TRAVEL TRAILER
5TH WHEEL
TOY HAULER TRAILER

OWNER'S GUIDE

Genesis Supreme RV, Inc.
23129 Cajalco Rd.
Perris, CA 92570
(951) 337-0254

TOWABLES – Rev. 2/22

Important Notices

Some wood products such as particle board, hardwood plywood, or paneling used in your trailer may have been made with urea-formaldehyde. The suppliers of these materials have requested that we tell you about urea-formaldehyde with the following statements:

Proper ventilation is important for making the interior of your trailer comfortable. Please read the section about ventilation in this Owner's Guide.

WARNING

This product is manufactured with a urea-formaldehyde resin. Small quantities of formaldehyde will be released into the air. Formaldehyde can be irritating to the eyes and upper respiratory system of especially susceptible persons such as those with allergies or respiratory ailments. Proper ventilation will reduce indoor formaldehyde levels. If symptoms develop, consult a physician.

California Proposition 65

WARNING

Certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. In addition, certain fluids contained in vehicles and certain products of component wear contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

WARNING

The fitting of non-approved parts and accessories, or the implementation of non- approved modifications to any vehicle components may be dangerous and could affect the safety of your vehicle and its occupants and also invalidate the terms and conditions of the Genesis Supreme RV Limited Warranty.

California Proposition 65

RAW WOOD PRODUCT EXPOSURE

Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information, go to:

https://www.p65warnings.ca.gov/wood

This product can expose you to chemicals, including Titanium Dioxide, which is known to the State of California to cause cancer, and Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information to to:
https://www.p65warnings.ca.gov

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Owner Notes

Owner Notes

Welcome to the family of Genesis Supreme RV owners!

This Owner's Guide describes many features and components of your RV. It is intended to help you operate, care for and maintain your RV.

We have tried to include as much information as possible to help you. There are occasional tips to help you enjoy the recreational lifestyle, but this guide is not intended to teach you *how* to camp, or *where*. We'll leave that up to you. Many publications are available that can tell you everything you want to know about RVing. Procedures outlined in this guide are typical for normal operating conditions. And remember, you are responsible for the safe operation and use of your RV.

Read the chapters in whatever order you need to. Just be sure to read it all. The information presented is not meant in any way to supplement, alter or supplant the **Genesis Supreme RV One-Year Limited Warranty** or other warranties supplied by the many manufacturers of the RV's components.

This guide, including photographs and illustrations, is based on the latest product information available at the time of publication. Recent product changes may not be reflected in this guide. Photographs or illustrations are representative of a wide variety of models. Equipment, interior or exterior decor or design options shown in illustrations may not be installed on or in your RV.

Some of the information, illustrations and procedures in this guide were supplied by the component manufacturers. They are included here for your convenience. Some instructions have been condensed or shortened, and more detailed information from these manufacturers may be found in your Owner's Information Packet. Occasionally, there may be differences between this guide and other manuals. In that case, use the information contained in the other manuals.

The Owner's Information Packet contains other valuable documents about your RV and its components - especially component warranty registration forms. Fill out and mail these warranty registration forms as soon as possible. Consider the materials in the Owner's Information Packet as well as this Owner's Guide a permanent part of the RV. If you ever decide to sell or trade the RV, be sure the new owner gets all the material in this packet.

IMPORTANT

All product data, graphics and photography in this Owner's Guide were as accurate as possible at time of publication. Subsequent refinements during the model year may be evident in the actual product. Genesis Supreme RV, Inc. reserves the right to change colors, materials, equipment and specifications without notice, as well as to add, modify or discontinue models shown in promotional materials.

TIP! After you fill out your personal record and read your owner's guides and instructions, put all of them in a plastic bag (or vinyl storage bag available from most dealers) and store them in a convenient place in your RV. That way you'll know where the information is when you need it.

Please review the Genesis Supreme RV Limited Warranty and the warranties of all the component manufacturers. The Genesis Supreme RV Limited Warranty and limited warranties issued by the component manufacturers require you to perform periodic service and maintenance. If you fail to provide these required services and/or maintenance, you may lose warranty coverage for that item.

If you ever have questions or need help with operation, maintenance or service, contact your Genesis Supreme RV dealer as soon as possible.

The following words and symbols are used throughout this guide. These statements are especially important. Please pay attention to these statements as you read this guide. They are used to alert you to potential personal injury hazards. Obey all safety messages that follow these symbols to avoid possible death, injury or property damage.

⚠DANGER
indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠WARNING
indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠CAUTION
indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

NOTICE
used without the safety alert symbol indicates a potentially hazardous situation that, if not avoided, may result in property damage.

(If Equipped)
indicates items that may be installed on some models but not on others, or are optional.

Warning, caution and information labels and tags are attached to many interior and exterior surfaces and components of your RV. They are meant to be permanent. Do not remove these important labels and tags.

IMPORTANT SAFETY PRECAUTIONS

You'll find many safety recommendations throughout this Owner's Guide. We believe the following recommendations are especially important.

- ***Do not allow passengers to ride in the trailer during travel.*** The transport of people puts their lives at risk and may be illegal. The trailer does not have seat belts. It is not designed to carry passengers. Please see Chapter 3 for more information.
- ***Reduce swaying or fishtailing.*** Sway or fishtailing is the sideways action of a trailer caused by external forces. Excessive sway of your trailer can lead to trailer and tow vehicle rollover resulting in serious injury or death. Follow the instructions and warnings outlined in Chapter 8.
- ***Towing and weight distribution.*** Weight distribution is an important factor when loading your fifth wheel or travel trailer. Properly loading your trailer will help increase towing efficiency and reduce the likelihood of load-related towing trouble. Please see Chapter 7 for more information on proper loading.
- ***Correct tire pressure and maintenance.*** Properly maintained tires improve your trailer's steering, stopping, traction and load-carrying capability. Underinflated tires and overloading are major causes of tire failure. For more information on tire safety, please see Chapter 6.
- ***Wheel nut tightening (torqueing).*** Inadequate and/or improper wheel nut torque (tightness) is a major reason wheel nuts loosen while traveling. Loose wheel nuts can cause a wheel to fall off the trailer with serious safety consequences. You must be familiar with the proper procedure and how to properly tighten the wheel nuts. Please see Chapter 6.
- ***Appliances and equipment.*** The appliances (stove, refrigerator, outdoor grill, etc.) and equipment (water heater, furnace, generator, etc.) typically operate on propane gas. Propane is flammable and is contained under high pressure. Improper use of propane may result in a fire and/or explosion. Be sure to follow all instructions and warnings in this guide as well as the specific appliance and equipment owner's manuals.

- ***Generator safety.*** Do not operate the generator in an enclosed building or in a partly enclosed area such as a garage. Do not operate the generator while you or any trailer occupants are sleeping in the trailer. Be sure to follow instructions and warnings in this guide (see Chapter 12) and in the generator operating manual.

- ***Mold.*** Mold and mold spores are found throughout the environment, both indoors and outdoors. There is no practical way to eliminate all mold and mold spores indoors. To help control the growth of mold, you must control indoor moisture and humidity. Please see Chapter 4 for more information on controlling moisture.

- ***Formaldehyde.*** Formaldehyde is an important chemical used to manufacture building materials and numerous common household products. It is also a by-product of combustion and certain natural processes. It may be present inside your trailer. Some individuals may be sensitive to formaldehyde. Thorough ventilation of the trailer reduces the concentration of formaldehyde to a comfortable level. Please see Chapter 4 for more information.

REPORTING SAFETY DEFECTS

If you believe that your trailer 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 Genesis Supreme RV.

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

To contact NHTSA, call either the Auto Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to:

https://www.NHTSA.gov on the Internet; or write to:

National Highway Traffic Safety Administration
1200 New Jersey Ave., SE
Washington, D.C. 20590

You may also obtain other information about motor vehicle safety from https://www.NHTSA.gov

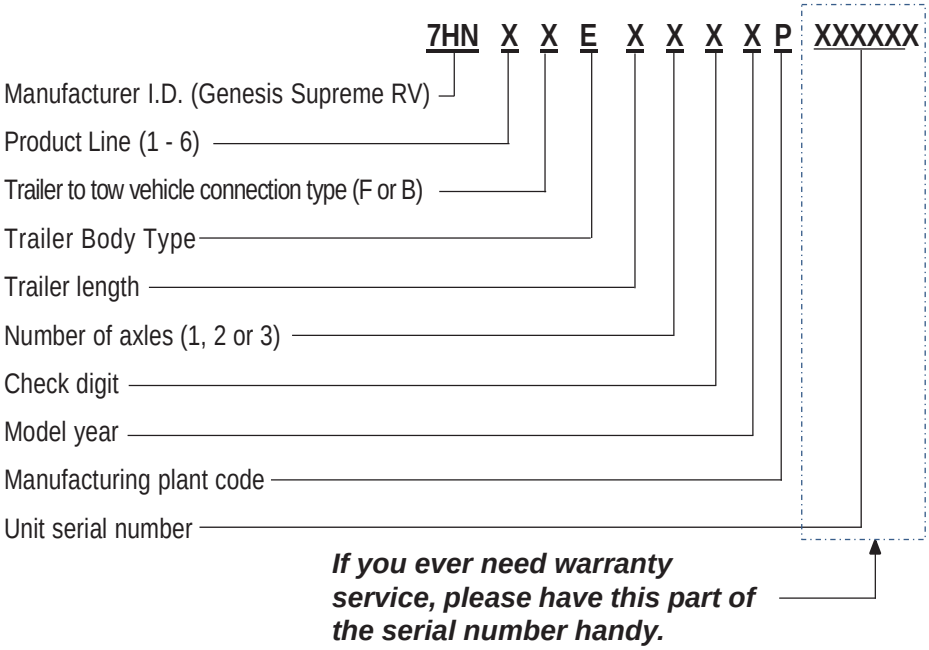
Vehicle Identification

The VIN or Vehicle Identification Number plate contains the model, model year, number of axles, etc. The VIN is the 17-digit serial number. Write this number in the space under Owner's Information on the "Owner Reference Information" page.

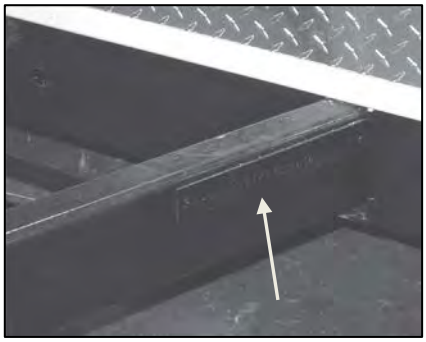
The 17-digit VIN is located on the identification data tag attached on the left front corner of your trailer. It is also stamped on the trailer chassis A-frame rail or the pin box on 5th-wheels.

The identification data tag contains the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR), tire size, rim size and tire air pressure. See the "Loading & Weighing" chapter of this Owner's Guide for more detailed information about GVWR, GAWR, and tires and tire air pressure.

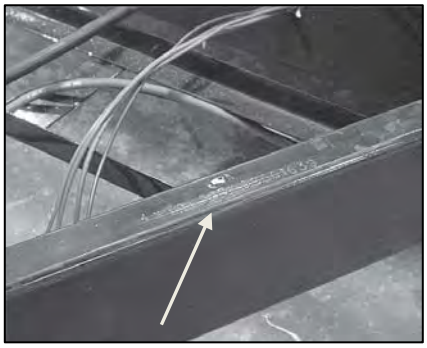
The following chart shows an explanation of the VIN.



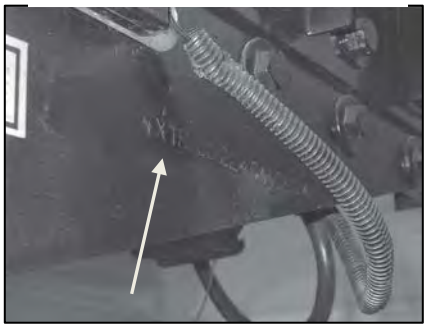
VIN Location on Frame



Metal plate attached to frame



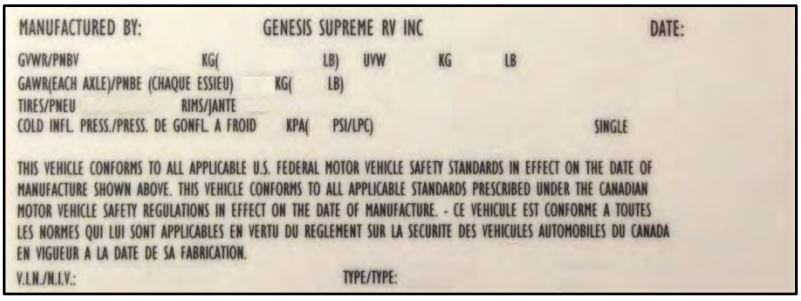
Stamped in frame channel



Stamped in pinbox or metal plate attached to pinbox

Tire and weight tags shown on this page are illustrations only. The tags attached to your trailer will have actual values applicable to your trailer.

Two tags are attached to left (road side) front corner of the trailer body. One is the Federal Certification tag and shows the trailer and axle weight ratings, tire size and inflation pressures, and the VIN.


MANUFACTURED BY: GENESIS SUPREME RV INC DATE:

GVWR/PNBV KG(LB) UVW KG LB

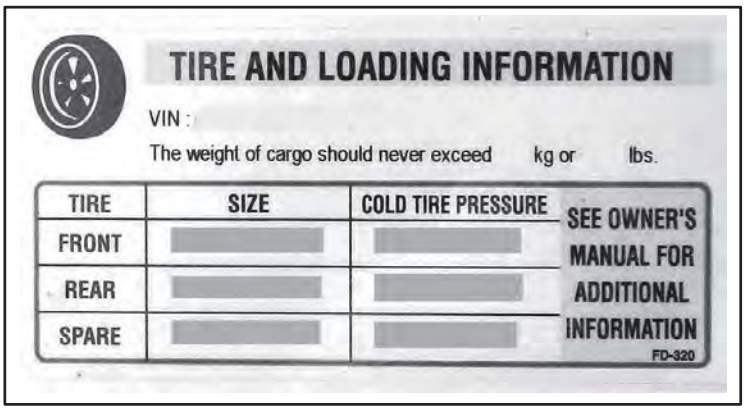
GAWR(EACH AXLE)/PNBE (CHAQUE ESSIEU) KG(LB)

TIRES/PNEU RIMS/JANTE

COLD INFL. PRESS./PRESS. DE GONFL. A FROID KPA(PSI/LPC) SINGLE

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE. THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT ON THE DATE OF MANUFACTURE. - CE VEHICULE EST CONFORME A TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU REGLEMENT SUR LA SECURITE DES VEHICULES AUTOMOBILES DU CANADA EN VIGUEUR A LA DATE DE SA FABRICATION.

V.I.N./N.I.V.: TYPE/TYPE:



The other is the tire and loading information tag. It lists the size of the tires originally installed on the trailer or the tires that are standard for these trailers, the recommended cold tire inflation pressure, cargo weight capacity of the trailer and the trailer VIN.

The trailer weight information tag is placed inside the trailer on the inside of a galley cabinet door. It shows the Gross Vehicle Weight Rating for the trailer and the Cargo Carrying Capacity calculation. These terms are explained in more detail in Chapter 7.


TRAILER WEIGHT INFORMATION

VIN OR SERIAL NUMBER

GVWR (GROSS VEHICLE WEIGHT RATING) IS THE MAXIMUM PERMISSIBLE WEIGHT OF THIS TRAILER WHEN FULLY LOADED. IT INCLUDES ALL WEIGHT AT THE TRAILER AXLE(S) AND TONGUE OR PIN.

UVW (UNLOADED VEHICLE WEIGHT) IS THE WEIGHT OF THIS TRAILER AS MANUFACTURED AT THE FACTORY. IT INCLUDES ALL WEIGHT AT THE TRAILER AXLE(S) AND TONGUE OR PIN. IF APPLICABLE, IT ALSO INCLUDES FULL GENERATOR FLUIDS, INCLUDING FUEL, ENGINE OIL AND COOLANTS.

CCC (CARGO CARRYING CAPACITY) IS EQUAL TO GVWR MINUS EACH OF THE FOLLOWING: UVW, FULL FRESH (POTABLE) WATER WEIGHT (INCLUDING WATER HEATER), FULL PROPANE WEIGHT.

CARGO CARRYING CAPACITY (CCC) COMPUTATION — POUNDS — KILOGRAMS

GVWR

MINUS UVW

MINUS FRESH WATER WEIGHT OF GALLONS @ 8.3 LB/GAL

MINUS PROPANE WEIGHT OF GALLONS @ 4.2 LB/GAL

= CCC FOR THIS TRAILER*

*DEALER INSTALLED EQUIPMENT WILL REDUCE CCC

CONSULT OWNER MANUAL(S) FOR SPECIFIC WEIGHING INSTRUCTIONS AND TOWING GUIDELINES.

OWNER REFERENCE INFORMATION

Complete the information below for ready reference when maintenance or service is needed. If you ever need to contact your selling dealer or Genesis Supreme RV, you will need the Vehicle Identification Number (VIN) and the delivery date information.

Owner _____

Address _____

City _____ State _____ Zip _____

VIN _____

License Plate No. _____ Delivery Date _____

Dealer Name _____

Address _____

City _____ State _____ Zip _____

Dealer's Phone _____ Fax _____

Sales Person _____

Insurance Policy

Agent Name _____

Policy No. _____

Agent's Phone No. _____

Key Numbers

Entry door deadbolt _____ Other _____

Entry door lock _____ Other _____

Major Appliances/Component Identification Numbers

Range Model _____ S/N _____

Refrigerator Model _____ S/N _____

Furnace Model _____ S/N _____

Water Heater Model _____ S/N _____

Converter Model _____ S/N _____

_____ _____ S/N _____

_____ _____ S/N _____

_____ _____ S/N _____

Owner Notes

CHANGE OF ADDRESS OR OWNERSHIP

Use this card if you change your address or if you are the new owner. Check one:

☐ Change of address ☐ Change of Owner

Name of Owner _____

Address _____

City _____ State _____ Zip _____

Phone No. _____ Date _____

Trailer VIN _____

Mail this card to: Genesis Supreme RV, Inc.
23129 Cajalco Road
Perris, CA 92570

CHANGE OF ADDRESS OR OWNERSHIP

Use this card if you change your address or if you are the new owner. Check one:

☐ Change of address ☐ Change of Owner

Name of Owner _____

Address _____

City _____ State _____ Zip _____

Phone No. _____ Date _____

Trailer VIN _____

Mail this card to: Genesis Supreme RV, Inc.
23129 Cajalco Road
Perris, CA 92570

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Use this card if you change your address or if you are the new owner. Check one:

☐ Change of address ☐ Change of Owner

Name of Owner _____

Address _____

City _____ State _____ Zip _____

Phone No. _____ Date _____

Trailer VIN _____

Mail this card to: Genesis Supreme RV, Inc.
23129 Cajalco Road
Perris, CA 92570

Please affix proper postage

GENESIS SUPREME RV INC
23129 CAJALCO ROAD
PERRIS CA 92570

ATTN: CUSTOMER RELATIONS

Please affix proper postage

GENESIS SUPREME RV INC
23129 CAJALCO ROAD
PERRIS CA 92570

ATTN: CUSTOMER RELATIONS

Please affix proper postage

GENESIS SUPREME RV INC
23129 CAJALCO ROAD
PERRIS CA 92570

ATTN: CUSTOMER RELATIONS

2 / WARRANTY AND SERVICE

Your Genesis Supreme RV was manufactured with high quality materials and workmanship in accordance with industry standards. In order to ensure that your RV provides you with years of enjoyment, it must be maintained properly. We suggest that you have the inspections, maintenance, and warranty services performed or coordinated by your selling dealer.

Even though every effort has been made at the factory to assure that systems and components operate correctly and within their design specifications when the trailer leaves the factory, problems may arise. For your protection, your Genesis Supreme RV is covered under Genesis Supreme RV's *One-Year Limited Warranty*. A copy of the warranty is included on the CD in your Owner's Information Packet, and you can read or download it from the Genesis Supreme website:
https://www.GenesisSupremeRV.com

Also, please complete the "Owner Reference Information" page in the *Introduction* chapter of this guide. The information will help you provide important information if you ever need warranty service. If you ever change your address or sell the trailer, please complete and mail the *Change of Address* form to Genesis Supreme RV, Inc.

Genesis Supreme RV is committed to continuous improvement in the design and manufacture of our products. This commitment helps us build a product that will be up-to-date, well-built and safe.

Genesis Supreme RV wants you to be a satisfied customer. We may choose to assist you in resolving product problems with your dealer or any component or appliance manufacturer.

Please note that Genesis Supreme RV reserves the right to authorize repairs in advance at our discretion, and to select the repair center and method of repair. In some cases, and *only with factory warranty center authorization,* Genesis Supreme RV may choose to pay transportation charges and expenses

to relocate the unit to a service or repair center of our choice, including transportation back to the factory.

If you require Genesis Supreme's assistance, contact the Genesis Supreme RV Warranty Department at:

Genesis Supreme RV, Inc.
23129 Cajalco Rd.
Perris, CA 92570
Attn: Warranty Department
Phone: (951) 337-0254

GENESIS SUPREME RV DEALER RESPONSIBILITIES

When you purchased your trailer, the dealer was to:

deliver the trailer to you in the best condition possible;

be sure the trailer was not damaged;

be sure the trailer was clean;

perform a pre-delivery inspection and various systems tests;

give you information about the operation, care and maintenance of the trailer;

explain the warranty to prevent any misunderstanding;

provide and coordinate quality service, maintenance and repair for the trailer.

OWNER'S RESPONSIBILITIES

There is a difference between "defects" that are covered under the Genesis Supreme RV warranty, and "damage". "Defects" are covered because Genesis Supreme RV is responsible for defects in materials, manufacturing and workmanship. On the other hand, Genesis Supreme RV has no control over "damage" caused by such things as collisions, misuse, and lack of maintenance occurring after the trailer is delivered to you. Therefore, *"damage" for any reason which occurs after the trailer is delivered to you is not covered under the warranty.* Maintenance services are also excluded from the warranty because, as a Genesis Supreme RV trailer owner, *you* are responsible for insuring that the trailer is inspected and maintained in a good and safe operating condition. You are responsible for taking whatever measures necessary to maintain the

Important Note About Tow Vehicles

In connection with the use and operation of **Genesis Supreme RV** recreational vehicles, **Genesis Supreme RV** customers and owners of **Genesis Supreme RV** recreational vehicles are solely responsible for the selection and proper use of tow vehicles. All customers should consult with a motor vehicle manufacturer or dealer concerning the purchase and use of suitable tow vehicles for the customer's choice of RV. **Genesis Supreme RV** further disclaims any liability with respect to damages which may be incurred by a customer or owner of **Genesis Supreme RV** recreational vehicles as a result of the operation, use or misuse of a tow vehicle.

SPECIAL NOTE: GENESIS SUPREME RV'S LIMITED WARRANTY DOES NOT COVER DAMAGE TO THE RECREATIONAL VEHICLE OR THE TOW VEHICLE AS A RESULT OF THE OPERATION, USE OR MISUSE OF THE TOW VEHICLE.

trailer, including the exterior sealants of the unit as described in the *Care and Maintenance* section of this Owner's Guide. You are also responsible for operating the trailer in a manner that insures its safe use and the safety of other vehicles, *and having necessary repairs made as soon as possible to prevent further damage to the trailer.*

You are also responsible for insuring that the warranty procedures for obtaining repairs as stated in the *Genesis Supreme RV One-Year Limited Warranty* are followed properly.

By following the care and maintenance recommendations in this Owner's Guide and other operating and maintenance manuals included in your Owner's Information Packet, you will not only insure that the trailer is in good operating condition, but also maintain the value of the trailer. It is vitally important that you inspect your trailer regularly for irregularities, especially sealants around windows, doors and exterior accessories. Prevention of a problem is far less expensive and unpleasant than fixing it later. You spent your money to have an enjoyable and properly operating recreational vehicle. Protect your investment by frequent and thorough inspections, regular maintenance and timely repairs when needed.

Most states have consumer protection laws that outline specific steps that both you and the manufacturer of the vehicle must follow to remedy situations where you believe the vehicle has a problem that substantially reduces the value, use, or safety of the vehicle. If you have any kind of problem with your trailer or selling dealer during the warranty period, Genesis Supreme RV wants to know about it. If you have a problem with your trailer, you have given your dealer a reasonable opportunity to fix the problem and the problem persists, *please contact Genesis Supreme RV.* Describe the problem, including details of attempts to fix it. Send correspondence to:

Genesis Supreme RV, Inc.
23129 Cajalco Rd.
Perris, CA 92570
Attn: Warranty Department

Please note: Your Genesis Supreme RV Limited Warranty covers warrantable repairs that are performed by an authorized Genesis Supreme RV dealer at their service center or facility only. It is important for the dealer to know that if you are unable to bring your unit in for repairs, Genesis Supreme RV is not responsible for any costs incurred for the service call charge, or time accrued to come out to your unit. Your unit is a recreational vehicle and not intended, nor manufactured, as a permanent residence.

Please have the following available when you call:

V I N (last five digits)
Model
Date of Purchase
Description of the problem

Call ahead - Think about an appointment time and call ahead. Mondays, Fridays and just before holidays are the busiest times at dealer service centers.

Be prepared - If warranty work is to be done, please have a copy of your warranty paperwork available and provide the service center with any helpful information on past repairs that may pertain and help technicians in diagnosing the problems.

Make a list - Have a list ready and be reasonable with repair expectations. Some repairs may require special order parts or parts shipped from a manufacturer. Explain what you would like to have done in your "call ahead" call or stop by the dealership ahead of time so that you and the service manager can discuss your needs and the time required for the service.

OBTAINING SERVICE

Whenever you require service on your trailer, make arrangements to have the service performed as soon as possible. Don't wait until you're ready to use the trailer. Your dealer or service center may not be able to service it immediately. Any parts required may have to be ordered. Normally, the dealer's service department is busiest on Mondays and Fridays and before holidays.

Write up a list of the services and/or repairs required. Give this list to the dealer's Service Manager. If you have a long list of items to be serviced and need to have the trailer by the end of the day, list the items in order of priority. If all the items cannot be completed in one day, make arrangements to have them completed at a second appointment.

If you believe the service is covered under the warranty, discuss the service with the dealer's Service Manager before the service is done. All the work to be performed may not be covered and you should have an estimate of the costs.

After the service has been completed, inspect the work immediately and notify the Service Manager of any dissatisfaction. Keep all service or repair related documents with the trailer and record the information in the *Maintenance Log* in this Owner's Guide.

GENESIS SUPREME RV, INC.
ONE YEAR LIMITED WARRANTY

FOR TRAVEL TRAILERS AND FIFTH WHEEL TRAILERS MANUFACTURED BY Genesis Supreme RV, INC. SOLD IN THE UNITED STATES.

Except as specifically excluded below, Genesis Supreme RV, Inc. (hereinafter "Genesis Supreme RV") WARRANTS for a period of one (1) year from the date of retail delivery that Genesis Supreme RV will remedy by repair or replacement components of the recreational vehicle manufactured and supplied by Genesis Supreme RV which, when used for their intended purpose of recreation travel and camping, are found to be defective in materials and workmanship. This Limited Warranty applies to the first consumer retail purchaser and is transferable. Warranty coverage transferred to a subsequent owner is limited to structural defects only and will be honored for the remaining warranty period.

This Limited Warranty may be transferred during the one (1) year term by the original consumer purchaser to subsequent purchaser. The limited one (1) year warranty, however, shall in no way be extended beyond the one (1) year from the original date of purchase by reason of the transfer from the original consumer to any subsequent purchaser(s). The subsequent purchaser(s) also has an obligation to notify Genesis Supreme RV. immediately upon the transfer of the warranty and to further provide proof of purchase within the one (1) year.

IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IF ANY, GIVEN BY LAW, SHALL BE LIMITED TO AND NOT EXTEND BEYOND THE DURATION OF THE WRITTEN LIMITED WARRANTY PERIODS SET FORTH HEREIN.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY APPLY TO YOU.

The warranty period begins on the date the recreational vehicle is delivered to the first consumer retail purchaser by an authorized Genesis Supreme RV dealer. If a defect in material or workmanship attributable to Genesis Supreme RV is found to exist during the warranty period, it will be repaired or replaced at Genesis Supreme RV's option without charge to the recreational vehicle owner in accordance with the terms, conditions and limitations of this Limited Warranty. Genesis Supreme RV, at its sole discretion, reserves the right to substitute parts or components of substantially equal quality, touch up cosmetic flaws, or make design and/or manufacturing improvements as the exclusive remedy under this limited warranty. Genesis Supreme RV's receipt of a registration within ten (10) days from delivery of the recreational vehicle is a condition to coverage under this limited warranty. Genesis Supreme RV reserves the right to make changes, additions or deletions in the design, material, or components of its products without incurring any obligation to incorporate such changes in any product previously manufactured. Genesis Supreme RV makes no warranty as to the future performance of the recreational vehicle, and this Limited Warranty is not intended to extend to the future performance of the recreational vehicle, or any of its materials, components or parts.

WARRANTY EXCLUSIONS

THIS LIMITED RECREATIONAL VEHICLE WARRANTY AND THE OBLIGATIONS STATED HEREIN SHALL NOT APPLY TO:

- Equipment, products, components, appliances, accessories or any items not installed or manufactured by Genesis Supreme RV whether or not separately warranted, including but not limited to tires, batteries, and other installed equipment, components or accessories; or any dealer-installed accessory;

- Recreational vehicles not originally sold through an authorized Genesis Supreme RV dealer, including but not limited to recreational vehicles sold through auction, repossession, salvage or in an otherwise “distressed” or “as is” condition;

- Any trailer sold, licensed, registered, stored, or used outside the United States of America;

- Recreational vehicles used in rental fleets or private rentals, as mobile or job-site offices, or for any purpose other than recreational travel and family camping;

- Product modification, customer or dealer installation, set up or placement;

- Equipment, products, components, appliances, accessories or any items that work properly as designed and that meet the manufacturer’s specifications but may not meet the owner’s specific expectations;

- Unauthorized diagnosis, troubleshooting, repair or failure to follow instructions supplied with the recreational vehicle including, but not limited to the instructions set forth in the Owner’s Guide;

- Routine maintenance beyond ninety (90) days after retail delivery including, without limitation, sealant inspection and resealing; propane system pressure adjustment; appliance systems; tightening screws, adjusting brakes, latches, locks; changing fuses or light bulbs; tightening P-traps and plumbing fittings; batteries and battery cables;

- Routine maintenance and inspection of air conditioning and heating systems; generator; water heater, refrigerator, range and oven; carbon monoxide alarm, smoke alarm, gas leak detector, generator exhaust pipe, fire extinguisher; slide-out system; coupler/pin box, gasoline fuel system (such as addition of fuel stabilizers, etc.); fuel contamination; fresh water and waste systems; suspension system;

- Minor adjustments to doors and drawers beyond ninety 90 days after retail delivery;

- Wheel alignment or adjustments to axles when caused by improper maintenance, loading or damage from road hazards, including off-road travel, wheel damage or balancing or damage from tire failure;

- Fading, discoloration or dulling of any and all fabrics, interior or exterior plastics or fiberglass, sheet metal, front and rear caps, graphics, striping, decals or labels;

- Cosmetic imperfections that do not affect the suitability or function of the recreational vehicle for its intended purpose of recreational use, such as “seam printing” or visible variations in any interior or exterior surface material;

- Any upholstery damage including, but not limited to tears, punctures, misuse or storage or improper preparation for travel;

- Any injury, loss or damage due to water intrusion, condensation, mold or fungi resulting from owner neglect or improper maintenance. It is the responsibility of the owner to take such preventive measures as are necessary to maintain the exterior caulking and sealants of the recreational vehicle. It is the responsibility of the owner to use reasonable, prudent care to prevent foreseeable secondary damage from rain, plumbing leaks, and the natural accumulation of moisture in your unit, such as a delaminated floor; stained upholstery, carpeting, or drapes; mold formation and growth, furniture damage, etc. Mold is a natural growth given certain environmental conditions and is not covered by the terms of the Limited Warranty;

- Damage or loss to any tow vehicle towing the recreational vehicle;

- Damage or loss to any electrical or electronic component due to the use of portable generating equipment; incorrect battery cable connection or battery charging; or the improper, incorrect or inadequate voltage, current or phase of “shore power”;

- Damage or loss caused in whole or in part by or from:

  misuse, abuse, neglect, theft or vandalism;

  the tow vehicle and associated towing options selected by the owner to pull the recreational vehicle including, but not limited to the improper selection or installation of a towing hitch on the tow vehicle;

  unauthorized attachments, modifications or alterations to the frame, structure, body, pin box, or tongue/A-frame of the recreational vehicle including, but not limited to hitches for towing, or platforms/racks for supporting cargo. “Structure” shall include the main frame and all steel members welded or fastened to it, and the sidewall, front wall, rear wall, roof, and slideouts;

  tire wear or tire failure;

  incorrect or improper wheel lug nut torque or incorrect tire inflation pressure as specified on the tire sidewall;

  overloading or the improper balancing of the cargo load;

the willful or negligent acts of the driver of the tow vehicle, any accident involving the recreational vehicle, the condition of any road surface over which the recreational vehicle is pulled, or the striking or driving over a curb, road hazard, uneven or broken road surface whether on- or off-road, or any other object known or unknown;

roof or exterior wall contact with trees, structures, or other overhead or roadside obstacles or obstructions;

excessive ice or snow loads, extreme heat or cold;

towing at excessive speed or in inclement weather, such as excessive winds, poor visibility conditions or other hazardous driving conditions;

the use of certain hitch adapter devices (“gooseneck”-style adapters, etc.) or towing/hitching aid;

the owner’s operation, use, or misuse of the tow vehicle including physical or mental impairment, or use of the vehicle by unauthorized or unlicensed drivers;

towing another vehicle behind the trailer (“triple-towing”) whether or not such towing is otherwise legal;

incorrect or improper brake controller installation or adjustment;

incorrect or improper trailer/tow vehicle electrical interface (“7- way” cord) wiring or tow vehicle circuit protection;

improper installation or adjustment of weight-distribution bars or sway control devices;

improper or inadequate storage, incomplete winterization, or abandonment;

exposure to natural atmospheric elements, airborne pollutants, corrosive chemicals, cleaning agents; the use of high-pressure washing equipment; the use of any chemical protectant coating; ash or fumes generated or released by the tow vehicle or any other vehicles; collision, road hazards, or rock chips;

the use of any cleaning agent, chemical protectant coating, polish, preservative, abrasive, color enhancer or other exterior surface cleaner or cleaning/preservation technique not specifically recommended by Genesis Supreme RV, Inc.;

the use of high pressure washing or cleaning equipment or processes (“power washing”) whether commercial or residential;

insects, spiders, birds, rodents, reptiles, wild or domesticated animals;

failure to secure loose-loaded items (examples: TVs, computers, electronic components, food items, dishes, chairs, tables, lamps, portable appliances, barbecues, clothing, luggage, toiletries, bric-a-brac, tools and tool boxes, vehicles and vehicle accessories);

failure to provide adequate flooring protection when loading/transporting or storing ATVs/UTVs, motorcycles and similar equipment in the cargo/storage bay;

failure to properly prepare the recreational vehicle for travel, i.e., retraction or disconnection of antennas, vents, stabilizer and/or landing jacks, awning(s), utility connections (water, sewer, electric, telephone, TV cable), slide-outs, fueling stations, entry steps, improperly secured exterior and interior doors and drawers;

improper use of equipment or components or by the use of components for other than their intended purpose;

the disablement of the carbon monoxide alarm, smoke alarm, gas leak detector, generator exhaust pipe, and fire extinguisher;

installation or use of any aftermarket accessory, including, but not limited to extra capacity water, holding or fuel tanks;

modification to the factory-installed plumbing system or any plumbing component; damage caused by the use of aftermarket plumbing accessories, or connection to high pressure water sources without the use of an approved pressure reducing/ regulating device, or the high-pressure/high volume filling of the fresh water tank(s);

modification of the factory-installed “shore power” cord or plug; the modification of the factory-installed electrical wiring, the use of aftermarket shore-power cord adapters or accessories, or connection to non-code compliant power sources;

acts of political violence, riots, terrorism, or acts of nature;

the acts or omissions of any kind by any party other than Genesis Supreme RV;

- Representations made by any person (including any Genesis Supreme RV dealer) beyond those stated in this Limited Warranty.

OWNER RESPONSIBILITY

It is the responsibility of the owner to maintain the recreational vehicle as described in the Care and Maintenance section of the Owner's Guide including taking whatever preventive measures necessary to maintain the exterior sealants of the unit and to prevent foreseeable secondary moisture or water damage to the unit from rain, plumbing leaks, condensation and other natural accumulation of water in the unit. Secondary damage may include, but is not limited to, stained upholstery, carpeting, linoleum or drapes; mold formation and growth; furniture, cabinetry or floor deterioration; wall and floor delamination or discoloration; deterioration of exterior components, etc.

HOW TO OBTAIN WARRANTY SERVICE

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

1. Notify an independent, authorized Genesis Supreme RV dealer, or Genesis Supreme RV, Inc. within ten (10) days of the discovery of the defect in material or workmanship attributable to Genesis Supreme RV, Inc. within the warranty coverage period designated above;

2. Promptly schedule an appointment with and take the recreational vehicle to your original selling dealer, or closest authorized Genesis Supreme RV dealer for repairs.

Regardless of any other arrangements for warranty service, Genesis Supreme RV at its sole discretion, reserves the right to require warranty repairs be performed at Genesis Supreme RV's national service center in Perris, California.

If you need assistance you may contact Genesis Supreme RV, at:

Genesis Supreme RV, Inc.
23129 Cajalco Rd.
Perris, CA 92570
Attn: Warranty Department
Phone: (951) 337-0254

NOTE: Genesis Supreme RV does not control the scheduling of service work at the independent, authorized dealerships. You may encounter some delay in scheduling or completion of work.

Appliance and Component Warranty Service/Administration

Appliance and component manufacturers may or may not provide their own warranties. These warranties are separate from the Genesis Supreme RV Limited Warranty and constitute the only warranty for those specific appliances and components, including any dealer-installed items. The terms, conditions and warranty periods of these items may vary from the Genesis Supreme RV Limited Warranty. Although Genesis Supreme RV makes no warranties with respect to these appliances and components, service under some of the separate manufacturer warranties may be obtained through Genesis Supreme RV dealerships during the terms of the Genesis Supreme RV Limited Warranty. After expiration of the Genesis Supreme RV Limited Warranty, all appliance and component warranty claims must be submitted to the respective appliance and component manufacturers.

DISCLAIMER OF CONSEQUENTIAL DAMAGES

GENESIS SUPREME RV DISCLAIMS ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO: ON-SITE SERVICE CALLS OR SERVICE CHARGES, RENTAL COST OF SUBSTITUTE EQUIPMENT OR OTHER LOSS OF USE DAMAGES, TOWING CHARGES, TRANSPORTATION COSTS, WEAR AND TEAR ON THE RECREATIONAL VEHICLE OR TOW VEHICLE DURING TRANSPORT FOR SERVICE; EXPENSES FOR FUEL, FOOD, LODGING, TELECOMMUNICATIONS CHARGES, TRAVEL; AIR, BUS AND TAXI FARES OR CAR RENTALS, VEHICLE OR PERSONAL PROPERTY STORAGE FEES, REIMBURSEMENTS FOR FINANCE OR INSURANCE PAYMENTS, LOANER VEHICLES, DAMAGE OR LOSS TO PERSONAL PROPERTY, LOSS OF REVENUES OR OTHER COMMERCIAL LOSS, OR ANY OTHER SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE RESULTING FROM ANY DEFECT IN THE RECREATIONAL VEHICLE.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY.

Additional Terms

NO PERSON SHALL HAVE THE AUTHORITY TO ENLARGE, AMEND, OR MODIFY THIS LIMITED WARRANTY.

ANY LEGAL OR EQUITABLE ACTION TO ENFORCE THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY SHALL NOT BE BROUGHT MORE THAN ONE (1) YEAR AFTER THE EXPIRATION OF THE ONE (1) YEAR TERM OF THIS LIMITED WARRANTY.

SOME STATES DO NOT ALLOW A REDUCTION IN THE STATUTE OF LIMITATIONS SO THE ABOVE REDUCTION MAY NOT APPLY.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Genesis Supreme RV, Inc.
23129 Cajalco Rd.
Perris, CA 92570
Attn: Warranty Department
Phone: (951) 337-0254

INSPECTION

To assist you in avoiding problems, Genesis Supreme RV requests that each dealer review the limited warranty and inspect the unit along with you. The dealer has been provided with a pre-delivery checklist. We are confident that you followed the Product Delivery Inspection (PDI) procedures with your selling dealer, received an extensive walk-through of your purchase, and had the warranty explained to you to your satisfaction. We hope that you are confident that you have been informed of the warranty, the operation and maintenance of your trailer and its components, and the details of the responsibilities of the manufacturer, dealer and owner relationship.

Your trailer has been inspected by the factory, and received a final inspection at the dealership, and then by you during the walk-through and demonstration. But we know that sometimes things can go wrong on the road. Please allow your dealership the opportunity to assist you in taking care of any warrantable problems.

OWNER'S INFORMATION PACKET

In addition to this Owner's Guide (published on the included compact disc), an information packet is located inside your new RV. This packet contains product manuals and information on systems and equipment in your RV. There are also individual product warranty registrations. Complete and mail these as soon as you can to activate your warranty coverage on these components. Some components shown in this guide or the information packet may be optional equipment. Inclusion of these items does not suggest that they are or may be available for a specific recreational vehicle. If you ever need more information about a specific appliance or component, you can contact the manufacturer directly. Contact information for many of the major component manufacturers is included in the information packet.

OWNER WARRANTY REGISTRATION

As a convenience to you, the owner registration form is completed at the dealership at the time of delivery. After an owner signs this form, the dealer will send the completed form to Genesis Supreme RV within 10 days. This will activate your Genesis Supreme RV, Inc. One-Year Limited Warranty. You should have completed and signed this form before you left the dealership. If you ever move, change your address,

or sell/gift the trailer, please complete and mail the ***Change of Address*** card located at the end of the ***Introduction*** chapter. Just fill in the new information and mail it to Genesis Supreme RV.

GET TO KNOW YOUR TRAILER

Your trailer has been inspected by qualified inspectors at the factory and then again at the dealership. As the owner, however, you will be the first to camp and use every system. Genesis Supreme RV wants your first camping experience to be a happy one. We suggest a "trial camping experience" before heading out. Plan a weekend in your yard or driveway and really camp in your trailer.

You will have a chance to use the systems and components in your trailer and see how they work. You will learn what items are needed when you go on your first real trip. Write down any questions that arise, difficulties or problems that occur. After your trial, call your dealer and ask any questions that you might have. Getting to know your trailer before the first adventure can save a lot of frustration and leave more time for fun!

2 / WARRANTY AND SERVICE

Owner Notes

3 / SAFETY FIRST

Your trailer was designed to be comfortable under nearly all traveling and living conditions. It complies with applicable codes and safety standards in effect at the time it was built. A number of required safety items are installed in your trailer for your safety and the safety of other occupants of the vehicle. This section describes several of these important pieces of equipment. Other chapters in this Owner's Guide describe important safety topics specific to the systems or components discussed in those chapters.

All occupants of the trailer should become familiar with the audible sounds of the carbon monoxide, propane and smoke detector/alarms. If an alarm sounds, find out why. Do not remove the detector/alarm in an attempt to silence the alarm. If any occupants of the trailer suffer from diminished hearing, add additional detector/alarms.

Carbon Monoxide Safety Precautions

Carbon monoxide is a colorless, tasteless, odorless gas. The generator (if equipped), furnace, water heater, propane refrigerator and cooking range/oven produce it constantly while they are operating. *CARBON MONOXIDE IS DEADLY.* To protect yourself from the effects of carbon monoxide poisoning, please read and understand the following precautions.

There are a number of symptoms of carbon monoxide poisoning:

Dizziness	*Intense headache*
Throbbing in temples	*Nausea*
Vomiting	*Muscular twitching*
Weakness/sleepiness	*Inability to think clearly*

If you or others (including pets) experience any of these symptoms, *get out into fresh air immediately.* Get medical attention if any of the symptoms persist. If any fossil-fuel burning device or appliance is running, shut it off and do not operate it until it has been inspected and repaired.

⚠WARNING

Exhaust gases are deadly. Do not block the tailpipes, or appliance exhaust ports, or situate the vehicle in a place where the exhaust gases have any possibility of accumulating either outside, underneath, or inside your vehicle or any nearby vehicles. Outside air movements can carry exhaust gases inside the vehicle through windows or other openings remote from the exhaust outlet. Operate the engine(s), carbon monoxide- producing systems or components only when safe dispersion of exhaust gases can be assured. Monitor outside conditions to be sure that exhaust continues to be dispersed safely.

1 - Carbon Monoxide Alarm

⚠ WARNING

Do not under any circumstances operate any engine while sleeping. You would not be able to monitor outside conditions to assure that engine exhaust does not enter the interior, and you would not be alert to exhaust odors or symptoms of carbon monoxide poisoning.

⚠ CAUTION

Do not spray paint or spray either the CO or propane detector with chemicals such as cleaners, air fresheners, hair sprays, insecticides, etc. These substances will damage the detectors requiring replacement of the detectors. Keep flames or other intense heat sources away from the detectors.

2 - Propane Leak Detector

Carbon Monoxide Detector/Alarm

A battery-powered carbon monoxide (CO) detector/alarm is installed in or near the main sleeping area. Detailed operating and maintenance instructions are in the Owner's Information Packet.

If the alarm sounds, it means that carbon monoxide gas is present in the air. This situation could occur in campgrounds where other vehicles as well as your trailer are contributing to the level of carbon monoxide in the surrounding air. If the alarm sounds, it does not indicate a faulty alarm. *It is warning you of potentially dangerous levels of carbon monoxide.*

When the alarm sounds:

1. *If anyone has symptoms of CO poisoning, immediately move all occupants to fresh air. Be sure to account for all trailer occupants including pets. Do not go back into the trailer until the source of the carbon monoxide has been located and repaired.*
2. *Turn off all sources of combustion at once: generator, furnace, water heater, range/oven.*
3. *Ventilate the interior of the trailer with fresh air. Open all doors, windows (except emergency exit window), and vents.*
4. *Have a qualified technician locate and correct the source of the carbon monoxide.*

Test the carbon monoxide detector weekly, after the trailer has been in storage, and before each trip. Replace the battery at least twice a year or immediately when the low battery signal sounds. If the CO detector fails to operate with a new battery, replace it with a new detector.

Propane Leak Detector

A propane leak detector is mounted near the floor. It is powered by the trailer 12-volt DC system. The detector senses the presence of propane and some other hydrocarbons. If propane is detected, the alarm will sound. The detector will not automatically shut off the propane system.

See the propane leak detector operating instructions in your Owner's Information Packet for detailed operating and maintenance instructions.

If the alarm sounds, open all doors and windows to air out the trailer. Close the propane valve(s) at the tank. Do not re-enter the trailer until the alarm stops. If the alarm sounds again, after you have turned the gas back on:

Extinguish any open flames, pilot lights, and all smoking materials.

Do not touch electrical switches.

Close the gas supply at the cylinder valves. Open doors and other ventilation openings.

Get everyone out of the trailer - including pets.

Have the propane system checked and the leak source corrected by a qualified propane dealer or RV service center before using the system again.

Clean the propane detector frequently by carefully vacuuming the front cover. Do not spray any kind of cleaning solution into the detector.

Smoke Detector

A battery-powered smoke detector is mounted on the ceiling in the living/cooking area of the trailer. Detailed operating and maintenance instructions for the smoke detector are in your Owner's Information Packet.

Never disable the smoke detector because of a nuisance or false alarm from cooking smoke, dusty furnace, etc. Ventilate the trailer interior with fresh air and the alarm will normally shut off. *Do not disconnect or remove the battery.*

Replace the battery at least twice a year or immediately when the low battery signal sounds. If the smoke detector fails to operate with a new battery, replace it with a new detector.

Fire Safety

The hazard and possibility of fire exists in all areas of life, and the recreational life-style is no exception. Your trailer is a complex product made of many materials. Some of these materials are flammable. Like most hazards, the possibility of fire can be minimized, if not totally eliminated, by recognizing the danger and practicing common sense, safety and good maintenance.

3 - Smoke Detector (typical)

4 - Fire Extinguisher

⚠WARNING

Some upholstered components and mattresses, carpet, and insulation products are made of urethane foam. Urethane foam is flammable!

Urethane foams burn rapidly, releasing great heat and consuming oxygen very quickly. Lack of oxygen is a danger of suffocation hazard. Hazardous gases released by the burning foam can be incapacitating or fatal to human beings if inhaled in sufficient quantities.

Do not expose urethane foams to open flames or indirect high temperature sources of ignition such as burning operations, welding, burning cigarettes, space heaters, or unprotected electric light bulbs.

⚠WARNING

Before refueling your tow vehicle, be sure to turn off all pilot flames and appliances in the trailer. Turning off the propane at the tank is insufficient. Pilotless appliances may still spark or pilot flames may not extinguish immediately.

⚠WARNING

Do not store or carry propane containers, or other flammable liquids inside the trailer.

A fire extinguisher is located in the entry way. It is rated for Class B (gasoline, diesel fuel, grease, flammable liquids) and Class C (electrical) fires. Read the instructions on the fire extinguisher, and know when and how to use it. The fire extinguisher is most valuable when used immediately on small fires. It has a limited amount of fire-extinguishing material, and must be used properly so this material is not wasted.

The fire extinguisher is a pressurized, mechanical device. Handle it with care. It should be checked at least once a year. To check the charge in the fire extinguisher, press down the button on the top. The button should return when released. If it does not, replace the fire extinguisher. Replace the fire extinguisher whenever it has been discharged. Always follow any instructions printed on the fire extinguisher.

Fire Safety Precautions

Maintain the fire extinguisher properly.

Instruct all occupants in the trailer on what to do in case of fire. Hold fire drills periodically.

Be especially aware that potentially explosive fuel vapor may be present at fuel filling stations. Never enter a fuel filling station if the generator is running, or if your water heater, furnace, or refrigerator is operating on propane. The flame in the burners of these appliances is a source of ignition, and could cause an explosion. These appliances must be turned OFF before entering a fuel filling station. Turn off the main propane valve.

If you experience a fire while traveling, maintain control of the trailer until you can safely stop. Evacuate the vehicle as quickly and safely as possible. Account for all occupants, including pets.

Consider the cause and severity of the fire and the risk involved before attempting to put it out. Move a safe distance away from the vehicle and wait for emergency fire assistance.

If the trailer is damaged by fire, do not occupy it until you have had it thoroughly inspected and repair

EMERGENCY ESCAPE WINDOW

5 - Emergency Escape Window (Typical)

Do not cover or obstruct emergency escape windows. These windows must be accessible at all times for emergencies.

An emergency escape window, mounted on a hinge, is located near the rear of the trailer. On some models, another emergency exit window may be located in the living/dining area. When you park the trailer, check that trees, fences, walls, other RVs or other obstacles do not block the emergency window operation. Also, while scenic views are one reason for traveling, *DO NOT park where a body of water, steep cliff, or any other environmental hazard is just outside your escape window.*

Teach everyone in the trailer how to use the emergency exit window(s). Occasionally open the window(s) to prevent the seal(s) from sticking. Plan fire escape routes. Decide who will exit the through the emergency escape window(s) first, and in what position. Place a blanket or heavy coat over the window frame to cushion the exit. If there is a fire, the last person to exit the trailer should be prepared to assist those in front. Arrange for a meeting place safely away from the trailer.

To open the emergency exit window:

1. *Pull both RED latches.*
2. *Push out on the glass until it swings clear*

Occupant and Passenger Safety

⚠WARNING

DO NOT allow passengers to ride in the trailer during travel. Although in some places it may be legal for passengers to ride in the trailer while under way, Genesis Supreme RV, Inc. specifically discourages this practice. There are no seat belts or other passenger safety equipment installed in the trailer, and trailer movements could cause objects in the interior of the trailer to become dangerous projectiles, possibly causing serious personal injury.

The activities of passengers – especially children – in the trailer is difficult to monitor. Appliances and other equipment could be operated without the driver's knowledge. Some of these activities could involve the starting of fires or the improper operation of stored vehicles, electrical equipment or appliances that could cause a hazardous and unsafe driving situation.

