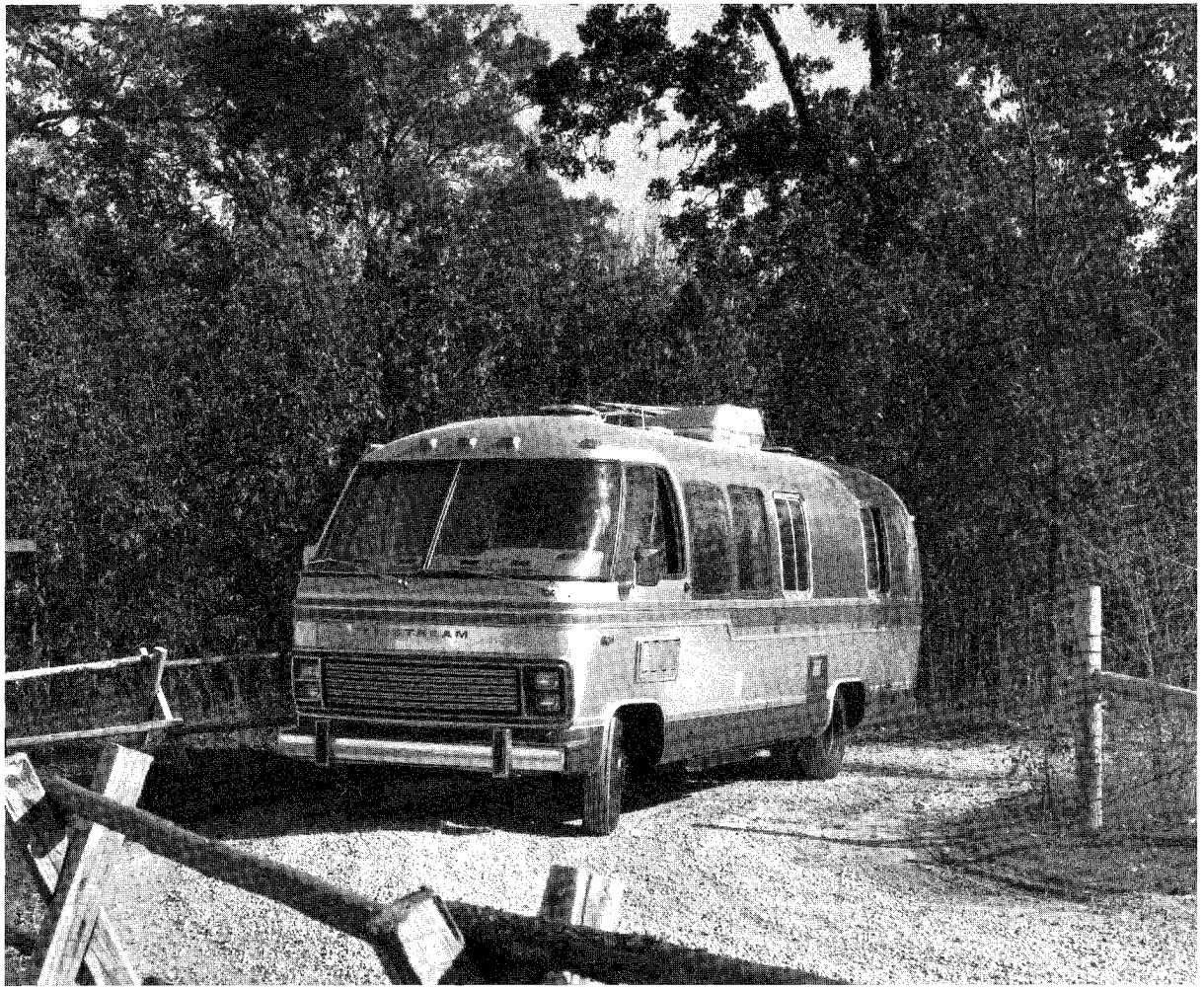
1979 Airstream Motorhome
Owner's Manual

WITH 1980-81 SUPPLEMENT



You have purchased with your Airstream Motorhome a meaningful warranty that covers many things not ordinarily covered by other manufacturers. Read your limited warranty, we have made it short and right to the point. As soon as you receive your limited warranty please attach it over the facsimile for safekeeping.

Upon delivery of your Motorhome and presentation of your identification and limited warranty card to any Airstream Certified Dealer Service center, any defect in material or workmanship (except vehicle chassis, engine and tires) will be repaired or replaced without cost to the owner for a period of twelve (12) months from the original purchase date, or 12,000 miles whichever occurs first. Warranties offered by component manufacturers, such as your Dometic refrigerator and Suburban furnace, will be honored by Airstream for the duration of that manufacturer's warranty.

The Motorhome chassis, engine and tires are serviced by their respective manufacturers, and will be handled by their service centers according to the terms of their written policy.

Your Motorhome chassis is prechecked by the manufacturer before delivery from Airstream. All service must be performed by them according to their warranty and service policies. Literature is supplied with each Motorhome chassis which gives important information concerning the care and operation instructions and its warranty coverage.

Some items, which appear to be part of the chassis, but are actually covered by the body limited warranty, include the chassis heater; defrosters; speed control; dash instrument cluster; windshield wiper blade, motor washer; LP gas bottle and gas regulator.

The body battery is covered by the body limited warranty for twelve (12) months or 12,000 miles whichever occurs first. The balance of the battery warranty is covered by its respective manufacturer on a prorata basis.

Inasmuch as this warranty covers defective material and/or workmanship, adjustments and checking are excluded. All adjustments are made at the factory prior to shipment, and rechecked by the dealer prior to delivery to the customer. An additional check-up, including adjustments, is given at the 1,000 mile or 60 day inspection. Adjustments thereafter become a customer responsibility.

Paint and appearance items which 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 warranty.

Damage to enameled or porcelain surfaces resulting from abrasion or blows is the result of accident or abuse, and is not covered by warranty. Window glass broken and what is termed by the automotive industry as "mysterious explosions" although not covered by this warranty, is covered by the comprehensive clause of most insurance policies.

This limited warranty does not include failure caused by normal wear, accident, abuse, exposure, 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.

EXCLUSIONS:

1. **Normal Wear.** Items such as water purifier packs, curtains, upholstery, floor coverings, window, door and vent seals will show wear or even wear out within the one year limited warranty period depending upon the amount of usage, weather, and atmospheric conditions.

2. **Accident.** We can all recognize damage caused by accident because it is visible, and we strongly urge our dealers and customers to inspect the Motorhome upon receipt of 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 customer's responsibility upon acceptance of delivery, unless Airstream is notified and the damage is verified by the person making the delivery.
3. **Abuse.** Lack of customer care and/or improper maintenance will result in early failure for which Airstream cannot be held responsible.
4. **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 which is normal and beyond the control and responsibility of Airstream.

   One other type of exposure is one resulting from an accident, rain or plumbing leak. Although it is our obligation to correct a rain or plumbing leak under the terms of the warranty it is the owner's responsibility to use reasonable, prudent care to minimize foreseeable secondary damage, such as a delaminated floor, stained upholstery, carpeting, drapes, etc.
5. **Overload.** Damage due to loading, either beyond capacity or to cause improper handling because of improper balance, is beyond Airstream's responsibility. The Airstream Motorhome body is engineered to properly handle any normal load with an overload factor added. There are limits to the amount of load that can be safely transported depending upon speed and road conditions, and reasonable cause to believe these factors have been exceeded could void the Airstream limited warranty. For additional information on the loading of your Motorhome, consult your Owners Manual or gross vehicle weight rating plate.

Airstream will not be responsible for any consequential damages incurred as a result of any defect. Consequential damages include, but are not limited to, travel expenses, gasoline, oil, lodging, means, telephone tolls, loss of work and loss of use of the Motorhome.

In the event of a warranty defect, the warranty holder should take corrective action to lessen the damages which might result from such defect. Airstream will not be responsible for resulting damages which could have been avoided.

The extent of Airstream's limited warranty is set forth in the "Airstream Motorhome Body Limited Warranty".

Airstream 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 Airstream Motorhome Body Limited Warranty.

If you believe your Motorhome needs repairs under the terms of the Airstream Motorhome Body Limited Warranty, you should contact the Service Manager at any Airstream Certified Dealer Service center. The Motorhome or defective part must be returned to the authorized service center at the owner's expense.

This limited warranty is transferrable to subsequent owners for the duration of the warranty period. Warranty transfer application forms are available from your dealer or the Airstream factory.

Airstream Dealers

An up to date list of Certified Airstream Motor-home Dealers is due for publication on or about Jan. 1, 1979. If you would like a copy of this list, just contact your local Airstream Dealer after that date.

Chevrolet Zone Offices

When calling for assistance, please ask for Consumer Relations Representative.

ATLANTA
5730 Glenridge Dr., N.E.
Atlanta, Georgia 30328
(404) 256-5613

BALTIMORE
1800 Parkway Drive
Hanover, Maryland 21076
(301) 796-3640
(202) 638-0338 Washington, D.C.

BIRMINGHAM
3490 Independence Dr.
Homewood, Alabama 35209
(205) 870-5306

BOSTON
505 Blue Hill Drive
Westwood, Mass. 02090
(617) 329-1057

BUFFALO
2615 Walden Avenue
Cheektowaga, N.Y. 14225
(716) 684-8025

CHARLESTON
1205-1211 Virginia St., E.
Charleston, W. Va. 25300
(304) 344-2301

CHARLOTTE
6000 Monroe Road
Charlotte, N.C. 28212
(704) 371-5116, 5105

CHICAGO
2021 Spring Road
Oakbrook, Ill. 60521
(312) 654-6380

CINCINNATI
11575 Reading Road
Sharonville, Ohio 45241
(513) 841-5927

CLEVELAND
12990 Snow Road
Parma, Ohio 44130
(216) 265-5600

DALLAS
8635 Stemmons Freeway
Dallas, Texas 75247
(214) 688-5241

DENVER
4355 Kearney St.
Denver, Colo. 80216
(303) 320-5023

DES MOINES
818 5th Avenue
Des Moines, Iowa 50309
(515) 247-8666

DETROIT
25200 Telegraph Road
Southfield, Mi. 48034
(313) 424-2011

FARGO
1111 38th St., So.
Fargo, N.D. 58102
(701) 282-4451

FLINT
5198 Territorial Road
Grand Blanc, Mi. 48439
(313) 694-7007

HARRISBURG
Pennsboro Office Center
Taylor Bridge Bypass
Wormleysburg, Pa. 17043
(717) 255-6416

HOUSTON
4807 Wake Forrest St.
Houston, Texas 77005
(713) 521-5225

INDIANAPOLIS
6910 N. Shadeland Avenue
Indianapolis, Indiana 46206
(317) 269-5031

JACKSONVILLE
8206 Phillips Hwy.
Jacksonville, Fla. 32216
(904) 733-3682

KANSAS CITY
8900 Marshall Drive
Lenexa, Kansas 66215
(913) 281-6702

LOS ANGELES
233 Wilshire Blvd., Suite 800
Santa Monica, Ca. 90401
(213) 394-6966

LOUISVILLE
4501 Indian Trail
Louisville, Ky. 40213
(502) 968-6203

MEMPHIS
3495 Lamar Avenue
Memphis, Tenn. 38118
(901) 346-5160, 5161, 5162

MILWAUKEE
333 Bishops Way
Brookfield, Wisc. 53005
(414) 784-2578

MINNEAPOLIS
7600 Metro Blvd.
Edina, Minn. 55435
(612) 830-4044

NEWARK
385 Nordoff Place
Englewood, N.J. 07631
(201) 894-7100, 7101

NEW ORLEANS
3545 I-10 Service Road
Metairie, La. 70002
(504) 888-9013

NEW YORK
175 Central Ave., S.
Bethpage, L.I., N.Y. 11714
(516) 420-4340

OAKLAND
39465 Paseo Padre Pkwy.
Fremont, Calif. 94538
(415) 498-5060

OKLAHOMA CITY
7901 W. Britton Rd.
Oklahoma City, Okla. 73132
(405) 721-0131

OMAHA
11616 "I" Street
Omaha, Neb. 68137
(402) 399-5515

PEORIA
2009 N. Knoxville
Peoria, Ill. 61601
(309) 688-1021

PHILADELPHIA
935 First Avenue
King of Prussia, Pa. 19406
(215) 265-9380

PHOENIX
1625 W. 23rd St.
Tempe, Arizona 85282
(602) 968-2425

PITTSBURGH
507-527 Forrest Ave.
Carnegie, Pa. 15106
(412) 928-5125

PORTLAND, ORE.
15005 S.W. Tualatian
Valley Hwy.
Beaverton, Ore. 97005
(503) 641-8271

RICHMOND
5450 Lewis Road
Sandston, Va. 23150
(804) 257-7567

SALT LAKE
303 East South Temple
Salt Lake City, Utah 84111
(801) 532-2345

ST. LOUIS
83 Progress Parkway
Maryland Heights, Mo. 63043
(314) 878-3304

SAN DIEGO
5353 Mission Center Road
San Diego, Calif. 92110
(714) 299-9480

SEATTLE
Bellevue Business
Center Building
Suite 300
777 106th Ave. N.E.
Bellevue, Wa. 98004
(206) 464-5111

SYRACUSE
107 Twin Oaks Drive
Syracuse, New York 13206
(315) 432-5300

TARRYTOWN
371 S. Broadway
Tarrytown, N.Y. 10591
(914) 332-0136

GM OF CANADA ZONE OFFICES

VANCOUVER, B.C., V6A 2N6
900 Terminal Avenue
(640) 684-9444

CALGARY, ALTA, T2P 2M7
P.O. Box 2510
(403) 243-4621

REGINA, SASK. S4N 5A9
581 Park St.
(306) 543-2224

WINNIPEG MAN. R2X OY9
1345 Redwood Avenue
(204) 633-1080

LONDON, ONT. N6A 4P6
951 Pond Mills Road
P.O. Box 5412
(519) 452-5151

OTTAWA, ONT. K1G 0Z4
875 Belfast Road
(613) 237-5051

TORONTO, ONT. M3C 1J1
1200 Eglinton Ave. E.
(416) 446-5053

MONTREAL, QUE. H9R 4R2
5000 Trans-Canada Highway
Pointe Claire, Quebec
(514) 687-9160

STE. FOY (QUEBEC),
QUE. G1V 4K7
979 Avenue de Bourgogne
P.O. Box 10800
(418) 653-2054

MONCTON, N.B. E1C 8M2
653 St. George St.
(506) 854-1500

HAWAII, GUAM
AMERICAN SAMOA
General Motors Overseas Distribution Corp.
1600 Kapiolani Boulevard, Suite 714
Honolulu, Hawaii
Mail — P.O. Box 341
Honolulu, Hawaii 96809
(808) 946-3988

MEXICO
General Motors de Mexico S.A. de C.V.
Av. Ejercito Nacional No. 843
Mexico 5, D.F.
Mail — Apartado 107 Bis
Mexico 1, D.F.
5 45-70-20

PUERTO RICO,
U.S. VIRGIN ISLANDS
General Motors Overseas Distribution Corp.
Suite No. 10
Centro Comercial San Francisco
Avenida De Diego
Rio Piedras, Puerto Rico
Mail — G.P.O. Box 4382
San Juan, Puerto Rico 00936
(809) 763-1315

PANAMA CANAL ZONE
General Motors Overseas Distribution Corp.
Edificio De Diego
Esq. Calle 40 Y
Avenida Balboa
Panama, R.P.
Mail — Apartado 7872
Panama 9, Republic of Panama
25-1983

Owner Assistance

Your satisfaction and good will are important to your dealer and Chevrolet. Normally any problems that concern the sales transaction or the operation of your vehicle will be handled by your dealer's Sales or Service Departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur. If your problem has not been handled to your satisfaction, we suggest you follow these steps:

Step One - Discuss your problem with a member of dealership management. Often complaints can be quickly resolved at that level. If the problem has already been reviewed with the Sales or Service Manager, contact the Dealer himself or the General Manager.

Step Two - Contact the Chevrolet Zone Office closest to you listed on the previous pages. (or in Canada, contact the General Motors Zone Office). **If your problem can't be quickly resolved by the dealership without further help, contact the Zone's Consumer Relations Department, and provide them with:**

- Your name, address, telephone number
- Vehicle Identification Number*
- Dealer's name and location
- Vehicle's delivery date and mileage
- Nature of problem

Step Three - Contact the Consumer Relations Representative, Chevrolet Central Office, General Motors Division, Detroit, Michigan 48202 (313-556-5219). (In Canada, contact the Customer Services Manager, Oshawa, Ontario; 416/644-6624). The representative will review all the facts involved. Then, if it is felt that some further action can be taken, the zone office will be so instructed. In any case, your contact will be acknowledged providing Chevrolet's position in the matter.

When contacting the Zone or Central Office, please bear in mind that your problem will likely be resolved in the dealership, using the dealer's facilities, equipment, and personnel. So it is suggested that you follow the above steps in sequence when you have a problem.

Your purchase of a Chevrolet product is greatly appreciated by both your dealer and Chevrolet. We want to help you in any way we can to make sure you are completely satisfied with your vehicle.

*Available from vehicle registration, title or plate attached to the left top of instrument panel and visible through the windshield.

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.

The maximum loaded trailer weight which you can pull with your vehicle is 2,000 lbs. Vehicle 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 trailer tongue load be maintained at approximately 10% of the loaded trailer weight, but not to exceed 200 lbs. 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, tires should be inflated to the highest pressures shown on the information plate attached to the firewall of your Motorhome or on page 45 of this manual. The allowable passenger and cargo load (GVW) of this vehicle is reduced by an amount equal to the trailer tongue load on the trailer hitch. Refer to page 20 for further information on vehicle loading.

Trailer brakes are required on all axles of trailers over 1,000 lbs. loaded weight.

Do not tap into the chassis hydraulic brake system if operation of the trailer brake system requires more than 0.02 cubic inch of fluid displacement from the vehicle's master cylinder. The vehicle's master cylinder fluid capacity will not be sufficient to operate both chassis and trailer brakes under all conditions of use if more than 0.02 cubic inch of fluid displacement is required. All brake fluid parts must be able to stand 3,000 psi. The brake fluid tap must be made to the master cylinder port supplying fluid to rear brakes. Copper tubing is subject to fatigue failure and must not be used.

More frequent service is required when using your vehicle to pull a trailer. Change the:

- Automatic transmission fluid each 12,000 miles.
- Rear axle fluid each 12,000 miles.
- Engine oil each 60 days or 3,000 miles, whichever occurs first.
- P.C.V. (Positive Crankcase Ventilation) valve each 12 months or 12,000 miles, whichever occurs first.

Proper lifting or towing equipment is necessary to prevent damage to the vehicle while **towing the Motorhome.** State (provincial in Canada) and local laws applicable to vehicles in tow must also be followed. Detailed towing instructions are available at your authorized Chevrolet dealer.

Your vehicle may be towed on all four wheels, at speeds of less than 35 MPH, for distances up to 50 miles, provided the driveline, axle and transmission, and steering system are otherwise normally operable. Use only towing equipment specifically designed for this purpose, following the instructions of the equipment manufacturer. A separate safety chain system must be used. For such towing the steering must be unlocked, transmission in neutral and the parking brake released. Attachments must be made to main structural members of the vehicle. Do not attach to bumpers or associated brackets. Remember that power brake and power steering assists are not available when engine is inoperative.

If it becomes necessary to rock the vehicle to **free it from sand, mud or snow,** move the selector lever from "D" to "R" in a repeat pattern while simultaneously applying moderate pressure to the accelerator.

Caution: Do not spin wheels in excess of 35 MPH as indicated on the speedometer. Personal injury and severe damage may result from excessive wheel spinning including tire disintegration or rear axle failure.

Caution: As with any vehicle, care should be taken to avoid sudden accelerations when both drive wheels are on a slippery surface. This could cause both drive wheels to spin, and allow the vehicle to slide sideways on the crowned surface of a turn.

Engine exhaust gas caution (carbon monoxide) Avoid inhaling exhaust gases because they contain carbon monoxide, which by itself is colorless and odorless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal.

If at any time you suspect that exhaust fumes are entering the passenger compartment, have the cause determined and corrected as soon as possible. If you must drive under these conditions, drive only with ALL windows FULLY open.

The best protection against carbon monoxide entry into the vehicle body is a properly maintained engine exhaust system, body and body ventilation system. It is recommended that the exhaust system and body be inspected by a competent mechanic:

- Each time the vehicle is raised for an oil change.
- Whenever a change is noticed in the sound of the exhaust system.
- Whenever the exhaust system, underbody or rear of the vehicle is damaged.

See your Vehicle Lubrication and Maintenance Schedule (page 49) for inspection procedure.

Sitting in a parked vehicle with the engine running for an extended period is not recommended.

Do not run engine in confined areas such as garages any more than needed to move vehicle in or out of area. When the vehicle is stopped in an UNCONFINED area with the engine running for any more than a short period, adjust vents to bring outside air into the vehicle as follows:

1. Open ceiling vents, turn fan on.
2. Slightly open a roadside and curbside sliding window.

Doors and rear windows should be closed while driving to avoid drawing dangerous exhaust gases into the vehicle. If for some reason they must remain open for a period while driving, the following precautions should be observed:

- Open all vents, turn on vent fans.
- Close driver's and passenger's sliding window.

Note: Particular care should be taken to prevent the possibility of carbon monoxide exposure if modification is made to the vehicle or other equipment is added to the vehicle, for recreational or other purposes. Additionally, some recreational vehicle appliances (such as gas lights, refrigerators, stoves, heaters) may generate carbon monoxide and should be used only if there is adequate ventilation.

Important Facts You Should Know About Gasoline Mileage and How to Improve It

How you drive, where you drive, and when you drive all affect how many miles/kilometres you can get from a gallon/litre of gasoline. The careful attention you give your vehicle as far as maintenance and repairs are concerned will also help fuel economy.

Fuel Selection:
Your vehicle engine is designed to operate on unleaded gasoline. It minimizes spark plug fouling and emission control system damage. Regular grade leaded gasoline should be used only when needed to eliminate knock. Knock is a metallic rapping noise that sometime happens during the combustion process. The engine does not require Premium grade fuel, so its use would be an unnecessary expense. If knocking persists, consult your dealer. Continuous or excessive knocking may result in engine damage. Failure to take steps to stop such knocking is misuse of the engine for which the manufacturing division is not responsible under terms of the new vehicle warranty. Use unleaded gasoline meeting Federal government regulations. The Federal government specifies the minimum octane

number of unleaded gasoline. Federal regulations require that pumps delivering such gasoline be labeled with the word UNLEADED.

"Jackrabbit" starts:
Gasoline can be conserved (and engine and tire life prolonged) by avoiding unnecessarily rapid acceleration away from lights and stop signs.

Stop-and-start driving:
Frequent stops and starts during a trip really cut down on your miles per gallon. Plan even your short shopping trips to take advantage of through streets to avoid traffic lights. Pace your driving like the professional drivers to avoid unnecessary stops.

Excessive idling:
An idling engine uses gasoline, too. If you're faced with more than a few minutes wait you're better off to "turn off" and start again later.

Sudden stops:
Sudden stops themselves don't waste gasoline, but energy is wasted as heat in braking. Energy in the form of gasoline is also needed to accelerate back to driving speed.

Lubricants:
A properly lubricated vehicle means less friction between moving parts. Consult this manual and the maintenance schedule for the proper lubricants to use and the lubrication intervals.

Air cleaner:
Your vehicle receives its power from a mixture of gasoline and air. The air is taken into the system through the air cleaner so it's important to replace the air cleaner at required intervals. A dirty air cleaner reduces engine efficiency.

Properly tuned engine:
Overall tuning (a check on timing, spark plugs, emission control devices, etc.) can improve your vehicle's gas mileage. You just can't expect an "out-of-tune" engine to give you good gas mileage and cleaner air.

Excess weight:
Fuel economy is related to the work the engine must do. The heavier the load, the more power it takes. Keep excess weight to a minimum by removing any personal effects or luggage from the vehicle when they are not needed.

Tire inflation:
Underinflation not only causes needless wear of tires, but can also waste gasoline. It's a good idea to check tire pressures regularly.

Wheel alignment:
"Toe in" or "toe out" has the effect of dragging your front tires sideways and causes premature tire wear. It takes power to carry this extra load and that takes gas from your tank.

1981 AIRSTREAM MOTORHOME SERVICE MANUAL

For most owners, this Owners Manual provides the answers for normal use and maintenance of an Airstream Motorhome. But some owners who are mechanically inclined want delailed information on all systems and equipment and basics construction of an Airstream Motorhome. For these people we have made available a copy of the same Service Manual provided to our Airstream Service Centers. The Airstream Motorhome Service Manual includes illustrated parts lists, procedured for maintenance and adjustments, service operations, removal and installation components, including options for all models.

The 1981 Airstream Motorhome Service Manual is scheduled to be available in January 1981. You may order your copy from your local Airstream dealer or if you prefer, directly from your Airstream by filling in the order form below and mailing to :

Airstream, Inc.
West Pike st., Jackson Center, Ohio 45334

Please send me the 1981 Airstream Motorhome Service Manual, price $50.00* per copy, to the following address:

Name _____

Address _____

City _____ State _____ Zip Code _____

( ) Enclosed $50.00* check or money ( ) Please send C.O.D.
order payable to:
Airstream, Inc.

*Ohio Purchasers - Add 4 1/2% Sales Tax

1000 MILE CHECK OR 60 DAY CHECK-OUT AUTHORIZATION CARD

This card entitles you, under the exclusive Airstream Certified performance check out program, to a 1000 mile (or 60 Day . . . whichever comes sooner) Performance Check of your Airstream Motorhome.

In the event you are traveling or moving, this service may be performed by any franchised Airstream dealer in the United States or Canada but, of course, it is recommended that the check-up be preformed by your selling dealer because of his logical interest in you as his customer.

We would suggest that you make an appointment with your dealer in advance of your arrival or inspection date.

AUTHORIZATION FOR INTERIM AIRSTREAM MOTORHOME WARRNATY

Airstream Motorhome Serial Number

Delivery Date _____

Purchased by: Name _____

Address _____

Purchased from: Name _____

Address _____

This card is valid for 60 days from the date of delivery.

1000 Mile Check Authorization Card

Vehicle Weights

Your Airstream is designed to provide satisfactory service if it is not loaded in excess of the Gross Vehicle Weight Rating (GVWR) or the maximum Front and Rear Gross Axle Weight Ratings (GAWR). Per Federal regulations, your Motorhome has a placard on the driver's side of the instrument panel to be viewed from outside through the driver's side windshield showing a GVWR and GAWR.

The **gross vehicle weight rating** is the maximum the Motorhome can weigh when it is in operation. The **gross axle weight rating** is the maximum load that can be on each axle when the Motorhome is in operation.

The GVWR is established by the manufacturer taking into consideration the engine, transmission, frame, springs, brake, axle and tire capabilities. Overloading can create a serious potential safety hazard.

Actual front and rear end weights at the ground can only be determined by weighing the vehicle. This can be accomplished through highway weigh stations or other such commercial facilities.

Shown below is a typical vehicle in a loaded condition. Note that the front and rear GAWR's and GVWR are not exceeded.

Charts A and B, page 20 and 21 may be used as a guide only to help you estimate the GVW. The sum of the optional weights, variable weights, personal cargo and passengers must not exceed the allowable additional weight specified in Chart A, page 20.

Column A

Column A represents the Total Maximum Personal Cargo and Passenger Weight that can be added to your Motorhome. Personal cargo includes food supplies, clothing, other personal items, etc. Find the total curb weight of your Motorhome, Chart A, page 20 and enter it across from Item 1 Column A (Curb Weight = Weight without Options and Variable Weights including gasoline and coolants (i.e. 9653 lbs.).

Next fill in the total weights of the Options and Variable Weight with which your Motorhome is equipped. This information is on Chart B,

MFD. BY: AIRSTREAM

DATE OF MFR. MARCH 1979

INC. VEH. MFD. BY: CHEVROLET MOTOR, DIVISION OF G.M.C.

DATE OF INC. MFG. DECEMBER, 1978

G.V.W.R. 12,500

G.A.W.R. FRONT 5,000 WITH 8.00-19.5 LRD

TIRES, 19.5 x 6.75 RIMS, AT 65

PSI COLD SINGLE

REAR 7,500 WITH 8.00-19.5 LRD

TIRES, 19.5 x 6.75 RIMS, AT 45

PSI COLD DUAL

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT IN: FEBRUARY 1979

V.I.N. # M28T9V5015

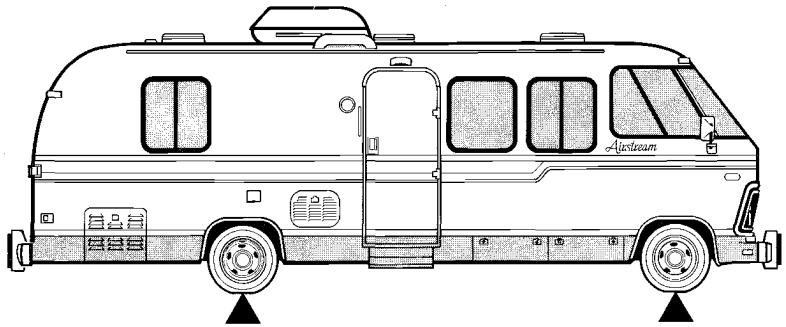
TYPE: MOTORHOME

A Member of
RECREATION VEHICLE
INDUSTRY ASSOCIATION

G.V.W.R/G.A.W.R. Placard

Gross Vehicle Weight Rating

Loaded—Maximum G.V.W.R.: 12,500 lbs. (28 ft. R.B. Twin)



Rear G.A.W.R.:	7500 lbs.	Front G.A.W.R.:	5000 lbs.
*Rear Curb	5701	*Front Curb	3952
Max. Allowable Rear Cargo & Pass. Load	1799	Max. Allowable Front Cargo & Pass. Load	1048
	*7500 lbs.		*5000 lbs.

Total Weight at Ground: 12,500 lbs.
Under no circumstances shall the G.V.W.R. be exceeded.

*Curb weight equals the weight of the vehicle without driver, passenger or cargo, but including gasoline and coolant.

page 21. Add all of the weights together and this total becomes Item 2, Column A (i.e. **775 lbs.**).

Next add Item 1 and Item 2. This becomes Item 3, Column A (i.e. **10,428 lbs.**). This is the sum total of your Motorhome's Curb Weight plus the Options and Variable Weights.

Next, enter in Item 4, Column A (i.e. **12,500 lbs.**), your Motorhome's Gross Vehicle Weight Rating (G.V.W.R.). This information is on the placard located on the driver's side of the instrument panel to be viewed from outside through the driver's side window which corresponds to information on Chart A, page 20. The Gross Vehicle Weight Rating is the maximum the Motorhome can weigh when it is in transit. Next, subtract Item 3, Column A from Item 4, Column A; this amount indicates the total Maximum Personal Cargo and Passenger Weight that can be added to your Motorhome (i.e. **2,072 lbs.**). Under no circumstances shall the G.V.W.R. be exceeded.

Column B

Column B represents the Maximum Personal Cargo and Passenger Weight that can be added to the front axle. Find the front axle curb weight of your Motorhome and enter it in Item 1 Column B (Front Axle Curb Weight = Weight without Options and Variable Weights (i.e. **3,952 lbs.**). This information is on Chart A page 20. Column B has + weight and - weight. Due to the location of optional items within the Motorhome, their weight will either have a + weight or - weight effect on the front axle. If the option is behind the rear axle, it will tend to have a - weight, or lifting effect on the front axle; if the option is forward of the rear axle, it will have a + weight or loading effect on the front axle. Next fill in + weights or - weights of the options and variable weights with which your Motorhome is equipped, indicated in the front axle weight columns on Chart B page 21.

Next total both the + weight (i.e. **115 lbs.**) and - weight (i.e. **-229 lbs.**) columns and find the difference between the two columns; this becomes Item 2 Column B (i.e. **-114 lbs.**). Next add Item 1 Column B and Item 2 Column B; this becomes Item 3 (i.e. **3838 lbs.**). This is the total of your Front Axle Curb Weight, plus the weight of the options and variable weights on the axle. Next enter in Item 4 Column B your Motorhome's Front Axle G.A.W.R. (i.e. **5000 lbs.**); this information is located on Chart A page 20 or on the placard located on the driver's side of the instrument panel.

Next subtract Item 3 Column B from Item 4 Column B and the amount indicates the Maximum Personal Cargo including passengers, on the front axle (i.e. **1162 lbs.**). Under no circumstances shall the front G.A.W.R. be exceeded.

Column C

Column C represents the Maximum Personal Cargo and Passenger Weight that can be added to your Motorhome's rear axle. Find the rear axle curb weight and enter it in Item 1 Column C (Rear Axle Curb = Weight without Options and variable weights (i.e. **5701 lbs.**). This information is on Chart A Page 20. Next fill in the weights of the options and variable weights with which your Motorhome is equipped from the Rear Axle Weight column on Chart B page 21. Add all of the weights together and this total becomes Item 2, Column C (i.e. **889 lbs.**).

Next add Item 1 Column C, Item 2, Column C; this becomes Item 3 Column C (i.e. **6590 lbs.**). This is the sum of the Rear Axle Curb Weight, the weight of the options and variable weights on the rear axle. Next enter in Item 4 Column C the rear G.A.W.R. (i.e. **7500 lbs.**); this information is located on Chart A page 20, or on the placard located on the driver's side of the instrument panel. Next subtract Item 3 Column C from Item 4 Column C. The remainder is the Maximum Personal Cargo including Passengers, on the rear axle (i.e. **910 lbs.**).

Under no circumstances shall the rear G.A.W.R. be exceeded.

Sample Form

Model: 28 Ft. Twin, R.B.	Column A Total Maximum Personal Cargo and Passenger Weight (includes both axles)		Column B Recommended Personal Cargo on Front Axle			Column C Maximum Personal Cargo on Rear Axle	
Total Curb Weight—w/o Options and Variable Weights	Item 1	9653					
Rear Axle Curb Weight—w/o Options and Variable Weights	→					Item 1	5701
Front Axle Curb Weight—w/o Options and Variable Weights	→		Item 1		3952		
Options:			+ Weight	− Weight			
Microwave Oven							
Ceiling Vent Fan	4		2			2	
Central Control Panel	2		1			1	
Cruise Control	5		5			0	
Dash Air Conditioner (Automotive)	71		69			2	
Engine 454 cu. in.							
Entertainment Group							
Heavy Duty Stabilizer							
Onan Generator 4 kw							
Range Vent Fan							
Spare Tire Wheel and Carrier	87			−59		146	
Roof Air Conditioner (Living Area)	139		12			127	
Trailer Hitch							
T.V. Antenna							
Water Purifier							
Variable Weights:							
Gas Tank gal. (Standard or optional)							
L.P.G. Tank and Liquid (Standard or optional)	50		26			24	
Water Tank	417			−170		587	
Item 2 — Total	775 →	775	+115	−229	= −114	889 →	889
Item 3 — Item 1 and 2 Total		10,428	−Add Item 1 and 2		3838	Add Item 1 and 2	6,590
Item 4 — G.V.W.R.		12,500	Front G.A.W.R.		5,000	Rear G.A.W.R.	7,500
Enter Item 3 and Subtract from Item 4		10,428	←		3,838	←	6,590
Total Maximum Personal Cargo and Passenger Weight		2,072			↓		↓
Total Maximum Personal Cargo and Passenger Weight on Front Axle		→			1162		
Total Maximum Personal Cargo and Passenger Weight on Rear Axle		→					910

Blank Form

Model:	Column A Total Maximum Personal Cargo and Passenger Weight (includes both axles)	Column B Recommended Personal Cargo on Front Axle	Column C Maximum Personal Cargo on Rear Axle
Total Curb Weight—w/o Options and Variable Weights	Item 1		
Rear Axle Curb Weight—w/o Options and Variable Weights	→		Item 1
Front Axle Curb Weight—w/o Options and Variable Weights	→	Item 1	
Options:		+ Weight / − Weight	
Microwave Oven			
Ceiling Vent Fan			
Central Control Panel			
Cruise Control			
Dash Air Conditioner (Automotive)			
Engine 454 cu. in.			
Entertainment Group			
Heavy Duty Stabilizer			
Onan Generator 4 kw			
Range Vent Fan			
Spare Tire Wheel and Carrier			
Roof Air Conditioner (Living Area)			
Trailer Hitch			
T.V. Antenna			
Water Purifier			
Variable Weights:			
Gas Tank gal. (Standard or optional)			
L.P.G. Tank and Liquid (Standard or optional)			
Water Tank			
Item 2 Total →		+ / − / =	→
Item 3 Item 1 and 2 Total		−Add Item 1 and 2	Add Item 1 and 2
Item 4 G.V.W.R.		Front G.A.W.R.	Rear G.A.W.R.
Enter Item 3 and Subtract from Item 4			
Total Maximum Personal Cargo and Passenger Weight			
Total Maximum Personal Cargo and Passenger Weight on Front Axle →			
Total Maximum Personal Cargo and Passenger Weight on Rear Axle →			

Chart A: Weights and Ratings

Model	G.V.W.R.	Curb Weight Total	Allowable Additional Weight*	G.A.W.R. Front	G.A.W.R. Rear	Curb Weight Front	Curb Weight Rear	Allowable Weight Per Axle Front	Rear
24 ft. Rear Bath 40 gal. tank	12,500	8485	4015	5000	7500	3920	4565	1080	2935
28 ft. T&D Rear Bath 70 gal. tank	12,900	10,910	1990	5000	7900	3910	7000	1090	900
28 ft. T&D Center Bath 70 gal. tank	12,900	10,890	2010	5000	7900	4020	6870	980	1030
28 ft. T&D (diesel) 70 gal. tank	12,900	11,280	1620	5000	7900	4190	7090	810	810
28 ft. T&D Rear Bath **60 gal. tank - California Emission	12,900	10,855	2045	5000	7900	3925	6930	1075	970
28 ft. T&D Rear Bath 40 gal. tank - California Emission	12,900	10,740	2160	5000	7900	3966	6774	1034	1126

Curb Weight - Weight of unloaded Motorhome with standard equipment - includes coolant and full tank of gas.

*Allowable additional weight includes all options and accessories, passengers, L.P.G., waste, water, food, supplies, clothing, other personal cargo, etc.

**Effective when available.

Chart B: Airstream Motorhome

Optional Equipment Variable Weights	Total Weight	24 Ft. Model, 1979 Rear Axle	24 Ft. Model, 1979 Front Axle	28 Ft. Model, 79/80 Rear Axle	28 Ft. Model, 79/80 Front Axle	28 Ft. Model, 1981 Rear Axle	28 Ft. Model, 1981 Front Axle
Microwave Oven	66	N/A	N/A	57	9	57	9
Ceiling Vent Fan	4	3	1	2	2	2	2
Solid State Control Panel	2	1	1	1	1	1	1
Cruise Control	5	0	5	0	5	0	5
Dash Air Conditioner (Automotive)	71	2	69	2	69	2	69
Engine 454 cu. in.**	208	38	170	STD	STD	STD	STD
Entertainment Group	12	-2	14	-2	14	-2	14
Gas Tank 70 gal.** (FULL)	312	N/A	N/A	400	-88	400	-88
Heavy Duty Stabilizer	20	10	10	STD	STD	STD	STD
Engine, Isuzu Diesel	N/A	N/A	N/A	N/A	N/A	22	128
L.P.G. TANK**	80	60	20	38	42	38	42
Onan Generator—4 kw	350	485	-135	395	-45	395	-45
Range Vent Fan	3	2	1	2	1	2	1
Roof Air Conditioner, - 13,500	139	117	22	127	12	127	12
Spare Tire, Wheel and Carrier	87	139	-52	146	-59	146	-59
Trailer Hitch	12	17	-5	17	-5	17	-5
T.V. Antenna	5	1	4	1	4	1	4
Water Purifier	3	1	2	——	——	——	——
Water Tank (Full) 24, 28 Ft.	417	560	-143	587	-170	587	-170

**Replaces Standard Equipment

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. In addition, see page 134 for Pre-Travel Check List.

Exterior Check List—before entering vehicle:

1. Check condition of tires for proper inflation.
2. Turn off L.P.G. valve on L.P.G. tank.
3. Check that sewer connection, all external compartments, and filler openings are properly stowed or closed and/or locked.
4. Check that items stored on exterior of vehicle are securely tied down.
5. Would any items stored on exterior of vehicle present a clearance problem?

Interior Check List—before driving off:

1. It is important that the main door be completely closed and locked with the dead bolt lock during travel. If it is not locked, the constant vibration of travel may cause it to open with possible damage. Check to make sure that door light on instrument panel goes out.
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. Check that counter tops, range top, credenza tops and shelves are clear of even small items that could become projectiles in an accident.
6. Do not cook while underway—hot food or liquid could scald due to a sudden stop or accident.
7. Be sure all L.P.G. controls on furnace, range/oven and gas/electric refrigerator are turned off.
8. Check that any internal stowage is securely held in place.
9. Check that lights and switches are set in positions safe for travel.
10. 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.
11. Check that front passenger's seat is locked in position—both fore and aft adjustment and swivel mechanism.
12. Check rear view mirror adjustment, inside and outside. Adjust curtains if necessary for maximum visibility
13. Fasten lap belts.
14. Check that step light goes out and that vacuumatic step has retracted.

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 motion. 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 hip bone structure instead of around the soft abdominal area. Two people should never try to use the same seat belt.

Engine Starting

To start the engine:

1. Apply the parking brake.
2. Place transmission selection in "P" or "N" ("P" preferred). A starter safety switch prevents starter operation while the transmission selector is in any drive position. (If it is necessary to re-start the engine with the vehicle moving, place the selector lever in "N".)
3. Depress accelerator pedal and activate starter as outlined below for different conditions.

Important: Do not keep the starter engaged for more than 15 seconds at a time. Wait 10 or 15 seconds before trying again.

To start a cold engine, fully depress accelerator pedal and slowly release. With foot off the pedal, crank the engine by turning the ignition key to the Start position — release when engine starts. If engine starts, but fails to run, repeat this procedure. DO NOT kick down from fast idle.

