

Scotty HiLander & Sportsman



Owner's Manual

Owner's Manual**DISCLAIMERS**

This Owner's Manual has information about all of the equipment and features of your new vehicle as was available at time of printing. Sierra Motor Corp may discontinue models or change equipment and features without any notice and without incurring obligation. Some information and details WILL NOT apply to your particular camper. For example, this manual explains most of the options that people could buy for different types of vehicles. You may not have bought all of the options that were available or they may not be available on your specific type of camper.

Limited Warranty Policy**Scope**

The Sierra Motor Corp Limited Warranty applies only to new vehicles sold by an authorized Sierra Motor Corp dealer for one year from the original retail purchase date. A signed warranty registration form must be received by Sierra Motor Corp in order to activate your warranty. Make sure you read and understand this Limited Warranty. This warranty applies only to the original owner and is not transferable.

Coverage

The Limited Warranty applies only to materials and components originally built or installed by Sierra Motor Corp. Provided that you notify Sierra Motor Corp or one of its' authorized servicing dealers of the defect in original materials or workmanship within the Warranty Period (one year), Sierra Motor Corp will make any necessary repairs to the "Recreational Vehicle" (also referred to as "RV") and, if applicable, to certain "Installed Portions" of the product as described below, which become necessary during the Warranty Period, due to defects in original material or workmanship. We will repair or replace any defective part at no cost to you. Because of design changes, we may substitute parts or components of substantially equal quality.

Exclusions

The Sierra Motor Corp Limited Warranty does not cover any of the trailer chassis' or axles components which are warranted separately by the respective manufacturers. This exclusion applies to problems caused by the structure of the trailer, trailer manufacturer-supplied lifting jacks, and spare tires. This Limited Warranty also does not cover televisions, converter, appliances or any other item or component, which are warranted separately by the respective manufacturers. This Limited Warranty specifically excludes damage caused by improper use, failure to maintain in accordance with the Owner's Manual, improper operation, overloading, abuse, collision, damage due to the environment such as discoloration of the exterior options, alterations or improper repairs, service call charges, corrosion, cosmetic flaws, or normal deterioration/wear of fabrics and carpeting. This Limited Warranty is void in the event that you use the interior other than for its' customary purpose, or use the vehicle for rental or other commercial purposes. **THIS PRODUCT WAS DESIGNED AND IS INTENDED TO BE USED FOR RECREATIONAL OR SEASONAL USE ONLY.**

There is no warranty of any nature made by Sierra Motor Corp beyond that contained in this Warranty. No person has authority to enlarge, amend or modify this Warranty. The dealer is not Sierra Motor Corp agent but an independent entity. Sierra Motor Corp is not responsible for any undertaking, representation or warranty made by any dealer or other person different from those expressly set forth in this Warranty.

NOTE: MOLD OR MILDEW CAN OCCUR AS A RESULT OF HIGH HUMIDITY, CONDENSATION OR WATER INTRUSION. PREVENTION OF MOLD AND MILDEW IS A MAINTENANCE ISSUE AND IS THE CUSTOMER'S RESPONSIBILITY. THEREFORE DAMAGES RESULTING FROM MOLD OR MILDEW ARE NOT COVERED BY THE SIERRA MOTOR CORP LIMITED WARRANTY.

Limitation of Implied Warranties

IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED OR LIMITED IN DURATION TO THE TERM OF THIS LIMITED WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Disclaimer of Consequential and Incidental Damages

THE ORIGINAL PURCHASER OF THE VEHICLE AND ANY PERSON TO WHOM THE VEHICLE IS TRANSFERRED, AND ANY PERSON, WHO IS AN INTENDED OR UNINTENDED USER OR BENEFICIARY OF THE TRAILER, SHALL NOT BE ENTITLED TO RECOVER ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FROM SIERRA MOTOR CORP. This exclusion shall include, but not be limited to, transporting the vehicle for service, lodging, meals, loss of use of the product, legal expenses, loss or damage to personal property, inconvenience or loss of income. Some states do not allow the exclusion or limitation of consequential or incidental damages, so the above exclusions may not apply to you.

Legal Remedies

ANY DISPUTE BETWEEN YOU AND SIERRA MOTOR CORP RELATING TO THE TERMS AND ENFORCEMENT OF THIS LIMITED WARRANTY AND ANY OTHER CLAIMS RELATING TO THE VEHICLE SUBJECT TO THIS WARRANTY SHALL BE RESOLVED BY BINDING ARBITRATION. THE DECISION OF THE ARBITRATOR MAY BE CONFIRMED BY A COURT OF COMPETENT JURISDICTION AND ENFORCED ACCORDINGLY. ANY ACTION TO ENFORCE THIS WARRANTY OR ANY IMPLIED WARRANTY ALLEGED TO EXIST, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE MUST BE COMMENCED WITHIN ONE (1) YEAR AFTER THE EXPIRATION OF THIS WARRANTY. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

To Obtain Service

For warranty service, simply contact an authorized Sierra Motor Corp or Authorized Service Center for an appointment or consultation, and then take the trailer (at your expense) to the servicing facility. It is the intent of Sierra Motor Corp to satisfy our valued customers. If you have a problem obtaining satisfactory and timely warranty service that may substantially impair the use, value or safety of your Sierra Motor Corp product, please call us on our toll free line (800-727-0638) so that we may attempt to resolve your concerns.

NATM COMPLIANCE NOTICE

If you believe that your vehicle has a defect that could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Sierra Motor Corp.

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 ABC Manufacturing Inc.

To contact NHTSA, you may either call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153), go to <http://www.safercar.gov>; or write to:

Administrator

NHTSA

1200 New Jersey Avenue S.E.

Washington, DC 20590

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

This information can also be found in your NATM Guidelines Manual under Section B-9 Warning Standards.

ABOUT THIS OWNER'S MANUAL

Always keep this manual located for handy reference within the camper. After you have read it once, you will probably return to it when you have a specific question and need additional information. To help you find information quickly, use the INDEX. We have designed the INDEX so that you can find information under vehicle models or systems (electrical, plumbing, etc.) or equipment and features.

Separate Owner's Manuals, Operating Instructions and Warranties for specific equipment that may be installed on your RV can be found in your "Retail Packet" located within the vehicle. THESE INSTRUCTIONS SUPERSEDE DIRECTIONS GIVEN IN THIS MANUAL OR FROM YOUR DEALER.

ALWAYS INSIST THAT YOUR RV DEALER ASSIST YOU IN LEARNING TO IDENTIFY AND OPERATE ALL EQUIPMENT AND FEATURES OF YOUR PARTICULAR PRODUCT LINE.

YOUR' RECREATIONAL VEHICLE

Your recreational vehicle is a vacation home on wheels. It has been carefully designed for normal recreational use and travel. It has not been designed nor is it intended to be used as a long-term permanent, full-time housing. Long term or full-time occupancy may lead to premature deterioration and may, under the terms of the warranty, constitute misuse and reduce your warranty protection. As a recreational vehicle, it becomes the owner's responsibility to return the product to an authorized RV dealer for any required service work.

OWNER'S RESPONSIBILITY

The warranty does not cover normal maintenance, service, replacement for soft trim or appearance items because of use or exposure, periodic sealing of doors and windows...or adjustment or tightening operations which may become necessary through normal use.

Your responsibility for preventive maintenance is an important part of a program to ensure carefree enjoyment of your camper. IT IS ALSO REQUIRED TO KEEP THE WARRANTY VALID.

VEHICLE IDENTIFICATION NUMBERS

Each RV Trailer will have a 17 digit number. It can be found:

1. On "A" frame
2. Date Sheet
3. Certificate of Origin
4. Federal Certification Tag, on left front side of camper

You should ALWAYS include this number any time you have warranty or service work done and any time you have correspondence with Sierra Motor Cop. or one of our authorized dealers.

INSURANCE: CONTACT YOUR INSURANCE AGENT IMMEDIATELY

As with your automobile, home or boat, it is important that you protect yourself and others with insurance coverage for personal liability, theft, collision, property damage, etc. and for comprehensive coverage against accidental loss caused by snow or ice, faulty jacks or block, falling objects, faulty thermostatic controls or other accidental system failures in the unit. Be sure to continue insurance coverage even if your camper is stored or parked for any length of time.

CAUTIONS AND WARNINGS

As you read through the manual, you will frequently find CAUTIONS and WARNINGS. Carefully read all cautions and warnings because they will tell you how to avoid endangering yourself, your family and others as well as protecting personal property.

Safety Symbols and Signal Words

Our trailers are built with components produced by various manufacturers. Some of these items have separate instruction manuals. This manual may indicate for you to read another manual. If you do not have the manual for an item, contact Sierra at 1-800-727-0628 or your dealer for assistance.

The safety information in this manual is denoted by the following alert symbol:

The following signal words are used to indicate the level of risk:

DANGER

Immediate hazards which **WILL** result in death or serious injury if the warning is ignored.

