dealer demonstrate the operation of the chairs in your unit. The captain's chair illustrated slides forward and backward, swivels and reclines in many positions.



**NOTES**








### RANGE HOOD

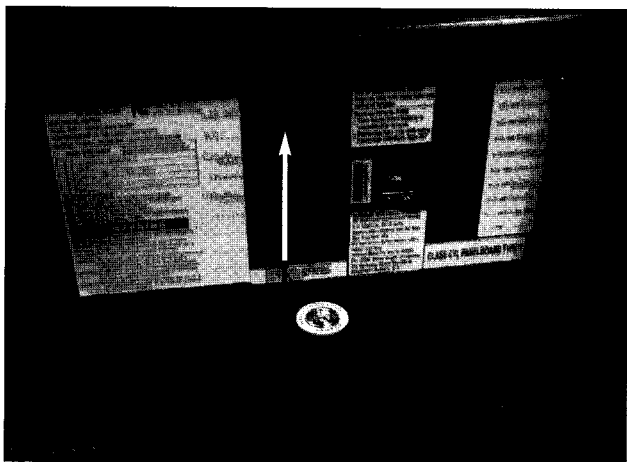
The light and fan of your power range hood are controlled by switches on the front. Use the fan to draw smoke and cooking fumes out of the unit.

### CLEANING THE RANGE HOOD

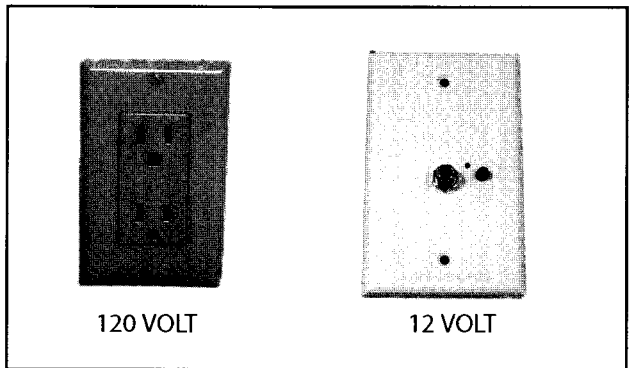
- **FILTER**-Push slot located in center front of the screen and pull down. If not greasy, simply tap the filter to loosen and dislodge any debris. If the filter is greasy, wash in hot soapy water until grease dissolves. Allow the filter to drain and dry then replace by positioning the flanges and push into place.
- **LIGHT COVER**-Remove and wash in warm soapy water. Rinse well, dry and replace.
- **METAL SURFACES/RANGE TOP**-Wash with soft cloth and warm soapy water as soon as surface is cool. Do not use abrasive cleaners or scrubbers.

## 12 VOLT AND 120 VOLT SYSTEMS

Your recreational vehicle contains two (2) separate electrical systems: one 12-volt direct current (DC) and one 120-volt alternating current (AC), similar to the one in your home. These systems provide you with power while you are camped or are traveling. The 120-volt system requires an external source of 120-volt electricity, usually a campsite or household receptacle or an auxiliary generator. The 12-volt electrical system is supplied by batteries, the power converter or the 12-volt source from the tow vehicle.



FUSES



12 VOLT AND 120 VOLT SYSTEMS

**NOTES**

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**120 VOLT SYSTEM**

The 120 volt system supplies power through the power center to the refrigerator, exterior receptacles, interior receptacles (used to operate regular household appliances), and optional roof air conditioner. The converter provides 12 volt power for all of the unit's 12 volt components. When the external 120 volt power cord is used, the power is connected directly into the electrical service panel of the power center and is distributed through circuit breakers.

**12 VOLT SYSTEM**

The 12 volt system, which includes the automotive battery and RV battery and the 12 volt converter, supplies power to the exterior lights, range hood fan and light, furnace blower, water pump, interior 12 volt receptacles, porch light and monitoring panel. The 12 volt receptacles can only be used for appliances specifically designed for that type of energy. The 12 volt energy is supplied by the automotive battery, the RV battery or the power converter.

The automotive alternator supplies 12 volt power to the vehicle's lights and components and to the RV's 12 volt system, including running lights and appliances when the engine is running. The RV battery is also charged by the power converter when you are using a shoreline connection, generator, external 120 volt power source, or the chassis engine.

**POWER CENTER DISTRIBUTION CHART**

<u>POWER CENTER AND/OR 12 VOLT BATTERY</u>	<u>120 VOLT ELECTRICITY</u>
Battery Disconnect	Power Center
Generator Starter	All Receptacles
Motor	Refrigerator
All Interior Lights	Air Conditioner(s)
Porch Light	Microwave
Trunk Lights	Television
Power Steps	VCR
Leveling system	
Water pump	
Monitor panel	
Range vent	
Power roof vent	
Jack Pump & Motor	
TV Antenna	
Water Heater (electric ignition)	
Furnace (electric ignition)	
Refrigerator controls	
Slide-Out Controls	
Wall Thermostat	
CO Detector	
LP Leak Detector	

**NOTES**

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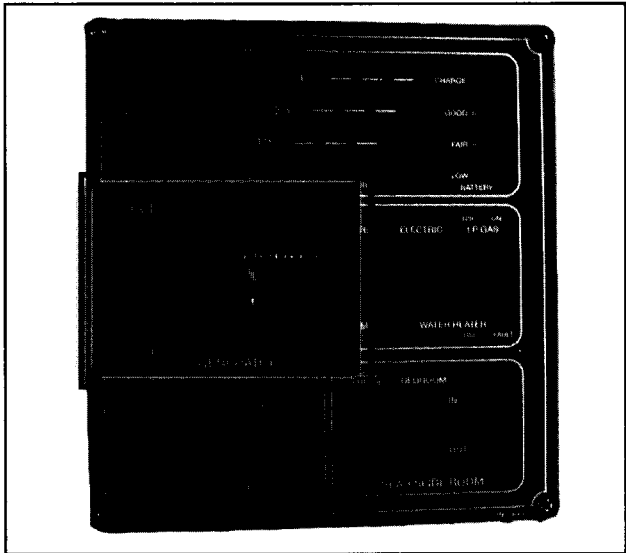


### SHORELINE CONNECTION

The shoreline is a heavy-duty cable with a 3 prong grounding plug on one end, permanently attached at the other end, and connected to the power center. It can be pulled from its storage compartment through a hatch in the sidewall and connect to a matching receptacle.

### GENERATOR

The optional generator is a gasoline operated component that will supply 120 volt electricity. It can be operated when your vehicle is stopped or while you are traveling. It draws its fuel from the gasoline tank. The fuel pickup tube is designed so it can not drain all of the gasoline from the main fuel tank of the coach. will not allow the generator to run if the fuel tank is below 1/4 tank. A labeled remote generator starter switch is installed inside your unit. There is also a START/STOP switch mounted on the generator. An automatic transfer switch incorporated in the power center prevents the simultaneous use of the generator and the shoreline connection.



### WARNING!!!

WHEN RUNNING, THE GENERATOR WILL DISCHARGE CARBON MONOXIDE GAS, PARTICULARLY DANGEROUS SINCE IT IS COLORLESS AND ODORLESS. DO NOT OPEN ROOF VENTS, WINDOWS OR DOORS. THIS COULD DRAW FUMES INTO YOUR UNIT. DO NOT OPERATE THE GENERATOR WHERE AN OBJECT SUCH AS A TREE, BUSH OR BUILDING CAN DEFLECT EXHAUST TO THE INSIDE OF YOUR RV. DO NOT OPERATE THE GENERATOR WHERE EXHAUST GAS COULD SEEP INSIDE AN OCCUPIED VEHICLE, TENT OR BUILDING.

When the generator is started, the transfer automatically switches from shoreline power to generator power. When the generator is turned off, the transfer automatically switches to shoreline power. There is a 30 to 45 second delay from the time the generator 'Start' switch is activated until the generator becomes operational.

### GENERATOR OPERATION

Familiarize yourself with the generator owner's manual. Before starting your generator, be sure the air intake and exhaust outlets are free from obstruction. Check the oil level. Be sure all 120 volt components are in the 'OFF' position. Depress the generator START/STOP switch to 'START' until the generator is running. When the switch is released, it will automatically return to the NEUTRAL position.

### CAUTION!!!

DO NOT REPLACE A FUSE WITH ONE OF A HIGHER AMPERE RATING.

### NOTE:

When using the generator for the first time, apply the electrical load gradually. Operate the generator at 1/2 load capacity for 30 minutes, then at 3/4 load for an additional 30 minutes before applying a full electrical load. After starting the generator, leave it running for a few minutes to prevent flooding.