When engine is running smoothly (approximately 30 seconds) the idle speed may be reduced by slightly depressing the accelerator pedal and then slowly releasing.

Caution: Extended running of engine (5 minutes or more) without depressing accelerator pedal could cause damage to engine or exhaust system due to overheating.

To Start a warm engine

- **Warm Engine (454 V-8)**
  Depress accelerator pedal about halfway and hold while cranking. Start engine.
- **V-8 (exc. 454)**
  Do not depress the accelerator pedal. Start engine with throttle closed. If crank time exceeds three seconds, depress accelerator pedal to one-third of travel while cranking.

If Engine Fails to Start

Depress accelerator pedal and hold to floor while starting until engine is cleared of excess fuel and is running smoothly. Never "pump" the accelerator pedal.

Warm-up

Always let the engine idle for 20 to 30 seconds after starting and drive at moderate speeds for several miles, especially during cold weather.

To start the engine in extremely cold weather (below 0° F.) (-18° C.) or after vehicle has been standing idle several days, fully depress and release accelerator pedal two or three times before cranking the engine. With foot off the accelerator pedal, crank the engine by turning the key to the Start position and release when engine starts.

After the engine is started, **note the oil gauge and voltmeter readings.** Voltmeter should show charge unless engine is idling slowly. The charging rate shown on a voltmeter with a fully charged battery may be so slight that the needle may appear to remain centered on the gauge and not move away from the gauge center mark. The oil gauge should show some pressure. If it does not, stop engine and determine fault. In unusually cold weather the oil gauge needle may move all the way over to the extreme right. If so, run the engine just above idling speed until the indicator hand drops to around the center of the gauge before driving vehicle.

After the engine is started, **check the temperature gauge.** If the needle moves to the "H" hot end of the gauge, stop the engine until the cause of overheating is determined.

Note: Your vehicle is equipped with a clutch type fan. The clutch engages at approximately 85° F (29°C.), increasing fan r.p.m. for additional cooling. An increase in noise level occurs when the clutch engages which may cause the sensation that the transmission is slipping.

Engines in vehicles with automatic transmissions cannot be started by pushing or towing the vehicle.

A vehicle with a discharged battery may be started by transferring electrical power from a battery in another vehicle or the auxiliary battery. This is called "**jump starting.**"

The following procedure is for use only under the following conditions. Departures from these conditions and procedures could result in: (1) serious personal injury (particularly to eyes) or property damage from such things as battery explosion, battery acid or electrical burns, or (2) damage to electronic components in either vehicle. If all the conditions cannot be met, or if you are uncertain about them, we strongly recommend for your safety and that of your vehicle that you leave the starting to a competent mechanic. The battery in the other vehicle must be the same nominal voltage, 12 volts, and must be negatively grounded. The auxiliary battery in your Motorhome is 12 volt negatively grounded, and therefore meets the requirements.

The nominal voltage and grounding of the other vehicle's battery may be determined by checking the specifications in its owner's manual. Use of a booster battery of a higher nominal voltage, or which is positively grounded may result in serious personal injury or property damage.

The **battery** in your vehicle must be equipped with flame arrester type filler/vent caps on all filler openings, or it must be a sealed-type battery which does not have filler openings or caps.

To Jump Start:

1. Wear eye protection and remove rings, metal watch bands, and other metal jewelry.
2. Set parking brake firmly, and place automatic transmission in "**park**" in both vehicles (don't let vehicles touch). Also turn off lights, heater, and all unnecessary electrical loads.
3. Attach one end of a jumper cable to one battery's positive terminal (identified by a red color, "+" or "P" on the battery case, post, or clamp), and the other end of the same cable to the positive terminal of the other battery.
4. Attach the remaining jumper cable first to the negative terminal (black color "-" or "N") of the vehicle with the good or charged battery and then to the negative terminal of the battery to be charged.
5. Start the engine of the vehicle that is providing the jump start (if it was not running). Let run a few minutes, then start the engine in the vehicle that has the discharged battery.
6. Reverse the above sequence exactly when removing the jumper cables, taking care to remove the cable from the negative terminal of the battery to be charged as the first step.

Driver Controls

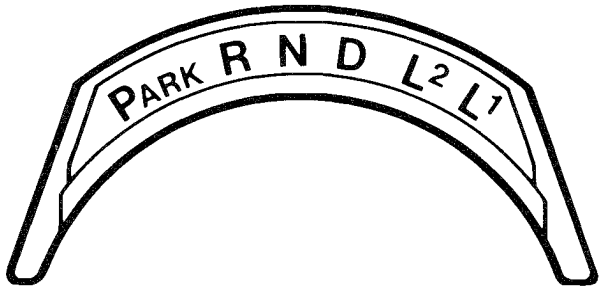
Automatic transmission driving cautions:

1. Do not accelerate engine for over 10 seconds while holding vehicle with brakes.
2. Never move selecter lever to "R" when vehicle is moving forward, except when "rocking" in mud, snow, sand, etc.
3. When stopped on an upgrade, do not hold vehicle with engine. Use service brake.
4. Do not move selector lever from "D" to "L_1," at speeds over 40 mph.
5. Engage "P" only when vehicle is completely stopped and **after** setting parking brake (see page 35).

The 1979 Motorhome has a 3 speed **Turbo-hydra-matic 400 transmission.** The selector lever is located on the right side of the steering column. The shift positions are indicated on the quadrant located on the top forward part of the steering column.

Park Position: The Park position is a mechanical lock for the transmission. Use this position when parked or starting the engine. To select this position move the lever up and all the way to the left. The Motorhome must be completely stopped before selecting this position or damage to the transmission will result.

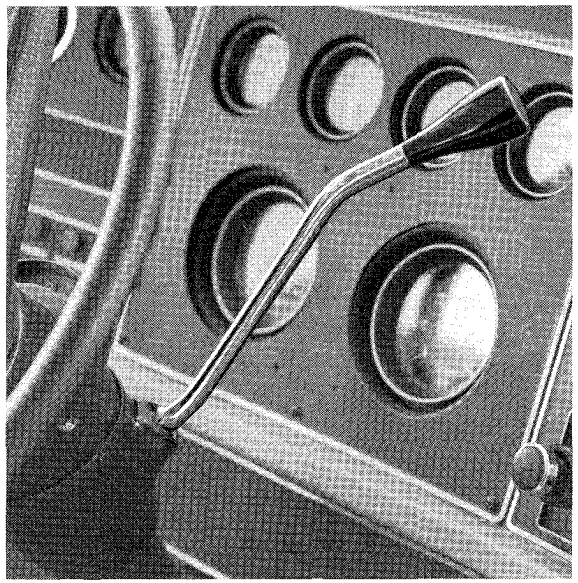
Note: Always apply the parking brake first before selecting Park position to prevent "torque lock." If parked on a slight grade or hill the Motorhome will exert enough force on the transmission that the weight on the pawl will prevent the selector from being taken out



Turbo Hydra-Matic Shift Positions

P-Park	Use only when vehicle is stopped.	Vehicle Parked
*Lift		
R-Reverse	For backing vehicle from stop.	
*Lift		
N-Neutral	For standing (brakes applied).	
D-Drive	For forward driving. Downshift for acceleration below 65 mph by depressing accelerator pedal to the floor; below 30 mph by depressing halfway to floor.	Normal Driving Range
*Lift		
L_2—LOW_2	For driving in heavy traffic or on hilly terrain.	Higher Performance Range
L_1—LOW_1	For descending steep grades or hard pulling at low speeds — The unit will not downshift into L_1 unless vehicle speed is 40 mph or below.	Sand, Snow or Mud and on Steep Grades

*Lifting clears stops that prevent unintentional shifts to Reverse, Park or Low.



Shift Position Quadrant

of the "Park" position. Before driving off, always select "Drive" position **before** releasing emergency brake. If "torque lock" does occur, another vehicle must be used to push the Motorhome uphill to take the load off the transmission while the driver moves the shift lever out of the Park position.

"Reverse" -R- Always bring the Motor home to a complete stop before selecting Reverse.

"Neutral" -N- The transmission will be out of gear when this position is selected; the engine can be started, if stalled, while the Motorhome is still moving. Do not coast in neutral.

"Drive" -D- In this range the transmission is completely automatic and will provide the correct gear for all city and highway driving.

Low_2-L_2- This gear will provide for faster acceleration in traffic, or help in climbing hills. Use also for engine braking while going down steep hills to conserve the brakes. Do not select Low_2 at speeds above 75 mph.

Low_1-L_1- Use L_1 for hard pulling through mud, sand, or when going down very steep hills. This transmission will not upshift automatically from Low_1 when selector is in L_1 position. It will not downshift to L_1, if selected, until speed is below 40 mph.

Note: If driving in snow, and vehicle becomes stuck, rock vehicle back and forth by moving selector from R to D, but do not let wheels spin faster than an indicated 35 mph or serious damage may result to drive train or tires. Use a higher gear (D or L_2), when in snow to gain more traction.

Forced down shift for passing: When you want to pass and speed is between 35 and 65 mph, by depressing the accelerator pedal all the way down to the floor, the transmission will downshift to L_2. If speed is under 35 mph, you can downshift from Drive by depressing the accelerator part way down.

Caution: Before descending a steep or long grade, down a mountain or hillside, reduce speed and shift into a lower gear. Under such conditions, use the brakes sparingly to prevent them from overheating which reduces brake effectiveness.

Caution: Use caution when shifting into lower range on slippery surfaces with vehicle moving — the abrupt engine braking action could cause the rear wheels to skid.

If the **power steering** fails due to some malfunction, or because the engine has stalled, the vehicle can still be steered. However, much greater effort is required, particularly in sharp turns.

The **tilt steering wheel** can be tilted up above normal position to provide additional room for entrance and exit as well as selected driving positions below normal height. This permits individual selection of the most natural position for all driving conditions. On long trips the steering wheel position can be changed to minimize fatigue.

The tilt mechanism is operated by lifting up on the small control lever on the left side of the steering column just below the directional signal, moving the steering wheel to the selected position, and releasing the lever.

Actuate the **horn** by depressing the horn pad located in the center of the steering wheel.

The **turn signal lever** is located on the left side of the steering column. The lever is moved upward to signal a right turn and downward to signal a left turn. Lamps on the front and rear of the vehicle transmit this signal to other motorists and pedestrians. The ignition switch must be in the "ON" position in order for the turn signals to be operational. This feature prevents battery drain if the lever is left in an "ON" position when your vehicle is not in use.

In a normal turning situation such as turning a corner, the turn signal is cancelled automatically after the turn is completed. However, in some driving maneuvers such as **changing**

lanes on an expressway, the steering wheel is not turned back sufficiently after completing the turn to automatically cancel the turn signal. For convenience in such maneuvers the driver can flash the turn signals by moving the turn signal lever part way (to the first stop) and holding it there. The lever returns to the neutral or cancelled position when the driver releases hold of the lever.

A green light on the instrument cluster flashes to indicate proper operation of the front and rear turn signal lamps. If the indicator lamp remains on and does not flash, or flashes rapidly, check for a defective signal lamp bulb. If the indicator fails to light when the lever is moved, check the fuse and indicator bulb.

Use the **hazard warning flasher** to warn other drivers any time your vehicle becomes a traffic hazard, day or night. Avoid stopping on the roadway if possible. Turn on the hazard warning flasher by pushing in on the button located on the column just below the steering wheel. Flasher can be actuated with engine ignition either off or on. Turn signals do not work with the hazard flashers operating. If the brake pedal is depressed, the lights will not flash but glow continuously instead. To cancel the flasher, pull the button outward.

The optional **speed control** is an automatic control system which enables your Motor home to maintain a desired speed while traveling on the highway.

To activate, slide switch from "OFF" to "ON" (located on turn-signal lever).

To engage, maintain desired speed and depress "SET SPEED" button (located in the end of the engagement switch); then release button slowly. You may also engage your speed control by moving slide switch from "OFF" to "RESUME" and releasing. You may remove your foot from the accelerator pedal as speed will be automatically maintained.

The slide switch operates in two modes as follows:

1. **Retard speed** — Slide switch to "OFF" position, vehicle speed will decrease.
2. **Resume speed** — When system is engaged and the brakes have been applied, former set speed can be resumed by sliding the switch to "RESUME" momentarily and releasing.

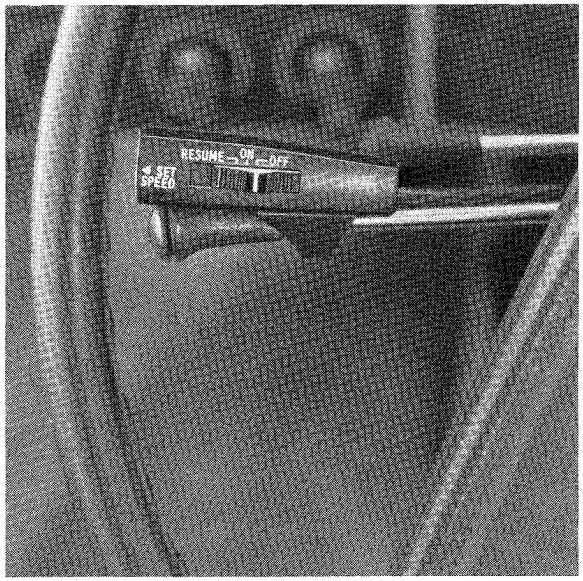
   Speed can be increased at any time with normal pressure on the accelerator pedal.

   Your speed control is disengaged by lightly depressing brake pedal, by sliding the switch to "OFF" position, or by turning the ignition off.
   Caution: The use of the speed control is not recommended on icy or wet roads or in congested traffic.

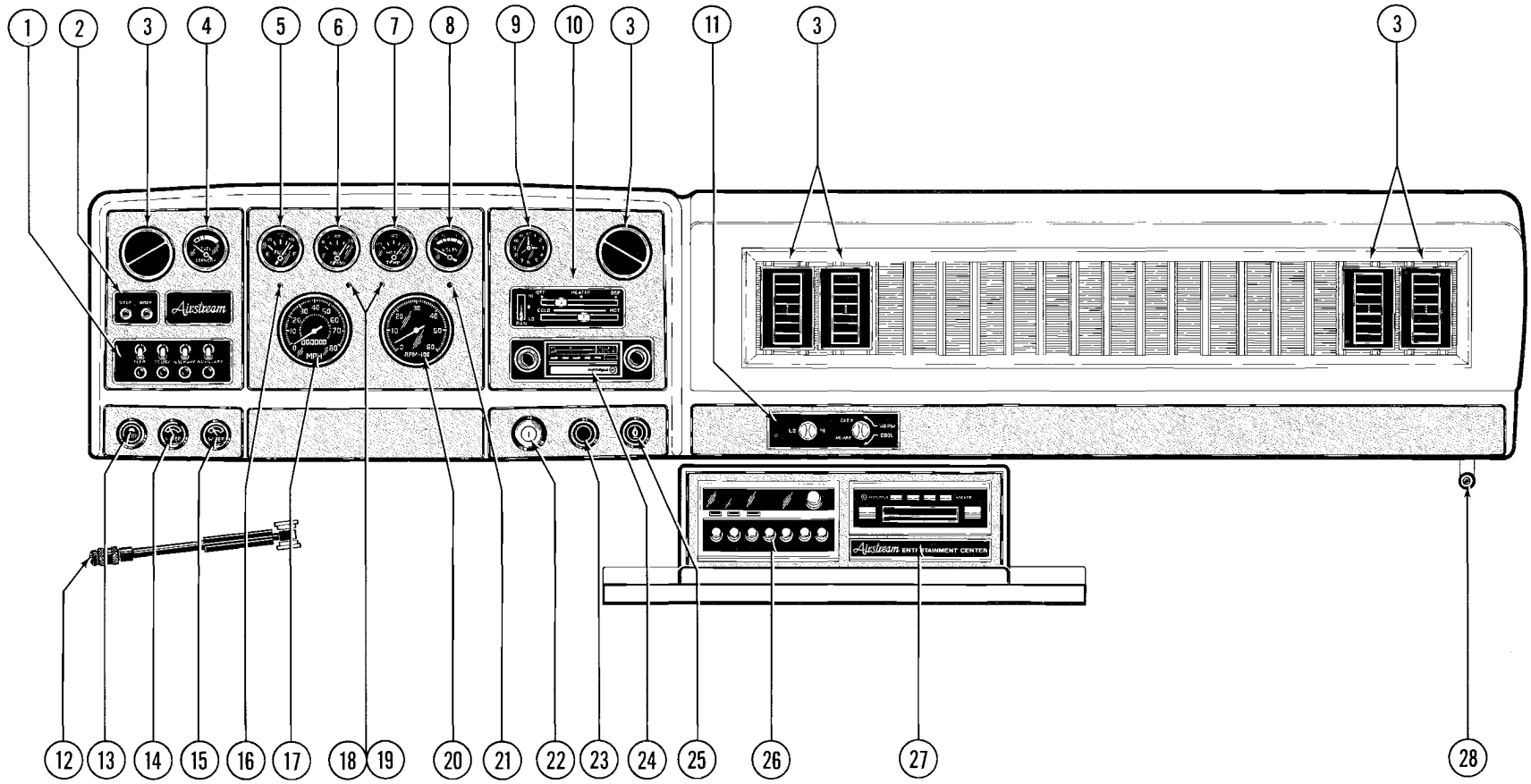
   Considering the fact that the speed control is controlled by vacuum, there will be times when the unit may appear to malfunction.

   This situation could occur when the vehicle is subjected to extremely heavy loads, severe upgrades or driving into an excessive headwind; any one of which would create a low vacuum situation, thus causing the vehicle to drop off speed.

Hazard Warning Flasher



Speed Control



Instrument Panel

No.	Description	Page No.
1.	Light Panel	—
2.	Step/Door Warning Lights	76
3.	A.C. Outlets	32
4.	Fuel Economy Gauge	—
5.	Fuel Gauge	30
6.	Oil Pressure Gauge	30
7.	Temperature Gauge	31
8.	Voltmeter	31
9.	Clock	—
10.	Heater-Defroster Controls	—
11.	Air Conditioner Controls	32
12.	Parking Brake Release Lever	35
13.	Headlamp Switch	31
14.	Windshield Wiper/Washer L.H.	31
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16.	Left Turn Indicator	27-28
17.	Speedometer	30
18.	Brake Warning Light	31
19.	Headlamp High Beam Light	36
20.	Tachometer	—
21.	Right Turn Indicator	27-28
22.	Ignition Switch	30
23.	Speaker Fader Control (Front to rear)	33
24.	AM-FM Stereo Radio w/Tape Player	33
25.	Cigar Lighter	—
26.	AM-FM Stereo Radio	34
27.	Tape Player	34
28.	Heat Pull	—

The solution to overcome this apparent malfunction is to temporarily use the accelerator pedal to assist during the period of low vacuum or an excessive reduction in speed. Under normal driving conditions you can expect the speed control to maintain the set speed plus or minus two miles per hour.

The **ignition switch** is located on the dash panel at the right side of the steering column. The switch has four positions:

Accessory — Permits operation of electrical accessories when engine is not running. To engage, push key in and turn counter-clockwise. It also permits charging of engine battery when 120 v. power cord is plugged into 120 v. source.
Off — Turns off engine and accessories.
Run (On) — For normal operation after engine has been started.
Start — Used only when starting engine. When released, switch returns on "ON."

The code number of each **key** is stamped on the "knock out" plug in the key head. Remove these plugs for your protection and:

Record the number on the key envelope and discard the key plugs. Keep the key envelope in a safe place such as your wallet, not in the vehicle.

In the event the original keys are lost, duplicates can be made by a Chevrolet dealer or a locksmith using the key code information.

Reminder: For greater security while your Motorhome is in use always lock the doors to keep children safely inside, to help prevent injuries in the event of an accident and to keep out unwelcome persons while momentarily stopped.

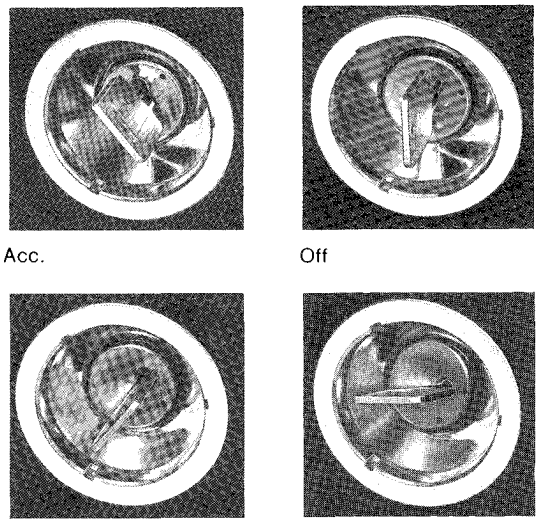
Be sure that all keys other than ignition key are retained by you whenever it is necessary to leave the ignition key with an attendant.

The **speedometer** hand indicates vehicle speed in miles per hour.

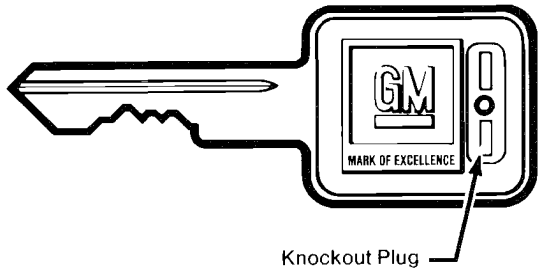
The **odometer,** the group of six figures in the speedometer lower center section indicates the accumulated mileage.

The **fuel gauge** is wired through the ignition switch and indicates the level of fuel in the tank when the ignition switch is turned on. This gauge uses a "balanced needle" for greater accuracy. The gauge needle will not necessarily return to the empty position with the ignition switch off. The needle may stop in the center of the gauge or go off at either end when the ignition switch is turned off.

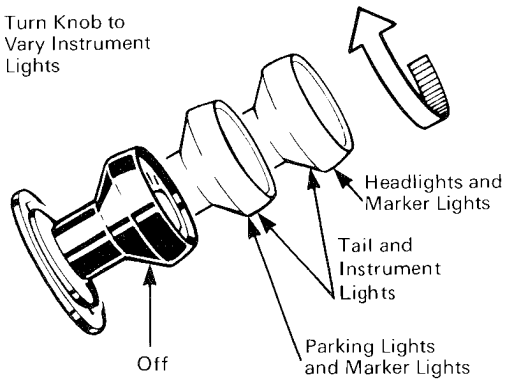
The **oil pressure gauge** indicates the pressure at which oil is being delivered to the various parts of the engine requiring lubrication. Pressures registered by the gauge may vary according to outside air temperatures or weight of oil being used. In unusually cold weather the oil gauge needle may move all the way over to the extreme right. If so, run the engine just above idling speed until the indicator hand drops to around the center of the gauge before driving vehicle. Readings in the mid range may be considered normal during moderate road speeds with the engine at proper operating temperatures. Gauge readings which are consistently high or low under these conditions may indicate lubrication system and/or engine malfunction.



Ignition Switch Positions



Key



Light Switch

The **water temperature gauge** indicates coolant temperatures which will vary with air temperature and operating conditions. The ignition switch must be on for accurate readings. Hard driving or prolonged idling in very hot weather will cause the pointer to move beyond the center of the band. Should pointer move to the "H" end of the band, stop engine or reduce speed to permit engine to cool. If the gauge indicates hot during extreme driving conditions, such as an extended idle, turn off the air conditioner (if used) and run the engine slightly faster than idle speed with the transmission in neutral gear. If the temperature does not reduce within a short period of time (1-2 minutes), then turn the engine off until the cause of the overheating is corrected. Glance at the instrument cluster frequently as you drive to note temperature indication.

The **voltmeter** indicates the state of the charging system. The alternator is equipped with a regulator which controls the voltage at which the alternator delivers 11 volts to 15 volts depending on ambient temperature and vehicle electrical requirement — larger electrical demand at night (headlights) and in the summer months (air conditioning). When the voltmeter is operating in this range, it indicates proper alternator operation and consequently will maintain the battery at the proper level of charge.

The service brake system is designed so that part of the brake system will provide some braking action in the event of a hydraulic leak in the other part of the system. If the **brake system warning light** located in the instrument panel area, glows continuously when the ignition is on and after the brakes have been firmly applied it may indicate that there is a malfunction in one part of brake system.

The light should glow during engine starting to verify that the bulb is operating properly. Have system repaired if light does not come on during check. This warning light is not a substitute for the visual check of brake fluid level required as part of normal maintenance.

If the light glows red and **your emergency brake is released,** the service brake system is partially inoperative. If this occurs, pull off the road and stop carefully. Remember that stopping distances may be greater, greater pedal effort may be required, and pedal travel may be greater.

Try out braking operation by starting and stopping on road shoulder. Then, if you judge such operation to be safe, proceed cautiously at a safe speed to nearest dealer for repair or have vehicle towed to dealer for repair. Continued operation of the vehicle in this condition is dangerous.

The three position **light switch** controls the instrument lamps, headlamps, marker lamps, parking lamps, tail lamps and interior lamp. Instrument light intensity can be varied by turning knob clockwise or counterclockwise.

The headlight circuits are protected by a circuit breaker in the light switch. An overload on the breaker will cause the lights to "flicker" on and off, or in some cases to remain off. If this condition develops, have your headlight electrical circuit checked immediately.

The **windshield wiper and washer controls** are located to the left of the steering column on the instrument panel.

Each wiper blade is controlled by a separate switch. Both controls are two speed.

To activate windshield washer, press knob marked "wiper-washer."

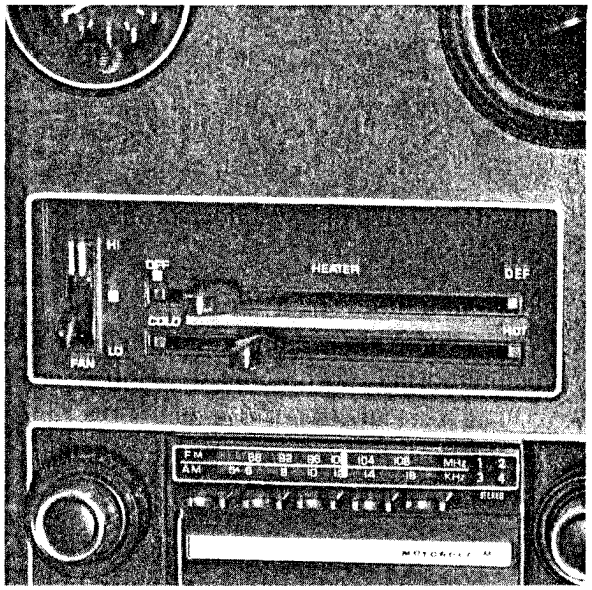
Check **washer fluid** level regularly — do it frequently when the weather is bad. Use a recommended fluid to prevent freezing damage and to provide better cleaning. Do not use radiator anti-freeze in windshield washer; it could cause paint damage.

Do not use washer solution in radiator coolant recovery tank; it could result in radiator boilover and paint damage. In cold weather, warm the windshield with defrosters before using water to help prevent icing that may seriously obscure vision. Fill the washer jar ¾ full during the winter to allow for expansion in case the temperature should fall low enough to freeze the solution.

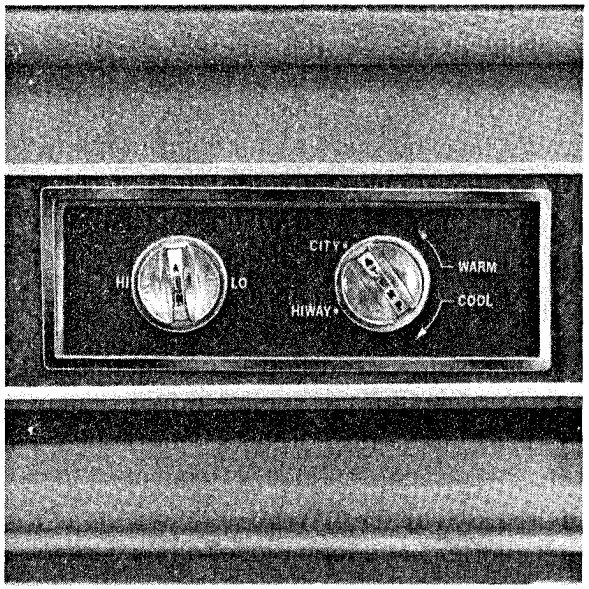
Your Motorhome is equipped with **automotive type air conditioning and heating units.** the controls are located to the right of the steering column.

To operate the heater.
When the **upper lever** is in the OFF position, air is directed up under the instrument panel. Moving the lever to HEATER position allows full air flow at the heater outlets. Move the lever full right to DEF position when windshield defrost is needed.

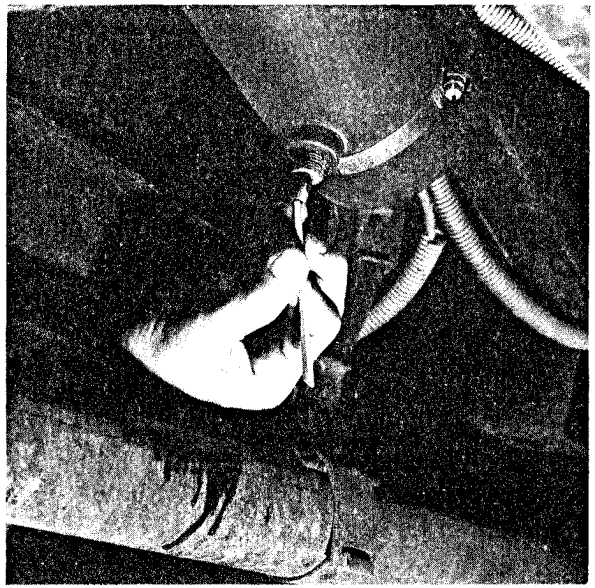
Push the lower lever as required to give the desired degree of heat. Full right position provides maximum heat.



Heating Unit



Air Conditioning


Draining Air Cushion System

The fan lever has two (2) positions. The bottom position marked "LO" is actually OFF. The center position is low speed and Hi is at the top.

To operate the air conditioner.
Close all windows and vents when operating air conditioner except for the first few minutes of operation when the Motorhome interior is very hot. Close all windows as soon as the excessively heated air has escaped.

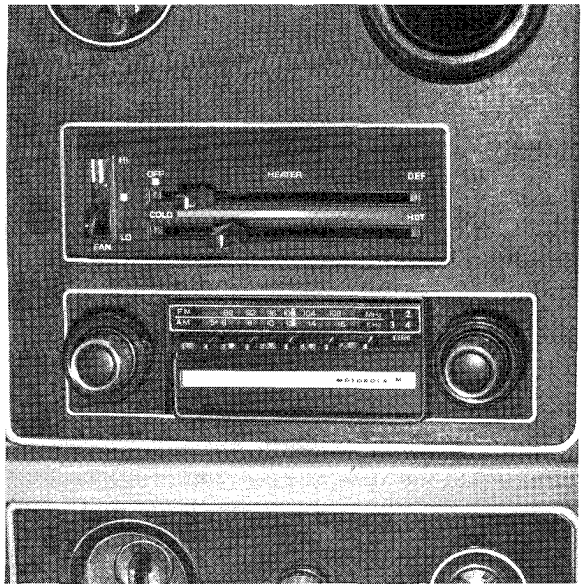
During some A/C operations, slight increases and decreases of engine speed/power may be noticed. This characteristic should be considered normal as the system, when switched to HIWAY will cycle the compressor intermittently "on and off" to maintain desired cooling. The reduced compressor operation should benefit fuel economy. This position is recommended for normal air conditioning situations. Switch the dial to CITY when in heavy "stop and go" traffic. The air compressor and fan will operate continually to maintain maximum cooling.

The **CITY/HIWAY switch** provides a selection of air conditioning combinations to handle various cooling requirements throughout the year.

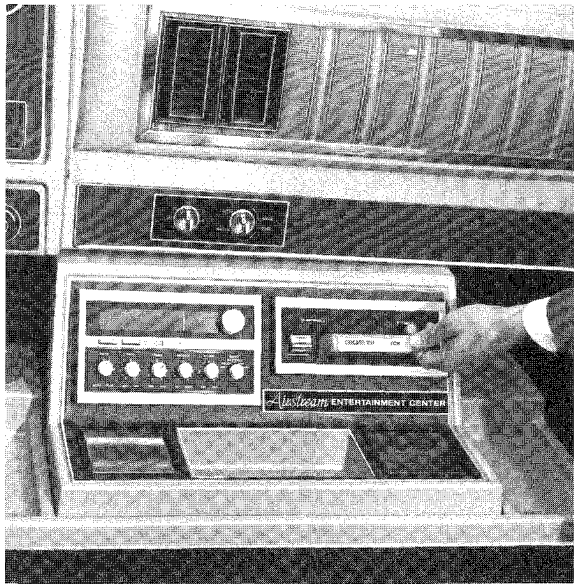
Turning the **temperature selector** controls the graduation of air temperatures from cool to warm.

All 28' Airstream motorhomes are equipped with an air cushion type rear suspension system. Heavy duty air cushions, one adjacent to each dual rear wheel, support most of the weight over the rear axle. These cushions are kept constantly inflated to the correct air pressure by means of an air compressor located inside the rear roadside storage compartment on center bath models, and inside the roadside storage compartment on rear bath models. Leveling valves at each air cushion location automatically compensate for variations in load, increasing or decreasing pressure as necessary in order to keep your motorhome in proper trim.

The air cushion systems contain an accumulator tank that should be drained every few days while traveling to prevent moisture build up. To drain, the valve stem is depressed until moisture is no longer present. Air pressure may also be added into the air cushion system through this valve, should the built in compressor fail. The tank on the 1979 and 1980 model is located under the floor to the rear of the curbside wheel on center bath models and behind the roadside wheel on the rear bath models. The 1981 model has the tank mounted vertically under the floor directly behind the differential. Air lost during draining will be replenished automatically.



Stereo AM-FM Radio/Tape Player



Stereo AM-FM Radio with separate Tape Player

Your Motorhome will be equipped with either a dash mounted combination Stereo AM-FM Radio with a Stereo Tape Player or a console mounted AM-FM Stereo Radio with separate Stereo Tape Player as options.

Dash Mounted Motorola AM-FM Stereo Radio with 8 Track Stereo Tape Player.

The combination Motorola AM-FM Stereo Radio with 8 Track Stereo Tape Player is dash mounted. It has a "fader" control which allows the front speakers to be turned on by themselves, or the rear speakers by themselves, or any combination of front and rear speakers.

To operate the radio

1. Switch power on by pressing Power Button to "in" position. Switch power off by pressing Power Button again, releasing it to "out" position.
2. Turn Select control to desired mode of operation (AM, FM, FM Stereo, FMLC, or Tape) **Note:** FMLC position is useful only in strong FM signal areas, especially where many FM stations may tend to interfere with each other. FMLC position minimizes this type of interference. For best FM reception under normal conditions, the "FM Stereo" position should be used. The "FM" position is useful in fringe areas to lock receiver into monaural mode, thus eliminating stereo threshold noise.
3. Turn Turning Control to select desired station.

To operate stereo

The indicator light will go on automatically when selected FM station is broadcasting in stereo. The light is not on when monaural broadcasts are being received, or when a stereo signal drops below a predetermined level. The radio is designed to reproduce weak stereo signals monaurally to provide more noise free reception. When the signal increases beyond the threshold level, the stereo indicator will light again.

To operate the tape deck

Insert tape cartridge into slot (behind hinged panel) to a fully seated position to switch tape deck on. Receiver Select Switch must be in Tape Position to operate tape deck. Retracting tape cartridge approximately one inch from seated position or removing tape cartridge completely switches tape deck off.

The Program Indicator Lights indicate which tape program is playing.

When Repeat Button is in "in" position, the tape deck will continue playing the same program until another program is selected or button is released to "out" position.

Press and release Program Button to position tape deck pick-up head to the next program on the tape. **Note:** If Program Selector Feature is not used, the four programs will play in sequence except when "Repeat" Button is in "Repeat" Position. The tape deck will play continuously in this manner until tape cartridge is pulled out from its seated position.

Store tapes in a cool area with open end down. Protect tapes from dust and direct sunlight.

In time, oxide from recording tape will accumulate on the tape head and capstan shaft which can cause tape hiss and erratic operation. The more often the tape player is used, the more often it should be cleaned.

Clean the head with a cotton swab moistened with isopropyl alcohol. **Do not use carbon tetrachloride.**

To clean the capstan shaft, first turn on the motor by depressing the motor switch (next to the capstan shaft) with the eraser end of a pencil. Use a cotton swab moistened with alcohol on the shaft.

The fuse for the radio, or radio/tape is located in an in-line fuse holder behind the unit. Gain access behind the instrument panel.

Console mounted Motorola AM-FM Stereo Radio

To operate the radio

1. Switch power on by pressing Power Button to "in" position. Switch power off by pressing Power Button again, releasing it to "out" position.
2. Turn Select Control to desired mode of operation (AM, FM, FM Stereo, FMLC, or Tape) **Note:** FMLC position is useful only in strong FM signal areas, especially where many FM stations may tend to interfere with each other. FMLC position minimizes this type of interference. For best FM reception under normal conditions the "FM Stereo" position should be used. The "FM" position is useful in fringe areas to lock receiver into monaural mode, thus eliminating stereo threshold noise.
3. Turning Tuning Control to select desired station.
4. Turn Volume Control to right to increase volume and to left to decrease volume.
5. Turn Balance Control either right or left as required for desired left and right sound level.
6. Turn Fader (front to rear) Control either right or left as required for desired front and rear sound level.
7. Turn Bass Control either right or left as required for desired bass response.
8. Turn Treble Control either right or left as required for desired treble response.
9. Press Noise Filter Button to "in" position to reduce annoying noise during reception.

To operate stereo

The Indicator Light will go on automatically when selected FM station is broadcasting in stereo. The light is not on when monaural broadcasts are being received, or when a stereo signal drops below a predetermined level. The radio is designed to reproduce weak stereo signals monaurally to provide more noise free reception. When the signal increases beyond the threshold level, the stereo indicator will light again.

To operate console mounted tape player

Insert tape cartridge into slot (behind hinged panel) to a seated position to switch tape deck on. Receiver Select Switch must be in Tape position to operate tape deck. Retracting tape cartridge approximately one inch from seated position or removing tape cartridge completely switches tape deck off.

The Program Indicator Lights indicate which tape program is playing.

When Repeat Button is in "in" position, tape deck will continue playing the same program until another program is selected or button is released to "out" position.

Press and release Program Button to position tape deck pick-up head to the next program on the tape. **Note:** If Program Selector Feature is not used, the four programs will play in sequence except when "Repeat" Button is in "Repeat" Position. The tape deck will play continuously in this manner until tape cartridge is pulled out from its seated position.

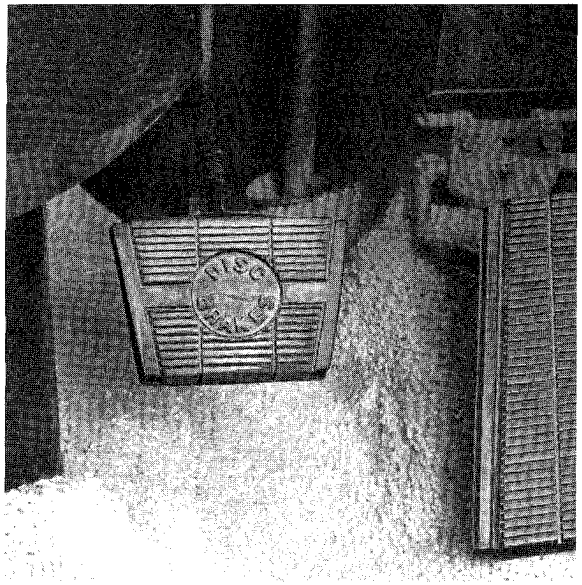
Store tapes in a cool area with open end down. Protect tapes from dust and direct sunlight.

In time, oxide from recording tape will accumulate on the tape head and capstan shaft which can cause tape hiss and erratic operation. The more often the tape player is used, the more often it should be cleaned.

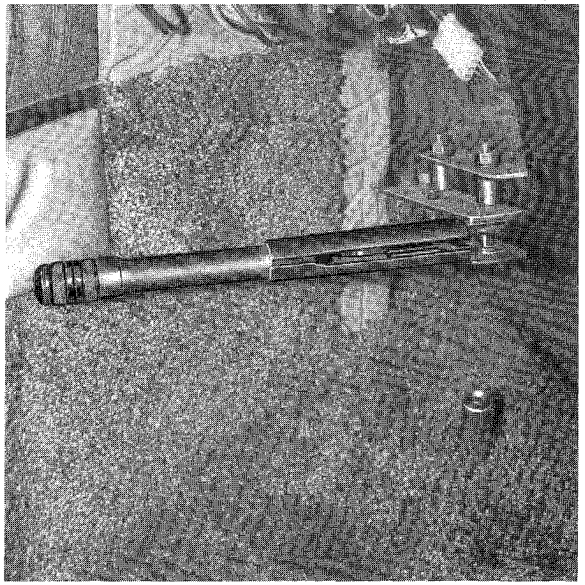
Clean the head with a cotton swab moistened with isopropyl alcohol. **Do not use carbon tetrachloride.**

To clean the capstan shaft, first turn on the motor by depressing the motor switch (next to the capstan shaft) with the eraser end of a pencil. Use a cotton swab moistened with alcohol on the shaft.

The fuse for the radio, or radio/tape is located behind the unit. To gain access, carefully pull the silver colored bezel from the front of the radio unit. This bezel snaps into position. Next, remove the four screws which attach the control plate flange to the console. Pull radio out to expose wire.



Brake Pedal



Parking Brake and Headlight Dimmer Switch

If power assist to the **power brakes** is interrupted due to a stalled engine or some malfunction, two or more brake applications can be made using reserve power in system.

If the brake pedal is held down, the system is designed to bring the vehicle to a full stop on reserve power. However, the reserve power is partially depleted each time the brake pedal is applied and released. Do not pump brake when brake power assist has been interrupted, except when necessary in order to maintain steering control on slippery surfaces.

When reserve power is exhausted, the vehicle can still be stopped by applying greater force to the pedal.

