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Dolphin  
RV Products

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# OWNER'S MANUAL

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**DOLPHIN**

## FORWARD

Welcome to the growing group of value conscious people who drive Dolphin motorhomes. We are proud of the quality and value that we build into each motorhome we manufacture.

We invite you to read through this Owner's Manual. It is designed to acquaint you with the product that we build. Although we build the motorhome section of the unit, many of our component suppliers, such as the chassis manufacturer and major appliance manufacturers, provide separate warranty and instruction manuals on their individual products. These manufacturers' warranty and instruction manuals and pamphlets have been enclosed in the **Important Papers** envelope in your motorhome. Please read each one carefully, as they more thoroughly describe proper operation and warranty procedures pertaining to that specific product.

Please leave this Owner's Manual in the motorhome at the time of resale. The next owner will need this information also.

Read all warning and caution labels in this Manual.

**Warnings** provide information about your personal safety.

**Cautions** provide information about possible damage to your motorhome.

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# WARRANTY INFORMATION

We have listed phone numbers for components used in the manufacture of your motorhome that have separate warranty, and specific service requirements.

**DO NOT HAVE WARRANTY WORK PERFORMED ON YOUR UNIT WITHOUT AUTHORIZATION FROM DOLPHIN OR THE SELLING DEALER. DOLPHIN'S PHONE NUMBER IS (213) 367-9227.**

## WARRANTY PHONE NUMBERS

Component	Manufacturer	Phone Number
Refrigerator	Dometic	(213) 968-9431
Range	Wedgewood	(615) 643-4556 (714) 524-9911
Water Heater	American Appliance	(213) 870-8541
Toilet	Thetford	(714) 993-7500
Wall Heater	Hydro Flame	(800) 654-4614
Dash Air Cond.	Frigette	(800) 433-1740 (800) 433-2910
	Frigi Cool	(800) 527-0839
Stereo	Audio-Vox	(213) 926-7758
	Nipondenso	Toyota Dealers
Water Pump	Shur Flo Pumps	(714) 533-7700
Wheels	Sun Rose Tire Co.	(213) 564-6715
Tires	Bridgestone Tire Co.	(213) 518-2140
	OR CHECK YELLOW PAGES FOR NEAREST DEALER	
Tires	Other than Bridgestone, Dolphin	(213) 367-9227
Roof Air Cond.	Coleman	(213) 946-5567
Monitor Panel	Larson Electronics	(714) 528-7100
Convertor AC-DC	Progressive Dynamics	(616) 781-4241
	Ask for Service Manager	

## TIRES - WHEELS - SUSPENSION - LOADING

**Warning** Lug nuts must be properly tightened, between 65 and 85 ft. lbs. It is important to be in this range! **DO NOT OVERTIGHTEN!** Lug nuts should be checked periodically, after the first 100 miles, and 500 miles, and every 30 days thereafter, or until you are sure they are not loosening up. Loosening up is generally caused by paint build-up at the lug and mounting surfaces. It is highly recommended that the wheel lug nuts be properly torqued and inspected by qualified personnel.

**Warning** Check both dual tires for flats frequently. Driving even short distances with one dual flat can cause a tire fire. Tire fires are difficult to extinguish and can engulf the entire vehicle.

### RECOMMENDED TIRE PRESSURES

Toyota 750 x 14, or G78 x 14	32#	Chevrolet & Ford 8:75 x 16:5	60#
Datsun L-12 E78 x 14	32#	Chevrolet & Ford 8:00 x 16:5	50#

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

### SPARE TIRE & WHEEL

To lower the spare tire housed under the Toyota or Datsun motorhome, insert the crank in the slot just above the spare, and turn the crank counterclockwise.

**Warning** The factory supplied jack that is furnished with the vehicle may not be heavy enough to lift your loaded rig. Prepare ahead of time. Get a heavy-duty jack to meet your weight requirements.

**Warning** Do not overload vehicle.

Gross vehicle weight ratings

	GVW	Wheelbase
Chevrolet Model G31332	8,900 LBS.	125"
Chevrolet Model G31632	10,500 LBS.	146"
Ford Model E350	11,000 LBS.	138"
Toyota	4,800 LBS.	132"
Datsun	4,800 LBS.	132"

## **TIRES - WHEELS - SUSPENSION - LOADING** Continued

**Warning** Do not tow any type of trailer with the standard hose carrying bumper. If a reinforced bumper is installed, take into consideration the G.V.W., the chassis, and the load rating of the rear tires, as well as the hitch weight of the towed trailer.

**Warning** Do not tow behind Toyota or Datsun motorhomes. These vehicles were not designed for towing purposes.

**Suspension** Dolphin has increased the weight carrying capabilities on the Toyota and the Datsun with the addition of overload springs, dual wheels, and Gabriel gas shocks.

### **LOADING INSTRUCTIONS**

**Warning** Carry only light loads on the roof rack. We do not recommend storage pods.

Load all heavier items as close to the floor as possible. Use overhead storage cabinets for lighter items such as clothing, cereals, etc.