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**NOTE:**

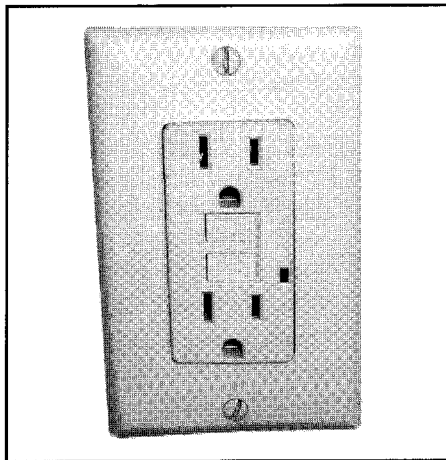
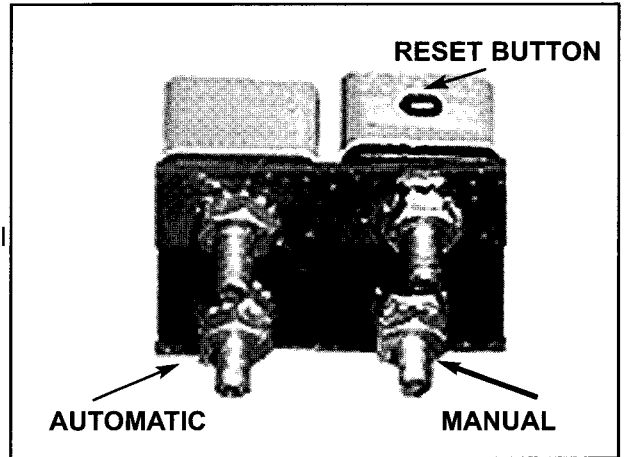
The generator is warranted only by its manufacturer.

**CARE OF GENERATOR**

For complete operation and care procedures for your generator, please refer to the generator's manufacturer's manual.

**CIRCUIT BREAKERS**

The 120 volt system is protected by circuit breakers, located inside the power center. If a circuit breaker opens, unplug the appliance(s) on that circuit, allow a short period for the breaker to cool, then reset the breaker. If the breaker continues to open, it may be caused by an appliance you have added, or a fault in the electrical system. If you determine it may be a fault in the electrical system, contact your Coachmen dealer.



**GFI (GROUND FAULT INTERRUPTER) RECEPTACLE**

The bath, kitchen and exterior receptacles are protected by a ground fault interrupter. The GFI is built into the bath or kitchen receptacle and connected to the outside receptacle. If a ground fault occurs in that circuit, the GFI protects against severe electrical shock. The GFI senses the fault and trips, breaking the bath, kitchen or exterior receptacle circuits. If this should happen, unplug all appliances on that circuit and reset the GFI receptacle. The GFI system should be tested at least once a month. To test the GFI system, plug a test light into the outlet and push the 'TEST' button on the receptacle. The test light should go out. To restore power, push the 'RESET' button. If the button does NOT pop out or if the test light indicates a live circuit, DO NOT use the outlets. Contact a Service Repair Center or your Coachmen dealer.

**IN-LINE FUSES**

In-Line fuses, or, over-current protective devices are installed in your RV. The in-line fuses will be located within 18 inches of the battery (power supply) for easy access and working room.

**PLUMBING SYSTEM**

Fresh water is supplied either by the vehicle's fresh water tank, using the 12-volt demand pump, or by an exterior pressurized source (city water).

**NOTES**

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The water heater is an LP gas appliance that heats water to a preset temperature. To fill the water heater, simply turn on a hot water faucet. When water flows steadily, turn the faucet off.

**⚠ CAUTION!!!**

Do not ignite the water heater until water heater tank is full. Doing so could cause permanent damage to the water heater tank.

Although a common garden hose can be used to fill the water tank and connect to city water, longtime RV'ers recommend a hose specifically manufactured for this, available at your RV dealer. Do not overfill. Doing so could cause damage to tank and surrounding structure

To fill the fresh water tank, connect a hose to the city water fill. Place the valves in the tank fill position, then turn water on. When tank shows full on the monitor panel, turn water off. Place valves in normal operation position and remove hose. Turn water pump on, open hot water faucet until water flows. Turn hot water faucet off and repeat with cold water faucet. The water pump should shut off and not come on until a faucet is opened.

To use city water, connect a hose to the city water fill. Place the valves in the normal operation position. Turn water on, then open a hot water faucet until water flows. Turn faucet off and repeat with cold water. Water pump should be shut off for city water use.

**NOTE:**

In areas where city water pressure exceeds 60 PSI, you should use a pressure regulator. Excessive water pressure may damage lines, connections, or other system components.

To add water to the tank where a city water hook-up is not available, use the following procedure: fill a water container, place the short piece of hose provided into the water (on some units, a plug may have to be removed and the hose installed in place of the plug). Place the valves in the tank filled position, and open valve in line to hose, or open suction fill valve if so equipped. Turn water pump on. The pump will draw water from the container into the water tank. You may have to refill the container several times to completely fill the tank. After tank is full, turn valves back to normal operating position and close suction fill valve (or reinstall plug).

If your RV is equipped with a gravity water fill, to fill the water tank, simply remove the cap on the gravity fill, place a hose in the opening and turn the water on. Water will come out the fill when the tank is full.

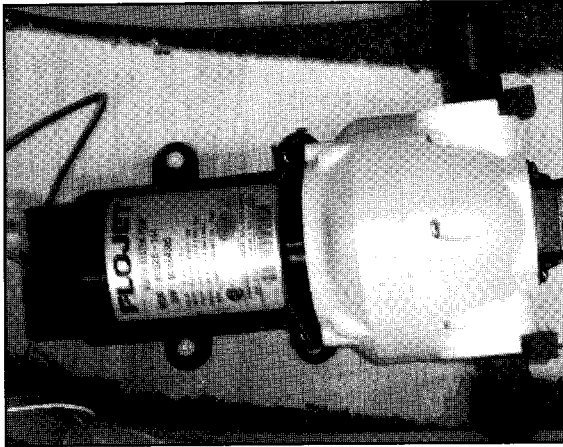
**WATER PUMP**

The water pump is a 12-volt DC appliance that is activated by a switch on the monitor panel. (On some models a second switch may be located in the bathroom). The switch can be left on while camping. When you want water, simply open a faucet. The pump which supplies water from the fresh water tank will run only as long as is needed.

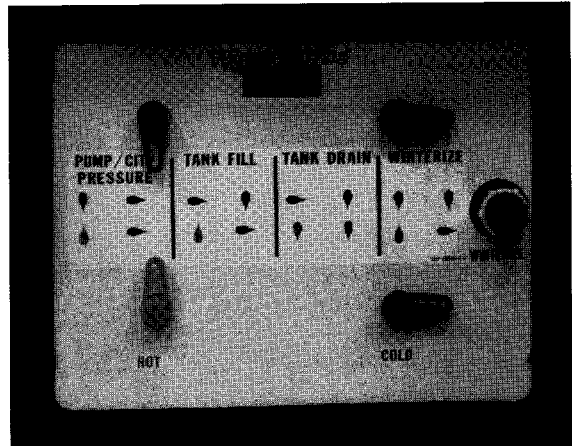
If the pump fails to start when the switch is on, check the fuse located in the converter. If the pump continues to operate whether the faucets are opened or closed, check the water tank.

If the pump runs sporadically the tank may be empty or there might be a leak in the system. If the city water is connected the pump is not required. Be sure to turn the pump off when not in use. For additional information consult the water pump manufacturer's manual.

**NOTES**

**WATER PUMP**



**WATER CONTROL PANEL**

### **FRESH WATER TANK**

Due to a variance in weight distribution, the water tank may be located beneath a sofa, dinette bed, kitchen cabinet or under the floor of the unit.

The water tank should be sanitized before you use it for the first time, after a period of non-use, or if you suspect the tank is contaminated. To sanitize your water tank, first empty the tank and then use the following procedures:

1. Mix 2-1/2 cups of liquid household bleach with 10 gallons of water into a potable water container. Place control valves in the tank fill position. Install the short length of hose in the winterization filling and place free end of the hose in your potable water container. Running the water pump will drain water from the external container into the fresh water tank.
2. Turn the vehicle's water pump ON, open the hot water faucet, wait until the water begins to flow, and then turn the faucet off. Do the same with the cold water faucet. Wait three hours.
3. Open faucets and line drains. Drain the entire system. Some solution will remain in the water heater.
4. Connect a hose to the city water fill. Begin filling the tank, open the hot water faucet. Be sure the water pump is on. Let the water run until the system is completely flushed. Do the same with the cold water faucet. The hot water faucet will need to run longer to completely drain the water heater.
5. If a chlorine taste lingers, flush the system with a vinegar and water solution (one quart of vinegar to five gallons of water). Wait two to three hours and then flush with fresh water.

### **LEAKS**

Traveling over bumpy or rough roads can cause pipe fittings to loosen. Check the pipe fittings in your unit regularly for signs of leakage.

### **SHOWER**

A shower hose anti-siphon device is installed on your faucet to prevent the possibility of backflow.

<b>NOTES</b>



## DRAINAGE/SEWER SYSTEM

Your RV is equipped with a drainage sewer system that functions much the same as the one in your home. This system includes drain lines from the kitchen sinks, lavatory, tub/shower and marine type toilet to a gray-water holding tank and/or a sewage holding tank.

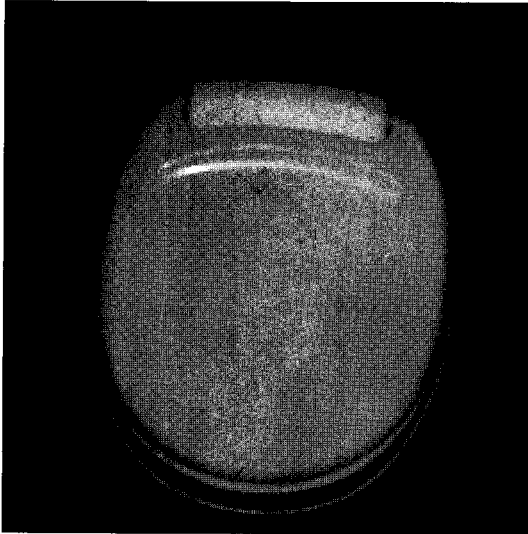
The drainage system also includes vents that carry odors (caused by drain water and waste) out through the roof. The drainage system vents also equalize the air pressure, which is necessary to maintain a water barrier against odors in the P-traps and to ensure smooth flow and escape for your drainage system.

