INTRODUCTION

The Owners Manual for your new Airstream Motorhome is designed to respond to the most frequent inquiries regarding the operation, function and care of the many systems that make modern motor homing a joy.

Airstream realizes our customers possess varying degrees of expertise in the area of repairing and maintaining the appliances in their motorhome. For this reason, the service and trouble-shooting information found in this manual is directed toward those with average mechanical skills. We also realize you may be more familiar in one area than you are in another. Only you know your capabilities and limitations.

We want you to use this manual, and hope you will find the information contained in it useful, however, should you ever feel you may be "getting in over your head" please see your dealer to have the repairs made.

The operation and care of component parts such as chassis, refrigerator, furnace, water heater and others are explained in this manual. However, you will also find the manufacturer's information supplied in a packet included with this manual.

The next page of this manual is a table of contents. Point your cursor to the subject, colored blue, you would like to research. Right click your mouse while it is on the subject title and you will be taken to that area of the manual.

To get back to table of contents, click on the back arrow in the tool bar at the top of the document. The arrow will be lighted.

The next two pages contain an index of subject material in alphabetical order.

Note: All information, illustrations and specifications contained in the literature are based on the latest product information available at the time of publication approval. Airstream reserves the right to make changes if and when new materials and/or production techniques are developed that can improve the quality of its product, or when material substitutions are necessary due to availability.

Throughout this manual <u>CAUTION</u> and <u>WARNING</u> notations are used.

Failure to observe **CAUTION** can cause equipment damage if not observed...

Failure to observe WARNING can lead to damaged equipment, serious personal injury and/or death if not observed.

Please read and follow all cautions and warnings. If any questions arise contact your dealer or the factory customer service department.

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AIRSTREAM INC. LIMITED WARRANTY

WARRANTY COVERAGE

When you buy a new Airstream Land Yacht Motorhome from an authorized Airstream dealer, Airstream, Inc., warrants the motorhome from defects in material and workmanship as follows:

BASIC WARRANTY PERIOD

This warranty is for 30,000 miles (40,000 Kilometers) or two years, whichever comes first, beginning when the vehicle is delivered to the first retail customer or first placed into demonstrator service. This warranty must have started prior to the accumulation of 4,000 miles in order to be valid.

ITEMS COVERED

Any part of the motorhome or any component equipment installed by the factory is covered by the basic warranty *except* the following items, which are *not covered:*

- House Batteries
- Automotive Chassis
- Generator

The above items will be handled by their respective service points and according to their written policy. This limited warranty does not include failure caused by accident, abuse, normal wears, overload or any cause not attributable to a defect in original material or workmanship of the motorhome or component equipment as installed by the factory.

LIMITATION OF IMPLIED WARRANTIES

All warranties of merchantability and fitness for a particular purpose, whether written or oral, express or implied, shall extend only for a period of two years from the date of original purchase, or 30,000 miles, whichever comes first. There are no other warranties, which extend beyond those described on the face hereof and which expressly excludes conditions resulting, from normal wear, accident, abuse, exposure or overload. Some states do not allow limitation on how long an implied warranty lasts, so the above limitations may not apply to you.

AIRSTREAM'S RESPONSIBILITY

The basic **Airstream Limited Warranty** applies for a period of two years from the date of original purchase or 30,000 miles, whichever comes first, and the application date of all warranties is that indicated on the owner's identification card. Defects in items covered under this Warranty will be corrected without cost upon the return, at the owner's expense, of the motorhome or defective part to an authorized Airstream dealer.

CARE AND MAINTENANCE

This warranty covers only defective material and/or workmanship; adjustments are made at the factory prior to shipment, and rechecked by the dealer prior to delivery to the customer. Adjustments thereafter become a customer responsibility.

The owner is also responsible for following all recommendations, instructions and precautions contained in the Airstream Motorhome Owner's Manual and the individual manuals furnished by the chassis, appliance and other manufacturers.

INSTALLATIONS NOT COVERED

Airstream, Inc., does not accept any responsibility in connection with any of its motorhomes for additional equipment or accessories installed at any dealership or other place of business, or by any other party. Such installation of equipment or accessories by any other party will not be covered by the terms of this warranty.

IF REPAIRS ARE NEEDED

If your motorhome needs repairs under the terms of the basic Airstream Limited Warranty, you should:

- 1. Take your motorhome to your selling dealer or other Authorized Airstream Dealer.
- 2. If the dealer is incapable of making the repair, request that he contact the Service Administration Department at Airstream, Inc., for technical assistance.
- 3. If repairs are still not made, the customer should contact:

AIRSTREAM, INC.

419 W. Pike Street - P.O. Box 629 Jackson Center, Ohio 45334-0629 Attention: Owner Relations Department

Furnish the following information:

- The complete serial number of the motorhome
- Mileage
- Date of original purchase
- Selling dealer
- Nature of service problem and steps or service, which have been performed. (The owner may be directed to another dealer at the owner's expense.)
- 4. If, after taking the above steps, repairs are still not complete, the Airstream owner may request the motorhome be allowed to be brought to the Factory Service Center at the owner's expense.

DEALER REPRESENTATION EXCLUDED

The full extent of the basic **Airstream Limited Warranty** is set forth in detail in the folder, and in the explanation of the basic **Airstream Limited Warranty** covered in the Airstream Motorhome Owner's Manual. Airstream Inc. will not be responsible for additional representations or implied warranties made by any of its dealers to the extent those representations are not a part of, or are contrary to, the terms and conditions of the basic **Airstream Limited Warranty**.

CONSEQUENTIAL AND INCIDENTAL DAMAGES

Airstream, Inc., will not be responsible for any consequential or incidental expenses or damages resulting from a defect. Incidental expenses include, but are not limited to: travel expenses, gasoline, oil, lodging, meals, telephone tolls, and loss of work and loss of use of the motorhome. Some examples of consequential damages would be: stained curtains due to rain leaks or delaminated floor caused by a plumbing leak. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

WARRANTY TRANSFER

The basic **Airstream Limited Warranty** is transferable to subsequent owners for the duration of the warranty period. Warranty transfer application forms are available from your dealer or the Airstream Inc. Service Administration Department.

CHANGES IN DESIGN

Airstream Inc. reserves the right to make changes in design and improvements upon its product without imposing my obligation upon itself to install the same upon its products theretofore manufactured.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

WARRANTY EXPLANATION

Along with your new Airstream motorhome you have purchased the Airstream Limited Warranty. Read your Limited Warranty carefully. It contains the entire agreement with respect to Airstream's obligation on the Limited Warranty on your new vehicle. The terms of the Limited Warranty, and only those terms, will define Airstream's responsibility. When you receive your Limited Warranty file it for safekeeping.

Upon proof of purchase date to any Airstream Dealer Service Center, defects in materials or workmanship will be repaired or replaced without cost to the owner for a period of twenty four (24) months from the original purchase date, or 30,000 miles, whichever occurs first. Written warranties of some manufacturers of components of the motorhome will be honored by Airstream for the duration on that manufacturer's warranty.

Items such as motorhome chassis, engine, tires, batteries and generator are serviced by their respective manufacturers and will be handled by their service centers according to the terms of their written policy. Any warranty forms from these manufacturers should be completed promptly, preferably at time of purchase.

Your motorhome chassis is pre-checked by its manufacturer before delivery to Airstream. All service to the chassis must be performed by the manufacturer according to the manufacturer's warranty and service policies. Literature is supplied with each Airstream motorhome that gives important information concerning its warranty coverage; however, the Airstream Limited Warranty covers the chassis heater, defrosters, windshield wiper blade, motor, washer, LP gas bottle and gas regulator.

Paint and appearance items that show imperfections should be brought to the attention of your dealer at the time of delivery and during pre-delivery inspection. Normal deterioration by use and exposure is not covered by the Airstream Limited Warranty.

Damage to enameled or porcelain surfaces resulting from abrasion, collision or impact, and broken window glass is not covered by the Airstream Limited Warranty.

The Airstream Limited Warranty Excludes:

Normal Wear:

Items such as water purifier packs, curtains, upholstery, floor coverings, window, door and vent seals may show wear within the one year Limited Warranty period depending upon the amount of usage, weather and atmospheric conditions.

Accident

Damage caused by accident is usually visible, and we strongly urge our dealers and customers to inspect the motorhome upon delivery for any damage caused by accident while being delivered to the dealer, or while it is on the dealer's lot. Damage of this nature becomes the dealer's or your responsibility upon acceptance of the motorhome. GLASS BREAKAGE, whether obviously struck or mysterious, is always accidental and covered by most insurance policies.

Abuse

Lack of customer care and/or improper maintenance, including failure to comply with the terms of the Owner's Manual, or failure to heed proper vehicle operation shown by the dash instruments is not covered by warranty.

Exposure

Deterioration by sunlight is possible to such items as tires, curtains or upholstery. Steel or metal surfaces are subject to the elements, causing rust and corrosion that is normal and beyond the control and responsibility of Airstream.

OVERLOAD

Overload Damage due to loading beyond capacity or to cause improper balance is not covered by the Airstream Limited Warranty. The Airstream motorhome body is engineered to properly handle any normal load. There are limits to the amount of load that can be safely transported depending upon speed and road conditions. If these limits have been exceeded the Airstream Limited Warranty will not cover resulting damage. For additional information on the load capacity of your motorhome consult your Owner's Manual or gross vehicle weight rating plate. Each motorhome is aligned during the last quality inspection. These tolerances will only change if the motorhome is subjected to abuse, such as dropping off a sharp berm, striking a curb, or hitting a deep hole in the road. Such damage would be considered as resulting from an accident which risks are not covered under the warranty. Abnormal tire wear and/or wheel alignment resulting from such damage is not covered under the terms of the warranty.

SERVICE

The Airstream Silver Key Delivery Program is an exclusive Airstream program. Before leaving the factory each and every vital part of the motorhome is tested for performance. Each test is signed and certified by an inspector. After the motorhome arrives on your dealer's lot all of these vital parts and systems are again tested. When you take delivery of your new motorhome you will receive a complete checkout.

Please contact your dealer if you need service. Major service under your Airstream Limited Warranty is available through our nationwide network of Airstream Dealer Service Centers. An up-to-date list of Dealer Service Centers has been provided with your new motorhome. This list is current as of the date of publication.

Occasionally dealerships change, or new dealers are added who may not appear on this list. For this reason, it is suggested that you contact your local dealer from time to time and bring your list up to date. He can also provide you with additional copies if you need them.

ALL SERVICE CENTERS OPERATE ON AN APPOINTMENT BASIS FOR THE UTMOST EFFICIENCY.

When you require service from the Airstream Factory Service Center, or a Certified Dealer Service Center, please contact the service manager for an appointment, and kindly inform him if you are unable to keep the appointment date or wish to change it.

Service may be arranged at the Factory Service Center by contacting the Service Coordinator at

Airstream Factory Service Center P.O. Box 629 419 W. Pike Street Jackson Center, Ohio 45334-0629 Phone: 937-596-6111

Fax: 937-596-6802

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 Airstream, Inc.

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

To contact NHTSA you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 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.

MAINTENANCE SCHEDULE

WARNING: FAILURE TO MAINTAIN YOUR COACH CAN CAUSE PREMATURE AND UNEXPECTED PARTS BREAKAGE AND/OR ERRATIC OPERATION THAT MAY BE HAZARDOUS. SERIOUS INJURY COULD RESULT FROM FAILURE TO HEED THIS WARNING.

Note: See chassis and appliance manufacturer's literature for further information.

EVERY 1,000 MILES OR 60 DAYS

Escape Window Check operation of latches and upper hinge.

Smoke Alarm Test and replace battery as required.

Tires Check tire pressure **See inflation warning on page C-13.**

GFI Circuit Breaker Test and record.

Spare Tire System (30' & 33' only) Check tightness and operation of winch. Check for worn and defective

cable, washer, or yoke.

EVERY 5,000 MILES OR 90 DAYS

Exterior Door locks Lubricate with dry graphite

Exterior Hinges Lubricate with light household oil

LPG Regulator Check bottom vent for obstructions

Main Door Striker Pocket Coat with paraffin.

Wheel Lugs Torque to 175 ft. lbs.

Range Exhaust Hood Clean fan blades and wash filter.

Roof Vent Elevator Screws Lubricate with light household oil

Main Door Step Check and lubricate moving parts.

EVERY 10,000 MILES OR 6 MONTHS

Exterior Clean and wax.

Carbon monoxide alarm Vacuum exterior only.

EVERY YEAR or 12,000 miles

Battery Clean, neutralize and coat terminals with petroleum jelly.

LP Tank Clean, neutralize and coat terminals with petroleum jelly.

Seams Check and reseal exterior seams, windows, lights and vents if

necessary. Reseal with Bostik urethane sealant or equivalent as needed.

MAINTENANCE RECORDS

DATE	DEALER	SERVICE PERFORMED

AIRSTREAM LAND YACHT OWNERS MANUAL 2002	
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A	1 -8

DRIVING

LOADING

Below is a sample of the weight information chart provided in all Airstream vehicles. This information can be found in your vehicle on the back of the first wardrobe door on the curbside of the vehicle about 60" up from the floor.

MOTORHOME WEIGHT INFORMATION

VIN OR SERIAL NUMBER

GVWR (GROSS VEHICLE WEIGHT RATING) IS THE MAXIMUM PERMISSIBLE WEIGHT OF THIS FULLY LOADED MOTORHOME. **UVW (UNLOADED VEHICLE WEIGHT)** IS THE WEIGHT OF THIS MOTORHOME AS MANUFACTURED AT THE FACTORY WITH FULL FUEL, ENGINE OIL AND COOLANTS.

SCWR (SLEEPING CAPACITY WEIGHT RATING) IS THE MANUFACTURER'S DESIGNATED NUMBER OF SLEEPING POSITIONS MULTIPLIED BY 154 POUNDS (70 KILOGRAMS).

CCC (CARGO CARRYING CAPACITY) IS EQUAL TO GWWR MINUS EACH OF THE FOLLOWING: UVW, FULL FRESH (POTABLE) WATER WEIGHT (INCLUDING WATER HEATER), FULL LP GAS WEIGHT AND SCWR.

CARGO CARRYING CAPACITY (CCC) COMPUTATION GVWR	POUNDS	KILOGRAMS
MINUS UVW		
MINUS FRESH WATER WEIGHT OF GALLONS @ 8.3 LB/GAL		
MINUS LP GAS WEIGHT OF GALLONS @ 4.5 LB/GAL		
MINUS SCWR OF PERSONS @ 154 LB/PERSON		
= CCC FOR THIS MOTORHOME*		
*DEALER INSTALLED FOLLIPMENT AND TOWED VEHICLE TONICLE WEIGH	T WILL BEDI	ICE CCC

See specifications section for Gross Combined Weight Rating (GCWR).

The motorhomes have large fluid tanks and lots of storage areas. It gives you great flexibility in loading. With flexibility comes responsibility. If you want to load down all the storage compartments the amount of fluids will have to be reduced. Distribute your additional cargo as evenly as possible with the heaviest objects located as low as possible.

Do you really want to carry 750 pounds of water to a RV park 1,000 miles away and then hook up to a city water supply? Even if you're going to the "boondocks" you can usually fill your water tank shortly before entering the area. Just reducing your load by 10 gallons of water lets you carry an awful lot of fishing and camping gear.

WEIGHING

The UVW, unloading vehicle weight, given in the chart above is the weight of the motorhome with the options as ordered, and installed at the factory. To determine the total actual weight of your vehicle with personal cargo, water and LP, it must be weighed on scales. The weight on each axle should be checked with the vehicle loaded also. The most common scales are those used by states to weigh trucks used along the highway. In rural areas grain elevators are a good source and another would be a gravel pit. If you have trouble locating scales, a call to your State Highway Patrol will usually find them very cooperative in assisting you.

WARNING: Do not exceed the Gross Axle Weight Ratings or the Gross Vehicle Weight Rating when loading your vehicle. Failure to heed any part of this warning could result in loss of control of the motorhome and towed vehicle or trailer and may cause an accident and serious injury.

CONSULT OWNER MANUAL(S) FOR SPECIFIC WEIGHING INSTRUCTIONS AND TOWING GUIDELINES. CD-130

SAFETY CHECK LIST

Your Airstream motorhome should be given a thorough safety check before a trip. Regular use of the following list will provide safe operation of your motorhome and will help you spot any malfunctioning equipment and correct the problem as soon as possible. The list is to help you and may not be all-inclusive.

Failure to heed the following items may cause damage to the vehicle or personal injury.

EXTERIOR CHECK LIST (BEFORE ENTERING VEHICLE)

- 1. Check condition of tires for proper inflation. See tire inflation on page C-13.
- 2. Turn off LPG valve on LPG tank.
- 3. Check that sewer connections, city water hookup, TV cable, and all exterior components are unhooked and properly stowed away.
- 4. Check that all external compartments and filler openings are properly closed and/or locked.
- 5. Check that items stored on exterior of vehicle are securely tied down.
- 6. Would any items stored on exterior of vehicle present a clearance problem?
- 7. Lower and secure awnings/TV antenna (satellite dish).
- 8. Follow all chassis manufacturers recommendations on checking and filling chassis fluid levels.

INTERIOR CHECK LIST (BEFORE DRIVING OFF)

- 1. It is important that the main door and cab door be completely closed and locked during travel. As an added precaution we recommend the dead bolt also be locked on the main door.
- 2. Turn off living area water pump.
- 3. Check that refrigerator door is fastened.
- 4. Check that nothing heavy is stored in overhead or high cabinets, which could fall out and cause injury. Heavy items should be stored in low cabinets.
- 5. Stow folding and pedestal tables.
- 6. Check that counter tops, range top, credenza tops and shelves are clear of even small items that could become projectiles in an accident.
- 7. Do not cook while under way. Hot food or liquid could scald due to a sudden stop or accident.
- 8. Be sure all LPG controls on furnace, range/oven and gas/electric refrigerator are turned Off.
- 9. Check that any internal stowage is securely held in place
- 10. Check that lights and switches are set in positions safe for travel.
- 11. Adjust the driver's seat so that you can easily reach and operate all controls. Make sure seat is locked in position. Do not adjust driver's seat swivel or fore and aft mechanism while vehicle is moving. The seat could move unexpectedly causing loss of control.
- 12. Check that front passenger's seat is locked in position both fore and aft adjustment and swivel mechanism.
- 13. Check rear view mirror adjustment, inside and outside. Adjust curtains if necessary for maximum visibility.
- 14. Secure children in a Federally Approved Child Restraint Device.
- 15. Fasten your lap belts.
- 16. Check that step light goes out and that electric step has retracted.

SAFETY SEAT BELTS

In the forward driver's area of the motorhome, safety seat belts are provided for the use of the driver and the right front passenger. Safety belts are available for other seats. It is strongly recommended that all occupants remain seated with their safety belts firmly attached while the motorhome is in transit. The driver should adjust his seat so that he is able to reach all controls easily with the belt on, especially able to use all the travel on the foot brake. The belt should be placed as low as possible around the hips to prevent sliding out from under them in case of accident. This places the load of the body on the strong hipbone structure instead of around the soft abdominal area. Two people should never try to use the same seat belt.

<u>WARNING:</u> Children must be secured in a Federally Approved Child Restraint Device. Failure to use proper restraints while in transit can result in severe or fatal injuries.

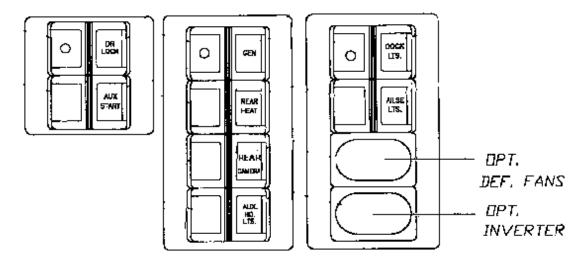
Child restraint devices are designed to be secured with lap or lap/shoulder belts. All instructions supplied by the restraint manufacturer must be followed. Statistics have shown children are safer when properly restrained in a rear seating position than in a front seating position.

Often the children traveling in motorhomes are grandchildren. There are times when our love for grandchildren makes us hesitate to properly supervise their actions. Don't hesitate when it comes to their safety. Make sure they are properly restrained.

CHILDREN HAVE LOVED ONES TOO.

IF YOU WON'T BUCKLE UP FOR YOURSELF, BUCKLE UP FOR THEM.

DASH-ARMREST SWITCHES - AIRSTREAM*



- **Door Lock** -The main door can be locked or unlocked from the drivers seat. Remember to hide an extra door key on the exterior in case of unexpected battery failure.
- Auxiliary Start The auxiliary start switch is intended to be used if the engine battery becomes too discharged to turn the engine over. To operate, hold the switch in the start position, and then use the ignition switch in a normal fashion. Operating the auxiliary start switch closes the points on a large solenoid, tying all three-vehicle batteries together for increased starting power.
- **Generator Switch** The remote generator switch on the dash allows the driver to start or stop the generator without leaving the driver's seat. It should be noted a built-in time delay allows the generator to reach full operating speed before 120 volt current is provided to the coach.
- **Rear Heat** This switch is two speeds and controls the fan on the rear engine heater by the door. The heat source is from the radiator so heat will only be available when driving.
- **Rear Camera** The rear view-monitoring camera has two positions. One will show the rear bumper and operating the switch tilts the camera to view further back.
- Auxiliary Head Lights To operate the auxiliary lights the regular headlights must be turned on first
- **Defrost Fans** In cool, damp weather these fans really help to clear the large windshields. This switch turns them on and off and each fan has its own switch to operate the oscillating feature.
- Aisle Lights The low aisle lights will allow passengers to converse without using overhead lights
 that could be bothersome to a driver at night.
- **Docking Lights** The docking lights illuminate the area at the side of the motorhome and are intended for use when parking in a campground at night.
- **Inverter** This switch controls a relatively small Inverter wired into the front television. Turn the switch on when you want to watch the front television and you're not plugged into 110-volt power.
- Exterior Mirrors (Armrest) Move center switch to R or L. The four perimeter switches will then move the right or left mirror in the direction indicated. Toggle switch operates heat.
- **Rear Monitor** When the ignition key is turned to the accessory or ON position, the power will be supplied and the monitor will be in the standby condition.

When you set the gear lever to the R (reverse) position with the POWER switch released (STANDBY), the monitor will be automatically turned on and the picture will be displayed on the monitor.

Please review the Rearview Monitor Manual provided by Weldex and placed in your Silver Key notebook. To see rearview when not in reverse, depress the power button to ON.

CAB SEATS

Besides the normal power seat control there are two additional finger levers. One allows the seat to recline and the other will let the seat rotate.

<u>CAUTION:</u> Revolving the power seat completely around will pull the wiring apart. The seats should only be swiveled toward the center of the vehicle. If the wires are loosened, following the color code can reconnect them: Red to red, green-to-green, etc. On some models the wires will be on a plug that can be reattached.

TRAILER TOWING AND DRIVING TIPS

Since this vehicle is designed and intended to be used primarily as a load-carrying vehicle, towing a trailer will affect handling, durability and economy. Maximum safety and satisfaction depends upon proper use of correct equipment and avoiding overloads and other abusive operation.

<u>WARNING:</u> The total weight of the motorhome and trailer must not exceed the GCWR listed in the specification section of this manual. The maximum towing capacity varies according to the size of the motorhome and its GCWR. Vehicles should be properly equipped for towing trailers. Information on trailer hauling capabilities and special equipment required may be obtained from your Airstream dealer.

To assist in attaining good handling of the vehicle/trailer combination it is important that the tongue load be maintained at approximately 10% of the loaded trailer weight, but not to exceed the hitch rating. Tongue loads can be adjusted by proper distribution of the load in the trailer, and can be checked by weighing separately the loaded trailer and then the tongue.

When towing trailers, motorhome tires should be inflated to the highest pressures shown on the information plate attached to the dash of your motorhome. The Cargo Carrying Capacity (CCC) of this vehicle is reduced by the amount that equals the trailer tongue load on the trailer hitch.

WARNING: The towing vehicle's braking system is rated for operation at GVWR (GROSS VEHICLE WEIGHT RATING), NOT at the GCWR (GROSS COMBINED WEIGHT RATING). A separate functioning brake system is required for any towed vehicles or trailers weighing more than 1000 lbs. (450 kg) when fully loaded. NEVER exceed the GVWR (GROSS VEHICLE WEIGHT RATING), or the GAWR (GROSS AXLE WEIGHT RATING) specified on a motorhome certification label. Also NEVER exceed the weight ratings of trailer hitch installed on a motorhome. Failure to heed any part of this warning could result in loss of control of the motorhome and towed vehicle or trailer and may cause an accident and serious injury. For specified towed vehicle braking requirements, consult the chassis owner's manual that comes with this vehicle.

<u>CAUTION:</u> Considerable damage will occur if the motorhome is improperly lifted for towing purposes. Only qualified professional wrecker service companies with proper equipment should be used.

The most common equipment is called "reach under hooks". These allow the tow operator to lift on the front suspension of your motorhome without damaging the bumper or other body parts. Another choice is a wheeled dolly. In these the front tires sit in a cradle supported by its own wheels. The tow operator should be told the weight of your vehicle is close to 5,000 lbs. on the front suspension so they can be properly prepared when they reach you.

On vehicles with hydraulically operated park position, it may be necessary to remove a drive shaft before towing. Further information is available in your Chassis Owners Manual.

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CHASSIS

The Airstream motorhome is built on a chassis designed for motorhomes. Operation of the engine and other related components is discussed in the Chassis Owners and Drivers Manual supplied with each coach.

If repairs are needed it can be difficult to determine which parts are the chassis, and which are Airstream's responsibility. The following list shows the major components of the chassis and the company responsible for their servicing.

Motorhome Chassis Serviced By Work Horse Custom Chassis.

Roadside Assistance: 1-877-946-7731 (24-7) See Chassis Owner's Manual

Engine Turn Signals

Transmission Suspension, including Front Air Cylinders

Brakes Drive Axle and Hubs

Steering Assembly Rear Shocks

Front Spindle, Bearings Automotive Fuse Panel

Steel Wheels Parking Brake
Alternator Electric Fuel Pump
Cruise Control Engine Battery

Instrument Panel Cluster Engine Cooling System

Tires (see tire manufacturer service center)

Auto Park Brake

Airstream

Auxiliary Heater Leveling Jacks
*Dash Air Conditioner/Heater Air Horn

Windshield Wipers Battery Control Center (Intellitec)

Hitch (REESE) Windshield Wipers

Coach Batteries

*The warranty on the dash air conditioner/heater can be confusing. The chassis manufacturer provides and installs the air conditioning compressor, condenser, dryer, dual cooling fans and associated plumbing. Airstream provides and installs the blower, evaporator, dash control, heater core and heater hoses. All venting and duct work is Airstreams.

The above list covers almost all of the chassis components. If you need further clarification or information contact the Airstream Customer Relations Department at 937-596-6111. If you wish to write the address is:

Airstream Inc. 419 W. Pike Street P.O. Box 629 Jackson Center, Ohio 45334

DASH AIR CONDITIONER/HEATER

Specific Climate Systems Inc. 1200 West Risinger Road Fort Worth, Texas Technical Assistance: 1-800-275-7524

OPERATION

The dash heater control is very similar to many automobiles

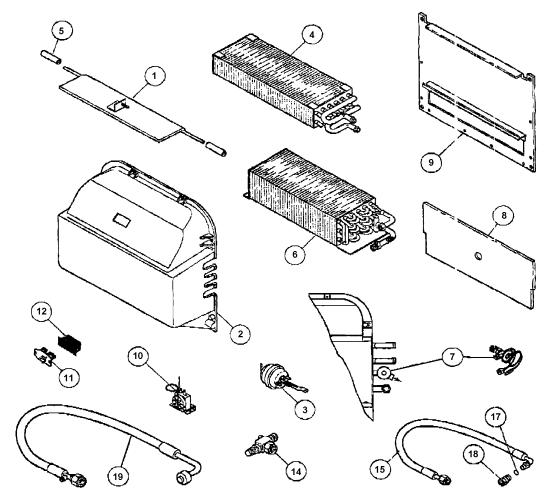
The center rotary switch marked "cold-hot" controls the amount of hot water flowing through the heater core. When the maximum air conditioner is engaged, inside air is circulated through the evaporator to obtain the utmost in cooling. The two positions marked vent and norm draw outside air through the evaporator.

SERVICE

Automotive Air conditioning has become a very specialized business requiring specific training and refrigerant disposal certifications. SCS has requested you to contact them on the toll free number listed above should you experience any service problems. Please contact SCS immediately if a warranty situation develops that your local dealer is unable to solve. They will authorize repairs and assist the dealer and if necessary aid you in obtaining service at an authorized air conditioner repair facility close to your location. This service locater assistance can be especially helpful if you are traveling and an Airstream dealer is unavailable or a considerable distance away.

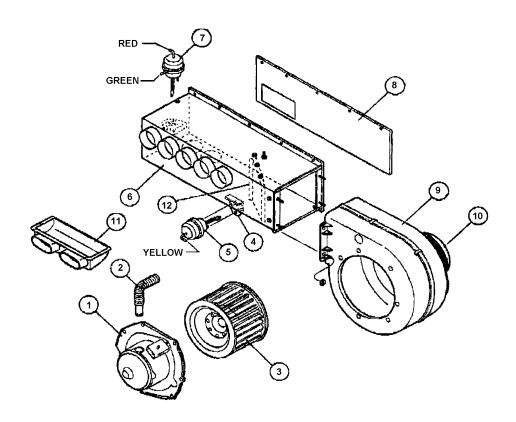
The following pages include wiring diagrams and vacuum line diagrams.