**Warning** Do not allow passengers in the cabover while vehicle is in motion, as the additional high center weight could cause the vehicle to become unstable.

**Warning** Motorcycles and bicycles should not be carried on the rear bumper of the vehicle as the bumper was not designed for it, and the extra weight can make steering difficult.

## ELECTRICAL

**Electrical Control Center** Your motorhome is equipped with a 110 Volt A.C. to 12 Volt converter, which is found in the electrical control center. This system allows all lights to operate on either voltage.

To operate the system, simply plug your unit into the 110 power using the cord attached inside of the cabinet marked Electrical Access. The cord has the California required plug and may require an adapter. When you are plugged in, you are automatically converting the 110 power to 12 volt D.C., and you are no longer drawing power from your battery source.

There are several 110 volt outlets that are hooked in a bypass circuit. There is a 15 Amp breaker on this circuit located on the Electrical Control Center panel. Turn to ON. There is also a 20 Amp circuit breaker on the control panel. This breaker is provided for a roof air conditioner. If your unit is not equipped with a roof air conditioner, the wiring has been run to a junction box for future use.

**Caution** Do not store anything on, or around the power converter, as it requires an unrestricted air flow to dissipate the heat that it generates.

**Warning** When utilizing 110 Volt AC utility supply, the polarity of the motorhome must match that of the receptacle to which it is to be connected. To accomplish this, there is an inexpensive, commercially distributed adapter available through most R.V. retail outlets. Improper polarity matching could cause personal injury.

**Warning** When utilizing 110 volt supply cord, make sure all three prongs of the supply cord are plugged into the receptacle. Improper grounding of the motorhome could result in personal injury or damage to equipment.

## LOW VOLTAGE FUSING & WIRING

12 Volt in-line fuses are provided for the water pump, the interior lights and the T.V. outlet. These fuses can be found in the electrical control center panel by removing the screw holding the small access door closed on the upper part of the control center panel. The monitor panel has a 15 Amp fuse located behind the panel.

### 12 Volt Main Circuit Fusing

There is a 20 Amp in-line fuse for all 12 Volt interior power. This fuse is connected to the auxiliary power battery terminal. NOTE: this fuse is normally removed and taped to the battery prior to sale by the dealer to keep shoppers from turning on lights and pumps, and running down the battery.

Motorhome tail and directional lights are wired into the vehicle's electrical system, and can be found by consulting the vehicle's owner's manual provided by the chassis manufacturer. This manual also provides information on the following items: Headlights, dash lights, radio, air conditioner, etc.

### WARNING

DO NOT replace circuit breakers or fuses with those of a higher current rating than those installed when your unit was purchased. Overfusing may cause the circuit wires to overheat and start a fire.

MAIN CIRCUIT: Use a 20 Amp fuse.

WATER PUMP: Use a 15 Amp fuse.

INTERIOR LIGHTS: Use a 15 Amp fuse.

T.V.: Use a 15 Amp fuse.

ROOF AIR COND.: Use a 20 Amp circuit breaker.

110V INTERIOR SYSTEM AND OUTLETS: Use a 15 Amp circuit breaker.

### 12 VOLT ELECTRICAL COLOR CODE

Interior Lights — Black

Ground (all) — White

Left Turn Light — Yellow

Right Turn Light — Yellow

Stop Light — Red

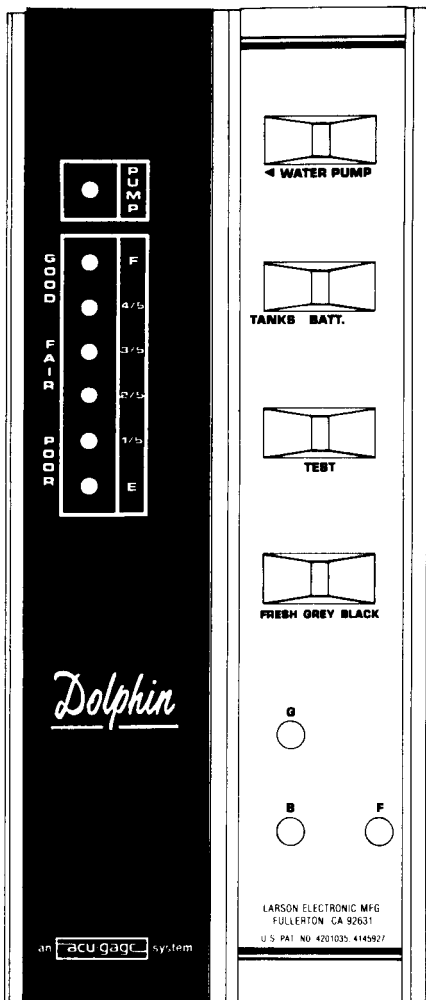
Running Lights — Green

Back-Up Light — Gray



# MONITOR PANEL

We are currently using this monitor gauge, panel; however, the styles and functions change from time to time. If the monitor panel in your unit is different, consult the manufacturer's guide provided with the unit.