Caution: Driving through deep water may wet the brakes and adversely affect brake performance so that the vehicle will not slow down at the usual rate and may pull to the right or left. Applying the brakes lightly will indicate whether they have been so affected. To dry them quickly, apply the brakes while maintaining a safe forward speed with an assured clear distance ahead until brake performance returns to normal.

Rear drum brakes on this vehicle are equipped with **automatic brake adjusters** designed to eliminate periodic brake adjustments. Adjustment is made automatically as the brakes are applied while vehicle is moving backwards. If excess brake pedal travel develops, drive alternately backward and forward several times and apply brakes firmly in each direction. See your dealer if normal pedal travel is not restored, or if there is a rapid increase in pedal travel, which could be a sign of other brake trouble. Front brakes are disc type and need no adjusting.

Note: "Riding the brake" by resting your foot on the brake pedal when not intending to brake can cause abnormally high brake temperatures, excessive lining wear and possible damage to the brakes.

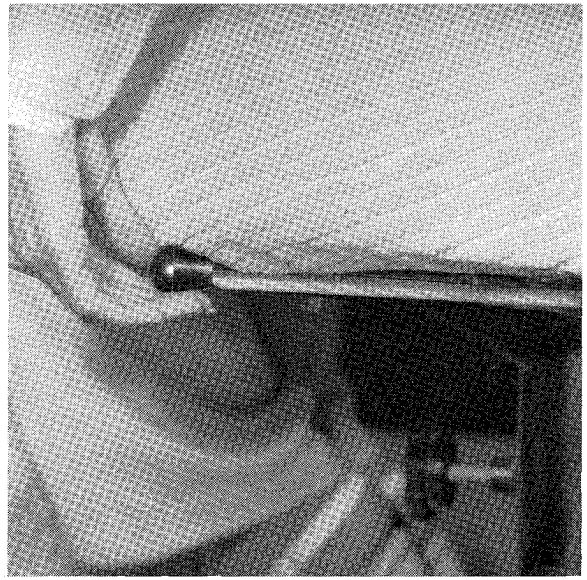
The Orscheln type **parking brake controls** are mounted to the left of the steering column under the instrument panel. On Orscheln, or over-center type levers, the amount of force required to apply the parking brake can be adjusted by turning a tension adjustment knob located at the upper end of the lever. This also adjusts the degree of brake application. The greater the force required at the lever the greater the degree of brake application.

- To set parking brake, pull lever all the way toward you.
- For increased holding power, first depress regular brake pedal and hold it while setting the parking brake.
- To release parking brake: push lever back.
- Never drive vehicle with parking brake set as this may overheat or other wise damage rear brakes.

To check the effectiveness of the parking brake, start the engine, and, with the parking brake on and your foot on the floor brake, engage the transmission and slowly remove your foot from the floor brake.

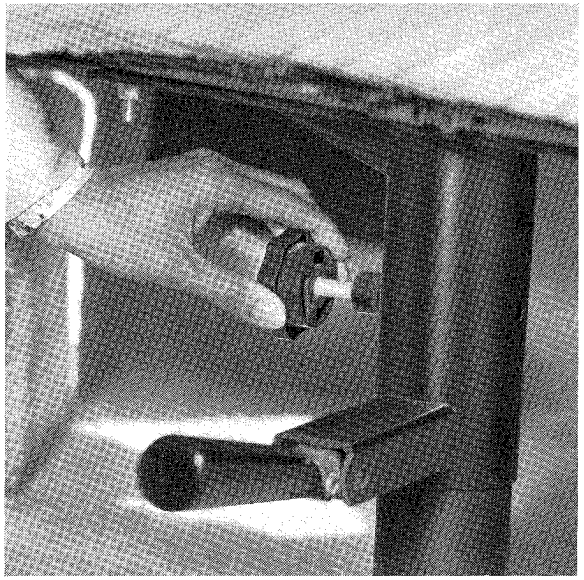
If your Motorhome moves easily the parking brake is not holding properly and should be repaired or adjusted.

Always release the parking brake before travel. Check the brakes at a low speed. Bring your Motorhome to a complete stop.



Forward and Backward Lock

Passenger Seat Tilt Handle



Raise or Lower and Seat Swivel Lock

The vehicle should stop in a straight line without skidding, swerving, or pulling to one side. The brakes should not grab, lock, or make excessive noise. If any of these conditions exist, do not operate the Motorhome until they have been corrected.

Note: The parking brake should be set first whenever leaving the driver's seat. If the vehicle is parked on a grade and the transmission selector lever is placed in "Park" before the parking brake is set, the weight of the vehicle may exert so much force on the parking pawl in the transmission that it may be difficult to pull selector lever out of "Park".

When preparing to move the Motorhome, the selector lever should be moved out of the "Park" position before releasing the parking brake. It is good driving practice to set the parking brake first, and release the transmission from "Park" first at all times, even on the level. If "torque lock" does occur, it may be necessary to have another vehicle nudge your Motorhome uphill to take some of the pressure off the transmission while the driver pulls on the transmission selector lever.

To obtain high or low beam headlights, push the **headlight foot dimmer switch** located on the floor to the left of the brake pedal. Each time the switch is depressed, the light beam changes. A headlamp beam indicator on the face of the speedometer is designed to light up when headlights are on high beam.

The sun visors may be rotated 90° to the side to provide shading. A bracket that secures the loose ends is located on the headliner in front to steady the sun visor.

The pedestal type driver's seat will adjust 4 ways for maximum comfort and efficiency for the driver and passenger. To move seat **forward** or **backward;** grasp the locking lever on left side of seat, pull outward to release. Then exert slight body pressure on seat in direction desired. Release lever to lock seat in desired position. The passenger seat may also be **tilted.** The release lever is on the left side under the seat cushion. Push the release lever down and tilt seat to desired position. The seats may be adjusted **upward** or **downward** and **swiveled** to provide easy entry and exit. To operate use the locking lever located on side of seat pedestal; pull up to unlock, then exert body pressure on seat in direction desired. Return seat to forward facing position, then push lever down to lock seat in position. The knob on the front of the pedestal acts as a safety lock to prevent the seat from accidentally raising, lowering or rotating. Turn clockwise to lock.

Fuel Stop Servicing

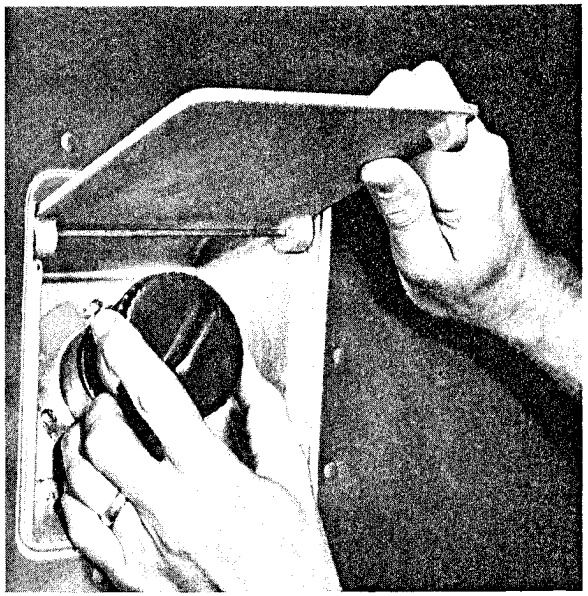
The fuel cap is located in a housing marked **Motor Fuel,** see photo.

Note: If the gas cap requires a replacement, only a cap with the same features should be used. Correct replacement caps may be obtained from your Chevrolet dealer.

Warning: All pilots and appliances must be turned off during refueling of motor fuel tank and permanently mounted L.P. gas tank.

Fuel Requirements

Your **Heavy Duty Emission Class Vehicle** engine is designed to operate on unleaded gasoline. It minimizes spark plug fouling and emission control system damage. Regular grade leaded gasoline should be used only when needed to eliminate knock. Knock is a metallic rapping noise that sometime happens during the combustion process. The engine does not require Premium grade fuel, so its use would be an unnecessary expense. If knocking persists, consult your dealer. Continuous or excessive knocking may result in engine damage. Failure to take steps to stop such knocking is misuse of the engine for which Chevrolet is not responsible under the terms of the new vehicle warranty.

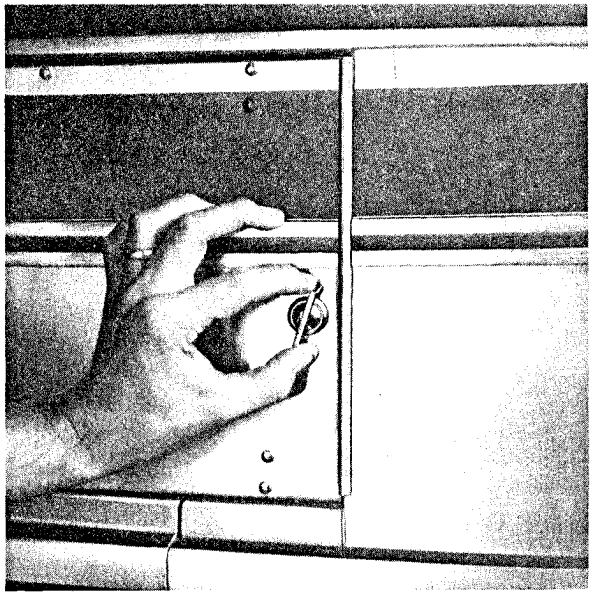


Fuel Cap

Use unleaded gasoline meeting Federal government regulations. The Federal government specifies the minimum octane number of unleaded gasoline. Federal regulations require that pumps delivering such gasoline be labeled with the word UNLEADED.

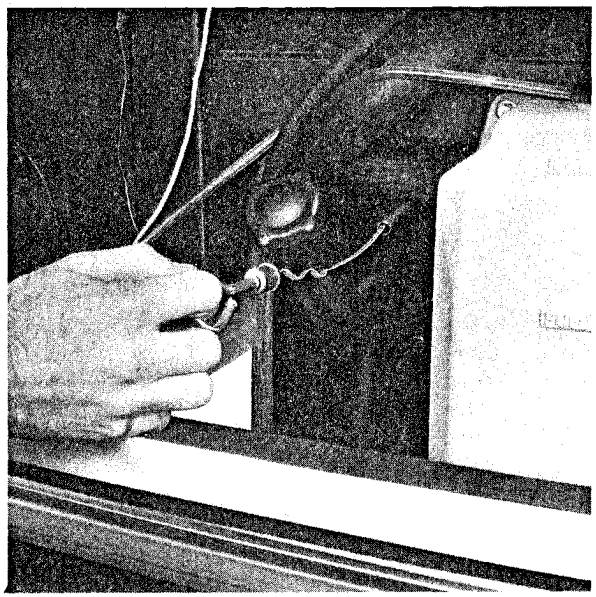
CAUTION: Motorhomes with the 70 gal. fuel tank should not be over filled. Only fill until the gas pump nozzle kicks off automatically.

To open forward service door, turn latches located on both curbside and roadside, see photo. Pull out on lower edge of door and lower to open position, see photos.

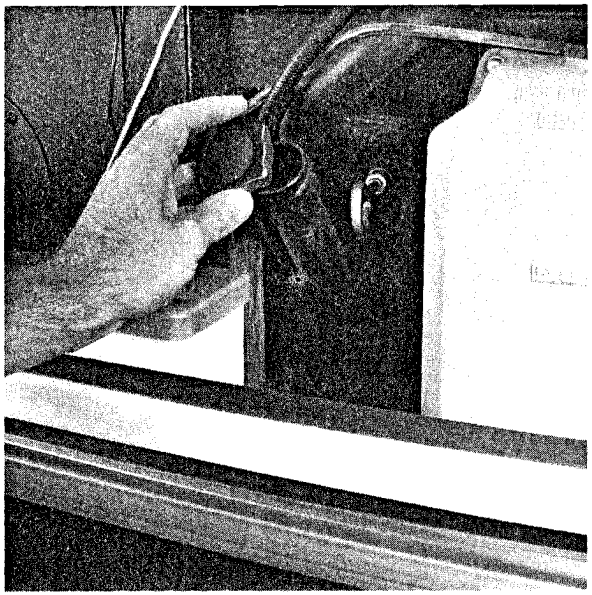


Forward Service Door Opening

2.



Dipstick 454 Cu. In. Engine



Oil Filler Cap Removal

Adding Engine Oil

The **engine oil** should be maintained at the proper level. If engine has been running, allow 2-3 minutes for oil to drain back into the crankcase before checking oil level.

To check the oil level, remove the dipstick (see photos for location), wipe it clean and reinsert it completely for an accurate reading. If the oil is at or below the "add oil" mark on the dipstick, oil should be added as necessary. The oil level should be maintained in the safety margin, neither going above the "full" line nor below "add oil" line.

To add oil, remove the filler cap, see photos, and add oil. Use only a high quality SE engine oil to the viscosity recommendation indicated on page 50.

The **engine recovery type cooling system** is standard on all Motorhomes and is designed to maintain the engine at proper operating temperatures. The recovery tank collects coolant that expands with rising temperature that would otherwise overflow from the system. When the system temperature drops, the coolant is drawn from the recovery tank back into the radiator by the suction created by coolant contraction. The cooling system has been filled at the factory with a high-quality, inhibited year-around coolant that meets the standards of General Motors Specification 1899-M. This coolant solution provides freezing protection to -20°F, and it has been formulated to be used for two full calendar years or 24,000 miles, whichever first occurs, of normal operation without replacement, provided the proper concentration of coolant is maintained.

To help avoid the danger of being burned, do not remove radiator cap while engine and radiator are still hot, because the cooling system will blow out scalding fluid and steam under pressure.

Check the coolant level visually in the **"see through" coolant recovery tank.** Level should be at the "full cold" mark on the recovery tank when the system is cold. At normal operating temperature the coolant should be at the "full hot" mark on recovery tank. Add sufficient coolant to recovery tank.

Use a 50/50 mixture of high-quality ethylene glycol anti-freeze and water for coolant additions. If regular additions are required, see your dealer for a cooling system check.

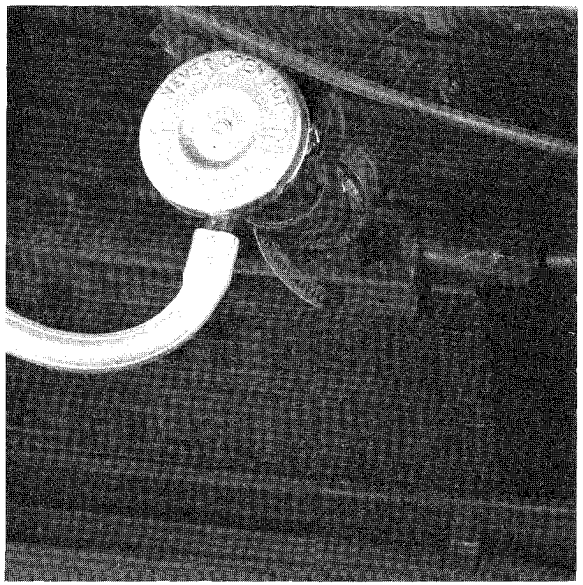
Note: If recommended quality antifreeze is used, supplemental inhibitors or additives claiming to provide increased cooling capability are not necessary. They may be detrimental to the efficient operation of the system, and represent an unnecessary operating expense.

Check the fluid level in the **pump reservoir** (see photo) at each fuel stop and oil change period. The reservoir contains special hydraulic fluid for the operation of the **power steering, power brake booster.**

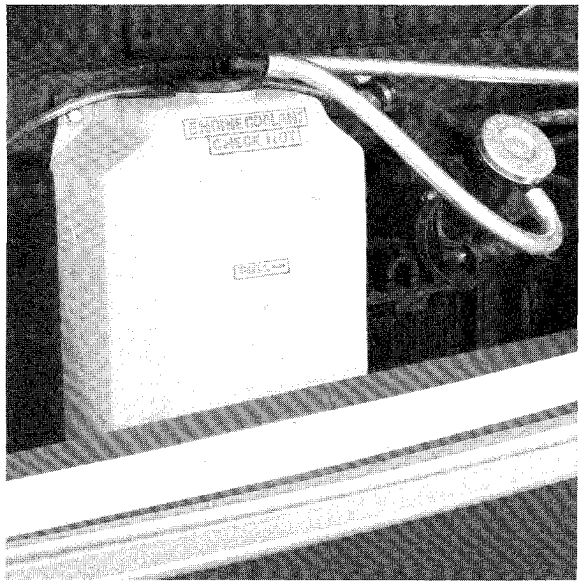
Add GM power steering fluid or automatic transmission fluid Dexron®-II as necessary to bring level to half full depending upon fluid temperature.

If at operating temperature (approximately 150°F—hot to the touch), fluid should be between ½ and ¾ full. If at room temperature (approximately 70°F), fluid should be at the half full level. Fluid does not require periodic changing.

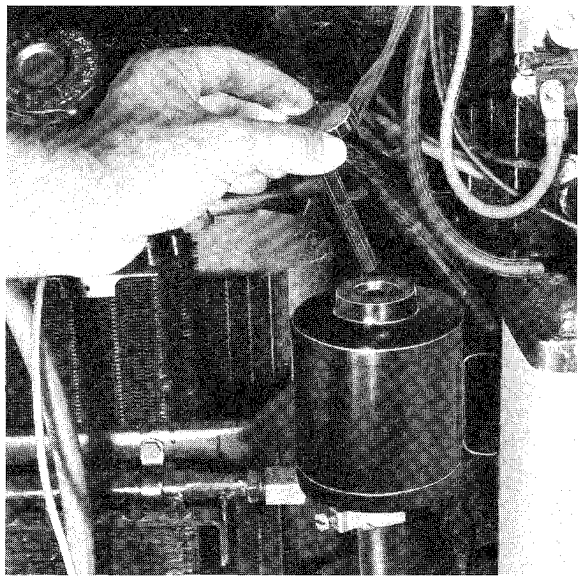
Check reservoir fluid level of the **windshield washer** regularly. Use a washer fluid such as GM Optikleen. The tank is located in the forward service area on the curbside behind the grill. See photo.



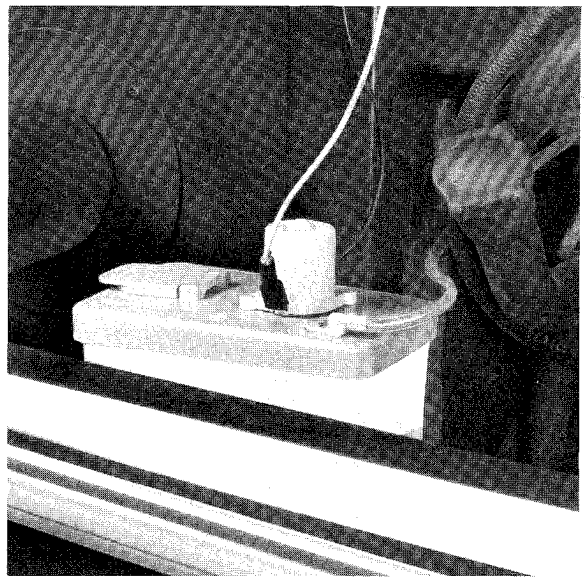
Radiator Cap



Coolant Recovery Tank



Pump Reservoir

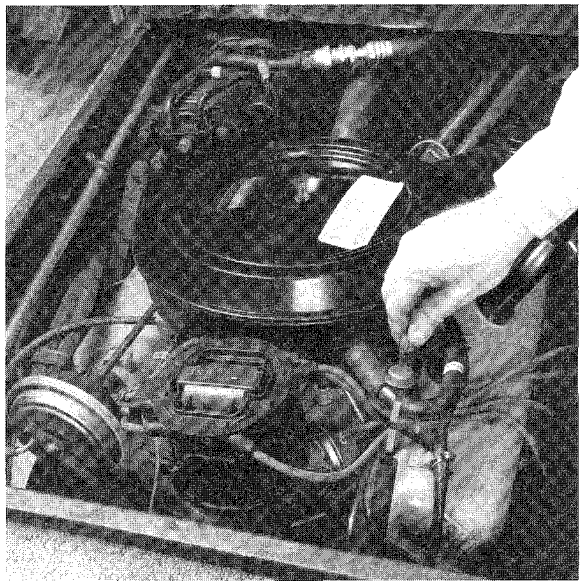


Windshield Washer Tank

Check the **automatic transmission fluid level** at each engine oil change period. More frequent checking may be necessary when towing a trailer. To make an accurate fluid level check:

1. Drive the vehicle several miles, making frequent starts and stops, to bring transmission up to normal operating temperature (approximately 180-190°F).
2. Park vehicle on a level surface.
3. Place selector lever in "Park" and leave engine running.
4. Cover carpeting, then lift up the hinged portion of the engine cover.
5. Remove dip stick, see photo, and wipe clean.
6. Reinsert dipstick until cap seats.
7. Remove dipstick and note reading.

If fluid is at or below the ADD mark, add sufficient fluid to raise the level to the FULL mark. Fluid should be poured into dipstick tube. One pint raises the level from ADD to FULL. Do not overfill. Use only automatic transmission fluids identified with the mark Dexron®-II available from your dealer or local service station.



Automatic Transmission Dipstick (454 Cu. In.)

Batteries

Your Airstream Motorhome is equipped with three batteries, an engine battery and two Univolt batteries.

The engine battery is used for starting the engine, Onan generator and operating the headlights, taillights, running lights, instrument panel lighting, and the automotive air conditioning and heater fans. The engine battery is charged by the alternator while driving and by the generator when it's been operated.

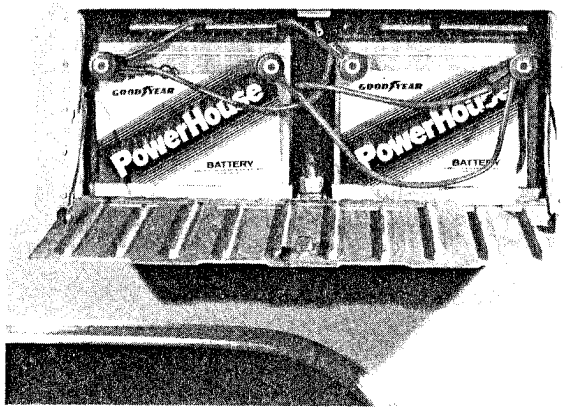
The Univolt batteries are used for interior lighting, exhaust fans, water pump, central control panel, entertainment center, optional 12V convenience outlets and the refrigerator when it is switched to 12V power. These batteries are charged by the engine's alternator when driving, by the Univolt when the power cord is connected to 120V city power or by the 120V auxiliary power plant that is in operation.

Univolt batteries on the 1979-80 and early 1981 motorhomes can be used to start your engine, using jumper cables, if the engine battery has become discharged. Later 1981 gasoline units have an auxiliary start switch that can be activated to engage all three batteries in the starting function. On 1981 diesel models, the auxiliary switch is wired so it's engaged automatically when starting. A battery isolator, located in the engine service compartment, electronically isolates your auxiliary batteries from the engine battery, allowing you to operate your extra accessories without draining the starting battery. The engine alternator properly charges each battery as you drive.

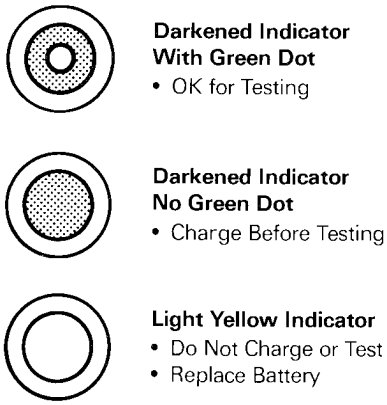
The 1979 Univolt batteries are located behind the forward roadside service door. Unlock and unlatch cover for accessibility. The engine battery is located in the lower roadside storage compartment.

On the 1980-81 models, both Univolt batteries and the Engine battery are located under the floor directly behind the step well. To gain access, turn the SCREW LATCH one quarter turn and lift.

Check fluid level in the Univolt batteries. Add only colorless, odorless drinking water or distilled water to bring level to split ring in filler opening. The engine chassis uses a Delco sealed type battery. Refer to Battery Charge Indicator (illus.) to determine charge of battery. The test indicator provides information for testing purposes only. The fluid level need not be checked.



Univolt Battery Service Compartment - 1979



Darkened Indicator With Green Dot
- OK for Testing

Darkened Indicator No Green Dot
- Charge Before Testing

Light Yellow Indicator
- Do Not Charge or Test
- Replace Battery

Battery Charge Indicator

Caution: Never expose battery to open flame or electric spark—battery action generates hydrogen gas which is flammable and explosive. Don't allow battery fluid to contact skin, eyes, fabrics, or painted surface—fluid is a sulfuric acid solution which could cause serious personal injury or property damage. Flush any contacted area immediately with water. Wear eye protection such as industrial safety spectacles or goggles when working on or near battery. Remove rings, metal watchbands and other metal jewelry before jump starting or working around a battery, and be careful in using metal tools—if such metal should contact the positive battery terminal (or metal in contact with it) and any other metal on the vehicle, a short circuit may occur which could cause personal injury. Batteries and battery acid should always be kept out of the reach of children.

A normal battery will discharge by itself in 30 to 45 days when not in use, therefore, **it is necessary to periodically check the battery and charge it as is necessary.** We suggest checking the battery at least every two weeks in freezing weather. The temperature at which a battery will freeze depends on the condition of its charge. As an example, a fully charged battery with specific gravity of 1.265 will not freeze until the electrolyte temperature drops to -71.3°F, while a discharged battery will freeze at +19°F. The following table shows the freezing points of batteries at various specific gravity readings, temperature corrected to 80° F.

1.265 -71.3°F
1.250 -62°F
1.200 -16°F
1.150 +5°F
1.100 +19°F

Note: Do not add water to a battery in freezing temperatures unless the vehicle will be put in use at once. Otherwise, the added water may freeze. Neglect is expensive. Care costs little. Check your batteries regularly.

Maintain a clean battery top and check terminals and cables for tightness and cleanliness. A dirty battery will dissipate its charge through surface contamination. Clean battery top with a damp cloth and dry thoroughly. The terminals should be tight and free of corrosion. To clean terminals, neutralize with a solution of baking soda, rinse with clear water, and dry.

Important: Always reconnect the battery cables to the correct battery terminals. The black cable should be connected to the negative terminal (-) and the red cable to the (+) terminal.

During the winter the batteries should be removed from the vehicle and stored in a cool, dry place, kept full of water, cleaned and charged monthly. A battery which is allowed to completely lose its charge will never regain its original power, or a full charge.

For battery service or replacement, go to any service station or dealer who sells and services this battery. See Body Limited Warranty Service and Maintenance page 5.

Tires

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.

The maximum cold **inflation pressures** for your factory installed tires are listed on the Certification Label. Your tires must be inflated to these pressures when the GVWR (Gross Vehicle Weight Rating) or GAWR (Gross Axle Weight Rating) is reached. These pressures may also be used to provide best fuel economy when running with lighter loads.

Incorrect tire inflation pressures can have adverse effects on tire life and vehicle performance. Too low an air pressure causes increased tire flexing and heat build-up. This weakens the tire and increases the chance of damage or failure and can result in tire overloading, abnormal tire wear, adverse vehicle handling, and reduced fuel mileage. Too high an air pressure can result in abnormal wear and harsh ride, and also increase the chance of damage from road hazards.

Lower inflation pressures can be used with reduced vehicle loads. After finding the load on each tire by weighing the Motorhome on a scale, the minimum cold inflation pressures can be found in the Inflation Pressure Chart.

The load on each tire of a single wheel axle (2 tires per axle) may be determined by weighing the axle and dividing by two. The load on each tire of a dual wheel axle (4 tires per axle) may be determined by weighing the axle and dividing by four.

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 tires are "cold".

1. The "cold" tire inflation pressure applied to the tire pressure when the Motorhome has not been driven more than one mile after sitting for three hours or more.
2. It is normal for tire pressures to increase 4-8 psi or more, when the tires become hot from driving. **Do not** "bleed" or reduce tire inflation pressures after driving. Bleeding serves to reduce "cold" inflation pressure and increase tire flexing which can result in tire damage and failure.
3. **For sustained driving at speeds over 65 mph, where permitted by law,** cold inflation pressures should be increased 10 psi above those stated in the Inflation Pressure Chart for the load being carried. Do not exceed the wheel capacity limit shown in the chart (page 45). **Sustained speeds over 65 mph are not advised** where the 10 psi pressure increase would exceed the capacity limit.

   For special operating conditions, cold inflation pressures may be increased up to 10 psi above those shown in the table. The total increase in cold inflation pressures, however, must not exceed capacity limit shown on the Tire Load Limits Chart.
4. Always use a tire pressure gauge (a pocket-type gage is advised) when checking inflation pressures. Radial tires may look underinflated when at the recommended cold inflation pressure.
5. Be sure to reinstall the tire inflation valve caps, if so equipped, to prevent dirt and moisture from getting into the valve core which could cause air leakage.
6. If an air loss occurs while driving, do not drive on the deflated tire more than needed to stop safely. Driving even a short distance on a deflated tire can damage a tire and wheel beyond repair.

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

Tire Rotation Schedule

Tire Construction	Truck Type Tires
Bias And Bias Belted	Every 6,000 Miles
Radial	First 6,000 Miles and at Least Every 12,000 Miles Thereafter.

Tire Load Limits in Pounds (At various inflation pressures)*

Cold Inflation Pressure (PSI)	30	35	40	45	50	55	60	65	70
Front Axle									
Tire Size 8.75-16.5 (LRE)	1570	1720	1850	1990	2110	2240	2350	2470	2570
Tire Size 8.00-19.5 (LRD)	——	——	——	——	2110	2270	2410	2540	2680
Rear Axle									
Tire Size 8.75-16.5 (LRD)	1380	1515	1630	1750	1855	1970	2070	——	——
Tire Size 8.00-19.5 (LRD)	——	——	1850	1990	2110	2230	2350	2460	——

Minimum Tire Inflation Pressure (PSI) at Gross Vehicle Ratings (cold inflation)*

Model		Tire Size	Front (LRE)	Rear, Duals (LRD)
24 Ft.	12,500 G.V.W.R.	8.75-16.5	70 p.s.i.	55 p.s.i.
28 Ft.	12,500 G.V.W.R.	8.00-19.5	65 p.s.i.	45 p.s.i.

* If your Motorhome is equipped with radial tires, add 5 lbs. pressure for any load.

For the longest tire life, any time irregular wear is seen, have the tires checked and rotated by your truck or tire dealer and have the cause of uneven wear corrected. After rotation be sure to check wheel nut tightness (See page 47) and to adjust the tire pressures, front and rear. (See tire inflation chart).

NOTICE: Wheel nuts should be tightened at certain intervals; see Wheel Nut Tightening Sequence, page 47.

NOTICE: The disc brake pads should be inspected for wear when the tires are rotated.

The outer tire of a pair on dual wheel installations generally wears faster than the inner tire. If this occurs, reverse position of the tires to equalize wear and achieve optimum tire life.

In addition, when vehicles are driven continuously on high crown roads, an increase in air pressure of from 5 psi to 10 psi in the outside tire of each dual produces maximum tire life. Be sure not to exceed the inflation pressure limits shown in the Tire Inflation Chart.

Proper **front-end alignment** improves tire tread mileage. Your front-end suspension parts should be inspected periodically and aligned when needed. (See the maintenance Schedule information.) 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.

Proper tire balancing provides the best riding comfort and helps to reduce tire tread wear. Out of balance tires can cause annoying vehicle vibration and uneven tire wear such as cupping and flat spots.

A decrease in driving, cornering, and braking **traction** occurs when water, snow, ice, gravel, or other material is on the road surface. Driving practices and vehicle speed should be adjusted to the road conditions.

When driving on wet or slushy roads, it is possible for a wedge of water to build up between the tire and road surface. This is known as hydroplaning and may cause partial or complete loss of traction, vehicle control, and stopping ability. To reduce the chance of traction loss, follow these tips:

1. Slow down during rainstorms or when roads are slushy.
2. Slow down if road has standing water or puddles.

3. Replace tires when tread wear indicators are showing.
4. Keep tires properly inflated.

If you equip your vehicle with snow tires, use the same size, load range, and construction type (bias, bias-belted, or radial) as your other tires.

Snow tires should be inflated above the advised cold inflation pressures for the load being carried.

Vehicle speed should be limited to 65 mph with truck type snow tires.

To prevent **chain** damage to your vehicle:

- Install the chains as tightly as possible, then tighten again after driving 1/4 to 1/2 mile.
- Do not exceed 45 mph, or the chain manufacturer's speed if lower.
- Drive in a restrained manner avoiding large bumps, potholes, severe turns and other maneuvers which could cause the vehicle to bounce up and down.
- Follow the chain manufacturer's instructions.

CAUTION: Do not mix different construction types of tires on your vehicle such as radial, bias, and bias-belted tires except in emergencies, because vehicle handling could be affected and may result in loss of control.

You should replace your tires when -

1. Your tires are worn to a point where 2/32 inch or less tread remains, or the cord or fabric is exposed. To help detect this, your tires have built-in tread wear indicators and appear between the tread grooves when the tread depth is 2/32 inch or less. When the indicators appear in two or more adjacent grooves at three spots around the tire, the tire should be replaced.
2. Your tire tread or side wall is cracked, cut, or snagged deep enough to expose the cord or fabric.
3. Your tire has a bump, bulge, or split.
4. Your tire sustains a puncture, cut, or other injury that can't be correctly repaired because of the size or location of the injury.

When replacing tires, you should use the same size, load range, and construction type (bias, bias-belted, or radial) as the original tires on your vehicle (see the Certification Label). Use of any other size or type tire may affect load carrying capacity, ride, handling, speedometer/odometer calibration, vehicle ground clearance, and tire clearance to the body and chassis. If replacing only a single tire, it should be paired on the same axle with the least worn tire of the other three.

When removing wheel rim **to change a tire,** loosen all wheel nuts approximately flush with end of stud; then clamp ring to loosen rim. Do not remove nuts until clamp rings are free or clamp ring may fly off at 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.

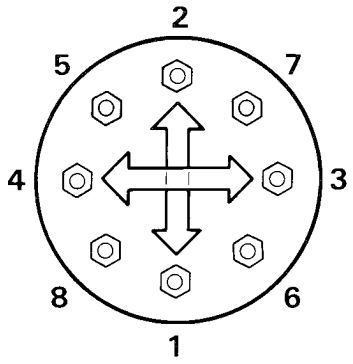
Wheels must be replaced if they become damaged (for example: bent, heavily rusted, leak air) or if lug nuts often become loose. Do not straighten bent wheels or use inner tubes in leaking wheels used with tubeless tires. Such wheels may have structural damage and could fail without warning.

The wheels originally equipped on your vehicle will provide optimum life up to the maximum load and inflation pressures shown in the Tire Load Limits Chart. Maximum loads, maximum inflation pressures, wheel identification codes, and wheel sizes are stamped on each wheel. When replacing wheels for any reason, the new wheels should be equal in load capacity, inflation pressure capacity, diameter, width, offset, and mounting configurations to those originally installed on your vehicle.

A wheel of the wrong size or type may adversely affect load carrying capacity, wheel and bearing life, brake cooling, speedometer/odometer calibration, stopping ability, headlight aim, bumper height, vehicle ground clearance, and tire clearance to the body and chassis. Replacement with "used" wheels is not advised: they may have been subjected to harsh treatment or very high mileage and could fail without warning.

NOTICE: The use of wheels and/or tires with higher load carrying limits than originally equipped on your vehicle does not in itself increase the GAWR of the GVWR of the vehicle.

Wheels having diameters ranging from 16 inches through 19.5 inches that have been



Nut Tightening Sequence

certified for radial tire application have the word "radial" stamped on the rim. Wheels in the 16 inch through 19.5 inch diameter range without the "radial" identification stamp are not to be used with radial tires. Because of the greater forces exerted by radial tires, these wheels could become fatigued and fail without warning.

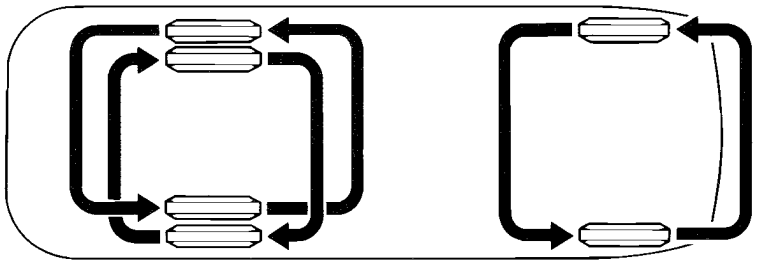
Proper replacement wheels can be obtained from your dealer.

WARRANTY

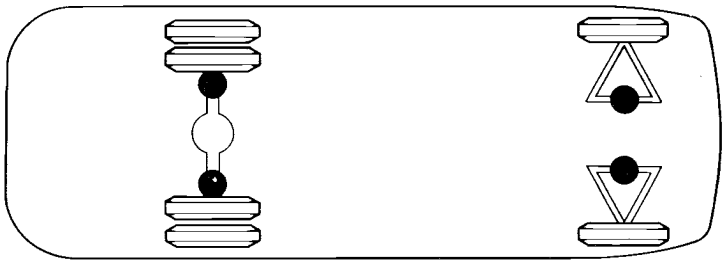
Tires are warranted by the tire manufacturers. Warranty information is included in the manufacturer's warranty folder furnished with your vehicle.

Wheel nut torque must be checked at 100, 1,000 and 6,000 miles and every 6,000 miles thereafter.

	Description	Torque
Rear		Power Torque
Dual Wheels	9/16" Bolts (8)	110-140 lb. ft.
		Hand Torque
		140-180 lb. ft.



Tire Rotation



● Jacking Points

Jacking Points

Vehicle Lubrication and Maintenance

Vehicle Lubrication and Maintenance recommendations are covered in detail in the literature provided by the chassis manufacturer. The following recommendations are presented here for your convenience.

To retain the safety, dependability and emission control performance originally built into your Airstream Motorhome, it is essential that it receives periodic inspections, maintenance and service parts replacements. If this is not performed the manufacturer's obligation under the provisions of the new vehicle warranty may be affected.

Vehicle operations under conditions such as heavy dust, continuous short trips, use of other than unleaded or low lead fuels, is not considered normal use and therefore more frequent maintenance will be required. Such additional maintenance requirements are included where applicable.

Your new Airstream Motorhome was designed, built and tested using genuine GM or Airstream parts. Accordingly, it is recommended that any replacement parts used for required maintenance services be new, genuine GM or Airstream parts.

The warranty obligations are not dependent upon the use of any particular brand of replacement parts. The owner may elect to use non-genuine GM or Airstream parts for replacement purposes. Use of replacement parts which are not of equivalent quality however, may impair overall effectiveness.

Genuine GM or Airstream parts when used in connection with Airstream vehicles, means parts manufactured by or for Airstream, designed for use on Airstream vehicles and distributed by Airstream or General Motors Corporation. **Maintenance service can be performed by any qualified service outlet; however, warranty service must be performed by an authorized Airstream or Chevrolet dealer.** Receipts covering the performance of regular maintenance should be retained in the event questions arise concerning maintenance. These receipts should be transferred to each subsequent owner of this vehicle.

If other than new genuine GM or Airstream parts are used for required maintenance service replacements, the owner should assure himself that such parts are warranted by their manufacturer to be equivalent to genuine GM or Airstream parts in performance and durability.

In addition to the in-shop type services detailed in the schedule, this section also includes safety checks which you, the vehicle owner or driver, should perform periodically.

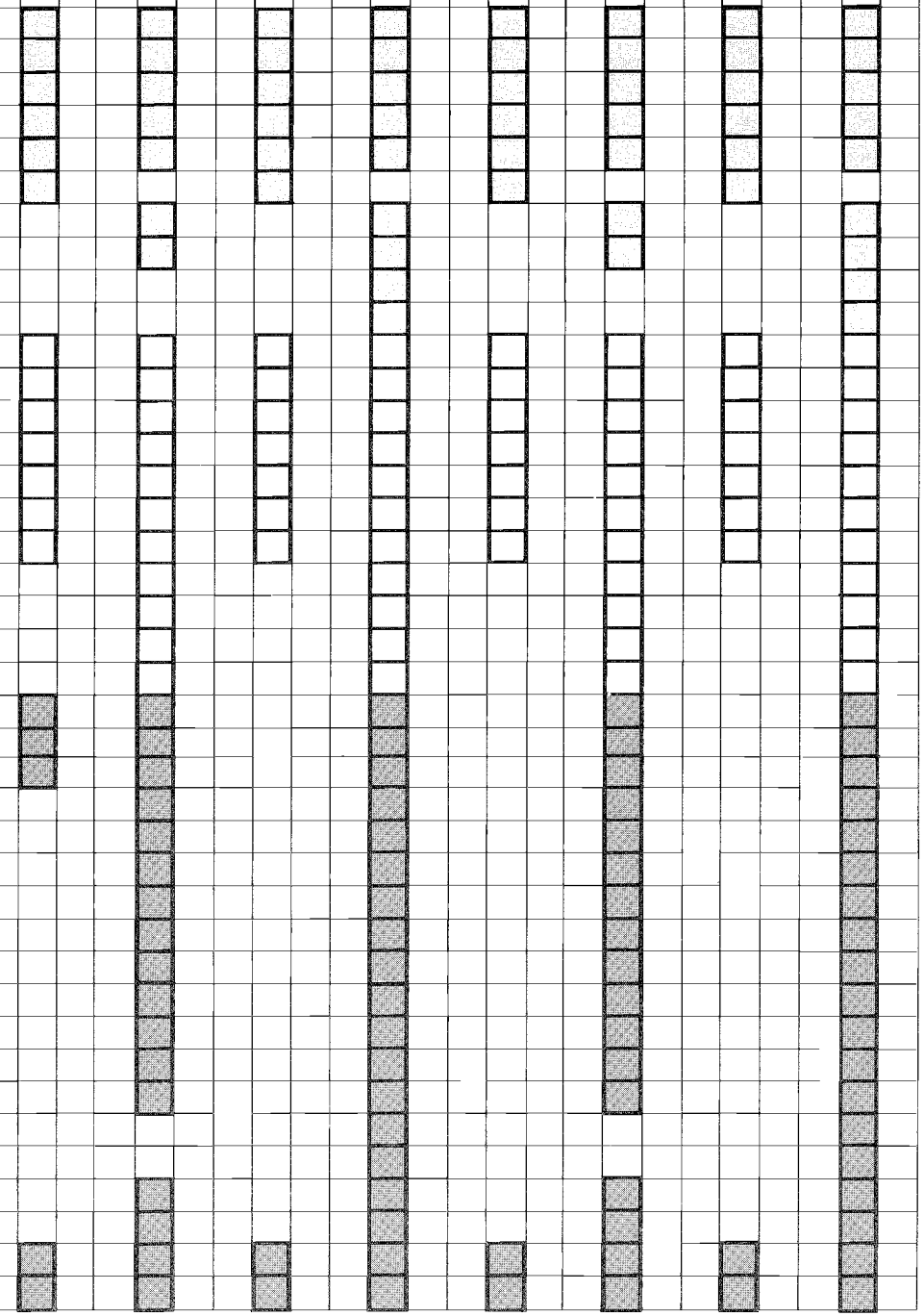
After each of the following maintenance services is performed, it is recommended that you insert the date in the maintenance schedule under the appropriate "Owner Service Log" column. For example, if the first chassis lubrication is performed at approximately 4,000 miles, the date should be entered under the column headed "4"; if performed closer to 6,000 miles, enter the date under the "6" column, etc.

