

Scamp

Owner's Manual



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LIMITED ONE YEAR WARRANTY

Eveland's Inc. d/b/a SCAMP (hereafter referred to as "SCAMP") warrants to the original purchaser of its products that the products manufactured by it will be free from defects in material and workmanship under normal use for a period of one (1) year after date of sale, whether or not use begins on this date. This limited warranty is only applicable to products which have not been altered or misused.

If any products do not meet the above limited warranty, SCAMP will either (at SCAMP'S option) repair or replace the defective product. In such case, purchaser may be required to deliver the defective product at his own cost to either SCAMP or an authorized service representative. SCAMP will complete the repair or replacement as soon as possible but in no event later than sixty days after its receipt of the product.

Notice of any alleged defect should be addressed to Warranty Department, Scamp/Eveland's, Inc., Box 2, Backus MN 56435. Telephone calls can be made to 218-947-4932 or by using the toll free number.

Products or components not manufactured by Scamp, but merely resold by Scamp are not covered by this limited warranty. These products carry their own warranties through their original manufactures. However, Scamp will extend to purchasers any warranties provided to Scamp by the original manufacturer.

SCAMP SHALL IN NO EVENT BE RESPONSIBLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, OR SPECIAL DAMAGES RESULTING FROM A DEFECT IN ITS PRODUCTS. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.)

THIS LIMITED WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. AFTER THE LIMITED ONEYEAR WARRANTY HAS EXPIRED, SCAMP SHALL NOT BE RESPONSIBLE FOR ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

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

WARRANTY PROCEDURE

1. For warranty service the owner should contact the Scamp warranty department, or the warranty dept. of the item covered by the original manufacturer. If there is any question on who to call, contact Scamp and the owner will be instructed on the correct procedure. Follow the instructions given either by the Scamp warranty dept., the instructions listed in the service manual for the specific product, or the instructions given by the authorized service center over the phone. DO NOT IGNORE THE INSTRUCTIONS AS IT MAY MEAN REJECTION OF THE WARRANTY CLAIM OR ONLY PARTIAL REIMBURSEMENT.

2. To receive reimbursement for warranty repairs a Warranty Authorization number will be given either verbally over the phone or in written form which will be mailed when necessary. Reimbursement will not be given without Warranty Authorization. A quote, verbal or written, will be required prior to warranty payment.

3. Generally, products covered by their own warranty resold by Scamp also need a Warranty Authorization to initiate repairs or receive reimbursement. Usually, if the warranty card has been filled out instructions are given on where to have the defective product repaired and generally the customer is not billed. The bill being sent directly to the original product manufacturer and paid by them. Otherwise the owner often must pay the bill which is then submitted either to the original product manufacturer or Scamp. If sent to Scamp and is covered by warranty by the original manufacturer, Scamp will forward the bill on to the original manufacturer.

4. Transportation of the trailer or parts needing warranty to the Scamp factory or an authorized service center is the responsibility of the owner. Scamp does not pay for house calls or travel time for repair personnel.

5. Any defective parts must be kept and returned to Scamp (unless otherwise instructed) to receive warranty reimbursement. DO NOT THROW DEFECTIVE PARTS AWAY UNLESS INSTRUCTED TO DO SO.

6. If the customer has any questions or problems obtaining warranty service the Scamp warranty dept. will assist the customer in resolving his problem.

SCAMP WILL NOT BE HELD RESPONSIBLE FOR:

1. Normal maintenance as outlined in the Scamp brochure and individual appliance brochures.

2. Any charges for checking out the trailer or appliances which indicate that the trailer or appliance is working correctly.

3. Normal adjustments that occur from over the road use, such as cabinet latches etc.

4. Blown fuses, electrical problems caused by incorrect use, or electrical problems caused by corrosion.

5. Problems resulting from faulty propane.

6. Reimbursement for repairs in which the owner or operator refused or did not follow the correct warranty procedure.

7. Any special additions added by Scamp at the customers request that are not normally installed or sold by Scamp.

8. Damage or repairs needed as a consequence of any misapplication, abuse, unreasonable use, unauthorized alteration, improper service, improper operation or failure to provide reasonable and necessary maintenance.

9. Damage as a result of floods, winds, lightning, accidents, corrosive atmosphere or other conditions beyond the control of Scamp.

10. Any special, indirect or consequential property, economic or commercial damage of any nature whatsoever.

GENERAL INFORMATION

1. General construction: The Scamp trailer is built with a fiberglass body which is fastened to a steel frame. On standard trailers the interior cabinets are also made of fiberglass. Deluxe trailers have interior cabinets made of wood. These interior cabinets do help support the body of the trailer, and they should not be removed for a long period without some support put in their place. The closet by the door or wood panel on deluxe trailers is especially important in supporting that side of the door opening.

2. Frame: The frame is constructed of 3" by 1 1/2" eleven gauge pre-primed tubing. Cross members are tubing or angle irons. Formed steel is also welded to the frame upon which the wood floor is screwed to. The frame will allow a bike carrier to be attached to the rear, often using a receiver type hitch. But the frame is not designed to have a tool storage box or other heavy items attached to the rear. Under no conditions is a boat or trailer ever to be towed behind the Scamp trailer. Any damage which occurs as a result of such use is not covered under the warranty.