SCS/Frigette MOTORHOME HVAC SYSTEMS



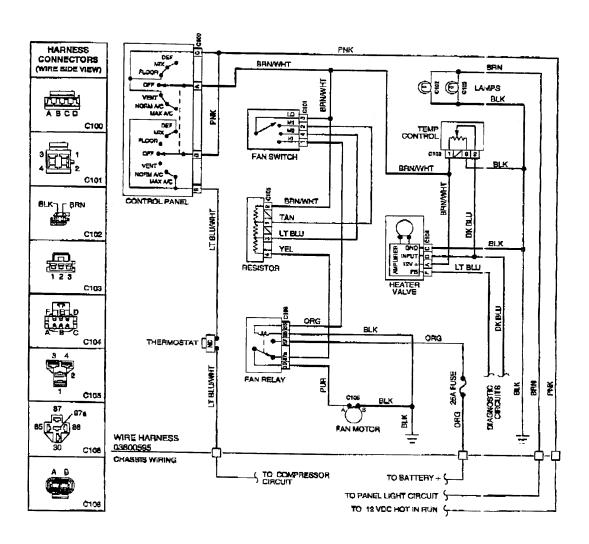
- 087-00219 DOOR ASSEMBLY
 062-00605 CASE
- 3. 030-00046 VACUUM MOTOR
- 4. 042-00044 HEATER COIL
- 5. 062-00623 BUSHING
- 6. 041-00157 EVAPORATOR COIL
- 7. 034-00029 EXPANSION VALVE
- 8. 045-00521 INSULATION
- 9. 071-00680 BACK PANEL
- 10. 033-00003 THERMOSTAT
- 11. 035-00006 RESISTOR
- 12. 071-00143 SHIELD
- 13. 05100362 #10 HOSE ASSY. L29
- 14 03400049 SERVICE VALVE
- 15. 085-0466 #6 HOSE ASSY.
- 16. 05000120 Q. C. COUPLING FM
- 17. 04500125 O-RING, SAE 012

SCS/Frigette_ MOTORHOME HVAC SYSTEMS

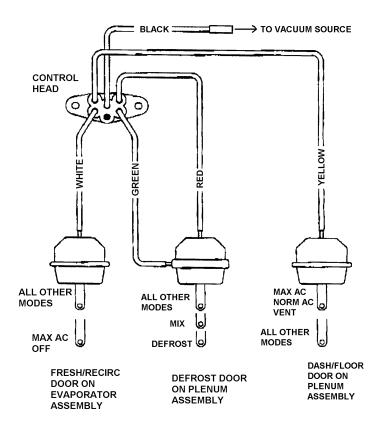


- 1. 030-00109 BLOWER MOTOR 2. 051-00034 VENT HOSE

- 2. 051-00034 VENT HOSE 6. 071-00763 HOUSING ASSEMBLY
 3. 062-00010 ELGWER WHEEL 7. 030-00068 VACUUM MOTOR
 4. 070-00234 VAC. MOTOR BRACKET 8. 071-00762 BACK PANEL
- 5. 030-00025 VACUUM MOTOR
- 6. 071-00763 HOUSING ASSEMBLY
- 9. 062-00113 BLOWER HOUSING
- 10. 060-00135 INLET GUIDE
- 11. 060-00497 HEATER BOX
- 12. 071-00645 DIVIDER



SCS/Frigette MOTORHOME HVAC SYSTEMS



AUXILIARY HEATER

The auxiliary heater, located under the coach near the step, is plumbed into the radiator system. Two "tees" are located between the engine and the front heater. The water lines to the heater are routed under the floor. By using the two-speed dash fan the temperature output can be varied.

WATER HEATER

Your motorhome uses a water heater that may have a motor aide feature. This feature circulates radiator cooling through an exchanger in the water heater as you drive. It is plumbed from the same hoses that supply hot water to the auxiliary heater. For further information on your water heater see the Appliance Section of this manual. The water heater with motor aide has caused some complaints. If it seems that when you take your motorhome out for a long drive that you are unable to light the burner of the water heater ... it is because the water is already hot!

TIRES

Your chassis Owner's Manual contains important cautions and information on tires and should be reviewed and followed for your safety.

The tires installed on your Airstream motorhome are engineered to provide a proper balance of performance characteristics for normal vehicle operation.

This section contains some tips on how you can obtain the most benefit from these tires.

Don't let anyone tell you that underinflation or over inflation is all right. It's not. If you're tires don't have enough air (underinflation) you can get tire flexing, heat build-up, tire overloading, bad handling, bad fuel economy, and bad wear. Too high an air pressure (over inflation) can result in abnormal wear, bad handling, harsh ride, and also increase the chance of damage from road hazards.

Tire inflation pressures should be checked at least monthly and when significantly changing the load you plan to carry in your motorhome. Always check tire inflation pressures when the tires are "cold". See tire inflation on page C-13.

Standard inflation pressures for tires are listed in the "Cold Inflation Pressure" chart. Front and rear pressures are shown for each model and GVWR, and are based on the GVWR and front and rear axle ratings (GAWRs) printed on your vehicle VIN plate and Certification label. Tires must be inflated to these pressures when the vehicle is fully loaded or an axle GAWR is reached.

Cold Inflation Pressure (PSI)

Model	Tire Size	Front	Rear Duals
26 ft. 15,000 GVWR	225/70R x 19.5F	80 psi	90 psi
30 ft. 18,000 GVWR	225/70R x 19.5F	80 psi	90 psi
33 ft. 18,000 GVWR	225/70R x 19.5F	80 psi	90 psi

Alignment

Proper FRONT END ALIGNMENT improves tire tread mileage. Your front-end suspension parts should be inspected periodically and aligned when needed. Improper alignment may not cause the vehicle to vibrate. However, improper toe alignment will cause front tires to roll at an angle, which will result in faster tire wear. Incorrect caster or camber alignment will cause your front tires to wear unevenly and can cause the vehicle to "pull" to the left or right.

The chassis front air bags should be inflated as instructed in chassis owner's manual and checked monthly.

<u>Caution</u>: Chassis manufacturer urges each owner to have the front end alignment checked after they have loaded the motorhome as they would on a trip.

WHEEL COVER

The new wheel covers on our motorhomes are removed by pulling off two of the lug nut covers. The two (of ten) loose ones are identified by indentations on three sides to hold them on the nut, and there are no flanges. You will have to look close the first time to find them. Once the nut covers are pulled off, the lug nut extension holding the wheel cover in place is easily removed.

TIRE CHANGING

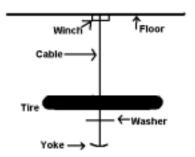
<u>Caution</u>: Changing a tire on a heavy-duty motorhome chassis is a physically demanding procedure. It requires specialized tools and knowledge of safety procedures. Only you can determine your knowledge base and physical ability. Don't take any unnecessary risks. You could turn an inconvenience into a tragedy. Please find a safe area to park your unit, call a tire service center and supply them with the information below if you have any doubts about changing a tire.

The spare tire is located in the trunk storage compartment on the 26 Ft model and tucked up under the trunk storage area against the bottom of the floor on the 30 & 33 Ft. models.

Remove the spare from the 26' coach by sliding it out the rear trunk door. The 30' & 33' models use a winch to lower and raise the spare tire. The winch is accessed inside the trunk storage area. To remove the spare tire, use a ratchet or speed wrench with a socket to lower the spare to the ground. Block the tire up to remove the weight from the washer, remove the washer from the yoke, slide the yoke through the rim, and slide the tire from under the motorhome.

To store a spare tire reverse the removal instructions.

WARNING: Defective spare tire equipment or an improperly stored spare tire could damage your equipment and/or cause serious injuries to people inside your motorhome, other motorists and pedestrians. The yoke, washer, and spare tire must be placed in the proper order to achieve safe storage as you travel. The cable and support system must be free from defects and in good working order. The complete system should be checked before each trip and every 1000 miles



during a trip for any signs of wear or possible failure. Please contact your dealer or Airstream Customer Service if you have any questions on the use of this equipment.

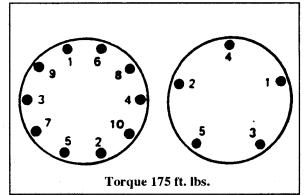
TIRE CHANGING (cont)

When removing a steel wheel rim to change a tire, loosen all wheel nuts approximately flush with end of stud, then tap clamp ring to loosen rim. Do not remove nuts until clamp rings are free or clamp ring may fly off of stud. When installing rim be sure pins on clamp ring face outboard. Then tighten attaching nuts alternately and evenly to avoid excessive wheel run-out. See torque values and sequence diagram. See tire inflation warning on page C-13.

LUG NUT TIGHTENING

WARNING: WHEN A UNIT IS NEW, OR WHEN EVER A WHEEL, WHEEL BOLT, OR WHEEL NUT IS REPLACED THE WHEEL NUT TORQUE MUST BE CHECKED AT 100, 1,000 AND 6,000 MILES, AND EVERY 6,000-MILES THEREAFTER.

TIGHTENING SEQUENCE



JACK PLACEMENT

Place the jack under the control arm to change front tires. Place the jack under the dual wheeled axle close to the tires being changed for rear tires on dual-wheeled axles.

TIRE ROTATION

Front and rear tires perform different jobs and can wear differently depending on the types of roads driven, your driving habits, etc. To obtain the longest tire life you should INSPECT AND ROTATE your tires regularly. (See Tire Rotation Illustration below).

Many automotive dealers and tire dealers will perform a free tire inspection to look for uneven or abnormal tire wear.

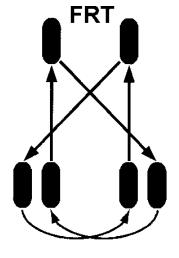
Tires should be rotated every 6,000 to 8,000 miles. For the longest tire life, any time irregular wear is seen have the tires checked, alignment checked, and tires rotated by your truck or tire dealer. Have the cause of uneven wear corrected.

The outer tire of a pair in dual wheel installations generally wears faster than the inner tire. When vehicles are driven continuously on high crown roads, an increase in air pressure of 5 psi on the outside tire of each dual produces maximum tire life. Be sure to return to recommended pressure when no longer driving under these conditions.

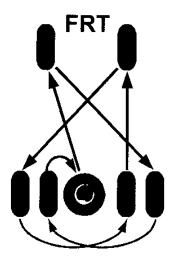
After rotation be sure to check wheel nut tightness and to adjust the tire pressures, front and rear. See tire inflation warning on page C-13.

<u>WARNING:</u> Wheel nuts should be tightened at certain intervals. See Lug Nut Tightening on previous page of this manual and read your chassis manual on this subject.

FOR SAME BRAND, LOAD RANGE AND TREAD PATTERN ON ALL TIRES







FRONT, REAR, AND SPARE

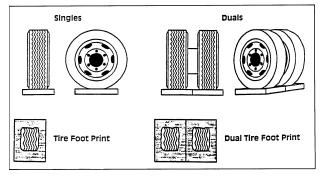
TIRE SUPPORT

Since motorhomes may sit for long periods of time it is important to properly support the tires if blocks are used for leveling.

The following information is provided by the Michelin Technical Group.

Extreme caution must be taken to ensure that the tires are fully supported when using blocks to level motorhomes and/or RV's. The load on the tire should be evenly distributed on the block and in the case of duals, evenly distributed on blocks for both tires. If not property done, the steel cables in the sidewall of the tires may be damaged and could lead to premature fatigue of the sidewall.

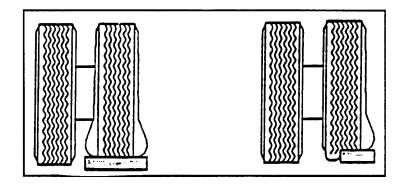
The **CORRECT** methods are shown in Figure 1. Please note that the blocks are wider than the tread and longer than the tire's footprint. This provides maximum support to the tires and assures that the load is evenly distributed throughout the tire's footprint area.

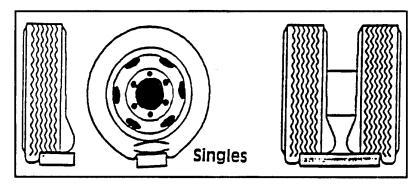


F FIGURE 1 CORRECT

INCORRECT

One tire or a portion of one tire is supporting the full load.





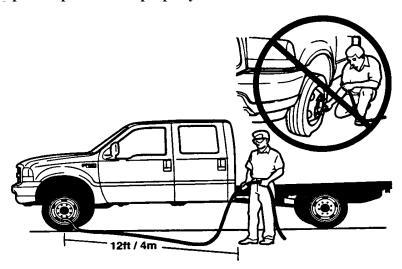
Portion of two tires are supporting the full load.

<u>CAUTION</u>: Tires incorrectly supported, as shown above, may be damaged which could lead to casing failure resulting in serious injury or property damage. If, on previous occasions, the tires have been incorrectly supported, a hidden damage may be present. Please contact your local Michelin dealer and request an inspection and a determination of possible damage.

TIRE INFLATION INFORMATION

WARNING: Your vehicle is equipped with a tire that is an all-steel radial. All-steel radial tires utilize steel cords in the sidewalls, and also require increased inflation pressures. Has such, they cannot be treated like normal light truck tires. Personnel trained, supervised and equipped according to Federal Occupational Safety and Health Administration (OSHA) regulations must perform tire service, including adjusting tire pressure. For example, during a procedure involving tire inflation, the technician or individual must utilize a remote inflation device, and insure that all persons are clear of the trajectory area.

An inflated tire and rim can be very dangerous if improperly used, serviced, or maintained. To avoid serious injury, never attempt to re-inflate a tire which has been run flat or seriously under inflated without first removing a tire from the wheel assembly for inspection. Do not attempt to add air to tires or replace tires or wheels without first taking precautions to protect persons and property.



ELECTRIC STEP (KWIKEE STEP 1 SERIES 28)

Manufacturer:

Kwikee Products Company Division of Ashton Corporation P.O. Box 638 Drain, Oregon 97435

Phone: 503-836-2126

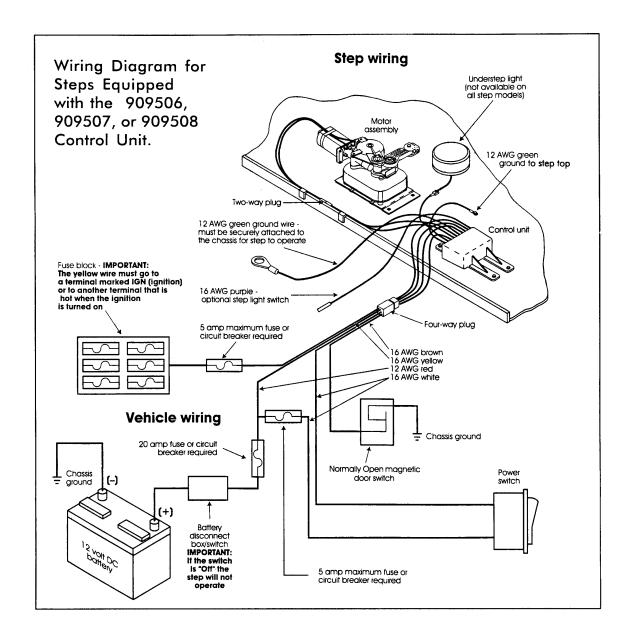
The step is easy and convenient to operate. Just inside the main door is a wall switch for the step. When traveling, leave the switch in the "ON" position - the step will lower when the door is opened and retract when the door is closed.

When parked, open the door so the step is lowered, then shut the switch off. The step will remain in the lowered position and the "step" light on the dash will be extinguished.

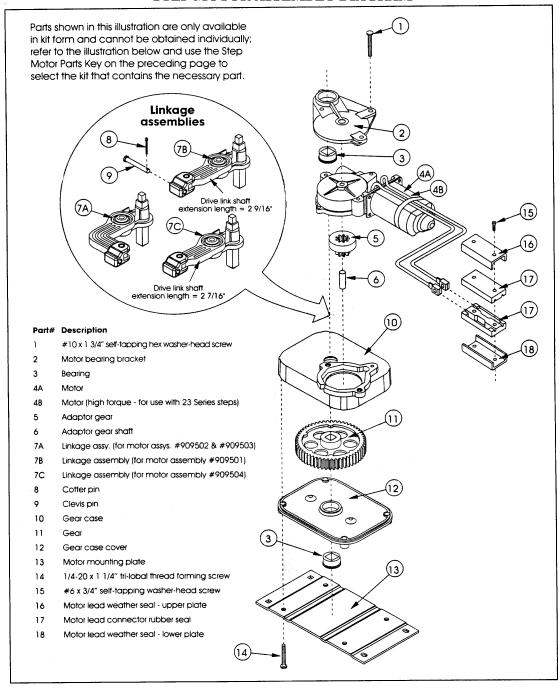
If you forget and leave the switch off as you leave - No Problem! When the ignition is "ON" the wall switch is by-passed and the step will retract when the door is closed.

<u>WARNING</u>: If the wall switch is turned off, and the step is in the retracted position when the ignition is turned off, the step will not lower when the door is opened. Keep your passengers informed.

DOOR SWITCH INSTALLATION

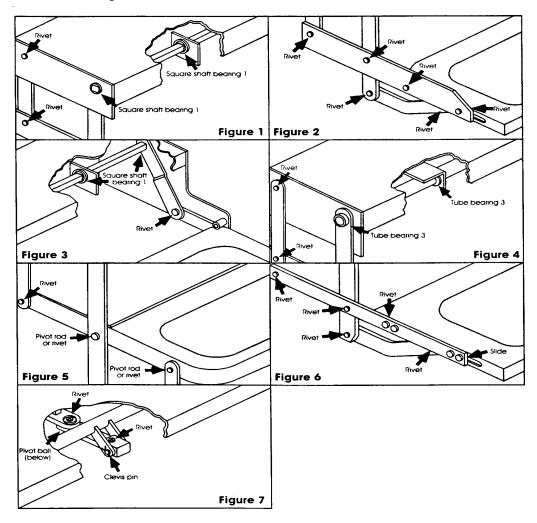


STEP MOTOR ASSEMBLY DIAGRAM



MAINTENANCE AND LUBRICATION

Clean all mud, salt, and road grime from step before lubricating. Lubricate all moving parts (bearings, pivot points, slides, clevis pin, and drive linkage ball) every 30 days with a good quality moisture and heat resistant penetrating grease. Kwik-Lube Spray Grease is specially formulated to lubricate Kwikee Electric Steps and is recommended for lubricating all moving parts. Refer to the figures below for lubrication locations.



NOTE: Figures are to be used as a general reference only. Some may not pertain to your particular step model. Views are typical to both ends of the steps.

- 1. Figures 1 & 3 square shaft bearing lubricate around outside and under head of bearing.
- 2. Figure 4 on step models equipped with plastic cover, this cover will have to be removed to lubricate center bearings. Lubricate bearings under cover every 90 days.
- 3. Figure 4 1" O.D. tube bearing lubricate around drive tube and between head of bearing and drive leg.

NOTE: We recommend that penetrating oils and silicone lubricants not be used on the step as they do not last.

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CAMPING

SAFETY: As always, safety should be one of your top priorities. Make sure you, and everyone traveling with you, can operate the main door and exit window rapidly without light.

WARNING: The roadside rear window is designed as an escape window. To escape, pull in on the two red latches at the bottom. The complete window sash will swing out to allow easy exit. The pleated shade is opened by sliding straight up. The window operation should be checked each trip and explained to all traveling companions.

WARNING: At each campsite make sure you have not parked in such a manner as to block the operation of the escape window by being too close to trees, fences or other impediments. Scenic views are one reason for traveling, but don't park so the beautiful lake or steep cliff is just outside your escape window.

<u>WARNING:</u> Read the directions carefully on the fire extinguisher. If there is ally doubt on the operation, you and your family should practice, then replace or recharge the extinguisher. You will find your local fire department will be happy to assist you and answer any questions.

$riangle_{ ext{WARNING:}}$

DON'T SMOKE IN BED!
KEEP MATCHES OUT OF REACH OF SMALL CHILDREN!
DON'T CLEAN WITH FLAMMABLE MATERIAL!
KEEP FLAMMABLE MATERIAL AWAY FROM OPEN FLAME!

We have all heard these warnings many times, but they are still among the leading causes of fires.

Other safety information on the LPG system of your motorhome is located in the Plumbing Section of this manual.

SMOKE ALARM - FIREX MODEL B

IMPORTANT INFORMATION SMOKE ALARM SAFETY CHECKLIST

Before installing, using and maintaining your smoke alarm read the entire owners manual and warranty. Keep it in a convenient place for reference.

- 1. Test your smoke alarm every week. To test the electronics, firmly depress the button. To test that smoke reaches the sensor, blow smoke in a careful fire-safe manner into your smoke alarm.
- 2. Your smoke alarm will not work without power. Never shut off its power or remove the battery to quiet the alarm.

FOR BATTERY-POWERED UNITS: When your smoke alarm "beeps" about once a minute, the battery is weak. Immediately install a new battery correctly. Be sure to use only batteries specified in Owner's Manual or on unit. Test unit after installing a new battery.

SMOKE ALARM – FIREX MODEL B (CONT.)

- 3. Clean and vacuum the openings on your smoke alarm once a month.
- 4. Do not open the smoke alarm or try to repair it. For replacement information see the WARRANTY in the Owner's Manual.
- 5. Verify you have the proper number of smoke alarms in your home and the correct location for each one. A smoke alarm will not respond well in an incorrect location.
- 6. If your smoke alarm has one or more of these special features, please note:
 - FALSE ALARM CONTROL (Model C): Pushing test/hush button reduces sensitivity for up to 15 minutes, minimizing nuisance alarms,
 - FLASHING LIGHT (Model E): Pushing test button turns flashing safety light on. Very thick smoke may obscure light.
- 7. Smoke alarms have technical limitations and may not respond in all situations. **FIRE PREVENTION** is your best safeguard.
- 8. For a replacement Owner's Manual or Safety Checklist, please indicate your unit model, include a self-addressed stamped envelope and send to:

Maple Chase Company

2820 Thatcher Road

Downers Grove, Illinois 60515-4040

WEEKLY TESTING OF YOUR SMOKE ALARM

- 1. FOR A COMPLETE WEEKLY TEST OF THE ELECTRONICS AND THE SENSOR OPERATION, FIRMLY DEPRESS THE TEST BUTTON ON THE COVER OF THE SMOKE ALARM FOR A FEW SECONDS. The smoke LED (light emitting diode), which is the indicator light under the clear Push-to-Test button, will blink once per second while the button is being pushed and the alarm is sounding. The smoke alarm will stop sounding when you release the button.
- 2. If your smoke alarm has the False Alarm Control or Safety Light feature see "SPECIAL SMOKE ALARM FEATURES" for further testing information.
- 3. **IMPORTANT:** Always test your smoke alarm upon returning from vacation, or any other time when no one has been in your household or residence for several days.
- 4. If a smoke alarm is installed in a mobile home, test the smoke alarm after you remove the vehicle from storage and before each trip.

WARNING: If your smoke alarm does not respond as described in any of the above tests, check that a good battery is properly installed. If a good battery is properly installed, promptly remove the unit, repack it and return it for repair or replacement.

TAKING CARE OF YOUR SMOKE ALARM

Your smoke alarm has been designed and manufactured to be as maintenance-free as possible. Here are a few simple steps you must perform, in addition to the weekly tests described in the section "WEEKLY TESTING OF YOUR SMOKE ALARM," to keep your unit in good working order.

• The smoke alarm should be vacuumed monthly or more often if there is dust, dirt or kitchen grease that can accumulate. Use a soft brush or wand attachment and vacuum all slots in the cover and side. FOR YOUR SAFETY, you must properly clean and maintain your smoke alarm, since a dirty or malfunctioning unit may fail to alarm or cause unwanted nuisance alarms.

SMOKE ALARM – FIREX MODEL B (CONT.)

If the unit is damaged or fails to operate properly, and you have checked that a good battery is
installed correctly, follow the directions in the section "WHERE TO SEND YOUR SMOKE
ALARM IF IT NEEDS SERVICE" for return. FOR YOUR SAFETY, DO NOT OPEN THE
SMOKE ALARM AND TRY TO REPAIR IT YOURSELF. While smoke alarms are economical
devices, they contain precision electronic components that are precisely calibrated. The
manufacturer must do repairs.

REPLACING THE BATTERY

The smoke alarm will "beep" once a minute for at least 30 days when the battery is weak. The battery must **immediately** be replaced with a fresh one.

The battery should also be changed if it does not sound an alarm when tested. TO REPLACE THE BATTERY:

- 1. Check if the tamper resist locking pin is installed in the smoke alarm (see "USING THE TAMPER RESIST LOCKING MECHANISM" section). If so, pull the pin completely out of the smoke alarm using long-nose pliers.
- 2. Remove the smoke alarm from the mounting bracket by twisting counterclockwise
- 3. Replace old battery with a fresh one. If your smoke alarm has a safety light, the miniature lamp operates on two AA batteries. (See recommended batteries below.)
- 4. Check that battery connections are secure and the battery is secured in its compartment
- 5. Test smoke alarm for proper operation (see "WEEKLY TESTING OF YOUR SMOKE ALARM" section). The smoke alarm operates on a 9-volt battery. The normal battery operating life will be one (1) year. The life of some batteries may be less.
- 6. Firex smoke alarms sold with Ultralife long-life lithium batteries require replacement approximately every ten (10) years or when the low battery signal sounds.

CAUTION: You should only use the batteries specified here or on the label of the unit.

For Models A, B, C, E and PB use: Eveready 216, 522 or 1222; Mallory MN1604; Duracell MN1604; or Ultralife U9VL-J.

For Model E also use AA Heavy Duty for light power. The miniature lamp operates on two (2) AA batteries. For replacement, use heavy-duty or alkaline AA batteries: Eveready 1215, E91, or Duracell M15HD, MN1500.

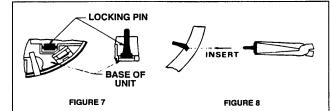
CAUTION: Do not use any type of rechargeable batteries.

USING THE TAMPER RESIST LOCKING MECHANISM

To make the smoke alarm somewhat tamper resistant, a "locking pin" has been provided in the base of the unit. It will help deter a child or other individual from removing the smoke alarm from the bracket. See

Figure 7. The following directions can install this.

- 1. Remove the break- away locking pin from the unit by rocking pin back and forth.
- 2. Put the smoke alarm back on the mounting bracket. (See section "HOW TO INSTALL YOUR SMOKE ALARM.")



- 3. Using long-nose pliers grab the head of the locking pin and insert into hole located on the side of the smoke alarm. See Figure 8.
- 4. The Tamper Resist feature is now installed and complete.

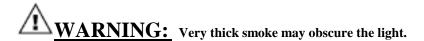
To Remove:

- 5. Using long-nose pliers grasp the head of the locking pin and pull the pin completely out of the smoke alarm.
- 6. The smoke alarm can now be removed from the mounting bracket with a counterclockwise twist.

SPECIAL SMOKE ALARM FEATURES

If your smoke alarm has one or more of these special features, read the following:

• BLINKING LED LIGHT (Models B, C, E and PB): The indicator light under the Push-to Test button blinks about once per minute to indicate the smoke alarm is receiving power.



CARBON MONOXIDE ALARM

The following information is highlights from the folder provided by the alarm manufacturer. The folder, with more detailed information, is contained in your Owners' Packet.

Test detector immediately following installation and weekly for proper operation by pushing the test button until the YELLOW L.E.D. lights and a short beep is heard (approximately three seconds). Release the button. The detector will then test itself for proper operation. At completion of the self-test, the alarm will sound and both L.E.D.s will light for 3/4 of a second. The detector then resumes normal operation.

NORMAL OPERATION

In normal operation the detector will flash the RED L.E.D. once every 30 seconds.

WARNING CONDITION

If the COSTAR senses a low level of CO The YELLOW L.E.D. will light and the detector will beep every three seconds warning that CO is present. The area should immediately be ventilated. A concentration of 60 PPM within 67 minutes will cause the warning condition. Pushing the test button will silence the warning.

signal but the YELLOW L.E.D. will stay on. After two hours the warning signal will sound again if the CO source has not been eliminated. If the condition persists there is a possibility that it may cause the unit to enter alarm condition (below). If this occurs pushing the reset button will silence the alarm for 30 minutes.

ALARM CONDITION

If the COSTAR senses unsafe levels of CO, the RED L.E.D. will light up and the alarm will sound. The alarm condition will be signified by a repetitive alarm-sounding pattern of approximately 4.5 seconds on 1.5 second off. **Immediate evacuation is required**. Pushing the test button will silence the alarm once for approximately 4 minutes.

After approximately 4 minutes the alarm will once again sound until the unsafe CO concentration is removed.

FAULT CONDITION

Periodically the detector's measurement circuit is tested. If an error is detected, the detector will sound twice and the YELLOW L.E.D. will flash twice every 30 seconds. This is an indication of circuit malfunction and that the detector requires immediate servicing.

MAINTENANCE

Battery Replacement:

If tamper resistant pin has been used, refer to "tamper resistant locking pin" for removal instructions.

To replace the battery remove the detector from the mounting plate by rotating the detector in the direction of the "OFF" arrow on the cover.

The **Model 9L-1 CO Detector** uses one (1) 9-volt battery. The **CO DETECTOR** is powered by a 9V alkaline battery. A fresh battery should last for one year under normal operating conditions. This detector has a low battery monitor circuit which will cause the detector to "chirp" and the red LED to flash approximately every 30-40 seconds for a minimum of seven (7) days when the battery gets low. Replace the battery when this condition occurs. **USE ONLY THE FOLLOWING 9 VOLT BATTERIES FOR CO DETECTOR REPLACEMENT.**

Alkaline type: EVEREADY522; DURACELL MN1604; GOLD PEAK 1604A

Lithium type: ULTRALIFE U9VL

NOTE: REGULAR TESTING IS RECOMMENDED.

WARNING: USE ONLY THE BATTERIES SPECIFIED. USE OF DIFFERENT BATTERIES MAY HAVE A DETRIMENTAL EFFECT ON THE CO DETECTOR.

CLEANING YOUR DETECTOR:

To clean your detector remove it from the mounting bracket as outlined in the beginning of this section. You can clean the interior of your detector by using your vacuum cleaner hose and vacuuming through the openings around the perimeter of the detector. The outside can be wiped with a damp cloth.

AFTER CLEANING, REINSTALL YOUR DETECTOR. TEST YOUR DETECTOR BY USING THE TEST BUTTON.

Test detector weekly for proper operation by pushing the test button until the YELLOW L.E.D. lights and a short beep is heard (approximately three seconds). Release the button. The detector will then test itself for proper operation. At completion of the self-test, the alarm will sound and both L.E.D.s will light for 3/4 of a second. The detector then resumes normal operation.

SERVICE AND WARRANTY

If after reviewing this manual you feel that your CO Detector is defective in any way, do not tamper with the unit. Return it for servicing to: Quantum Group, Inc., 11211 Sorrento Valley Road, Suite Valley Road, Suite V. San Diego, CA 92121.

