

OWNER'S MANUAL

FOLD-DOWN CAMPING
TRAILER



INTRODUCTION

This manual has been provided by Dutchmen Manufacturing, Inc. solely for the purpose of providing instructions about the operation and maintenance of its recreational vehicles. Nothing in this manual creates any warranty, either express or implied. The only warranty offered by Dutchmen Manufacturing, Inc. is set forth in the limited warranty applicable to your vehicle.

The limited warranty and the limited warranties issued by component manufacturers require periodic service and maintenance, and the owner's failure to provide this service and/or maintenance may result in the loss of warranty coverage for that item. The owner should review Dutchmen Manufacturing, Inc.'s limited warranty and the limited warranty of all other manufacturers.

Instructions included in this manual are for operating some components which may be optional on your vehicle.

This manual is devoted to instructions on fold-down camping trailers. We hope you will have many years of vacationing pleasure.



Dutchmen®

DUTCHMEN MANUFACTURING, INC.

925 W. BROOKLYN

SYRACUSE, IN 46567

219/457-8385

OWNER'S RESPONSIBILITY

As the owner of a new recreational vehicle, it is important to regularly and properly maintain your vehicle. Be sure to read the Owner's Manual and all appliance manuals so proper maintenance can be applied.

It is your responsibility to return your vehicle to an authorized dealer for any repairs and service that may be required.

DEALER'S RESPONSIBILITY

Throughout the manufacturing process, your recreational vehicle has been inspected by our qualified inspectors. However, our final inspection at the factory is not be the last one. The dealer is to perform a final inspection of your vehicle. And to help you, the owner, fill out and complete all necessary forms and understand the limited warranty pertaining to your new vehicle.

Dealer's responsibilities also include:

1. Familiarizing the customer with the operation of all systems and components of the new recreational vehicle.
2. Explaining and reviewing the limited warranty provisions to the customer.
3. Assisting the customer in completing all necessary registrations and warranty cards for the vehicle.
4. Instructing the customer on how to receive local and out of town service on the vehicle and its separately warranted components.
5. Servicing all Dutchmen recreational vehicles.

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INTRODUCTION TO R.V. OWNERSHIP

WELCOME

Thank you for purchasing your Dutchmen Recreational Vehicle and welcome to the world of recreational vehicle travel. Your purchase of a Dutchmen R.V. allows you to enter this unique world of camping and leisure in a grand style. Your Dutchmen R.V. has been designed and engineered to offer you many comforts of home that will make your camping experience as enjoyable as possible. Dutchmen recreational vehicles are designed, constructed and intended to be used as temporary living quarters for recreational, camping and travel uses, all as defined in the by-laws of the Recreation Vehicle Industry Association. Our recreational vehicles are not intended for the hauling of cargo.

This owner's manual was prepared to assist you in understanding the proper use and operation of various containment systems, servicing and maintenance of component parts, and explanation of your warranty protection. If you are a newcomer to R.V. travel, you will especially appreciate the suggestions and "shop talk" information to be found throughout this manual to help you obtain the most pleasure from the use of your vehicle.

The information in this manual reflects the most current available to us at the time of publication. If you find the components in your recreational vehicle vary significantly from what is described in this manual, please disregard that section and follow the instructions provided by that particular component manufacturer. You should carefully read and understand this owner's manual which is a supplement to various other instructions supplied by the manufacturers of separately warranted products.

Keep this owner's manual in your recreational vehicle for handy reference. Get to know your new vehicle and how it operates. You should carefully read and understand these instructions and information supplied by manufacturers of separately warranted products, since they contain important operating, safety, and maintenance instructions. If you have questions that are adequately answered by this manual or other booklets, consult your dealer. If he cannot satisfactorily answer your questions, he will call our staff or refer you to us for help.

Every effort has been made to provide you with a safe, dependable product. Your vehicle complies with applicable requirements of Federal Motor Vehicle Safety Standards, State Regulations, Canadian Standards Associations (CSA) where applicable, and complies with requirements of ANSI Standard A119.2, the nationally recognized "Standard For Recreational Vehicles - Installation of Plumbing, Heating and Electrical Systems." The Recreational Vehicle Industry Association (RVIA) and Canadian Standards Association (CSA) periodically inspect our production line and assist us in maintaining strict compliance with installation and safety standards for those systems. Your follow-up with periodic safety inspections and a program of preventive maintenance is important for the continuation of safe and trouble-free operation. Camping is a great way to relax and enjoy the outdoors with your friends and family. Please remember to tread lightly on our beautiful land and leave only your footprints so that others may enjoy nature as much as you did.

SAFETY CONSIDERATIONS

The terms NOTE, CAUTION and WARNING have specific meanings in this manual.

A **NOTE** provides additional information to make a step or procedure easier or clearer. Disregarding a NOTE could cause inconvenience, but would not be likely to cause damage or personal injury.

A **CAUTION** emphasizes areas where equipment damage could result. Disregarding a CAUTION could cause permanent mechanical damage. However, personal injury is unlikely.

A **WARNING** emphasizes areas where personal injury or even death could result from failure to follow instructions properly. Mechanical damage may also occur.

REPORTING SAFETY DEFECTS

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

If NHTSA in addition 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 Dutchmen Manufacturing, Inc.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 368-0123 in Washington, D.C. area) or write to:

NHTSA
U.S. Department of Transportation
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from the Hotline.

SAFETY IN USING L.P. GAS

You should check for leaks at the connections on the L.P. gas system soon after purchase and initial filling of L.P. tanks, and continued periodic checks of the system are recommended. Your vehicle was manufactured to provide you with full access to all gas line connections. Leaks can be found with a soapy water solution applied to the outside of the gas piping connections: the soap will bubble at the leak. **DO NOT USE FLAME OR LIGHTED MATCHES TO TEST FOR LEAKS.** Usually tightening of connections will close leaks. If not, ask an authorized dealer's service department to make the necessary repairs.

EVEN THOUGH THE MANUFACTURER AND DEALER HAVE ALREADY MADE TESTS FOR LEAKAGE, THIS CHECK IS ADVISABLE BECAUSE OF THE VIBRATION ENCOUNTERED DURING TRAVEL.

L.P. gas is heavier than air. Leaking gas tends to flow to low places. It will sometimes pocket in a low area. L.P. gas can usually be detected by an identifiable odor similar to onions or garlic. Never light a match or allow any open flame in the presence of leaking gas.

It is very important to have L.P. gas shut off during refueling of tow vehicles. Some states prohibit gas appliances to be operated during travel, especially in underground tunnels.

Never allow gas containers to be filled above the liquid capacity indicated on the container. If a container is overfilled, liquid gas may flow through the regulator causing it to freeze and/or introduce a dangerous excessive gas pressure into the lines. In addition, an overfilled container placed in hot sunlight may expel excess gas through the relief valve and be susceptible to ignition by any nearby open flame.