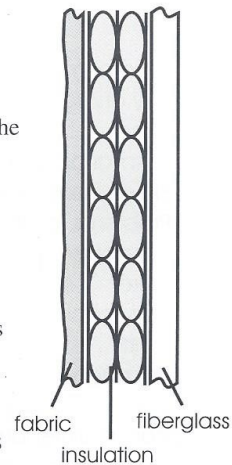
3. Exterior fiberglass: Scamp trailers are built using an FRP (Fiberglass Reinforced Resin) open mold process. The white exterior paint is called Gelcoat. It is resin with pigment added. Gelcoat bonds chemically to the FRP structure and becomes part of the supporting structure of the trailer. Pigments in the gelcoat can be gradually broken down by sunlight, causing in the course of time, the gelcoat to change, either yellowing or oxidizing. Waxing the trailer, covering it, or storing it inside greatly reduces this process. Wax that works well on fiberglass products can be purchased at any boat dealer or many auto part stores. If gelcoat becomes chalky looking over time buff the chalkiness out, using fine rubbing compound.

4. Insulation and wall headliner: Double bubble foil sided insulation is used, and is glued to the roof and walls of the trailer with a nonflammable adhesive. R value rating is about 15. Headliner is glued to the insulation using the same adhesive. The headliner is a marine fabric which may be cleaned by using most upholstery cleaners.

5. Flooring: The floor is constructed of OSB sheeting undercoated with fiberglass resin. The OSB sheeting soaks up the resin making the underside of the trailer extremely waterproof. The frame is caulked, then the sheeting is screwed down to the frame. Paint covers the floor in cabinet areas. Carpet is on the main floor.

6. Windows: All solid front windows are plexi-glass. Sliding or crank out windows are standard RV windows. All windows should be closed while traveling, especially on gravel or dirt roads, which prevent dust from entering the trailer interior. All windows can be cleaned with water or window cleaner. If the plexi-glass gradually becomes scratched by road debris, or improper cleaning, polish can be purchased to buff out the scratches. If a window pane is broken in a slider or crank-out the window can be removed and the pane replaced. Procedure is as follows: **Radius corner crank-out and sliding windows:** This procedure needs two people, one inside the trailer and the other outside. Inside man needs a drill with a number two square drive bit. Outside man keeps window from falling as it becomes loose. Window is held in place by the interior lock-ring, which is fastened in place by square drive screws. As the screws are removed the lock-ring will come loose from the window allowing the window to be removed from the exterior of the trailer.

7. Hitches: 1). 16 foot and 13 ft trailers use an A frame 2" coupler with a 5000 pound rating. This coupler is also adjustable with a nut on the locking mechanism. 2 inch balls are required with this coupler. 2) Fifth wheel trailers use a gooseneck type of hitch also with a 5000 pound 2 inch coupler. This coupler is not adjustable, but locks in place with its own system. The gooseneck hitch mounts in the back of the tow vehicle with two rails, which are bolted through the bed of the truck with 3/8" bolts. The hitch sets into the rails with four removable pins. The hitch may then be easily removed when not in use. Sometimes the trailer is too far forward or rearward for the hitch to release correctly. If so, move the vehicle slightly to release the hitch. Do not raise the tow vehicle with the trailer landing gear (jacks) as damage may result.

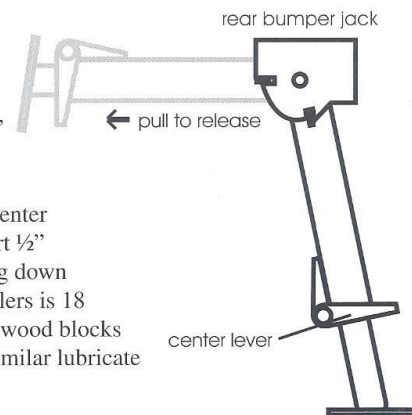


8. Jacks and landing gears 1). Front center mount jack, used on 16 & 13 foot trailers, has a 2000 pound rating. Mounts in the center of the 5000 pound 2" coupler. To use turn crank clockwise to go up, counterclockwise to go down. Since the jack foot extends down beneath the coupler it is necessary to have the hitch on the car mounted at the correct height to avoid the jack foot from contact with the ground while traveling. 2) Landing gears used on fifth wheel trailers. 4000 pound capacity. It is not necessary to extend jacks all the way up or down by cranking. When unhitching from the vehicle remove the extension pins and let the legs down to the ground. Level ground should be chosen. Put the pins back in, locking the legs in place. Extend legs further by cranking the remaining distance. To extend legs crank counter-clockwise, to retract crank clockwise. **Do not force gears when end of leg extension is reached as this can damage the gears.** Make sure that all pins on the landing gears are in place before travel, otherwise landing gear legs or landing gear feet may be damaged while towing.

9. Power lift for 5th wheel legs. Optional so not installed on all units. There is a black toggle switch with two controls. To extend the jacks legs push the "Ext" and to retract the jack legs push the "Ret".

10. Bathroom fan. To activate push the center handle up, and then push in the red button. To stop, push the red button again and then pull the handle down. When new the handle tends to be quite stiff.

11. Rear bumper jacks: 1000 pound capacity per jack. Mounted with two 3/8" by 1" hex head bolts. This jack is spring loaded. Use requires pulling the jack toward the center of the trailer which releases the spring. The jack manually swings down and locks into place at about a 15 degree angle off vertical. Push center lever down to release leg which will drop down to full or necessary length. Insert 1/2" zinc coated rod through desired front hole of jack and back hole of jack. Pushing down on rod will force the jack down farther. Total drop fully extended on 13 foot trailers is 18 3/4". On 16 foot trailers the drop is 22 3/4". Do not over extend. Soft soil requires wood blocks under jacks for good stabilization. It is a good idea to lubricate with WD40 or similar lubricate occasionally.