Or call us toll free (800) 432-5599 E-mail address: mktsls@qginc.com

LP GAS DETECTOR

In the kitchen area of your unit, approximately six inches above the floor, is the LP gas detector. LP gas is a mixture of gases produced and sold commercially as a fuel for heating and cooking appliances. LP gas is highly flammable and, as a result, can be explosive if ignited under certain circumstances. LP gas is heavier than air and, if confined in a closed space, will accumulate close to the floor. When the LP gas concentration in your unit exceeds 2000 PPM the detector will provide a visual and audible alarm by sounding a buzzer and flashing the red LED two times per second.

WARNING: Activation of this detector indicates the presence of LP gas, which can cause an explosion and/or fire. This normally indicates a leak in the LP gas installation or a LP gas appliance. Extinguish all open flames, open your windows and door and evacuate the unit immediately. Do not activate any electrical switch. Turn off the LP at your gas bottle(s). DO NOT RE-ENTER YOUR UNIT UNTIL A QUALIFIED REPAIR TECHNICIAN HAS CORRECTED THE PROBLEM.

OPERATION

Your LP gas detector is wired directly to your vehicle battery and incorporates a 1-amp in-line fuse. When the device is operating normally the green LED will be lit.

<u>CAUTION</u>: It is not recommended that the detector be disconnected from the battery during periods of storage. There is a small heater on the sensor of the device, which "burns" away impurities in the air during periods of normal use. During periods when power is interrupted, impurities can build up on the sensor. When power is returned to the detector the detector alarm may activate until the impurities are "burned" off. This could take a number of hours, during which time the alarm will be constantly "on".

DETECTOR TEST

Press the test button for 5 to 6 seconds until the alarm sounds then release the test button. The red LED should flash and the alarm sound for approximately 4 minutes. This test should be performed at least once a week during normal vehicle operation, and after periods of storage, and before each trip.

LOW VOLTAGE

Below 10 VDC the detector will continue to operate but will blink alternately green and orange. Below 8 VDC the unit will behave erratically and will eventually shut off. To ensure proper operation, do not operate the unit below 10 VDC.

COMPONENT FAILURE

The failure of any circuit component will cause the detector to display a continuous orange LED fault light and a short beep indicating failure. If this occurs, immediately contact your dealer or Airstream Customer Service for the name of the nearest detector service center.

Please read the operating instructions for your detector, which have been supplied with the paper work of your unit.

<u>WARNING:</u> Have a professional technician check all safety related systems yearly or whenever any doubts of their ability to function properly arise.

OVERNIGHT STOP

In time you will develop a knack for spotting wonderful little roadside locations by turning off the main highway and exploring. There are many modern recreational vehicle parks, including State, County and Federal parks with good facilities, where you may obtain hookups of electrical, water and sewer connections. Directories are published which describe in detail these parks and tell what is available in the way of services and hookups.

All you need to do to enjoy the self-contained luxury is to:

- 1. Turn on LP gas supply and light appliance pilots if required.
- 2. Turn on water pump and open faucets until air is expelled from the system.

Before moving on, turn off the LP gas and water pump, check your campsite, both for cleanliness and also to be sure you haven't left anything behind. Make sure everything is properly stowed.

Overnight or Weekend Trips

On overnight or weekend trips, chances are you will not use up the capacity of the sewage holding tank, deplete the water supply, or run down the batteries which supply the living area 12 volt current.

Longer Trip

On a longer trip, when you have stayed where sewer connections and utility hookups were not available, it will be necessary for you to stop from time to time to dispose of the waste in the holding tank and replenish the water supply. Many gas stations (chain and individually owned) have installed sanitary dumping stations for just this purpose. Booklets are available which list these dumping stations.

When you stop for the night, your Airstream motorhome is built to be safely parked in any spot that is relatively level and where the ground is firm. Your facilities are with you. You are self-contained. Try to pick as level a parking spot as possible.

Hydraulic Leveling Jacks

Some models are equipped with hydraulic leveling jacks that can be deployed. Complete instructions are included with the Owners Packet. Be sure to read the directions completely prior to operating the jacks. The jacks will be able to level your unit in most modern campgrounds. However, their capabilities are limited, and in some situations you will have to use planks to level the coach.

TV Backing Monitor

The optional TV backing monitor can be extremely helpful, especially when traveling alone. The Owners Packet includes complete instructions on use. Practicing with the monitor in a safe place will make it much easier for you to use when it is really needed.

WINTER TRAVELING

Traveling in your motorhome during the cold winter months can be a most exhilarating experience. There are, of course, certain precautions that must be taken as you would in your home in low temperatures.

<u>WARNING:</u> Always shut off the LP gas when gasoline is added to the fuel tank.

WINTER TRAVELING (Cont.)

Some states do not allow LPG to be turned on while moving. While traveling in these states you must use your common sense. How cold is it? How long will it be before you can turn the heat back on? Is the temperature dropping or rising? Remember, the wind chill factor when driving 50 MPH will cause the interior of the motorhome to cool much faster than when it is parked.

- 1. You must have a plentiful supply of propane gas.
- 2. If your stay is longer than overnight, you should endeavor to have 120-volt electricity available. The batteries, fully charged, will not last more than about 15 hours in freezing weather. Of course, you can run your generator to recharge the batteries, or even use the generator continually. Since the generator starts off the same battery as the engine, it is recommended to start the generator prior to shutting off the engine. This will prevent running the engine battery down should there be a difficulty in starting the generator in the cold temperatures.
- 3. Minimize use of electricity if 120-volt power source is not available.
- 4. Leave cabinet doors, bed doors and wardrobe doors slightly open at flight to allow circulation of air in and around all furniture components
- 5. Use propylene glycol type antifreeze in waste and drain water tanks to prevent freezing. Quantity of antifreeze needed will vary with ambient temperature and the amount of liquids in tank.
- 6. For extended stays in cold weather, insulate the water line outside the motorhome. You should remember that low temperatures in combination with high winds cause an equivalent chill temperature much below what your thermometer is reading. For instance, with an outside temperature of zero degrees, and the wind velocity of 10 miles per hour, the equivalent chill temperature is minus 20° F. The exterior water faucet has an in-line valve inside the motorhome. In below freezing temperatures, shut off the valve inside and open the exterior brass valve so it will drain. See the valve section in this book for locations.

Condensation

It is also important to guard against excessive humidity inside your motorhome during winter campouts. When windows and window frames fog up or "sweat," it means that there is too much moisture in the air. Moisture comes from water vapor and water vapor is the direct result of water evaporating.

Many things such as baths and showers, boiling foods, washing dishes, washing clothes, even breathing, contribute to evaporation. The inside air can only absorb so much of this moisture before it becomes saturated. At this point it can hold no more, and any additional water vapor condenses back to liquid water in the form of droplets on any available cool, solid surface. Temperature has a direct effect on the airs saturation point. Cold air holds less moisture than warm air. For this reason, the air immediately adjacent to cold outside walls and windows cools down and causes water vapor to condense and form moisture droplets, even though warmer inside surfaces are still dry.

The best way to keep condensation under control is to reduce moisture-producing activities. It is important to provide adequate ventilation and keep the air circulating as much as possible.

Use your exhaust fans to remove moisture before water vapor mixes with the air. Open windows slightly once in a while, while operating fans, to bring in drier outside air and aid in overall air circulation. In extremely cold weather, when outside ventilation is not practical, it may be necessary .to use a small dehumidifier to aid in reducing condensation.

There is no substitute for common sense in cold weather.

Note: The Airstream motorhome is built as a recreational vehicle and is not intended as a permanent dwelling or for more than temporary use in sub-freezing temperatures.

EXTENDED STAY

Making a long trip is not very different from making a weekend excursion. Since everything you need is right at hand, you are at home wherever you go. When packing for an extended trip, take everything you need, but only what you need.

Some models are equipped with Hydraulic Leveling Jacks that can be deployed. Complete instructions are included with the Owners Packet. Be sure to read the directions completely prior to operating the jacks.

When you plan to stay in the same place for several days, weeks or months, you will want your motorhome to be as level as possible. Check the attitude with a small spirit level set on the inside work counter. If a correction is necessary, then you must first level from side to side. This can be done most easily by driving up a small ramp consisting of 2" x 6" boards tapered at both ends. WE DO NOT RECOMMEND PLACING TIRES IN A HOLE FOR LEVELING. Check the tire section of the chassis portion of this manual for information on tire support.

Hook Up to Water by attaching a ½ " minimum high-pressure water hose to the city water service, or the hose from the water reel if so equipped.

Plug the **Electrical Cable into the City Power Service**. Be sure you have the wire grounded and have the proper polarity. See Electrical Section for technical details.

A **Cable TV Hookup** is located on the roadside rear corner of the 26' motorhome and inside the small roadside compartment in the 33' & 30'. They are already wired into the existing system, so the exterior connection is all that is required.

To use the **Generator** you simply start it. All switching is done automatically. The generator can be started either from your interior monitor panel, dash switch or the switch on the generator itself.

It is easier on your generator and appliances if you'll allow the generator to reach its normal operating speed (about a minute) prior to applying heavy current loads.

Hook your **Waste Drain Hose into the Sewer Disposal Facility** and attach to the drain outlet in your motorhome. For details on this procedure see Drain and Waste System Section.

Turn on the gas supply and light the oven pilot. Lighting a top range burner to bleed any air from the system will make it easier to start other appliances.

When you stay for extended periods where electric or water hookups are not available, you must make regular checks on the condition of your 12-volt battery and the contents of your water tank. Carry drinking water in a clean bucket to refill your tank. When your waste tank nears capacity, move your motorhome to a dumping location.

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EXTERIOR

The sidewalls and roof of your Airstream Land Yacht motorhome are laminated fiberglass with a gel coat exterior finish. No paint means the small mars and scratches can be polished out or repaired using gel coat. We recommend this be done professionally since excessive polishing can remove the gel coat.

There is no magic to caring for your motorhome. The finish is the same as non-painted fiberglass boats. As a general rule of thumb, we recommend the motorhome be washed about every four weeks and waxed in the spring and fall. To make sure your new unit is always protected, you should wax it immediately or have your dealer wax it just prior to delivery. In industrial areas cleaning and waxing should be done on a more frequent schedule.

ALWAYS CLEAN YOUR MOTORHOME IN THE SHADE OR ON A CLOUDY DAY WHEN THE SKIN IS COOL. Oil, grease, dust and dirt may be removed by washing with any mild non-abrasive soap or detergent. Cleaning should be followed by a thorough clean water rinse. Spots and streaks may be prevented by drying the unit with a chamois or a soft cloth.

After cleaning and drying, a good grade of nonabrasive automotive paste or liquid wax will increase the life of the finish, especially in coastal areas where the finish is exposed to salt air, or in polluted industrial areas. It will also protect the shell from minor scratches and make subsequent cleaning easier.

It is important to remove sap, gum, resin, asphalt, etc., as soon as possible after they appear by washing and re-waxing. Sunlight and time will bake-harden these materials, making them almost impossible to remove without heavy buffing. If asphalt remains on the motorhome after washing, use a small amount of kerosene on a rag and wipe the spots individually, being careful not to scratch the finish.

It is recommended that the caulking and sealant used in external seams and joints such as window frames, light bezels, beltline and rub-rail molding, etc., be checked regularly. If this material has dried out and becomes cracked or checked, or if a portion has fallen out, it should be replaced with fresh material to prevent possible rain leaks. Caulking and sealing material is available from your motorhome dealer.

Main Door Lock

The door lock on your motorhome operates in the same manner as the locks used on most automobiles. Locking the latch actually disengages the linkage between the handles and the latch. This prevents forced entry by using large pliers on the lock handle.

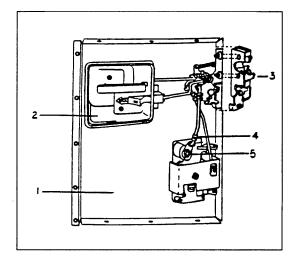
We urge you to keep an extra set of keys for both the door lock and the ignition hidden somewhere on the exterior of the coach. We probably receive a dozen calls a year from people who have lost keys or locked them in the coach. Your keys will overcome the keyless lock system used on the dead bolt.

Occasionally you might find the latch catch, shown on the next page, out of time. This simply means it has been bumped and has flipped to the closed position when the door is still open. To re-time, hold the door handle in the open position, then pull out and down on the latch catch. It should flip to the open position as shown in the illustration.

LOCK ASSEMBLY, DRIVERS DOOR

- 1. Mounting plate, Door Lock
- 2. Lock Handle, Inside
- 3. Latch Catch
- 4. Keeper, Rod Linkage
- 5. "E" rings, Tumbler Installation

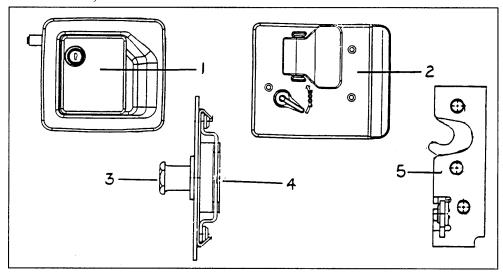
(Lock assembly as viewed from inside of door with cover plate removed.)



Access to the linkage mechanism of the lock is gained by removing the two screws holding the lock handle and the center panel of the inside door skin. This will expose the door lock assembly, as shown in the illustration.

The tumbler is replaced by removing the inside lock handle and the center panel of the inside door skin so the lock assembly is exposed. Insert key into tumbler then remove the "E" ring (item #5 on Illus), being careful it is not lost.

LOCK ASSEMBLY, MAIN DOOR



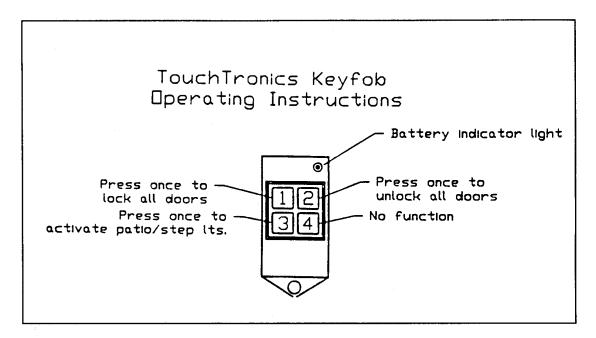
- 1. Outside housing assembly
- 2. Inside plate
- 3. Striker bolt
- 4. Caged nut
- 5. Rotary latch

KEYLESS DOOR LOCK

Operation

The dead bolt portion of your motorhome may be controlled by radio signals produced by the key fob shown below. One characteristic of this system is the one second delay after a pad has been depressed.

NOTE: When you use the keypad to turn the patio lights ON you must also use the keypad to turn them OFF. The same goes for the switch inside the door ... if you turn the lights on with this switch, you must use the same switch to turn them off. You cannot turn the lights on with the keypad and off with the switch.



SERVICE

There are four major components operating the door locks; control module/receiver, dash switch, relay, and drive motors. The control module is mounted on the inside wall just behind the main door. The relay operates in conjunction with the dash switch and is located up under the left hand side of the dash. The drive motors, located at each lock, are polarity sensitive. When testing you'll find the wires at the drive motors will switch from positive to negative and vice versus as the key fob or dash switch is being operated. When using the dash switch the relay under the dash performs the polarity switching functions and the control module/receiver serves the same function when the key fob is used.

A detailed wire layout is provided in the electrical section of this manual.

ROOF LADDER

For traveling, the ladder should be hinged down and snapped securely into the nylon sockets. If the ladder is down and rear compartment access is required, the bottom of the ladder is pulled out of the sockets (a good hard tug is needed) then swung up vertically. As it nears vertical, the slot in the hinge will fall into a locked position and hold the ladder up. To lower, raising up on the ladder will release the hinge and allow the ladder to be pivoted down to use position.

WARNING: The intent of the ladder is for service access to roof mounted components by trained service technicians. Vertical ladders require physical dexterity and safe conditions to climb. The ladder and roof can be a dangerous place, especially when wet, or in snow and ice. Falls from the roof or ladder with serious or fatal injuries are possible. Only you can judge your physical abilities and the environment for safety as you contemplate using the ladder. If in doubt, be safe, and please stay off the ladder and the roof!

CAUTION: The maximum roof capacity is 250 lbs. spread over a minimum of 4'x 4' area. This criteria is easily met by the service technician placing appropriately sized paneling or plywood on the roof.

POWER AWNING (OPTION)

Just inside the main door is a switch used to extend and retract the optional power awning. An exterior switch is located in the lower exterior compartment behind the main door. Please read and follow all operational guidelines as set forth in the awnings owner manual that is inserted in the Silver Key Book before operating the power awning.

INTERIOR

The luxurious interior of your Airstream motorhome has been designed for comfort, convenience, durability and appearance. An understanding of the operational procedures and maintenance techniques of the interior appointments will add to your pleasures, as well as to the long life of your motorhome.

Lounges

To convert the Deluxe Sofa into a bed, pull straight up and remove armrest, grasp the front edge of the seat, raise and pull it toward the aisle of the motorhome. The backrest will slide down into place automatically.

Cocktail Chairs

The cocktail chairs have two adjustments. One lever will allow the chair to rotate. The other lever lets the chair slide forward and back.

<u>CAUTION</u>: Rotating the chair when it's slid back against the wall can damage the upholstery. Position the chair so it isn't chafing when in transit.

Dinette

The dinette is hinged to the wall and is supported by one folding table leg. To make into a bed, the front of the table is lifted slightly and the leg is then folded up against the bottom of the tabletop. The pressurized piston will hold it into place. Raising the front of the table leaf further allows it to be unhooked from the wall. The leaf will then swing out and down onto the support ledges on the front of the dinette seat. The backrests are then laid on the table leaf to complete the bed.

<u>CAUTION:</u> Never remove cushion cover for separate cleaning or washing. Any tumble cleaning method can destroy the backing, shrink or otherwise damage upholstery.

Shades

The main door shade is operated in the same manner as most Venetian blinds. Pulling down on the tab lowers the shade and it will catch on its own. A slight pull downward will release the shade and it can slowly be returned to the open position.

Day-Night shades are lowered and raised by the bars running across the shade. Grasp in the center of the bottom bar or place hands evenly on the bar. Pull the bottom bar down to the lower sill. A center bar with small handles can be lowered (night) or raised (day). Rough roads and long trips may cause the pleated shades to come down slightly during travel. Tensions on the strings at the sides of the shades adjust the ease of operation and their ability to stay up during travel. Do not over-tighten as this may cause the string to break, requiring service.

A feather duster, or the soft-bristled brush often found as part of vacuum cleaner attachments, are recommended for cleaning the blinds and pleated shades. The longevity of the pleated shades will be increased if the shades are in the up position when your vehicle is stored.

INTERIOR (cont)

Carpet

The carpet can be cleaned with any good commercial carpet cleaner, or with a detergent and water. HOWEVER, BE CAREFUL NOT TO SOAK THE CARPET WITH WATER.

Hardwood Flooring

Daily care for the planked hardwood floor is by vacuuming. Occasionally waxing with a non-water base wax will help extend the life of the floor.

<u>CAUTION</u>: Warn occupants of the vehicle when fresh wax has been applied, just like a home, the floor will be slippery.

Counter areas

The counter areas around the sink are of a high-pressure laminate or Corian and can be cleaned with soap and water, or you can use a common solvent on tough spots. Be sure no abrasive cleaner is used, as there is the possibility it could scratch the surface. A protective pad should always be placed under hot utensils.

Sanding minor damaged areas can repair Corian counters. The color of the material is constant and not just a surface coat.

Wall/cabinets

The vinyl walls of the motorhome can be wiped with any mild household cleaner. The wood grain panel also has a vinyl covering for easy care. The cabinet doors and framework are hardwood, so any good furniture polish can be used.

CAUTION: Do not use any abrasive material on the vinyl-covered walls.

Bathroom

The counter areas around the lavatory sink are of a high-pressure laminate or Corian and can be cleaned with soap and water, or you can use a common solvent on tough spots. Be sure no abrasive cleaner is used, as there is the possibility it could scratch the surface.

Sanding minor damaged areas can repair Corian counters. The color of the material is constant and not just a surface coat.

Shower Stall

To clean your ULTRA/GLAS shower stall unit, use warm water and one of the stronger liquid detergents. Do not use abrasive cleaners; they may scratch and dull the surface of your ULTRA/GLAS unit. Stubborn stains can be removed with solvents such as turpentine, paint thinner or acetone. Restore dulled areas by rubbing with an automotive-type liquid cleaner, and then put the soft glow back into your ULTRA/GLAS unit with a light application of liquid wax.

INTERIOR (cont)

Fabric Cleaning

<u>WARNING:</u> Keep your furniture and family safe from fires caused by careless smoking. Do not smoke when drowsy. Remove immediately any flowing ash or a lighted cigarette that falls on furniture. Smoldering smoking material can cause upholstered furniture fires.

All material should be professionally dry cleaned to remove any overall soiled condition. These materials may be spot cleaned, however, using the cleanability code instructions as listed, Sample swatches are furnished to our dealers. The dealer will be able to give you the cleaning code and part number for the fabrics used in your particular motorhome.

The following are the cleanability code instructions for the various fabrics used in the Airstream motorhomes:

Cleanability Codes

CODE W-S

Fabric care. Spot clean this fabric either with a mild solvent or a water-based cleaning agent. When using a solvent or dry cleaning product, follow instructions carefully and clean only in a well-ventilated room. Avoid any product that contains highly toxic carbon tetrachloride. You may also use an upholstery shampoo product or the foam from a mild detergent. With either method, pretest a small area before proceeding. Use professional furniture cleaner when an overall soiled condition is reached.

CODE S

Fabric care. Spot clean, using a mild, water-free solvent or dry-cleaning product. Carefully follow instructions on such product. Clean only in a well-ventilated room. Avoid any product containing carbon tetrachloride, which is highly toxic. Pretest small area before proceeding. Use professional furniture cleaner when an overall soiled condition is reached.

CODE W

Fabric care. Spot clean, using the foam only from a water-based cleaning agent, such as mild detergent or non-solvent upholstery shampoo product. Apply foam with a soft brush in a circular motion. Vacuum the area its when dry. Pretest small area before proceeding. Use professional furniture cleaner when an overall soiled condition is reached. The manufacturer of the fabric designed the above code.

Drapes

Use the following procedures to remove drapery panels for cleaning

Front Wrap Around Drapes

- 1. Remove screws securing rear end of drapery track bracket to wall, both roadside and curbside.
- 2. Remove the plastic end cap.
- 3. Slide draperies to the rear until they are clear of track.
- 4. After reinstalling drapes, replace the caps and refasten the track.

CAUTION: All drapery materials and mattress covers must be professionally dry-cleaned.

To prevent excessive wear to drapery linings, blinds must be secured at the bottom and slats turned vertically when driving long distances.

PLUMBING

LPG SYSTEM

Your motorhome is equipped with a permanently mounted tank for LPG (Liquid Petroleum Gas). LPG burns with a clean blue flame. There are two basic types of LPG in common usage: Butane and Propane. Butane is widely used where temperatures are normally above freezing the year round, and Propane is used where subfreezing temperatures are common, since Butane freezes at 32°F as compared to -40°F for Propane. ALL OF THE ORIFICES IN THE LPG APPLIANCES ARE OF THE UNIVERSAL TYPE THAT WILL BURN EITHER FUEL. How long a full tank of gas will last is dependent on usage. In cold weather, when you are using the furnace, large amounts of hot water, and cooking extensively, you will naturally use more than you will in warm weather, when you may do limited cooking. On the average, with normal cooking and other appliance use, you can probably count on one month of usage from the tank.

If you have allowed the tank to run out, air may have gotten into the lines. In this event the air must be forced out through the lines by gas pressure before you can light the pilots. Hold a match to the pilot of the appliance closest to the tanks until it lights and stays lit. Then move to the next closest, etc.

WARNING: All pilot lights and appliances must be turned off during refueling of motorhome fuel tank and permanently mounted LPG tank. Gas lines should be checked periodically for leaks with ammonia free soapy water. Do not use open flame.

<u>CAUTION</u>: Moisture in the LPG tank will cause a malfunction of the regulator in controlling proper pressure. This may result in the flame lifting off the burner, or the flame may go out frequently. Many refueling stations will add approximately $\frac{1}{4}$ to $\frac{1}{2}$ gallon of alcohol to lower the moisture temperature. Moisture will then pass through the regulator without the formation of ice crystals.

<u>WARNING</u>: If gas can be smelled, appliance pilots fail to stay on, or any other abnormal situation occurs, shut off tank valve immediately and call on a qualified LPG service center or Airstream Service Center.

LPG Regulator

The LPG regulators used on Airstream motorhomes are designed for low-pressure service, with a normal outlet pressure setting of 11.5 inches water column. Only personnel trained in the proper procedures, codes, standards, etc., should service regulators.

Have the regulator inspected each time the tank is refilled. Make sure the regulator vent opening on both first and second stage regulators does not become plugged by mud, insects, snow, ice, paint, etc. Vents must remain open.

Replace any regulator that has had water in the spring case, or shows evidence of external corrosion, or corrosion inside the spring case. Closely examine regulators directly connected to the container valve by means of a solid POL adapter (horizontal mounting) for signs of corrosion. (An Airstream Service Center is recommended for this service.)

BASIC RULES FOR SAFETY

WARNING: DO NOT store LP containers within vehicle. LP containers are equipped with safety devices that vent gas should the pressure become excessive.

<u>WARNING:</u> DO NOT use cooking appliances for comfort heating. Cooking appliances need fresh air for safe operation. Before operation open overhead vent or turn on exhaust fan and open window.

A 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 dangers of asphyxiation. It is especially important that cooking appliances not be used for comfort heating as the danger of asphyxiation is greater when the appliance is used for long periods of time.

WARNING: 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.

WARNING: A warning Label has been located near the LP gas container. This label reads: DO NOT FILL CONTAINER (S) TO MORE THAN 80% PERCENT OF CAPACITY. Overfilling the LP gas container can result in uncontrolled gas flow that can cause fire or explosion. A properly filled container will contain approximately 80 percent of its volume as liquid LP gas.

<u>WARNING:</u> Do not bring or store LP gas containers, gasoline or other flammable liquids inside the vehicle because a fire or explosion may result.

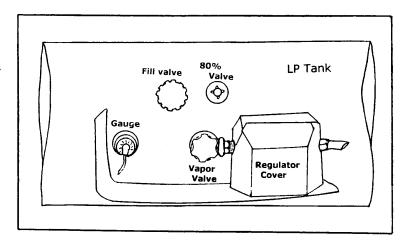


- 1. Extinguish any open flames, pilot lights and all smoking materials.
- 2. Do not touch electrical switches.
- 3. Shut off the gas supply at the tank valve(s) or gas supply connection.
- 4. Open doors and other ventilating openings.
- 5. Leave the area until odor clears.
- 6. Have the gas system checked and leakage source corrected before using 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 regulator vent faces downward and that cover is kept in place to minimize vent blockage that could result in excessive gas pressure causing fire or explosion.

LP TANK INSTALLATION

The regulator at the L.P. tank is under a black plastic cover. The protective cover certainly helps to keep the vent on the regulator from getting clogged by wasps or ice, but should still be checked regularly to make sure the vent remains clear.





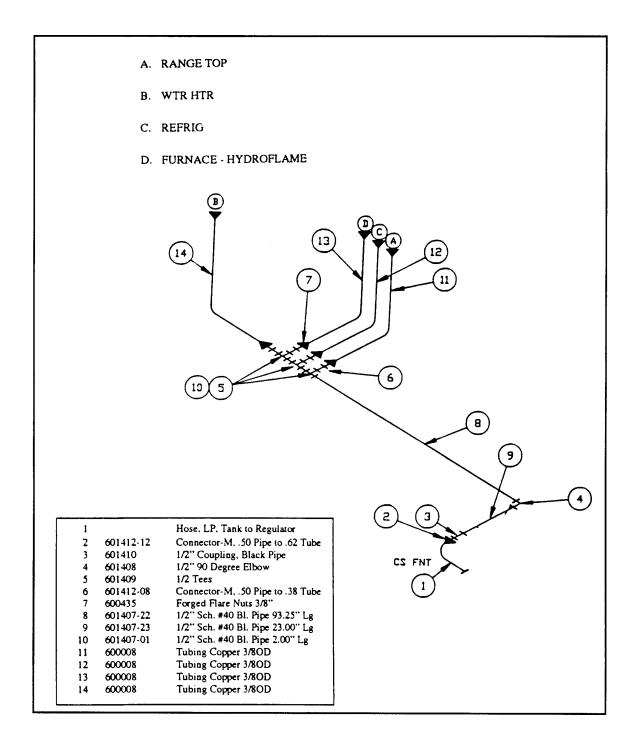
WARNING: Do not attempt to seal regulator cover.

<u>WARNING</u>: Check vent each time tank is filled to make sure it is clear of obstructions.

Gas Regulator Removal/Replacement

- 1. Shut off main gas supply at the tank.
- 2. Remove the plastic protective cover from the regulator assembly
- 3. Using two wrenches, one to hold the line fitting and one to turn the flare nut, disconnect the regulator from the flexible rubber line.
- 4. Disconnect the regulator from the tank fitting. Remove regulator.
- 5. To replace, reverse the removal procedures.

TYPICAL LP GAS SYSTEM



WATER SYSTEM - SELF-CONTAINED

The fresh water system consists of a water fill, fresh water tank, water-pump, pump filter, hot and cold water lines, water heater, drain valves, and faucets.

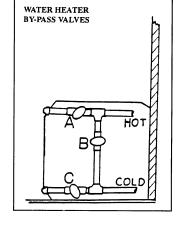
To operate the system:

Turn the water heater by-pass valves to normal flow position.

The by-pass valves are located under the lavatory cabinet in the 33' model (accessed by removing the lower shelf vertical close-out), under the wardrobe in the 30' model (pull off the small raised panel door held on by pressure latches below the wardrobe door) and under the bedroom wardrobe in the 26' (open the lower door). For normal operation open valves A and C and close valve B. (Reverse the valves and drain the water heater for winterization).

Check all drain valves and turn them to the closed position as needed.

Fill the water tank by opening the exterior door marked water fill, remove screw cap and pull the vent plug. A garden hose can now be inserted. It's a good idea to let the water run through the hose for a short time to flush it



out. RVers sometimes fill their tanks with "home" water to avoid strange water that may be distasteful to them on short outings. Remember the more water you carry in the fresh water tank, the less cargo carrying capacity you have for other items.

The amount of water in the tank may be checked on the Monitor Panel, or you may fill the tank until water overflows out of the fill.