### TOILET (THETFORD)

Flush the toilet before initial use and after emptying the holding tank, this will help to prevent collection of solids.

To help control odors, there are a number of toilet and holding tank treatment concentrates on the market. These chemical concentrates are available at your Coachmen dealer. To operate the toilet, step on the small pedal to add water to the bowl. When you have the desired amount of water in the bowl, slowly release the pedal. To flush this type of toilet, step on the large pedal until the water swirls and then slowly release the pedal.

When you clean your toilet, do not use highly concentrated or highly acidic household cleaners (no scouring powder). If the pedal does not move freely, apply silicone spray. To ensure proper operation and maintenance, refer to your toilet manufacturer's operating manual.



### HOLDING TANKS

Your drainage/sewer system has two holding tanks, gray water and waste (black) water. The gray water holding tank collects water from the kitchen sink, lavatory and tub/shower. The waste (black) water holding tank is used to collect waste from the toilet. To prevent unnecessary accumulation of solids in the waste holding tank, do not put facial tissues or similar products into the toilet.

**Note:** It is highly recommended that you use chemicals designed to break down the solids and use only bio-degradable toilet tissue; both of which are available from your Coachmen Dealer.

Holding tanks should be emptied frequently at a dumping station. Most campgrounds have dumping stations, often at each campsite. Many service stations and highway rest areas also have waste dumping stations. Before emptying the holding tanks, be sure your vehicle is level, or tilted toward the dump station. Emptying the holding tanks depends on gravity.

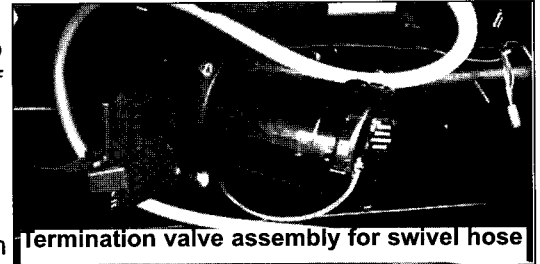
### EMPTYING THE HOLDING TANKS

To empty the holding tank, remove the sewage drain hose from its storage area. Remove the cap from the termination outlet and connect the sewage drain hose. To drain a holding tank, pull the dump valve slide handle. After the tank is drained, close the valve.

**NOTES**



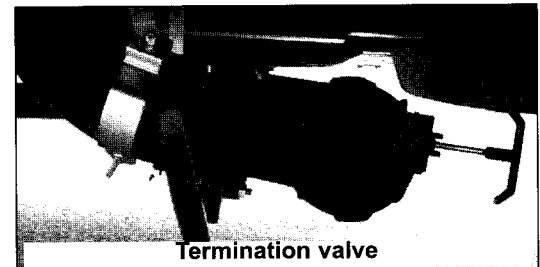

Some models have a swivel sewage drain hose holder under the unit. Simply swivel the holder around, take off the cap and hook up to a dump facility. Swivel the termination down, reach down in holder, pull up end of hose, remove termination cap and hook up sewer hose. Now you are ready to pull the gate valves and dump your tank.



Termination valve assembly for swivel hose

**DRAIN CLEAN-OUT**

Do not use harsh drain cleaner chemicals or solvents in the drains. Drain clean-outs are installed on certain units at intervals to facilitate drain line cleaning or unclogging. Use a wrench to remove and replace drain clean-out plug.

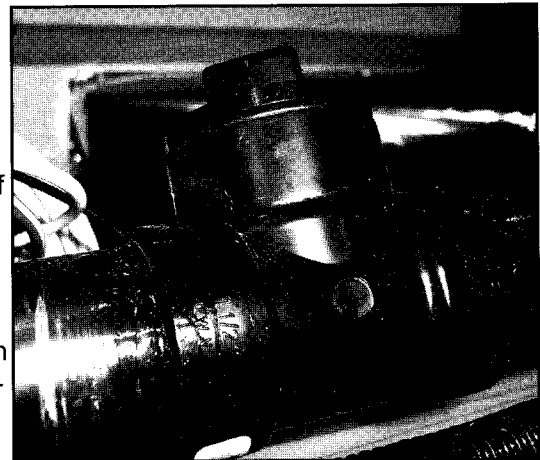


Termination valve

While you are camped you may leave the gray water dump valve open only if the hose is connected and your campsite has a sewage hookup. Do not open the waste water dump valve until you want to empty the holding tank. If the waste water dump valve is left open, the rinse and flush water will run off and solids will be left to collect and harden in the bottom of the tank.

To drain a holding tank, pull out the dump valve slide handle. On some units it is necessary to unfasten a locking device before the slide valve handle can be pulled out. After the tank is drained, close the valve (if applicable, lock in place).

After emptying the waste holding tank, flush or pour about two gallons of water through the toilet and drain again. This flushes the tank and helps clean the drain hose. Repeat as necessary.



CLEAN-OUT DRAIN VALVE

To empty the gray water holding tank, follow the same procedure used to empty the waste holding tank. A flushing may not be necessary. When the tank is empty push the dump valve handle in until it seats (if applicable, lock in place). Remove the hose, wash it and return it to its storage holder. Replace the termination cap securely.

If your model is equipped with an outside shower this may be used to rinse out the inside of your sewer hose before leaving the dump facility.

It is recommended that you always drain the sewage waste holding tank first, and then the gray water tank. This assists in flushing and cleaning the termination valve and drain hose.

**NOTES**

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## LP GAS SYSTEM

The liquefied petroleum (LP) gas system in your unit furnishes fuel for hot water, heat, cooking and refrigeration. LP gas provides a portable, efficient and inexpensive source of energy. It is stored in an LP gas tank which is mounted to the chassis of your unit and is serviced through an access door.

Under pressure in the tank, the LP gas turns to vapor; it is the latter that burns. Each tank has an automatic 80 percent stop-fill valve that allows space in the tank for vapor expansion. The high pressure of the vapor in the tank is reduced in two stages through a regulator. The tank pressure will vary with temperature and altitude, but may be reduced to about 12 psi in the first stage, then to about 6-1/4 ounces in the second stage (the 6-1/4 ounces per square inch also is expressed as 11 inches of water column).

### **WARNING!!!**

LP gas is usually propane or a blend of propane and butane. When you fill your tanks, be sure to use propane ONLY. Do not use butane or butane mixtures.

### **WARNING!!!**

The LP gas system is designed and built to meet rigid standards, and it is tested before it leaves the factory. Your dealer should also test the system before it is delivered to you. Always take your vehicle to an authorized dealer for LP gas problems. Always have an authorized LP gas supplier fill your LP gas tanks.

### **WARNING!!!**

LP gas burns readily and with intense heat. With proper care and maintenance, it is safe and efficient. There are, however, certain characteristics about LP gas you should know. LP gas settles into any closed area, it displaces air and could cause suffocation if not detected. It also could create a fire or explosion hazard. In its natural state, LP gas is odorless. An additive gives it a distinctive mustard odor so that leaks can be readily detected. Under certain circumstances you may not be able to detect LP gas by smell. For that reason, your vehicle is equipped with an LP leak detector which will provide an audible warning if a propane leak is detected. Never disable or bypass this critical safety device.

### **WARNING!!!**

LP gas containers should not be placed or stored inside the living area of a vehicle. LP gas containers are equipped with safety devices that relieve excess pressure by discharging gas to the atmosphere.

### **CAUTION!!!**

Be sure the regulator vent faces down and the cover is kept in place. This will minimize vent blockage which could result in excessive gas pressure and cause a fire or explosion.

#### **NOTE:**

Before using any LP gas appliance, read the respective manufacturer's operating manual.

### **WARNING!!!**

Most LP gas appliances used in recreational vehicles are vented to the outside of the vehicle. When parked close to a gasoline pump, it is possible that the gasoline fumes could enter this type of appliance and ignite from the burner flame, CAUSING A FIRE OR AN EXPLOSION.

**FOR YOUR SAFETY, IT IS RECOMMENDED THAT ALL LP GAS APPLIANCES WHICH ARE VENTED TO THE OUTSIDE SHOULD BE SHUT OFF WHEN REFUELING.**

#### **NOTES**




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

**⚠ WARNING!!!  
IF YOU SMELL GAS:**

1. Extinguish any 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 non-electrical ventilating openings
  5. Leave the area until odor clears
  6. Immediately call your dealer and have the gas system checked and leakage source corrected before relighting
- A warning label has been placed in your RV near the range which contains this information.

**CLIMATE DIFFERENCES**

An appliance will not function if the LP gas does not vaporize. Propane continues to vaporize down to 44 degrees Fahrenheit below zero. Liquid gas does not vaporize as rapidly in cold weather, so you may place too great a demand on your tank's capacity in certain conditions. This can cause a refrigeration effect resulting in frosting of the tank and regulator. Check with your dealer or LP gas supplier about the appliance demands that can be met by your tank at various temperatures. Always have your LP gas supplier add anhydrous methanol before filling the tank in cold weather.