ELECTRICAL SYSTEM SAFETY

Circuit breakers and fuses are installed to protect electrical circuits from overloading. Do not make unauthorized changes to circuitry or add on fixed appliances yourself. If you wish changes, consult your dealer and he will assist you in obtaining a safe installation.

An approved power supply cord has been supplied with the vehicle. Always use this cord for hook-up to the 120-volt source. Note that the cord has a three pin plug, which provides proper grounding through the third (round) pin. Grounding is your personal protection from electrical shock.

WARNING:

DO NOT USE ANY ADAPTER, CHEATER, OR EXTENSION CORD THAT WILL BREAK THE CONTINUITY OF THE GROUNDING CIRCUIT CONNECTED TO THAT THIRD PIN. NEVER REMOVE THE GROUNDING PIN FOR CONVENIENCE OF BEING ABLE TO CONNECT TO A NON-GROUND (ONLY 2-PRONG) RECEPTACLE. CHECK THE POLARITY OF YOUR POWER SOURCE.

ADDITIONAL SAFETY CONSIDERATIONS

1. Sanitize the fresh water supply system periodically (see sanitizing instructions).
2. Keep water connection fittings from coming in contact with the ground or drain hose to reduce chance of contamination.
3. Enlist services of a qualified technician to fix gas or electrical appliances.
4. Always have a serviceable fire extinguisher placed in an easily accessible location.
5. Please read carefully the loading section under "Usage of Your R.V." related to your respective trailer.
6. Insure that tires are in good condition and properly inflated. Watch inflation especially close - under-inflated tires will overheat. Overheated tires are a potential hazard as they may throw rubber and cause a blow-out. Check tire pressure before each trip.

7. Check and tighten wheel lugs regularly (every 50 miles when new until 200 miles are reached and then check lugs ever 500 miles).
8. Check brakes in a safe area - not while traveling a busy highway.
9. Always block trailer wheels solidly before unhitching.
10. Before leaving a camp area with a trailer in tow, insure that the safety pin or locking lever is seated, the jack is raised so that it cannot touch the ground, the dolly wheel removed, 110-volt electrical cord properly stored, safety chains are connected, and all interior lights off.
11. Observe the warning labels attached to your vehicle concerning L.P. gas, water and electricity.
12. Observe the maintenance chart in the "Mechanical Maintenance" section related to your respective unit.

EXTENDED OR COLD WEATHER USE

Your new Dutchmen produced R.V. has been built for enjoyment in a recreational manner. While it was not intended to be used as living quarters, it can be temporarily by making some special provisions and understanding potential problems.

1. Proper care needs to be observed in the fresh water and draining systems to avoid freezing problems.
2. Adequate gas and electrical supply is needed along with protection from possible freeze-ups on gas regulator.
3. During cool weather useage, ventilation or addition of a dehumidifier may be required to reduce possible condensation.

CAUTION:

CONTINUOUS LIVING IN YOUR DUTCHMEN VEHICLE COULD CAUSE ACCELERATED WEAR AND DAMAGE TO COMPONENTS.

CONDENSATION

Condensation is a natural phenomenon. The amount of condensation will vary with the climate conditions, particularly the relative humidity. Condensation occurs because there is water vapor present in the air, which each of us adds by breathing, bathing & cooking, etc. The water vapor collects wherever there is available air space, and when the temperature reaches the 'dew point' the water vapor in the air condenses and changes to liquid form. Most people have experienced a similar phenomenon when moisture forms on kitchen windows, bathroom mirrors, etc. during the cooler weather.

Proper ventilation and, if needed, the use of a dehumidifier in your unit will assist in controlling the condensation. Condensation causes dampness, mildew, staining and if allowed to continue at high levels, may cause damage to the paneling, ceilings and floor structures.

WARRANTY & SERVICE

SERVICE PROCEDURES

BASIC SERVICE PROCEDURE

We are particularly interested in maintaining good customer relations. Only by having your complete confidence and satisfaction with our product and its service can we assure our continued success as manufacturers of recreational vehicles. We have found that continuing a pleasant and effective relationship through our dealers is equally as important as maintaining the technical excellence of our product. Your authorized dealer will cordially assist you in providing service maintenance, selection of options, and instructions concerning the operation of your vehicle.

Should you have a problem with service, please follow the steps listed below in this order.

1. Contact your selling dealer's service department for an appointment. Describe to the best of your knowledge the nature of the problem. Please keep appointments to establish a good working relationship.
2. Contact the owner or General Manager of the dealership should the initial attempt fail with the service department.
3. Contact the:
Dutchmen Manufacturing, Inc.
925 W. Brooklyn
Syracuse, IN 46567
(219) 457-8385

Give all the above information as requested along with serial number of the coach in question. We will make every attempt to resolve your problem.

Please bear in mind that most problems arise from misunderstandings concerning warranty coverage and service. In most instances, you will be referred to the dealer level and problems will be resolved with the dealer's facilities and personnel.

DEALER

Your authorized Dutchmen dealer has inspected and serviced your new Dutchmen R.V. He is authorized to service and maintain your coach as needed. All warranty repairs are to be performed by the selling dealer unless Dutchmen gives prior approval.

Some R.V. dealers may be authorized service centers for certain manufacturers of products warranted separately. Check with your dealer before contacting anyone else to reduce delays. If the dealer is not an authorized service center for the product in question, he can assist you in obtaining authorized service.

FACTORY

A factory service department is operated at our Syracuse, Indiana, manufacturing facility. Should your Dutchmen R.V. be in need of repairs and your dealer recommends that the factory repair it, it may be returned to our plant for repairs upon following these procedures.

- A. Your dealer must make an appointment prior to returning it to the factory service department.
- B. Freight costs are the responsibility of the owner.

PARTS

Parts are available at most Dutchmen dealerships or your dealer will order parts for you as needed. Should you be unable to find a dealer in your local area, contact our Customer Service Department at (219) 457-8385 and we will assist you in providing parts through an authorized dealer.

OWNER'S RESPONSIBILITY

As a new owner of a Dutchmen recreational vehicle, you are responsible for regular and proper maintenance. This will help you prevent conditions arising from neglect that are not covered by your Dutchmen Limited Warranty.

Maintenance service should be performed in accordance with this owner's manual and any other applicable manuals.

As the owner, it is your responsibility and obligation to return the RV to an authorized dealer for repairs and service (see your Limited Warranty). Since the authorized dealer where you purchased your R.V. is responsible for its servicing before delivery and has an interest in your continued satisfaction, we recommend that inspection, warranty, and maintenance services be performed by the dealership.

If you are traveling and are unable to locate an authorized Dutchmen dealer, or an authorized dealer for the component needing service, please call our customer service office at (219) 457-8385 or contact your selling dealer for assistance. Service at a non-authorized Dutchmen dealer should have prior authorization. You will be asked to return any mechanical parts replaced before reimbursement consideration is made. Unauthorized or improper repairs may void the warranty on that component.

Please keep your owner's manual, your copy of your warranty registration form, and any other related papers in your R.V.

USAGE OF YOUR R.V.