Open the hot side of the galley or lavatory faucet and fill the water heater by turning on the water pump switch located on the monitor panel or connecting to an exterior city water source. For some time the open faucet will only sputter. This is because the water heater is being filled and air is being pushed out through the lines. Once the water heater is full, a steady stream of water will come from the faucet. Now open a cold faucet. It will sputter for a short time, but will soon expel a steady stream. All other faucets can now be opened until all air is expelled.

Once the system is filled with water and the faucets are closed, the water pump will shut off. To prevent equipment damage the water heater should only be started after the water system is primed and ready for use.

When a faucet is opened the pump will come back on automatically. If the faucet is just barely open it is normal for the pump to cycle on and off rapidly.

It is normal for a pump to occasionally cycle when all faucets are off to keep the water pressure at the set point, however, if it cycles frequently (more than a few times an hour) the plumbing system and pump should be checked to be sure it is not loosing pressure through a slow water leak or back through the pump.

Note: Water pressure at some campgrounds may be low. The water pump can be turned on to assist the city water pressure. Be sure there is water in the fresh water tank. The pump will only use the water that is needed out of the tank to bring the pressure up to the usual standard.

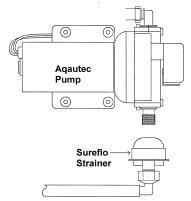
<u>Caution</u>: Turn the water pump off when the motorhome is left unattended.

WATER PUMP AND STRAINER

The water pump and strainer are located under the rear bed. The strainer should be visually checked for accumulation of sand or debris that could affect water flow.

To clean the strainer screen, first remove the inlet connection from the pump side of strainer. This will allow the intake side of the strainer to be rotated about 1/8 turn counter clockwise and be removed. The screen part of the strainer will now be accessible for cleaning.

When reassembling only rotate the inlet side of the strainer until the stops are felt. The "O" ring performs the sealing and too much pressure will only break the strainer.



SANITIZING

Potable water systems require periodic maintenance to deliver a consistent flow of fresh water. Depending on use and the environment the system is subject to, sanitizing is recommended prior to storing and before using the water system after a period of storage. Systems with new components, or ones that have been subjected to contamination, should also be disinfected as follows:

- 1. Use one of the following methods to determine the amount of common household bleach needed to sanitize the tank.
 - A) Multiply "gallons of tank capacity" by 0. 13; the result is the ounces of bleach needed to sanitize the tank.
 - B) Multiply "Liters of tank capacity" by 1.0; the result is the milliliters of bleach needed to sanitize the tank.
- 2. Mix into solution the proper amount of bleach within a container of water.
- 3. Pour the solution (water/bleach) into the tank and fill the tank with potable water.
- 4. Open all faucets (Hot & Cold) allowing the water to run until the distinct odor of chlorine is detected.
- 5. The standard solution must have four (4) hours of contact time to disinfect completely. Doubling the solution concentration will allow for contact time of one (1) hour.
- 6. When the contact time is completed, drain the tank. Refill with potable water and purge the plumbing of all sanitizing solution.

NOTE: The sanitizing procedure outlined above is in conformance with the approved procedures of RVIA ANSI A 119.2 and the U.S. Public Health Service.

WATER PUMP

Manufacturer:

Aquatec

17422 Pullman Street Irvine, CA 92614 Phone: 800-975-9995 Phone: 949-225-2200 Fax: 949-225-2222 Web site: www.aquatec.com

Aquajet RV Series.

This revolutionary pump employs state-of-the-art electronics to automatically control motor speed -the pump actually adjusts its speed as you open and close water fixtures. The Aquajet RVs exclusive soft start feature eliminates annoying rapid cycling, and its exclusive 5-valve design can deliver twice the flow and pressure conventional RV industry pumps.

OPERATIONAL AND INSTALLATION GUIDELINES AQUAJET RV PUMP

(Partial Reprint. Please contact Aquatec for complete instructions.)

Please read these Operational and Installation Guidelines before installing or operating the AQUAJET RV PUMP. If additional help is needed, please consult the Factory.

CAUTIONS:

- A. The pump is equipped with an electrical speed controller; please insure that electrical connections are made in accordance with these instructions.
- B. The pump is equipped with a pressure sensing demand switch, which controls the maximum operating pressure as set at the Factory. Never subject the pump to pressures above 125 PST (9.5 bars).
- C. Never operate the pump in a harsh environment or hazardous atmosphere, since motor brush and switch may cause electrical arcing.
- D. Pump head materials are designed for use with water only. Do not use with petroleum products.
- E. As long as there is inlet water pressure, the pump will not stop forward flow of water even if the motor is turned off. Be sure the system has a positive means of shutting off water supply.
- F. Always consider electrical shock hazards when working with and handling electrical equipment. If uncertain, consult an Electrician. Electrical wiring should be done by a qualified electrician only, and all local and State Electrical Codes must be followed.

Do not subject the pump to extreme high or low (freezing) temperatures while in operation. (Operating ambient temperature range is 32° to 115° F).

The pump will only prime if all pressure is relieved from the outlet port

ELECTRICAL:

- A. The Aquajet RV pump has a motor speed controller that is factory pre-set to operate at a minimum current of 10 amps while operating on a 12 VDC system. A 15-amp fuse must protect the electrical system.
- B. The motor speed controller has a built in heat sink. The temperature of this exposed aluminum surface may reach 200° after extended running.
- C. Care must be taken to insure proper connection of the positive wires (red to red), and negative black wires. Reversing these lead wires **will damage** the electrical circuit board.
- D. The built in pressure sensing demand switch is factory preset to turn off the pump automatically at 65 PSI.

Trouble Shooting

MOTOR DOES NOT OPERATE.

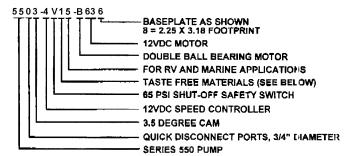
- Is battery discharged?
- Are any wires disconnected?
- Are terminals corroded'?
- Is switch in "ON" position?
- Is fuse good?
- Is water frozen in pump head?

MOTOR RUNS BUT NO WATER FLOWS.

- Is water tank empty?
- Are there kinks in the inlet hose?
- Is air leaking into inlet hose fittings?
- Is inlet line or in-line filter plugged?
- If using a filter, check the line just before the filter.
- Is outlet hose kinked?

AQUAJET RV Pump

Model: 5503-4V15-B636 **Identifying The Part Number**



SPECIFICATIONS:

MOTOR:

TYPE: 12 VDC, Permanent Magnet, Totally Enclosed, Non-Ventilated

LEADS: 14 AWG, 12" Long, Black Negative, Red Positive

DO NOT REVERSE

TEMP. LIMITS: Safe to 150°F (66°C) DUTY CYCLE: See Heat Rise Graph

Factory Set to Approximately 10 Amps Max. Thermally Protected to Avoid Component SPEED CONTROLLER:

Damage. CAUTION: Exterior Surfaces (heat sink), May Exceed 150°F After Only 5 Min ites of

Operation.

5 Chamber Diaphragm Pump, Self Friming, Capable of Being Run Dry PUMP DESIGN:

TYPICAL APPLICATION: Water Pressurization for RV and Marine

MATERIALS:

PUMP HOUSINGS: Polypropylene CONTROLLER HOUSING: Nylon VALVES: **EPDM** DIAPHRAGM: Santoprene

FASTENERS: Stainless Steel

PUMP CERTIFICATIONS: IAPMO, NSF

PRIMING CAPABILITIES: 13 Feet

LIQUID TEMPERATURE:

FITTINGS:

WEIGHT: 8 lbs.

н	HOSE BARIS SIZE	
PE SHAPE 1/2	" 5/8" 3/4"	
ARB STRAIGHT QB5-	554 QBS-565 QBS-660	
ARB ELBOW QBE-	554 QBE-555 QBE-656	
ARB ELBOW QBE-	554 QBE-566 QE	

THREADED FOR USE WITH PRE-FILTER QTB-666

140°F (60°C) Max.

www.aquatec.com

Aquatec Water Systems, Inc. 17422 Pullman Irvine, CA 92614

Sales: 949-225-2200 Fax: 949-225-2222

DOCUMENT: ISSUED: REVISED:

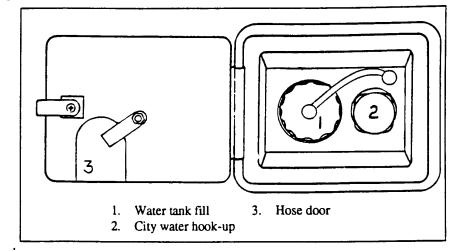
D\$5503-4V15-B636 3/3/00 3/3/00

G-9

CITY WATER HOOKUP

Use a high-pressure hose of at least ½ " diameter. It should be one that is tasteless, odorless and non-toxic designed for RV use. The city water inlet is a standard garden hose thread. We suggest you carry two lengths of hose.

This way you have the ability to reach hookups further away than normal, plus you



have a spare hose should one fail or become damaged unexpectedly. Turn the water heater bypass to the normal flow position as described under self- contained.

After hooking up the hose and turning on the city water valve provided in the park, slowly open a faucet. There will be a lot of spurts and sputtering until all the air is expelled from the motorhome system. If the water heater is empty it will take some time before all the air is expelled and you get a steady flow of water at the faucet. Once a steady flow is achieved at one faucet, the others should be opened long enough to expel the air in the lines going to them.

Water pressure at some campgrounds may be low. *The water pump can be turned on to assist the city water pressure*. Be sure there is water in the fresh water tank. It is not necessary to fill the tank, the pump will only use the water that is needed out of the tank to bring the pressure up to the usual standard. The water pump should be turned off when the motorhome is left unattended.

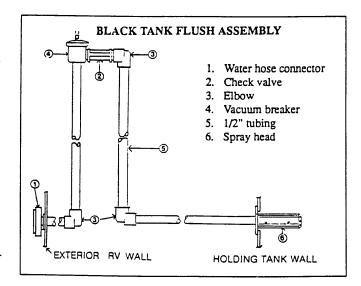
Your plumbing system has a built in pressure regulator to protect your lines and faucets from extremely high pressures on some city water systems. An after-market external regulator could lower the water pressure at the inlet and thus to your faucets and shower.

BLACK TANK FLUSH

In the utility compartment on the left rear lower side is a water hose connector marked "black tank flush". (Don't mistake it for the exterior water spigot.)

Hook-up a ½" or larger water hose and turn it on full force. Within the tank a multiple holed plastic water line will spray the interior surface of the tank.

The gate valve should be closed for the first couple of minutes to let some water accumulate in the tank, and then opened to let the water out in a rush. Repeat as needed.



EXTERIOR WATER SERVICE

Next to the black tank flush is a second water hose hook-up with a shut off valve. This is plumbed into the fresh water system of the motorhome. This is an ideal place to rinse the sand off your feet after going to the beach, cleaning mud off your boots and hundreds of other messy jobs that are better done outside of your motorhome.

GALLEY FAUCET-MOEN PURETOUCH CLASSIC

WATER FILTRATION SAFEGUARDS

Your Moen PureTouch® Classic Filtering Faucet System integrates carbon block filtration technology designed by Culligan International into a faucet spout. This technology is fast and effective at reducing contaminants commonly found in water and is certified by NSF® International. The PureTouch Filtering Faucet System and installation must comply with State and Local laws and regulations. To ensure optimal operation of your new Moen faucet, please read the following safeguards carefully.

MicroTechTM Filter Cartridges

• MicroTech filter cartridges will reduce:

Chlorine, Taste and Odor (MicroTech 400, 600)

Lead (MicroTech 400,600)

Cysts (Cryptosporidium, Giardia) (MicroTech 600)*

*The contaminants removed or reduced by this filter are not necessarily in your water.

- Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfections before or after the system. Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.
- MicroTech filter cartridges are designed for replacement after dispensing 200 gallons of filtered water. Water conditions and usage may affect filter life and water taste.
- The electronic indicator will signal when filter replacement is necessary
- Use only MicroTech 400 or 600 filter cartridges with the PureTouch *Classic* Filtering Faucet System.
- Filter flow rate = .4-.5 gpm at rated pressure (20 psi min. -125 psi max.).

Water Temperature

- Minimum/Maximum faucet operating temperature = 40 degrees 150 degrees F
- CAUTION: Do not filter water above 100degrees F.

MicroTech Filter Flushing Instructions

- New MicroTech Filter Cartridge: Allow cold water to run through a new filter for 5 minutes to flush out any loose carbon particles. Once these small black specks are washed out the filter is ready for use.
- Daily Use: Allow cold water to run through the filter for 10-15 seconds prior to first use. If the filter has not been used for two days, run cold water through the filter for 60 seconds prior to use.

Ouestions

• If you have any questions please call Moen's toll-free help lines:

1-877-DRINK-H20

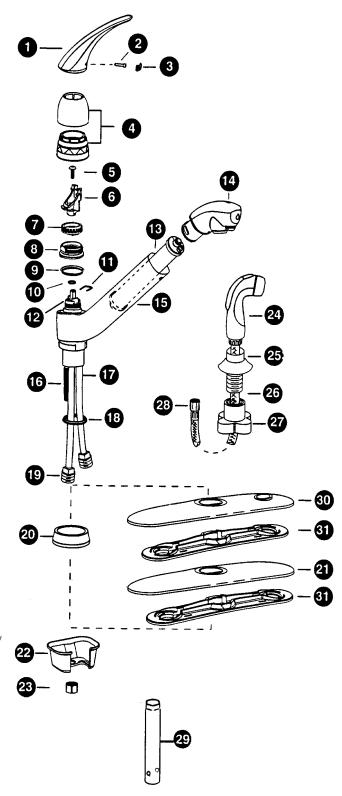
Monday through Friday 8:00 a.m. to 8:00 P.M.

1-877-374-6542

Saturday 8:00 a.m. to 6:30 p.m.

PARTS DESCRIPTION

- 1. Solid Handle Body
- 2. Set Screw
- 3. Plug Button
- 4. Dome & Pivot Retainer Assembly
- 5. Cartridge Screw
- 6. Handle Adapter & Connector Assembly
- 7. Pivot Stop
- 8. Spout Retaining Nut
- 9. Bearing Washer
- 10. "D" Washer
- 11. Retainer Clip
- 12. 1225 Cartridge
- 13. Filter Cartridge
- 14. Filtering Appliance
- 15. Lower Spout Assembly
- 16. Threaded Shank
- 17. Supply Tubes (2)
- 18. Bottom Bearing Washer
- 19. ½ " Threaded Fitting
- 20. Deck Ring with Gasket
- 21. Deck Plate
- 22. Mounting Bracket
- 23. Mounting Nut
- 24. Designer Spray Head (Spray Models)
- 25. Hose Guide with Gasket (Side Spray Models)
- 26. Spray Hose
- 27. Extended Locknut (Side Spray Models)
- 28. Swivel Nut (Spray Models)
- 29. Mounting Tool
- 30. Deck Plate (Spray in Deck Models)
- 31. Support Plate with Gasket



MICROTECHTM FILTER INSTALLATION/REPLACEMENT

- 1. Install a new filter by wetting the outlet ports with water and then inserting into the round filter ports on the faucet head and pushing the filter and head together. Both outlet ports must be fully inserted into the filter ports.
- 2. Install the filter and faucet head assembly on to the spout by wetting the faucet head o-ring seal and then carefully sliding the free end of the filter into the spout. The head will need to be initially turned approximately ½ turn counter clockwise from its normal position to slip past the safety catch. Lock the head into place by simultaneously pushing and twisting the head clockwise. When properly installed the head will feel secure, and will be correctly oriented on the spout.
- 3. Reset the filter life indicator by pushing the filter button 3 times. Wait 10 seconds. You should not be running water while resetting the filter life indicator because the filter button will remain depressed, with the first push as it switches to filter mode. The filter life indicator has been correctly reset if a short series of rapidly flashing green light occurs, indicating that the new filter-flushing period has begun.
- 4. Flush the filter for 5 minutes before initial use.

Your new Moen faucet is now ready for normal use.

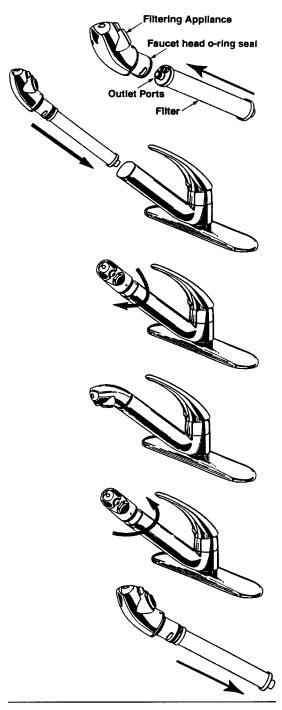
To replace filter:

- 1. Turn off the faucet. Remove the faucet head by twisting it approximately ¼ turn counter clockwise to unlock it. Gently pull the faucet head away from the spout and twist it approximately another ¼ turn to get the faucet head past the safety catch. The faucet head and depleted filter (if one is installed) can now be pulled completely out of the spout.
- 2. The filter is held to the faucet head by two outlet ports, which connect into the head. Remove the old filter by simply pulling it straight off. Discard the old filter and install a new MicroTech 400 or 600 filter.

Note: The faucet will function correctly in unfiltered stream mode with or without a filter installed. The

faucet will not function correctly in filter mode without a filter. If a filter is not installed and the filter button in depressed, unfiltered water will flow from both the filtered water outlet and the stream outlet aerator, and the filter button will not automatically stay depressed.

Use only Microtech 400 or 600 filter cartridges with the PureTouch Classic Filtering Faucet system. The Microtech filters are high performance carbon block filters developed specifically for the PureTouch system.



OPERATING INSTRUCTIONS

Controlling The Water

The PureTouch system has two options for water delivery, unfiltered stream and filtered water.

STREAM MODE: Unfiltered water in regular stream flow

When the water is turned on at the faucet, the spout will always begin operating in the regular stream mode.

FILTERED WATER MODE: Filtered water dispensed though the separate filtered water outlet.

Pressing the front filtered water button will divert water through the filter and dispense filtered water from a separate outlet. To exit the filter mode, shut off the faucet.

CAUTION: Only filter cold water. Do not filter water above 100 degrees F.

Electronic Indicator

The flashing light on the electronic filter life indicator provides information regarding the performance of the filter. The indicator provides you with information throughout the life of the filter to help communicate the level at which it is performing.

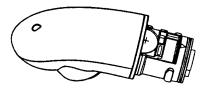
Indicate Color	Performance	
Amber & Green	A new filter must be flushed with cold water for 5 minutes after it is installed. This procedure helps clean the filter of loose carbon particles.	
Green	Filter performing at optimum efficiency.	
Amber	WARNING: Filter is ready for replacement. (Approximately 16 gallons left.)	
Red	WARNING: Filter life is deleted, discard old filter and replace with a new Microtech 400 or 600 filter.	

*If fast red doesn't change to slow amber/green after memory has been reset, reset was not complete and needs to be redone. Follow step 3 on the previous page.

A standard replaceable 3V lithium watch battery (2032) designed to last several years powers the electronic indicator.

Battery Replacement

Follow filter replacement instructions to remove filter appliance. Locate battery compartment drawer, pull out and replace battery, positive side up.



TROUBLESHOOTING

PROBLEM: Water flows from both outlets, filter and unfiltered, when the filter button is pushed.

SOLUTION: No filter is installed. Install a filter.

PROBLEM: After installing a new filter, the filter life indicator still flashes red.

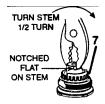
SOLUTION: Filter life indicator was not reset, or the attempt to reset the indicator did not work. Perform

reset sequence.

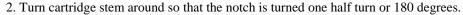
PROBLEM: Reversed Hot & Cold positions,

SOLUTION: HELPFUL HINTS: IT IS NOT NECESSARY TO SHUT OFF WATER SUPPLIES.

HANDLE SCREW REQUIRES A 7/64" HEX KEY WRENCH.



1. Remove plug button (3) from the handle by prying the button upwards from the bottom center. If a tool is required, use something, which will not scratch the handle. Remove set-screw (2), handle body (1), dome and pivot retainer assembly (4), cartridge screw (5), handle adapter and handle connector assembly (6).





3. Reinstall as follows: Be sure retainer clip (11) is present on cartridge stem and raised edge of pivot stop (7) faces front. Note orientation of handle adapter & connector assembly (6) in the exploded view. Completely tighten cartridge screw (5) to prevent unwanted closure of faucet. Thread on dome clockwise until hand tight. Reinstall handle body (1), set screw (2), and plug button (3).

PROBLEM: Faucet head is loose and water flows freely from between the head and spout. SOLUTION: The head was not locked in place correctly. Reinstall the head and filter assembly.

PROBLEM: Slow or uneven water flow in filtered mode.

SOLUTION Filter outlet may be clogged.

- 1. Remove filter outlet nut, flush out carbon particles.
- 2. Filter cartridge may be clogged with captured contaminants. Replace filter cartridge. If problem persists call Moen Help line at:

1-877-DRINK-H20 (1-877-374-6542)

PROBLEM: Electronic display doesn't function

SOLUTION: Replace battery.

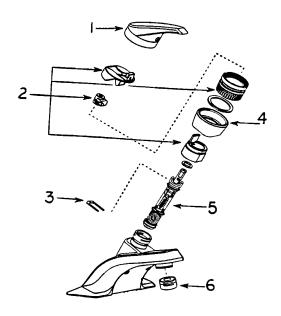
CARE AND MAINTENANCE

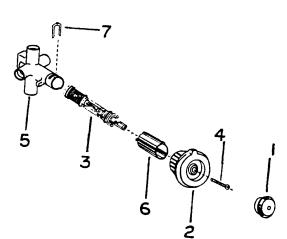
All that is needed to clean your faucet is a soft damp cloth. Moen does not recommend the use of scour pads, cleansers or chemicals. The abrasive nature of these substances could damage the faucet's finish. A non-abrasive car wax will help to protect the finish. DO NOT SUBMERGE OR PLACE FAUCET HEAD IN DISHWASHER.

MOEN LAVATORY FAUCET

- 1. Handle
- 2. Lever mechanism
- 3. Retainer clip
- 4. Transition collar
- 5. Cartridge
- 6. Flo-control aerator

NOTE: See end of faucet section for removal of cartridge.





MOEN SHOWER MIXING VALVE ASSEMBLY

- 1. Handle Cover
- 2. Handle
- 3. Cartridge
- 4. Handle Screw
- 5. Valve Body
- 6. Stop Tube
- 7. Retainer Clip

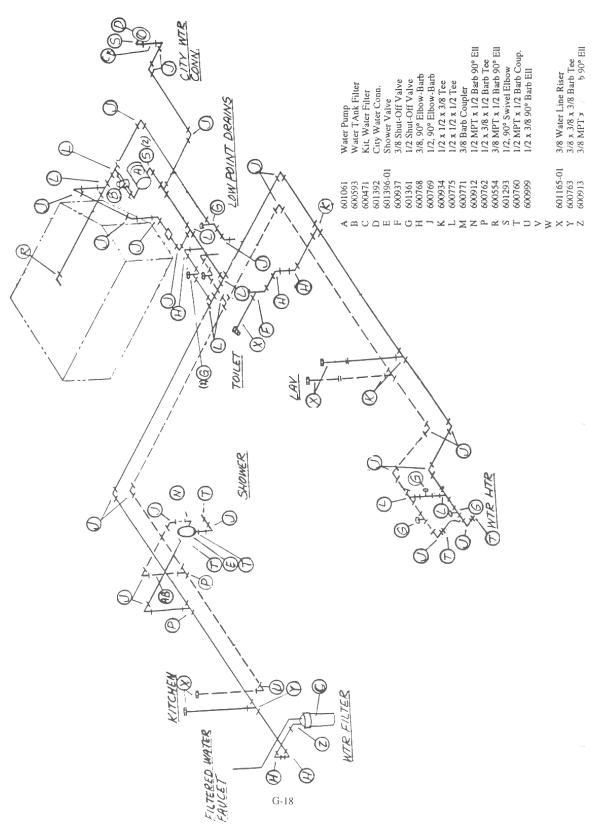
LAVATORY FAUCET AND SHOWER MIXING VALVE CARTRIDGE REMOVAL

Shut off water pressure for entire system.

Disassemble: Remove handle cover. Take out handle screw and remove handle and stop tube, Lift out retaining clip and pull the cartridge out of the body by the stem.

<u>CAUTION</u>: Reinsert cartridge by pushing it all the way into the body and until the front of the ears on the cartridge shell are flush and aligned with the body. Replace the retainer clip so that the legs straddle the cartridge ears and slide down into the bottom slot in the body. This prevents the cartridge from rotating and locks it in the body. Reinstall stop tube and handle. Tighten handle screw securely, and replace the handle cover. The red flat on the stem must point UP when mounting the knob handle (down for lever handle).

If cold water is on left side and hot water is on right side (red flat pointed down), remove cartridge and reinstall 180 degrees.



Typical Plumbing Diagram

DRAIN AND HIGH PRESSURE WATER VALVES

Your Land Yacht motorhome has 10 water valves not counting your interior faucets.

3 valves are located under the double bed behind the hinged door. One each for draining hot and cold water lines and the third drains the water tank. If you have a twin bed model, these 3 valves would be located under the curbside twin bed behind the lower access door at the front edge of the bed base.

3 more valves are for the water heater by-pass system.

Access - 26 foot -30-foot - pull off panel below wardrobe

33 foot - open lavatory cabinet and pull out vertical panel

1 valve is the brass exterior service valve: 26 foot - Center roadside compartment

30 & 33 foot - Roadside rear utility compartment

1 valve will be inside the coach on the exterior water service line. During cold weather usage you'll want to close the valve and open the brass exterior valve so it won't freeze and burst.

Access - 26 foot - under rear roadside dinette seat

30 foot - under lavatory, unscrew the vertical closeout for the lower shelf.

33 foot - open lavatory cabinet and pull out vertical panel

1 valve is for the optional icemaker

Access - 26 foot – Remove drawer under refrigerator

30 foot - under lavatory

33 foot - under galley way back against wall

TOILET (30' & 33' Models)

Manufacturer: Thetford Corporation

7101 Jackson Road Ann Arbor, MI 48103 313-769-6000 Canada: The

Thetford Sanitation Ltd. 2710 Slough Street Mississauga, Ontario Canada, L4T 1G3

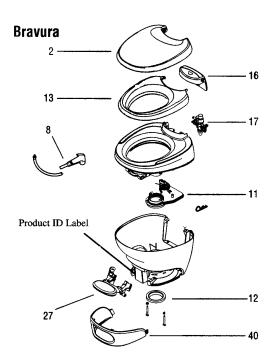
The RV toilet in your Airstream is a design that has been used for many years.

In normal use, when you are hooked up to city water, both pedals are depressed together. This dumps the sewage and fresh water and flushes down the side of the bowl. Water will continue to run into the bowl for a short time after the pedals are released.

When you wish to conserve water hold the hand-spray head over the bowl and hold down the thumboperated lever. Now when you depress the pedal all the water is routed through the hand-spray.

<u>CAUTION</u>: When you dump the bowl of the toilet make sure all paper and solids have cleared the slide mechanism before you allow it to close. Failure to do so can cause the groove for the slide to become jammed and the slide will no longer close completely.

If the problem should occur a small nail or bent clothes hanger can be used to "pick" the material out of the groove.



Before ordering parts, record the Product ID information.

No. Description

- 1 Hinge Pins (2)
- 2 Seat Cover
- 3 Vacuum Breaker 4 Flush Tube
- 5 Flush Nozzle Assv.
- 6 Overflow Trap
- 7 Water Supply Tube 8 Hand Spray Kit (Water
- Saver Option Only)
 9 Side Access Covers (2)
- 10 Water Valve
- 11 Lower Mechanish Assy.
- 12 Closet Flange Seal & Bolt Pkg.
- 13 Seat
- 14 Hinge Post Kit
- 15 Upper Mechanism Assy.
- 16 Pod
- 17 Water Module
- 18 Water Valve Link
- 19 Lever Assy.
- 20 Wire Replacement Pkg.†
- 21 Mechanism Cover

No.Description

- 22 Bracket & 2 Screws[†]
- 23 Float Assy.
- 24 Actuator Assy.
- 25 Base to Bowl Screws (9) 26 Closet Bolt Pkg.
- 27 Pedal Pkg.[†]
- 28 Base
- 29 Retainer & Screw[†]
- 30 Sealant
- 31 Blade Spring
- 31 Blade Sp 32 Blade
- 33 Blade Seal
- 34 Blade Track
- 35 Flapper
- 36 Overflow Tube 37 Nozzle Assy
- 37 Nozzle Assy. 38 Bowl
- 39 Reservoir Assy.
- 40 Shroud

Specify High or Low

- * Hand Flush only
- † Foot-Pedal Flush only

For Thetford service centers: 1-800-521-3032

Canada: 1-888-215-5410

TROUBLE SHOOTING

PROBLEM: Water keeps running into bowl.

CAUSE: The blade in the bottom of the bowl is not closing completely, which in turn keeps the water control valve partially open. The groove into which the blade seats when completely closed is clogged with foreign material.

REMEDY- Insert the end of a coat hanger or similar object into the sealing groove and remove the foreign material. Avoid damaging the rubber seal while cleaning.

PROBLEM: Toilet leaks. There is water on the floor. Specify the problem. Determine if water is leaking from:

CAUSE: a. Vacuum breaker.

- b. The water-control valve.
- c. Bowl to mechanism seal. (If this is the problem, the water would not stay in the bowl.)
- d. Closet flange base seal.

REMEDY: a. The vacuum breaker. If the vacuum breaker leaks when flushing the toilet, replace vacuum breaker.

- b. If the vacuum breaker leaks when the toilet is not in operation, replace the water control valve.
- c. Leaks at the bowl to mechanism seal. Remove mechanism and replace seal,
- d. Leaks at closet flange area. Check front and rear closet flange nuts for tightness. If leak continues remove the toilet, check the closet flange height. The height should be between $\frac{1}{4}$ " and $\frac{7}{16}$ " above the floor. Adjust closet flange height accordingly and replace closet flange seal.

PROBLEM: Foot pedal operates harder than normal or the blade sticks.

REMEDY: a. Apply a light film of Silicone spray to blade.

b. Check closet bolt tightness. If closet bolts are over tightened, the mechanism may be distorted.

PROBLEM: Bowl will not hold water; i.e., water leaks from bowl down into the holding tank.

REMEDY: Using a bent screwdriver or similar object, scrape the groove in front of the mechanism blade. Generally paper or other foreign material is lodged in this groove, causing the leak.