Propane has become the main type of LP gas used in RV's. It is recommended that you use only propane gas. The names of LP suppliers can be found in the Yellow Pages of your telephone directory under "Gas-Liquefied, Petroleum Bottled and Bulk." Many campgrounds now have LP fill facilities, as do some service stations.

To operate any LP gas appliance, the LP gas SERVICE valve must be open. When first used, or after a refill, there may be some air in the gas lines that will escape when you first open a range burner or similar LP gas valve. The air may extinguish your match or igniter the first time or two before you get ignition.

Remember too, that when you close the tank's SERVICE valve some of the gas will remain in the lines. To completely bleed the lines of gas, close the tank's SERVICE valve and light a range burner to use up the excess. When the flame burns out, turn the range burner off.

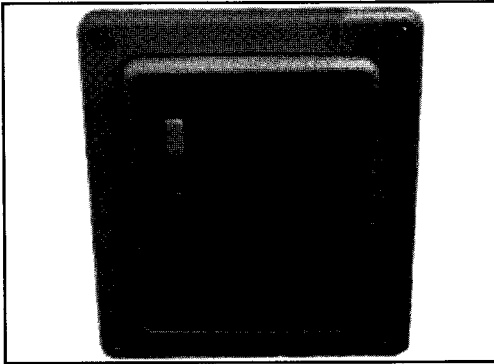
**REGULATOR PRESSURE**

Check the LP gas regulator at the beginning of each season or whenever a problem is indicated. Correct line pressure is 11 inches of water column. Your dealer or LP gas supplier can perform this check.

LP gas regulators must always be installed with the diaphragm vent facing down. Regulators that are not in compartments have been equipped with a protective cover.

Be sure the regulator vent faces down and the cover is kept in place. This will minimize vent blockage which could result in excessive gas pressure and cause a fire or explosion.

<b>NOTES</b>



### LP LEAK DETECTOR

It is recommended that your LP Leak Detector be operational whenever you are using your RV. The green indicator light will be illuminated on the face of the detector when it is operational.

### LP GAS REGULATOR FREEZE-UPS

LP gas regulator freeze-up is a problem RV owners can prevent if they are aware of the causes. Although every precaution is taken by fuel producers, tank manufacturers, and LP gas dealers to keep moisture out of the fuel, this problem at times does exist and causes regular freeze-ups.

Suggestions that you should follow to help prevent this moisture are:

1. Always keep the main tank valve closed during periods that gas is not in use, especially if the tank is empty.
2. Contact your LP gas dealer about the addition of anhydrous methanol to your tank. Your dealer may do this for a minimal charge, and it will help to prevent freeze-up.

### FILLING LP GAS TANKS

Before having an LP gas tank filled, be certain all burners and pilot lights are off.

Drive your motorhome to an authorized LP supplier for filling (never remove the tank). He will connect the fill nozzle to the LP gas tank fill valve. When the tank is being filled, the Service valve must be CLOSED and the 20% liquid level gauge must be OPEN. The 80% stop fill valve may close the valve before liquid appears at the 20% liquid level gauge, but if liquid does appear, stop filling immediately; the tank is filled to its LP capacity. When liquid LP gas is no longer visible, close the liquid level gauge. Do not use a wrench to tighten the Service valve or the 20% gauge; they are designed to be closed leak-tight by hand. If you cannot hand tighten properly, the valve probably needs repair or replacement.

Because there may be some leakage of LP gas when the tank is being filled, we recommend that you drive at least a mile away from the LP gas dealer before you light any pilots or appliances if the scent of LP gas is present. Open the windows and doors and wait 30 minutes. If the odor is still present, follow the instructions in the LP LINE CHECK section, following the Warning.

### WARNING!!!

A warning label has been located near the LP gas container. This label reads: DO NOT FILL CONTAINER(S) TO MORE THAN 80% OF CAPACITY. Over-filling the LP gas container can result in an uncontrolled gas flow which can cause fire or explosion. A properly filled container will contain approximately 80% of its volume as liquid LP gas. If the tank is over-filled, have the LP gas dealer bleed out the excess. DO NOT smoke, strike a match, or ignite a lighter when the LP gas container is being filled. A spark or flame could ignite fumes. Be certain all burner and pilot flames are out and the Service Valve is closed when filling your vehicle's LP gas or fuel tanks.

### NOTES






## LIGHTING THE RANGE

Be certain that the LP gas Service valve is OPEN. Light a match and hold it close to the range burner making sure you are lighting the valve you turned on.

Turn the burner's control knob to full ON. Air in the line may cause a blowing noise and may extinguish the match. When the line is free of air, the burner will light readily. Adjust the burner flame with the control knob.

## CARE OF RANGE AND OVEN

Allow the range top to cool, then clean it with hot, soapy water. Use a damp cloth to clean chrome surfaces. Grease splatters, which may bake onto the surfaces, should be wiped off before they have time to harden. Use chrome polish to remove stubborn stains. Clean the oven with commercial cleaner after each trip, or as necessary. DO NOT apply cleaner to aluminum gas tubing, thermostat sensing bulb or electrical components.

## CARE OF RANGE HOOD

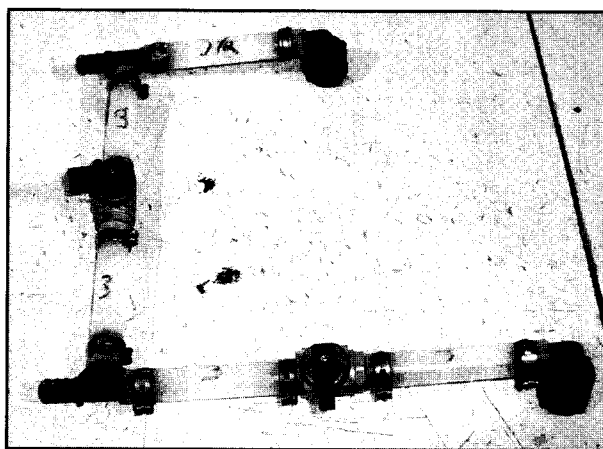
For metal surfaces, use the same procedure as for the range top. For the power hood, clean the plastic light cover by removing and washing it. If the light burns out, replace with a bulb of the same size. To clean the power hood filter, push slot located in center front of screen and pull down. If not greasy, simply tap the filter to shake out the dirt. If the filter is greasy, run hot, soapy water over it until grease dissolves. Allow the filter to drain and dry, then replace by positioning the flanges and push into place.

## MICROWAVE OVEN

The microwave oven is a 120-volt appliance used to cook, defrost or simmer foods in less time than other cooking methods. Several types of microwave ovens are installed by the manufacturer. Be certain to read carefully the oven manufacturer's owner's manual for specific instructions for the model which may be installed in your unit.

## WATER HEATER

Your water heater is an LP gas appliance capable of heating gallons of water to a preset temperature. When the system is connected to city water, fill the water heater by opening a hot water faucet. When filling the fresh water tank, turn the water pump ON and open a hot water faucet. In either case, when water flows steadily, turn the faucet OFF.



## NOTES

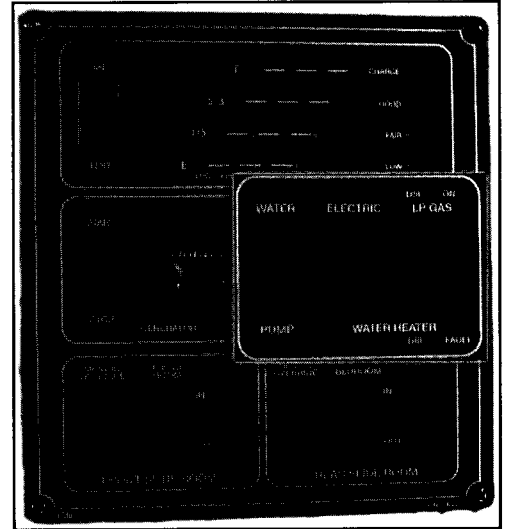



### WATER HEATER BYPASS

There is a water heater bypass system installed in the water lines at the back of the water heater. This bypass system allows you to use the water system without the water heater, as well as winterize the water system without having to fill the water heater with antifreeze. For normal operation, close the center valve and open the outside valves. To bypass the water heater, open the center valve and close the outside valves.

### ELECTRONIC IGNITION

Place the LP Gas water heater switch in the ON position. This switch is located in the middle right section of the display panel. If the red fault light comes on, place the switch in OFF position and wait 5 minutes. The red fault light will only come on in the event of water heater malfunction or if the flame fails to light. After the required delay, again place switch in ON position. If the water heater turns on a green light will show on the display panel. It may take more than one start attempt when the water heater is being used for the first time or after the LP gas bottle has been refilled. To turn the water heater completely off place the switch in OFF position. These same instructions go for the electric water heater switch as well.



### BURNER ADJUSTMENT

Refer to water heater manufacturer's Operation Manual.

### DRAINING

There is a drain plug or drain cock in the water heater which must be opened or removed to drain the water heater tank. To facilitate drainage, open all hot water faucets. When water ceases to drain, replace plug. Because of the location of the drain plug, about two quarts of water will remain in the bottom of the tank. This can be flushed as described in CARE OF WATER HEATER.