HITCH HEIGHT

The correct hitch ball height is 16½" for your camping trailer. It is measured with the coach in level position, measuring from the top of the ball to ground level.

Dutchmen Manufacturing, Inc. cannot be responsible for the suspension system of any tow vehicle. There are a variety of suspension systems available on tow vehicles today which will affect the ball height and levelness of your R.V. when hooked up to your vehicle. Make certain your dealer is aware of the type of tow vehicle you will be using so you can be certain a compatible hook-up can be achieved.

LOADING

Loading camping gear in your Dutchmen recreational vehicle should be given serious consideration. ALL cargo, supplies and equipment you load should be distributed evenly with the heaviest items being stored in the lower cabinets. Be sure that all heavy items are secured to prevent weight shifts while traveling. Try to keep additional weight behind the axle to a minimum.

WARNING:

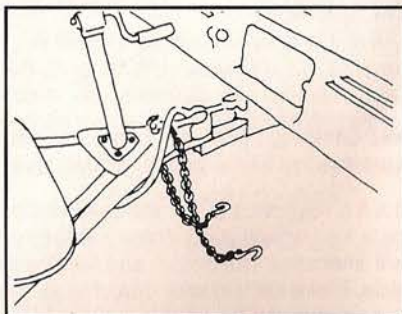
NEVER ADD ITEMS SUCH AS GENERATORS, MOTORCYCLE RACKS, HEAVY TOOL BOXES, ETC. TO THE BACK OF YOUR R.V. WEIGHT BEHIND THE AXLE SINCE THIS LIGHTENS THE HITCH WEIGHT AND WILL TEND TO MAGNIFY ANY SWAY THAT OCCURS WHEN PASSING TRUCKS OR IN GUSTY WINDS. EXCESS WEIGHT CAN TURN A USUALLY ALMOST UNNOTICEABLE SWAY INTO A SEVERE SWAY YOU MAY NOT BE ABLE TO CONTROL.

CAUTION:

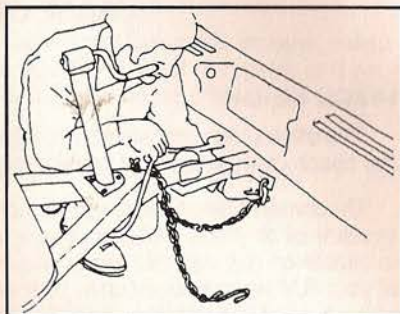
DAMAGE FROM ADD-ON EQUIPMENT OR IMPROPER LOADING IS NOT COVERED BY YOUR DUTCHMEN LIMITED WARRANTY.

THE SAFETY CHAIN

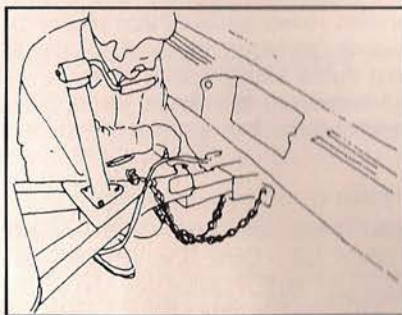
There are different safety chain requirements by the various states. As delivered by your dealer, your vehicle is equipped with chains to meet SAE standard requirements for maximum gross trailer weight. Always have the safety chain(s) attached when towing. Install them in a manner so they do not restrict sharp turns of the tow vehicle-trailer combination, but tight enough so they do not drag on the road.



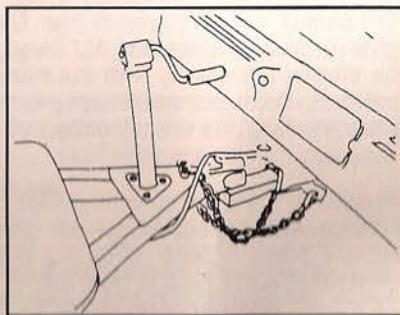
1. Inspect chains to determine that they are properly attached to trailer frame.



2. Criss-cross left chain and attach to **right** mounting slot in trailer hitch.



3. Repeat step 2 with right chain. Slack for each length should be the same but not more than necessary to permit the vehicle to turn at their minimum radius.



4. Properly mounted safety chain. Note that the jack is fully raised, and dolly wheel removed.

WHEEL LUGS

When the wheels are installed on your Dutchmen lug bolts must be tightened at 85-95 foot pounds of torque. Because these wheel lugs can work loose, IT IS RECOMMENDED THAT YOU CHECK YOUR WHEEL LUGS AFTER THE FIRST 50 AND 200 MILES. After your first trip, check the wheel lugs periodically for safety. The wheel lugs should then be checked after winter storage, before starting a trip, or following extensive braking. Over-tightening can distort wheel. Please observe the above recommendations for your safety and that of others.

TIRES

The tires of all Dutchmen units are supplied by companies with the recreational vehicle in mind and are tested at turnpike speeds. They are made with nylon cord designed to offer strength and extra mileage in all kinds of weather. The air pressure should be kept at its recommended pressure, which is stamped on the tire sidewall. Always check the tires when they are cold such as before traveling at the beginning of the day. DO NOT release air pressure as tires become hot. If you do, the tires will then be under inflated when they cool down.

CAUTION:

IT IS RECOMMENDED THAT THE TIRE PRESSURE BE CHECKED AT THE BEGINNING OF EACH JOURNEY TO OBTAIN THE MAXIMUM LIFE OF THE TIRES.

BRAKES (Electrical) (Optional)

The brakes on your new unit are electric and are integrated into your brake system of your truck or car in such a way that equal braking power is distributed to both trailer and towing vehicle. Explained below are several components that make up the brake system.

The battery of your truck or car is used as the primary source of power. No special source of power is required. From the battery, the power is taken to the controller which will be assembled under the dashboard of your truck or car. In open positions, it breaks the electrical circuit, so no current reaches the brakes. When depressed by hand or by hydraulic pressure (foot pedal) the variable resistor controls the amount of current which in turn varies the braking of your trailer.

Although it is possible to operate the controller by hand, it is designed to operate automatically when the car's brakes are applied. A line for hydraulic fluid from the controller to the master cylinder allows the accelerator bar and coil to make contact when the foot pedal is depressed which in turn sends the current to the brakes. To obtain equality between your car or truck and your Dutchmen trailer, a front mounted knob on the controller can be turned for more or less braking effort.

The last item in the braking system is the brakes themselves. The brakes are wired in parallel, never in series. Parallel wiring provides each brake with its own individual power supply to give you assurance of safety and protection.

SET-UP

OPENING YOUR DUTCHMEN CAMPER

After parking your new Dutchmen tent camper, disconnect the coach from the tow vehicle. Have the coach in a level position and tires blocked so the camper will not roll anywhere. You are now ready to set up your tent which is designed to be simple and trouble free.

IMPORTANT:

We recommend that well in advance of any trip, your camper be set up at home and the canvas tent hosed down with water thoroughly. After the canvas dries, repeat the soaking process two additional times. This process acts to seal areas where the canvas is sewn with thread. If you do not follow this procedure, you will most likely experience water leaks at the seams during the first few exposures to rain. Let dry thoroughly before storing to prevent mildew and odors.