WARNING

Hazards or unsafe practices which **COULD** result in death or serious injury if the warning is ignored.

CAUTION

Hazards or unsafe practices which could result in minor or moderate injury if the warning is ignored.

CAUTION

Hazards which could result in equipment or property damage.

Hazards From Accessories

This manual contains information on accessories that may or may not be installed in your trailer.

You must read the instruction manual for each of the accessories before operating them. You must follow all of the instructions and warnings in those manuals and in this manual.

The primary hazards from operation of accessories are:

- Death by carbon monoxide poisoning from operation of:
 - Gasoline or diesel generator
 - Liquefied-Petroleum (LP) gas applications.
- Fire or explosion from accumulated, unburned LP gas.
- Electrocution or fire from shore power.

Carbon Monoxide (CO) Hazard

Carbon monoxide can come from operation of fuel burning appliances such as a generator, water heater, furnace, cook top, and oven. Never operate any of these appliances while the trailer is in an enclosed building or confined area.

Carbon monoxide is a colorless, tasteless, odorless gas that can cause brain damage or death.

Symptoms of carbon monoxide poisoning are:

- Headache
- Drowsiness
- Nausea
- Vomiting
- Shortness of breath
- Unconsciousness

If any of these symptoms exist, remove the victim immediately to fresh air and get medical attention.

Never operate a portable grill, portable stove, portable heater, or portable gas lantern inside the trailer. Deadly carbon monoxide is produced by these appliances.

Never use a cooking appliance to provide comfort heating.

DANGER

You can die or be brain damaged by carbon monoxide.

Do not operate gas appliances or generator while the trailer is in an enclosed building or confined area.

Test the carbon monoxide detector for operation before operating any gas appliances or generator.

WARNING

Risk of carbon monoxide poisoning or fire.

The fumes from burning gas contain carbon monoxide, an odorless gas that can cause death or brain damage.

Cooking appliances used for comfort heating can ignite surrounding surfaces.

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

Never operate any gas burning appliances while the trailer is in an enclosed building or confined area. A confined area will not allow proper ventilation and the carbon monoxide fumes can enter the trailer.

Conditions that can redirect carbon monoxide fumes are for example:

- Being drawn in by fans or ventilators operated in a trailer;
- Prevailing wind;
- Being trapped between adjacent trailers, vehicles, buildings; or
- Being trapped between or in a snow bank or other materials that can redirect fumes.

You must have a working carbon monoxide detector inside the living space of your trailer.

Test the carbon monoxide detector after periods of storage, before each trip, or before operating any gas burning appliance. Replace the battery at least once per year.

A blocked appliance vent can cause a fire or result in carbon monoxide entering into the trailer. Check the following appliance vents for debris after periods of storage and before each use:

- Furnace
- Water Heater
- Exhaust Hood

Turn the exhaust hold ON **before** lighting the cook top burners oven to vent fumes and cooking odors to the outside.

Liquefied-Petroleum (LP) Gas Hazard

Your trailer may be equipped with the following appliances that operate on LP gas:

- Cook top
- Oven
- Water heater
- Refrigerator
- Furnace

Keep the LP gas cylinder supply valves closed at all times, except when using a gas appliance.

The LP gas system in your trailer is designed to operate on LP gas only, NOT natural gas. A natural gas supply is not safe for use in an LP gas system due to the difference in the gas pressure, which will result in an uncontrollable flame.

WARNING

Risk of explosion or fire.

- Connect the LP gas system to a supply of LP gas only, NOT natural gas.
- Do not place an LP gas cylinder (empty or full) inside the trailer.
- Have the LP gas cylinder refilled by a qualified LP gas supplier.

Check to be sure all LP gas appliances are off before opening the LP gas cylinder supply valves. If an appliance is left on, gas could accumulate in the trailer creating a fire or explosion hazard.

WARNING

Risk of explosion.

Gas can accumulate in the trailer if an appliance control is left on and the gas supply valve is opened.

Verify that all appliance controls are off before opening gas supply valve.

WARNING

Risk of explosion or fire.

If LP gas is detected (by smell or by the LP gas detector):

- Do not touch electrical switches.
- Extinguish flames and pilot lights.
- Shut off LP gas supply at the LP cylinders.
- Leave the area until odor clears.

Have a qualified LP gas technician correct the source of LP gas leakage before using LP appliances.

Do not use a flame to locate the source of an LP gas leak.

Do not attempt to fill the LP gas cylinders yourself. Have the cylinders filled by a qualified LP gas supplier.

Turn off all gas appliances and pilot lights before refueling LP gas cylinders, gasoline, or diesel fuel tanks or when towing trailer. Some automatic ignition appliances may continue to spark even after the gas is turned off at the supply valve.

WARNING

Risk of explosion or fire.

Automatic ignition appliances may continue to spark after the gas supply valves are turned off, which can ignite gas fumes.

Turn off all gas appliances and pilot lights when refueling gasoline or diesel tanks, LP gas tanks, or when towing trailer.

LP Gas Appliance Hazards

Cook Top and Oven

WARNING

Risk of fire.

Cooking appliances used for comfort heating can ignite surrounding surfaces.

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

WARNING

Risk of explosion or fire.

Light one burner at a time.

If any burner goes out after lighting, turn off all burners and wait five minutes before relighting.

Turn controls off when not in use and while refueling.

Do not store or use flammable vapors or liquids near this or any other appliance.

Furnace, Water Heater, and Refrigerator

WARNING

Risk of explosion or fire.

Do not store or use flammable vapors or liquids near any appliance.

If water heater overheats, turn off LP gas cylinder supply valves.

Turn off all gas appliances and pilot lights when refueling gasoline or diesel tanks, LP gas cylinders or when towing trailer.

Electrical Hazards

Your RV is equipped with a 120 or 240 volt electrical system. The electricity for this system can be provided by the shore power cord or a generator.

Shore power and a generator pose a risk of death due to electrocution or fire.

Replace fuses and circuit breakers with the correct rating.

Generator

If your RV is equipped with a generator, you must have and follow the generator manufacturer's instructions.

WARNING

Operating a gasoline or diesel generator can lead to death or serious injury by:

- Carbon Monoxide
- Fire and Explosion
- Electrocution

Have a working carbon monoxide detector in the living space of the trailer before operating the generator.

Do not refuel a running generator or refuel near ignition sources.

Shore Power

WARNING

Shore power poses a risk of death due to electrocution or fire.

Always use the cord that was supplied with the trailer when manufactured or a Sierra approved replacement. Never use an extension cord.

Always connect the electrical cord to a grounded source of shore power.

Never remove prongs from the shore power plug.

Connect only to source of proper voltage.

Mechanical Hazards

Crank Up Roof Antenna (If Equipped)

WARNING

Risk of electrocution.

Antenna contacting power lines can cause electrocution.

Be sure there are no overhead power lines over or near the trailer before raising antenna.

Safety Warning Labels on Your Trailer

WARNING

To protect you and others against death or serious injury, all of the labels shown must be on the trailer and must be legible.

If any of these labels are missing or cannot be read, contact Sierra at 1-800-727-0638 for replacement labels.

You must provide the part number shown for correct replacement.

Cook Top Warning Labels

Located on all cook top covers

WARNING!

Top Cover Must Be In The Open Position Whenever Top Burner(s) Are In Operation. After Use Of Top Burner(s), Let Top Burner Grate Cool Before Closing Top Cover.

191688

Located under the cover on a gas cook top.

WARNING

IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING. Cooking appliances need fresh air for safe operation.

Before operation:

1. Open overhead vent or turn on exhaust fan.
2. Open window.

FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

DD-26W

LP Gas Warning Labels

Located on the inside of an upper cabinet door.

DANGER

IF YOU SMELL PROPANE

1. Extinguish any open flames, pilot lights and all smoking materials.
2. Do not touch electrical switches.
3. Shut off the propane supply at the container valve(s) or propane supply connection.
4. Open doors and other ventilating openings.
5. Leave the area until odor clears.
6. Have the propane system checked and leakage source corrected before using again.

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

DD-90

PROPANE

AD-86

DANGER

Running of portable generator inside of unit may result in injury or death.

SM1023

Location near the LP gas tanks.

WARNING

DO NOT FILL PROPANE CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY. FAILURE TO COMPLY COULD RESULT IN A FIRE OR PERSONAL INJURY.

CAUTION

THIS PROPANE PIPING SYSTEM IS DESIGNED FOR USE WITH PROPANE ONLY. DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.

Securely cap inlet when not connected for use. After turning on propane, except after normal cylinder replacement, test propane piping and connections to appliance for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine.

AD-34

Carbon Monoxide Warning Label

Located inside kitchen overhead cabinet door.

DANGER

All generators produce DEADLY carbon monoxide (CO) exhaust.

Before starting generator:

- Be sure CO detector works.
- Push Test button.
- Each time you park, inspect generator exhaust system for damage or obstruction.

