

View

Table of Contents

INTRODUCTION 1

About This Manual	1-1
Safety Messages Used In This Manual	1-1
Owner InfoCase	1-2
Chassis Owner's Manual	1-2
Pre-Delivery Inspection	1-2
Front Axle Tire Alignment	1-2
Service and Assistance	1-2
Reporting Safety Defects	1-2
Vehicle Certification Label	1-3
Body and Chassis Specifications	1-4
Tank Capacities	1-5
Owner Information	1-6
Emergency Information	1-6
2006 New Vehicle Limited Warranty	1-7

SAFETY & PRECAUTIONS 2

General Warnings	2-1
Driving	2-1
Formaldehyde Information	2-1
LP Gas Leak Detector	2-1
Carbon Monoxide Warning	2-2
Carbon Monoxide Alarm	2-2
Smoke Alarm	2-3
Fire Extinguisher	2-3
Emergency Exits	2-4
Roadside Emergency	2-4
Wheel Mounting Nuts (Lug Nuts)	2-5
Jump Starting	2-7
Engine Overheat	2-7
Effects of Prolonged Occupancy	2-7

DRIVING YOUR VEHICLE 3

Seats	3-1
Seat Belts	3-1
Child Restraints	3-2
Keyless entry	3-2
Rearview Monitor System	3-2
Auto Air Conditioner/Heater	3-3
In-Dash Radio	3-3
Battery Boost Switch	3-3

Engine Access	3-3
Engine Cooling System	3-3
Lights	3-3
Automotive 12-Volt Fuses and Circuit Breakers	3-4
Tires	3-4
Suspension Alignment and Tire Balance	3-4
Air Springs – Rear Helper	3-4
Loading the Vehicle	3-5
Weighing Your Loaded Vehicle	3-6
Roof Loading	3-7
Car or Trailer Towing	3-7
Trailer Wiring Connector	3-8
Towing Guidelines	3-8
Mountain Driving	3-9
Ladder Extension	3-10
Awning & Door Props	3-10

APPLIANCES & SYSTEMS 4

Refrigerator	4-1
Refrigerator Service Access Compartment	4-1
Range Top	4-2
Range Hood	4-2
Microwave Oven	4-3
Systems Monitor Panel (Wall Mounted)	4-3
LP Gas Furnace	4-4
Water Heater	4-5
Pressure-Temperature Relief Valve	4-6
Water Heater Bypass Valve	4-6
LP Gas Furnace	4-7
Heat Pump	4-7
Ducted Roof Air Conditioning System	4-8
Electric Entrance Step	4-10

LP GAS 5

LP Gas Supply	5-1
Safe Use of the LP Gas System	5-2
LP Gas Warnings and Precautions	5-3
Pressure Regulator	5-4

ELECTRICAL 6

Electrical Cautions	6-1
110-Volt AC System	6-1
External Power Cord	6-1
Power Converter	6-2
110-Volt Circuit Breakers	6-3
110-Volt Receptacles	6-4

Ground Fault Circuit Interrupter	6-4
Auxiliary 110-Volt Generator	6-4
12-Volt DC System	6-6
Auxiliary Battery (Aux. Batt) Switch	6-6
Battery Access	6-6
Battery Care	6-7
12-Volt House Fuses and Circuit Breakers	6-8

PLUMBING 7

Fresh Water System	7-1
Water Pump	7-2
Disinfecting Fresh Water Systems on Recreation Vehicles	7-4
Shower Hose Vacuum Breaker	7-5
Exterior Shower/Wash Station	7-5
Toilet	7-5
Waste Water System	7-6
Holding Tank Heater	7-7
Water Line and Tank Drain Valves	7-7
Winterizing Procedure	7-8
Water System Drain Valve Locations	7-11

ENTERTAINMENT 8

DVD Player	8-1
TV - LCD	8-1
TV Antenna	8-1
TV Signal Amplifier	8-2
Cable TV Hook-Up	8-2
Satellite System Wiring	8-2

FURNITURE & SOFTGOODS 9

Sleeping Facilities	9-1
Couch/Bed Conversion	9-1
Dinette/Bed Conversion	9-1
Front Bunk	9-2
Skylight	9-3
Day/Nighter Pleated Blinds	9-3
Wood Furniture and Cabinetry	9-4

SLIDEOUT ROOM 10

Slideout Room Operation	10-1
Crank-In Mode:	10-3
General Slideout Care	10-3

MAINTENANCE & STORAGE 11

Sealants	11-1
Roof	11-1
Underbody	11-1

Table of Contents

View

Exterior Finish	11-2
Care of Decals	11-2
Plastic Parts - Cleaning	11-2
Exterior Lights	11-3
Interior Softgoods	11-3
Care of Ceiling Fabric	11-5
Cabinetry	11-6
Vinyl Wallboard	11-6
Tables and Countertops	11-6
Stainless Steel Sink	11-6
Range and Refrigerator	11-7
Bathroom	11-7
Doors and Windows	11-7
Day/Nighter Pleated Blinds – Care/Adjustment	11-7
Preparing Vehicle For Storage	11-7
Removal From Storage	11-8
Coach Maintenance Chart	11-10
Recommended Sealant Application	11-13

View

SECTION 1 INTRODUCTION

Congratulations! We welcome you to the exciting world of motor home travel and camping. You will find it convenient and enjoyable to have all the comforts of home and still enjoy the great outdoors wherever you choose to go.

Your motor home has been carefully designed, engineered and manufactured to provide dependability as well as safety. Before sliding into the driver's seat, please become familiar with operations and features. This manual was prepared to aid you in the proper care and operation of the vehicle and equipment. We urge you to read it completely. In addition, spend some time with the dealer when you take delivery; you will want to learn all you can about your new motor home.

ABOUT THIS MANUAL

Please read this operator's manual completely to understand how everything in your coach works before taking it on its "maiden voyage."

*NOTE: This manual describes many features of your motor home and includes instructions for its safe use. This manual, including photographs and illustrations, is of a general nature only. **Some equipment and features described or shown in this manual may be optional or unavailable on your model.** Because of Winnebago Industries' continuous program of product improvement, it is possible that recent product changes and information may not be included. The instructions included in this manual are intended as a guide, and in no way extend the responsibilities of Winnebago Industries beyond the standard written warranty as presented in this manual. The descriptions, illustrations, and specifications in this manual were correct at the time of printing. We reserve the right to change specifications or design with-*

out notice, and without incurring obligation to install the same on products previously manufactured.

SAFETY MESSAGES USED IN THIS MANUAL

Throughout this manual, certain items are labeled Danger, Warning, Caution or Note. These terms alert you to precautions that may involve damage to your vehicle or a risk to your personal safety. Read and follow them carefully.



DANGER

DANGER indicates a directly hazardous situation which, if not avoided, will result in death or serious personal injury.



WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious personal injury.



CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, could result in damage mainly to equipment or property, but in some cases may also result in minor or moderate personal injury.

NOTE: A 'Note' is not necessarily safety related but indicates a recommendation or special point of information that could assist in understanding the use or care of a feature item.

OWNER INFOCASE

The materials in your Owner InfoCase contain warranty information and operating and maintenance instructions for the various appliances and components in your motor home.

NOTE: Many of the instruction sheets and manuals for the various appliances and components have been incorporated into the Operator Manual Supplement for your convenience. Throughout the Operator's manual when referred to the InfoCase keep in mind that much of this information will be found in the Operator Manual Supplement. Please read the FAQ in section 1 of the Operator Manual Supplement for more details.

CHASSIS OWNER'S MANUAL

Throughout this manual, frequent reference is made to the vehicle chassis owner's manual that is provided by the manufacturer of the chassis on which this motor home is built (e.g., Daimler-Chrysler Dodge Sprinter). Consult the chassis owner's manual for operating safety and maintenance instructions pertaining to the chassis section of the motor home

PRE-DELIVERY INSPECTION

This motor home has been thoroughly inspected before shipment. Your dealer is responsible for performing a complete pre-delivery inspection of the chassis and all motor home components.

As a part of the pre-delivery inspection procedure, the dealer is responsible for road testing the motor home; noting and correcting any problems before delivery.

FRONT AXLE TIRE ALIGNMENT

We recommend that you have the front suspension and steering alignment checked and adjusted after you have fully loaded the vehicle

according to your needs. Thereafter, have alignment inspected periodically to maintain vehicle steering performance and prevent uneven tire wear.

SERVICE AND ASSISTANCE

Your dealer will be glad to provide any additional information you need, as well as answer any questions you might have about operating the equipment in your motor home. When it comes to service, remember that your dealer knows your vehicle best and is interested in your satisfaction. Your dealer will provide quality maintenance and any other assistance that you may require during your ownership of this vehicle.

If you need warranty repairs while traveling you may take your motor home to any authorized Winnebago or Itasca dealership and request their assistance.

See the dealership directory in your Owner InfoCase.

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 Winnebago Industries, Inc.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Winnebago Industries.

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.

VEHICLE CERTIFICATION LABEL

This label contains vehicle identification and other important reference information. The label is affixed to the lower inside panel of the door or on the door jamb.

MANUFACTURED BY		INCOMPLETE VEHICLE MANUFACTURED	
		BY <u>1</u>	<u>2</u>
GAWR: <u>3</u>		GVWR <u>4</u> LB	KG
FRT	LB <u>5</u> KG	SUITABLE TIRE AND RIM CHOICE	COLD INFLATION PRESSURE
RR	LB <u>5</u> KG	TIRE	RIM
		<u>6</u>	<u>7</u>
			<u>8</u> PSI
			KPA <u>SING</u>
			PSI <u>8</u> KPA <u>DUAL</u> <u>9</u>
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.			
SERIAL NO.	<u>10</u>	VIN	<u>11</u>
TYPE	<u>12</u>	MODEL	<u>13</u>
			COLOR <u>14</u>

EXPLANATION OF DATA

- Chassis manufacturer.
- Chassis manufacture date.
- Month and year of manufacture at Winnebago Industries.
- Gross Vehicle Weight Rating: Total permissible weight of the vehicle, including driver, passengers, total cargo carried (including all liquids) and equipped with all options.
- Gross Axle Weight Rating: Total permissible weight allowed for the front and rear axles (listed in pounds and kilograms).
- Suitable Tire Choice: Tires recommended to meet handling and safety requirements. When replacing any of the tires on your vehicle, always replace with a tire that meets these specifications.
- Suitable Rim Choice: Wheel rims recommended to meet handling and safety requirements. When replacing any of the rims on your vehicle, always replace with a rim that meets these specifications.
- Cold Inflation Pressure: Inflation pressures at Gross Axle Weight Ratings recommended (while Cold) for the tires originally equipped on your vehicle. These pressure levels must be maintained to assure proper handling, safety and fuel economy.
- Rear Axle Wheel Configuration: Single or Dual as it relates to the inflation.
- Serial Number: This is the serial number assigned to the completed vehicle by Winnebago Industries.
- Vehicle Identification Number (VIN): This number identifies the chassis on which the motor home is built. The 10th digit of the VIN designates the chassis model year. (5=2005, 6=2006, etc.). This information is useful when ordering chassis repair parts.
- Type: States the NHTSA designated usage classification for your motor home. MPV signifies a Multi-purpose Passenger Vehicle.
- Model: Lists the Winnebago product model number of your vehicle.
- Color: Signifies the color code number of the decor used throughout the vehicle. This number is necessary for ordering replacement cushions, curtains, carpet, etc.

BODY AND CHASSIS SPECIFICATIONS

Model	23H	23J
Length (front bumper to rear spare tire)	23' 6"	23' 6"
Exterior Height (top of A/C)	10' 9"	10' 9"
Exterior Width	7' 6"	7' 6"
Exterior Storage (cu. ft.)	12.0	25.3
Interior Height	6' 8"	6' 8"
Interior Width	7' 3"	7' 3"
GCWR (lbs.)	13,700	13,700
GVWR (lbs.)	10,200	10,200
GAWR - Front (lbs.)	3,859	3,859
GAWR - Rear (lbs.)	7,056	7,056
Wheelbase	159"	159"

NOTE: The height of each model is based on the curb weight of a typically equipped unit and is measured to the highest standard feature on the roof. The actual height of a vehicle may vary by several inches depending on equipment variations. Refer to Section 3 for Towing Guidelines.

TANK CAPACITIES**Chassis Fuel Tank**

All Models 26.4 gal.

LP Gas Tank

All Models 14.1 gal.* (17.6 gal. w.c.)

Fresh Water Tank

All Models 28 gal.

Water Heater

All Models 6 gal.

HT1 - Black Water Holding Tank

Model 23H (Toilet & Lavatory) 33 gal.

Model 23J (Toilet) 31 gal.

HT2 - Gray Water Holding Tank

Model 23H (Galley & Shower) 32 gal.

Model 23J (Galley, Shower & Lavatory) 38 gal.

**LP Gas tank capacity shown is the usable "full" LP gas capacity, which is 80% of the tank manufacturer's listed water capacity (w.c. shown in parenthesis). An LP tank must have at least 20% of tank volume free to allow for expansion and proper vaporization of the liquid fuel. The tank is also equipped with mandatory safety shut-off equipment that prevents filling above this level.*

NOTE: Capacities shown are approximate volumes based on computer design calculations. Usable capacities may vary according to fabrication and installation of tanks and compartments.

**SECTION 1
INTRODUCTION**

View

OWNER INFORMATION

Owner's Name _____

Street Address _____

City and State (or Province in Canada) _____

Motor Home Serial Number _____

Vehicle Chassis Identification Number (VIN) _____

Vehicle Mileage at Time of Delivery _____

Selling Dealer Name and Address _____

EMERGENCY INFORMATION

YOUR WINNEBAGO INDUSTRIES DEALER

Name _____

Address _____

Contact Person _____

Phone _____

CHASSIS DEALER/SERVICE CENTER

Name _____

Address _____

Contact Person _____

Phone _____

INSURANCE POLICY

Company _____

Policy Number _____

Phone _____

2006 NEW VEHICLE LIMITED WARRANTY
WINNEBAGO INDUSTRIES, INC.**WARRANTY COVERAGE TO OWNER**

Winnebago Industries, Inc. of Forest City, Iowa warrants each new Winnebago Industries motor home to the owner for use in the U.S.A. and Canada as follows:

WARRANTY PERIOD

The Warranty Period for all coverages begins on the date the vehicle is delivered to the first retail purchaser or first placed in service as a demonstrator or company vehicle.

BASIC COVERAGE

The basic Warranty Period is 12 months or 15,000 miles (24,135 kilometers), on the odometer, whichever occurs first. This is the only warranty authorized by Winnebago. There are no other promises, representations or warranties concerning the matters set forth herein. Winnebago Industries does not authorize any person to create for it any other obligations or liability in connection with this vehicle. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO THIS VEHICLE IS LIMITED IN DURATION TO THE DURATION OF THIS WRITTEN WARRANTY AS HEREINBEFORE OR HEREINAFTER PROVIDED. THE PERFORMANCE OF REPAIRS IS THE EXCLUSIVE REMEDY UNDER THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. WINNEBAGO INDUSTRIES SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOSS OF TIME, INCONVENIENCE, OR OTHER CONSEQUENTIAL DAMAGE INCLUDING EXPENSE FOR GASOLINE, TELEPHONE, TRAVEL, LODGING, LOSS OR DAMAGE TO PERSONAL PROPERTY, OR LOSS OF REVENUE RESULTING FROM BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

ITEMS NOT SUBJECT TO WARRANTY COVERAGE.

Chassis, Drivetrain and related components*
Wheels*
Tires*
Service Items, such as Windshield Wiper Blades, Lubricants, Fluids & Filters
Adjustments

*These items are covered under the manufacturer's individual warranty.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Also, this warranty shall not apply to failures, damage or malfunctions resulting from normal wear, misuse, abuse, negligence, alteration, accident, fire, improper repair of the vehicle or failure to follow recommended maintenance requirements.

36 MONTHS/36,000 MILE STRUCTURAL WARRANTY

At the expiration of the Basic Coverage and for the remainder of the period of 36 months or 36,000 miles (57,924 kilometers), on the odometer, whichever occurs first, Winnebago Industries warrants the following:

1. Structural defects of the subfloor, floor, and slide-out room assembly. Floor lamination failure and lamination failure of the subfloor panels and risers are covered by the structural warranty.
2. Body Thermo-Panel® Lamination of the sidewalls and backwall against delamination. Body Thermo-Panel® Lamination is the bonding of the exterior skin and the interior paneling to an insulating core material. Delamination (separation of layers)

caused by other factors such as physical damage or failure to properly maintain sealants is not covered by this warranty.

WINNEBAGO INDUSTRIES' RESPONSIBILITY

Any part of the vehicle subject to warranty which is found to be defective in material or workmanship, will be repaired or replaced at Winnebago Industries' option upon notice of the defect without charge to the customer for parts or labor. While any Winnebago Industries motor home dealer can perform warranty service, we recommend you return to the dealership that sold you your vehicle. If you are touring or have moved, contact any Winnebago Industries motor home dealer in the United States or Canada for warranty service.

CUSTOMER RESPONSIBILITY WHEN REPAIRS ARE NEEDED

If a part of the system covered by this warranty fails to function or requires service during the warranty period:

1. Promptly take the vehicle to the selling dealer for repair or inspection.
2. Written notice of defects must be given to the selling dealer or manufacturer no later than 10 days after the expiration of the warranty.
3. If the dealer is incapable of making the repairs, request that he contact Winnebago Industries, Inc.
4. If, after the above steps are completed and the repair is not made, the customer should contact Winnebago Industries, Inc., P.O. Box 152, Forest City, Iowa 50436, Attention: Owner Relations Department (800-537-1885) and furnish the following information:
 - The complete serial number of the vehicle
 - Date of retail purchase
 - Selling dealer's name
 - Nature of the service problem, and a brief explanation of the steps or service the dealer has performed, and the results obtained. The customer may be directed to another dealer or service center for repairs to be completed, if such a dealer or service center is better able to complete the repair.

Winnebago Industries may, at its option, request the vehicle be returned to Forest City, Iowa for repair. If the customer refuses to allow repairs to be performed at the Forest City, Iowa facility, the warranty on that repair will be voided.

5. If after the above steps are completed and the repairs are not satisfactory, the customer may contact the Service Administration Manager of Winnebago Industries, and request a customer relations board meeting to resolve the problem. This action, however, is not mandatory.
6. Certain components are covered beyond the 12 months/15,000 miles basic warranty coverage by the individual manufacturer's warranty. Please refer to the component's information supplied in the owner's information InfoCase for any additional warranty coverage after the basic warranty has expired.

DEALER'S REPRESENTATIONS EXCLUDED

Winnebago Industries, Inc. does not undertake the responsibility to any purchaser of its products for any undertaking, representation, or warranty made by dealers selling its product beyond those herein expressed.

INSTALLATION NOT COVERED

Winnebago Industries, Inc. cannot, however, and does not accept any responsibility in connection with any of its motor homes for additional equipment or accessories installed at any dealership or other place of business, or by any other party other than Winnebago Industries, Inc. Such installation of equipment or accessories by any other party will not be covered by the terms of this warranty.

SECTION 1 INTRODUCTION

View

CARE AND MAINTENANCE

It is the owner's responsibility to perform the care, maintenance and proper load distribution described in the owner's manual which accompanies your motor home. Any damage which results to your vehicle as a result of your failure to perform such duties, is not covered.

Damage to appearance items such as fiberglass, metal, paint, fabrics and trim, may occur during manufacturing or transporting. Normally, any factory defect or damage is corrected at the factory. In addition, dealers are obligated to inspect each vehicle upon delivery to them and prior to delivery to you. You should also immediately inspect appearance items and advise your selling dealer of any discrepancies. Damage and normal deterioration due to use and exposure is not covered by this warranty.

CHANGES IN DESIGN

Winnebago Industries, Inc. reserves the right to make changes in design and changes or improvements upon its products without imposing any obligation upon itself to install the same upon its products theretofore manufactured.

NEW YORK:

If your motor home has been repaired three or more times for the same nonconformity, defect, or condition, or if your motor home has been out of service by reason of repair for twenty-one days, Section 198-a of the General Business Law of the State of New York requires you to provide written notice by certified mail, return receipt requested, to Winnebago Industries or its authorized dealer before making any claim under that section of the law. If you do have problems with your motor home, you should provide written notice to Winnebago Industries at the following address:

Winnebago Industries, Inc.
P.O. Box 152
Forest City, Iowa 50436
Atten: Owner Relations

CALIFORNIA:

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

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

The CAP-RV program operates as a certified mechanism under the review of the California Arbitration Certification Program. You must utilize the arbitration program before claiming rights conferred by 15 USC section 2310 (Uniform Commercial Code) or Civil Code section 1793.22(b) (Tanner Consumer Protection Act). You are not required to use the program if you choose to seek redress by pursuing rights and remedies not created by those laws.

Revised 9-05

SECTION 2 SAFETY & PRECAUTIONS

GENERAL WARNINGS

- Only seats equipped with seat belts are to be occupied while the vehicle is moving.
- Make sure all passengers have seat belts fastened in a low and snug position so the force exerted by the belt in a collision will be spread across the strong hip area. Pregnant women should wear a lap-shoulder belt whenever possible, with the lap belt portion worn low and snug throughout the pregnancy.
- All moveable or swiveling seats should be placed and locked in forward facing positions while the vehicle is moving.
- Never let passengers stand or kneel on seats while the vehicle is moving.
- Sleeping facilities are not to be utilized while vehicle is moving.
- Examine the escape window and be familiar with its operation.
- Inspect the fire extinguisher monthly for proper charge and operating condition. This should also be done before beginning a vacation or any extended trip.

DRIVING

- Do not attempt to adjust the driver's seat while the vehicle is moving.
- Do not adjust tilt steering in a moving vehicle.
- Do not operate the cruise control on icy or extremely wet roads, winding roads, in heavy traffic, or in any other traffic situation where a constant speed cannot be maintained.
- Use care when accelerating or decelerating on a slippery surface. Abrupt speed changes can cause skidding and loss of control.
- Driving through water deep enough to wet the brakes may affect stopping distance or cause the vehicle to pull to one side. Check brake operation in a safe area to be sure they have

not been affected. Never operate any vehicle if a difference in braking efficiency is noticeable.