### WARNING!!!

Hydrogen gas can be produced in a hot water system served by a heater that has not been used for a long period of time (generally two weeks or more). HYDROGEN GAS IS EXTREMELY FLAMMABLE. To reduce the risk of injury under these conditions, it is recommended that the hot water faucet be opened for several minutes at the kitchen sink before using any electrical appliance. If hydrogen is present, there should be an unusual sound such as air escaping through the pipe as the water begins to flow. There should be no smoking or open flame near the faucet at the time it is open. Contact your dealer or the Coachmen Service Department at the address on the manufacturer's warranty if you are not certain of what action you should take.

### CARE OF WATER HEATER

Be certain the exterior compartment is clean and does not contain combustible materials. Never obstruct the relief valve or exhaust vent. Periodically drain and flush the water heater tank. To flush the tank, connect a hose to the city water fill. Remove the drain plug from the water heater tank. Run water for several minutes to flush tank. Turn water off and reinstall drain plug.

### NOTES




## FURNACE

The furnace is an automatic ignition type, controlled by a wall thermostat. Heat is delivered through a duct system.

### NOTE:

Although the furnace's fuel source is LP gas, the power operates on 12-volt electricity. The furnace requires a minimum of 9 volts to operate.

### **WARNING!!!**

DO NOT use portable fuel-burning heating appliances, including kerosene heaters, wood and charcoal grills or stoves, in your motorhome. Such appliances produce excessive moisture, consume oxygen and may emit dangerous products of combustion.

## IGNITION

Before lighting a furnace, be sure the LP gas bottle Service valve is OPEN and the thermostat ON/OFF switch is ON.

## AUTOMATIC MODELS

Set thermostat to desired temperature and turn ON/OFF switch to ON. An automatic relay in your furnace provides a time delay. Therefore, when you turn up the thermostat there will be a pause prior to startup of the blower. At blower startup, your furnace air will enter your living quarters at room temperature.

Your furnace will start warming quickly and continue getting warmer for the next several minutes. If your motorhome is cold throughout, it may take several hours to heat all interior walls, ceilings, floors and fixtures to a comfortable temperature. Once reached, your furnace will automatically maintain steady warmth. On initial lighting, the burner may not ignite due to air in the gas lines. If this occurs, set the thermostat back to the lowest setting and wait 30 seconds; then reset thermostat to the desired temperature.

### **CAUTION!!!**

If the furnace does not light after several attempts, while allowing each time for any delay pause, turn the thermostat OFF and contact your authorized Coachmen dealer or service center. DO NOT attempt to repair or adjust the furnace yourself. For complete shutdown, turn the thermostat to OFF.

When changing your unit's electrical source, as from 12-volt to shoreline or generator, turn the thermostat off. This will preserve the life of your furnace's electronic system. Carefully read the furnace manufacturer's manual for other important Do's and Don'ts of service and operation.

## PREVENTIVE MAINTENANCE

Preventive maintenance should be performed annually by an authorized dealer and should include cleaning of heat exchanger, furnace ducts and blower wheels to remove dust, lint and other foreign materials, the furnace's LP gas system should also be checked. Check manufacturer's manual for further information.

## REFRIGERATOR

Your refrigerator operates on either LP gas or 120-volt electricity. The Refrigerator is equipped with a control system, which can automatically select the most suitable energy source which is available, either 120-volt AC, or LP gas oper-

## NOTES




ation. The refrigerator can be run either in a factory preset temperature setting AUTO mode, or in MANUAL mode. The refrigerator controls will work down to 9.6-volt DC.

**NOTE:**

Under certain cool weather conditions the food in the lower portion of the fresh food compartment may freeze if operated for extended period of time in the MANUAL mode.

Ask your Coachmen dealer to demonstrate the operation of the refrigerator in your motorhome. The instructions given here are for your convenience; in case of a difference, use the instructions furnished with your refrigerator.

The refrigerator operates on the gravity flow of chemicals, so it must be level. If you must stop on an uneven site for more than 30 minutes, turn the refrigerator OFF. Use a level in the freezer compartment to check levelness. Using your refrigerator when it is not level could result in permanent damage to the cooling unit.

Before starting on a trip, use the shoreline connection to cool the refrigerator the night before departing. Keep items to be stored in the RV refrigerator in your home refrigerator or freezer until you are ready to leave. This will reduce the cooling load on your refrigerator and help keep perishable foods fresh longer. Always store food in sealable containers or suitable wrapping. When traveling, switch to LP gas (or 12-volt DC, if so equipped) operation. Use door lock during travel.

Some states and municipalities do not allow operation of LP gas systems which the vehicle is in motion. If you have a question in this regard, check with local law enforcement authorities.

**START UP INSTRUCTIONS**

- A. A continuous 12-volt DC supply must be available for the electronic control to function.
- B. Press the main power ON/OFF button (1) to the DOWN position.
- C. In AUTO mode operation, the temperature is automatically controlled by a factory preset temperature setting, on the energy source selected by the control system.
- D. In MANUAL mode operation, the refrigerator will run continuously on the energy source selected by the control system.

**NOTE:**

Under certain cool weather conditions the food in the lower portion of the fresh food compartment may freeze if operated for extended period of time on this mode.

**AUTO MODE**

- 1) Press the AUTO/MANUAL mode selector button (2) to the DOWN position. The AUTO mode indicator lamp (A) will illuminate. If 120-volts AC is available, the control system will select AC operation. If 120-volts AC is not available, the control system will automatically switch to GAS operation. Within 45 seconds the burner should be ignited and operating normally.

NOTES





- 2) If the CHECK indicator lamp (B) illuminates, the control has failed to ignite the burner on GAS. To reset when the CHECK indicator lamp (B) is illuminated, press the main power ON/OFF button (1) to the OFF then ON position.
- 3) On the initial refrigerator start-up on gas (120-volts AC is not available), it may take longer than 45 seconds to allow air to be purged from the gas line. If the refrigerator has not been used for a long time or the LP tanks have just been refilled, air may be trapped in the supply lines. To purge the air from the lines may require resetting the main power ON/OFF button (1) three or four times. If repeated attempts fail to start the LP gas operation, check to make sure that the LP gas supply tanks are not empty and all manual shutoff valves in the lines are open. If the problem is still not corrected, contact a service center for assistance.
- 4) In AUTO mode operation, the temperature is automatically controlled by the factory preset temperature setting.

**NOTE:**

Do not continue to reset GAS operation if the CHECK indicator lamp continues to be illuminated after several tries.

**MANUAL MODE**

- 1) Move the AUTO/MANUAL mode selector button (2) to the UP position. The AUTO mode indicator lamp (A) will go off.

The difference from AUTO mode is that in MANUAL mode operation, the refrigerator will run continuously on the energy source selected by the control system.

**NOTE:**

Under certain cool weather conditions the food in the lower portion of the fresh food compartment may freeze if operated for extended period of time on this mode.

**TO TURN REFRIGERATOR OFF**

The refrigerator may be shut off while in any mode of operation by pressing the main power ON/OFF button to the UP (OFF) position. This shuts off all DC power to the control system.

**DESCRIPTION OF OPERATING MODES**

**AUTO MODE**

When operating in the AUTO mode, the AUTO mode indicator lamp (A) will illuminate. The control system will automatically select between AC and GAS operation with AC close the light switch or remove the lamp bulb having priority over GAS. If the control system is operating with AC energy and it then becomes unavailable, the system will automatically switch to GAS. As soon as AC becomes available again the control will switch back to AC operation.

Gas operation (120-volts AC is not available). The control system will activate the ignition system and will attempt to light the burner for a period of approximately 45 seconds. If unsuccessful, the CHECK indicator lamp (B) will illuminate. To restart an ignition attempt with the CHECK lamp illuminated or to clear (turn off) the CHECK lamp, press the main power ON/OFF button to the OFF and then ON position. The control system will attempt a new 45 second ignition sequence. If 120-volts AC becomes available while the CHECK indicator lamp is on, the CHECK lamp will not turn off until the main power ON/OFF button is pressed to the OFF then ON position.

<b>NOTES</b>



## MANUAL MODE

When operating in the MANUAL mode, the AUTO mode indicator lamp (A) will be off, and the refrigerator will run continuously on the energy source selected by the control system.

The control system will automatically select between AC and GAS operation with AC having priority over GAS. If the control system is operating with AC energy and it then becomes unavailable, the system will automatically switch to GAS. As soon as AC becomes available again the control will switch back to AC operation.

## NOTE:

To avoid running the battery down the climate control should be turned OFF. The interior light should be turned off during defrosting and storage periods.

## CARE OF REFRIGERATOR

Remove food and ice after each trip. Clean the interior of the refrigerator with a luke-warm, mild baking soda solution. The evaporator, ice trays and shelves must, however, be cleaned with warm water only. Wipe dry with a soft, dry cloth. Never use strong chemicals or abrasives to clean the refrigerator; they can do harm to the plastic and aluminum surfaces. If the refrigerator is not in use for a period of time, turn all power OFF, empty and clean the interior and leave the door slightly ajar. To defrost refrigerator freezer, remove food and ice. Turn the thermostat OFF. To speed up the defrosting process, fill the ice trays with hot water. When all frost is melted, empty the drip tray and dry the interior of the refrigerator with a clean cloth. Replace the drip tray and ice trays, replace all food stuffs and set the thermostat at MAX for a few hours. Later, reset the thermostat knob to its normal position.