Do not start generator if:

Exhaust system is

- Damaged (bent, cracked, punctured, rusted, etc.)
- Blocked (by snow bank, beam, log, wall, etc.) or
- Moved from original position.

CO detector does not work.

See owner's manual for more on CO poisoning and CO detectors.

W13-0192

Refueling Warning Label

Located near the LP gas tanks.

DANGER

ALL PILOT LIGHTS, APPLIANCES AND THEIR IGNITORS (SEE OPERATING INSTRUCTIONS) SHALL BE TURNED OFF BEFORE REFUELING OF MOTOR FUEL TANKS AND/OR PROPANE CONTAINERS. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

AD-05

Refueling Warning Label

Located inside kitchen overhead cabinet door and rear stall door.

DANGER

Turning off generator when refueling. Failure to do so could result in injury or death.

SM1022

Smoke Detector Warning Label

Located on the smoke detector cover.

WARNING

TEST SMOKE ALARM OPERATION AFTER VEHICLE HAS BEEN IN STORAGE, BEFORE EACH TRIP, AND AT LEAST ONCE PER WEEK DURING USE. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY.

AS-95

Overview

Your trailer is equipped with a:

- Carbon monoxide detector
- LP gas leak detector
- Smoke detector
- Fire extinguisher

Test each of the detectors, and verify the fire extinguisher is functional after periods of storage, before each trip, or at least once per week.

Carbon Monoxide Detector

DANGER

Risk of death from carbon monoxide.

Do not operate any gas appliance unless the carbon monoxide detector is working.

Test the carbon monoxide detector:

- After periods of storage
- Before each trip
- At least once per week

Replace the battery at least once every year.

Press the test button (1) until alarm sounds, then release. If alarm does not sound, replace the batteries and retest. If the detector still does not work, replace it before using any gas appliance.

Refer to the Owner's Manual provided with your carbon monoxide detector for additional safety, operating, and maintenance information.



LP Gas Detector

WARNING

Risk of explosion or fire.

Do not open the LP gas supply valves unless the LP gas detector is working.

Test the LP gas detector:

- After periods of storage
- Before each trip
- At least once per week

The LP Gas Detector operates off of the trailer 12 volt battery.

Press the mute (1) until alarm sounds, then release button. The detector will sound alarm three times.

The alarm LED will flash red, and then go out. The green operating LED will be illuminated during normal operation.

Refer to the Owner's Manual provided for your LP gas detector for additional safety, operating, and maintenance information.

Smoke Detector

DANGER

Risk of death from smoke insulation or fire.

Do not the living space of the trailer unless the smoke detector is working.

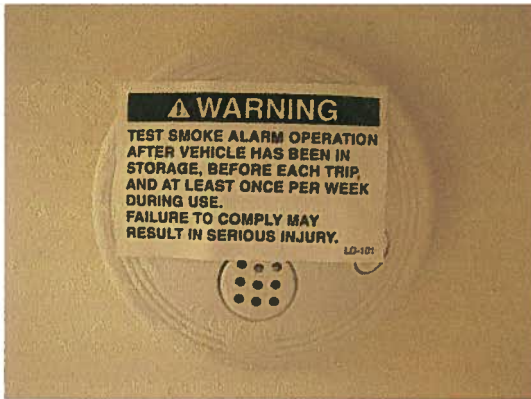
Test the carbon monoxide detector:

- After periods of storage
- Before each trip
- At least once per week

Replace the battery at least once every year.

Press the test button until alarm sounds, then release. If alarm does not sound, replace the batteries and retest. If the detector still does not work, replace it before using the trailer.

Refer to the Owner's Manual provided for your smoke detector for additional safety, operating, and maintenance information.



Fire Extinguisher

Refer to the Owner's Manual provided for your fire extinguisher for the recommended replacement, recharging information, safety, operating, and maintenance information.



CAUTION

Risk of equipment damage.

Appliance and plumbing can be damaged by temperatures below 32°F.

Drain water system and winterize if trailer will be subjected to temperatures below 32°F.

See "Storage and Winterizing" on page 54.

Some trailers have been designed and built for use in temperatures below 32°F. Contact your dealer and give them your trailer serial number to verify if your trailer plumbing system can be used in temperatures below 32° F.

Potable Water Supply

Your trailer is equipped with a potable water system. It provides fresh water to the kitchen, lavatory, toilet, and shower. Water is supplied by either the potable water storage tank in the trailer, or by an external water source.

External Water Supply

Any pressurized external water supply connected the water system bypasses the demand pump and potable water storage tank, supplying water directly to all faucets and toilet. There is a check valve on the demand pump that prevents the external water supply from filling the potable water storage tank.

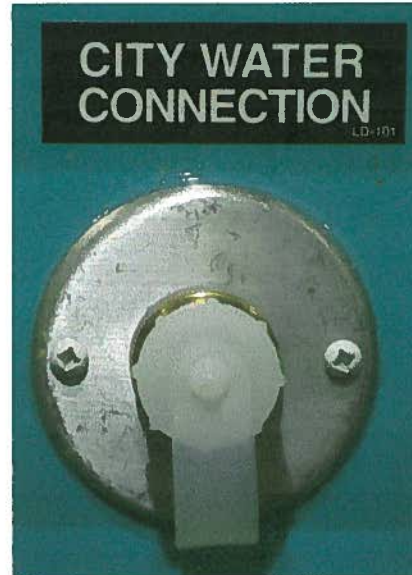
The external water connection has a regulator that allows the system to be connected to a high pressure water supply. The regulator keeps the water pressure in the trailer at 30 psi.

Connect to External Water Supply

1. Turn the demand pump switch off.

Note: Always make sure you are connecting to an approved potable water source, or a source you know is safe.

2. Remove cap and attach a potable water hose to the city water connection on the side of the trailer.



Disconnect External Water Supply

1. Turn off the external water supply.
2. Open a faucet inside the trailer to relieve pressure in the water lines.
3. Disconnect water hose and install cover on connection.

Disinfection/Sanitation

Disinfect the potable water tank before use. Disinfection is required immediately after periods of storage and every six months. Following are a list of instructions on how to properly sanitize the potable water tank.

1. Prepare a chlorine solution using 1 gallon of water and 1/3 cup household bleach (sodium hypochlorite solution). Prepare 1 gallon of chlorine solution for every 15 gallons of tank capacity. This will result in a residual chlorine concentration of 50 parts per million (ppm) in the water system.

2. With tank empty, pour chlorine solution into the tank. Complete filling of tank with fresh water. Open each faucet and run the water until a distinct odor of chlorine can be detected in the water discharge. Turn off faucet as soon as chlorine is smelled.

3. Allow the system to stand at least 4 hours when disinfecting with 50 ppm residual chlorine. Disinfection will not occur if the 50 ppm solution is removed before the 4 hour time period.

If a shorter time period is desired, use a 100 ppm chlorine concentration in the system for at least one hour. Disinfection will not occur if the 100 ppm solution is removed before the 1 hour time period.

To mix a 100 ppm concentration, use ½ cup of household bleach with 1 gallon of water to prepare the chlorine solution.

4. Drain water tank at a recreational vehicle waste dumping facility and flush tank with fresh potable water.

Fill Potable Water Tank

Note: Always make sure you are filling the potable water storage tank from an approved potable water source, or a source you know is safe.

To fill the potable storage tank, remove the cap on the potable tank connector and connect an approved potable water hose. The tank has built in overflow valves and vents to prevent air from being locked inside.



12 Volt Disconnect Switch

The 12 volt disconnect switch must be in the on position when the unit is being used for camping and your shore cord is plugged in to 110 volt power supply.



Water Heater and Water Pump

When you are using the self-contained potable water storage tank, the pressure is supplied by a water pump. The pump is fully automatic and will run when the switch is on. When the RV is parked and ready for use, you should leave both the water heater and water pump on.



CAUTION

Risk of water heater damage.

The heating element in an optional electric water heater will be damaged if the on/off switch is turned on without water in the water heater tank.

Prime the water system BEFORE turning the water heater switch "ON".

Open hot water faucet to be sure there is water in the tank and that the demand pump or external water supply is on.

When the water system is not in use, or when you will be leaving the trailer for an extended period of time, move the demand pump switch to the "OFF" position. If there is a slow leak or a faucet is left partially open, the pump could drain the entire tank and discharge the auxiliary battery.

Priming the Water System

Using the Potable Water Storage Tank

1. Make sure that all water drain valves are closed, including the water heater.
2. Make sure the demand pump switch is in the "OFF" position and the water tank is full.
3. Open all faucets, hot and cold.
4. Turn the demand pump on.
5. Close each faucet as it begins to run a steady stream of water.
Turn the hot water faucet off last to ensure that the water heater tank is filled.
6. After all faucets are primed and shut, check the demand pump to ensure that it has topped. If the pump continues to run, check for an open faucet or leaks.
7. The water system is now ready for automatic operation. The pump will start automatically when a faucet is opened or the toilet is flushed.