APPLIANCES

Read all appliance manuals before use. Pay special attention to all warning and cautions in all manuals. Fill out any and all warranty cards within ten days of trailer purchase.

When using the gas appliances in the Scamp follow directions exactly. Do not store or use gasoline or other flammable vapors liquids in the vicinity of any gas appliances.

What to do if you smell gas:

1. Extinguish any open flame.
2. Evacuate all persons from the trailer.
3. Leave door open to ventilate trailer.
4. Shut off the gas supply at the gas tank or source.
5. Do not touch any electrical switch, or use any phone or radio in trailer.
6. Contact the nearest gas supplier or qualified service technician.
7. Do not turn on the gas supply or use any gas appliance until the gas leak has been repaired.
8. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

1. Ice Box: Standard item on trailer. Deleted if a refrigerator is installed. To use place ice on the top shelf, as it melts it will drain out the bottom of the trailer. Always close ice box door when traveling to insure your food items stay cool and remain in the ice box.

2. Two burner stove top: Standard item on trailer. To use, make sure gas tank is turned on. Do not turn gas on at stove. First, light match, holding it close to desired burner, then turn burner on, lighting burner with match. Then set flame to desired height.

3. Roof vent/escape hatch: Vent opens by cranking handle counter-clockwise. To close turn clockwise. Pulling red latch backward releases screen and allows for escape through roof. If possible escape should be made through the door.

4. Furnace: Read the Suburban owners manual before operating the furnace. To operate the furnace 1) Make sure that the propane is turned on at the tank. 2) Set the thermostat to the desired setting. The furnace should react by first having the fan come on. Second, the furnace should try to light, which will sound like a small click. Third, flames should be visible when looking through the window in the front of the furnace. Kneeling is generally required to see through the window. When first starting the furnace sometimes this cycle needs to be repeated several times to get ignition. If the furnace does not initially light often it is air trapped in the gas line. Repeat the ignition cycle several times until the furnace lights. A good way to help remove air from the lines is to light the stove top and let it run a few minutes. Shortly after ignition the furnace should start to blow out heated air.

5. Awning: 13 foot trailers use a 2.5 (about 8 ft.) meter awning. 16 foot trailers and fifth wheel trailers use a 3.5 (about 12 ft.) meter awning. Read the instruction manual before use. Awnings should not be used or left out in windy conditions. When using in moderate winds the awning should be tied down with the stakes provided. Check the awning manual for operating instructions.

6. Roof mount air conditioner: Must be plugged into 120 volt to operate. Two knobs on front of air conditioner. Right one controls air temperature. Left controls fan speed. Blue side controls air, black side is fan speed without air and red dot activates heat strip if installed (which is optional). Any Scamp trailer with a roof air conditioner has had extra support built into the roof structure. Roof air conditioners should not be installed in existing Scamps without making sure that the roof has the proper support. For additional information read the Coleman air conditioner owners manual.

7. Water heater: Before use read the Atwood Gas Hot Water Heater manual. Before use make sure that the hot water heater is filled with water. If water heater is lit without filling tank damage will occur. To fill simply connect to city water or fill the fresh water tank and turn on demand pump. Open the hot water side of the sink faucet. When water comes out sink faucet hot water heater is full. Most water heaters will use a White Rodgers control. To light 1) Turn lighting control dial to 'Pilot' position and hold against stop while lighting pilot burner. 2) Allow pilot to burn approximately one half minute before releasing knob. 3) Turn control knob to 'On' position. 4) If pilot does not remain lit, repeat operation allowing longer period before releasing knob. 5) Set the lever at the mark between the warm and hot position. 6) Close access door. Electric operated hot water heaters use the inside controls. On electric operated hot water heaters the red light comes on only with a malfunction in lighting. Check the hot water heater manual for malfunction information.

8. Oven: May only be installed in 16 foot, and fifth wheel models. Read oven manual before use. Gas must be turned on at tank to operate oven. Top burners light by turning them on, and lighting with match. Oven requires that pilot light be lit.

9. Refrigerator: Scamp uses three different refrigerator sizes. The 1.9 cubic foot refrigerator works on 120 volt, 12 volt, & propane. The 4.6 and 6.0 cubic foot refrigerators work on 120 volt & propane. To operate it is best to follow instructions as given in Dometic's owners manual. Use 120 volt power if available, if not use gas. Only use 12 volt while traveling, as it is the least efficient. It is best to pre-cool your refrigerator before traveling.

10. Power range hood: Operates on 12 volt only. Switch has three positions. 1) Light. 2) Fan. 3) Light and fan.

11. Roof fan: Operates only on 12 volt. Turn crank counter clockwise to open, clockwise to close. To exhaust air push in/out switch to out and set fan speed with rear knob. To intake air set in/out switch to in.

12. TV antenna: Operates on 12 volt only. Connect TV lead to coax connector.

13. Toilet: Read Sea-Land owners manual before use. RV tissue should be used to prevent the black water tank clogging. Follow operating instructions in manual for correct use. Do not let toilet freeze without winterizing.

RUNNING GEAR

1. Axle: The Suspension system is a torsion arm type suspension, with the torsion bar completely self contained in the axle tube, surrounded by four rubber cords. When compressed, the rubber cords push back on the arm, creating suspension. Thirteen foot trailers use a 2200 pound axle. With 7" brakes optional. The 16 foot and fifth wheel trailers use a 3500 pound axle with 10" brakes standard. The torsion axle allows each spindle to operate independently of the other.