## MAKING A MEASUREMENT

- ← 1. Set switch to either TANKS or BATT. (battery).
- ← 2. For battery reading, just push the test switch.
- ← 3. For TANKS, select either FRESH (water), GREY (dish and shower waste water), or BLACK (septic waste water) and then push the test switch.

## CALIBRATION

To calibrate your monitoring panel, simply fill all of your tanks with tap water. Set the selector switch to the tank to be calibrated. Press the test switch and, using a small flat bladed screwdriver, rotate the adjustment located behind the small hole on the face of the panel and identified by the small black letter above (F-fresh, G-grey, B-black). As the adjustment is turned, the lights will turn on and off in sequence. When the last light (marked F) is just fully lit, the tank is properly calibrated.

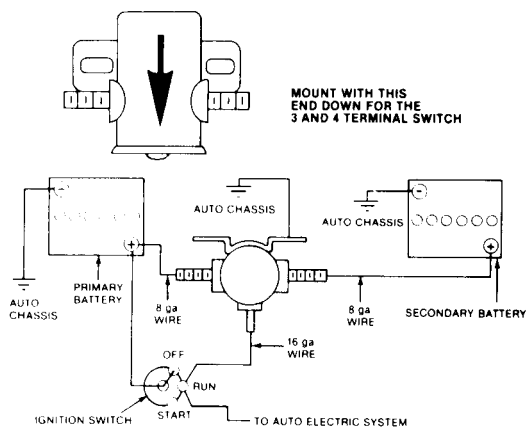
## AUXILIARY BATTERY

Your Dolphin Motorhome is equipped with an auxiliary battery. This battery, if supplied by Dolphin (usually a Sears Die Hard), is an R.V. marine deep cycle model, whose purpose is to provide 12 volt power to the Dolphin coach. The auxiliary battery is isolated from the main battery by an automatic switch located on the engine compartment wall. This switch automatically allows both the main battery and auxiliary battery to be charged while the vehicle engine is running and separates the two batteries for use; that is, the main battery supplies power to start the vehicle engine, and operate the automotive 12 volt system, such as lights, radio, wiper, horn, etc., without drawing from the auxiliary battery; and the auxiliary battery powers the motorhome without drawing from the main battery. A wiring diagram of the battery switch follows.

**NOTE:** The auxiliary battery will be found in the engine compartment of all vehicles, except the Datsun. On the Datsun, the battery will be found in the coach on the left side in a battery compartment.

**Battery Charger** Your unit has a battery charging system built into the Electrical Control Center. When you are plugged into 110 Volt power the battery charger is automatically re-charging your auxiliary battery. **NOTE:** Consult Electrical Control Owners Manual for operation and Warnings.

### 3 TERMINAL SWITCH MODEL NO. 7000



THE SWITCH HOUSING PROVIDES THE GROUND RETURN FOR THE 3 TERMINAL SWITCH. THIS ELIMINATES THE NEED FOR A GROUND RETURN WIRE WHEN MOUNTED ON AUTO CHASSIS.

**NOTE:** THE WIRE SIZE INDICATED FOR BATTERY CONNECTION IS MINIMUM REQUIREMENT TO IMPROVE THE SECONDARY BATTERY CHARGE RATE. INCREASE THIS WIRE SIZE

## BATTERY Continued

**Warning** Before removing any battery cables or battery, make sure all of the 12 volt equipment in the motorhome is off, and the power cord has been disconnected.

**Warning** To prevent wiring damage, it is essential when replacing the cables on the battery, or when using a "booster battery" that the positive post and the positive cable be attached to the posts marked (+) plus and (-) minus, and the minus cable be hooked to the minus terminal. If a faster charger is used while the battery is in the motorhome, disconnect both battery cables before connecting the charger. Never attempt to charge or boost a frozen battery!

**Warning** To jump a battery, attach the final negative cable connection to the frame or engine.

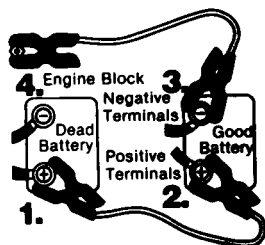
**Warning** Never expose battery to open flame, or electric sparks. Batteries generate a gas which is flammable and explosive. To avoid personal injury or damage to your clothing, do not allow battery fluid to contact eyes, skin, or fabric.

**Warning** Do not lean over the battery when attaching clamps or allow the clamps to touch each other.

## JUMP STARTING

### TO JUMP-START, REMEMBER:

- ☒ Batteries same voltage.
- ☒ Both negative posts grounded.
- ☒ Check fluid, check for freezing.
- ☒ Cars not touching.
- ☒ Ignitions off, accessories off, gears in "park" or "neutral," brakes on.
- ☒ Attach clamps in order shown, remove in exact opposite order.



## JUMP STARTING *Continued*

### CAUTIONS

The instructions below must be followed **exactly** or personal injury (particularly to eyes) or property damage may result from battery explosion, battery acid, or electrical (short circuit) burns.