Note: The shaded blocks indicate when services should be performed based on mileage intervals as shown in the "When To Perform Services" column.

VEHICLE MAINTENANCE SCHEDULE

Code: ☐Lubrication ☐Safety ▒Emission Control

When To Perform Services (Months or Miles, Whichever Occurs First)	Item No.	Services (For Details, See Numbered Paragraphs)	OWNER'S SERVICE LOG — Insert month and day (i.e. 11/10) in mileage square* closest to the mileage when service is performed.
Every 4 months or 6,000 miles	1	Chassis Lubrication	
	2	‡†Fluid Levels	
	3	*Engine Oil	
	4	Air Conditioning System	
Every 6,000 miles	5	Tire Rotation	
At 1st oil change—then every 2nd	6	*Engine Oil Filter	
Every 12,000 miles	7	Rear Axle	
Every 12 months or 12,000 miles	8	Cooling System	
Every 24,000 miles	9	Wheel Bearings	
	10	Automatic Transmission	
Every 4 months or 6,000 miles	11	Owner Safety Checks	
	12	Tires and Wheels	
	13	Exhaust System	
	14	*Engine Drive Belts	
	15	Suspension and Steering	
	16	Brakes and Power Steering Reservoir	
Every 6,000 miles	17	Brakes	
Every 12 months or 12,000 miles	18	Parking Brake	
	19	Throttle Linkage	
	20	Headlights	
	21	Underbody	
At 1st 4 months or 6,000 miles—then at 12 month/12,000 miles intervals	22	Carburetor Choke and Hoses	
	23	Timing, Distributor Cap, Engine Idle	
	24	Carburetor Mounting	
Every 12 months or 12,000 miles	25	Thermostatically Controlled Air Cleaner	
	26	Manifold Heat Valve	
	27	Engine Timing Adjustment	
Every 12,000 miles	28	Spark Plugs	
Every 12 months or 12,000 mi.	29	EGR System	
	30	Carburetor Fuel Inlet Filter	
	31	Engine Idle Mixture	
	32	Throttle Return Control	
	33	Idle Stop Solenoid	
	34	PCV System	
Every 24 months or 24,000 mi.	35	ECS System	
	36	Fuel Cap, Tank and Lines	
Every 12,000 miles	37	Air Cleaner Element	
Every 12 months or 42,000 mi.	38	Spark Plug Wires	
Every 6 months or 6,000 mi.	39	Air Injection Reactor (A.I.R.)	
Every 6 months or 6,000 mi.	40	Engine Compartment Insulation	



*Also an Emission Control Service ‡Also a Safety Service †Figures represent miles in thousands

1 Chassis

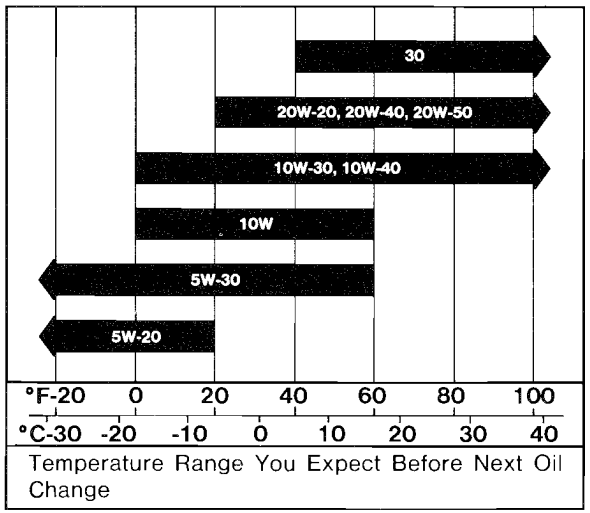
Lubricate all grease fittings in front suspension, steering linkage, and constant velocity universal joint. Also lubricate transmission shift linkage, hood latch, hood hinge, parking brake cable guides and linkage, clutch linkage, propellor shaft slip joint, universal joints and brake and clutch pedal springs. Lubricate suspension and steering linkage every 4 months or 6,000 miles, whichever occurs first, or every 2 months or 3,000 miles when operating under dusty or muddy conditions and in extensive offroad use.

All **universal joints** are the needle bearing type. Lubricate those universal joints equipped with lube fittings every 6,000 miles or 4 months with water resistant EP chassis lubricant which meets General Motors Specification GM 6031M. More frequent lubes may be required on heavy duty or "Off the Road" operations.

2 Fluid Levels

Check level of fluid in brake master cylinder*, power steering pump*, battery, engine, axles, transmission, and windshield washer*. Engine coolant should be checked for proper level and freeze protection to at least -20 degrees F or to the lowest temperatures expected during the period of vehicle operation.**

*Also a Safety Service
**Also an Emission Control Service



NOTICE: Do not use SAE 5W-20 oils for continuous high-speed driving.

Recommended SAE Viscosity Number

Proper engine coolant also provides corrosion protection. Any significant fluid loss in any of these systems or units could mean that a malfunction is developing and corrective action should be taken immediately. A low fluid level in the brake master cylinder front reservoir could also be an indicator that the disc brake pads need replacing.

3 Engine Oil**

A high quality SE oil was installed in your engine at the factory. It is not necessary to change this factory-installed oil prior to the recommended normal change period. However, check the oil level more frequently during the break-in period since higher oil consumption is normal until the piston rings become seated.

Note: Non detergent and other low quality oils are specifically not recommended.

Engine Oil Fill

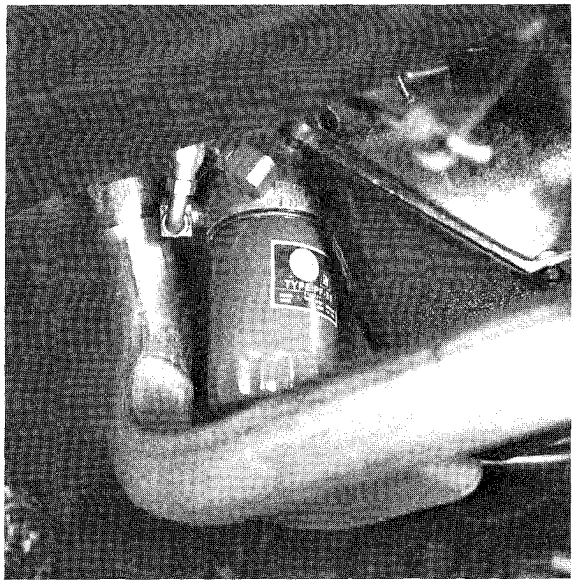
Only the use of SE engine oils and proper oil and filter change intervals assure you of continued proper lubrication of your engine.

Select the proper oil viscosity from the chart above.

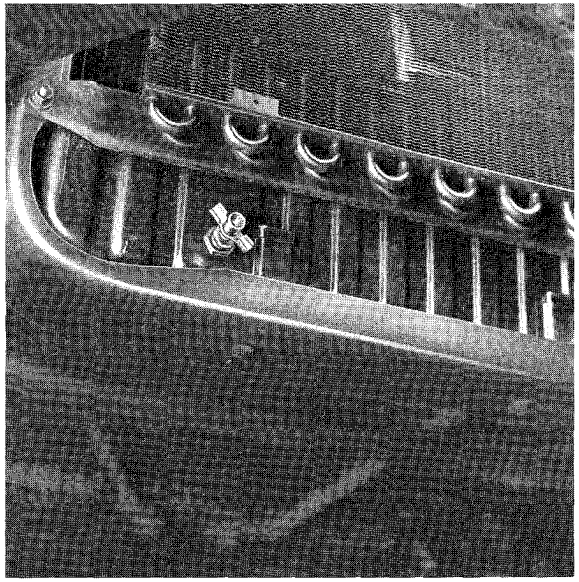
Note: SAE 5W-20 oils are not recommended for sustained high-speed driving. SAE 30 oils may be used at temperatures above 40°F, SAE 5W-30 oils are recommended for all seasons in vehicles normally operated in Canada.

The proper oil viscosity helps assure good cold and hot starting.

The regular use of **supplemental engine oil additives** is specifically not recommended and will increase operating costs. However, supplemental additives



Engine Oil Filter



Radiator Drain Valve

are available that can effectively and economically solve certain specific problems without causing other difficulties. For example, if higher detergency is required to reduce varnish and sludge deposits resulting from some unusual operational difficulty, a thoroughly tested and approved additive—"Super Engine Oil Supplement"—is available at your dealer. In the event of an operational problem, consult your dealer for advice before using supplemental additives.

4 Air Conditioning

Check condition of air conditioning system hoses and refrigeration charge at sight glass (if so equipped). Replace hoses and/or refrigerant if need is indicated.

5 Tires

To equalize wear, rotate tires. See page 44-45.

6 Engine Oil Filter**

Replace at the first oil change and every other oil change thereafter.

7 Rear axle

Change lubricant every 12,000 miles.

Every 4 months or 6,000 miles, whichever occurs first, check lubricant level and add lubricant, if necessary, to fill to level of filler plug hole. Use GL-5 Gear Lubricant of viscosity shown in following table: (For vehicles normally operated in Canada; use SAE 80 GL-5 Gear Lubricant.)

Outside Temperature	Viscosity Lubricant To Be Used
Below 10°F	SAE 80
Below 100°F	SAE 90
Above 100°F Consistently	SAE 140

8 Cooling System

At 12-month or 12,000 mile intervals, wash radiator cap and filler neck with clean water, pressure test system and radiator cap for proper pressure holding capacity, tighten hose clamps and inspect condition of all cooling and heater hoses. Replace hoses every 24 months or 24,000 miles or earlier if checked, swollen or otherwise deteriorated.

Also each 12 months or 12,000 miles, clean exterior of radiator core and air conditioning condenser. Every 24 months or 24,000 miles, drain, flush, and refill cooling system with a new coolant solution.

To drain and flush the cooling system: Remove radiator cap when engine is cool by slowly rotating cap counterclockwise to detent. (Do not press down while rotating.) Wait until any residual pressure (indicated by a hissing sound) is relieved. After all hissing ceases, press down on cap while continuing to rotate counterclockwise.

Caution: To avoid the danger of being burned, do not remove radiator cap while engine and radiator are still hot because scalding fluid and steam will be blown out under pressure.

If necessary, run engine with radiator cap removed until normal operating temperature is reached and upper radiator hose is hot (indicates thermostat is open).

Stop engine and open radiator drain valve located at the base of the radiator, to drain coolant.

Close valve and add sufficient water to fill system.

Run engine, drain and refill the system, as described above, a sufficient number of times until the drained liquid is nearly colorless.

Allow system to drain completely and close radiator drain valve tightly.

Remove recovery cap leaving hoses in place. **Remove coolant recovery tank and empty the fluid.** Fill tank with clean water, drain and reinstall.

Add sufficient ethylene glycol coolant, meeting GM Specification 1899-M, to provide the required freezing and corrosion protection—at least a 44 percent solution (-20°F). Fill radiator to the base of the radiator filler neck and add sufficient coolant to the recovery tank to raise level to the "FULL HOT" mark. Reinstall recovery tank cap.

Run engine, with radiator cap removed, until normal operating temperature is reached. (Radiator upper hose becomes hot.)

With engine idling, add coolant until level reaches bottom of filler neck and install radiator cap making certain arrows line up with overflow tube.

It is the owner's responsibility to keep the freeze protection at a level commensurate with the temperatures which may occur in the area of vehicle operation.

Maintain cooling system freeze protection at -20°F, or below to ensure protection against corrosion and loss of coolant from boiling, even though freezing temperatures are not expected.

Add ethylene glycol base coolant that meets GM Specification 1899-M when coolant additions are required because of coolant loss or to provide additional protection against freezing at temperatures lower than -20°F (-35°F in Canada).

Note: Alcohol or methanol base coolants or plain water are not recommended for your engine at any time.

The radiator cap, a 15 lb. pressure type, must be installed tightly, otherwise coolant may be lost and damage to engine may result from overheating. Radiator pressure caps should be checked periodically for proper operation. If replacement is required specify AC.

The cooling system is protected and controlled by a **thermostat** installed in the engine coolant outlet to maintain a satisfactory operating temperature of the engine. This thermostat is designed for continuous use through both winter and summer and need not be changed seasonally. When replacement is necessary, Delco parts are recommended.

9 Wheel Bearings

Front wheel bearings—Use wheel bearing lubricant GM Part No. 1051344 or equivalent. This is premium high melting point lubricant which meets all requirements of General Motors Specification GM 6031M.

Due to the weight of the tire and wheel assembly it is recommended that they be removed from hub before lubricating bearings to prevent damage to oil seal. Then remove the front wheel hub to lubricate the bearings. The bearings should be thoroughly cleaned before repacking. Front wheels are equipped with tapered roller bearings on all vehicles. Wheel bearings should be lubricated every 24,000 miles. Do not mix wheel bearing lubricants.

Caution: "Long fibre" type greases should not be used on roller bearing front wheels.

When replacement is necessary, specify United Delco parts.

Rear wheel bearings—The rear wheel bearings receive their lubrication from the rear axle. When installing bearings which have been cleaned, prelube with wheel bearing grease.

10 **Automatic Transmission**

Use only automatic transmission fluids identified with the mark Dexron®-II available from your dealer or local service station.

Check the fluid level at each engine oil change period. To make an accurate fluid level check:

a. Drive the vehicle several miles, making frequent starts and stops, to bring transmission up to normal operating temperature (approximately 180-190°F).
b. Park vehicle on a level surface.
c. Place selector lever in "Park" and leave engine running.
d. Cover surrounding carpet, lift and prop up inside engine access cover.
e. Remove dipstick and wipe clean.
f. Reinsert dipstick until cap seats.
g. Remove dipstick and note reading.

If fluid is at or below the ADD mark, add sufficient fluid through dipstick table to raises the level to the FULL mark. One pint raise the level from ADD to FULL. Do not overfill.

Under normal driving conditions, the transmission fluid should be changed every 24,000 miles. If your vehicle is driven extensively in heavy city traffic during hot weather, or is used to pull a trailer, change fluid every 12,000 miles.

To change **Turbo Hydra-Matic fluid**—remove fluid from transmission sump, add approximately 7.5 pints U.S. measure (6.25 pints Imperial measure) for the Turbo Hydra-Matic of fresh fluid, to return level to proper mark on dipstick.

Every 24,000 miles, the **Turbo Hydra-Matic transmission sump filter** should be replaced.

Every 6,000 miles or 4 months, lubricate **transmission shift linkage lever** contacting faces with water resistant EP chassis lubricant which meets GM Specification GM 6031M.

Check **starter safety** switch by placing the transmission in each of the driving gears while attempting to start the engine. The starter should operate only in the Park ("P") or Neutral ("N") positions.

Caution: Before making the check above, be sure to have a clear distance ahead and behind the vehicle, set the parking brake and firmly apply the foot brake. Do not depress accelerator pedal. Be prepared to turn off ignition switch immediately if engine should start. Check to be sure automatic transmission shift indicator accurately indicates the shift position selected.

Safety Maintenance

11 **Safety checks to be performed by owner**

Listed below are safety checks that should be made by the owner (items a through j). These checks should be made regularly during operation, at no greater interval than 4 months or 6,000 miles, whichever occurs first, and more often when the need is indicated. Any deficiencies should be brought to the attention of your dealer or another service outlet, as soon as possible, so the advice of a qualified mechanic is available regarding the need for repairs or replacements.

a **Windshield wipers and washers**—Check operation of wipers, as well as condition and alignment of wiper blades. Check amount and direction of fluid sprayed by washers during use.

In cold weather, warm the windshield with defrosters before using washer—to help prevent icing that may seriously obscure vision.

Fill the washer jar ¾ full during the winter to allow for expansion in case the temperature should fall low enough to freeze the solution.

b **Defrosters**—Check performance by placing selector lever in defrost position, noting temperature and amount of air.

c **Rearview mirrors**—Check that friction joints are properly adjusted so mirrors stay in the selected position.

d **Horn**—Blow the horn occasionally to be sure that it works.

e **Lap**—Check belts, buckles, and anchors for cuts, fraying or weakened portions, loose connections, damage, and for proper operation. Check to make certain that anchor mounting bolts are tight.

f **Lights**—Check all instrument panel illuminating and warning lights, interior lights, license plate lights, side marker lights, headlamps, parking lamps, tail lamps, brake lights, turn signals, backup lamps, and hazard warning flashers. Have someone observe operation of each exterior light while you activate the controls.

g **Glass**—Check for broken, scratched, dirty or damaged glass on vehicle that could obscure vision or become an injury hazard.

h **Door latches**—Check for positive closing, latching and locking.

i **Hood latches**—Check to make sure hood closes firmly.

j **Fluid leaks**—Check for fuel, water, oil or other fluid leaks by observing the ground beneath the vehicle after it has been parked for a while. (Water dripping from air conditioning system after use is normal.) If gasoline fumes or fluid are noticed at any time, the cause should be determined and corrected without delay because of the possibility of fire.

12 **Tires, Wheels, Balance and Alignment**

Check tires for excessive wear, nails, glass, cuts or other damage. Make certain wheels are not bent or cracked and wheel nuts are tight. Uneven or abnormal tire wear may indicate the need for alignment service. This may be indicated by a pull to the right or left when driving on a straight and level road. The need for wheel balancing is usually indicated by a vibration of the steering wheel or seat while driving at normal highway speeds. Tire inflation pressure should be checked by the owner at least monthly, or more often if daily visual inspection indicates the need. See page 45-47.

13 **Exhaust System**

Check complete exhaust system, including optional generator, and nearby body areas for broken, damaged, missing or mispositioned parts, open seams, holes, loose connections or other deterioration which could permit exhaust fumes to seep into the passenger compartment. Dust or water in the passenger compartment may be an indication of a problem in one of these areas. Any defects should be corrected immediately. Be alert to any change in the sound of exhaust system or a smell of fumes which may indicate a leak. See page 13.

14 **Engine Drive Belts****

Every 4 months or 6,000 miles whichever comes first, inspect fan and drive belts for wear, fraying, cracking and tension. Belts which are in poor condition should be replaced immediately. If any of the fan blades are bent or broken, replace fan. Check fan shroud for looseness or damage.

Check belt tension by applying moderate thumb pressure midway between pulleys. If the center-to-center distance between pulleys is 13 to 16 inches, the belt should deflect ½ inch. If the center-to-center distance is 7 to 10 inches, the belt should deflect ¼ inch. Loose belts should be retensioned to give the correct deflection.

If it becomes necessary to replace any of the belts, we recommend that you contact your nearest Chevrolet dealer. If he is not completely familiar with Airstream products, however, it may be necessary to provide him with the following procedures for removing the engine cover, to gain service access.

Before starting this procedure, make sure that all surrounding furniture and carpeting are covered to protect from dirt, grease, or oil.

1. Carefully pull bezels from the front of radio and tape player on models so equipped.
2. Remove and disconnect radio and tape player.
3. Remove the screws located along the bottom edge of the console used to attach the console to the engine cover. Remove the console.
4. Remove four long screws, two on each side of the engine cover just below the storage box mounting position. Remove the front engine cover carpeting shroud. **Note:** It may not be necessary to remove the carpeting from the triangular shaped, hinged rear portion of the cover.
5. Remove all of the screws securing the metal top of the engine cover and remove the top with the carpeted, hinged rear portion attached.
6. When belt servicing is completed, replace engine cover components by reversing the removal procedures. It is recommended that belts be replaced every 24 months or 24,000 miles.

15 **Suspension and Steering**

Check for damaged, loose or missing parts, or parts showing visible signs of excessive wear or lack of lubrication in front and rear suspension and steering system. Questionable parts noted should be replaced by a qualified mechanic without delay.

Be alert to any changes in steering action. The need for inspection of servicing may be indicated by "hard" steering, excessive free play or unusual sounds when turning or parking.

Maintain correct front end alignment to provide easy steering, longer life, and driving stability. Check control arm bushings and ball joints for wear. Lubricate tie rods, pitman arm, idler arm, upper and lower control arms, and ball joints at fittings with water resistant EP chassis lubricant which meets General Motors Specification GM 6031M every 6,000 miles or 4 months. Lubricate every 3,000 miles or 2 months whichever occurs first when driving in dusty or muddy conditions or after extensive off-road use.

Note: Ball joints must be at +10°F. or more before lubricating.

Airstream Motorhomes are equipped with rubber air cylinders inside the front coil springs. Air pressure in these cylinders may be increased or decreased to adjust vehicle trim and minimize "crash through" on large road bumps or depths. Inflation pressure must be maintained between 40 psi minimum and 50 psi maximum. Valve stem is located at base of cylinder. All 28' models are equipped with air cushion rear suspension. See page 32 for a description.

16 **Power Booster Reservoir**

Check lines and hoses for proper attachment, leaks, cracks, chafing, deterioration, etc. Any questionable parts noted should be replaced or repaired immediately. When abrasions or wear is evident on lines or hoses, the cause must be corrected.

Check the fluid level in the **pump reservoir** at each fuel stop and oil change period. This reservoir contains hydraulic fluid for the operation of the power steering, and power brake booster.

Add GM Power Steering Fluid (or Automatic Transmission Fluid Dexron®-II as necessary to bring level into proper range on filler cap indicator depending upon fluid temperature.

If at operating temperature (approximately 150°F—hot to the touch), fluid should be between one half and three quarters full. If at room temperature (approximately 70°F), fluid does not require periodic changing.

If the steering system power assist fails due to some malfunction, or because the engine has stalled, the vehicle can still be steered. However, much greater effort is required, particularly in sharp turns.

17 **Power Brakes**

Be alert to illumination of the brake warning light or changes in braking action, such as repeated pulling to one side, unusual sounds when braking or increased brake pedal travel. Any of these could indicate the need for brake system inspection and/or service.

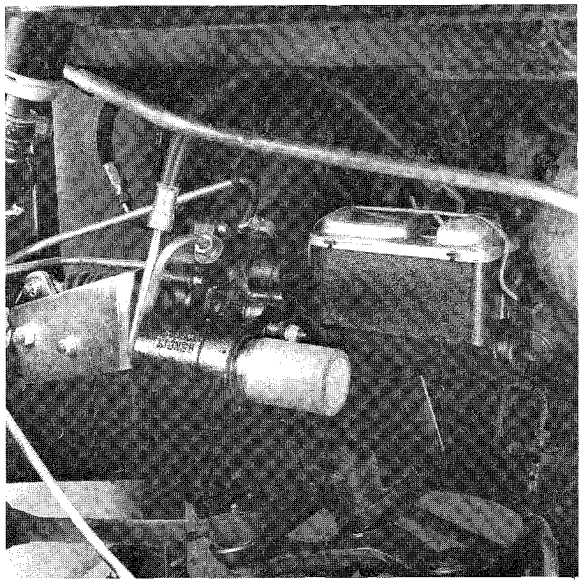
Be alert for disc brake wear. Check brake pads and condition of rotors while wheels are removed during tire rotation. The linings should be replaced prior to the point where the remaining thickness is 1/32" above the shoe table or rivet head whichever is applicable. Brake rotors incorporate numbers which indicate the minimum useable thickness of the rotor.

Check drum brake linings and other internal brake components at each wheel (drums, wheel cylinders, etc.). Parking brake adjustment also should be checked whenever drum brake linings are checked.

Note: More frequent checks should be made if driving conditions and habits result in frequent brake application. Your Chevrolet dealer can advise you how often these checks should be performed. When brakes require relining, it is recommended that you use those genuine General Motors parts specified for your vehicle, and Delco fluid as required or their equivalent.

Lubricate brake pedal spring every 6,000 miles or 4 months with engine oil.

The master cylinder is located inside the front roadside wheel well behind the wheel. The master cylinder fluid level in both reservoirs should be checked every 6,000 miles or 4 months. To check, remove the front wheel or turn it all the way to the right to give you access. It is recommended that you check fluid level, using a small mirror and flashlight. If the fluid is low in the reservoir, it should be filled to a point about ¼" below lowest edge of each filler opening with Delco Supreme No. 11 or DOT-3 fluids.



Master Cylinder

18 Parking Brake

Parking brake adjustment also should be checked for drag and lubricated at every chassis lube period.

Note: More frequent checks should be made if driving conditions and habits result in frequent brake application. Your Chevrolet dealer can advise you how often these checks should be performed.

When brakes require relining, it is recommended that you use those genuine General Motors parts specified for your vehicle, and Delco Fluid as required.

Check parking brake holding ability by parking on a fairly steep hill and restraining the vehicle with the parking brake only.

Every 6,000 miles or 4 months clean and lubricate all parking brake pivot points with water resistant EP chassis lubricant which meets General Motors Specification GM 6031M.

19 Throttle Linkage

Check for damaged or missing parts, interference or binding. Any deficiencies should be corrected without delay by a qualified mechanic. Lubricate the ball stud at the carburetor lever with engine oil every 12,000 miles. Do not lubricate the accelerator cable.

20 Headlights

Check for proper aim. Correct as necessary. More frequent checks should be made if oncoming motorists signal when you are already using your low beams, or if illumination of the area ahead seems inadequate.

21 Underbody

The effects of salt and other corrosive materials used for ice and snow removal and dust control can result in accelerated rusting and deterioration of underbody components such as brake and fuel lines, frame, underbody floor pan, exhaust system, brackets, parking brake cables.

These corrosive effects, however, can be reduced by periodic flushing of the underbody with plain water. In geographic areas having a heavy concentration of such corrosive materials it is recommended that the complete underbody be inspected and flushed at least once a year, preferably after a winter's exposure. Particular attention should be given to cleaning out underbody members where dirt and other foreign materials have collected.

If desired, your dealer can perform this service for you. In addition, he can provide recommendations on undercoating materials which will help protect your vehicle from corrosion.

Emission Control Maintenance

Note: Additional recommended maintenance instructions relating to vehicle use, evidence of maintenance, and service replacement parts are included in the New Vehicle Warranty Information Folder.

22 Carburetor Choke and Hoses

Check choke mechanism for proper operation. Any binding condition which may have developed due to petroleum gum formation on the choke shaft or from damage should be corrected. Check carburetor choke hoses for proper connection, cracking, abrasion or deterioration and correct or replace as necessary.

23 Timing, Distributor Cap
Engine Idle Speed

Adjust ignition timing following Chevrolet specifications. Also, carefully inspect the interior and exterior of the distributor cap and rotor for cracks, carbon tracking and terminal corrosion. Clean or replace as necessary.

Adjust engine idle speed accurately (following Chevrolet specifications). Adjustments must be made with test equipment known to be accurate.

24 Carburetor Mounting

Torque carburetor attaching bolts and/or nuts to compensate for compression of gasket at first 4 months or 6,000 miles of vehicle operation, then at every 12,000 miles thereafter.

25 Thermostatically Controlled Air Cleaner

Inspect installation to make certain that all hoses and ducts are connected and correctly installed. Also, check valve for proper operation.

26 Manifold Heat Valve

Some engines are equipped with a manifold heat valve which should be inspected and repaired as necessary to insure free operation.

27 Engine Timing Adjustment & Distributor Check

Adjust ignition timing following the specifications shown on label under the hood. Also, carefully inspect the interior and exterior of the distributor cap and rotor for cracks, carbon tracking and terminal corrosion. Clean or replace as necessary.

28 Spark Plugs

Replace at 12,000 mile intervals. Use of leaded fuels results in lead deposits on spark plugs and can cause misfiring at mileages less than 12,000 miles. Where misfiring occurs prior to 12,000 miles, spark plugs in good condition can often be cleaned, tested and reinstalled in an engine with acceptable results.

29 Exhaust Gas Recirculation System (EGR)

At 12 month/12,000 mile intervals, inspect and if deposits exist, clean the EGR valve. Inspect the EGR passages in the inlet manifold and clean as required. A damaged EGR valve must be repaired or replaced. Check thermal vacuum switch for proper operation. A malfunctioning switch must be replaced. Check hoses for proper connection, cracking, abrasions, or deterioration and replace as required.

30 Carburetor Fuel Inlet Filter

Replace filter at 12-month/12,000 mile intervals or if clogged.

31 Engine Idle Mixture

At 12,000 mile intervals or in case of a major carburetor overhaul, or when poor idle quality exists, adjust mixture by a mechanical method (lean drop), following Chevrolet specifications.

32 Throttle Return Control (TRC) System

Check hoses for proper connections, cracking, abrasion, or deterioration and replace as necessary.

Check for proper operation of system.

33 Idle Stop Solenoid

Check for proper operation. An inoperative solenoid must be replaced.

34 Positive Crankcase Ventilation System (PCV)

Check the PCV system for satisfactory operation at 12-month or 12,000 mile intervals. Replace the PCV valve at 24-month or 24,000 mile intervals, blow out PCV valve hose with compressed air and replace the filter. The PCV valve should be replaced at 12-month or 12,000 mile intervals when the vehicle is used in operations involving heavy dust, extensive idling, trailer pulling, and short trip use at freezing temperatures where engine does not become thoroughly warmed up. The PCV filter should be replaced at 12-month/12,000 mile intervals under dusty driving conditions.

35 Evaporation Control System (ECS)

Check all fuel and vapor lines and hoses for proper connections and correct routing as well as condition. Remove canisters and check for cracks or damage. Replace damaged or deteriorated parts as necessary. Replace filter in lower section of canister. If vehicle is equipped with two canisters, filter is located in lower canister only.

36 Fuel Cap, Fuel Lines and Fuel Tank

Inspect the fuel tank, cap and lines for damage which could cause leakage. Inspect fuel cap for correct sealing ability and indications of physical damage. Replace any damaged or malfunctioning parts.

37 Air Cleaner Element

Replace the engine air cleaner element under normal operating conditions every 12,000 miles. Operation of vehicle in dusty areas will necessitate more frequent element replacement. Your Chevrolet dealer can be of assistance in determining the proper replacement frequency for the conditions under which you operate your vehicle.

Caution: Do not operate the engine without the air cleaner unless temporary removal is necessary during repair or maintenance of the vehicle. When the air cleaner is removed, backfiring can cause fire in the engine compartment.

38 **Spark Plug Wires**

Clean exterior of wires; remove any evidence of corrosion on end terminals. Inspect spark plug wires for evidence of checking, burning, or cracking of exterior insulation and tight fit at distributor cap and spark plugs, or other deterioration. If corrosion cannot be removed, or other conditions above are noted, replace wire.

39 **Air Injection Reactor System (A.I.R.) Controlled Combustion System (C.C.S.) (On models so equipped.)**

The Air Injection Reactor system should have the drive belt inspected for wear and tension, check the muffler for looseness and obstructions to air flow every 4 months or 6,000 miles, whichever occurs first. In addition, complete effectiveness of either system, as well as full power and performance, depends upon idle speed, ignition timing, and idle fuel mixture being set according to specification. A quality tune-up which includes these adjustments should be performed periodically to assure normal engine efficiency, operation and performance.

40 **Engine Compartment Insulation**

Check every 6 months or 6,000 miles to make sure the insulating material is firmly in place, there are no unnecessary tears or pieces missing.

Operating Record

Date	Mileage	Gasoline		Oil		Repairs	
		$		$		$	

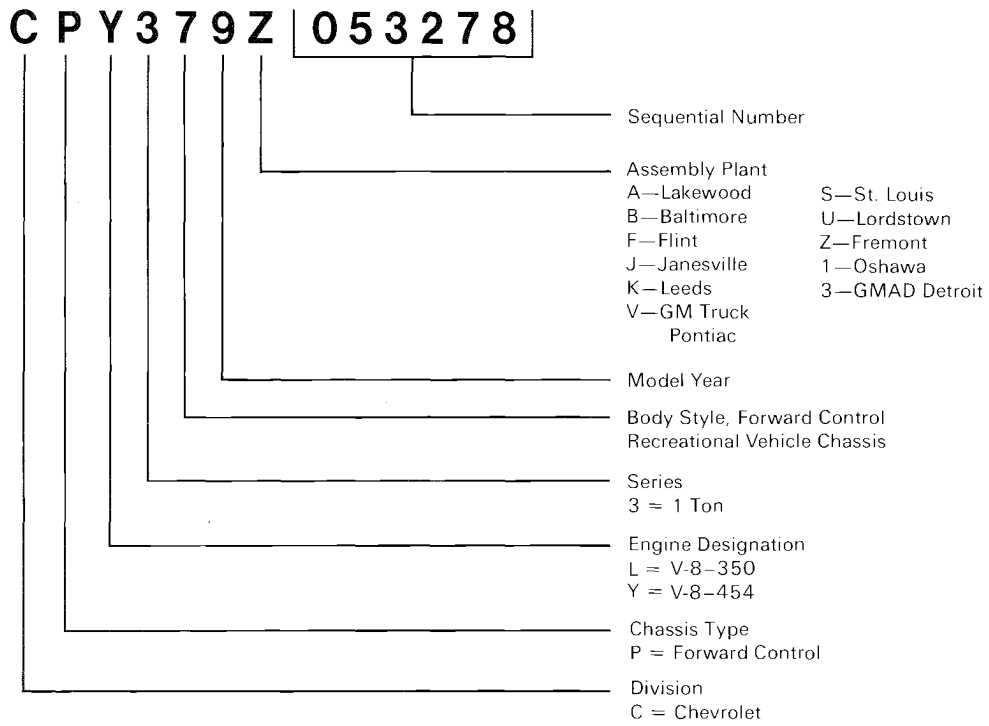
Date	Mileage	Gasoline		Oil		Repairs	
		$		$		$	

Vehicle Specifications

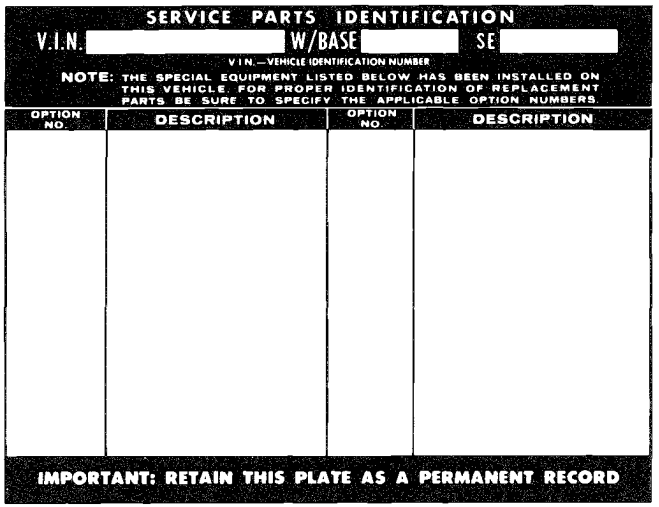
A **vehicle identification number** is stamped on a combination vehicle identification number and rating plate located on the dash and toe panel.

The **Service Parts Identification Plate** is located in the forward Service Door Area. The plate lists the V.I.N. (vehicle identification number), wheelbase, paint information and all Production Options or Special Equipment on the vehicle when it was shipped from the factory. **Always refer to this information when ordering parts.**

Vehicle Indentification Number



Service Parts Identification Plate



Lubricant Capacities

Item	U. S. Measure	Imperial Measure
Rear Axle		
10½" Ring Gear (Chev.)	5.4 Pints	4.4 Pints
10½" Ring Gear (Dana)	7.2 Pints	6.0 Pints
Crankcase		
454 V-8	12.0 Pints	10.0 Pints
350 V-8	8.0 Pints	6.5 Pints
Add 1 qt. for filter		
Oil Filter		
350 Cu. In.	2 Pints	1.5 Pints
454 Cu. In.	2 Pints	1.5 Pints
AC PF-35; Throwaway Type		
Fuel Tank (cap. approx.)		
Standard 24 Ft. (1979)	24.0 Gallons	20.0 Gallons
Standard 28 Ft. (1979)	50.0 Gallons	41.7 Gallons
Standard 28 Ft. (1981)	70.0 Gallons	58.1 Gallons
California Emission 28Ft. (1981)	40.0 Gallons	33.2 Gallons
Automatic Transmission		
Turbo Hydra-Matic 400 - Total	19.0 Pints	16.0 Pints
- Refill	7.5 Pints	6.0 Pints
Cooling System		
350 Cu. In. V-8	16.9 Quarts	14.0 Quarts
454 Cu. In. V-8	21.0 Quarts	17.5 Quarts
353 Cu. In. 6 (diesel)	23.0 Quarts	19.3 Quarts

A 195°F thermostat is standard equipment on all models except diesel which is 179°F.

The cooling system is protected and controlled by a thermostat installed in the engine coolant outlet to maintain a satisfactory operating temperature of the engine. This thermostat is designed for continuous use through both winter and summer and need not be changed seasonally. When replacement is necessary, specify United Delco parts.

Pressure Cap Capacity.....15 psi
AD Type RC15

Engine	Piston Displacement	Compression Ratio	Standard Spark Plug
350 Cu. In. V-8	350	8.5:1	R44-T
454 Cu. In. V-8	454	8.25:1	R44-T

Engine-Number
Stamped on a Boss (Right Front Side of Block.)

Lamp Bulb Data
Always replace with AC type Guide # Lamps.

Used in	Trade #
Instrument cluster lamps	168
Headlamp beam indicator lamp	168
Lamp assembly-tail & stop lamp (3)	1157
Head lamps (1)	6014
License lamp (2)	67
Directional signal (front park lamps) (3)	1157
Directional signal indicator lamp	168
Running lights	1895
Brake warning indicator	168
Transmission control	1445
Backing lamp	1156

1. Double filament sealed beam: 50W low beam, 60W high beam.
2. Two lamps used
3. Double filament lamp

Spark Plug Gap	.035

Note: For additional information refer to the Chevrolet Light Duty Truck Service Manual. See your Chevrolet Owner's and Driver's Manual or contact your nearest Chevrolet Dealer for information on obtaining a Service Manual.

Fuses-Circuit Breakers
The chassis wiring circuits are protected from short circuits by a combination of **fuses, circuit breakers, and fusible thermal links in the wiring itself.** This greatly reduces the hazard of electrically caused fires in the vehicle.

The headlamp circuits are protected by a circuit breaker in the light switch. An electrical overload on the breaker will cause the lamps to go on and off, or some cases to remain off. If this condition develops, have your wiring circuits checked immediately.

Fuses located in the Junction Block beneath the dash on the driver's side are:

Instrument Panel Lights ..... 5 Amp
Instrument Panel Gauges,
Transmission Downshift,
Idle Stop Solenoid ..... 10 Amp
Stop Lamp, Traffic Hazard,
Brake Warning Lamp..... 15 Amp
Directional Signal Indicator Lamp,
Backing Lamps ..... 15 Amp
Cigarette Lighter, Horn,
Dome Lamp ..... 15 Amp
Tail Lamps, License Lamp,
Parking Lamp, Side Marker Lamps 20 Amp
Heater, Air Conditioner..... 25 Amp
Windshield Washer/Wiper..... 25 Amp

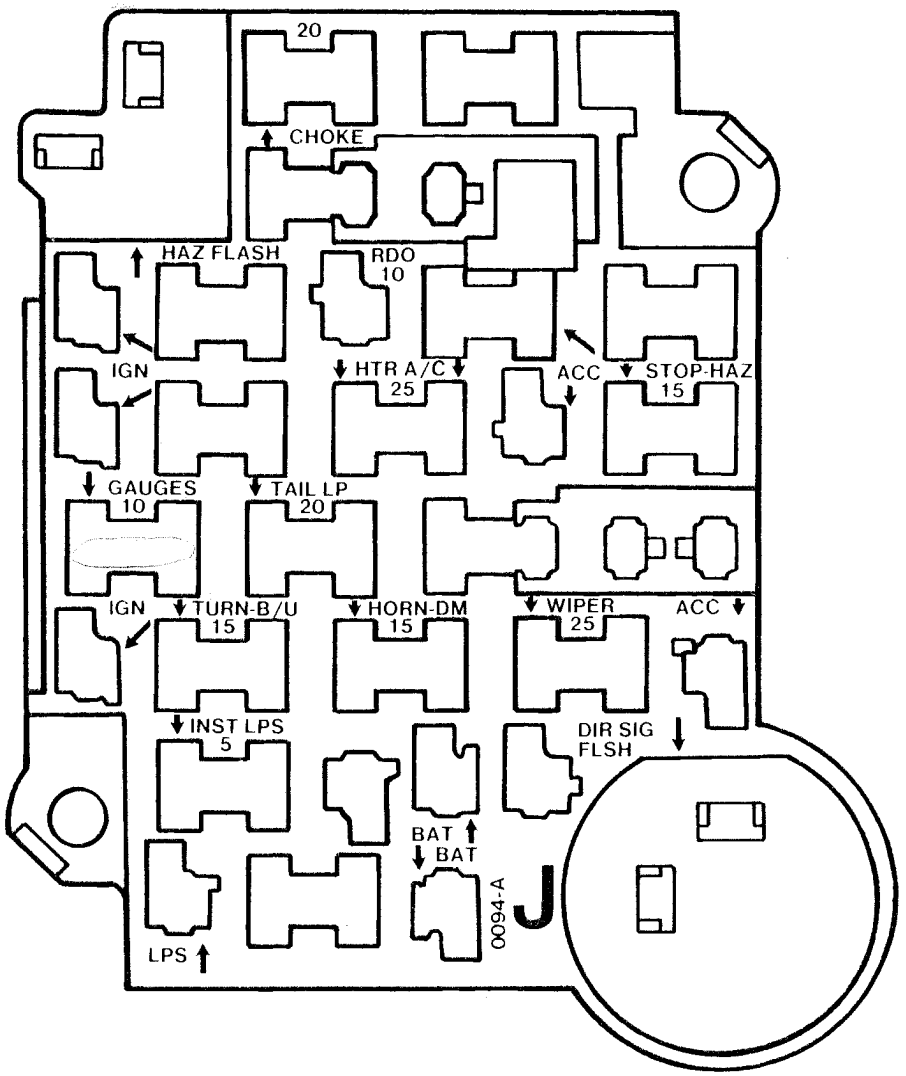
Note: Do not use fuses of higher amperage than those recommended.