- Adverse weather conditions and extremes in terrain may affect handling and/or performance of your vehicle. Refer to your chassis manual for related information.

FORMALDEHYDE INFORMATION



WARNING

Some components in this vehicle contain formaldehyde based adhesives which may release formaldehyde fumes into the air for an unknown period of time until total dissipation occurs. Individuals who are allergic to formaldehyde gas fumes may experience irritation to eyes, ears, nose and throat. Reaction in infants may be more severe. Although long range effects are not well understood, testing to date has not revealed any serious health effects in humans at the level of emission from these products.

LP GAS LEAK DETECTOR

Your coach is equipped with an LP gas leak detector which sounds an alarm if an unsafe amount of LP gas is present inside the coach. Because LP gas is heavier than air, the leak detector is located on a cabinet face near the floor of the coach



 **WARNING**

Never use an open flame to test for gas leaks. When testing for gas line leaks with a soapy water solution, DO NOT use a detergent containing ammonia or chlorine. These substances may generate a chemical reaction causing corrosion to gas lines, resulting in dangerous leak conditions.

Power Connection

The LP gas leak detector is powered by the coach batteries. If the auxiliary battery switch is shut off or the battery cable is disconnected from the batteries, the alarm will not work. The LP gas leak detector fuse is located in the 12-volt house electrical load center.

Because the LP gas leak detector is connected to the auxiliary battery, it is always drawing a small amount of current. Even though this current draw is slight, it could drain the coach battery during storage periods when the house battery will not be charged regularly by the engine or shoreline. Turn the Aux. Batt switch OFF to avoid current drain during storage periods.

Further Information

See the manufacturer's information in your Owner InfoCase. It contains further instructions on nuisance alarms and care and testing of the LP gas leak detector.

CARBON MONOXIDE WARNING

 **WARNING**

Avoid inhaling exhaust gases, as they contain carbon monoxide, which is a colorless, odorless and poisonous gas.

The best protection against carbon monoxide entry into the vehicle body is a properly maintained engine exhaust and ventilation system. It is recommended that the exhaust system and body be inspected by a qualified motor home service center.

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

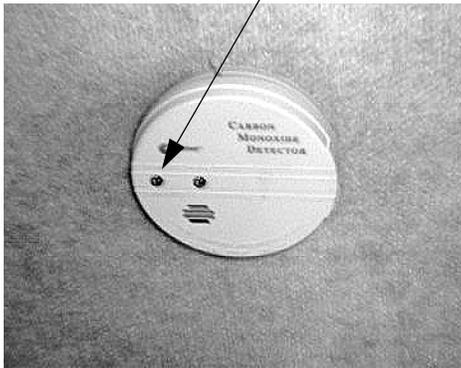
To allow proper operation of the vehicle's ventilation system, keep front ventilation inlet grill clear of snow, leaves or other obstructions at all times. **DO NOT OCCUPY A PARKED VEHICLE WITH ENGINE RUNNING FOR AN EXTENDED PERIOD.**

Do not run the engine in confined areas, such as a garage, except to move the vehicle into or out of the area.

CARBON MONOXIDE ALARM

Your coach is equipped with a carbon monoxide (CO) alarm located on the ceiling in the bedroom area. The CO alarm is powered by a 9-volt battery and has a sensor that is designed to detect toxic carbon monoxide gas fumes resulting from incomplete combustion of fuel. It will detect CO gas from any combustion source such as the furnace, gas range/oven, water heater, refrigerator, chassis engine, and electric generator engine.

Press button to test



Carbon Monoxide Alarm

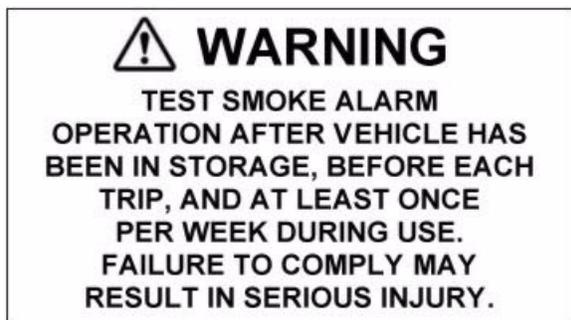
Further Information

Please read the information provided by the manufacturer, which is included in your Owner InfoCase. It includes information on precautions, operational testing, and battery replacement.

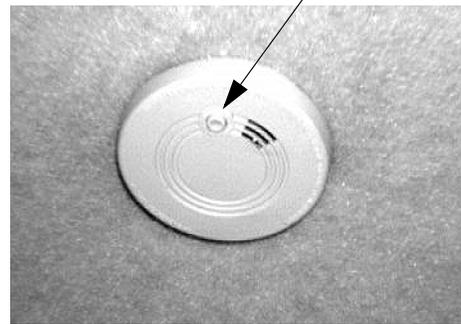
SMOKE ALARM

Your motor home is equipped with a smoke alarm located on the ceiling in the galley area. The smoke alarm is powered by a 9-volt battery and has a sensor that is designed to detect smoke. This alarm meets U.L. Standard 217 and NFPA Standard 74 for operation of smoke detection devices.

The following label is affixed either to the smoke alarm or on the ceiling near the smoke alarm.



Press button to test



Smoke Alarm

Further Information

Please read the information provided by the manufacturer, which is included in your Owner InfoCase. It includes information on precautions, operational testing, and battery replacement.

FIRE EXTINGUISHER

A dry chemical fire extinguisher is located near the main entrance door.



We recommend that you become thoroughly familiar with the operating instructions displayed on the side of the fire extinguisher or in the information supplied in your Owner InfoCase.

We also recommend that you inspect the fire extinguisher for proper charge at least once a month in accordance with National Fire Protection Association (NFPA) recommendations as stated on the label.

If the charge is insufficient, the fire extinguisher must be replaced.



WARNING

Do not test the fire extinguisher by discharging it. Partial discharge can cause leakage of pressure or contents which would render the unit inoperative when needed. When using the fire extinguisher, aim the spray at the base of the fire.



WARNING

This window should be kept closed while driving to avoid drawing dangerous exhaust gases into the vehicle.

EMERGENCY EXITS



WARNING

Use care when exiting emergency window, as broken glass may be present in the exit area.

Escape Window

The bedroom escape window is secured by two red safety latches at the bottom of the window.

To open, lift both latches up and toward the center of the window, then push outward at the bottom of the window.

Brief instructions for opening are also located on the latches for quick reference and for passengers who may not be familiar with the exit.



Lift latch handles upward to open.
Escape Window

**Using Slider Windows As
Emergency Exits**

Most slider windows along the side of the motor home can also be used as emergency exits, should the need arise. To use the windows as exits, first slide the window open, then slide the screen open or push the screen material out, depending on window type.

ROADSIDE EMERGENCY

We strongly advise obtaining professional road service to change a flat tire whenever possible. However, if an emergency requires you to change the tire yourself, please exercise extreme caution and read all tire changing information in the chassis manufacturer's operating guide.

If You Get A Flat Tire

- DO NOT panic.
- Grip the steering wheel firmly and steer the vehicle as straight as possible. Avoid quick maneuvers. You may need to counter-steer to compensate for "pull" created by the failed tire.
- DO NOT stomp on the brake. This abruptly shifts the vehicle's weight forward, making it nose-dive and pull toward the blown-out side.
- DO NOT jerk your foot off the accelerator. Just ease back on the accelerator slowly and gently to continue momentum. The deflated tire will slow the vehicle.
- If you must change lanes to get to a safe stopping place, use your signals to warn other motorists and change lanes smoothly and carefully after you are certain the lane is clear.

- Let the vehicle coast to a stop, gently steering to a safe stopping place off the traffic lanes of the road. Don't worry about damaging the tire or wheel rim by driving on it. A tire or wheel replacement is cheaper than damaging the vehicle or injuring yourself.
- When you have come to a stop, activate your hazard flashers to warn other motorists, then exit the vehicle carefully.
- Set out flares or other warning devices.

Check your tires for proper inflation before each trip and at least once a month with an accurate tire gauge.

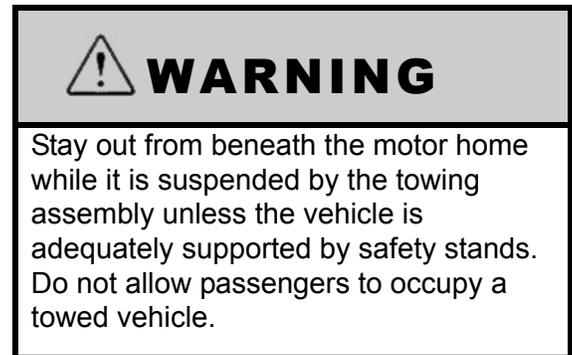
Recovery Towing

When calling a professional towing service, we recommend that you advise them of your coach length and approximate front axle weight listed on your Vehicle Certification Label. This will allow the towing operator to determine the proper towing equipment to use.

We recommend that you ask for an underlift (wheel lift or frame lift) type towing assembly for safe towing.

Winnebago Industries does not assume responsibility for damage incurred while towing this vehicle.

NOTE: Consult the chassis owner's manual for any additional towing instructions or precautions provided by the chassis manufacturer.



WHEEL MOUNTING NUTS (LUG NUTS)

The mounting bolts and nuts for the standard steel wheels and optional aluminum wheels are designed specifically for the type of wheel. Be sure to use the proper nut for the wheel you are mounting. See the following information and photos.

Note: The Sprinter chassis owner's manual (Daimler-Chrysler Corp. #81-326-0599, First Edition) does not show wheel lug nut information for the 10,200 GVWR chassis that this coach is built on. See your chassis owner's manual along with the following supplemental information.

Aluminum Wheel Mounting Precautions

- Do Not mount aluminum front wheels onto rear hubs or aluminum rear wheels onto front hubs.
- Always mount aluminum wheels shiny side out.
- If a tire mounted on an aluminum wheel must be rotated front-to-rear or rear-to-front, the tire must be dismounted from the existing wheel and remounted and balanced onto the wheel for the position in which it will be remounted.
- The lug nut for aluminum wheels has a bright plated finish. The threaded sleeve is fitted into an accompanying plated washer before threading onto the wheel stud.

SECTION 2 SAFETY & PRECAUTIONS

View

- Torque wheel nuts to 140 ft.lbs. (124-152 ft.lbs.) in numbered sequence specified in chassis owner's manual, then retorque a second time in same sequence.
- Check and retighten wheel nuts after driving 30 miles, then again at 100 miles and 500 miles after changing a wheel.



Steel Wheel Lug Nut and Washer
(Hex Flange Nut with Split Cone Washer)



Aluminum Wheel Front

Aluminum Wheel Rear



Aluminum Wheel Lug Nut and Washer
(Extended Thread Shoulder Nut)



WARNING

If mounting a steel wheel in place of an aluminum wheel for any reason, you must use the steel wheel lug nut and split cone washer to avoid shifting of the wheel on the bolts.

Likewise, if mounting an aluminum wheel, you must use the longer, plated lug nut to ensure proper thread and bolt hole engagement.

Steel Wheels

- The lug nut for steel wheels is a non-plated, hat-shaped, flange nut. The accompanying dome-shaped, split cone washer should be positioned 'dome first' onto the wheel stud before the nut as shown.



Steel Wheel Front

Steel Wheel Rear

Spare Tire Mounting

The spare tire is mounted to the back of the coach as shown.



JUMP STARTING

If your coach will not start from the automotive batteries, try using the battery/boost switch to divert power from the coach batteries to the starter. (See Battery Boost Switch in Section 3).

If you wish to try jump starting the engine using another vehicle or booster system, see your chassis owner's manual for connecting jumper cables to the automotive electrical system.

 WARNING
Do not attempt to push-start this vehicle. Damage to the transmission or other parts of the vehicle could occur.

ENGINE OVERHEAT

If you see or hear steam escaping from the engine compartment or have any other reason to suspect an extreme engine overheating condition, pull the vehicle over to the roadside as soon as it is safe to do so, stop the engine and get all passengers out of the vehicle.

 WARNING
Operating a vehicle under a severe overheating condition can result in damage to the vehicle and may result in personal injury.

For information on what to do in case of overheating, consult your chassis owner's manual.

EFFECTS OF PROLONGED OCCUPANCY

Your motor home was designed primarily for recreational use and short term occupancy. If you expect to occupy your coach for an extended period, be prepared to deal with condensation and humid conditions that may be encountered.

Humidity And Condensation

Moisture condensing on the inside of windows is a visible indication that there is too much humidity inside the coach. Excessive moisture can cause water stains or mildew which can damage interior items such as upholstery and cabinets.

When you recognize the signs of excessive moisture and condensation in your coach, you should take immediate action to minimize their affects.

You can help reduce excessive moisture inside the motor home by taking the following steps:

Ventilate with Outside Air

Partially open one or more windows and a roof vent to circulate outside air through the coach. In cold weather, this ventilation may increase use of the furnace, but it will greatly reduce the condensation inside the coach.]

Minimize Moisture Released Inside the Coach

Run the range hood fan while cooking, and open a bath vent while bathing or showering to carry water vapor out of the coach. Avoid making steam from boiling water excessively or letting hot water run. Avoid bringing extra moisture into the coach by way of soaked clothing or snow on shoes. Do not hang-dry wet overcoats or clothing inside the coach.

View

SECTION 3 DRIVING YOUR VEHICLE

The information in this section refers only to features installed or adapted to the dash and driver compartment area by Winnebago Industries. It also includes safety belts in the living area of the coach.

See your chassis owner's manual for all original chassis related controls, instrumentation, switches and other features. This includes items such as cruise control, climate controls, gauges, wipers, lights, front seats and three-point safety belts, etc.

SEATS

The driver and co-pilot seats may be independently adjusted to suit individual preference.

See your chassis owner's manual for instructions on seat adjustments.

SEAT BELTS

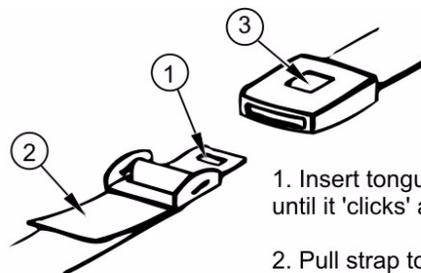
Seats intended for occupancy while the vehicle is in motion are equipped with seat belts for the protection of the driver and passengers.

See your chassis owner's manual for instructions on driver and passenger front safety belt instructions and adjustments.

The following instructions are for lap belts equipped in the living area of the coach.

Lap Belts

The lap belts must be worn as low as possible and fit snugly across the hip area. Always sit erect and well back into the seat. To gain full protection of the safety belt, never let more than one person use the same safety belt at any one time, and do not let the safety belts become damaged by pinching them in the doors or in the seat mechanism. After any serious accident, any seat belts which were in use at the time should be replaced.



1. Insert tongue into buckle until it 'clicks' and is locked

2. Pull strap to tighten

3. Press button to release

Adjustment:

To lengthen belt, turn tongue at a right angle to belt and pull to desired length. To shorten, pull loose end of belt.

To Fasten:

Be sure belt is not twisted. Grasp each part of the belt assembly and push tongue into buckle. Adjust to a snug fit by pulling the loose end away from the tongue.

To Release:

Press button in center of buckle and slide tongue out of buckle.



WARNING

Snug and low belt positions are essential. This will ensure that the force exerted by the lap belt in a collision is spread over the strong hip area and not across the abdomen, which could result in serious injury. Only seats equipped with seat belts are to be occupied while vehicle is in motion.

Seat Belt Care and Cleaning

- Be careful not to damage the belt webbing and hardware. Take care not to pinch them in the seat or doors.
- Inspect the belts and hardware periodically. Check for cuts, frays, and loose parts. Damaged parts should be replaced. Do not remove or modify the belt system.

SECTION 3 DRIVING YOUR VEHICLE

View

- Keep belts clean and dry. If the belts need cleaning, use only a mild soap and water solution. Do not use hot water. Do not use abrasive cleaners, bleach or dyes. These products may weaken the belts.
- Replace any belt assembly that was used during a severe impact. Replace the complete assembly even if damage is not apparent.

CHILD RESTRAINTS

A properly installed and secured child restraint system can help reduce the chance or severity of personal injury to a child in an accident or during a sudden maneuver. Children may be injured in an accident if they are seated in a child restraint system which is not properly secured.

A child restraint system is designed to be secured in a vehicle seat by a lap belt or the lap belt portion of a lap-shoulder belt. According to accident statistics, children are also safer when properly restrained in rear seating positions than in front seating positions.

When purchasing a child restraint system:

1. Look for the label certifying that it meets all applicable safety standards.
2. Make sure that it will attach to your vehicle and restrain your child securely and conveniently so that you are able to install it correctly each time it is used.
3. Be certain that it is appropriate for the child's height, weight and development. The instructions and/or the regulation label attached to the restraint typically provides this information.
4. Review the instructions for installation and use of the restraint. Be sure that you understand them fully and can install the restraint properly and safely in your vehicle.

Tether Anchor - Model 523J

A child seat tether anchor loop is located in the floor of the coach directly behind the forward facing dinette seat. The dinette table must be in the lowered position when a child seat is in use.

Child Restraint
Tether Anchor
(typical)

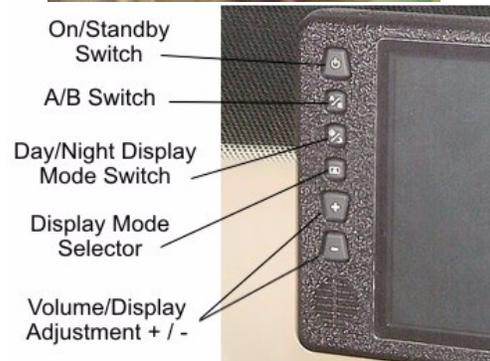


KEYLESS ENTRY

The keyless entry system controls the locks for the cab doors and the coach main entrance door. The entrance door must be closed for the lock to operate.

See your chassis owner's manual for instructions on operation of the keyless entry system and remote battery replacement information.

REARVIEW MONITOR SYSTEM - Optional



If your motor home is equipped with this optional system, refer to the Owner InfoCase for specific instructions provided by manufacturer.

AUTO AIR CONDITIONER/ HEATER

See your chassis owner's manual for instructions on operating the heating, air conditioning and ventilation controls.

IN-DASH RADIO

Please refer to the radio manufacturer's operating guide in your Owner InfoCase for detailed instructions on programming preset station buttons and using this full-featured radio/audio system.



In-Dash Radio

Radio Power Switch

The radio power switch lets you connect the dash radio to the coach batteries with the ignition switch turned off for listening while parked. This prevents accidental draining of the chassis (starting) battery with prolonged use of the radio.



Press HOUSE to listen to the radio while parked without the ignition key on. Press ENGINE to listen while driving.

BATTERY BOOST SWITCH

This switch can be used to provide emergency starting power from the motor home auxiliary battery if the automotive battery is dead.



If the engine battery is dead, press and hold Battery Boost Switch ON while turning the ignition key for emergency starting power.

NOTE: The Aux Battery switch must be ON and house batteries sufficiently charged for this feature to work.

ENGINE ACCESS

See your chassis owner's manual for information on opening the hood and engine compartment features.

ENGINE COOLING SYSTEM

Refer to your chassis owner's manual for information and precautions on filling, servicing and checking the fluid level.

LIGHTS

All exterior lights should be checked for proper operation each time the vehicle is prepared for a trip. Any bulbs which fail to light should be checked and replaced if necessary with a new bulb of the same size. A failure of more than one light, such as both taillights not operating, may indicate a burned out fuse. Check fuse and replace with one of the same rating

SECTION 3 DRIVING YOUR VEHICLE

View

when necessary. If a fuse is not the cause of the problem, the wiring system should be checked immediately by an authorized service center.

Refer to your chassis owner's manual for further information.

AUTOMOTIVE 12-VOLT FUSES AND CIRCUIT BREAKERS

See your chassis owner's manual for information on chassis fuses, circuit breakers and relays.

TIRES

Improper tire pressure can result in tire overloading and abnormal wear and also affects handling, ride characteristics and fuel economy.



WARNING

Make sure all replacement tires are of the same size and ply rating as those installed as original equipment.

See your Vehicle Certification Label for tire information.

SUSPENSION ALIGNMENT AND TIRE BALANCE

The front suspension and steering system of this vehicle was factory aligned using highly accurate equipment prior to delivery to the dealership. However, we recommend that alignment should be checked and adjusted after you have fully loaded the motor home according to your personal needs. Thereafter, the alignment should be periodically inspected to help prevent uneven tire wear.

Any excessive or abnormal tire wear may indicate worn or misaligned suspension or steering, unbalanced tire or other tire/suspension problem.

Alignment can be affected by worn steering/suspension parts or by incidents which happen during driving, such as hitting a curb, pothole or

railroad track, etc. Improper alignment can cause tires to roll at an angle and wear unevenly. It may also cause the vehicle to "pull" to the right or left. Have your dealer inspect your vehicle's suspension and steering components periodically for misalignment or wear.

Out-of-balance tires will not roll smoothly and can lead to annoying vibrations and uneven tread wear such as cupping and flat spots. Tires may need to be balanced if uneven wear is detected or if ride comfort decreases noticeably.

See your chassis owner's manual for further information.

AIR SPRINGS – REAR HELPER –If Equipped

The rear air 'helper' springs (also commonly called 'air bags') are an enhancement to the standard chassis suspension system to provide adjustable load and ride conditions. *This feature is not intended to increase the load capacity of the rear axle or the vehicle.*

The air bag fill valves are located on a panel in the generator compartment behind the right rear tires.



Rear Air Spring Fill Valves
located on panel in generator compartment

Min. Operating Pressure: 20 psi
Max. Operating Pressure: 75 psi

Air Spring Adjustment

(Air Spring Manufacturer's Recommendation)

Start with minimum pressure (20 psi) and load the coach with your belongings for the trip.

Drive down a familiar stretch of road to evaluate handling characteristics. Have a passenger accompany you in the furthest rearward belted seating position to evaluate the ride characteristics.

Add pressure in 5 psi increments on both sides and repeat the test drive until the ride is determined to be 'rough' or 'harsh', then let out about 5 psi on each side. This should result in the best combination of ride and handling characteristics for the load.