## ROOF AIR CONDITIONERS

If you did not order the optional roof air conditioner at the time of purchase, your motorhome is wired so that one can be installed later. The roof air conditioner will operate only on 120-volt electricity. More than one type of roof air conditioner is installed at the factory. Consult your Coachmen dealer and your roof air conditioner manufacturer's manual for specific instructions for the one installed in your motorhome.

Before starting any model of roof air conditioner, close all doors and windows. The controls for the air conditioner are on a panel on the portion of the appliance that is attached to the ceiling inside your unit. You can select cooling, fan only, or—with the optional heat package—heating. For information on electrical load refer to A/C Selector Switch section of this manual.

## AIR CIRCULATING ONLY/COOLING

Turn or slide the Selector switch to COOLING, then rotate the thermostat to the position that is most comfortable to you and adjust the directional louvers to the desired direction of air flow. The compressor will cycle on and off, automatically maintaining the temperature you've set.

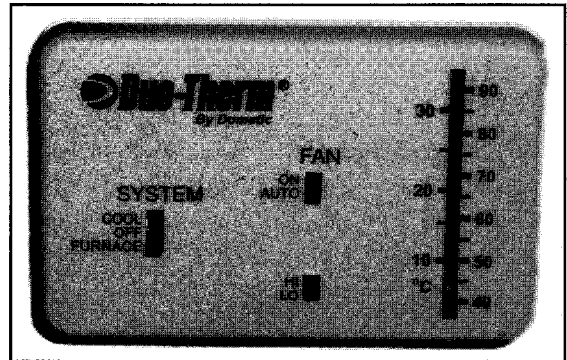
The optional heat unit on some models is not a substitute for a primary heating system. It is designed to warm the air during moderately cool days or nights. If your air conditioner is equipped with the optional heat package, turn the selector switch to HEAT and rotate the thermostat to the position most comfortable and adjust the directional louvers to the desired direction of air flow. The heater will cycle on and off automatically to maintain the temperature.

## NOTES




### DUCTED ROOF AIR CONDITIONING

The ducted roof air conditioning system is optional on some models. It utilizes ducts in the ceiling to distribute the air flow throughout your recreational vehicle. The air flow can be regulated by opening and or closing the outlets of your choice. The thermostat for the ducted A/C system also controls the furnace. It is necessary to move the switch to the desired function,i.e., heat or cool.

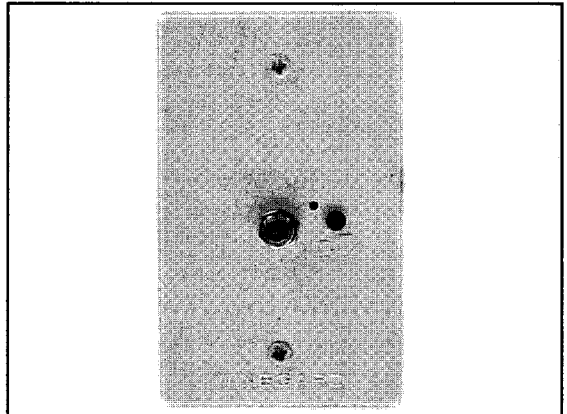


### TV ANTENNA/CABLE SYSTEM

This system allows you the flexibility to use the amplified TV antenna hook up, or cable, if your location has cable hook ups. To use the TV antenna, simply turn on the power supply switch at the wall plate. To use the cable, turn the power switch off at the wall plate.

To raise the antenna, turn the antenna control handle in the up direction until some resistance is felt. Pull down the rotating knob to disengage it from the ceiling plate and turn it until you find the best sound and signal.

Always lower the antenna before moving your recreational vehicle. Pull down and turn the rotating portion so that the pointer lines up with the ceiling plate pointer. Turn control handle in down direction until some resistance is felt. Turn off the power switch on the wall plate.



Most wall plates also have a 12-volt receptacle for TV sets designed to run on 12-volt DC power. This receptacle should not be used for high current devices such as 12-volt hair dryers, as the maximum amp draw should not exceed 7.5 amps.

### NOTE:

Even though your 12-volt radio and/or TV antenna will operate on the 12-volt current that is supplied through the power converter, spikes and surges in the current are possible and will result in poor reception. It is recommended, therefore, that these items be used only in conjunction with a properly installed RV battery.



### NOTES






## **LP GAS**

Close the LP gas container's Service valve. Extinguish all pilots and close all appliance LP gas valves (oven/range, water heater, refrigerator, furnace). Light a range burner to consume any gas remaining in the lines. When the flame burns out, turn the range burner off.

## **WATER HEATER**

Drain the water heater. To drain, see Water Heater Draining in the appliance section of this manual.

## **WATER TANK**

To drain see Water Tank Draining in the Fresh Water System of this manual.

## **WATER PUMP**

When the water tank and water lines have been drained, remove the outlet hose from the pump. Turn the pump on, allowing it to pump out any remaining water, usually about a cupful. Use a towel or cloth to catch this water. Reattach the outlet hose.

## **ELECTRICAL SYSTEM**

Turn off all circuit breakers at the Power Center. Disconnect all loads from battery. Recharge battery and check water.

## **GENERAL**

Close and secure all doors and windows. Open a roof vent or window slightly to allow circulation, but not so far that rain or snow can enter.

## **FUEL SYSTEM**

During extended periods of vehicle storage (60 days or more) fuel may deteriorate due to oxidation. This can damage rubber and other polymers in a unit's fuel system. It may also plug small orifices. To prevent such an occurrence, it is advised that a commercially available stabilizer ("STA-BIL" or equivalent) should be added to a vehicle's fuel tank whenever actual or expected storage periods exceed 60 days. The instructions for use accompanying the product should be followed. The vehicle should then be operated at idle speed to circulate the additive throughout the fuel system.

## **WINTERIZATION**

Make special preparations for storing your unit in cold winter climates. All systems and components should be inspected and, if necessary, repaired prior to storage. Winterize the motorhome before removing the RV battery.

## **NOTE:**

If you will be using your motorhome during cold weather, be certain to keep the fresh water system drained or use an approved, non-toxic RV antifreeze to prevent freeze-ups. Have an LP gas supplier add methanol to your LP gas containers. Consult your authorized Coachmen dealer for more information.

## **REFRIGERATOR**

Remove all food from the refrigerator, defrost and wash and dry the inside. Prop the door open so air can circulate.

## **NOTES**




**CABINETS**

Check the staple foods in your cupboards and remove any that could freeze and be damaged. Leave cabinet and closet doors open a little to prevent a musty odor or mildew.

**HOLDING TANKS**

The dump valve shafts should be inspected and lubricated. Be certain the dump valves are closed

**⚠ CAUTION!!!**

Do not use automotive antifreeze in the water or sewage system. It is poisonous and also corrosive to sewage system components.

Recharge and add water, if necessary. Disconnect the battery cables and store battery in a cool, dry place. Check regularly and recharge as needed. Do not store battery in an area where possible exposure to extreme heat or sparks can occur. Be sure room is properly ventilated to dispel hydrogen fumes given off by battery.

**WINDOWS**

Cover with newspaper or cardboard to protect fabrics from fading.

**EXTERIOR VENTS**

Cover range hood, refrigerator and furnace vents with plastic. Inspect all roof vents and replace, if necessary.

**⚠ CAUTION!!!**

Never use appliances with vent covers in place.

**EXTERIOR**

Clean and wax, lubricate locks and hinges. Check under the motorhome for any openings which would allow varmints to enter; seal if necessary. Lock securely. Inspect throughout the winter months and remove any snow accumulation from the roof with a long-handled broom or similar tool.

**WATER SYSTEM**

To winterize the fresh water system, place the water control valves in the winterize position. Remove the plug for the antifreeze connection and screw in the fitting and short hose. Open the winterize/suction fill valve (Santara & Leprechaun models only). Place free end of short hose in a container of RV antifreeze. Place valves behind water-heater in bypass position. Turn on pump. The water will pump antifreeze from the container into the system. This will not put any antifreeze into the fresh water tank. Turn faucets on until antifreeze appears.

On units with a gravity water fill, (195 Sport) pour RV antifreeze into tank (2-3 gallons). Place valves behind water heater in bypass position. Turn on pump until antifreeze appears out of faucets.

<b>NOTES</b>



## SAFETY DEVICES

### FIRE SAFETY

Prevention is the best form of fire safety. Observe the same precautions in your RV as you do in your home. Use care with any open flame inside of your unit. Follow the instructions previously listed for the care and maintenance, and operation of the various appliances in your motorhome. Make certain everyone in your party is familiar with the emergency features of the unit, the location of exits and the location and operation of fire extinguishers. It is recommended that a fire drill be conducted on a regular basis to ensure this knowledge. A chemical fire extinguisher has been furnished with your unit. Check it regularly to be sure it is ready for emergency use. Immediately replace a fire extinguisher that is discharged or partially discharged. Fire extinguishers are located directly inside the front entrance door on either a cabinet or on the sidewall.

### SMOKE DETECTOR/LP DETECTOR/CARBON MONOXIDE DETECTOR/FIRE EXTINGUISHER

Your motorhome is equipped with several safety devices. Test each device after the vehicle has been in storage, before each trip, and at least once a week during the time you actually use your motorhome. Be sure you always have the appropriate size of fresh replacement batteries on hand.