Carrying or allowing passengers (or pets) to ride in the trailer while you are travelling is dangerous. ***The trailer interior is not designed for passenger occupancy while under way. State and Federal vehicle safety laws require seats belts and passenger restraint systems in vehicle passenger areas. The trailer interior is not designed for or equipped with these systems. It cannot be modified or retrofitted to meet vehicle safety standards and regulations for passenger occupancy.*** Additionally, some systems such as slide-out rooms can be operated, but should not be operated, while the trailer is being towed. Under some circumstances, carbon monoxide and other toxic gases and fumes from the tow vehicle exhaust can enter the trailer while being towed. It is also possible in some models to carry hazardous and/or toxic substances in the interior. Persons occupying the trailer while going down the road could be exposed to these fumes and gases, resulting in respiratory or other injury, or fatal carbon monoxide poisoning.

Since the driver of the tow vehicle cannot properly monitor the activities of any trailer occupants while towing, a dangerous situation could arise without the driver's knowledge. Even the best intercom and radio communications devices are not adequate to inform the driver of all potential hazards in the trailer. And, although an unlikely and remote possibility, the trailer could become detached from the tow vehicle, or a vehicle crash or overturn could happen, seriously injuring or even killing any trailer occupants.

Owner Notes

4 / INDOOR AIR QUALITY - Condensation, Mold & Formaldehyde

Your trailer was designed primarily for recreational use and short-term occupancy. If you expect to occupy it for an extended period, be prepared to deal with indoor air quality issues that you may encounter. These issues include condensation and high humidity, concentrations of formaldehyde and other airborne irritants, and biological pollutants. This chapter outlines some basic information about these air quality concerns and how you can minimize their effects on your RV lifestyle.

CONDENSATION AND EXCESSIVE HUMIDITY

The relatively small volume and tight, compact construction of modern RVs means that the normal living activities of even a few occupants will lead to rapid moisture saturation of the air in the trailer and the appearance of visible moisture, especially in cold weather.

Just as moisture collects on the outside of a glass of cold water during humid weather, moisture can condense on the inside surfaces of the trailer during cold weather when the relative humidity of the interior air is high. This condition is increased because the insulated walls of your trailer are much thinner than house walls. Estimates indicate that every day a family of four can vaporize up to three gallons of water through breathing, cooking, bathing and washing.

During cold weather and even in short term occupancy, condensation often forms on ceiling vents and may accumulate to the point of dripping onto the surface below. This is sometimes thought to be a "leaking" roof vent, but is most often condensation.

Unless the water vapor is carried outside by ventilation or condensed by a dehumidifier, it will condense on the inside of the windows and walls as moisture or in very cold weather as frost or ice. It may also condense out of sight within the walls or the ceiling where it will manifest itself as warped or stained panels. Appearance of these conditions may indicate a serious condensation problem. When you see signs of excessive moisture and condensation in the trailer, you should take action to minimize their effects.

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

If you use a dehumidifier, please read and follow all manufacturer instructions and recommendations for use and cleaning. Be sure to empty and thoroughly clean the water collection container often.

How To Reduce Condensation Problems:

- Allow excess moisture to escape to the outside when bathing, washing dishes, hair-drying, laundering and using appliances and non-vented gas burners. Open windows and use the vent fans.
- Maintain interior relative humidity at 50% or below. In cold climates, relative humidity may need to be 35% or less to avoid window condensation. You can monitor relative humidity with a hygrometer. Hygrometers are available at building supply or some electronics stores.
- Always use the vent hood when cooking.
- Keep the bathroom door closed and the vent or window open when bathing and for a period of time after you have finished.
- Do not dry wet clothes or wet shoes in the trailer.
- In hot weather, start the air conditioner early as it removes excess humidity from the air while lowering the temperature.
- Keep the temperature as reasonably cool during cold weather as possible. The warmer the interior of the trailer, the more cold exterior temperatures and warm interior temperatures will contribute to creating condensation on interior surfaces. Avoid nighttime thermostat settings 10 or more degrees below your daytime settings. Drastic temperature reductions that reduce the indoor temperature quickly can increase the chance for moisture to condense on windows and other interior surfaces.
- Use a fan to keep air circulating inside the trailer so condensation and mildew cannot form in dead air spaces. Allow air to circulate inside closets and cabinets (leave doors partially open). Please keep in mind that a closed cabinet full of stored goods prevents circulation and allows the buildup of condensation.
- During cold weather, the natural tendency is to close up the trailer tightly. This will actually make the problem worse. You need to remove some of the warm air and allow some cool outside air to get inside the vehicle so the furnace will not recycle the humid interior air. Even when it's raining or snowing outside, the outside air will usually be dryer than the inside air.
- When cleaning floors and carpet, use the least amount of water necessary. Be sure to extract or dry any residual moisture thoroughly. If floors and carpet are cleaned before storing the trailer, be sure carpet is completely dry before closing up the trailer for an extended period.

- Keep the exterior shell of the trailer properly maintained. The shell includes the roof, side and end walls, windows, doors, compartments and exterior accessories, slideouts and under floor. Proper maintenance of sealants will help maintain a tight barrier against water intrusion. If you ever make modifications to your trailer, be sure any changes are done by a qualified service firm to minimize the possibility of moisture intrusion or accumulation problems later.
- Using your trailer in severe climates or weather conditions, such as extreme hot and humid or cold weather, will require extra care and maintenance to avoid moisture-related issues. In both extremely cold and hot/humid climates, you will need to pay more attention to controlling relative humidity inside the trailer. You may need to use a portable dehumidifier to manage the relative humidity within an acceptable range.

About Molds and Biological Contaminants

What are Biological Contaminants?

Biological contaminants include bacteria, molds, mildew, viruses, animal dander and saliva, house dust, mites, cockroaches, and pollen. There are many sources of these pollutants. Pollens originate from plants; viruses are transmitted by people and animals; bacteria are carried by people, animals, soil and plant debris; household pets are sources of saliva and animal dander. The protein in urine from rats and mice is a potent allergen. When it dries, it can become airborne.

Biological contaminants are, or are produced by, living things. Biological contaminants are often found in areas that provide food and moisture or water. For example, damp or wet areas such as cooling coils, humidifiers, condensate pans, or unvented bathrooms can be moldy. Draperies, bedding, carpet, and other areas where dust collects may accumulate biological contaminants. Contaminated air conditioning/heating systems can become breeding grounds for mold, mildew, and other sources of biological contaminants and can then distribute these contaminants throughout your RV. Many of these biological contaminants are small enough to be inhaled.

By controlling the relative humidity level in a recreational vehicle, the growth of some sources of biologicals can be minimized. A relative humidity of 30-50 percent is generally recommended. Standing water, water-damaged materials, or wet surfaces also serve as a breeding ground for molds, mildews, bacteria, and insects. House dust mites, the source of one of the most powerful biological allergens, grow in damp, warm environments.

Health Effects From Biological Contaminants

Some biological contaminants trigger allergic reactions, including hypersensitivity pneumonitis, allergic rhinitis, and some types of asthma. Infectious illnesses, such as influenza, measles, and chicken pox are transmitted through the air. Molds and mildews release disease-causing toxins. Symptoms of health problems caused by biological pollutants include sneezing, watery eyes, coughing, shortness of breath, dizziness, lethargy, fever, and digestive problems. Children, elderly people, and people with breathing problems, allergies, and lung diseases are particularly susceptible to disease-causing biological agents in the indoor air.

Allergic reactions occur only after repeated exposure to a specific biological allergen. However, that reaction may occur immediately upon re-exposure or after multiple exposures over time. As a result, people who have noticed only mild allergic reactions, or no reactions at all, may suddenly find themselves very sensitive to particular allergens.

Reducing Exposure to Biological Contaminants

- General good housekeeping, and maintenance of heating and air conditioning equipment, are very important. Adequate ventilation and good air distribution also help.

- Maintain the relative humidity between 30% - 60% to help control mold, dust mites, and cockroaches.

- Use the recommendations in the section on **Condensation and Excessive Humidity** to keep the humidity level down.

- Humidifiers can become breeding grounds for biological contaminants. They have the potential for causing diseases such as hypersensitivity pneumonitis and “humidifier fever.” Clean evaporation trays in air conditioners, dehumidifiers, and refrigerators frequently.

- Thoroughly clean and dry water-damaged carpets and building materials (within 24 hours if possible). Water-damaged carpets and building materials can harbor mold and bacteria. It is very difficult to completely rid such materials of biological contaminants.
- Avoid drying wet clothes inside.
- Keep the RV clean. Dust mites, pollens, animal dander, and other allergy-causing agents can be reduced, although not eliminated, through regular cleaning.
- Take steps to minimize biological pollutants in storage compartments and indoor closets and cabinets.

Specifically About Molds ...

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

What Factors Contribute To Mold Growth?

For mold growth to occur, the temperature must be between 40 degrees and 100 degrees Fahrenheit and there must be a source of moisture such as humidity, standing water, damp materials, etc. Indoors, the most rapid growth occurs with warm and humid conditions.

How Can Mold Growth Be Inhibited?

By controlling relative humidity, the growth of mold and mildew can be inhibited. In warm climates, air conditioner use will reduce the relative humidity. Vents are located in the bathing and cooking areas and you should use them continuously during food preparation and bathing even during colder weather. Opening a window during these activities will assist in ventilation. In extremely humid conditions, using a dehumidifier can be helpful.

Further Information About Molds

Frequent use of your trailer and keeping it clean are important preventive measures. Wipe up and dry any spills as soon as possible. Avoid leaving damp items lying about. Use mold- or mildew-killing cleaning products where they can be safely used. Read the labels before using the product(s). Check sealants regularly and resea when necessary to avoid water leaks.

Proper preventive maintenance to the trailer and its accessories, as described both in this manual and in accompanying literature, will help reduce the possibility of mold and mildew problems.

Dry any areas exposed to water leaks or spills as soon as possible and definitely within 24-48 hours. Quickly drying minimizes the chance for moisture damage and possible mold growth which can begin to form colonies in 48 hours. Since moisture is key to mold issues, treat all signs of condensation and spills seriously and deal with them promptly. Failure to deal with a moisture issue promptly may cause more severe problems where there weren't any before, or may make a small problem much worse.

Learn to recognize the signs of mold. Don't paint over suspicious discolorations until you are sure it is not mold. The affected surface must first be cleaned and dried. Any residual stains can be painted over.

Be sure to understand and eliminate the source of moisture accumulation as a part of the clean up. Clean up small amounts of mold as soon as it appears. Use a detergent/soap solution or an appropriate household cleaner. Dispose of rags or sponges used to clean mold. Dry the cleaned area thoroughly using any of several methods:

- Remove excess water with an extraction vacuum
- Use portable fans to move air across the wet surfaces
- Use a dehumidifier to aid drying

CHEMICAL SENSITIVITY

After you first purchase your new RV and sometimes after it has been closed up for an extended period of time, you may notice some strong odors and feel some chemical sensitivity. *This is not a defect in your RV.* Many different products are used in the construction of your RV. Some of these materials such as carpet, linoleum, plywood, insulation, upholstery, may "off-gas" different chemicals. This off-gassing is especially noticeable when the materials are new or are exposed to high temperatures and/or humidity. Since your RV is much smaller than your home, and because the air inside the RV is exchanged less often, the concentration of these chemicals in your RV is more noticeable.

IMPORTANT NOTE
Chemical off-gassing is not a "defect" in your recreational vehicle. It is not covered under the one-year limited warranty. Please follow the recommendations in this section to address this concern.

Under some conditions, you may experience eye, nose, and throat irritation, and possibly headache, nausea, and a variety of asthma-like symptoms. Elderly persons and young children, as well as anyone with a history of asthma, allergies, or lung problems, may be more susceptible to the effects of these chemical emissions.

FORMALDEHYDE

Formaldehyde is an important chemical commonly used by industry to manufacture building materials and numerous household products including some paints, coatings and cosmetics. It is also a by-product of combustion and certain other natural processes. It is used to add permanent-press qualities to clothing and draperies, as a component of glues and adhesives, and as a preservative in some products. Formaldehyde is also found in tobacco smoke, household products, and the use of un-vented, fuel-burning appliances. Thus, it may be present in substantial concentrations both indoors and outdoors.

As is standard in the industry, your Genesis Supreme RV recreational vehicle incorporates wood products that were manufactured using formaldehyde. Formaldehyde has an important role in the adhesives used to bind together the components of certain wood products such as particleboard used as sub-flooring and shelving and in cabinetry and furniture; hardwood plywood paneling used for decorative wall covering and used in cabinets and furniture; and medium density fiberboard (MDF) used for drawer fronts, cabinets, and furniture tops. The wood products in your RV are designed to emit formaldehyde at or lower than the maximum levels allowable under standards issued by the Recreational Vehicle Industry Association, and should not produce symptoms such as eye and throat irritation in most people.

Studies have shown that while almost all of the formaldehyde used in the materials in your RV is consumed during the manufacturing process, a small amount remains. This left-over formaldehyde dissipates over time, typically ranging over several months. The rate at which products like pressed wood or textiles release formaldehyde can change. Formaldehyde emissions will generally decrease as products age. When the products are new, high indoor temperatures or humidity can cause increased release of formaldehyde from these products.

Some parts of this recreational vehicle were made with products that contain urea-formaldehyde resin. As these products age, they will release small quantities of formaldehyde. Formaldehyde can be irritating to the eyes and upper respiratory system of especially susceptible persons such as those with allergies or respiratory ailments. Proper ventilation will reduce indoor formaldehyde levels. If symptoms develop, consult a physician.

HEALTH EFFECTS OF FORMALDEHYDE

Formaldehyde is a colorless, pungent-smelling gas that can cause watery eyes, burning sensations in the eyes and throat, nausea, wheezing and coughing, fatigue, skin rash and difficulty in breathing in some people, and severe allergic reactions. High concentrations may trigger attacks in people with asthma. It has also been shown to cause cancer in animals and may cause cancer in humans.

In almost all cases, the human body is naturally equipped to handle formaldehyde without harm. If formaldehyde is absorbed into the body, naturally occurring enzymes in the blood stream convert it into a non-toxic substance that is eventually expelled as a bodily waste.

A very small percentage of the population, however, is more sensitive to formaldehyde. For these people, coming in contact with formaldehyde can cause watery or itchy eyes, runny or bleeding nose or sore throat. In most cases, these symptoms disappear with fresh air ventilation.

If you think you might have a sensitivity to formaldehyde, or if you have any questions or concerns about the health effects of formaldehyde, please consult your doctor or local health professionals.

HOW TO REDUCE EXPOSURE

To reduce or lessen your exposure to chemicals from off-gassing, you must ventilate your RV. Open windows, doors and exhaust vents frequently after purchase and whenever the temperature and/or humidity is high. Operate ceiling and/ or other fans, roof air conditioner(s) and the furnace. Use a fan to force the stale air out and bring fresh air in.

- Use air conditioning and dehumidifiers to maintain moderate temperature and reduce humidity levels. Use the recommendations in this chapter on controlling moisture and humidity.

- Increase ventilation, particularly during the first few months after purchasing your RV.

- Do not smoke inside your RV. In addition to causing damage to your RV, tobacco smoke releases formaldehyde and other toxic chemicals.

If you use dehumidifiers to control humidity, be sure to drain and clean dehumidifier collection trays frequently so that they do not become a breeding ground for microorganisms. See the section on biological pollutants for more information.

ADDITIONAL INFORMATION ABOUT FORMALDEHYDE

- U.S. Consumer Product Safety Commission
  https://www.cpsc.gov
  Enter "Formaldehyde" into "Search CPSC" bar

- **American Lung Association (ALA)**
  1740 Broadway
  New York, NY 10019-4374
  1 (800) 586-4872

  Local ALA offices also have information.

- For further information on formaldehyde and consumer products, call the **EPA Toxic Substance Control Act (TSCA) Assistance Line:**

  (202) 554-1404.

Owner Notes

5 / YOUR TOW VEHICLE AND EQUIPMENT

There are some other important things you should know about towing your trailer.

Towing a trailer will subject you to new and different challenges on the highway than you may have ever experienced before. An accident with a tow vehicle and trailer can have much greater consequences than carelessness with a small car. Take your responsibilities as a tow vehicle driver very seriously. Learn all you can about doing the job safely and well. Balancing the load and preparing the trailer and tow vehicle are critical to safe handling.

The combined weight of your trailer and tow vehicle must never exceed the Gross Combined Weight Rating (GCWR) as specified by the tow vehicle manufacturer. A load heavier than this limit could exceed the tow vehicle's ability to pull and stop the load, could damage the tow vehicle chassis, structure or drive train, and possibly lead to a vehicle crash. Remember, *you cannot increase the tow vehicle's towing capacity by changing the capacity of the hitch.* Weights heavier than the limit can change your handling, could restrict your warranty coverage, and could possibly lead to a crash.

Remember that you must stop the trailer with the tow vehicle's brakes in combination with the brake controller and trailer brake system. This is extremely critical when driving in hills, mountains, sharply curving roads and irregular road surfaces.

Another critical aspect of safely operating a trailer is knowing the weights involved and where they are placed. You must determine that the load you intend to tow is within the capacities of the equipment you are using. The location of the load in the trailer is also critical to the way your rig will handle on the road.

There are some basic loading and towing rules that you must follow for safe towing. If a trailer doesn't tow properly when all the basic rules have been followed, the answer can be very complex, because the result can be an oscillating or swaying trailer. Swaying is usually caused by a trailer that is "tail heavy", and moving cargo to increase tongue weight will usually cure the problem. The moment

your trailer shows any tendency to sway, you should slow down and determine the cause. Swaying can be a very complex problem because several components working together can cause it. Speed and wind are two of these components, so you should *never drive faster* to try and eliminate swaying or any other problem.

NOTICE

In connection with the use and operation of Genesis Supreme RV recreational vehicles, Genesis Supreme RV customers and owners of Genesis Supreme RV recreational vehicles are solely responsible for the selection and proper use of tow vehicles. All customers should consult with a motor vehicle manufacturer or dealer concerning the purchase and use of suitable tow vehicles for Genesis Supreme RV products. Genesis Supreme RV further disclaims any liability with respect to damages which may be incurred by a customer or owner of Genesis Supreme RV recreational vehicles as a result of the operation, use or misuse of a tow vehicle.

NOTE: GENESIS SUPREME RV's LIMITED WARRANTY DOES NOT COVER DAMAGE TO THE RECREATIONAL VEHICLE OR THE TOW VEHICLE AS A RESULT OF THE OPERATION, USE OR MISUSE OF THE TOW VEHICLE.

YOUR TOW VEHICLE

You likely already have the vehicle you will be using to tow and you may have based your trailer purchase on its capabilities. It is up to you to determine if your tow vehicle is really big enough to have the brakes and suspension it takes to safely tow your trailer. There isn't any good way to overcome a problem such as this short of trading up to a vehicle with more capacity. Adding bigger tires, more springs or better shocks will not help. If the suspension isn't heavy enough, the brakes are probably inadequate for the load you intend to tow. Just because a half-ton pickup may be able to carry 1000 pounds of weight in the bed, it probably cannot support 1000 pounds at the hitch without special modifications to the suspension. There is a difference between "load" (actual weight applied) and "load rating" (maximum engineered design load limit). Gross Vehicle Weight Rating (GVWR) is determined by the manufacturer in the design of the vehicle. *GVWR cannot be changed.* The addition of heavier components does not change the legal GVWR of your vehicle. *Any load exceeding the manufacturer's rating values is both unsafe and illegal.*

You can't always correct a swaying problem by moving the trailer load forward if the tow vehicle isn't capable of handling the required hitch weight. Moving the load back in the trailer could make for a very unstable and dangerous condition. Too much weight on the hitch can also cause a dangerous situation where the tow vehicle doesn't have enough weight on the front wheels to keep the vehicles under control. When you hit the brakes, the trailer dives lifting the front of the tow vehicle even more, and you lose most of your braking and steering at the same time. Weight distribution hitches are available that can dramatically help your handling by spreading the forces to both axles, *but they cannot compensate for inadequate towing capacity or overloading.*

A basic rule of trailer towing is:

> The tow vehicle and hitch must be capable of safely handling at least 15% of the gross weight of the trailer (total weight of trailer plus contents). Fifth wheel trailers usually have up to 25% of the gross weight on the hitch.

Tow Vehicle and Trailer Brakes

You can't have too much braking power. You should be able to stop your rig on a hill without the trailer brakes.

When learning, get on a lonely road without any traffic and try practicing panic stops. Of course, you shouldn't just slam on your brakes. You should try to slowly shorten your stopping distance by applying more pressure. Don't take it to the point that you lose control, just enough to get a feeling what it takes to make a quick stop and the distances involved. Don't ride the brakes going down hills as this overheats brakes, causing them to lose effectiveness. Use the engine and lower gears to control the downhill speed on long hills. Learn how electric brakes work and how to adjust the controllers that actuate them. Remember that the slightest pressure to the brake pedal will apply the electric brakes. Keep your foot off the brake pedal unless you intend to use them.

The Hitch

Before towing anything, have your hitch inspected by a qualified hitch installation company, and have them determine what the maximum tongue weight can be if it is not plainly marked on the hitch. This is usually 15% of the rated hitch capacity (25% for fifth wheels). Note that this is the hitch capacity, not the ball capacity. A ball is rated by its towing capacity. A hitch is rated by not only its towing capacity but also by the trailer tongue weight.

The Hitch, Ball, and Safety Chains

The hitch pin plate or ball should be located so the trailer sits level when connected to the tow vehicle. The vehicle should be able to accept the loaded trailer tongue weight without a major change of attitude.

NOTICE

Be sure the tow vehicle is large enough for your trailer or fifth wheel, and has the needed power and heavy-duty drivetrain and suspension. It must be rated by the vehicle manufacturer to tow the gross weight, and to carry the hitch weight of the fully loaded trailer or fifth wheel.

NOTE: Heavy-duty commercial vehicles larger than one ton may be used **only** if an energy absorbing hitch, such as the Air Ride Hitch™, is used to couple the trailer to the tow vehicle. The rough ride of the larger trucks can cause structural problems to develop in recreational trailers if an energy absorbing hitch is not utilized.

The hitch pin plate or ball should be lightly greased so the pin box or coupler rotates smoothly on it. Safety chains are required on all trailers except fifth wheels; they should be long enough for tight turns and be crossed under the ball (right to left and left to right). This will help keep the tongue off the road if the ball and coupler become disconnected and will help maintain control while stopping. Never allow the chains to drag on the pavement, because they can be ground to an unsafe condition very quickly. Always inspect the hitch and tongue for cracks when hooking up. Rust is your enemy and can cause premature failures. Check lights and brakes each time the trailer is hooked up. Try to do things in the same order each time and use a checklist. *Don't forget to retract the tongue jack and stabilizer jacks. Don't ever hook a trailer up half way or you may forget to finish the job. Don't start if you can't finish, and never leave the receiver pin out for a minute, or forget to latch the pin and coupler.*

Equipment Selection and Preparation

For conventional travel trailers:

Use a weight distributing hitch with spring bars rated for not less than the trailer Gross Vehicle Weight Rating. The hitch must be equipped with a 2-5/16" diameter ball. Keep the hitch ball as close as practical to the rear bumper to minimize rear overhang. Do not add hitch extenders to the rear of your tow vehicle.

Use a sway control system installed and adjusted according to the sway control manufacturer's instructions.

Refer to the hitch installation instructions for detailed preliminary ball mount adjustments.

For fifth-wheel trailers:

Use a hitch and receiver assembly sized for the 2" SAE king pin and rated to pull not less than the Gross Vehicle Weight Rating of the fifth-wheel trailer. The receiver should be attached to the truck chassis. No weight distributing or sway control devices are needed with a fifth-wheel hitch.

For all trailers:

Use a brake controller that automatically applies the brakes in proportion to the tow vehicle brakes and also has a hand control for applying the trailer brakes only.

Use outside mirrors installed and adjusted to allow a clear view of the area at both sides of and behind the trailer. Locate them as close as possible to the driver to provide the maximum field of view.

If your trailer is wider than your tow vehicle, you will need extended side view mirrors to see rear and side approaching traffic.

STATE AND LOCAL REQUIREMENTS FOR TOWING

States and municipalities may require special permits and licenses based on the size and weight of your trailer, especially if it is over eight feet wide. Some states require additional equipment for the tow vehicle, such as side and rear view mirrors. Inquire at your local motor vehicle administration to find out what requirements affect you.

If you plan to travel in another state, don't forget to check its requirements also. There may be weight, height, and width limits for using certain roads, bridges, and tunnels. Be aware of restrictions regarding the transport of propane gas and other volatile gases or fuels in tunnels. Contact your insurance company to make sure you have the proper coverage.

NOTICE

Fifth-wheel hitch extenders (also called "gooseneck tongue adapters") are not to be used with Genesis Supreme RV fifth-wheel trailers. Use of a hitch extending device may cause structural damage to the trailer pin box assembly or chassis. Damage caused by the use of a hitch extending device may affect your warranty coverage under the Genesis Supreme RV Limited Warranty.

Owner Notes

6 / TIRES AND WHEELS

THE IMPORTANCE OF PROPER TIRE INFLATION

Your trailer tires and wheels, and tongue or fifth-wheel hitch support the entire weight of the trailer and its contents. The tires are also the only contact the trailer has with the road surface. Determining and maintaining proper inflation is the most important factor in maximizing the life of your tires. Driving on a tire that does not have the correct inflation pressure for the trailer load is dangerous and may cause premature wear, tire damage, tread delamination and/or loss of control of the trailer and/or tow vehicle.

An under-inflated tire will build up excessive heat that may go beyond the limits of the tire materials. This could result in sudden tire failure. An under-inflated tire will also cause poor vehicle handling, rapid and/or irregular tire wear, and an increase in rolling resistance which results in decreased tow vehicle fuel economy.

The maximum cold inflation pressure for your tires is stated on the tire sidewalls (see page 8 of this chapter) and Federal certification label (see Chapter 1, page 6). Keep your tires inflated to this maximum cold pressure. This reduces the chance of a failure and improves towing stability. Maintaining correct tire inflation pressure for your trailer is of the utmost importance and must be a part of regular vehicle maintenance.

You must weigh your trailer when it is fully loaded as you expect to use it. You need to weigh all axles together and calculate the hitch weight. You may find that even though the total weight is within the GVWR, one side may be overloaded. For this reason, you must know the weight of each side of the trailer. When you know the weight on each side of the trailer, the combined axle assembly, and the hitch weight, you will be able to manage your loading to be able to maintain good balance and assure good and safe handling on the road. Here are some tips to help you plan your loading:

- *Do not overload. Experiment with various loads starting with light loads and working up to heavier loads. Take into consideration the load of the fresh water system. The tow vehicle and the terrain will affect the true weight you should carry.*

⚠ WARNING

Check tire pressures before traveling. Always check tire pressure when tires are cold. Do not exceed the maximum recommended pressure.

⚠ WARNING

Keep tires properly inflated. A tire that is run long distances or at high speeds while seriously under-inflated will overheat to the point where the tire may lose air suddenly and/or catch fire, possibly resulting in damage to the vehicle and its contents and/or personal injury.

- *Distribute the load evenly over the axles as much as possible. Keep heavy items low and forward, preferably in the lower storage areas. This will produce a lower center of gravity, and improve road stability.*
- *Distribute the load evenly on each side of the trailer. Place heavier objects opposite the heavier appliances, cabinets, furniture, etc. when possible. Experiment with various load positions until you find the best distribution.*
- *Avoid loading heavy items in or on the rear of the trailer. This can cause both total weight problems and hitch weight distribution problems.*
- *Secure items so they won't move around while traveling. Make sure all items and materials are properly stored. Close and latch all drawers, cabinet doors, and closet doors. Pull all loose furniture away from cabinets and walls, and lay on their side or secure to prevent rubbing during travel.*
- *Carry only as much water as you think you will need while traveling. Water weighs over eight pounds per gallon. Whenever possible, empty the holding tanks before getting on the road.*
- *If you are heading for rough terrain, use heavy packing material in the cupboards to hold plates, glasses, etc. Put a nonskid material beneath heavier items to prevent shifting. Expensive and breakable belongings should be well packed and placed on the floor in the center of the trailer, as the center rides best.*
- *Store emergency items such as fire extinguisher, first-aid kit, highway warning devices, gloves, etc. in a readily accessible place. Don't bury these items beneath other cargo.*
- *When you have properly loaded your trailer with the things you need for your trip, make a diagram that outlines where things are stored. With this diagram, your list of items and the weight of the items, you will be able to find specific items easily and have a handy reference for determining proper weights.*
- *Weigh your trailer after you have loaded it. You may have to do this several times to get it right.*

Check the trailer tires frequently. Tires can lose 1 to 3 PSI per month. This is because molecules of air, under pressure, migrate through the rubber from the inside to the outside. A drop in tire pressure could cause the tire to become overloaded, leading to excessive heat build up. If a trailer tire is under-inflated, even for a short period of time, the tire could be damaged internally. A flat tire can go unnoticed on a multiple axle trailer while it is being towed. Running with a flat can cause it to catch fire and burn up your rig. With multiple axles or tandem wheels it is hard sometimes to see a flat tire as the other tires are supporting the weight of the rig and the flat tire is less noticeable. A quick check can be made by "thumping" each tire with a tire iron or rod to make sure they all sound the same. Each time you gas up, walk around the trailer and give a quick check by feeling each tire with your hand. A tire that is getting low will be hotter than the rest. There is no substitute, however, for actually measuring tire pressures to make sure they are all within safe limits. Always check the cold tire inflation pressures before each trip and at least once a week during the trip for proper inflation levels.

The most common causes of tire failure are overloading and underinflation. Both result in excess flexing of the sidewall which causes heat buildup and eventual tire failure. *Continuing to run with a flat can cause it to catch fire.*

The most important things you can do to avoid tire failures are:

- *maintain proper tire pressure*
- *stay within tire and vehicle load limits*
- *avoid road hazards if possible*
- *inspect tires for cuts, slashes, and other irregularities.*

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Make tire safety a regular part of your vehicle maintenance routine. The time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

⚠CAUTION

Tire load ratings are dependent on tire inflation pressures. Under-inflated tires can be damaged and result in a loss of inflation pressure.

UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure that a tire requires to be properly inflated. It is difficult to obtain the recommended tire pressure if your tires are not cold. Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

CHECKING & ADJUSTING TIRE PRESSURE

It is important to check your vehicle's tire pressure at least once a month, always before every trip, and at least once a week while on the road. Not only do tires naturally lose air over time, but they can lose air suddenly if you drive over a pothole or other object, or if you strike the curb. It is difficult to determine tire inflation pressure by looking at the tire. Purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure is the proper pressure when a tire is cold. A "cold" tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, ***you must measure tire pressure when the tires are cold.***

- *Refer to the tire sidewalls for the recommended tire pressure. Your trailer may be equipped with optional tires. Always refer to the tire sidewalls for recommended tire pressure.*
- *Check and write down the pressure in all tires.*
- *If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.*
- *If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. You will need to add air to get to the correct pressure.*

NOTE:
The air pressure recommended on the tire information placard is for the original standard equipment tires only. Your trailer may be equipped with optional-sized tires. Always follow the pressure recommendations stamped in the tire sidewall for any replacement tire.

- *Add air to each tire that is under-inflated.*
- *Check all the tires again to make sure they have the same air pressure.*

If you have been towing your trailer and think that a tire is under-inflated, fill it to the recommended cold inflation pressure. Remember to recheck and adjust the pressure in all tires when you can obtain a cold reading.

TIRE TREAD

The tire tread provides the gripping action and traction that helps to prevent your trailer from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires.

TIRE LIFE

Trailer tires may be worn out even though they still have plenty of tread left. This is because trailer tires have to carry a lot of weight all the time, even when not in use. It is actually better for the tire to be rolling down the road than to be idle. During use, the tire releases lubricants that are beneficial to tire life. Using the trailer tires often also helps prevent flat spots from developing. The average life of a trailer tire is about five years under normal use and maintenance conditions. After five years, trailer tires may be degraded to the point that they should be replaced, even if they have had minimal or no use. Exposure to sunlight (ultra-violet damage) and high speed towing in hot conditions also reduces tire life. As heat builds up during driving, the tire's internal structure starts to break down, compromising the strength of the tire. Have your tires inspected by a tire supplier to determine if your tires need to be replaced.

REPLACEMENT TIRES

To maintain tire safety, purchase new tires that are the same type, size, construction and load rating as the original tires. Look at the tire information placard or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

⚠WARNING

All tires on your trailer should be the same type, size, construction and load rating — do not mix bias-belted and radial tires.

⚠WARNING

There is a danger of serious injury or death if a tire of one bead diameter is installed on a rim or wheel of a different rim diameter. ALWAYS replace a tire with another tire of exactly the same bead diameter designation and suffix letters.

TIRE SAFETY INFORMATION

This portion of the Owner's Guide contains tire safety information as required by 49 CFR 575.6.

The National Highway Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 36) that discusses all aspects of Tire Safety, as required by CFR 575.6. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

http://www.NHTSA.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires.

These actions, along with other care and maintenance activities, can also:

Improve vehicle handling

Help protect you and others from avoidable breakdowns and accidents

Improve fuel economy

Increase the life of your tires.

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

SAFETY FIRST – BASIC TIRE MAINTENANCE

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

FINDING YOUR VEHICLE'S RECOMMENDED TIRE PRESSURE AND LOAD LIMITS

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

Recommended tire size
Recommended tire inflation pressure
Vehicle capacity weight (VCW–the maximum occupant and cargo weight a vehicle is designed to carry)
Front and rear gross axle weight ratings (GAWR– the maximum weight the axle systems are designed to carry).

Both placards and certification labels are permanently attached to the trailer on the forward half of the left side, and are easily readable from outside the vehicle without moving any part of the vehicle.

TIRE REPAIR

The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

TIRE FUNDAMENTALS

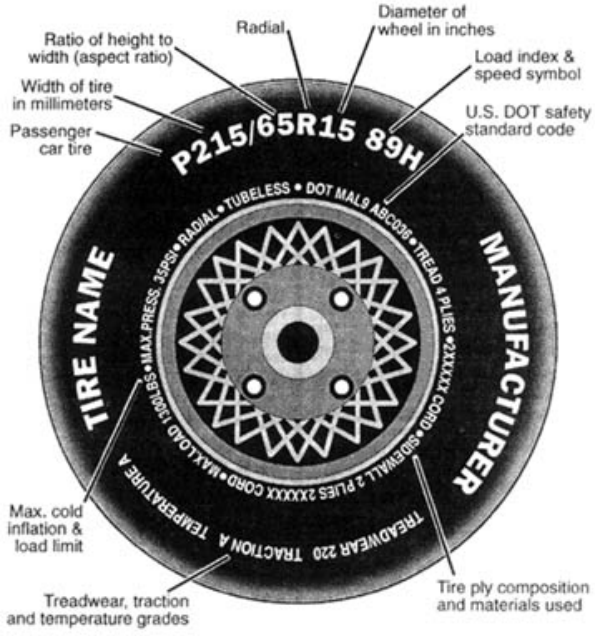
Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

TIRE LABEL INFORMATION

P - *The "P" indicates the tire is for passenger vehicles.* **NOTE: Passenger car tires are not recommended for use on trailers.**

LT - *"LT" indicates the tire is for light trucks.* **NOTE: Light truck tires are not recommended for use on trailers.**

ST - *"ST" is an indication the tire is for trailer use only.*



Next number - *This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.*

Next number - *This two-digit number, known as the aspect ratio, indicates the tire's ratio of height to width.*

R - *The "R" stands for radial. Other tire designs may be "bias ply" or "bias belted" and are designated by other letters.*

Next numbe*r - This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.*

Next number - *This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer.* ***Note:*** *You may not find this information on all tires because it is not required by law.*

Speed Rating - *The speed rating denotes the top speed at which a* **passenger car** *tire is rated. A speed rating will not be found on "ST" tires used on trailers. All "ST" tires are speed restricted to 65 mph. Never operate a vehicle in an unsafe or unlawful manner. Tire speed ratings (if indicated) should never be associated with the ability of the vehicle to handle the speed for which the tire is rated.*

U.S. DOT Tire Identification Number - *This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3 22 means the 3rd week of 2022. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.*

Tire Ply Composition and Materials Used - *The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.*

Maximum Load Rating - *This number indicates the maximum load in kilograms and pounds that can be carried by the tire.*

Maximum Permissible Inflation Pressure - *This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.*

IMPORTANT SPECIAL NOTICE

Your trailer is equipped with tires designated as "ST". This designation means that the tires are built specifically for trailer applications. They are correct for your trailer and the maximum loads the trailer was designed and rated to carry.

Tire industry standards require that tires with the ST designation are speed restricted to 65 MPH under normal inflation and load conditions. Unless a different speed restriction is indicated on the sidewall of the tire, it is best that you not operate your trailer at speeds above 65 mph.

NOTICE

Although tires designated "LT" are sometimes used on trailers, they are not recommended for use on your trailer and should not be considered as replacements for the original equipment "ST" designated tires.

Vehicle Load Limits

Determining the load limits of a vehicle includes more than understanding the load limits of the tires alone. A Federal Certification Label is located on the forward half of the left (road) side of the unit. The certification label indicates the vehicle's gross vehicle weight rating (GVWR). This is the most the fully loaded vehicle can weigh. It also provides the gross axle weight rating (GAWR). This is the maximum weight a particular axle can carry. If there are multiple axles, the GAWR of each axle is provided. In the same location as the certification label described above, there is a vehicle placard. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity.

Cargo Capacities

Cargo can be added to the vehicle, up to the maximum weight specified on the placard. The combined weight of the trailer and the cargo is provided as a single number. In any case, remember: ***the total weight of a fully loaded vehicle cannot exceed the stated GVWR.***

Water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the RV before it is loaded with cargo and is not considered part of the disposable cargo load. Water however, is a cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh over 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel and camping needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your RV dealer to discuss the weighing methods needed to determine the various weights related to the RV. This would include weights for the following: axles, wheels, hitch or pin and total weight.

How Overloading Affects Your RV and Tires

The results of overloading can have serious consequences for vehicle safety. Too much weight on your vehicle's suspension system can cause spring, shock absorber, or brake failure, handling or steering problems, irregular tire wear, tire failure or other damage. An overloaded vehicle is hard to drive and hard to stop. In cases of serious overloading, brakes can fail completely, particularly on steep hills. The load a tire will carry safely is a combination of the tire size, its load range, and corresponding inflation pressure. Excessive loads and/or under-inflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. Since RVs can be configured and loaded in many ways, air pressures must be determined from actual loads (determined by weighing) and taken from the load and inflation tables provided by the tire manufacturer. These air pressures may differ from those found on the certification label. However, they should never exceed the tire limitation for load or air pressure. If you discover that your tires cannot support the actual weights, the load will need to be lightened.

Tire Safety Tips

PREVENTING TIRE DAMAGE

- *Slow down if you have to go over a pothole or other object in the road.*
- *Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.*

TIRE SAFETY CHECKLIST

- *Check tire pressure (including the spare) at least once a month and before going on any trip*
- *Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.*
- *Remove bits of glass and foreign objects wedged in the tread.*
- *Make sure your tire valves have valve caps.*
- *Do not overload your vehicle. Check the Tire Information and Loading Placard or User's Manual for the maximum recommended load for the vehicle.*

How To Determine Correct Load Limit

- *Locate the statement "The weight of cargo should never exceed XXX lbs" on your vehicle's placard.*
- *The figure stated on the placard is the available amount of cargo load capacity. The weight of all cargo loaded in the vehicle may not safely exceed this figure.*
- *Determine the weight of cargo being loaded in the vehicle. That weight may not safely exceed the available cargo capacity.*

For further information about wheel and tire safety:

1-888-327-4236 (TTY: 1-800-424-9153)
http://www.safercar.gov

and

National Highway Traffic Safety Administration
1200 New Jersey Ave., SE
Washington, D.C. 20590

GLOSSARY OF TIRE AND WEIGHT TERMINOLOGY

Cold inflation pressure - The pressure in the tire before you drive.

Load rating - The maximum load that a tire is rated to carry for a given inflation pressure.

Maximum load rating - The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum permissible inflation pressure - The maximum cold inflation pressure to which a tire may be inflated.

Recommended inflation pressure - The inflation pressure provided by the vehicle manufacturer on the Tire Information label and on the Federal Certification/VIN tag.

⚠WARNING

WHEEL SEPARATION CAN OCCUR

On first trip, torque wheel nuts at 10, 25 and 50 miles and every 50 miles during the first 200 miles thereafter, and before each trip. After winter storage, check wheel nut torque before beginning a trip. After excessive braking, check wheel nut torque.

⚠WARNING

Installation of wheels which are not compatible with the manufacturer-installed axle assembly could result in wheel separation, which can lead to property damage, serious injuries or loss of life.

⚠WARNING

Do not tow the trailer with missing wheel nuts or faulty lug bolts.

⚠WARNING

Torque wheel nuts to the wheel manufacturer's specifications. Incorrectly torqued wheel nuts can cause the wheel to separate from the wheel mounting surface during operation, causing property damage, personal injury or death.

WHEELS AND WHEEL NUT TORQUE

The axle and wheel assemblies of your RV are designed differently than those on your car. The overall size, weight and center of gravity of a recreational vehicle subject the wheels to pressures unique to trailering. During normal cornering, the tires and wheels experience a considerable amount of stress called "side-load". Trailer wheels must carry higher loads per wheel than passenger car or light truck wheels. The axles on multiple-axle trailers do not steer, and are subjected to very high side load stress whenever the trailer makes a tight turn. When you go around corners — especially tight ones — the wheels on your trailer are subjected to these strong side loads. This action tends to flex the wheel and gradually loosen the wheel nuts. Even though the materials and manufacturing processes are maximized for this type of service, the extra load stresses and flexing can cause loosening.

Proper wheel nut torque is very important to safe and dependable trailering. Although the wheel and axle systems used in your trailer are similar to those on your car or truck, they differ in several important ways. These differences require special attention to wheel nut torque both when the trailer is new and throughout the trailer's life.

It is critical that the wheels be properly torqued during the first 10 to 50 miles of operation. The wheels have been correctly torqued before leaving the factory. But settling and wearing in of components during the first few miles of operation may cause some loosening of the wheel nuts.

The wheel nut torque specification is shown on the ***Wheel Nut Torque Table*** at the end of this chapter. The values are different depending on the type of wheel installed. Always use an accurate torque wrench to tighten the wheel nuts. Before each trip and any time a wheel is replaced, be sure to tighten the wheel nuts as outlined in the following section. If a wheel is replaced, check the torque again after 10, 25 and 50 miles. If you ever notice wheel wobbling or hear a rattling sound coming from a wheel, especially at low speeds, a wheel nut may have come loose. **If you have reason to believe a wheel nut has come loose, *safely stop at the side of the road as soon as possible.*** Check all wheel nuts, and tighten to the specified torque. If wheel stud bolt threads are damaged or faulty, get professional service help. ***Do not tow the trailer with missing wheel nuts or faulty wheel stud bolts.***

If you ever have to replace lost or damaged wheel nuts, be sure the replacements match the cone angle of the originals.

WHEEL NUT TORQUE REQUIREMENTS & MAINTENANCE

Tools Required

Dial indicator or adjustable dial torque wrench
7/8" or 13/16" socket

DO NOT USE a 4-way socket or any other type of wrench, *which does not measure the actual pressure applied to the wheel nut.*
Please refer to the torque wrench manufacturer's instructions for information on correct use, storage and maintenance of your torque wrench.

Remember:

Check wheel nut torque before every trip.
Genesis Supreme RV recommends this maintenance procedure to ensure proper torque has been applied to wheel nuts before heading out on the road.

Always follow the appropriate tightening sequence ("star pattern") *as indicated in these instructions or in your axle manufacturer's owner's manual to assure proper torque.*

Torque wheel nuts in the correct stages and follow-up intervals after any wheel reinstallation. For further information on these steps, refer to the axle manufacturer's owner's manual in your Owner's Information Packet. Proper torque of wheel nuts can only be achieved by using a torque wrench and a socket.

Setting Torque Value on a Dial Indicator Wrench

1. *Make sure your indicator needle is set to "0".*
2. *As you apply clockwise pressure to the wheel nut, both needles will show the current amount of torque being applied.*
3. *When you reach your desired torque value, stop applying pressure and your indicator needle will stay at the highest torque value reached.*

Setting Torque Value on Adjustable Dial Wrench:

1. *Unlock the handle and set the dial to your desired torque value.*
2. *Lock the handle back in place.*
3. *As you apply clockwise pressure to the wheel nut, you will hear an audible "click" when the desired torque wrench value is reached. Do not apply further pressure once you hear the "click".*

⚠WARNING

Loose wheel nuts can damage the stud and/or wheel. If driven in this condition for any extended period, severe wheel damage could occur affecting the handling of your trailer.

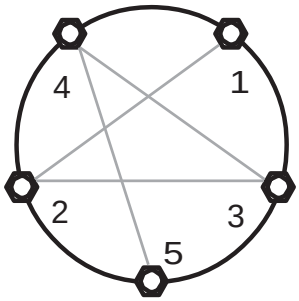
This wheel was operated with four loose wheel nuts. Note the damaged holes, and that only two nuts were holding the wheel on the axle hub.

⚠WARNING

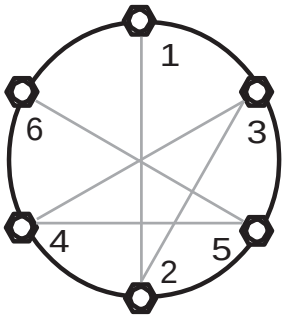
Do not attempt to repair or modify a damaged wheel. Even minor modifications can cause a dangerous failure of the wheel and result in personal injury or death.

⚠WARNING

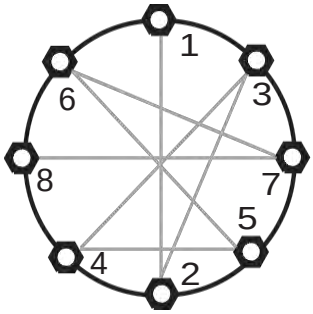
Under- or over-tightening of wheel nuts can cause the wheel to separate from the axle and could lead to property damage, serious injury or death.



5-Lug
Bolt Pattern



6-Lug
Bolt Pattern



8-Lug
Bolt Pattern

NOTE: *Use a torque wrench to tighten wheel nuts. Do not tighten with an impact wrench unless using a torque stick.*

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NOTE: *The* **maximum** *torque value for the wheel mounting studs is 120 ft.-lbs. Studs are* **Grade 8, 1/2"-20 UNF, Class 2A***.*

Wheel Nut Torquing Sequence

Pre-Trip Torquing Procedure:

1. *Set your torque wrench to the final value listed in thed* **Wheel Nut Torque Table** *at the end of this chapter.*
2. *Begin with the appropriate bolt for your wheel (12 o'clock position for 8- and 6-hole wheels and 2 o'clock position for 5-hole wheels, as illustrated) and apply torque to all wheel nuts following the star pattern indicated.*
3. *Complete the procedure on each wheel. Before moving to each new wheel, be sure to verify your preset torque wrench value.*

Torquing After Wheel Reinstallation

After removing a wheel from your RV for any reason, you must carefully follow a 2-step process:

1) Wheel Reinstallation

2) Follow-up

Wheel Reinstallation

When you reinstall a wheel, the wheel nut torque must be applied in 3 stages. This will ensure the wheel studs are centered in the wheel holes, and will help the wheel nuts maintain proper torque.

1. *Start all wheel nuts by hand.*
2. *Stage 1*

   Set your torque wrench to the 1st Stage value3 on the **Wheel Nut Torque Table***.*

   Begin with the appropriate bolt for your wheel (12 o'clock position for 8- and 6-hole wheels and 2 o'clock position for 5-hole wheels) and apply torque to all wheel nuts following the star pattern as shown in the **Wheel Nut Torquing Sequence** *illustration.*
3. *Stage 2*

   Increase your torque wrench setting to the 2nd Stage value on the **Wheel Nut Torque Table***.*

   Begin with the appropriate bolt for your wheel and apply torque to all wheel nuts following the star pattern.

   Following stage 2, the wheel can support the weight of the trailer and can be lowered off of the jack stands.
4. *Stage 3*
   Increase your torque wrench setting to Final Torque value on the **Wheel Nut Torque Table***.*

   Begin with the appropriate bolt for your wheel and apply torque to all wheel nuts following the star pattern.

Step 2) Follow-Up: Retorque after 10, 25, and 50 miles

1. *After the first 10 miles of your trip, pull your recreation vehicle off the road into a safe work area.*
2. *Set your torque wrench to the Final Torque value on the Wheel Nut Torque Table for your wheels.*
3. *Begin with the appropriate bolt for your wheels and apply torque to all lug nuts following the star pattern.*
4. *Reapply torque (at the Final Torque value for your wheels) and repeat steps 1, 2, & 3 again at 25 miles and at 50 miles of your first trip.*
5. *The follow up process is complete and you should refer to the general lug nut torque maintenance process described in "Pre-Trip Torquing Procedure".*

REPLACEMENT WHEEL REQUIREMENTS

Genesis Supreme RV installs axle systems with hubs and drums that are compatible with many wheels used in the recreational travel trailer industry that have similar or matching bolt patterns. If the original manufacturer installed equipment must be replaced, contact the replacement wheel manufacturer to ensure compatibility prior to replacement and use.

Customers replacing original equipment must ensure the replacements are compatible with the hub and drum assembly installed. This compatibility includes, but is not limited to:

- *Diameter of the hub-mounting surface*
- *Stud length and diameter*
- *Location and number of studs – Many bolt circle dimensions are available. Some vary by so little that it might be possible to attach an improper wheel that does not match the axle hub. Be sure to match your wheel to the axle hub.*
- *Center hole diameter for the wheel*
- *Wheel mounting offset from the rim center*
- *Rated capacity of the wheel – Make sure that the wheels have enough load carrying capacity and pressure rating to match the rated load of the tire(s).*
- *Offset – This is the relationship of the center line of the tire to the hub face of the axle. Take care to match any replacement wheel with the same offset wheel as originally equipped. Failure to match offset can result in reducing the load carrying capacity of your axle.*

NOTE: *The studs conform to SAE standards for* **Grade 8**.

Keep the date and mileage when you check the wheel nut torque. Note any wheel nut that has lost torque. Investigate the reason(s) if the wheel nut torque is not maintained after more than one re-torquing.

This indicates there is something wrong with the wheel nuts, nut studs, wheels and/or hubs and should be corrected.

If you ever experience a wheel separation incident, notify Genesis Supreme RV and your dealer. Seek prompt professional assistance in assessing the trailer and its gear. Keep, but don't re-use the wheels, wheel nuts and studs involved. Don't repair or service the trailer yourself.

⚠WARNING

Do not mismatch wheels and tires.

⚠WARNING

Do not paint or apply anti-seize or anti-rust materials to the hub mating surface of wheels. These materials prevent a secure metal-to-metal contact with the hub surface. Use of these materials may cause loosening of the wheel or wheel nuts, causing the wheel to separate from the axle, and may lead to property damage, serious injury or death.

- *Wheel fastener torque*
- *Wheel nut size and shape (including cone angle)*
- *The effects of any added wheel accessories that could affect proper seating of the wheel to hub surface.*

Certain tests are recommended by the manufacturers of factory-installed equipment for all wheels and rims to be installed in place of original factory equipment. Contact the wheel manufacturer to verify compatibility with the factory installed equipment prior to replacement.

Any replacement wheel must be plain metal on the surface mating to the trailer hub. There should be no paint, clear coat material, anti-seize or anti-rust coating. These materials prevent a secure metal-to-metal contact with the hub. A secure metal-to-metal contact is required for safe and complete attachment of the wheel to the hub.

The same torquing considerations apply to replacement wheels as to original equipment. If you replace wheels, try to find out the torquing specifications for the replacement wheel. In all cases, do not torque wheel nuts greater than the value listed in the **Wheel Nut Torque Table**. This is the maximum specified torque for the wheel mounting studs. The studs conform to SAE standards for Grade 8.

NOTE: The maximum air pressure rating stated on the tire information placard is for the original equipment, factory-installed tires only. Always follow the pressure recommendations stamped in the tire sidewall for any replacement tire.