Too much air pressure in the air springs will result in too firm a ride.

Too little air pressure will not provide the improvement in handling that is possible and will allow the air spring to 'bottom out' over rough road conditions.

The air bags can be adjusted independently if necessary to equalize a load, however we recommend maintaining the same pressure in both air bags whenever possible to ensure that the vehicle remains level.

Periodic Checking

Check and adjust the air bag pressure periodically to maintain optimal ride and handling characteristics according to cargo weight. It is recommended to check the air spring pressure whenever you check tire air pressure.

NOTE: Keep in mind that, because of the small capacity of the air sleeves, a minimum of 5 pounds of pressure can be lost each time air pressure is checked. The burst of air you hear when pressing an air gauge to the valve is air pressure escaping, so remember to compensate for this pressure loss.



If the vehicle must be lifted by the frame, all air pressure must be released from the air springs.

LOADING THE VEHICLE

NOTE: Your motor home's load capacity is designated by weight, not by volume, so you cannot necessarily use all available space when loading your motor home.

- Store or secure all loose items inside the motor home before traveling. Possible overlooked items such as canned goods or small appliances on the countertop, cooking pans on the range, or free-standing furniture items can become dangerous projectiles during a sudden stop or evasive maneuver.
- Be aware of GVWR, GAWR and individual load limit on each tire or set of duals.

When loading the vehicle, distribute the cargo load so that you do not exceed either the Front or Rear Gross Axle Weight Rating (GAWR) or the Gross Vehicle Weight Rating (GVWR). The Gross Axle Weight Rating (GAWR) means the weight value specified by the chassis manufacturer as the load carrying capacity of a single axle system as measured at the tire-to-ground interfaces. This is the total weight a given axle is capable of carrying. Each axle has its own rating.

Have your vehicle weighed to determine the proper load distribution for your vehicle. Also distribute cargo side-to-side so the weight on each tire or dual set does not exceed one half of the GAWR for either axle.

For example, if the Front GAWR is 6,000 lbs., there should be no more than 3,000 lbs. on each tire. (If the left side weighs 3,100 lbs. and the right side weighs 2,700 lbs., at least 100 lbs. of the load should be shifted from the left side to the

SECTION 3 DRIVING YOUR VEHICLE

View

right side.) The GVWR is listed on the Vehicle Certification Label. (See sample in Introduction Section).

The GCWR (Gross Combination Weight Rating) means the maximum allowable loaded weight of this motor home and any towed trailer or towed vehicle.

NOTE: We recommend that you dump all holding tanks before traveling to avoid carrying unnecessary weight.

CAUTION

The weight of the loaded vehicle (including options, attachments, passengers, water, fuel, luggage, trailer tongue load, and all other cargo) must not exceed the GVWR or GAWR of either axle.

WEIGHING YOUR LOADED VEHICLE

To check the weight of your fully loaded coach, locate a commercial weighing scale that is capable of weighing large trucks.

Loading

Load your vehicle completely as if you were going on a long trip, with everything you would carry, including food, clothing, bedding, lawn chairs, etc., a full fuel tank, full LP tank, and a partial tank of fresh water - but empty holding tanks.

Finding a Scale

In urban areas, the most common places to find a public access scale are commercial truck stops. In rural areas, most grain storage elevators have scales available. Most scales charge a nominal fee for weighing a vehicle.

Weighing

There is typically a scale operator to direct you but the basic routine is to take three separate weights - front axle, whole vehicle, and rear axle.

You will first drive only your front wheels onto the scale pad, then drive ahead so that the whole vehicle is on the scale, then finally pull off until just the rear wheels are on the pad.



Front Axle Only



Both Front and Rear Axles



Rear Axle Only

You will receive a weight 'ticket' that states your current Front Axle Weight, Rear Axle Weight and Vehicle Weight. You can compare these weights to the weight ratings listed on your Vehicle Certification Label to use as a guideline for future loading limits and weight distribution.

The gross weight of the vehicle should not exceed the Gross Vehicle Weight Rating (GVWR) specified on the Vehicle Certification Label. (see section 1). The front and rear axle weight also should not exceed the corresponding Axle Weight Rating specified on the Vehicle Certification Label.

Corner Weighing (Side-to-Side)

Weighing each corner of the coach separately (single L/R front wheels or L/R rear dual sets) is an accurate method to determine how to distribute your cargo to avoid overloading, especially on tires.

To determine the weight distribution on each tire or dual set, you will need to find a scale capable of weighing side-to-side, or all four 'corners' of the vehicle, separately. A truck scale may be used if the ground is level with the scale surface and the scale has clearance to drive one side of the coach onto the scale as shown.

Drive the coach on the level area next to the scale and straddle the scale so that only one side of the coach will be on the scale pad. Pull only the front wheel onto the pad as shown.



Weighing Left Front 'Corner'

When the front wheel has been weighed, pull the coach straight ahead until only the rear wheel/dual set is on the scale pad as shown.



Weighing Left Rear 'Corner'

After the rear wheel set has been weighed, turn the coach around and repeat this process for the other side.

The load on each wheel or dual-wheel set should not exceed one-half of the corresponding GAWR. For example, if the GAWR for the rear axle is 12,000 lbs., then the load on each rear dual set (left rear duals or right rear duals) should not exceed 6,000 lbs.

Tires should be filled to the recommended air pressure for the highest loaded tire set on that axle. For example, on the rear axle, if the left side weighs more than the right, fill the left tires to the pressure required for that weight, then fill the right tires to the same pressure as the left ones.

If your actual weight is considerably less than GAWR, you may be able to lower your tire pressure. See a tire dealer for a load/pressure chart.

NOTE: The Hitch Load from a Towed Vehicle or carrier box must also be counted on the Rear GAWR and subtracted from the rear axle cargo capacity.

If you tow other than a light trailer or if you tow a vehicle by means of a tow bar, you should have the trailer or vehicle coupled when weighing your motor home.

Be aware that hitch load can affect handling characteristics. The more weight on the hitch, the lighter the front end will feel at the steering wheel.

ROOF LOADING

The roof is capable of carrying up to 10 pounds per square foot to a maximum of 100 pounds while the vehicle is in motion.

When the vehicle is stationary, a cargo load of 100 pounds plus the weight of a 225 pound person to load the cargo or to conduct inspection and maintenance is permissible.

Weight added to both the roof and the trailer hitch contribute to the gross vehicle weight, which must not exceed the vehicle's GVWR.

CAR OR TRAILER TOWING

Hitch pulling capacity: 3,500 lbs. max.

Tongue weight: 350 lbs. max.

The factory installed towing hitch on this coach is capable of pulling 3,500 lbs. load (max.), however the vertical (tongue) weight may vary according to chassis and model combinations. Do not exceed either the GVWR, the rear axle GAWR, or the chassis GCWR by the combined

SECTION 3 DRIVING YOUR VEHICLE

View

loaded weight of the coach and the towed vehicle. *See preceding items "Loading the Vehicle" and "Weighing Your Loaded Vehicle" for explanation of weight ratings.*

Because of individual vehicle use and loading habits, we recommend weighing the vehicle while fully loaded to avoid exceeding any of the listed Gross Weight Ratings. See "Vehicle Certification Label" in the Introduction Section for information on gross weight ratings.

Towing will affect vehicle handling, durability and fuel economy. Exceeding any of the listed Gross Weight Ratings will result in unacceptable overall vehicle performance. Maximum safety and satisfaction when towing depends on proper use of correct equipment. Select a drawbar that mates properly with the towing hitch receiver and provides proper alignment to the vehicle tow bar. The tongue of the tow bar must be as close as possible to parallel with the ground when attached to the hitch ball.

Installation of a proper trailer brake system is recommended. Check state regulations on trailer weight and trailer brake requirements to be sure you select the right equipment before towing.

Before descending a steep or long grade when towing a trailer, reduce speed and shift into a lower gear to control vehicle speed. Avoid prolonged or frequent application of brakes which could cause overheating and brake failure.



WARNING

For safe towing and vehicle handling, maintain proper trailer weight distribution. The total weight of the motor home and the vehicle towed must not exceed the Gross Combined Vehicle Weight rating. See the Body and Chassis Specification chart in Section 1.



CAUTION

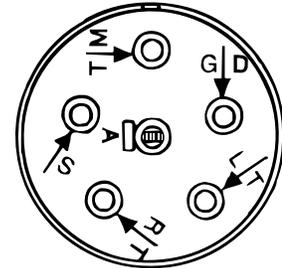
Exceeding any of the recommended gross vehicle weight ratings may result in vehicle damage.
Do not install a frame equalizing type hitch on your vehicle.

TRAILER WIRING CONNECTOR

Your coach is pre-wired for trailer or car towing lights with a 6-pin socket on the rear bumper. The connector plug is supplied in the coach parts package provided to you by your dealer when you took delivery of the vehicle.

The diagram shows proper connection of trailer or tow vehicle wiring to the coach light system. We recommend connections be made by a qualified auto electrical technician to avoid 'shorts' or other malfunctions.

TM = Tail lights
GD = Ground
LT = Left turn
RT = Right turn
A = Backup lights
S = Brake lights



TOWING GUIDELINES

Gross Vehicle Weight Rating (GVWR):

This is the maximum allowable weight of the fully loaded vehicle. Included are fuel, water, LP, passengers, cargo, tools, and optional equipment installed by the motor home manufacturer, dealer, or owner. This value is found on the Vehicle Certification Label.

Gross Axle Weight Rating (GAWR):

This is the total weight a given axle is capable of carrying, measured at the ground. Each axle has its own rating. These values are also found on the Vehicle Certification Label: front, rear, and tag, if applicable.

Gross Combination Weight Rating (GCWR):

This is the maximum allowable weight of the motor home and loaded trailer, including the items noted in GVWR above. The “trailer” can be an actual trailer, a vehicle towed on a towing dolly, or a vehicle towed by means of a towing bar. GCWR is typically specified based on durability and performance of the tow vehicle drivetrain: engine cooling systems, transmission, drive line, drive axle, and others. The tow vehicle brakes may be rated for operation at GVWR, not GCWR.

NOTE: If the “trailer” weighs 1,000 lbs. or more, state or provincial laws/regulations may require the “trailer” to be equipped with brakes that are activated when the motor home brakes are applied. The user is responsible to know and understand the laws of the state or province being traveled. The Department of Transportation in a given state or province should be able to provide specific information.

Hitch Ratings:

SAE Standard J684 defines

Class 1 trailers as “GVWR not to exceed 2,000 lbs.”;

Class 2 trailers as “GVWR over 2,000 lbs. and not to exceed 3,500 lbs. GVWR”;

Class 3 trailers as “GVWR over 3,500 lbs. and not to exceed 5,000 lbs. GVWR”;

Class 4 trailers as “GVWR over 5,000 lbs. and not to exceed 10,000 lbs. GVWR”.

Hitches are to be permanently marked with “Maximum trailer GVWR to be drawn” and “Maximum vertical tongue weight to be imposed...” The SAE standard does not specify a

vertical load rating, as such. Traditionally, hitches are labeled 3,500/350 as Class 2 and 5,000/500 as Class 3.

The vertical tongue load value of 10 percent of drawn rating apparently comes from the collective experience that 10 percent is the minimum value that provides stable towing of a trailer. Ford’s towing guide suggests 10 to 15 percent for trailers over 2,000 lbs. (Hitch ratings are independent of towing vehicle ratings.)

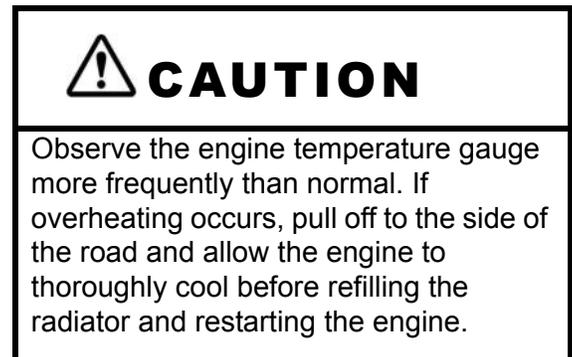
NOTE: Some Winnebago Industries models equipped with a Class 3 hitch may have a label limiting vertical tongue load to 350 lbs. The user must verify that the hitch equipment being used is adequate for the application.

MOUNTAIN DRIVING

Special techniques must be used when driving in mountainous or hilly country.

Climbing A Hill

The transmission will automatically downshift as needed to climb most hills. If the hill is long or very steep, however, you may need to manually shift to a lower gear to keep the transmission from repeatedly upshifting and downshifting. Select the lowest adequate gear range for the duration of the incline. See your chassis operating guide for specific information.

**Descending A Hill**

When going down a long grade, you may need to manually shift to a lower gear rather than keeping your foot on the brake pedal. A lower gear will allow the engine to provide a degree of braking action. Holding your foot on the brake

SECTION 3 DRIVING YOUR VEHICLE

View

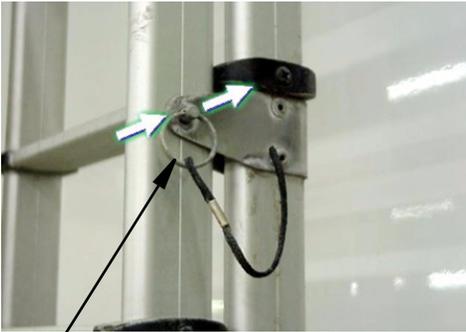
pedal for an extended period may cause brakes to overheat, which could cause you to lose control of the vehicle. See your chassis owner's manual for specific information.

LADDER EXTENSION



To use the swing-down ladder extension

- Pull the retainer pin and lower the ladder into position.



Pull pin to lower ladder extension



- Fold the extension upward and reinsert the pin to store.
- Always store the extension when not in use to prevent children from climbing onto the ladder.
- Be sure latch is fastened securely to prevent ladder from dropping while the coach is in motion.

AWNING & DOOR PROPS

When you are using the awning with the arm-to-wall attachments, the door can contact the awning arms when opened.

To open the door fully, you must extend the awning and position the lower arms vertically, like tent poles. Fully extend the lower arms and stake to the ground. To avoid damaging the door when the awning arms are attached to the vehicle, we have provided a prop rod to be used to hold the door in an open position.



Awning Arms

Door Prop



The door prop rod is stored beneath the couch (model 523H) or in the right rear exterior compartment (model 523J).

After setting the awning, **crank awning about 10 turns inward** to raise the canopy slightly to provide adequate door clearance and avoid abrasion on the awning.

Further Information

See the awning manufacturer's information in your Owner InfoCase.

View

SECTION 4 APPLIANCES & SYSTEMS

The appliances installed in your motor home are manufactured by reputable RV appliance makers and have been tested by independent laboratories to meet all applicable standards and codes set for RV appliances.

REFRIGERATOR

The refrigerator in your coach can be operated from either of two power sources available to the motor home:

- 110-Volt AC electric
- LP gas

	CAUTION
To prevent permanent damage to the refrigerator cooling unit, turn the refrigerator off if the vehicle will be parked on an incline of over 3° side-to-side or 6° front-to-rear (such as steep driveways or parking lots, etc.) for more than one hour.	

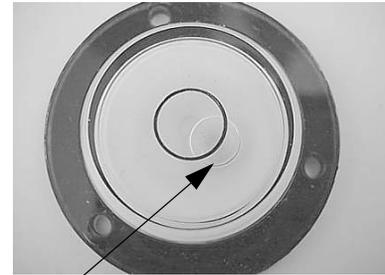
Leveling

Before operating the refrigerator when the motor home is stationary, place a small level on the freezer plate and make certain the unit is level.

Normal vehicle leveling to provide comfort for the occupants is satisfactory for refrigerator operation.



Place bubble level in bottom of refrigerator



Bubble must be 1/2 inside circle

If over 1/2 of the bubble is inside the circle in any direction, the coach is level enough for continuous operation of the refrigerator while parked.

Further Information

For further information and operating cautions, see the refrigerator operating instructions included in your Owner InfoCase.

REFRIGERATOR SERVICE ACCESS COMPARTMENT

(Exterior)

The exterior refrigerator compartment allows access to the rear of the refrigerator for inspection, maintenance and service.



Refrigerator Access Compartment

SECTION 4 APPLIANCES & SYSTEMS

View

To Open:

1. Use a screwdriver or coin to turn the latch knobs to the vertical position as shown.
2. Remove the door from the opening.



Refrigerator Access Door Latches

To Close:

1. Replace the door into the opening.
2. Push the latch knobs in while turning to the horizontal position as shown.

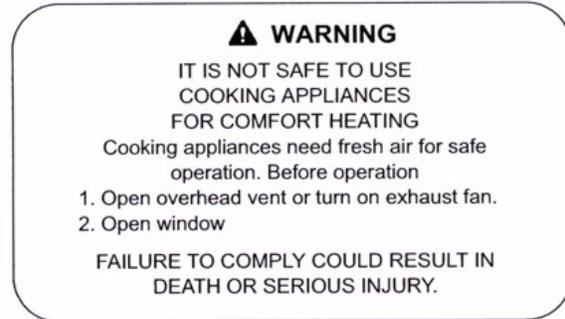
RANGE TOP



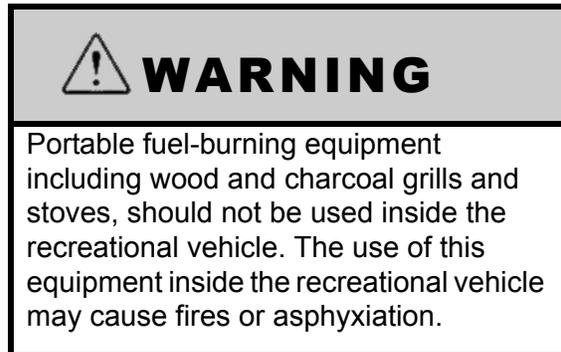
The range in your motor home operates on LP gas and will provide nearly all of the functions that the range in your home does.

Avoiding Asphyxiation

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



Unlike large homes, the oxygen supply inside a recreational vehicle is limited due to its size. To avoid danger of asphyxiation, provide proper ventilation when using the gas rangetop. It is especially important not to use the gas range top for comfort heating. Danger of asphyxiation is greater when gas appliances are used for long periods of time in confined spaces.



Further Information

See the range top manufacturer's operation information in your Owner InfoCase.

RANGE HOOD

The range hood vent draws cooking odors and airborne grease particles into the filtration grid and vents it to the outside of the coach. A light on the underside of the hood provides illumination for food preparation.

See the range hood manufacturer's information for instructions on replacement of light bulbs and grease filter elements.



MICROWAVE OVEN

Refer to the microwave oven manufacturer's information provided in your InfoCase for complete operating instructions.

SYSTEMS MONITOR PANEL (WALL MOUNTED)



The Systems Monitor Panel provides a convenient central location for checking the condition of all utility systems in your coach. At the touch of a button this panel can display the fresh water and holding tank levels, LP gas tank level, plus the coach battery condition. You can start the auxiliary generator or turn on the water pump or water heater. Indicator lights tell you if the water pump is on or if the water heater pilot light is out.

At the push of a button the monitor panel simultaneously displays the coach battery condition and levels of the water tank, holding tanks and LP tank.

Water And Holding Tank Levels

Press and hold the "Levels Test" switch to show approximate level on the monitor lights.

The approximate fluid levels are measured by electronic sensors on the sides of the tanks. There is generally more fluid in a tank than indicated on the monitor panel.

For example, if the fluid level is 1-2" below the FULL sensor, the monitor will show the level to be only 2/3 even though the tank is nearly full. If the fluid level is below the 1/3 sensor, the monitor will register an empty tank because the fluid is no lower than the 1/3 sensors. There may actually be some fluid left in the tank. However, when the indicator reads FULL, the tank is actually full.



Tank Capacities

See "Tank Capacities" in Section 1.

LP Gas Level

Press and hold the "Levels Test" switch to show approximate LP tank level.

The LP level is registered by a sending unit on the tank. The gauge mounted on the side of the tank will give a more accurate indication of actual tank level if needed.

Battery Charge Meter

Push the “Levels Test” button to check the level of charge (voltage) in the 12-volt coach battery. The colored segments (red, yellow and green) will light from the bottom up to the amount of charge the battery contains.

- Green - good or adequate charge.
- Yellow - marginal charge.
- Red - battery needs charging before use.

To get an accurate reading;

1. Both the chassis engine and the auxiliary generator engine must be shut off and 110 - Volt AC shoreline unplugged.

An interior light should be turned on to provide a small load which draws off the battery surface charge.

Water Pump Switch

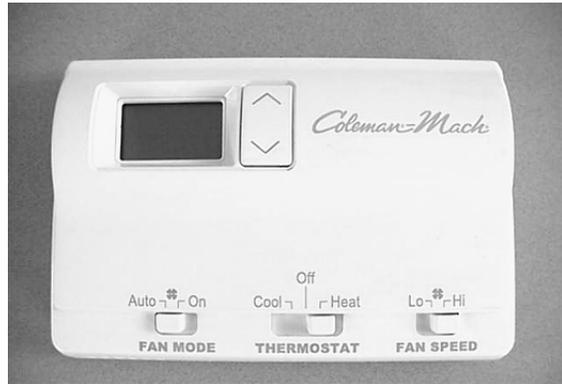
When use of the self-contained water system is desired, turn the “Water Pump” switch on. The “Pump On” light will illuminate when the pump switch is on and the system is operable. Water will be available as soon as a faucet is opened. Refer to “Water Pump” in Section 7- Plumbing for additional information on the water pump and initial start-up. (There is also a pump switch in the water center compartment on the outside of the coach.)



LP GAS FURNACE

Start Up:

1. Open the LP gas tank valve by turning fully counterclockwise.
2. Move thermostat switch from OFF to HEAT and press the Temp Selector button (Up/Down arrows) until the desired temperature is shown on the display



3. Furnace fan will start to blow soon after setting thermostat.
4. After about 30 seconds, the furnace burner will light.
5. The furnace will now cycle off and on automatically as the thermostat demands just like a household furnace.

NOTE: If heat does not come out of the heat ducts after a minute or so the burner is not lit. Turn thermostat off for 3-5 minutes, check to be sure tank valve is open and tank is not out of fuel, then try steps 2-4 again. If it still will not light after three attempts, go to Shut Down steps and contact your dealer or a local RV service center.