2. Bearings: When using the EZ lube axles the bearings run hot the first several hundred miles until they seat in. Bearings should be lubed every 5000 miles and visually checked every 10,000 miles. To lube remove rubber cap from the middle of the grease cover on end of spindle. Inside will be a grease zerk. Use high temperature grease. To check bearings remove from spindle, clean, and look for damage, pitting, or flat spots on bearings.

3. Brake systems: All brakes installed on Scamp trailers are electric brake systems, requiring a brake control and 12 volt power from the tow vehicle. Two areas on the hub need periodic inspection, which can be done when the bearings are checked. The drum surface where the brake shoes make contact, and the armature surface where the magnet makes contact. The brake shoes and the electric magnet also should be checked at the same time for wear. The most common electric brake problem is low or no power at the brake. Each brake has a star type adjustment.

4. Tires: Standard tires on thirteen foot trailers are 13" radials with a C load rating. Sixteen foot trailers and some fifth wheels will use a 13" radial tire with a C load rating. Some fifth wheels will use a 14" tire. Matching tires should always be used. Tire inflation and tire balance are the most important factors in tire life. Inflation pressure should always be as recommended by the tire manufacturer (as indicated on the tire). Over-inflating and under inflation may result in poor tire wear, poor handling characteristics, or poor gas economy. Don't forget to check spare tire pressure. When tire replacement is needed any 13" matching tire may be used. When replacing radial tires care should be taken to purchase radials that are manufactured for trailer use. Many standard radials built for cars have less rigid side walls and will cause the trailer to sway while being towed.

Service and Maintenance-

Jacking up the trailer: On the trailer there are two main beams made out of 3" by 1 1/2" tubing. One on each side of the trailer. Either beam may be used as a point to jack up the trailer. The jack should be placed close to the axle or toward the rear of the trailer. A scissor jack, hydraulic jack, or floor jack should be used to jack the trailer up. A jack is not supplied with the trailer.

Changing tires: 1) Loosen the lug nuts on the tire to be changed. 2) Jack up the trailer on the main beam, usually to the rear of the axle. 3) Remove the wheel using a 13/16" wrench (some older trailers used 3/4"). The lug nuts and spare tire nuts are 1/2" fine thread. 4) Remove the spare tire from the rear of the trailer and mount it on the trailer. Wheel should be tightened on by using an alternate pattern on the lug nuts. Tighten one, skip one, tighten the next one, etc, until all lugs are tight. Torque should be 70-90 pounds. 5) Lower trailer back to ground. Again check lug nuts, and tighten if necessary. Lugs should be rechecked after 200 miles of travel.

Hitches: Bumper or receiver type hitches may be used with the Scamp trailer. Usually a 16 foot trailer will require a class two hitch, which is generally of the receiver type. Consult the tow vehicles owners manual for information on towing capacities for the tow vehicle. Dry weights of the Scamp trailers are: 13 foot, 1100-1200 pounds, 16 foot, 1800-2000 pounds, 5th wheel, 2400-2800 pounds. These weights do not include waste or fresh water, and do not allow for any personal items stored in the trailer by the owner. Usually when options, and personal items are included, several hundred pounds may be added to the trailer. Just water can add over 400 pounds on some trailers if all the tanks are filled.

Hitch ball height: Ball heights are relative. Suspension on tow vehicle, storage of personal items in trailer, water in trailer, will affect correct ball height. So the following information is general.

13 foot trailer- 18" to top of ball.

16 foot trailer- 21" to top of ball.

5th wheel trailer- 45" to top of ball. If side walls on truck box are more than 48" high off the ground a raised axle may be needed.

Winterizing-

- 1. Water system:** Anytime that the outside temperature falls below freezing there is a danger of the water system inside the trailer freezing and causing damage. Two items are needed, a 1 1/16" socket, and some RV antifreeze.
 - a. Open all faucets, including any bathroom shower or sink faucets.
 - b. On the water tanks front left corner is a pet cock valve. Turn it 180 degrees toward the center of the trailer. This opens the valve and should drain the fresh water tank. This should drain out the cold water lines in any trailers not having a 12 volt fresh water pump. Close the pet cock toward the outside wall of the trailer when the fresh water tank is drained.
 - c. Open the service access to the gas hot water heater. Take the 1 1/16" socket and remove the white drain plug from the lower left of the hot water heater tank. Water will drain out of tank, and also drain the hot water lines if they have been opened. Once tank is drained replace the plug.
 - d. Pour RV antifreeze into fresh water tank. Close faucets. Trailers with hand pumps need to be pumped until antifreeze comes out of faucet in steady stream. Pump until sink trap is full of antifreeze. Trailers with 12 volt pumps require pump to be turned on. Open only cold water side of sink faucet until steady stream of RV antifreeze comes out. Fill trap. If bathroom has sink faucet repeat this process there. Also repeat this process through the shower faucet.
 - e. Pour RV antifreeze down the trap in the bathroom and turn on the pump that transfers gray water to the gray water tank. Flush the toilet several times until RV antifreeze appears in the toilet.
 - f. Drain the gray and black water tanks completely.
- 2. Battery:** To prevent battery from discharging over the winter, disconnect the battery. If in a freezing climate, removing battery from trailer and storing indoors can prevent battery from freezing and breaking if discharged. If battery is not disconnected or removed from trailer make sure all twelve volt lights and appliances are turned off.
- 3. Running Gear:** Jack up the axle and block it up to take the weight off the suspension. Leaving the weight of the trailer on the suspension for extended periods while it is stored is extremely hard on the torsion axle. The rubber tends to compress and not relax as fully as before. Relieve tire pressure to 10 or 15 pounds while stored. This extends tire life.
- 4. Propane:** Make sure the propane is off at the tank. It is also wise to make sure all appliances are off.
- 5. Door and Windows:** If the trailer is stored outside, check all windows, service doors, roof vents, and entry door making sure they are properly closed.