Wheel Nut Torque Table			
	Steel Wheel	**Chrome-plated Steel Wheel**	**Aluminum Wheel**
1st Stage	*20-30 ft./lb.*	*20-30 ft./lb.*	*35-40 ft./lb.*
2nd Stage	*55-60 ft./lb.*	*55-60 ft./lb.*	*75-80 ft./lb.*
Final Torque	*90-95 ft./lb.*	*90-95 ft./lb.*	*120 ft./lb.*

7 / LOADING AND WEIGHING

You, as the trailer operator, are responsible for the safe operation of the trailer. A very important part of safe trailer operation is proper loading. This guide will provide you with information about the proper way to load and weigh your trailer. We'll also discuss the relationship between loading, weighing and proper tire inflation, related chassis components, your tow vehicle and towing equipment. We have also provided some safe driving and towing guidelines. There are some very important terms and concepts about weights and loading that you must understand. *Please study this section carefully* and refer to it often as you prepare your trailer for travel.

Towing a trailer will present different challenges on the highway than you may have experienced before. You should always be careful and think safety first. An accident with a tow vehicle and trailer can have much greater consequences than carelessness with a small car. Take your job as a tow vehicle driver very seriously. Learn all you can about doing the job safely and well. Balancing the load and preparing the trailer and tow vehicle are critical to safe handling.

A critical aspect of safely operating a trailer is knowing the weights involved and where they are placed. You must determine how much is being towed. You must assure that it is within the capacities of the equipment you are using. The location of the load in the trailer is critical to the way your rig will handle on the road.

There are some basic loading and towing rules that you must follow for safe towing. If a trailer doesn't tow properly when all the basic rules have been followed, the answer can be very complex. We will discuss some of the rules of safe trailering and how you can reduce the possibility of having serious towing problems like swaying or instability.

Chassis Weight Specifications and Limits

The trailer chassis was designed to carry a specific maximum weight. That weight includes everything: the chassis components, the empty trailer body as completed at the factory, all of your cargo and belongings, fuel, fresh water, waste water, propane, and anything else that might be attached to or carried in the trailer. *You must never exceed this maximum weight.* If you exceed this weight, you will change the way your trailer and/or tow vehicle handles. Tires and suspension components may be overloaded. This may lead to unsafe conditions, loss of control, and the loss of your trailer and/or tow vehicle.

Chassis weight specifications include terms that require some explanation. As we discuss loading and weighing, we'll refer to these terms. The following include definitions used by the recreational vehicle industry:

GVWR (Gross Vehicle Weight Rating) is the maximum permissible weight of the fully loaded trailer. It is the **absolute total allowable weight** on the wheels and tongue. This is the limit of the specified axles and tongue components as engineered by the trailer manufacturer. It represents the manufacturer's **maximum** loaded weight that the trailer is designed to carry. The GVWR has been determined by weighing a sample of units with the hitch weight added to the sum of the GAWRs.

UVW (Unloaded Vehicle Weight) is the weight of the trailer as manufactured at the factory. The UVW does not include cargo, fresh water, propane, factory installed options, or dealer installed accessories. UVW also includes all weight at the axles and coupler. If applicable, it also includes full generator fluids, including generator engine fuel, engine oil, and coolants. The UVW of the trailer is noted on the trailer weight placard.

GCWR (Gross Combined Weight Rating) is the total combined maximum weight specified by the tow vehicle manufacturer. It is the total weight that the tow vehicle is designed to tow and stop.

CCC (Cargo Carrying Capacity) is the maximum weight of all personal belongings: food, tools, dealer installed accessories, etc. that can be carried by your trailer. CCC is equal to GVWR minus each of the following: UVW, full fresh (potable) water weight (including water heater), and full propane gas weight.

GAWR (Gross Axle Weight Rating) means the maximum permissible loaded weight a specific axle is designed to carry when being towed. Each axle has its own GAWR. The GAWR is prescribed by the axle manufacturer for each axle. It is the lowest rated component of the axle system, including wheels and tires. The total GAWR for the trailer is GAWR per axle times the number of axles.

GTW (Gross Towed Weight) means the maximum permissible loaded weight of any towed load (trailer, car, etc.) that your tow vehicle has been designed to tow, as specified by the tow vehicle manufacturer. You cannot increase this weight by changing the trailer hitch on the tow vehicle.

Maximum Tire Load is the maximum amount of weight a tire is designed to carry when the tire is inflated according to the tire manufacturer's specifications.

You may see other weight terms and definitions in publications such as sales literature, magazines, books or on-line. Many of these terms are interchangeable, and may require some interpretation and conversion to avoid confusion. The following are several of those other terms, what they mean and how you can translate between them:

DRY WEIGHT is the weight of the trailer as it comes out of the factory with no fluids - completely empty and dry. This is the weight of the trailer as built with all standard features, and includes options normally added to the trailer by Genesis Supreme RV. **DRY WEIGHT does not** include accessories or components added by the dealer or the owner. It does not include any gasoline for the generator (if equipped), gasoline for the fuel station (if equipped), water, propane or other **CARGO**.

CARGO is anything loaded in or on the trailer that is **not** generator or fuel station gasoline, water or propane.

Subtract **DRY WEIGHT** from **GVWR** to get **PAYLOAD CAPACITY.** This figure represents the maximum amount of gasoline fuel, water, propane and other cargo which can be added to, loaded in or loaded on the trailer. **PAYLOAD** is **anything** added to the factory-bare trailer.

Fresh water weighs 8.3 lbs./gal.
Propane weighs 4.2 lbs. /gal.
Gasoline weighs 6.0 lbs. /gal.

This includes:

water
generator and fuel station gasoline
propane
food
tools
personal belongings, clothes, bedding, furnishings not installed at the factory, camping items, etc. that you load for your recreational activities; and anything not on or in the trailer when it left the factory. Any accessory or component added to the trailer by the dealer or the owner is considered “payload” and reduces the **PAYLOAD CAPACITY** by the amount of the weight of the item(s) added.

Example: If the specified payload capacity of the unit is 2200 lbs., and a dealer or owner adds accessories that weigh 600 lbs., the actual payload capacity or the amount that can safely be loaded in the trailer without overloading is now 1600 lbs.

UNLOADED VEHICLE WEIGHT (UVW) is the **DRY WEIGHT** of the trailer plus **only** the weight of generator and fuel station gasoline if the trailer is equipped with a fuel station, is equipped with a generator or can be equipped with a generator (manufactured as “generator-ready”)**.**

Subtract **UVW**, the weight of water and the weight of propane, from **GVWR** to get **CCC (Cargo Carrying Capacity).** You will see references to **CCC** on weight certification tags or in other publications.

PAYLOAD CAPACITY and **CARGO CARRYING CAPACITY** are not the same thing. Remember that the weight of generator and fuel station gasoline, water and propane are included in what is considered “cargo”.

CARRYING CAPACITY

Although all the weight and load ratings and weight definitions are important, the one you will be concerned with on a daily basis is *Cargo Carrying Capacity*. If you fill all the tanks, compartments, cabinets and other storage spaces, the trailer will probably be overloaded. Always remember that the storage compartments and facilities have been designed and positioned for convenience.

Carefully plan your loading and the items you load. Be aware of the weight of everything you load. Take all you need, but no more than you need.

Carefully plan how to distribute the items you carry so you can load correct amounts of weight from front-to-rear and side-to-side. Properly distributing the weight will help you keep within the axle and individual tire and wheel weight limits. When you load properly, the trailer and your tow vehicle will handle and respond safely, and you and your passengers will be more comfortable and confident while on the road. If you load improperly, your trailer/tow vehicle may be unsafe and/or uncomfortable to drive, and your tires may be overloaded. If the vehicle is top heavy or too heavy on one side, it can be overturned in a curve or during an emergency steering maneuver. Proper weight distribution is very important to overall stability and towing characteristics. Poor weight distribution, especially in the rear of the trailer, can cause trailer swaying or handling instability. Always include the essential things you need, but *DON'T OVERLOAD*.

HOW OVERLOADING AFFECTS YOUR TRAILER

The results of overloading can have serious consequences for safety. Too much weight on your trailer's suspension system can cause spring, shock absorber, or brake failure, handling or steering problems, irregular tire wear, tire failure or other damage. An overloaded trailer is hard to tow and hard to stop. In cases of serious overloading, brakes can fail completely, particularly on steep hills.

Overloading a trailer beyond its rated capacity, even though it may be well balanced and seem to handle fine, is a very dangerous practice. Eventually something is bound to fail with dramatic and unpleasant results. Overloading places excess strain not only on your tow vehicle causing possible failures at the hitch or in your capacity to safely bring it to a stop in an emergency, it also overloads the trailer's frame, axles, bearings and tires.

Load your trailer well below the maximum for the first tow with a new rig or while you are learning. Keep track of the weights of the individual items as you load them. When in doubt, guess high. Using a scale, adjust the load so that you have around 12% to 15% (15 to 25% for fifth-wheels) of your best estimated total weight on the hitch. Attach the trailer to the tow vehicle and note how much the rear end drops. If it looks excessive, check the tow vehicle's load capabilities.

CARGO CAPACITIES

The certification label attached to left front corner of the trailer body shows trailer and axle weight ratings, tire size and cold inflation pressures. The label indicates the vehicle's gross vehicle weight rating (GVWR). This is the most the fully loaded vehicle can safely weigh. It also states the gross axle weight rating (GAWR). This is the most a particular axle can safely weigh. If there are multiple axles, the GAWR of each axle is stated.

Cargo can be added to the trailer, up to the maximum weight specified on the label. The combined weight of the trailer and the cargo is provided as a single number. In any case, *remember that the total weight of a fully loaded vehicle cannot exceed the stated GVWR.*

Water and propane also need to be considered. The weight of the fully filled propane containers is considered part of the weight of the RV before it is loaded with cargo and is not considered part of the usable cargo load. Water however, is a *cargo* weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh over 800 pounds. Consider this if your travel plans require you to carry water. Remember to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the trailer. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed near or on the floor and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale.

PLACING THE LOAD

There are many different trailer designs but the loading rules are generally the same no matter what type of trailer you have. Typically, RV trailers fall into two categories: ramp trailers which are the ones commonly known as “toyboxes” or “toyhaulers”, and non-ramp or conventional style trailers. Ramp trailers combine RV living quarters with a large cargo area. All of the loading rules apply to both styles of trailer, but there are a couple of special loading rules for ramp trailers. When you load a ramp trailer, you should place approximately 60% of the total cargo weight either over or slightly forward of the center line of the axle assembly. On two-axle trailers this would be a point midway between the axles, and on three-axle trailers this point would be over the center axle. Load vehicles and heavy cargo items in the cargo area as far forward as possible.

Big, heavy items should be loaded where they can be securely tied down. Everything should be securely tied down but that is not always possible. Start with top heavy items if you have them. That’s usually a good place to start because you must have plenty of room available to properly tie them down. Tying them straight down is not secure enough. They need to be tied off at several angles or they could fall over in an abrupt change in speed or direction. You need room to accomplish this. Smaller items can be used to fill the spaces around them later.

Once you have the heavy items located, check the tongue weight. If the load is radically off, make the changes necessary to get close. The smaller items can be loaded in such a way that they balance out the load. They should be located so that they will stay put. Placing them next to items that have already been tied down helps, but your main concern should be to not upset the trailer balance.

Don't forget you can also get one side of a trailer a lot heavier than the other without a little planning. This can cause tire failures from overloading. This can also cause a very serious problem when cornering, even causing the trailer to turn over in a sudden turn.

Top heavy loads can cause problems not only in cornering but also in hard braking. They have a tendency to make the trailer "dive" in hard braking conditions. This suddenly increases tongue weight and can decrease tow vehicle front axle loading just when you need steering and brakes the most. Center top heavy items or arrange the remainder of the load to act as a counter weight to minimize this effect.

Never place heavy objects on add-on devices hung on the rear bumper or placed across the tongue frame. This places heavy objects where they will dramatically affect handling in corners or bumps. Heavy weights placed well behind the axle can also reduce stability. A bicycle may be fine to hang out in back, but not a motorcycle.

Use good common sense and to always allow plenty of margin for safety.

How To Weigh Your Loaded Trailer

Though it is not necessary to weigh your trailer every time you load it, it is important to verify that you have proper balance and have not exceeded any ratings. Once you have a feel for it, a good estimate is usually close enough unless you are loading to near your trailer's maximum limits.

Find a public weigh station. Locations of weigh stations or scales can be found in your local telephone directory. Many truck stops, grain elevators, moving and storage companies, gravel pits, and recycling centers have weigh stations that may be able to help you. Be sure your trailer is loaded as you intend for travel. Generally, the procedure will be similar to the following. There are several types of scales in use, and you should follow the attendant's instructions for positioning your trailer for the type of scale. The following procedure assumes a single platform scale is being used.

1. Pull the trailer onto the scales so that the trailer is centered on the platform and the rear wheels of the tow vehicle are off the scale platform and the trailer is centered on the platform. Leave the trailer hitched to the tow vehicle. Take a reading. This weight is the axle weight. This weight must not be more than the total of the Gross Axle Weight Ratings for all of the trailer axles.
2. If necessary, back the trailer until it can be unhitched from the tow vehicle and the landing gear or tongue jack can be lowered onto the scale platform. Unhitch the trailer from the tow vehicle, lower the landing gear or tongue so the trailer is level, and drive the tow vehicle off the scale platform. The trailer alone should be sitting on the scale platform. Take a reading. This weight is the total trailer weight. This weight must not be more than the Gross Vehicle Weight Rating (GVWR) or the GTW (Gross Towed Weight) as specified by the tow vehicle manufacturer.
3. Refer to the trailer weight information placard typically located on the left front side of the trailer. The Gross Weight limits of the axles and the Gross Vehicle Weight limit are printed on these forms. Compare the readings on the scale to the values printed on the placard. **If any reading is higher that the printed rating, you must adjust or remove the excess weight.**
4. To determine the left and/or right side weights, center only the left side trailer wheels on the scale platform. The trailer wheels on the other side will be off the scale platform. Take a reading. Write down this reading as “Left side weight”. Subtract this reading from the total axle weight. The result is the weight on the opposite side. Write down this value as “Right side weight”. This weight will help you determine whether one side or the other is overloaded.
5. To determine the Gross Combined Weight, center both the trailer and tow vehicle on the scale platform. Take a reading. Compare the weight to the tow vehicle GCWR specification as listed on the two vehicle weight ratings placard.

Now That You Have Weighed Your Trailer

The information you collect when you weigh your trailer will help you load your trailer properly so that you don't overload the trailer chassis components, tires, or your tow vehicle.

If you find a difference in the weights on one side of the trailer as compared to weights on the other side, tires, wheels, brakes, springs and other components on the heavier side could be overloaded, even though the total axle load is within the GAWR. It is important that you redistribute the load to avoid component failure, as well as to improve the handling characteristics of the trailer. With the actual weights in hand, you can now compare them against the GAWR, GVWR and tire capacities. The actual weights should also be used to help determine the proper air pressure for the tires. Redistribute the load to avoid component failure, as well as to improve the handling characteristics of the trailer.

Determining The Correct Pin/Tongue Weight Percentage

You must determine the amount of weight on the trailer coupler or fifth-wheel pin. Your trailer is the most stable when towing if the weight on the coupler is between 9% and 15% of the total loaded trailer weight, or between 15% and 25% for fifth-wheels. With these weights correct, the possibility of trailer sway is reduced. Sway is usually caused by a trailer that is "tail heavy." The worksheet on the following page will help you determine the correct tongue/pin weights. Rearrange your load until the percentages fall into the correct range.

Owner Notes

Loading & Weighing Worksheet

Determining the Pin or Tongue Weight Percentage

Trailer GVWR _____ **lbs. (kg)**

Trailer tongue load rating _____ **lbs. (kg)**

(See the weight tag attached to the front roadside of the trailer.)

Tow Vehicle GVWR _____ **lbs. (kg)**

Tow Vehicle Front GAWR _____ **lbs. (kg)**

Tow Vehicle Rear GAWR _____ **lbs. (kg)**

(For these values, see the tow vehicle build tag or the weight tag attached to the front door pillar. Write the values in the spaces for your reference.)

1. Take Scale Reading 1 with the trailer fully loaded with cargo, water and propane. The entire trailer should be on the scale with the tow vehicle disconnected and off the scale. The tongue jack or 5th-wheel landing gear should be extended to support the front of the trailer.

Scale reading 1 _____ **lbs. (kg)** **Loaded Trailer Weight**

2. Take Scale Reading 2 after moving the the trailer so that only its axles are on the scale. Be sure to keep the trailer level. Keep the landing gear up on 5th-wheels.

Scale reading 2 _____ **lbs. (kg)** **Loaded Trailer Axle(s) Weight**

3. Calculate the pin/tongue weight percentage.

Scale reading 1 _____ **lbs. (kg)**

Minus Scale reading 2 _____ **lbs. (kg)**

equals (=) **Loaded pin/tongue weight** _____ **lbs. (kg)** This should not exceed the pin/tongue weight rating

Loaded pin/tongue weight divided by Scale Reading 1 times 100 = _____ **% tongue weight**

Tongue weight should be between 15% and 25% for 5th-wheels and between 9% and 15% for travel trailers.

8 / SAFE DRIVING AND TOWING

YOUR RESPONSIBILITIES AS A DRIVER

Towing a trailer has a responsibility similar to properly driving your car. It is a skill that has to be developed and a responsibility that shouldn't be taken lightly. If you're towing a travel trailer for the first time, drive only when traffic is light. Avoid uncomfortable traffic conditions. Get a friend with this type of experience to help you learn. Don't be embarrassed to ask questions or just stop, park and relax if you need to. Learn what it takes to keep from ruining your transmission when pulling heavy loads up a hill or burning up your brakes going down hills. The hardest skill to learn is knowing when *not* to tow a trailer. Your confidence will grow as your skills increase.

State laws in the United States and Mexico, and provincial laws in Canada are different concerning towing requirements and limits. Always check the laws in the areas where you anticipate traveling.

DRIVING AND VEHICLE CONTROL

Towing your trailer will be different from driving your family car or truck. Your trailer/tow vehicle combination is heavier, longer, wider and higher than a typical car or truck you may be accustomed to driving. You will have to adjust or learn new driving techniques to safely operate your rig. Keep this in mind as you become familiar with your trailer. New trailer owners should take special care to learn the driving and handling characteristics of your vehicle in safe and familiar surroundings. Drive defensively at all times. *DO NOT* drive if you are tired, have been drinking alcoholic beverages, are under the influence of any controlled substance, or are taking any medication or drugs that may impair your sight, hearing, judgment or coordination. Pull off the road and park in a safe area until you can drive safely.

SAFE DRIVING TECHNIQUES

We want every Genesis Supreme RV owner to be a safe and courteous driver. The following rules will help you develop the skills for safe trailer towing:

- *Travel very slowly if you are new to trailer towing, or if you have a new trailer or tow vehicle, until you have learned the handling and stopping characteristics of the tow vehicle/trailer combination. Practice turning, stopping, and backing in a secluded place away from traffic. Large, empty parking lots are good, but get permission first.*
- *Do not permit a driver who is inexperienced at towing to operate your tow vehicle/trailer combination without your direct supervision. Remember — it's slow speed for beginners.*
- *Tow at moderate speeds allowing for adverse highway and wind conditions. Even under the best of conditions, do not exceed the posted speed limit for trucks and trailers. As speed increases, trailer sway stability, stopping ability, and the ability to make emergency maneuvers are greatly reduced.*
- *Reduce speed before starting down hills — even short ones — and avoid heavy tow vehicle braking on downgrades. Trailer tow stability is reduced when traveling downhill, and is further reduced by tow vehicle braking.*
- *Slow down before entering turns and avoid heavy braking in turns. Trailer stability is reduced in turns, and the weight of the trailer tends to push the back of the tow vehicle outward in turns, which can cause loss of control and "jackknifing".*
- *Check and monitor wind conditions in the areas where you expect to travel. If it is windy or passing vehicles are affecting the trailer, slow down until full, comfortable control can be maintained. Trailer sway can be started by crosswinds and the wind from passing vehicles, especially trucks and buses passing from the rear. Reduced speed improves trailer stability and handling.*
- *Avoid quick steering movements that can start the trailer swaying.*

MANEUVERING IN TRAFFIC

A few hours of practice in a large empty parking lot will make pulling your trailer much easier. Mark out two corners for both left and right turns. Use these corners to practice turns, backing up and parking. As you practice, note how the tracks made by the trailer wheels are distinctly different from those made by your tow vehicle. Study these tracks as you perfect your skills. Be sure your tow vehicle is equipped with side-mounted rear-view mirrors. They are required in most states, and are a must for maximum visibility.

Be cautious when maneuvering to allow for the length and width of your rig. Always allow room to corner and to change lanes. The rear-view mirrors mounted on your tow vehicle will help you keep aware of your position and the position of other vehicles and/or obstructions near you. Watch the mirrors. Learn to use them to view objects around you and your position on the road.

Remember that your trailer/tow vehicle is heavier than a car or your truck by itself, making your towing combination less maneuverable and harder to stop. Also, because of the greater side surface area of the trailer, it is more easily affected by cross winds. Allow extra distances for passing and stopping, and drive at a moderate speed, particularly in traffic and in gusty wind conditions.

Be aware of the extra height of your trailer. Check for low hanging tree branches or other obstructions whenever you drive or park. Avoid low overhangs when pulling in for service or fuel. Always check overhead clearances of overpasses and bridges. This is especially important if you drive with overhead vents open and because of roof racks or TV/radio/satellite antennas mounted on the trailer roof.

Always plan ahead. When approaching traffic lights let off the gas, and let the tow vehicle and trailer slow down. Avoid slamming on the brakes at the last second. When approaching dips and depressions in the road, slow down. Resume your normal speed only after you are sure the trailer wheels have cleared the dip. When you travel on rough roads, slow down and try to avoid potholes. Quick steering maneuvers at high speeds could cause unpredictable trailer reactions, and may cause furniture and items in the trailer to move around causing interior damage.

On freeways or expressways, choose your lane and stay in it! Always maintain sufficient space between you and the vehicle in front of you. For every 10 miles per hour of speed, allow at least double the length of the tow vehicle and trailer. For example, if you are traveling 60 miles per hour, allow six times the length of your rig. This may seem like a lot of distance, but at 60 miles per hour, you are covering 88 feet per second. You will need all of that distance to stop your rig under control. If your tow vehicle and trailer rig is 50 feet long, as an example, you have about four seconds to react and stop. *You cannot stop that fast.* You need to test your brakes and learn your rig's stopping capability. There are many variables involved, such as your brake control settings, loading, and your tow vehicle. You must learn how they all work together. And remember that you will need much more time and distance to overtake and pass another vehicle.

Despite the best hitch, whenever a large bus or truck overtakes and passes your rig, you will feel some instability. The air being pushed ahead of the large vehicle pushes the rear of your trailer to one side, and then pushes the front. You may even feel the air pressure rock your tow vehicle. You will naturally want to apply the brakes or correct the steering. Do not apply the brakes, and just maintain the steering in a straight line. The slight swaying of your trailer will last for a very short time, and abrupt braking or steering corrections may cause real swaying problems that will be more difficult to handle. There is no need to panic — just watch your mirrors and adjust your position in the lane to give yourself more space between your rig and the passing vehicle. The effects of the air pressure wave are lessened if there is a greater distance between the two vehicles. If you feel a little "tail wagging", lightly apply the trailer brakes with the controller only. We'll cover more serious swaying later in this section.

On two-lane roads, other vehicles will collect behind you. It is both courteous and sensible to signal, pull onto the shoulder or turnout and let them pass. In some places, the law requires you to pull over and let other vehicles pass. Check your mirrors often, and when you see traffic behind you, pull over.

On slippery pavement, avoid using the engine to help slow down as this may cause the tow vehicle wheels to skid. On icy pavement, drive slowly. If you feel the tow vehicle skidding,

gently apply the *trailer brakes only* with the controller. This will help bring the tow vehicle and trailer back into a straight line. And remember that chains on the tow vehicle do not help the trailer wheels.

If you get into mud or sand, let the momentum carry the rig through. Apply power very gently, and use as little as possible. Stay in any tracks of any vehicle(s) ahead of you. Keep the tow vehicle in the highest possible gear. If you do get stuck, tow the rig out without unhitching. *Disconnect the weight-distribution spring bars before towing in this situation.*

After traveling some distance, pull over and check the heat at the trailer wheel hubs. Use one of the inexpensive infrared thermometer guns available from tool suppliers. The hub temperature should be nearly the same at each hub. If you notice a temperature at any wheel that is significantly higher than the others, the brakes may not be adjusted correctly, or there may be another problem with the brake system or wheel bearings. Check the tire pressures and temperatures all around. A hot tire usually indicates low air pressure in that tire.

The brake controller is activated when you apply the tow vehicle brakes. This sends an electrical current to the trailer brakes. You can also apply the trailer brakes independently from the tow vehicle by operating the brake controller by hand. Under normal conditions, you should not operate the trailer brakes by hand, but you have the option when it is needed. See the operating instructions for your brake controller for more information.

Remember that a temporary increase in loading occurs during dips or bumps in the road. A severe dip causes increased weight to suddenly be placed on hitch, axles and tires. Though hitch manufacturers take this into consideration in their designs, an overloaded or old, cracked and rusted hitch or tongue can be suddenly stressed beyond capacity, causing it to fail. Watch for bumps and large dips in the road and try to slow down for them.

Backing Up and Parking

Backing a trailer can be a challenge even for experienced drivers. It takes practice to perfect the necessary skills. Improper or careless backing can result in possible injury or, more likely, expensive damage. Of course, if you can avoid backing up altogether – arrive in daylight or request a pull-through site – you'll be much better off. Just remember to take your time. Be patient, and try not to get upset if you don't successfully back in on the first attempt. Remember, it's not as easy as it looks – even for experienced drivers.

We discussed how your trailering rig is much larger than the car or truck you normally drive. Terrain and road surfaces, visibility, and even driver fatigue can affect your ability to back and park your trailer.

Backing your trailer can be more than just getting it into a site at a campground or RV park. There can be many other backing situations that require close driver attention and backing skills. Consider some of these other situations:

Backing into an RV storage space

Driving into a dead-end street by mistake

A fuel pump is not located where you expect it or need it

Entering a parking lot that does not have a pull-through lane

Entering a fast-food restaurant pull-through lane with height or width limitations

Unexpected low overhead or bridge weight limitations while driving on local roads.

Some backing situations require you to be more careful and attentive:

Backing into an RV site to avoid campers, other RVs, shrubs, trees, picnic tables and utility hookups

Anytime children are present is a big one. Children always assume if they can see you, then you can see them.

Backing up at night means reduced visibility. It's difficult to estimate distance in low light or darkness.

Backing up in gas stations or supermarket parking lots. When an RV pulls up and stops, other vehicles may not be visible in your mirrors when they pull up right in back of you.

The most important factors to backing up safely include paying close attention, being patient, and watching and listening for anything unexpected. Avoid pulling into commercial, shopping or industrial areas while towing if you're unfamiliar with the layout. You may not know how to get out without your having to back up. Sometimes calling ahead to your destination before you arrive can save time and effort. Ask about specific directions and parking limitations. If you are unable to call ahead, when you arrive, park out on the street and then walk in to investigate.

You will often be backing and parking your rig in a limited-size space. Before you know if it will fit, you have to know how big it is. Minimize surprises by spending some time to collect the following information:

The total length of the tow vehicle and trailer from the front bumper of the tow vehicle to the rear bumper of the trailer;

Total width of the rig, including all mirrors on the tow vehicle;

Total height, including all roof-mounted accessories such as A/C units, roof vents, satellite dish and TV antennas, storage boxes and CB and radio antennas.

Whenever possible, pull into parking situations that allow you to "pull through" thus avoiding backing. If your situation allows it, before backing up, get out and walk around the location where the RV is to go. Check to see if awnings or slideouts will fit safely when extended, and look overhead for tree limbs or low wires. Then look down and around for sloping sites, tree trunks and tree limbs, utility hookups, picnic tables, large rocks, railroad ties, wooden posts, cables and fences often used to separate camping sites, or any other objects that could damage the trailer.

Eliminate distractions by requesting passengers to refrain from talking while you are backing. Turn off radios and TVs, etc., and other distraction sources of noise. When backing, just remember to slow

down and take your time. If the trailer doesn't go where you want it to, just stop. Concentrate on the back of the trailer. Remember that you have poor visibility to the rear. Someone standing safely outside at the rear of the trailer to guide you will help you back the trailer safely. Use the rear-view mirrors to watch what is happening behind you, and keep an eye on both sides of the tow vehicle. Continually monitor the location of the front mirrors and front corners, as well as the rear of the RV to avoid obstacles.

Follow these tips for backing:

1. *Align the trailer and tow vehicle in a straight line, if possible. Also, backing to the left is easier because your rear visibility is better.*
2. *Start backing slowly. With your hand at the bottom of the steering wheel, turn the wheel in the direction you want the rear of the trailer to go. Watch in the mirrors or out the window until the rear of the trailer is pointing in the desired direction. Note that the rear of the tow vehicle will go in the opposite direction of the trailer. Be careful as the trailer/tow vehicle angle changes. You can quickly get into a jackknifed position that could cause damage to the tow vehicle or trailer.*
3. *When the trailer is pointing in the desired direction, start turning the steering wheel in the opposite direction. This will cause the tow vehicle to follow the trailer in an arc.*
4. *Straighten the tow vehicle and trailer by turning the steering wheel more sharply. When you get more into a straight line, straighten the wheel. Adjust your position as necessary.*
5. *If you don't make it on the first try, just pull forward to straighten things out, and start over.*

When you park, look around and observe any poles or other obstructions beyond the curb or past the wheel track. Remember that the front and rear portions of the trailer swing wider than the tow vehicle's body. On level ground, always shoft the tow vehicle

transmission to P (automatic transmissions) or low or reverse (manual transmissions), and set the parking brake.

Try to avoid parking on a grade or hill. If parking on a grade is unavoidable, follow these steps:

1. *Apply and hold the tow vehicle brakes.*
2. *Have an assistant place wheel chocks under the trailer wheels.*
3. *When the wheel chocks are in place and the assistant is clear of the vehicles, release the tow vehicle brakes until the chocks absorb the load.*
4. *Apply the tow vehicle parking brake.*
5. *Shift the tow vehicle transmission to PARK (automatic) or low or reverse (manual). Don't shift into PARK until the trailer wheels are chocked and the tow vehicle parking brake is set. If you do, the weight of the vehicle and trailer may put so much strain on the transmission that you will not be able to shift it out of PARK.*

When starting after being parked on a grade:

1. *Apply and hold the tow vehicle brakes.*
2. *Start the engine in PARK (automatic) or neutral (manual) with the parking brake set.*
3. *Shift into gear and release the tow vehicle parking brake.*
4. *Release the tow vehicle brakes and move the trailer until the chocks are free.*
5. *Apply and hold the tow vehicle brakes and have an assistant remove the chocks.*

CONTROLLING TRAILER SWAY OR FISHTAILING

WARNING

Excessive sway or fishtailing of your trailer can lead to the rollover of the trailer and tow vehicle. Serious injury or death can occur. It is important that you read and understand the information in this section.

Sway or fishtailing is the sideways action of a trailer caused by external forces. Trailer sway can occur at any time. It cannot be prevented completely, but you can learn how to control your rig if and when it happens. It often occurs in response to strong winds or crosswinds or when passed by or passing a large truck and trailer on a downhill.

Trailer sway or fishtailing is primarily influenced by these factors:

Equipment: When hitched together, the trailer and tow vehicle must be level. The tires of both the trailer and tow vehicle should be in good condition and inflated to the recommended pressure as noted on the tires.

Your trailer brakes should work in synchronization with your tow vehicle brakes. Never use your tow vehicle brakes alone to stop the combined load. Your brake controller must be set up according to the manufacturer's specifications to ensure proper synchronization between the tow vehicle and the trailer. Additionally, you may have to make small adjustments occasionally to accommodate changing loads and driving conditions.

We recommend that you install a friction sway damper or hitch with built-in sway control. Please consult with your RV dealer regarding this equipment, as Genesis Supreme RV does not provide sway control devices.

Tongue Weight: The tongue weight should be between 12% and 15% (15% to 25% for 5th-wheels) of the total travel trailer weight. See Chapter 7 of this Owner's Guide regarding the proper loading and weighing of your trailer.

Driving: This is the most important factor. The tendency for the trailer to sway increases as your speed increases. Obey all speed limits and reduce speed during bad weather or windy conditions.

Several different forces working together can cause swaying. Speed and wind are two of these forces, so you should *never drive faster* to try and eliminate swaying or any other problem.

Instability can also be caused by road conditions, other vehicles and — most importantly — incorrect or inadequate driver control inputs. If you make abrupt braking or steering changes, travel too fast for road and traffic conditions, ignore the mechanical components of your rig, including tire pressures, your towing situation will be more susceptible to instability and swaying.

Corrective measures: If you find yourself in a situation where the trailer is beginning to sway or otherwise feels unstable, here are some techniques that will help:

- *The moment your trailer shows any tendency to sway, you should slow down immediately by removing your foot from the accelerator. Avoid strong or hard tow vehicle braking unless there is a danger of collision. Reduce speed gradually whenever possible. Apply the brakes gently and progressively. A properly adjusted brake controller will apply the trailer brakes first. If you can do so safely, use the brake hand controller to gradually apply the trailer brakes. This will help keep the vehicles aligned. If you apply the tow vehicle brakes only, trailer stability will be reduced, and skidding the tow vehicle tires can cause loss of control and jackknifing.*
- *Practice using the brake hand controller on a deserted parking lot. Don't wait until an emergency occurs to learn how to use it. The brake hand controller should be located where it is easily accessible.*
- *Do not jam on the brakes or attempt to accelerate your way out of the swaying. Both actions make the situation worse and could cause severe injury or death.*

- *Steer as little as possible while maintaining control of the rig. Because of natural reaction lag time, quick steering movements to counter trailer sway will actually cause increased sway and loss of control. Keep both hands on the wheel. Hold the wheel as straight as possible until stability is regained.*
- *Once the swaying is under control, stop as soon as possible. Check tire pressures and cargo weight distribution. Look for any signs of mechanical failure. Travel at reduced speeds that permit full control until the problem can be identified and corrected.*

Driving In Windy Conditions

Wind can create hazardous conditions when towing a trailer. Wind can cause your rig to oscillate or suddenly pull to one side. Thirty mile an hour crosswinds can blow you off the road if there is a sudden gust. For example: A hard gust of wind hits your rig from the left. Your rig pitches to the right and moves towards right. In order to stay on the road you steer to the left. With the rig leaning to the right, the centrifugal force generated by steering left can be the added ingredient that puts you on your side, or worse yet, down the side of a ravine. The only way to lower the risk of traveling in these conditions is to *slow down*. The safest way is not to drive in extremely windy conditions. Park it until it's safe to continue.

EXTREME DRIVING CONDITIONS

Driving on winding or mountain roads is not difficult if done with care. When driving in mountainous areas, look for and obey highway signs concerning grades and curves. Your driving experience when pulling and stopping a trailer on mountain roads will be very different from what you experience on level ground.

Mountain driving or desert temperatures can put extreme demands on the drive train components of your tow vehicle. Observe proper vehicle speeds when ascending or descending hills and always operate in the proper transmission range.

Downshift on hills to avoid overheating or excessive engine loads. Downshift when descending grades. Engine compression and friction will help control vehicle speed, and relieve some of the strain on the brakes. Shift the transmission to a lower gear before starting down the grade. The engine braking effect can help control downhill speed, and will help ease the load on the service brakes.

Downhill driving puts extra strain on many drivetrain components of your tow vehicle. The brakes can become overloaded and overheated when used for downhill slowing. Brake fade will occur if the brakes overheat.

Rule of thumb: Use the same lowest gear going down as it took to go up the hill. Crest the hill in the lower gear. Watch your speed and pay attention to any caution signs along the road. You can also use the trailer brake controller to help control downhill speed, and ease the load on the tow vehicle brakes.

When descending grades, never use a higher gear than was used to climb the same or similar grade. Select a gear that will keep you at a safe speed with minimal brake application. NEVER ride the brakes when descending a grade. Riding the brakes will cause excessive brake heat resulting in brake fade and leaving you with little or no stopping power.

Some tow vehicle engine manufacturers specify both maximum and minimum engine RPM in any transmission gear. With some engines, either over-revving or lugging the engine can cause serious engine damage. Become familiar with the operating limits of your tow vehicle engine. When ascending grades, shift to a

lower gear when engine speed drops to the engine manufacturer's specified minimum RPM and keep the engine speed in the RPM mid-range of the selected transmission gear.

Driving in hot weather, and especially in hilly or mountainous areas, requires different driving techniques than driving on flat ground or in cooler weather. Be sure tire pressures are correct. Tire overheating can cause tread delamination and tire failure. It is especially important to watch engine coolant temperature under these conditions. *If the tow vehicle engine temperature indicator indicates overheating:*

- *Reduce road speed and shift to the next lower gear to keep the engine running at higher RPM, but not over-revving. In most cases, this will stabilize the engine temperature.*
- *If the temperature indicator continues to indicate overheating, safely pull over to the side of the road (use turnouts on mountain roads) and stop. Shift the transmission into* **P** *(PARK). Increase engine speed until the temperature drops down into the normal range.*
- *If the temperature indicator does not begin to show normal engine temperature, shut down the engine and allow it to cool. After the engine is cooled down, check the coolant level in the reservoir and if necessary, add the proper mixture of coolant solution.*

IF YOU GET A FLAT TIRE . . .

Tire changing instructions are in the *Care and Maintenance* chapter of this Owner's Guide.

Your trailer is equipped with quality tires made by a major tire manufacturer. Under normal circumstances and with proper maintenance, you should receive thousands of miles of trouble-free service. But you may get a flat tire.

A sudden tire failure ("blowout") will usually be accompanied by a sudden reduction in stability of your rig. Depending on which tire is involved, the steering could feel a little "mushy" or you may feel a little swaying. A tire that goes flat slowly will not cause a sudden unstable feeling. It will be more gradual, and you could wind up driving a long distance before you notice the tire is flat. *Running a flat tire is very dangerous.* The increased friction will causethe tire to overheat and possibly ignite, causing

a fire that may be very difficult to extinguish. Knowing this, keep an eye on your tires by checking the rear-view mirrors while driving. When you stop, check the tires by whacking them on the tread surface with a short piece of pipe or broom handle. Check the tire temperature. Pay attention to other drivers that may give you hand signals or otherwise try to communicate with you that something is wrong. *If you see smoke coming from your wheels, or if someone is signaling to you, stop immediately in as safe a way possible,* and check the situation.

If you experience a sudden tire failure:

- **Avoid heavy braking application; gradually decrease speed**
- **Hold the steering wheel firmly and move carefully to a safe place off the road**
- **Park on a firm, level spot if possible**
- **Turn off the vehicle ignition**
- **Turn on the vehicle hazard warning flasher system**

If possible, summon professional help through your auto club road service (i.e., AAA and similar services), or local tire service facility. *Do not attempt to change the tire yourself.* A lifting jack is not supplied with the trailer.

ALTERING YOUR TRAILER

Many RV owners like to add personal touches to their units. But there is a difference between changing how your trailer looks and how it handles and performs. If you consider any type of alteration to your trailer, be sure you understand how the alteration will change or affect the stability, handling, vehicle response, and overall performance and safety of your trailer or your tow vehicle/trailer combination. An improper alteration that affects vehicle handling or response can cause a vehicle crash, and any improper alteration to the electrical or propane systems can cause a fire and can endanger your trailer and its occupants. *Never alter the trailer chassis.* Any of the following alterations to the chassis may limit the chassis warranty, and may limit your warranty coverage of other trailer components or systems:

- **alterations affecting the axles, brakes, and/or suspension components**
- **any alteration to the main frame components**
- **any alteration to the coupler or pin box components**
- **the addition of cargo racks or platforms to any part of the trailer**
- **the addition of any lifting or height increasing device**
- **use of a "gooseneck" style hitch device**

NOTICE

Fifth-wheel hitch extenders (also called "gooseneck tongue adapters") are not to be used with Genesis Supreme RV fifth-wheel trailers. Use of a hitch extending device may cause structural damage to the trailer pin box assembly or chassis. Damage caused by the use of a hitch extending device may affect your warranty coverage under the Genesis Supreme RV Limited Warranty.

MAINTENANCE

It is your responsibility as the trailer owner/operator to properly maintain your trailer and its systems. Consult this Owner's Guide and any operating and maintenance guides included in your Owner's Information Packet for service and maintenance information. Keep your trailer properly maintained.

WARNING DEVICES

Your trailer is equipped with carbon monoxide and propane gas detection warning devices. These devices were discussed in a previous chapter. Check them before a trip for proper operation. A disabled warning device cannot warn you or your occupants of a life-threatening danger. Keep them working and respond to them quickly.

9 / AXLES, SUSPENSION AND BRAKES

AXLES

The axle weight ratings are listed on the DOT placards and tags located on the front left side of the trailer. The axles are designed to last the life of the trailer without service, except for lubrication of the wheel bearing, adjustment and inspection of the shackles, shackle links and springs. A complete guide to axle maintenance requirements and procedures is in your Owner's Information Packet. Never weld on or near the axles.

The axles are a hollow-tube design and may be cambered by the axle manufacturer. Cambering means that the axle has a slight precision bend that compensates for the trailer load. You may notice a slight outward tilt at the top of the wheels when the trailer is unloaded. This is caused by the cambering. As the trailer is loaded, the axle will straighten and the wheels will be straight up and down. If you continue to load the trailer beyond the axle load ratings, the axle may bend the other way, and the wheels may appear to have an inward tilt. If you see the tops of your wheels tilting inward, this is a sign of axle overload.

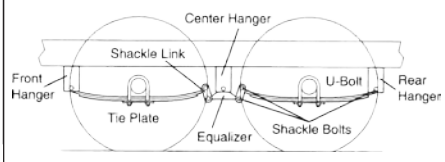
NOTICE

Do not lift or support the trailer on any part of the axle or suspension system. Lifting the trailer at the axle tube can cause permanent damage to the axle, which will not be covered under the warranty.

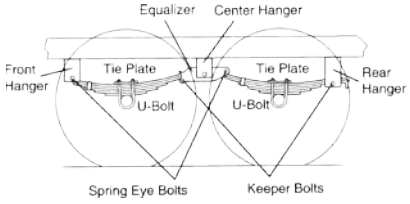
SUSPENSION SYSTEM

Most Genesis Supreme RV trailers use double-eye leaf spring suspension. An equalizer assembly between the springs transfers the load from one axle to the other while the trailer is moving, and helps to smooth out variations in the road surface.

Bump stops may be attached to some trailer frames to limit the upward travel of the axle(s). Please note that the total axle vertical travel is only about 1-1/4". Keep this in mind when traveling. Although you may not feel irregularities in the road because of your tow vehicle's longer springs, the trailer's stiffer suspension doesn't absorb bumps and potholes the same way. The springs on your tow vehicle are considerably longer and have a much greater total vertical travel. This is what helps give your tow vehicle a smooth ride. Under certain conditions, you may see your trailer "bounce" more than you expect.



Underslung Axle



Overslung Axle

Generally, this is normal. If you travel in areas where road conditions are severe, slow down to reduce the possibility of damage to your suspension system, the trailer structure or items inside the trailer.

ELECTRIC BRAKES

Your trailer is equipped with electric brakes. They are similar to the drum brakes in many trucks and cars. The basic difference is that rather than using hydraulic pressure for activation, your trailer brakes are actuated by an electromagnet.

A controller (not supplied with the trailer) that is or will be installed in your tow vehicle controls the amount of electrical current sent to the trailer brake assemblies. Several types of controllers are currently available. You can choose whichever type controller best suits your needs and budget.

NOTE: The brake controller is not supplied with the trailer. If you have not chosen and installed a brake controller in your tow vehicle, see your trailer dealer.

No matter which type of controller you use, under most towing conditions, the trailer brakes are operated by 12- volts DC from the tow vehicle electrical system. The 7-way power cord carries the electrical power to the trailer brakes, and the cord must be connected at all times while towing. The diagram shows a typical brake system electrical schematic.

The controller in the tow vehicle cab can be adjusted to affect the rate of application of the trailer brakes. This adjustment does not affect the maximum braking capacity of the brakes. It should be adjusted so that the tow vehicle and trailer brakes are balanced, and provide a safe, comfortable stop. The trailer brakes should usually just slightly lead the tow vehicle brakes. Always adjust the controller according to the manufacturer's instructions. When it is properly adjusted, you should feel no sensation of the trailer pushing the tow vehicle or of the trailer pulling the tow vehicle during a stop. See the axle operation and maintenance guide in your Owner's Information Packet for details regarding brake and controller synchronization.

NOTE: Check brake shoe adjustment regularly. They should be in the same adjustment as the tow vehicle brakes. Loose, worn, or damaged wheel bearings are a common cause of "grabby" brakes.

The breakaway switch is a special trailer brake control that operates the trailer brakes in case the trailer ever becomes uncoupled while towing. Power for the breakaway system comes from the trailer batteries and is supplied to the brakes through the switch. The switch is located on the A-frame coupler (pin box on fifth-wheels). It has a steel lanyard which must be fastened to a rigid part of the tow vehicle frame or hitch assembly. Should the trailer become unhitched, the switch is activated when the cable pulls the pin out of the switch, applying the trailer brakes. Towing the trailer with a defective breakaway switch is both dangerous and illegal in most places.

Test the operation of the breakaway switch periodically. To insure safe operation, the cable must be secured properly to a rigid part of the tow vehicle frame or to a non-removable part of the hitch on the tow vehicle. Do not loop the breakaway switch lanyard over the hitch ball or to any removable part of the hitch assembly. ***Never use the breakaway switch for parking, or remove the pin from the switch.*** This will apply the trailer brakes and run down the trailer batteries, and possibly damage the switch contacts and brake shoe magnets. When disconnecting the trailer from the tow vehicle, remove the lanyard from the tow vehicle.

The magnets, brake shoes and related components on the trailer axles are what actually stop your trailer. The magnets and brake shoes are "wear" items meaning that over time they wear out and you have to replace them as a part of normal maintenance. Please note that trailer brakes do not have the same life expectancy as the brakes on your car or truck. They will typically last 10,000 - 20,000 miles depending on your towing conditions. Certain conditions will shorten the life of the brake components. If you travel mostly on paved roads and operate the brakes properly with a properly adjusted controller, you can expect the maximum life. If you travel mostly on dirt roads, in sand or in other harsh road conditions, or if your controller is not set up properly you can expect shorter brake component life. Your driving technique will also significantly impact the life of your brakes. Hard stops from high speeds will shorten brake life.

⚠ CAUTION

Be sure the trailer batteries are charged before traveling, and that the charge line from the tow vehicle is connected. Proper operation of the brakes by the breakaway switch requires fully charged batteries, or connection a power source equivalent to or greater than an automotive type 12-volt, 12-amp-hour wet-cell battery.

⚠ WARNING

Do not loop the breakaway switch lanyard over the hitch ball or to any removable part of the hitch assembly.

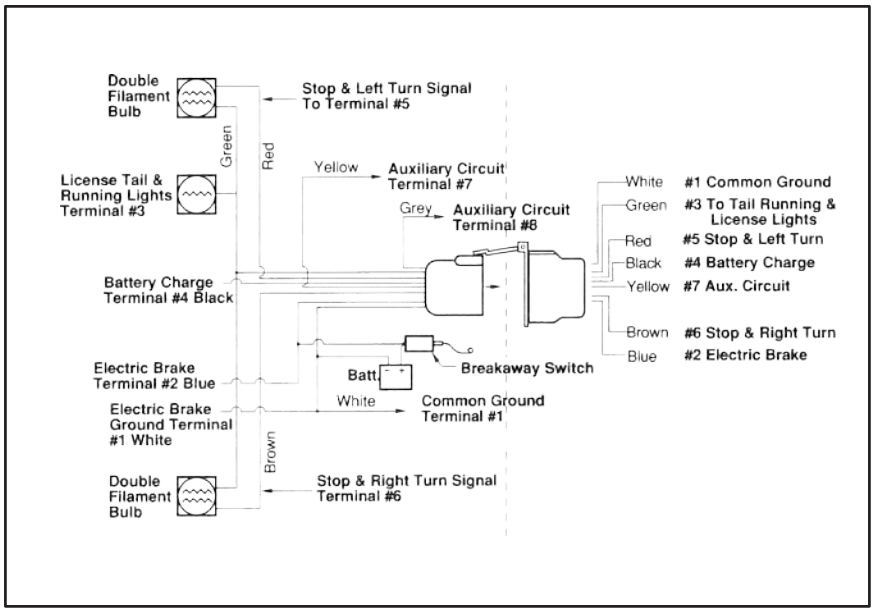
⚠ CAUTION

Do not use the breakaway switch as a parking brake. The trailer batteries will be discharged rapidly and the brake magnets may be damaged.

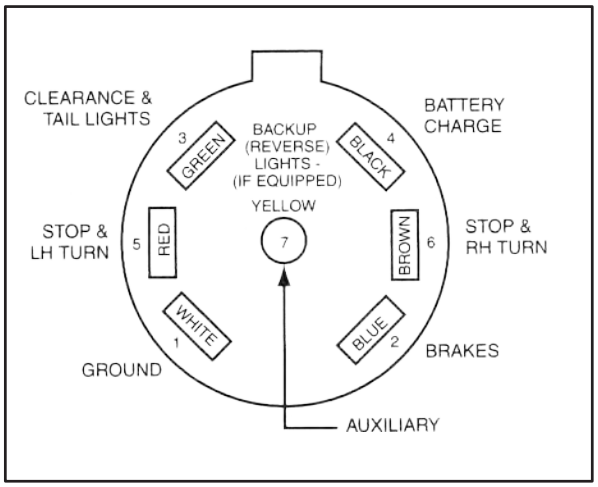
NOTICE

Failure to disconnect the unit from the 7-way tow vehicle cord prior to testing the breakaway switch may cause damage to the brake controller.

Also note that *the trailer brakes are not self-adjusting* the way most car and truck brakes are. The trailer brakes will need periodic adjustment. Please follow the recommended inspection, adjustment and service intervals as outlined in the axle operation and maintenance guide.



Typical trailer brake system schematic



7-Pin Wiring
(View is looking into the tow vehicle-mounted connector)

10 / TRAVEL

Since your dealer probably had your new trailer hitched up to your tow vehicle when you took delivery of the trailer, your first task as a new owner will be to unhitch and stabilize it at your home or first camp site. So that's where we'll start, along with some information about setup and stabilizing equipment and techniques. We'll go on to preparing for travel and hitching up later in the chapter.

Landing Legs, Tongue and Stabilizer Jacks

Landing Legs (5th-Wheels only)

The landing legs of a 5th-wheel trailer are used for positioning the trailer during hitching and unhitching from the to tow vehicle and to support the trailer during camping and storage. They level the trailer front-to-rear to provide comfort for the occupants, and to allow the refrigerator to operate properly. *They are not designed to support the full weight of the trailer to change tires or for servicing the trailer. Do not use the landing legs to raise the tires off the ground.*

The landing legs are made up of steel tubes that slide inside of each other, either a hand crank or electric motor drive that turns gears and a drive mechanism in each leg to extend or retract the legs, foot pads, pull pins and related hardware.

⚠WARNING

Do not exceed the individual leg or system load ratings.

Do not use the legs to raise the trailer to change a tire. The legs are not designed to support the trailer's weight during tire changes or servicing.

Never drop the trailer off the hitch.

Tongue Jack (Conventional Trailers only)

The tongue jack of a conventional trailer is used for positioning the trailer during hitching and unhitching from the tow vehicle and to support the trailer during camping and storage. It helps level the trailer front-to-rear to provide comfort for the occupants, and to allow the refrigerator to operate properly. *It is not designed to support the full weight of the trailer to change tires or for servicing the trailer. Do not use the tonguejack to raise the tires off the ground.*

The tongue jack is made up of steel tubes that slide inside of each other, either a hand crank or electric motor drive that turns gears and a drive mechanism to extend or retract the jack, a foot pad and related hardware.

⚠WARNING

Do not exceed the tongue jack load rating.

Do not use the tongue jack to raise the trailer to change a tire. The tongue jack is not designed to support the trailer's weight during tire changes or servicing.

Never drop the trailer off the hitch.

⚠CAUTION

Do not attempt to raise or place all of the trailer's weight on the stabilizer jacks.

Tip! When you select your site, pay attention to where the utility connections are located. Try to position the trailer so that these hookups are within reach of your cords and hoses.

⚠CAUTION

Be sure you have adequate lighting to safely operate all equipment and vehicles.

⚠WARNING

Never stand between the tow vehicle and the trailer. Unexpected vehicle movement could pin a person between the tow vehicle and the trailer.

⚠CAUTION

Do not attempt to raise the trailer on one landing gear only. Uneven distribution of weight on the landing gear jacks will make the trailer unstable and may damage the overloaded jack.