To Shut Down:

1. Slide thermostat switch to OFF position.
2. Close LP tank valve.

NOTE: Metal coatings used during manufacture of the furnace burner parts may smoke when the furnace is used for the first time, which may also set off your smoke alarm. If this

happens, provide adequate ventilation to avoid a nuisance smoke alarm. We do not recommend removing the smoke alarm battery.

For Further Information

Please see the furnace operating instructions provided in your Owner InfoCase for further information, including operating precautions, and periodic maintenance. See the Coach Maintenance Schedule in Section 11 for recommended intervals.

WATER HEATER

Operating Instructions

Read the Water Heater Manufacturer's Installation and Operation Manual for complete Safety Warnings, Operating Instructions and Maintenance Information before operating the water heater.

Be sure the water heater is filled with water before starting either electric or LP operation.

To fill the water heater, turn the Water Pump switch on and open a hot water faucet anywhere in the coach. When water begins to flow steadily from the faucet, the water heater is full.



For LP Gas Operation

Press the Water Heater switch on the Monitor Panel. The "Pilot Out" light will glow for about 10-15 seconds, then it will go out. The "Heater On" indicator will remain lit. If the "Pilot Out" light comes on during LP operation, it means that the burner has gone into "lockout" mode and

must be restarted. If this happens, turn the Water Heater switch off for about 5 minutes, then turn it back on.

For Electric Operation - Optional

Turn on the optional Water Heater electric element switch. The shoreline must be connected or generator running for electric operation.



Electric Water Heater
Switch

An automatic energy management system (EMS), also known as a 'load shedding device', will shut down the electric water heater element while the microwave oven is being used to avoid an overload condition. It will turn it back on when the microwave shuts off.

This does not normally present a problem in providing hot water since microwave use is typically brief and the water heater is well insulated.

If this does present a problem for your water heating needs, you may wish to switch to LP operation to continue water heating function while the microwave is being used.

For Quick Recovery Operation (Dual Heating - optional)

Press both Water Heater switches ON; the gas one on the monitor panel and the electric one (optional). This will help reheat the water heater tank more quickly than a single source would alone. Use this mode when you are using a larger than normal volume of hot water.

**PRESSURE-TEMPERATURE
RELIEF VALVE**

On occasion, water may be seen seeping from the water heater pressure temperature relief valve. This is no cause for repair or replacement of the valve.



Water Heater Exterior Service Access

Normally there is an air gap at the top of the water heater tank which acts as a pressure buffer. In time, however, heated water may expand and fill this air gap, causing a slight increase in water pressure. This may cause the P-T valve to “weep” until the air gap is manually replaced.

CAUTION

Operate this valve only when the water heater and engine cooling system are cold!

To Replace the Air Gap:

1. Turn off the water heater switch and incoming water supply (city water and/or demand pump).
2. Open a faucet in the motor home to relieve water pressure.
3. Pull the handle of the P-T valve straight out and allow water to flow until it stops.



Lift handle straight out to open P-T valve

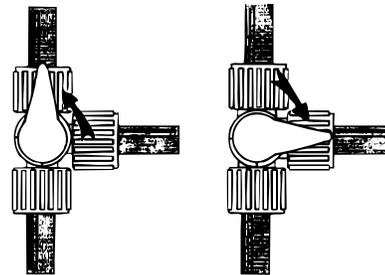
4. Let the handle of the P-T valve snap shut.
5. Close the faucet and turn on the water supply before switching the water heater on.

Manually operate the pressure temperature relief valve at least once a year.

**WATER HEATER BYPASS
VALVE**

Your coach may be equipped with a water heater bypass valve for easier winterization of water lines using RV antifreeze. See Plumbing Section for valve location.

Turn the handle as shown to either bypass or flow through the water heater.



Normal
Flow

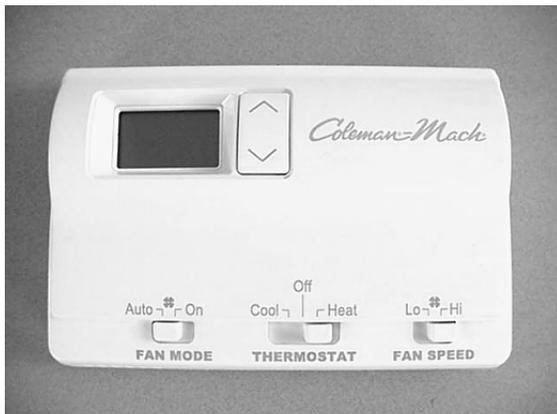
By-Pass
Mode

CAUTION

Leave bypass valve handle in NORMAL FLOW position if draining water and blowing out water lines. Place in BYPASS position ONLY when using antifreeze solution in water lines.

LP GAS FURNACE**Start Up:**

1. Open the LP gas tank valve by turning fully counterclockwise.



2. Move thermostat switch from OFF to HEAT and press the Temp Selector button (Up/Down arrows) until the desired temperature is shown on the display.
3. Furnace fan will start to blow soon after setting thermostat.
4. After about 30 seconds, the furnace burner will light.
5. The furnace will now cycle off and on automatically as the thermostat demands just like a household furnace.

NOTE: If heat does not come out of the heat ducts after a minute or so the burner is not lit. Turn thermostat off for 3-5 minutes, check to be sure LP gas tank valve is open and tank is not out of fuel, then try steps 2-4 again. If it still will not light after three attempts, go to Shut Down steps and contact your dealer or a local RV service center.

To Shut Down:

1. Slide thermostat switch to OFF position.
2. Close LP tank valve.

NOTE: Metal coatings used during manufacture of the furnace burner parts may smoke when the furnace is used for the first time, which may also set off your smoke alarm. If this

happens, provide adequate ventilation to avoid a nuisance smoke alarm. We do not recommend removing the smoke alarm battery.

For Further Information

Please see the furnace operating instructions provided in your Owner InfoCase for further information, including operating precautions, and periodic maintenance. See the Coach Maintenance Schedule for recommended intervals.

HEAT PUMP**- Optional**

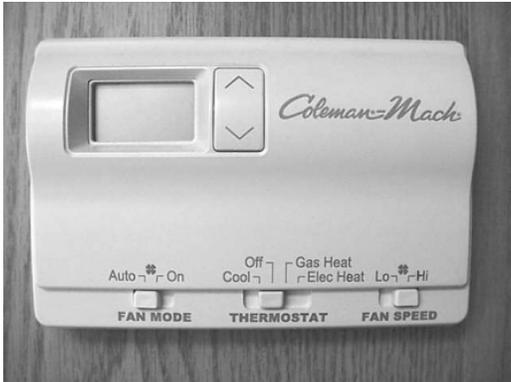
Your coach may be equipped with an air source heat pump built into the air conditioning system. Because the heat pump operates on electricity, it provides economical heat inside your coach and helps reduce the use of LP gas for heating in cooler weather.

A heat pump can be thought of as an air conditioner running in reverse. An air conditioner absorbs heat from the air on the inside of the coach and moves it to the outside. The heat pump does exactly the opposite. Even cold air contains some heat, so a heat pump will extract heat from the outside air on a cold day and carry it to the inside of the coach to maintain a comfortable temperature.

The efficiency of a heat pump decreases as the outdoor air temperature drops, so supplementary heat is often needed when the outside temperature nears freezing. This system is set to automatically start the LP gas furnace to assist the heat pump if room temperature cools to 5 degrees or more below the thermostat set temperature. You may wish to manually switch to furnace heat to maintain a higher temperature when outside temperatures begin to reduce the efficiency of the heat pump. The heat pump will not operate when the outside temperature falls below 36 degrees F.

To operate the heat pump:

See the air conditioning/heat pump manufacturer's information in you Owner InfoCase for complete operating instructions.



Gas Heat = Gas Furnace
Electric Heat = Heat Pump
Cool = Roof Air Conditioner

Check your Air Filter

Closed or blocked vents and a dirty air filter can hinder the efficiency of a heat pump.

- Be sure ceiling vents are open to distribute heat pump output air.
- The washable foam filter should be checked monthly for dirt build-up and cleaned or replaced as needed. It is located in the ceiling mounted AC air return grille in the lounge area.

DUCTED ROOF AIR CONDITIONING SYSTEM

NOTE: The ducted roof air conditioning system has ceiling registers that can be closed if necessary to force more cool air toward a specific area of the coach or to route cool air away from a specific area. If too many vents are closed, however, it can cause the air conditioner unit to shut down, particularly in high humidity conditions.

All cooling functions controlling to setpoint have a short cycle protection time delay of 3 minutes. There will be no delay if the cycle OFF time exceeds 3 minutes.

THERMOSTAT OPERATION

The following chart shows the system functions with the “Heat/Cool” thermostat. Disregard references to heat functions when using the “Cool Only” thermostat in the rear bedroom.

■ Switch position —■— Switch position does not matter or is inactive for this feature

FAN MODE SWITCH		THERMOSTAT SWITCH				FAN SPEED SWITCH		WHAT HAPPENS
Auto	On	Cool	Off	Gas*	Elec*	Lo	Hi	
			■					If the Thermostat Switch is Off, the whole heating and cooling system is off— nothing is happening.
Gas Furnace Heating:								
—■—	—■—			■		—■—	—■—	Furnace Blower runs along with the LP Gas Furnace which turns on and off as needed according to thermostat setting.
Heat Pump Heating:*								
■					■	—■—	—■—	A/C Fan runs at Low Speed along with the Heat Pump which turns on and off as needed according to thermostat setting.
	■				■	—■—	—■—	A/C Fan runs continuously at Low Speed while the Heat Pump turns on and off as needed according to thermostat setting.
A/C Cooling:								
■		■				■		A/C Fan runs at Low Speed along with the Air Conditioner which turns on and off as needed according to thermostat setting.
■		■					■	A/C Fan runs at High Speed along with the Air Conditioner which turns on and off as needed according to thermostat setting.
	■	■				■		A/C Fan runs continuously at Low Speed while the Air Conditioner turns on and off according to thermostat setting.
	■	■					■	A/C Fan runs continuously at High Speed while the Air Conditioner turns on and off according to thermostat setting.

NOTE: These instructions include the optional heat pump, which may not be equipped on your model. If you do not have a heat pump, the Thermostat Switch Gas position is the same as the Heat position on your thermostat— in this case, ignore the Elec Heat switch settings with apply to the heat pump only.

NOTE: The thermostat is equipped with a replaceable 2 Amp fuse located on the back of the thermostat body.

ELECTRIC ENTRANCE STEP

The power switch for the electric entrance step is located to the left of the main entry door as you enter the coach.



WARNING

Do not use step unless fully extended. Do Not Stand on step when vehicles ignition switch is turned to either the "On" or "Start" position. The step will automatically retract, which may cause personal injury. Always remember to retract the step before moving the vehicle.

**Automatic Mode - Step Switch ON
(Step Operates with Door)**

With the Step switch in the ON position the step is in Automatic Mode. This means it will extend and retract automatically whenever the screen door is opened or closed.

**Stationary Extended Mode - Step
Switch OFF**

(Step Remains Extended)

With the Step power switch in the OFF position the step will extend when the screen door is opened and will stay extended whether the door is opened or closed.

This position is normally used to keep the step extended when parked at a campsite or whenever people will be entering and exiting the vehicle frequently.

Automatic Retraction Feature

The step is equipped with an automatic retraction feature that stores the step automatically when the Ignition Switch key is turned to the On or Start positions and the entrance door is closed.

The step will retract regardless if the Step power switch is ON or OFF.

This feature is intended to prevent injury or damage by an extended step while the vehicle is moving.

Further Information

For additional information on the step, see the manufacturer's operators manual included in your Owner InfoCase.

View

SECTION 5 LP GAS

LP GAS SUPPLY

The LP gas system supplies fuel for the range, water heater, furnace and refrigerator (while in gas mode). When used and handled properly, this system is safe and economical and provides modern living conveniences wherever you travel.

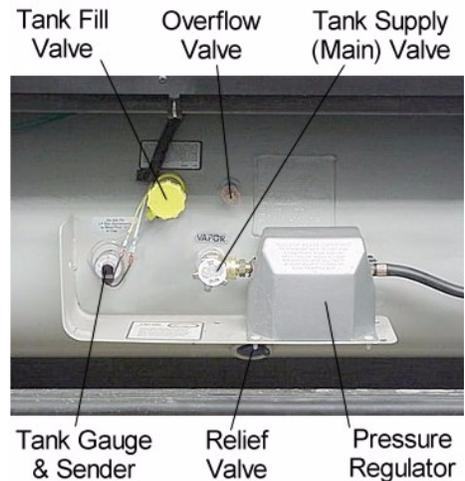
How LP Gas Works

LP (Liquefied Petroleum) gas is a true gas compressed into liquid form for easy transportation and storage. LP gas is available in two types - propane and butane. It is also called tank gas, bottle gas, or simply LP.

LP is used by appliances in vapor form only, but is stored in the tank as a liquid under very high pressure. As the liquid gas is released, it reverts back to a vapor and expands to many times its compressed volume.

LP Tank System

The storage reservoir for the LP gas system is a horizontally mounted tank which is permanently attached to the vehicle frame. The tank is accessible only from the outside of the vehicle. The tank supply valve is located near the top center of the tank, next to the regulator. Before opening the supply valve, check to be sure all controls for gas appliances are in the "Off" or "Pilot Off" position. If this step is not performed, LP gas could accumulate inside the motor home creating a fire or explosion hazard.



Refilling LP Tank

Since the LP tank is permanently mounted to the frame, the motor home must be taken to an LP dealership for filling. Do not attempt to remove the LP tank from the vehicle. The tank is equipped with a fill adapter with both internal and external threads which allows easy filling with any LP filling equipment. The tank is full when liquid LP gas appears at the overflow valve.

NOTE: The LP tank is equipped with an automatic 80% stop-fill device.



WARNING

DO NOT FILL CONTAINER TO MORE THAN 80 PERCENT OF CAPACITY. Make sure the motor home is level when filling. It is possible to accidentally overflow the tank if the vehicle is unlevel, with the fill valve on the uphill side. Overfilling the LP gas tank can result in uncontrolled gas flow, which can cause fire or explosion. A properly filled container will contain approximately 80 percent of its volume as liquid LP gas.

All pilot lights must be extinguished and supply valve closed before refilling LP gas tanks or vehicle fuel tanks.

Do not smoke or expose an open flame while near an LP refueling area. LP gas is heavier-than-air and extremely flammable.

Never use an open flame to test for LP gas leaks.

Replace all protective covers and caps on LP system before filling.

Never fill the LP tank with engine or generator running.

Selecting LP Fuel Types

We recommend using straight propane in your LP tank. Propane gas is commonly available at all LP gas outlets in the U.S. (According to the National LP Gas Association, LP gas outlets in the United States do not offer any other type of liquefied petroleum gas than propane to the general public.) Check local phone directory yellow pages for locations of local LP gas refilling stations or bulk dealerships.

NOTE: If you travel outside the U.S. with your motor home, you may find butane or propane/butane mixtures available in addition to

propane. Gas-burning RV appliances are designed to run on propane only, so we recommend that you request straight propane only. Butane burns about 30 percent hotter than propane and can overheat some appliances, particularly refrigerators, and cause permanent damage. Other appliances designed to operate on propane can become sooted and lose efficiency by using butane fuel.

Air In The LP Gas Tank

If your LP gas appliances do not stay lit or require frequent adjustment, even though you know the LP tank contains sufficient fuel, the problem may be air in the LP gas tank. Air in the tank mixes with the LP gas vapors causing them to burn poorly. This condition could linger for weeks if the air is not purged from the tank. Most LP gas dealers have equipment for purging air from LP gas tanks and will purge before refilling the tank.

SAFE USE OF THE LP GAS SYSTEM

The LP system is designed and built with strict adherence to federal, state and recreational vehicle industry requirements for mobile LP gas equipment.

For your safety, there are many safety devices and backup systems installed, such as tank fill overflow valves, an interior LP gas detector/ alarm, and an interior carbon monoxide (CO) detector/alarm.

LP gas also contains an odor additive that you can smell if LP is present in the air.

Listed below are a few precautions to observe that will help you to use the LP gas system safely.

- Exercise caution at all times. Be familiar with the distinctive odor of LP gas. If a leak is suspected, turn off the supply valve immediately. Have the LP gas system checked by your dealer or other qualified LP gas service center.

- Do not tamper with the LP gas piping system, pressure regulator or gas appliances. Service and maintenance of LP gas system components should be performed only by your dealer or a qualified LP gas service center.
- Never attempt to connect natural gas to the LP gas system.
- Have the entire LP gas system inspected for possible leaks and missing or damaged parts at each tank filling. Also inspect before and after each trip, and any time trouble is suspected.
- Turn the LP supply valve off when not using the LP gas system.
- Never use a wrench to tighten the tank supply valve. It is designed to close leak-tight by hand. If a wrench is required to completely close the valve, it is defective and must be replaced.
- Be sure appliance and outside vents are open and free from obstruction when using the LP gas system.
- Never attach a lock or any device requiring a key to the LP tank compartment door. According to standards set for recreation vehicles, the LP supply valve must be readily accessible in an emergency.
- Exercise caution when drilling holes or attaching objects to the walls. Gas lines and electrical wiring could be seriously damaged and present an extreme safety hazard.
- Never smoke while refilling vehicle fuel tank or LP gas tank.
- Avoid inhaling exhaust gases produced by burned gasoline, diesel fuel or LP gas in items such as the range, chassis engine, generator engine, refrigerator, furnace and water heater. They contain carbon monoxide, which is an odorless, colorless and poisonous gas.
- Do not bring or store LP gas containers, gasoline or other flammable liquids inside the vehicle because a fire or explosion may result. LP gas containers are equipped with safety valves which relieve excessive pressure by discharging gas to the atmosphere.
- Do not fill LP gas container(s) above 80 percent of capacity. Overfilling the LP gas container can result in uncontrolled gas flow which can cause fire or explosion. A properly filled container will contain approximately 80 percent of its volume as liquid LP gas.
- Never use an open flame to test for LP gas leaks. Replace all protective covers and caps on LP system after filling. Make sure valve is closed and door latched securely.
- Never connect natural gas to the LP gas system.
- Portable fuel-burning equipment, including wood and charcoal grills and stoves, shall not be used inside the recreational vehicle. The use of this equipment inside the recreational vehicle may cause fires or asphyxiation.
- Regulators are equipped with a protective cover. Make sure that the regulator vent faces downward and that the cover is kept in place to minimize vent blockage which could result in excessive gas pressure causing fire or explosion.

LP GAS WARNINGS AND PRECAUTIONS

It is illegal for vehicles equipped with LP tanks to travel on certain roadways or through certain tunnels in the U.S. To avoid inconvenience, check state regulations concerning flammable gas transportation.

- All pilot lights must be extinguished and appliances turned off while refilling the fuel tank or LP tank.

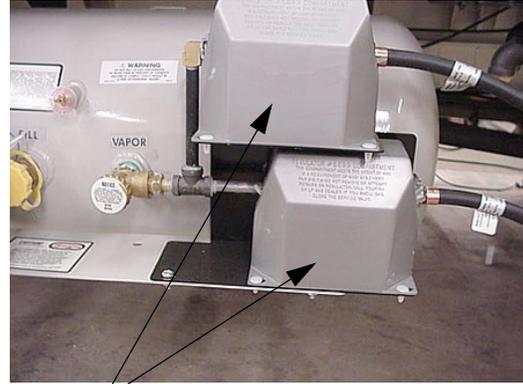
LP Gas Leaks

The following label is located in the vehicle near the range area. If you smell gas within the vehicle, quickly and carefully perform the procedures listed.

⚠ DANGER
IF YOU SMELL GAS

1. EXTINGUISH ANY OPEN FLAME, 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 CONNECTIONS.
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.

FAILURE TO COMPLY COULD RESULT IN EXPLOSION RESULTING IN DEATH OR SERIOUS INJURY.



LP Gas Regulators (additional one on top is for LP fueled aux. generator if equipped)

PRESSURE REGULATOR

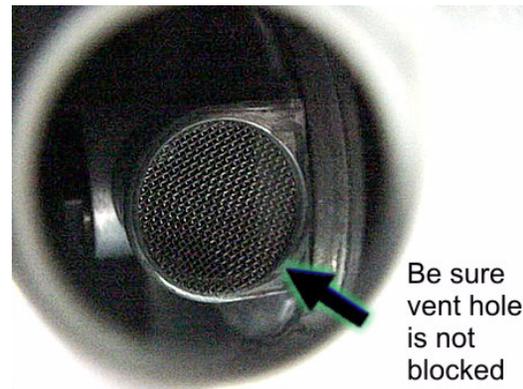
The pressure regulator is protected from the elements by a plastic cover which should be left in place at all times. Only your dealer or a qualified LP gas service should remove the regulator cover for adjustments.

⚠ WARNING

Visually inspect the pressure regulator vent periodically for blockage by accumulated debris or insect nests, etc. Vent obstruction could result in excessive pressure which could cause a fire or explosion. If any obstruction is apparent, have the regulator serviced by your dealer or a qualified LP gas service center.



Look up inside hole on underside of regulator housing to see vent screen



Be sure vent hole is not blocked

Regulator freeze-ups are caused by the presence of moisture in fuel. This moisture will pass through the cylinder valve and into the regulator where it can freeze. Fuel producers, tank and bottle manufacturers and LP gas dealers take every precaution to reduce moisture, but sometimes only a fraction of an ounce entering the tank can cause problems. To help avoid the possibility of freeze-up, always keep tank control

valve closed when not in use, even when tank is empty, to prevent moisture from collecting on the inside.

If regulator freeze-up should occur, you may attempt to thaw the regulator using a light bulb. **DO NOT USE AN OPEN FLAME OR HEAT LAMP.**

If moisture begins to cause problems, have your LP gas dealer inject a small amount of dry methyl alcohol in your tank (approximately one ounce to 20 pounds or one pint to 100 gallons) to help guard against regulator freeze-ups.