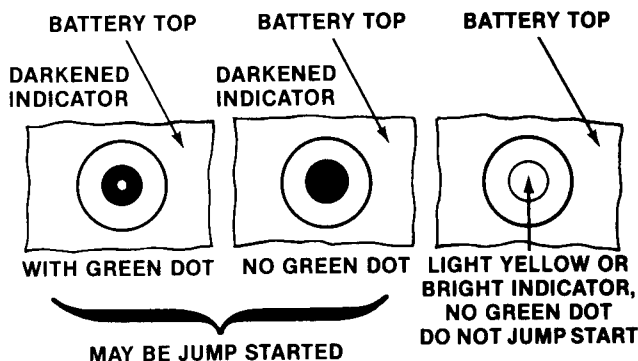
- THE MAJOR SAFETY PRECAUTION IS TO MAKE THE FINAL CONNECTION TO GROUND ON THE ENGINE AT SOME DISTANCE FROM THE BATTERY. THIS HELPS REDUCE THE CHANCE OF AN EXPLOSION DUE TO SPARKS.
- To lessen the chance of an explosion, never expose the battery to open flames or electric sparks. Also do not smoke near the battery. Batteries give off a gas which is flammable and explosive.
- To lessen the risk of injury in case an explosion does occur, **wear eye protection** or shield your eyes when working near either battery. Do not lean over a battery.
- Do not allow battery fluid to contact eyes, skin, fabrics, or painted surfaces because battery fluid is a corrosive acid. **Flush any contacted area with water immediately and thoroughly. Also get medical help if eyes are affected.**
- To lessen the risk of a short circuit, remove rings, metal watch bands and other metal jewelry. Also do not allow metal tools to contact the positive battery terminal (or metal in contact with it) and any other metal on the vehicle.

Make certain when attaching the jumper cable clamps to the positive terminals of the batteries that neither clamp contacts any other metal.

1. This vehicle has a 12 volt battery and a negative ground electrical system. Make sure that the other vehicle also has a 12 volt battery and negative ground. Its owner's manual may provide that information. **If unsure of voltage (or if the voltage and ground are different from your vehicle), do not attempt to jump start as personal injury or severe damage to electrical and electronic parts may result.**
2. Position the vehicle with the good (charged) battery so that the jump starting cables will reach. **Do not allow the vehicles to touch, and check to see that bumpers do not touch.**
3. Turn off all electrical motors and accessories in both vehicles. Turn off all lights except those needed to protect the vehicle or illuminate the work area. Turn off the ignition, apply the parking brake firmly, and put the automatic transmission in "Park" (manual transmission in "Neutral") in both vehicles.

## JUMP STARTING Continued

4. If the discharged battery has filler caps, check the fluid level. **(Do not use an open flame to check and do not smoke.)** Add clear drinking water to the proper level if low, and replace caps before jump starting. If the battery is a Delco sealed type, do not attempt to jump start the vehicle, or charge it, or test the battery if the center of the test indicator in the battery is bright or light yellow. Instead, install a new battery.

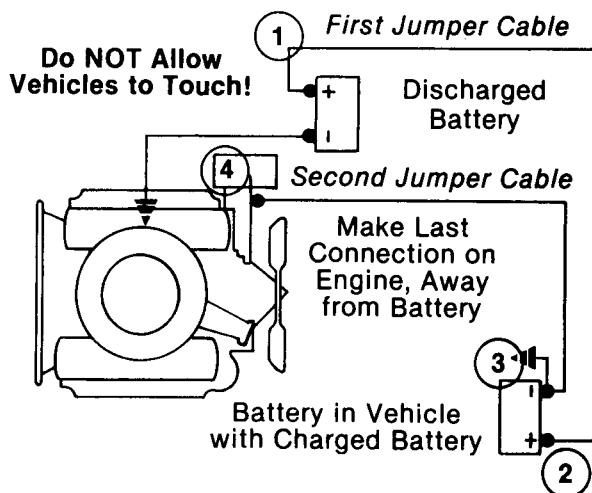


### 5. Jumper Cable Connection Instructions:

- Connect the first jumper cable from the positive "+" (red) terminal on one battery to the positive "+" (red) terminal on the other battery. Never connect "+" (red) to "-" (black), or "-" to "+".
  - Next, connect one end of the second cable to the grounded negative "-" (black) terminal of the good (charged) battery.
  - Lastly, connect the other end of the second jumper cable to a solid, stationary, metallic point on the engine of the vehicle with the discharged battery but at a point away from the battery — 18 inches (450 mm) or more from the battery if possible. Do not connect it to pulleys, fans, or other parts that move. Beware of touching hot manifolds which can cause severe burns. (The MOUNTING BRACKETS for the Delcotron generator, or the air conditioner compressor, generally make a good point for this final ground attachment point. Take care that the jumper cable does not contact moving parts on or near the generator or compressor.)
6. Start the engine on the vehicle with the good (charged) battery and run the engine at a moderate speed.