⚠CAUTION

The crank handle will rotate when the electric drive motor is operated. Remove the crank handle before using the electric motor to prevent injury.

Stabilzer Jacks

Stabilizer jacks are located at the corners of the trailer frame. They are designed to stabilize the trailer after it has been leveled at the camp site. *They are not designed to level the trailer or to support the full weight of the trailer to change tires or for servicing the trailer. Do not use the stabilizer jacks to raise the tires off the ground.* Use them to give the trailer a firm setting and to keep it from "jouncing" when you move around inside. If you use after-market stabilizer jacks, they must be placed under the chassis frame rails only.

Unhitching Fifth Wheel (full unhitch)

Always try to park your trailer as level as possible. When you are unable to find a reasonably level place, you should use leveling blocks under the trailer wheels before unhitching. An accessory visual level available at RV supply stores can be installed on the front/side of the trailer to assist leveling.

1. When you have located your intended parking space, look over the site carefully. Check above the site and the approach to the site to be sure there are no overhead obstacles that might damage the trailer or that might be damaged by it. Check the side clearance to be sure the slide-outs (if equipped) can be extended without interference. Ensure the ground is not soft or uneven and will support the weight of the trailer on the stabilizing jacks or other support devices. Ensure there are no potential hazards outside where the emergency exit window will be.

2. Drive the trailer onto the site. Use commercial plastic or solid wood leveling blocks if necessary to level the trailer. **Do not use rocks, concrete blocks or pavers, bricks, or particle board as leveling blocks**. Place the blocks on the ground forward of the wheels, and tow the trailer onto the blocks. **Chock the trailer wheels so there is no wheel movement.**

3. Extend the landing gear legs: Insert the hand crank into the alignment tube until the end engages the cross shaft. **For electric drive or hydraulic jacks, do not insert the crank handle.** Turn the crank clockwise, or press the switch (electric drive) in the **DOWN** position until the middle tube is halfway to the ground. This will optimize the overlap of all tubes, maximizing trailer stability.

   Pull the lock pin on the landing gear leg and allow the drop tube to drop to the ground. Adjust the tube up or down so you can re-engage or re-pin in the nearest adjustment hole.

Repeat for the other side. Begin to extend the landing gear to raise the trailer until the lock pins engage. If the lock pins do not engage simultaneously, the ground is not level in the landing gear area. Under these circumstances, use solid wood or plastic wedges to even the load of the landing gear legs.

Raise the unlocked drop tube until the pin locks. Slide the wedge under the foot. If it does not fit, raise the drop tube to the next lock position. Kick the wedge into place firmly.

NOTE: If the parking spot is on asphalt on a very hot day or on dirt and/or gravel, a block of wood under each landing gear leg can be used to spread the load and reduce the possibility of the leg sinking into the surface.

4. Extend the landing gear legs until there is a small gap between the hitch and trailer pin box.

5. Lower the truck tailgate. Remove all obstacles in the truck bed. Disconnect the 7-way cord and the breakaway switch from the truck. Lay the cables over the tailgate.

6. Unlock the 5th-wheel hitch keeper. Slowly drive the truck forward until the king pin disengages from the hitch. Stop the truck. If the trailer does not disengage, the king pin and hitch may be binding. Move the truck about one-quarter inch front or back to free the king pin.

7. When the king pin is free, move the truck away.

8. Raise or lower the landing gears checking the front to back level with a bubble level. Remove and stow the crank handle (manual operation).

9. Lower the rear stabilizer jacks. On soft ground, place a load spreader board under the jacks. Lower the jacks to the ground and firm them up.

NOTE: Setting up the trailer without a complete unhitch allows you to locate the trailer at a site when you want to leave the trailer attached to the truck. Use steps 1 through 3 and steps 8 and 9 above. When extending the landing gear legs, avoid using the landing gear to lift or raise the truck. Since you will not be disconnecting the king pin from the truck hitch, the truck will be an additional load on the landing gear. If you cannot level the trailer reasonably well without lifting the truck, you will need to reposition the trailer on a more level surface.

NOTICE

At either full extension or full retraction, you may hear a clicking noise from the motor. This is the action of the slip clutch built into the drive motor to protect it against overload or to prevent over-extension or over-retraction.

Release the switch as soon as you hear this noise to prevent damage to the motor or bevel gears at the top of the legs. If you hear this noise when the legs are neither fully extended nor fully retracted, one or both of the legs may be overloaded and you will have to shift items around in the trailer or remove items from the trailer.

Continuing to operate the legs overloaded will lead to premature wear and poor performance of the legs.

⚠CAUTION

Do not attempt to raise the trailer on one landing gear only. Uneven distribution of weight on the landing gear jacks will make the trailer unstable and may damage the overloaded jack.

⚠CAUTION

Do not use the stabilizer jack for any other purpose. Use only the stock handle supplied. Do not use a cheater bar on the handle.

⚠WARNING

When lowering the landing gear and stabilizing jacks, keep all body parts away from the bottom of the gear and/or jack.

NOTICE

Never move the trailer with the landing gear legs down.

⚠WARNING

After-market stabilizer stands must be placed only under chassis frame rails. Stabilizer jacks should not be placed at extreme corners of the frame. Locating stabilizers in these locations can cause slide-room damage if leveling blocks were to shift or settle. Do not attempt to level, raise or otherwise place all of the weight of the unit on the stabilizer jacks. Do not use stabilizer jacks for tire changing.

Once the trailer is stabilized, you can continue with setting up the trailer by connecting to site facilities, extending slide-outs, etc. according to your personal preferences and needs. There is no particular order to set up procedures, and with practice you will find the order that is the most efficient for your situation.

Conventional Trailer Unhitching & Leveling

Always try to park your trailer as level as possible. When you are unable to find a reasonably level place, you should use leveling blocks under the trailer wheels before unhitching. An accessory visual level available at RV supply stores can be installed on the front/side of the trailer to assist leveling.

1. When you have located your intended parking space, look over the site carefully. Check above the site and the approach to the site to be sure there are no overhead obstacles that might damage the trailer or that might be damaged by it. Check the side clearance to be sure the slide-outs (if equipped) can be extended without interference. Ensure the ground is not soft or uneven and will support the weight of the trailer on the stabilizing jacks or other support devices. Ensure there are no potential hazards outside where the emergency exit window will be.

2. Drive the trailer onto the site. Use commercial plastic or solid wood leveling blocks if necessary to level the trailer. **Do not use rocks, concrete blocks or pavers, bricks, or particle board as leveling blocks**. Place the blocks on the ground forward of the wheels, and tow the trailer onto the blocks. **Chock the trailer wheels so there is no wheel movement.**

3. Put the foot pad on the tongue jack post, and turn the tongue jack crank clockwise (or press the switch to **EXTEND**) to lower the tongue jack nearly to the ground. If the ground surface is soft or may not be able to fully support the weight of the trailer tongue, place a sturdy 2" x 6" wood block under the jack post foot pad to support the jack post. The block should rest level and remain stable.

4. Disconnect the breakaway switch lanyard and safety chains. Unplug the 7-way cord from the tow vehicle.

5. Unlatch the hitch ball lock.

6. Turn the tongue jack clockwise (or press switch to **EXTEND**) to lower the jack post until the trailer tongue rises up and off the tow vehicle hitch ball. When the tongue is completely off the ball, drive the tow vehicle forward out of the way.

7. Check the level of the trailer with a carpenter's level both crosswise and lengthwise on the trailer floor. Raise or lower the tongue with the jack until the trailer is reasonably level front to rear.

Tip! When you select your site, pay attention to where the utility connections are located. Try to position the trailer so that these hookups are within reach of your cords and hoses.

⚠WARNING

Never stand between the tow vehicle and the trailer. Unexpected vehicle movement could pin a person between the tow vehicle and the trailer.

NOTICE

Never move the trailer with the tongue jack down and supporting the trailer tongue.

Put a small round bubble level inside the refrigerator to help determine proper level for refrigerator operation.

⚠CAUTION

Do not attempt to raise or place all of the trailer's weight on the stabilizer jacks.

⚠WARNING

Do not attempt to use the stabilizer jacks or the landing gear jacks (electric or hydraulic) to change a trailer tire.

WARNING

After-market stabilizer stands must be placed only under chassis frame rails. Stabilizer jacks should not be placed at extreme corners of the frame. Locating stabilizers in these locations can cause slide-room damage if leveling blocks were to shift or settle. Do not attempt to level, raise or otherwise place all of the weight of the unit on the stabilizer jacks.

8. Lower stabilizers, if desired. After stabilizing the trailer, be sure the trailer frame is not twisted, buckled, or stressed. Check that all doors and windows operate freely and do not bind.

Once the trailer is stabilized, you can continue with setting up the trailer by connecting to site facilities, extending slide-outs, etc. according to your personal preferences and needs. Although there are no rules about setting up, usually you'll connect to the electrical service first so you can have light when needed, or operate other electrical power needs. With practice you will find the order that is the most efficient for your situation.

The Entry Step

The entry steps make it easy to enter and exit your trailer. There are a few things that you should know to be safe and to keep the steps operating the way they should.

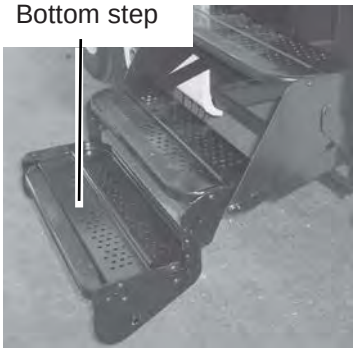
The steps consist of several elements that fold over each other to store compactly under the trailer body. There may be up to four step elements depending on trailer model. They all operate the same, as shown below (4-element step shown).

Extending the entry step

1. Grasp and pull up and out on the release handle under the top of the step assembly. Pull step assembly out from trailer body. Grasp and wiggle the step to be sure it is completely extended and locked in position. (Step is shown partially extended.)

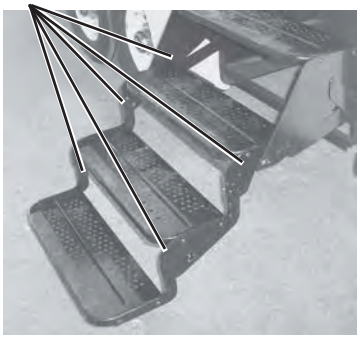
2. Rotate the step elements out and downward.

Bottom step



3. Fold the bottom step down. Be sure bottom step is unfolded completely.

PINCH / AMPUTATION HAZARDS



4. Reverse the procedure to retract. Be sure the step assembly is secure.

⚠WARNING

PINCH / AMPUTATION HAZARD
Keep fingers, feet and other body parts away from the step hinges when lowering or raising the entry step. The hinges form a "scissor"-like device and can cause serious injury to or amputation of fingers or toes.

The steps will become a routine item in your daily life with your trailer. But there are some safety precautions that you should be aware of that will help you use the steps safely and keep them working for the life of the trailer.

- **Remember that the entry steps are like any other stairs. Use the same caution when going in and out of your trailer that you would on any other stairway. Use the entry assist bar/grab handle.**
- **The steps may be hot, wet, slippery, dirty or in some other condition that may be potentially hazardous. Check the condition of the steps before entering or exiting your trailer.**
- **There may be sharp machined edges on some parts of the step mechanism. Be careful when extending or retracting the steps. Keep your fingers and toes away from the hinge elements at the sides of the steps.**
- **Be sure the step areas are well lit. Avoid entering or exiting the trailer at night or in conditions of poor visibility without good lighting. Turn on the porch/scare lights.**
- **Do not move the trailer with the steps extended. The step could be damaged from hitting rocks, trees, posts, etc. and may not be able to be retracted. It may also be broken in a way that is not visible and fail the next time you need to use it.**
- **Although the steps are strong and capable of supporting normal foot traffic, they are not infinitely strong and may fail under extreme loads.**
- **Inspect the steps before every trip. Look for cracked or bent parts or obvious damage. If any damage is found, have the step repaired before using it.**
- **Keep the step clean. Wash off oil, grease, wax, or other slippery substances. Clean off ice and snow accumulations, and dirt and sand accumulations.**

PREPARING THE TRAILER FOR TRAVEL

1. Pack up the trailer. As you become familiar with your traveling needs, you can develop checklists to use to remind you as you pack. Be sure to follow the loading guidelines in Chapter 7.

2. Do a walk-around inside the trailer. Check these items:

- ☐ All cabinets closed tightly.
- ☐ All interior sliding door travel locks are in place.
- ☐ Raise and lock blinds to keep them from swinging and causing damage.
- ☐ Be sure emergency escape windows are secure.
- ☐ Close and latch all windows, and close roof vents.
- ☐ Secure fold-down beds/lounges and collapsible tables.
- ☐ Secure ALL loose items: bunk ladders, freestanding furniture, small appliances, food and housekeeping items, TVs and entertainment equipment, etc. Retract and lock TV attachment arms (if equipped).
- ☐ Close all drawers. Tug on them to make sure.
- ☐ Be sure all doors near slide-outs are closed.
- ☐ Move chairs or other furniture/equipment away from the walls.

  NOTE: If you expect to travel on bad roads, turn the dinette table over and move the chairs to the front.
- ☐ Retract all slide-outs (if equipped).
- ☐ Retract TV antenna and/or satellite dish (if equipped).
- ☐ Turn off range and oven controls and be sure all pilots are off. Close all faucets, and turn all appliance switches OFF.
- ☐ Turn off water pump.

3. Do a walk-around outside the trailer:

- ☐ Retract and lock all awnings (if equipped).
- ☐ Disconnect all electric, water and waste connections (if connected). Stow all cables and hoses.

- ☐ Close and lock all outside compartment doors (except propane compartment).
- ☐ Clear all obstacles under the trailer.
- ☐ Retract stabilizer jacks, and remove and stow all portable jacks/blocks.
- ☐ Check tire pressures (see Chapter 6).
- ☐ Check wheel nut torque (see Chapter 6).
- ☐ Retract entry steps.
- ☐ Close, latch and lock rear and side cargo doors (if equipped)
- ☐ Close and lock entry door (handle and dead bolt).

NOTE: Keep the trailer wheels chocked until hitching is completed.

HITCHING UP

Hitching your trailer to your tow vehicle will become routine with experience. Make it a habit to examine all hitch components before hitching the trailer. If you have a conventional ball hitch, check for cracked or bent parts, cracked welds, deformed or stripped bolts. Inspect the spring bars and chains. Be sure the ball is tight and well lubricated.

Check the trailer tongue for cracks. Be sure the ball locking device works freely. Inspect the safety chains. If you find a defect in any hitch component, correct it before towing the trailer.

If you have a fifth-wheel trailer, check all truck-mounted hitch components. Check for worn, cracked, or bent parts. Be sure the locking device works properly. Inspect the pin box assembly on the trailer. Check the king pin. If you find any defective components, repair or replace them before towing. Be sure all moving parts of the hitch are well lubricated.

Hitching Up Fifth Wheel

1. **Chock the trailer wheels so there is no wheel movement.**
2. Extend the 5th-wheel landing gear legs and raise the king pin to the appropriate hitch height.
3. Lower the tow vehicle (truck) tailgate and remove any obstacles in the truck bed. Be sure the trailer king pin will clear the truck bed.
4. Open and lock the jaws of the hitch (not required on some hitches). Position the hitch level to give a clear view of the hitch and king pin.
5. Back the truck so that the king pin is directly in front of the mouth of the 5th wheel hitch. Stop and check that the tailgate will not hit the trailer and that the king pin is even with or slightly below the top of the hitch plate.
6. Lay the 7-way power cord and the breakaway switch cable over the truck to keep them clear of the truck and to make connection easier.
7. Insert the hand crank into the alignment tube until the end engages the cross shaft (manual operation). **For electric drive or hydraulic jacks, do not insert the crank handle.**
8. Turn the crank counterclockwise (or press the switch **UP**) until the trailer king pin is lined up with the tow vehicle hitch.
9. Back the truck into position until the king pin locks into the hitch jaws. Some hitches require manually locking the jaws. Install all locking pins on the hitch plate lever.
10. Secure the breakaway switch cable to a secure attachment point on the tow vehicle. Make sure the cable is free and will not bind against the truck or any equipment in the truck bed, especially during turns. Make sure the pin in the breakaway switch is securely in place.
11. Connect the 7-way power cord to the tow vehicle receptacle.
12. Check the running lights on the trailer and tow vehicle for proper operation: brake lights, taillights, clearance lights, turn signals.
13. Raise the trailer landing gear legs an inch or two and do a short "pull test" to make sure the hitch is secure. If everything is okay, completely raise the landing gears legs.
14. Remove (or disengage) the pull pin and raise the drop tube, re-pinning it in the highest position. Middle tube is halfway to the ground.

⚠CAUTION

Do not attempt to raise the trailer on one landing gear only. Uneven distribution of weight on the landing gear jacks will make the trailer unstable and may damage the overloaded jack.

An assistant outside can help you align the tow vehicle and trailer.

⚠WARNING

Never stand between the tow vehicle and the trailer. Unexpected vehicle movement could pin a person between the tow vehicle and the trailer.

⚠CAUTION

Do not attempt to raise the trailer on one landing gear only. Uneven distribution of weight on the landing gear jacks will make the trailer unstable and may damage the overloaded jack.

5th-Wheel Breakaway Switch

15. Fully retract the legs so that the foot pad is higher than the lowest point of the trailer, to prevent dragging.
16. Remove and stow the crank handle (manual operation).
17. Remove and stow the wheel chocks. If possible, move the rig ahead about 50 feet and test the trailer brakes and lights. Check the ground for forgotten objects.
18. Check inside the trailer to be sure that everything is stored away, vents and windows are closed, and doors and drawers are closed.
19. Be sure entry door is locked and steps are retracted.
20. Regularly check tire pressures, hub temperatures, and wheel nut torque while under way.

CURT ROTA-FLEX™ PIN BOX *(IF EQUIPPED)*

NOTICE

Altering the pin box in any manner may void the pin box warranty.

The Curt Rota-Flex™ Pin Box system will help eliminate excessive wear and tear on the tow vehicle and trailer.

It significantly reduces fore-to-aft trailer movement and vibration. The rubberized torsion compound absorbs motion and vibration caused by road shock.

The system is fully adjustable in most cases and maintains the original equipment king pin location.

HITCHING PROCEDURE FOR CONVENTIONAL TRAILERS

Hitch ball size: 2-5/16”

Before attempting to hitch up your trailer, read the instructions provided by the manufacturer of the hitch. Your hitch must be able to accept a 2-5/16” ball. The following instructions apply in most cases. If the instructions provided with your hitch are different from these instructions, follow those of the hitch manufacturer:

NOTICE

If you tow using a weight distributing hitch, the spring bars MUST be disconnected when towing off-road. Weight distributing hitches are not designed for operation on unlevel surfaces. Failure to disconnect the spring bars when towing off-road may result in damage to the tongue of the trailer.

1. **Chock the trailer wheels so there is no wheel movement.**
2. Turn the tongue jack crank clockwise. This will extend the jack and raise the tongue and coupler. Raise the tongue sufficiently to clear the hitch ball on the tow vehicle.
3. Back the tow vehicle until the hitch ball is under the hitch ball socket. If you are working alone, a backing aid mirror may be helpful.
4. The coupler latch locking lever on the tongue should be fully open. Lower the tongue jack until the ball is firmly seated in the socket. Close the coupler latch and secure it with a locking pin or bolt.

5. Raise the tow vehicle and trailer with the tongue jack high enough to allow room to install the hitch spring bars (if using a weight distributing hitch).
6. Attach the spring bars according to the hitch manufacturer's instructions.
7. After adjusting the spring bars, retract the tongue jack completely. Note that the trailer must be relatively level front to back. Tilt in either direction must be kept to an absolute minimum. Having the front lower than the rear reduces towing stability on tandem axle trailers.
8. Install the sway control system according to the manufacturer's instructions (if using sway control).
9. Connect all safety chains. Safety chains are extremely important, and as a trailer owner, it is your responsibility to be familiar with these devices and their correct use. The hitch on your tow vehicle must be equipped with two chain attachment eyes, on each side of the vehicle's centerline. Install the chains by threading each one through its attachment eye and hooking it back on itself. Adjust each chain length so that it is as short as possible, but still permits full "jackknife" turns without becoming tight. Both chains should be the same length and crossed under the trailer's tongue to hold the tongue off the ground if the trailer accidentally becomes uncoupled.
10. Connect the 7-way power cord to the tow vehicle receptacle, and the breakaway switch lanyard to a non- removable part of the hitch or the tow vehicle chassis.
11. Check the running lights on the trailer and tow vehicle for proper operation: brake lights, taillights, clearance lights, turn signals.
12. Completely raise the coupler jack and jack wheel (if equipped).
13. Remove and stow the wheel chocks. If possible, move the rig ahead about 50 feet and test the trailer brakes and lights. Check the ground for forgotten objects.
14. Check inside the trailer to be sure that everything is stored away, vents and windows are closed, and doors and drawers are closed.
15. Be sure entry door is locked and steps are retracted.
16. Regularly check tire pressures, hub temperatures, and wheel nut torque while under way.

⚠WARNING

Follow the instructions of the hitch manufacturer for adjusting the weight distributing hitch. Overtightening of hitch spring bars will reduce cornering and stopping ability as well as stability.

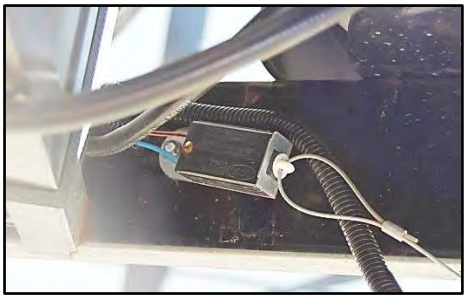
⚠WARNING

Never attach safety chains to the hitch bar or any removable part of the hitch.

Simple hitching aids are available from RV accessory suppliers that make it easier to align the coupler and hitch ball without leaving the driver's seat.

⚠WARNING

Never attach the breakaway switch lanyard to the hitch bar or any removable part of the hitch.



Breakaway Switch

Electrical Hookup (see Chapter 12)

Before connecting to the electrical supply, check the supply rating. Be sure it is 110- to 125-volt single phase AC for 30-amp service or 2-phase 220 to 240-volt AC (two 110 to 120-volt legs) for 50-amp service.

1. Be sure the site power source breakers are OFF (both legs on 50-amp service).
2. If the site power source breakers are not accessible, turn OFF the main breakers inside the trailer.
3. Insert the plug of the cord into the site source receptacle, seating the connector squarely and completely.
4. Turn site source breakers ON.
5. Turn trailer main breakers ON.

To disconnect:

1. Turn trailer main breakers OFF.

   OR

   Turn site source breakers OFF.
2. Pull the plug end of the cord straight out of the source receptacle.
3. Coil and stow the shore power cord.

⚠ CAUTION

The fresh water plumbing can be damaged from high water pressure. Use a water pressure regulator to reduce water pressure at the city water hookup.

Fresh Water Hookup (see Chapter 13)

The city water system is connected through a potable water hose to a hookup on the exterior wall of the trailer. Since campground water systems have varying pressures, a pressure regulator **MUST** be used to reduce the city water pressure to the trailer (see below).

To connect to the city water system:

1. Set the water pump switch to OFF.
2. Pull out the fresh water hose.
3. Turn on the site water supply and allow clean water to flow for a few seconds or until the water is clean and clear. Turn off the site supply valve and connect the fresh water hose to the supply.
4. Turn on the site supply valve.

WASTE WATER/SEWER HOOKUP (SEE CHAPTER 14)

During self-containment, the sewer line is securely capped to prevent leakage of waste material onto the ground or pavement. Do not pull the holding tank knife valves open when the protective cap is installed on the pipe. Always drain the tank into an acceptable sewer inlet or dump station.

Drain the holding tanks only when they are at least 3/4-full. If necessary, fill the tanks with water to 3/4-full. This provides sufficient liquid to allow complete flushing of waste material into the sewer line.

Whenever possible, drain the tanks before traveling. Waste water and sewage in the holding tanks reduce the carrying capacity of the trailer, and there's no sense driving around with it.

During extended hookups, waste materials will build up in the tank and cause serious plugging if the tank valves are left open. Keep the valves closed until the tanks are 3/4-full, then dump into the sewage system. When not connected to a sewage system, keep the protective cap in place on the drain line fitting.

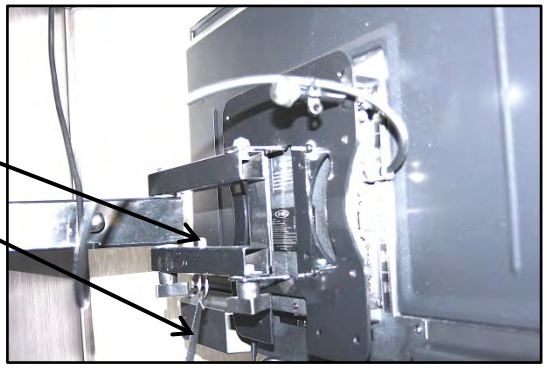
To dump the holding tanks:

1. Turn the outlet cap counterclockwise to remove it.
2. Attach the sewer hose to the holding tank outlet by turning clockwise, locking the tabs on the outlet.
3. Place the other end of the sewer hose into an approved dump station inlet. Push it far enough into the opening to be secure. Adapters may be required between the line and the inlet. Arrange the hose so it slopes evenly to the sewer inlet. Avoid sharp bends.
4. Open the black tank termination valve (the larger one) and drain. Grasp the valve handle firmly and slide the valve open with a quick, steady pull. Allow enough time for the tank to drain completely. Rinse and flush the tank through the toilet. When the tank is empty, push the valve handle back in to close the valve. Run enough water (up to five gallons) into the tank to cover the bottom. This will help to break up solids and reduce "pyramiding" of solid wastes.

5. To drain the gray water tank, open the gray tank termination valve (the smaller one) and drain. Drain the gray tank last to aid in flushing the outlets and hose. When the tank is empty, push the valve handle back in to close the valve.
6. Disconnect sewer hose, reinstall termination cap on the outlet.
7. Rinse out the sewer hose with fresh water and remove the sewer hose from the dump station.
8. Replace the sewer or dump station covers, and store the sewer hose and fittings.

Interior Set Up

1. Check the inside of the trailer for any open doors, drawers or furniture that might block the operation of the slide-outs.
2. Make sure there are no obstacles on the outside and extend the slide-outs (if equipped).
3. If not connected to city water, turn the water pump switch on the monitor panel to ON. Open both hot and cold faucets to bleed air from the lines. Make sure water heater is full and turn on the water heater.
4. Make sure oven and range controls are off. Open the propane gas main valve.
5. Operate the appliances as desired.
6. When TVs are positioned as desired, it's a good idea to replace the restraining cable/strap/pin (as equipped). In case of any accidental trailer movement, this will help keep TVs from falling, swinging or otherwise moving and causing damage or injury.



Before You Leave Your Site

- ☐ Make sure all cabinets are closed, travel locks where installed are in place, and interior doors, sliding doors and drawers are closed.
- ☐ Turn off range and oven controls and turn off oven pilot.
- ☐ Turn off all vents and fans and close vents.
- ☐ Turn off fresh water pump.
- ☐ Turn off climate control system.
- ☐ Turn off water heater.
- ☐ Turn off all appliances and interior lights.
- ☐ Retract TV antenna.
- ☐ Retract awnings and set travel locks.
- ☐ Position furniture to prevent damage from retraction of the slide-outs. Retract slide-outs.
- ☐ Position and stow all loose-loaded items such as furniture, TVs, electronic devices and components, food, tools, supplies, etc.
- ☐ Raise and lock all blinds.
- ☐ Close all propane gas cylinder main valve(s).
- ☐ Drain waste tanks.
- ☐ If connected, turn off the site circuit breakers. Disconnect the shore power cord and stow it in the compartment.
- ☐ Drain the waste holding tanks. Wear gloves to protect your hands while handling the waste system. If you are not situated at a site with sewer connections, drive the trailer to a dump facility and dump the tanks.
- ☐ If connected, turn off the site water valve. Loosen the water connector at the supply valve to reduce pressure, then disconnect the hose pressure regulator from the valve. Disconnect the hose from the city water inlet on the trailer. Coil and store the water hose.
- ☐ Retract the entry steps.
- ☐ Check the roof and under the trailer for any obstructions. Check the campsite for any forgotten items and for obstacles before moving the trailer.
- ☐ Close and lock exterior compartment doors, and entry door. Give them a tug to be sure.
- ☐ Hitch up the trailer as outlined in **"Hitching Up"** section.
- ☐ Check trailer wheel nut torque, and adjust if necessary.

Owner Notes

11 / 12-VOLT ELECTRICAL SYSTEM

The trailer 12-volt system includes components that operate on electrical power from the tow vehicle engine alternator, a converter/charger, or the trailer battery bank. "House" electrical components such as the lights and water pump are supplied by the house battery bank. The house battery bank may consist of only one battery or several batteries connected together. The battery bank is charged by a) the converter/charger when the trailer is connected to 120-volt ("shore") power or when the generator (if equipped) is running; b) the tow vehicle engine alternator while the tow vehicle engine is running and the 7-way cord is connected or c) the optional solar panel system (if installed).

Power for the trailer exterior 12-volt DC system is provided by the tow vehicle through the 7-way power cord. This system powers the trailer running lights, brake lights, turn signals, backup lights (if equipped), and brakes. The 7-way power cord also provides a common ground and a 12-volt charge line from the tow vehicle alternator to charge the trailer batteries.

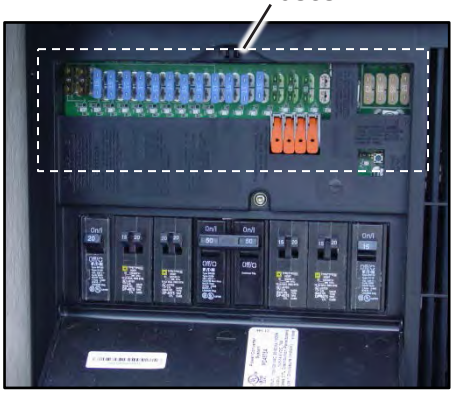
The trailer interior 12-volt DC system operates 12-volt motors, pumps, 12-volt appliances, interior lighting, landing gear, furnace, slide-outs, etc. The battery bank also provides power to the breakaway switch to apply the trailer brakes if the trailer ever becomes uncoupled from the tow vehicle.

Power from the battery bank, tow vehicle alternator and/or converter is routed to the main fuse panel. From the main fuse panel, power is supplied to the various circuits in the trailer. The circuits are listed on a label attached to the distribution panel door usually located below the refrigerator.

BATTERIES

The batteries and charging system are the heart of the 12-volt DC system. When the trailer is not connected to shore power, or if the generator (if equipped) is not running, most power needs are supplied by the batteries. If the batteries are low, all sorts of problems can occur. It is very important to maintain the batteries in a full state of charge or monitor their charge state. The converter/charger system will help you manage your electrical

NOTE: The 12-volt battery is not supplied with the trailer by Genesis Supreme RV. You must purchase the battery separately.



Converter/charger/distribution panel Location and configuration may differ according to model/floorplan.

⚠WARNING

Do not install fuses with amperage ratings greater than that specified on the fuse panel or fuse holder label.

requirements and charging needs. When the trailer is not connected to shore power or you are not running the generator (if equipped), be energy efficient. Turn off lights and appliances when they are not being used. Later in this chapter we'll discuss power management and give you some worksheets and charts to help you manage your 12-volt power needs.

Under low voltage, fuses and circuit breakers can blow without a short circuit condition. The refrigerator control system requires at least 10.5 volts and will shut down even with propane supplied, potentially ruining food in the refrigerator.

Never completely discharge the batteries, and maintain the electrolyte level in each battery cell at the proper level. Permanent damage may occur from using or charging a battery with a low electrolyte level. Add only ***distilled water*** to the proper level.

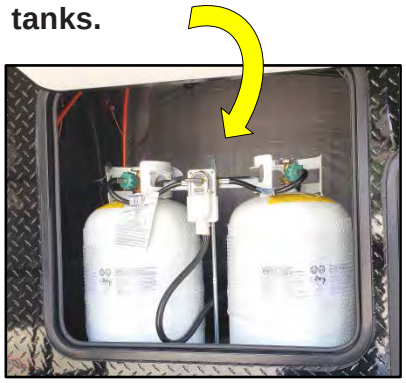
NOTE: Keep the batteries fully charged at all times. Storing a discharged battery will shorten the life of the battery.

Low battery charge or bad batteries are the most common cause of poor performance of slide-out rooms, appliances and other components connected to the 12-volt DC electrical system. Low voltage can also cause the furnace fan to run too slowly to operate an internal switch controlling the furnace gas valve. This will shut the furnace down. Learn to conserve your battery power. The power use chart at the end of this chapter can help you determine your power needs. To help insure that you don't have a battery failure, have your batteries checked and serviced regularly.

Avoid running down the batteries completely. The breakaway braking system depends on the 12-volt power from the trailer battery bank.

If the batteries become discharged quickly (high current use over a short period of time), a high amperage charge rate can be used to quickly recharge them. Disconnect batteries before high-amperage charging.

NOTE: 5th-Wheels only: A second set of battery trays are provided behind the LP tanks.



BATTERY INSTALLATION

Your trailer is designed for dual batteries for extra power. Two battery spaces are located on the doorside front. On fifth-wheels only, two battery spaces are located behind the LP gas tanks. If you connect more than one 12-volt battery, ***they must always be connected in parallel. Do not connect the batteries in series.*** Series connection will result in 24-volt output and cause damage to equipment designed for 12- volt use.

The way that batteries are installed in your coach is critical. Improperly installed batteries create the potential for serious injury. Although Genesis Supreme RV does not provide batteries, here are guidelines for their proper installation:

Batteries should be installed in a protective “battery box” or tray. This reduces the possibility of accidental contact with the battery terminals and contains any leakage of battery acid.

You can operate your trailer with either single or dual batteries. In either case, we recommend deep cycle batteries.

Always install multiple 12-volt batteries in parallel or 6-volt in series/parallel. Route cables carefully to avoid pinching the cables after installation. Pinching the cables may damage the cable insulation and lead to a short.

Remove the batteries from the trailer before recharging them with an accessory battery charger.

Battery Monitor

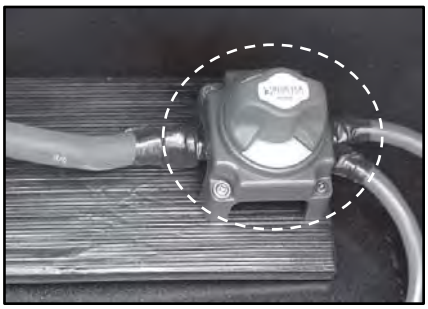
The monitor panel provides a effective way to keep an eye on your battery bank. To check the battery charge, press the **BATT** button. Indicators show the charge level in the batteries. Disconnect the shore power source when checking the battery condition. If the batteries become drained over an extended period of time, a low charge rate over a long period of time works best to recharge them. The converter/charger will automatically charge the batteries at the proper rate when you are connected to shore power or running the generator (if equipped).

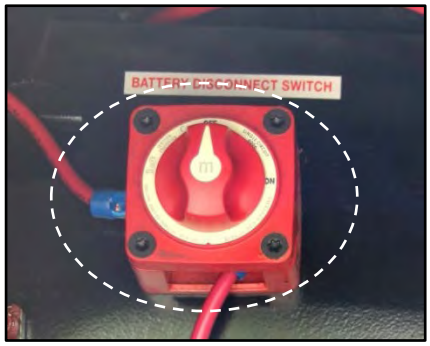
Battery Disconnect

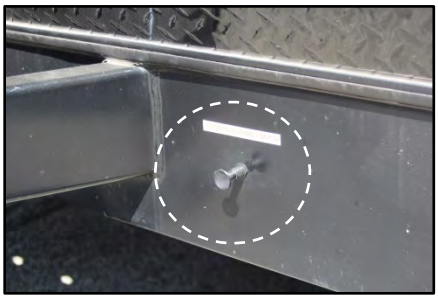
Some accessories or equipment in the trailer may draw small amounts of current even when turned OFF. A battery disconnect (or “load disconnect”) system allows you to disconnect the house batteries. Disconnecting the batteries will help reduce the possibility of battery discharge over long storage periods.

The battery disconnect switch (optional on some models) may be either a rotary or push-pull type. Push-pull types will be located near the 12-volt fuse panel/converter, or near the battery in an exterior compartment. The rotary type will be mounted near the battery. If you expect to store the trailer for more than 10 days, turn the knob to **OPEN** or push the switch knob in. Remember to turn the knob to CLOSE or pull the switch out when you take the trailer out of storage.

Battery charge indicator on Convenience Center oanel *(style and location varies depending on model)*







Battery Disconnect Switches *(Location and style varies by model)*

When servicing batteries, always observe the following:

⚠WARNING

Disconnect all electrical power, both 120-volt AC and 12-volt DC systems, before working on the electrical systems. Make sure all accessories are off so you don't cause a spark.

When checking or filling the electrolyte level in the batteries, do not allow battery electrolyte to contact skin, eyes, fabrics or painted surfaces. The electrolyte is a sulfuric acid solution, which could cause serious personal injury or damage to the trailer. Wear complete eye protection and clothing protection when working with batteries. Avoid touching your eyes while working near batteries.

Do not smoke, have an open flame, or generate sparks near batteries that are being charged or that have recently been charged. Gases from the battery could explode.

When working around a battery, remove rings, metal watchbands, and other metal jewelry. Be careful when using tools. A short circuit across the battery terminals could cause injury, explosion or fire. Lead-acid batteries produce a short circuit current high enough to weld metal to skin, causing a severe burn.

Battery Inspection and Care

Check the condition of the batteries at least monthly. Check for cracks in the cover and case. Check vent plugs and replace them if they are cracked or broken. Make sure the hold-down hardware is tight to prevent the batteries from shaking. Make sure the battery tray or compartment is clean and free of corrosion. Do not store anything in the compartment or tray which could cause a short circuit across the terminals of the batteries.

To clean the batteries:

1. Be sure the vent caps are installed and tight.
2. Wash the batteries with a diluted solution of baking soda and water to neutralize any acid present. Gently rinse the batteries with clean water.

   NOTE: Foaming around the terminals or on top of the batteries is normal acid neutralization. Avoid getting the solution in the battery.
3. Dry the cables and terminals before reinstalling them.
4. Clean the terminals and the cable ends with a brush.
5. Reinstall the cables and use a plastic ignition protective spray to protect the terminals. Do not use grease on the terminal or cable bare metal. Grease is an insulator.

Batteries and Battery Charging

Most of the time you will use your trailer under three different conditions: dry camping, driving, or connected to shore power.

Dry Camping

You will be using power from the batteries to operate lights, fans and other DC components as listed on the power use charts. You will be discharging the batteries.

While Driving

Under driving conditions, or with the tow vehicle engine running, your batteries will be charged by the tow vehicle engine alternator.

Connected to Shore Power

When you are connected to shore power or when the generator (if equipped) is running, all batteries will be charged automatically by the converter/charger.

The 120-volt AC is the power input source to the converter/charger. The converter/charger changes the 120-volt AC power to 12volts DC to operate the DC appliances and accessories in the trailer.

It is very important to understand that ***the difference between a fully charged battery and a fully discharged one is only about 1 volt.*** *A fully charged battery at rest, in which no discharging or recharging has occurred for 24 hours has a voltage of 12.63 volts (at 77 degrees F.). A completely discharged battery has a voltage of 11.82 volts. Don't be fooled by voltage readings —* ***a battery that measures 12 volts is already 75% discharged.***

If you experience dead batteries:

1. Plug in to shore power if available, or start and run the generator (if equipped).
2. Reduce the loads on the batteries by turning off any lights, fans, or other 12-volt DC powered equipment that is not absolutely necessary. Avoid turning off the refrigerator. You must reduce loads as much as possible for charging to take place. Run the generator while monitoring the battery charge status indicator on the monitor panel. Running the generator will supply AC current to the converter/charger system, thus charging the batteries.
3. Connect the 7-way cord to your tow vehicle and run the engine at high idle to increase charging current and reduce charging time. Keep loads reduced until batteries are fully charged.

If your tow vehicle battery is dead or discharged, and the generator will not start, an external jumper battery or battery charger must be used to either start your tow vehicle engine or the generator. You may also connect to available shore power to operate the converter/charger system to charge the batteries.

When servicing batteries, always observe the following:

⚠WARNING

Make sure the area around the battery is well ventilated.

Have someone within range of your voice or close enough to come to your aid when you work near a lead-acid battery.

Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters your eye, immediately flood it with running cold water for at least twenty minutes and get immediate medical attention.

TIPS FOR DEAD BATTERIES:

Dead batteries raise a lot of questions, and in most cases are the result of owners misunderstanding their use, maintenance and capabilities.

- *Compartment, patio and bathroom lights left on are common causes of battery drain. If you are going to park the trailer for a period of time, plug in to shore power to insure the batteries are topped up prior to your next use. Check the batteries while the trailer is plugged in to make sure they are not overcharged or the electrolyte has not evaporated out. Battery failures caused by lack of water are not covered under the battery warranty.*

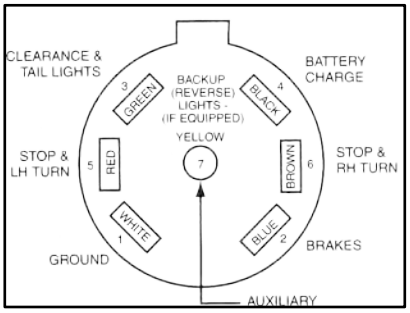
- *In most refrigerators there is a "humidity control" switch, usually just inside the door. Be sure it is off when you leave your trailer as this one function can draw down your battery quickly.*

- *Furnace and vent fans are one of the most common and significant power draws in your trailer. If you leave a furnace or vent fan on all night, your battery will be nearly completely drained by morning.*

7-WAY POWER CORD

The power cord circuits are protected by automotive type auto-reset circuit breakers mounted on a panel either in a forward compartment or under the front of the trailer on the chassis frame rail.

Be careful to prevent damage to the 7-way cord. When hitching and unhitching, make sure the cord is out of the way and cannot be damaged by the hitch and/or pin box. Do not allow the cord to drag on the ground. When not in use, cover the cord connector to prevent moisture from entering the connector. Clean the contacts in the cord with a contact cleaner every six months.



1	White	Ground
2	Blue	Brakes
3	Green	Clearance/Tailights
4	Black	Charge line
5	Red	Stop/Left turn signal
6	Brown	Stop/Right turn signa
7	Yellow	Aux. circuit (if used)

7-Pin Wiring

POWER WORKSHEETS

The following chart illustrates various combinations of power service and converters. The maximum available power to your RV depends on both the electrical service you connect to and the output capability of the converter installed in your trailer. **NOTE:** You do not have the total output current (amps) available when operating on 120-volt AC service. The service input current is also "converting" to DC and therefore not all current is available for the trailer AC circuits.

To find out how much power capacity your trailer has, select the type of service (30-amp or 50-amp) then locate the type of power converter (32-amp or 45-amp) and then match the system voltage. The amperage shown is the total amount of amps that you can use at a single time.

The worksheet on the next page lists the typical power usage for many recreational vehicle appliances. Write in any appliances or components you have that are not listed. Then add up the amperage for the appliances you would like to run, and then check the table below. **If the total amount exceeds the available amount listed on the chart, you cannot use all of those appliances at the same time.**

If you are operating on:	**30-amp Service**				**50-amp Service**	
and you have a:	**32-amp converter**		**45-amp converter**		**45-amp converter**	
for these circuits:	**120-VAC**	**12-VDC**	**120-VAC**	**12-VDC**	**120-VAC**	**12-VDC**
you will have available:	**25 A**	**32 A**	**22.2 A**	**45 A**	**42.2 A**	**45 A**

Power Use Worksheet

12-VOLT APPLIANCE	Current Draw in AMPS
Radio	.5 – 6.0
Range Hood Fan	1.75
Power Roof Vent	1.5
Water Pump	4.0 – 8.0
A/C Circuitry	1.5
Furnace	4.0 – 6. 0
CD Player	.5 – 1.0
Refrigerator	3.0
TV Booster	3.0 – 11.0
Trailer Lights	.69
Water Heater	1.0
Inverter (if installed):	
Other:	
Other:	

DC Current Draw:_____

120-VOLT APPLIANCE	Current Draw In AMPS
Air Conditioner	12.0
Microwave Oven	7.0 – 10.0
Toaster	10.0
Blow Dryer	6.0 – 8.0
Ceiling Fans	2.0
Water Heater	12.0
Refrigerator	3.0 – 4.0
Coffee Pot	8.0
Other:	
Other:	
Other:	
Other:	
Other:	
Other:	

AC Current Draw:_____

Total Current Requirement in Amps:_____

Note: Water heaters and refrigerators may require both 12-volt DC and 120-volt AC power depending upon the ignition.

The Solar Panel System (If Installed)

Your solar power system is an eco-friendly, quiet and clean power source. Apart from the battery bank, it requires little maintenance.

The system in your Genesis Supreme RV is designed primarily as a battery charger. Any devices connected to the battery bank operate on the 12-volts DC supplied by the battery bank, not by the solar panel(s). *The system is not designed to directly operate AC appliances such as refrigerators or the air conditioning system(s). These devices should be operated* ***ONLY*** *on shore power or the generator.*

Solar Components

Solar Panel - Converts sunlight to electricity. The panels are permanently mounted on the RV roof.

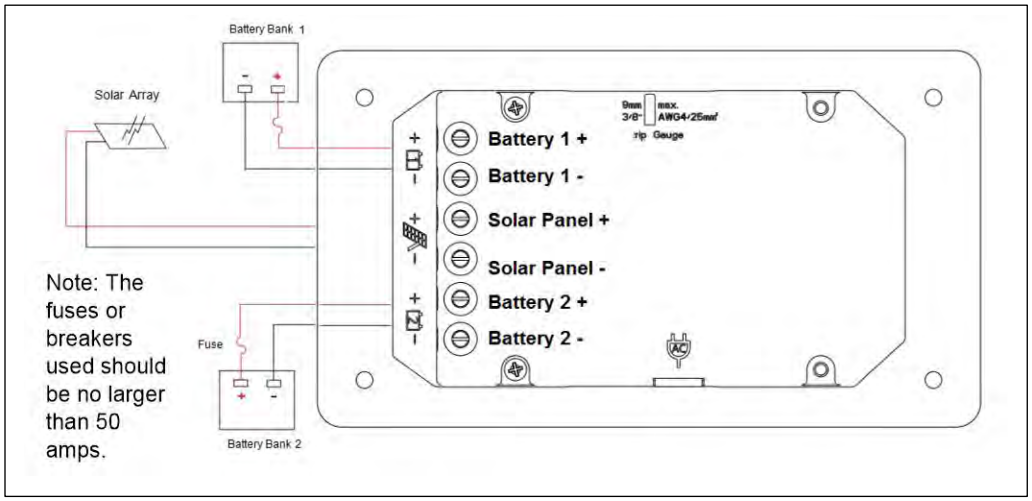
Solar Charge Controller - Directs the power generated by the panels to the battery bank of your RV. With Pulse Width Modulation (PWM) technology, it uses a three- or four-stage charge system to regulate the charge voltage and current to the RV's battery bank. The controller allows you to keep track of amperage, voltage, and amp-hours when charging.

A complete guide to the charge controller is in your Owner's Information Packet.

Solar Panel Charge Controller *(Location and mounting details vary depending on model)*

Battery Bank - The source of 12-volt DC power. Although not technically a part of the solar system, the 12-volt DC components in your RV (lights, radio/entertainment system, water pump, etc.) are connected to the battery bank through the fused DC circuits in the electrical distribution panel. The battery bank may be one or a combination of several batteries wired to be compatible with your RVs electrical system. The battery bank stores the DC power which is "inverted" to higher voltage alternating current (AC) to power select circuits for devices plugged into them. See the ***Battery*** section of this chapter for details.

Inverter - Changes the 12-volt DC from the battery bank to 120-volts AC to operate selected circuits. TV outlets, a galley outlet and an outlet in the trunk area are typically connected to the inverter. A label near the outlet (or on the distribution panel) indicates that it is an inverter circuit. Note that all other AC outlets are connected to the distribution panel, and are powered by the shore cord or generator. Full AC power is only available when connected to shore power (30- or 50-amp, depending on model). See the ***120-Volt Electrical System*** chapter for details.



Typical Solar Panel System Diagram *(optional dual batteries shown)*

MAINTENANCE

Clean the panels regularly with a non-abrasive cleaner or detergent soap. Rinse all dirt and soap residue from panels to help ensure maximum output.

Ensure that the fasteners and mounts are tight. Vibration, expansion and contraction caused by temperature changes might loosen the mounting hardware.

12 / 120-VOLT ELECTRICAL SYSTEM

The 120-volt AC system in your trailer is similar to that in your home. The system also charges the batteries through the converter/charger. 120-volt AC power is supplied to the load center from either the generator (if equipped) when "dry camping" or through the shore power cord when plugged into campground power.

Load Center Circuit Breakers

Circuit breakers for the 120-volt system are usually located under the refrigerator either combined in the converter/charger or on a separate panel. The location may vary depending on model and floorplan.

AC current from the power source or the generator is routed to the main circuit breakers in the distribution panel. The current is then distributed to the other circuits through individual circuit breakers. The circuit breakers open the circuits if the rated current is exceeded. Never substitute a circuit breaker with a higher value than the original breaker installed.

Main Converter/Charger

Your trailer is supplied with a converter. The converter converts 120-volt AC current to 12-volt DC. It provides DC power to operate the DC electrical system and charge the batteries.

Power is supplied whenever the trailer is connected to shore power or the generator is running. Some converters include a cooling fan that will come on when certain temperatures are reached. You may occasionally hear this fan running if outdoor temperatures are high or the DC load is high.

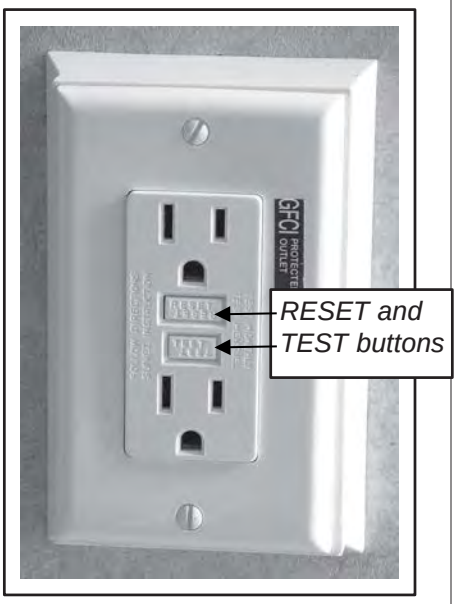
CAUTION

When packing the trailer, leave clearance around the converter for adequate ventilation.

NOTICE

Always turn off the main circuit breakers before plugging into the site receptacle. If the power conductors ("hot" legs) make contact before the neutral, unbalanced voltage can damage electronic devices connected to the electrical system.

Circuit Breaker and Fuse Panel (Layout varies depending on model)



Ground Fault Circuit Interrupter Outlet (GFCI) (Color may vary with model)

NOTE:

If bath, galley, or exterior outlets don't work, check the bath GFCI. Reset it if necessary. If it continues to trip, have the electrical system checked by a qualified electrician.

Ground Fault Circuit Interrupter (GFCI)

The receptacles in the bathroom, galley and exterior are protected by the GFCI. This device provides ground fault protection from potential electrical shock hazards of line to ground electric faults and electrical leakage shocks possible when using appliances in damp areas. The GFCI disconnects the circuit (and other outlets on the same circuit) whenever a ground fault is detected, limiting your exposure time to the shock hazard caused by current leakage to ground. ***The GFCI device does not prevent electric shock, nor does it protect a person who comes into contact with both "hot" and neutral sides of the circuit. It does not protect against electrical circuit overloads.***

Test the GFCI breaker each month while operating on 120-volt AC power. To test the GFCI:

1. *Press the* **TEST** *button on the GFCI outlet. The* **RESET** *button should pop out indicating that the protected circuit has been disconnected.*
2. *If the* **RESET** *button does not pop out when the* **TEST** *button is pressed, ground fault protection on the protected circuit has been lost. Do not use the outlet or other outlets on the same circuit. Have the trailer electrical system checked by your dealer or a qualified electrician. Do not use the system until the problem has been corrected.*
3. *Press the* **RESET** *button to reset the GFCI and restore power to the protected circuit.*

Power "Shore" Cord

Your trailer is equipped with a heavy duty power cord to connect to an external 120-volt 30- or 50-amp (depending on model) rated AC service. The cord and plug are a molded, weatherproof assembly. The cord provides a correct ground connection to the site service. Do not alter or cut the cord in any way. Do not remove the ground pin from the plug, or defeat the ground circuit in the trailer. If you have to use an adapter to plug into an electrical service, make sure the ground is maintained through the adapter. Never use a two-conductor extension cord, or any cord that does not assure correct and adequate ground continuity. Never plug the 120-volt cord into an ungrounded receptacle.