Using an External Water Supply

1. Make sure that all water drain valves are closed, including the water heater.
2. Make sure the demand pump switch is in the "OFF" position and the external water supply hose is connected.
3. Open all faucets, hot and cold.
4. Turn the water supply on.
5. Close each faucet as it begins to run a steady stream of water.
Turn the hot water faucet off last to ensure that the water tank is filled.
6. The water system is now ready for use.

Toilet

Use the lever (usually foot operated) to add water to the toilet until the desired water level is reached. More water is generally needed to flush solids.

Use the lever (usually foot operated) to flush toilet, push down on the flush lever until contents leave the bowl. This may require holding the flush lever down for several seconds.

Release the flush lever by allowing it to snap back. This will ensure a positive seal. A small amount of water will remain in the bowl.

It is recommended that RV tissue be used to prevent clogging in the waste system. Regular tissue will clog the toilet and drains.

Drain Waste Tanks

CAUTION

Drain waste tanks only at a recreational vehicle waste dumping facility.

Note: The waste water (grey) tank is illustrated below. The drain procedure is the same for the sewage (black) tank.

1. Remove drain hose from the holding tube (usually located under the trailer gooseneck).
2. Remove cap and connect drain hose to connector located under the trailer.
3. Pull out on drain line handle to drain tank. Push in to close after draining.



4. Remove drain hose, rinse, and place in storage tube.
5. Install cap.

Overview

The LP gas system installed in your trailer can operate appliances such as an oven, cook top, refrigerator, water heater, generator, exterior grill, and furnace.

The fumes from burning LP gas contain carbon monoxide, an odorless and colorless gas that can cause death or brain damage.

Do not operate any gas appliance unless the carbon monoxide detector is working.

The exhaust hood must be turned on while using the gas cook top and oven.

NEVER use the cook top or oven for comfort heating.

NEVER operate a portable grill, portable stove, portable heater, or portable gas lantern inside the trailer.

NEVER leave gas appliances on while the trailer is being towed.

NEVER leave gas appliances on while refueling the tow vehicle.

DANGER

Risk of carbon monoxide poisoning and fire.

Do not operate LP gas appliances while the trailer is in an enclosed building or confined area.

Do not use cooking appliances for comfort heating. The flame could ignite surrounding surfaces and the fumes contain carbon monoxide.

Test the carbon monoxide detector for operation before operating any gas appliances.

Unburned LP gas can create an explosive mixture, where a spark or open flame can set off a deadly explosion. To prevent the accumulation of unburned LP gas, you must:

- Turn appliances off when not in use.
- Turn LP gas cylinder supply valves off when the trailer is not being used.
- Turn all appliances off before opening LP gas cylinder supply valves.
- Have a working LP gas detector.

WARNING

Risk of explosion or fire.

LP Gas cylinders can discharge gas to the atmosphere as the air temperature changes.

Never place an LP gas cylinder inside the trailer.

The LP gas system in your trailer is designed to operate on LP gas only, NOT natural gas. A natural gas supply is not safe for use in an LP gas system due to the difference in the gas pressure, which will result in an uncontrollable flame.

WARNING

Risk of explosion or fire.

The LP gas system in your trailer is not compatible with natural gas.

Never hook the LP gas system to a natural gas fuel source.

If you are having trouble keeping appliances lit or lighting them, you may have air in the LP gas system. Air in the system will mix with the gas vapors causing the gas to burn poorly. This is common when the LP gas system is the first used or after an idle period. Take the trailer to an LP gas service center to have the system professionally purged.

Do not use a wrench or any other tool to open or close an LP cylinder supply valve. If the supply valve does not completely stop the flow of LP gas when it is hand tightened, the supply valve is defective and must be replaced. Turn off all gas appliances. Take the trailer to an LP gas service center to have the cylinder replaced.



Traveling with LP Gas

When traveling, be sure to check your map and/or with Department of Transportation for permissible travel routes. Some roadways and tunnels do not allow vehicles equipped with LP gas.

Using LP Gas in the Winter

It is important to remember that as the temperature decreases, so does the vaporization rate for LP gas. Also remember that butane cannot be used when the temperature is 32° or lower. In winter conditions the vaporization rate for propane may not be enough to allow normal gas consumption. An insufficient fuel supply will resemble a frozen regulator. Reduce gas consumption before having the regulator inspected.

Below is an energy to temperature ratio chart. Refer to the manual provided with each appliance for the BTU's that are required to operate that appliance, and the BTU's available from your fuel supply at these temperatures.

WARNING
<p>Risk of explosion or fire.</p> <p>If LP gas is detected (by smell or by the LP gas detector):</p> <ul style="list-style-type: none"> • Do not touch electrical switches. • Extinguish flames and pilot lights. • Shut off LP gas supply at the LP tank. • Leave the area until odor clears. <p>Have a qualified LP gas technician correct the source of LP gas leakage before using LP appliances.</p> <p>Do not use a flame to locate the source of an LP gas leak.</p>

Temperature Available	% of BTU's Available
20° F	200%
10° F	150%
0° F	100%
-5° F	75%
-10° F	50%
-15° F	25%
-20° F	12.5%
-44° F	0%

80% full @ 0° F = 64,400 BTU/Gal

SUPPORT SYSTEMS

Whether your RV is a truck camper, fifth wheel, or travel trailer, the following information and instruction should pertain. We will discuss the proper use and types of systems that may be equipped within your unit. Some discussion may pertain to optional items that are not on your camper. Reading and following all the information listed will ensure you of many hours of happy and safe camping.

- A. **PLUMBING:** Depending on which model RV you own, the complexity of the plumbing system (including the holding tank(s) water lines, drainage lines and fresh water tank) will be located and run differently.

1. **WATER LINES:** Most units are equipped to obtain water into the system through one of two ways. These two inlets are labeled and located on the exterior of the vehicle. The "bucket" or "gravity" type fill allows you to fill your fresh water storage tank by simply pouring water into the plastic inlet outside the vehicle. This will only fill the water storage tank and a water pump or a hand pump is needed to pump water through the water system.

The other inlet known as the "city water" fill, requires a special hose (approved for drinking water) to be connected to the special female swivel water service connector on the vehicle exterior with the other end connected to the park water service or the outside spigot of your house. The inlet is normally located next to the gravity fill. When using this city type fill, the pressure from the outside water source will service the system.

Our water lines are made of special tubing. Because it is a form of plastic, be sure to take special care when storing equipment that may come in contact with the tubing.

2. **WATER PUMP:** The water pump used on our water lines is also a part of your 12 volt electrical system. The switch that operates the pump is usually located near the water tank. Whenever you turn on a faucet, you can cause a drop in water pressure and the pump will kick-in. It will automatically shut off when the required pressure is returned.

CAUTION: NEVER OPERATE YOUR WATER PUMP WITHOUT WATER IN THE SYSTEM. ALWAYS TURN YOUR WATER PUMP SWITCH OFF WHEN TOWING YOUR CAMPER.

3. **WATER HEATERS:** Your water heater has limited capacity and it is important that you know how to operate it properly to obtain maximum usage. Before lighting the water heater, make sure that it is filled with fresh water and does not have a pocket of air trapped in the top. Next, double check that LP gas main valve to make sure it is fully open.

Lighting the Water Heater

Depending on which model (DSI, GAS/Electric or straight LP) your vehicle is equipped with, will determine the proper lighting instructions. Straight gas models are lit from the outside through the exterior door of the water heater. Lighting instructions are inside this door). Once lit, you can control the water temperature by the temperature knob located on the back of the water heater. Recovery time will depend on the temperature you desire. Normally 30 minutes will be required if the tank is completely relieved of hot water.

Campers equipped with optional Direct Spark Ignition (DSI) feature are more convenient to light. In the vicinity of the kitchen sink you will locate a switch labeled "Water Heater". Simply fill water heater tank, open main LP valve on bottle assembly (allow 5 minutes for gas to reach water heater) and then switch "On" until you hear heater ignite.

If you have a gas/electric water heater and you want to use the electric heating element, follow these steps:

- a. Fill water tank with water,
- b. Connect camper "power supply cord" to proper capacity power source.
- c. Position water heater switch to electric position.
- d. Always follow manufacturer's instruction

4. WATER HEATER BYPASS:

This simple feature is designed to allow you to fill your fresh water lines with antifreeze or flush the fresh water lines WITHOUT going through the water heater.

For normal operation, the "By-Pass" handle will be pointed AWAY from the "tee" side of bypass.

CAUTION: ALWAYS CHECK HANDLE POSITION PRIOR TO IGNITING WATER HEATER AS WATER HEATER TANK MUST BE FULL BEFORE HEATER IS LIT.