## JUMP STARTING Continued

### Make Connections in Numerical Order



7. Start the engine of the vehicle that has the discharged battery.
8. Remove the battery cables by reversing the above sequence exactly. Start by removing the last clamp first; that is, remove the jumper cable from the engine of the vehicle with the discharged battery as the first step.

## LP-GAS SYSTEM

As with other systems in your unit, all components have been tested and approved for use in recreational vehicles by a nationally recognized testing laboratory. When properly handled, LP-gas will provide you with trouble-free operation of your heat producing appliances.

LP-gas (liquified petroleum gas) is a material composed of various hydrocarbons such as propane, propylene, butanes, butylenes, or a mixture of them. In its gaseous form (vaporized) it is colorless and carries an added garlic-like odor for detection. Besides being flammable, it is potentially lethal to inhale. LP-gas is compressed into liquid form for storage and transportation. It is also known as bottle gas. Propane gas will vaporize during extreme cold (to 44 °F below zero), while butane will not vaporize below 30 °F. Most LP-gas fueling stations sell only propane for RV's.

The LP-gas tank mounted in your unit contains LP-gas in liquid form under high pressure. As fuel is used, vapor (LP-gas) passes from the top of the tank through a regulator which reduces the pressure to about 6½ ounces per square inch. Vapor at the low pressure is then transferred through the gas distribution lines for appliance use.

### **WARNING**

Periodically check your gas system for possible leaks. Although the entire system and its attached appliances have undergone extensive factory testing for leaks, road vibrations could cause connections and fittings to develop leaks. Usually you can detect these leaks by the strong odor of garlic or onions. If you do encounter this odor, turn off all open flames immediately and commence a systematic search for leaks throughout the gas system. Use a bubble solution or soapy water, NEVER A MATCH, on connections and fittings. Bubbles will appear at the leaky point. When tightening connections, use two wrenches with opposing torque to prevent twisting of copper tubing. If the leak doesn't show up in the manifold or copper tubing distribution system, then check the appliances.

**Warning** Do not use a detergent containing ammonia or chlorine when testing gas lines for leaks, as they may cause a chemical reaction causing corrosion to the gas lines, resulting in dangerous leaks. Never use an open flame to test for gas leaks. Use a mild soapy water for testing lines.

### **LP-GAS REGULATOR SETTING**

Never attempt to reset the gas regulator yourself. Have an authorized service agency make any regulator adjustments. Even a little amount of pressure over the recommended 6½ ounces PSI (or alternate method 11 " water column) can cause damage to appliance regulators.

## LP-GAS SYSTEM **Continued**

### **WARNING**

#### **FILLING LP-GAS TANKS**

The main valve on the LP-gas tank should be tightened by hand only, using caution not to over-tighten. The valve is designed to satisfactorily close with only a reasonable amount of tightening. Continual over-tightening will eventually damage the valve and will require its replacement. If a valve is replaced, always replace it with the same type.

When LP-gas tanks are filled to the proper level, there is available space for safe expansion of the vaporized liquid. If your tank becomes overfilled and is not allowed to "bleed off" before using, with the LP-gas system, it may gain pressure due to exposure to high temperatures and will begin "blowing off" pressure from the relief valve. This can be detected by the strong odor around the tank, and can be heard close up. Keep all open flames away from this area. It is best to remove the bottle, take it to a safe area away from open flames or sparks, and bleed off the excess pressure by opening the valve and closing it when discharge has been sufficient.

### **LIQUIFIED PROPANE LPG**

**Warning** Never allow the LPG tank to be filled above the 80% level. Make sure the motorhome is level when filling. It is possible to accidentally overfill the tank if the vehicle is unlevel; especially if the fill valve is on the uphill side. 20% of the tank area must remain empty to allow gas to vaporize.

**Warning** When filling the motorhome with LPG, or gasoline, be sure all pilot lights are out.

**Warning** Because of the extreme flammability of LP-gas, and its heavier than air qualities, do not smoke or expose the tank to an open flame while near a refueling area. Never use an open flame to test for gas leaks. Replace all protective covers and caps on LP system after filling.

**Warning** Do not alter or remove LP gauge at any time.

**Warning** LP-gas containers are equipped with safety devices which relieve excessive pressure by discharging gas to the atmosphere.

### **DO NOT FILL CONTAINER(S) TO MORE THAN 80% CAPACITY**



## LIQUIFIED PROPANE LPG *Continued*

This label has been located near the LP-gas container.

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.

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

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

**Warning** Do not bring or store LP-gas containers, gasoline or other flammable liquids inside the vehicle. Fire or explosion may result.

**Warning** Portable fuel-burning equipment, including wood and charcoal grills and stoves shall not be used inside the recreational vehicle. The use of this equipment inside the recreational vehicle may cause fires or asphyxiation.

## SPACE HEATER

Your Dolphin R.V. has a thermostatically controlled LP fired space heater with a blower. The unit has an electronic pilot light ignitor. Please read the entire manual supplied with this unit for complete operational instructions and BTU size.