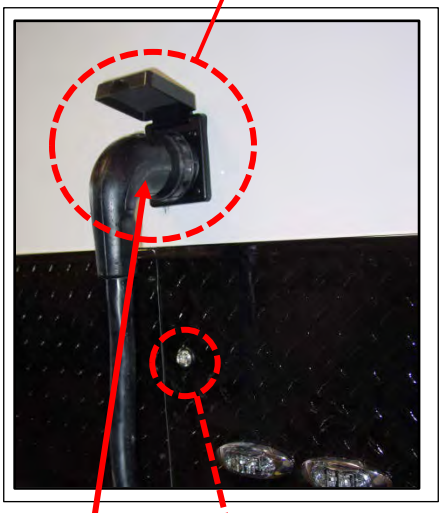
⚠ CAUTION

Depending on model, the power cord is either wired permanently to the trailer electrical system, or is removable. Removable cords attach to the trailer inlet with a twistlock connector and locking ring. When attaching the cord to the trailer, be sure to align the pins correctly before locking the cord in place. The locking ring provides extra strain relief and a weather-resistant seal.

When connecting the cord to the service, push the plug straight into the receptacle until it seats completely. On models equipped with a generator but without auto- transfer switching in the converter, the power cord must be plugged into the generator outlet when using the generator for AC power. Plug the cord into the generator outlet before starting the generator on these models.

Shore Cord (Typical

Twistlock Shore Cord Inlet (30-amp shown; 50-amp is similar.)



50-amp Shore Power Cord

Reverse Polarity Indicator (location varies with model)

Electrical Hookup

Before connecting to the electrical supply, check the supply rating. Be sure it is 110-volt to 125-volt single phase AC for 30-amp service or 2-phase 220 to 240-volt AC (two 110 to 120-volt legs) for 50-amp service.

Connecting To Shore Power

1. Be sure the site power source breakers are OFF (both legs on 50-amp service).

2. If the site power source breakers are not accessible, turn OFF the main breakers inside the trailer.

3. Insert the plug of the cord into the site source receptacle, seating the connector squarely and completely.

4. Turn site source breakers ON.

5. Turn trailer main breakers ON.

⚠ CAUTION

NOTE: 50-amp shore power cords are equipped with a reverse polarity indicator as shown above. If the indicator light is on, the electrical service is wired incorrectly. Disconnect and try another electrical service outlet or have the electrical outlet repaired by a qualified electrician.

To disconnect:

1. Turn trailer main breakers OFF.

OR

Turn site source breakers OFF.

2. Pull the plug end of the cord straight out of the source receptable.

3. Coil and stow the shore power cord.

Generator (If Equipped)

The generator will provide 120-volt AC power when shore power is not available. It can be controlled both at the generator and from the remote START/STOP controls located inside the trailer. IMPORTANT: *BE SURE TO READ AND UNDERSTAND THE GENERATOR OPERATOR'S MANUAL BEFORE OPERATING THE GENERATOR.* Observe all operating instructions and warnings as well as all recommended maintenance schedules and procedures.

⚠WARNING

Do not place flammable material or store any other materials in the generator compartment.

⚠WARNING

Do not modify the generator installation or exhaust in any way.

Depending on model, the output of the generator is connected to the trailer AC electrical system either automatically through a transfer switch in the converter when the generator is started, or by plugging the shore cord into the generator outlet. In either case, power is routed through the load center main breakers.

Generator Control Panel Operation

See the generator Operating Guide in your Owner's Package for complete operating and maintenance instructions. The generator control panel features:

Hourmeter - *Indicates total generator operating time in hours and tenths of hours. Use the hourmeter with the generator maintenance schedule for periodic maintenance.*

Start/Stop switch - *To start the generator, press and hold at the* **RUN** *position. Release the switch when the engine starts (the* **GEN RUN** *lamp will come on). To stop the generator, hold the switch at the* **STOP** *position until the engine stops.*

Every time before starting the generator:

- *Check the fuel level in the fuel tank. Check the oil level.*
- *Check all fuel lines for fuel leaks.*
- *Inspect generator for loose or damaged components and fasteners.*
- *Correct any problems before operating the generator.*
- *Inspect the generator exhaust system for damage or leaks Be sure the exhaust pipe is clear of walls, snow banks or any obstruction that would prevent exhaust gases from dissipating.*
- *Be sure the trailer is not parked in high grass or brush.*
- *Set the main circuit breakers to OFF.*
- *Connect the shore power cord to the generator and/or the shore power receptacle.*

1. *Press and hold the START/STOP switch in the START position at either control panel until the generator starts. Release the switch when the generator starts. Do not hold the switch in the START position for more than 10 seconds. The indicator light will remain on after the switch is released.*
2. *If the generator does not start, release the switch. Wait two minutes and try again. If the second try does not start the generator, try starting using the START/STOP on the generator control panel. If the indicator light still does not light, there may be an open in the remote wiring. Contact a service center for assistance.*
3. *Do not turn on the main breakers until the generator is running smoothly and is warmed up. Check that there are no fuel or exhaust leaks.*
4. *Turn off the individual breakers, and set the main breakers ON. Turn on the individual circuit breakers one at a time to prevent generator overloading.*
5. *To stop the generator, turn off the main breakers. Let the generator run three to five minutes to cool down. Press and hold the START/STOP switch to the STOP position until the generator stops completely and the indicator light goes out. If the switch is released before the generator stops and the light goes out, the generator will continue to run.*

NOTE: *The output from the generator may be interrupted if the main generator circuit breakers trip. These breakers are located on the main generator control panel. If there is no power when the generator is running, check and reset these breakers.*

IMPORTANT SPECIAL NOTE:

If you store your RV during the winter, or don't operate it often enough to refill the gas tank every month, a fuel varnishing problem could develop in your generator engine and fuel system.

Fuel varnish is a gummy residue that clogs the generator carburetor and fuel pump and is caused by the deterioration of fuel. Depending on fuel quality and storage conditions, gasoline can deteriorate in as little as 30 days. As long as you refuel frequently with fresh gasoline, and exercise the unit regularly, fuel varnishing is less likely to occur. But if you leave the same gasoline in the tank for several months, you're very likely to have problems.

The only way to prevent fuel varnishing is to add a fuel preservative to the fuel (gasoline) tank and to run the generator.

For more information, see the generator operating and maintenance manual.

Generator Operating Safety Precautions

The generator produces carbon monoxide while it is running. Carbon monoxide is a colorless, tasteless, odorless gas. *CARBON MONOXIDE IS DEADLY.* Before you start and use the generator, inspect the exhaust system. Do not use the generator if the exhaust system is damaged. Test the carbon monoxide detector every time you use the RV. To protect yourself from the effects of carbon monoxide poisoning, please read and understand the following precautions.

There are a number of symptoms of carbon monoxide poisoning:

Dizziness	*Intense headache*
Throbbing in temples	*Nausea*
Vomiting	*Muscular twitching*
Weakness/sleepiness	*Inability to think clearly*

If you or others (including pets) experience any of these symptoms, *get out into fresh air immediately.* Get medical attention if any of the symptoms persist. Turn the generator off and do not operate it until it has been inspected and repaired by a generator repair facility.

DANGER

CARBON MONOXIDE IS POISONOUS AND CAN CAUSE UNCONSCIOUSNESS AND DEATH.

Follow all instructions in this section as well as the ones outlined in the generator operator's manual.

- **Review the safety precautions for fuel and exhaust fumes elsewhere in this manual.**
- **DO NOT operate the generator if exhaust gases cannot be discharged away from the trailer or other vehicles. Do not block the exhaust pipe. Do not park the trailer where the exhaust gases can accumulate either outside, underneath, or inside the trailer or other vehicles. Make sure exhaust gases are clear of walls, snow banks or any obstructions that can prevent exhaust gases from dissipating.**
- **DO NOT operate the generator while sleeping. You would not be aware of exhaust entering the trailer, or alert to symptoms of carbon monoxide poisoning.**
- **DO NOT operate the generator in an enclosed building or in a partly enclosed area such as a garage.**
- **DO NOT operate the generator when the trailer is parked in high grass or brush. Heat from the exhaust could cause a fire in dry conditions.**

WARNING

Do not under any circumstances operate the generator while you are sleeping. You would not be able to monitor outside conditions to assure that engine exhaust gases are being safely dissipated, and are not entering the trailer interior. You would not be alert to exhaust odors or the symptoms of carbon monoxide poisoning.

- **DO NOT operate the generator when parked in close proximity to vegetation, snow, buildings, vehicles, or any other object that could deflect the exhaust under or into the vehicle.**
- **DO NOT simultaneously operate the generator and a powered ventilator which could result in the entry of exhaust gas. When exhaust ventilators are used, open a window on the opposite side of the trailer upwind of exhaust gases to provide cross ventilation.**
- **When parked, position the vehicle so that the wind will carry the exhaust away from the vehicle. DO NOT open nearby windows, ventilators, or doors into the passenger compartment, especially those downwind, even part of the time.**
- **Never operate your tow vehicle or generator engine longer than necessary when parked.**
- **Do not fill the fuel tank while the generator is running. Fuel contact with the hot generator or exhaust is a fire hazard.**
- **Do not smoke or have an open flame near the generator or fuel tank.**
- **Never store anything in the generator compartment. Always keep the compartment clean and dry.**
- **Do not start the generator while a load is connected. Make sure the MAIN circuit breakers are OFF before starting.**
- **Disconnect the generator from the battery before performing any generator maintenance.**
- **DO NOT touch the generator while it is running, or immediately after turning it off. Heat from the generator can cause burns. Allow the generator to cool before attempting maintenance or service.**

  NOTE: During long periods of inoperation, or if the engine does not reach operating temperature, moisture can condense in the engine making starting difficult and causing damage to the engine. Operate the generator with a 50% capacity load for two hours once a month. A long exercise period that allows normal operating temperatures is preferable to short periods.

⚠WARNING

Do not block the generator ventilating air inlets or outlets. Restricting ventilating air inlets or outlets can cause engine failure or fire from engine overheating.

Generator Maintenance

Details of service and maintenance are in the generator Operator's Guide in your Owner's Package.

Inverter (If Equipped)

The inverter uses 12-volt DC power to create 120-volt AC power for several outlets – typically, the main and bedroom TV outlets a galley outlet and a compartment outlet. These outlets can be used when shore power is not available or when the generator (if equipped) cannot be operated. A built-in transfer switch automatically detects when generator or shore power status changes to ensure power is always available at these outlets. A detailed operating guide for the inverter is in your Owner's Information Packet.

If operating on battery power only, the inverter will consume your available battery power. Your battery charging source will probably be your tow vehicle alternator if you are operating the inverter in a dry camping situation. To charge the trailer battery(s) from the tow vehicle alternator, you must connect the 7-way connector to the tow vehicle and run the tow vehicle engine idle long enough to charge the batteries.

Inverter (Location and mounting details vary depending on model)

The inverter is equipped with the following protection and alarm features:

Low battery alarm *if the battery has become discharged to 10.5 volts or lower.*

Low battery voltage shutdown *Shuts the inverter down automatically if the battery voltage drops below 10.0 volts to keep the battery from being completely discharged.*

Battery high alarm *if the battery exceeds 15.5 volts.*

Battery high shutdown *if the battery exceeds 16.0 volts.*

Input reverse polarity/under voltage/over voltage protetion/ AC over current protection

Output short circuit/overload/over temp/over voltage alert *if the loads connected to the inverter are close to the inverter's operating limits.*

Overload shutdown *Shuts the inverter down automatically if the loads connected to the inverter exceed the inverter's operating limits or if a short circuit is detected in the circuitry connected to the inverter's output.*

Over-temperature alert *if the inverter is running hot and is approaching the over-temperature shutdown level.*

Over temperature shutdown *Shuts the inverter down automatically if its internal temperature rises above an acceptable level.*

Operating Panel Contols

On/Off/Remote button. *Select ON, OFF or Remote modes*

Status GREEN / ORANGE / RED LED Indicator
Patterns of blinking colored LEDs indicate 11 status conditions from POWER OK to COMPONENT FAILURE.
See the inverter User Guide for details of these status indications..

Operating Modes

Shore Power Mode

The inverter is in shore power mode when an AC source (a generator or shore power) is present to power the circuits connected to the inverter. The status LED glows green to indicate that the inverter is using shore (or generator) power. The inverter draws minimal power from the battery. Whether or not the on/off button is on, shore power will pass through the inverter. When the inverter is on, if the AC source drops to less than 90 VAC or is disconnected, the transfer switch automatically transfers the appliances to inverter power. The status LED glows yellow to indicate the inverter is using the battery to power the circuits.

Inverter Mode

The inverter is in inverter mode when it is using the battery (inverting DC to AC) to power the circuits connected to the converter.

Turning the Inverter On and Off

The ON/OFF/REMOTE button on the remote panel turns the inverter on and off. If a solar panel charger system is installed, a switch on the solar charger controller will turn the inverter ON or OFF if the switch is set to REMOTE.

When the inverter is ON and shore power is present, the incoming shore power is passed to the output to power appliances connected to the inverter, and the inverter draws minimal power from the battery.

When the inverter is turned OFF, the inverter is disabled. Incoming shore power is passed to the output to power the inverter circuits. If the shore power becomes disconnected (or the generator is stopped), the inverter circuits do not transfer to inverter power. Transfer to inverter power only occurs if the inverter is ON (or switched ON by the remote control with inverter switched to REMOTE mode).

Portable Generator (If Equipped)

Your RV may have been optionally equipped with a portable generator. Portable means that the generator is not rigidly and permanently attached and connected to the RV structure. This Owner's Guide Supplement discusses safety and operational information you need to know when operating the portable generator.

The portable generator will provide 120-volt AC and DC power for operating portable tools and appliances when shore power is not available. IMPORTANT: *BE SURE TO READ AND UNDERSTAND THE PORTABLE GENERATOR OWNER'S MANUAL BEFORE OPERATING THE PORTABLE GENERATOR.* Observe all operating instructions and warnings as well as all recommended maintenance schedules and procedures.

Portable Generator Operating Precautions

The generator produces carbon monoxide while it is running. Carbon monoxide is a colorless, tasteless, odorless gas. *CARBON MONOXIDE IS DEADLY.* Before you start and use the generator, inspect the fuel and exhaust systems. Do not use the generator if the fuel system is dripping fuel or the exhaust system appears damaged. Test the carbon monoxide detector every time you use the RV. To protect yourself from the effects of carbon monoxide poisoning, please read and understand the following precautions.

There are a number of symptoms of carbon monoxide poisoning:

Dizziness	*Intense headache*
Throbbing in temples	*Nausea*
Vomiting	*Muscular twitching*
Weakness/sleepiness	*Inability to think clearly*

If you or others (including pets) experience any of these symptoms, *stop the generator and move into fresh air immediately.* Get medical attention if any of the symptoms persist.

► **Review the generator operating and safety precautions found in the portable generator operating manual.**

DANGER

CARBON MONOXIDE IS POISONOUS AND CAN CAUSE UNCONSCIOUSNESS AND DEATH.

Follow all instructions in this section as well as the ones outlined in the generator operator's manual.

WARNING

Do not under any circumstances operate the generator while you are sleeping. You would not be able to monitor outside conditions to assure that engine exhaust gases are being safely dissipated, and are not entering the trailer interior. You would not be alert to exhaust odors or symptoms of carbon monoxide poisoning.

WARNING

Do not modify the generator exhaust system in any way.

WARNING

Do not block the generator ventilating air inlets or outlets. Restricting ventilating air inlets or outlets can cause engine failure or fire from engine overheating.

- **DO NOT operate the generator if exhaust gases cannot be discharged away from the trailer or other vehicles. Do not block the exhaust pipe. Do not park the trailer where the exhaust gases can accumulate either outside, underneath, or inside the trailer or other vehicles. Make sure exhaust gases are clear of walls, snow banks or any obstructions that can prevent exhaust gases from dissipating.**
- **DO NOT operate the generator while sleeping. You would not be aware of exhaust entering the trailer, or alert to symptoms of carbon monoxide poisoning.**
- **DO NOT operate the generator in an enclosed building or in a partly enclosed area such as a garage.**
- **DO NOT operate the generator beneath the trailer or beneath an extended slideout room or under an extended awning.**
- **DO NOT operate the generator in high grass or brush. Heat from the exhaust could cause a fire in dry conditions.**
- **DO NOT operate the generator when parked in close proximity to vegetation, snow, buildings, vehicles, or any other object that could deflect the exhaust under or into the vehicle.**
- **DO NOT simultaneously operate the generator and a powered ventilator which could result in the entry of exhaust gas. When exhaust ventilators are used, open a window on the opposite side of the trailer upwind of exhaust gases to provide cross ventilation.**
- **Position the generator so that the wind will carry the exhaust away from the vehicle. DO NOT open nearby windows, ventilators, or doors into the passenger compartment, especially those downwind, even part of the time.**
- **Do not fill the fuel tank while the generator is running. Fuel contact with the hot generator or exhaust is a fire hazard.**
- **Do not smoke or have an open flame near the generator or fuel tank.**

- **Do not start the generator while a load is connected. Make sure the MAIN circuit breakers are OFF before starting.**
- **DO NOT touch the generator while it is running, or immediately after turning it off. Heat from the generator can cause burns. Allow the generator to cool before attempting maintenance or service.**

Transporting and Storage

The portable generator can be transported or stored inside the trailer. Secure it upright in its normal operating position, with the engine switch OFF. Be sure it cannot move while traveling. Allow the engine to cool well before turning the fuel cap vent lever counterclockwise to OFF.

- DO NOT OPERATE THE GENERATOR INSIDE THE TRAILER OR IN ANY COMPARTMENT.

⚠WARNING

The portable generator is heavy. Attempting to lift or move the generator alone may cause serious injury. Lift or move the generator only if you and at least one other person capable of lifting the weight can assist you. Do not attempt to lift or move the generator alone.

Owner Notes

13 / FRESH WATER SYSTEM

(Also see Chapter 20 "Severe Weather Use" section for information about the optional Arctic Package)

Your trailer's fresh water system is a vital part of your traveling life while on the road. Your ability to depend on clean, fresh water can have a lot to do with how much you enjoy the RV lifestyle.

Your trailer is equipped with a dual fresh water system. The demand fresh water system operates from the trailer's own self-contained supply tank and water pump. A monitor panel indicates the water level in the fresh water tank. The "city water" hookup allows you to connect to a pressurized external system at a campground.

Fresh water for self-contained use is stored in a plastic tank located below the floor of the trailer. The tank is vented to allow proper and complete filling. This vent must remain open. The monitor panel level sensors are mounted in the tank, and a drain valve and/or removable plug allows you to drain the tank. Always drain the tank before storing the trailer for long periods. When the trailer is in use, drain and clean the tank every month or so. The entire fresh water system should be sanitized before the first use, after a period of nonuse, or if the system becomes contaminated. Sanitation and routine tank maintenance are covered later in this manual.

The easiest way to keep the tank full of clean water is to start with a dedicated, clean drinking water hose and an inline filter system. These two items are not included with your trailer.

Non-toxic, FDA-approved drinking water hoses are inexpensive and yield no taste or no odor to the water. They are usually white in color with a light blue stripe. This helps identify the hose and reminds you to keep it separate from other hoses, especially any hose, fittings or other hardware you use for waste drainage. You should consider using a special FDA-approved hose because many common garden hoses are made of re-ground rubber or other materials. As they age and the compounds break down, they can impart taste, odor and impurities to your fresh water supply.

TIP! If you attach the two ends of the fresh water hose together following each use, you will minimize the possibility that impurities will get into the hose while it is in a storage compartment.

NOTICE

Do NOT leave hose unattended during filling of potable water. Turn water OFF immediately when tank is full. Damage may result from either overfilling or leaving hose unattended. Rapid filling of the fresh water tank may cause inadequate venting or water to escape the tank when full. Excessive pressure in the tank may cause damage to the tank.

IMPORTANT NOTE: The fresh water tank is mounted under the trailer to allow it to "belly down" as it is filled. It may appear to be unsupported. It is designed to be this way. If the tank is not allowed to expand downward, it will expand upward. The tank is mounted securely against the trailer floor, and if it expands upward, it may cause damage to the trailer floor, cabinetry and other components. **DO NOT ADD ADDITIONAL SUPPORT MEMBERS BELOW THE FRESH WATER TANK.**

Fresh water tank fill *(color, style and location varies with model)*

There are two things to remember about your fresh water hose: *Never use it for anything except filling the fresh water tank or connecting to city water, and always store it away from all other assorted hoses and plumbing supplies. Second, if possible, nothing should go through that hose unless it goes through an inline filter first.*

Filling the Fresh Water Tank

NOTE: Before filling the water tank, be sure the water supply is "potable", that is, drinking quality. Not all water supplies may be drinking quality. Water quality and contamination issues are discussed later in this chapter.

The gravity water tank fill inlet is not designed or intended for fast tank filling under pressure. The volume of air in the tank must be allowed to escape at the same rate the water is entering the tank. Sometimes filling too fast causes a back flow of water through the fill tube because the air in the system can't escape as fast as the water is coming in.

If you fill the tank too quickly, air can be trapped in the tank. This can cause the tank to bulge beyond its limits and possibly rupture. The excessive bulging can damage the trailer floor, surrounding cabinets, and chassis structure.

Fill the tank slowly, allowing the air inside to escape through the inlet vent. It takes a little more time, but slow filling will reduce the possibility of damaged tanks, damaged floors, and gushing water. *Structural damage from overfilling tanks is not covered under warranty. It is considered operator error.*

SPECIAL NOTE: *A flexible tank overflow tube is built into the top of the tank. This tube directs overflow water to the ground under the trailer. If you see water running out onto the ground under the trailer, you are overfilling the tank and the overflow tube is doing its job.* ***STOP FILLING THE TANK.***

To fill the fresh water tank:

1. Remove the cap from the tank fill on the side of the trailer. (The tank fill may be behind a lockable door on some models.)
2. Connect one end of a potable water transfer hose to a water supply, turn on the supply and let the water run until it is clean and clear. Turn off the supply. Place the other end into the water inlet on the side of the trailer. Turn on the water supply and fill the tank until water flows out the tank vent on the side of the trailer.
3. Remove and store the hose.

Connecting To City Water

The city water system is connected through a potable water hose to a hookup on the exterior wall of the trailer. Since campground water systems have varying pressures, a pressure regulator **MUST** be used to reduce the city water pressure to the trailer (see below).

To connect to the city water system:

1. Set the water pump switch to OFF.
2. Pull out the fresh water hose.
3. Turn on the site water supply and allow clean water to flow for a few seconds or until the water is clean and clear. Turn off the site supply valve and connect the fresh water hose to the supply.
4. Turn on the site supply valve.

Water pump switch on Convenience Center panel

City water connection - note filter screen *(color and style varies with model)*

Pressure Regulators, Check Valves and Filters

Water pressure will frequently vary from location to location and too much pressure can damage your plumbing system and components. Always keep a water pressure regulator in the freshwater storage box and use it whenever you hook up to city/campground water. A number of reasonably priced, inline regulators are available. See the end of this chapter for illustrations of several types of pressure regulators.

⚠CAUTION

The fresh water plumbing can be damaged from high water pressure. Use a water pressure regulator to reduce water pressure at the city water hookup.

The majority of these regulators are set to limit the pressure to the RV to 45 psi. Adjustable regulators are also available that allow you adjust the pressure and flow for your specific needs.

A check valve built into the water pump prevents city water from flowing into the fresh water tank. A check valve is also located at the city water inlet to prevent water pressurized by the water pump from flowing from the city water inlet.

A water filter or filtration system can be added to the city water inlet. Please see *Fresh Water Filter Systems* later in this chapter for more information.

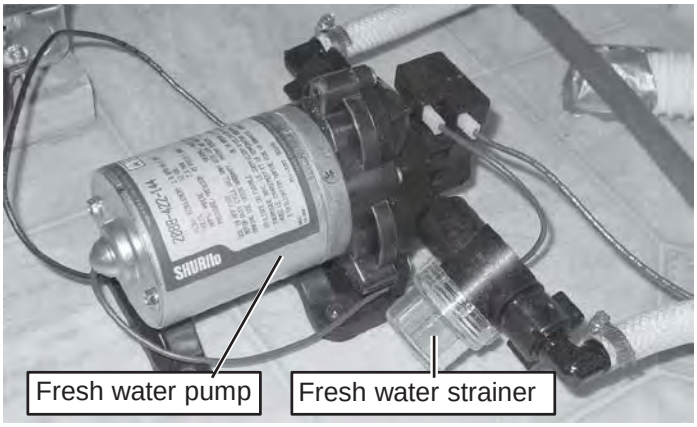
NOTICE

Whenever you leave the trailer for a period of time, turn off the water pump and/ or shut off the city water supply. A sudden leak in the water system will allow the water system to run and flood the trailer.

Turn off the water pump while traveling. A faucet may come open while traveling and all your fresh water could be pumped out. If you leave a sink drain plugged, the sink will overflow causing the interior of the trailer to be flooded.

WATER PUMP

The water pump is a demand type pump designed for intermittent use. It runs when a pressure drop in the water lines is detected, such as when a faucet is opened. The pump will continue to run until the faucet is closed and the pressure is restored. It is self-priming and can pump a constant rate of approximately 2.8 gallons per minute at approximately 40-45 psi. A switch for the water pump is located on the monitor panel, and an indicator light on the panel shows that the pump is operational. Always turn off the water pump power switch when leaving the RV unattended.



Location and installation may differ depending on model and floorplan.

A transparent water strainer is installed on the supply side of the water pump. This strainer helps to filter out large particles, such as leaves, sand, etc., that might be in the fresh water supply. *It does not filter out bacteria or chemical pollutants in the water.* **The strainer requires periodic cleaning.** See Plumbing System Maintenance section in the *"Care and Maintenance"* chapter.

To help speed priming after the fresh water tank has been emptied:

1. Fill the fresh water tank.

2. Turn on the water pump switch. Open all faucets, both hot and cold. Allow time for the water heater to fill. Turn off each faucet as the water flow becomes steady and free of air.

3. When the water heater tank is full and all air is expelled from the system, close all faucets. The water pump should stop running. The system is now ready for use.

SPRAY-AWAY™ PRESSURE WASHDOWN CENTER *(IF EQUIPPED)*

The Spray-Away™ is a self-storing, self-contained washdown fixture designed to eliminate the need for a bulky garden hose connection for outdoor washing activities.

Spray-Away™ places a concentrated water spray to aid in rinsing gear, cleaning fish, washing boats or vehicles, dousing campfires and many other washing chores.

The flexible 15-foot coiled hose automatically recoils into and stows away in its own self-contained compartment. A quick-connect brass fitting with internal valve shutoff is connected to the trailer cold water plumbing.

Note: The Spray-Away™ is not a motorized, high- pressure washer system. It relies on the trailer fresh water system pressure to supply the concentrated spray intensity. When using the Spray-Away™ be sure the trailer is connected to a city water supply or the water pump switch is ON.

The Spray-Away™ is not a potable (drinkable) water system. Avoid drinking from the hose or using the water for food or beverage preparation.

Spray-Away™ Nozzle

SANITIZING THE FRESH WATER TANK AND SYSTEM

For RVers who consume water from their RV tanks, the most important fact to remember is that potable water doesn't stay potable for long. Even though you may be completely confident in your water supply, by the time city water reaches the tap, the chlorine level is already reduced. Air, heat and the sloshing of the water will quickly dissipate the remaining chlorine. Any micro-organisms that the chlorine had inhibited but not killed will now become active. This new growth of micro-organisms will render the water unpalatable and perhaps unpotable, producing slime and algae in the tank and lines.

To prevent this problem, you as an RV owner must maintain a safe system, treat the water that is stored in your holding tank and consider installing a water purification system.

How To Maintain Your System

There are two sanitation procedures that you need to learn and use. One can be considered a "shock" treatment for serious contamination and before you use the system for the first time, and the other is for routine maintenance to keep the system fresh during your normal travels. We'll cover the "shock" treatment in the *Care and Maintenance* chapter.

The Environmental Protection Agency (EPA) advocates a method called "super-chlorination/de-chlorination" to prevent bacterial growth while traveling. This method adds chlorine to the water in increased amounts to provide a minimum chlorine residual of 3.0 ppm (parts per million) for a contact period of five minutes. Your tank will be full of water with a high concentration of chlorine. A granular activated carbon (GAC) filter can be used to remove the chlorine taste.

To super-chlorinate:

1. Connect your hose to your RV.
2. Pour 1 teaspoon of chlorine bleach for every ten gallons of tank capacity into the opposite end of the hose, prior to connecting it to the filling source.
3. Connect the hose to your water supply and fill normally.

Use chlorine every time you fill up with fresh water. This will also keep the filler hose sanitary and protect it from becoming contaminated. Use a chlorine test kit regularly to determine the residual chlorine level (3.0 ppm recommended). Testing should not be done immediately after filling, wait until the water has been "standing" for at least six hours.

Between trips or every few months you should do a routine tank sanitation to keep the tank and system fresh and odor-free.

Routine tank sanitation:

1. Drain the water tank completely, then refill halfway with clean, fresh water.
2. Mix 1/6-cup of regular chlorine bleach (not fragranced) for every 15 gallons of tank capacity into a container filled with a gallon or two of clean water.
3. Pour this mixture into the water tank.
4. Top off the water tank with fresh water. Drive the trailer around the block a couple of times to mix the solution.
5. Pump about a quart of water through each faucet so that all the lines are filled with the water/bleach mixture from the tank.
6. Because the hot water tank holds around 6 gallons of water, run the hot water faucets until this much of the water/bleach solution has passed to ensure that the old water has been purged from the tank and replaced by the new solution.
7. Let the water stand in the system for three to six hours.
8. Drain the entire water system, hot water tank included.
9. To remove the bleach odor, mix a cup of baking soda with a gallon of water and pour into the fresh water tank.
10. Fill the tank completely and pump this solution through the water heater and the rest of the water lines as in step 5. Let this solution sit in the system for a few days to neutralize the odor.
11. Drain the entire system and refill with fresh, clean water.

WHOLE-HOUSE WATER FILTRATION SYSTEM *(IF EQUIPPED)*

The whole-house water filtration system is connected to the cold water lines throughout the trailer. It uses a flow- through filter that removes chlorine, cloudiness, and sediments, resulting in clear, odorless and taste-free water for drinking, cooking, and personal care.

Replacing the Water Filtration Cartridge

Replace the filter cartridge after 1,000 gallons of usage or sooner if water flow from faucets is noticeably reduced.

IMPORTANT NOTE: The whole-house water filtration system will not remove biological contaminants from the water. It is not a reverse osmosis system. Please see the sections **"Fresh Water Filtration Systems"** and **"Dealing With Water Contamination"**.

1. Turn off the water supply and relieve water line pressure by opening a faucet.
2. Use the supplied filter wrench to remove the filter canister from the filter head. Unscrew the canister from the filter head. (There will be water inside the canister).
3. Remove the large O-ring seal from the canister. Check seal for damage, wipe clean, and set aside. Remove and discard the used filter cartridge.
4. Wash the inside of the canister with dish soap and warm water using a nonabrasive sponge or cloth. Rinse thoroughly.
5. Fill canister about 1/3 with clean water and add a couple of tablespoons of household bleach, then scrub with a sponge or brush to disinfect. Rinse thoroughly.
6. Lubricate the O-ring with clean silicone grease to ensure a proper watertight seal, then place back into the groove at the bottom of the canister threads.

NOTE: Replace the O-ring every third cartridge change to ensure proper sealing. See your dealer for replacement cartridges and O-rings.

7. Insert a new filter cartridge into the canister. Hand tighten the canister securely onto the filter head. DO NOT TIGHTEN WITH THE FILTER WRENCH OR OVERTIGHTEN.
8. Turn the Fresh Water Valve to Normal position. Next open a faucet inside the coach or the exterior shower, then turn city water on SLOWLY to allow the canister to fill with water.
9. Run the water for about 20 minutes to thoroughly flush the filtration system. Check for leaks.

FRESH WATER FILTER SYSTEMS

Many water filters are designed to remove sediment and particles from the water. Removing sediment and particles can help reduce the cloudiness of the water. You can also purchase filters that will help remove odors and improve the taste of the water. Over time these filters will eventually become clogged with filtered sediment and must be replaced. When you notice reduced flow and decreased water pressure, it is time to replace the filter.

There are also filters that will reduce chemicals, bacteria, viruses, and various other organic impurities that can cause sickness. These filters are usually installed at the galley faucets or at a special filtered water faucet for drinking/cooking water only. If you will be traveling in places where the water supply is questionable, you might consider a filter system with these capabilities. Your dealer can advise you on specific filter systems for your needs.

Dealing With Water Contamination

Water contamination creates a challenge for RVers. Not only must RVers draw water from unfamiliar sources, they must deal with what can happen to the water once it's inside the holding tank and plumbing.

You can reduce health risks by following a few common-sense precautions. You might also consider using water purification equipment.

At The Campground

Always connect to a water supply of known quality. If water is being delivered as potable, it has probably been tested. Many campgrounds operate from their own wells which should be tested and labeled as approved. Since you may not be able to determine when the water was last tested and since contamination can show up at any time, always be on guard.

In The Great Outdoors

Drinking from any non-treated source such as a lake, pond or cool mountain stream is risky. Although mountain water rushes over rocks, gravel and sand, most harmful contaminants are still in the water. There is also the possibility that you are downstream from a dead animal, animal or even human waste.

Micro-organisms

The most formidable villains while on the road are microbes and cysts which includes bacteria, viruses, protozoa and fungi. Not all microbes are harmful to man, but those that are can be serious. Among these are the viruses that cause infectious hepatitis and the protozoans or amoebic cysts that lead to giardiasis and amoebic dysentery.

All of these contaminants can be present in any water supply that has been polluted by sewage. This is the major reason why you should keep your fresh water hose and

fittings away from any hardware or supplies you use for waste system chores.

Giardiasis is caused by giardia lambia. It infects the small intestines and causes symptoms that may include severe diarrhea, cramps, nausea, vomiting and fatigue. It has been considered the most common disease-causing intestinal parasite in the United States. It resists typical chlorination and filtration procedures, and thrives in a wide range of temperatures. Giardiasis hits hardest those water systems that draw their water from mountain streams.

Chemical Contaminants

The vast majority of chemical contaminants have no taste or smell and leave the water appearing clear and clean. Even well water can't always be trusted. A common belief once was that if water came from the ground, it had to be safe.

Water contamination is a serious and complex problem. By taking a few precautionary measures, you can travel and enjoy the outdoors without risking illness. As said in the beginning, the simplest first line of defense is to *use only water you are reasonably certain is potable.*

Fixed Pressure
No Gauge
Not Adjustable

Fixed Pressure
With Gauge
Not Adjustable

Adjustable Pressure
With Gauge

Typical Water Pressure Regulators for RV Use

14 / WASTE SYSTEM

The waste water system in your trailer is made up of sinks, tub, shower, toilet, drain plumbing and vent lines. Waste water from the sinks and shower is contained in a "gray water" holding tank. Toilet waste is contained in a separate "black water" holding tank. The holding tanks make the system completely self-contained allowing you to dispose of waste at your convenience. In addition, there is a dump valve for each holding tank, the toilet, "P" traps at each sink and shower drain, and an indicator on the Convenience Center panel for each tank. Each holding tank is vented through the roof to reduce the buildup of interior odors. A flexible sewer hose and several fittings are required to connect the holding tank outlet to the inlet of an approved waste water dump station or sewer system. See Chapter 20 "Severe Weather Use" section for information on the optional "Arctic Package".

The water in the "P" traps also prevents odors from passing through the traps and venting into the trailer interior. Evaporation, particularly in a little used shower can make the "P" trap ineffective and allow odors to back up into the trailer interior. Make sure there is water in the traps.

The drain and waste plumbing is very similar to that used in your home. The plumbing is made of plastic, is durable and resistant to most chemicals.

NOTE: Do not open the holding tank dump valves unless properly connected to a sewer receptacle.

TOILET

Your trailer is equipped with a marine/RV-type toilet. It operates from water supplied either by the fresh water tank or from an exterior water supply connected at the city water hook-up. (The water pump must be turned on when utilizing the water from the fresh water tank.) The toilet flushes directly into the black water tank. Most models have pedals or hand-operated levers that operate independently. One opens a water valve to fill the bowl, the other operates the valve in the bottom of the bowl, permitting the contents to be flushed into the black holding tank. Complete instructions and care for the model installed are located in your Owner's Information Packet.

OPERATION

Depress the pedal about half-way to fill the toilet bowl prior to use.

Depress the pedal completely to flush the contents into the holding tank. Refill the bowl about half-way after flushing, if desired.

When flushing the toilet, make sure all contents are flushed out. If toilet tissue gets caught between the seal and the valve, the toilet may allow odors from the holding tank into the interior of the trailer.

SOLID BUILD-UP

The most common problem associated with the waste system is solid build up. Use plenty of water when flushing the toilet, and keep the tank valves closed until ready to flush the system to reduce the risk of build- up. Should you ever have a build- up of solids, close the valves, fill the tanks about ¾-full with fresh water, drive a distance to agitate the solids and drain the tanks.

Use of a holding tank deodorizing product is also highly recommended. Many deodorizing products are available from RV dealers or wherever camping supplies are sold.

NOTE: Prime the waste holding tank with an odor control chemical and one or two gallons of water at the start of each trip. Vehicle movement helps to liquefy solids for easier dumping.

HOLDING TANKS

The holding tanks provide maximum flexibility and convenience for complete self-contained operation. The tanks terminate at a three-inch drain fitting under the trailer. Each holding tank has a separate dump valve. The dump valve is a quick opening, knife-type, slide valve.

Each waste tank is made of seamless molded plastic, and will not corrode. To insure proper operation of the toilet, dump valves, monitor, and holding tanks, *never* flush the following items down the toilet. See the *"Care & Maintenance"* chapter for more information on toilet and holding tank cleaning.

Facial and/or wet strength tissues, paper towels, sanitary products (including those labeled "flushable").

Colored toilet paper. Use the inexpensive white toilet tissue as it dissolves easily. Biodegradable tissue is recommended and available at RV supply stores.

Detergents, bleach, lye, petroleum products or ammonia

Automotive antifreeze, alcohols, or acetones.

Grease or oil from cooking, table scraps or other solids that may cause clogging.

Use only potable antifreeze products, which are approved by the toilet and tank manufacturers, when winterizing the trailer.

Whenever the waste system is not connected to a sewer receptacle, the dust cap should be kept on the drain connection to prevent dust and/or dirt from entering the connection and damaging the dump valve.

HOLDING TANK MONITOR

The level in each holding tank is indicated on the Convenience Center panel. To check the level, press the switch for the tank and check the indicator light.

Convenience Center Panel *(varies depending on model)*

DUMPING THE HOLDING TANKS

During self-containment, the sewer line is securely capped to prevent leakage of waste material onto the ground or pavement. Do not pull the holding tank knife valves open when the protective cap is installed on the pipe. Always drain the tank into an acceptable sewer inlet or dump station.

Drain the holding tanks only when they are at least 3/4-full. If necessary, fill the tanks with water to 3/4-full. This provides sufficient liquid to allow complete flushing of waste material into the sewer line.

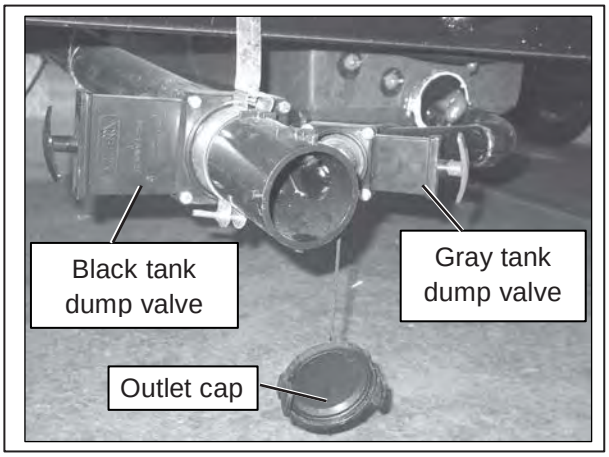
Whenever possible, drain the tanks before traveling. Waste water and sewage in the holding tanks reduce the carrying capacity of the trailer, and there's no sense driving around with it.

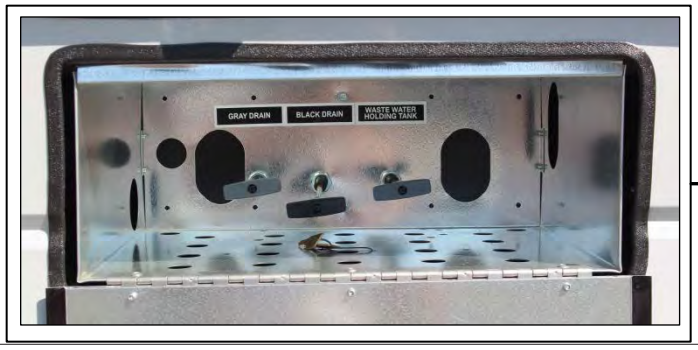
During extended hookups, waste materials will build up in the tank and cause serious plugging if the tank valves are left open. Keep the valves closed until the tanks are 3/4-full, then dump into the sewage system. When not connected to a sewage system, keep the protective cap in place on the drain line fitting.

NOTE: Local or State regulations may prohibit highway travel unless the holding tank outlet is securely capped.

⚠WARNING

Holding tanks are enclosed sewer systems and as such must be drained into an approved dump station. Both black and gray water holding tanks must be drained and thoroughly rinsed regularly to prevent accumulation of harmful or toxic materials.





Holding tank dump valves with optional Arctic package.

⚠WARNING

Do not use the fresh water hose you use for filling the fresh water tank or connecting to city water to rinse the sewer hose. Harmful or toxic materials could come into contact with the fresh water hose and could contaminate the fresh water supply, tank and plumbing system. Always use a separate hose for rinsing the sewer system components.

Please ... Practice good housekeeping when draining wastes at a campsite or disposal station. Be a good RV citizen and leave the site in good order. Leave it the way you would like to find it. Above all, do not pollute.

To dump the holding tanks:

1. Turn the outlet cap counterclockwise to remove it.
2. Attach the sewer hose to the holding tank outlet by turning counterclockwise, locking the end levers over the termination end.
3. Place the other end of the sewer hose into an approved dump station inlet. Push it far enough into the opening to be secure. Adapters may be required between the line and the inlet. Arrange the hose so it slopes evenly to the sewer inlet. Avoid sharp bends.
4. Open the black tank termination valve (the larger one) and drain. Grasp the valve handle firmly and slide the valve open with a quick, steady pull. Allow enough time for the tank to drain completely. Rinse and flush the tank through the toilet. When the tank is empty, push the valve handle back in to close the valve. Run enough water (up to five gallons) into the tank to cover the bottom. This will help to break up solids and reduce “pyramiding” of solid wastes.
5. To drain the gray water tank, open the gray tank termination valve (the smaller one) and drain. Drain the gray tank last to aid in flushing the outlets and hose. When the tank is empty, push the valve handle back in to close the valve.
6. Disconnect sewer hose, reinstall termination cap on the outlet.
7. Rinse out the sewer hose with fresh water and remove the sewer hose from the dump station.
8. Replace the sewer or dump station covers, and store the sewer hose and fittings.

HOLDING TANK CARE

The holding tanks are virtually trouble-free. The most common problem is also an unpleasant one — clogging. You can reduce the chance of clogging by remembering the following:

- Keep the black water tank knife valve closed. Fill the tank to at least 3/4-full before draining. Be sure to cover the tank bottom with water after draining.
- Use only toilet tissue formulated for use in septic tank or RV sewer systems.
- Use only cleaners that are approved for use in septic tank or RV sewer systems.
- Use a special holding tank deodorizer chemical approved for use in RV sewer systems. These chemicals aid the breakdown of solid wastes and make the system much more pleasant to use.
- Do not put facial tissue, paper, automotive anti-freeze, household toilet cleaner or sanitary napkins in the holding tanks.
- Do not put anything solid in either tank that could scratch or puncture the tank.
- Keep both knife valves closed and locked, and the drain cap tightly in place when on the road.

If the drain system does get clogged:

- Use a hand-operated probe to loosen stubborn accumulations.
- Seriously clogged P-traps may require disassembly. Be careful to not overtighten when reassembling.
- Do not use harsh household drain cleaners.
- Do not use motorized drain augers.
- Sometimes the holding tank valve will get clogged. In this case, a hand-operated auger may be necessary. Be ready to close the valve quickly once the clog is cleared.

SANI-FLUSH (OPTIONAL)

If equipped, the San-Flush kit has been installed to rinse the interior of the black tank. Similar to the water fills located on the exterior of the unit, a separate hookup is placed on the exterior.

Flush the tank after dumping by connecting the sewer hose and attaching a garden hose - *not your fresh water hose* - to the inlet labeled "**SANI-FLUSH".** Open the water supply to full pressure to flush tank. When water runs clear from sewer hose, shut off water supply and disconnect garden hose from source. Do not disconnect hose from flush inlet until water has drained from system. Close black tank dump valve.

- DO NOT leave any hose connected when not in use.
- DO NOT add any check valves to this system.

Sani-Flush Connection (Shown capped and with cap detached)

14 / WASTE SYSTEM

Owner Notes

15 / PROPANE GAS SYSTEM

Propane gas is used to operate the range, oven, furnace, water heater, and the refrigerator (when 120-volt AC power is unavailable). The gas is stored in portable DOT cylinders.

In its natural state, propane is colorless and odorless. An odorant is added to the gas at the refinery to give it a very distinct odor – similar to onions or garlic. You may smell this odor occasionally, especially after filling the tank. The filling process requires venting a small amount of gas, and sometimes high outdoor temperatures can cause expansion of the gas in the cylinder, and venting of the excess pressure through the safety valve. Another reason, and probably the most common, is that the odorant tends to settle near the bottom of the cylinder. As the cylinder gets closer to empty, the concentrated odorant becomes more obvious. Any time you smell gas, you should investigate the cause. It is possible that you may not be sensitive to the odorant used, and therefore would not notice the smell of gas. That is why it is very important that you pay attention to the propane leak detector installed in your trailer. If the leak detector sounds, or if you smell gas:

1. ***Extinguish any open flames, pilot lights, and all smoking materials.***
2. ***Do not touch electrical switches.***
3. ***Shut off the gas supply at the cylinder valves.***
4. ***Open doors and other ventilation openings.***
5. ***Evacuate the trailer of all occupants.***
6. ***Have the gas system checked and the leak source corrected before using the system again.***

Read all appliance literature, including the information on the propane cylinders and regulator, provided in the Owner's Information Packet. Follow any instructions provided in the appliance manuals.

⚠WARNING

If a leak is detected, do not continue to use the propane system until the leak is repaired.

Follow the instructions and warnings noted in the appliance and equipment owner's manuals as well as the ones listed here.

PROPANE SAFETY PRECAUTIONS

Propane is highly flammable and is potentially explosive if not handled properly. It is not poisonous, but can cause drowsiness and may result in suffocation. If you maintain the system properly, you can expect nearly trouble-free operation. Always observe the following when handling and using propane:

- ***Do not obstruct access to the cylinders. Access to the cylinders is critical in an emergency.***
- ***Inspect the entire propane system for leaks or damaged parts before each trip and before filling the cylinders.***
- ***Never check for leaks with an open flame. Use an approved leak detection solution or a non-ammoniated, non-chlorinated soap solution only. If the leak cannot be located, take the trailer to a propane service facility.***
- ***Do not attempt to fill the propane cylinders yourself. Filling should be done only by qualified personnel using the required special tools and fittings.***
- ***When filling the propane cylinders, use extreme caution and make sure others do also. Keep any flame, spark or anything that might produce a spark at least 25 feet from the filling operation. DO NOT SMOKE.***
- ***Observe the warning label located near the propane cylinders. The label reads "DO NOT FILL CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY."***
- ***Alterations, even as simple as mounting a plaque, can cause an unseen propane, water or electrical line to be damaged. Any nailing, screw attachment, drilling, or similar operation on or in the trailer could be hazardous. Always be careful when drilling holes or fastening objects to the trailer.***
- ***Turn off the main propane valve, pilot lights, appliances, and their ignitors when filling the propane cylinders and/or tow vehicle fuel tank.***
- ***Burning propane consumes oxygen in your trailer. Keep your trailer properly ventilated at all times, especially when using the oven or stove.***

- ***Do not place or store propane tanks or cylinders, gasoline or other flammable liquids inside the trailer (Standard models only. Carrying these items in cargo hauler models is permitted.)***
- ***Do not use any other propane container other than the ones furnished with your trailer without being sure that all connecting components are compatible, and that it meets all applicable regulations and codes.***
- ***Do not use cooking appliances to heat the trailer interior.***
- ***Before opening the main propane valve, be sure that all inside valves and burners are closed.***
- ***Make sure all appliances, plumbing and outside vents are open and free from obstructions such as ice and snow. Make sure the breather vent on the propane regulator is clean and clear of obstructions.***
- ***Make sure the regulator vent is facing downward.***
- ***Portable fuel-burning equipment, including wood and charcoal grills and stoves, should not be used inside the trailer. The use of this equipment inside the trailer may cause fires or asphyxiation.***
- ***Do not use a wrench or pliers to close the main shut-off valve. This valve is designed to be closed leak-tight by hand. If a tool is required to stop a leak, the valve probably needs repair or replacement.***
- ***If you do not have the special tools and training necessary, do not attempt to repair or modify propane system components.***
- ***Annual maintenance on the propane system, appliances, and equipment should be done only by an authorized dealer or repair facility.***
- ***Insects can build nests in the burners of the various appliances and equipment. The burners and orifices in the propane gas appliances and equipment should be cleaned out by an authorized dealer or repair facility at least once a year or whenever necessary.***
- ***Always think safety.***

PROPANE SYSTEM COMPONENTS

The propane system consists of the propane cylinders with overfill protection devices (OPD), the automatic change over regulator, hoses, and associated pipe and tubing. All components meet UL or CSA requirements. The system has been tested and approved for use in your trailer, and has been performance tested at both the factory and the dealership. You should check the system for leaks periodically. Twice a year, or after a long storage period, the system should be checked by a qualified propane service facility. Check hoses for signs of deterioration every time you have the propane cylinders filled or serviced. Be sure any replacements meet original performance specifications. See the *"Care and Maintenance"* chapter for details on leak testing and system service. A gas leak detector is installed in your trailer to detect the presence of propane and sound an alarm. A description of this device is in the *"Safety First"* chapter, and detailed operating instructions are included in your Owner's Information Packet.

The regulator reduces the pressure of the gas from the cylinders to a safe, steady level for use by the appliances. The regulator is adjusted for the proper pressure and is rechecked by your dealer. Do not adjust the regulator. If necessary, have the regulator checked and adjusted by an authorized propane service facility.

The automatic changeover feature allows an uninterrupted flow of gas to the system as long as both cylinders' main valves are open. The arrow on the changeover lever points to the supply cylinder. When the supply cylinder becomes empty, the control will automatically begin to draw gas from the reserve cylinder. An indicator on the changeover will show red. By turning the arrow on the changeover lever to the reserve cylinder, the red indicator will disappear as long as there is gas in the reserve cylinder.

⚠ CAUTION

The supply cylinder is not completely empty until the red indicator is fully visible in the indicator window. There will still be pressure in the empty cylinder.

⚠ WARNING

With a cylinder removed, the hose from the regulator must be capped. Gas will escape to the atmosphere through the open connection if pressure in the supply cylinder drops to 5 psi (red indicator flag visible). If the changeover lever is turned to the disconnected side gas will escape.

FILLING THE PROPANE TANKS

Your trailer is equipped with two propane cylinders. When one cylinder becomes empty, you can switch over to the other without interrupting the gas flow. This makes it convenient when you are located at a location that may be a long way from a gas supplier.

Your propane system is equipped with a Type I cylinder connector, with a large green nylon swivel nut. The green swivel nut attaches to the outside of the cylinder valve with right hand threads. Tighten the swivel nut by hand. DO NOT use tools.

The safety features of this system prevent gas from flowing unless the connection is tight and will limit excessive gas flow. In cases of extreme heat, 240° to 300°F, at the connection, the connection to the cylinder will be shut down.