1. Unfasten each corner latch. **CAUTION: NEVER TRY TO CRANK UP THE ROOF UNTIL ALL FOUR CORNER LATCHES ARE UNLOCKED AND FREE.**
2. Insert the raising crank into position and crank in a clockwise direction to raise.
3. Continue cranking until the gauge cable is almost tight. The green safety gauge cable is located directly above the crank position.
4. The next step is to release self-storing stabilizer jacks and set them as needed. Fold down units have their stabilizer jacks built into the frame. To operate these units which are spring loaded, hold the jack and push to the center of your unit. This will allow the jack to move out of its traveling position and allow it to drop into place. Now extend the jack "foot" by pushing it to the ground. More tension can be placed on the jack feet by using the long jack handle supplied in each unit. Be sure that not too much force is applied to the jack handle; it will cause the holes in the jack legs to expand by breaking out the dividers and cause adjustment problems in the entrance door. One notch should be sufficient. **DO NOT** place excessive weight on these jacks as they are intended to stabilize, not bear the weight of the camper.

CAUTION:

DO NOT RAISE CAMPER IN VERY COLD WEATHER. DOING SO MAY CAUSE THE PANELS TO CRACK.

5. Install hinged bunk support brackets over rear wall and into slots in frame.
6. Pull out rear bunk to the stops and pull canvas down over sides of bunk.
7. Repeat on front bunk (Models 1001, 1002, 1201, 1202 require two additional bunk support poles to be mounted).
8. Enter unit and insert bed bow support pole at center of bow. Push bow outward and upward until curved end will slip into bracket mounted onto roof.
9. Swing down the double hinged, self-storing screen door. Drop channel of lower edge of screen door over entrance door, guiding locating pins into door jamb extrusion.
10. Fasten velcro seal around both sides of door.

11. Set-up galley by flipping it over.

12. Hook elastic cord over bell washers under bunks along sides. The canvas is permanently attached on the ends of the bunks.

CLOSING YOUR DUTCHMEN CAMPER

To close, simply reverse the above procedure beginning with Step. No. 12 and ending with Step No. 1. It is possible, due to an unlevel campsite, that one corner may "hang up" when you crank down your unit. This is not a serious problem and is due to binding of the lifter arm. To solve this problem, shake the camper gently to move the roof back and forth, allowing it to come down. Never force the hung up corner down by grabbing the roof and applying your weight. This could damage the lifter arm. If the roof is persistent in sticking, crank up again and start over.

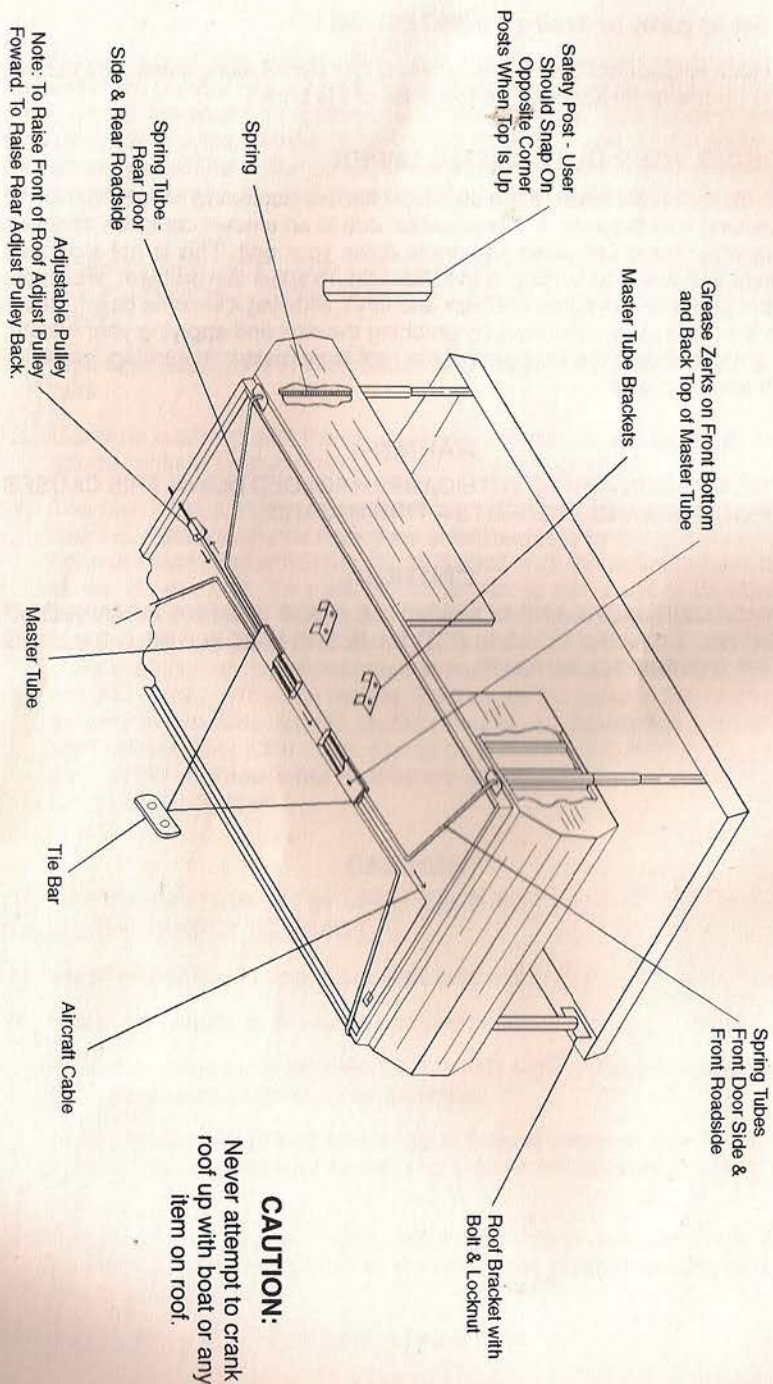
WARNING:

NEVER RUN CONVERTER WITH CAMPER FOLDED DOWN. THIS CAUSES OVERHEATING AND PRESENTS A FIRE HAZARD.

CAUTION:

IF STABILIZER JACKS ARE DOWN WHILE ROOF IS BEING CRANKED UP OR DOWN IT IS VERY POSSIBLE TO HAVE THE UNIT IN A BIND CAUSING LIFTER SYSTEM TO HANG UP.

CRANK UP LIFT SYSTEM



PLUMBING

Instructions for sanitizing potable water systems of recreational vehicles

To assure complete sanitation 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.

1. Prepare a chlorine solution using one gallon of water and 1/4 of household bleach (5% sodium hypochlorite solution). Pour one gallon of solution into tank for each 15 gallons of tank capacity.
2. Complete filling of tank with fresh water. Open each faucet and drain cock until all air has been released from the pipes and entire system is filled.
3. Allow to stand for three hours.
4. Drain and flush with potable fresh water.
5. To remove any excessive chlorine taste or odor which might remain, prepare a solution of one quart vinegar to five gallons water and allow this solution to agitate in tank for several days by vehicle motion.
6. Drain tank and again flush with potable water.