<u>CAUTION</u>: Use care not to damage the blade seal. Always make certain that the tool is under the lip of the seal, not above it.

The tool can easily be made by bending a coat hanger or screwdriver over about 7/8".

MAINTENANCE

If the bowl-sealing blade does not operate freely after extended use, it may be restored to its original, smooth operating condition by applying a light film of silicone spray to the blade. To clean the toilet use Thetford Aqua Bowl or any other high grade, non-abrasive cleaner. Do not use highly concentrated or high acid content household cleaners. They may damage the rubber seals.

REMOVAL

- 1. Shut off water valve behind toilet or main water supply.
- 2. Disconnect water supply line from toilet. You will probably find a small mirror very useful.
- 3. Depress pedal and remove nut located in pedal recess.
- 4. Reach behind toilet and remove nut on opposite side of base from pedals. In some situations you may want to remove the plug in top of the seat designed to give access from above to this nut.

NOTE: Always replace flange seal when toilet has been removed.

Winterizing

Draining Method

Disconnect water supply line at water valve. Completely drain the water supply line before winter storage.

<u>CAUTION</u>: To avoid damage, when using air pressure to blow water from the lines, be sure toilet valve is in the open position.

<u>CAUTION</u>: if water is frozen in the toilet, do not attempt to flush until with the ice thaws.

CAUTION: Never use automotive type antifreeze.

Toilet (26 Ft Land Yacht Motorhome)

Sealand Traveler Lite Model 111 Sealand Technology, Inc P.O. Box 38 13128 State RT. 226 Big Prairie, Ohio 44611 (800-321-9886)

The Traveler toilet should be cleaned regularly for maximum sanitation and operational efficiency. You can clean that just as you would a household toilet. **Do not use caustic chemicals, such as drain opening types, as they will damage the seals.**

BOWL CLEANING; for stubborn stains, ease Brilliance liquid or toilet bowl cleaner. Sealand manufactures it especially for use with Traveler and Traveler Lite toilets. In certain locations where water is hard, a buildup of the lime may dull the toilet bowl finish. Restore the shine with Brilliance cleaner. If you cannot find Brilliance in your area, contact Sealand or your nearest dealer. If Brilliance is not available, you can also use Bar Keepers Friend® cleanser. It is not necessary to vigorously scrub with either product. Please follow label instructions.

SEAL CLEANING; after an extended time, mineral deposits from hard water can build up under the edge of the rubber bowl seal, resulting in a slow leak down of water from the bowl. To be event this mineral buildup, periodically clean under the bowl seal with Brilliance cleanser.

WINTERIZING

At the end of the season, the Traveler or Traveler Lite toilet should winterized for storage, by either draining or using potable water safe antifreeze and the system.

To drain;

- 1. Thoroughly flush system with fresh water.
- 2. Empty the holding tank.
- 3. Shutoff water supply to go to sleep have the toilet and remove inlet waterline.

Do not remove brass camp on bottom of the valve.

4. Press flush lever until all air is drained from the toilet.

To use antifreeze;

- 1. Drain potable water tank.
- 2. Add fresh water antifreeze to potable water tank.
- 3. Flush potable water antifreeze and water makes cheer through toilet into the waste holding tank. Each installation is different so amounts may vary. User discretion is required to assure adequate protection.
- 4. Empty holding tank.

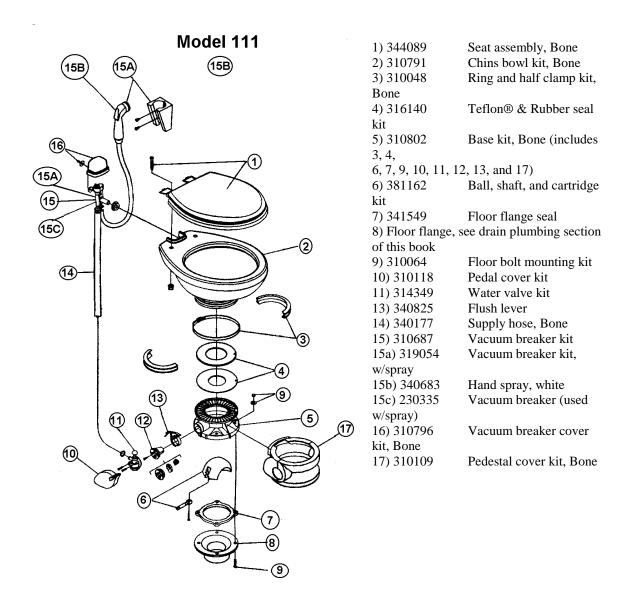
Note; use non-toxic antifreeze designated for potable water systems.

See the Sealand toilet owner's manual for complete instructions and cautions.

Parts Ordering:

Please contact Sealand at 1-800-321-9886, Monday through Friday, from 8:00 a.m. to 5:00 p.m. for the location of the Sealand Authorized Service Center nearest you, or e-mail Sealand@Sealandtechnology.com. Have toilet model number, serial number, and the part you need (number and description) ready to speed up the ordering process.

Sealand Toilet Traveler Lite Series



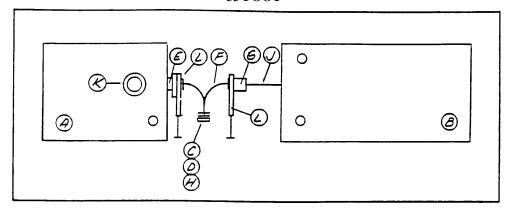
Sealand Technology is ready to assist you in the event service is required. Before calling, please have the following information available.

- 1. Toilet Model Number
- 2. Serial Number
- 3. Part Number, Description, and Quantity.

For the name of the nearest authorized service center please call 1-800-321-9886 between the hours of 8:00 AM and 5:00 PM, Eastern Time.

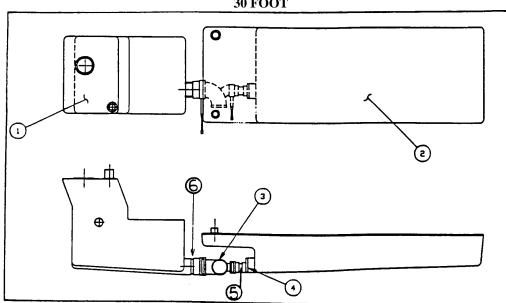
DRAIN LINES, BELOW FLOOR

33 FOOT



A. 601493 Black Tank B. 601492 Grey Tank C. 601251 Bayonet Ring 0 Bayonet Cap D. 601250 E. 601432 Adapter 3 Way Elbow F. 600866 3" Coupler G. 600289 3" Dia x 3" H. 601160-04 3" Dia x 10" J. 601160-04 K. 601266 4 x 3 Closet Flange L 601430 3" Gate Valve

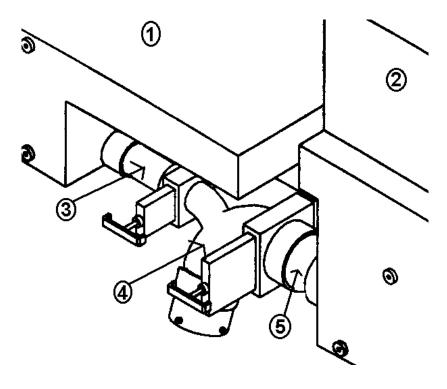
30 FOOT



Tank Black Holding 1.601567 2. See 109992 Tank Grey Holding **Dump Valve Rotating Assy** 3.601482 Reducer Adapter 3" to 1.5" 40740 4. 195329-229 5. 601160-04 Pipe. ABS DVW, 3"

Pipe. ABS DVW, 11/2 " 6. 601160-02

PLUMBING DRAIN WATER 26 FT



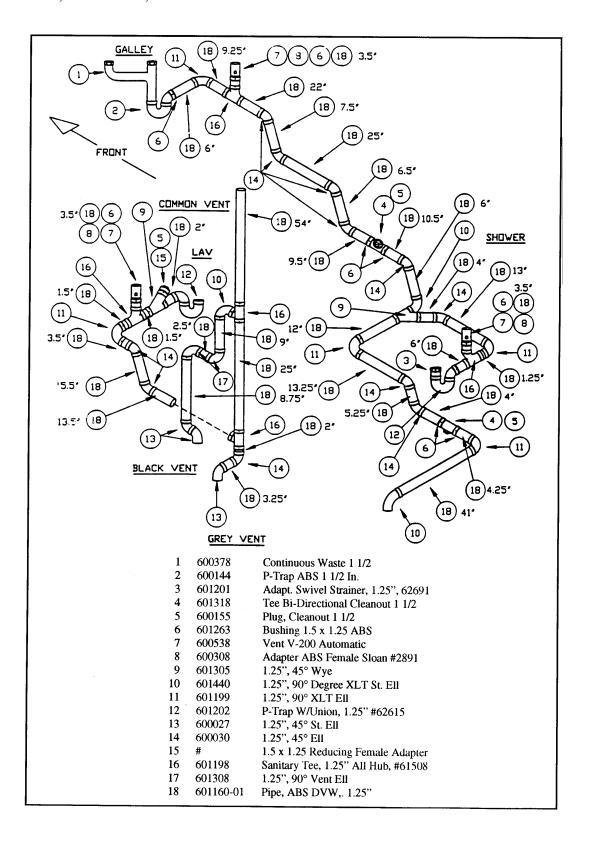
1) 601794	Gray water tank
2) 601795	Black water tank

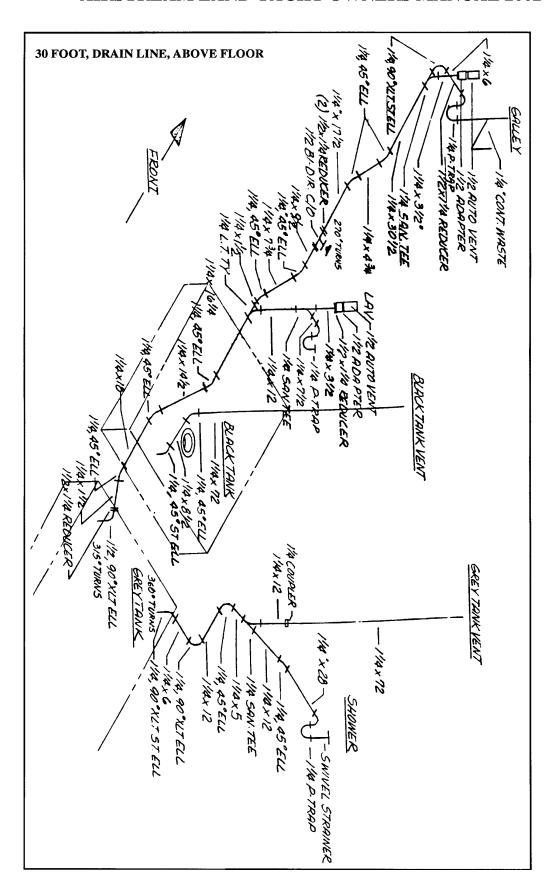
3) 601160-02 Pipe, 1½", ABS DVW, 4.63" long 4) 601482 Dump valve, rotating assembly 5) 601160-04 Pipe, 3", ABS DVW, 4.63" long

453810 Bracket, holding tank 453981 Support, holding tank **601441 System, tank flush** 601786 Water fill, tank flush

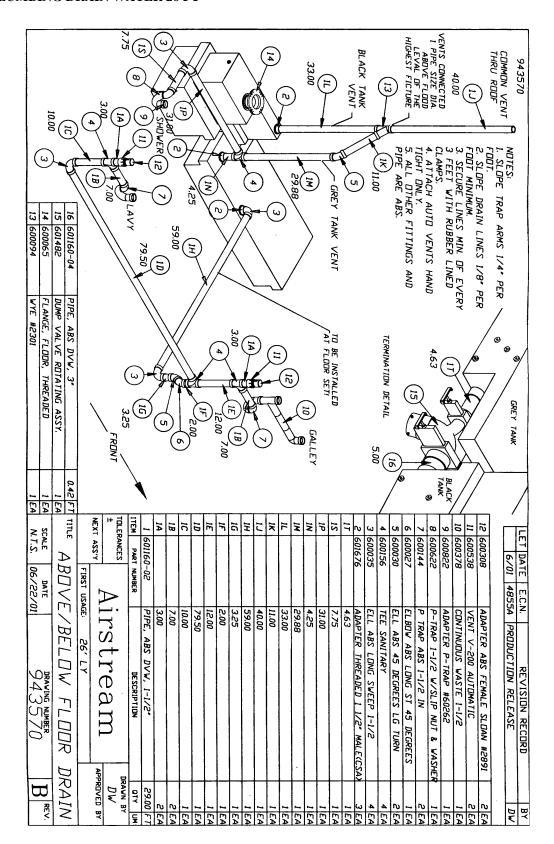
914189 PAN ASSY BLACK TANK 914196 PAN ASSY. GRAY TANK

33 FT., DRAIN LINE, ABOVE FLOOR





PLUMBING DRAIN WATER 26 FT



STORAGE AND WINTERIZING

When storing your motorhome for a short or long period, use the same precautions as you would in your own home in regard to perishables, ventilation and rain protection. In addition, for prolonged storage periods flush out all the drain lines and the holding tanks. Also, drain the entire water system, including the water heater and the water storage tank. Instructions for draining the water system are explained in the following paragraphs on winterizing.

Twice a year, or after a long storage period, we suggest you take your unit into your Airstream dealer for a check-up and cleaning of the gas operated appliances

Living Area

The main consideration in winterizing is to guard against freezing damage to the hot and cold water systems, the waste drain system (including the traps), the waste holding tanks, the water heater and the batteries. To completely winterize your motorhome follow this procedure:

- 1. Level the motorhome from side to side and front to rear. Open all faucets.
- 2. Turn the water pump switch to the OFF position.
- 3. Open all drain valves. One drain valve or plug on all models is located on the water heater exterior and is accessible through the water heater access door.
 - On rear double bed models three additional valves are located under the bed. One for hot lines one for cold lines and the third for draining the water tank.
 - On rear twin bed models these same valves are located under the curbside rear twin bed.

Other valves to open would be exterior service valve and the in-line exterior service valve. (See drain valves and their access in this section).

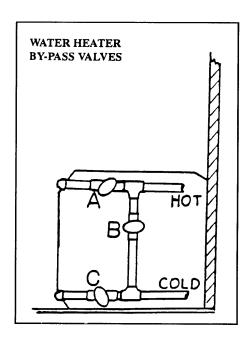
- 4. Follow winterizing instructions for your toilet in the toilet section of this manual.
- 5. While the water is draining from the system, depress hand spray thumb button on the telephone showerhead and drain all the water. Unscrew the head on spray unit and store.
- 6. After the water has stopped running from the drain lines, apply at least 60 lbs. of air pressure at the city water inlet. Be sure the toilet valve and all drain valves and faucets are open and pump outlet hose is disconnected. This can be accomplished at a service station and will force any remaining water from the water heater and remove any water which may be trapped in low areas.
- 7. Pour a cup of non-toxic antifreeze into the lavatory, sink, and tub drains to prevent freezing water in traps.
- 8. Be sure to open the waste holding tank drain valves, and drain and flush the tanks thoroughly. (This is very important, as the frozen sewage could seriously damage the tank.)
- 9. Remove water filter canister and dump.
- 10. Remove the batteries from your motorhome and store in a cool dry place where there is no danger of freezing. It is very important for optimum life of your battery to check it periodically and to keep it fully charged. This is especially true in winter months, when the temperature may drop below freezing. If the period of storage is for 30 days or less, you may turn off the "kill" switch rather than remove the batteries,
 - Please refer to the battery section for more information on battery maintenance
- 11.Remove any items (food, cosmetics, etc.) from the interior that might be damaged by freezing, or might damage the motorhome if containers break.
- 12. If you have an optional icemaker, read and follow the winterizing directions in the manufacturer's owner's manual.

For additional winterizing protection, add non-toxic antifreeze (approved for drinking water systems) to your water lines using the following procedure:

- 1. Reconnect all lines except the hose to the pump inlet port. Close all drain valves (See Step 3)
- *2. Turn bypass valves to bypass position.
- 3. Attach a length of hose to the pump inlet port. This piece of hose should be long enough for the free end to be inserted into and reach the bottom of the antifreeze container.
- 4. Dilute the antifreeze solution in accordance with the manufacturer's instructions.
- 5. Open all water faucets.
- 6. Insert hose length into the antifreeze container, turn the pump switch on, and run the water pump until the antifreeze solution fills all water lines. Flush toilet. Work shower hand spray while holding down in tub.
- 7. Shut off the pump and close all faucets.
- 8. Disconnect the hose length from pump inlet fitting and reconnect water system inlet line.

*Turn the water heater valves to by-pass flow position. To by-pass the water heater for winterizing, close valves A and C and open valve B (See illustration). The by-pass valves are located under the lavatory cabinet in the 33' model (access by removing the lower shelf vertical close-out) and under the wardrobe in the 30' model (pull off the small raised panel door held on by pressure latches below the wardrobe door).

For normal operation open valves A and C and close valve B.



DRAIN AND WASTE SYSTEM

The drain and waste system of your motorhome includes waste holding tanks made from molded plastic. The MAIN HOLDING TANK enables you to use the toilet for several days away from disposal facilities. The wastewater from the sink, shower, and bath and lavatory drain into the AUXILIARY HOLDING TANK. Each tank has its own dump valve; however, both tanks drain through a common outlet. Therefore, you need to make only one connection when hooking up in a trailer park with sewer facilities.

Monitor Panel

Check your monitor panel frequently. When the MAIN HOLDING TANK is completely full, sewage cannot be emptied from the toilet bowl. If the AUXILIARY HOLDING TANK is overfilled, drain water will "backup" into the tub and cause an unpleasant cleaning job. Tank one on the monitor panel is the "black" tank and tank two is the auxiliary or "gray" tank. Never drain the tanks at any place other than an approved dumping station.

To empty both tanks, attach the sewer hose by pressing the bayonet fitting onto the outlet adapter and rotate clockwise until it feels solid and secure. Attach the outlet end of the hose to the sewage outlet; making sure that the hose is placed so that it will drain completely. The dump valves are located on the lower rear roadside corner of the motorhome. Pull the dump valve handle out as far as it will go and wait until the tank is drained. If the auxiliary tank is drained after the waste tank, the soapy water will help keep the sewer hose and outlet clean.

The main holding tank must be flushed out until all paper and waste material is removed. Close the dump valve and refill the tank with 5 to 10 gallons of clean water and repeat until clean.

When Parked and Connected to Sewer Outlet

When you are in a park and connected to a sewer outlet, keep the main holding tank dump valve closed and empty the tank every few days or whenever it becomes almost full. ONLY BY SENDING A LARGE VOLUME OF LIQUID THROUGH THE MAIN HOLDING TANK AT A TIME WILL TOILET PAPER AND OTHER SOLIDS COMPLETELY WASH AWAY.

This practice will avoid the accumulation of solids in the main holding tank, which could lead to an unpleasant cleaning job. Should solids accumulate, close the dump valve, fill the tank about half full with water, then drive the motorhome for a few miles. The turbulence and surging of the water will usually dissolve the solids into suspension so the tank can be drained. Keep the auxiliary tank valve open when connected to a sewer outlet.

Draining the tanks as described will protect them from freezing during storage. When traveling in subfreezing temperatures, use a winterizing solution designed for RV use. Follow the directions on the container. As this is being written, heated tanks are being considered and may be on your motorhome.

<u>CAUTION</u>: Never put wet strength paper towels or tissues in your holding tank, since they won't dissolve and can "catch" in the mechanism of the dump valve. Colored toilet tissue is slower to dissolve than white. Most RV accessory stores offer tissue, designed for RVs that will completely dissolve.

Black Tank Flush

On the left rear lower side is a water hose connector marked "black tank flush." To use, hook-up a hose to the connector and turn the water on full force. Within the tank a spray head with a multiple-holed head will spray the interior surface of the tank.

The gate valve should be closed for the first couple of minutes, and then opened to let the water out in a rush. Repeat as needed.

Drain Systems Cleaning

There are many deodorizers on the market in tablet, liquid, and powder form. These not only combat odor, but also stimulate the bacteria that works to dissolve the solids in your tank. Picking a deodorizer with lubricating qualities will help ease the slide valve operation.

The only cleaning agents that can be used without causing harm to the system are household ammonia and tri-sodium phosphate in small quantities. Do not use any product that contains any portion of petroleum distillates. This attacks the rubber seals of your toilet and dump valve. Also, do not use any dish detergent or abrasive cleaners. All products should be marked approved for ABS drainage systems.

When winterizing the drains use only recreational vehicle plumbing type antifreeze. These are sold through your dealer.

ELECTRICAL SYSTEM BATTERY CONTROL CENTER

The Intellitec Battery Control Center is a centralized power switching, fusing, and distribution center. Power from both the chassis and the coach batteries are feed into the control center box. **All servicing with-in this box should be done only by a qualified Service Technician.** Page H-3 has a drawing of the 12-volt chassis wiring system used in your motor home.

Your motorhome is equipped with three batteries. One battery will be for the engine and the other two batteries (coach) for the interior 12-volt circuits. All batteries are located under the front hood.

The **Engine battery** is used for starting the engine and operating the headlights, taillights, running lights, instrument panel lighting, automotive air conditioning and other accessories. The alternator charges all the batteries while the engine is running. The converter charges all the batteries when the unit is plugged into shoreline.

The **Coach batteries** are used for interior lighting; exhaust fans, generator, water pump, central control panel, entertainment center, optional 12-volt convenience outlets, and the refrigerator when it is switched to 12-volt power. The Intellitec Battery Control Center manual is also in your packet. It has trouble-shooting and wiring information.

The **Intellitec Primary Battery Control Center** is located in the driver's side front exterior lower compartment along with the interior 12-volt fuse panel. 12-volt power is distributed to each of the 12-volt interior circuits of the motorhome from this fuse panel.

The **Battery Disconnect** switches on the panel just inside the main door acts as master switches. When the coach switch is turned to **use** it opens the circuit between the coach batteries and the twelve-volt distribution panel in the primary Battery Control Center. The chassis disconnect switch does not disconnect the chassis battery from the chassis systems. It only cuts off power from the converter charging system to the chassis battery. You must have the battery disconnect switch on (use) for the converter to charge the engine batteries. The coach batteries are charged by the converter whether the coach battery disconnect switch is in the use or store position. The generator also charges all batteries when it is running, through the 120-volt city power system that powers the converter.

The disconnect switch is not intended for everyday use. But if you're going to be away from your coach for more than 3 or 4 days and it's not plugged into 110-volt current just flip the switch off on the way out and you're assured of fresh batteries when you return.

The converter is located under the dash on the curbside in the 30 FT. and 33 FT. Models. Remove the kick panel for access. It is under the front dinette seat in the 26 FT. Model, remove the seat top for access.

The hydraulic pump for the leveling jacks is located under the front hood.

There are two sets of fuses in your motorhome. Several circuits of Airstream installed equipment are fused in the Battery Control Center in the roadside front exterior compartment, see page H-4. The main interior circuits are fused in the 12-volt distribution panel beside the Battery Control Center. The brightly colored fuses pull straight out from the face of the panel. Replacement fuses are available at automotive stores and most service stations. There are diagrams on the lids of both fuse panels.

Another set of fuses is chassis fuses and is located to the left of the steering column. The functions of these fuses are marked directly on the face of the fuse block. See your Chassis Drivers Manual for further information on chassis items. A diagram is in this section shows where Airstream picks up power for automotive accessories.

The diagrams for these fuse panels are shown later in this section.

12-Volt Operation

The only thing you have to do is make sure the two coach batteries and engine battery does not run down. In normal usage there isn't any problem, since you would normally drive part of the day and be plugged into a campground at night. The alternator charges the batteries when you drive. When you're plugged into city power the converter charges the batteries and carries much of the load.

Some nights you may not find a place to plug into city power. No problem; the batteries total about 210 amp-hours, so you can comfortably run your lights and vents in a normal fashion without depleting the batteries.

If you are not plugged into city power and you're not driving, you'll want to conserve your coach batteries by using as few lights and appliances as possible. The Battery Control Center isolates the engine battery and coach batteries from each other, preventing the coach 12-volt system from drawing down the engine battery. If you notice the lights becoming dim, it's much easier on the batteries if you go ahead and start the engine or generator before the batteries run down.

Interior Lights

Many interior lights have been included in your motorhome to give you almost infinite variable light intensity.

There are two main clusters of light switches. Just inside the main door on the galley end panel are switches for the step, patio light and forward ceiling lights. The forward ceiling lights must have their switches on before the remote switch on the galley end panel will control them.

The second cluster of switches is in the bathroom. They control the bath lights, water heater and water pump. The water pump switch operates in conjunction with the pump switch on the monitor panel. The pump can be turned on or off at either location. The water heater switch supplies power to the igniter and gas valve. When turned on it will flash red until flame is sensed, then the red light will be extinguished.

The bulbs in the interior lights are all easily replaced if they burn out, Round, exposed bulbs, such as those around the bathroom mirror and reading lights, are replaced by depressing them into their base, then turning to the left about ½ turn. This will allow them to "pop" out part way so they can be removed.

<u>WARNING:</u> If they are difficult to turn, use a folded rag to protect your hand when grasping the bulb in me it should unexpectedly shatter.

AIRSTREAM LAND YACHT OWNERS MANUAL 2002 A/S P/N: 511152-11 MONITOR PANEL WITH GEN. START SWITCH 心 ÇA. 18 GA. RED, METER/GEN. RUN INTERIOR FUSE PANEL A/S P/N: 511638 SEE DETAIL DVG. 952678 EOR CIRCUIT DETAILS 18 GA. YELLOW, START 먗 18 GA. BLACK, GROUND 18 GA. BROWN, STOP 5.5 KV GENERATOR A/S P/N: 511038 6 GA. RED TO AUX. BATT. SOLENOID. (SWITCHED) BATTERY CONTROL CENTER DISCONNECT SWITCH A/S P/N: 511632-03 _. _. 2 GA. RED A/S P/N: 511632-02 BATTERY CONTROL CENTER DISCONNECT CABLE 50A. PRIMARY BATTERY CONTROL CENTER A/S P/N: 511632-01 SEE SERVICE MANUAL EOR CIRCUIT DETAILS ® Au SO AMP AUTO RESET 50A. 6 GA. RED COMPARTMENT AUX. BATT, SOLENDIA 6 GA. WHT. CHASSIS 1/0 RED A/S P/N: 511426 Lay-Out, 12V. Wiring, Chassis 55 AMP B GA. BARE COPPER CASE GND. 2 GA. CHASSIS GND. 130A 2002 M.Y. STARTER AUXILLIARY BATTERIES A/S P/N: 511132 (2) GROUP 27 - TYP. LEAD ACID GA YELL 18" MAX. | 1/0 RED TYPE 3 CHASSIS 4 BLACK 1/0 BLK 26', 30', 33' L/Y Mh's. 2 GA. BLK CHASSIS GND. AUX. BATTERY CHASS GND. PUNCK 10 GA. 1/0 BLK Ĕ CHASSIS GND. SUPPLIED W/CHASSIS A/S P/N: 511340 'OPTIONAL' 130 V. INVERTER AUX. BATTERY 2/0 RED 10 GA. WHT. CHASSIS GND. 1/0 BLK H-3

Primary Battery Control Center Circuit Locations Front Driver's Side Exterior Compartment

AUX START
SWITCH
TO TEST
ISOLATOR RELAY:
TURN OFF ENGINE
AND GENERATOR
DISCONNECT
SHORE POWER
PRESS AUX
START SWITCH
ISOLATOR RELAY
SHOULD CLICK
CHASSIS BD

	AUX	ISOL TURN AND DIS SHC PI STA STA ISOL SHC	CHAC
F14	AUX BD LED 5 AMP MAX		<i>ל</i> גל
F15	CB POWER 10 AMP MAX	LLITEC B.C.C. EL 100 777-000	CHAS BD LED 5 AMP MAX
F16	RADIO PWR 10 AMP MAX	INTELLIT GAS B.C. MODEL 1 00-00777-(⇔ STEP MOTOR □ 25 AMP MAX
F27	SOLAR PANEL 5 AMP MAX	Z 0 Z 0	4 STEP SW
F26	CHAS SPARE 15 AMP MAX		SPARE CHAS 5 AMP MAX
F25	RADIO MEM 5 AMP MAX		ω IGN SIGNAL T.5 AMP MAX
F24	LP DETECT 3 AMP MAX		POWER SEAT
F17	AUX START 5 AMP MAX		∞ REAR HEAT 15 AMP MAX
F18	DOOR LOCK 15 AMP MAX		ற POWER WIND
F19	BD RELAY SW 5 AMP MAX	FOG LIGHTS 15 AMP MAX	20 AMP MAX
14.	3 AMP MAA		⊖ JACKS/MIRR ———————————————————————————————————
		THESE TERMINALS FOR TEST ONLY SEE SERVICE MANUAL	₹ 15 AMP MAX
		FOF O O WA	N HEATER/AC FAN
		,	SPARE IGN 2 15 AMP MAX
			SPARE IGN 1 15 AMP MAX

12-VOLT WIRING DIAGRAMS

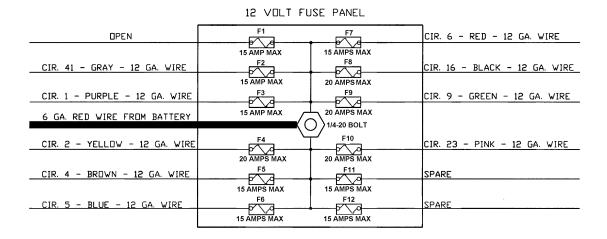
- 12-volt Coach fuse panel-Airstream
- 12-volt calculations 26 ft.
- 12-volt calculations 30 ft.
- 12-volt calculations 33 ft.
- Chassis Fuse Panel w/ Airstream Circuits
- Harness, body, interior 33 ft.
- Harness, body, chassis 33 ft.
- Harness, ceiling 33ft.
- Harness, body, chassis 30 ft.
- Harness, body, interior 30 ft.
- Harness, ceiling 30 ft.
- Harness, body, interior 26 ft
- Harness, body, chassis 26 ft.
- Harness, ceiling 26 ft.