In very cold weather when a large volume of gas is being used for heating, it is possible to experience a loss of gas pressure. At first, this problem may appear to be caused by a regulator freeze-up, but is actually caused by failure of the liquid gas to vaporize as fast as it is needed. As the temperature becomes colder, it is increasingly harder for the liquid LP gas to vaporize. At the same time, the demand for LP to produce heat increases to the point where the system cannot maintain production.

The only solution to this problem is to reduce the consumption of gas where possible. Adjusting the temperature on the gas/electric refrigerator may be a first step. Using less hot water will help as well.

View

SECTION 6 ELECTRICAL

Your coach is equipped with an electrical system consisting of two separate voltages; a 12-volt DC system and a 110-volt AC system. The 12-volt system consists of two internal power sources, while the 110-volt system is operated from an outside power source or the optional 110-volt generator. All systems operate through a single power converter control center to provide electrical power to the motor home.

ELECTRICAL CAUTIONS

- Careless handling of electrical components can be fatal. Never touch or use electrical components or appliances while feet are bare, while hands are wet, or while standing in water or on wet ground.
- Improper grounding of the vehicle can cause personal injury. Do not plug the utility power cord into an outlet which is not grounded and do not adapt the plug to connect to a receptacle for which it is not designed.
- Do not attach an extension cord to the utility power cord.
- Be sure that all electrical appliances to be used contain 3-prong plugs for proper grounding.
- Avoid overloading electrical circuits. Replace fuses or circuit breakers with those of the same size and amperage rating only. Never use a higher rated fuse or breaker.
- Use caution when handling or working near electrical storage batteries. Always remove jewelry and wear protective clothing and eye covering. Avoid creating sparks.

110-VOLT AC SYSTEM

The 110-volt system operates from the shoreline cord connected to an outside 110-volt utility service such as those at campgrounds, or from the 110-volt generator. When the shoreline cord is connected to an outside power source, or when the generator is in operation, the power converter automatically changes a portion of the

110-volt current to 12-volt DC current. All equipment in the motor home that is normally powered by the auxiliary batteries is then powered through the converter.

In addition, the following equipment is entirely dependent on 110-volt current: roof air conditioner, refrigerator (when placed in AC mode), microwave oven, and any 110-volt electrical equipment used at convenience outlets.

EXTERNAL POWER CORD (Shoreline)

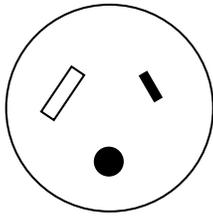
The external power cord (commonly referred to as a “shoreline”) is stored in the utility compartment on the left (driver’s) side of the coach.



WARNING

Do not connect the external power cord to any receptacle **until** you have contacted the owner and/or attendant of the premises to verify proper polarity and grounding. It is the responsibility of the owner of the electrical receptacle to ensure that the receptacle is properly wired and grounded. Reverse polarity and improper grounding of the vehicle can cause personal injury or death.

The three-prong power cord is designed to ground the electrical system through the receptacle. It is also designed to carry the amperage output of most campground outlets. If the electrical receptacle to be used is designed to mate with the three prongs on the power cord plug, the electrical connection can be expected to carry rated load.



30 Amp Receptacle



WARNING

Do not plug the power cord into an outlet which is not grounded, or adapt the plug to connect to a receptacle for which it is not designed.

Be sure that all three prongs of the supply cord are properly plugged into the receptacle.

Do not connect the power cord to an extension cord.

Connecting the Power Cord

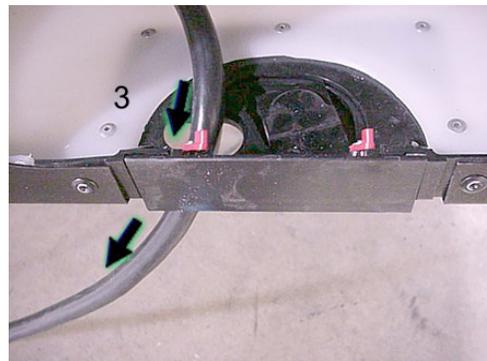
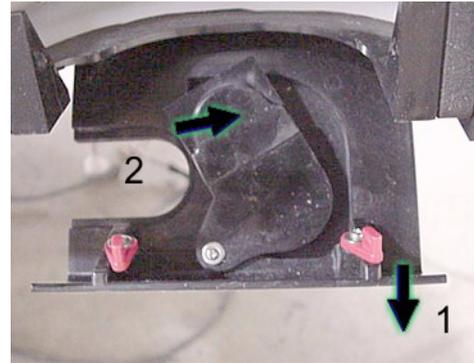
To connect to an external power source, remove the power cord from the utility compartment and plug it into a suitable power receptacle.

An access hatch in the compartment door or compartment floor lets you route the power cord out of the compartment so you can shut the compartment door while the cord is connected.

Model 523J



Model 523H



1. Swivel the hatch retainers aside and lower the hatch.
2. Swivel the cord notch cover aside.
3. Route the cord through the notch and close the hatch.

Park Fuses or Breakers

Most campgrounds are equipped with a fuse or circuit breaker at the receptacle. This protects the park's wiring, as well as the power cord on your vehicle, from electrical damage. If electrical power fails, contact the park attendants and have them check the fuse or breaker for your supply receptacle.

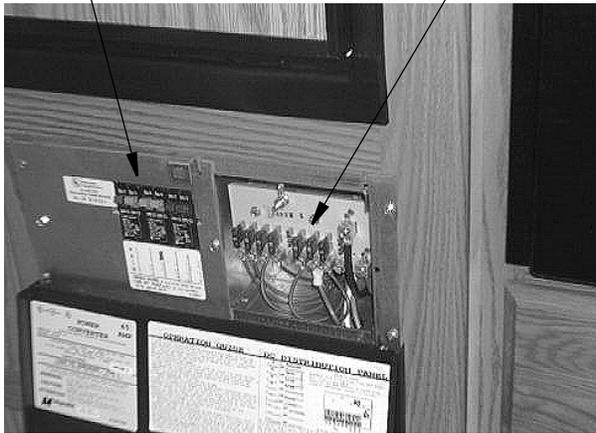
After disconnecting the power cord, neatly replace it in the utility compartment.

POWER CONVERTER

The power converter changes 110-volt AC current from the auxiliary generator or the shoreline into 12-volt DC current for use by 12-volt equipment in the motor home.

110-Volt
Circuit Breakers

12-Volt
House Fuses



Power Converter

Certain circuits, however, remain unchanged for use by items which require 110-volt current, such as the air conditioner(s), the refrigerator in AC mode, the microwave oven, etc.

NOTE: The converter will not change 12-volt DC current to 110-volt AC.

Current drawn from the coach batteries passes through the power converter unchanged, although it is routed through a series of protective fuses located on the power panel.

The converter is located in a lower cabinet face in the galley, living area, or beneath a bed. The converter power panel contains the coach electrical system 110-volt circuit breakers and 12-volt fuses.

CAUTION

Do not block the converter cover vents in any way. The converter generates heat while operating, and needs unrestricted air flow for proper cooling.

Further Information

See the manufacturer's operation, care and maintenance information in your Owner InfoCase

Charging Section

The converter charges coach batteries while 110-volt external power is connected. The converter will automatically "sense" the condition of the RV battery. If it is below "full charge", the Charging Section will start charging the batteries.

If the coach batteries have been extremely discharged, they will accept charge at a relatively high amperage rate. If they are only slightly discharged, they will charge at a lower amperage rate. The rate of charge will decrease as the batteries reach "full charge", then will continue "trickle" charging at a very low amperage rate. If your battery does not charge as described above, it is possible the battery is defective.

Thermal Overload

A thermal overload will "break" the 110-volt AC power to the converter section of the Power Center if the power converter becomes overheated. This can result from operating above its maximum limit for an extended period of time or by obstruction of ventilation to unit.

NOTE: The power converter section will automatically route 12-volt lights and motors to battery power in this event.

The thermal overload will reset itself after a period of time, and the lights and motors will again resume operation from the power converter section. If the breaker trips again shortly after reset, take immediate steps to correct the cause of overheating. A portion of the coach 12-volt load (lights or motors or both) should be turned off to reduce total load. Also, inspect the power converter section to make sure ventilation is not obstructed.

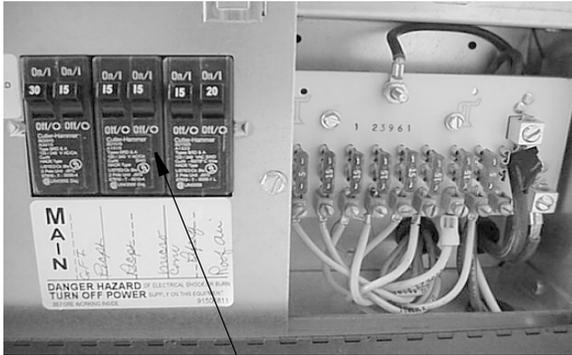
110-VOLT CIRCUIT BREAKERS

The breaker panel protects all 110-volt components in the motor home from either an overload on the circuit or a short in the wiring or component itself. When an overload or short develops, the breaker will open preventing damage to the system.

SECTION 6 ELECTRICAL

View

Shut off the equipment (example: roof air conditioner) and allow a brief cooling period. Then reset the breaker by moving the switch to “Off” and back to “On”. If the breaker is continually tripped and no overload is evident, have the system checked for a short in the wiring or the appliances.



110-Volt Circuit Breakers

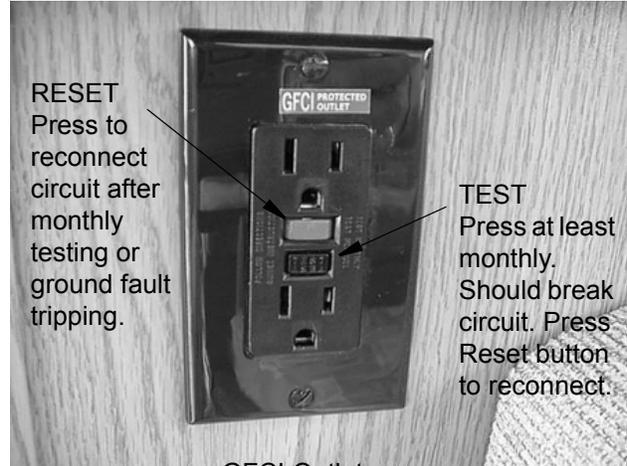
110-VOLT RECEPTACLES (Outlets)

A number of standard AC electrical outlets are provided throughout the coach for connecting small appliances such as televisions, radios, toasters, etc. An outlet is also located on the outside of the coach near the entrance door.

GROUND FAULT CIRCUIT INTERRUPTER

Bath, galley and exterior outlets are connected to a GFCI (Ground Fault Circuit Interrupter), which is an extremely sensitive circuit breaker that will help to protect against severe electrical shock if a ground fault develops. If such a condition occurs, the GFCI will break the circuit by turning off the power to the protected outlets. Should this occur, unplug all the appliances on that circuit and press the reset button on the GFCI equipped outlet.

If the GFCI keeps tripping, have the electrical system checked and repaired, if necessary, before using again.



GFCI Outlet
(Ground Fault Protector)

WARNING

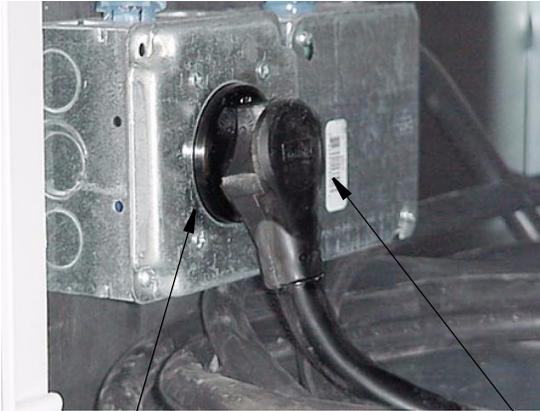
The GFCI will not completely eliminate electrical shock. Small children and persons with heart conditions or other disabilities which make them especially sensitive to electrical shock may still be injured by a 110-volt receptacles even though protected by a Ground Fault Circuit Interrupter.

AUXILIARY 110-VOLT GENERATOR Optional

WARNING

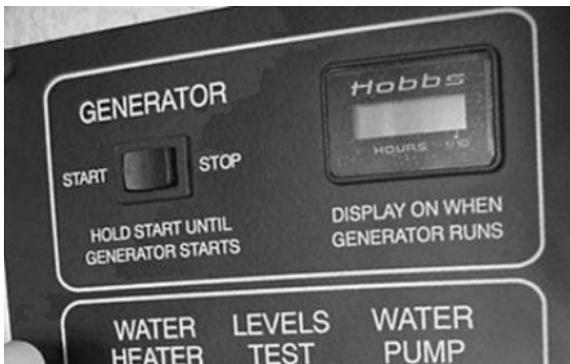
Careless handling of the generator and electrical components can be fatal. **Never** touch electrical leads or appliances when your hands are wet, or when standing in water or on wet ground. **Do not** attempt to repair the generator yourself. Service should be performed by an authorized service center. **Do not** plug the power cord into the generator receptacle while the generator is running.

To use the 110-volt generator, plug the power cord into the generator receptacle within the utility compartment before starting the generator.



Generator Receptacle

Power Cord



Generator Operation

See the manufacturer's operation, care and maintenance in your Owner InfoCase

Generator Hourmeter

This meter is located on the monitor panel. It registers the total number of hours that the generator has been operated. Refer to the hourmeter to determine when periodic maintenance is due and to record services which have been performed.

Operation Warnings and Cautions



WARNING

The exhaust of all internal combustion engines contains carbon monoxide (CO). This poisonous gas is colorless, odorless, tasteless, and lighter than air. The exhaust systems of both your motor home engine and your generator engine have been installed with your safety in mind. However, certain precautions must be taken when using them to protect yourself from conditions beyond the control of the manufacturer.

1. **Do not** simultaneously operate the generator engine and a ventilator which could draw exhaust gases into the vehicle.
2. **Do not** open windows or ventilators on the end or side of the vehicle where exhaust pipe of the generator is located.
3. **Park the vehicle** so that the wind will carry the exhaust away from the vehicle. Also, note the position of other vehicles to be sure their exhaust will not enter your vehicle.
4. **Do not** operate the generator engine while parked if vegetation, snow, buildings, vehicles, or any other object can deflect the exhaust under or into the vehicle.

Check auxiliary generator oil level frequently during periods of use.

Refer to the generator manufacturer's maintenance information in your Owner InfoCase for specific recommendations.



WARNING

Never check generator oil level while generator engine is running.

12-VOLT DC SYSTEM

The DC voltage system consists of the chassis battery, the 12-volt house auxiliary batteries, and the 12-volt power converter.

Converter

See “Power Center”.

Chassis (Starting) Battery

The chassis battery is used to operate the engine starter and automotive accessories and controls found on the instrument panel. The slideout room systems and the electric step are also connected to the chassis battery.

The chassis battery is located in the engine compartment. See your chassis owner’s manual for instructions.

House (Aux.) Batteries

The house batteries supply current to 12-volt equipment located in the living area of the motor home. This includes interior lights, range exhaust fan, furnace fan, water pump, water level and holding tank gauges, 110-volt generator starting, refrigerator and bath roof vent fan. The house batteries may also be used to start the engine if the chassis battery is discharged. Refer to “Battery Boost Switch” in section 3.

The house batteries are “deep-cycle” type batteries specially designed for recreational vehicle use. They will provide longer lasting power than standard automotive batteries, and will withstand the frequent drain-and-recharge cycles that occur under the demanding conditions of a camping outing.

The house batteries are automatically charged by the engine alternator while the engine is running.

AUXILIARY BATTERY (AUX. BATT) SWITCH

The AUX BATT switch disconnects the auxiliary (coach) batteries from the 12-volt system of your coach to avoid long-term battery

drain by electrical items that are hooked directly to the coach batteries, such as clock displays and radio memories, etc.

Always leave this switch ON except during storage periods. Some electronic displays and memory functions may need to be reset after power has been reconnected.



Aux. Batt. Disconnect Switch
Model 23H - on back side of dinette
Model 23J - on end of galley

BATTERY ACCESS

The batteries are located beneath the interior entrance step. Release the latch and lift the top of the step upward to remove.



Release latch and lift step to access house and chassis batteries



BATTERY CARE

Lead -acid type batteries are electro-chemical devices for storing and releasing electrical charge. As such, they are simply an electrical reservoir, not an electrical source. As soon as energy is removed from the battery, it should be replaced by the engine alternator or the RV converter system.

If a battery sits unused for 30 days or more, especially during warm weather, it can develop a deposit of sulfate crystals on the metal plates inside the battery. This condition is called ‘sulfating’ and prevents the battery from either releasing or accepting a charge. If this condition occurs, the battery must be replaced.

If a battery does not contain at least 80% charge during freezing temperatures, the electrolyte can freeze and crack the battery case.

The two best defenses against sulfating and insufficient charge are to:

1. Turn off the Auxiliary Battery switch to avoid parasitic discharge (the trickle discharge caused by directly connected components like LP gas detectors or digital clock displays, etc.)
2. Check the battery and recharge as necessary at least once a month during long storage periods. Turn the Aux. Batt. Switch off to avoid electrical arcing when attaching or detaching charger clamps.

**WARNING**

California Proposition 65 Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm. Wash hands after handling.

NOTE: We do not recommend leaving the shore-line plugged in continuously during storage periods because the batteries can lose electrolytic fluids and become damaged from continuous charging without periodic use or

maintenance.

We recommend following regular battery inspection and maintenance, especially in cold weather.

Further precautions are:

- Remove the battery from the coach.
- Store it in a cool place on a wooden or rubber pad to inhibit conductive transfer.
- Check the state of charge periodically to avoid discharge or sulfating.

To ensure that the battery will always accept and hold a charge, follow these simple maintenance practices.

- Make sure the batteries always remain securely clamped in the battery tray.
- Make sure battery cable clamps are tight on the terminal posts and are free of corrosion.
- Neutralize corrosion buildup or acid film on top of battery by washing with a baking soda/ water solution. Rinse with clear water.

NOTE: Make sure vent caps are on securely to prevent baking soda solution from entering the battery and contaminating the electrolyte fluid.

**WARNING**

Before removing any battery cables or battery, make sure all 12-volt equipment in the motor home is off and the power cord has been disconnected.

Be sure to replace the battery terminal boot back onto the positive terminal after servicing. Care must be taken to avoid pinching the cable between any metal parts. Should the cable be damaged, a short circuit could result in personal injury or damage to equipment. Replace any damaged cables at once. Always remove jewelry and wear protective clothing and eye covering when checking or handling batteries.

- Clean and tighten battery terminals and have the specific gravity checked at least once a year.

SECTION 6 ELECTRICAL

View

- Check the battery fluid level every month, or more often in hot weather. Fill to approximately 3/8 inch above the plates. **DO NOT OVERFILL.** If fluid is added during freezing weather, the motor home should be driven several miles to mix water and electrolyte to prevent freezing.
- Fluid level check may be omitted if equipped with maintenance-free batteries.



WARNING

To prevent wiring damage, it is essential when replacing the cables on the battery, or when using a “booster” battery, that the positive post and the positive cable be attached and the negative post and negative cable be attached. The posts are marked (+) plus and (-) minus. If a “boost charger” is used while battery is in the motor home, disconnect both battery cables before connecting the charger to avoid damage to engine electronic components. Never attempt to charge or boost a frozen battery.



Chassis/House 12V Circuit Breakers behind cover panel in floor compartment between front seats.

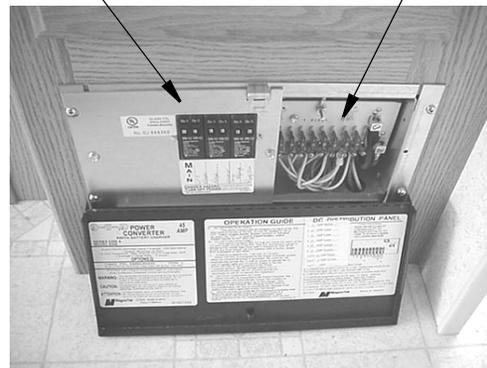
A label on the panel states the amperage rating and circuit protected for each fuse or breaker.

Fuse Panel

The fuse panel is mounted on the right-hand side of the power converter.

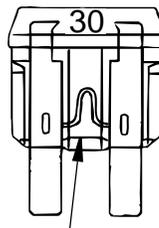
110-Volt
Circuit Breakers

12-Volt
House Fuses

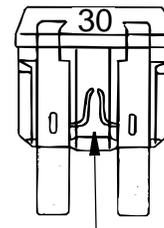


Power Converter

The fuse panel accepts only blade type plug-in fuses. Always replace fuses with those of the same amperage rating.



Good Fuse



Bad Fuse

12-VOLT HOUSE FUSES AND CIRCUIT BREAKERS

All 12-volt circuits and equipment in the coach area of the motor home are protected by either a fuse panel or breaker panel. When a circuit is overloaded or a short develops in any part of the system, a fuse or breaker will shut down that circuit. If this happens, turn off all affected lights or appliances and reset the breaker or replace the fuse with a new one of equal amperage rating.

View

SECTION 7 PLUMBING

FRESH WATER SYSTEM

The fresh water system provides water to the galley sink, shower, bathroom lavatory, toilet and water heater. Water may be supplied by either of two sources:

- a water tank located within the motor home, or
- any external water source to which the motor home may be connected, known as “city water.”



Water Service Center

Fresh Water Tank Filling Procedures:

Always fill the fresh water tank at an approved potable water filling facility or a known purified drinking water source.

The tank may be filled either by gravity fill or by pressure filling through the city water connection. A special diverter valve will route the water from the hose either directly to the water lines for city water hookup use, or to the fresh water tank for filling.

Gravity Fill

Insert hose into fill opening and turn water supply on. Tank is full when water flows from tank vent tube beneath coach. The gravity fill tube is located behind a small, lockable door on the left (driver) sidewall toward the back of the coach.



Water Tank Gravity Fill

Pressure Fill from City Water Connection

1. Attach hose to city water connector.



Fresh (City) Water Connection

2. Open the Gravity Fill door to provide adequate air venting and avoid pressure buildup.
3. Turn the Fresh Water Valve inside water service center to Tank Fill position



4. Turn city water supply on.
5. Tank is full when water flows from tank vent tube beneath coach.
6. Turn off city water supply and disconnect from city water connector.
7. Turn Fresh Water valve to Normal position to use the water demand pump. The Tank Fill position is only for pressure filling the water tank from the city water hose connection.