CAUTION:

CHLORINE SOLUTION CONCENTRATIONS EXCEEDING RECOMMENDED LEVELS MAY DAMAGE THE WATER SYSTEM.

FRESH WATER SYSTEM

1. The fresh water tank (approximately 10 gallons) is located under one of the dinette seats. The seat lid is fastened permanently closed since there is not storage available in that area. To drain water from this tank, move the handle on the pump up and down.
2. A "city water" or direct hook-up from an external water supply may be attached to the pressure water inlet.

We recommend adding a pressure regulator to the line system, as some campgrounds may have water pressure in excess of 100 lb. or more. A regulator rated at 35 lb. is suggested. The regulator may also be a removable type.

DRAINAGE SYSTEM

Connect a hose to outlet and drain sink either to a container to hold waste water or to a direct sewer inlet supplied by some campgrounds. Most campgrounds and some states prohibit sewer water drainage onto the open ground.

WINTERIZATION

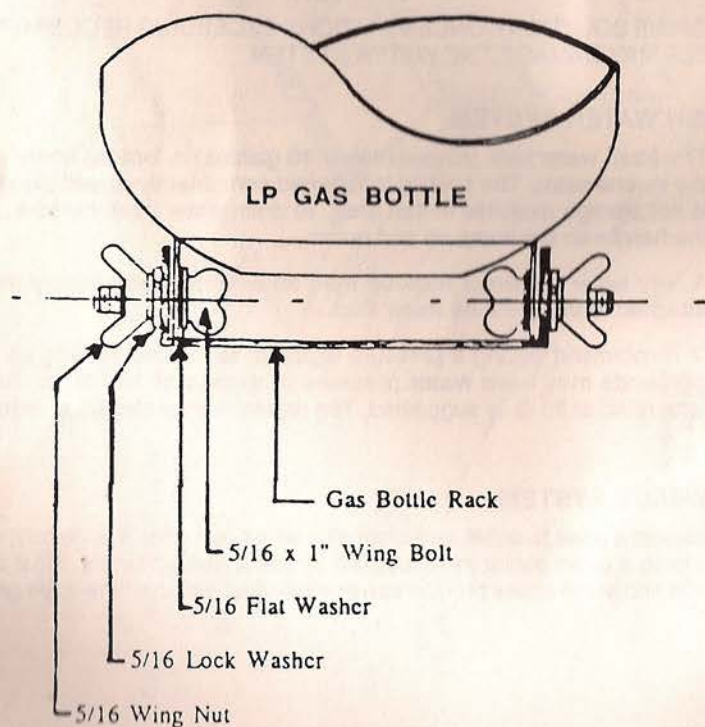
1. Drain tank entirely. The remaining small quantity of water in a plastic tank will not damage tank by freezing.
2. Be sure all water has been drained from the hand pump by using an up and down motion with the lever with no water in tank. No anti-freeze is needed for hand pumps.
3. If all water cannot be drained or has not evaporated from trap under sink, put a small quantity of non-toxic anti-freeze into trap.

WARNING:

USE ONLY ANTIFREEZE MADE SPECIFICALLY FOR POTABLE WATER SYSTEMS. AUTOMOTIVE ANTIFREEZE, IF INGESTED, CAN CAUSE BLINDNESS, DEAFNESS OR DEATH.

LP GAS SYSTEM

LP (liquid petroleum) is product refined from various hydrocarbons from crude oil. In its gaseous form (vaporized) it is colorless and carries an added garlic additive for detection. LP fuel in its stored form is liquid. To be used in appliances it needs to be changed to vapor. The appliances are not designed to consume liquid but vapor only. This fuel stored in a vertical container mounted in front of your fold down camper as shown in the diagram below.



GAS BOTTLE MOUNTING INSTRUCTIONS

L.P. Gas Bottles should be mounted securely to Gas Bottle rack by using a 5/16" x 1" Wing Bolt, 5/16" Flat Washer inside bottle ring as shown in diagram, 5/16" Lock Washer and 5/16" Wing Nut.

L.P. Gas Bottles should be installed with two Wing Bolt assemblies.

LP GAS CONTAINER

The L.P. gas tank mounted on your vehicle contains L.P. fuel in liquid form under pressure. As fuel is used, vapor (L.P. gas) passes from the top of the tank through a dual-stage regulator which reduces the pressure to about 6-1/2 ounces per square inch. Vapor at the low pressure is then transferred through the gas distribution lines for appliance use. You must keep the regulator clean and dry. Its cover should remain in place, and its vent placed according to the manufacturer's instructions.

WARNING:

DO NOT FILL CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY. OVERFILLING THE L.P. GAS CONTAINER CAN RESULT IN UNCONTROLLED GAS FLOW WHICH CAN CAUSE FIRE OR EXPLOSION. A PROPERLY FILLED CONTAINER WILL CONTAIN APPROXIMATELY 80 PERCENT OF ITS VOLUME AS LIQUID LP GAS.

WARNING:

L.P. GAS CONTAINERS SHALL NOT BE PLACED OR STORED INSIDE THE VEHICLE. L.P. GAS CONTAINERS ARE EQUIPPED WITH SAFETY DEVICES WHICH RELIEVE EXCESS PRESSURE BY DISCHARGING GAS INTO THE ATMOSPHERE. DO NOT BRING OR STORE L.P. GAS CONTAINERS, GASOLINE OR OTHER FLAMMABLE LIQUIDS INSIDE THE RECREATIONAL VEHICLE. DISREGARDING THIS WARNING MAY RESULT IN FIRES OR EXPLOSIONS.

SERVICING AND FILLING L.P. CONTAINERS

WARNING:

YOUR VEHICLE HAS EXTERIOR COMBUSTION AIR INLETS. APPLIANCE PILOT LIGHTS SHOULD BE TURNED OFF DURING GASOLINE OR LP GAS REFUELING. (REQUIRED BY LAW IN SOME STATES.)

Local regulations sometimes require cylinders be removed from the R.V. for refilling. A relief valves is incorporated on all tanks for safety. This valve is normally opened during fillings and will indicate when the tank is filled to the proper limit by appearance of liquid replacing vapor. At all other times, the overfill valve should be tightly closed by hand only.

The main valve on the L.P. gas container 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.

When L.P. gas containers are filled to the proper level there is available space for safe expansion of the vaporized liquid. If your tank becomes over-filled and is not allowed to "bleed off" before installation with the R.V. system, it may gain pressure due to exposure to hot sun rays and will begin "blowing off" pressure from the relief valve. This can be detected by the strong odor around tanks. Keep open flames away from this area. It is best to remove the bottle, take it to a safe area, and "bleed off" the excess pressure by opening the valve and closing it when discharge has been sufficient.