All Models

- Harness, body, upper Harness
- Harness, firewall
- Harness, clearance lights
- Wiring, Dash switches
- Keyless Entry Layout
- Remote Control Electric Mirrors
- Harness, Head Lights
- Harness, Tail Lights
- Harness, Drivers Door
- Harness, Coax Cable Layout

Fuse Panel, Coach

Front Roadside Exterior Compartment



For individual circuit information see the 12-volt calculation sheets on the following pages for your model.

26 Ft. LAND YACHT MOTORHOME 12-VOLT CALCULATIONS

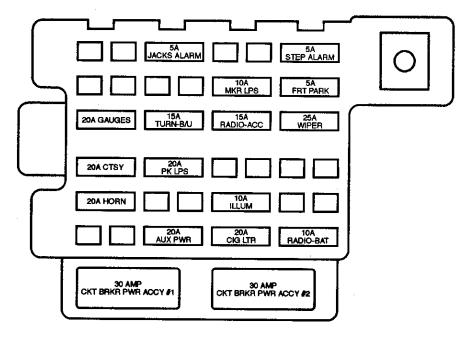
FUSES POSITION 1, 15 AMP, SPARE	Front AC Feed wire 1.00 Total 8.60 AMPS	
FUSES POSITION 2, CIRCUIT41, 20 AMP, GRAY OPTION POWER AWNINGS 5.00 AMPS	FUSE POSITION 7, CIRCUIT 6, 15 AMP., 12 GA., RED (7) Compartment Lights 10.08 AMPS	
FUSE POSITION 3, CIRCUIT1, 20 AMP, 12 GA. PURPLE		
(2) 1-bulb 10W. Bed Reading Lights 1.60	<u>IRCUIT 8, 20 AMP., 12 GA</u>	
	thts	
#4 Bedroom Fluor. Ceiling Light 1.33	Patio Light 1.50	
(1) 2-bulb Wall Lamp 2.00	3-Bulb Dinette Light 4.50	
	#1, 2, and 3 Fluor. Ceiling Lights 5.10	
RC Closet Light	Total	
` ',		
Total 17.25 AMPS	NO CIRCUIT 8 USED	
FUSE POSITION 4. CIRCUIT. 20 AMP. 12 GA YELLOW	FUSE POSITION 9, CIRCUIT 9, 20 AMP., 12 GA., GREEN	
Toilet Area Fluor. Light	Range Vent and Light 3.20	
	·	
Water Heater Elec. Ign. 1.00	Total 13.20 AMPS	
` ''		
Total 15.63 AMPS	, 20 AMP., 12 C	
NO CIRCUIT 3 USED	(4) Halogen Docking Lights 18.33 AMPS	
FUSE POSITION 5, CIRCUIT 5, 15 AMP., 12 GA. BROWN	FUSE POSITION 11, 15 AMP., SPARE	
(4) Aisle Lights 1.60		
Under hood Light 1.44	FUSE POSITION 12, 15 AMP., SPARE	
Light		
Total 4.37	Battery Charger 3.00 AMPS	
THE ACT OF THE SE ANTICOURS A MOUNTAGE RESIDENCE	TOTAL AMP DAW	Z
r., 12 GA	- 20 00 A MTDS	2
Celling Fan	AND A AMERICA (M. 100 %) = 20.00 AMERICA	-
	2 AMPS(0, 20%) = 10.00 AMPS	
RS Lounge R/L Lights	67.56 AMPS (a) 25% = 16.89 AMPS	
	46.89 POWER CONVERTER REQUIRED	
12-volt Booster 0.00		

30 Ft. Model

	LET BATE LECAL
9524.0	Product
/, cu A. ruse, ic	
Keter 5,00 Amps	
Fuse Position 2, Circuit 7, 20 A, Fuse, 12 Ga. Drange	
Refer 9.00 Amps	
Fuse Position 3, Circuit 1, 20 A. Fuse, 12 Ga. Purple	Fuse Position 8, Circuit 16, 20 A. Fuse, 12 Ga. Black
(2) 1-Bulb PD Bedroom Locker Lights 2.88 Amps	#'s 1,2,3,4 and 5 Celling Lights 8.50 Amps
nt 1.70	hts
(2) 2-Bulb Wall Lamps 5.60	
Bedroom TV 4.20	3- Bulb Dinette Light 3.40
(1) 2-Bulb Vanity Light 2.00 Total 16.38 Amps	Total 14,40 Amps
Fuse Position 4, Circuit 2, 20 A. Fuse, 12 Ga. Yellow	Fuse Position 9, Circuit 9, 20 A. Fuse, 12 Ga. Green
Bath Exhaust Fan 2.00 Amps	Range Vent and Light
Water Heater Ignition 1.00	Pump 7,00
Total 3.00 Amps	
Fuse Position 5, Circuit 4, 20 A. Fuse, 12 Ga. Brown	10+0T
partment Light 1.00 A	
Front TV 7.00	Rottenson Chamber 200 Amer Tatal Amer Chamber 200 40
(2) 2-Bulb Aisle Lights	1st 20 Amps, @ 100% = 20.00 Amps.
(2) 1-Bulb Aisle Lights	e 100% = 10.00
Patio Light 1.04	e 25% = 15.60
(2) Step Lights 2.00	Total 45.60 Amps
Front Radio 5.00	
Total 16.94 Amps Fuse Position 6, Circuit 5, 20 A. Fuse, 12 Ga. Blue	45.60 Amp. converter required by calculation.
Credenza D/H Light .90 Amps	load 30 mmp, converter daed. All appliances installed per manufacturer's
Lounge D/H Light .90	Instructions per NEC 551-10 (e-3),
Galley D/H Light .90	
"Fantastic" Celling Fan 3.30	ITEM PART MANGER BESCRIPTION GTY UM
Total 6.0	
Fuse Position 7, Circuit 6, 20 A. Fuse, 12 Ga. Red	PREDDUCT
Furnace 6.50 Amps	
Total	SCALE DATE DRAVING NAMER A REV.

Refer Circuit 2, 20 Amp. Fuse, Orange 9.00 Circuit 3, 20 Amp Fuse, Purple (2) I Bulh PD 7-droom Locker Lights 2.88 #5 Bedroom Fluorescent Light 1.70 (2) 2 Rulh Hall 1-mos	9.00 Amus.		
	9.00 Amps.		
	Ambo		
		Circuit 8, 20 Amp. Fuse, Black	
			.90 Amps
4	_	ing Fluor. Lights	6.80
N/S Wardrobe Light 70	. 70	C/S Wardrobe Light	.70
	· edimo	Total	9.50 Amps.
20 Amp. ruse, Yellow	2 00 4 22 2	Const and Constant	
(1) 3 Bulb Vanity Light 3.50	o amps.		3 20 Amps
ent Light		Water Pump	7.00 7.00
)	•		1.00
-		Total	11.20 Amps.
	Amps.	ı	
Circuit 3, 20 Amp. Fuse, Brown 1 oc	7 00 1	Circuit 17, 25 Amp. Fuse, Pink	20 00 Ames
	. sdmb		occo ompo-
		Rattery Charger	3.00 Amps.
(2) I Bulb Aisle Lights .30	_		
Patio Light 1.04 Step Light 1.04		Total Amp. Draw 12	124.92 Amps.
Front Radio 5.00		1st 20 Amps. @ 100% = 20.00 Amps.	ŝ
Total	Ambs	. @ 50% =	ů.
		@ 25% =	Š
Circuit 6, 20 Amp. Fuse, Blue		51.23 Amps.	
	Amps.	51.23 Amp. power converter required by calculation. Todd 75 Amn.	/ calculation, Todd 75 Amn.
1ght		converter used.	
3.40 "Entroller O/H Light 3.40 "Entroller E.		All appliances installed per manufacturers instructions per NEC	rers instructions per NEC
		551-10 (e-3). All wire is stranded copper, listed THHN or TEW.	oper, listed THHN or TEW.
0.00		ILEM PART WUNDER	DESCRIPTION
	Amps.	TOLFANCES	Dringson
20 Amp. Fuse, Red		12	te scale brawn av TC
(9) Compartment Lights	6.3U Amps.		
Total	15.50 Amps.	PRACTIONAL TITLE	ועונ
		-	- 1
		AMGULAR NEXT ASST	DATE DRAWING NUMBER

33 Ft. Model

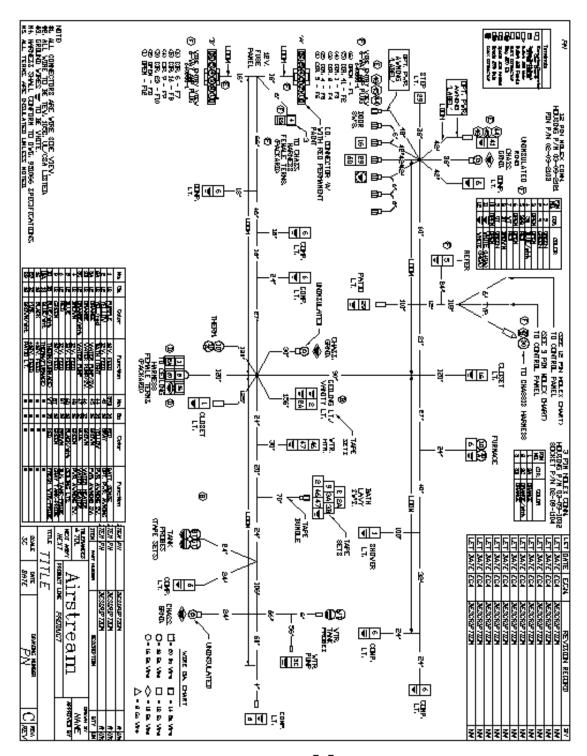


Airstream functions only, see Workhorse manual for all chassis protections.

NAME	SIZE	CIRCUITS PROTECTED
HORN	20A	Horn
CTSY	20A	Dome lights
GAGES	20A	See Workhorse manual
AUX PWR	20A	
PK LPS	20A	Head lamp switch
TURN/BACK UP	15A	Reverse view for camera.
JACKS ALARM	5A	
CIG LTR	20A	Dash 12-Volt outlet
ILLUM	10A	Dash switch lights
RADIO-ACC	15A	Monitor, Step (ign.), Step,
MKR LPS	10A	Clearance lights
RADIO-BATT	10A	
WIPER	25A	Wiper
FRT PARK	5A	Front park lights
STEP ALARM	5A	
PWR ACCY 1	30A	
PWR ACCY 2	30A	

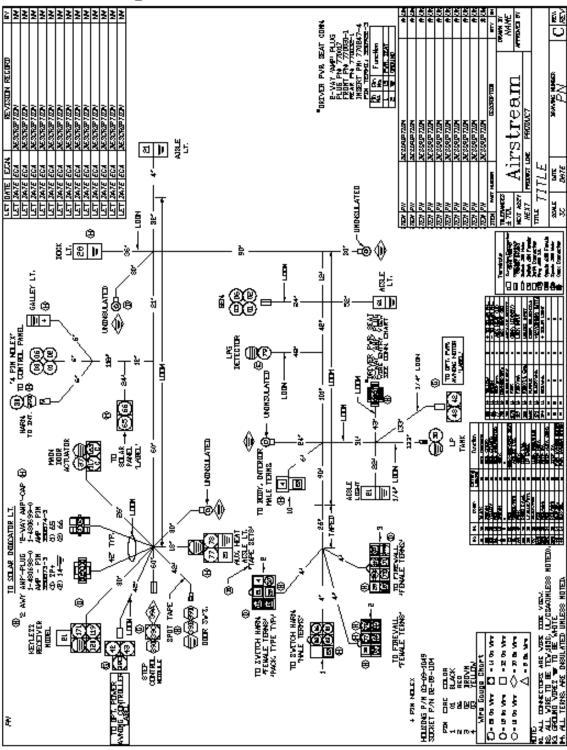
EXTERIOR WORKHORSE FUSE BLOCK

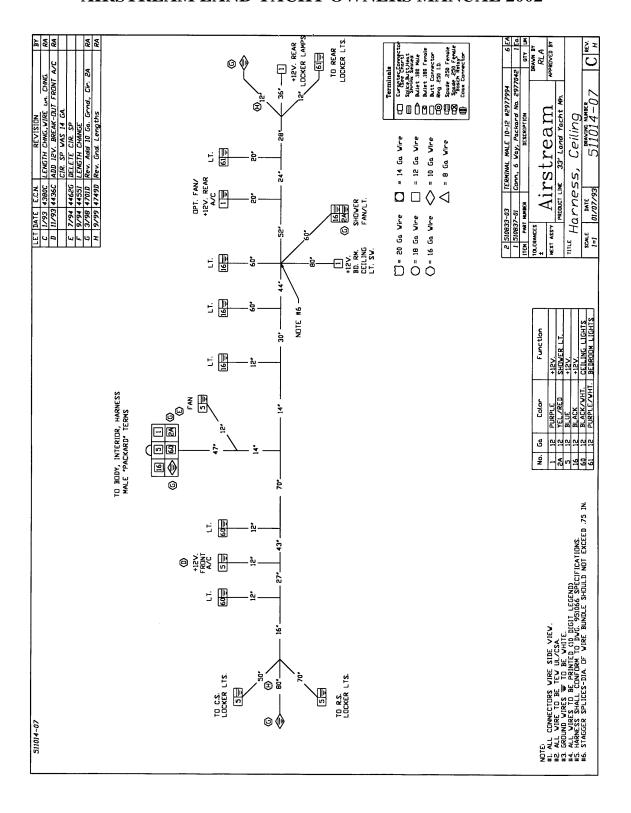
The 10-amp ALT/START must be a circuit breaker.

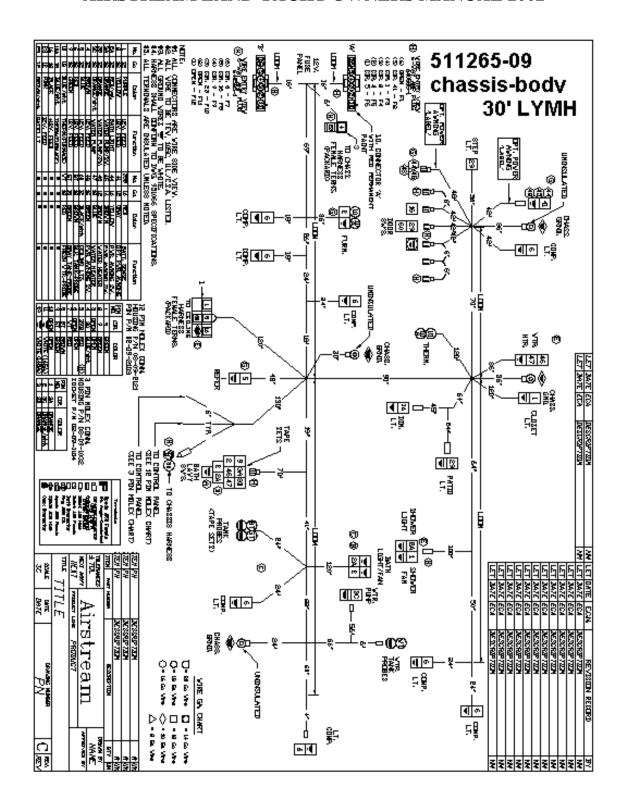


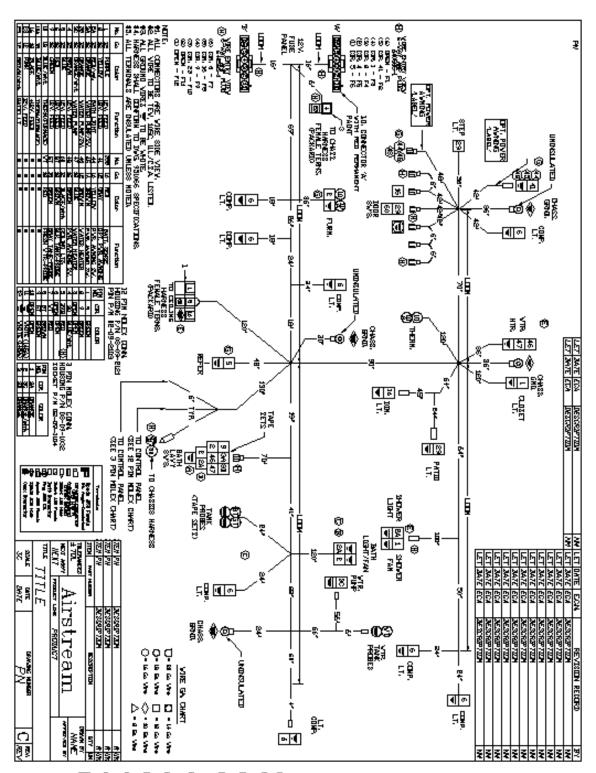
511266-06 Harness Body- Interior 33' LYMH

511267-08 Harness Body-Chassis 33' LYMH

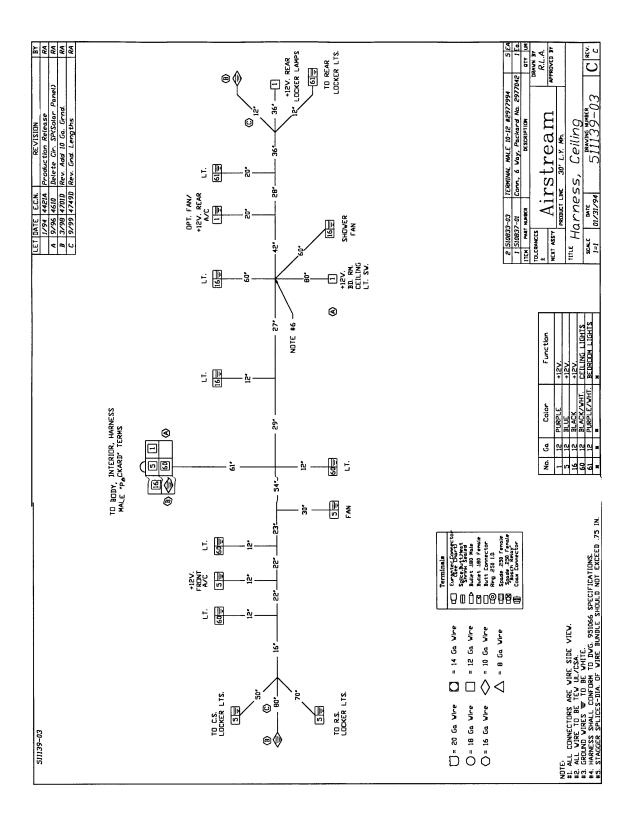




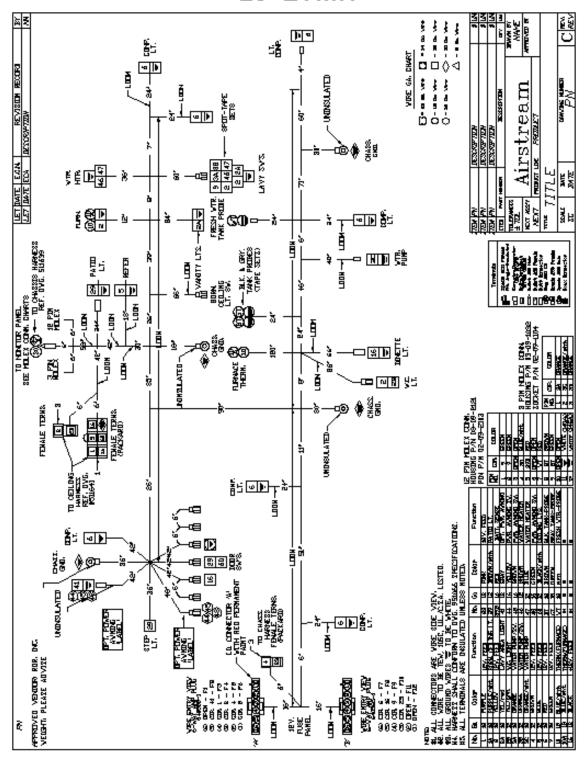




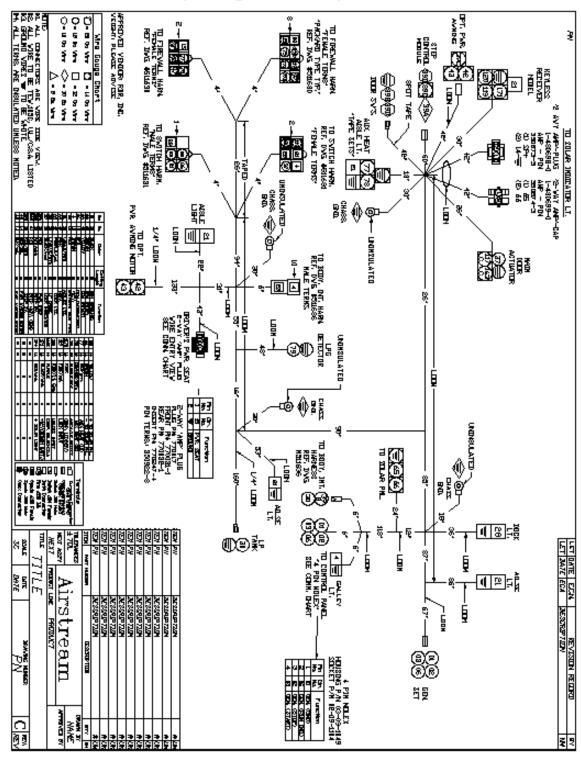
511264-08 Harness Body Interior 30' LYMH



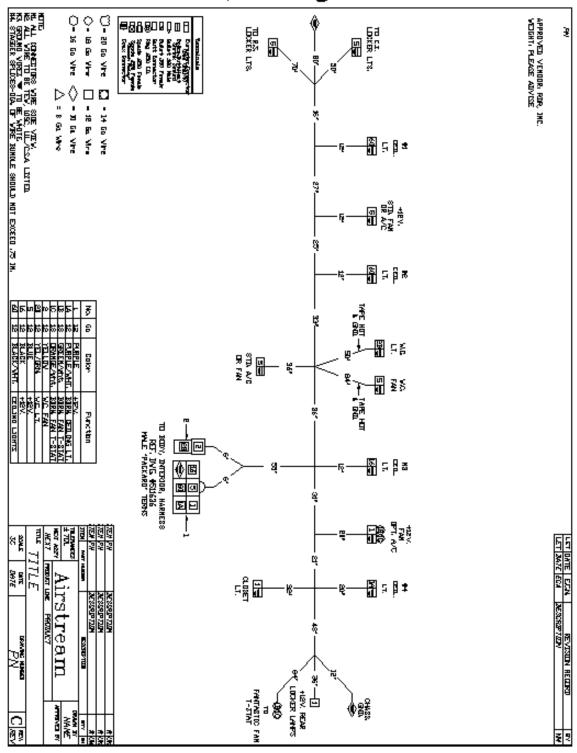
511636 Harness Body, Interior 26' LYMH

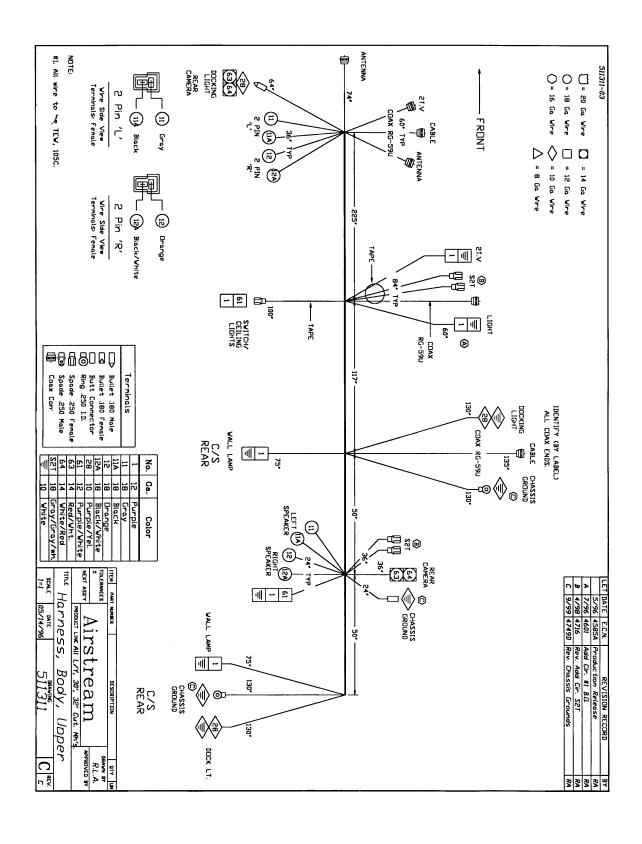


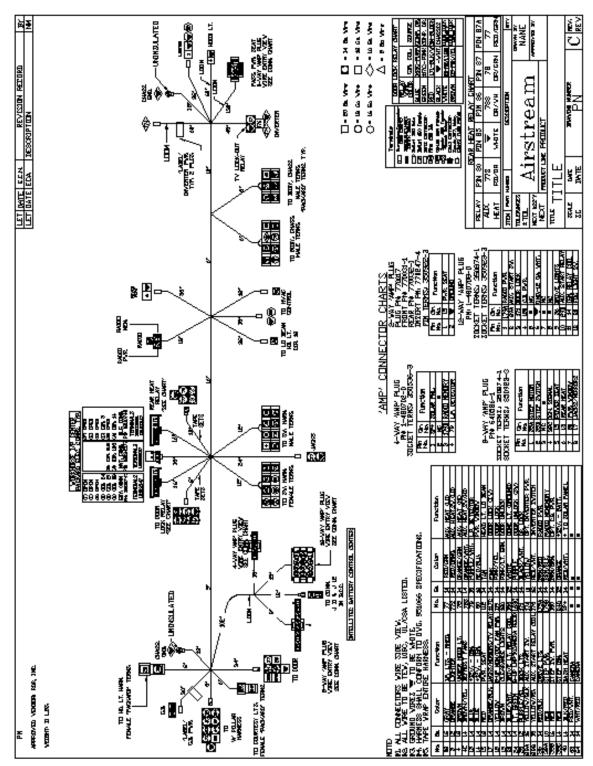
Harness, Body-Chassis, 26' LYMH



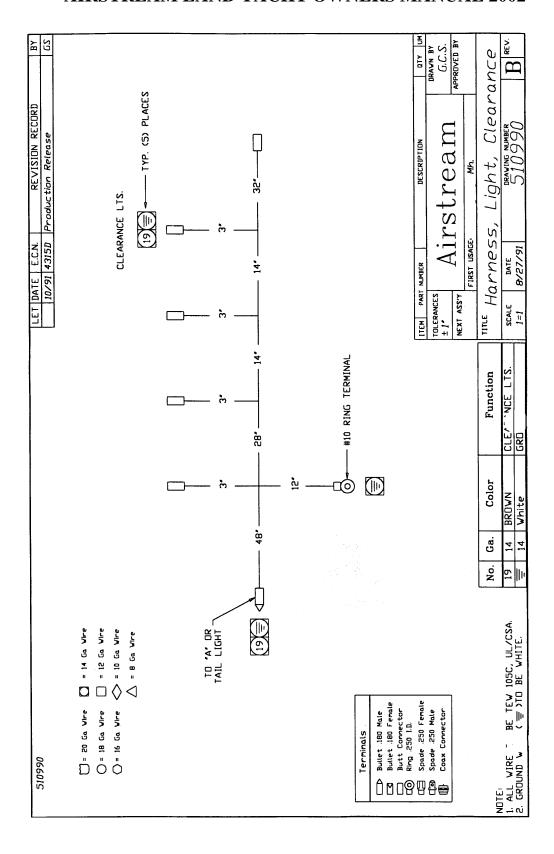
Harness, Ceiling-26' LYMH

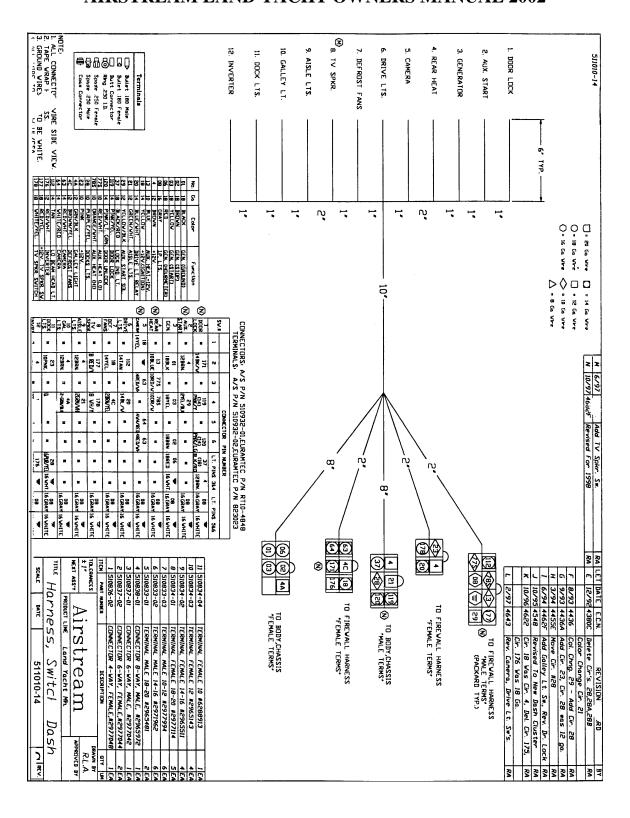


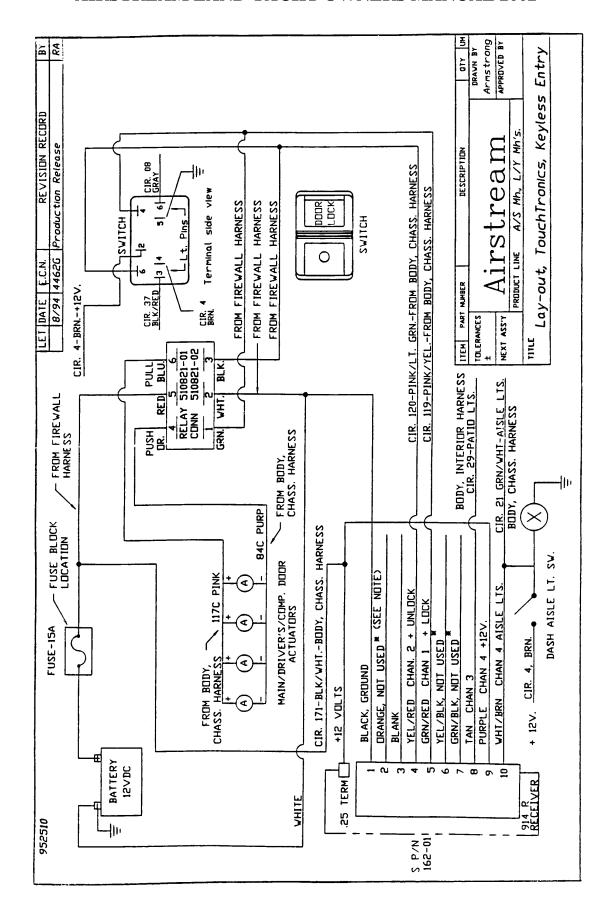


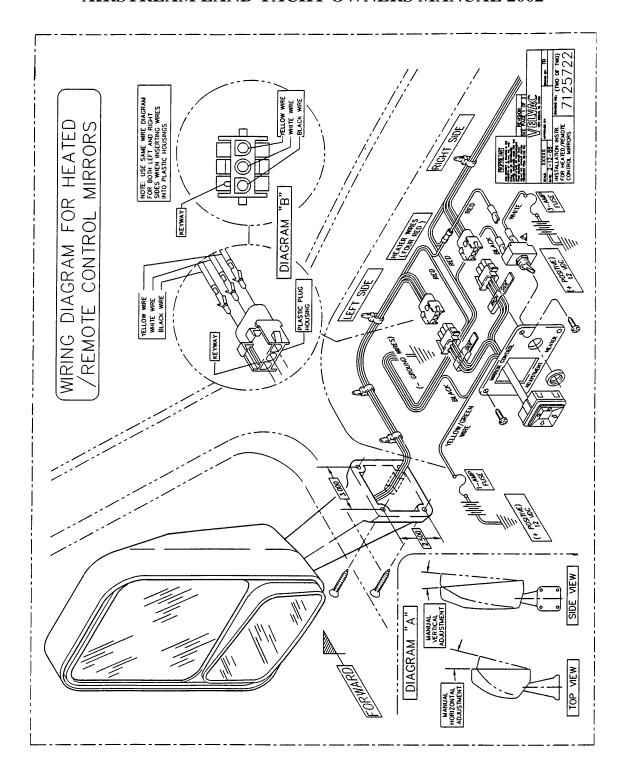


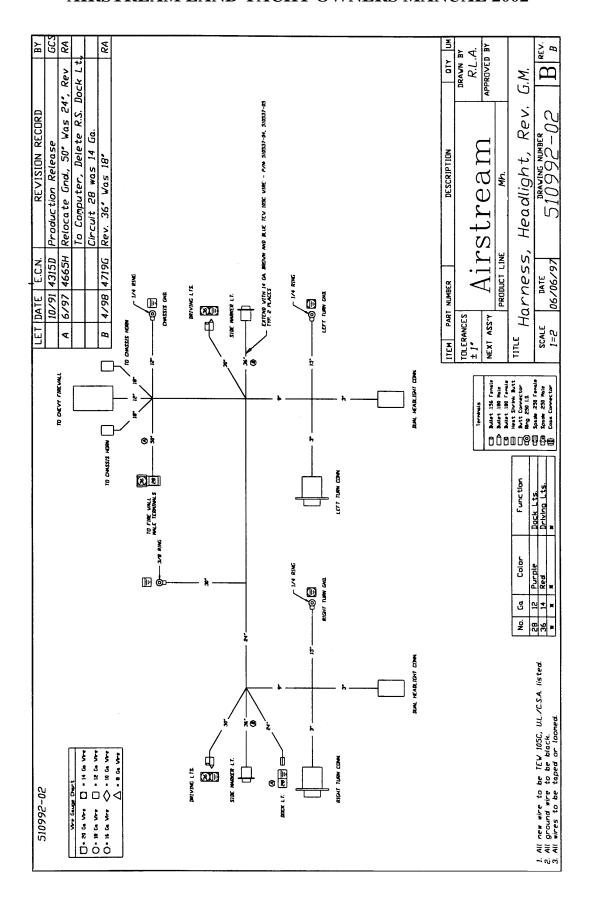
511630 Firewall Harness 26', 30', 33' LYMH