The following wiring harnesses are protected by a "fusible link" which is a special wire incorporated in the circuit; headlamp hi-beam indicator, horn and ignition circuits. Should an electrical overload occur, this wire will fail and prevent damage to major harness.

Circuit Breaker

Device or circuit protected	Amperes	Location
Headlamp and parking lamp circuit.	15 AMP	light switch

Vehicle Junction Block



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 hook-ups 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 hook-ups.

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.

On a longer trip, when you have stayed where sewer connections and utility hook-ups 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.

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

1. Light the water heater, refrigerator and furnace pilots if required. See pages 90-98 for complete details on LPG system and gas operated appliances.
2. Turn on the gas supply at the range and light the pilot.

Before moving on, check your campsite, both for cleanliness and also to be sure you haven't left anything behind. Turn off the gas to the range and make sure everything is properly stowed.

Winter Traveling

Traveling in your Airstream Motorhome during the cold winter months can be a most exhilarating experience.

There are of course certain precautions which must be taken as you would in your home in low temperatures.

1. You must have a plentiful supply of propane gas.
2. If your stay is longer than overnight and you do not have the generator option, then you should endeavor to have 120V electricity available. The battery (full charged) will not last more than about 15 hours in freezing weather. Of course you can always run your Motorhome to recharge the battery and normally the battery will attain sufficient power to run another 5 hours by running your engine for approximately one hour at fast idle. For more detailed information on the battery see page 42.
3. Minimize use of electricity if 120V power source is not available.
4. Leave cabinet doors, bed doors and wardrobe doors slightly open at night to allow circulation of air in and around all furniture components.
5. Use propylene glycol type anti-freeze in waste and drain water tanks to prevent freezing. Quantity of anti-freeze 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.

It is also important to guard against excessive humidity inside your Motorhome during winter camp-outs. 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, mopping the floor, 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 air's 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 also 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 de-humidifier to aid in reducing condensation.

For added cold weather comfort, a 120V generator that operates on the Motorhome's gasoline, is available as an option. We recommend this option when you are planning extensive winter usage.

There is no substitute for common sense in cold weather.

NOTE: For proper use of anti-freeze refer to page 52,68,69.

Extended Stay

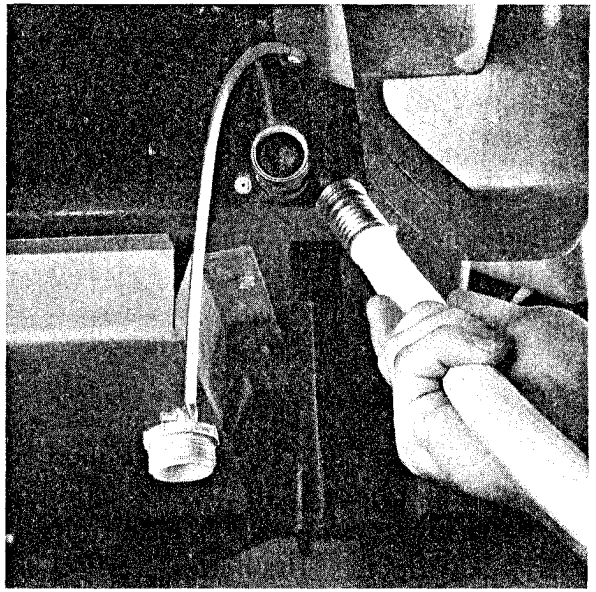
Making a long trip is not very different from making a weekend excursion. Since everything you need is right at hand you are at home wherever you go. When packing for an extended trip take everything you need, but only what you need.

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 level from side to side first.** 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.**

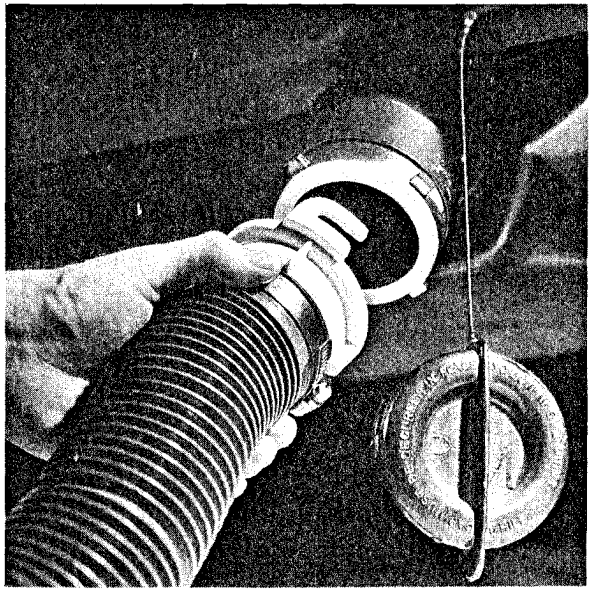
Hook up to water by attaching a ½" minimum high pressure water hose to the city water service.

Plug the **electrical cable into the city power service.** Be sure you have the wire grounded and have the proper polarity. See page 105 for technical details.

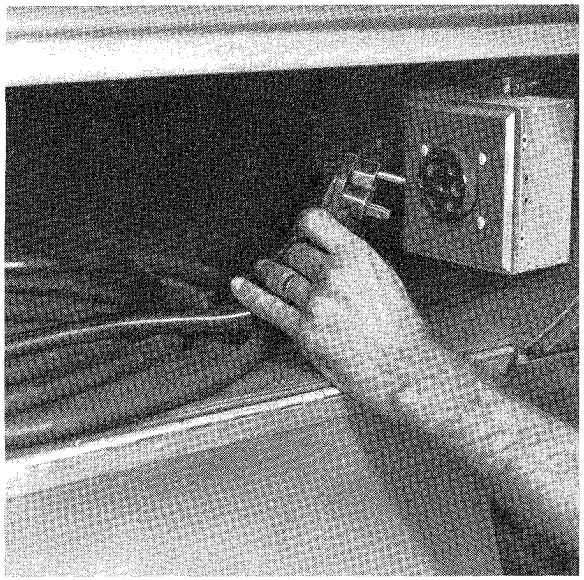
If city power service is not available, plug your electric cable into the generator outlet located inside the trunk compartment, where power cord is stored. See page 108 for details of generator operation.



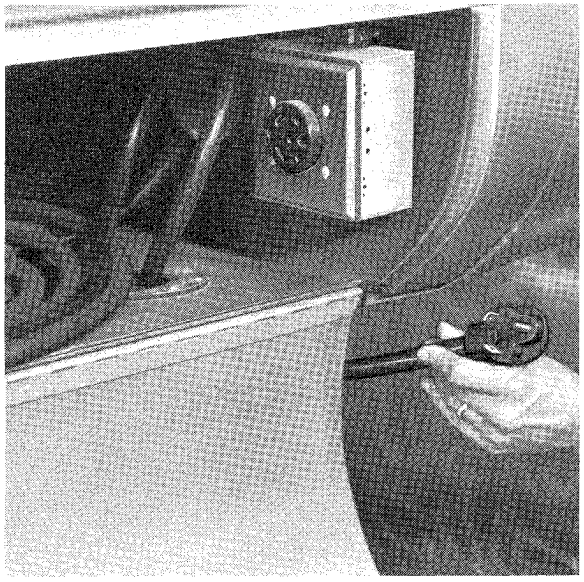
City Water Hook-Up



Waste Drain Hose Hook-Up



120 Volt Electrical Supply - Self Contained



120 Volt Electrical Supply - City Power

Hook your **waste drain hose into the sewer disposal facility** and attach to the drain outlet in your Motorhome. For details on this procedure refer to page 102.

Turn on gas supply; light the oven pilot, light the water heater and refrigerator pilots.

When you stay for extended periods where electric or water hook-ups are not available, you must make regular checks on the condition of your 12 volt battery and the contents of your water tank. Try to conserve electricity. You can recharge your battery by running the engine in your Motorhome at a fast idle. 1 hour per day should provide about 5 hours of power. Carry drinking water in a clean bucket to refill your tank. Be sure to light your refrigerator pilot. When your waste tank nears capacity, move your Motorhome to a dumping location.

Storage and Winterizing

When storing your Motorhome for short or long periods 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 in to your Airstream Dealer for a check-up and cleaning of the gas operated appliances.

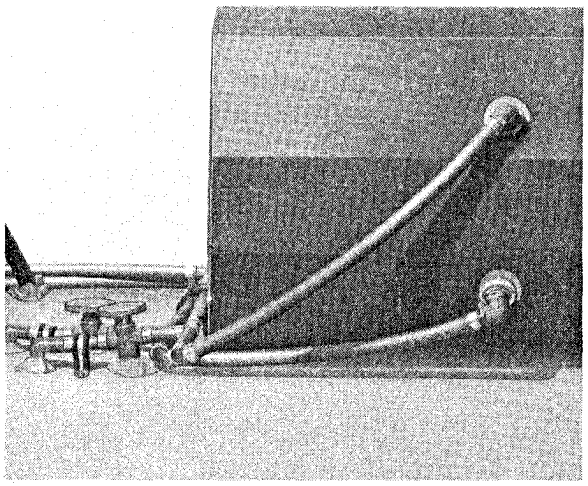
Living Area

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 the faucets.
2. Turn the water pump switch to the OFF position.
3. Open all drain valves. One drain valve on all models is located on the water heater exterior and is accessible through the water heater access door. On the 24 ft. models, valves are located in the roadside wardrobe and under the refrigerator. On the 28 ft. rear bath models, valves are located in the roadside bathroom closet. On the 28 ft. center bath models, valves are located under the roadside bed.
4. The toilet water valve should be left in open position while draining water. It is located in the lavatory cabinet on all models.
5. While the water is draining from the system, open and flush the toilet flushing valve. Depress hand spray thumb button of the optional water saver toilet and hold the spray head below rim of the toilet and drain the hand spray line. There is danger of damage from freezing if water remains in these lines and valves. Depress hand spray thumb button on the telephone showerhead and drain all water. Unscrew the heads on both spray units and store.
6. Remove the flexible hose from the check valve. The check valve is part of the water pump's outlet fitting.
7. Disconnect the water pump inlet connection and expel water by turning pump on for approximately 1-2 seconds.
8. 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.
9. Pour a cup of non-toxic antifreeze into the lavatory, sink, and tub drains to prevent freezing of water in traps.
10. Be sure to open the waste-holding tank drain valves and drain and flush the tanks thoroughly. (This is very important as the sewage in the tank, if frozen, could seriously damage the tank.)
11. Remove the cartridge of the water purifier, if your Motorhome is so equipped, and drain the purifier.
12. 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. Please refer to the battery section for more information on battery maintenance.
13. Remove any items (food, cosmetics, etc.) from the interior that might be damaged by freezing—or might damage the Motorhome if containers break.

For additional winterizing protection add non-toxic anti-freeze (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. 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.
3. Dilute the antifreeze solution in accordance with the manufacturer's instructions.

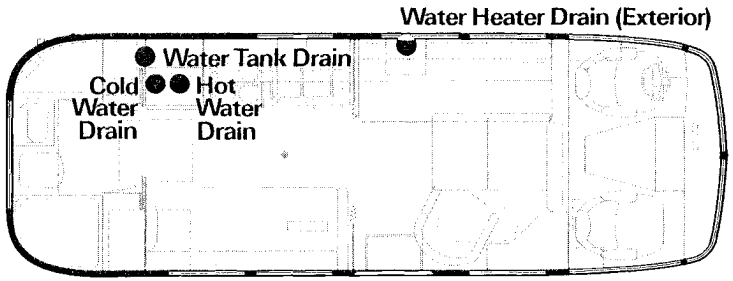


Drain Valves

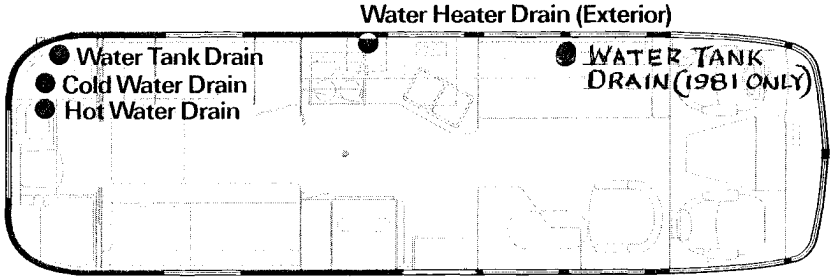
4. Open all water faucets.
5. Insert hose length into the antifreeze container, turn the pump switch on, and run the water pump until the antifreeze solution fills all water lines and the water heater. Flush toilet, work hand spray, while holding down in bowl. Work hand shower spray while holding down in the tub.
6. Shut off the pump and close all faucets.
7. Disconnect the hose length from pump inlet fitting and reconnect water system inlet line.

Note: If you wish to bypass your water heater in order to cut down on the amount of antifreeze necessary, you may purchase a kit for this purpose from a Wally Byam Store.

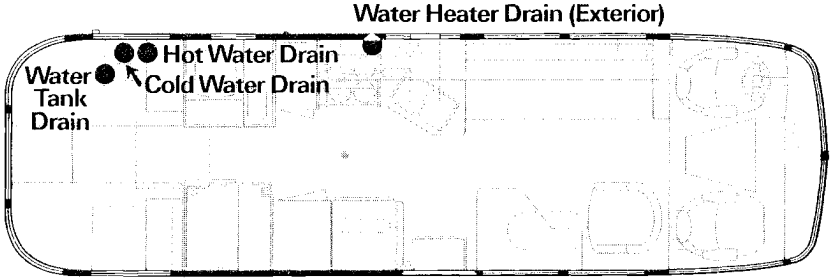
24 Ft. Model



28 Ft. Rear Bath Model



28 Ft. Center Bath Model



Drain Valve Locations

In addition to the living area storage protection the vechicular drive train and accessories must be protected. Check with your Chevrolet dealer for proper procedures.

Vehicle Drive Train

Less than 30-day storage:

1. Wash vehicle exterior completely to remove surface dirt.
2. Check engine coolant level and, if necessary increase "anti-freeze" protection, see page 52.
3. Check batteries and charge if below 1.225 specific gravity to avoid freezing and deterioration. All battery cables should be disconnected at the battery to prevent gradual discharge and the possibility of fire due to short circuits.
4. Check and inflate tires to correct pressure, see page 45.
5. Vehicles are best stored in a clean, dry, closed or roofed area. If vehicle is subject to corrosive fumes or bird droppings, it should be covered. If the vehicle is to be stored where the wind might move the cover extensively during storage, secure the cover carefully as it may cause rub-through of paint.
6. Run engine until completely warmed up before shutting off ignition (at fast idle for a minimum of 15 minutes).
7. **Make sure all windows are closed.**
8. Leave parking brake in "OFF" position. Place selector lever in "PARK" position and place blocks fore and aft of wheels.

Extended storage beyond 30 days:

In the event your Motorhome is to be stored for extended periods beyond 30 days, the following items are suggested in addition to the steps given for vehicles that are to be stored less than 30 days:

1. Apply a coat of wax to all the exterior surfaces.
2. Start and run engine until completely warm. Shut off engine, drain engine oil and replace filter element; refill with fresh oil. After oil has been replaced, remove air cleaner and pour one-half to one pint of 10W or lighter oil into carburetor air intake with engine running. Pour slowly at first; then rapidly, using last quarter to stall engine. Replace air cleaner, if vehicle is equipped with air conditioning, the unit should be operated during this final engine warm-up to lubricate compressor seals.
3. Drain coolant from radiator, cylinder block and heater.
4. If freezing temperatures are expected the battery should be removed from the vehicle and stored in a cool, dry area at above freezing temperatures. Also, do not place the batteries directly on a concrete floor—use a piece of wood between the batteries and floor.

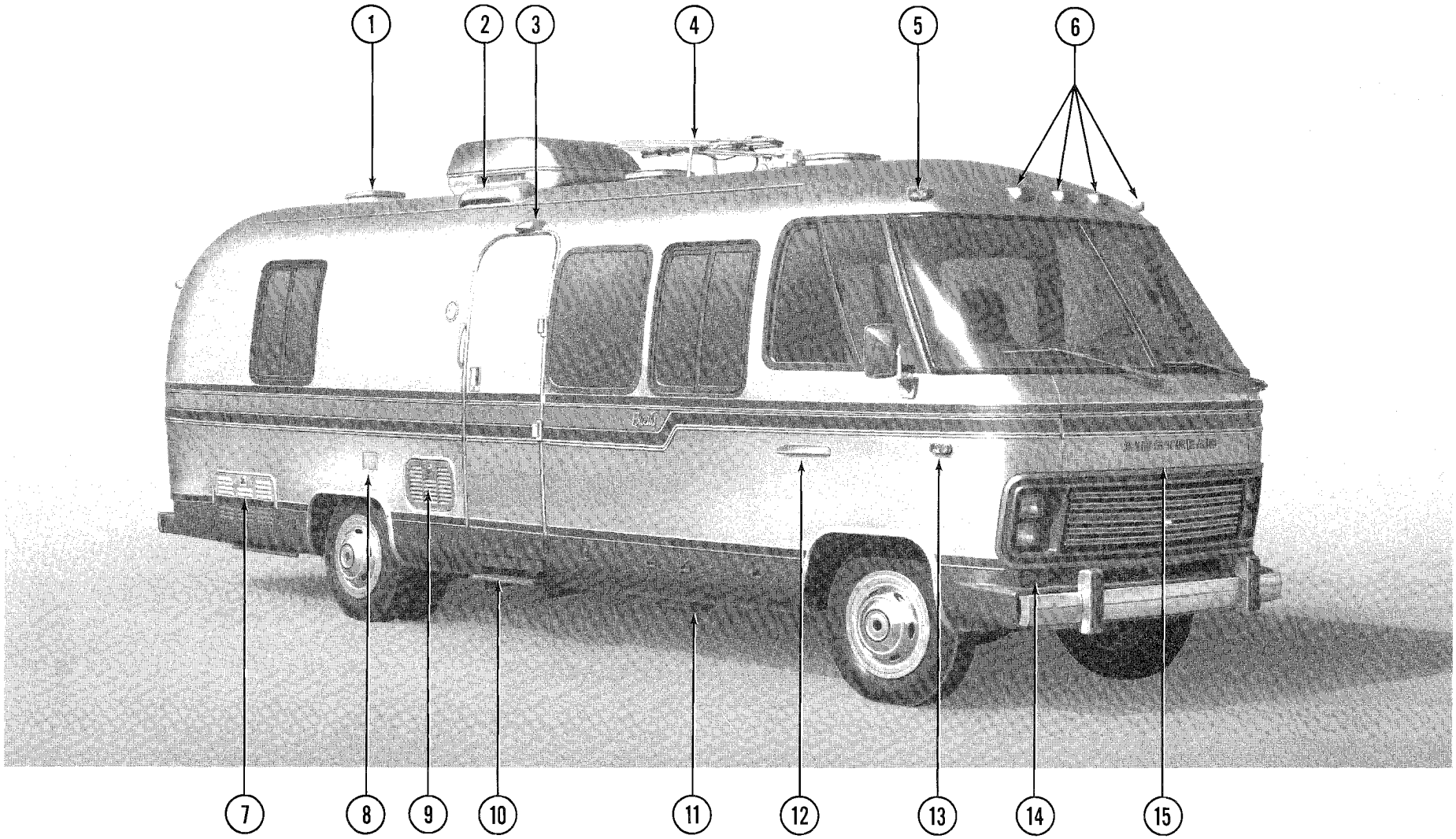
   Caution: As part of the normal function of an automobile storage battery, hydrogen gas is produced through chemical action. This gas is toxic and extremely combustible when mixed with air. Do not store battery where it will be exposed to sparks or open flame, nor where it is exposed to children.
5. Jack up vehicle and place blocks under front and rear suspension so that tires do not contact the ground.
6. Drain gasoline from fuel tank, fuel lines, and carburetor to reduce the fire hazard and to prevent gumming of the fuel as it evaporates.
7. Remove windshield wiper arms and blades and store in vehicle.

Re-activating Motorhome after extended storage:

1. Check oil and fluid levels and replenish as necessary in the following components: engine, radiator, crankcase, transmission and differential, gasoline and oil. Have the refrigerant in air conditioning system checked and replaced if necessary.
2. Check engine compartment and under vehicle for nesting creatures and evidence of leakage of oils or fluids or physical damage.
3. Inflate tires to recommended pressure, see page 45.
4. Clean battery cable connectors and install fully charged batteries.
5. Lubricate chassis, suspension, and steering components.
6. Bleed and adjust brakes and replenish fluid as necessary.
7. Remove spark plugs; clean and gap.
8. Replace carburetor air cleaner.

If vehicle is equipped with air conditioning:

9. Disconnect the compressor clutch wires before attempting to start vehicle.
10. Check to see if compressor hub and clutch driver can be turned by hand, if not, the unit should be broken loose by manually turning the shaft with a wrench on the shaft lockout on the clutch driver plate. A few "rocking" turns should be sufficient so that the shaft can be turned by hand.
11. Reconnect compressor clutch wires and check belt tension. Run engine with air conditioning on for a minute or two to reseal system.



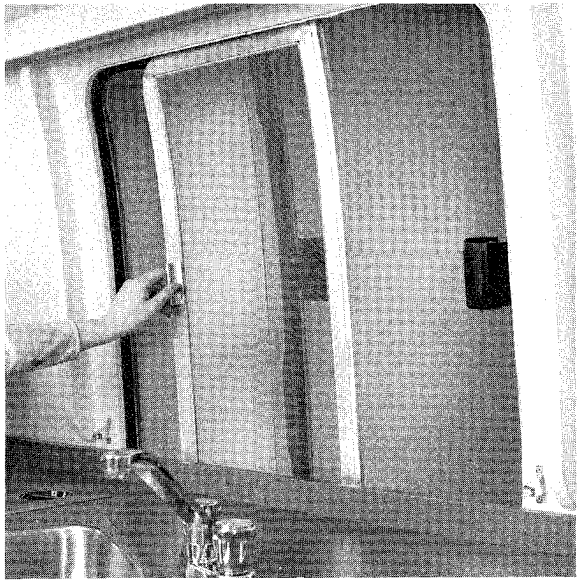
Exterior Identification

No.	Description	Page No.
16.	Air Conditioner	86
17.	Bathroom Vent	—
18.	Univolt Batteries	42
19.	Radio Antenna	75
20.	Engine Battery	42
21.	Furnace Vent	92
22.	Water Heater Service Door	98
23.	Water Fill	100
24.	Fuel Filler Door	37
25.	120 Volt Electrical Supply	105
26.	Polarity Light	105
27.	Holding Tank Outlet	102
28.	Main & Auxiliary Holding Tank Dump Valves	103
29.	Stop, Tail, Turn and Back-up Lights	62

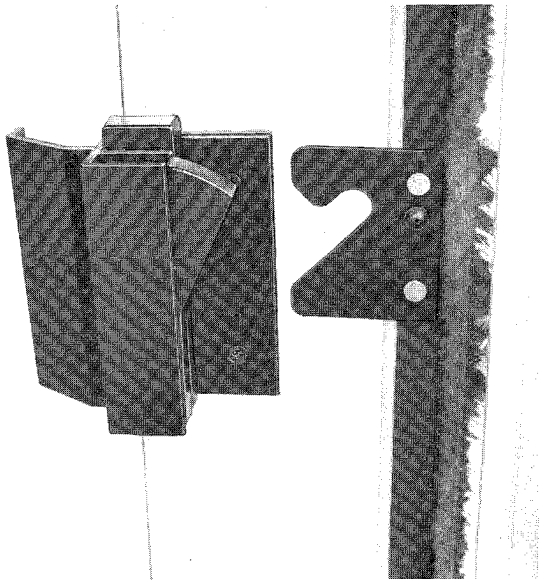
Exterior

The exterior of the Airstream Motorhome has an automotive enamel finish. The Excella Motorhome is covered by a clear acrylic lacquer finish. With these high quality finishes certain precautions must be taken to protect them. Oil, grease, dust and dirt may be removed by washing with any mild non-abrasive soap or detergent. Automatic dishwasher detergents and acid etch cleansers are too strong and should never be used. **Always clean your Airstream Motorhome in the shade or on a cloudy day when the exterior shell is cool.** Cleaning should be followed by a thorough clean water rinse. Spots and streaks may be prevented by drying 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. Wax should normally be applied every three to six months.

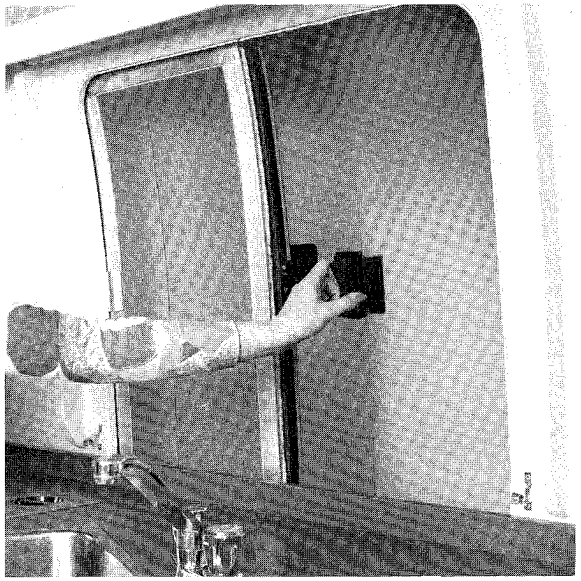
It is important to remove sap, seeds, gum, resin, asphalt, etc., as soon as possible after they appear by washing and rewaxing. Sunlight and time will bake-harden these materials making them almost impossible to remove without heavy buffing. If asphalt remains on the Motorhome after washing use a small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



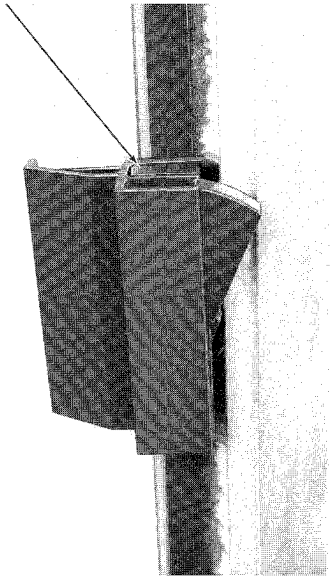
Window Operation 1.



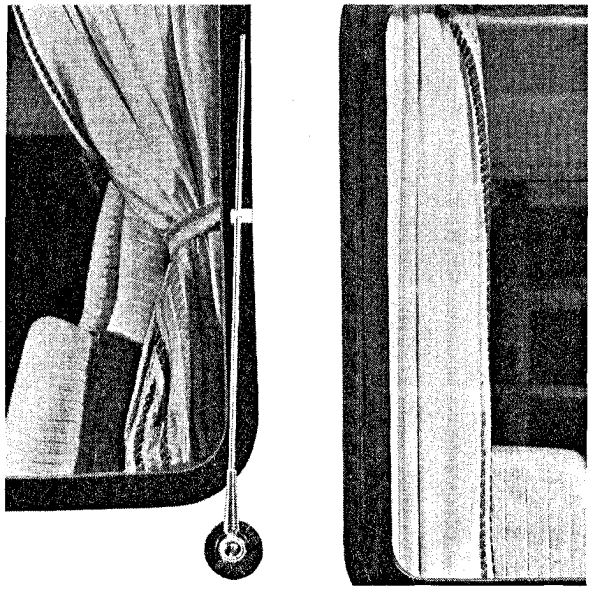
Lock Mechanism Open



Window Operation 2.



Lock Mechanism Closed (Lock Pillar Down)



Radio Antenna

For small areas of damage to the enamel finish retouch with aerosol spray paint available through your local dealer.

For small areas of damage to the acrylic protective coating, or where oxidation is beginning to occur, remove all traces of the acrylic coating with a good grade of lacquer solvent. Respray the area with clear acrylic lacquer. All items needed for these minor repairs to the exterior shell are available at Wally Byam Stores. For extensive refinishing we recommend that you contact an Airstream Service Center or the factory for instructions.

Note: The enamel finish should not be waxed during the first 30 days, or for 30 days after an extensive refinishing. This is to allow the finish to harden sufficiently. Acrylic lacquer finishes should not be waxed for the first 90 days after purchase or refinishing.

The sliding windows in your Motorhome are made of heat strengthened plate glass. For convenience and safety the windows will automatically lock when they are returned to the closed position.

These windows are cleaned in the same manner as ordinary windows. Clean the seals with a damp cloth or mild detergent every three to six months taking care not to use strong solvents as they will damage the seals. For replacement of a damaged window contact an Airstream Certified Service Center or the factory.

Screens are made of plastic for hard wear and easy maintenance. Clean with a damp cloth. Note: They will melt at the point of contact if touched by a cigarette.

Factory recommended awnings provide shade. They are easy to operate and can be installed by your Airstream dealer.

TV antenna (optional): The controls are in the ceiling directly below the antenna. To raise the antenna, turn hand crank clockwise until it stops. Then turn on TV set and select channel. While watching picture, push handle up toward ceiling, hold in that position and rotate antenna. If you hit a stop in rotation before the picture is clear, reverse rotation. You may have to readjust when changing channels. To close, rotate antenna until it hits the stop, and is pointing forward. Pull handle down and reverse the directions of cranking for raising. Before traveling, double check outside that the antenna is folded and pointed straight forward.

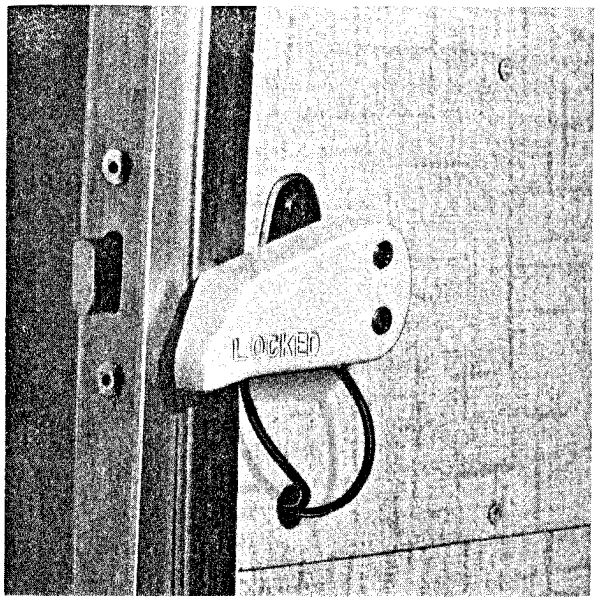
The motorized T.V. antenna has a control panel located on the curbside wall forward of main door opening. A two position rocker type switch is used to control the antenna. When the upper portion of the switch is pushed, the antenna raises to the full "up" position then starts to turn in a clockwise direction. When the strongest signal point is reached, antenna rotation is stopped by pushing the bottom portion of the switch rocker to bring it to the center or "off" position. Counter clockwise rotation and antenna lowering are accomplished by pushing the rocker bottom portion all the way in. A green light on the switch panel indicates when antenna is being raised or lowered. Both red and green lights will be illuminated when the antenna is rotating. The antenna must be fully stowed for travel.

The aluminum and steel construction of your Motorhome creates a radio-shield and you will need outside antennas for perfect reception.

A telescoping radio antenna (optional) is available on the 1979-80 models for the 12V AM-FM radio and should only be professionally installed next to the driver's window. The 1981 models have a radio antenna installed that provides signal not only to the AM-FM radio but also incorporates a C.B. antenna lead. This lead can be found at the splitter located under the dash behind the entertainment center. C.B. radios should only be professionally installed since it's necessary to match the antenna to the transmitter and this requires a Standing Wave Meter. The matching adjustment is preformed on the splitter.

For your security the main door latch has been designed as a dead bolt. For this reason never try to shut the door when it is locked. The door is properly closed when the handle is firm. If the door is difficult to open push in to release the latch. When the door swings fully open it will automatically latch against the side of the Motorhome.

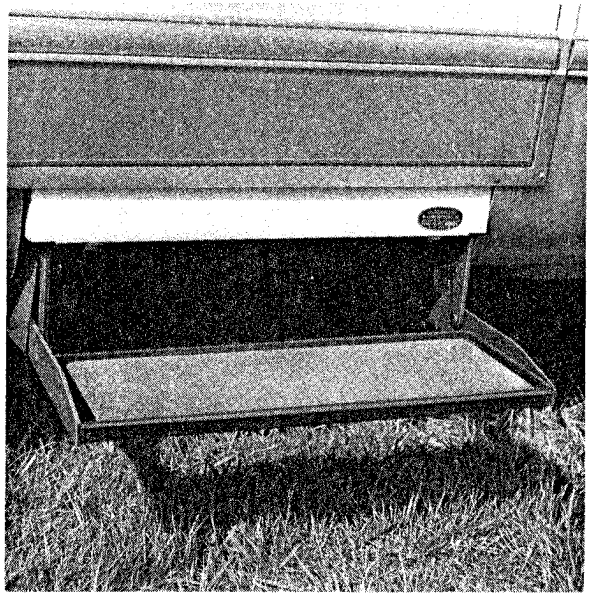
A separate dead bolt lock operates only from the inside of the vehicle for your additional security. It is equipped with a 12V switch in the handle which activates a warning light on the instrument panel then the lock is disengaged and the ignition is turned on. This lock is installed in the main door frame. To operate, simply turn the handle counter-clockwise until the bolt is fully engaged in the door striker. Once engaged, the door can not be opened. You should always engage this lock when traveling.



Dead Bolt Type Lock

A slide bolt latch on the inside of the main door can be used to secure the screen door so that it will hinge on the main door. The screen door may be operated independently by releasing the latch.

NOTE: It is important that the main door be completely closed and locked during travel. If it is not locked, the constant vibration of travel may cause it to open. Damage may result.

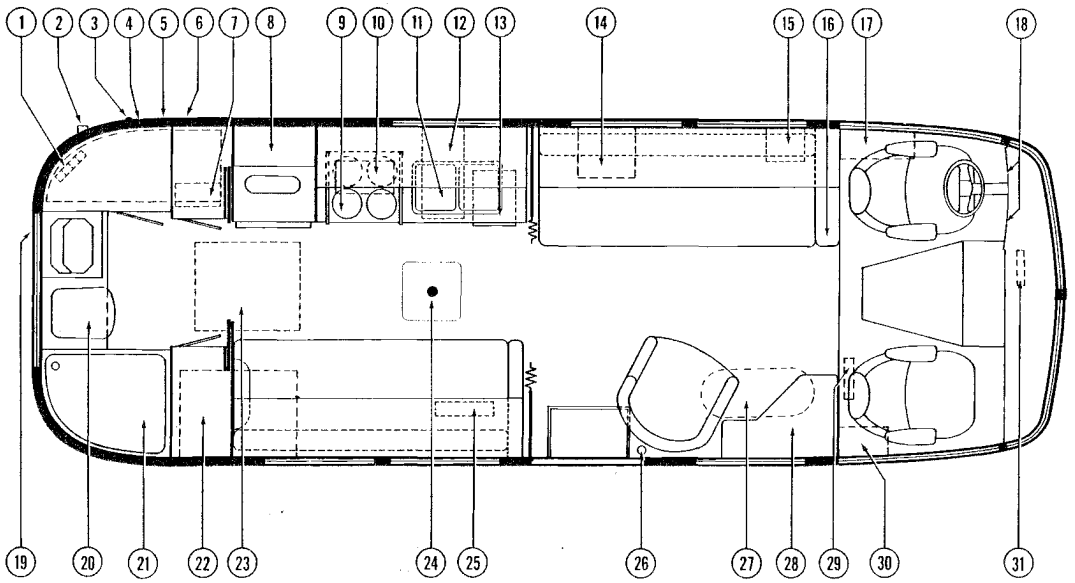

Vacuumatic Step

The vacuumatic step operates automatically. When the engine is shut off, the step will deploy as long as the main entrance door is closed. When the engine is started, the step will retract. With the main door open, the step will deploy and remain deployed regardless of whether the engine is running or not.

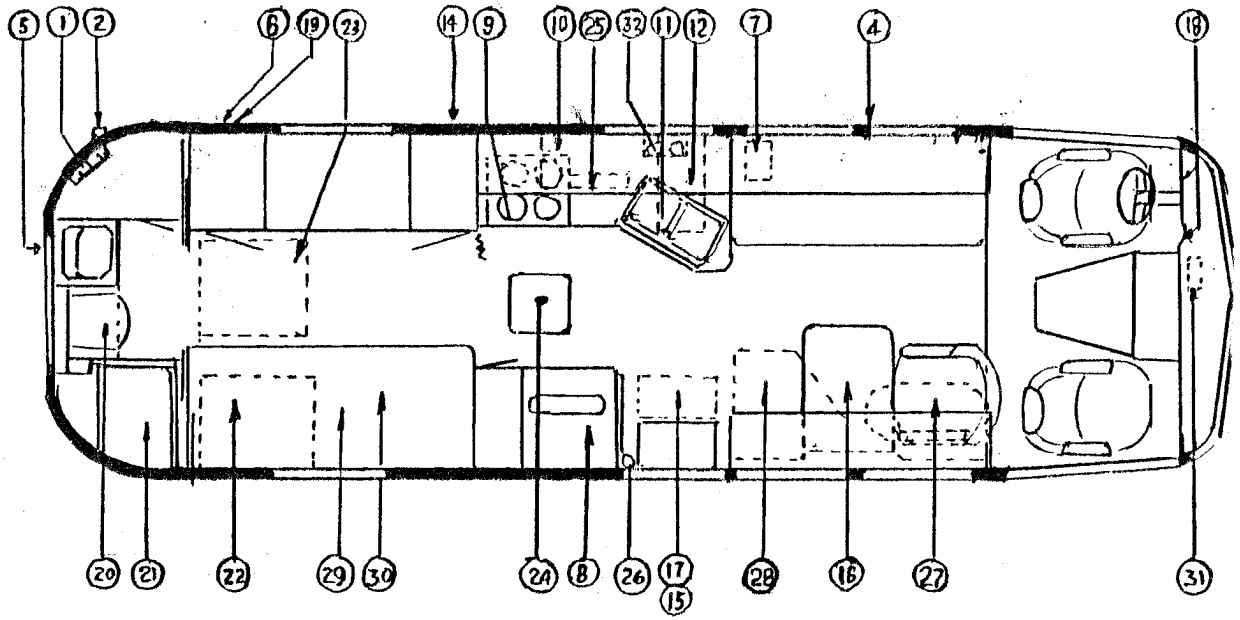
NOTE: Never travel with step down. Be sure it has retracted before moving. A step warning light on the instrument panel flashes whenever the step is down and the ignition switch is turned on.