The empty cylinder can be removed without disturbing the gas flow to the system.

1. Before removing an empty cylinder for refilling, close the main valve on the empty cylinder – hand tighten only. Rotate the changeover lever on the regulator so that it points to the full cylinder.

2. Loosen the hand nut attaching the flexible hose to the cylinder.

3. Loosen the wing nut holding the retaining bracket for each cylinder. Remove the empty cylinder. Install the plastic plug in the cylinder port.

4. Have the empty cylinder filled at a safe distance from the trailer. Caution the fill station attendant not to overfill the cylinder. All DOT propane cylinders have overfill protection devices (OPD) to prevent overfilling.

5. Place the refilled cylinder back on the trailer. Secure the cylinder with the retaining bracket and wing nut.

⚠WARNING

The propane gas system in your trailer is designed for propane gas only. Do not connect natural gas to this system.

⚠WARNING

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

Open the tank main valve slowly. Opening the tank main valve quickly can be hard on the regulator diaphragm and result in leaks.

6. Remove the plastic plug and connect the flexible hose to the cylinder. Tighten the hand nut securely but not overtight.

7. Slowly open the main valve on the cylinder. Do not "snap" open the valve. The sudden pressure surge can damage the regulator diaphragm components. Test the connection for leaks with propane leak detector solution or a soapy solution that does not contain ammonia or chlorine.

Take empty propane cylinders to a propane gas supplier or service station which sells propane. Do not attempt to fill the cylinders yourself. The cylinders can legally be filled to 80% of each cylinder's total capacity. Filling a cylinder to 80% allows for 20% vapor and expansion space. A built-in safety feature indicates when the cylinder has been filled to the 80% level. Overfilling propane cylinders can result in uncontrolled gas flow which can cause fire or explosion. A properly filled cylinder will contain 80% of its volume as liquid propane.

A simple way to determine the level of liquid in a propane cylinder is to slowly pour a pot of hot water down the side of the cylinder, warming a path from top to bottom. Wait 10 seconds. Now run your hand down the path warmed by the water until you feel a cold line – this indicates the liquid level. Be sure to wipe the cylinder dry to prevent rust spots.

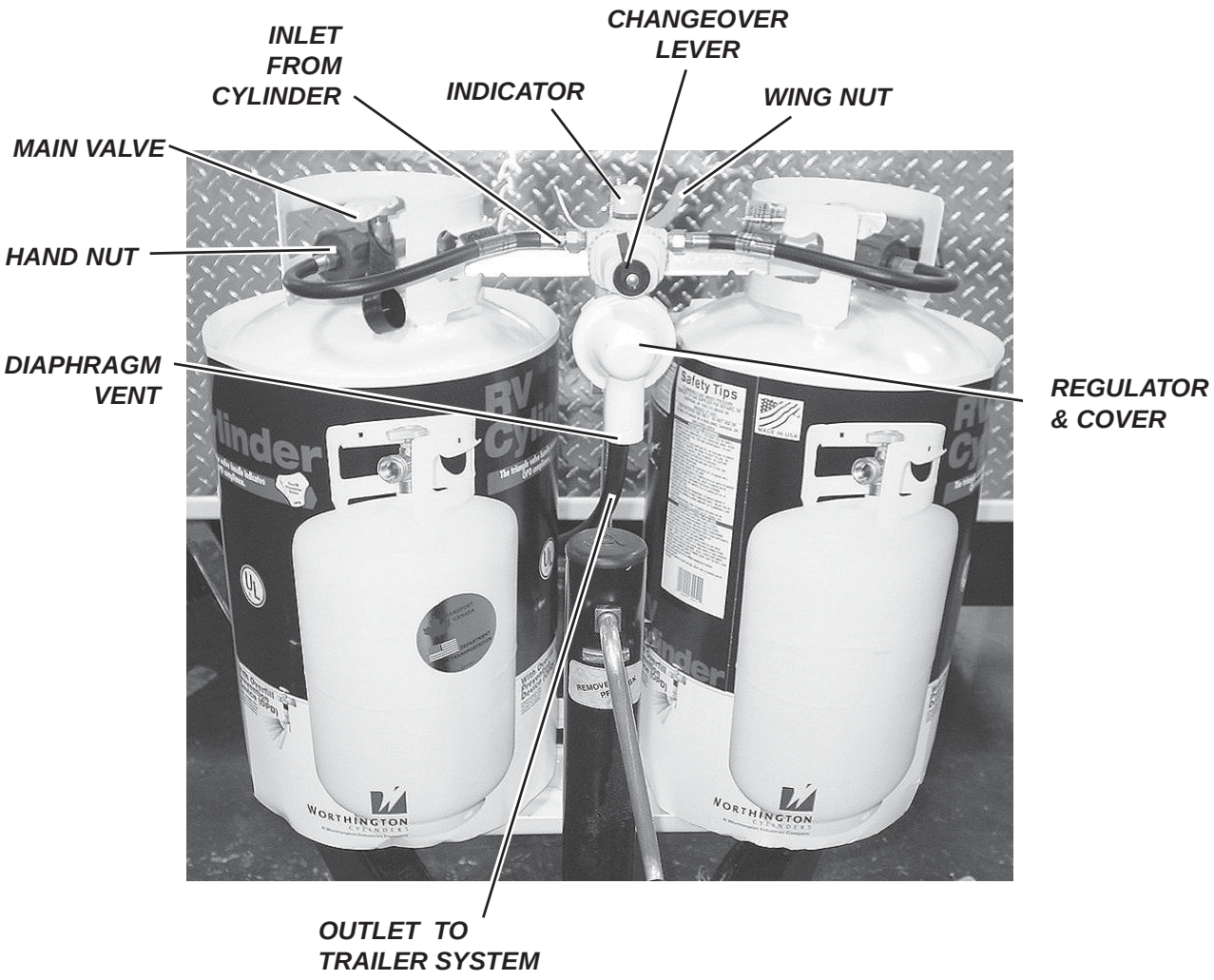
If the cylinder is to be put in storage for a length of time or is empty, close the main valve on the cylinder and install the plug in the cylinder port. This will minimize entry of moisture in the regulator or cylinder. Moisture can cause freezing damage in the regulator.

USING PROPANE IN LOW TEMPERATURES

If you expect to use the system in cold temperatures, be sure to use a gas mixture that will not freeze up. Your local propane gas service facility can advise you on the best mixture of gas for your anticipated traveling needs. As long as the system components are kept above the vapor point of the gas, the system will function in low temperatures. Different gas blends are available, and you should contact your gas supplier for information on blends appropriate for your needs and the areas where you will be traveling.

Propane systems can freeze up during extremely cold weather. Although properly blended gas does not freeze, moisture or water vapor in the system or absorbed by the gas can freeze and partially or totally block the flow of gas. You can help prevent propane system freeze up:

1. If you are unsure whether a cylinder is completely moisture-free, have your propane supplier inject a special, approved antifreeze or deicer into the cylinder.
2. Use the proper blend of gas for your traveling area. With the proper blend, freeze up is unlikely. If you do experience freeze up, have your propane service facility service the cylinders and regulator as required. ***NEVER TRY TO RESTORE GAS FLOW WITH ANY OPEN FLAME DEVICE.***



Typical Propane System Components
(Component arrangement may differ depending on model)

Owner Notes

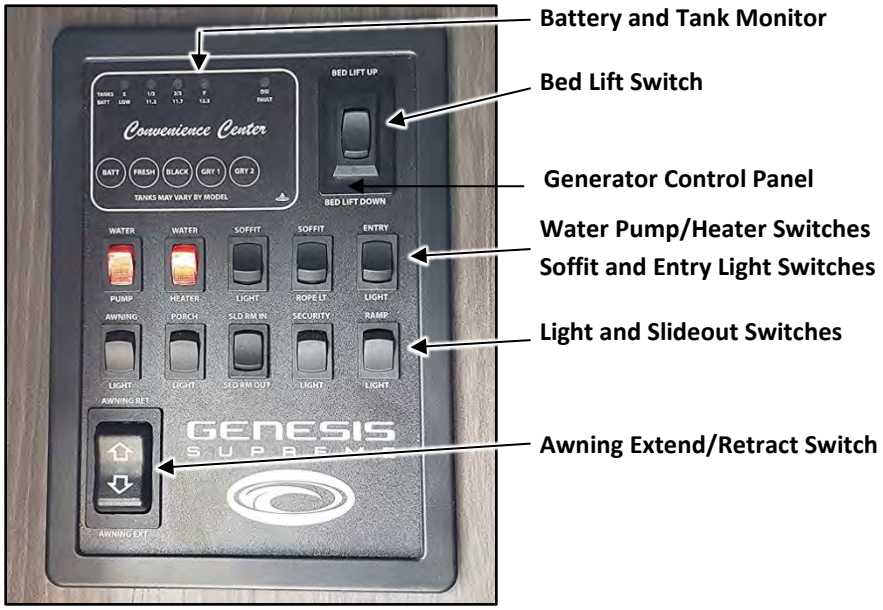
16 / INTERIOR & FURNISHINGS

IMPORTANT NOTICES

Some wood products such as OSB (oriented-strand board), hardwood plywood, or paneling used in your trailer may have been made with urea-formaldehyde. Ventilation is important for making the interior of your trailer comfortable, and is a part of good maintenance. Please read the section about ventilation in Chapter 4 of this Owner's Guide.

INTERIOR CONTROL PANEL

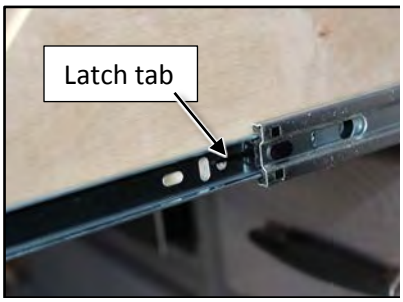
Many of the control, warning and indicator devices have been centralized in a Convenience Center panel similar to the one shown below. Specific components and layout depends on the model of your trailer and equipment installed. Details of each of the components are discussed in other chapters of this guide.



Convenience Center (Location and layout vary depending on model)

⚠CAUTION

Some parts of this product are manufactured with a urea-formaldehyde resin and will release small quantities of formaldehyde. Formaldehyde can be irritating to the eyes and upper respiratory system of especially susceptible persons such as those with allergies or respiratory ailments. Proper ventilation will reduce indoor formaldehyde levels. If symptoms develop, consult a physician.



Cabinets and Drawers

The drawers run in metal guides. To remove a drawer, pull it out until it stops. On each side of the drawer is a latch mechanism tab. Press the latch tab while pulling the drawer out slightly to clear the latch tab. Pull the drawer out and lift slightly to clear the guide wheels.

To re-install the drawer, lift it slightly while sliding the guide wheels into the track. The latch mechanism will reset automatically.

Interior Storage

Interior storage areas may be found in a number of places in your trailer – overhead compartments, wall closets, under the dinette, sofa, under the bed and in lavy/galley cabinets.

Some interior storage areas may be equipped with 12- volt lights. Be sure these lights are OFF when you close the door or your battery could be rapidly discharged if you are not connected to shore power.

Be sure to close cabinet and closet doors and drawers before towing the trailer. Catches and detents will keep the doors and drawers closed under most travel conditions, but may not hold on very rough roads.

Travel Locks

Sliding doors, including the shower door, may be equipped with travel locks to keep them from being damaged or causing damage during travel.

Folding Doors/Dividers

The divider doors allow you to separate areas of the interior. When the dividers are open during travel, be sure to attach the holdback to keep the door from sliding back and forth.

Interior Lighting

Both decorative and utility lighting fixtures may be installed in your trailer. Controls may be either on the fixture itself or on a wall switch. Always replace bulbs with the same type and wattage as originally installed or as indicated on the fixture.

⚠CAUTION

Some lighting fixtures may use halogen or other high energy lamps. Both the lamp(s) and fixture(s) may get very hot when they are on. Do not touch these lighting fixtures when they are on. Always allow them to cool before attempting to change the lamp or clean the fixture.

Dinette Conversion *(If Equipped)*

To convert the dinette into a bed:

1. *Extend the slideout (if equipped) as necessary.*
2. *Pull table top up and off the support posts. NOTE: The support posts may come out of the floor sockets with the table top. They may fall out of the table top sockets.*
3. *Remove the support posts and put them aside.*
4. *Lay the table top down on the seat frame supports, flat side up. Be sure the table top is squarely supported on the seat frame supports.*
5. *Arrange the seat and back cushions on the table top for the desired sleeping surface.*
6. *Reverse procedure to restore dinette.*

Jackknife Sofa Conversion

To convert the sofa/lounge into a bed:

1. *Extend slideout (if equipped) if necessary.*
2. *Remove and set aside loose cushions (armrests, bolsters, etc.).*
3. *Grasp and lift bottom (seat cushion) to about a 45-degree angle. You might hear or feel a slight "click" as the mechanism releases. Pull toward you and the back will lay down flat as the cushion area slides slightly toward you.*
4. *To restore sofa, lift up and hold seat cushion, grasp back cushion and "roll" sofa assenbly back to sofa position.*
5. *Reposition arm rests, bolsters and cushions as desired.*

⚠CAUTION

Pinch Hazards. Keep hands, fingers, feet, and toes away from the sofa/bed/lounge frame pivot points when converting to beds or sofas.

CAUTION

Fold sofa legs up/in before operating slide-out room. The extended legs could contact the floor and cause damage to the floor material.

NOTICE

BUNK LOAD LIMITS:
450 LBS. MOVING
600 LBS. STATIONARY

Bunks

There isn't much to know about bunks except that they have a weight limit. They can handle a maximum stationary weight of 600 pounds, and a moving weight of 450 pounds.

Some bunks are very high. Small children may fall. Use good judgment when using the bunks. High bunks may not be appropriate for very young children.

When preparing the trailer for travel, remove and stow the bunk ladder (if equipped) to prevent it from moving inside the trailer, possibly causing damage to the interior. Use caution when positioning the ladder. Do not use the ladder for any other purpose.

Ladder Safety

- *Position the bunk ladder so that the bottom of the ladder is about 1/4 of its length from the bunk.*
- *Keep the ladder dry and free of oil, grease, paint or other slipping hazards.*
- *Keep the area around the top and bottom of the ladder clear of obstacles.*
- *Do not tie sections of ladders together to form a longer ladder.*
- *Do not use the bunk ladder for any other purpose.*

⚠CAUTION

Do not allow anyone to ride on the power bunks while raising, lowering or adjusting the bunks.

⚠WARNING

Do not operate the power bunk lift with people or objects on bed(s). Serious injury may result.

Power Bunks (See Bed Lift User's Manual)

To operate the power bunks:

1. *Remove any objects in the path of either upper or lower bunk. Do not allow anyone to occupy the area either above or below the bunks while raising, lowering or adjusting the bunks.*
2. *Press the bed lift switch to RAISE to raise the bunks. Press to LOWER to lower.*

⚠CAUTION

Be sure area for bed lift is free of obstacles above and below.

⚠CAUTION

Do not use the power bunks to store or lift any items including ATVs.

Overhead Vents

An overhead vent is located in the bath area for fresh air circulation and for exhausting heat and water vapor from bathing. An overhead vent may also be located in the galley to exhaust odors and moisture from cooking, etc. and for fresh air circulation.

Turn the crank in the center of the vent to open or close. Some vents may also have a 12-volt electric fan and switch.

Be sure to close or lower the overhead vents before traveling. Wind and low overhead clearances could damage the vent(s). Close the vent lid completely while going down the road or in windy conditions. It could ratchet open and be damaged.

Use soapy water to clean the vent covers. Vacuum the screens. Lubricate the mechanism once a year with light, water resistant grease.

NOTICE

Before opening the vent dome, be sure there is clearance for the dome. Do not travel with the dome open.

MiniBlinds and Window Shades

⚠WARNING

Small children can strangle in the loop of pull cords, chain and bead cords, and cords that run through window coverings. They can also wrap cords around their necks.

To avoid strangulation and entanglement, keep cords out of the reach of young children. Also,

1. Install safety devices that remove the cord loop or reduce access to cords, and

2. Move cribs and furniture away from window covering cords.

Owner Notes

17 / EQUIPMENT & APPLIANCES

Appliance Operating Guides

Operating guides and manuals for the appliances and components installed in your trailer are in your Owner's Information Packet. These manuals outline operating and maintenance details. Most difficulties with the use of appliances, entertainment systems, and other components are related to a lack of understanding with the operation of the system. Take time to read the operating manuals and guides for each component.

Refrigerator

The refrigerator operates on either propane or 120-volt AC electric power. If both power sources are available, 120-volt AC operation will be selected unless the controls are set to GAS. The ice maker (if equipped) will operate only if the refrigerator is operating on 120-volt AC power. Refer to the refrigerator operating manual for details on operation and maintenance.

If your refrigerator is equipped with an ice maker, it must be drained and winterized if you plan to store or operate the trailer in freezing temperatures. See the *Storage and Winterization* chapter in this Owner's Guide, or the refrigerator operating manual.

Most RV refrigerators use absorption of heat rather than a blower to cool the interior of the refrigerator. They will not keep the interior cool if you open and close the door more than necessary, and particularly if you leave the door open for a minute or more. Once the interior cold dissipates, it can take an hour or more to restore the cold temperatures inside. During defrost cycles, the interior may rise to 50 degrees or more for a period of several hours. If you open the door during this period it will take much longer to restore the interior cold temperature. Your refrigerator will keep things colder when it is full as the cold products inside help with cooling. Pre-cooling refrigerated items will help reduce the time it takes to get everything in the refrigerator cold.

NOTICE

Some appliances are installed with compartment space built around them to allow for proper air flow. Do not restrict this air flow space by storing anything in the space. Please pay attention to the following notice installed in certain appliance compartments/air spaces:

⚠DANGER

IMPORTANT NOTICE
This compartment is for proper air flow to the refrigerator.

DO NOT USE THIS SPACE FOR STORAGE OF ANY KIND.

Do not store or use gasoline, other combustible materials or liquids, or any other materials in this compartment or adjacent to the refrigerator.

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or death.

Range and Oven

The range and oven operate on propane. A detailed guide to operating the range and oven is in your Owner's Information Packet. Make sure you review all the safety precautions and warnings in the *Propane System* chapter in this Owner's Guide. When traveling, make sure the range and oven pilot are OFF. The range and oven require an adequate supply of fresh air for combustion. Make sure there is proper ventilation when using the cooking appliances.

Before operating the range or oven:

1. Secure the privacy curtain (if equipped)
2. Open the overhead vent or turn on the exhaust fan and,
3. Open a window.

A warning label is located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen is limited due to the size of the trailer. Proper ventilation when using the cooking appliance(s) will reduce the danger of asphyxiation. It is especially important that cooking appliances not be used for comfort heating as the danger of asphyxiation is greater when the appliance is used for long periods of time.

⚠WARNING

Do not use this appliance unless the privacy curtain is secured. Failure to comply could result in fire or serious injury.

⚠WARNING

Burning propane consumes oxygen in your trailer. Keep the trailer properly ventilated at all times, especially if the oven is in use.

⚠WARNING

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

Microwave/Convection Oven (if equipped)

The microwave/convection oven is similar to those used in home kitchens. A complete guide to operation and maintenance is included in your Owner's Information Packet.

Air Conditioner(s) (if equipped)

To operate a single air conditioner, the trailer can be connected to 30-amp shore power, or you can operate the generator. To operate both air conditioners (if equipped), the trailer must either be connected to 50- amp shore power, or the generator must be operated if connected to 30-amp shore power. Neither air conditioner can be operated from the inverter (if equipped).

Please note that typical RV air conditioning systems will result in interior temperatures approximately 20 degrees cooler than the outside air temperature. They cannot maintain an interior temperature of 70 degrees with an outdoor temperature of 110 degrees. In extreme hot and humid weather conditions, you will not be able to cool the interior of the trailer beyond the capacity limits of the air conditioner(s). This does not indicate a defective air conditioner.

You can help keep interior temperatures down by parking – whenever possible – in the shade. Ceiling fans (if equipped) and other interior air circulating fans can also help keep indoor temperatures relatively comfortable. Closing windows and shades/blinds early in the day can also help keep indoor temperatures down.

WATER HEATER

Depending on trailer model, the water heater may operate on electric, propane or a combination of both. Before operating the water heater, *make sure it is full of water.* Observe all the following warnings and any additional warning in the manufacturer's instructions.

Before operating the water heater:

Do not try to light the burner by hand. The water heater does not have a pilot light. It is equipped with an ignition device which lights the burner automatically.

Before lighting, smell all around the appliance area for gas.

If you do smell gas, take action as directed in the following WARNING.

Do not attempt to repair the automatic gas valve. No adjustments are necessary. Tampering with the gas valve could result in a fire or explosion.

Do not use this appliance if any part has been under water. Call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

NOTICE

If the trailer is not to be used for some time or if it will be subjected to freezing temperatures without heat, drain the water heater as outlined in the CARE and MAINTENANCE chapter.

⚠WARNING

If you smell gas, do not try to light any appliance. Do not touch any electrical switch or use any phone in your trailer. Call a qualified service technician immediately.

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

Make sure all ignition systems are OFF during any type of refueling.

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or death.

PROPANE OPERATION

1. Be sure the water heater is full. Open a hot water faucet and check that water flows.

2. Press the switch ON. If the burner does not light, the system will automatically attempt two more tries for ignition before lockout. During ignition, the indicator light will illuminate. If the light does not go off, the ignition system is in lockout.

3. To turn the water heater off, press the water heater switch to OFF.

Water Heater Switch

If the burner will not come on, check the following items before calling a service technician:

Propane supply is empty or not turned on

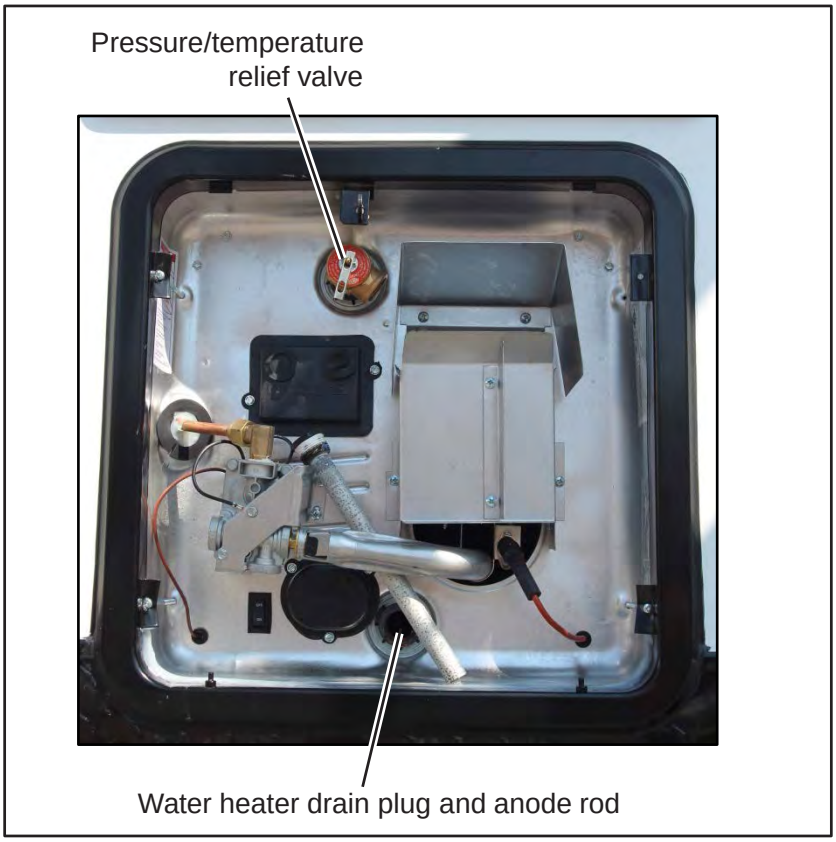
Fuse blown

See Troubleshooting chart in water heater operating manual.

PRESSURE/TEMPERATURE RELIEF VALVE

Occasionally this valve may “weep”. This is not a defect. The water heater tank is designed internally with an air gap at the top to reduce the weeping. Normal water expansion while it is being heated may, over time, absorb the air and cause weeping. To reduce the weeping:

1. Turn off the water heater and let it cool.
2. Turn off water pump or city water connection.
3. Open a hot water faucet.
4. Pull out on the handle of the relief valve and allow water to flow from the valve until it stops.
5. Release the handle on the valve. It should snap closed.
6. Close the faucet and turn on water supply. As the tank fills, the air pocket will be restored.



Water heater (shown on outside trailer sidewall)
Location of items shown may vary depending on brand and model.

WATER HEATER BYPASS SYSTEM

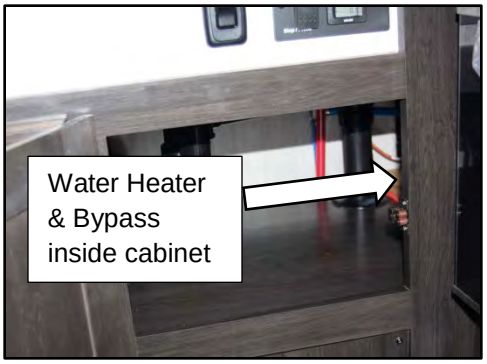
The bypass valve allows the water heater tank to be bypassed when winterizing the fresh water system. Bypassing the water heater will save several gallons of antifreeze solution.

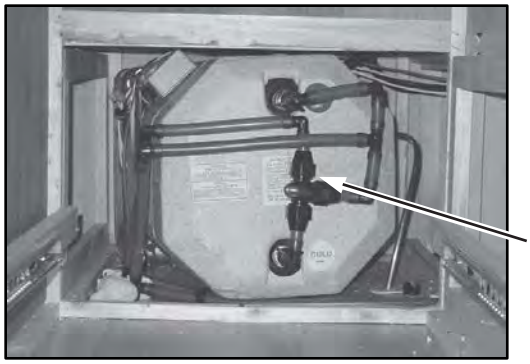
The bypass valve is located on the back of the water heater or in the cold water line near the water heater. You may have to look in a cabinet or behind a panel to see the back of the water heater. Just look on the outside of the trailer, locate the water heater and find the corresponding location inside.

For normal water heater operation, be sure the bypass valve handle is set as shown in the illustration. To bypass the water heater for winterization, turn the valve handle one-quarter turn clockwise. The valve is a quarter-turn valve, and only has two positions – open and closed.

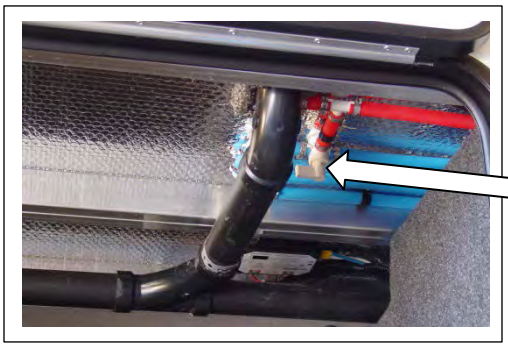
If the bypass valve is set to the bypass position, the water heater will not fill with water. If you don't get hot water after a reasonable time, check this valve and be sure it is set to the normal position.

See the *Care and Maintenance* chapter for more details on fresh water system care and maintenance.





Bypass valve on back of water heater. View is from inside trailer.



5th-Wheel Water Heater Bypass located in forward trunk.

Bypass valve in NORMAL position

Bypass valve in BYPASS position

CENTRAL VACUUM CLEANING SYSTEM *(IF EQUIPPED)*

The vacuum cleaning system is located in the trunk with the hose attachment inlets located in the interior and one in the trunk next to the vacuum unit. Detailed safety, operating and maintenance instructions are in your Owner's Information Packet.

The unit will come on automatically when the attachment inlet cover is opened and the attachment is connected

NOTE: The vacuum power unit has a thermal protector in the motor to prevent overheating. If the motor will not operate, pull the power cord out of the receptacle and reinsert it to reset the unit. Allow the unit to cool down before continuing vacuuming.

The filter bag should be changed when it is 2/3 to 3/4 full. The vacuum system user guide lists replacement filter bags and accessories.

To change the filter bag:

Locate the canister, lift the lid and pull the bag collar off the connector. Open the new bag and expand the bag pleats by carefully pulling on the bag. Slide the collar of the new bag securely over the inlet connector.

ELECTRIC FIREPLACE *(IF EQUIPPED)*

The electric fireplace is a decorative secondary heat source for the interior of the trailer. Complete, detailed safety, operating, and maintenance instructions are in the Owner's Information Packet.

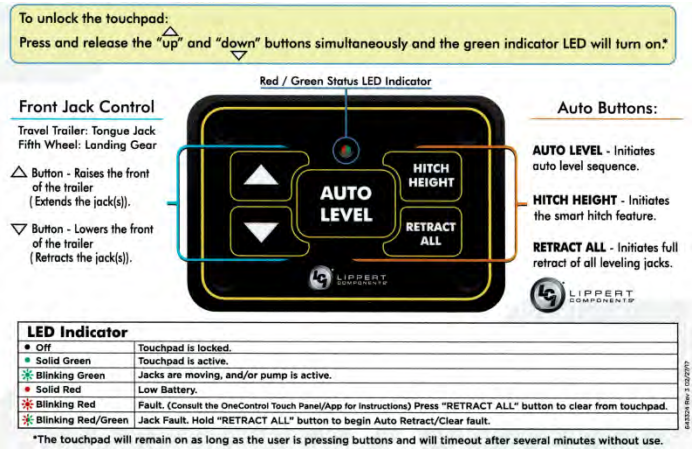
GENERAL FIREPLACE OPERATING SAFETY PRECAUTIONS

⚠WARNING

- **Read the fireplace operating instructions in the Owner's Information Packet before using the fireplace.**
- **The fireplace will become hot during use. Do not let bare skin touch hot surfaces. The grill at the top of the unit will become hot when the fireplace is in use. Do not block the air intake or exhaust ports.**
- **Use extreme caution when operating the fireplace near children or invalids or whenever the fireplace is left operating and unattended.**
- **Do not insert insert or allow foreign objects to enter any ventilation or exhaust openings. These objects may cause an electric short or fire, or damage the fireplace.**
- **To help prevent the possibility of fire, do not block air intakes or exhaust in any manner. Do not place cushions, pillows, bedding, clothing or similar soft materials near openings which may be blocked.**
- **Do not attempt to burn wood, charcoal, paper, or any combustible liquid or material in the fireplace.**
- **Do not place clothing or other flammable materials on or near the fireplace.**

LEVELUP OCTP® 5TH-WHEEL LEVELING SYSTEM *(IF EQUIPPED)*

The LevelUp hydraulic leveling system allows you to control the landing and leveling legs when setting up at a site. A detailed guide to safety, operation, maintenance and troubleshooting is included in your Owner's Information Packet.



LevelUp Leveling System Controls – Refer to complete, detailed operation, maintenance and troubleshooting guide in your Owner's Information Packet. You can also download the user guide from:

https://lci-support-doc.s3.amazonaws.com/manuals/leveling-and-stabilization/ccd-0001539.pdf

⚠WARNING

Failure to act in accordance with the following may result in serious personal injury or death.

Do not use the Level-Up 5th wheel leveling system to support the trailer for any reason other than leveling the trailer. It is designed as a leveling system only. Do not use the leveling system to lift the trailer to change tires or service the leveling system components.

Any attempts to change tires or perform other service while the trailer is supported by the Level-Up 5th wheel leveling system could result in damage to the trailer and/or cause serious injury or death.

SLIDEOUTS (IF EQUIPPED)

The slide-outs are designed to provide additional living space during site set-up.

Before operating the slideout, level and stabilize the trailer. If the trailer is not level, the slideout room and/or the mechanism may be damaged. Stabilizer jacks help keep the trailer square so the slideout extends/retracts and seals correctly. Be sure stabilizer jacks are placed on a solid ground surface. Piers or supports are not necessary under the slideout when extended.

The slideout system will make creaking or squeaking noises during operation. These noises are normal especially during the break-in period while the components are seating properly. These noises will decrease after a few extend/retract cycles. Note that there will always be some noticeable noises when operating the slideout.

When the slideout is extended, it is outside the trailer. Rain, snow, ice, blowing dirt and dust, and other debris may cling to the outside surfaces of the slideout and mechanism. When the slideout is retracted, whatever is on the outside will be brought inside the trailer. Before retracting the slideout, check the outside surfaces. Wipe them dry or clean as much as possible. If the slideout is extended for a long period, be sure to check for insect nests, etc. before retracting. **Check for standing water on the slideout topper awning (if equipped). And remember that the slideout seals are not designed to remove all the water or debris that may accumulate on the outside surfaces. You must wipe it off before retracting the slideout.**

⚠WARNING

Stand clear of the room's interior path and verify that there are no exterior obstructions before extending or retracting the slideout.

⚠WARNING

There are hard, sharp metal edges in the slideout mechanism. Do not allow children to play under the slideout(s) when extended.

⚠WARNING

The slideout room and mechanism are a potential crush hazard. Disconnect the batteries to disable power to the slideout(s) before working on or under the slideout(s).

NOTICE

Do not move the trailer with the slideout extended. Damage can occur to the slideout or the trailer.

⚠WARNING

Keep people, pets and objects away from the slideout room and mechanism during operation. The mechanism assembly may pinch or catch loose clothing causing personal injury.

Slideout control switches

(Color, style and location varies depending on model)

⚠CAUTION

Do not manually retract/ extend the slideout room or mechanism unless the battery is disconnected, cables removed or main disconnect switch is OFF.

Slideout Operation

Electric Operation

1. Level and stabilize the trailer.
2. Be sure the batteries are fully charged or the trailer is connected to the tow vehicle through the 7-way cord and the tow vehicle is running at high idle. Turn off all unnecessary lights to maximize available power.
3. Close all cabinet doors and drawers.
4. Before extending, be sure the area outside the trailer is free of obstacles – trees, boulders, fences, etc.
5. When retracting, be sure the interior is clear of people, pets, furniture, clothing, etc. Move any furniture or other items which may be in the path of the slide-out unit. If the outside of the slideout is wet, wipe it dry before retracting. **SPECIAL NOTE FOR SLIDEOUTS WITH SOFA: Place sofa in upright position before retracting slidout. Sofa legs could damage floor material.**
6. Press and hold the slideout room switch to either IN or OUT until the slideout is completely extended or retracted. The slideout(s) must be completely extended or retracted for seals to be effective.

NOTE: If you hold the switch past when the room is fully extended or retracted, the motor will automatically stop.

Manual Operation

If the electrical operation of the slideout(s) fail, they can be operated manually. A square drive on the end of the each motor shaft allows you to use a socket and ratchet to turn the motor shaft and retract or extend the slideout. The slideout drive motors incorporate brake mechanisms that must be disengaged before the motor shaft can be turned. *Do not attempt to turn the slideout motor shaft without disengaging the motor brake.*

1. Locate the slideout drive motor. It is mounted in a compartment below the slideout (main slideout), or attached to the rail assembly (bedroom slideout, if equipped).
2. Rotate the brake lever on the back of the motor counterclockwise (looking from the rear of the motor) about 1/8-turn to the released position. This will release

the motor brake that holds the slideout in place. The slideout room is now free to move.

3. With a 3/4", 8-point or socket and long-handled, 1/2"- drive ratchet (or adjustable wrench), turn the square drive motor shaft as required to retract or extend the room. Note that the drive system uses a gear reduction arrangement, and many strokes of the ratchet will be required to fully extend or retract the slideout. (Unlock slideout awning, if necessary before moving slideout.)
4. When the slideout is positioned as desired, apply some pressure with the wrench and return the motor brake lever to the engaged position. This will lock the room in place. Lock the slideout awning if necessary. Remove the wrench.
5. Have the problem corrected as soon as possible.

Slideout setup and adjustment are routine owner maintenance items and are not covered under the warranty. If the slideout system needs adjustment or re- leveling, your dealer or service center will charge you to perform these services. Regular maintenance and replacement of seals as soon as required will extend the life and usefulness of the slideout system. If deteriorated seals are used past their useful life, rain, snow and ice can penetrate inside the trailer walls and/or roof and cause extensive damage that can be very expensive to repair. These repairs are not covered under the warranty.

Closely inspect the slideout seals at least twice a year, before winter and again in the spring. Over time, the seals will stiffen, become brittle and crack. The time it takes for this to happen will vary depending on weather conditions and exposure to the sun. Seals that are protected from sunlight are hidden from view. They will last longer than the outer perimeter seals, but will still need replacing. If you see any evidence of water or wind leakage, have the slideout seals checked. Replacement of these seals should be done by your dealer or authorized RV service center. It may be necessary to partially disassemble the slideout and your dealer or service center has the special tools and experience to do this work correctly.

NOTICE

Do not store the trailer with the slideout(s) extended. Damage can occur to the slideout or the trailer.

Level your travel trailer when you put it in storage.

17 / EQUIPMENT & APPLIANCES

Owner Notes

18 / CARGO/RAMP TRAILERS

CARGO/RAMP TRAILER WEIGHT DISTRIBUTION

All loaded trailers must remain within GVWR and GAWR limits. Proper load distribution is especially important for ramp/cargo trailers. These trailers are designed to carry a variety of cargo and/or vehicles in the cargo storage area. These cargo items are typically heavy and you must consider how they are loaded. Incorrectly loaded trailers can have too little weight resting on the hitch or pin and can become unstable when towing. Therefore, you must maintain a hitch weight percentage of 10 – 15% for travel trailers and 15 – 25% for fifth wheels. Keep 60% of the cargo weight forward of the axle(s) centerline.

CARGO/RAMP TRAILER LOADING

The rear cargo door/loading ramp gives you complete access to the trailer cargo area. When lowered, the loading ramp allows you to easily load rolling cargo, bicycles, small motorcycles and ATVs, and small vehicles.

This section outlines the safety precautions you should take when loading and unloading cargo and vehicles, as well as loading/unloading procedures, techniques and tips.

CARGO/RAMP TRAILER LOADING SAFETY

The loading ramp/door area of your trailer can be a very hazardous part of your recreational activities. Many combinations of hazards and a large volume of activities occur in this area. Some of these hazards are:

- ***ramps and inclines***
- ***overhead obstructions***
- ***dissimilar surfaces that are often wet and slippery***
- ***poor lighting during night or early morning activities***
- ***other vehicular traffic***
- ***pedestrians***
- ***restricted views***
- ***awkward, heavy or unbalanced loads***
- ***sheer drops***
- ***trailer creep***
- ***congested staging areas***
- ***accumulations of empty containers and debris***

⚠CAUTION

REAR CARGO DOOR WEIGHT CAPACITIES:

WHEN USED AS A LOADING RAMP WEIGHT CAPACITY IS:

3000 POUNDS (1360 kg.)

WHEN USED AS A PATIO, WEIGHT CAPACITY IS:

1800 pounds (816 kg.)

DISTRIBUTE THE WEIGHT EVENLY ON THE RAMP/PATIO SURFACE

Over time, the loading and storage pattern of very heavy motorsport equipment may cause uneven wear and surface variations of the cargo ramp and cargo floor area. This is normal. To reduce this effect, vary your loading and unloading track and storage pattern.

These are all hazards which can all be present at the same time within a very confined area. You need to be aware of these potential hazards when loading, unloading and rigging your cargo. Your continuous attention to safety measures will help prevent accidents and possibly serious injuries and property damage.

The biggest reason to put a priority on loading safety is not so much related to the frequency of accidents as it is to the potential severity of injuries that can occur in these types of accidents. The kinds of injuries sustained when a load tips over or falls from the ramp(s) or falls out of the trailer, or those that occur if the load shifts unexpectedly during travel tend to be very serious and sometimes fatal. You can prevent these types of accidents by paying attention to what you are doing and thinking through the consequences of poor loading.

Poor hazard assessment decisions are directly responsible for many accidents. You can help minimize these risks, avoid hazards, and enjoy your recreational activities safely by using an effective decision-making strategy:

- ***Look around you and your situation.*** Get a good idea of what's going on around you before you act.
- ***Identify hazards*** or specific problems in your path. Equipment, materials, debris, other vehicles, children, pets, or any number of other things may be in your way when you load or unload cargo or vehicles.
- ***Predict*** what may happen and think of the consequences of your actions. If you are loading/unloading alone, are you physically capable of handling the load safely and keeping it under control? Ask yourself what would happen if your load falls over, slips off the ramp or falls out of the trailer. If you are unable to control your cargo, what will happen to it, you, and any other people, equipment, or materials if/when it becomes uncontrollable? If you tie down your load, what will happen if a tie down comes loose? What will happen if all tie downs come loose? What will you do if someone else does something dangerous during your loading/unloading?

- ***Decide what to do*** based on your abilities and the capabilities of your equipment. Always use proper lifting techniques, and personal protection equipment as necessary such as gloves, helmets, kneepads and other protective clothing. Be sure your cargo does not exceed the capacity of your loading ramp and the trailer.

Here are some general safety rules about loading and unloading your cargo trailer. Other safety items will be covered throughout this section.

- ***Always consider the equipment you are loading. After use, it may be hot, wet, slippery, dirty or in some other condition that may be potentially hazardous.***
- ***In all situations, follow the loading and weight guidelines in the "Loading and Weighing" chapter of this Owner's Guide. Never exceed the GAWR and GVWR ratings of either your trailer or your tow vehicle.***
- ***Connect to the tow vehicle and use wheel chocks in addition to the forward landing gear/ jack of spotted trailers when loading and unloading to prevent potential forward or backward movement when loading or unloading.***
- ***Be sure the work/loading area is well lit. Avoid loading/unloading at night or in conditions of poor visibility.***
- ***Do not allow anyone who is not engaged in loading or unloading to be inside the trailer cargo area while loading/unloading.***
- ***Visually inspect the trailer before loading. A damaged spot in the floor can cause cargo to be unstable, and damaged or missing tie down rings will prevent you from securing your load properly.***
- ***Use caution tape, traffic cones or portable barricades to designate staging and loading areas in high activity situations where other vehicles and/or pedestrians are present.***
- ***Keep the loading area clean and free of clutter and debris. Clean up water and oil on the floor.***

Cargo floor tiedown ring

Ramp Door Load Limit: 3000 lbs. (1360kg.) total

Tiedown D-ring Load Rating: 2500 lbs. (1134 kg.) each

Patio Load Limit 1800 lbs. (816 kg) evenly distributed

- ***Designate areas at your campsite or activity area for storage of trash, tools, equipment, supplies and expendable containers such as food, beverage, oil and fuel containers.***
- ***Give special attention to large loads that may obstruct the view of the loading crew.***
- ***Wear boots that provide adequate ankle support and a slip resistant tread design, and hand protection when loading/unloading.***
- ***Always communicate with the person doing the loading. Know what the plan is and make sure you agree.***
- ***Maintain eye contact with other persons involved at all times during loading/unloading; making sure they know where you are.***
- ***Slow down and pay attention; never hurry around loading/unloading operations.***
- ***Train everyone in your travel group on the hazards of loading and unloading.***
- ***Establish and enforce compliance to all safety procedures.***

YOUR LOADING EQUIPMENT

The loading equipment furnished with your trailer is the ramp door and the tiedown attachment points in the cargo area floor. When used as a loading ramp, the rated capacity of the ramp door is 3000 pounds (*2360 kg.*). Each tie down D-ring attachment is rated at 2,500 pounds (*1134 kg.*) . No tiedown straps, cables, hooks, chains, wheel chocks, blocks, etc. are supplied with your trailer.

CHOCKS AND BLOCKS

Chocks and blocks prevent accidental or unintended movement of mobile equipment and cargo while you are loading, unloading, hitching, unhitching, or performing service or maintenance. Wheel *chocks* are wedge-shaped blocks placed in front of or behind the rear wheels of a trailer or tow vehicle to prevent the trailer from

moving while the trailer is being loaded. "Trailer creep" occurs when the sideways and vertical forces exerted each time a load enters and exits the trailer cause the trailer to slowly move away from the loading area. The weight and speed of loading can affect trailer creep. The grade the trailer is parked on, the softness of the suspension, and whether the trailer has been dropped off or if it is still connected to the tow vehicle are also factors. Loading accidents can also occur when a driver prematurely pulls away while the trailer is still being loaded/unloaded.

Always hitch the trailer to the tow vehicle, and use wheel chocks or other vehicle-restraining devices when loading and unloading the trailer. Keep spare chocks on hand. They often get left behind or lost during outdoor activities. Chocking the wheels of a truck, trailer, or other piece of mobile equipment provides a physical stopper to the wheels to prevent runaways that can crush and injure people and damage equipment.

When chocking, use wheel chocks of the appropriate size and material to securely hold the vehicle. Don't use lumber, concrete or cinder blocks, rocks, or other make-shift items to chock. Make it easy to find and use the correct chocking equipment; store chocks inside the trailer or tow vehicle. Keep chocks available at places where you typically load and unload.

Use extra caution when loading from the ramp. If the trailer rolls away, you and the equipment you are loading can fall with severe injuries or death. Never load equipment from the ramp into the trailer until you ensure that the wheels are properly chocked. Ensure that the trailer floor is in good condition and that it can support the weight of the equipment you are loading**. To prevent damage to the floor material from tire heat and friction, place carpet strips or rubber matting on the floor before loading vehicles.** ***Floor surface damage caused by inadequate floor protection is not covered under the Genesis Supreme Limited Warranty.***

Blocking stabilizes loaded cargo to prevent shifting and trailer overturns. If the load shifts while in motion, the sudden shift in position and center of gravity may cause towing instability possibly causing the trailer to overturn. Securely block all cargo, not just wheeled equipment and round or oddly shaped items. Block items separately and on all four sides using wood blocks thick enough to prevent cargo movement. Use tie downs and D-rings/carabiners strong enough to secure the load. Avoid using other cargo as a block.

CARGO PLACEMENT AND RESTRAINT

Cargo that is likely to roll (vehicles, tool chests, barrels, etc.) should be restrained by chocks, blocks, wedges, a cradle or other equivalent means to prevent rolling. Whatever you use to prevent rolling should not be able to be accidentally unfastened or loosened while the trailer is in motion.

PROPER USE OF TIEDOWNS

Avoid using tiedowns and securing devices with knots. Be sure to attach and secure each tiedown so that it can't come loose, unfastened, opened or released while the trailer is in motion. Also, use edge protection whenever a tiedown could be damaged or cut at the point where it touches an article of cargo. Avoid using "bungee" or similar elastic cords on D-rings.

TIEDOWN MINIMUM WORKING LOAD LIMIT

The working load limit of a tiedown, associated connector, or attachment mechanism is the lowest working load limit of any of its components (including any tensioner device), or the working load limit of the anchor points to which it is attached, whichever is less. When you choose tiedown hardware, choose items that are strong enough to hold the load you are securing. The load limit of each tiedown used should be at least one-half the working load limit of each tiedown that goes from an anchor point on the trailer to an attachment point on an article of cargo. Check the tiedown manufacturer's specifications to determine working load limits.
NOTE: Tiedown hardware is not supplied with your trailer.

MINIMUM NUMBER OF TIEDOWNS

When a cargo item is not blocked or positioned to prevent movement in the forward direction, the number of tiedowns needed depends on the length and weight of the cargo items. In all cases, use enough tiedowns to secure the cargo from moving in any direction. Heavy tool chests or cabinets may require tiedowns around the bottom, middle and top to secure them. Be sure to lock or secure drawers in these chests or cabinets so they can't open while traveling. Keep handle bars, mirrors, etc. away from the trailer interior walls. The walls can be damaged by contact with hard, sharp objects.

CARGO LOADING PROCEDURE
REAR DOOR/LOADING RAMP OPERATION

⚠CAUTION

REAR DOOR/RAMP WEIGHT CAPACITY:	REAR DOOR/PATIO WEIGHT CAPACITY:
3000 POUNDS	**1800 POUNDS**
(1360 kg.)	**(816 KG.)**

1. ***Hitch the trailer to a tow vehicle before loading and unloading the rear cargo area.*** *Select a parking site where the edge of the rear door/loading ramp will rest entirely on a flat, level surface, and the corners of the door will be supported. Avoid soft sand or mud surfaces. When the trailer is loaded, the added cargo weight may cause the trailer and/or tow vehicle to become stuck.*
2. *Level and stabilize the trailer.*
3. *Unlock the rear door/loading ramp and carefully lower it to the ground.*
4. *If equipped with a power bunk, raise both bunks fully.*
5. *Move things out of the way of your cargo, whether you are loading, or unloading. Have an idea where your cargo will be positioned after your load/unload activities.*
6. *Use caution and proper lifting techniques when loading and unloading items from the cargo area.*
7. *Use extreme caution when loading/unloading ATVs, motorcycles, or other vehicles ("motorized cargo" or "vehicle(s)"). These machines are generally heavy, and may be hot from operation and/or covered with dirt, oil, or other substances that may make them slippery. See the* ***"Special Procedures for Loading and Unloading Motorized Cargo"*** *for more details.*
8. *Make certain that the door seals and hinge area are free of any debris, such as sand or snow before closing the rear door/loading ramp.*
9. *Inspect ramp door hinges, assist springs, and latch mechanism before each trip for signs of wear or damage, and make any needed repairs for safe operation and towing.*

⚠CAUTION

THE REAR CARGO DOOR IS HEAVY. It weighs approximately 200 pounds *(91 kg.)*. It is designed for two-person operation.

The maximum cargo capacity of the rear cargo door/ramp is 3000 pounds *(1360 kg*.); as a patio, capacity is 1800 pounds *(816 kg.)*

The maximum capacity for each tiedown point in the cargo area is 2500 pounds *(1134 kg.)*.

⚠WARNING

When the trailer is unhooked from the tow vehicle, lower and check the stabilizing jacks before using the loading ramp. Failure to do so could cause the trailer to tip back as the load is shifted to the rear of the cargo area causing property damage, personal injury, and/or death. Hitch the trailer to a tow vehicle before loading and unloading the rear cargo area.

⚠WARNING

It is not safe for persons or pets to occupy the vehicle storage area while vehicles are present. Failure to follow these important precautions may result in serious injury or death.

⚠CAUTION

Ramp Door Load Limit: 3000 lbs. (1360kg.) total

Patio Load Limit 1800 lbs. (816 kg) evenly distributed

⚠WARNING

There is a hazard of serious personal injury when using a loading ramp. Never ride motorized cargo up a loading ramp.

⚠WARNING

If the motorized cargo loses traction and spins sideways, it may slip sideways off the ramp, tipping sideways, and possibly falling on the rider causing injury.

Loading and Unloading Motorized Cargo

⚠WARNING

⚠ ***Any motorized vehicle or any motorized equipment powered with flammable liquid can cause fire, explosion, or asphyxiation if stored or transported within the recreational vehicle. To reduce the risk of fire, explosion, or asphyxiation:***

⚠ ***Passengers shall not ride in the vehicle storage area at any time.***

⚠ ***Occupants shall not sleep in the vehicle storage area while vehicles are present.***

⚠ ***Doors and windows in separation walls (if installed) shall be closed while the vehicles are present.***

⚠ ***Fuel shall be run out of engines of stored vehicles after shutting off fuel at the tank.***

⚠ ***Motor fuel shall not be stored or transported inside this vehicle.***

⚠ ***The vehicle storage area shall be ventilated (i.e., open a window, etc.)***

⚠ ***Gas appliances, pilot lights, or electrical equipment shall not be operated when motorized vehicles or motorized equipment are inside vehicle.***

⚠ ***FAILURE TO COMPLY COULD RESULT IN AN INCREASED RISK OF FIRE, EXPLOSION, ASPHYXIATION, DEATH OR SERIOUS INJURY.***

Many recreation ATV or motorcycle accidents and injuries happen while loading or unloading. Steep inclines, unstable ramps, power and a short stopping area are what make loading motorized cargo difficult and unsafe. There is no absolute safe way to drive your motorized cargo into the trailer. Take the following steps to aid in reducing the risks associated with transporting, storing, or occupying the trailer with motorized equipment and vehicles:

- ***Wear personal protective equipment while loading and unloading vehicles to/from the trailer. This includes but is not limited to, an approved motor vehicle helmet, leather boots, appropriate gloves, and eye protection.***

- ***Never stand in the path of equipment when loading/unloading with the ramp, and keep bystanders away from the ramps.***
- ***Keep body parts completely clear of the ramp door hinge pinch area at all times.***
- ***Check parking brakes on the vehicle(s) you are loading/unloading, and on the tow vehicle.***
- ***Inspect ramp and trailer floor/loading area for cracks, damage, oil or other debris that may cause slippage.***
- ***Do not allow persons or pets to ride inside the vehicle storage area at any time.***
- ***Close doors and windows in separation walls while the vehicles are present.***
- ***Close fuel tank valves and operate the engine(s) to run fuel out of engine(s) of stored vehicles.***
- ***Do not store or transport motor fuel anywhere inside the trailer.***
- ***Ventilate the interior of the trailer to reduce the risk of fire, explosion, or asphyxiation.***
- ***Do not operate gas appliances, pilot lights, or electrical equipment when motorized vehicles or motorized equipment are inside the trailer. FAILURE TO COMPLY COULD RESULT IN AN INCREASED RISK OF FIRE, EXPLOSION OR ASPHYXIATION.***
- ***Load and store your equipment and motorized vehicles according to the "Loading and Weighing" chapter in this Owner's Guide.***
- ***During transit, secure motorized vehicles and motorized equipment so that items do not move while in transit.***
- ***Remove carpet from section where fueled vehicles or motorized equipment will be stored.***

⚠WARNING

CARBON MONOXIDE GAS CAN KILL YOU. Fuel-burning devices such as ATVs or motorcycles that burn gasoline, diesel, or other fuels produce carbon monoxide when they are operating. Carbon monoxide gas is invisible, odorless, and colorless. Dangerous levels of carbon monoxide gas can accumulate in a trailer which cannot be detected by sight, smell, or taste.