City Water Use

Connect hose to city water connection as described in previous steps. Turn Fresh Water valve to Normal position and turn demand water pump switches OFF.

NOTE: Always keep the tank fill valve in Normal position unless you are filling the tank. If this valve is left in the Tank Fill position while using the city water, water will keep flowing into the tank and out the tank vent tube onto the ground and the water pump will run without delivering water to faucets.

When connected to an outside source of water, the water bypasses the demand pump and storage tank and supplies pressure directly to individual faucets and toilet. A check valve built into the pump prevents water from entering the pump and filling the storage tank.

*NOTE: Because city water pressure varies from location to location, we recommend using an **in-line water pressure regulator** to prevent damage to any components, connections and seals in your fresh water system.*

A water pressure regulator may be obtained from any well stocked RV dealership retail center and some retail discount centers. These devices simply connect in-line between the supply hose and the city water input on the coach.

*We recommend a regulator that controls water pressure to **40 psi maximum**.*

To Disconnect from the City Water source:

1. Turn the city water source off.
2. Open a faucet inside the vehicle to relieve line pressure.
3. Disconnect the hose from the vehicle and replace the cap on the city water connection.

WATER PUMP

When your coach is not connected to a city water supply, water is supplied from the fresh water tank by a water system demand pump. A demand pump is designed to run only when you are using water. When you open a faucet, the water line pressure drops and the pump begins to run, and it will continue to run as long as the faucet is open. When you close the faucet, the line pressure backs up to the pump, and it shuts itself off.

The pump is self-priming and will run briefly to build up line pressure when the Water Pump Switch is first turned on. See "Initial Water Line Priming" for instructions on using the water system for the first time.

Further Information

See the water pump manufacturer's operation, care and maintenance information in your Owner InfoCase.

Water Pump Location

(Model 23H)

The water pump is located beneath a panel in the floor of the right rear storage compartment. A finger hole is provided for you to lift the panel as shown. The water drain valves and winterization valve are also located in this compartment.



Finger hole - Lift panel to access pump, strainer, drain valves and winterization valve.



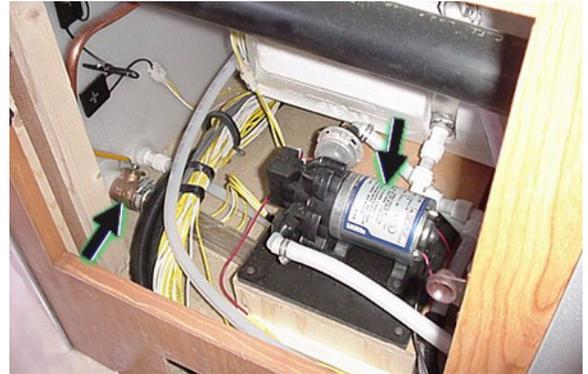
Winterization Valve Water Pump Water Heater Bypass Valve Pump Strainer

Model 23J

The water pump is located behind a louvered pull-off panel on the lower face of the wardrobe cabinet. The water tank drain valve is also located in this compartment.



Carefully pry panel from lower face of wardrobe cabinet using thin blade-type tool.



Water Tank Drain Valve and Water Pump

Pump Strainer

The pump is equipped with a cleanable strainer to capture any possible tank borne particles that could damage pump components.

NOTE: We recommend that you check and clean the strainer after each tankful of water during the first few uses of the water pump system. Thereafter, remember to check it at least yearly, such as during winterization procedures.

Unscrew bowl and remove to clean strainer



Water Pump Strainer

To Clean Pump Strainer

Be sure all water pump switches are OFF.

- Twist the inlet cap (bowl) counterclockwise to unscrew from the strainer assembly.
- Remove the bowl and pull the strainer screen out of the bowl to tap out any particles and rinse clean.
- Insert the strainer screen back into the bowl, then screw the bowl back onto the strainer assembly.

NOTE: You must also empty the strainer when winterizing your coach to avoid water freezing and cracking the filter bowl.

Water Pump Switch

Water pump switches are located on the systems monitor panel and in the water service center. While the switch is in the “ON” position, the pump will automatically supply water pressure as it is needed. It is recommended that the pump switch be turned off whenever you are away from the vehicle or not using the water system. A slow leak in a faucet could drain the water system and discharge the coach battery.

Initial Water Line Priming

1. Make sure that all water drain valves are closed, including water heater valve.
2. Turn water pump switch to “OFF” position.
3. Fill water tank.
4. Open all faucets, hot and cold.

5. Turn on pump switch.
6. Close each faucet as it begins to deliver a steady stream of water (close cold water first). Leave hot water faucets on until they also deliver a steady stream of water. This will ensure that the water heater is filled with water.
7. Check to be sure pump stops soon after all faucets have been closed.
8. Pump is now ready for automatic operation. Pump will start when a faucet is opened and stop when the faucet is closed.

DISINFECTING FRESH WATER SYSTEMS ON RECREATION VEHICLES

(As approved by the U.S. Public Health Service)

To assure complete disinfection of your fresh water system, it is recommended that the following procedure be followed on a new system, one that has not been used for a period of time, or one that may have become contaminated. This procedure is also recommended before long periods of storage such as over winter.

1. Prepare a chlorine solution using 1 gallon of water and 1/4 cup of household bleach (sodium hypochlorite solution). With tank empty, pour chlorine solution into the tank. Use 1 gallon solution for each 15 gallons of tank capacity. This procedure will result in a residual chlorine concentration of 50 ppm in the water system. If a 100 ppm concentration is required as discussed in item 3, use 1/2 cup of household bleach with 1 gallon of water to prepare the chlorine solution. One gallon of the solution should be used for each 15 gallons of tank capacity.
2. Complete filling of tank with fresh water. Open each faucet and run the water until a distinct odor of chlorine can be detected in the water discharged. Do not forget the hot water taps.

3. Allow the system to stand at least 4 hours when disinfecting with 50 ppm residual chlorine. If a shorter time period is desired, then a 100 ppm chlorine concentration should be permitted to stand in the system for at least 1 hour.
4. Drain and flush with fresh water.

 **WARNING**

Chlorine is poisonous - recap bottle and clean utensils after use.

SHOWER HOSE VACUUM BREAKER

After using the shower, you may notice water dripping from the shower faucet assembly. The dripping results when vacuum in the shower hose (after closing the shower faucet) slowly releases and allows water remaining in the hose to drain down. This is a normal function of the shower valve assembly and is not a leak or defect.

The International Association of Plumbing and Mechanical Officials Standard TSC 21-85 (PAR. 4.3) states:

“Shower heads which incorporate shutoff valves, shall have a minimum “drip rate” of one (1) quart in thirty (30) minutes.”

 **CAUTION**

If items are placed into the shower tub before shower valve vacuum release is complete, they may become wet.

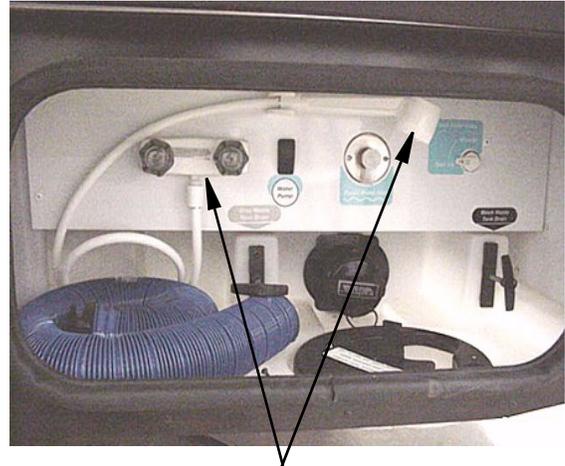
EXTERIOR SHOWER/WASH STATION

- Optional

The exterior wash station feature allows you to do things such as rinse off sand or salt after a swim, rinse off muddy boots, or bathe your pet

outside the coach. A water pump switch is located near the shower faucet for your convenience.

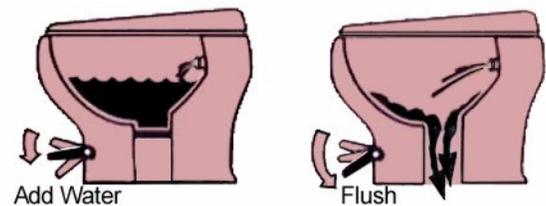
- The wash station is located in the water service center on the left side of the coach.



Exterior Shower/Wash Station
(Typical)

TOILET

The toilet in your motor home is very similar to the household type, except that it is designed to use only a small amount of water per flush. It uses a high velocity jet of water, producing a swirl effect, to efficiently cleanse the bowl.



Important “Don’ts”

- Don’t use facial tissue or regular toilet tissue in the RV toilet. These will not disintegrate sufficiently and will often cling to the sides of the holding tank. Toilet tissue made specifically for use in RV toilets and holding tanks is available at most RV supply centers.
- Don’t dispose of sanitary napkins or other non-dissolving items in the toilet.

- Don't put automotive antifreeze or caustic chemicals, such as laundry bleach or heavy detergents into the toilet or holding tank. These products may damage plastic or rubber parts in the system.

See winterizing instructions at the end of this section to prepare the toilet for storage in freezing conditions.

Further Information

See the toilet manufacturer's operation information in your Owner InfoCase for complete operating, care and maintenance information.

WASTE WATER SYSTEM (Holding Tanks)

The drainage system is self-contained and uses two separate holding tanks to contain the waste water until it can be dumped at an appropriate waste water disposal site. This means you can use the toilet, sinks and shower even in areas where utility hookups are not available.

The black water holding tank contains the sewage from the toilet and may include bathroom lavatory on some models. The gray water holding tank contains the waste water from the galley sink and shower, and may include bathroom lavatory. See Tank Capacities in Section 1 for your model.



Dumping Holding Tanks

1. Remove drain hose from water service center.
2. Remove dust cap from drain and connect sewer hose. Be sure it is firmly attached.
3. Place the outlet end of sewer hose into disposal opening.
4. Open the black water valve (black handle) with a quick pull and make sure there are no sags in the hose. Move the hose gently about to dislodge any waste and ensure complete drainage. Close black water valve as soon as tank is empty.

NOTE: Do not open the gray water valve until the black water tank is drained and dump valve closed to avoid sewage back-up into gray tank. Gray water also rinses any black water solids from the drain hose.

5. Open the gray water valve (gray handle). Be sure there are no sags in the hose to ensure complete drainage. Close gray water valve as soon as tank is empty.
6. Add an odor control chemical to the sewage holding tank through the toilet. These chemicals are available at most R.V. stores.
7. Rinse sewer hose thoroughly with water and stow.

NOTE: We recommend that you dump all holding tanks before traveling to avoid carrying unnecessary weight.

Using On-Site Sewer Hook-Ups

The drain hose may remain attached to the dump outlet and be routed out the bottom of the compartment while the motor home is parked and connected to an on-site sewage hook-up.

When using a sewer hook-up, keep the dump valves closed until a tank becomes full or when preparing to leave the site. This keeps the solids in suspension, allowing them to be carried out with the liquids when the dump valve is opened. If the valve is left open, the liquids will drain off, leaving solids in the tank. Should this accidentally happen, disconnect the hose, fill the tank about half full with water, and drive a few

miles to dislodge the solids. A few starts and stops will aid in the process. Then reconnect the hose and drain in the normal manner.

Holding Tank Level Indicators

See Systems Monitor Panel in Section 4 for further information on the monitor panel and checking tank levels.

HOLDING TANK HEATER

-Optional

Your coach may be optionally equipped with black water and grey water holding tank heaters to allow use of waste utilities in freezing temperatures. The holding tank heater power switch is located near the monitor panel. The illuminated switch will glow when the power is on.



DO NOT operate the holding tank heater unless you are providing a supplemental 12-volt power source to recharge the house batteries. This means either the shoreline cord must be plugged into a 120-volt source, or the auxiliary generator must be operating, or the chassis engine must be running (such as when driving down the road). This will prevent excessive discharge of the house battery.

NOTE: The holding tank heater pads are electrical resistance type heating elements. This type of heating element typically uses a large amount of current while operating. If the tank heaters are used without a recharging source, they will drain the house batteries in a relatively short period. Typically the

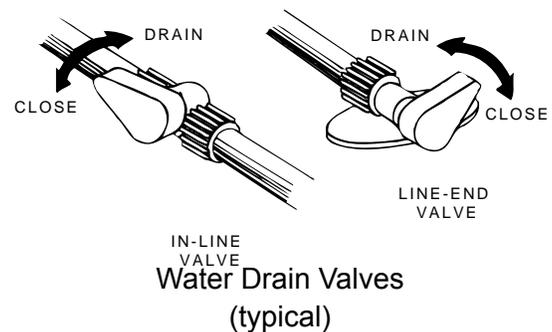
batteries would not support overnight heating without a supplemental charging source.

WATER LINE AND TANK DRAIN VALVES

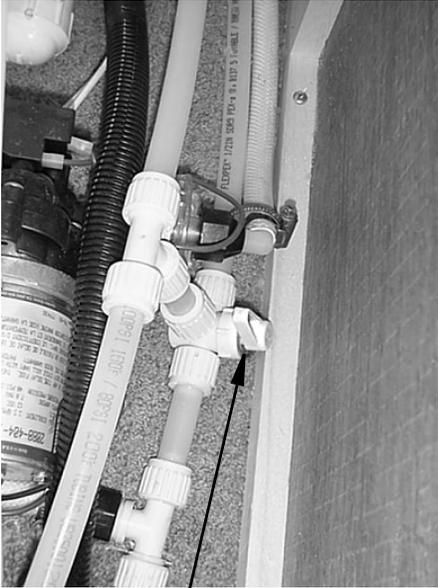
The water drain valves are used to drain water from the water tank and the water supply lines when preparing the motor home for storage or when sanitizing the water system.

To open or close the drain valves, turn the handles in the directions indicated by the following illustration.

See the Water System Drain Valve chart at the end of this section for locations on your coach.



Water Tank Drain Valve
(Typical)



Water Heater Bypass Valve
(Typical)



4. Turn on water pump and open all sink faucets and shower head knobs. Leave open after water stops flowing.
5. Press the toilet flush pedal and hold until water stops flowing in the toilet. Then turn water pump switch off.
6. Turn off the water heater power switch before draining the water heater tank to avoid damage to the heating element. Drain the water heater by removing the plug from the base of the water heater tank, accessible from the outside of the coach. (Requires socket and ratchet.)

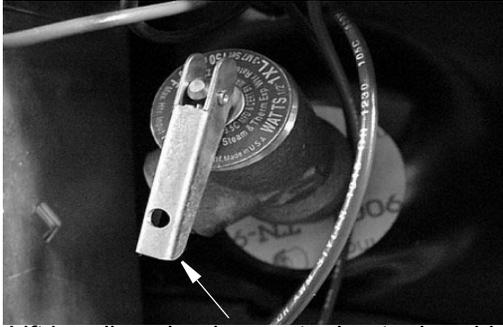
WINTERIZING PROCEDURE

Blow Out Procedure

1. Level the motor home and drain the entire plumbing system as described in the following steps.
2. Open water line drain valves and drain fresh water tank. (See Water System Drain Valve Locations chart at the end of this section for locations of drain valves on your model.)
3. Open the Exterior Wash Station shower knobs and lay shower head on ground to drain any water left in the shower line. Also place the tip of your finger into the city water inlet and gently press the backflow valve “button” in the center of the inlet to drain any water trapped in the inlet line.

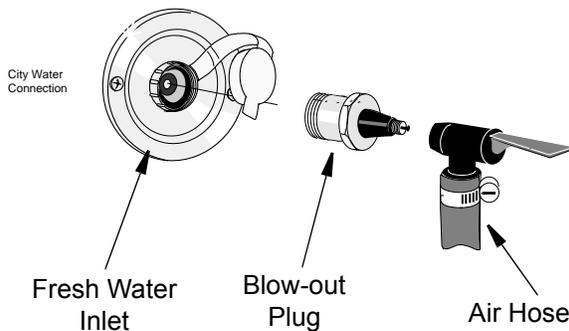


Also open the Pressure-Temperature relief valve at the top right portion of the tank to prevent air locking in the tank while draining.



Lift handle only when water heater is cold

- After water has stopped draining at all faucets and drain valves, leave faucets open and connect a “blow-out” plug to the city water connection on the coach. Then use a compressed air hose regulated to 30 psi or less to force air through the system. (A “blow-out” plug can be purchased at any Winnebago or Itasca dealer. P/N 701705-01-000.)



 CAUTION
<p>Limit air pressure to 30 psi to avoid damage to pump or water lines.</p>

NOTE: DO NOT burst air into the system. This can damage the water pump. It is better to let air in slowly.

- Let air flow for five minutes until water is completely drained out of faucets and drain valves. Then close faucets one at a time.
- Operate and hold toilet flush pedal until water is completely drained from toilet.

- Now turn air pressure off and disconnect water purge adapters. Recap the city water connection to avoid contamination by dirt or insects.

- Follow Procedure listed in “Final Steps...”

Water System Antifreeze Procedure

NOTE: As an alternative to totally draining the plumbing system, you may winterize tanks and lines by pumping non-toxic RV antifreeze through the system. This product is available from your dealer and from most RV supply stores. Follow directions on the container to determine the correct amount to use for your coach.

Your coach is equipped with a manually operated water line winterization system for your convenience in winterizing fresh water lines.

The system features a diverter valve with suction tube to draw non-toxic RV water system antifreeze into the water lines. There is also a water heater bypass valve to avoid filling the water heater with antifreeze. This feature is located near the water pump in the water center or utility compartment.

 CAUTION
<p>Leave bypass valve handle in NORMAL FLOW position if draining water and blowing out water lines. Place in BYPASS position ONLY when using antifreeze solution in water lines.</p>

 WARNING
<p>NEVER use automotive antifreeze/coolant in your RV water system. Auto antifreeze contains ethylene glycol which, if ingested, can cause blindness and can be fatal.</p>

- Turn water heater bypass valve to **BYPASS** position.
- Remove and save the protective cap from the end of the antifreeze draw tube.
- Insert the end of the draw tube into a pail or other container with 2 to 3 gallons of non-toxic RV antifreeze solution.



Siphon Tube
(insert into container of RV water system antifreeze)

Winterizing Valve
(point toward siphon tube for winterizing)

Winterization Valve
(See Water System Drain Valve chart at end of section for location)

- Turn the diverter valve handle so that it points toward the suction tube.
- Turn the water pump switch on.
- Open each hot and cold water faucet handle in the coach one at a time until antifreeze solution just begins to flow from the faucet, then close.

When Done Adding RV Antifreeze:

- Turn water pump switch off.
- Turn the diverter valve handle so it points toward the water line to the pump as shown in the photo. This will stop the flow from the suction tube and revert the tank line flow to the pump.
- Replace the protective cap onto the end of the suction tube to keep out insects and debris when not in use.

Dump and Clean Holding Tanks:

- Completely drain the sewage and waste water holding tanks at an approved waste disposal site. Drain the sewage tank first so the following waste water can rinse any waste solids from the dump outlet and sewer hose.
- Close dump valves and refit the dust cap onto the drain outlet.

Final Steps for “Blow-out” or “Water System Antifreeze” Procedure

1. Close all drain valves and faucets to avoid contamination by dirt or insects. Reinstall water heater drain plug and close P-T relief valve.
2. Pour about one cup of non-toxic RV antifreeze into the kitchen sink drain, bathroom sink drain and shower drain. This prevents any holding tank odors from entering the coach during storage.

NOTE: It is not necessary to add antifreeze to the toilet since the flush valve will be closed.

Do not add automotive antifreeze or caustic chemicals such as bleach or laundry detergents into the toilet bowl or holding tanks. Although these products may have a deodorizing effect, they may damage plastic and rubber parts in the system.

3. Place a bucket beneath the sewage drain valve outlet and re-drain the sewage and waste holding tanks of any clean water that may have entered during the “blow-out” procedure.
Close dump valves to prevent valve shafts from rusting and to prevent entry by rodents and insects. Refit the dust cap onto the drain outlet.
4. Empty the water pump strainer filter bowl to avoid water freezing and cracking the filter bowl. Strainer is shown previously in this section.

Your drainage and fresh water systems are now totally winterized.

WATER SYSTEM DRAIN VALVE LOCATIONS

MODEL	SYSTEM	DRAIN VALVE LOCATIONS
23H	Water Lines	Open exterior shower faucet and lay shower head on ground.
	Water Tank	Large yellow-handled valve beneath galley. Remove bottom drawer to access.
	Water Heater	Drain plug on outside of coach, behind service door. Use socket to remove drain plug. See photo on previous page.
	Water heater Bypass Valve	Beneath removable access panel in floor of right rear exterior storage compartment.
	Winterization (Antifreeze) Valve	Beneath removable access panel in floor of right rear exterior storage compartment.
23J	Water Lines	Open exterior shower faucet and lay shower head on ground.
	Water Tank	Large yellow-handled valve behind a removable louvered access grille on the lower face of the wardrobe cabinet.
	Water Heater	Drain plug on outside of coach, behind service door. Use socket to remove drain plug.
	Water heater Bypass Valve	In right rear exterior storage compartment.
	Winterization (Antifreeze) Valve	In right rear exterior storage compartment.

View

SECTION 8 ENTERTAINMENT

DVD PLAYER

See the manufacturer's operation, care and maintenance information in your Owner InfoCase.

An infrared remote 'eye' is mounted on the underside of the video cabinet to allow remote control operation of the DVD player while the cabinet door is closed.



DVD Player in overhead cabinet above TV

Speaker Switch Remote 'Eye' 12V Power Switch TV Up/Dn Switch



Retractable TV - Model 523J

The speaker selector switch must be in TV position to enable surround sound speakers while watching a DVD or TV. This switch is mounted on the inside or underside of the DVD cabinet.

See the television manufacturer's information in your Owner InfoCase for operating instructions.

TV - LCD

The liquid crystal display flat panel TV is powered by 12-Volt DC current from the automotive or coach battery. The TV power switch must be On to operate the TV.