Towing Instruction-

1. Have the appropriate hitch installed with the correct hitch ball size.
2. Hook up trailer to tow vehicle. Fasten hitch down and check to make sure hitch is securely in place. fasten safety chains to tow vehicle. Don't move trailer until jacks are up. Front center mount jack should be all the way up.
3. Connect trailer end electrical connector to car end connector. Check running lights, turn signals, and stop lights.
4. Check tire pressure, including spare. Also check for abnormal tire wear.
5. Make sure propane tank is off. Turn off all appliances and water valves.
6. Keep windows and vents closed while traveling.
7. While packing the trailer weight distribution should always be kept in mind. Improper distribution may cause the trailer to sway while traveling. Pack items so that in travel they will not migrate. Breakable items should be packed securely to withstand bouncing around. When possible use non-breakable plates and glasses.
8. When trailer is new check the axle after the first 200 miles. (Axle will be hot at first until easy lube hubs break in). Check lug nuts making sure they are not loosening and hub for excessive heat. Otherwise bearings should be checked once a year or every ten thousand miles. If trailer is equipped with brakes they should be checked at the same time as are the bearings. With the easy tube axles the bearings may be greased at anytime. Just remove the rubber plug out of the grease cap. Inside there will be a grease zerk. By using this grease zerk both inner and outer bearings will be greased. Care needs to be taken not to over grease.

9. Excessive swaying can be the result of several things.
 - a. Improper tire pressure.
 - b. Improper loading, which causes weight imbalance.
 - c. Some vehicles will not interact well with the trailer while traveling. Sway bars may be required to operate normally.
 - d. A loose hitch may cause sway.
 - e. Using radial tires with soft side walls may cause the trailer to sway. Radial tires designed for trailer use will have more rigid side walls to prevent sway.

Electrical System-

In the Scamp trailer will be a converter which contains the 120 volt breakers and the fuses for the 12 volt system. When the trailer cord is plugged into a 120 outlet this converter will run the 120 volt system and convert 120 volt to 12 volt and power the 12 volt system. Underneath the brown plastic panel are the circuit breakers for the 120 volt system and the fuse panel for the twelve volt system. The 120 volt system works just like the 120 volt system in a home. There are between one and four breakers located in the 120 volt panel. They must be turned on for the 120 system to operate. The other side of the panel contains the 12 volt fuses for the 12 volt system. Most campgrounds will have a 30 amp and a 15 amp power supply. The power cord supplied with the trailer is a 30 amp cord. If only a 15 amp supply is available the 30 to 15 adapter must be used to plug into power supply. The dome lights, bullet lights, furnace, power fan, TV antenna all require 12 volt power. The air conditioner, microwave, and converter all require 120 volt power.

Power Converter: The power converter converts 120 volt power to 12 volt power, charging the 12 volt battery at the same time. This allows the user to fully use the 12 volt system without fear of running out of battery power. The power converter is fully automatic. There is a fan on the converter which will come on occasionally as needed. There will be one or more fuses in the converter fuse panel which control interior 12 volt circuits. There is a wiring diagram on the last page of this manual. 120 volt circuits will have dotted lines and the 12 volt circuits will have solid lines. Any trailers without all the appliances listed will have the associated wiring deleted from that trailer.

Battery Pack: 12 volt power is essential for several of the optional appliances and some of the lights. Once the battery pack is installed it is fully automatic and has no off/on switches. Deep cell batteries with wing nut attachments are used for easy removal when needed.

Gas System-

Several of the appliances use propane gas to operate: the stove top, furnace, gas hot water heater, and refrigerator. Gas is supplied through the use of a 20# propane tank (double tank option is available). Gas flow is controlled by a gas regulator which is connected by a gas hose to a bulkhead fitting on the trailer. All fittings to appliances are flared. If any appliances are to be added, repaired, or added, take special care to tighten all fittings carefully, using only flared fittings if adding an appliance. **Do not use any gas appliance after repairing or changing the system without checking for gas leaks. Do not smoke, use lights, or matches until this has been done.**

To use the propane system the gas must first be turned on at the tank. Initially the gas lines will be filled with air which must be cleared for most of the appliances to operate correctly. Lighting the drop-in stove top first is the best way to clear the line of air. Then light the other appliances. Note that the hot water heater must have water in it before lighting.

Water System-

Water systems can vary greatly in Scamp trailers depending on the unit purchased. Every trailer has a 12 gallon fresh water tank located underneath the right side rear bunk. To fill, open the fresh water cap at the right rear of the trailer and use either a bucket or a hose to fill the tank. The tank has an overflow which will emit water underneath the trailer when the tank is completely filled. A 3/8" clear tubing connects the water tank to the hand pump located on the sink. In trailers with 12 volt water pumps the 3/8" hose connects to the water pump, which connects to the rest of the water system with 1/2" high pressure tubing.

Hand pump: Operates by pumping the handle up and down. Placing the handle in the back "Prime Locked position" after use will keep the pump ready for instant water during the next use. To winterize position handle down to release prime and drain pump.