When winterizing your camper, **USE ONLY NONTOXIC ANTIFREEZE ESPECIALLY DESIGNED FOR RECREATIONAL VEHICLES.** Your dealer will inventory the exact type your unit requires.

5. **SANITIZING FRESH WATER SYSTEM:** To keep the fresh water system clean and safe for drinking, follow the sanitizing instructions below prior to use of the vehicle. These rules are approved and recognized by the U.S. Public Health Service.
 - a. Make a solution of one gallon of water and one cup of chlorine bleach. (5% sodium hypo chloride)
 - b. Make sure the fresh water tank is empty.
 - c. Use one gallon solution for each 15 gallons of tank capacity. (Each vehicle has different capacities.)
 - d. After the solution has been added, fill the remainder of the tank with fresh water. Open all faucets and drains of the fresh water system until all air has been released and the entire system fills with the solution. Once filled, close all faucets and valves.
 - e. Allow system to stand for three hours.
 - f. Drain and flush system with fresh water.
 - g. Make sure you flush the water system several times to remove any taste of chlorine. To remove any chloride or odor which might remain, mix a solution of 1 quart vinegar to five gallons of water. Pour this solution into the tank and fill the system with the solution by opening and closing each faucet. Allow to sit overnight, if possible, then drain and flush thoroughly several times with fresh water.
 - h. Always drain your fresh water system completely when vehicle is not in use. A quick flush and a fresh water fill of the system before each trip will ensure the highest quality drinking water for your consumption.
 - i. Failure to follow these steps could cause severe illness.

6. **LOW POINT DRAIN:** Travel trailers will have a “Low Point” drain for the hot and cold water lines. Be sure these drains are closed when using the water system and during the winterizing and sanitizing processes.

Most often, these drains are located near heater along the floor line. The fresh water tank also has a drain cock on it. Be sure to keep it closed during system’s operation.

DRAINAGE, WASTE AND VENT SYSTEMS

RV products vary from the basic kitchen sink drain found on some truck campers to complete self-contained waste systems used in larger truck campers and all fifth wheels and most travel trailers.

The major part of the drainage waste is made of ABS plastic. This plastic form is not designed for certain types of cleansers.

CAUTION: ALWAYS READ DIRECTIONS ON ANY CLEANSER BEFORE YOU USE IT TO CLEAN THE DRAINAGE LINES.

Campers that are self-contained will have ABS holding tank(s) for use when not hooked up at the campsite dump station. Different vehicles have different capacities for waste holding. The size of the waste tanks and personal hygiene habits will determine how long you may camp without direct hook-up to a sewage disposal system.

When preparing to camp without facility hook-ups, be sure to close all slide or knife valves of the waste tanks. The main dump will also have a cap that must be closed. The main dump of the waste system is usually located on the left or roadside of the fifth wheel or trailer and on the rear of the truck camper.

When using your RV, always prime the waste storage tanks with a small amount of water containing an odor control chemical.

YOUR RECREATIONAL VEHICLE SHOULD BE REASONABLY LEVEL FOR BEST OPERATION OF THE WASTE SYSTEM.

Most states as well as recreational vehicle parks have strict laws and regulations prohibiting the dumping of wastes of any kind into other than approved disposal facilities or sewer systems. To find the closest “dump station” when traveling, check with a local service station or the park operator of the campsite.

To keep the system fresh smelling at all times, we suggest that you thoroughly flush the entire system with fresh water and deodorizing chemicals, or mild soapy water after each trip. Flush the system prior to storage.

BE SURE ALL VALVES AND CAPS ARE CLOSED AND SECURED PRIOR TO TRAVELING.

ELECTRICAL

Handle all electrical equipment with care. Never try to repair or alter the electrical system. Hire only a qualified electrical technician or contact the authorized dealer.

1. **120 VOLT SYSTEM:** The "life line" or power cord of the vehicle is located on the left or roadside or rear of the vehicle. Depending on the model and options the camper is equipped with, various appliances are powered by this 12 volt system. The round prong on the plug end of the power cord (see figure below) is provided to assure proper grounding.

WARNING: NEVER CUT OR BREAK OFF THIS PRONG.

POWER CORD PLUG

Ground Plug



2. **GFCI:** Where required, models are equipped with a GFCI (ground fault circuit interrupter) device. The following receptacles are on the GFCI Circuits:
 - a. Any receptacles located in bathroom,
 - b. Any exterior, weatherproof receptacle, &
 - c. Any general purpose receptacle found in the area of the kitchen sink.

If there is no power at the receptacle, push "Reset" button on GFCI receipt and double check "Breaker" in distribution box. Separate instructions are furnished by the supplier of GFCI receptacle.

3. **LOAD LIMITS:** The 120 Volt system of this unit does have load limits. Some home type electrical heaters, irons, broilers, etc., are not suitable for RV use due to excessive power requirements. RV travel trailers are powered through 30 AMP power supply cords with 15 AMP general purpose circuit and receipt load ratings.

WARNING: NEVER USE AN ELECTRICAL APPLIANCE AS A MEANS TO HEAT CAMPER!

All wiring is installed as required by the National Electrical Code and the National Fire Protection Association standards for recreational vehicles at the time of printing this manual. Canadian units are built per the Canadian Standards Association, Z 240.

4. **12 VOLT SYSTEMS:** As with the 120 Volt system of the unit, the 12 volt system only operates certain light and appliances within the camper. Your Camper can obtain 12 volt electrical power from three (3) different sources. The first is the tow vehicle, which provides 12 volt energy through the power supply cord located on the front end of the camper.

CAUTION: THE TOW VEHICLE BATTERY AND AUTOMATIC CHARGING SYSTEM ARE DESIGNED TO BE USED WHILE IN TRANSIT. DO NOT USE TOW VEHICLE POWER FOR CAMPING.

The second source of 12 volt power is through the power converter. When the 120 volt lifeline is connected to an outside supply, the power converter will convert 120 volt energy into 12 volt power. RVs with converters 32 AMP or larger have automatic features that convert 120 volt to 12 volt.

The third 12 volt power supply is the "Battery". We recommend using a deep cycle, marine type battery. Make sure the battery is fully charged, installed in an approved, protective box or container and that all wiring and terminals are clean and free from defects.

For any prolonged storage, we suggest the removal of battery from the RV and storing it in a cool, dry, well-ventilated area.

When the converter is 32 AMP or larger, the battery is being trickle-charged through the Power Converter charge line when camper is plugged into 120 volt power. The battery also gets direct charge through the 12 volt power supply line when hooked up to running tow vehicle. Remember that power from the battery is limited. **DO NOT TRY TO OPERATE RV FOR TOO LONG ON THE BATTERY ALONE.** Unplug the RV from the tow vehicle so as not to draw down the tow vehicle battery. An "Isolator" installed by dealer will protect batteries and eliminate need to disconnect battery.

WARNING: IF NOT USED WITH CARE, THE 12 VOLT SYSTEM CAN BE AS DANGEROUS AS THE 120 VOLT SYSTEM. LET AN AUTHORIZED DEALER PERFORM ALL REPAIRS AND SERVICE.

LP GAS SYSTEM

LP gas (Liquid Petroleum Gas) is a material composed of various hydrocarbons, such as propane, butanes, butylenes, or a combination. In its gaseous (vaporized) form, it is colorless and carries a garlic-like odor for easy detection. Besides being flammable, it is potentially lethal to inhale.

Even though tests have been performed by the factory and by the dealer, you must check for leaks on all connections on the LP gas system soon after purchase and before each filling of LP cylinders. This check is advisable because vibration encountered during travel may have loosened some fittings.

Leaks can be found by applying a soapy water solution to the outside of the gas piping connections. Usually, additional tightening of connections will close leaks. If this method does not work, ask authorized dealer to make necessary repairs.

WARNING: NEVER USE AN OPEN FLAME OF ANY TYPE TO DETECT LEAKAGE!

FILLING LP TANKS

When filling the LP containers, take care and **DO NOT** overfill the tank. When closing the main valve of the tank, use caution not to over-tighten. The valve is designed to satisfactorily close with only a reasonable amount of "hand" tightening. Continual over tightening will eventually damage the valve and will require replacement.

Handle the LP tanks with care. Note that when disconnecting, the valve must be turned in a CLOCKWISE direction, because the connection utilizes LEFT HAND threads. Similarly, when reconnecting, turn the valve COUNTER CLOCKWISE. When tightening, only "snug-up" the connection. Avoid over-tightening that might strip the threads.

A warning label has been placed near the LP-Gas container. This label reads: **DO NOT FILL CONTAINER(S) TO MORE THAN 80% CAPACITY.**

Overfilling the LP gas container can result in uncontrolled gas flow, which can cause fire or explosion. A properly filled container will contain approximately 80% of its volume as liquid LP gas.

CAUTION: After a propane tank has been filled, the main valve should be opened momentarily to the atmosphere to insure that it has not been over-serviced. When venting, you should NOT observe a white fog from the valve.