12V Power Switch Remote 'Eye'



Stationary TV - Model 523H

TV ANTENNA

The TV antenna on your motor home can be easily raised, rotated a full 360° and lowered from inside the vehicle by simply turning a crank or directional handle. A built-in signal amplifier designed to strengthen signals, is controlled by a power switch built into the TV jack assembly.

See the antenna manufacturer's operation, care and maintenance information in your Owner InfoCase.



WARNING

Never allow the antenna to touch electrical power lines or any other electrical wires.



CAUTION

Always align directional handle to "DOWN" position before lowering.

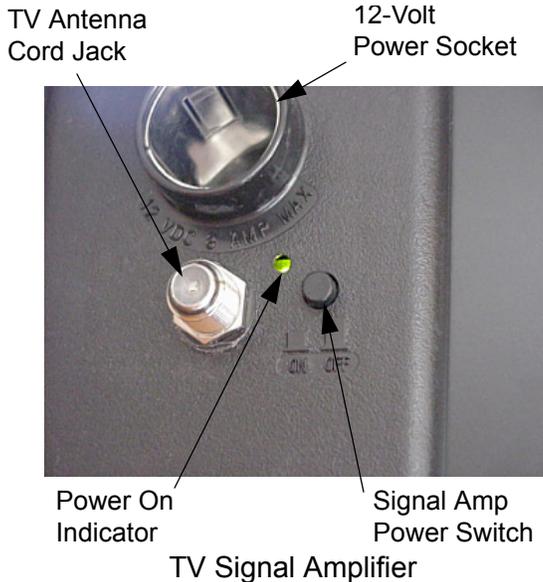
TV SIGNAL AMPLIFIER

Model 523H: The signal amplifier is located in the right side front interior overhead compartment.

Model 523J: The signal amplifier is located in the left side interior overhead compartment

NOTE: Be sure the TV antenna amplifier switch is turned OFF while connected to cable. The antenna amplifier will make the cable TV signal snowy.

To operate amplifier, turn on power switch.



Checking Performance

The TV signals available to an RV are entirely dependent on its location in relation to the transmitter. Signals may vary from strong to no usable signal at all. We recommend that the TV system be checked out in an area known to have good TV reception.

To check the antenna amplifier, raise the antenna, select a TV channel and rotate the antenna for best picture. Then turn off the

amplifier power switch. If the antenna amplifier is working properly, the TV picture will now be degraded (snowy). When you turn the switch back on, the picture should again be sharp.

CABLE TV HOOK-UP

The cable television input connector is located in the power cord utility compartment.



Cable TV Input Hook-Up in Utility Compartment

SATELLITE SYSTEM WIRING

This coach is pre-wired for installation of a digital satellite system (DSS). Coaxial cable connections to hook up your satellite receiver are located in the right side overhead compartment. See your authorized Winnebago Industries dealer for proper installation and sealing of roof mounted components.



Interior Connection for Satellite Receiver (in video cabinet)

SLEEPING FACILITIES



WARNING

Do not use sleeping facilities while vehicle is moving.

COUCH/BED CONVERSION

Couch to Bed:

Pull the front edge of the couch seat upward and outward from the wall while gently pushing downward on the backrest until the cushions lie flat. The bed is now ready for use.

Bed to Couch:

Push the front edge of the seat toward the wall while lifting upward on the backrest until the couch is fully seated against the wall.

DINETTE/BED CONVERSION

Dinette to Bed:

1. Release the catch on the table leg brace and fold the leg up against the bottom of the table.



2. Remove the table from the wall support bracket by lifting the end of the table. Then lower the table to rest on the cleats attached to each dinette bench.



3. Arrange dinette cushions to cover bed area.

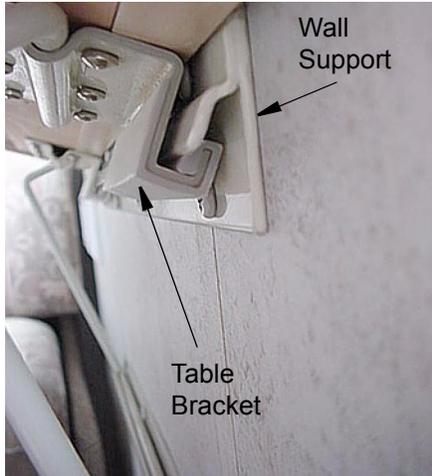


Bed to Dinette:

1. Reattach the table onto the wall support and lower the table leg.

SECTION 9 FURNITURE & SOFTGOODS

View



2. Make sure that the table leg is secured into the floor support bracket and the leg brace is locked.



A ladder for the front bunk is stored in the right rear exterior compartment (Model 523J) or beneath the slideout room couch (Model 523H) as shown.



The hooks on the top of the ladder engage with the slot brackets on the rear edge of the bunk shown.

FRONT BUNK

The front bunk is hinged at the front and fastened to the cab ceiling as shown when stored.





SKYLIGHT

The skylight contains a sliding shade for privacy and light control and a screen, both of which retract into the sides.

It can also be opened to several positions for ventilation if necessary. Press the large latch button with your thumb and pull the lever down as shown in the following photos.



CAUTION

Always close the skylight completely before driving. Do not open the skylight when the vehicle is in motion.

DAY/NIGHTER PLEATED BLINDS

Your coach may feature two-stage pleated window blinds that can be used for daytime or nighttime privacy.

Sun Shade

The lower section is a translucent white shade that can be lowered for privacy without darkening the inside of the coach. It can also filter out harsh direct sunlight to help keep the inside of the coach cool in summer or to disperse light for houseplants.

Room Darkening/Privacy Shade

The upper section is an opaque, darkening shade for nighttime privacy and daytime room darkening purposes. Pull the lower and upper sections down together or separately.

WOOD FURNITURE AND CABINETRY

People are drawn to the natural beauty of wood. At Winnebago Industries, our craftsmen work with the art found in each piece of wood to create cabinets of superior quality, backed by the Winnebago Industries warranty.

- Oak is a strong, open-grained hardwood that ranges in color from white to pink and reddish tones. Streaks of green, yellow and even black may appear due to mineral deposits. Oak may also contain wormholes and wild, varying grain patterns. This distinct graining is considered a desirable quality and has made oak one of the most popular woods used for cabinetry.
- Maple is a close-grained hardwood that is predominately white to creamy-white in color, with occasional reddish-brown tones. While maple typically features uniform graining as compared to other wood species, characteristic markings may include fine brown lines, wavy or curly graining, bird's eye dots and mineral streaks. These traits are natural and serve to enhance maple's natural beauty.
- Cherry is characterized by its red undertones, but may vary in color from white to a deep, rich brown. Cherry is a close-grained wood with fairly uniform texture, revealing pin knots and curly graining. All wood will age with time and the finish will darken. This is especially true for cherry. This is a sought-after quality in cherry cabinetry, and those who select it expect this evolution.

No matter which species you choose for your new Winnebago Industries motorhome cabinetry, please keep in mind that no two pieces of wood are exactly the same.

Stains are likely to exaggerate the difference between open and closed grains and other markings in wood. Grain variation and color change should be expected. As hardwood ages, it will darken when exposed to different types of light. Color differences or changes in wood can also be caused by exposure to harsh chemicals, extreme heat or other contributing external conditions.

Any color change that occurs in both the finish and the wood is considered part of the natural aging process and is not to be considered defect or damage.

Additionally, wood species exhibit other defining characteristics, such as mineral deposits/streaks, knots, sap runs, pin holes and wormholes. These markings make the wood unique and contribute to its enduring beauty.

Therefore, since wood is a product of nature and will have certain natural characteristics and variances they are not covered under the warranty.

View

SECTION 10 SLIDEOUT ROOM

SLIDEOUT ROOM OPERATION

The slideout living room provides a spacious living area at the push of a button. The slideout room is extended and retracted using a motorized mechanism with an electronic control system.

The slideout room system uses a 12-volt DC motorized room mechanism to insure smooth operation and positive weather seal.

The slideout control switch is located near the monitor panel.

Note: We recommend that you KEEP THE ENGINE RUNNING WHILE EXTENDING OR RETRACTING SLIDEOUT ROOMS so the engine alternator can provide maximum power for proper operation of the slideout mechanisms.

Travel Strap

The travel strap **must be released before extending the room** or damage to the coach will result.

The travel strap is designed only to help keep the room extension secured against the coach sidewall to maintain an effective weather seal while the vehicle is in motion. It is not designed to withstand the force exerted by the room extension mechanism and will not prevent accidental extension of the room.

The travel latch is located near the floor at the front end of the slideout room.

To Release:

- Pull the strap buckle outward and up to release tension on strap.
- Pull a short length of the excess strap back through the buckle to provide sufficient slack.
- Unhook the strap end peg from the mooring bracket on the floor and wall edge. Store strap in location of your choice. (Under the couch is one choice.)



To Fasten Strap:

- Hook the strap end peg into the mooring bracket.
- Flip buckle downward and press toward strap until it “snaps” snugly into place against the strap.
- If a strap is loose or too tight after closing the buckle, release the buckle and pull the loose end of the strap in or out to adjust tension as needed. Then reclose the buckle.

NOTE: If latch becomes loose and will not stay fastened, see your dealer for proper adjustment.

Before Extending the Slideout Room:

1. Level the coach and set the Parking Brake.

SECTION 10 SLIDEOUT ROOM

View

2. Make sure that the exterior compartment doors are closed so that they will not interfere with slideout operation.
3. Make sure that there are no people who could be harmed or obstacles that could cause damage due to room extension.
4. Release the safety travel straps inside the coach.

If the slideout room has a couch or other furniture, make sure no people or pets are seated on them until the room has been fully extended.



CAUTION

Release slideout room travel straps before attempting to extend slide-out room. Fasten travel straps before driving vehicle.



WARNING

Keep all persons clear of the slideout room and moving parts while extending or retracting. Do not occupy the slideout room while it is being extended or retracted.

To Extend Slideout Room:

- To extend the room, press and hold the switch to extend position.



- Release the button when the room has reached its full extension.

- To stop extending the room anytime during operation, release the button.

Before Retracting the Slideout Room:

1. Be sure the coach is level and the Parking Brake is set.
2. Check the outside of the coach to make sure that no obstacles exist between the outer wall flange and the outside sidewall of the coach.
3. Make sure that there are no people who could be harmed or obstacles that could cause damage due to room retraction.
4. Make sure that there are no obstacles that could interfere with the room's retraction on the inside of the coach such as open doors, drawers, chairs, etc.

If the slideout room has a couch or other furniture, make sure no people or pets are seated on them until the room has been fully retracted.



CAUTION

Although there is an awning over the roof of the slideout room, there is a possibility of debris getting onto the roof. Because the slideout roof is drawn into the interior of the coach when retracted, be sure there is no debris, such as excessive dirt, tree seeds, twigs, leaves, etc. on the roof before retracting.

To Retract the Slideout Room

See "Before Retracting Slideout Room" on the previous page for precautions before proceeding.

To retract the room, press and hold the switch to RETRACT position.



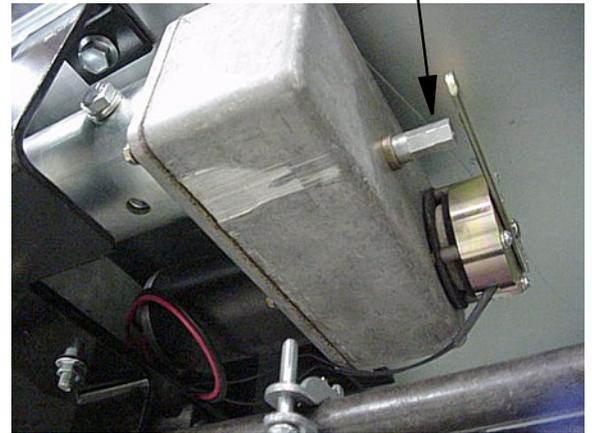
- To stop retracting the room during operation, release the button.
- Release the button when the room has retracted completely.
- After the room has been retracted, refasten the safety travel strap.

CRANK-IN MODE:

If the room will not retract using the buttons and the mechanism is apparently malfunctioning, you may need to manually crank the room in to the travel position.

- Use a ratchet wrench and a 12-point 7/16" socket on the motor gearshaft to manually crank the room inward.
- The motor/gear assembly is located beneath the vehicle near the rear of the slideout room, just ahead of the driver side rear tires.

Use 12-point 7/16" socket with ratchet on gear shaft to crank room inward



View of motor/gear assembly from ground

- Crank the room in until it is just 'snugged up'. Do not overcrank or you could damage the gear assembly.
- Fasten the travel strap before driving the vehicle to your dealer for service of the slideout mechanism.

See your dealer for service of the slideout system before using again.

GENERAL SLIDEOUT CARE

- Wipe outer seals occasionally with talc or 303 brand protectant for smooth quiet operation.
- Clean the floors inside before retracting the room to avoid vinyl flooring scratches or carpet pile snags.
- Be sure there are no obstruction items at end of bed or behind the driver seat or in compartments. Some items could be crushed or cause damage to floor covering or cabinets when the room is retracted.
- See your authorized dealer for regular maintenance and service of the mechanism.

SECTION 11 MAINTENANCE & STORAGE

SEALANTS

Water is a recreational vehicle's worst enemy when it is allowed to enter where it's not intended. Sealants perform a very important function and should be inspected closely and maintained regularly. Winnebago Industries utilizes many different types of sealants. See "Recommended Sealant Application" page at the end of this section.

Sealants, in general, do not have "set" lifetimes. Varying environmental factors affect the pliability and adhesiveness of sealants. You or your dealer must:

- Inspect all sealants, a minimum of every six months.
 - * Inspect the moldings, windows, clearance lights, exterior compartment doors and all their attachments.
 - * Check for cracks, voids, gaps, breaks, adhesion, and any sign of physical deterioration.

NOTE: Proper sealant inspection includes not just visual observation but running a finger along sealant seams to verify proper adhesion to the surface. Any loosened areas must be replaced.

- Have the sealant replaced if you notice any of the above. Your local Winnebago Industries dealer has the correct and necessary parts and experience to help you maintain your sealants. See "Recommended Sealant Application" page at the end of this section.
- Always use the same type sealant that was removed.
- Immediately have dealership check moldings, windows and exterior attachments for leak source if you notice water inside of unit.



CAUTION

Sealants must be inspected every 6 months and replaced if necessary.

ROOF

The roof is made of Thermo-Panel materials like the walls and floor. It will support the weight of an average adult should it become necessary to repair the roof or roof mounted components. It is not recommended, however, that very large or heavy objects be carried on the roof while the vehicle is in motion. (See Section 3 for roof loading specifications.) Always have damage to the roof area repaired immediately. Damaged or detached sealant around the vents, air conditioner, body-to-roof seams, etc., should also receive immediate attention. Delaying these repairs may allow water leakage and result in damage to interior ceiling and body panels, upholstery, etc., which is not covered by the limited warranty.

UNDERBODY

Buildup of mud and dirt under the body can cause damaging rust on steel parts and can add needless weight to the vehicle. This, in effect, reduces the amount of cargo you can carry and remain within GVWR and GAWR limits.

Corrosive materials, such as those used for ice and snow removal and dust control, also accumulate on the underside of a vehicle. These materials should be removed by flushing the underbody regularly with water, especially areas where mud and other foreign materials collect.

NOTE: Anytime an RV technician is beneath the coach or it is on a hoist for service, have the underbody and chassis checked for proper condition, clearance and routing

of wires harnesses for slideout room to avoid pinched wires, etc.

EXTERIOR FINISH

The exterior surface of your motor home has an automotive type finish. Frequent washing and thorough cleaning is recommended to prevent damage to the vehicle finish after exposure to damaging salts, calcium chloride, road tar, tree sap, insects and other foreign material. Never wash the vehicle in direct sunlight or while the vehicle surface is hot.

Do not use strong soaps or detergents for washing the motor home. Always use a mild soap in warm water. Be careful when using pressure-type washers to avoid loosening exterior decals or sealants.

NOTE: Avoid aiming water flow from a hose or spray from high pressure washing equipment into any appliance intake because damage or difficulty in operating appliances may occur.

After washing the motor home, carefully inspect caulking around window frames and vents and any other joints that may have separated. Recaulking, if necessary, is quite simple. Appropriate compounds are sold at Winnebago and Itasca dealers, and the materials are quickly and easily applied. Also, inspect weather seals around door, etc., and if necessary have a dealer replace them immediately.



CAUTION

Never use a strong solvent such as lacquer thinner, or harsh abrasives on painted surfaces.

Waxing and Polishing

When water will not bead up and roll off the finish of your freshly washed vehicle, it's time to apply a new coat of wax to the finish. Wax not

only improves the appearance of the vehicle, but protects the finish against oxidation and corrosive substances.

We recommend using a wax that is compatible with painted and gel-coated fiberglass finishes.

If the finish begins to look dull or discolored, it may need to be cleaned with a polishing or cleaning compound.

NOTE: If you use a polish or a cleaning compound that does not contain a wax preservative, we recommend reapplying a coat of hard wax after cleaning or polishing the finish.

CARE OF DECALS

The pressure-sensitive decals on your coach require very little maintenance. They should be treated like any painted surface on your vehicle. Here are a few helpful hints on caring for decals:

- Wash decals with plain soap and water or any retail car wash soap. Always rinse thoroughly.
- High pressure water spray may damage decals and paint.
- Test any cleaning solution on a small section of decal before using.
- Do Not use any aromatic solvents such as acetone, MEK, toluene, xylene, etc., on decals. Any solvent including alcohol may soften or smear colors.
- Do Not use lacquer thinner on paint or decals.
- Do Not overcoat decals with clear paint.
- Do Not let gasoline or other fuels drip and stay on decals for any length of time. Rinse immediately.

PLASTIC PARTS - CLEANING

Many parts in your motorhome, such as the dash, exterior light lenses, and certain exterior body panels are made of high-impact plastic materials that can be damaged by wiping with solvents or improper cleaning products.

Always try cleaning plastic parts with the mildest cleaners first and work your way up to stronger cleaning products. Use the following cautionary lists as a guide when selecting cleaning products to use on plastic parts.


CAUTION

DO NOT use citrus based cleaners on polycarbonate finishes.
Citric compounds will damage the high-gloss surface, causing it to appear dull or 'flat'.

Always test a cleaning product on a hidden area to be sure it will not cause damage to the appearance of the part.

Here is a list of mild cleaners that **may be used safely**:

- Car washing soap and water
- Glass cleaners *without ammonia*
- Mineral oil
- Multipurpose cleaners (such as Fantastik[®], Formula 409[®], etc.)

The following products, compounds or solvents must be **wiped off immediately** to avoid damage:

- Ammonia
- Brake fluid
- Bathroom basin, tub and tile cleaners
- Chlorine
- Ethyl alcohol
- Isopropyl (rubbing) alcohol
- Kerosene or gasoline
- Naptha
- 'Pine' type household cleaners

Do not use cleaners containing the following products, compounds or solvents. These products **will damage** the finish

- Acetic acid

- Acetone (nail polish remover)
- Aromatic solvents (lacquer thinners)
- Benzene
- Butyl alcohol

EXTERIOR LIGHTS

Most Winnebago Industries vehicles have polycarbonate lenses on exterior lamps, which are very sensitive to a variety of chemical solvents and cleaners.

Use only soap and water to clean exterior lamp lenses - especially headlights!

- Contact with certain chemicals can cause etching, 'crazing' or cracking of the lens, which can significantly reduce the lens clarity and effectiveness of the lamp and may require replacement of the complete lamp housing.
- Some popular citric acid cleaners may cause bicarbonate lenses to become 'hazy' or 'foggy'.
- Do not use a pressure washer to clean headlights.
- Inspect and operate the lights regularly to confirm proper operation and mounting condition.

INTERIOR SOFTGOODS

We recommend a weekly routine of vacuuming all fabrics and carpet throughout the motor home to prevent an accumulation of dirt which can detract from the appearance and shorten the life of carpet and fabrics.

Fabric Upholstery

Some fabrics used in this motor home may contain fire retardant and fade resistant additives which can be damaged by use of improper cleaning products. Some water-based household cleaning products are not formulated for use on fabrics and may cause excessive shrinkage or fading. Always test any cleaning product on a hidden area of fabric before using on visible

areas. For best results, fabric cleaning should be referred to a professional carpet and upholstery cleaner.

NOTE: To minimize fading of upholstery, carpets and other interior fabrics caused by excessive sunlight, the drapes, blinds or shades should be closed when the motor home is parked for an extended period of time.



WARNING

When cleaning upholstery and fabric, do not use lacquer thinner, nail polish remover, laundry soaps, or bleach. Never use carbon tetrachloride, gasoline, or naphtha for any cleaning purpose. These materials may cause damage to the material being cleaned and most are highly flammable.

Vinyl Fabrics

Vinyl should be cleaned with a soft, damp cloth, and a mild detergent only. Do not use solvents. Solvents may damage the surface of the vinyl.

**Draperies, Curtains and
Bedspreads**

These items may be woven from a variety of fabrics. We recommend that these be professionally dry cleaned only. A five percent shrinkage may occur when you have these items dry cleaned.

General Stains

As with any stain or contamination, the quick response is the best, especially when done in conjunction with the proper cleaner for the type of stain.

CARE OF CEILING FABRIC

While using your coach, your ceiling fabric may become soiled and require spot cleaning from time to time. The following information is provided as a guideline for care and cleaning of ceiling fabrics used in your coach. (See cleaning chart below.) These materials are made from polypropylene or polyester synthetic fibers, so they clean very well with virtually no damage to the color or fabric itself.

Most commercially available carpet and upholstery cleaners will do an excellent job removing stains. From time to time, additional cleaning methods may need to be used to remove stubborn or difficult stains.