Floor Plans

No.	Description	Page No.
1.	120 Volt Distribution Panel	104
2.	Waste Outlet	102
3.	Polarity Light. 1979	—
4.	Water Inlet (Tank)	99-100
5.	Water Inlet (City)	99
6.	120 Volt Electrical Supply (Self Contained & City Power)	105-106
7.	Water Pump	99
8.	Refrigerator	90
9.	Range	96
10.	Range Exhaust	97
11.	Sink	85
12.	Furnace	92
13.	Ice Maker	86
14.	Water Heater	98
15.	Engine Battery	42
16.	Sliding Table	81-82
17.	Univolt Batteries	42
18.	Instrument Panel	29
19.	Fuel Fill	37
20.	Toilet	102
21.	Shower	100
22.	Generator	108
23.	Fuel Tank	—
24.	Air Conditioner	86
25.	Solid State Control Panel	87-128
26.	Fire Extinguisher	109
27.	L.P.G. Tank and Regulator	89
28.	Television Cabinet	85
29.	12 Volt Distribution Panel	127
30.	Univolt	104
31.	12 Volt Fuse Panel (Chassis)	63
32.	Nutone Appliance Center	—



24 Ft. (Rear Bath)



28 Ft. (Rear Bath) 1981

No.	Description	Page No.
1.	120 Volt Distribution Panel	104
2.	Waste Outlet	102
3.	Polarity Light. 1979-80	—
4.	Water Pump	99
5.	Water Inlet (City)	99
6.	Water Inlet (Tank)	99-100
7.	Fuel Fill	37
8.	120 Volt Electrical Supply (Self Contained & City Power)	105-106
9.	Fuel Tank	—
10.	Range	96
11.	Water Heater	98
12.	Solid State Control Panel	87-128
13.	Nutone Appliance Center	—
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18.	Univolt Batteries	42
19.	Instrument Panel	29
20.	Toilet	102
21.	Shower	100
22.	Bed Light	86
23.	Generator	108
24.	Air Conditioner	86
25.	Refrigerator	99
26.	Fire Extinguisher	109
27.	Television Cabinet	85
28.	L.P.G. Tank and Regulator	89
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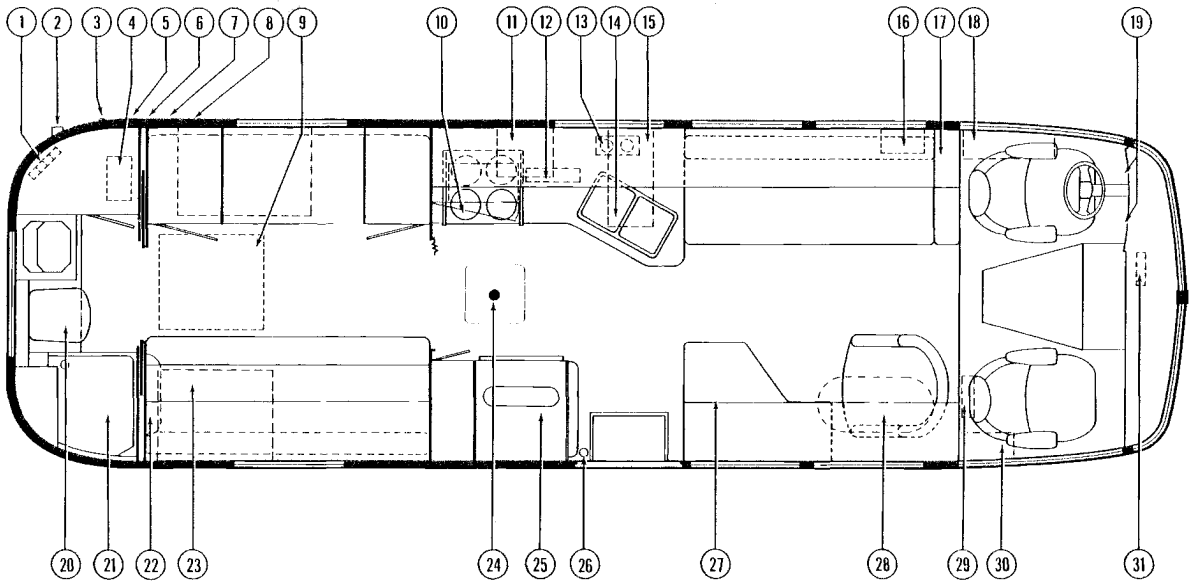
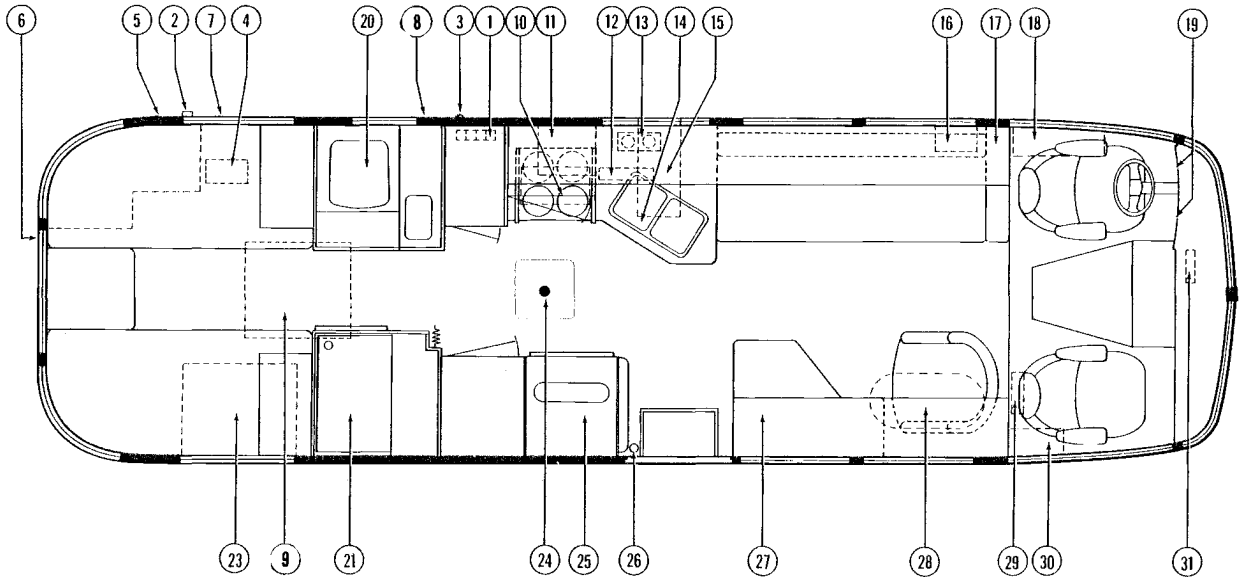


28 Ft. Double (Rear Bath)

28 Ft. Twin (Center Bath)



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 pleasure as well as the long life of your Motorhome.

All models are designed with a **Pull-Out Lounge** which converts into bed.

All 1979 models feature a sliding table located directly behind the driver's seat. This table conveniently unfolds to provide a dining space. (See illustration)

The standard table arrangement in the 1980 and 1981 models is a fold-out table mounted on the curbside wall forward of the door and two aisle mounted tables. Optional is the TV cabinet and the two pedestal tables.

Fold out table operation:

1. Swing bottom of table out from wall until it's horizontal with floor.
2. Pull "T" end of table leg loose from velcro and lower to the vertical position.
3. The table leg is attached to the leaf support bracket, grasp firmly and slide bracket and leg across aisle.
4. Pull out and turn to the side, the spring loaded clip holding the two table leaves together.
5. Unfold top leaf and lower onto support bracket.
6. When stowing, the table leg latch must be raised to allow leg to be folded.

Pedestal table operation:

1. Remove "plugs" from pedestal floor mounting bracket. NOTE: The plugs are approximately 3" in diameter and the front one is located 13" back from the cab platform and the rear one is 62" from the platform. Both are about 1' from front of the roadside lounge.
2. Slide pedestal tube into floor socket.
3. Set table leaf down over pedestal tube.
4. A slight twisting action will aid when removing pedestal from floor and leaf sockets.

To Operate the Folding Table - 1979

To open the table, release the floor latch on sliding table compartment and slide out along the track until table is centered in isle. Make sure passenger seat is full forward to provide clearance for lid to open.

Operating Instructions

Caution: Do not force table under any circumstances.

To Open:

1. Remove table from case by evenly lifting up on handles. Raise table until rollers contact stops.
2. Tilt table slightly and unfasten table leg.
3. Rotate table down into working position. Lift the leg slightly to clear the rug, pull the extension frame out as far as it will go, and release "U" shaped clip locking the folded leaf. Rotate the leaf over onto the extension frame.

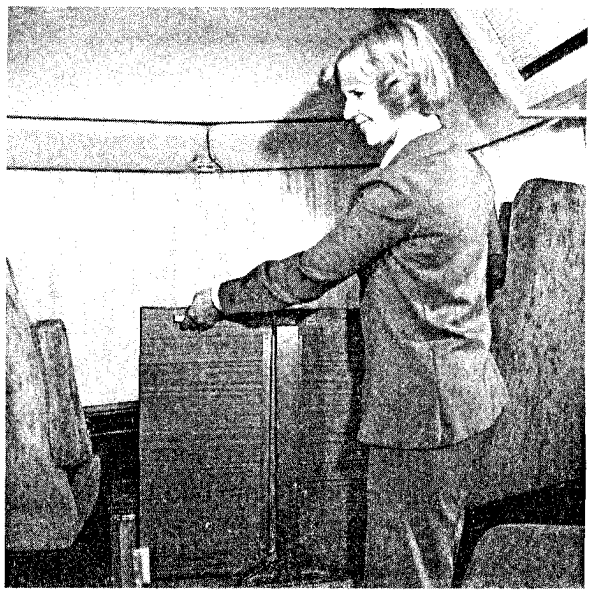
To Close:

Reverse opening procedure.

To Operate the Lounge

To convert the lounge into a bed, just lift up slightly on the front rail of the seat, then pull the seat out until it stops and the seat back is in a horizontal positon. To return to lounge position reverse this procedure.

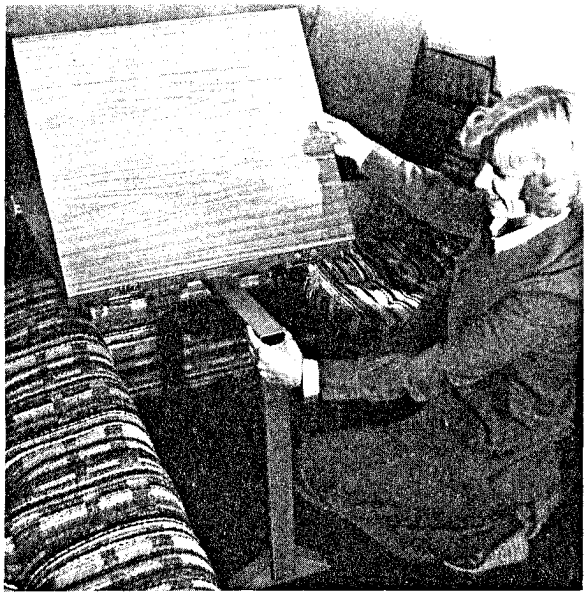
Folding Table, Step 1.



Step 2.

Pull-Out Lounge, Step 1.

Step 2.



Step 3.

Step 3.

Following is a list of upholstery materials used in 1979 Airstream Motorhomes. All materials 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.

1979 Airstream

Fabric Name	Cleaning Code
Ny-Crest - Fawn	S
Kenilworth - Navy	WS
Ventura - Henna	WS
Bengal 335 (Excella)	S
Whitney - Mocha (Excella)	WS

1980-81 Airstream

Fabric Name	Cleaning Code
Bengal - Brown	S
Mocha - Brown	WS
Chapman Canyan - Blue	W
Tristan Copen - Blue	W
Chapman Parsley - Green	W
Laser Seafoam - Green	S

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 which contains highly toxic carbon tetrachloride. You may also use an upholstery shampoo product or the foam from a mild detergent.

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. Pre-test small area before proceeding. Use a professional furniture cleaner when an overall soiled condition is reached.

Code W

Fabric Care. Clean with water base foam solvent.

CAUTION: Never remove cushion cover for separate dry-cleaning or washing. Any tumble cleaning method can destroy the backing, shrink or otherwise damage upholstery fabric.

Smoking Warning

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 which falls on furniture.

SMOLDERING SMOKING MATERIAL CAN CAUSE UPHOLSTERED FURNITURE FIRES.

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

Use the following procedure to remove drapery panels for cleaning:

Front wrap around drapes

1. Remove screw securing rear end of drapery track to wall both roadside and curbside.
2. Slide draperies to the rear until they are clear of track.
3. After reinstalling drapes, replace screw in end of track.

Lounge side draperies, roadside and curbside

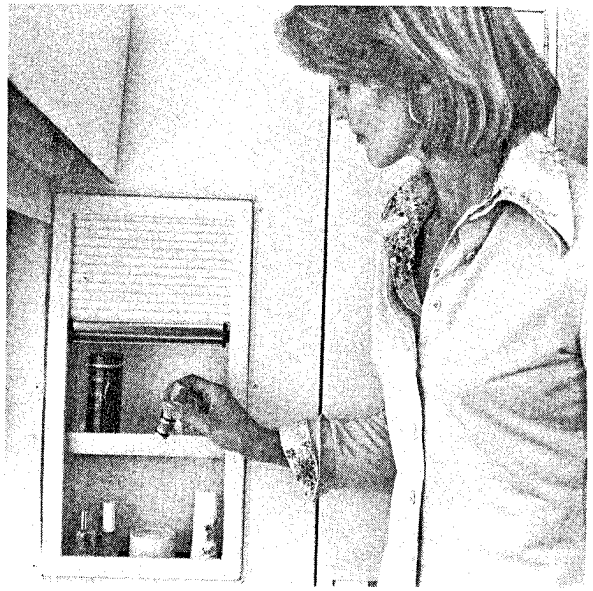
1. Remove upper valance panel.
2. Remove stop screw from forward end of lower track.
3. Slide draperies forward until they clear upper and lower track.
4. After reinstalling draperies, replace stop screw in lower track, replace valance panels.

Bedroom draperies, roadside and curbside

1. Remove rearmost screw attaching drapery track to rooflocker, top, and to side wall bottom.
2. Slide drapery panels to rear until they clear upper and lower tracks.
3. After reinstalling draperies, replace attaching screws.

The Woven Wood **window shades** installed in Excella models require routine maintenance to insure lasting beauty. Dust build-up is the major cause of soilage so the fabric should be vacuumed periodically. Should the fabric become soiled, a solution of lukewarm water and mild detergent should be used to sponge off the fabric, taking care not to soak the material, particularly any fringe trim. Very stubborn or ground in stains can be touched up with a household stain remover. Bleach or strong household cleanser should not be used.

China Cabinet



Medicine Cabinet

Operation and Adjustment:
Should cords become difficult to pull, check alignment in pulley mechanism. Do not force the mechanisms as they will bind even more. Should one side of a shade raise more than the other, simply adjust the cord equalizers. They are set at the factory but may get out of alignment with use. Should a yarn slip off the edge of the fabric, remove the yarn completely. The weaving technique used allows removal of yarns without affecting the strength of the material or causing it to unravel.

The carpet can be cleaned with any good commercial carpet cleaner, or with a detergent and water. **Be careful not to soak the carpet with water, however.**

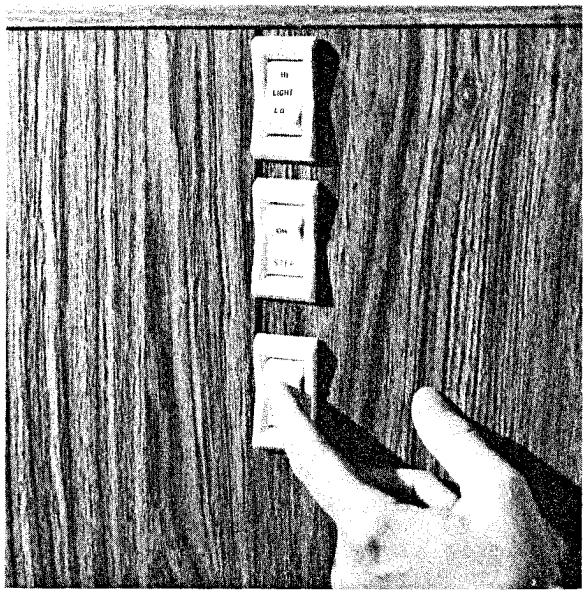
The counter areas around the sink are of a high-pressure laminate and can be cleaned with soap and water, or you can use a common solvent on tough spots. Be sure no abrasive cleaner is used as there is the possibility it could scratch the surface. A protective pad should always be placed under hot utensils.

The walls can be cleaned with any vinyl cleaner or with any mild household detergent and water. But, again, no abrasives.

The high-pressure laminate wood of the wardrobes and cabinets may be waxed, if desired, or may be cleaned simply with a damp cloth.

See the bathroom section for cleaning and maintenance suggestions for the ABS plastic surfaces.

T.V. Cabinet



Light Switches

The area above the refrigerator and refrigerator cabinet incorporates a built-in **china cabinet** for the handy storage of dishes and glassware. Decorative cane panel by-pass sliding doors provide easy access and their design compliments the overall interior decor. Doors are easily removed for cleaning or repair, simply lift up and tilt out at bottom.

A **galley spice rack** on 24' models provides handy storage for spices and condiments. The tambour style door can be rolled up out of the way when the rack is being used and rolled down to the closed position after use or while traveling.

The **fresh air vents** are operated by a single control handle. To raise turn the control handle clockwise. Screens should be removed for periodic cleaning.

The **bathroom light** is operated by a switch on rear wall over the lavatory. To change bulbs carefully squeeze plastic lens and remove from frame.

A **medicine chest** located in the bathroom closet wall provides handy storage for cosmetics, cleaning aids and medical supplies. The handy tambour door rolls up for easy access.

The **lavatory bowl and shower pan** in the bathroom are made of a special ABS long-wearing, light weight, high strength plastic material. When cleaning, use soap or detergent only—never use scouring powder.

The **telephone shower head** is designed to give maximum flexibility in usage and provides for water saving techniques when using your Motorhóme on self-containment. For operational procedures refer to page 100.

Stainless steel sinks are not harmed by boiling water. However, salt, mustard, mayonnaise and ketchup can cause pitting. Stubborn stains will yield to paste made of water and slightly abrasive household cleaner. Be sure to work in the direction of the polish-lines on the steel, to keep the original finish. Fingerprints are sometimes a problem. They can be minimized by applying a cleaner that leaves a film of thin wax: simply wipe it on and remove the excess with a dry cloth. After this, fingerprints can be wiped off with a soft dry cloth, or one moistened with a little wax cleaner. The surface should always be washed before wax is applied. Regular cleaning will prevent build-up of scale and film. Ordinary soaps or detergents are best for routine cleaning of the stainless steel sinks. Rinse thoroughly with warm water and wipe dry with a cloth to avoid streaks and spots.

All the **drawers** are removable allowing you storage flexibility and ease of packing and unpacking.

Switches for the **living room overhead valance lights**, the **door step light** and the **outside flood light** are located next to the main door frame on the living room wall. The valance light switch has 3 positions. When the upper portion of the rocker is pushed, the lights are turned on high. When the lower portion is pushed, the lights are on low. When the rocker is centered, the lights are off. The other two switches are two position. When the top of the rocker is pushed, the light comes on. When the bottom is pushed, the lights are turned off.

Bed lights are operated by a switch in the end of the lens. To replace bulbs, work up through opening in underside of lens.

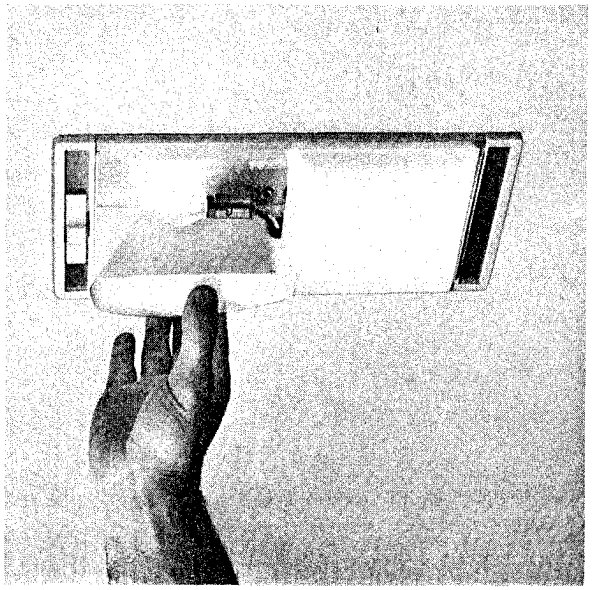
To operate the **ceiling light fixtures** slide the switch bar located on the end of light frame, from side to side; first position 1 light, second position both lights. To replace the bulbs carefully squeeze plastic lens and remove from frame.

When **attaching wall hung improvements,** like hooks for clothing, bookshelves and extra towel racks, secure with half-inch No. 8 sheet metal screws with flat binder heads. Make holes in the aluminum inner walls with a small hand drill (No. 30 drill bit).

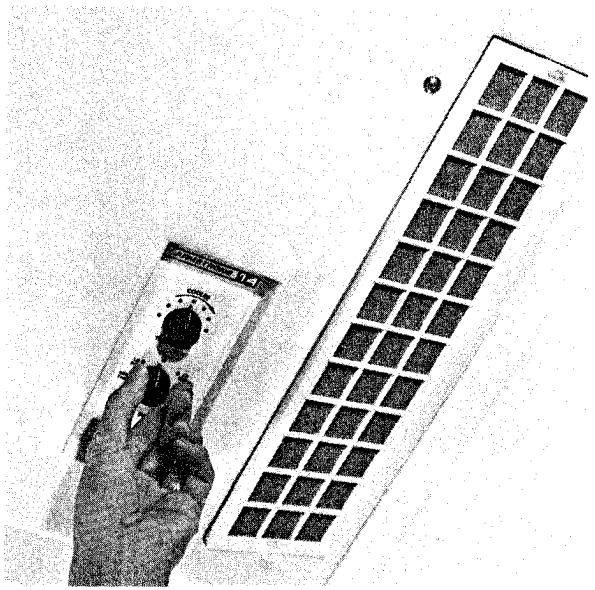
The **air conditioner** (optional) requires expert installation. Please let your Airstream dealer or the factory install it. The air conditioning unit can be used for cooling or heating, or for air circulation only.

To operate for cooling: - 1979, Armstrong

1. Make sure you are connected to 120V supply. Close doors, windows and ventilators.
2. Set to "Hi-Cool" position to start unit. Set thermostat indicator to desired position for your particular comfort level. On "Hi-Cool" fan will run continuously.
3. Set to "Lo-Cool" position for night time operation or if air conditioner cycles on or off at close intervals. On "Lo-Cool" the fan will also run continuously.
4. Do not use "Lo-Cool" or "Hi-Cool" settings below 60°F outside temperature.



Ceiling Light



Air Conditioner Controls

5. For air circulation, use "Fan" position. During the heating season, the fan can help circulate warm air from the furnace.
6. To shut off, set switch to "off" position.

On models with heating unit, to operate for heating:

1. Set thermostat to "HEAT" position and set thermostat indicator to your desired comfort level.
2. Set system switch to your preferred speed setting. We suggest MED or LO speed.

   Note: The heater will not operate until speed selection is made.

To use for air circulation, set thermostat to "OFF" position and system switch to any of the three speed selections. To shut unit off, set system switch to OFF position.

To clean filter, shut unit "off." Clean filters with vacuum cleaner once a week. Once a month remove filters and wash in warm soapy water for a thorough cleaning.

The optional **ice cube maker** operates on 120V electrical current only, and is separate from your refrigerator. It is designed to produce up to 22 pounds of half-circle ice cubes per day. Operation is completely automatic. The unit will manufacture ice cubes until the cube basket is filled. Minimal defrosting is required when operating on normal cycles. When demand is low or door is closed continually for long periods of time, defrosting may be necessary. To defrost, disconnect 120V supply and prop the door open until all frost build up is melted. The door should be propped open for winter storage.

AIR CONDITIONING, 1981 COLEMAN

On 1981 models with the dual roof air conditioner, it is necessary to operate them on different circuits. The rear air conditioner is wired directly to the 20 amp circuit breaker on the Onan generator and will only operate when the generator is running. The forward air conditioner is wired into the standard breaker box and will operate when the Motorhome power cord is plugged in a 120 V power source.

NOTE: The micro-wave oven and the forward air conditioner may not be operated at the same time. A switch located just forward of the range exhaust fan filter controls whether the current is being supplied to the micro-wave or the air conditioner.

General Information

Your unit is operated totally from the control panel on the inside ceiling assembly. There are three (3) controls on the control panel, they are as follows:

1. The temperature control regulates the "on" and "off" temperature setting at which the compressor or heater (if you have the Elect-A-Heat model) will operate.
2. The small lever regulates the volume of air that your air conditioning unit will be handling during the fan only, cooling or *heating, (if you have the Elect-A-Heat model) cycle. In the "up position" high air volume and in the "down position" low air volume.
3. The selector switch positions the desired mode (Off, Heat, Fan Only, and Cooling).

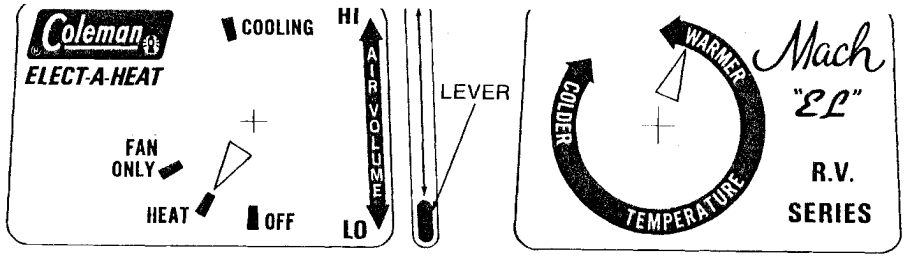


Figure 1

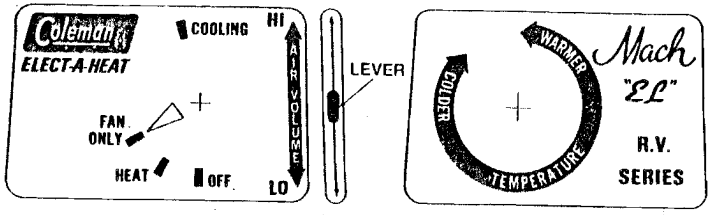
Your Coleman RV air conditioner unit incorporates a unique air damper control which regulates the volume of air being circulated in the RV as well as several other things related to your personal comfort. First, the blower recirculates air throughout the RV to keep you comfortable. In addition, the air being circulated is completely filtered by non-allergic natural fiber filters while the unit is in operation. Second, it conditions the air to the temperature that is most comfortable for you if the unit has been sized correctly to your RV and the locale.

*NOTE

The optional Elect-A-Heat is intended to take the chill out of the indoor air when the air is a few degrees too cool for comfort. When properly sized, the Elect-A-Heat is an effective "chill chaser". It is not a substitute for a furnace.

To Operate For Heating

1. Set the selector switch to the "Heat" position, Figure 1. The fan will automatically start circulating air continuously.
2. Set the temperature control to the temperature level that is the most comfortable for you. The heater will automatically turn on when the temperature of the air entering the air conditioner drops below this setting a few degrees and automatically turns off when the temperature of the air entering the air conditioner rises a few degrees above the temperature setting you have selected. The air conditioner will keep cycling the heat on and off in this fashion until you change the selector switch to another mode of operation.
   NOTE: The coach air temperature must be below 80°F. for the heater to operate.
3. You can regulate the air volume and resulting air temperature change with the lever and in conjunction with closing the louvers partially. Fully open louvers will



Cooling and Heating Models
Figure 3

throw the prewarmed air toward the back and front for efficient circulation and faster warm-up of the vehicle. NOTE! Although the air temperature is lower the same amount of heating capacity is produced, irregardless of louver position. Hottest air is produced when lever is in full down position.

To Operate For Air Recirculation Only

1. Set the selector switch to the "Fan Only" position on the dial, Fig. 3. The fan will run continuously and filter the air without either cooling or heating the air. To obtain a lower or higher volume of circulating air, simply lower or raise the lever. This will close or open the damper in the air conditioning unit to give you almost unlimited control over the volume of air being recirculated in your R.V.

To Operate For Cooling

1. Set the selector switch to the "Cooling" position of the dial. The fan will run continuously and filter the air while keeping the air circulating throughout the R.V. Setting the lever at "Hi" will give you the greatest volume of air circulation, and is recommended to provide fastest "cool down" of the vehicle.
2. Set the temperature control to the temperature level that is the most comfortable for you. The compressor will automatically turn on when the temperature of the air entering the air conditioner rises a few degrees above the setting you have selected and automatically turns off the compressor when the temperature of the air entering the air conditioner drops a few degrees below this setting. The air conditioner will keep cycling the compressor ON and OFF in this fashion until you change the selector switch to another mode of operation. During this time, both the air recirculating system and the refrigerant system will be in operation to provide you with filtered dehumidified, cold air in the volume you desire.

Operation of Damper (Small Lever)

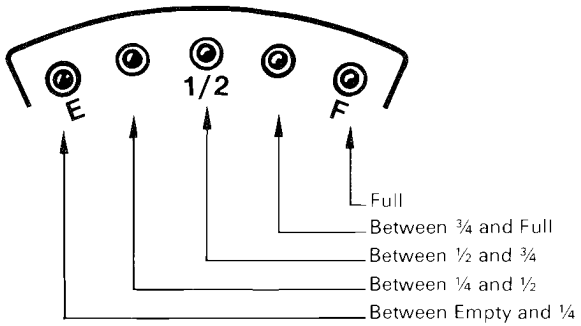
When relative humidity conditions are high, set air damper at either medium or high setting. In high humidity conditions we do not recommend operation of the air conditioner at the full "Lo Air Volume" position, which may cause excessive sweating at ceiling plate location.

Operation During Cooler Nights (Cooling)

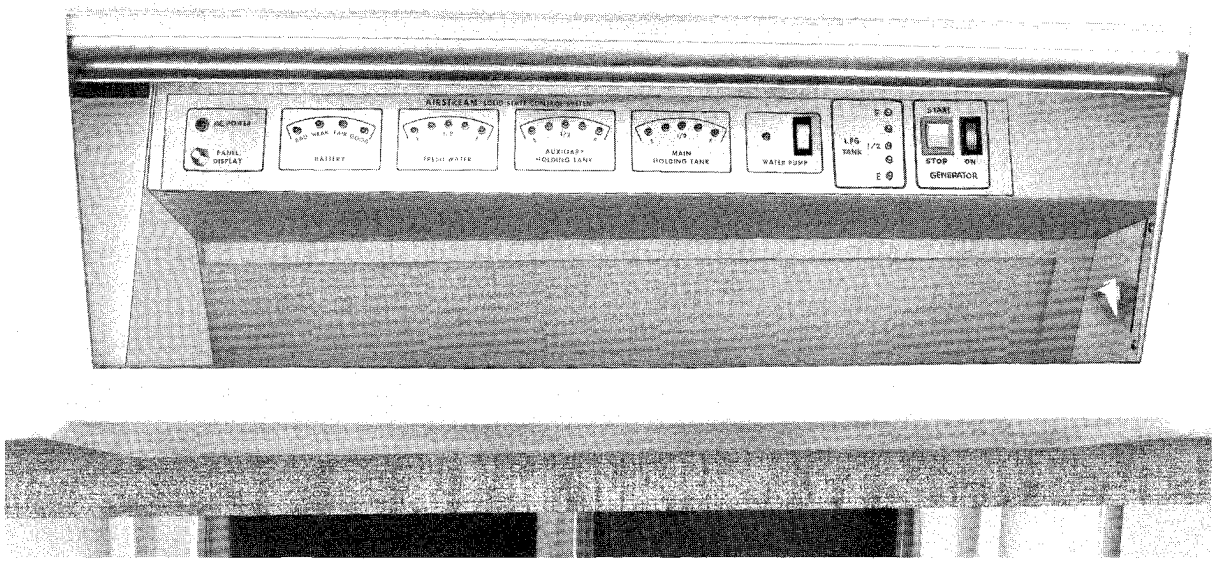
It is important when temperatures drop in the evening or during the night below 75°F. that the thermostat (Temperature Control) be set at about midway between "COLDER" and "WARMER". When the setting is at "COLDEST" it may cause freezing or icing-up of the cooling coil (Evaporator) and stop cooling. During the heat of the day reset temperature control to any desired cooling position.

NOTE

Should icing-up have occurred it is necessary to let the coil defrost before normal operation is possible. Run unit on "Fan Only" position. If increased or full air flow is observed, the coil should be clear of ice.



Fresh Water and Holding Tank Gauges



Range Exhaust Control and Solid State Control Panel

The **Solid State Control Panel,** located in the galley roof locker of your unit, contains the necessary indicator lights to monitor your Airstream's systems.

The **panel display light** switch lights all the gauges.

The **battery condition tester** indicates good, fair and low battery condition. (This meter does not indicate true battery state of charge while you are hooked-up to 120 volt city power. For this reason, you should briefly disconnect city power, turn one light on in low position for about 30 seconds, then take a reading). When it shows low condition, you should take every reasonable step to conserve power by using as few lights as possible and switching off appliances. The Univolt battery should be charged as soon as practical by the vehicle engine's alternator, or by connecting the power cord to 120 volt city power, or by the 120 volt generator.

The **water pump switch,** when on, also lights the indicator light. For more information on the pump, please refer to page 99.

The **water tank, main holding tank** and **auxiliary holding tank gauge lights** indicate the amount of liquid in their respective tanks.

Measurements are made by means of a series of electronically controlled probes located at various levels in each tank.

A **remote start switch** for your 120V generator is located at the end of the Solid State Control Panel. Push the switch rocker up and the generator will start. The red indicator light will indicate when it is running. Push the switch rocker down to stop the generator.

For complete details on the generator see pages 108-119.

The **LPG** tank indicator lights show the amount of liquid in the tank. They will indicate any quantity between empty and full.

The **power-on light** will glow automatically when you are hooked up to city power. This light and the polarity warning light are your checks on a proper 120 volt connection.

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 which 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. For complete appliance operating instructions, refer to pages 90-98.

Warning: All pilot lights and appliances must be turned off during refueling of motor 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.

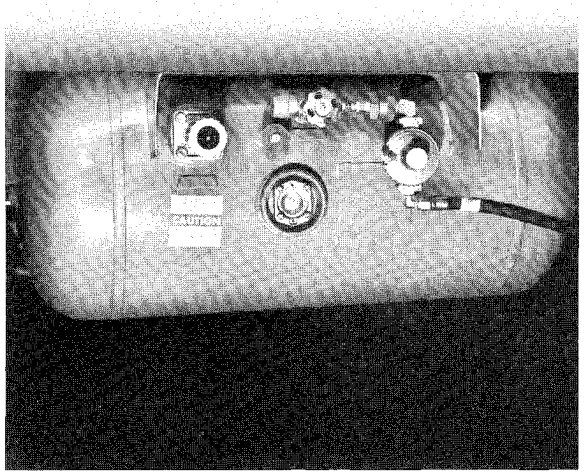
Caution: Moisture in the LPG tank will cause a malfunction of the regulator in controlling proper pressure. This may result in the flame lifting off the burner, or the flame may go out frequently. Many refueling stations will add approximately ¼ to ½ gallon of alcohol to lower the moisture temperature. Moisture will then pass through the regulator without the formation of ice crystals.

Warning: 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 LP service center or Airstream Service Center.

The LPG regulators used on Airstream Motorhomes are designed for low pressure service with a normal outlet pressure setting of 11'' 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 adaptor (horizontal mounting) for signs of corrosion. (An Airstream Service Center is recommended for this service.)



LPG Tank and Regulator

Refrigerator

Your Airstream Motorhome is equipped with an **A.G.A. approved Dometic gas-electric refrigerator.** These are the finest refrigerators available for travel use and will give you many years of faithful service.

For best operation of this refrigerator it is important to level your Motorhome. When parking, try to avoid having a strong wind blowing directly against the vent outlet for most efficient operation.

Controls for both Gas and Electric operation are located inside the food storage compartment, at the bottom of the unit, and in the outside access compartment. See photo.

For Gas Operation, follow these instructions:

1. Open refrigerator door, all controls for gas operation are located at bottom of unit.
2. To start the refrigerator turn the valve knob (A) to gas position. The gas valve is now open and the electric circuits are not in use. Set thermostat knob (C) to setting No. 4.
3. Pull knob (D) of the automatic pilot, and keep it out for 15 seconds. Press in knob (E) of the piezo lighter. The pressing may have to be repeated.
4. After the burner is lit, which can be seen through reflector window (F), keep the knob (D) pulled outward for an additional 15 seconds.
5. Release the knob (D) and check that the burner is operating.

If the burner is not operating, repeat the lighting procedure.

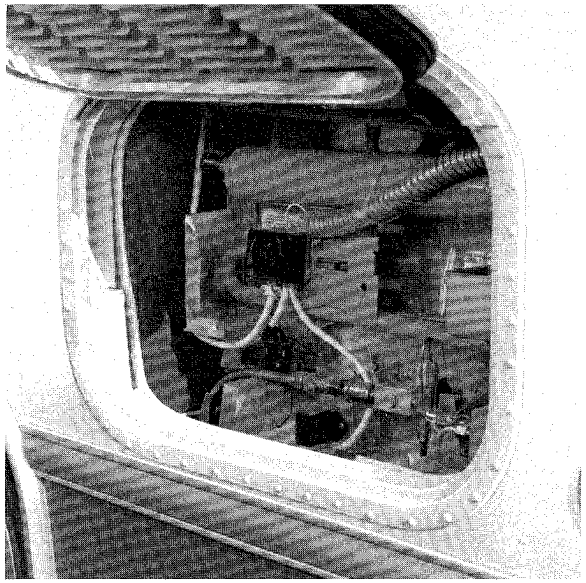
After a long shut-off period the gas lines are likely to be filled with air. In such cases the lighting procedure has to be repeated until the air is pushed out of the lines and the gas has reached the burner.

As soon as the required cold temperature inside the cabinet is reached, the thermostat cuts the burner main flame to the by-pass flame sufficient to keep the safety valve open during gas operation. During electric operation the thermostat cycles the flow of the electrical current to maintain the set temperature.

Incorporated in the burner bracket is an automatic flame failure device which allows gas to pass only when the burner is lighted, keeping the thermocouple hot. Should the flame be blown out, the thermocouple will cool and the device will cut off the flow of gas to burner.

For Electric Operation, use these instructions.

1. Open refrigerator door and outside access compartment door. Outside access doors are opened by unlocking and turning the handle ¼ turn counterclockwise. Controls are located in both areas.
2. To start the refrigerator turn the valve knob (A) to the off position.



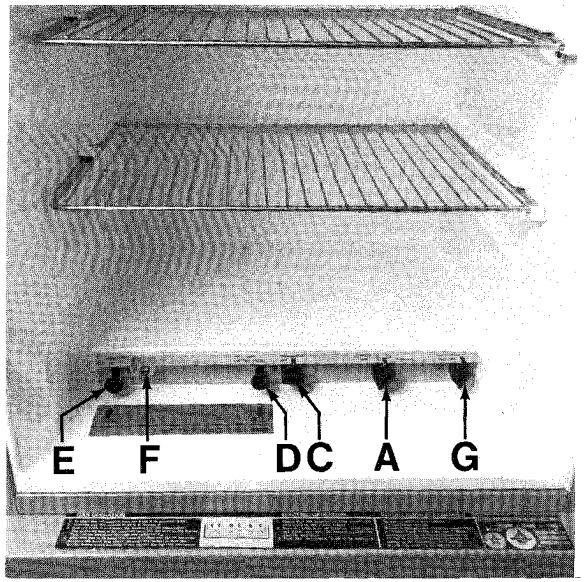
Outside Access Compartment

For 120 V Operation:

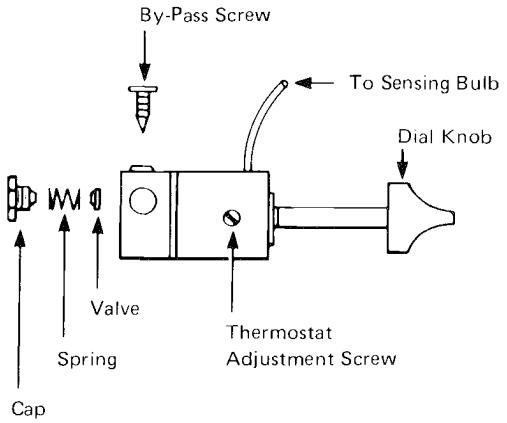
3. Plug the electrical cord into the 120 volt outlet located in the refrigerator outside access compartment.
4. Press knob (A) in, until it stops, then turn to 12V or 120V electric position.
5. Turn the electric thermostat knob (G) to setting No. 4.

For best operation, even during extended stays in parks, your unit should be periodically run on gas.

The refrigerator has automatic thermostatic control of the temperature in the food storage space. The gas thermostat (C) controls the temperature during gas operation, while the electric thermostat (G) controls the temperature during electric operation. Be sure to make the temperature setting on the correct thermostat.



Controls Inside Refrigerator



Thermostat

When cleaning, remove all food and clean the interior and all other plastic parts with warm water and mild detergents. Never use abrasive or caustic cleaning powders, polishes, cleaning paste, gasoline, turpentine or other solvent type cleaners. Use a damp cloth for cleaning. Finish with a soft dry cloth.

When the refrigerator is to be out of operation for some time, always leave the door slightly open or place a pie tin of barbecue charcoal on the shelf.

The Model RM-100 Refrigerator incorporates a unique, fully automatic defrosting device for the general food storage compartment, which eliminates the necessity for manual defrosting at frequent intervals normally associated with most conventional refrigerators in the medium size range. Furthermore, the time interval of each defrosting cycle and the frequency have been so arranged that during defrosting, there is no noticeable effect upon the temperature of the foods stored in the refrigerator, and the frozen food storage conditions can be maintained at all times in the frozen storage compartment.

The following are some trouble shooting tips for emergency use only. They relate to gas operation and should normally be done by the dealer.

Problem: Flame goes out. The thermostat is out of adjustment. To adjust it, turn the dial to "zero". If the flame does not go down to the "low" by-pass setting, follow this procedure:

1. Unscrew the large cap screw at the rear of the thermostat and remove the valve. Clean the seat and valve, and replace.
2. If procedure (1) does not correct the problem, adjust the set screw out (in counter-clockwise direction) until the flame goes down to the "low" position.

If the flame keeps going out when the dial is turned to (O), remove and clean the by-pass screw which is located as shown in the diagram above.

Problem: Burner does not light. Remove and clean the burner barrel, and/or check the gas supply.

On gas refrigerators, the flue will require cleaning at least once a year. To do this, it will be necessary to gain access to the back of the cabinet. When cleaning the flue proceed as follows:

Unscrew the burner housing, then lift out the baffle on its support wire from the top of the boiler tube. From the top, clean the flue with a suitable flue brush. Also clean the baffle, before putting back in place. An obstruction in the flue will reduce or stop flue draft. Flue obstructions will cause odors outside refrigerator, slow freezing and higher cabinet temperatures.

Caution: 12V should only be used while driving or while the motorhome engine is running. When parked use 120V or gas mode only.

Furnace

The Airstream Motorhome furnace is an American Gas Association approved Suburban unit with an electronic ignition designed specifically for R.V. units. It has a sealed combustion system with a dual blower for maximum air circulation. One blower circulates room air while the other draws in air for combustion. The adjustable louvered heat registers control warm air flow while cold air returns through the galley cabinet toe kick opening.

The heat duct system also circulates warm air around the holding tank and water tank, a vital feature when operating in below freezing weather.

The Suburban furnace is thermostatically controlled. When the thermostat calls for heat, the blower starts and only after it has reached nearly full speed will the burner light. After the temperature set on the thermostat is reached the blower will continue to run for a short time removing most of the remaining heat from the furnace as well as forcing the combustion gases from the heat exchanger. To turn the furnace off for an extended period of time turn the thermostat and the gas valve to their "OFF" positions. The gas shut-off valve is outside the Motorhome below the furnace. Operating instructions are printed inside the furnace door.

Trouble-free operation of the Suburban furnace will depend on your adherence to recommended operating procedures and precautions. Regular preventive maintenance is important.

Recommendations and instructions are covered under "Maintenance and Cleaning" on page 93. Corrections of possible malfunctions presented here will be helpful in an emergency situation, but servicing should be done by a dealer. One note of caution regarding flue gases: they are vented from the furnace to the outside through a vent in the outside wall. **Do not in any way obstruct this vent by placing clothing or other flammable material on the vent assembly.** Check it often to make certain it does not become clogged.