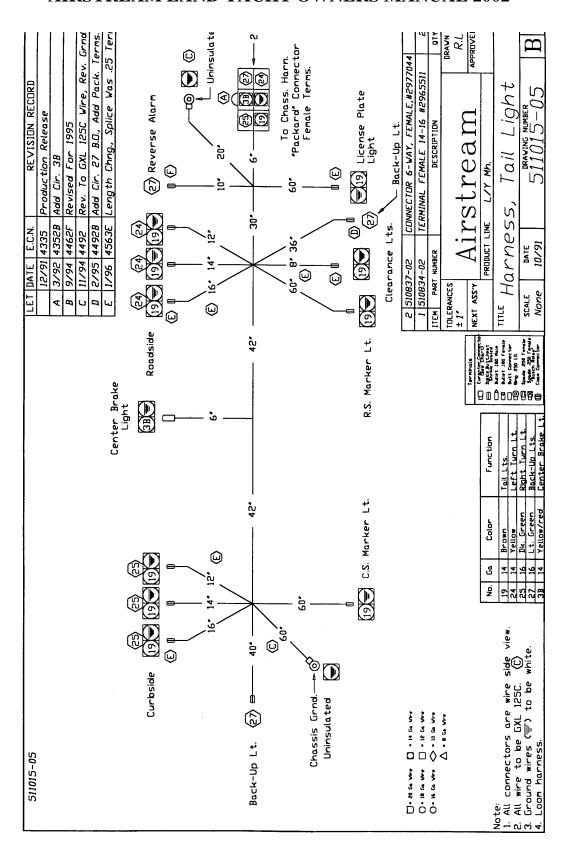


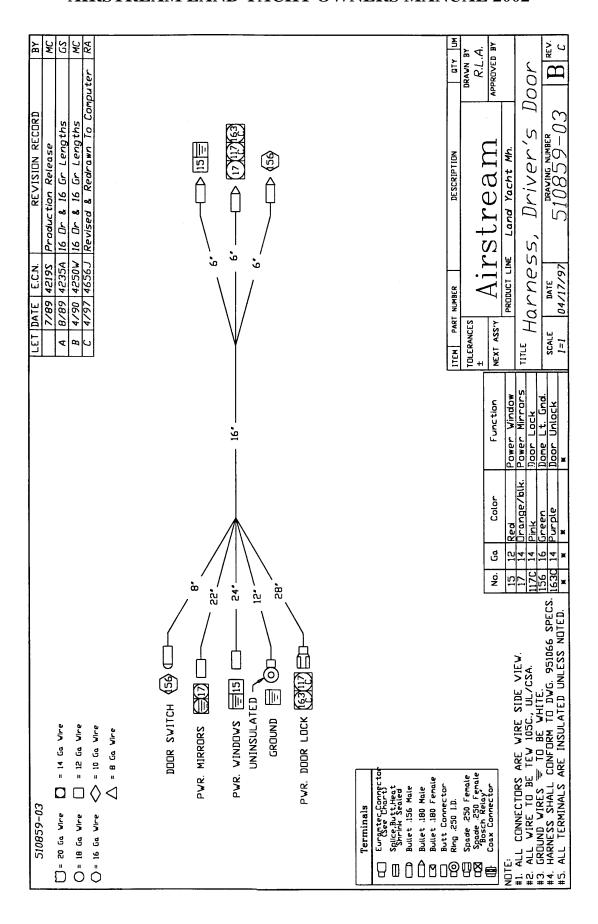


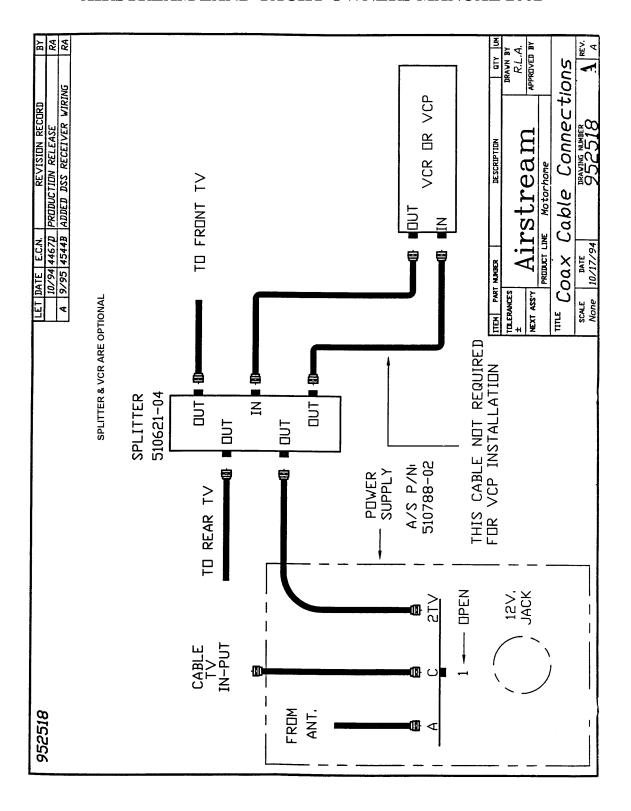












MONITOR PANEL

Ventline P.O. Box 629 Bristol, Indiana 46507 Phone: 219-848-4491

Operation

To check tank capacities or battery condition, depress the switch marked "test." In order to obtain a true reading on the batteries, you must be unplugged from city power and disconnected from your tow vehicle. Tank 1 on the monitor panel is the "black" tank and tank 2 is the "gray" or drain water tank.

The range exhaust fan has an exterior door that must be unlatched to be effective. You'll see the two small twist latches if you look at the fan from outside the motorhome. In most circumstances you can leave the door unlatched. During storage or adverse weather conditions, latching the door is recommended.

Trouble Shooting Guide

Be sure the wiring to the panel is correct and that the house battery is well charged. All electrical connections must be correct.

NOTE: RV's are subjected to a lot of vibration from traveling on the highways, so always look for broken wires and loose or broken connections.

NOTE: If a RV has exposed holding tanks under the vehicle and the vehicle is operated in the rain, sleet or snow, the panel may show incorrect tank levels due to electrical conductivity on the outside of the tanks. Washing the tanks and sealing the connections on the outside of the well nuts with silicon sealer should correct this condition.

When troubleshooting a problem with a Ventline monitor system, always remember that there are four basic system components to consider.

- 1) The monitor panel assembly, which includes the circuit board, lights, and switching.
- 2) The wiring harness, which includes the wires and connectors that connect the monitor panel to 12-volt DC power, ground, tank resistor harnesses, LP sensors and switching.
- 3) The tank resistor harness, which includes the wires, connectors, and encapsulated electronic components.
- 4) The holding tank sensors and fresh water probes.

In many cases a malfunction of one of the above components will be reflected in another, which can result in misdiagnosis of the actual problem. Ventline recommends a consistent, methodical approach to troubleshooting in order to diagnose and correct the problem with the minimum investment in time and resources.

COMMON FIELD PROBLEMS

- Inaccurate Holding Tank Level Readings
- Some Or All Holding Tank Level Lights Not Coming On
- Some Or All Holding Tank Level Lights Continuously On LP Gas Levels Not Reading Properly

INACCURATE HOLDING TANK LEVEL READINGS

The accuracy of two wire holding tank monitoring systems can be adversely affected by dirty tanks, unusual mineral content in the water, or improper holding tank probe location. These conditions can cause the monitoring system to have oversensitive (reads higher than actual level) or under sensitive (reads lower than actual level) readings.

Oversensitive readings: Oversensitive readings can occur as a result of scum buildup on the tank walls, abnormally high mineral content in the water, or incorrectly located holding tank probes. In these situations, the monitoring system indicates higher levels than are actually present in the holding tank. Certain cleaning products and food by-products can build up on the inside walls of the holding tanks producing a layer of scum that can cause the monitoring system to read higher than the actual level. To correct this problem, the holding tanks should be cleaned periodically (consult dealer or tank manufacturer for cleaning instructions). If the problem persists after cleaning the holding tank, the ground probe can be moved farther away from the other tank probes. The increased distance between the ground probe and the other probes will decrease the sensitivity of the monitoring system.

Under sensitive readings: Under sensitive readings can occur if the mineral content of the water is abnormally low or if the holding tank probes are located incorrectly. In this case, the monitoring system indicates lower levels than are actually present in the holding tank. This problem can be corrected by moving the ground probe closer to the other probes. Moving the ground probe closer increases the sensitivity of the monitoring system.

The Ventline AdjustaboardTM: In response to requests from the field for a means to adjust monitor sensitivity without relocating holding tank probes, Ventline has developed the Ventline AdjustaboardTM (patent pending). This adjustable circuit board allows for field adjustments to monitor sensitivity. As tank conditions or water mineral content changes, the monitor circuitry may be made more or less sensitive as required. Pleas see Appendix A for adjustment instructions.

SOME OR ALL HOLDING TANK LEVEL LIGHTS NOT COMING ON

Possible Cause	Corrective Action		
No power	Verify 12 volt DC power is available from the battery or from the filtered side of the power converter. Verify 12 volt DC power is present at the circuit board.		
Verify ground at panel and ground probe with a continuity tester.	Poor ground at monitor panel or at holding tank ground probe.		
Wire to tank resistor harness disconnected or damaged.	Verify wire is connected and free of damage. Replace if necessary. With the tank resistor harness correctly installed and free from damage, a jumper wire containing a 47Kohm resistor placed between the holding tank ground probe and any tank level probe should cause the respective tank level lights to illuminate,		
Short circuit on circuit board	If the above test fails to illuminate the level lights, repeat the test at the monitor panel. Refer to the wiring diagram for the correct wires to jump together. If lights illuminate, replace the wiring between the panel and the tank resistor harness. If lights do not illuminate, replace the circuit board.		

SOME OR ALL HOLDING TANK LEVEL LIGHTS ON CONTINUOUSLY

Possible Cause Correct

Foreign substances on interior of holding tank causing false readings

Clean holding tanks per manufacturers recommendations.

recommendation

Tank sensor wire from panel to tank resistor
harness shorted to ground.

Disconnect wire from panel and tank resistor
harness. Verify wire is not shorted to ground

with a continuity tester. Replace wire if shorted.

Tank resistor harness shorted internally

Disconnect the tank resistor harness from the

tank sensors and from the wire connected to the monitor panel. Check resistance between tank sensor wires with an OHM meter. Typical resistance will be 68k ohm between Full and 2/3 levels, 68k ohm between Full and 1/3 levels, and 136 k ohm between Full and 1/3 levels. Specific resistance will vary based on resistor harness model, but at no time should you detect a dead short or an open circuit. For resistor values specific to your application, please determine the model number of the resistor harness in question and contact Ventline for assistance. If a short or an open is detected, replace the tank resistor harness.

narn

If the above steps fail to pinpoint the specific problem, replace circuit board and re-test.

LP GAS LEVELS NOT READING ACCURATELY Corrective Action

Possible Cause Corrective Action Open circuit between panel and LP sensor causes Disconnect the wire running from the monitor

Open circuit between panel and LP sensor causes tank to incorrectly read full. Short circuit between panel and LP sensor causes tank to incorrectly read empty.

panel to the LP sensor. Check the wire for damage and with continuity tester to verify the wire is OK. If OK, reconnect and check operation, if circuit is open or shorted replace the wire and re-test.

Defective LP sensor provides incorrect signal to monitor panel causing incorrect readings.

Consult the RV manufacturer for information on troubleshooting the LP sensor. Replace the LP sensor and re-test.

Short circuit in circuit board.

Short circuit on circuit board

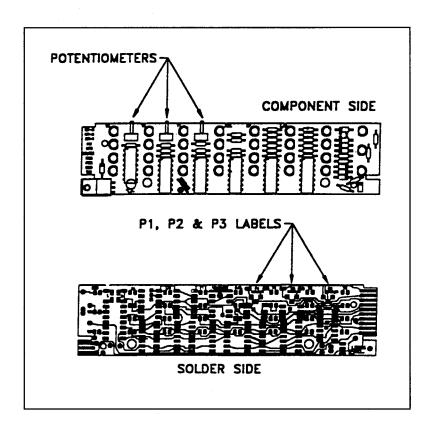
If the above steps fail to pinpoint the specific problem, replace circuit board and re-test.

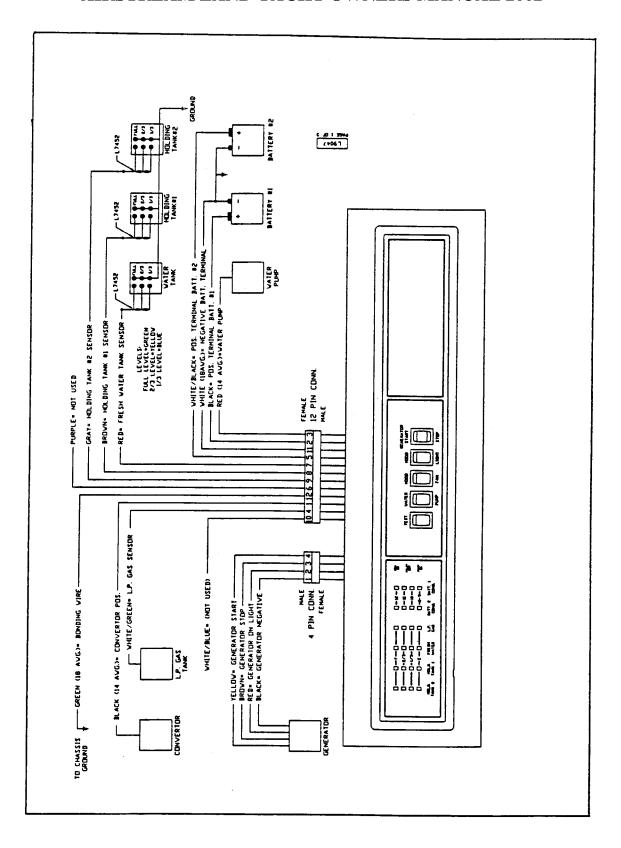
ADJUSTMENT INSTRUCTIONS FOR VENTLINE ADJUST-A-BOARDS $^{\mathrm{TM}}$

Ventline's latest printed circuit boards (PCB's) are equipped with potentiometers (pots) that allow the holding tank sensitivity to be adjusted. This adjustment is sometimes necessary to compensate for the difference in conductivity between liquids in the holding tanks. The intent of this feature is to compensate for minor fluctuations in the mineral content of the water, not to be used in place of regular maintenance of the holding tanks. The pots should not be adjusted to compensate for dirty holding tanks. A buildup of grease, soap by-products, etc. will cause a path of least resistance in the holding tank and cause the system to be oversensitive. The holding tanks should be cleaned regularly as recommended by the tank manufacturer. See section G of this manual.

The PCB's have one pot installed for each holding tank; they are located towards the top of the PCB. Each pot is identified on the back of the PCB with PI, P2, or P3 (i.e., PI = corresponds to the pot for holding tank 1). The monitor panel pots are initially set with the wiper blade fully clockwise. If a holding tank reading is oversensitive (the LED's are reading higher than the actual tank water level), the pot should be adjusted counterclockwise until the LED's read the correct level. Care should be taken not to force the pot past its wiper blade limits. It is not necessary to remove the PCB from the monitor panel chassis to make these adjustments.

If you have any further questions regarding this subject, please contact Ventline Engineering at (219) 848-4491.





TV ANTENNA

Manufacturer:

Winegard Company 3000 Kirkwood Street Burlington, Iowa 52601 Phone: 800-843-4741

Raising Antenna to Operating Position

Turn elevating crank in "UP" direction until some resistance to turning is noted. Antenna is now in operating position. Check to make sure switch on front TV jack is on.

Rotating Antenna

Make sure antenna is in "UP" position. Pull down on directional handle with both hands until it disengages ceiling plate and rotate for best picture and sound on television set.

Lowering Antenna to Travel Position

Rotate antenna until pointer on directional handle aligns with pointer on ceiling plate.

<u>CAUTION</u>: Antenna must be in "down" position while traveling to prevent damage.

Turn elevating crank in the "Down" direction until resistance is noted. Antenna is now locked in travel position.

Checking Operation

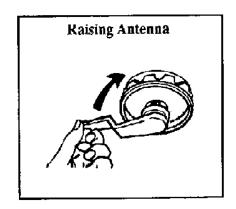
- 1. Tune TV receiver to nearest station and rotate antenna for best picture and sound.
- 2. Turn off switch on power supply. Picture on TV receiver should be considerably degraded with the power off.

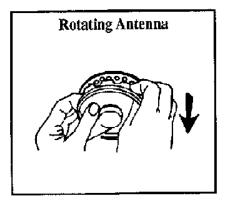
DO'S

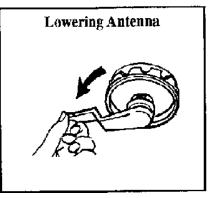
- 1. Do check parking location for obstructions before raising antenna.
- 2. Do carefully raise, lower and rotate if difficult, check for cause.
- 3. Do rotate slowly when selecting station and check finetuning on TV set to make sure it is properly adjusted.
- 4. Do lower antenna before moving vehicle.

DON'TS

- 1. Don't force elevating crank up or down. Check for cause of trouble.
- 2. Don't rotate directional handle hard against stops.
- 3. Don't travel with lift in up position.
- 4. Don't leave lift part way up or down.
- 5. Don't apply sealing compound or paint over top of base plate or anywhere on lift.



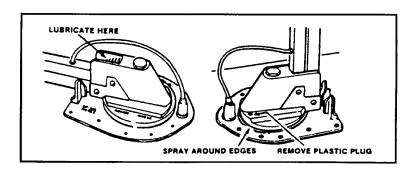




Maintenance

Lubrication

To lubricate the elevating gear apply a liberal amount of silicone spray lubricant to the elevating gear with the lift in the down position, then run the lift up and down a few times to distribute lubricant over gears.



Lubricating Rotating Gear Housing

In the event that rotating the antenna becomes difficult, lubricating the bearing surface between the rotating gear housing and the base plate can restore normal operation. Any spray type silicone lubricant may be used.

Elevate antenna and remove setscrew from rotating gear housing as shown. Spray lubricant into hole and around edges of gear housing. Rotate gear housing until lubricant coats bearing surfaces and antenna rotates freely.

Elevating Shaft Worm Gear Assembly Replacement Procedure

NOTE: It is not necessary to remove the rotating gear housing (11) from the base plate (14) or remove the antenna from the roof to replace the shaft and gear assembly.

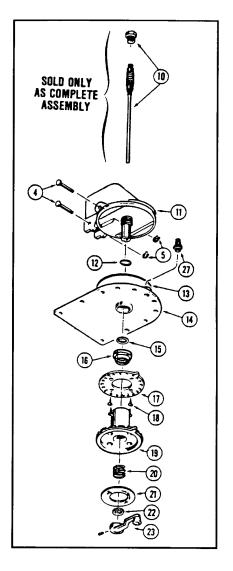
STEP 1: Lower antenna to travel position. Loosen set - screw on elevating crank (23); remove crank, spring (20), and directional handle (19).

STEP 2: Remove top retaining ring (5) from top pin (4) holding **top** elevating tube in rotating gear housing and remove pin.

STEP 3: Remove plug from top of rotating gear housing elevating gear (8) and remove elevating shaft assembly (10).

STEP 4: Cut new shaft to same length as one removed.

STEP 5: Lubricate worm gear on new elevating shaft assembly with spray silicone lubricant, make sure wave washer, flat washer and quad ring are on lower bearing and insert assembly in housing.

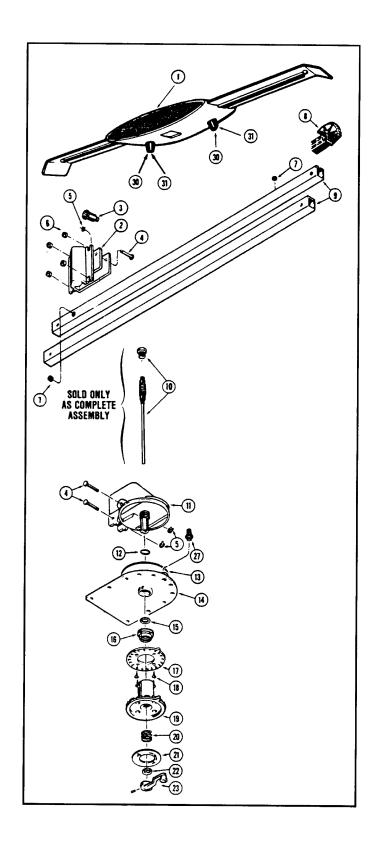


STEP 6: Install plastic plug in top of housing, re-engage elevating gear in worm gear, replace pin and retaining ring.

STEP 7: Replace directional handle, spring and elevating crank. Make sure setscrew contacts flat on shaft before tightening.

PARTS DESCRIPTION

- 1. Antenna Head
- 2. LM-300 Leveling Mount
- 3. Boot, Coax Cable
- 4. Pin, Headed/Grooved
- 5. Ring, Retaining Snap
- 6. Spacer, Plastic
- 7. Grommet, Plastic
- 8. EG-87 Elevating Gear
- 9. Tube, Square Elevator
- 10. Elevating Shaft Assy
- 11. Housing, Rotating Gear
- 12. Ring Quad Seal
- 13. Bearing, Nylon
- 14. Housing, Base Plate
- 15. Bearing, Nylon
- 17. Plate, Ceiling
- 18. Screw
- 19. Handle, Directional
- 20. Spring, Handle
- 21. Decal, Crank Cover
- 22. Bearing, Nylon
- 23. Elevating Crank/Set Screw
- 27. Boot, Gear Housing
- 30. Bumper, Rubber
- 31. Screw



SOLAR POWER

The 5 watt system installed in your motorhome primarily function is as a battery maintainer. Memory functions in radios, locks and the circuit boards in some safety devices each draw power in the milliamp range. If a charge source is not available, even these miniscule power drains will run your chassis batteries down in a few days. Barring an unusual number of cloudy days the solar system will keep your chassis batteries in pretty good condition.

Turning your auxiliary battery switch off at the dash will help maintain the charge in both the chassis and coach batteries.

110-VOLT POWER

The 110-volt system works very much like your home. When you're plugged into city power or start your generator, power is supplied to the 110-volt circuit breakers. The circuit breakers are located under the front of the rear bed in the 30' & 33' and in the top of the roadside wardrobe in the 26'.

If a circuit is over loaded or a short circuit occurs, the breakers will "kick" out. To reactivate the circuits, turn the breaker to off, reduce the load or correct the short, and turn the breaker back to on.

One of the easiest and least disturbing way to reduce the 110-volt load is to turn off the water heater switch in the bathroom. The water heater element draws about 12 amps.

One of the breakers is a GFI (Ground Fault Interrupter) breaker. The intent of this breaker is to sense any loss of ground before a harmful shock could occur, and kick the breaker out. These sensitive breakers are installed in the circuit feeding the outside receptacle, and galley area. These are the areas where the use of water or the wet ground could put a person in danger of shock. Since the GFI breaker is so sensitive, it is not unusual to have it kick out for no apparent reason.

110-VOLT SWITCHOVER BOX

To protect linemen from an unexpected shock the generator must: be wired through a switchover box.

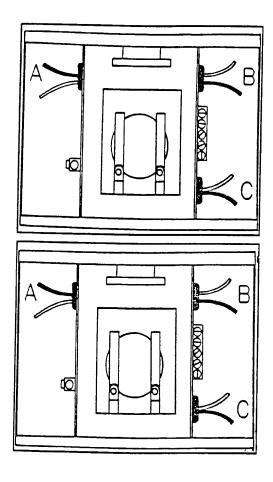
Generator/City Power

- A. To 110-volt circuit breakers
- B. To generator 30 amp circuit
- C. To city power

When plugged into city power, the current path is from C to A. When you start your generator and unplug from city power, the points switch and the power flow is from B to A. If you're plugged into city and you start the generator, city power has the priority, so the current flow is C to A.

Rear Air Conditioner

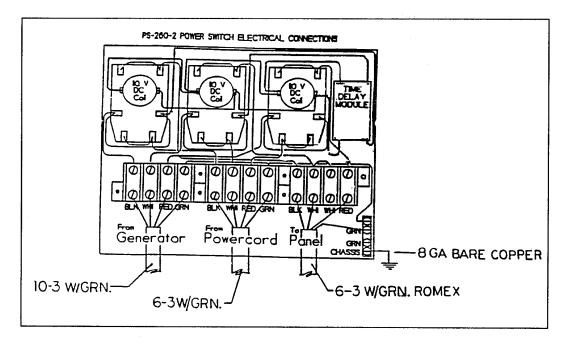
- A. To rear air conditioner
- B. Generator 20 amp circuit
- C. To front/rear air conditioner Automatic Energy Select Switch



SWITCHOVER BOX (cont.)

When you have the optional 50 amp service, the red wire shown on the following diagram will be providing power to the rear air conditioner whether you are plugged into city power or operating the generator.

SWITCH OVER BOX - 50 AMP



Locating Shorts and Opens

The key in locating shorts and opens is isolation. The first step to isolate the circuit with the short or open. The second step is to then isolate the section of the circuit with the fault. Once the section is identified, the specific problem can be located. The cause may be a loose or corroded connection, cut wire, worn insulation, or defective component. The following procedure is one method for isolating shorts and opens.

SHORTS

- 1. Isolate the circuit that has the short by noting which circuit has tripped.
- 2 Disconnect the power inlet cord from the power source.
- 3. Using the 120V schematic as a reference, disconnect outlet boxes one it a time starting at the box furthest from the distribution panel. After disconnecting each box, check for continuity between the black wire and ground or common (white) wire on the distribution panel side of the circuit. When a continuity light or ohmmeter indicates no continuity, the short is either in the receptacle just removed or the section of Romex wire between this receptacle and the previous receptacle removed.
- 4. Examples of a short are:
 - A) The black wire of the 120V system contacting the white wire, bare wire, or grounded surface.
 - B) An internal short in a 120V appliance.

Locating Shorts and Opens (Cont.)