Demand pump: Are installed in any trailer with a toilet or shower and by special order. hand pumps are deleted on trailers with demand pumps. All demand pumps work off the 12 volt electrical system, and are filtered. To operate the demand pump the switch on the side of the cabinet must be turned on. The sink faucet, toilet, and shower are supplied by this pump.

Shower: Water supply for the shower and toilet follows the contour of the trailer where the floor meets the wall. Since the Scamp trailer has very little drop from front to rear, the gray water drains slowly out of the shower area. A 12 volt gray water pump has been installed to aid the gray water removal from the shower area. There will be a switch in the shower area to activate this pump. Located to the right of the toilet in a side bath model, and to the left of the shower controls in a front bath model. This pump should only be turned on when showering. The shower operates by turning water on at the shower valve, and by the volume control on the shower handle itself. If the grey water pump quits evacuating water check the filter located between the shower trap and the pump. The clear part of the filter turns off counter clockwise.

Waste water tanks: Black water tank (for toilet water) is located under the toilet and holds 9 gallons. Gray water tank (shower and sink water) is located under the rear dinette area of trailer, and holds 21 gallons. Both tanks have venting for displacement and odor. When waste water tanks have been used they should be emptied before traveling. Most RV parks have facilities for this. A ten foot three inch sewer hose is supplied in the hose carrier (the white cylinder mounted on the front of the trailer). Remove the sewer hose by unscrewing the cap on either end of the hose carrier. Both black and gray water tanks have termination hose fittings that the sewer hose connects to.

Storage Compartments-

Scamp trailers have various inside storage compartments. The front bunk bed has three storage compartments. One in the center accessible from the front, where the sani potti is normally stored. The other two access areas are in the top of the lower bunk, underneath the cushion. Each rear bunk also has a top access storage area, the door side bunk containing the water tank. These front and rear storage areas are best used for clothing, bedding, or other lighter items.

Heavy items should be stored as near to the center of the trailer as possible. This will help balance the trailers weight. Heavy foodstuffs (canned foods), should be stored in the center cabinets of the trailer.

Upper cabinets, some of which are optional, should also not be overloaded with heavy items. Upper cabinets mounted in the center of the trailer usually will have better support than end mounted cabinets.

In deluxe trailers, depending on configuration, storage areas vary greatly according to the placement of appliances.

Campground Setup-

After choosing a camping spot, which may be a drive-through or back-in spot, park the trailer. At first this may require a little maneuvering around until backup skills are improved. Second, if 120 volt power is available plug the trailer in with the 30 amp power cord. Third, if the trailer has a refrigerator, turn it on to 120 volt power. If no electric power is available start the refrigerator on gas. Fourth, level the trailer. This can usually be done with the rear jacks and the front jack. If the ground is uneven wood blocks must be used. Fifth, water and sewer lines may be hooked up. Sixth, once hot water heater is filled it may be lighted.

Troubleshooting and Repair-

Water Leaks: The first step when any leak occurs is to isolate the leak, that is, find out where and what exactly is leaking. A leak may occur in one spot, but the water may migrate to another spot and appear elsewhere in the trailer. Always dry wet areas as soon as possible. This may require a fan or extra ventilation. Leaks should always be repaired as soon as possible.

1. Window leaks: May occur in two different ways. 1) Around the seal of a window, which is repaired by removing the window and installing new seal or by caulking with silicone sealant. 2) Windows may leak through the window itself. This could be a result of weep holes being plugged or faulty seal around the glass.
2. Other exterior leaks: 1) Roof vents. If the lid is cracked causing leaks it should be replaced. A leak through the frame of the vent requires caulking. 2) Rivet leaks. May be repaired by re-caulking with silicone. If leak persists rivet may need replacing. 3) Appliance leaks. Usually caulking will fix the leak. Sometimes in horizontal rain or certain driving conditions the refrigerator vents will leak water. This is usually a isolated incident.
3. Interior leaks: 1) Fitting leaks. Tighten hose clamps or replace fitting, as needed. 2) Water line leaks. Usually indicates a break in the line. Replace and repair. 3) Interior appliance or pump leaks. This is often a result of poor winterizing. Often requires replacement of leaking appliance. 4) Toilet leaks. On the flush valve usually means frozen and broken. Needs replacing. Toilet tank leaks. May need a replacement seal or the tank may be broken or damaged. 5) Sink or shower trap leaks. May need to be caulked and if broken replaced.

Electrical Problems: May be the result of poor contact, poor ground, corrosion on the trailer car connectors, blown fuses, or defective power supply. Often a test light is needed to solve the problem. Separate the tow vehicle from the trailer when diagnosing most problems. This pinpoints problem in trailer or tow vehicle.

120 volt problems:

1. Check power supply.
2. Make sure breakers are 'ON' in breaker box in trailer.
3. Check power cord for conductivity and good connection to breaker box.
4. Check ground.
5. Check for direct short.

12 volt problems:

1. No power from battery.
 - a. Fuse in converter fuse panel or at the battery is bad.
 - b. Battery is low on charge, defective, or not being correctly charged.
 - c. Ground is defective.
2. No power from tow vehicle.
 - a. Check battery fuse on tow vehicle.
 - b. Determine if car or trailer connector is corroded and non-conductive. WD-40 or something similar can prevent corrosion.
 - c. If brake lights do not work check brake switch.
3. 12 volt running and signal light problems.
 - a. Check bulbs.
 - b. Check ground.