To start the furnace:

1. To light the furnace, turn the manual valve to the "off" position and wait 5 minutes with blower running. (Set thermostat above actual temperature to operate blower.)
2. After 5 minutes, set the thermostat to the "off" position.
3. Open manual valve. (Correct operating characteristics depend on this valve being positioned fully open. Never attempt to operate with valve partially closed.)
4. Set thermostat on desired temperature.
5. If burner does not light, set thermostat on "off" and repeat steps 1 thru 5.
6. If after 3 trys and no ignition, go to shut down and determine cause. Do not attempt to light burner with matches.

To shut down

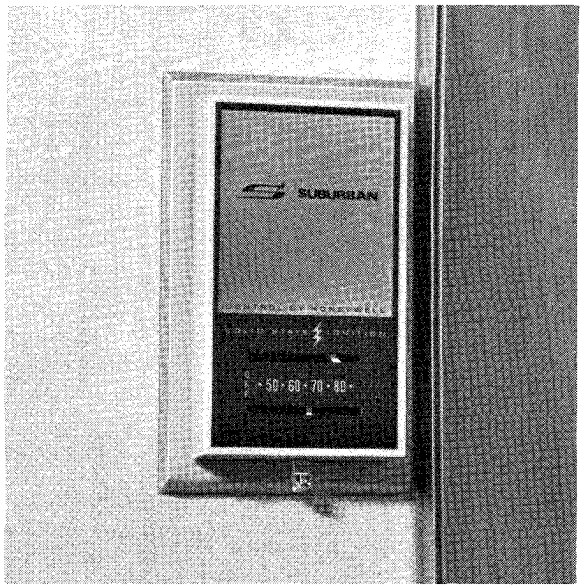
1. Turn manual valve to the "off" position.
2. Set thermostat on "off".

Caution: The air shutter adjustment cover must be tightly secured for proper operation of the heater.

If your fuel supply is depleted the main burner will go into lockout. To reset the lockout, turn gas valve to "OFF" and set thermostat to "OFF". Wait 5 minutes and return to operation.

Adjustment of Main Burner (Primary air): Set the furnace into operation by advancing the thermostat and allow to run until it reaches near-maximum operating temperature. Observe the main burners through the burner observation window. The flame should be without a trace of yellow and be "sitting" on the burner. As the furnace was tested at the factory before shipment, it may be found that the primary air is already in proper adjustment. However, adjustments may vary from one location to another due to differences in elevation and in characteristics of the fuel gases.

If the flame burns yellow or "lifts" off the burner, it needs adjustment. Take out the screws retaining the rectangular cover plate and lift the plate off.



Furnace Thermostat

Inside the opening is a threaded rod with the visible end slotted to receive a screwdriver. By turning the rod you will adjust the position of the main burner air shutter. This air shutter should be adjusted to the point where a hard blue flame is present at the burner. Replace the cover and check to be certain that the flame is still hard blue.
Caution: The primary air adjustment cover plate must be in place for proper operation of the furnace.

Note: If burner is allowed to operate in yellow condition, "soot" will accumulate on vent cap and in radiators. This should not be allowed to occur.

When the humidity is high inside and you wish to remove moisture, open a roof vent and turn on a vent or open a window slightly for cross ventilation.

Maintenance and Cleaning
We recommend that the furnace be inspected and thoroughly cleaned by a qualified service agency before each heating season. This would include the combustion chamber, the main burner, the blower assembly, and all control parts. A careful inspection of all gaskets should be made and if any gaskets show signs of leakage or deterioration, they should be replaced.

Cleaning of the chamber and main burner will be required if the unit has been allowed to operate with a high yellow flame. The yellow flame is due to incomplete combustion (lack of air) and will deposit a soot formation inside the chamber and on the main burner.

To clean the chamber, main burner, blower assembly and controls, the chamber assembly must be pulled from the furnace. (See instructions for removing chamber.)

The furnace is equipped with an oiled, sealed motor and requires no oiling.

Furnace Trouble Shooting Check List

Malfunction	Cause	Correction
Noisy, rumbling burner or smoke or carbon at exhaust vent.	Faulty (broken) electrode	Replace electrode
	Improper air adjustment	Adjust primary air
	Excess fuel pressure	Check LP Tank Regulator
Thermostat calling for heat, furnace blower does not start	Safety Lock-out	Press reset button
	Blown fuse	Replace fuse
	Dead Battery or loose wiring	Check Battery and examine wiring to furnace
Blower runs for 30-60 seconds then stops and requires manual reset before it will start. Burner does not ignite	No fuel or low fuel pressure	Check LP Tank
	Tank or Furnace manual valve closed	Open valve
	Low voltage at furnace	With blower running, check voltage at terminals on furnace. If below 10.2 volts, check wiring, battery or converter
	Ignition connection loose at ignitor or ignition pak.	Tighten both connections.
Blower runs 30-60 seconds, then stops and requires manual reset before it will restart. Burner does ignite	Low fuel pressure	Check LP Tank
	Faulty Flame Switch	Replace Flame Switch
	Poor Burner Flame	Adjust Primary Air
	Broken Electrode	Replace

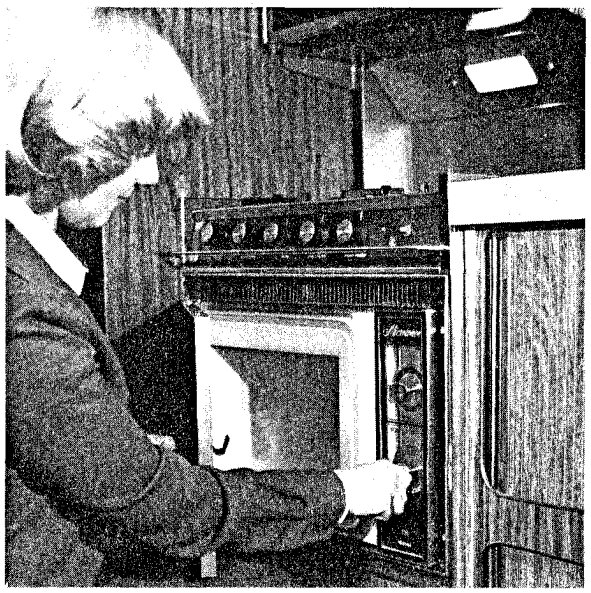
RANGE AND OVEN

Your Motorhome is equipped with a Magic Chef gas range and oven. The following are some hints on how to keep them operating at their best.

Note: The 1979-80 range gas line shut-off valve, located on the lower exterior of the Motorhome below the range, must be turned off when driving, when refueling, when changing the gas tank, or if the gas supply is turned off for any reason. Be sure oven and top pilot lights have been relighted as soon as range shut-off valve is turned on. If the range has not been operating for a long time, a longer waiting period for ignition of the pilot may be necessary due to air in the gas lines. On the later 1981 models all the gas supply is controlled by the main valve at the L.P. tank.

To light the pilots:

1. Be sure all valves are in the "OFF" position. The oven thermostat dial should be in the "PILOTS OFF" position.
2. Turn on main gas supply to range.
3. Depress and turn the thermostat dial to the "OFF" position.
4. Lift main cook top panel and light top burner pilot with a match.
5. Open oven door and light pilot with a match. A small flame will be noted at the top of the pilot burner.



Microwave Oven - 1979

The oven thermostat control knob is combined with the constant oven and top burner pilot shut-off. For normal use: turn only between "OFF" and "BROIL". When traveling, turn to "PILOTS OFF". Relight only when you want to use the range, by turning from "PILOTS OFF" to "OFF" and lighting oven and top burner pilots with a match.

Range top Section

The range is equipped with orifices for use with L.P. gas only. The flame will be approximately $\frac{1}{2}$" long. Do not attempt to adjust gas to burner. The orifices have no readjustment.

Top burner pilot adjustments:

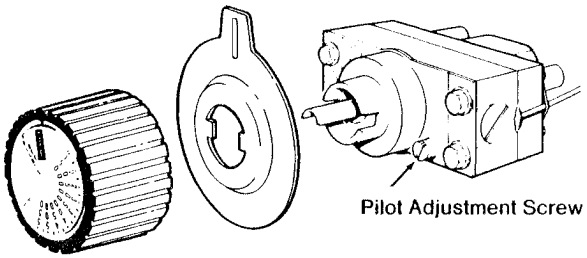
Adjust top pilot so that tip of flame is just over the edge of inner cone. Top burner pilot adjustment screw can be reached by removing the thermostat knob and escutcheon (See Figure 2.) Burners should light within 4 seconds. If lighting is difficult, check height of pilot.

Warning: Never allow the top cover to be closed while the range is in operation, as this could extinguish the flame and permit gas to escape into the Motorhome.

Oven Section

The thermostat on your oven does not have a by-passing setting. It will cycle off and on at all temperature settings except broil. No by-pass adjustment is necessary. There are no oven pilot adjustments on the thermostat. Control has been factory preset for use on L.P. gas.

To adjust main oven burner air shutter: Open air shutter to the full open position where you have a blowing condition. Begin closing the shutter slowly. When you reach the correct adjustment, blowing will stop. Burner should have a sharp blue flame approximately 3" long.

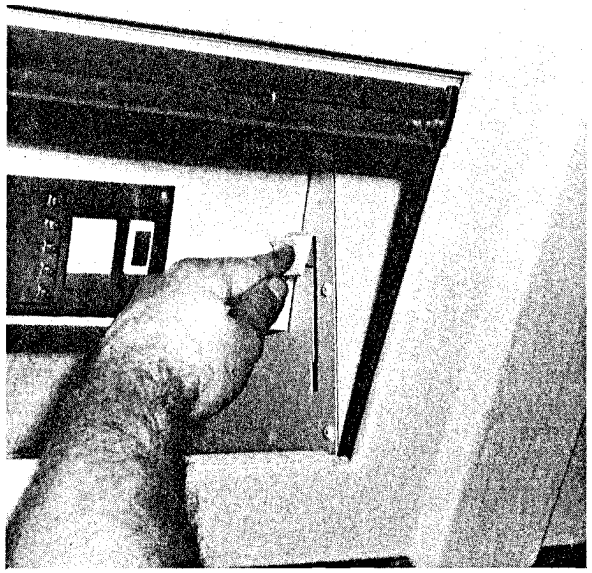


Oven Thermostat - Figure 2

Important: Your oven is equipped with a safety ignition that requires a minimum of 30 seconds to operate after turning the oven control knob on. The oven pilot may be slow in lighting due to air in the gas lines.

Cleaning Instructions:

1. The main top has been hinged from the back so that it can be raised or removed for cleaning around the top burners.
2. When cleaning the top burner heads, care should be taken that all ports are opened up with a toothpick afterwards.
3. Spill-over or spotting in the oven or broiler are more easily cleaned when removed promptly after they occur.
4. An orange flame indicates dirt or dust getting into burners.



Range Exhaust Hood

Never wash porcelain when warm. Never use cleaning powder containing grit or acid. When oven bottom is replaced after cleaning and servicing, be sure that it is locked in place.

MICROWAVE OVEN

Airstream dealers cannot service or make adjustments to your optional Magic Chef Microwave Oven. This must be done by an authorized Magic Chef agency. If you need to have service work done on your oven, check the list of agencies provided with Motorhome.

To operate your oven, first open the oven door by pulling up on the door latch then select the cooking mode on the mode dial, Bake, Broil, etc. Place your food in the oven, close the door, making sure it latches tightly. Set the timer dial for the desired time and the oven does the rest. You should always make sure the timer is turned back to OFF when you remove the food.

Your oven shuts off automatically when you open the door. Never tamper with the door interlock switch or operate the oven with the door open. If the door becomes damaged so that it will not close properly, have it repaired before attempting to operate your oven.

Do not allow grease to build up inside your oven or on the door seal. Use a mild detergent and water to clean the inside surfaces. Don't use abrasive cleaners as they can scratch the surface.

The range exhaust hood provides venting of cooking heat and smoke from the Motorhome. To operate, pull down on lever located inside forward galley roof locker. This will open the shutter and turn on the switch for the power fan. Clean the filter at least every six months with warm water and detergent. To remove the filter, remove the two screws that secure it to the housing and let it drop out while supporting it with your hand. Keep the vent housing clean of grease and dirt by frequent washing.

WATER HEATER

The Bowen Gas Water Heater is equipped with a Robertshaw 100% shut-off safety valve which shuts off the gas supply if the pilot flame is extinguished or the water temperature becomes excessively hot. It is lighted and serviced from the outside through an access panel at the roadside, rear, of the Motorhome.

Procedure for lighting or relighting:

1. Be sure the water heater is filled with water. Open the hot water faucet at the sink and when the water flows, the heater is full.
2. Turn manual gas valve, on the lower exterior of the Motorhome below the water heater, to the "ON" position.
3. Turn the gas cock knob (A) to the "OFF" position and the temperature indicator dial (B) to the lowest temperature position.
4. Wait sufficient length of time to allow gas, which may have accumulated in the burner compartment, to escape (approximately five minutes).
5. Turn gas cock knob (A) to "PILOT".
6. Keep the reset knob depressed for one-half minute after the pilot flame ignites.
7. Turn the gas cock knob to "ON".
8. Set the temperature indicator dial to the desired water temperature.
9. To shut down the water heater, turn the gas cock knob to the "OFF" position.

If the pilot flame does not have a small orange tip, the pilot is not getting enough gas. The flame should be about $\frac{1}{4}$" in vertical height when the water in the tank is cold and the burner is off, 1/4 to 3/8" in horizontal length when the tank is warm.

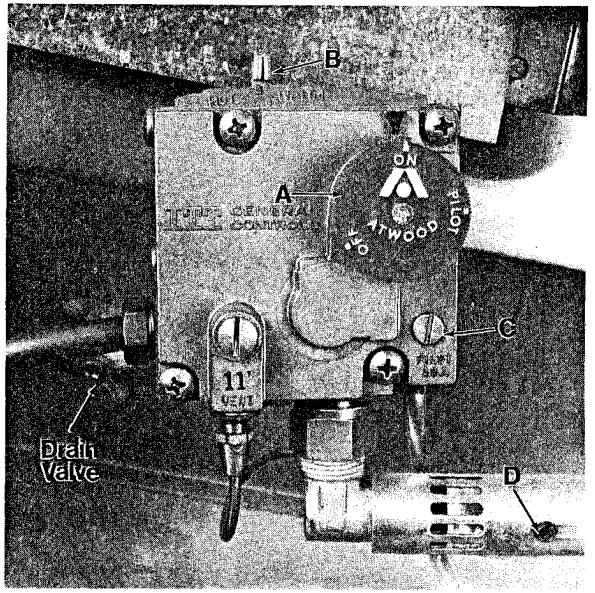
A large orange flame indicates excessive gas supply, which will result in short pilot life and early replacement. The pilot has been properly adjusted at the factory and should operate with a blue, orange tipped flame enveloping the pilot thermocouple. Removal of the pilot adjustment cap (C) in the lower right corner of the control will reveal the pilot adjustment screw. Turning this screw clockwise reduces the flow of gas to the pilot (blue flame) and counter-clockwise, the gas supply will increase (orange flame). Always replace the pilot adjustment cap to prevent gas leakage.

Direct ignition water heaters.
(Optional 1981)
The control switch for the direct ignition water heaters is located just above the control panel over the range. Following is the operating instructions:

1. Place switch in "on position.
2. If switch light comes on, place switch in "off" position and wait 5 minutes.
3. Repeat step one.
4. For complete shut down, place switch in "off" position.

NOTE: It may take more than one start attempt when the unit is being used for the first time or after the L.P. tank has been refilled.
This unit is equipped with a manual reset automatic gas shut-off system actuated by high water temperature. Reset as follows:

1. Position switch in off position.
2. Depress red button on limit switch thru hole in junction box cover. Switch must be in off position before servicing.



Water Heater Controls and Drain Valve

Water System

The water system provides full service both when the Motorhome is self contained, or when city water is available.

When self contained, the water pump should be turned on. The switch is located on the wall above the galley or on the optional Solid State Control Panel. The water pump will run whenever a faucet is closed.

Note: The water pump must be turned off when hooked up to city water supply and when you leave your Airstream Motorhome unattended.

For city water supply, connect a $\frac{1}{2}$" minimum high pressure hose to the water inlet fitting (see photograph) located on the rear roadside corner of the Motorhome. Turn the hose on and slowly open an inside faucet until the water flows free of air. The system will now be ready for use. If you are staying for some time where city water is available, drain the water storage tank. The drain valve is accessible under rear lounge or curbside bed. Be sure to refill the tank with fresh water before departing.

The water tank is located on the roadside rear corner of the 1979-80 models.

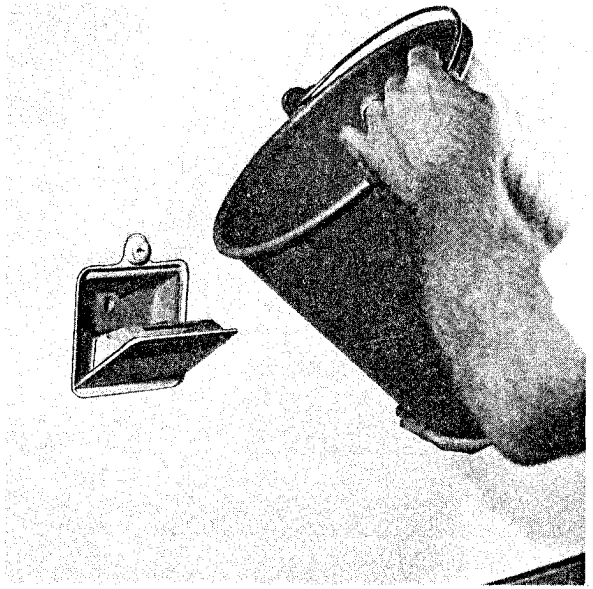
The 1981 models have the water tanks under the roadside front lounge. To fill the water storage tank, open the filler spout (see photo) on the exterior wall, and fill with a hose or a bucket, until the water supply pipe is overflowing. If the water tank must be cleaned, the following procedure is recommended.

1. Prepare a sodium hypochlorite solution using potable water and household bleach ($5\frac{1}{4}$ to 6%) in the ratio of $\frac{1}{4}$ C of bleach to 1 gal of water. (Common household bleaches are Purex and Clorox.)
2. Pour 1 gal of hypochlorite solution for each 15gals of capacity into the empty water tank.
3. Add enough potable water to completely fill the water system.
4. Allow closed system to stand for three hours.
5. Drain the hypochlorite solution from the system and refill with potable water.
6. Excessive hypochlorite taste or odor remaining in the water system is removed by rinsing the system with a vinegar solution mixed in the ratio of 1 qt of vinegar to 5 gals of water.
7. Drain the system and flush with potable water.

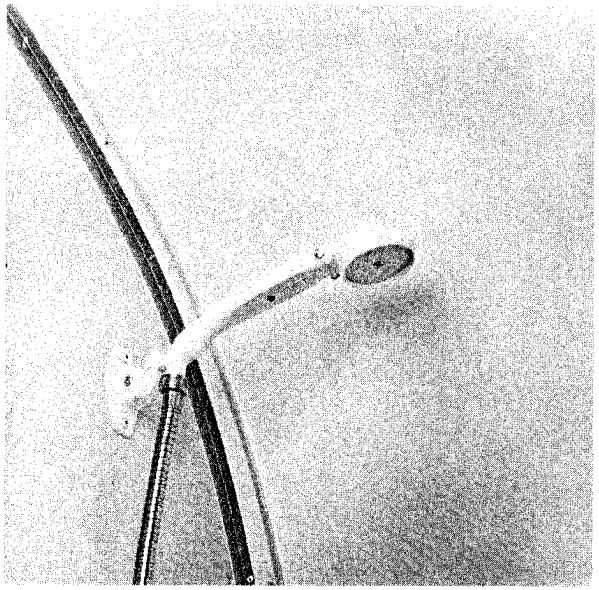
City Water Supply Connection

The pump and water filter are under the refrigerator on the 24 ft models and in the rear bathroom wardrobe on the 28 ft rear bath models. On 28 ft center bath models, the pump and water filter are under the roadside bed. Pump and water filter on 1981 models are located next to the water tank under the roadside front lounge.

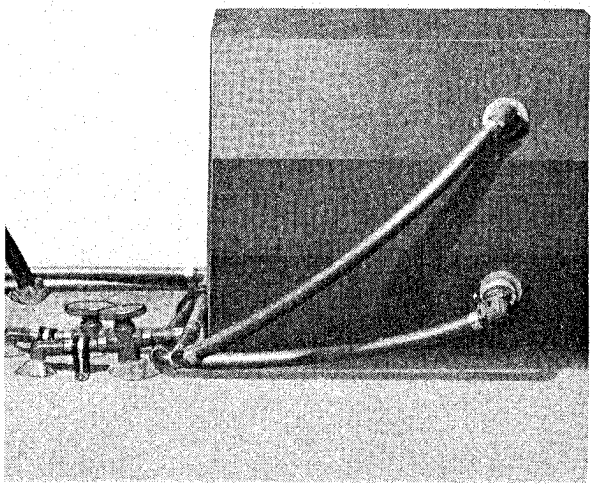
The Everpure Water Purifier (optional) is located under the galley sink. It will remove dirt and colloidal matter, and eliminate most chlorine, phenol and similar odors and tastes while delivering sparkling taste-free water for drinking and cooking. The filter is connected to the cold water line only. The purifier is not guaranteed to remove the tastes and odors of iron and sulphur. To remove these tastes, chlorinate the water supply.



Water Tank Fill Spout



Telephone Shower Head



Drain Valves

Super chlorination will precipitate dissolved iron, and the purifier will then remove the formed chlorine salts. To purify any questionable water add 1 tsp. chlorine (ordinary household bleach) per 10 gallons of water to the water tank. We recommend the use of tablets available at your local dealer. The quality of the water never varies even at the end of the filter pack life, however as the minute pores slowly fill up with impurities, this will gradually reduce the rate of flow until it is necessary to change the filter. Instructions are in each box, and we advise buying two at a time, always keeping one in reserve.

To remove used cartridge:

1. Shut off water by lifting valve handle. Move counterclockwise as far as possible.
2. Turn colored ring all the way to the left. Ring will drop about ½".
3. Lift cartridge slightly and turn it further to the left until it can be disengaged.
4. Lower cartridge to disengage it from ring. Discard used cartridge.

To install new cartridge:

1. With colored ring in lowered position (turned all the way to the left), orient lug on cartridge with cutout under label on ring.
2. Insert cartridge straight up into ring as far as it will go. Holding colored ring steady, turn cartridge as far to the right as possible.
3. Then turn colored ring far to right to drive cartridge up into head.
4. To lock ring in place and turn water on, move valve handle down. Be sure handle leg engages ring locking-lug.

The **water system** has built-in drain valves to protect it from winter freezing. (See Storage and Winterizing, pages 68-69).

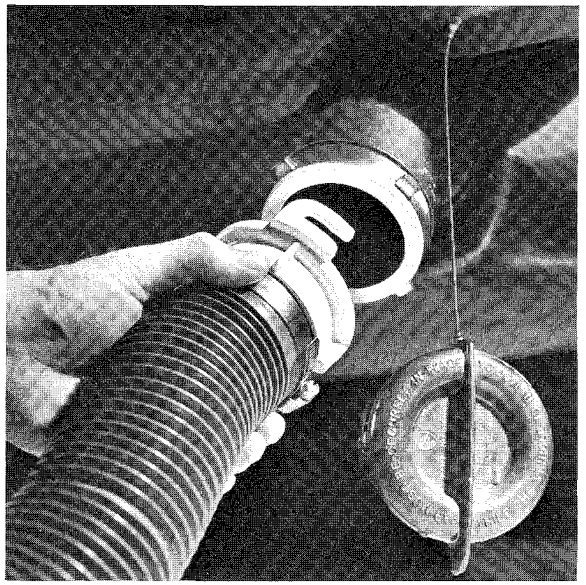
The **telephone shower head** is designed to give maximum flexibility of usage and to conserve water. When using the shower head, it should be held in the hand and moved about the body. Normally the best water conservation procedure is to wet the entire body and then turn the water off with the push button at the shower head. Apply soap, lather thoroughly, then rinse the soap off.

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 waste water from the sink, shower, 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.

When the toilet will no longer drain, the main holding tank is full and must be emptied. Watch this closely, because when the tank is full, sewage cannot be emptied from the toilet bowl.

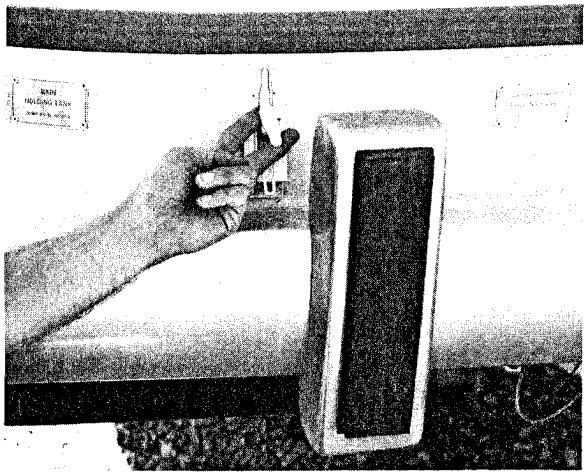
To empty both tanks attach the sewer hose by pressing the bayonet fitting onto the outlet adapter and rotate clockwise until it feels solid and secure. Attach the outlet end of the hose to the sewage outlet, making sure that the hose is placed so that it will drain completely. The dump valves are located on the lower rear roadside corner of the Motorhome. They have two wire loops that lock the handle in the closed position. To unlock push outward on the wire loops and they will snap loose, permitting you to open the valve. Pull up the dump valve handle as far as it will go and wait until the tank is drained.



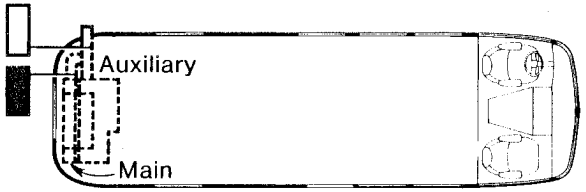
Sewage Outlet

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.

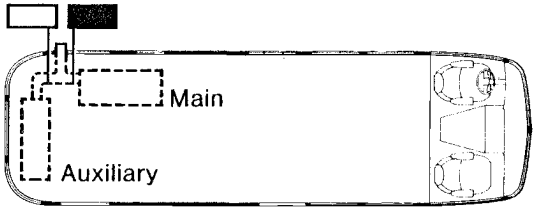
When connected to a sewer outlet keep the dump valve closed and empty the tank every few days or whenever it becomes almost full. **Only by sending a large volume of liquid through the main holding tank at a time will toilet paper and other solids completely wash away.** This practice will avoid the accumulation of solids in the main holding tank which could lead to an unpleasant cleaning job. Should solids accumulate and 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.



Dump Valve - Main and Auxiliary Holding Tank



24 Ft. & 28 Ft. Rear Bath Models



28 Ft. Center Bath Model

Main Holding Tank Dump Valve

Auxiliary Holding Tank Dump Valve

Dump Valve Locations

The Aqua Magic toilet employs a sliding self-cleaning positive seal blade. Odors cannot escape from the holding tank into the Motorhome. The unit uses less than 2 quarts of water for automatic flush.

When conserving water use the optional hand spray in the following way:

1. Hold the hand spray in ready position over bowl.
2. Depress thumb button and step on the foot pedal, which sprays water and dumps the contents at the same time.
3. Spray the bowl clean.
4. Release foot pedal, shutting off water flow.
5. If you wish to refill bowl with water for next use, depress small foot pedal until water reaches desired level.

If you are certain to empty your holding tank every few days, you can use the toilet on automatic flush. It uses very little water and the tank will provide for the requirements of two adults from 2 to 4 days.

Whenever water is scarce, the optional hand spray flush makes it possible to stay a week or longer in areas where you cannot empty the holding tank. In flushing for urine only, first, wet the bowl with fresh water, and again after use. Starting with a dry bowl takes more water for the final rinse. To flush for urine and solid matter: spray just enough water in the dry bowl to provide for floating the paper and solids. After use, rinse down the sides with the hand spray and empty the bowl. Hold the slide valve open and spray and rinse the lower surfaces. Even if it appears clean, quickly spray it one more time, then release the pedal and it is ready for the next use.

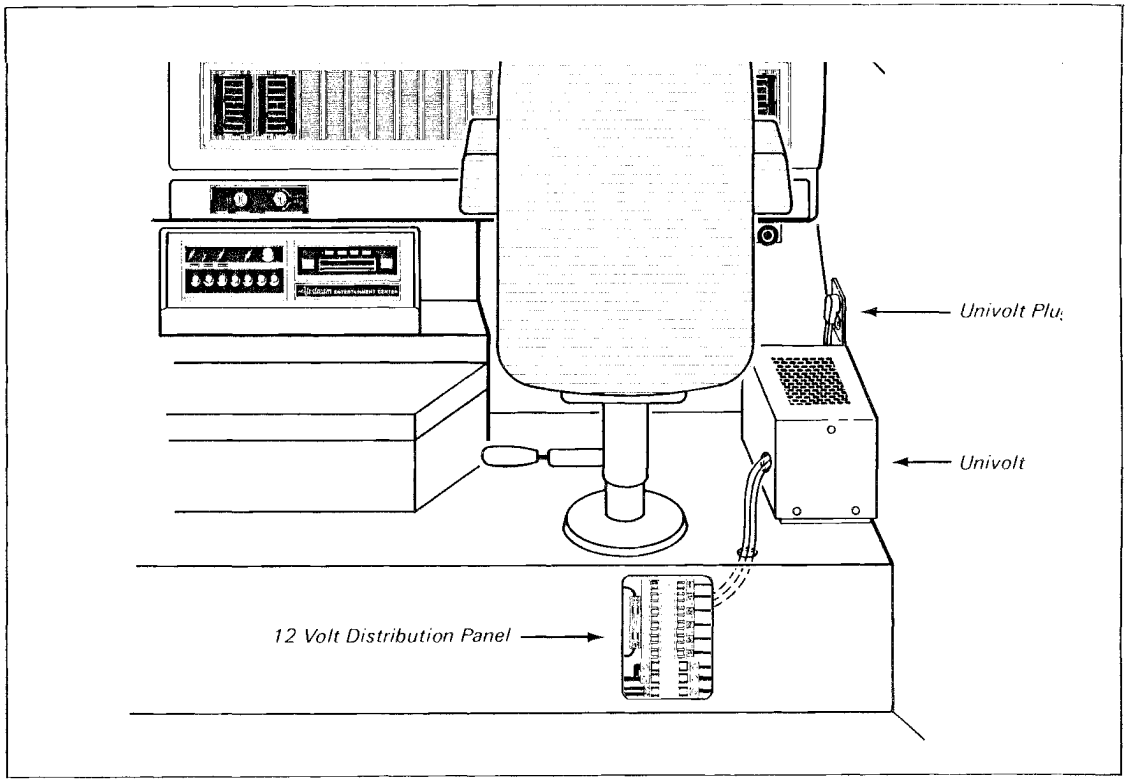
There are certain items that should never be put into the toilet or tank. Facial and other similar tissues: because they have wet strength and do not dissolve easily. Toilet paper, especially white, dissolves well after a period of traveling.

Use only recreational vehicle sewage tank deodorizers. Ammonias, alcohols and acetones may cause damage to the tank, valve parts, tank fittings, and drain hose. For protection against freezing use recommended fluids (see Winterizing, page 68).

Some state and federal parks prohibit draining sink and bath waters into the ground, although this is sometimes done in the wilderness. Your auxiliary holding tank will hold this water until you are at a dump area.

Living Area Electrical System

Your Airstream Motorhome Univolt System enables you to use the light and appliances whether operating on self-contained battery power or hooked up to 120V city power or optional 120V generator. This combination unit is designed for protection from damage up to and including a dead short. The 12V light bulbs give off the same light as regular household bulbs, so that when operating on self-contained battery power only, everything works normally except the 120V convenience outlets and 120V electrical operation of the refrigerator.

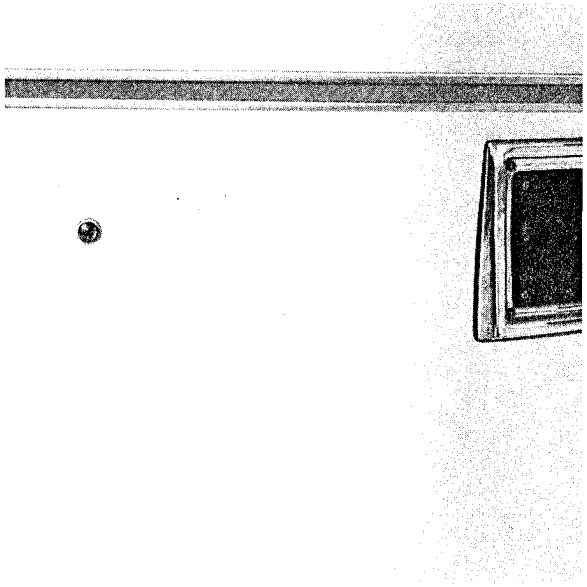


The Univolt and 12V Fuse Panel on the 1979-80 models are located under and behind the passenger cab seat. (See illustration). The 12V fuse panel and univolt on the 1981 models are located under the curbside rear bed.

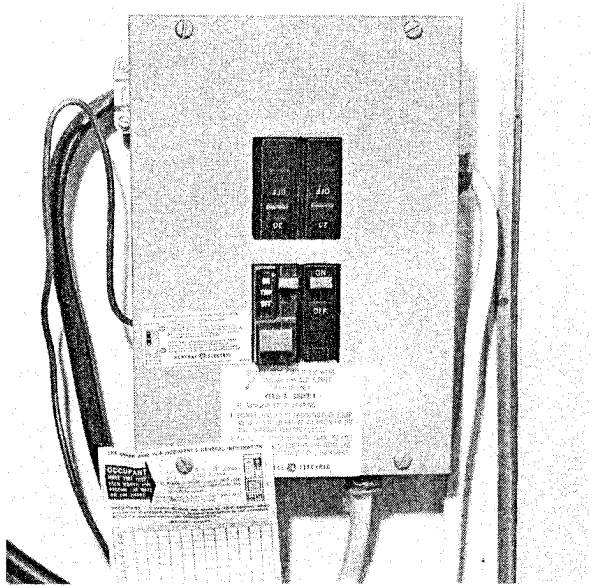
The 120V circuit breaker panel is located in the bathroom closet on rear bath models and inside the rear wardrobe on the center bath model. In the event of failure of a 120V circuit, check your circuit breaker first. While you are connected to the 120V receptacle or 120V generator, the wiring is protected by circuit breakers in the breaker panel. If a breaker continues to trip after you have reset it several times, your circuit may be overloaded with appliances or there may be a short in the circuit. If lessening the load does not solve the problem consult an Airstream Motorhome Service or the factory.

The Univolt System has a series of fuses (see page 127) for your safety and that of the unit. Trouble with the electrical system is extremely unlikely, but if it should occur we recommend that you contact your nearest Airstream Service Center for repairs. We have included a trouble shooting chart to be used in emergencies only, see page 126.

Details of electric motor amperage, light bulb size and fuse and circuit breaker capacities are shown on pages 130 - 131.



Polarity Warning Light



120 Volt Circuit Breaker Panel

To operate self-contained, simply disconnect the power supply cable from 120 volt city power receptacle and connect it to the generator's receptacle located in the roadside power cord storage area.

When your Motorhome is hooked up to 120 volt city power or the generator's outlet, the **Univolt System charges the Univolt battery.** You may also charge the engine battery by turning ignition switch to ACCESSORY position. See page 42 for complete details. The speed and degree of charge depends on how much power is used for lights and appliances, as only the surplus goes to charging the batteries. If you are making an extended stay or storing your Motorhome then you should (if it is available) **keep your Motorhome hooked up to 120 volt city power.**

Whenever possible, use the automatic built-in charger of the Univolt System for charging. The charging circuit automatically controls the current, reducing it as the battery increases in charge. At service stations, make certain they give your battery a slow charge because quick charges will drastically shorten the life of the battery as will allowing repeated complete discharges.

120 Volt Generator

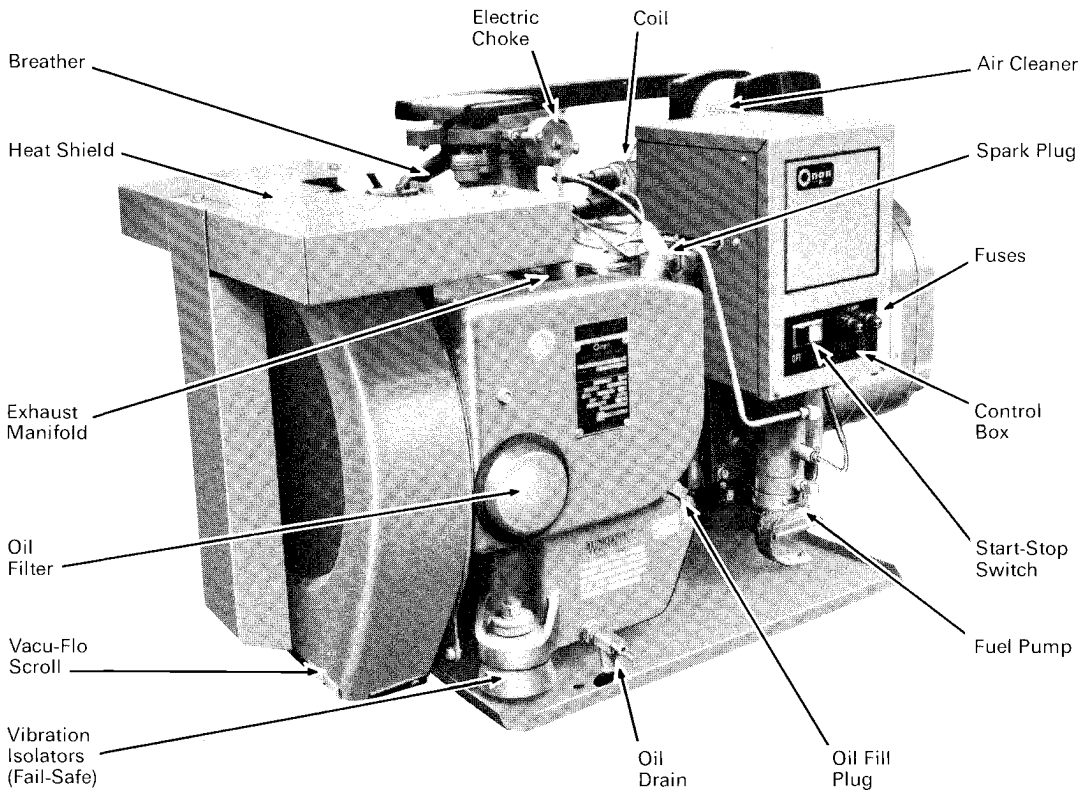
General Information:
The optional generator will allow you to operate your 120 volt appliances without being connected to 120 volt city power. Make sure the 120V power cord is plugged into the receptacle in the generator compartment, then start the generator.

Read this section of your manual carefully and observe all safety rules. Operating instructions, adjustments and periodic maintenance procedures are given to keep your unit running like new and dependable for many years. Remember, any machine, regardless of design or type, will perform only in relation to the service it receives.

If your generator set needs special attention, consult an authorized Onan Service Center for assistance. All service staffs have been factory-trained to provide up-to-date know-how for keeping your Motorhome's electric generating set "on the road."

When contacting an Airstream Service Center or Onan Service Center about the generator set, always supply the complete model number and serial number as shown on the nameplate (see Model Designation following). This information is necessary to identify your generator set among the many types manufactured by Onan.

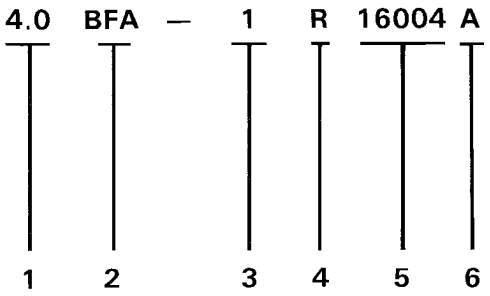
Onan BFA Generator Set



Onan BFA Generator Set

Model Designation:

The following typical model number is broken down into code segments used by Onan.



1. Indicates kilowatt rating.
2. Series identification.
3. Number 1 is the voltage code for 120 volts single phase.
4. Method of starting: R-remote electric starting.
5. Factory code for designating optional equipment if any.
6. Specification letter which advances when the factory makes production modification.

Specifications	General 4.0	General 6.5
Dimensions		
Height	20.30 inch (516 mm)	19.50 in.(495 mm)
Width	18.00 inch (457 mm)	20.00 in.(508 mm)
Length	29.90 inch (759 mm)*	33.37 in.(848 mm)
Weight	232 lbs. (105 kg)	305 lbs.(138 kg)
Engine		
Manufacturer	Onan	Same
Number of Cylinders	Two	Same
Displacement (cubic inches)	43.30 (713 cm^3)	60 in (983cm)
Cylinder Bore	3.25 in. (82.55 mm)	3-9/16 in(90.49 mm)
Piston Stroke	2.62 in. (66.68 mm)	3 in.(76.20 mm)
Compressions Ratio	7.01	7.0 to 1
Engine Speed	1800 RPM	Same
Engine Design	Four Cycle, Air Cooled,	Same w/L-Head
Starting System	Exciter Cranking	Same
Generator		
Manufacturer	Onan	Same
Design	Revolving Armature,	Same
Rating (in Watts)	4000 Watts (4 kW)	6500 (6.5 kW)
Voltage	120	120 or 120/240
Current Rating—120 Volt	33.3 amperes	54.2 Amperes
Phase	Single	Same
Wire	2 Wire	4 Wire Reconnectible
Output Rating	Unity Power Factor	Same
Cranking Current	75 amps	100 Amp. (Nominal)
Capacities and Requirements		
Oil Capacity	4 qts. (Plus ½ pt. f/filter	3 qts.
Recommended Battery—Electric Start	12 Volt 74 amp/Hr	Same
Battery Charge Rate—Fixed	1-1½ amps	Same
Ventilation Requirements (Total)	80 sq. in. (516 cm^2)	120 sq. in.
Tune-Up Specifications		
Spark Plug Gap	.025 in. (0.64 mm)	Same
Breaker Point Gap (cold setting)	.021 inch (0.53 mm)	016 in(0.41 mm)
Ignition Timing Reference (cold setting)	21° B.TC	20° BTC
Valve Tappet Adjustment (engine cold)		
Intake	.003 in. (0.08 mm)	.003 in(.076 mm)
Exhaust	.010 in. (0.25 mm)	.012 in(0.30mm)

*Add ½ inch for UL/CSA listed model.