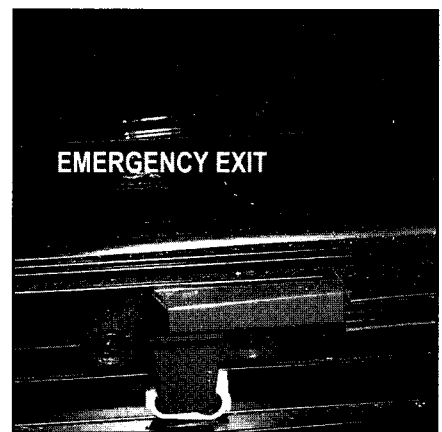
#### **WARNING!!!**

Do not bring or store LP gas containers, gasoline or other flammable liquids inside your RV.



### EMERGENCY EXITS

Emergency exits, commonly known as egress windows, are marked with a label which has one-inch red letters. Handles that must be operated to open emergency exits also will be colored red. Be sure your dealer explains the location and operation of emergency exits to you. It is also very important to familiarize all guests with the operation of all of the safety equipment installed in your RV.



## RV MAINTENANCE

RV owners are noted for the pride they take in the appearance of their units. Proper maintenance will do more than keep your motorhome looking nice. It can help ensure trouble-free operation and maximum efficiency of the appliance and accessories. Failure to maintain the vehicle or its components may also constitute a breach of your warranty obligation.

### NOTES




ations. Just as an open window or an unrepaired leak in your home may lead to costly damage, the failure to repair leaks in your vehicle or to reseal your seams may result in serious damage to your motorhome. Read the various appliance and component manufacturer's manuals for specific maintenance information.

Unless otherwise noted, maintenance functions should be performed at least annually. All maintenance schedules listed are the minimum requirement; heavy use, unusual temperatures or humidity, or other environmental conditions may require more frequent maintenance. At the start of each season, or after a period of storage, thoroughly inspect and test all systems and components to be certain they are functioning properly before you use your motorhome.

**Airing** of the unit is essential before you occupy it. See details under the AIR QUALITY and CONDENSATION sections of this manual.

**Automotive and Chassis System** of your vehicle should be serviced and maintained as outlined in the chassis owner's manual.

**Awning Supports** and bright metal parts should be cleaned and coated with silicone annually.

**Axle and Suspension** should be inspected frequently.

**Batteries** should be inspected frequently and refilled or recharged as necessary; battery cables and terminals should be checked and cleaned every 90 days.

**Body** should be washed to remove dirt, dust, road tar, bird and tree droppings, insects, and other foreign material from exterior surfaces. Use a mild soap in lukewarm water. Apply an automotive-type wax at least once a year.

**Bumper and Frames** that are painted, or any exposed painted surface, should be inspected for damage and rust. Rust should be removed and bumper and frame painted with rust preventive paint annually.

**Counter and Table Tops** should be cleaned periodically with a mild detergent.

**Electrical System** should be inspected and tested prior to each trip. Check the shoreline for damage. Test the 120-volt system for proper polarity and voltage. You may want to purchase a ground monitor and a line voltage tester to perform these checks.

**Fabrics** need regular and continuing care. To keep them at their best, vacuum and brush away loose dirt before it becomes embedded and more difficult to remove. Clean spills and stains while fresh. VELVET fabrics should be cleaned with extreme care. Spills on velvet generally will bead-up. Blot them up quickly and gently so as not to force the stain deep into the fabric. If a stain remains, spot-clean using one of the methods described below. Wipe the stain in the direction of the pile to prevent distortion. When the fabric is dry, gently brush with a soft brush. Many velvet fabrics cannot be cleaned with water-based cleaned agents.

**Draperies, Curtains, Bedspreads** should be dry-cleaned only.

**Cushions, Chairs, Sofas** may be labeled with the voluntary industry cleanability code. Because dyes or backings on some upholstery fabrics will be affected by water or solvents, the cleanability code will indicate the cleaning method

NOTES





that is safe for your fabric. If the furniture is not coded, test the fabric for discoloration on an inconspicuous part of the furniture before spot-cleaning. The code is symbolized by the following letters:

**W**

Use only water-based cleaning agents or foam. Mix two tablespoons ammonia or detergent, such as Ajax liquid, with a quart of water. Wipe the stain gently with a clean cloth dampened with the solution. Continue wiping, turning the cloth so that you are always using a clean portion, until the stain is removed. Be careful not to wet the fabric too much. Always wipe from the outer edge of the stain toward the center.

**S**

Use only mild, pure, water-free dry-cleaning solvents, such as Energine or Carbona. Dampen a clean cloth with the solvent and follow the same procedure described under W.

**WS**

Either of the above methods may be used.

**X**

Clean fabric only by vacuuming or light brushing to remove soil. Do not use liquid cleaning agents of any kind.

**TYPES OF STAINS**

**Water-Based**—ketchup, soft drinks, milk, etc. Remove using method W.

**Oil-Based**—salad dressing, butter, greasy food, etc. Use method S or, for flat-woven fabrics, not velvet, apply Texize K2R Spot Remover according to directions.

**Combination**—ice cream, gravy, etc. are both watery and oily. Remove these types of stains using the S method and follow with the W method.

**Mud**—lift away what you can easily remove without forcing the mud into the fabric. Allow the remaining mud to dry completely, then vacuum. If the stain remains, clean with method W.

When overall cleaning is necessary, professional cleaners are recommended. However, if you wish to do it yourself, follow these suggestions:

1. Vacuum the area thoroughly.
2. Test fabric for discoloration on an inconspicuous place using a foam cleaner such as Fibre Fresh Concentrate or Glamorene.
3. If no discoloration appears, use cleaner on entire item. Note: Many velvet fabrics cannot be cleaned with water-based cleaning agents.
4. After cleaning, you may wish to apply Scotchguard fabric protector to such areas as furniture arms, backs and cushions.

**NOTE:**

The above information is provided only as a service and should not be interpreted as a warranty. The list of cleaning agents does not constitute an endorsement of products; other similar products may be equally effective.

<b>NOTES</b>



**Floor Coverings** should be cleaned as necessary. Vacuum carpeting. Avoid using heavy moisture; it could enter and damage your floor.

## ADDITIONAL SAFETY CHECKS

### GENERAL DRIVING CHECKS

For your safety, make certain that the following items have been checked and rechecked before you take your RV on the road. Make certain that all items inside of your RV are secured (e.g., lawn chairs, pots and pans, TV, etc.). As you travel, these items, if not secured, may become damaged or may damage the interior of your RV.

**Lights**—The following lights should be tested: brake lights, warning lights, flashers, clearance lights, taillights and headlights.

**Rearview Mirrors**—Adjust the rearview mirrors so that the driver can see the right and left sides of the unit.

### OTHER DRIVING CHECKS

Whether you are departing from your home, rest area or campsite, you should check the following parts of your unit before you take off.

**Tires**—Before each trip, check your tires for uneven wear, road damage, foreign objects or excessive peeling or bulging. Each morning, inspect the condition and pressure. Heat generated by surface friction will increase the tires air pressure approximately six to nine psi; therefore, do not bleed air out of a hot tire. Inflate the tire to the recommended pressure (indicated either on the tire or in the manufacturer's instruction booklet).

#### NOTE:

Proper tire inflation is extremely important.

#### A TIRE SHOULD BE REPLACED WHEN:

1. It is worn to 1/16-inch depth in two or more adjacent grooves.
2. It is worn to the level of the tread indicators that are molded into the bottom of the tread grooves, or
3. The indicators appear in two or more adjacent grooves at three locations around the tire.

On new tire purchases, be certain that the new tire is the same size as the old tire and that the new tire has the same ply rating and load range as the old one. DO NOT mix radial-ply tires with bias or bias-belted tires.

**Tire Change**—Change a tire on as level and firm a surface as possible. If you are on the roadside, activate the vehicle's warning flashers. Apply parking brake and move transmission selector to Park (P). Set up flares and/or warning lights. See the chassis manufacturer's owner's manual for specific jacking and tire removal and replacement instructions which pertain to your unit. Stop at the nearest service facility and have the torque checked

#### NOTES




**▲ CAUTION!!!**

Never place the jack under a bumper or edge of the sidewall. On units equipped with a tag axle, never place the jack under the tag axle. Use the jack only for changing tires. Never get underneath the vehicle when using the jack; always securely stow the spare tire in the proper area and return all jacking equipment to its proper storage area.

**Wheel Lugs**—Wheel lugs must be tightened every 50 miles for the first 200 miles whenever a wheel has been reinstalled. Thereafter, check lugs after storage.

**Power Cord**—The 120-volt shoreline power cord must be unplugged from the external source and placed into its compartment. The cord hatch must be secured before you travel.

**Water Fill Hose(s)**—All hoses must be disconnected and all hose caps must be secured before you travel.

**Sewage Termination Valves**—These valves must be closed and locked before you travel. The sewer hose must be removed from the termination valve outlet and stored in the appropriate compartment. Termination caps must be securely fastened to the termination valve outlet(s).

**Door Step**—The door step must be returned to its travel position before the unit is safe for traveling. To do this, lift the front edge of the step and push it under the unit.