LP gas regulators must always be installed with the diaphragm vent facing downwards. Regulators that are not in compartments have been equipped with a protective cover. Make sure that regulator vent faces downward and that cover is kept in place to maximize vent blockage that could result in excessive gas pressure causing fire or explosion.

WARNING: ALL PILOT LIGHTS AND APPLIANCES MUST BE TURNED OFF DURING REFUELING OF TOW VEHICLE FUEL TANKS AND/OR GAS CONTAINER.

WARNING: PORTABLE FUEL-BURNING EQUIPMENT INCLUDING WOOD AND CHARCOAL GRILLS AND STOVES, SHOULD NOT BE USED INSIDE THE CAMPER. THE USE OF THIS EQUIPMENT INSIDE THE CAMPER MAY CAUSE FIRE OR ASPHYXIATION.

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

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 tank valve(s) or gas supply connections.
4. Open doors and other ventilating openings.
5. Leave the area until the odor clears.
6. Have the gas system checked and leakage source corrected before using.

GENERAL OPERATION: DO NOT ALTER, ATTACH TO OR OTHERWISE MODIFY THE LP GAS SYSTEM.

WARNING: DO NOT STORE OR BRING LP GAS CONTAINERS, GASOLINE OR OTHER FLAMMABLE LIQUIDS INSIDE THE VEHICLE. DOING SO MAY RESULT IN FIRE OR EXPLOSION.

WARNING: LP GAS CONTAINERS ARE EQUIPPED WITH SAFETY DEVICES THAT RELIEVE EXCESSIVE PRESSURE BY DISCHARGING GAS INTO THE ATMOSPHERE.

APPLIANCES

This section deals with the proper use and trouble-shooting tactics of the major appliances of this RV. These instructions are general in nature and references should be made to the separate instructions furnished with each appliance. Whenever a conflict occurs between our written information and that of the appliance manufacturer, FOLLOW THE MANUFACTURER'S INSTRUCTIONS. Your RV dealer is

familiar with all appliances and we recommend that the dealer instruct you with proper operation of each appliance. The dealer can also provide information on how to avoid possible appliance breakdown.

RANGES

Before lighting or cooking with the range, familiarize yourself with its operation and use limitation.

Allow 5 minutes from the time of opening the main valve on LP tanks before trying to ignite the burners or oven. LP gas travels at a slow rate and will take time to flow from the tanks to range or oven.

Surface burners and oven burner in range should burn a clean blue flame. If the flame is reddish or yellow in color, or if the pans gather soot on the bottom, the fuel/air mixture required adjustment. Refer to gas range manual for flame adjustment details.

NEVER FORCE OR TWIST GAS BURNER KNOBS TO GET THEM OPEN.

Improper use of aluminum foil will greatly reduce cooking efficiency of oven. If using large sheets of foil to catch drippings, this may cut down air circulation within the oven. Never put foil directly on oven bottom, simply place it on the shelf below the food being prepared; being careful not to cover the entire shelf.

If the RV has optional folding range cover, be sure to shut off all burners before covering range top.

CAUTION: NEVER USE THE RANGE COVER FOR COOKING.

WARNING: IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING.

Cooking appliances need fresh air for safe operation. Before using:

1. Open overhead vent or turn exhaust fan to "on".
2. Open window.

This warning label has been located in cooking area to remind user to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen supply is limited due to the size of the recreational vehicle. Proper ventilation when using the cooking appliances will avoid 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.

RANGE HOODS

Above the gas range is a 12 volt power exhaust hood with exterior vent. **OUTSIDE VENTS MUST ALWAYS BE OPEN WHEN COOLING.** The power range hood has a filter that must be cleaned or replaced periodically for efficient operation.

Wash with hot water and household detergent, rinse thoroughly and dry. All dust and greasy surfaces, fan and motor should be cleaned frequently... **DO NOT USE ABRASIVES IN CLEANING.**

MICROWAVE OVEN

Many RVs are equipped with microwave ovens. See manufacturer's instructions for operating and cooking details. These full feature ovens are made available to provide convenience. The camper must be powered through the 120 volt supply cord for ovens to work. If unit has an electrical water heater, it may be necessary to shut the water heater off when using microwave oven. Most vehicles do not have enough 120 volt power to supply the microwave oven and the electric water heater simultaneously.

HEATERS AND FURNACES

Be sure to familiarize yourself with the operating instructions which come with the furnace before trying to ignite it. When ready to light the furnace, "cycle" it completely. (That is, light the pilot and turn thermostat to a setting which requires heat.) When the main burner turns on, turn the thermostat down. The furnace will not shut down immediately, but should cycle in a few minutes. Then set the thermostat to the comfort level desired.

The heater or furnace is equipped with automatic ignition. To ignite, follow these simple instructions:

1. Set thermostat above actual temperature to operate blower.
2. Turn LP Bottle to open position.
3. Set thermostat at desired temperature (must be above room temperature for furnace to ignite.)
Allow 30 seconds for burner to light.

If the burner does not light, set the thermostat to "Off" and repeat ignition procedure. If after three attempts, there is still no ignition, completely shut down the furnace and determine the cause.

For complete furnace shut-down, turn manual gas valve "Off" and set thermostat to "Off" position.

REFRIGERATORS

Since it is designed to give you the same convenient service as at home, a RV refrigerator does have special features that require a little more time and preparation prior to and during its use.

Please read the supplier's manual furnished with the refrigerator and follow their instruction on the operation part of your particular model.

CAUTION: YOUR RV MUST BE LEVEL FOR REFRIGERATORS TO OPERATE EFFICIENTLY.

NOTE: CLEAN YOUR REFRIGERATOR OFTEN AND PRIOR TO LONG TERM STORAGE DISCONNECT ELECTRICAL POWER, TURN OFF MAIN GAS VALVE AND BLOCK REFRIGERATOR DOOR(S) OPEN.

AIR CONDITIONERS

Your (optional) air conditioner operates from a 120 volt AC source only. It is wired to the load center through its own appropriately labeled circuit breaker. Keep in mind that a RV electrical system with air conditioning is usually designed to handle 30 AMPS maximum, and that the air conditioner takes a sizable portion of that when the compressor is starting. Reduce the remaining load as much as possible to reduce the chance of overload and possibly tripping the breaker. Be sure air conditioner is turned "Off" before plugging your RV into park receptacle. Keep air conditioner filter pad clean for most efficient operation. If your camper came with the optional "heat strip" please remember that the equipment is **NOT** designed to be used as a replacement for the LP gas heater furnace.

If your travel trailer is only pre-wired for air conditioning, you will need an authorized RV dealer's assistance in selecting and installing the brand name and model of air conditioner to best fit your RV.

CAUTION: When using the AC, be sure the outside door is open by lifting it up and sliding it to the front.

SPECIAL FEATURES

This section deals with some of the standard and optional features that your RV may or may not be equipped with.

- A. **EMERGENCY EXITS:** As required by codes and standards, all travel coaches are designed with emergency exits. These exits may be a door, window or special hatch. They will be marked (red handle and label) and identified for easy reference. Try to keep these exits as well as other exits clear of debris. Check them regularly to make sure they are in good working condition. Most truck campers use an escape hatch located in the ceiling above the cab-over bed.

CAUTION: MAKE SURE YOUR RV DEALER SHOWS YOU THE TYPE, LOCATION AND SPECIFIC OPERATING INSTRUCTIONS FOR THE "EGRESS" COMPONENT(S) USED IN YOUR TYPE OF RV.

- B. **FIRE EXTINGUISHER:** This safety item is required by codes and standards that regulate the recreational vehicle industry. The fire extinguisher is always located in an accessible area, generally near the main entry door. If you have not used your extinguisher in more than 6 months, we recommend that you have it checked or replaced.

WARNING: IN CASE OF FIRE EVACUATE VEHICLE IMMEDIATELY.

- C. **SMOKE DETECTOR:** To protect you and your family while sleeping, we suggest the installation of a battery operated smoke detector. We recommend that the detector be tested before each trip and that the battery be replaced at least once a year. We further recommend the use of an "alkaline" or "heavy duty battery".
- D. **T.V. ANTENNA (OPTIONAL):** By having a roof mounted TV antenna, the quality of your TV reception will improve. Separate instructions are provided by the antenna manufacturer. Please take a few moments to read them. Whenever traveling, we recommend that the antenna be kept in the "down" position. Prior to exiting the campground, check to be sure the antenna is down.

The "booster" power of your antenna is energized by 12 volt electricity. A "red" light will be illuminated when "booster" power is being used.

If your camper is factory pre-wired, but TV antenna is not installed, check with your RV Dealer for proper selection and installation.

- E. **SIDE AWNING (OPTIONAL):** Separate instructions are provided by the manufacturer. Check "Retail Packet" for details.

CAUTION: BE SURE SIDE AWNING IS PROPERLY STORED AND SECURED IN PLACE BEFORE TRAVELING.