## WATER HEATER

Your Dolphin R.V. is equipped with a 6-gallon, fast recovery, LPG fired heater with a match lit pilot light. Please read the instructions printed on the inside cover of the water heater, and read the manufacturer's instructions and warranty information supplied with this unit. The water heater is automatically filled with water when your water pump is on and will stay filled with water, even when your water supply tank is empty. The only way the water tank can be drained is through the drain on the water tank itself. Consult manual for location.

## GAS RANGE & OVEN

**Warning** The control knobs for the burners must be pushed in prior to turning on your burners. Be sure that the knobs spring back out when in the off position, otherwise there may be gas leaking.

For safety reasons there are no continuous burning pilot lights on the range top. There is a pilot light in the oven which will need to be lit prior to using the oven. Consult manufacturer's literature provided for the range operation.

**Warning:** IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING

Cooking appliances need fresh air for operations. Before operating:

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

This warning label has been located in the cooking area to remind you 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, and 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 appliances are used for long periods of time.

## REFRIGERATOR

Your Dolphin R.V. is equipped with a 2-way combination gas-electric refrigerator. Use your propane while in transit, and your 110 volt system when you are plugged into external power. In both systems there is no audible sound. Consult the refrigerator's manual for proper operation and instructions.

### **Caution**

To obtain proper performance from the refrigerator and prevent damage to the cooling unit, make certain the motorhome is level side to side and front to rear when parked. When the motorhome is in motion, the continuous movement will not affect the refrigerator since the rolling and pitching action will prevent pockets of liquid from forming. If the motorhome is parked in an out of level position for more than one hour, the refrigerator must be turned off.

**Caution** Do not use metal or sharp objects to remove frost accumulation from the freezer, as damage to the interior surface may result.

### **FRESH UP?**

Your refrigerator will smell better if you put a couple of charcoal briquettes inside. They will absorb odors like a charcoal filter.

## TOILET

Your toilet, known as a marine or fresh water flush type, is mounted to the floor and plumbed into the water system and drains into a waste holding tank. The toilet is flushed by pulling forward on the black lever located at the rear, top area behind the seat. The white lever is to rinse the bowl by also pulling forward. A small fresh water reservoir built into the toilet assures the restoration of the water seal even if the toilet is flushed with the water turned off. The toilet requires no preparation prior to use.

**Caution** Although many detergents and bleaches have a deodorizing effect, they should not be used to clean or deodorize the toilet or holding tank. These could damage the seal in the toilet or the holding tank valve.

## WASTE WATER HOLDING TANK

The toilet waste holding tank is located directly beneath the toilet and should be primed with one gallon of water and the recommended amount of chemical. To drain waste holding tank, remove the cap from the drain outlet and attach the 3" drain hose supplied with your unit to the outlet, and pull the release valve. Most dump stations are equipped with drain rinse water. After you dump your waste tank, close the valve and insert the water rinsing hose into the top of the toilet and fill the holding tank partially with rinsing water and evacuate again. This will assist in moving lodged waste out of the tank and also clean the inside of the drain hose. Store the drain hose in the rear bumper.

## **WASTE WATER TANK CHEMICALS**

There are many waste tank chemicals on the market. These chemicals assist in breaking down the waste and liquifying the solids. They also have a cover-up odor that kills the waste smell.

Most of the unwanted solids build-up in waste tanks is due to using too little water and not flushing the tank out properly after each use. If you wish to dump a partially full tank, it is better to fill the remaining space with water first, to provide the volume necessary for complete flushing. Never use detergents, alcohols, or strong bleaches to clean the holding tank, as they can cause damage to the plastic tank and drain lines. When the toilet has been drained and is not going to be used for some time, refill with the recommended amount of fresh water only. Be careful not to spill toilet chemical on your hands, clothes or rug as it may cause an unremovable stain. Vehicle movement helps liquify the solids for easier dumping of the toilet wastes. For that reason, when possible, it is better to dump soon after road travel rather than before road travel.

## **INSTRUCTIONS FOR DISINFECTION OF POTABLE WATER SYSTEMS ON RECREATION VEHICLES**

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

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

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

## DISINFECTION OF POTABLE WATER SYSTEMS **Continued**

4. Drain and flush with potable water.

**Warning** Do not use automotive type radiator antifreeze to winterize the fresh water system. It is poisonous.

The water tank drain is a small spigot located on the exterior of the unit.

### CITY WATER HOOKUP

If you desire to hook up to city water, there is a city water inlet provided to accommodate a hookup hose. When hooked up to city water, the on-board water reservoir is bypassed.

#### **CAUTION**

All models have an in-line water pump that has a built-in check valve that will not withstand pressure over 45 lbs. per square inch. Most trailer parks have their water regulated to this pressure. Be sure and check before hooking up. Or, you may purchase a water regulator to put on the inlet fitting of your motorhome.