Even small quantities of carbon monoxide can cause carbon monoxide poisoning and suffocation, which will cause death, serious injury, or permanent disability. Exposure to high concentrations of carbon monoxide for even a few minutes will also cause death, serious injury, or permanent disability.

DO NOT start ATVs, motorcycles, or other fuel burning devices while they are located in your trailer.

IMPORTANT
NOTICE

Place protective carpet or rubber mats on the cargo area vehicle track and under UTV wheels when loading and during travel/storage. Cargo area floor can be damaged by tire heat and friction.

⚠WARNING

Do not load motorized cargo (motorcycles, ATVs, etc.) by riding them up the ramp door. Loss of control could cause serious personal injury. Genesis Supreme RV does not recommend loading motorized cargo under power.

Loading Technique - Ramp Positioning

The ramp angle from the trailer floor to the ground affects the risk when loading/unloading cargo. If the ramp angle is reduced, and all other conditions remain the same, risk is reduced. Always try to reduce the loading ramp angle – the shallower the ramp angle, the easier cargo loading will be. Position the trailer to take advantage of any terrain features that will help reduce the ramp angle. In all cases, be sure the ends of the ramp door can be fully supported.

Always position the loading ramp so the ends in contact with the ground are level or at the same height. An uneven ramp may cause the cargo to tip over sideways during loading/unloading.

Loading under power

Motorized cargo should be walked up the ramp. When preparing to load the vehicle into the trailer, the operator's hands should be positioned on the controls so as to keep the vehicle in control during loading.

1. *Shift into lowest gear before ascending ramps.*
2. *Align wheels with ramps both loading and unloading.*
3. *Approach straight on, not on an angle. If you are off to one side and the ground is uneven where the ramp touches the ground, an unbalanced situation can occur.*
4. *The operator should apply throttle smoothly and climb the ramp at low speed. Too much or sudden increases in throttle will cause the vehicle to be harder to control and may cause the vehicle to impact the front of the trailer cargo area or over-turn.*
5. *Stop when fully in the trailer. Keep handle bars, mirrors, etc. away from the trailer interior walls. The walls can be damaged by contact with hard, sharp objects.*
6. *After loading, close the fuel valve and run the engine until it stops (motorcycles and ATVs). Turn the ignition key off and remove it. Set the parking brake. For manual clutch machines, leave the machine in gear.*
7. *Secure the vehicle with tie downs. The attachment points you select on your equipment must be strong enough to support the weight of the equipment. Usually attachment*

points that are low and centered on the equipment frame will be good. An attachment to a decorative piece of chrome or plastic will usually not be a good tie-down point. Consider any leverage action that may occur. An attachment point past the center of the equipment could cause the equipment to either swing around or flip over, causing damage to the equipment, or personal injury. If you have any doubt about the attachment point you have selected, stop and find a better attachment point.

Secure The Load

Install blocking devices in the front, back, and on both sides of the wheels to keep it from rolling. This block is strictly an additional safety precaution and does not reduce the need for strapping the vehicle in securely.

Use a minimum of three tiedowns to secure the vehicle to the trailer. Use one tie down to secure the front of the vehicle to the trailer. Use two tiedowns to secure the rear of the vehicle to the trailer. Four tiedowns (one at each corner) are preferred.

Attach tiedown hooks to the vehicle's frame, not to an accessory such as a mirror, handle bar, pedal, etc. Hooks on the other end must be attached to vehicle cargo anchors installed in the trailer.

For transport, motorized cargo with manual transmissions should be left in first gear. Vehicle's with automatic transmissions should be in the Park position. The vehicle's ignition key should be turned off and removed, the parking brake set, the run/stop switch in the stop (or off) position and the fuel lever turned to the off position.

⚠WARNING

Failure to properly secure cargo could cause property damage, injury, and/or death.

The Safe Way To Unload Motorized Cargo

The safest method of unloading is to push the vehicle down the ramp, carefully braking to ensure control of the vehicle.

If you loaded your vehicle forward (front in) that means you will unload it in reverse. Driving a motorized vehicle backwards down a hill (the ramp) is not recommended. A slight turn of the handle or slip of a wheel can cause your vehicle to fall, tip or roll sideways. If you are on or in the vehicle you can be injured or killed. Unload the vehicle safely as follows:

1. *Be sure the back tires of the vehicle are aligned with the ramp, and there are no people, pets or obstructions in the unloading area at the end of the ramp. Assure that the ground surface will support the vehicle, and that the vehicle cannot roll away uncontrolled.*
2. *Stand at the front of the vehicle.*
3. *Push the vehicle backward in line with the ramp.*
4. *As the rear tires start down the ramp let go of the vehicle and let it roll backwards (don't try and slow or control the vehicle as this can cause injury).*

Fuel Transfer System

A fuel transfer system allows you to store gasoline for use in powersports or other equipment. This system consists of a fuel tank and filler, fuel gauge, fuel transfer pump and digital logic controller, fuel transfer hose with fill nozzle, and a metal ground clip to reduce the possibility of static electricity discharge between the fuel station and the equipment being fueled. The fuel transfer system complies with California Air Resources Board (CARB), Environmental Protection Agency (EPA), and other Federal and Canadian standards and certifications for both emissions and safety.

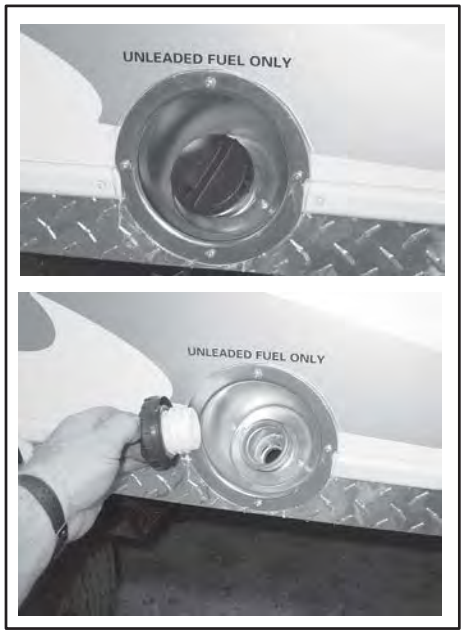
To fill the tank, remove the fuel filler cap and fill the tank with the grade of gasoline required by your equipment. When replacing the fuel fill cap, be sure it seats squarely and turn it firmly to lock it on the fill pipe neck.

DANGER

Do not smoke when filling the tank. Before dispensing fuel, turn off all engines and fuel burning appliances and ground the trailer. Do not dispense fuel within 20 feet of an ignition source.

DANGER

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



Fuel fill (location may vary)

General Fuel Transfer System Safety

Static electricity-related incidents when refueling are extremely unusual. They appear to happen most often during cool or cold and dry climate conditions. In rare circumstances, these static related incidents have resulted in a brief flash fire occurring at the fill point. You can minimize these and other potential fueling hazards by following safe refueling procedures.

A build-up of static electricity can be caused by re- entering a vehicle during fueling, particularly in cool or cold and dry weather. If you return to the fuel fill pipe during refueling, the static may discharge at the fill point, causing a flash fire or small sustained fire with gasoline refueling vapors.

If you cannot avoid getting back into the vehicle, always first touch a metal part of the vehicle with a bare hand, such as the door, or some other metal surface, away from the fill point upon exiting the vehicle.

Here are some additional refueling safety guidelines when refueling your vehicle or filling up gasoline storage containers:

- *Turn off vehicle engines. Disable or turn off any auxiliary sources of ignition: the trailer furnace, water heater, cooking unit, and any pilot lights. Turn off main propane valve.*
- *Do not smoke, light matches or lighters while operating the refueling system, or when using gasoline anywhere else.*
- *Use only the refueling latch provided on the gasoline dispenser nozzle.*
- *Never jam or otherwise try to lock the refueling latch on the nozzle open.*
- *Do not re-enter your vehicle during refueling. If you cannot avoid reentering your vehicle, discharge any static build-up BEFORE reaching for the nozzle by touching something metal with a bare hand — such as the vehicle body or frame — away from the nozzle.*
- *In the unlikely event a static-caused fire occurs when refueling, leave the nozzle in the fill pipe and back away from the vehicle. Turn off the fuel pump master switch immediately.*
- *Do not over-fill or top-off your vehicle tank, which can cause gasoline spillage.*

⚠DANGER

Any motorized equipment powered with flammable liquid can cause fire and explosion or asphyxiation if stored or transported inside the trailer. To reduce the risk of fire, explosion or asphyxiation:

1. **Do not allow passengers to ride inside the storage area at any time.**
2. **Prior to storing vehicles in the trailer, run fuel out of the engine after shutting off fuel at the vehicle fuel tank.**
3. **Do not store or transport any motor fuel inside the trailer.**
4. **Ventilate the interior of the trailer to reduce the risk of fire, explosion or asphyxiation. Open the ventilation panels on either side of the cargo area.**
5. **Do not operate propane appliances, pilot lights, or electrical equipment when motorized vehicles or motorized equipment are inside the trailer. Set the cargo electrical disconnect switch to OFF.**

- *Never allow children under licensed driving age to operate the pump.*
- *Avoid prolonged breathing of gasoline vapors. Use gasoline only in open areas that get plenty of fresh air. Keep your face away from the nozzle or container opening.*
- *Never siphon gasoline by mouth. Never put gasoline in your mouth for any reason. Gasoline can be harmful or fatal if swallowed. If someone swallows gasoline, do not induce vomiting. Contact a emergency medical service provider immediately.*
- *Keep gasoline away from your eyes and skin; it may cause irritation.*
- *Remove gasoline-soaked clothing immediately.*
- *Use gasoline as a motor fuel only. Never use gasoline to wash your hands or as a cleaning solvent.*

Fuel Transfer System Operation

To operate the fuel transfer system (also see illustrations on page 16 of this chapter):

1. *Lower the tongue jack or 5th-wheel jacks to the ground. This will electrostatically ground the trailer to reduce the possibility of static discharge while refueling.*
2. *Set the cargo area disconnect switch to ON.*
3. *Close the side windows and vents to prevent fuel vapor from entering the trailer.*
4. *Attach the ground clip securely to a bare metal part of the equipment to be fueled (frame, handle bar, axle bolt, etc.)*
5. *Press the ON or OFF button to WAKE the system. You can read the fuel level on the gauge.*
6. *Press and hold the OFF button until the gauge lights blink. The system is now unlocked.*
7. *Press the ON button to run the system for 5 minutes. After 5 minutes of run time, the system will reverse flow for 9 seconds to draw remaining fuel in hose back into the tank. This reverse flow cannot be interrupted. After this reverse flow is complete, you can press ON again for another 5 minutes of run time.*
8. *Place the nozzle into the equipment fuel filler and squeeze the handle to allow fuel to flow. Be careful not to overfill the equipment fuel tank. Wipe up any spilled fuel.*
9. *When finished, release the nozzle handle, return the nozzle to its compartment, detach ground clip from re-fueled equipment, and stow in compartment.*

⚠WARNING

Fuel-soaked rags or other materials contain flammable and/or explosive fuel vapors and other hazardous substances. Clean up materials should be temporarily stored in a nonflammable, vapor-tight container until proper disposal facilities are available. Do not store flammable clean up rags or materials inside the trailer, inside any other vehicle or near any source of flame or ignition.

9. *Lock the fuel transfer nozzle compartment to prevent unauthorized use.* ***The nozzle compartment must be locked at all times when not dispensing fuel.***
10. *When you are finished with all fueling, the system will automatically go to SLEEP/LOCK mode after 2 minutes of inactivity. Press and hold the OFF button until the gauge lights blink. The system is now LOCKed. Repeat from step 5 to start fuel transfer again.*

All parts of the fuel transfer system including but not limited to the hose, pump, nozzle, fittings, and tank have been selected for their quality, safety, and intended application. Any alteration or replacement of any part by other than Genesis Supreme RV parts could jeopardize the integrity of the system and may result in serious injury or even death.

If your fueling system is not working properly or you need additional information on the use of the system contact your authorized Genesis Supreme RV dealer immediately or call Genesis Supreme RV directly.

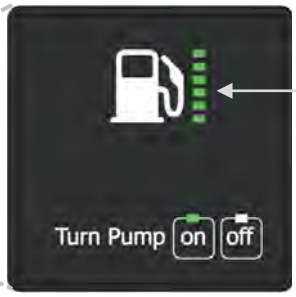
Portable Containers

When dispensing gasoline into a container, use only an approved portable container and place it on the ground to avoid a possible static electricity ignition of fuel vapors. Never fill a container while the container is inside a vehicle, a car trunk, the bed of a pickup truck or the floor of a trailer.

- *When filling a portable container, manually control the nozzle valve throughout the filling process. Fill a portable container slowly to decrease the chance of static electricity buildup and minimize spilling.*
- *Keep the fuel nozzle in contact with the rim of the container opening while refueling.*
- *Fill container no more than 95 percent full to allow for expansion.*
- *Place cap tightly on the container after filling – do not use containers that do not seal properly.*
- *Store gasoline in approved containers only. Never store gasoline in glass or any other unapproved container.*
- *If gasoline spills on the container, clean up the spill immediately.*
- *When transporting gasoline in a portable container make sure it is secured against tipping and sliding, and never leave it in direct sunlight or in the trunk of a car.*

⚠CAUTION

If a fuel spill occurs in the storage area of the trailer, open the windows and sidewall vents, and wipe up the fuel with cloth or paper towels. Dispose of the towels in a suitable hazardous waste container. Do not hose out the trailer with water. Clean the fuel spill areas with a grease/oil dissolving cleaner such as 409®. Thoroughly dry the spill areas.

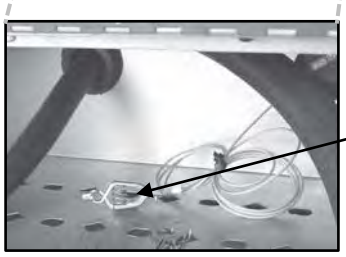


Fuel gauge

Press ON or OFF to WAKE; then press and hold OFF to UNLOCK when lights blink.

Press ON to operate for 5 minutes.

Press and hold OFF until lights blink to SLEEP/LOCK.

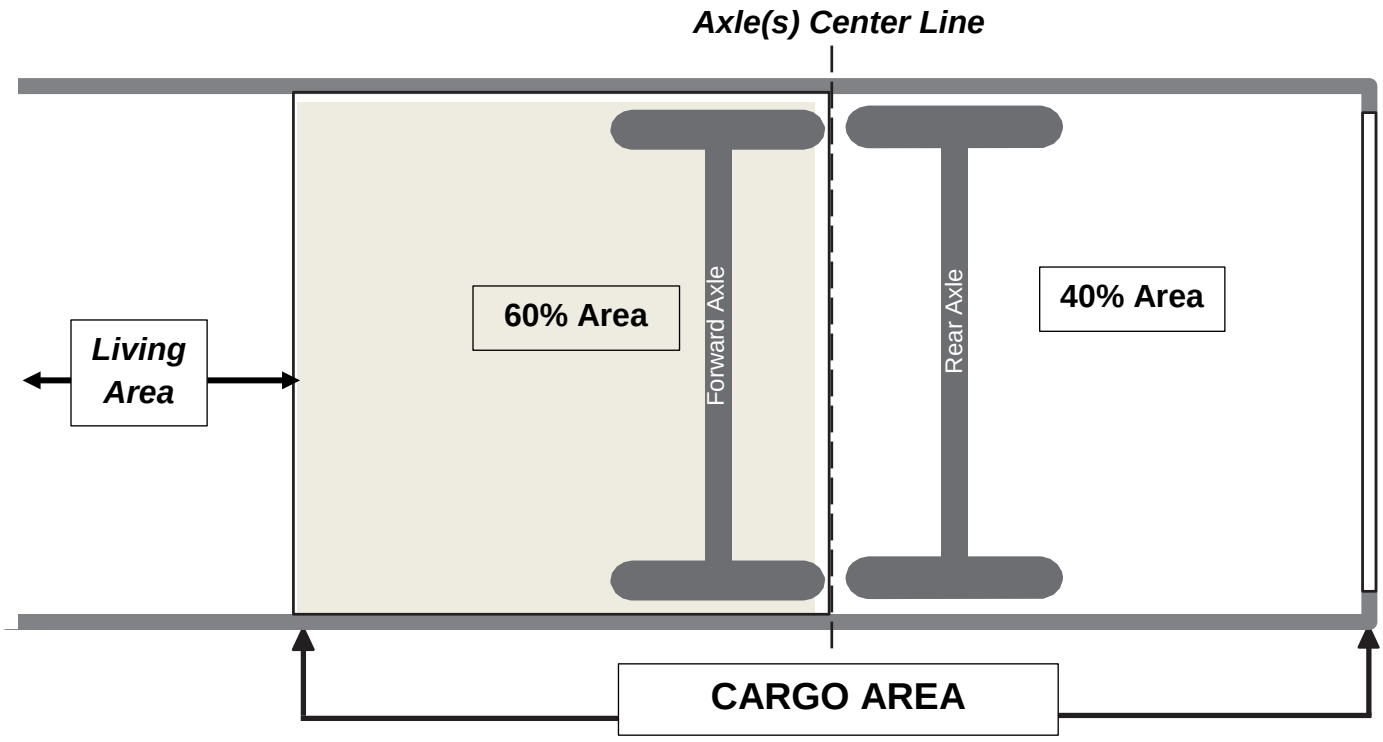


Ground clip

See page 14 for more information.

Fuel Transfer System

(Component locations and layout vary depending on model.)



Keep 60% of the cargo load forward of the centerline of the axle(s), Two-axle unit shown – use centerline of the center axle on 3-axle units.

(Illustration is not to scale, and is not dimensionally correct)

CARGO AREA WEIGHT DISTRIBUITION

Owner Notes

FUEL TRANSFER SYSTEM

This supplement describes the operating procedures specific to the fuel transfer system installed in your Genesis Supreme RV. This is additional information not included in the current Owner's Guide edition. All warnings, cautions and danger advisories in the published Owner's Guide apply to this system.

The system consists of a fuel tank and filler, fuel gauge, fuel transfer pump and digital logic controller, fuel transfer hose with fill nozzle, and a metal ground clip to reduce the possibility of static electricity discharge between the fuel station and the equipment being fueled. The fuel transfer system complies with California Air Resources Board (CARB), Environmental Protection Agency (EPA), and other Federal and Canadian standards and certifications for both emissions and safety. Components of the system are shown below.

Lockable hose, nozzle and ground clip compartment

Fuel tank fill pipe and cap

ON/OFF controls and fuel gauge

Press ON or OFF to WAKE; then press and hold OFF to UNLOCK when lights blink.

Press ON to operate for 5 minutes.

Press and hold OFF until lights blink to SLEEP/LOCK.

Ground clip

Fuel fill nozzle

To fill tank, remove fuel fill cap. Fill tank with grade of gasoline required by your equipment. When replacing fuel fill cap, be sure it seats squarely and turn it firmly to lock it on fill pipe neck.

DANGER

Do not smoke when filling the tank. Before dispensing fuel, turn off all engines and fuel burning appliances and ground the trailer. Do not dispense fuel within 20 feet of an ignition source.

DANGER

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

FUEL TRANSFER SYSTEM OPERATION

To operate the fuel transfer system:

1. *Lower tongue jack or 5th-wheel jacks to the ground.*
   This will electrostatically ground trailer to reduce the possibility of static discharge while refueling.
2. *Set cargo area disconnect switch to ON.*
3. *Close side windows and vents to prevent fuel vapor from entering trailer.*
4. *Attach ground clip securely to a bare metal part of the equipment to be fueled (frame, handle bar, axle bolt, etc.)*
5. *Press **ON** or **OFF** button to **WAKE** system. Read fuel level on gauge.*
6. *Press and hold **OFF** button until gauge lights blink. System is now unlocked.*
7. *Press **ON** button to run system for 5 minutes.*

8. *Place nozzle into equipment fuel filler and squeeze handle to allow fuel to flow. Be careful not to overfill the equipment fuel tank. Wipe up any spilled fuel.*

NOTE: *After 5 minutes of run time, system will reverse flow for 9 seconds to draw remaining fuel in hose back into tank. This reverse flow cannot be interrupted. After this reverse flow is complete, you can press **ON** again for another 5 minutes of run time.*

9. *When finished, release nozzle handle, return nozzle to its compartment, detach ground clip from re-fueled equipment, and stow in compartment*
10. *Lock fuel transfer nozzle compartment to prevent unauthorized use. **The nozzle compartment must be locked at all times when not dispensing fuel.***
11. *When you are finished with all fueling, the system will automatically go to **SLEEP/LOCK** mode after 2 minutes of inactivity. Press and hold **OFF** button until gauge lights blink. The system is now **LOCK**ed. Repeat from step 5 to start fuel transfer again.*

All parts of the fuel transfer system including but not limited to the hose, pump, nozzle, fittings, and tank have been selected for their quality, safety, and intended application. Any alteration or replacement of any part by other than Genesis Supreme RV parts could jeopardize the integrity of the system and may result in serious injury or even death.

If your fueling system is not working properly or you need additional information on the use of the system contact your authorized Genesis Supreme RV dealer immediately or call Genesis Supreme RV directly.

19 / CARE & MAINTENANCE

Your trailer will provide you with many years of use if you follow a good plan of maintenance and care. Time spent taking care of your trailer will pay for itself in extended vehicle life, and will protect your investment. The *"Warranty,Maintenance and Care Guidelines"* at the end of this chapter is a summary of the important maintenance and care requirements. Use it as a reminder to help you keep your trailer in good condition.

You can do most of the maintenance items on your trailer if you are mechanically inclined. If you prefer, your dealer can coordinate or perform these services for you.

This section is intended to give you a general overview of the service and maintenance required for the trailer. Detailed service and maintenance information can be found in the owner's/operator's manuals for the various components installed in the trailer. These manuals are in your Owner's Packet. There may be times when comprehensive and detailed diagnostic and repair procedures may be required. In those situations, you should contact your dealer or Genesis Supreme RV.

CHASSIS

TIRES AND WHEELS

The tire manufacturer's recommended inflation pressure is stamped on the sidewall of the tire. The maximum tire pressure is also listed on the trailer VIN label. Check the tires frequently to be sure they are properly inflated. Always check tire pressure when the tires are cold. Check that the air pressure is equal in all tires. When replacing tires, make sure the replacement tire is the same size and load capacity as the original. See the *"Tires and Wheels"* chapter for more information.

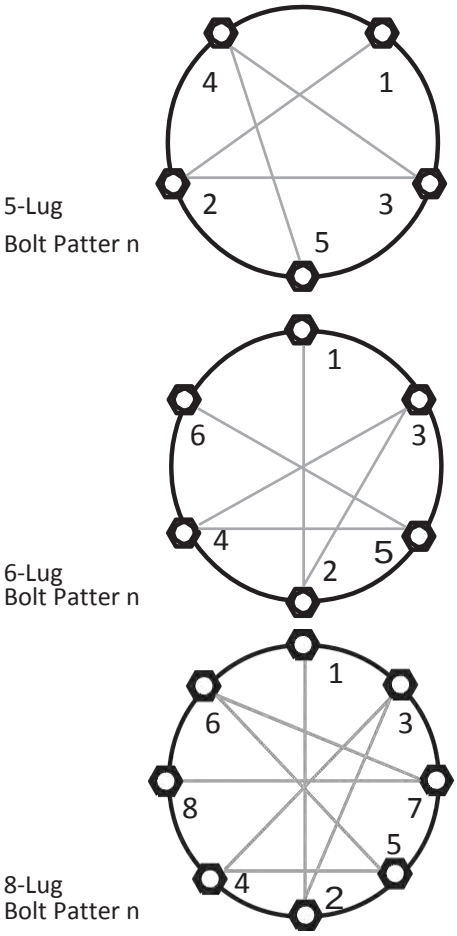
Direct sunlight and "smog" can be very damaging to your trailer tires. Periodically coat them with a UV/ozone protectant. Generally, good tire care requires only washing with water and a good quality car wash soap.

During periods of non-use or storage, make sure the tires are fully inflated to the maximum rated pressure. Keep the tires shaded from the sun to prevent weather cracking. A barrier such as a heavy garbage bag, a piece of carpet or a piece of plywood between the trailer tires and a concrete or asphalt surface it is parked on will help prevent possible tire damage from chemicals in the parking surface.

You may notice some tire sidewall discoloration, especially during warm weather. This discoloration is normal. It is the migration of the wax and anti-oxidant compounds that are part of the tire materials. The wax forms a protective coating on the tire to reduce damage from ozone and ultraviolet rays from the sun. Please note that this coating affects only the cosmetic look of the tire and does not affect the structure or strength of the tire.

⚠CAUTION

The spare tire and wheel are heavy. Be careful when lowering the spare to the ground.



NOTE: Use a torque wrench to tighten wheel nuts. Do not tighten with an impact wrench unless using a torque stick.
See the **Wheel Nut Torque Table** at the end of chapter 6, **"Tires and Wheels"** for correct wheel nut torque values.

Wheel Nut Torquing Sequence

Changing A Flat Tire

If you have a flat tire, Genesis Supreme RV recommends you call for road service. We do not suggest that you change a flat tire yourself. Road service providers will have the necessary tools to change your tire quickly and safely. *There is no jack supplied with the trailer.* If you *MUST* change a flat tire yourself:

1. Be sure the tow vehicle and trailer are completely out of any traffic lane, and on a solid ground or pavement surface. **Do not attempt to change a flat tire on a soft, wet or uneven surface. Turn on the tow vehicle emergency flashers and set up flares or warning lights/signs.**
2. Lower spare tire to the ground and roll it near the flat tire. With the spare close to the flat, you can more quickly change the tire.
3. Place wheel chocks in front of and behind a tire diagonally opposite the flat to keep the trailer from rolling. If connected to the tow vehicle, place transmission in PARK, set the parking brake and loosen the hitch bars if applicable. Stop the tow vehicle engine. (For manual transmission, shift to reverse, stop engine, and set parking brake.)
4. Place a minimum 10-ton bottle jack **only** directly under the trailer frame near the flat tire. **Do not jack at any other point.** Serious chassis damage can occur if other jacking points are used. **Do not use a bumper jack.**
5. Raise the jack enough to take some of the load, but not enough to raise the tire you are changing.
6. Loosen the wheel nuts on the flat tire.
7. Using the bottle jack, raise the trailer high enough to remove the flat tire. Remove the wheel nuts and remove the wheel and tire.
8. Place the spare tire on the axle and secure it with the wheel nuts. Tighten the nuts until the wheel is secure on the axle.
9. Lower the trailer to the ground. Tighten the wheel nuts in the sequence shown in the illustration.
10. Place the removed wheel on the spare tire carrier, raise carrier so tire is firmly in place. Remove and stow winch handle.

When attaching wheels:

1. Start all nuts by hand to prevent cross threading.
2. Tighten all nuts in the sequence shown, in three stages to the torque values shown in the Wheel Nut Torque Table at the end of chapter 6, **"Tires and Wheels"**.
3. Torque wheel nuts before the first road use and after each wheel removal. Check and recheck torque after the first 10 miles, 25 miles, and again at 50 miles. Check periodically thereafter. STOP AT THE NEAREST SERVICE FACILITY AND HAVE THE TORQUE CHECKED.

See the *"Tires and Wheels"* chapter for detailed wheel nut torque information.

Axles, Brakes and Suspension

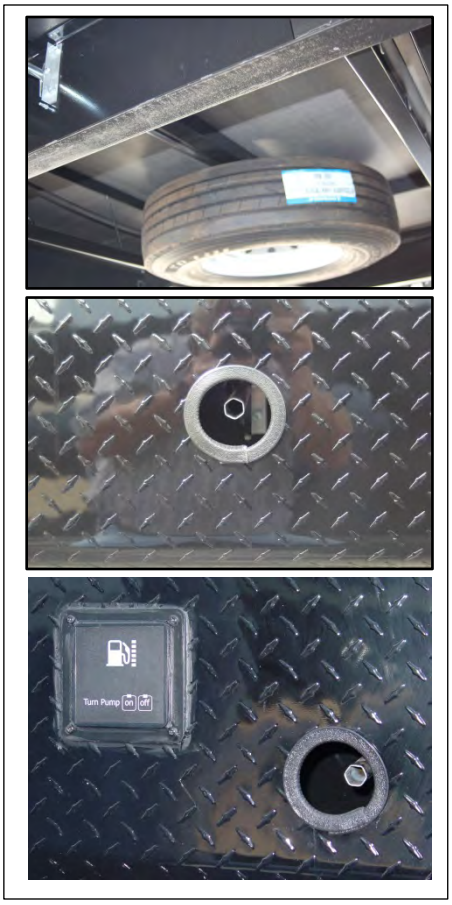
The axles are designed to last the life of your trailer with periodic service, wheel bearing and shackle lubrication, inspection and adjustment of shackles, shackle links and springs. Refer to the axle manufacturer's manual in your Owner's Information Packet for detailed service and maintenance information.

Suspension Lubrication

The suspension system has anti-friction bushings located in the spring eyes and equalizer. These parts do not require routine lubrication. They should be periodically inspected for signs of excessive wear, cracking or hole elongation. If excessive wear, cracking or hole elongation exists, all links and worn parts should be replaced immediately.

Hub and Bearing Maintenance

Refer to the axle Owner's Manual in included in your Owner's Information Packet. It contains maintenance and troubleshooting procedures along with maintenance schedules and correct materials for maintaining your tralier's hubs and bearings.



Spare tire location and carrier winch socket. Winch socket location varies depending on model.

Refer to the axle Owner's Manual included in your Owner's Information Packet for all axle, hub and bearing maintenance and troubleshootung procedures, and maintenance product specifications.

5TH-WHEEL LANDING GEAR

1. Before each use, inspect the drop tube and inner ram tube. Replace if either are bent or damaged.

2. Lubricate the landing gear once each year:

   Extend the landing gear legs as far as possible. Clean the drop tube and inner ram tube. Coat the exposed surface of the tubes with silicone spray lubricant. Oil the shaft bushings in the gearbox and leg gear heads with SAE 30 oil. Lubricate the gears in the gearbox and landing leg gear heads with extreme pressure grease.

3. Twice each year, check the wiring connections at the battery. Clean the battery terminals.

⚠ CAUTION

Always wear eye protection when examining the underside of the trailer. Road debris, dirt, oil, or other hazardous substances may be present and fall into your eyes.

FRAME

The frame has been painted with an environmentally safe paint. This paint may wear off after a time. This is normal. You should inspect the frame for damage and paint wear. When necessary, have the frame touched up or repainted to prevent rust. The frame should be spray washed at least once a year and more often if traveling in dirty or dusty areas.

If the trailer is used in an area where salt is used on the roads or near the sea shore, rustproofing or undercoating the frame can help prevent rust and corrosion.

EXTERIOR

FIBERGLASS SIDE WALLS

Fiberglass exterior wall surfaces will provide years of environmental protection. The finish on these parts is durable, but not indestructible. Any material and finish will deteriorate in time. Exposure to sunlight, moisture and airborne pollutants can cause dulling and fading of the finish. Generally, changes in the finish due to weathering are cosmetic – they are on the surface of the part and do not affect its strength or integrity. Weathering can take the form of chalking, fading and yellowing and are excluded from warranty coverage.

Wash the exterior with any mild, nonabrasive car or RV wash soap or detergent to remove oil, grease, dust, and dirt. Never use strong solvents or harsh abrasives. Do not dry wipe the surface. Always clean the exterior in the shade or on a cloudy day when the wall surfaces are cool. After washing, follow with a thorough

clean water rinse. Dry with a chamois or soft cloth to reduce spots and streaks.

Apply a good, nonabrasive automotive wax to the fiberglass surfaces only after washing and drying. **NOTE: Do not apply wax to the graphics. Do not use rubbing compound on the fiberglass finish.**

Fiberglass Front and Rear Caps (If Equipped)

Depending on model, the front and rear caps of your trailer may be made of fiberglass with a gel coat surface. This gel coat surface contains the color material and is generally about 10 times thicker than paint. The gel coat is strong and robust, but can be damaged by sun exposure, road grime, dust, dirt, insects, saps and drippings from trees, and environmental air pollution. Routine maintenance will keep the gel coat looking like new.

Generally, you can use automotive wash and wax products to maintain the gel coat. **NOTE: Do not apply wax to the graphics.** Cleaning with a mild detergent or car wash solution will remove normal accumulations of soil. Avoid products advertised as "all-in-one" or liquid spray or rinse wash products that don't require actual physical rubbing of the fiberglass surface. The rubbing or wiping of the surface with the wash product and wash mitt or cloth helps to remove any slight oxidation of the surface, and any grime or grit that may have become imbedded in the gelcoat. It also provides a slight polishing effect. About every six months, you should follow a thorough washing with an application of a high quality automotive finish polish to the fiberglass surfaces only, and then a good coat of automotive wax. The wax helps seal the gelcoat surface, and helps prevent grit, grime and air pollution particles from embedding in the gelcoat. Never use caustic, highly alkaline cleaners, or cleaners containing ammonia. These products can cause a chemical reaction that will cause staining or darkening of the color which will require the use of rubbing compound or 400-grit sandpaper to remove. This will shorten the life of the gel coat.

NOTICE

Do not allow rubbing compound to get on the decals. Do not use wax with petroleum distillates on the decals. It will cause them to shrink and prematurely peel and fade.

NOTICE

Do not use cleaners or conditioners containing petroleum solvents, harsh solvents, or citric based cleaners. You may cause irreparable damage to your roof.

As the gel coat begins to lose its gloss from constant exposure to the natural environment and pollutants, it will require some special attention to restore the original gloss and color. After washing with a mild soap solution, waxing in the spring and fall with a self-cleaning automotive wax will restore most of the original gloss. If the gel coat surface has been allowed to weather badly, and washing and waxing do not restore the gloss, compounding will be necessary.

Polishing compound (fine abrasive) or rubbing compound (coarser abrasive) is recommended to remove scratches, stains, or a severely weathered surface. It can be applied by hand or by machine. After the stain, scratches, or weathering has been removed, wax the surface to restore the gloss and seal out new soil accumulations. Consult with your dealer before attempting to restore badly weathered or stained gel coat surfaces.

Exterior Aluminum Walls (if equipped)

Wash with any mild, nonabrasive car or RV wash soap or detergent and water to remove oil, grease, dust, and dirt. Never use strong solvents or harsh abrasives. *Do not "dry wipe" the surface.* Always clean the exterior in the shade or on a cloudy day when the wall surfaces are cool. After washing, follow with a thorough clean water rinse. Dry with a chamois or soft cloth to reduce spots and streaks.

Apply a good, nonabrasive automotive wax to the metal surfaces only after washing and drying. **NOTE: Do not apply wax to the graphics.** This will help increase the life of the finish, especially in coastal areas or other areas where the finish is exposed to salt or industrial pollution. Do not use rubbing compound on the metal finish.

Important Note: You may notice waviness or slight distortion of the exterior metal surfaces, especially when the trailer has been sitting in the sun in hot weather. This is normal and does not indicate a defect in the sidewall(s). Thermal expansion and contraction of the metal causes this effect, and when the temperature returns to normal, the metal surfaces will return to their normal appearance. If you ever see this distortion of the metal surfaces, don't try to fix it. Just leave it alone – nothing bad is happening.

XTRM PLY® PVC Roofing

XTRM PLY® is a flexible and durable PVC Roofing membrane with high tear and puncture strength, and superior solar reflectivity. Under most normal conditions, it will not chalk, spot or cause streaks on the side of your RV. It does not require any reconditioning, coatings, treatments, or special cleaners. It is nearly maintenance-free, requiring only routine cleaning with environmentally friendly materials.

Proper care and maintenance is simple, easy, and requires no special tools or materials. Inspect the roof every three months. Check the roof material for possible damage from trees or overhanging obstacles. Check the sealant used on the edge areas and around all accessories and components mounted on the roof as well as their mounting hardware and fasteners. If any defects, gaps or voids in the sealant are evident, reseal as soon as possible to prevent water leaks.

Use caution when placing objects on the roof, and use care when working on the top of your trailer. The roof membrane can be punctured, but is easily patched. The roof surface may be slippery when wet.

Cleaning

Rinse the roof completely with clean water to remove loose dirt or debris.

1. Wet the roof surface with clean, soapy water, sponged or sprayed on.
2. With medium bristle brush, scrub the surface thoroughly with soapy water solution to loosen any built up dirt or sediment.
3. Rinse the soapy water from the roof and sidewalls with clean water to remove all residue. A rubber squeegee may be used to direct the water off the roof.
4. Go inside the trailer and check for leaks.

Recommended Cleaners:
Fantastik®, Soft Scrub®, Windex®

Do not use: Abrasive Pads (Scotch-Brite®, Magic Erasers®, and similar)

DO NOT USE ANY OIL BASED PRODUCTS OR PRODUCTS CONTAINING PETROLEUM DISTILLATES OR SOLVENTS (ACETONE, MEK, NAPTHA, MINERAL SPIRITS, XYLOL, etc.).

⚠CAUTION

The roof membrane may be very slippery when wet. Use caution when working on top of the trailer.

NOTICE

Beware of areas where fruit or tree sap or harsh environmental fallout may stay on the roof for an extended period of time. These conditions may result in permanent stains. If you are in these conditions, you may have to increase the frequency of your cleaning or premature deterioration may occur.

NOTICE

"Power washing" with high pressure/high volume techniques is not required or recommended. The extreme high pressures associated with power washers may loosen or damage sealants or damage sidewall graphics or finishes.

Exterior Doors

All exterior doors should be closed and securely latched when traveling. Silicone spray lubricant can be used on hinges and latch mechanisms. Lubricate locks with dry graphite.

Covers on receptacles, vents, and other ABS plastic parts will fade or yellow over time. These items can be painted with Polar White enamel. Do not paint over labels.

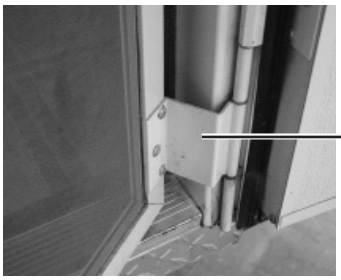
Door Adjustments

The cargo and compartment doors used in your trailer have no built-in adjustment feature. Over time, slight variations in installation and road dynamic conditions may cause the doors to settle slightly in the frame, causing the door to touch the frame before being completely closed. This very seldom reduces the actual performance of the door or lock.

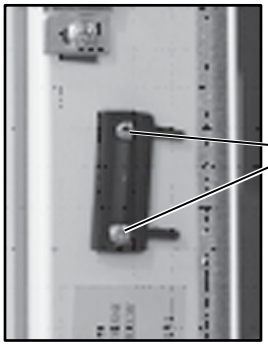
A firm tug on the door at the opposite corner from any binding can almost always eliminate this problem. Another technique is to use a mallet and block of wood to remove any slight interference. During the course of ownership, these doors might normally require this minor routine maintenance adjustment, and is not a defect covered under warranty.

Use a wood block and mallet to tap the frame near the point of binding. Use light taps to adjust the frame and remove the interference. Taps in several locations near the interference may be required.

To align/adjust the screen door, pull up on the screen frame. Do it carefully so as to not bend the screen frame. You may have to repeat it a few times to get it just right. If you “overadjust”, just pull it back in the opposite direction, or pull down on the top corner of the frame.



The hinges are not designed to handle significant downward force as may happen over time when opening and closing the screen door. Pulling up on the corner of the frame will realign the hinge slightly to compensate for any settling. There is no adjustment available at the hinge.



Adjust the screen door latch by loosening the screws as shown. Move the latch plate for a good fit when the screen door is closed. Tighten screws after adjustment.

Normal operation and over the road dynamics will cause the screen door hinges to settle slightly, causing the screen frame to drag on the threshold.

Adjust it by carefully pulling up on the screen frame as shown. Be careful to not overdo it. Avoid severely bending the screen frame. Pulling up on the corner of the frame will slightly adjust the bottom hinge to compensate for the normal settling over time. Several gentle adjustments may be more effective than a single forceful one.

This is a routine maintenance adjustment and may be done several times over the life of the trailer.

Adjust the screen door latch as shown.

Sealants & Adhesives

YOUR TRAILER'S #1 ENEMY IS WATER. SEALANT INSPECTION AND MAINTENANCE OF THE SEALS ON YOUR TRAILER IS A CRUCIAL OWNER RESPONSIBILITY AND IS NOT COVERED BY THE WARRANTY.

Close inspection and routine maintenance are crucial to the longevity of the trailer. Exposure to the elements and regional weather variations can accelerate sealant deterioration. Even the finest materials will eventually dry out and lose their effectiveness. Inspect the sealants around windows, doors, moldings and exterior components at least every three months. Also inspect around roof vents, other roof components, moldings around the front and rear caps, and perimeter moldings. A quick inspection prior to every trip will help reduce potential problems down the road.

When inspecting, check for cracks, voids, shrinkage, or any sign of deterioration. If any of these signs are noticed, have your dealer inspect and reseal if necessary. Cracked, void, deteriorated sealants in need of repair may allow water into the structure which can lead to very costly repairs.

If you ever notice interior leaks, contact your dealer or an authorized RV service center as soon as possible. Leak damage caused by failure to inspect and maintain the exterior sealants may affect your warranty coverage.

Proper, complete and effective resealing usually requires the removal and/or partial disassembly of some components on the trailer. These components may include:

windows

exterior compartment/luggage doors

roof-mounted appliances and vents

exterior appliance access doors exterior

moldings/trim

Your dealer can perform the sealant inspection and resealing work for you. Your dealer also has current information on sealants used in your trailer, and can recommend the appropriate sealant products for you if you prefer to do this work yourself. Always use the recommended sealants.

Be aware that the removal of these components, and proper removal of old sealing materials, cleaning of surfaces and re-installation of components is time consuming and may require special tools. Your RV dealer or service center is best equipped to do a complete re- sealing of your trailer. Genesis Supreme RV recommends that you have this work done by a qualified RV dealer or service center.

Rubber Seals

Rubber seals will deteriorate over time depending on the environment. This is normal, and these parts may need replacing every two years. Check entry door, exterior access, ramp door (if equipped) and compartment doors seals for proper sealing at the beginning and end of your regular travel season or twice a year. They can be cleaned with a mild detergent and treated with UV/ozone protectant.

Slideouts

Check the slideout seals every three months. Clean the seals with a mild detergent such as household Fomula 409®. Other cleaners can be used but do not use cleaners containing any of the compounds listed on page 24 of this chapter. If you use cleaners containing any of the listed ingredients, the seals can be damaged . This damage will not be covered under warranty. Check the labels carefully.

Check the area behind the seals for debris. Pull out the edge of the seal and clean as necessary.

When the slideout is extended, visually inspect the inner slide rails. Check for excess buildup of dirt or other material. Clean off any debris that may have accumulated. Generally, lubrication is not required, but a dry lubricant such as graphite or silicone spray lubricant, or a light lithium grease can be applied to the roller and bearing sleeve inner diameter. Remove any excess lubricant or grease so that dirt or debris do not build up. Do not lubricate the slideout drive gears, gear racks, or roller outer diameter as this will attract dirt and debris.

You can download a comprehensive and detailed slideout maintenance guide from: https://support.lci1.com/in-wall-slide-out

⚠CAUTION

Do not work on the slideout room or mechanism unless the battery is disconnected, the cables are removed or main disconnect switch is OFF.

Windows and Screens

While washing the trailer, check for leaks around the windows. If a leak is detected inside the trailer, check for voids in the seal and the clear sealant at the top of the window. If necessary, have the sealant replaced.

The window frames contain drain slots at the bottom. These slots allow any water collected in the frame to drain. Make sure these drain slots are open.

To remove window screens:

1. Slide window glass open.
2. Move the screen to the middle of the window frame.
3. Lift the screen by its frame at both sides until it clears the bottom of the frame. Tilt the bottom out and remove the screen. Note the guide springs at the top of the screen frame.
4, Reverse the above procedure to replace. Be sure the guide springs are aligned in the top of the frame track.

AWNINGS

LIPPERT AWNING CARE (If Equipped)

Awnings come with two types of fabric: acrylic, a cloth-type fabric, or vinyl. Acrylic awnings have the color woven right into the fabric. Acrylic also performs a little differently than vinyl in wet weather. It is water repellent, not waterproof. Because it's a woven cloth, it breathes. Air circulates through the fabric so dew and rain can dry quickly. However, you should avoid touching the underside of an acrylic awning when it is wet. This will break the surface tension and allow seepage through the fabric. If your awning gets rolled up while wet, unroll it as soon as the weather allows. It should be completely dry before rolling it up again to avoid mildew.

To keep your acrylic awning clean:

1. Simply hose it off occasionally and let it dry.
2. While a vinyl awning is mildew resistant, mildew can still form on the dirt and dust that sticks to the awning. To avoid these problems you will need to keep your UV-protected vinyl awning clean. Use a mixture of 1/4-cup mild dish soap, and five gallons of fresh water. Soap the open awning with this mixture, then roll it up to soak for five minutes. Next, open the awning and hose it off with fresh water top and bottom.
3. Repeat this process if necessary. After the awning is completely dry, roll it up. To remove a grease spot from a vinyl awning, use only soap and water.
4. ***Do not use household cleaners, mildew removers or hard bristle brushes!***

3. Repeat this process if necessary. After the awning is completely dry, roll it up. To remove a grease spot from a vinyl awning, use only soap and water.

4. ***Do not use household cleaners, mildew removers or hard bristle brushes!***

CAREFREE AWNING CARE (If Equipped)

FABRIC MAINTENANCE

DO NOT USE OIL BASED CLEANERS OR ANY CAUSTIC, GRANULATED, OR ABRASIVE TYPE CLEANERS ON YOUR CAREFREE AWNING PRODUCT.

One of the best ways to keep the fabric looking good and to delay the need for deep or vigorous cleanings is to hose fabrics off on a monthly basis with clear water. This practice will help prevent dirt from becoming deeply imbedded in the fabric and eliminate the need for more frequent vigorous cleanings. In most environments, a thorough cleaning will be needed every two to three years.

When it's time for a thorough cleaning, the fabric can be cleaned while still on an awning frame.

Vinyl Fabric – Use a soft brush and warm water with soap.

Acrylic Fabric – Use a stiff brush and warm water with soap.

When cleaning the fabric:

Always use a natural soap. Never detergent.

Water should be cold to lukewarm. Never more than 100 degrees.

Air-dry only. Never apply heat to the fabric.

MILDEW

Mildew is a fungus growth that looks like dirt. Vinyl coated polyester fabrics are mildew resistant because of a chemical biocide in the vinyl coating. Under ordinary conditions, mildew will not appear. However, in areas where high temperature and humidity are common, mildew can be a problem and require the material to be washed more frequently. THOROUGHLY rinse the fabric with clean water and allow to air dry completely before rolling up the awning.

Additional Tips for All Awnings:

1. At the start of each camping season, make sure the top and bottom bracket screws are tight.
2. If the lift handle is hard to operate, spray it with silicone spray. You may have to repeat this process periodically. You may also need to spray the bottom bracket release tab and rafter and support arms.
3. One of the secrets to a long life for your awning is to keep it clean. Follow the instructions for your type of awning.
4. If you get water streaking or experience seeping behind your awning rail, inspect the rail for loose screws or peeled sealant.
5. To avoid water pooling, lower one end of the awning for proper water runoff.
6. For ease of hardware operation, rub candle wax on all sliding surfaces.
7. If you're expecting heavy or prolonged wind or rain or if you will be leaving the awning unattended, it's best to roll it up. ***Damage as a result of weather is not covered by warranty.***
8. Finally, make sure the awning is extended high enough before opening the entry door.

Decals/Exterior Graphics

The decals are made of vinyl. They will fade from exposure to the sun. If you expect to park the trailer for an extended period outdoors, reposition it occasionally so the decals will fade equally. Clean the decals with soap and water. Never use strong solvents, rubbing compound, petroleum distillates (acetone, MEK, mineral spirits,etc), citrus based soaps, etc. **Do not apply wax to the graphics.**

Appliances and Components

Please refer to the individual appliance or component manual included in your Owner's Packet. If service is required for one of the appliances in your trailer, follow the instructions for service as outlined in the Owner's Manual for that appliance. Each appliance manufacturer has its own network of service outlets, and these centers are best qualified to service your appliances. If a problem persists, contact your selling dealer.

INTERIOR

The interior of your trailer has been carefully crafted and decorated to accommodate your comfort and travel needs.

INTERIOR CABINETS AND WALLS

The interior cabinets and wall panels are made of a vinyl surface on semi-hard plywood. They require little maintenance during the life of your trailer. Use a warm water and mild soap solution to clean them, and wipe them dry with a smooth, dry cloth. Do not use citrus based soaps, petroleum distillates or polish. These products will attack the vinyl. Lightly wash with a soft cloth and quickly dry the finish.

FLOORS

Carpets - Vacuum carpet regularly. Clean with a good quality carpet cleaner.

Tile floors - Use a good quality cleaner.

Squeaky floors - Squeaky floors are usually caused by loose screws holding the floor and the walls or cabinets. Open the cabinet doors and remove the drawers to inspect screws and other fasteners holding the floor and cabinet.

DRAPERIES AND CLOTH UPHOLSTERY

The draperies and upholstery are of similar quality as found in your home. Treat them as you would any fine fabric. Some bedspreads and drapes require dry cleaning.

LEATHER FURNITURE (IF EQUIPPED)

Leather furniture should not be placed near a source of heat, or exposed to sunlight. Dust and wipe clean frequently to eliminate the clogging of pores.

For spills and stains, blot with a clean, dry absorbent cloth or sponge. For matte finish leathers, if necessary, wipe with a clean cloth and damp lukewarm water. Do not dry wet areas with hair dryers, etc. For natural or non- protected leathers, blot liquid with a clean absorbent cloth. If a stain appears it will dissipate in time. Do not apply water to clean butter, oil or grease spots. Do not use furniture polish, varnish, ammonia, saddle soaps, oils, abrasive cleaner soaps, etc.

⚠WARNING

Do not use flammable or poisonous materials, such as polish remover, gasoline, naptha, lacquer thinner, or carbon tetrachloride for any cleaning purpose. These items could cause damage to the materials and could cause injury or death.

Day-Night Shades (If Equipped)

Clean day-night shades with an automotive upholstery cleaner.

Counters and Sinks

Countertops and sinks are made of solid surface or high pressure laminate materials. These surfaces are stain resistant and require very little care. Clean and remove stains as follows:

Cleaning - For most dirt and stains, use soapy water or ammonia-based cleaner. For water marks, wipe with a damp cloth and towel dry. For difficult stains, use an abrasive cleaner and a green Scotch Brite® pad.

To disinfect, occasionally wipe the surface with a solution of 1 part household bleach and 1 part water.

Stainless Steel fixtures

Clean with stainless steel fixture cleaner only.

Tubs and Showers

Tubs and showers are made of fiberglass or ABS plastic materials. Use a mild soap and water solution or cleaners specially formulataed for fiberglass and plastics to clean the surface. DO NOT USE harsh chemicals, abrasives or abrasive cleansers, gasoline, chlorine, acetone, kerosene, Formula 409®, or citrus-based cleaners. Citrus-based cleaners contain D-limonene which attacks ABS plastic products. Check any cleaners for fiberglass or ABS plastic compatibility. Recommended cleaners include many non-abrasive household cleaners such as:

Fantastic Spray Cleaner (5% solution)
Joy Liquid Detergent (5% solution)
Gel Gloss
Murphy Household Oil Soap (diluted)
Plexus Plastic Cleaner
SoftScrub
Windex Glass Cleaner

Cabinet Doors and Drawers

Make sure the catches on all cabinets and doors are adjusted properly to prevent them from opening while traveling.