CAUTION: ALWAYS STORE YOUR AWNING DURING HEAVY AND VIOLENT WIND OR RAIN STORMS.

CAUTION: BE SURE TO PROPERLY STORE AND LOCK THE OUTSIDE SHOWER BEFORE TRAVELING.

- F. CABINET BUNKS (OPTIONAL): Maximum load capacity is 150 pounds; designed for children.

APPEARANCE PROTECTION

Proper maintenance will help keep your recreational vehicle looking “factory new” for years to come. The following cleaning and care recommendations will provide the RV with necessary appearance protection.

Washing your RV

- Wash your RV regularly with liquid, nonabrasive cleaners designed for use on Aluminum Painted Surfaces. Be sure to follow directions on the package and try the cleaner in an inconspicuous area if there is any question about the compatibility of the cleaner and the aluminum surfaces. **ALWAYS BE SURE THAT CLEANING COMPOUNDS DO NOT SCRATCH OR ABRASE THE SURFACE!**
- Should you ever have a stubborn mark or stain on the painted surface that will not come clean with soap, water, and a clean rag; try using mineral spirits or any other chemical cleaner or the surface gloss will become dull. Be very careful with chemical cleaners of any kind and be sure to check their compatibility by testing them on an inconspicuous area on the coach before using. Some chemicals can discolor, erode, or dull the surface finish. Always rinse the RV with clean water after using any chemical cleaner.
- Waxing helps prolong the finish, just like it helps prolong the finish on your car, truck, or boat. Use nonabrasive waxes designed for use on aluminum painted surfaces, RV's, or boats. Be careful when using cleaners, polishers, or rubbing compounds as many of these products are designed to lightly abrade the surface. Surface abrasions of any kind are not good for the finish.

Maintaining the Gloss and Color

- If at all possible, shield your RV from the long term damaging effects of the sun by using an RV cover or by storing the unit in a shaded area when not in use. Just like your car/truck, your RV will retain its original gloss and color much longer if kept out of the sun. The sun is the number one enemy of all exterior products in the RV and automotive industries.
- Should you ever need to repair the surface on your coach, please consult a repair professional.

CAUTION: DO NOT USE STEEL WOOL, ABRASIVE TYPE CLEANERS OR STRONG DETERGENTS CONTAINING HIGHLY ALKALINE OR CAUSTIC AGENTS ON CHROME PLATED MATERIALS, ALUMINUM WHEELS, BUMPERS, OR ANODIZED ALUMINUM PARTS BECAUSE YOU MAY DAMAGE THE PROTECTIVE COATING AND CAUSE DISCOLORATION OR PAINT DETERIORATION.

- **RUBBER ROOF:** If the roof material of your recreational vehicle is rubber, it requires a minimum of maintenance. Periodically, (at least annually), check the roof area around roof vents and other structures that penetrate the roof and, if necessary, apply a coating to seal these areas. Rubber manufacturer's 12 year Limited Warranty voided if approved sealant is not used.

CAUTION: SOME SEALANTS AND SILICONE MAY “EAT” OR DESTROY THE RUBBER COMPUND. READ THE MANUFACTURER’S MAINTENANCE INSTRUCTIONS PRIOR TO PERFORMING ANY SERVICE.

Should your rubber roof be torn or be punctured, repair kits are available through dealer.

5. **SKYLIGHTS AND ROOF VENTS:** These plastics require seal with an approved material that will not destroy plastic.

B. INTERIOR: Various types of floor coverings are used in RV’s.

Vinyl or linoleum needs regular washing and special waxing. Special no-wax cleaners are available. Some waxes are good for one type, but not another. Ask your dealer to recommend the best type of cleaner and polish for your RV.

1. Use warm, not hot, water to wash the floor. Be sure to rinse well and mop dry. Be careful not to let dirt, sand, or sharp objects stand on your floor or they will be ‘ground in’ and mar your floor covering.
2. Walls, cabinetry and ceiling have been constructed of plywood and synthetic materials coated with vinyls or papers. These panels will require special care. Avoid scratching these panels or allowing hot objects to come in contact with them. **DO NOT USE A CITRUS BASED CLEANER.**
3. Tables and counters are made of high pressure laminates. Do not lay lit smoking materials on any of the counter tops; they will leave burn marks. Be extra careful when cutting so as not to scratch the surface.
4. Draperies should be removed and dry cleaned as required. Do not wash any of the draperies by hand or with a washing machine.
5. Cushions, mattresses and their covers should be spot cleaned only. We do not recommend their removal for washing because of possible shrinkage. Consult your local dry cleaner for possible aid.

All cushions and mattresses should be “turned” on a regular basis to maximize wear.

6. Fiberglass or ABS tubs, shower pans, and plastic sinks should be cleaned with soap and warm water. Do not use any abrasive or chemical cleaners which could scratch or mar the finish. If it becomes necessary to repair the finish, contact your dealer. He should have the skill and materials needed for such jobs.

Serious damage to ABS fixtures cannot be repaired; they must be replaced.

7. Interior hardware - such as hinges, door pulls, and drawer tracks - may require a periodic application of silicone lubricant. Never force a drawer or door open.

WINTERIZING YOUR RV

1. Flush all water lines, water tanks, and holding tanks.
2. Open all faucets in the RV.
3. Open the water line low point drains and the drains on the water heater and water tank and allow all water to drain out.
4. Close all faucets and cold water line drains but leave the hot water drain tank open.
5. With an air pressure hose, through the city water fill, thoroughly blow out the lines, checking each faucet, one at a time, to see that no water remains in the faucet or lines.
6. Open all faucets and leave open for the winter.
7. Fill the P-traps in your sink and shower with an antifreeze specified by your dealer. This will keep the traps from freezing. Do not use alcohol in the traps.
8. If your RV is equipped with a water heater bypass kit, fill water lines with approved nontoxic antifreeze.
9. Should you have any questions on winterizing your RV, contact your dealer.

MISCELLANEOUS TIPS FOR WINTERIZING

1. Open your holding tank valves and leave them open for winter.
2. Be sure all windows and doors are shut.
3. Empty your gas bottles; don't leave gas in the bottles if the unit is not in use.
4. The battery should be removed from the vehicle and should be charged as necessary to maintain full charge through the winter.
5. Make sure the camper is level.
6. Remove all perishable items from camper.
7. Thoroughly clean interior, wash and wax exterior and seal as needed.

HELPFUL HINTS

MIRRORS

Side view mirrors for both the left and right side of the tow vehicle should be used at all times. Have someone adjust the mirrors while you are sitting behind the steering wheel so that you can see down the left and right side of your camper. These mirrors are invaluable aids when backing up or changing lanes.

LEVELING THE RV

The importance of proper leveling cannot be overemphasized. The improper setup can result in:

1. Floor tile cracks and ridges
2. Refrigerators that won't cool.
3. Slow running drain lines.
4. Doors, cabinets, windows that bind.

SCHEDULED MAINTENANCE

As with your tow vehicle, it is very important to perform regularly scheduled maintenance in order to keep your RV looking and operating like new. It is also required to keep RV's warranties valid.

Please follow ALL recommended maintenance as described throughout this manual and as required by manufacturers of component parts (See their respective information in "Retail Packet.")

The manufacturer suggests that you have one of our authorized dealers inspect, test, and repair your camper at least once a year or as needed.

REMEMBER... ONLY AN AUTHORIZED DEALER KNOWS YOUR CAMPER AND HOW TO BEST SERVICE IT.

TRAVELING TIPS

Most states have special rules and requirements in regards to operating your tow vehicle and RV on its road and highways.

For instance, some states allow riding inside the camper while traveling on roads, but many do not. **THE MANUFACTURER ALWAYS RECOMMENDS THAT YOU RIDE IN THE TOW VEHICLE AND STAY BUCKLED UP FOR SAFETY.**

Many states have special lower speeds for recreational vehicles. Always follow individual state laws.

Wind, rain, ice and snow all create hazardous driving conditions. This is even more evident when towing or carrying a recreational vehicle. The extra height, weight, and weight distribution can create difficult vehicle handling in adverse conditions. PLEASE slow down, increase distance between you and the vehicle in front, and signal clearly before turning or changing lanes. If at all possible, pull over and camp until driving conditions improve.

SUPPLIES AND EQUIPMENT

Besides your personal, cooking, cleaning, and hygiene items, you should carry the following supplies:

- First aid kit
- Spare fuses and light bulbs
- Oil, coolant, and water for tow vehicle
- Flashlight with fresh batteries
- Dealers name, address, and phone number
- Chemicals for toilet
- Trash Bags

- Leveling Blocks
- Wheel chocks
- Maps

TRAVEL TRAILERS

The following topics discuss information pertaining to Travel Trailers.

TOW VEHICLE

Whether you plan to use the vehicle you now own or intend to purchase a new one, the manufacturer recommends that you have your auto or truck dealership and authorized dealer assist you in matching the tow vehicle with the camper of your choice.