Handle your L.P. tanks with care. Note that when disconnecting, you must turn the wrench in a clockwise direction because the connection utilizes left hand threads. When reconnecting, turn wrench counterclockwise. When tightening, only "snug-up" — avoid over-tightening. The tanks must be in an upright position at all times.

CAUTION:

IF YOU HAVE DOUBLE BOTTLES ON YOUR R.V., USE ONLY ONE AT A TIME. OTHERWISE THE GAS SUPPLY WILL BE DRAIN EQUALLY FROM BOTH BOTTLES UNTIL SUPPLY HAS BEEN TOTALLY EXHAUSTED. USING THE ONE BOTTLE UNTIL IT IS EMPTY, THEN USING THE SECOND BOTTLE WILL ALLOW YOU TO FILL THE EMPTY BOTTLE AT YOUR CONVENIENCE WITHOUT BEING TOTALLY OUT OF PROPANE.

If you travel alternately on wet roads and in freezing weather, be sure your L.P. gas regulator is protected from road spray. If water enters the vent in the regulator it may freeze the pressure controlling diaphragm in the open position so that the container pressure is applied to the appliances — a hazardous condition. Follow the instructions given by the manufacturer of the regulator.

CAUTION:

NEVER SMOKE DURING THE FILLING OF L.P. TANKS. KEEP THE R.V. AWAY FROM IMMEDIATE FILLING AREA WHEN POSSIBLE OR EXTINGUISH ALL GAS PILOT LIGHTS.

When an L.P. tank gets low, sometimes there is a concentration of garlic-like odor which may be mistaken for a gas leak. After a change over to a full tank, the odor usually will disappear. If not, turn off the L.P. and have the system checked by a qualified technician.

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.

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 ventilating openings.
5. Leave area until odor clears.
6. Have the gas system checked and leakage source corrected before using again.

WARNING:

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

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

A warning label has been located in the cooking area to remind you to provide an adequate amount 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 appliance(s) 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.

CHECKING FOR LEAKS

Upon delivery and periodically thereafter, check your gas system for possible leaks. Although the entire distribution system and its attached appliances have undergone factory testing for leaks, with normal use being subject to road vibrations, connections, and fittings can develop leaks. 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 of soapy water — **NEVER A MATCH** — on connections and fittings. Bubbles will appear at the leaky points. 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 systems, then check the appliances.

L.P. 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 setting can cause damage to appliances and regulators. This pressure setting must be performed with a gas pressure gauge or monometer.

Present Codes and Standards require the use of a "Dual-stage" L.P. gas regulator with an "excess flow" P.O.L. adaptor. The "excess flow" adaptor is built to restrict the flow of escaping gas in the event of a break in the gas supply line.

The "Dual-stage" regulator performs the act of reducing gas pressure in the first stage 10-13 P.S.I.. The second stage then reduces it to eleven inches of W.C. (Water Column).

It is important to turn your gas bottle valve slowly to eliminate a chance of a fast rush of gas from the tank. This would possibly "freeze" the excess flow valve and shut off your gas supply. Should this happen, turn off your gas valve at the tank. Wait about 15 minutes and try again.

WARNING:

LP GAS REGULATORS MUST ALWAYS BE INSTALLED WITH THE DIAPHRAGM VENT FACING DOWNWARD. REGULATORS THAT ARE NOT IN COMPARTMENTS HAVE BEEN EQUIPPED WITH A PROTECTIVE COVER. MAKE SURE THAT THE REGULATOR VENT FACES DOWNWARD AND THAT THE COVER IS KEPT IN PLACE TO MINIMIZE VENT BLOCKAGE WHICH COULD RESULT IN EXCESSIVE GAS PRESSURE CAUSING FIRE OR EXPLOSION.

ELECTRICAL SYSTEM & OPERATION

CONNECTION TO 120-VOLT AC

Your electrical system of 120-volts AC and 12 volts DC has been designed and installed in accordance with the safety requirements of ANSI Standard A119.2, The National Electrical Code and Canadian Standards Association.

Your new Dutchmen tent camper is equipped with a 30-amp, (15 amp with CSA), power cord to connect from the campground outlet to your camper. The power cord is prewired into the distribution panel an overcurrent protection breaker and then supplies 120-volt AC to the 12-volt DC power converter.

To prevent accidental electrical shock, insure that the ground pin on the attachment plug cap is intact to the earth ground through the RV park receptacle. When plugged into a receptacle with no provision for the third pin, use an adapter with a pigtail that can be connected to the receptacle box, with the grounding circuit completed through the ground pin or R.V. park receptacle box. Any accidental short of a live circuit conductor will trip the circuit breaker indicating a shorted circuit. You should be certain that the polarity of the external power is not reversed, in order to avoid harm to appliances and personal electrical shock. Polarity indicators may be purchased in most electrical and hardware stores.

WARNING:

NEVER USE A "CHEATER" PLUG OR EXTENSION CORD WHICH BREAKS THE CONTINUITY OF THE GROUND CIRCUIT TO THE GROUND PIN. NEVER REMOVE THE GROUND PIN TO CONNECT WITH A TWO PRONG UNDERGROUND RECEPTACLE.

CHANGES, MODIFICATIONS, AND ADDITIONS

Any changes or additions made after delivery may cause a hazardous condition. Be sure to consult your local authorized dealer. Only qualified electrical technicians should attempt to make changes or additions to our electrical system, using only approved materials and components and employing approved methods of installation.

Extension cords should always be a heavy gauge of wire equal to the power cord. Usage of too small a cord will result in overheating and possible burning of the cord. **DO NOT** leave an unused portion of an extension cord in a coil as it may overheat, short out wires, and potentially destroy your extension cord.

Wall recepts are powered by 110 volt electrical current, rated at 15 amps maximum.

CONVERTOR AND G.F.C.I. BREAKERS

A convertor uses 110 volt power and transforms this energy into 12 volt DC power.

Each convertor has a G.F.C.I. breaker built into the unit. These initials mean "Ground Fault Current Interrupter." This special breaker has been designed to reduce the possible injury caused by an electrical shock.

An example of ground fault current is the current which would flow through a person who is using or touching an appliance with faulty insulation and, at the same time, is in contact with an electrical ground such as plumbing fixtures, wet floor, or earth.

This G.F.C.I. breaker will not protect against short circuits or overloads. The circuit breaker or fuse in the electrical panel which supplies power to the circuit provides this protection.

When the G.F.C.I. breaker is tripped, it has interrupted ground fault current caused by such things as faulty insulation or wet wiring inside some appliance or equipment connected to the circuit. The faulty equipment should be repaired before it is used again.

This special breaker should be tested monthly while the camper is being used. See the manufacturer's owner's manual for more instructions.