- c. Check car and trailer end connectors.
- d. Check wiring connectors.
- 4. Converter problems.
 - a. Check 120 power supply.
 - b. Check ground.
 - c. Check fuses located in front of converter.
 - d. Check individual lines with test light if appliances do not work.
- 5. Appliance electrical problems.
 - a. Check power to appliance.
 - b. Check ground.
 - c. Check wire connections.
 - d. If all above check out properly then appliance may have interior problems that will require repair.

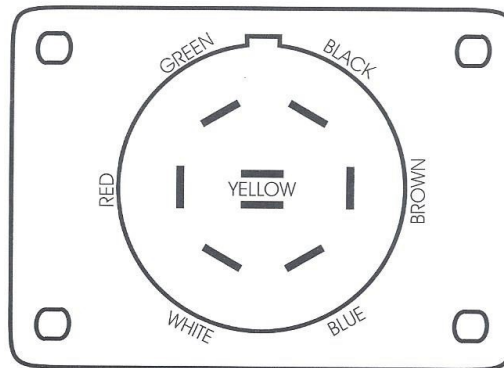
Fiberglass Problems: Fiberglass is easily repairable. Boat repair facilities and auto body shops all can do fiberglass work. Most auto parts stores carry fiberglass repair kits. To repair:

- 1. Prepare surface to be repaired.
- 2. Repair with strips or patch as required.
- 3. Let fiberglass set up completely.
- 4. Sand smooth as needed for painting.
- 5. Paint.
- 6. Buff out paint after it completely sets up.
- 7. Stress cracks (small hairline cracks in paint), may appear in Gelcoat eventually but do not indicate structural damage. They result from Gelcoat and fiberglass backing not flexing at the same rate.

Appliance Problems: Consult specific appliance manuals.

Electrical Connectors -

The towing vehicle will need to be outfitted with the proper electrical connector to operate the trailer lights, interior 12 volt lights, and trailer brakes (if so equipped). The 7-prong jack is for trailers equipped with or without electric brakes. The wire color legend below indicates the wire colors used for the Scamp wiring harness.

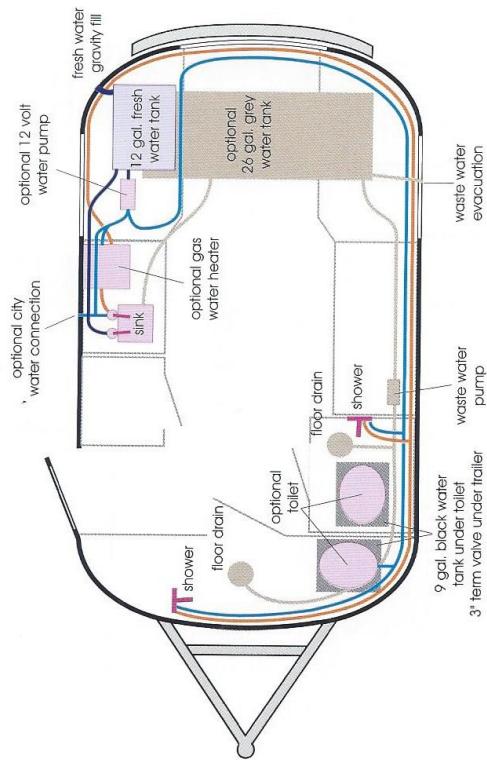


Green	Tail Lights and Marker Lights
Red	Left Turn and Brake Light
Brown	Right Turn and Brake Light
Black	Battery Charge
White	Ground
Yellow	Backup Lights
Blue	Electric Brakes

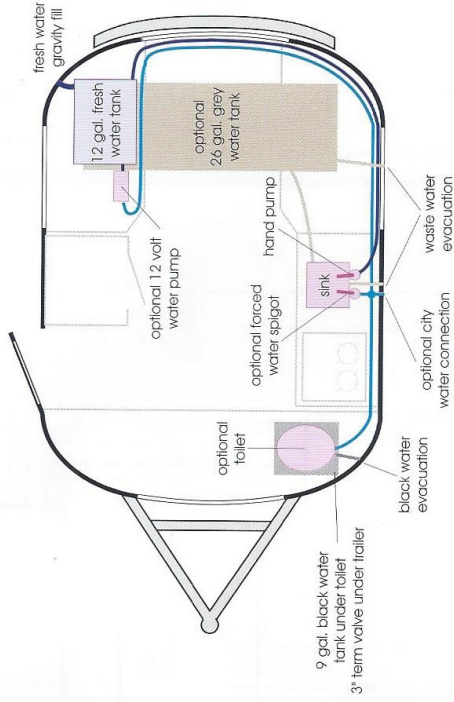
Notes on Electrical diagram on last page.

1. Because Scamp builds trailers to meet the desires of the customer, very few trailers are constructed the same way. Thus, the wiring diagram may not specifically represent your trailer. It shows how appliances are connected, which lines are fused, and how the lights are connected to the power supply. Use this diagram only as a reference.
2. Each 12 volt water pump, whether fresh or gray water, will have an on/off switch.
3. Only two 12 volt lights are shown. Some trailers have up to eight. All lights would be wired into the 12 volt system as shown, but in different locations. Sometimes extra lights use a 16 gauge green wire for power instead of black.
4. The 120 volt breaker box contains one to four 15 amp breakers, as needed for the appliances in the individual trailer.