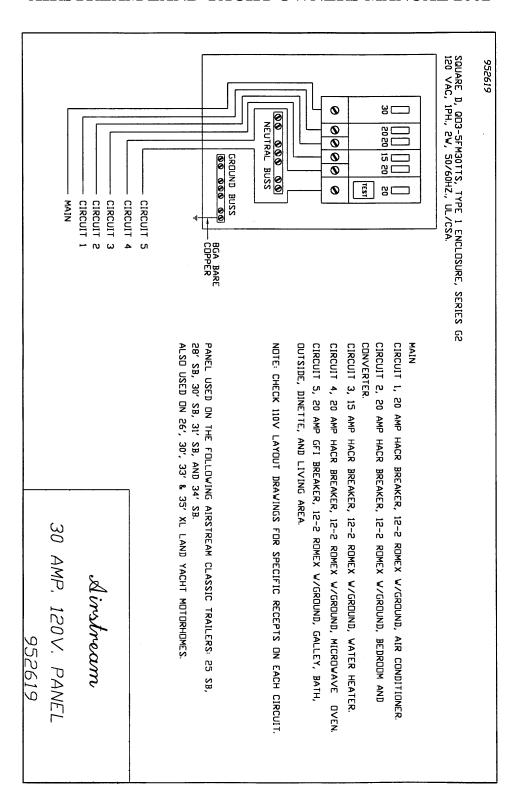
Any damaged wire must be replaced. The National Electric Code does not permit splicing 120V wiring outside an outlet box or junction box. Also, the wire must not be exposed to an area such as a sharp metal edge that may damage the wire.

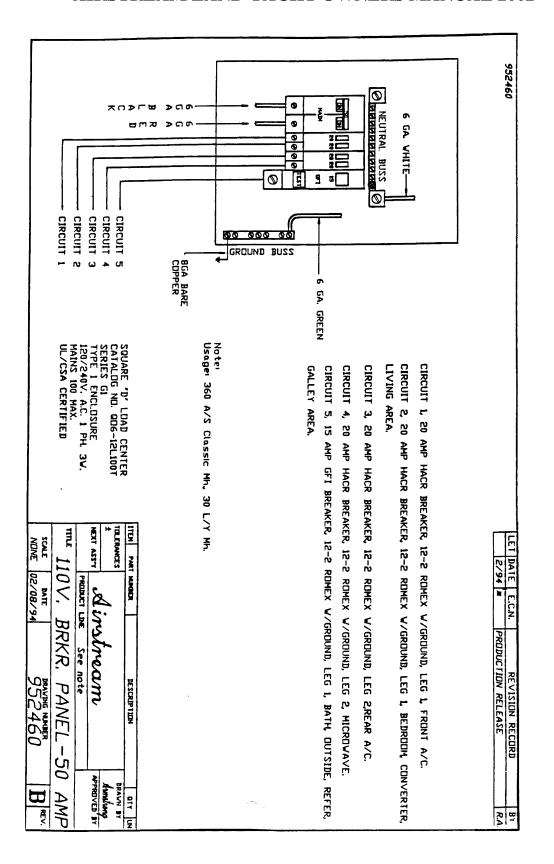
OPENS

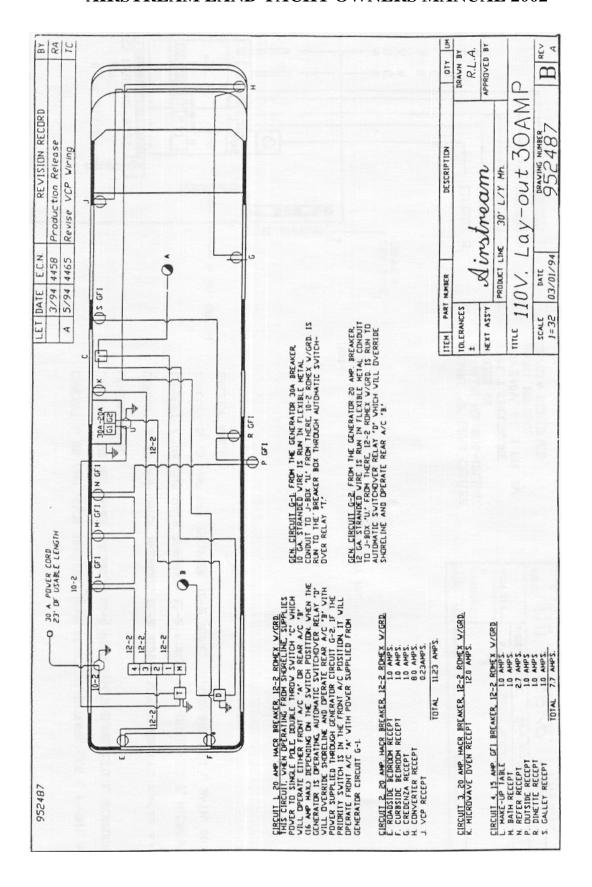
- 1. Check all receptacles and components for voltage on the circuit that has the open.
- 2. If all receptacles and components of the circuit are without power, begin to look for the open in the distribution panel.
- 3. Inspect for loose or corroded connections and a faulty circuit breaker,
- 4. Check for power on both ends of circuit breaker. If there is no power on the inlet side of the circuit breaker, the open is between the power cord's male connector and the distribution panel.
- 5. The open can be isolated by noting the outlets that do not have power. Example: If the bath outlet in the rear bath model has power and the converter has no power, the open is between the bath outlet and converter outlet.
- 6. Examples of an open are:
 - A) Loose or corroded connections.
 - B) A wire disconnected from a terminal.
 - C) Contacts in the circuit breaker that do not like contact.
 - D) A broken wire.

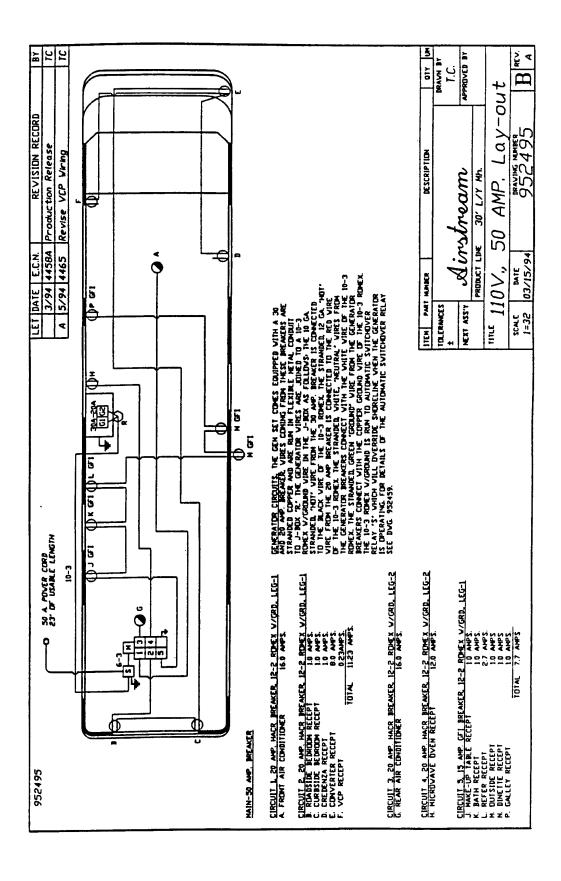
120-VOLT WIRING DIAGRAMS

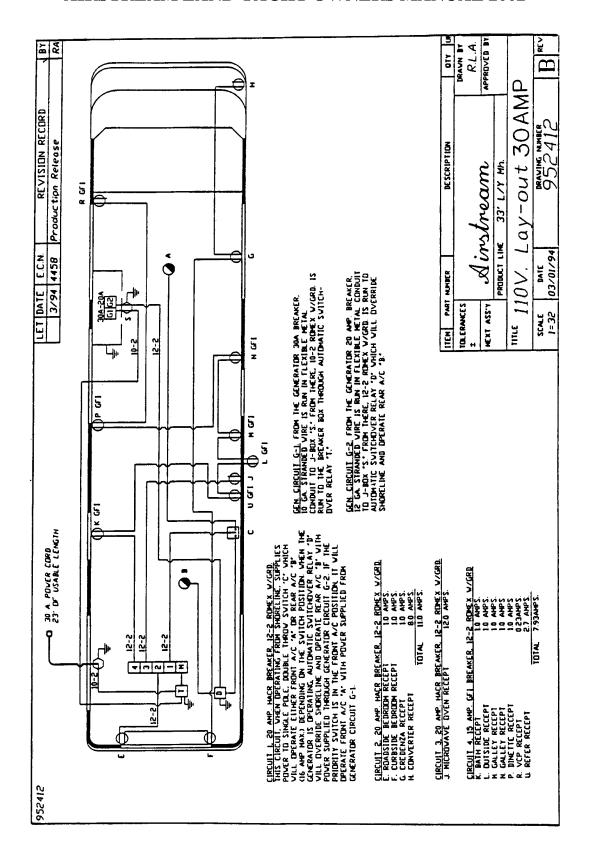
- 120-volt 30 amp Breaker Panel
- 120-volt 50 amp Breaker Panel
- 120-volt, 30 amp wiring layout 30 foot
- 120-volt, 50 amp wiring layout 30 foot
- 120-volt, 30 amp wiring layout 33 foot
- 120-volt, 50 amp wiring layout 33 foot
- 120-volt, 30 amp wiring layout 26 foot
- Wiring Diagram, Automatic Energy Select Switch
- System Layout, Automatic Energy Select Switch

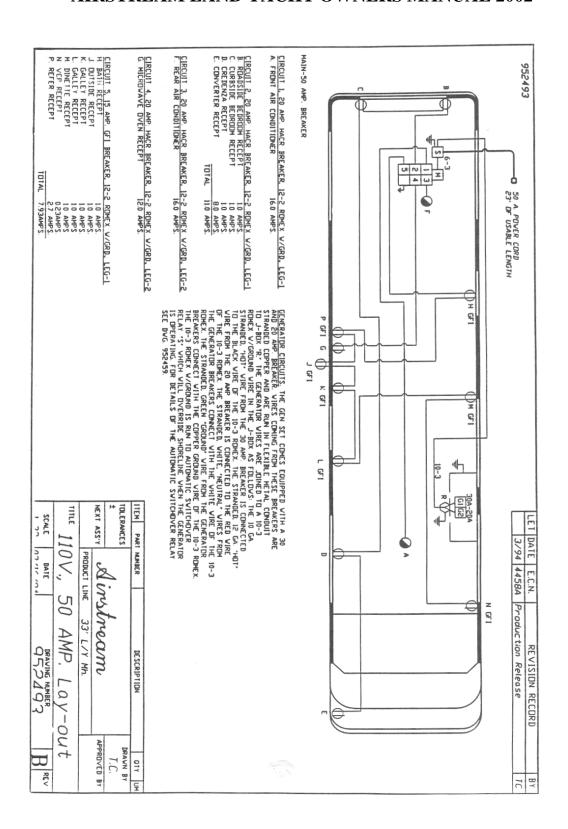


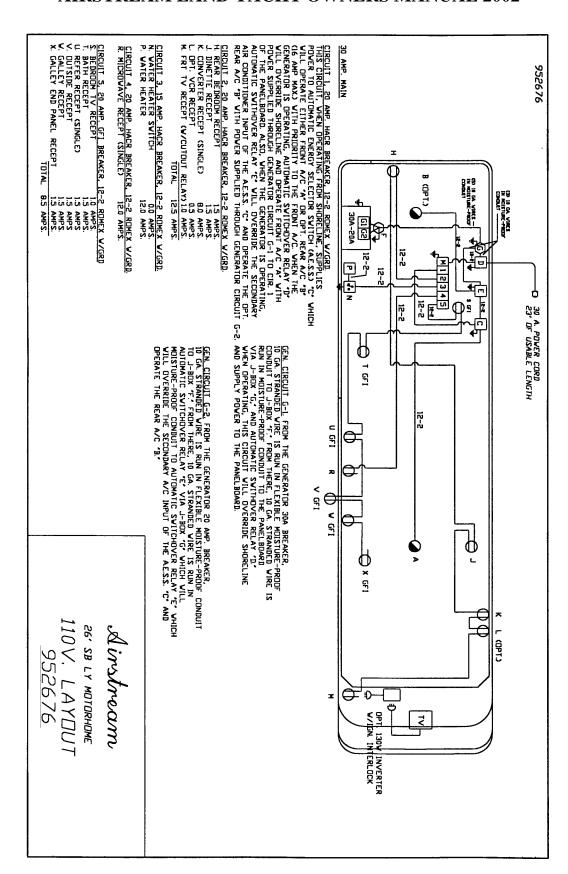








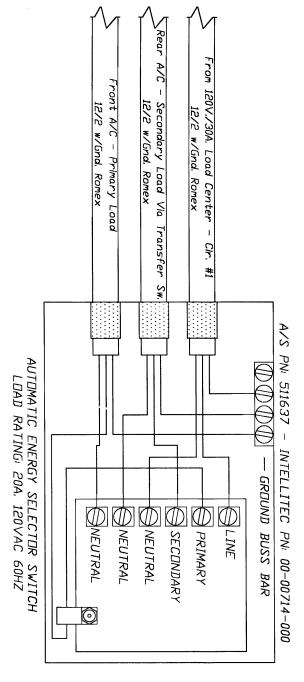


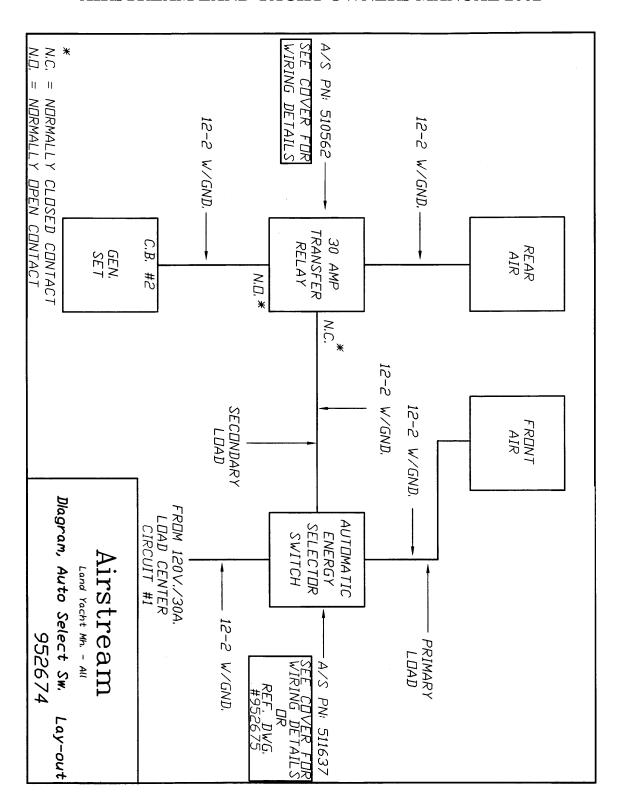


Automatic Energy Select Switch (AESS)

Located in the trunk area.

Front a/c is priority. Rear a/c will cool, if cool mode is selected, when front a/c has finished its cooling process. Front a/c will come back on as its thermostat detects the need to cool and the rear a/c will shut off. A/C fan (powered by 12-volt) on both units will run even if the other is cooling on the 120-volt circuit. Turn front a/c to fan or off to run rear a/c only.





APPLIANCES

WARNING: Most LP gas appliances used in recreational vehicles are vented to the outside of the vehicle. Check the exterior areas of your unit for clearance in these areas. Turn all gas operated appliances off when parked close to a gasoline pump, it is possible that gasoline fumes could enter these types of appliances and ignite from the burner flame or automatic igniters, CAUSING A FIRE OR AN EXPLOSION.

AIR CONDITIONER

Manufacturer: Dometic Sales Corporation 2320 Industrial Parkway P.O. Box 490

Elkhart, IN 46515 Phone: 219-295-5228

Note: Review the air conditioning literature supplied in your Owner's Packet before proceeding.

The roof air conditioner used on Airstream motorhomes is one of the most popular on the market today. In your Owner's Packet is a set of literature covering all operating and maintenance instructions. If the literature is misplaced, please contact the air conditioner manufacturer or your Airstream dealer for replacement. A detailed service guide may be ordered from the manufacturer.

Because of the amount of power drawn by the air conditioners, it is only possible to operate one at a time when plugged into city power. The Intellitec Automatic Energy Selector Switch shown on the previous page controls this function. Front a/c is priority. The rear a/c will cool when the cool mode is selected on it and when the front a/c has finished its cooling process and the thermostat shuts it down. The front a/c will come back on as its thermostat detects the need to cool and the rear a/c will shut off. The A/C fan (powered by 12-volt) on both units will run even if the other is cooling on the 120-volt circuit. Turn the front a/c to fan or off to run the rear a/c only.

Another appliance drawing a lot of current is the microwave. Operating the microwave and an air conditioner at the same time will put your electrical system at the edge of maximum draw. If the air conditioner goes into a "start up" cycle, the additional current will probably cause your main circuit breaker to kick out. If this situation occurs it is best to leave the air conditioner off for the few minutes the microwave is normally operated.

Both air conditioners may be operated when the generator is running or if you have optional 50-amp service. When the generator is running, the front air conditioner is powered through the normal shoreline circuit on the generator 30-amp circuit. The generator powers the rear air conditioner through its 20-amp circuit at the same time.

The voltage to the air conditioner is critical. We commonly refer to 110 or 120 volts, but a check with a volt meter may find voltage much lower. Your air conditioner will probably not function if the current drops below 105 volts. Low voltage is usually associated with older or poorly maintained trailer parks, but many people have found their homes, built only twenty or thirty years ago, may not be capable of operating the air conditioner on some receptacles. Parking your motorhome so the power cord can be plugged into a receptacle close to the fuse or circuit breaker box can alleviate the problem. Avoid extension cords and adapters whenever possible. If an extension cord must be used, it should be as short and heavy as possible to provide the most current to the air conditioner.

If high temperatures are expected, you should make an effort to park in a shaded area. Starting the air conditioner early in the morning also helps. It is much easier to hold a comfortable temperature than it is to lower the temperature after the interior of the motorhome is already hot.

FURNACE (See warning at top of page J-1)

Manufacturer:

Hydro Flame Corporation 1874 South Pioneer Road Salt Lake City, UT 84104 Phone: 801-972-4621

The manufacturer of the furnace in your motorhome has been well known in the RV industry for many years. The furnace burns LP gas, and is powered by 12-volt current from the battery when there is no shoreline hookup or power converter when plugged into 120-volt shoreline. Operating instructions are located in your Owners Packet. If they should become misplaced new literature can be ordered direct from the manufacturer or your Airstream dealer. The manufacturer also offers a detailed service guide for your furnace.

WARNING: Carefully read all the manufacturer's instructions prior to operating. NEVER store flammable material next to the furnace or around its exhaust vent on the side of the motorhome.

If warranty service is required use only a service location recommended by the furnace manufacturer or your Airstream dealer.

REFRIGERATOR (See warning at top of page J-1)

Manufacturer: Dometic Sales Corporation 2320

Industrial Parkway P.O. Box 490

Elkhart, Indiana 46514 Phone: 219-295-5228

Review all Dometic Literature supplied in your Owner's Packet or stored in the refrigerator prior to operating.

In an absorption refrigerant system ammonia is liquefied in the finned condenser coil at the top rear of the refrigerator. The liquid ammonia then flows into the evaporator (inside the freezer section) and is exposed to a circulating flow of hydrogen gas, which causes the ammonia to evaporate, creating a cold condition in the freezer.

The tubing in the evaporator section is specifically sloped to provide a continuous movement of liquid ammonia, flowing downward by gravity, through this section. If the refrigerator is operated out-of-level when the vehicle is not moving, liquid ammonia will accumulate in portions of the evaporator tubing. This will slow the circulation of hydrogen and ammonia gas, or in severe cases, completely block it, resulting in a loss of cooling.

Any time the vehicle is parked for several hours with the refrigerator operating the vehicle should be leveled to prevent this loss of cooling. The vehicle needs to be leveled only so it is **comfortable to live in** (no noticeable sloping of floor or walls).

When the vehicle is moving the leveling is not critical, as the rolling and pitching movement of the vehicle will pass to either side of level, keeping the liquid ammonia from accumulating in the evaporator tubing.

OPERATION

The refrigerator requires 12-volt current to operate even if running on LP or 110 volt modes. The 12-volt is used to power the circuit board that directs the refrigerator functions. When running in a mode such as LP, it means the heat source, by far the largest power requirement; to evaporate the ammonia is being provided by an LP Gas burner.

RANGE

Manufacturer: Magic Chef

28812 Phillips Street Elkhart, Indiana 46514

219-264-9578

People using gas ranges in their home will find little difference in the operation of the range in the motorhome. Other customers, used to electric ranges may be a little apprehensive at first; but will quickly gain confidence. The basic operation of the gas ranges have been the same for many years, but please be sure to read all the directions furnished by the manufacturer and located in the Owner's Packet. Excellent service and parts manuals are available from the manufacturer.

WARNING: The operation manual for the range is titled "Maytag RV Cooking Appliances". If this has not been provided with your motorhome, contact the manufacturer listed at the top of the page to obtain. Their manual contains specialized warnings and cautions that should be reviewed prior to operating the appliance.

MICROWAVE OVENS

Only federally certified technicians are permitted to service microwave ovens. For this reason the only service instructions contained in this manual are for removal of the complete oven. If you have a microwave problem please contact the appropriate manufacturer.

Dometic Sales Corporation Sharp Electronics Corporation

2320 Industrial Parkway 10 Sharp Plaza

P.O. Box 490 Paramus, New Jersey 07652

Elkhart, IN 46515 201-5112-0055

219-295-5228

Airstream has used two different methods of holding the ovens in place. The most common is a setscrew configuration where two bolts apply downward pressure on top of the range. The bolts can be found in the cabinet directly above the oven, and out toward the front. Back them out a few turns and the front of the oven can be lifted up and out over the lower ledge.

The second method was to slide a piece of 3/4" pine board under the microwave in front of the rear supports. Once in place screws were run up through the bottom shelf into the 3/4" pine.

You will note neither method makes any holes in the microwave cabinet. The microwave is simply captured in its cabinet. Usually you will be able to move the microwave around in the cabinet, but it won't come out.

WATER HEATER (See warning at top of page J-1)

Manufacturer: Atwood Mobile Products 4750

Hiawatha Drive P.O. Box 1205 Rockford, Illinois 61105 Phone: 815-877-7461

Note: Review the water heater literature supplied in your Owner's Packet before proceeding,

WARNING: Hydrogen gas can be produced in a hot water system served by this heater that has not been used for a long period of time (generally two weeks or more). Hydrogen gas is extremely flammable. To reduce the risk of injury under these conditions, it is recommended that the hot water faucet he opened for several minutes at the kitchen sink before using any electrical appliance connected to the hot water system. If hydrogen is present there will probably be an unusual sound such as air escaping through the pipe as the water begins to flow. There should be no smoking or open flame near the faucet at the time it is open.

Electronic Ignition

The switch used to light your electronic ignition water heater is located in the bathroom above the lavatory top. When the switch is turned on, the red light will come on indicating the "try" mode is in effect. Normally the burner will ignite in just a few seconds, and the light will go out. If your LP system hasn't been used for some time, the system may go into safety lockout (about 20 seconds) before the air is all expelled from the lines. Turning the switch off for 30 seconds, then back on, reinstates the "try" mode.

110-Volt Operation

In the bathroom you'll see a 110-volt switch for the water heater. This provides power to the heating element.

<u>CAUTION</u>: DO NOT use the water heater system unless you are sure there is water in the water heater. Open a faucet and see if there is a full stream of water on the hot side. Be sure the water heater by-pass valves are in the normal use position. The water heater may be damaged if you disregard this caution.

The 110-volt element may be operated at the same time as the gas burner. To operate the 110-volt by itself simply turn the electronic gas igniter switch off.

The heating element is 1500 watts so if breakers start to kick out when the air conditioner cycles you may want to turn the switch off the heating element and return to LP gas operation.

SAFETY

If your water system is full and cold and the water heater is ignited, the system can produce pressures as high as 120 psi before the relief valve starts to open. Since the water system normally operates in the 40-psi range the water expansion does put unusual stress on the system. This normally does not cause any problems, but the stress is easily alleviated. As the water is heating just open any faucet and run as little as a cup of water. Just removing this small amount of water reduces the pressure build up significantly.

For fun, watch the sequence of events your family goes through when you park the motorhome and ignite the water heater. More than likely someone will run water and relieve the pressure without even realizing it.

HIGH VOLUME ROOF VENT (OPTIONAL)

Manufacturer: FAN-TASTIC VENT CORP.

4349 S. Dort Hwy. Burton, MI 48529 1-313-742-0330 1-800-521-0298

The optional high-volume roof vent system is designed to quickly exhaust stale, hot air and draw in fresh air. It's great to use when the outside temperature really doesn't call for air conditioning, but heat has built up in your coach.

OPERATING INSTRUCTIONS:

- 1. Rotate 3-speed switch to desired position, 0-off, 1, 2, and 3. The 3-speed switch must be set at 1, 2 or 3 to activate appliance.
- 2. Rotate thermostat knob toward 40° (cooler) until dome begins operating.
- 3. When equipped with reverse switch, there is a neutral (off) position. Fan motor will not operate when in/out switch is in its center "off' position. The dome will, however, operate up and down automatically as long as the 3-speed switch remains on.
- 4. To determine desired temperature setting:
 - a. Use the wall thermometer on furnace thermostat, or any interior temperature indicator.
 - b. Operate fan until interior comfort level is achieved. Rotate thermostat knob toward 110' symbol on label until dome begins closing. You now have the location for normal setting.

The thermostat sensor is calibrated approximately 4°. This minimizes rapid recycling of the unit, once desired temperature level is achieved.

5. The rain sensor built into your fan will prevent excessive rain from entering coach through the open dome. Maintain a setting above (to the right of) "rain override" zone and the dome will close when the sensor becomes wet.

CAUTION: Do not leave coach unattended with thermostat knob set in the "rain override" zone.

- 6. A rain sensor override is built into this system so you can operate your fan during light to moderate rains. When sensor is wet, rotate fan thermostat knob to coolest position to override sensor. Dome will open and fan motor will start. When sensor has completely dried, rotate thermostat knob back to desired setting for automatic operation.
- 7. To close dome in extremely hot conditions, rotate thermostat knob right, past 110° symbol to off. Dome will come down.
- 8. Always allow dome to completely cycle up and down. If dome "hangs up" in partially open/close position, rotate thermostat knob to extreme right and then left position allowing complete cycles down and up. Now reset to original comfort level.
- 9. When vehicle is in storage, rotate thermostat knob to right (off), after dome closes, turn 3 speed switch to "O" (off).

CLEANING INSTRUCTIONS:

- 1) Turn fan motor OFF.
- 2) Remove 8 painted flathead Philips screws around perimeter of screen insert only.
- 3) Clean screen with soap & water solution and reinstall.

AUTOMATIC SATELLITE SYSTEM (Option)

The satellite system comes with an owner's manual. The manufacturer requests that technical and warranty questions be directed to them.

KING DOME SATELLITE SYSTEMS Technical Support: 1-800-982-9920 Website: <u>www.kingcontrols.com</u>

SPECIFICATIONS

Coach

NOTE: All weights and measurements were made on prototype vehicles. Your production motorhome may vary slightly.

	26 FT	30 FT	33 FT
DIMENSIONS			
Exterior Height with Air Conditioner	122"	122"	122"
Interior Head Room	79"	79"	79"
Interior Width	90"	90"	90"
Exterior Length	26'	31'2"	33' 5"
Exterior Width	96"	96"	96"
CAPACITIES			
LPG Tank	82 lbs.	90 lbs.	105 lbs.
Fresh Water Tank	44 Gal.	60 Gal.	60 Gal.
Grey Water Holding Tank	23 Gal.	36 Gal.	36 Gal.
Black Water Holding Tank	34 Gal.	34 Gal.	29 Gal.

Hitch Rating 30 Ft. & 33 Ft.: 3000 Lbs Gross Vehicular Weight, 300 Lbs. Hitch Weight. Hitch Rating 26 Ft.: 4000 Lbs. Gross Vehicular Weight, 400 Lbs. Hitch Weight.

WARNING: NEVER exceed the weight ratings of trailer hitch installed on a motorhome. Failure to heed any part of this warning could result in loss of control of the motorhome and towed vehicle or trailer and may cause an accident, serious and/or fatal injury. For specified towed vehicle braking requirements, consult the chassis owner's manual that comes with this vehicle.

SPECIFICATIONS

CHASSIS	26 Ft.	30 Ft.	33 Ft.
Wheel Base	158.5"	190"	208"
Cargo Carrying Capacity (CCC)	2,100 Lbs.	3,850 Lbs.	3,330 Lbs.
Gross Vehicular Weight Rating (GVWR)	15,000 Lbs.	18,000 Lbs.	18,000 Lbs.
*Gross Combined Weight Rating (GCWR)	19,000 Lbs.	21,000 Lbs.	21,000 Lbs.
Unloaded Vehicle Weight (UVW)	12,524 lbs.	14,150 Lbs.	14,670 Lbs.
**Gross Axle Ratings Front:	6,000 Lbs.	6,000 Lbs.	6,000 Lbs.
**Gross Axle Ratings Rear:	10,000 Lbs.	12,000 Lbs.	12,000 Lbs.
***Fuel Tank	60 Gal.	75 Gal.	75 Gal.

^{*}GROSS COMBINATION WEIGHT RATING means the value specified by the motorhome manufacturer as the maximum allowable loaded weight of this motorhome with its towed trailer or towed vehicle.

WARNING: The towing vehicle's braking system is rated for operation at GVWR (GROSS VEHICLE WEIGHT RATING), NOT at the GCWR (GROSS COMBINED WEIGHT RATING). A separate functioning brake system is required for any towed vehicles or trailers weighing more than 1000 lbs. (450 kg) when fully loaded. NEVER exceed the GVWR (GROSS VEHICLE WEIGHT RATING), or the GAWR (GROSS AXLE WEIGHT RATING) specified on a motorhome certification label.

** WARNING: Do not exceed the Gross Axle Weight Ratings or the Gross Vehicle Weight Rating when loading your vehicle. Failure to heed any part of this warning could result in loss of control of the motorhome and towed vehicle or trailer and may cause an accident and serious injury.

*** WARNING: READ AND FOLLOW ALL WARNINGS IN THE FUEL SECTION OF YOUR CHASSIS OWNER'S MANUAL BEFORE FUELING YOUR VEHICLE.

Tire Cold Inflation Pressure:

See tire inflation warning on page C-13.

	20 Ft.	SUF t.	33 Ft.
Single Wheel (front)	80 PSI	80 PSI	80 PSI
Dual Wheel (rear)	90 PSI	90 PSI	90 PSI

Tire Size 225/70R x 19.5F PXZA

Front Air Cylinders Inflation (See WORKHORSE CHASSIS Manual): Maximum-110 PSI