## THE FOLLOWING IS A LIST OF WARNINGS AND CAUTIONS WHICH SHOULD BE ADHERED TO WHEN OPERATING YOUR MOTORHOME.

**Warning** Make sure that all pilot lights have been extinguished before refilling fuel tank(s).

**Warning** An overfilled gas condition could create a fire hazard due to the fuel run off being present on the exterior of the fuel tank and on the ground beneath the vehicle. Safety being of the utmost importance, care should be taken to prevent this condition when refueling all motor vehicles.

**Warning** Know how your recreational vehicle handles before driving at high speed or in the wind. Windy conditions affect the large body. Avoid driving in strong winds.

**Warning** Avoid inhaling exhaust gases, as they contain carbon monoxide, which by itself is colorless, odorless and poisonous.

**Warning** Hydraulic brake fluids not conforming to the vehicle manufacturer specifications should never be used. A fluid with a lower boiling point or one that is unidentified may result in sudden brake failure under hard braking conditions.

**Warning** Driving through water deep enough to wet the brakes can affect braking performance and cause the vehicle to pull to either side when the brakes are applied.

**Warning** If brake failure is indicated, immediate repair service is necessary. Continued operation of the vehicle in this condition is dangerous.

**Caution** Never drive the vehicle with the parking brake set. Overheating or damage to the rear brakes could occur.

**Warning** Never add coolant to the radiator when the engine is overheated. Do not loosen or remove the cap to cool an overheated engine.

**Warning** Do not use parking lights when vehicle is in motion. Parking lights denote a parked vehicle.

**Warning** Operating the hazard flasher system while moving on the highway is prohibited by law.

**Warning** Inspection and service should be performed any time a malfunction is observed or suspected.

**Warning** Snug and low seat belt positions are essential. This will ensure that the force exerted by the lap belt in a collision is spread over the strong hip area, and not across the abdomen, which could result in serious injury.

## WARNINGS AND CAUTIONS *Continued*

**Warning** Do not adjust driver's seat belt while vehicle is in motion.

**Warning** Only seats equipped with seat belts are to be occupied while vehicle is in motion. Seats not equipped with seat belts will be labeled: "This seat not intended for occupancy when the vehicle is in motion."

**Warning** Before beginning a vacation or trip of any extended travel in your R.V., it is recommended that the fire extinguisher be checked for proper charge and inspected to assure proper operating condition.

**Warning** When performing maintenance on any gas fired appliance, shut off gas at the tank. Perform a gas leak test on tank valves and check connections using leak detector before relighting.

**Caution** The starter should not be operated longer than 15 seconds at a time. If the engine fails to start, always wait a few seconds before trying again to protect the starter from overheating.

**Caution** Extended running of engine while vehicle is stationary (5 minutes or more) without reducing idle speed, could result in damage to engine, or exhaust system due to overheating.

**Caution** When driving in summer heat, observe the engine temperature gauge more frequently than normal. In the event an overheating condition occurs, pull off to the side of the road and allow the engine to thoroughly cool before refilling the radiator and restarting the engine.

**Warning** Do not use automotive type radiator antifreeze to winterize the fresh water system. It is poisonous.

**Warning** The radiator cap should be removed only when checking coolant freeze point, or for complete replacement with antifreeze coolant. DO NOT remove radiator cap until the radiator has cooled completely. Use caution with a hot coolant system. Place a cloth over the cap, turn left to first stop on the cap, pause to allow any pressure to release through overflow tube, then press down and turn left to remove cap.

**Caution** Always check for sufficient overhead clearance before entering an area with low overhead clearance, such as garages, drive-ins, car washes, etc.

**Caution** It is recommended that the windows and door seams and joint sealants be checked every 6 months and resealed if necessary.

## CARE AND CLEANING

### Removal of Specific Stains

**Candy** Chocolate, use a cloth soaked in lukewarm water; other than chocolate, use very hot water. Dry. If necessary, clean with fabric cleaning fluid.

**Chewing Gum** Harden gum with ice cube and scrape off with dull knife. Moisten with fabric cleaning fluid and scrape again.

**Fruit Stains, Coffee, Soft Drinks, Ice Cream and Milk** Wipe with cloth soaked with fabric cleaning fluid. Soap and water is NOT recommended as it might set the stain.

**Catsup** Wipe with cloth soaked in cool water. If further cleaning is necessary, use a detergent foam cleaner.

**Grease, Oil, Butter, Margarine and Crayon** Scrape off excess with dull knife. Use fabric cleaning fluid.

**Paste or Wax Type Shoe Polish** Light application of fabric cleaning fluid.

**Tar** Remove excess with dull knife, moisten with fabric cleaning fluid, scrape again, rub lightly with additional cleaner.

**Blood** Wipe with clean cloth moistened with cold water. Use NO soap.

**Urine** Sponge stain with lukewarm soap suds from mild neutral soap on clean cloth, rinse with cloth soaked in cold water, saturate cloth with one part household ammonia water and five parts water. Apply for one minute, rinse with clean, wet cloth.

**Vomitus** Sponge with clean cloth dipped in clean cold water. Wash lightly with lukewarm water and mild neutral soap. If odor persists, treat area with a water/baking soda solution (one teaspoon baking soda to one cup of tepid water). Rub again with cloth and cold water. Finally, if necessary, clean lightly with fabric cleaning fluid.