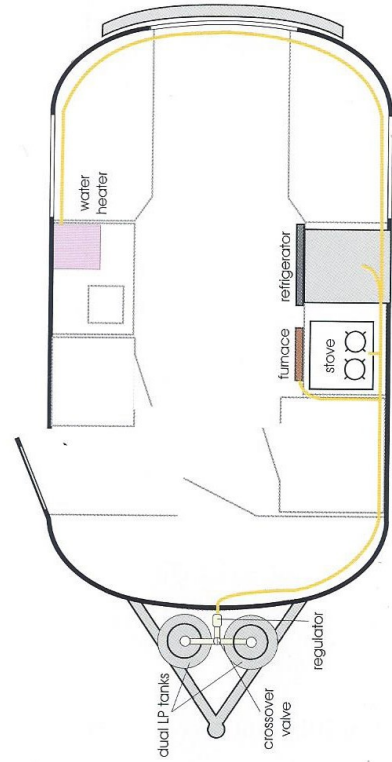
NOTES -



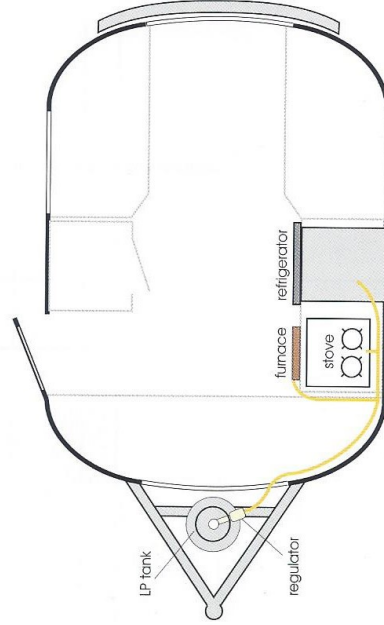
16' water layout



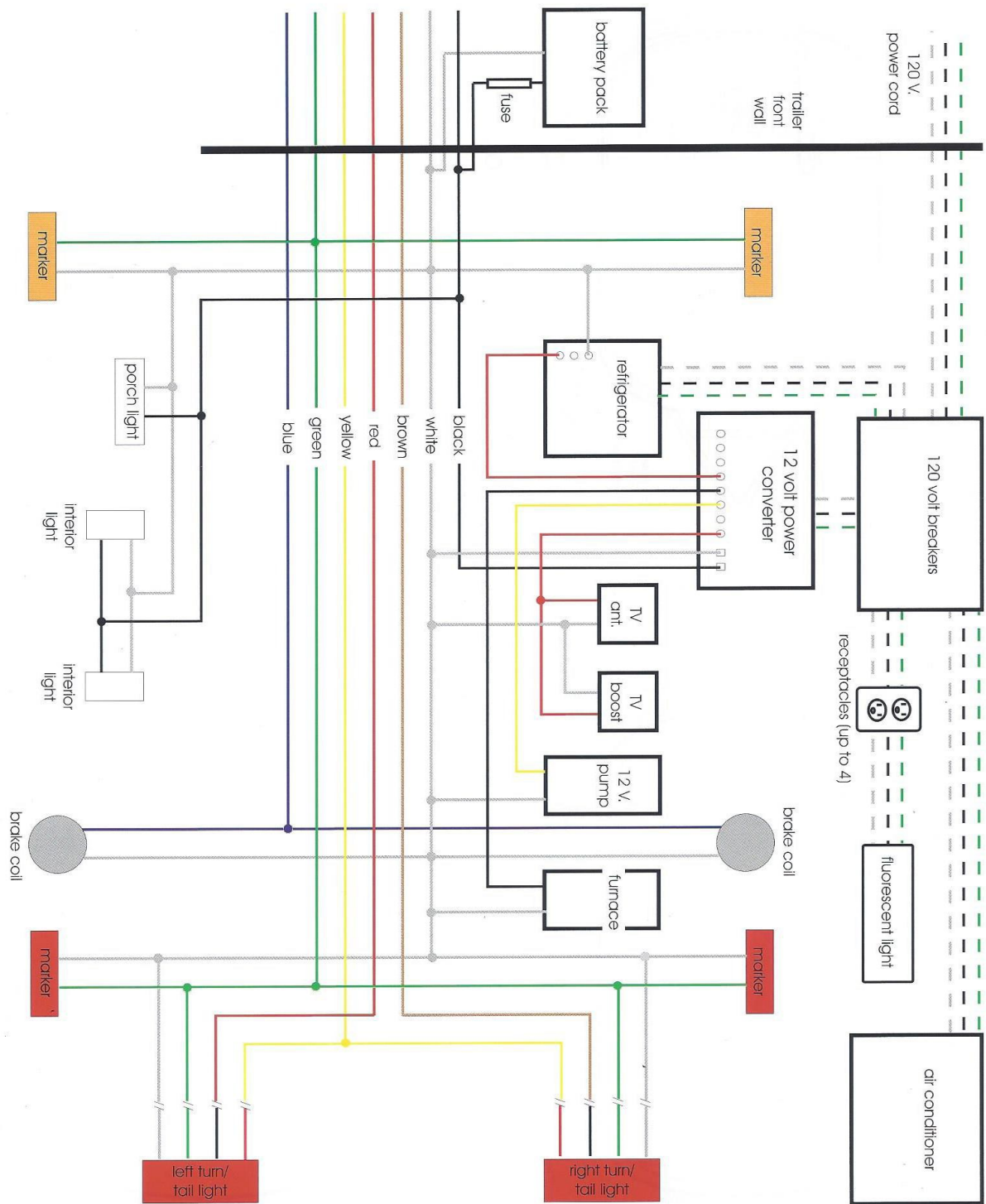
13' water layout



16' gas layout



13' gas layout



Electrical Diagram - See notes for Electrical Diagram on page 12.