Factors to consider include: engine size, axle ratio, alternator and battery size, geographical use (mountain, hot, etc.), and towing package limits.

HITCHES

Travel Trailer hitches are available in four different weight classifications:

- a. Class I – for Trailers under 2,000# with 10-15% tongue weight
- b. Class II – for Trailers 3,500#'s or less
- c. Class III – for Trailers 5,000#'s or less and 15% tongue weight
- d. Class IV – for Trailers more than 5,000# and 15% tongue weight

Equalizer hitches are also available. The effect of an equalizer hitch is to distribute the hitch load equally between the front and rear tow vehicle axles and the trailer axle(s). The hitch distributes hitch weight from the "Bumper" area of tow vehicle evenly to the tow vehicle axles and trailer axle area.

SWAY CONTROLS

Sway controls are designed to decrease the sway effects induced by passing trucks, buses, or strong side winds. There are several types available; friction, cam action, and computer operated. Each has its own advantages.

SAFETY CHAINS

Most states require safety chains on all travel trailers. Always have the safety chains attached when the RV is being towed. Make sure chains do not restrict sharp turns and that they do not drag on the road.

BREAKAWAY SWITCH

As with "safety chains," most states also require the use of a breakaway switch. It is powered by your on board trailer 12 volt battery. An aircraft cable is used to attach engagement pin to the tow vehicle. The pin is inserted in the breakaway switch to hold the switch and electrical current is applied to the trailer brakes.

TRAVEL SAFETY TIPS

Due care should be used when driving with RV in tow. High winds, ice, snow, and rain can all make driving difficult.

Make sure safety chains, breakaway switch and hitch are properly connected. Drive slowly and defensively. If weather elements become too inclement, pull over and rest at the nearest facility.

Use side mirrors and turn indicators before changing lanes or turning.

Allow at least twice the normal stopping distance between you and the vehicle in front. Avoid sudden braking.

Check clearances (height, width and ground clearance) prior to entering any unknown road, drive or campground.

FEDERAL CERTIFICATION STICKER

Located on front left tongue, this label gives maximum weight carrying capacity of the trailer and each axle.

***GROSS VEHICLE WEIGHT RATING (GVWR)**

The maximum the trailer should weigh with fresh water and LP Gas tank(s) filled and with food, clothing and all other camping supplies aboard, including items on roof rack.

***GROSS AXLE WEIGHT RATING (GAWR)**

The maximum load bearing capacity of each axle.

Cruiser RV LLC recommends that before your first trip begins, verify the vehicle loaded weights. This can be easily done by driving the fully loaded camper to a weight station (rural feed and grain scale, port of entry, etc.), and documenting trailer weight: 1) whole camper on scale (total weight) and, 2) axle(s) only on scale (*axle weight). Check these weights to verify that they are less than the GVWR and GAWR respectively.

LOADING TRAILER

Always store the heaviest article over the axles. NEVER overload front of coach: that would put excessive weight on the hitch.

SUSPENSION SYSTEM

Your RV rides on the best axles available. The axles are equipped with exclusive "greaser" feature.

The "greaser" axle has a zert located on each end of the spindle for easy lubrication of the bearings. The axle manufacturer recommends that the axles be checked and greased, if needed, every 6 months or 6,000 miles. Simply pull out rubber seal on axle ends, exposing zerts and fill with proper grease. They require a grade 2, high temperature automotive type grease with a minimum of 440° dropping point.

Both axles can be checked and re-greased in about 10 minutes.

BALANCE THE LOAD

Handling can be affected by grossly uneven loading across the axle. Most of the appliances are mounted on the Road Side of the camper, so stowing a proportionate amount of your camping gear at the door side helps to equalize the weight across the axle. Failure to balance the load will promote uneven tread wear.

CAUTION: ALWAYS BE SURE TO GREASE HUBS BEFORE ANY LONG TERM STORAGE.

TIRES AND RIMS

To ensure good handling, long life and protection against road hazards, the manufacturer equips all trailers with radial tires.

To help these tires perform up to their maximum capacities, you must maintain them properly. Be sure to check the tire pressure before EACH trip.

Remember, over or under inflated tires will cause bad vehicle handling, uneven tire wear, and possible blowout. See tire sidewall for proper inflation requirements.

Rotate tires every 5,000 miles. Check and torque lug nuts to 90-95 PSI after first 100 miles and every 1,000 miles thereafter.

Your RV comes with ST250/75R15 Tires. Max PSI 50. Load Rating C. These tires are for Trailer Service only.

During long term storage, you will need to be sure tires are on a paved or solid ground, rotating tires every 30 days to prevent "hard spots" from forming at the bottom. Also make sure vehicle is level to equally distribute trailer weight on tires.

STABILIZER JACKS

These optional devices are used to level and stabilize the trailer while camping.

CAUTION: STABILIZER JACKS ARE NOT DESIGNED OR INTENDED TO LIFT TRAILER OFF THE GROUND.

If on soft soil, be sure to use some type of lock or support under "jack" foot.

Always level the camper from side to side AND front to back. Once unit is positioned and level, chock wheels so camper will not shift.

LIGHT BULBS

LOCATION	BULB #
Clearance	#183(TC) #57FW/TT)
Patio/porch	1141
General Interior	1141
Range Hood	912
Taillight/turn	1157
Backup	1141

Registration Information For Your Records:

RV Model: _____

RV VIN Number: _____

Date of Manufacture: _____

Date of Purchase: _____

Dealer Name: _____

Dealer Address: _____

Dealer Phone Number: _____

Sierra Phone Number: **(800) 727-0638**

Sierra Address: **19224 CR 8, Bristol, IN 46507**

Registration Mail In Form

RV Model: _____

RV VIN Number: _____

Date of Manufacture: _____

Date of Purchase: _____

Dealer Name: _____

Dealer Address: _____

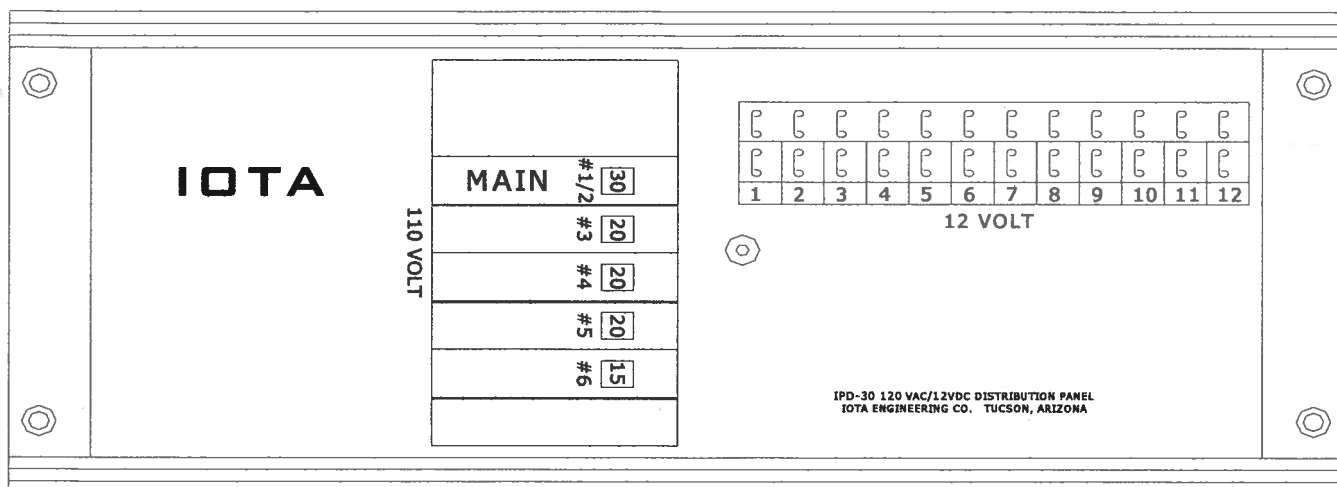
Dealer Phone Number: _____

Owners Name: _____

Owners Phone Number: _____

Owners Address: _____

**Please mail in the bottom section of this form to: Sierra Motor Corporation
19224 CR 8
Bristol, IN 46507**



110 VOLT BREAKERS

1. 30 Amp main breaker
2. 20 Amp Air conditioner
3. 20 Amp refrigerator
4. 20 Amp microwave
5. 15 Amp 110 volt outlets
6. 15 Amp power converter

1. 20 Amp Refrigerator
2. 15 Amp ceiling lights
3. 15 Amp ceiling vents
4. 15 amp porch light
5. 15 Amp Furnace
6. 15 Amp Counter light and water pump
7. 3 Amp LP detector
8. 15 Amp Recharge line

12 VOLT FUSES

Wire Color

Large Black

Brown

Red

Pink

Purple

Blue

Direct

Small Black