**Caution** Salt, mustard and mayonnaise may cause pitting. If spilled, clean immediately.

## HANDY HINTS

**Bugs Bugging You?** Rub on the repellent if you like. Some pros swear by Vitamin B-12. A capsule a day will keep the bugs away!

**Dried Bugs A Problem?** Those dried up bugs left over from the last outing will come off if you spray with baking soda or Coca Cola and wait a few minutes, then wash off.

**Are You Ready For Trouble?** Is your fire extinguisher in place and ready for use? It's the best insurance you can have for either a motorhome fire or an engine fire.

**Want To Save Money?** Laws in various areas and states are getting tougher all the time, and fines in some cases are high. Conform to all campground rules and regulations, watch your drain water and make sure the area is clean when you leave.



## GENERAL CARE

Dust and dirt can be removed quickly from your upholstery with a vacuum cleaner. For removal of specific spots or stains refer to accompanying "Removal of Specific Stains." For best results, spots or stains should be removed as soon as possible. Some types, such as lipstick, ink, mustard, and grease, are extremely difficult to remove; in some cases, impossible. You may be faced with the choice of leaving a small spot or stain or a larger soiled area where you tried to remove the spot and failed.

First determine what caused the spot, stain or soiled area. Many can be removed with warm water and detergent. Then proceed accordingly.

**Warning:** Do not use volatile cleaning solvents such as: acetone, lacquer thinner, carbon tetrachloride, enamel reducers, nail polish remover; or such cleaning materials as laundry soaps, bleaches or reducing agents (except as noted in the instructions on stain removal). Never use gasoline or naphtha for any cleaning purpose. These materials may be toxic or flammable, or may cause damage to the materials.

### Cleaning Fabrics with Cleaning Fluid

Cleaning fluid should be used for cleaning stains containing grease, oil or fats. Any excess stain should be scraped off carefully with a clean dull knife. Using very little cleaner and light pressure, with a clean cloth, wipe toward the center of the stained area, constantly changing to a clean section of cloth. When stain is removed from the fabric, immediately wipe the area briskly with an absorbent towel to help the area dry and prevent a cleaning ring. If ring forms, immediately clean entire area. Sometimes a difficult spot may require a second application of cleaning fluid followed immediately by a soft brush to completely remove the spot.

### Cleaning Fabrics with Foam Cleaners

Foam cleaner is excellent for cleaning general soilage from fabrics where a minor cleaning ring may be left from spot cleaning. Vacuum area to remove excess loose dirt. Always clean at least a full section of material. Mix detergent type foam cleaners in accordance with directions on label of container. Use foam only on a clean sponge or soft bristle brush. Do not wet exceedingly or rub too hard with brush. Wipe clean with a slightly damp absorbent towel or cloth. Immediately after cleaning fabric, dry fabric with a dry towel or hair dryer.

## LOADING CHECK LIST

- ☐ Guidebook to parks/campgrounds
- ☐ (Woodalls, Rand McNally, Sunset)
- ☐ Fire extinguisher
- ☐ Paper towels
- ☐ Needle and thread
- ☐ Charcoal lighter fluid
- ☐ Jumper cables (for battery)
- ☐ 25' water hose
- ☐ Paper cup dispenser & 4 oz. cups
- ☐ Can opener
- ☐ Tow cable or chain (10'-25')
- ☐ 3 or 4 ton jack
- ☐ Flashlight
- ☐ Tires inflated properly
- ☐ Horn works
- ☐ Lights adjusted with load
- ☐ Brakes work evenly
- ☐ Lug nuts tight
- ☐ Refrigerator locked
- ☐ First aid kit
- ☐ Safety pins
- ☐ Paper and pencil
- ☐ Wooden matches
- ☐ Small ax and shovel
- ☐ 25' extension cord
- ☐ Ice pick
- ☐ Fire permit
- ☐ Emergency signal devices
- ☐ Good humor
- ☐ Sink drain secure
- ☐ Holding tank caps on
- ☐ Vents closed
- ☐ Clearance lights working
- ☐ Extra keys handy
- ☐ Full load of water, fuel & propane
- ☐ Loose items put away
- ☐ Lights off in house
- ☐ Cabinet doors and entry door closed and locked

## WATER & HOLDING TANK CAPACITIES

## MODEL

300T	Water Holding	26 gallons 26 gallons
500T	Water Front Holding Rear Holding	20 gallons 20 gallons 18 gallons
600	Water Holding	20 gallons 26 gallons
700	Water Front Holding Rear Holding	21 gallons 20 gallons 18 gallons
1000	Water Toilet & Lavy Holding Shower & Kitchen Sink Holding	40 gallons 40 gallons 37 gallons
2000	Water Toilet, Shower & Lavy Holding Kitchen Sink Holding	40 gallons 40 gallons 30 gallons

## NOTES



**DOLPHIN**

**DOLPHIN R.V. PRODUCTS**

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