Adjusting the hinges, latches and catches is a routine maintenance task and is not covered under the warranty. You may have to make adjustments or tighten screws several times over the life of the trailer. Normal use and travel vibrations may cause minor flexing of the cabinets, drawers, and doors. Loosened screws or hardware is a normal part of the RV lifestyle.

Propane System Maintenance

Propane Leak Testing

Inspect all propane lines and fittings, including connections to appliances, frequently for possible damage and leaks. Brush or spray an approved gas leak detection solution or a non-chlorinated, non-ammoniated soap suds solution over all fittings and any areas showing apparent damage in the lines. The bubbles will grow in size to indicate a leak.

⚠WARNING

Do not use an open flame or any spark producing device to locate a leak.

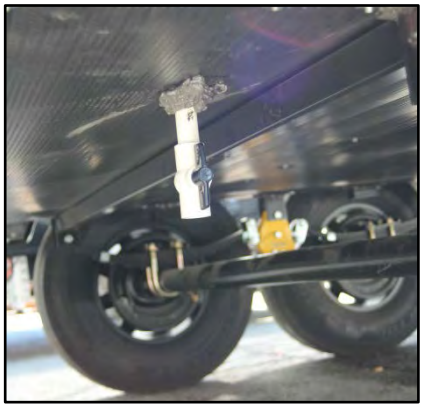
Always tighten flared fittings with two wrenches with opposing torque and do not over tighten. Using only one wrench or over tightening can cause leaks. Have someone stand by to close the main propane tank valve(s) while you are tightening fittings in case a leak occurs. After tightening, check again with the leak detection solution to be sure the leak is stopped. If bubbles still appear, your dealer or a gas service center may need to fix the problem.

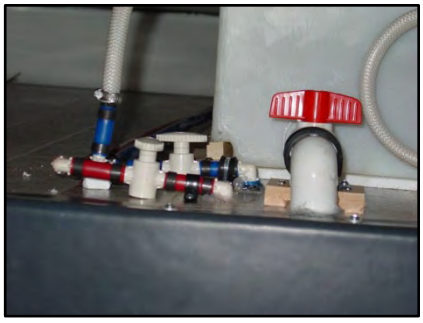
⚠CAUTION

Do not use products containing ammonia or chlorine to check for leaks. Ammonia and chlorine can cause cracks to form on copper lines and brass fittings, causing a leak.

The primary manifold is a black pipe located under the trailer. Copper tubing with flare fittings is used for secondary lines running to the gas appliances. NEVER attempt to splice ruptured lines. A new line should always be installed. Your dealer or authorized service center should perform any propane gas line service.

Although your propane system was thoroughly inspected for leaks before delivery, gas fittings can loosen from vibration during travel. Inspect the system at least once a year, and have any problems corrected immediately.





Fresh water drains (typical)
Style and location varies with model

Plumbing System Maintenance

Fresh Water System

Draining the Fresh Water System

The fresh water system should be drained whenever the system becomes contaminated, prior to winter storage, and after long storage when the system was not drained prior to storage.

Drain the fresh water system as follows:

1. Open the fresh water tank drain valve. Allow the tank to drain completely. If you are not draining the tank for storage, close the drain valve.
2. Turn the water heater OFF. Allow the heater to cool. Drain the water heater by removing the drain plug.
3. Disconnect the ice maker (if equipped) behind the refrigerator. Drain the ice maker as directed in the **Storage and Winterization** chapter.
4. Open all faucets, both hot and cold, in the galley, bathroom and shower. Open the shower head valve.
5. Open the system drain valves. These are the lowest points in the water system. If you are not draining for storage, close the valve. See the diagram in **Fresh Water System** chapter.
6. Completely drain the water from the toilet by depressing the foot pedals.
7. Remove the water filter cartridge (if equipped). If you are draining for storage, do not reinstall the filter cartridge. Store the cartridge in a safe place.
8. Disconnect the outside shower hose (if equipped) and drain the hose. Reconnect the hose.
9. Refer to the **Storage and Winterization** chapter.

Water Pump Maintenance

Normal pump maintenance is all that is needed: Check and cleaning the strainer. Sanitize, winterize and occasionally check all plumbing hardware and fittings for tightness. Lack of sanitizing is the number one reason for premature pump failure and poor performance. Lack of sanitizing will cause scale build-up on the diaphragm and valves, causing low flow and leak back.

FRESH WATER SYSTEM SANITATION ("SHOCK TREATMENT")

The entire fresh water system should be sanitized before the first use, after a period of nonuse, or if the system becomes contaminated. To fully sanitize the system:

1. Open the water tank drain valve and completely drain the water tank. Close the valve after the tank is fully drained.
2. Add about 10 gallons of fresh water to the water tank.
3. Add 2/3-cup (six ounces) of liquid chlorine bleach for each 10 gallons of tank capacity (1/2-gallon bleach for 100 gallon tank).
4. Completely fill the water tank with fresh water.
5. Close the valve at the water purifier (if equipped) unless the water has been contaminated. If the water is contaminated, discard the filter cartridge and leave the valve open.
6. Close the ice maker valve and drain the ice maker (if equipped).
7. Turn the water pump ON and open all the sink, tub/ shower drains and faucets to allow air to escape from the plumbing. After all air has escaped, and solution has flowed through the faucets, close the drains and faucets and turn the pump OFF. This fills the entire system with solution. When you can smell the chlorine from each faucet, that's enough.
8. Run the hot-water faucets until the old water has been purged from the hot-water tank, and it is now filled with the water/bleach solution from the water tank.
9. Allow the filled system to stand for several hours.
10. Open the tank drain valve, water heater drain valve and all faucets. Turn the water pump ON and flush the system until the water tank is empty. Turn the water pump OFF. Be careful to not overfill the waste tanks.
11. After draining the system, close the drain system.
12. To remove the bleach odor, mix ½ cup of baking soda with a gallon of water and pour into the fresh water tank.
13. Fill the tank completely and pump this solution through the water heater and the rest of the water lines. This solution can sit in the system for a few days.

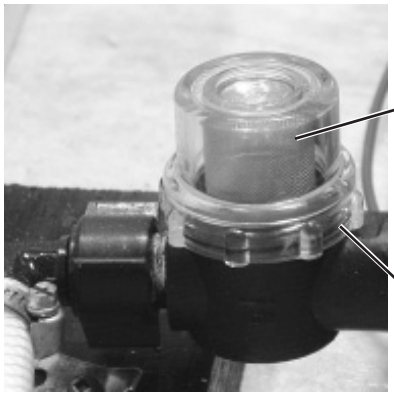
14. To remove residual chlorine from the system, run fresh water through the system using the water pump with the faucets open.
15. Fill the water tank with fresh water for use.
16. Open the icemaker valve and water purifier valve (if equipped). Replace the filter cartridge if it had become contaminated.

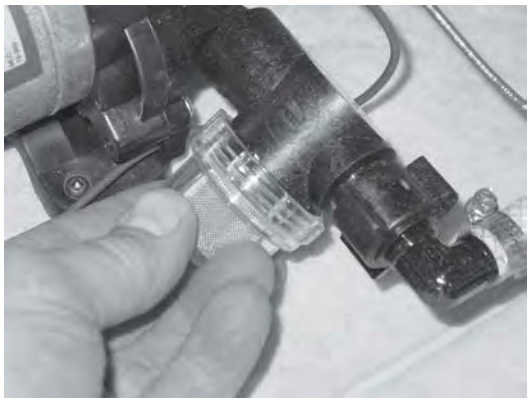
Water Pump Strainer Cleaning

Cleaning the fresh water pump inlet filters is a normal customer maintenance item. It is normal for debris to collect in this filter, especially during the first use of the plumbing system. It is performing its function by trapping any minor debris which might be present in the water.

Cleaning this filter is not considered a warranty item. It is routine, and may be done many times over the life of the trailer depending on the purity of the water coming from the tank.

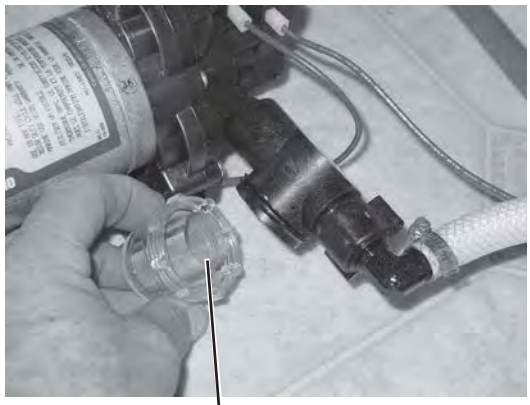
Check the water pump strainer at 90 days and at least once a year thereafter. Clean if necessary as follows:





2. Unscrew filter housing from water pump inlet fitting.

1. Turn water pump OFF.



3. Lift out screen, clean it, insert it back into the housing and screw the housing back onto the water pump inlet fitting.
4. Operate the fresh water pump and check for leaks. Make sure the filter and housing are properly secured.

Draining the Water Heater

If the trailer is to be stored during winter months in freezing temperatures, the water heater must be drained to prevent damage from freezing. See the *"Storage and Winterization"* chapter for more details on winterization.

1. Set water heater switches to OFF.
2. Set the heater bypass valve to BYPASS. Let water heater cool.
3. Remove drain plug from water heater tank, and depress the lever on the pressure/temperature relief valve to aid tank draining.
4. When water is drained, reinstall the drain plug. Replace the drain plug if it shows signs of deterioration.
5. Set the bypass valve to NORMAL unless you are winterizing with antifreeze. In that case, leave the valve in the BYPASS position.
6. Turn off the circuit breaker in the main panel that supplies power to the water heater element.

Fresh Water Line Maintenance

The water lines need little, if any, maintenance. Plumbing system fittings can loosen over time due to vibration and flexing from road dynamics. This loosening can also occur during storage periods because of temperature changes.

Check the water line fittings where they attach to fixtures. Look for drips and other evidence of water. You can easily tighten the threaded fittings by hand or with basic hand tools. Occasionally, simple Teflon tape can be used to assist this process. The photos show some of these typical fittings. Exact installation details differ from those shown depending on model and placement of fixtures.

NOTE

When the trailer is new, there may be a brief "break-in" period for plastic parts as the sealing surfaces seat and become permanently water tight. This is normal, and does not indicate a defect. Tightening these fittings is a routine maintenance item not covered under warranty.

Typical galley/bath faucet fittings

Typical shower/tub faucet fittings

Waste System

The waste system plumbing is black ABS plastic. The fittings are designed to be tightened by hand. Do not use tools to tighten the fittings.

The P-traps need to have water in them in order to prevent holding tank odors from entering the trailer. After draining the holding tanks, run some water into the traps.

Typical galley/bath P-trap and drain fittings

Tighten by hand only.

HOLDING TANKS

After draining a black water waste tank (toilet waste), the monitor panel indicator lights may appear to malfunction. Foreign material (toilet paper, grease, hair, etc.) may collect on and adhere to the monitor probes and can cause a false reading. If this happens, flush the black water tank as directed below. Usually, the motion of the trailer on the road and the natural sloshing of the tank contents will keep these materials from sticking to the probes.

1. Wear a pair of gloves to protect your hands while handling the waste system.
2. Drain the waste tank as outlined in the **Waste Water System** chapter.
3. The tank can be flushed through the toilet if a flushing system is not installed.
4. Connect a water hose (NOT the fresh water supply hose) to a city water supply. Hold open the toilet flush valve and insert the other end of the hose into the black tank through the toilet bowl outlet.
5. Open the black tank dump valve and the final dump valve. Open the city water valve and flush the black tank for approximately two minutes.
6. Close the black water dump valve and final dump valve. Disconnect the waste hose, rinse it, and install the dust cap.
7. Run fresh water into the black tank for approximately 30 seconds to prime the tank. Never leave it unattended. It can back fill into the trailer through the toilet.
8. Turn off the water supply, and remove the hose from the toilet outlet.
9. Rinse, coil and store the flushing hose. Store the waste drain hose. Wash your hands.
10. If the monitor does not read properly, fill the waste tank approximately 3/4-full with fresh water. Tow the trailer to allow the water to slosh and clean the monitor sending probes. Drain the waste tank and check the monitor.
11. If there is still a malfunction, pour 1/2-cup of muriatic acid (pool acid) into 4 gallons of water in a 5-gallon pail. Pour the mixture into the toilet to thoroughly mix the solution. Fill the tank through the toilet and let it stand overnight. Drain and flush with clean water.

⚠WARNING

Do not pour water into acid. Always pour acid into water.

Chemical Ingredients In Proposed Slideout Seal Cleaners To Avoid

While most household cleaners work well on the slideout seals, some chemicals may cause degradation of the seal. Formula 409®, Lysol® and similar cleaning products work well. Below is a list of chemicals that should be avoided due to the potential adverse affects on seal performance. Some caulks and sealants may include listed chemicals that degrade performance strength. Please read product labels before using any cleaners, caulks or sealants.

DO NOT use cleaners containing:

Aliphatic hydrocarbons
Amyl acetate
Amyl alcohol
Amyl chloride
Aromatic hydrocarbons
Benzaldehyde
Benzene
Benzoic acid
Benzyl alcohol
Butane
Butyl acetate
Carbon disulfide
Chlorobenzene
Chlorobromomethane
Chloroform
Cresol
Cyclohexane
Cyclohexanone ethers
Gasoline (any)
Kerosene
Lacquer solvent
Linseed oil
Methane
Naphtha
Natural gas
Nitrobenzene phenol styrene
Toluene
Trichloroethylene
Turpentine
Vinyl plastisols
Xylene

Avoid cleaners containing:

Acetic anhydride
Alcohols
Aniline
Aniline hydrochloride
Butyl alcohol (Butanol)
Carbon tetrachloride
Ethylene glycol
Ethyl alcohol (Ethanol)
Fatty acids
Freon
Glycerine
Iodine & solutions containing iodine
Monoethanolamine
Animal oils
Mineral oils,
Vegetable oils
Perchloroethylene
Polyglycol
Steam (up to 40 psi)

SERVICE/MAINTENANC LOG

SERVICE	DATE	BY	COST	NOTES

Warranty, Maintenance and Care Guidelines

Genesis Supreme RV welcomes you as a new customer. We want you to be happy with your new trailer, and we are here to assist you and stand behind the product. You can help by being informed and insuring certain inspections and preventive maintenance are performed. Follow these important steps to help prevent small issues from developing into significant problems:

- **Be sure your dealer completes and submits the warranty registration for your RV when you complete the sale. This ensures your Genesis Supreme factory RV warranty protection has begun and avoids possible confusion later.**
- **Review your Owner's Information Packet. Your Owner's Guide (published on the included compact disc) and equipment literature and operating guides are in this package. Review them thoroughly, and keep them in a convenient location for reference.**
- **Your Owner's Information Packet also contains warranty registrations for most of the equipment and appliances installed in your trailer. Be sure to complete and submit these registrations as soon as possible to activate your warranty coverages on these components. If you do not register these warranties, your warranty coverage on these components may be reduced.**
- **It is vitally important that you inspect your trailer frequently for irregularities. Pay special attention to the roof and roof sealants; sealants around windows, doors, exterior accessories; and all exterior moldings. Proper, high quality sealants have been used to produce your trailer, but just like a house, sealed areas should be checked and maintained regularly. But over time, water may intrude into these areas, possibly causing unseen damage to walls and other parts of your RV.**
- **Do not store your trailer without first inspecting the sealants. Inspect the trailer regularly. Look for anything unusual, such as signs of leaks. Early detection and remedy is the best way to prevent a serious repair.**
- **If you find a problem, fix it as soon as possible. Neglect may make it worse. Contact your dealer or Genesis Supreme RV as soon as possible if you need help.**

Follow these use and maintenance requirements:

Exterior & Chassis

Every 90 days, thoroughly inspect the roof sealants, sealants around windows, exterior doors, cargo doors, fittings and moldings. Reseal annually or as needed.

Inspect the chassis frame rails and components. Check for loosened bolts. Look for bent or dented parts.

Check visible wiring. Look for damaged wiring. Look for loosened connections.

Check the tires and wheels. Be sure tires are properly inflated and wheel lug nuts remain torqued to the correct specification.

Open exterior storage compartments regularly and ventilate. Look for any signs of water intrusion. Reseal as required or ask your dealer for assistance.

Interior & Furnishings

Thoroughly ventilate the interior when using the trailer. This will reduce the effects of condensation that could damage walls and fabrics.

Wipe up spills and excess moisture from floors and carpets. Vacuum frequently to enhance carpet performance.

Close window shades when the trailer is stored in direct sunlight to minimize possible fabric and carpet fading.

When storing your trailer for long periods, empty all foodstuffs from cabinets and the refrigerator, especially during freezing weather.

⚠CAUTION Do not leave the trailer unattended for an extended period with city water connected and under pressure. Turn it off when the trailer is unattended. A water pressure regulator is required.

⚠WARNING When storing the trailer, **CLOSE** the propane tank valves to the **OFF** position.

⚠CAUTION Do not leave the gravity water fill unattended when filling. Damage may result. Fill the fresh water tank slowly. Let the air escape to reduce the possibility of fresh water tank over expansion.

Plumbing & Propane Systems

Open cabinets and plumbing access panels frequently and look for any signs of plumbing leaks or water intrusion.

Over time, flexing and vibration from towing and normal use may cause some plumbing fittings to loosen. This is normal. You can easily tighten most fittings by hand or with basic tools to stop or prevent minor leaks.

Check and clean the fresh water filter at the water pump regularly. When reinstalling the filter housing, be sure it is tight, run the fresh water pump and check for any leaks.

If you store your trailer in freezing weather, completely drain the fresh water plumbing system, water heater, toilet, ice maker, and holding and fresh water tanks. See your dealer for the proper winterization procedure. Visit your trailer while it is in storage. Inspect for anything unusual.

Check the propane gas tank hold down bracket. Be sure it is tight before towing your trailer.

Each time your propane tanks are filled, check the propane hose fittings at the tanks. Tighten them securely, but by hand only.

⚠WARNING **(Ramp/"Toybox" trailers):** When loading the trailer, load 60% of the cargo over or forward of the centerline of the axle(s). Overloading and unbalanced loads may cause towing and handling problems or create an unstable towing condition. This can result in damage to the trailer, the towing vehicle and cargo.

⚠WARNING **(Non-ramp conventional trailers):** Overloading and unbalanced loads may cause towing and handling problems or create an unstable towing condition. This can result in damage to the trailer, the towing vehicle and cargo. Load evenly from side to side and front to back, keeping heavy items near the floor and directly over or as close to the forward-most axles as practicable.

Many other maintenance items are covered in your Owner's Guide and the equipment operating guides for the components in your trailer. See your Owner's Information Packet.

20 / STORAGE & WINTERIZATION

The checklists and procedures in this section will help you take a systematic approach to preparing your trailer for storage in cold-weather conditions. These checklists do not include every detail required, and you may want to expand them to suit your needs, or perform the tasks in an order that suits your situation and work style. The sections are not necessarily presented in the order that you should do them. Other manuals included with your trailer may contain more detailed procedures for some of the items on these checklists. Contact your dealer or Genesis Supreme RV for additional suggestions suitable to your climate and storage conditions.

CHASSIS

- ☐ If possible, select a storage area that is dry, well-ventilated and protected from wind and sunlight. A garage would be ideal, but a protected outdoor area will be fine.
- ☐ Lubricate all grease fittings on the axle hubs.
- ☐ Check all tires for damage and set tire pressure to the maximum as indicated on the tire sidewall. Clean the tires and wheels with your regular soap/car wash solution. It is not necessary or desirable to treat the tires with any commercial tire dressing.
- ☐ Wash the trailer underside. Hose off any accumulations of mud and/or road salts on frame, axles, and other chassis components. This is also a good time to inspect the underside of the trailer. Look for obvious damage, and for small cracks, separations, or openings in storage compartments. Check for any damaged components or wear.
- ☐ Park the trailer as level as possible front to rear and side to side. Use blocks or ramps under the wheels, if necessary.
- ☐ Be sure the breakaway switch activating pin is secure in the switch. Coil and stow the 7-way power cord.
- ☐ Grease the hitch king pin (5th-wheels) to prevent rust and corrosion.

- ☐ Block the tires front and rear. Cover tires with cloth, plywood, or aftermarket tire covers to protect them from ultraviolet exposure from the sun (if stored outdoors).
- ☐ Check tire pressures every 30 days during long-term storage. Maintain the maximum rated cold inflation pressure.

BODY/EXTERIOR

- ☐ Close all vents and windows, and thoroughly wash the exterior, including roof, sidewalls and front and rear caps. Be sure to remove all debris, road grime, bugs, tree sap, bird droppings, etc.
- ☐ While washing, make note of any maintenance that may be needed. Closely inspect the sealants around roof accessories (vents, antennas, racks, etc.) and windows and doors. Reseal as necessary before winter rains or snows accumulate.
- ☐ Cover all exterior appliance vents (water heater, refrigerator, range hood) to prevent insects, small birds or other creatures from getting in.
- ☐ Extend the awnings (if equipped). Sweep or vacuum away branches, leaves, and any other debris. Wash both the tops and bottoms of the awnings with a mild, natural soap. This will help reduce the growth of mildew on the awnings. Allow them to dry completely before retracting them. After they are dry and still extended, spray a light coat of silicone-based lubricant on all metal moving parts.
- ☐ Extend the slide-outs (if equipped) and prepare them for storage:

  1. Wipe down all exposed mechanical slide components: gears, rails, shafts, etc. Look for any damage, or caked accumulation of grease and dirt. Remove any of this accumulation.
  2. Check the exterior rubber slideout seals. Look carefully for any tears or splits in the seals. This would be a good time to have repairs made. Clean the seals with any of the recommended cleaners. After cleaning, dry thoroughly with clean cloths.
  3. Leave the slideouts extended for now. Retract them after your interior preparation is completed.

- ☐ Check inside all exterior compartments. Remove anything that you don't intend to store. Vacuum out the compartments and carefully wipe down components inside. Look over any exposed wiring. Check for loose connections or damaged wires. Make any repairs now. Wipe down the rubber seals around the doors. Lock all exterior compartments (except propane compartment).
- ☐ Lubricate locks, hinges and latch mechanisms with silicone- based lubricant.
- ☐ If the trailer is parked outdoors, remove any high grass and weed accumulation under and around the trailer, as necessary.

PROPANE SYSTEM

- ☐ Turn off all propane appliances: refrigerator, range/oven, water heater, furnace.
- ☐ Close the main outlet valves on the propane cylinders. Cover the regulator and cylinders to keep moisture out.
- ☐ Remove all food from the refrigerator and freezer. Wash down the interior walls with a mild soap solution. An open box of baking soda or other absorbent inside will help reduce odors. Block the doors open slightly to allow air to circulate.
- ☐ Turn off the range and oven burners. Clean the top and oven interior. Turn off any pilot valves.

PLUMBING SYSTEMS

Proper preparation and winterization of the fresh water and waste water systems is vital to the continued safe and effective operation of these systems. Freezing water expands and can rupture tubing, fittings, tanks, and fixtures. Damage from freezing could be extensive and very expensive to fix. Since you will be running water and antifreeze solution through the drain piping into the gray and black water holding tanks, we'll winterize the fresh water system first, and finish the job with the waste water system. Be sure to dump the holding tanks before starting winterization.

NOTICE

Be sure the water in the water heater is cool before beginning winterization.

- ☐ Turn off the water heater and let it cool. Turn off the water heater electrical circuit breaker to prevent accidental operation with a dry tank. To drain the water heater, remove the plug at the bottom of the heater and open the pressure relief valve near the top of the heater. When all water is drained from the heater, close the pressure relief valve and replace the drain plug. Set the bypass valve to prevent filling the water heater with antifreeze.
- ☐ Open the tank drain valve to drain the fresh water tank. If you have a full or nearly full tank, be prepared for the full capacity of the tank to drain. Close the valve when the tank is completely drained.
- ☐ Open all faucets, both hot and cold, in the galley, bathroom and shower. Open the shower head valve. This will allow the water in the lines to flow to the low point drains.
- ☐ Open the system low point drain valves. These are the lowest points in the water system. The low point drains are located under the trailer. Drain out all water. Close the low point valves when ALL water is drained.
- ☐ Press the toilet flush pedal to completely drain the water from the toilet.
- ☐ Remove the water filter cartridge, if equipped. If you are draining for storage, do not reinstall the filter cartridge. Store the cartridge in a safe place. Turn off the supply valve to the filter.
- ☐ Disconnect the outside shower hose (if equipped) and drain the hose. After all water is drained from the hose, reconnect hose.

For Storage in Freezing Conditions:

- ☐ Add potable RV antifreeze to the system. Genesis Supreme RV recommends disconnecting the water pump inlet tube and pumping antifreeze from a container into the system.

  1. Close the fresh water tank drain valve and the low point drain valves. Close all faucets, and be sure the water purifier (if installed) supply valve under the galley is closed.
  2. Disconnect water pump inlet line. Attach a 3- or 4-foot length of hose to the pump inlet port, and put the other end of the hose into at least a one-gallon container of RV water system antifreeze. ***Do not use automotive coolant system antifreeze.***

⚠WARNING

Use only RV water system antifreeze for winterization. Do not use automotive coolant antifreeze (ethylene or propylene glycol). *Automotive antifreeze is poisonous.*

3. Be sure the trailer 12-volt electrical system is activated. Turn the water pump **ON** to pressurize the cold side of the fresh water system. Pump about a gallon of antifreeze into the system. Put the free end of the hose into another container of antifreeze. Open each faucet – lavy, shower, galley, exterior shower and wash-up faucets – until the antifreeze solution flows freely. Close each faucet when you see the antifreeze. Open the toilet water inlet valve and activate the toilet flush valve so antifreeze gets into the toilet. With the system pressurized, press the check valve in the city water inlet until antifreeze flows out.
4. Open the low point drain valves until you see antifreeze flowing out, then close the valve.
5. Turn off the water pump, disconnect the temporary hose, reconnect the inlet tubing and open all faucets.

☐ Winterize the refrigerator ice maker (if equipped).

1. Push the ice maker arm up to the OFF position.
2. Remove the vent from the exterior side of the trailer.
3. Close the water shutoff valve for the ice maker.
4. Place a shallow pan under the water solenoid valve.
5. Disconnect the water supply line from the water solenoid valve. Drain the water from the supply line.
6. Unscrew the plastic nut and disconnect the water line from the outlet side of the water solenoid valve. Drain the water from the ice maker line.
7. Reconnect both lines to the water solenoid valve in their original locations. Leave the water shutoff valve closed.
8. Dry out the ice maker mold assembly with a soft cloth.
9. Remove the white ice maker AC power cord from the outlet.

☐ Be sure water pump and water heater switches are OFF.

☐ Clean up around the dump valves and fittings. Be sure the dump hose is clean and dry. Pull off the termination caps, clean around the sealing rings and reattach them. Cycle the dump valves a couple of times. Spray a silicone-based lubricant on the actuating shafts and mechanisms.

- ☐ Pour one or two cups of RV antifreeze down each lavy, galley, and shower drain. Pour a couple of cups into the toilet, and operate the flush valve.
- ☐ Cap the holding tank drain, city water inlet, and fresh water fill inlet. Coil and store the fresh water hose, waste hose and flushing hose.

PREPARING THE ELECTRICAL SYSTEMS FOR STORAGE

Preparing the electrical systems for storage mainly involves the batteries and the generator (if equipped). Properly storing the batteries will ensure that they will be able to power up your systems when you take the trailer out of storage, and that you get the maximum life from the batteries.

- ☐ If possible, remove all batteries and store them in a clean, dry location. Arrange them in a way that allows you to get to them for periodic recharging during the storage period.
- ☐ If you can't remove the batteries, disconnect the cables and clean the terminals. Remove any dirt and/or acid buildup. Clean the tops of the batteries and dry thoroughly. Reattach the cable, and apply a battery terminal protectant.
- ☐ **Check the charge in each battery with a hydrometer.** Be sure the specific gravity in each cell is no less than 1.260. Recharge as necessary. A fully charged battery will not freeze until 50 or 60 degrees below zero, but a partially discharged one may freeze at only 20 degrees above zero. A frozen battery is a ruined battery. Checking the voltage is not a good way to determine battery charge. A battery that measures 12 volts is already 75% discharged. A fully charged battery will measure about 12.63 volts at 77 degrees F. The hydrometer/specific gravity method is the best way to determine battery charge level.
- ☐ Check the charge in the batteries every 30 days. Recharge to specific gravity of at least 1.260.
- ☐ Change the oil and oil filter in the generator (if equipped).
- ☐ Turn off any unnecessary DC and AC loads. Turn devices off, open the main battery disconnect switch.
- ☐ Unplug all 120-volt AC appliances. Turn off all AC breakers, including the main breakers at the main panel. You may want to do this after all interior preparations have been completed, leaving it as the last things you do.

- [ ] Clean and re-coil the shore power cord. Check the plug end of the shore power cord. Clean the prongs with electrical contact cleaner or a ScotchBrite® pad.

INTERIOR

- [ ] Thoroughly clean the interior. Remove all traces of food, including pet food. Vacuum in and under cabinets. Remove all canned goods and personal items if they contain liquids that will freeze. A burst can or jar of food can be a real mess to clean up in the spring.
- [ ] Open closet doors, drawers, and cabinets so air can circulate through. This will help reduce the buildup of condensation and musty odors.
- [ ] Close and cover all vents to prevent entry of snow, etc.
- [ ] Close and lock all windows. Turn vent fan and range hood fan switches OFF.
- [ ] Turn off all radios, TVs, interior and exterior lights.
- [ ] Close curtains and/or miniblinds, and pull shades. This will help reduce fabric fading from exposure to sunlight.
- [ ] Remove, clean or replace air conditioner filter.
- [ ] Remove batteries in clocks and other battery-operated devices such as smoke detectors. Leave the cover off the smoke detector to remind you to replace the battery when reactivating the trailer after storage.
- [ ] After all cleaning chores are complete, and you are ready to leave the trailer, do a walk-through to make sure you haven't forgotten something.
- [ ] When exiting the trailer, close and lock the entry door, and retract the entry step.
- [ ] Check the condition of the trailer weekly.
- [ ] During long-term storage, operate the air conditioning system (if equipped) periodically to lubricate the compressor seals. Operate the slideout(s) several times to keep seals from sticking, and to lubricate the mechanism. Reconnect batteries or connect to shore power.

Reactivating After Extended Storage

If the trailer was properly and carefully prepared for storage, getting it ready for another travel season should not be difficult. The following checklist assumes that you stored the trailer with care. If damage from freezing or other serious deterioration has occurred, please consult with your dealer or Genesis Supreme RV for advice on how to get your trailer back to usable condition.

If you have added checklist items of your own, make sure those items are covered as you prepare your trailer for travel.

- ☐ Thoroughly inspect the outside of the trailer. Look for animal nests in wheel wells, in compartments, or in other out of the way places.
- ☐ Remove all appliance vent covers, roof vent covers, or other coverings. Be sure all furnace, water heater, and refrigerator openings are clean and free of debris.
- ☐ Open all doors and compartments. Check for animal or insect intrusion, water damage, or other deterioration.
- ☐ Check charge level in all batteries. Refill and recharge as necessary. Reinstall batteries, if necessary. Be sure cables ends and terminals are clean and free of corrosion. **Always install the positive (+) cable first.**
- ☐ Close the main battery disconnect switch.
- ☐ Check tire pressures. Reinflate to specified cold pressure.
- ☐ Check wheel nuts and torque to correct values. See the **Wheel Nut Torque Table** in Chapter 6.
- ☐ Lube chassis and axles. See the axle maintenance guide in your Owner's Package.
- ☐ Check all exterior lights, and replace as necessary.
- ☐ Remove covering from inside windows, if necessary.
- ☐ Open vents and windows for interior ventilation.
- ☐ Drain, flush and sanitize the fresh water system as outlined in the **Care and Maintenance** chapter. Inspect the drain hose for leaks. Replace the hose if necessary.
- ☐ Install a new fresh water filter cartridge (if equipped).
- ☐ Operate all faucets and fixtures in the fresh water system. Check for leaks at all joints and fittings. Repair any leaks.
- ☐ Check all 12-volt DC circuit fuses.

- [ ] Operate all 12-volt DC lights and equipment.
- [ ] Install new batteries in battery-operated devices. Check the operating guides for these devices for additional operating information.
- [ ] Test the carbon monoxide, propane and smoke detectors and alarms.
- [ ] Check the Convenience Center monitor operation.
- [ ] Open and operate vents and vent fans, including the range hood fan.
- [ ] Inspect the 120-volt AC electrical system. Check the shore power cord, converter, all outlets, and any exposed wiring. If defects are found, refer service to your dealer.
- [ ] Prepare the generator (if installed) for operation following instructions in the generator operating manual. Make sure the main circuit breakers are off.
- [ ] Start and run the generator (if equipped). Check the generator exhaust system for leaks or deterioration.
- [ ] Operate 120-volt appliances and trailer air conditioning system (if equipped).
- [ ] Inspect the propane system and check for leaks as described in the **Care and Maintenance** section. If the propane cylinder(s) appear rusted or corroded, have them inspected by a qualified propane service center.
- [ ] Operate each propane appliance. Observe all burner/pilot flames for proper color and size.
- [ ] Inspect and clean the interior.
- [ ] Check sealants around all roof and body seams and windows. Reseal if necessary as outlined in the **Care and Maintenance** section.
- [ ] Check and lubricate fittings and hinges on ramp door(s), if installed.
- [ ] Wash and wax the exterior. Inspect the body for scratches or other damage. Touch up or repair as necessary. Flush the underside of the trailer thoroughly.

Owner Notes

SEVERE WEATHER USE

Your RV was designed primarily for short-term use in moderate temperature and climate conditions. Generally, this means in temperatures between 0 degrees F. and 110 degrees F. There may be situations when you may choose to use the RV outside of this range. But you must be aware that the plumbing systems, heating and cooling appliances, and structural components of the RV are not appropriate for long term use in either the coldest or warmest climate conditions.

Before you consider using your RV in temperature extremes, please take time to read this section. We've provided some guidelines for operating various systems and appliances in either very cold or very hot weather. We've also provided some life-style tips if you intend on using your RV in temperature extremes. Please also be aware that although the components and appliances in your RV will perform very well within their design specifications, damage to components, appliances or RV structural materials while used in severe weather conditions may not be covered under the warranty. If you intend to store your RV during severe winter weather, please see the *Storage and Winterization* section of this chapter. Operating and living in your RV during the winter requires some preparation and additional equipment and materials. You will also need to learn to more closely manage your electrical and propane resources.

Successfully using your RV in extreme cold temperatures generally means doing three basic things: *1) keeping heat in*, *2) keeping cold out*, and *3) adding heat where it's needed.* This guide will give you a few tips on dealing with those three basics.

PLUMBING SYSTEMS

Of all the systems in your RV, the fresh and waste water plumbing will require the most attention during extreme cold weather use. Freezing can cause extensive damage to the plumbing that can be very costly to repair, and will not be covered under warranty.

The optional Arctic Package is discussed at the end of this chapter.

In units not equipped with the optional Arctic Package, fresh water and waste tanks, and most of the plumbing pipes and fixtures ***ARE NOT*** in heated compartments. The plumbing pipes run through the walls or under the floor. Some are exposed to the outdoors and can freeze.

Know where all of the plumbing on your RV is located. Take a close look around and find where your tanks, outdoor fixtures, indoor plumbing, drain valves, and water pump are located. Look under the RV, and in all the compartments. The plumbing components that are exposed to the outside are much more prone to freezing since they are directly exposed to outdoor air temperature.

- **Keep the heat in**

  Look all around the underside of the trailer. Wherever you find plumbing fixtures, piping, etc. is a good place to stuff in insulation material such as fiberglass wool. Look especially for pipes where they enter through the floor or sidewalls. Those are good places to put extra insulation. And don't forget to keep the interior of the RV heated. If you're expecting extremely cold temperatures, open cabinet doors and drawers in the galley and bathroom. The plumbing fixtures are closer to the outside walls in these areas and will freeze faster. If you leave the doors and drawers open, the interior heat will have a chance to keep the plumbing above freezing.

- **Keep the cold out**

  Exterior utility compartments are directly exposed to outside temperatures. The exterior compartment (if equipped on some models) can be stuffed with insulation if you don't have to get into it often. You can also cut out pieces of foam insulating material to fit inside the door to help keep out the cold.

  If you are going to be situated for several weeks or months during severe cold weather, consider installing insulated underskirting all around the trailer. Small ceramic heaters and heat tape can be used under the trailer and around plumbing components. Try to seal up as many gaps as possible to keep cold winds and snow from getting under the trailer.

- **Add heat where it is needed**

  The most effective way to protect the water tanks, water pump, fresh and waste water plumbing is to add heat in the areas where it is needed.

  Keep the compartment doors closed. Foam insulating material can be cut to fit inside the compartment doors and help keep the heat inside. Check inside occasionally to make sure everything is okay.

  If you have AC power available, wrap the fresh water inlet plumbing and waste lines with heat tape. Plug the heat tape into an extension cord. Be sure to follow all installation and use instruction provided by the heat tape manufacturer.

- **A few more tips:**

  Thoroughly drain water from hoses before you store them. If you don't and you need to use a hose, it will probably be frozen. You can take hoses inside to thaw out if need be, or use a hair dryer.

  Drain holding tanks before they are completely full during cold weather camping. This will reduce the chance of freezing, resulting in damage to the holding tanks.

  Leave the water heater turned on whenever the water heater tank is full so there is no chance of it freezing.

  Depending on your travel situation, you might consider traveling with the water system winterized. Take bottled water along for drinking and other needs like cooking, washing up and brushing your teeth when the RV is winterized. Even with the fresh water system winterized, you can still use the bathroom facilities. Gallon jugs filled with water can be used in the toilet. If your holding tanks are not heated, you can put some RV antifreeze in the holding tanks to prevent the contents from freezing. Add the RV antifreeze through the toilet for the black water holding tank and down the shower or tub drain for the gray water tank. The antifreeze will also protect the shower or tub P-trap which is usually located below floor level. The amount of antifreeze reqired for the holding tanks will be based on

the size of the tanks, and it will be necessary to add more RV antifreeze as waste water is added to the tanks to prevent diluting the antifreeze.

ELECTRICAL SYSTEM

The batteries and generator (if equipiped) will be your primary electrical system concerns. If you are connected to shore power, you will likely have all the power you need to operate appliances and the battery charger. You will also have the necessary power if you have a generator *IF* you properly prepare it for extreme temperature operation. This will mean making sure the correct weight of oil is installed, and the engine is in good tune. Preparing the generator for cold weather is relatively inexpensive. But if you can't get it started or if it fails during extremely cold weather, it is no better than not having a generator. Be sure it is well-prepared for the traveling conditions you expect.

⚠WARNING

Do not under any circumstances operate any engine while sleeping. You would not be able to monitor outside conditions to assure that engine exhaust does not enter the interior, and you would not be alert to exhaust odors or symptoms of carbon monoxide poisoning.

If you expect to dry camp – that is, without the benefit of shore power or a generator – *the batteries are the most critical part of the electrical system since they will be your only source of electrical power.*

If the batteries are not kept fully charged, they will freeze. If they freeze, they will be destroyed. You must measure specific gravity with a hydrometer to determine battery state of charge. A voltage reading will not give you useful information. *A battery that measures 12 volts is already 75% discharged. If the battery measures below 12 volts, the battery will freeze at a much higher temperature.* Use the *Battery State of Charge* table on the next page to see the relationships between voltage, specific gravity, temperature and state of charge.

The batteries, fully charged, will not last more than about 10 hours in zero-degree weather depending on battery condition and 12-volt loads. In extreme temperatures, don't plan on relying on batteries for longer than this unless you have a means to charge them. If you expect to stay longer than overnight, you should expect to either have 120-volt AC power nearby or run the generator (if equipped). Minimize your use of electric power if AC power is not available or you cannot run the generator.

Electrolyte Temperature		Specific Gravity @ % SoC					Voltage Reading @ % SoC				
°F.	°C.	100%	75%	50%	25%	0%	100%	75%	50%	25%	0%
120	48.9	1.249	1.209	1.174	1.139	1.104	12.663	12.463	12.253	12.073	11.903
110	43.3	1.253	1.213	1.178	1.143	1.108	12.661	12.461	12.251	12.071	11.901
100	37.8	1.257	1.217	1.182	1.147	1.112	12.658	12.458	12.248	12.068	11.898
90	32.2	1.261	1.221	1.186	1.151	1.116	12.655	12.455	12.245	12.065	11.895
80	**26.7**	**1.265**	**1.225**	**1.190**	**1.155**	**1.120**	**12.650**	**12.450**	**12.240**	**12.060**	**11.890**
70	21.1	1.269	1.229	1.194	1.159	1.124	12.643	12.443	12.233	12.053	11.883
60	15.6	1.273	1.233	1.198	1.163	1.128	12.634	12.434	12.224	12.044	11.874
50	10.0	1.277	1.237	1.202	1.167	1.132	12.622	12.422	12.212	12.032	11.862
40	4.4	1.281	1.241	1.206	1.171	1.136	12.606	12.406	12.196	12.016	11.846
30	-1.1	1.285	1.245	1.210	1.175	1.140	12.588	12.388	12.178	11.998	11.828
20	-6.7	1.289	1.249	1.214	1.179	1.144	12.566	12.366	12.156	11.976	11.806
10	-12.2	1.293	1.253	1.218	1.183	1.148	12.542	12.342	12.132	11.952	11.782
0	-17.8	1.297	1.257	1.222	1.187	1.152	12.516	12.316	12.106	11.926	11.756

Temperature-Compensated Battery State of Charge (SoC) Table

Without shore power or a generator to run the charger, you can charge batteries with your tow vehicle alternator through the 7-way connector charge line. If you do this, monitor battery charge with the monitor panel or measure specific gravity with a hydrometer.

Cold weather preparation for your RV batteries is the same as for your car or truck: keep them clean, keep the electrolyte level correct and keep the cables and terminals clean and dry. A battery terminal protectant spray or paste can help keep corrosion to a minimum.

Running Gear and Body

Prepare your RV chassis, running gear and body as you would your car or truck. A good coat of wax will help protect the exterior panels. Be sure tires, bearings, brakes and exterior lighting are all in good operational condition. Many locations use corrosive substances to de-ice roads. Whenever you can, use fresh water to flush the undercarriage and rinse off accumulations of mud and road salts.

Before traveling in severe weather, do a thorough inspection of exterior sealants. Water that gets into walls or under the roof area can cause severe damage. Open seams or moldings can become filled with water and freeze causing even more damage from expanding ice.

Be sure roof vents, furnace, refrigerator and water heater exhaust vents and the generator exhaust system are not damaged and are functioning properly. Faulty exhaust vents can allow the buildup of deadly carbon monoxide.

INTERIOR

Outside of comfort heating, humidity and condensation will be your main concerns during cold weather. Moisture buildup on walls, the ceiling and even in closets can cause damage and lead to mold and mildew formation. This Owner's Guide has a detailed section on humidity and condensation control. Please see that chapter for more information as you plan your cold weather RVing activities.

Cold weather comfort involves the same three basics as keeping your plumbing systems working: *1) keeping heat in; 2) keeping cold out; and 3) adding heat where it is needed.*

The best heat source is the RV's forced air furnace. It will consume more propane than any of the other propane- fired appliances. The propane tank or cylinders should be full before leaving on your trip. Monitor the propane supply carefully during your stay.

- **Keep the heat in**

  Much of the heat inside your RV will escape through the windows. Cover the windows with curtains, drapes or almost anything to help hold some of the heat in. Foam or other insulating material cut to fit the windows can help cut down on heat leakage during the night. Several plastic films are available that can be applied to window frames with adhesive and then shrunk with a hair dryer that will act like storm windows to help keep the heat in and help reduce the formation of condensation on the window glass.

  You can stuff insulation or heavy cloths into the slideout mechanisms and other openings that will help reduce drafts.

  Use overhead and range vents to reduce the humidity inside the RV. A cross-flow of outside fresh air using the overhead vents will be better at

conserving heat than opening windows or exterior doors. In very severe weather, you can cover or block the insides of roof vents with plastic or foam insulation.

Weather-strip doors and windows. Cold little drafts in your main residence are annoying; they are much more serious in a recreational vehicle.

A few throw rugs over uncarpeted flooring can add another thermal layer.

When you arrive at your destination, try to select a site that will be exposed to the sun throughout the day, but also where there is some type of wind break available. Position the RV on the site so the front or rear rather than the side will be facing into the wind. And if possible, situate so that the side with the utility connections (water, sewer, electrical) is on the sunny side.

WARNING

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

- **Keep the cold out**

The best way to keep the cold out is to avoid opening doors and windows. Avoid opening the entry door as much as possible.

Block off sections of the RV you won't be using with blankets or sheets. The more heat where you are the better. That doesn't mean that you shouldn't heat parts of the RV, just keep most of the heat in the areas where you will be spending most of your time.

Check all around doors, windows and other openings for drafts or cold air. Block these areas with blankets, carpet or other insulating materials to help keep the cold out.

WARNING

Some upholstered components and mattresses, carpet, and insulation products are made of urethane foam. Urethane foam is flammable!

Urethane foams burn rapidly, releasing great heat and consuming oxygen very quickly. Lack of oxygen is a danger of suffocation hazard. Hazardous gases released by the burning foam can be incapacitating or fatal to human beings if inhaled in sufficient quantities.

Do not expose urethane foams to open flames or indirect high temperature sources of ignition such as burning operations, welding, burning cigarettes, space heaters, or unprotected electric light bulbs.

- **Add heat where it is needed**

There may be times in exceptionally cold weather when you will have to add heat to the interior. If you are connected to shore power or can operate a generator, use low-wattage electric ceramic heaters for spot heating an area. *Never use the range or oven for interior comfort heating.* These appliances produce deadly carbon monoxide when they are operating. If you use electric heaters, follow all instructions.

Do not place the heaters near upholstery, clothing or other flammable materials.

If you have 120-volt power at your site, turn on the tow vehicle engine block heater (if equipped) overnight to ensure the engine will be warm for a quicker start in the morning. If you don't have a block heater, a trouble light placed under the engine oil pan or near the battery can help with cold-weather starting.

PERSONAL COMFORT AND SAFETY

Extreme temperature and weather conditions require that you prepare yourself for the conditions you may encounter. Extreme cold weather is often experienced in places where the weather can change rapidly. Watch for sudden weather changes. Always carry a survival kit in your vehicle. The kit should contain flashlights, batteries, rain ponchos, a portable weather radio, first aid kit, nonperishable packaged or canned food and a manual can opener, blankets, prescription and nonprescription drugs, pet supplies, bottled water and any special items for infants, elderly or disabled family members. What you put in this survival kit is up to you, but be sure to include everything you might need.

You must be prepared with appropriate clothing, fuel supplies and food. Adding these extra severe-use items may affect the load you carry in your RV and how you load it. Equip your tow vehicle with snow tires or have tire chains available when conditions warrant their use. Watch for ice on roads and trails. Always obey posted speed limits and proceed with caution.

No matter what extreme weather conditions you may encounter – whether extreme heat or extreme cold – remember that you may be isolated. You may be far away from food and fuel supplies, other RVers, and emergency help. If you have cell phone service, be sure your service is usable in the areas where you intend to travel. Always tell someone where you are going, how long you plan to be gone, and how to contact you in case of emergency. An aftermarket GPS system can be a good emergency preparedness investment.

WEATHER PLANNING

Many RVers do not take into consideration the weather conditions at their travel destination. When you travel several hundred miles a day in your RV the weather conditions can change several times. The weather is often the last thing on your mind. Severe weather can occur without much warning, and if you are caught in it, it can be disastrous. RVers need to have an emergency plan in case of a severe storm.

The National Oceanic Atmospheric Administration (NOAA) Weather Radio (NWR) is a nationwide network of radio stations that broadcast continuous weather information directly from a nearby National Weather Service Office. They broadcast National Weather Service warnings, watches, forecasts and other hazard information 24 hours a day. Alerts inform people if they need to take some type of action in order to protect themselves.

Consider both a portable GPS unit and a weather radio receiver as part of your travel gear. Receivers are available in many price ranges depending on the quality of the receiver and its features. It is well worth the investment to be able to pinpoint your exact location and to know what type of weather to expect when traveling or camping in your RV. For more information on the NOAA Weather Radio visit their website at **www.nws.noaa.gov.** It is a good idea to monitor the weather radio while traveling.

Develop an emergency evacuation plan in case of severe weather. When you arrive at a campground, ask about emergency plans in case of a severe storm such as a tornado, or a thunderstorm with high winds. If the campground doesn't have a plan, you need to make your own. Locate a structure that is safer than your RV, like a bathhouse or the campground office. Always stay on the lowest level possible and away from doors and windows. Tell everyone who is with you about the emergency plan.

Explain to children how to respond to different disasters and the dangers of severe weather, fires, and other emergencies. Instruct children on emergency exits. Instruct them on how and when to call 911 or other emergency phone numbers. Make sure everybody knows exactly what his or her job is in case of severe weather. Monitor the weather radio for emergency information. Emergency weather watches and warnings are posted for counties and towns, so always check a map for the county or town where you are staying.

⚠WARNING

Travel trailers are high-profile vehicles and are subject to the effects of wind.

Be aware of and pay attention to wind advisories and warnings in the areas where you travel and/or camp.

Do not use your RV to take shelter during severe weather. Seek shelter when severe weather or tornado warnings are issued.

Severe Weather Information Resources

American Red Cross

http://www.redcross.org/

Centers for Disease Control and Prevention

http://www.bt.cdc.gov/disasters/winter/guide.asp

National Oceanic and Atmospheric Administration Weather Radio

http://www.nws.noaa.gov

University of Illinois Extension/Disaster Resources

http://web.extension.uiuc.edu/disaster/winter/

US Department of Transporation Federal Highway Administration

http://www.fhwa.dot.gov/trafficinfo/

Optional Arctic Package

The Arctic Package includes heated, enclosed fresh, grey and black water tanks and valves, reflective floor insulation, a single heat duct from the furnace and double ceiling insulation. This configuration of components allows you to extend your camping season and use your RV in colder temperatures without the need to winterize the plumbing systems.

To ensure proper operation in below-freezing temperatures, you **MUST** operate the furnace to allow warm air flow to the tank/valve enclosure. If the furnace is not operated, the tanks/valves will freeze, possibly causing extensive plumbing system damage.

When operating in below-freezing temperatures, be aware that outdoor temperatures can fall rapidly depending on outdoor wind currents, especially at night. Review the *Severe Weather Use* discussion in this chapter when planning to use your RV in below-freezing temperatures.

Arctic Package tank valve arrangement

(Color and location varies depending on model/floorplan.)

If you are planning to use your RV in near- or below-freezing temperatures, please be aware of the following:

- ***The tanks and valves are heated only when your propane furnace is operating.***
- ***The amount of warm air provided by your furnace that reaches your tanks and valves is limited.***
- ***Operating a portable electric heater inside won't keep your tanks or pipes from freezing.***
- ***DO NOT ATTEMPT TO USE ANY TYPE OF FUEL BURNING HEAT SOURCE INSIDE THE TRAILER TO HEAT THE TANKS. IT WON'T WORK, AND YOU RISK THE POSSIBILITY OF FIRE, ASPHYXIATION AND/OR CARBON MONOXIDE POISONING.***
- ***The tank enclosure underbelly is not airtight and will allow cold air to penetrate into the enclosure.***
- ***If you are camped in temperatures well below freezing for any length of time and do not have your furnace running constantly, your pipes, tanks and dump valves will freeze in a short time.***
- ***If you plan to camp for an extended time in cold weather, plan and manage your electrical and LP gas resources carefully. Batteries and LPG can be depleted rapidly when operating the furnace and other electrical devices.***
- ***The LPG regulator may freeze in extreme cold temperatures, stopping the flow of gas to your furnace and other LP gas appliances.***
- ***If it gets cold enough and there is liquid in holding tanks it will freeze.***
- ***Mother Nature is brutal and has no sense of humor in extreme temperatures.***

⚠WARNING

Do not use any type of fuel-burning heat source inside the trailer. The use of these devices may cause fires, release carbon monoxide and will deplete the oxygen in the trailer interior possibly causing asphyxiation and carbon monoxide poisoning resulting in serious injury or death.