**Windows and Vents**—All windows and vents should be closed completely or adjusted as desired before you travel.

**TV Antenna**—The TV antenna must be cranked down to its traveling position.

**Automotive System**—The automotive system of your vehicle should be serviced and maintained as outlined in the chassis owner's manual.

**Interior Doors and Drawers**—Close and secure all interior doors and drawers in your unit. Store or secure all loose items.

**Exterior Access Doors**—Exterior access doors for storage and equipment should be closed and locked.

**NOTES**




**QUICK REFERENCE TROUBLESHOOTING GUIDE**

**NOTE:**

Use the appliance manufacturers' owner's manuals for all appliance trouble shooting.

**ELECTRICAL POWER**

No electrical power to unit.	Shoreline connection.	Be sure you have power to the shoreline.
	Circuit breaker may be off or tripped.	Reset breaker(s).
	Bad power cord adapter.	Replace adapter.

**POWER CONVERTER**

Converter makes a clicking noise.	Circuit overload.	Reduce load on circuit.
	Reversed polarity at battery.	Correct polarity at battery.
	Short in recharge line.	Locate and fix short.

**ELECTRICALLY CHARGED (HOT) CHASSIS**

Chassis is electrically charged.	Short in 110/120 volt circuit.	Disconnect unit from electrical supply. Have unit inspected and repaired if necessary, by a qualified service facility.
		NOTE: Determine if shoreline has proper polarity.
	Check shore line power for reverse polarity.	Disconnect unit from shoreline.
	Bad power cord adapter.	Replace adapter.

**LIGHTS**

Lights flickering.	Loose fuse holders.	Tighten or replace fuse holder.
	Blown fuse.	Replace fuse with one of the same ampere rating.
	Broken connection or wire. Bad ground.	Replace connection and/or wire. Make sure ground connection is secure.
Lights dim or half bright.	Bad battery.	Check battery condition.
	Possible converter malfunction	Have converter checked by an authorized service center.
	Possible low voltage from shoreline.	Be sure voltage to shoreline is not too low.

**NOTES**




**QUICK REFERENCE TROUBLESHOOTING GUIDE (CON'T'D. PG 2)**

**NOTE:**

Use the appliance manufacturers' owner's manuals for all appliance trouble shooting.

**ELECTRICAL POWER**

No electrical power to unit.	Shoreline connection.	Be sure you have power to the shoreline.
	Circuit breaker may be off or tripped.	Reset breaker(s).
	Bad power cord adapter.	Replace adapter.

**POWER CONVERTER**

Converter makes a clicking noise.	Circuit overload.	Reduce load on circuit.
	Reversed polarity at battery.	Correct polarity at battery.
	Short in recharge line.	Locate and fix short.

**ELECTRICALLY CHARGED (HOT) CHASSIS**

Chassis is electrically charged.	Short in 110/120 volt circuit.	Disconnect unit from electrical supply. Have unit inspected and repaired if necessary, by a qualified service facility.
		NOTE: Determine if shoreline has proper polarity.
	Check shore line power for reverse polarity.	Disconnect unit from shoreline.
	Bad power cord adapter.	Replace adapter.

**LIGHTS**

Lights flickering.	Loose fuse holders.	Tighten or replace fuse holder.
	Blown fuse.	Replace fuse with one of the same ampere rating.
	Broken connection or wire. Bad ground.	Replace connection and/or wire. Make sure ground connection is secure.
Lights dim or half bright.	Bad battery.	Check battery condition.
	Possible converter malfunction	Have converter checked by an authorized service center.
	Possible low voltage from shoreline.	Be sure voltage to shoreline is not too low.

**NOTES**




**QUICK REFERENCE TROUBLESHOOTING GUIDE (CON'T'D. PG 3)**

**NOTE:**

Use the appliance manufacturers' owner's manuals for all appliance trouble shooting.

**LP GAS**

Smell gas in and/or around unit.

Possible gas leak in system

1. Extinguish any 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.

**WATER PUMP**

Pump fails to start when the switch is on.

Fuse located in the converter may have blown.

Replace fuse with one of the same ampere rating.

Water system hooked up to city water.

Remove hose from city water or turn water pump switch off.

Pump continues to operate whether the faucet's are open or closed

Water tank may be empty or there might be a leak in the system.

Fill water tank and/or fix any leaks in the system.

Pump goes ON and OFF with faucet's shut OFF.

There may be a leak in plumbing system fittings or lines

Fix any leaks in plumbing system, by checking all fittings for tightness and replacing any broken parts.

**WASTE TANK**

Waste tank will not drain

Build up in tank.

Check for build-up in tank at stool. Make sure stool holds water.

**TERMINATION VALVE**

Termination valve leaks.

Debris blocking valve or build-up

Clear debris from and around valve.

Bad gasket.

Replace gasket.

**MICROWAVE OVEN**

Microwave oven will not operate.

No power to oven.

Check power supply and circuit breaker

Door open, or timer OFF.

Close door and turn timer ON.

**NOTES**




**QUICK REFERENCE TROUBLESHOOTING GUIDE (CON'T'D. PG 4)**

**NOTE:**

Use the appliance manufacturers' owner's manuals for all appliance trouble shooting.

**FURNACE**

Furnace does not light.

May be out of LP gas.

Check the LP gas supply.

Low battery or bad battery.

Refill water to correct level in battery; recharge and/or replace battery.

Furnace fan does not run.

Blown fuse.

Replace fuse with one of the same ampere rating.

The furnace does not light after several attempts.....



1. Turn the thermostat and the furnace gas control valve OFF.
2. Contact your Coachmen dealer or authorized service center. DO NOT attempt to repair or adjust the furnace yourself.

**REFRIGERATOR**

Refrigerator will not cool.

Unit not level.

Be sure unit is level.

Upper and/or lower refrigerator vents clogged.

Clear vents of all debris.

If on gas, empty tank.

Fill LP gas tank.

**TV ANTENNA**

TV antenna has poor reception.

Power jack not turned on.

Turn power jack switch on.

Bad connections at TV or wall plate.

Make sure the connections are good at both TV and wall plate.

Cut or nicked cable.

Replace bad cable where needed at TV and antenna.

Antenna not pointed in direction of "sending" station.

Point antenna in direction of "sending" station.

**NOTES**




## MAINTENANCE SCHEDULE

\*Maintenance schedules listed are minimum requirements; heavy use, unusual temperatures or humidity, or other environmental conditions may require more frequent maintenance.

ITEM	Every Trip	Every 30 days or 1,000 miles	Every 60 days	Every 90 days or 2,500 miles	Every 6 months or 5,000 miles	Annually or 10,000 miles	REFERENCE
Airing	*						Air Quality, Condensation, Maintenance, this manual
Appliances	*					*	Appliances, this manual; Appliance Manufacturer's instructions
Awning Supports						*	Maintenance, this manual
Automotive System	*						Chassis Manufacturer's manual
Batteries	*	*					Maintenance, this manual
Brakes & Suspension					*	*	Maintenance, this manual; Brake/Suspension Manufac. manual
Body					*		Maintenance, this manual
Bumpers						*	Maintenance, this manual
Counter, Table Tops	*						Maintenance, this manual
Doors				*			Maintenance, this manual
Electrical System	*						Maintenance, this manual
Fabrics						*	Care of Fabrics, this manual
Floor Coverings	*						Maintenance, this manual
Frame						*	Maintenance, this manual
Hinges						*	Maintenance, this manual
Locks & Latches						*	Maintenance, this manual; Lock/Latch Manufacturer's manual
LP Gas	*	*					LP Gas; this manual; Appliance Manufacturer's instructions
Lug Nuts	*						Maintenance, Chassis manual
Roof, Body, Underbelly				*			Maintenance, this manual
Seams (Seal)						*	Maintenance, this manual
Shades, Valances	*						Maintenance, this manual
Steps	*					*	Maintenance, this manual; Step Manufacturer's instructions
Tires	*					*	Pre-Travel Check, Maintenance, this manual; Tire Manufac. manual
TV Antenna		*					TV Antenna Manufacturer's instructions
Vents						*	Maintenance, this manual; Vent Manufacturer's instructions
Vinyl Ceiling/Wall Panels	*						Maintenance, this manual
Water Heater	*					*	Maintenance, this manual; Water Heater Manufacturer's manual
Windows	*						Maintenance, this manual; Window Manufacturer's instructions
Wood Cabinetry	*	*					Maintenance, this manual





**REPORTING SAFETY DEFECTS**

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying COACHMEN RECREATIONAL VEHICLE COMPANY, LLC. at 1-800-453-6064.

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 COACHMEN RECREATIONAL VEHICLE COMPANY, LLC.

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

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

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

**NOTES**








The Coachmen recreational vehicles described in this manual incorporate components produced by divisions of Coachmen Industries, Inc., and various suppliers. During the product year, Coachmen may decide to produce units with different components and/or specification other than initially scheduled. All such changes are approved for use by Coachmen in order to maintain the quality standards associated with the Coachmen name. All illustrations and specifications contained within this owner's manual are based upon the latest product information at the time of publication. Coachmen Recreational Vehicle Company, LLC reserves the right to make changes in operations, materials, equipment and specifications at any time without notice. Coachmen assumes no responsibility for any error in type or print reproduction of specifications in this owner's manual. Check with your Coachmen dealer for additional information regarding your specific recreational vehicle.

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