12 VOLT DC SYSTEM

EXTERIOR

All exterior vehicle lights are 12 volt and wired in accordance with the standard accepted color code:

WHITE - GROUND
GREEN - RUNNING LIGHTS
RED - LEFT TURN, STOP
BROWN - RIGHT TURN, STOP
BLACK - 12-VOLT HOT
BLUE - BRAKES, IF SO EQUIPPED (OPTIONAL)

The connector between tow vehicle and trailer may build up corrosion over a period of time caused by weather elements, and should be cleaned occasionally to insure good electrical contact.

Attach the receptacle leads to the vehicle wiring in a workman-like manner, mechanically and electrically secure. Tape all splices with electrical tape. The receptacle leads must be properly routed and protected against cutting and pinching where they leave the vehicle body.

INTERIOR

All 12 volt power comes from the convertor or the black lead in the wire harness from the tow vehicle. Remember, to receive power from the convertor you must have a 110 volt energy source available. 110 volt power may be turned off or on by pulling or pushing the 110 volt breaker in the convertor.

The 12 volt power will operate all interior lights and optional furnace with blower.

The convertor may be operated as follows:

1. Move manual rocker switch to "trans" position to receive power through the convertor.
2. Move manual rocker switch to "battery" position to receive power from tow vehicle or if auxiliary battery is used.
3. Off (center) position is to be used for traveling or storage.

Dutchmen model tent campers have the interior circuit directed through the convertor.

WARNING:

DO NOT REPLACE CIRCUIT BREAKERS OR FUSES WITH THOSE OF A HIGHER CURRENT RATING THAN THOSE SUPPLIED WITH THE NEW CAMPER. OVER-FUSING CAN CAUSE A FIRE HAZARD BY OVERHEATING ABOVE THE TEMPERATURE RATING OF THE ELECTRICAL WIRING.

WARNING:

BE SURE TO TURN OFF ALL INTERIOR LIGHTS AND CONVERTOR TO "OFF" POSITION BEFORE FOLDING THE CAMPER FOR TRANSIT AS THE BULBS MAY CAUSE A FIRE HAZARD IN THE FOLDED POSITION AND BURN HOLES INTO TENT.

CEILING LIGHTS

A safety cut-off switch is installed to automatically disconnect power to the ceiling lights when the galley is flipped over to the traveling position. This is to prevent the lights from being left on when the roof is lowered.

CAUTION:

WHEN DRAWING CURRENT FROM THE TOW VEHICLE BATTERY BE SURE TO AVOID DRAINING BATTERY TO LOW POINT THAT THE TOW VEHICLE WILL NOT START.

WARNING:

NEVER HOOK UP 12 VOLT POWER SOURCE THROUGH THE CONVERTOR FOR 12 VOLT POWER ON REFRIGERATOR, IF AVAILABLE. THE ONLY 12 VOLT POWER TO BE USED ON REFRIGERATOR OPERATION IS WHILE TRAVELING TO "MAINTAIN COLD" ONLY.

APPLIANCES

STOVE

1. A three burner drop-in stove is built into a small cabinet top assembly to be removed and used either inside or outside of coach.

To operate drop-in stove follow these instructions:

1. Push knob inward and turn valve to open position.
2. Hold lighted match beside burner until burner lights.
3. After burner is lit, extinguish match and adjust burner to position desired.

NOTE: If there is air in L.P. line, it may take several seconds to bleed air before gas will light burner.

The L.P. gas connections are made with a "quick-coupler" system. ALL such systems must have a positive shut-off located in or near the connector.

The "quick-coupler" has a valve built into the coupler which must be TURNED OFF before it can be disconnected.

WARNING:

ALWAYS SHUT OFF MANUAL VALVE BEFORE DISCONNECTING ANY "QUICK-COUPERS".

To remove stove from the inside of the camper to the outside, after coach is in a camping position:

1. Shut off valve.
2. Disconnect quick-coupler.
3. Carry stove/cabinet assembly to the outside and mount on outside stove rail.
4. Install brace into holder located on side wall.
5. Raise outer edge of stove assembly and insert brace into hook mounted below stove cabinet.
6. Connect "quick-coupler" to L.P. supply hose located inside of cable hatch.
7. Open gas valve.
8. Place windguards in operating position.
 - A. Raise hinged lid.
 - B. Swing out two side shields.
9. Your stove assembly is now ready to be operated in the outside position. Remember to allow several seconds for air to escape in the stove fuel system.

Reverse procedure when placing stove assembly into traveling position, making certain you close gas valve before disconnecting the "quick-coupler."

CAUTION:

WHENEVER OPERATING STOVE OR OTHER AIR GAS APPLIANCE, BE SURE THE APPLIANCES GET ENOUGH FRESH AIR FOR VENTILATION.

FURNACE (Optional)

The furnace utilizes a combustion system which is completely sealed from the interior of the RV. Combustion air is drawn from the outside and combustion products are expelled outside through the vent.

Turn thermostat to "off" position if so equipped. Wait five minutes. Set thermostat to "on" position. Allow 15-30 seconds for burner to ignite. If burner fails to light, repeat this procedure three or four times. Determine cause why furnace is not lighting. Additional information will be found in manufacturer's supplied owner's manuals.

REFRIGERATORS (Optional on Most Models)

RM2190 operates on LP gas while cooling down and during camping use. Twelve volt is available to be used when traveling only. Never hook up to 12 volt refrigerator to 12 volt convertor. No 110 volt is available.

Venting is the most critical. Operating instructions for this refrigerator are included with each unit.

CARE OF BODY COMPONENTS

BODY

The side walls and roof of your Dutchmen are of laminated construction with the outer surface being reinforced fiberglass siding. It should be washed regularly with liquid detergents.

If you wish to wax the camper use automotive waxes or cleaner/polishes developed for use on fiberglass boats, showers and tubs.

Don't use abrasive cleaners, rubbing compounds and don't dry wipe the surface.

EXTERIOR ROOF

The roof of your Dutchmen should be inspected regularly to insure the prevention of leakage (at least once a year). Special attention should be given to the silicone seal (located at the top of the lower most aluminum extrusions on the roof) to insure that this seal adheres completely to the roof side fiberglass and to the aluminum extrusion. Should this seal need to be replaced we recommend using a silicone sealant, which can be purchased at most hardware stores, in easy to use caulking tubes.

FRAME

The frame on your new Dutchmen coach has been primed and painted to resist rust and corrosion. It is recommended to periodically inspect the exterior exposed areas, clean and repaint the steel members to insure long life.

DRAPES

Your drapes are washable, gentle cycle wash, low temperature dry or hand dry. Do not use chlorine bleach. For best results, however, dry cleaning is recommended.

CUSHIONS

CAUTION:

DO NOT DRY CLEAN.

If the cushions are dry cleaned, the vinyl on the reverse side of the cushion will shrink, become hard, and crack.

DO NOT REMOVE COVERS.

If covers are removed it may be difficult to reinstall covers due to possible shrinking.

To clean your cushion and bed mat covers it is recommended to frequently vacuum or lightly brush to remove dust and grime for prevention of overall soiling.

Spot clean the foam only from a water-based cleaning agent such as a mild detergent. Apply foam with soft brush in a circular motion. Vacuum when dry. Pretest a small area before proceeding. Use a professional cleaning service when an overall soiled condition has been reached.