Type of Stain	Cleaning Agent	How to Remove
Mustard	Dry-Clean Solvent	Scrub-Soak-Blot Dry
Ketchup*	High Strength Detergent	Scrub-Soak-Blot Dry
Coffee*	High Strength Detergent	Scrub-Soak-Blot Dry
Chocolate*	Detergent	Scrub-Soak-Blot Dry
Tea	High Strength Detergent	Scrub-Soak-Blot Dry
Chewing Gum	Dry-Clean Solvent	Scrub-Soak-Blot Dry
Oil	High Strength Detergent	Scrub-Soak-Blot Dry
Grease	High Strength Detergent/Degreaser	Scrub-Soak-Blot Dry
Tar/Asphalt	K-1 Kerosene/Thinner	Scrub-Soak-Blot Dry
Wax	Detergent	Hot Iron on Detergent-Soaked Towel or cloth
Rust	Rust Remover	Scrub-Soak-Blot Dry
Dirt*	Detergent	Scrub-Soak-Blot Dry
Lipstick	Dry-Clean Solvent	Soak-Blot Dry
Nail Polish	Dry-Clean Solvent	Soak-Blot Dry
Shoe Polish	Dry-Clean Solvent	Soak-Blot Dry
Crayon	High Strength Detergent	Scrub-Soak-Blot Dry
Marker (indelible)	Detergent	Scrub-Soak-Blot Dry
Ink (Ballpoint Pen)	Dry-Clean Solvent	Soak-Blot Dry
Pencil Lead (Graphite)	Detergent	Scrub-Rinse-Blot Dry
Vomit*	High Strength Detergent	Scrub-Rinse-Blot Dry-Deodorize w/Vinegar
Urine*	High Strength Detergent	Scrub-Rinse-Blot Dry-Deodorize w/Vinegar
Blood*	High Strength Detergent	Scrub-Rinse-Blot Dry
Excrement*	High Strength Detergent	Scrub-Rinse-Blot Dry-Deodorize w/Vinegar

NOTE: In many cases listed above, repeated steps may be required to fully extract contaminant from material. Items listed above with () may also be removed through steam extraction method by a professional cleaner or service. Always check to see that the cleaner used will not cause damage to the material or fabric by testing on an area out of sight.*

Water Stains

Water stains should be cleaned with a mixture of 1/4 cup of white powdered or clear liquid laundry detergent (no coloring) in a bucket of warm water. Working with a clean sponge or white cloth, start from the outside of the stain and work your way to the center. This method will keep the stain from spreading. Do not over saturate as this may cause de-lamination. No need to scrub, simply rub lightly or dab the stain.

SECTION 11 MAINTENANCE & STORAGE

View

You may have to repeat this procedure more than once to achieve desired results. Finish up with clean water, using the same method, and blot dry.

Steam cleaning is also an option. Again, take care not to over-saturate the material.

REMEMBER, this is polypropylene–basic plastic–so do not be afraid to clean it.

CABINETRY

Wooden items may be cleaned with a soft cloth and a good quality wood finish cleaning product.

Vinyl simulated wood (Plus-Wood) panels may be cleaned with a mild, water based cleaner and a soft cloth. Do not use solvents on vinyl wood panels.

NOTE: Many cabinetry and furniture items throughout this motor home are constructed either partially or completely of real hardwoods. Because of natural variations in woodgrain density, slight differences in stain hue may exist between one item and another. This is the distinctive character and beauty of real wood.

VINYL WALLBOARD

Decorative vinyl covered wallboards may be cleaned with a mild solution of water and isopropyl (rubbing) alcohol or a mild soap solution. Do not use solvents or abrasive cleaning products.

TABLES AND COUNTERTOPS

Work surfaces are covered with a plastic laminate that resists solvents, stains and abrasions. A coat of furniture wax applied to these surfaces on the counters and table will help preserve their beauty and make cleaning easier. Always clean the surface before applying wax.

STAINLESS STEEL SINK Stainless Steel



Care & Cleaning Instructions

The stainless steel sink can usually be cleaned with water and soap or detergent using a soft cloth or sponge.

- **Rinse thoroughly** with warm water and wipe dry quickly to avoid spots and streaks.
- **For stubborn stains**, use a mild abrasive cleanser like Soft Scrub[®], Comet[®], etc. Work in the direction of the ‘grain’ of the brushed finish lines.
- **Never use steel wool.** Particles of steel from the wool pad can embed into the sink surface, then become rusty and unsightly.
- **Avoid contact with full-strength** bleaches, household chemicals, and acid based cleaners. If this happens, rinse and wipe dry quickly.
- **Salt, mustard and mayonnaise** can cause pitting if left on the steel sink surface. If spilled, clean and rinse immediately.
- **A high iron content** in the water (hard water) may result in a brown or rust colored stained appearance. If noticed, dry towel sink after each use.
- **Do not use rubber mats** in the sink bowl. Material trapped under mats can complicate cleaning.

NOTE: Improper use may damage this product and void the warranty.

RANGE AND REFRIGERATOR

For care and appearance maintenance of the range and refrigerator, refer to the operation and maintenance manual for each of the individual appliances included in your Owner InfoCase.

BATHROOM

The tub and shower walls in the bathroom should be cleaned with a mild soap and water solution, or (to obtain maximum luster) use a good quality wax cleaner. Do not use an abrasive cleaner on the shower walls and tub.

DOORS AND WINDOWS

Windows may be periodically cleaned with a good quality glass cleaner or mild soap solution using a soft cloth. Use care when removing ice or frost from the windows. Always use a plastic ice scraper, never one made of metal. Use care when removing ice from the mirrors to protect the reflective surfaces.

Door locks and hinges should be lubricated periodically with powdered graphite to ensure trouble-free operation and to protect against freeze-up.

DAY/NIGHTER PLEATED BLINDS – CARE/ADJUSTMENT

Tension Adjustment:

The tension of the pleated blinds can be adjusted if they become loose and will not stay up when raised, or they are too tight and are difficult to raise and lower.

To tighten the tension, simply wrap the lower end of the guide cords (on each side of the shade) a few turns around the spools at the lower corners of the blinds.



To loosen the tension, unwrap the guide cords from the spools one turn at a time until desired tension is achieved.

Preserving Shape:

The pleated blinds are made using high quality materials that are designed and woven to retain their shape throughout their useful life. They may lose their crisp shape, however, if left in a lowered position for an extended period of time without being raised periodically. If this happens, the pleats can be restored using this simple method.

- With the blind fully lowered, dampen the entire area of the pleats with a good quality laundry spray starch.
- Raise the blind fully while still damp and let it remain in the raised position for about 24 hours, until the starch has dried and “set”.
- Reapply starch periodically (every few months) as needed.

PREPARING VEHICLE FOR STORAGE

Properly preparing your vehicle for storage will lessen the possibility of damage to your vehicle. Prepare the motor home for vacancy just as you would if you were leaving your house for an extended period:

Clean and Prep Coach for Storage

1. Turn off the LP gas tank
2. Turn the furnace thermostat switch OFF.

3. **Remove all foods and items that may cause odors from cabinets and refrigerator.**
4. Clean and defrost the refrigerator. Prop the door open slightly to allow any odors to dissipate. Place an open box of baking soda inside the refrigerator to help absorb odors.
5. **Fully charge the batteries. Batteries must have at least 80% charge to survive freezing temperatures and long period of non-use.** We recommend that you connect a battery charger or plug in the shoreline once a month during long-term storage periods to maintain battery charge and to avoid sulfating. If connecting a charger directly to batteries, turn the Aux. Battery switch off to avoid electrical arcing when attaching and detaching charge clamps.

NOTE: We do not recommend leaving the shoreline plugged in continuously during storage periods because the batteries can lose electrolytic fluids and become damaged from continuous charging without periodic use. We recommend following regular battery inspection and maintenance especially in cold weather. See "Battery Storage and Maintenance".

6. After charging batteries, turn the Aux Battery Switch off to disconnect the batteries and avoid parasitic* drain. The inverter/charger must be shut off at the control panel to avoid draining the house batteries when the Aux. Battery switch is turned off. The inverter/charger is directly powered and is not affected by the Aux Battery Switch.
* Parasitic battery drain is the gradual drain by items connected directly to battery power such as clocks, radio memory and the engine computer.
7. Have the vehicle chassis completely serviced and lubricated. Be sure radiator antifreeze protection level is sufficient for the lowest anticipated temperatures.
8. Wash and wax the coach.
9. Inspect all seams and seals around doors, windows, vents, and any other joints. Replace or repair any that are damaged. Sealing

- materials and compounds can be purchased from your dealer. Badly damaged weather seals may need to be replaced by your dealer.
10. Close all windows and roof vents. Protect all appliance vent openings from contamination by animals or insects (e.g. bird nest, wasp nests, etc.)
11. Lubricate all door hinges and locks.
12. Clean the interior of the coach. Dirt and stains are more easily removed when fresh.

When storing your vehicle through the winter, or in cold climates, extra preparations need to be made to protect systems that can be damaged by freezing temperatures. See "Winterizing" in Plumbing Section.

REMOVAL FROM STORAGE

1. Completely air out the motor home.
2. Have the entire LP gas system checked for leaks.
3. Check window operation.
4. Check cabinet and door hinges. Lubricate with penetrating oil, if necessary.
5. Close all faucets and drain valves that are open.
6. Add a few gallons of water to the fresh water tank and turn on the water pump to check for leaks especially at fittings.
7. Open all faucets in turn to release trapped air and check be sure faucet washers have not hardened during storage.
8. Sanitize the water system as outlined under "Disinfecting the Fresh Water System" in the Plumbing Section.
9. After disinfecting and flushing the water lines thoroughly with fresh water, remove the water filter diverter plug and install a new water filter cartridge. Store the diverter for future use. The diverter plug is intended for winterization only.
10. Check the toilet for proper operation.
11. Add water to the holding tank using the toilet flush pedal and galley sink faucet. Check to be sure dump valves seal tightly.

12. Check around all appliances for obstructions and ensure that all vent openings are clear.
13. Start refrigerator and check for proper cooling.
14. Clean paneling and counter surfaces.
15. Replace batteries if necessary and check out electrical system to make sure all lights and electrical components operate.
16. Check tires for proper cold inflation pressure. See Vehicle Certification Label.
17. After washing accumulated winter grime from the vehicle, it is important to carefully inspect the seams and sealants for separation or cracks that may have appeared around the window frames, vents and any other joints. See “Sealants” at the beginning of this section.

Re-sealing is quite simple and the material is quickly and easily applied. Appropriate compounds are available from your dealer. See “Recommended Sealant Application” page at the end of this section.

Also inspect weather seals around doors, etc., and if necessary, have a dealer replace immediately.

**SECTION 11
MAINTENANCE & STORAGE**



COACH MAINTENANCE CHART

These recommendations apply for normal recreational use. Heavy duty or full-time use may require more frequent maintenance intervals.

Always use specified sections or manufacturer's guide for further information and instructions.	Before Each Use	Weekly	Monthly	Every 3 Months	Every 6 Months	Every Year	As Necessary
LP System							
Have LP system checked for leaks.						◆	◆
Pressure regulator - inspect and adjust if needed						◆	
Check LP tank condition, mounting and fittings						◆	
Electrical System							
Check Battery Condition Meter	◆						
Check battery fluid level & connections			◆				
Check 12V fuses & 120V breakers							◆
Check GFCI Receptacles			◆				
Generator							
Visually inspect Generator and Compartment	◆						
See generator manufacturer's maintenance guide							◆
Plumbing System							
Sanitize plumbing system							◆
Winterize plumbing system							◆
Clean water pump strainer filter						◆	◆
Slide-Out Room System							
Check & inspect room seals (bulb seals)					◆		◆
Exterior							
Clean roof				◆			◆
Clean sidewalls			◆				◆
Clean windows							◆
Flush underside of vehicle				◆			◆

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Always use specified sections or manufacturer's guide for further information and instructions.	Before Each Use	Weekly	Monthly	Every 3 Months	Every 6 Months	Every Year	As Necessary
Safety Equipment							
Check operation of the following items							
Headlights, Taillights and Marker Lights	◆		◆				
Turn Signals	◆		◆				
Horn	◆		◆				
Hazard Warning Flashers	◆		◆				
Windshield Wipers & Washers	◆		◆				
Fire Extinguisher - check charge indicator	◆		◆				
Smoke Alarm - test operation *	◆		◆				
Carbon Monoxide Alarm - test operation *	◆		◆				
LP Gas Leak Detector - test operation	◆		◆				
(*replace battery if needed)							
Appliances							
Water Heater							
See water heater manufacturer's maintenance guide							◆
Inspect & clean exterior vent	◆						◆
Refrigerator							
See refrigerator maintenance guide							◆
Inspect and clean exterior vent & drip tray drain tube	◆						◆
Furnace							
See furnace manufacturer's maintenance guide							◆
Inspect & clean exterior vent	◆						◆
Air Conditioner							
See A/C manufacturer's maintenance guide							◆
Inspect for exterior damage				◆			◆
Check/Replace Filter			◆				
Range Top							
See range manufacturer's maintenance guide							◆
Inspect & clean/replace range hood grease filter							◆

**SECTION 11
MAINTENANCE & STORAGE**

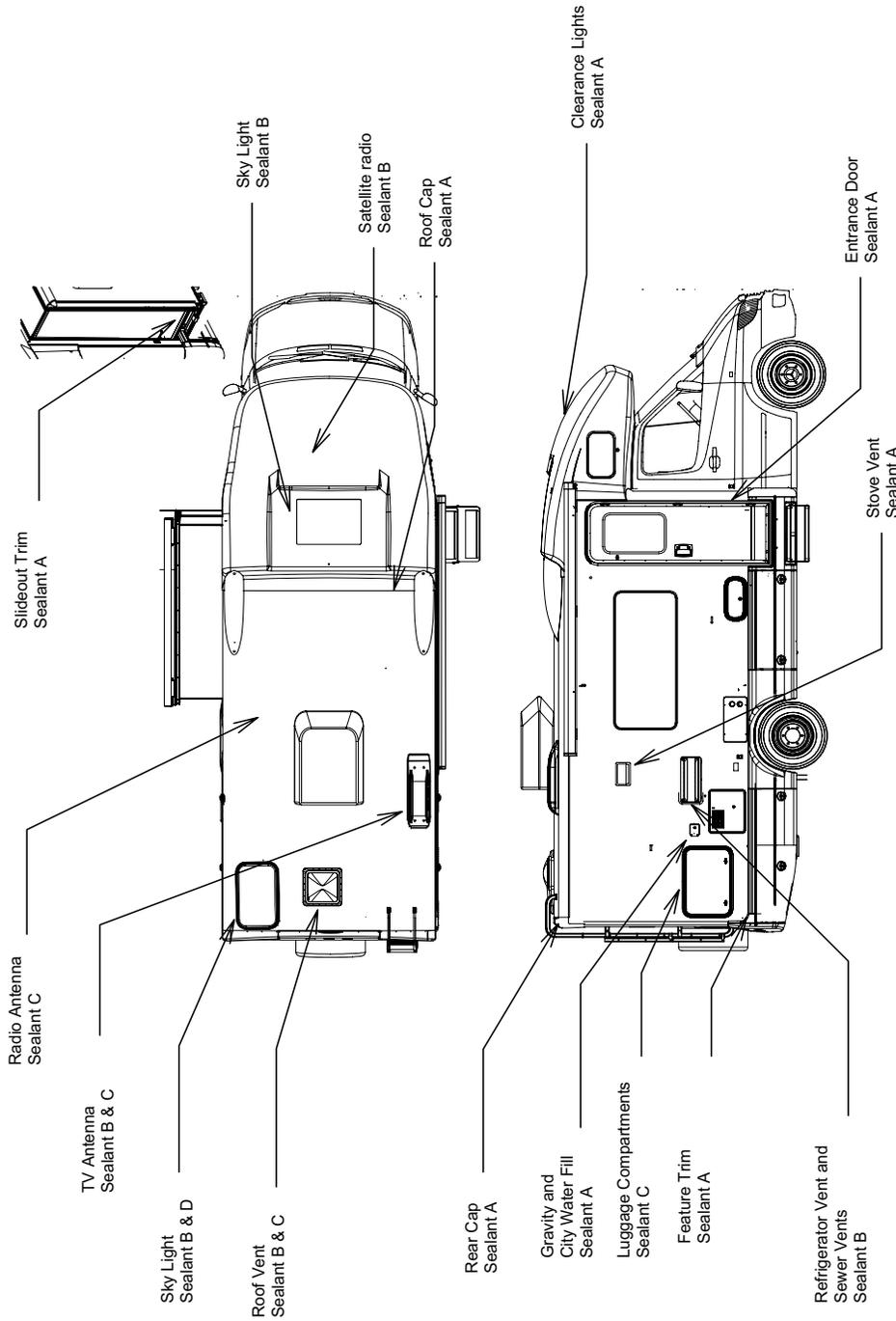


COACH MAINTENANCE CHART

These recommendations apply for normal recreational use. Heavy duty or full-time use may require more frequent maintenance intervals.

Always use specified sections or manufacturer's guide for further information and instructions.	Before Each Use	Weekly	Monthly	Every 3 Months	Every 6 Months	Every Year	As Necessary
Sealants							
Inspect (see "Sealants" at beginning of this section for proper inspection technique)					◆		◆
Replace							◆
Frame & Chassis							
Follow Chassis manufacturer's maintenance guide (Refer to Chassis Operating Guide)							◆
Inspect Hitch Receiver (if towing)	◆						
Tires							
Check & adjust air pressure	◆						◆
Check tread wear	◆						◆
Check front end alignment and adjust if needed							◆
Miscellaneous							
Lubricate locks, hinges, latches						◆	◆

RECOMMENDED SEALANT APPLICATION



Sealants may be purchased from your Winnebago or Itasca Dealer

Sealant	Winnebago Part #
A	072889-10-000
B	131264-03-01A
C	131264-01-02A

This is only a graphic representation for sealants and does not represent actual component position.
Rev A

View

Index

110-Volt AC System	6-1	Ducted Roof Air Conditioning System	4-8
110-Volt Circuit Breakers	6-3	DVD Player	8-1
110-Volt Receptacles	6-4	Effects of Prolonged Occupancy	2-7
12-Volt DC System	6-6	Electric Entrance Step	4-10
12-Volt House Fuses and Circuit Breakers	6-8	Electrical Cautions	6-1
2006 New Vehicle Limited Warranty	1-7	Emergency Exits	2-4
About This Manual	1-1	Emergency Information	1-6
Air Springs – Rear Helper	3-4	Engine Access	3-3
Auto Air Conditioner/Heater	3-3	Engine Cooling System	3-3
Automotive 12-Volt Fuses and Circuit Breakers	3-4	Engine Overheat	2-7
Auxiliary 110-Volt Generator	6-4	Exterior Finish	11-2
Auxiliary Battery (Aux. Batt) Switch	6-6	Exterior Lights	11-3
Awning & Door Props	3-10	Exterior Shower/Wash Station	7-5
Bathroom	11-7	External Power Cord	6-1
Battery Access	6-6	Fire Extinguisher	2-3
Battery Boost Switch	3-3	Formaldehyde Information	2-1
Battery Care	6-7	Fresh Water System	7-1
Body and Chassis Specifications	1-4	Front Axle Tire Alignment	1-2
Cabinetry	11-6	Front Bunk	9-2
Cable TV Hook-Up	8-2	General Slideout Care	10-3
Car or Trailer Towing	3-7	General Warnings	2-1
Carbon Monoxide Alarm	2-2	Ground Fault Circuit Interrupter	6-4
Carbon Monoxide Warning	2-2	Heat Pump	4-7
Care of Ceiling Fabric	11-5	Holding Tank Heater	7-7
Care of Decals	11-2	In-Dash Radio	3-3
Chassis Owner’s Manual	1-2	Interior Softgoods	11-3
Child Restraints	3-2	Jump Starting	2-7
Coach Maintenance Chart	11-10	Keyless entry	3-2
Couch/Bed Conversion	9-1	Ladder Extension	3-10
Crank-In Mode:	10-3	Lights	3-3
Day/Nighter Pleated Blinds – Care/Adjustment	11-7	Loading the Vehicle	3-5
Day/Nighter Pleated Blinds	9-3	LP Gas Furnace	4-4
Dinette/Bed Conversion	9-1	LP Gas Furnace	4-7
Disinfecting Fresh Water Systems on Recreation Vehicles	7-4	LP Gas Leak Detector	2-1
Doors and Windows	11-7	LP Gas Supply	5-1
Driving	2-1	LP Gas Warnings and Precautions	5-3
		Microwave Oven	4-3
		Mountain Driving	3-9
		Owner InfoCase	1-2

Owner Information	1-6	Trailer Wiring Connector	3-8
Plastic Parts - Cleaning	11-2	TV - LCD	8-1
Power Converter	6-2	TV Antenna	8-1
Pre-Delivery Inspection	1-2	TV Signal Amplifier	8-2
Preparing Vehicle For Storage	11-7	Underbody	11-1
Pressure Regulator	5-4	Vehicle Certification Label	1-3
Pressure-Temperature Relief Valve	4-6	Vinyl Wallboard	11-6
Range and Refrigerator	11-7	Waste Water System	7-6
Range Hood	4-2	Water Heater	4-5
Range Top	4-2	Water Heater Bypass Valve	4-6
Rearview Monitor System	3-2	Water Line and Tank Drain Valves	7-7
Recommended Sealant Application	11-13	Water Pump	7-2
Refrigerator	4-1	Water System Drain Valve Locations	7-11
Refrigerator Service Access		Weighing Your Loaded Vehicle	3-6
Compartment	4-1	Wheel Mounting Nuts (Lug Nuts)	2-5
Removal From Storage	11-8	Winterizing Procedure	7-8
Reporting Safety Defects	1-2	Wood Furniture and Cabinetry	9-4
Roadside Emergency	2-4		
Roof	11-1		
Roof Loading	3-7		
Safe Use of the LP Gas System	5-2		
Safety Messages Used In This Manual	1-1		
Satellite System Wiring	8-2		
Sealants	11-1		
Seat Belts	3-1		
Seats	3-1		
Service and Assistance	1-2		
Shower Hose Vacuum Breaker	7-5		
Skylight	9-3		
Sleeping Facilities	9-1		
Slideout Room Operation	10-1		
Smoke Alarm	2-3		
Stainless Steel Sink	11-6		
Suspension Alignment and Tire			
Balance	3-4		
Systems Monitor Panel			
(Wall Mounted)	4-3		
Tables and Countertops	11-6		
Tank Capacities	1-5		
Tires	3-4		
Toilet	7-5		
Towing Guidelines	3-8		