TENT (Canvas Material)

The canvas used on all Dutchmen camping trailers is made of 10.10 ounce army duck cotton. It is treated to pass the required Federal Fire Retardant Standards.

If a dirty spot needs to be cleaned, use a damp cloth or sponge with water.

The canvas should not be washed with a detergent as it will remove the waterproof repellants and the fire retardant. Hair spray or insect spray will also remove repellence.

If the canvas is properly taken care of it should last indefinitely. Be sure your canvas and trailer has good ventilation whenever possible, especially after a rainy period. The largest cause of damaged canvas is mildew, which is the result of storing your unit for any short period of time with a damp or wet canvas. This is even more important in coastal states which have a damp atmosphere.

CONDENSATION IN TENTS

Condensation can be prevalent in tent campers if proper ventilation is not used. It is recommended that you leave a small opening in each bunk zipper to permit air to flow through and allow the tent to "breathe". This will help minimize moisture gathering above bunk area on the vinyl.

CONDENSATION CAN BE A PROBLEM WHETHER A HEATER IS USED OR NOT.

PANELING

The wall paneling in your new Dutchmen is a vinyl covered wood panel. If deep scratches occur, they can be covered using a thin film of shoe polish or stain, followed by a coating of furniture wax. There may be putty sticks available to cover scratches at your local hardware store.

To clean, use a mild solution of soap and lukewarm water with a soft sponge or cloth. Refrain from the use of abrasive cleaners. It could cause the vinyl to scratch and turn dull. Grease spots and stubborn dirt can be cleaned off with an all-purpose spray cleaner.

FLOOR

To clear for the decorative vinyl floor covering, wash and wax as you would in your home.

Avoid excessive application of water on new floor as it may cause lifting and curling of the tile. It is best to establish a good coating of wax around edges.

MAINTENANCE

REMOVE TIRE & WHEEL FROM TENT CAMPER

1. Using a separate jack to raise the trailer, preferably hydraulic, screw jack, or scissor jack, etc. Place jack under the axle directly below the main frame member on the appropriate side. Do not place the jack under the axle at any other point since this may cause the axle to be de-cambered.
2. Loosen lug bolts.
3. Remove lug bolts.
4. Remove tire and wheel.

To protect your investment, as well as ensuring your continued enjoyment and personal safety, we urge you to follow this maintenance schedule. You will find other recommended maintenance instructions and schedules in the individual component operating instructions. While many owners perform their own maintenance, your Dutchmen dealer will be happy to handle your service needs.

COMPONENT	MAINTENANCE	AVOID
Wheel Bearings	<p>The wheel bearings in your new Dutchmen tent camper are pregreased. It is recommended that you repack these bearings a 5,000 miles or at the end of each season's camping to prepare for winter months ahead.</p> <p>Be sure to use only a multipurpose No. 1 or 2 good quality wheel bearing grease.</p> <p>If bearing or cone (race) become pitted, please replace any damaged part.</p> <p>Note: Should you be concerned about heat in wheel bearings, check them occasionally while traveling by placing hand on hub. You will be able to hold your hand momentarily on the hub.</p>	<p>(a.) Exposure to any water or condensation will cause bearings to rust and be damaged.</p> <p>(b.) Never let bearings run dry.</p> <p>(c.) Never overpack wheel bearings, especially in the middle of hub. It will trap heat if overpacked.</p>

COMPONENT	MAINTENANCE	AVOID
	<p>Should it be extremely hot, it is recommended to have the bearings inspected by a qualified service center.</p> <p>Note: During break-in period (first 500 miles) your hubs may feel extra warm due to brake shoes setting in with the brake drum (units with optional brakes).</p>	
Lug Bolts	<p>Lug bolts must be checked at 50 and 200 miles when your coach is new. After this, lug bolts should be periodically checked for safety, especially before any long trip and extensive braking. Tighten lug bolts to 85-95 ft. pounds torque using a cross tighten sequence of 1-3-2-4.</p>	<p>WARNING: DO NOT ignore checking wheel lug bolts.</p>
Coupler	<p>Use a small quantity of grease on moving mechanism to insure ease of operation.</p> <p>We recommend that you use conventional grease on the ball of hitch for ease of operation.</p>	
Tongue Jack	<p>Lubricate the jack by extending to full down position and insert SAE 30 oil through oil hole in top of jack. Do this several times per season.</p>	
Tires	<p>It is very important to check tires often as noted in the "Usage of Your R.V." section.</p>	<p>DO NOT ignore checking tire P.S.I. pressures often.</p>

COMPONENT	MAINTENANCE	AVOID
Brakes	<p>It is important to have brakes adjusted by selling dealer between 200-500 miles after initial break-in period. This operation may not be included by selling dealer as part of selling price.</p> <p>After initial break-in it is recommended to adjust the brakes following each 5,000 miles or at beginning of each season's camping trips.</p>	<p>It is very important to keep brakes adjusted as poorly adjusted brakes will not function correctly.</p>
Lifter Posts	<p>Your telescoping posts should be lubricated semi-annually with a light coat of silicone spray to insure smooth, trouble-free operation. Do not permit spray to reach tent.</p>	<p>DO NOT use grease or oil on posts as this lubricant will attract dirt and cause tent to become dirty.</p>
Winch	<p>The winch should be lubricated once per year, preferably at the season's beginning. Use a small quantity of light oil on two upper shaft bearings and also at each end of main drum which cable rolls on.</p>	
Pulleys	<p>Using spray can type grease, lube front and rear idler pulleys.</p>	
Push Rod	<p>Located under frame, on the main spring tube are two grease zerks on top and bottom. Pump enough grease until it is visible from each end of spring tube. (Grease - regular automotive cartridge type.)</p>	

COMPONENT	MAINTENANCE	AVOID
L.P. Gas System	<p>At the beginning of each season:</p> <ol style="list-style-type: none"> 1. Inspect all gas lines for crimps and road damage. 2. Check all alines and connections for leakage with soapy water or leak detector. 3. We recommend that you have the regulator checked and adjusted to proper pressure once per year. A gas leak check should be performed at least once a year by a qualified technician. 	<p>DO NOT smoke while changing bottles or any lines.</p> <p>DO NOT allow any connection to be loose.</p>
Bed Slides	<p>Be sure to lubricate bed slides twice per year with silicone spray as you do the lifter posts.</p>	
Appliances	<p>To care for brushed chrome we recommend you clean with a mild soap and water, wipe dry with soft cloth. Apply a light coat of oil such as "Johnson's Baby Oil" periodically.</p> <p>Various items on these appliances need to be cleaned periodically as need be, such as burner orifices, etc. See individual booklets for directions or see your dealer.</p> <p>On any appliance with porcelain covering, use caution to avoid chipping. Be careful not to drop items on porcelain surfaces.</p>	<p>DO NOT use steel wool, ammonia, acids, or abrasives on chrome surfaces.</p>

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