Safety Precautions:

The following information signals potentially dangerous condition to the operator or equipment. Read this carefully. Know when these conditions can exist. Then, take the necessary steps to protect personnel as well as equipment.

Fuels, electrical equipment, batteries, exhaust gases and moving parts present potential hazards that could result in serious, personal injury. Take care in following these recommended procedures.

Use Extreme Caution Near Gasoline. A constant potential explosive or fire hazard exists. Do not fill fuel tank with engine running. Do not smoke or use open flame near the unit or the fuel tank.

All Airstream Motorhomes have fire extinguishers mounted just inside the doorway. Be sure the extinguisher is properly maintained and be familiar with its proper use.

To Guard Against Electric Shock, remove electric power before removing protective shields or touching electrical equipment. Use rubber insulative mats placed on dry wood platforms over floors that are metal or concrete when around electrical equipment. Do not wear damp clothing (particularly wet shoes) or allow skin surfaces to be damp when handling electrical equipment.

Jewelry is a good conductor of electricity and should be removed when working on electrical equipment.

Use extreme caution when working on electrical components. High voltages cause injury or death.

Do Not Smoke While Servicing Batteries. Lead acid batteries emit a highly explosive hydrogen gas that can be ignited by electrical arcing or by smoking.

Keep The Unit and Surrounding Area Clean. Remove all oil deposits. Remove all unnecessary grease and oil from the unit. Accumulated grease and oil can cause overheating and subsequent engine damage and may present a potential fire hazard.

Do not store anything in the generator compartment such as oil cans, oily rags, chains, wooden blocks etc. A fire could result or the generator set operation may be adversely affected. Keep the floor clean and dry.

Protect Against Moving Parts. Avoid moving parts of the unit. Loose jackets, shirts or sleeves should not be permitted. The danger of becoming caught in moving parts is multiplied.

Make sure all nuts and bolts are secure. Keep power shields and guards in position.

If adjustments must be made while the unit is running, use extreme caution around hot manifolds; moving parts, etc.

Do not work on this equipment when mentally or physically fatigued.

Installation Checks:
There are a few areas that you as the operator should be concerned with. If in doubt about any aspect of your generator set's operation or safety, contact your nearest authorized Service Center.

A periodic inspection of your installation should include the following:

1. **Exhaust:** Check for leaks around manifolds, gaskets, and welds. If leaks are detected have the condition corrected immediately. Remember, exhaust gases contain deadly carbon monoxide. Be sure all holes in the generator compartment remain sealed to prevent poisonous exhaust gases from entering your vehicle.
2. **Fuel System:** With set running, check for leaks. Raw fuel will cause fumes which could **explode.** Check around carburetor and fuel pump inlets. Make sure fuel lines are not rubbing against anything which could cause breakage.
3. **Electrical:** AC Output: Two AC leads, M1 (hot) and M2 (ground), terminate in generator junction box. These wires should be connected to distribution box with multistrand wire enclosed in a flexible conduit. Check all wires (to and from the generator set) and fraying and loose connections.
   Battery Connections: Battery positive (+) connection connects to start solenoid. Battery negative connects to location on rear of generator. Check terminals on set and battery for clean and tight connections.
4. **Ventilation:** The biggest enemy of electric generating sets installed in Motorhomes is excessive heat. Make sure the set's air inlet and outlet are not plugged with dust, dirt, bugs, leaves, or anything that could restrict the flow of cooling air.

Warning: *Do NOT use discharged cooling air for compartment heating since it could contain poisonous exhaust gases. Do not disconnect battery cables from battery while generator set is cranking or running; sparks may cause an explosion.*

Operation:
Before Starting: The crankcase oil capacity of the BFA generator set is 4 U.S. quarts (3.79 lit). Fill the crankcase until the oil reaches the "FULL" marks on the oil level indicator. **Do not overfill.** (See Figure 1)

Use a good quality, heavy duty oil with the API, (American Petroleum Institute) designation SE or SE/CC (gasoline operation only). If this oil is not available, SD or SD/CC designated oil can be used.

Check oil lever daily and change oil every 100 normal operating hours. See Figure 2 for the location of the oil drain. If operating in extremely dusty or dirty conditions, the oil may need changing sooner. When adding oil between changes, use the same brand as in the crankcase. Various brands of oil might not be compatible when mixed.

Oil consumption may be higher with a multigrade oil than with a single-grade oil if both oils have comparable viscosities at 210°F (99°C). Therefore, single grade oils are generally more desirable unless anticipating a wide range of temperatures. Use the proper grade oil for the expected conditions.

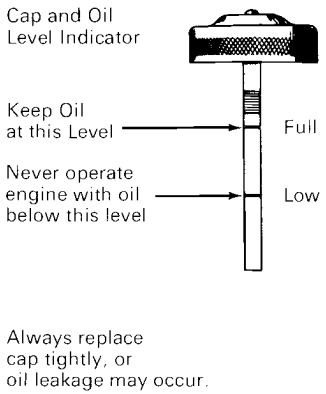
Use of the same grade and quality oil as that used in your Motorhome engine is acceptable as long as the unit is serviced regularly and

the oil meets API designation SE or SE/CC. Other factors (primarily temperature) should also be considered when selecting appropriate engine oil.

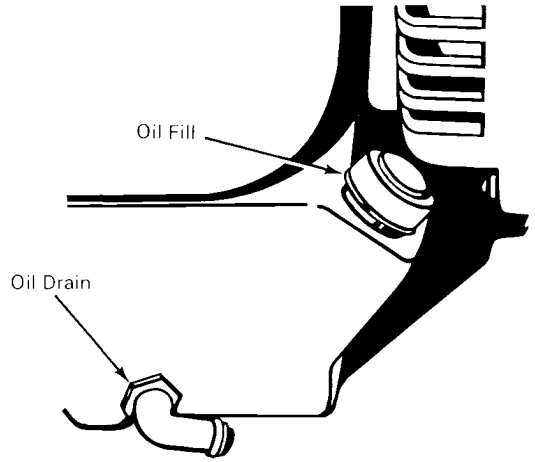
Warning: *Do NOT check oil while the generator set is operating. Hot oil could cause burns by blowing out of oil fill tube due to crankcase pressure.*

Oil Chart

Temperature	Grade
Below 0°F (—18°C)	5W or 5W-30
0° to 32°F (—18°C to 0°C)	10W or 10W-40
Above 32°F (0°C)	30



Oil Level Check - Figure 1



Oil Fill and Drain - Figure 2

Recommended fuel:
The generator fuel supply is tapped into the Motorhome's fuel tank. The generator's fuel tank pick up tube does not extend to the bottom of tank. This prevents emptying the tank while operating your generator only. Because any AC electric generating set runs at a constant speed, lead deposits tend to build up in the combustion chambers. For this reason, use clean, fresh, lead free or low-lead gasoline. Regular grade gasoline may also be used, but DO NOT use highly leaded premium types of fuel.

The **carburetor** should be adjusted using an exhaust gas analyzer. The engine must be hot and the choke open. (An authorized Service Center is recommended for this service).

Starting: Before starting the generator, check the oil level, add oil if required. To start the engine, plug the power cord into the receptacle adjacent to the power cord entrance. Press remote switch, located in the galley roof locker (on models so equipped) "up" to START position for a short period (same as starting car). On models without remote start, switch is located in generator compartment on face of control box. Do not operate starter for more than 30 seconds or serious damage may result.
Release the starter switch after engine starts. After the engine starts, allow it to warm up a few minutes before applying load.

To stop the unit, depress the start-stop switch down to STOP. If the engine has been running hard and is hot, do not stop it abruptly from full load. Remove the load first and allow engine to run for a few minutes.

A controlled break-in-procedure with the proper oil and a conscientiously applied maintenance program will help to assure satisfactory service from your Onan electric generating set.

Break-in follows:

1. One half hour at ½ load (with air conditioner only).
2. One half hour at ¾ load (with air conditioner and approximately 1000 watts additional load).
3. Change crankcase oil after the first 50 hours of operation.

Before applying load, allow the set to warm up. Do not overload generator set. Continuous generator overloading may cause high operating temperatures that can damage the windings. Keep the load within the nameplate rating.

Power requirements for appliances:

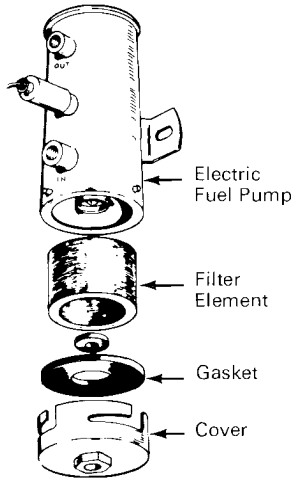
Appliance or Tool	Approximate Running Wattage
Refrigerator	600-1000
Electric broom	200-500
Coffee percolator	550-700
Electric frying pan	1000-1350
Hair dryer	350-500
Electric stove (per element)	350-1000
Electric iron	500-1200
Radio	50-200
Space heater	1000-1500
Electric blanket	50-200
Television	200-600
Electric drill	250-750
Electric water pump	500-600
Air Conditioner	1400-2200
Univolt	900 max

Infrequent use of the generator can result in hard starting. Operate the generator set one 30-minute period each week. Run longer if the battery needs charging. Exercising for one long period each week is better than several short periods.

The **battery charge rate** is controlled by a fixed value resistor that allows a trickle charge rate of 1 — 1½ amps under all conditions.

The generator's output is connected to a 120 volt AC receptacle adjacent to the power cord. To provide power to your Motorhome plug in power cord. Do not install any outlets between the generator and distribution panel.

A **circuit breaker,** will disconnect the load if current exceeds maximum plant rating. If



Onan Fuel Pump - Figure 3

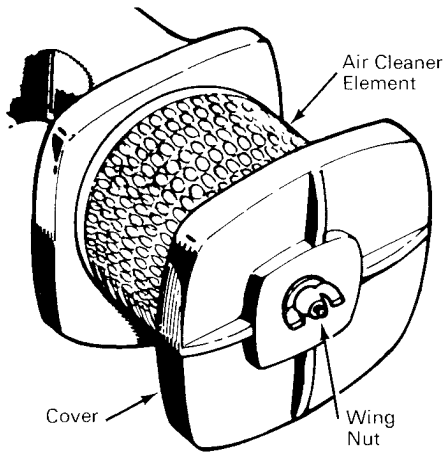
breaker trips, remove part of the load before resetting.

If high operating temperature conditions exist:

1. See that nothing obstructs air flow to and from the set.
2. Keep the cooking fins clean.
3. Keep ignition timing properly adjusted.

If low operating temperature conditions exist:

1. Use correct SAE oil for temperature conditions. Change oil only when engine is warm. If an unexpected temperature drop causes an emergency, move vehicle to a warm location.
2. Use fresh gasoline. Protect against moisture condensation. Below O°F (-18°C), adjust the carburetor main jet for a slightly richer fuel mixture.



Air Cleaner Element - Figure 4

3. Keep ignition system clean, properly adjusted and batteries in a well charged condition.
4. Partially restrict cool airflow, but use care to avoid overheating.

When operating in extremely dusty and dirty conditions:

1. Keep unit clean. Keep cooling surfaces clean.
2. Service air cleaner as frequently as necessary.
3. Change crankcase oil every 50 operating hours.
4. Keep oil and gasoline in dust-tight containers.
5. Keep governor linkage clean.
6. Clean generator brushes, slip rings, and commutator, do not remove normal dark brown film. Do not polish.

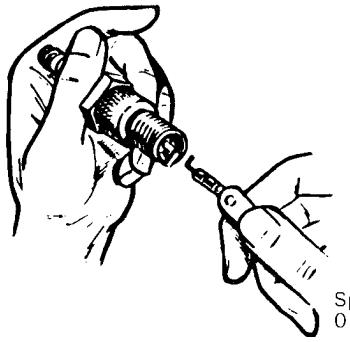
When operating in high altitude: At altitudes of 2500 feet (775 m) above sea level, close carburetor main jet adjustment slightly to maintain proper air-to-fuel ratio (refer to the ADJUSTMENTS section). Maximum power will be reduced approximately four percent for each 1000 feet (310 m) above sea level after the first 1000 feet.

Maintenance:
Service of the **electric fuel pump** is limited to cleaning the filter. Every 100 hours, drain the fuel pump and check the filter element. Turn the hex nut on the base of the pump to gain access to the filter element. If the element appears dirty, replace it. Be sure to replace gaskets when reassembling. (Figure 3)

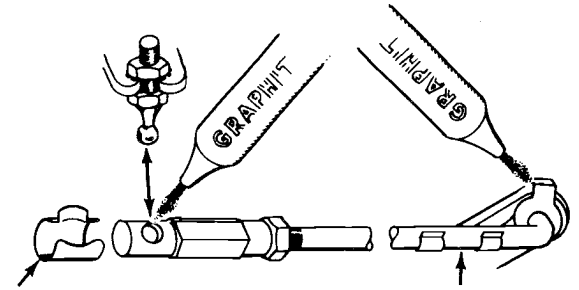
The generator set is cooled by a flywheel blower fan which pulls air over the cylinders and cooling fins. The air path is directed by sheet metal shrouds and plates. These shrouds and plates must always be installed properly so unit does not overheat.

Check and clean (if necessary) the cooling fins at least every 200 hours of operation. Remove any dust, dirt or oil which may have accumulated. check compartment air inlet and power plant air outlet for buildup of dirt, chaff, etc.

Check and clean the **air cleaner element** at least every 100 hours. Loosen wing nut to remove. Clean by tapping base lightly on a flat surface. replace element at least every 200 operating hours; clean or replace more often in dusty conditions.



Checking Spark Plug - Figure 5



Governor Linkage - Figure 6

Replace **spark plugs** every 100 hours or at least once a year. A badly leaded plug will cause misfiring, poor operation or stopping when a load is applied.

1. Black deposits indicate a rich mixture.
2. Wet plug indicates misfiring.
3. Badly or frequently fouled plug indicates the need for a major tune-up.

Each time the spark plugs are removed, inspect, clean and regap (Figure 5). If the plugs look discolored or have fouled, replace them.

The **governor linkage** must be able to move freely through its entire travel. After every 50 hours of operation, clean the joints and lubricate as shown in Figure 6. Also inspect the linkage for binding, excessive slack and wear.

BFA "RV" Parts Information:
The following Running Replacement parts list consists of external items which may require replacement due to normal wear and service and can usually be installed by the operator.

For additional information on parts or service contact your nearest authorized Service Center. A complete parts catalog is available from Onan and may be ordered under #965-0222.

Running Replacement Parts List:

Part No.	
140-0495	Air Cleaner Element
167-0237	Spark Plug
160-1183	Breaker Points
312-0196	Condensor (Breaker Points)
321-0174 (2 each)	Fuses for Control
122-0406	Oil Filter

Out-of-service protection:
If you are going to *store*, or not use, your Motorhome for a period in excess of 30 days the following procedures should be followed to protect your generator from damage due to

rust and corrosion. The following steps will properly protect the generator.

1. Operate the generator with at least a 50% load until thoroughly warm (1 hour is usually sufficient). Shut off the fuel supply and allow the engine to run out of fuel. Operating the choke manually as the engine stops will help drain the carburetor.
2. A full fuel tank will reduce condensation if encountering extreme temperature changes.
3. Drain the oil base while the engine is warm. Replace the oil filter if the unit is so equipped. Replace the drain plug and refill the engine with oil to the proper level. Attach a tag to the engine stating oil type and viscosity.
4. Remove spark plug. Pour 1 ounce of rust inhibiting oil (or SAE No. 10 oil) into the cylinder (spray cans work well). Turn the engine over by hand at least 2 complete revolutions. Stop the engine at the TC (top center) mark. Replace the spark plug.
5. Service the air cleaner.
6. Plug the exhaust outlet.
7. Clean and oil all exposed engine parts including carburetor and governor linkage.
8. Wipe generator brushes, slip rings, housing, etc. Do not apply any lubricant or preservative.
9. Remove the battery and store in a cool dry place. Coat the battery terminals and cable connections with vasoline or grease to prevent any corrosion. Recharge the battery at least monthly or maintain with a trickle type battery charger.
10. Provide a suitable cover if the unit is exposed to the elements.

To return the unit to service:

1. Wipe the oil film off all exposed engine parts. Remove the plug from the exhaust outlet.
2. Visually inspect the unit for any damage. Check to be sure the carburetor and governor linkage are free. Remove the generator end bell band and check to be sure the brushes work freely in their holders.
3. Check the tag to ensure oil of the proper type and viscosity has been installed. Check the oil level.
4. Install the battery (be sure battery is fully charged), observing proper polarity. Ground is negative.
5. Remove spark plug, clean and gap. Turn the engine over by hand several times. Reinstall spark plug.
6. Turn off fuel, disconnect electric fuel pump lead and electric fuel solenoid shut-off lead if unit is so equipped. Jump the fuel pump and electric fuel solenoid shut-off leads to the battery to prime the unit. Reconnect the leads.
7. Remove all load and start the generator set. Initial start may be slow due to oil or rust inhibitor in the cylinders. Excessive smoke and rough operation will occur until the oil or rust inhibitor is burned off.
8. Apply a 50% load after the set runs smooth. Allow the generator set to warm up (1 hour) with the load connected. Check speed and voltage.
9. Unit is now ready for service.

	After each cycle of indicated hours				
Service these items	**8**	**50**	**100**	**200**	**400**
General Inspection	X1				
Check Oil Level	X				
Check Battery Electrolyte Level		X			
Change Crankcase Oil			X2		
Check Air Cleaner			X2		
Check Spark Plug			X4		
Check Breaker Points			X3		
Clean Cooling Fins				X2	
Change Oil				X2	
Replace Breaker Points				X4	
Clean Crankcase Breather				X2	
Replace Air Cleaner				X2	
Remove Carbon Deposits from Heads				X2	
Adjust Tappets					X
Replace Fuel Filter					X4
Clean Carburetor					X
Check Generator Brushes (Replace if Necessary)					As required

X1—With set running, visually and audibly check exhaust system for leaks.
X2—Perform more often in extremely dusty condition.
X3—Replace if necessary.
X4—Replace annually or prior to storage.

Regularly scheduled maintenance is the key to lower operating costs and longer service life for the unit. The following schedule can be used as a guide. However, actual operating conditions under which a unit is run should be the determining factor in establishing a maintenance schedule. When operating in very dusty or dirty conditions, some of the service periods may have to be reduced. Check the condition of the crankcase oil, the filter, etc. frequently until the proper service time periods can be established.

For any abnormalities in operation; unusual noises from engine or accessories, loss of power, overheating, etc.; contact your nearest authorized Onan Service Center.

Carburetor:

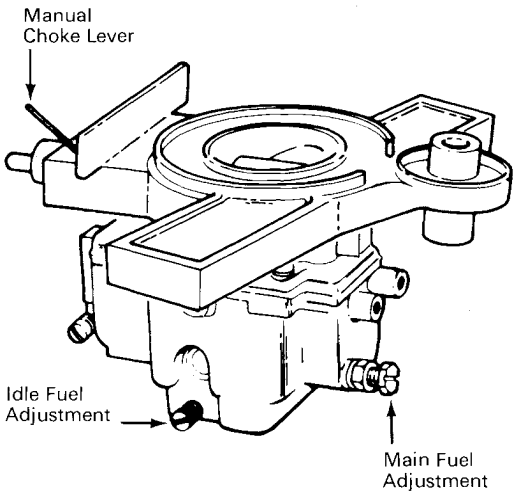
The BFA "RV" generator set carburetor has two mixture adjustments, an idle mixture which affects operation mainly at no load and a main (power) adjustment which affects operation at maximum load (Figure 7). If your generator set has a "hunting" (sudden surges and drops in speed) condition at no load or full load and cannot be corrected by carburetor adjustments, check governor, linkage and adjustment (see *Governor Adjustments*). A hunting condition at no load can usually be corrected by an idle mixture adjustment.

Caution: *When determining fuel mixture settings, forcing the fuel mixture adjustment needles against their seats will damage the seats and needles.*

Carburetor adjustments

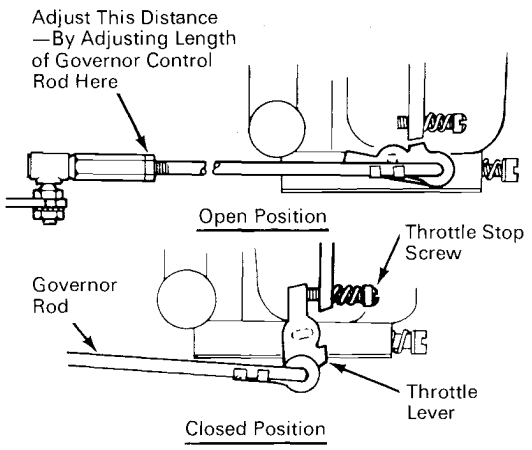
Start generator set and allow it to warm up for at least 10 minutes before making any adjustments. Remove all AC loads and connect a plug-in-type AC voltmeter into one of the receptacles in the coach. When procedure below calls for full load, turn on appliances or use an Onan load test panel. The first two adjustments are made with the set not running. Turn unit off — proceed as follows:

1. Turn idle mixture screw out (counter-clockwise) ½ to ¾ turn from seated position.
2. Turn main mixture screw 1¼ to 1½ turns out (counterclockwise) from seated position.



Carburetor Fuel Mixture Adjustments - Figure 7

3. Start set and adjust governor spring setting so engine speed is 1860 RPM at no load (62 hertz or 130 volts).
4. Hold back governor arm so that throttle lever rests on throttle stop screw. Adjust idle stop screw to 1500 RPM (50 hertz or 100 volts). Release governor arm.
5. Adjust idle mixture screw to highest RPM or voltage. Readjust governor spring setting so engine speed is 1860 RPM at no load (62 hertz or 130 volts).
6. Apply full load to generator and adjust main mixture screw to highest RPM or voltage. Readjust governor spring setting so engine speed is 1770 RPM at full load (59 hertz or 110 volts).
7. Remove and add load several times to check for a governor hunting condition. Readjust governor spring setting if required.



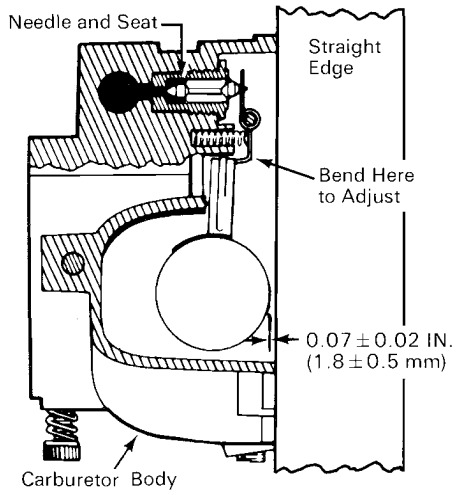
Throttle Stop Screw Setting - Figure 8

Throttle stop screw

The throttle stop screw is located on the base of the carburetor (opposite side from main power adjustment needle) near the crankcase breather valve. It must be adjusted to obtain 56 hertz at no load with the throttle closed as far as possible (throttle shaft lever touching adjustment screw). See Figure 8.

Carburetor float adjustment

1. Normal operation seldom requires any adjustment of the float level. Disconnect throttle control, choke leads, air cleaner inlet hose and fuel line from carburetor.
2. Remove the four bolts that hold the intake manifold assembly in place and remove the complete carburetor and intake manifold assembly as one unit. Then remove carburetor from intake manifold for easier handling when checking float level.
3. Remove the four phillips head screws on the top of the carburetor and lift it off.

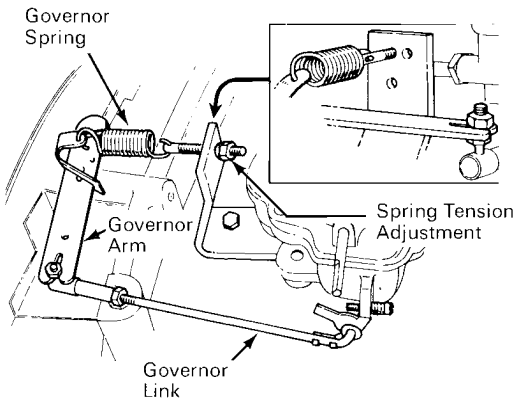


Carburetor Float Setting - Figure 9

4. Invert the carburetor and check the float setting (see Figure 9). The float should have a 0.07 ± 0.02 inch (1.8 ± 0.5 mm) clearance from the machined mating surface (without gasket). Bend the float tab as required.
5. If it is necessary to reset the float level, loosen the screw near float valve axle (pin) and bend the float arm near float valve axle (pin) to position float flush with top edge of carburetor float bowl. See Figure 9.

Caution: *If float adjustment is necessary, be careful not to lose the bouyancy spring or the tension spring on the viton tip float needle and seat assembly.*

6. Reassemble carburetor and reinstall carburetor or intake manifold assembly and then replace complete assembly on engine.
7. Check carburetor for proper operation.



Governor Adjustments - Figure 10

Governor adjustments

If carburetor and the following governor adjustments have already been made and the governor action is still erratic, replace the governor spring (Figure 10) with a new one and readjust the governor. Springs lose their calibrated tension through fatigue after long usage.

Before making governor adjustments, run the unit about 15 minutes under light load to reach normal operating temperature. (If governor is completely out of adjustment, make a preliminary adjustment at no load to first attain a safe voltage operating range).

Engine speed determines the output voltage and current frequency of the generator. By increasing the engine speed, generator voltage and frequency are increased, and by decreasing the engine speed, generator voltage and frequency are decreased. An accurate voltmeter or frequency meter (preferably both) should be connected to the generator output in order to correctly adjust the governor. A small speed drop not noticeable without instruments will result in an objectionable voltage drop. The engine speed can be checked with a tachometer.

A binding in the bearings of the governor shaft, in the ball joint, or in the carburetor throttle assembly will cause erratic governor action or alternate increase and decrease in speed (hunting). A lean carburetor adjustment may also cause hunting. Springs of all kinds have a tendency to lose their calibrated tension through fatigue after long usage. If all governor and carburetor adjustments are properly made, and the governor action is still erratic, replacing the spring with a new one and resetting the adjustments will usually correct the trouble.

Speed Chart for Checking Governor Regulation	
Maximum No-Load Speed (RPM)	1890
Hertz (Current Frequency)	63
Minimum Full-Load Speed (RPM)	1770
Hertz	59

Voltage Chart for Checking Governor Regulation	**120 Volt 1 Phase 2 Wire**
Maximum No-Load Voltage	132
Minimum Full-Load Voltage	108

1. Adjust the carburetor idle needle with no load connected.
2. Adjust the carburetor main jet for the best fuel mixture while operating the set with a full rated load connected.
3. Adjust the length of the governor linkage and check linkage and throttle shaft for binding or excessive looseness.

4. Adjust the governor spring tension for rated speed at no load operation.
5. Adjust the governor sensitivity.
6. Recheck the speed adjustment.
7. Set the carburetor throttle stop screw.

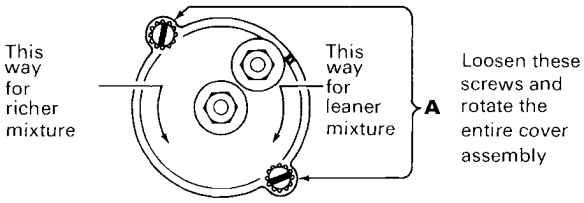
Linkage. The engine starts at wide open throttle. The length of the linkage connecting the governor arm to the throttle shaft assembly is adjusted by rotating the ball joint. Adjust this length so that with the engine stopped and tension on the governor spring, the stop on the throttle shaft assembly almost touches the throttle stop screw housing on side of carburetor (one more turn of governor ball joint would allow throttle shaft linkage to rest against stop screw housing). See Fig. 8.

Speed Adjustment: With the warmed-up unit operating at no load, adjust the tension of the governor spring. Refer to the Voltage Chart and the Speed Chart. Turn the speed adjusting nut to obtain a voltage and speed reading within the limits shown.

Sensitivity Adjustment: Refer to the Governor Adjustment illustration, and to the Voltage and Speed Charts. Check the voltage and speed, first with no load connected and again with a full load. Adjust the sensitivity to give the closest regulation (least speed and voltage difference between no load and full load) without causing a hunting condition.

To increase sensitivity (closer regulation), shift the spring toward the governor shaft.

Electric Choke Adjustment:
If extremes in starting temperatures require a readjustment of the choke, loosen slightly the two cover retaining screws. See Figure 11.



Average Choke Setting

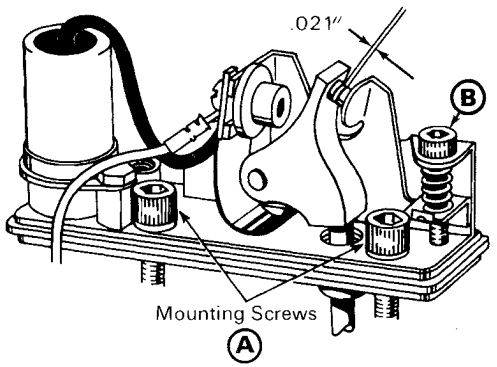
Ambient Temp (F°)	Choke Opening
58 (14°C)	closed
66 (19°C)	¼ open
72 (22°C)	½ open
76 (24°C)	¾ open
82 (28°C)	open

Choke Adjustment - Figure 11

For less choking action, turn the cover assembly a few degrees in a clockwise direction. For more choking action, turn counterclockwise. Retighten the cover screws.

If the engine starts and runs roughly after a minute or two of operation, the choke is set too rich. If the engine starts, and assuming that fuel, ignition and compression are adequate, but the engine sputters or stops before it warms up, the choke is set too lean.

If the engine starts sooner than 6 seconds of cranking, and runs roughly after a minute or two of operation, the choke is set too rich. If the engine starts between 6 and 15 seconds of cranking, the choke is properly adjusted. If the engine starts after 15 seconds of cranking; then sputters or stops before it warms up, the choke is set too lean. (Assuming that the fuel, ignition and compression are adequate)



Top Adjust Points - Figure 12

Breaker points and ignition timing:
The correct point gap setting is .021 cold (0.53 mm) and should be adjusted with the engine in a static and cold condition.

1. Remove cover by loosening screw and lift off.
2. To set the point gap turn the engine crankshaft with rotation until the maximum breaker point gap is obtained.
3. Using an allen head wrench, adjust set screw (B) for .021 (0.53 mm). Measure point gap with a flat thickness gauge. **Make sure feeler gauge is cleaned and free of any grease, oil or dirt. See Figure 12.**
   The timing is adjusted during initial engine assembly and is fixed by the point gap adjustment. No other adjustment or alignment is necessary. A .021 point gap is equivalent to approximately 21° BTC.
4. Replace point box cover.

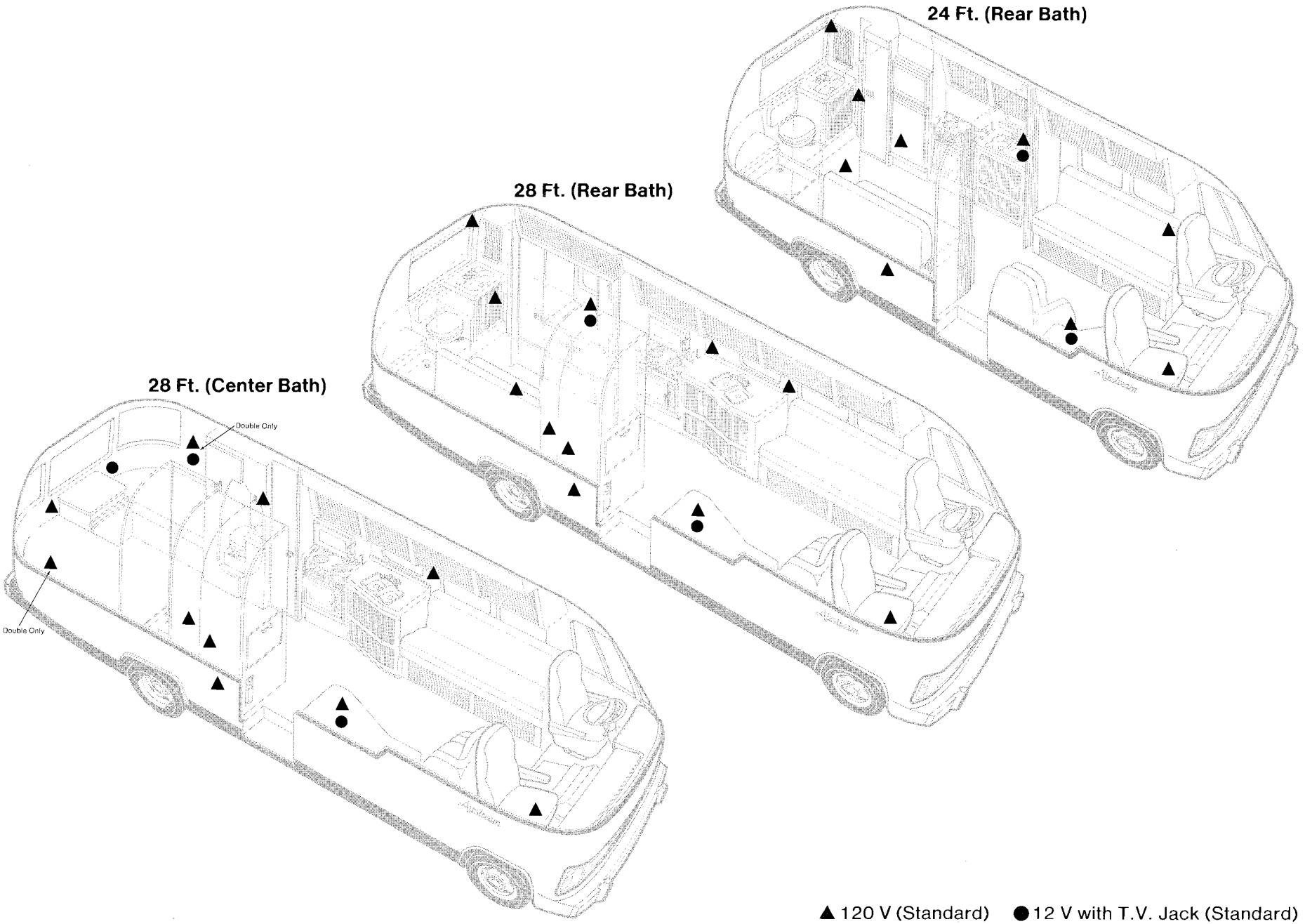
120 Volt Generator Trouble Shooting

Problem	Probable Cause	Remedy
Fails to crank	1. Bad battery connection	1. Clean and tighten all battery and cable connections.
	2. Low battery	2A. Check specific gravity. Recharge or replace battery if necessary.
		2B. Reverse current diode (CR1) may be shorted or open causing a drain on the battery. R2 may be open.
	3. Faulty start solenoid (K1)	3. Push start switch. Check start solenoid "S1" terminal voltage to ground. When battery voltage at start solenoid "B+" terminal is present, battery voltage should also appear at "S1" terminal; if not, replace start solenoid.
	4. Faulty start switch	4. Replace Jumper solenoid (S1) terminal to ground. If solenoid does not energize, replace switch.
Cranks slowly	1. Bad battery connection	1. See 1 above (Fails to crank)
	2. Low battery	2. See 2 above (Fails to crank)
Cranks but won't start	1. Blown fuse (F2)	1. Replace fuse (F2) on control.
	2. Faulty fuel solenoid or fuel pump	2. Fuel solenoid must open during cranking and running. Check by removing steel line from carburetor, then crank engine. If fuel solenoid is open, fuel will pulsate out of this line. If it does not, the fuel solenoid and fuel pump must be checked separately to determine defective parts.
	On later models, fuel solenoid is an integral part of fuel pump.	**Warning:** *Use extreme care for this test. Direct fuel flow into a suitable container and make sure area is well ventilated to prevent accumulation of gasoline fumes.*
	3. Faulty ignition	3. Check to see if points open and close during cranking. If they do not open and close, adjust and set points. Plug and plug wires must be in good condition. Voltage at ignition coil negative terminal (-) must alternate from +12 volts to zero volts as points open and close during engine cranking.
	4. Inoperative choke	4. With engine not running, check choke vane movement by pushing choke lever arm. Choke must be in closed position with cold engine, and must be free to move against bimetal

(Continues on next page)

Problem	Probable Cause	Remedy
Cranks but won't start (Continued)		spring. As engine warms up, bimetal spring relaxes and allows choke vane to open fully. The lever will pulsate as engine warms up. See Adjustment section.
	5. Faulty crank ignition relay (K2)	5. Check voltage from relay terminal "4" to ground while cranking unit. Battery voltage should appear at this terminal. If not, check for voltage at relay terminals "1" and "2". If battery voltage is present at terminals 1 and 2, but not at 4, replace relay. If no voltage appears at terminals 1 and 2 on relay while cranking, check wiring between start solenoid (K1) and crank ignition relay (K2).
Starts, but stops immediately after releasing start switch S1	1. Resistor R1 may be open. 2. Run ignition relay K3. 3. Low oil level 4. S3 low oil pressure switch may be defective.	1. Check voltage on both sides of R1. With generator running voltage should be 24-32 volts DC. 2. Check voltage on both sides of K3. Should be 12 volts. 3. Check oil level. If low or empty, refill to proper level. 4. Check S3. Switch should close with generator running at 10 lbs. minimum oil pressure.
Runs then stops	1. Low oil level	1. See 1 above.
Runs but surges	1. Stuck choke 2. Governor not adjusted properly	1. See 5 above (Cranks but won't start) 2. Readjust governor.
Stops	1. Faulty ignition 2. Out of fuel 3. Low oil level	1. See 3 above (Cranks but won't start) 2. Refill fuel tank. 3. See 1 above.
Remote running time meter or generator lamp inoperative	1. Blown fuse (F1)	1. Replace F1 fuse on control.

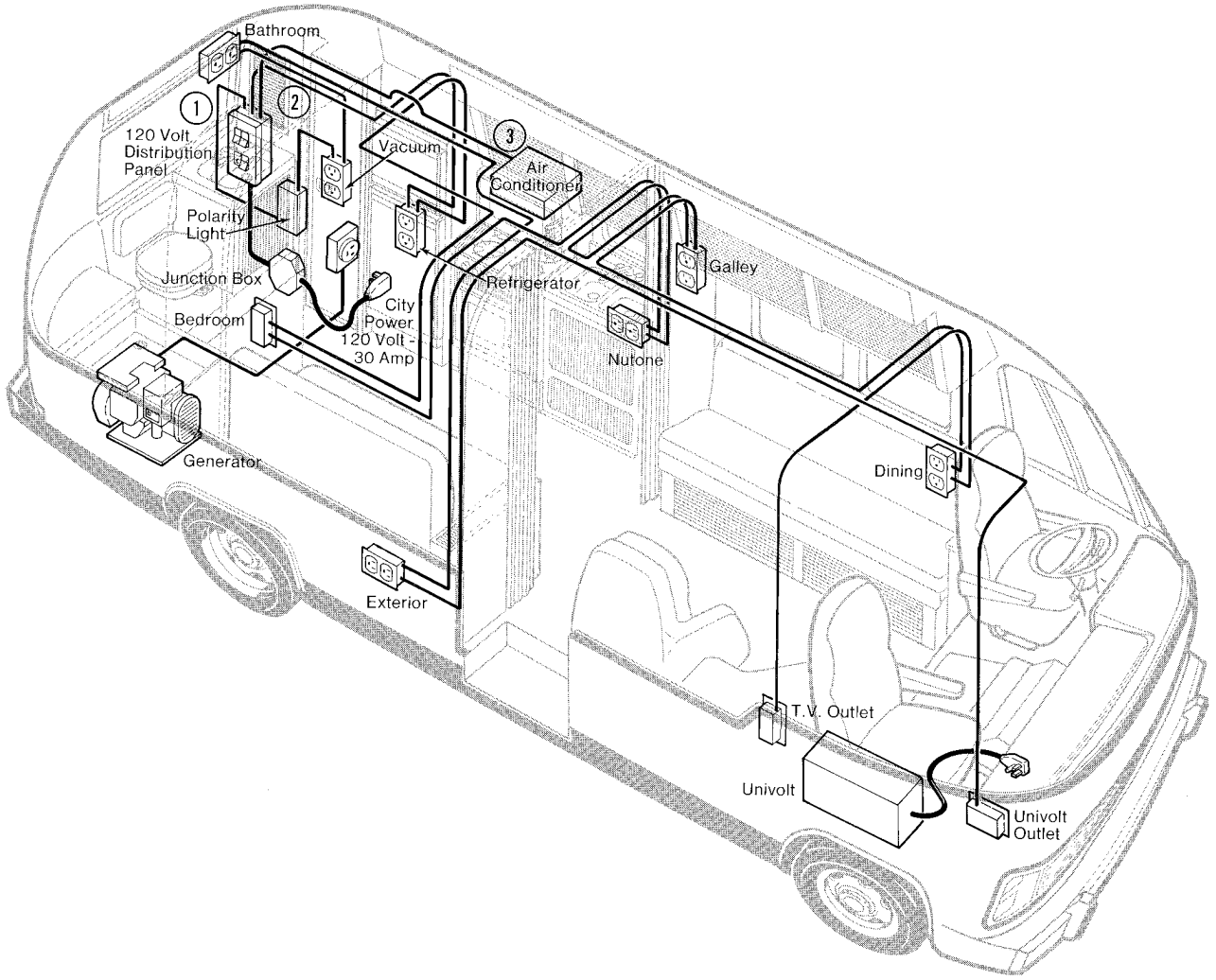
Electrical Outlet Locations



▲ 120 V (Standard) ● 12 V with T.V. Jack (Standard)

Electrical Wiring Diagrams

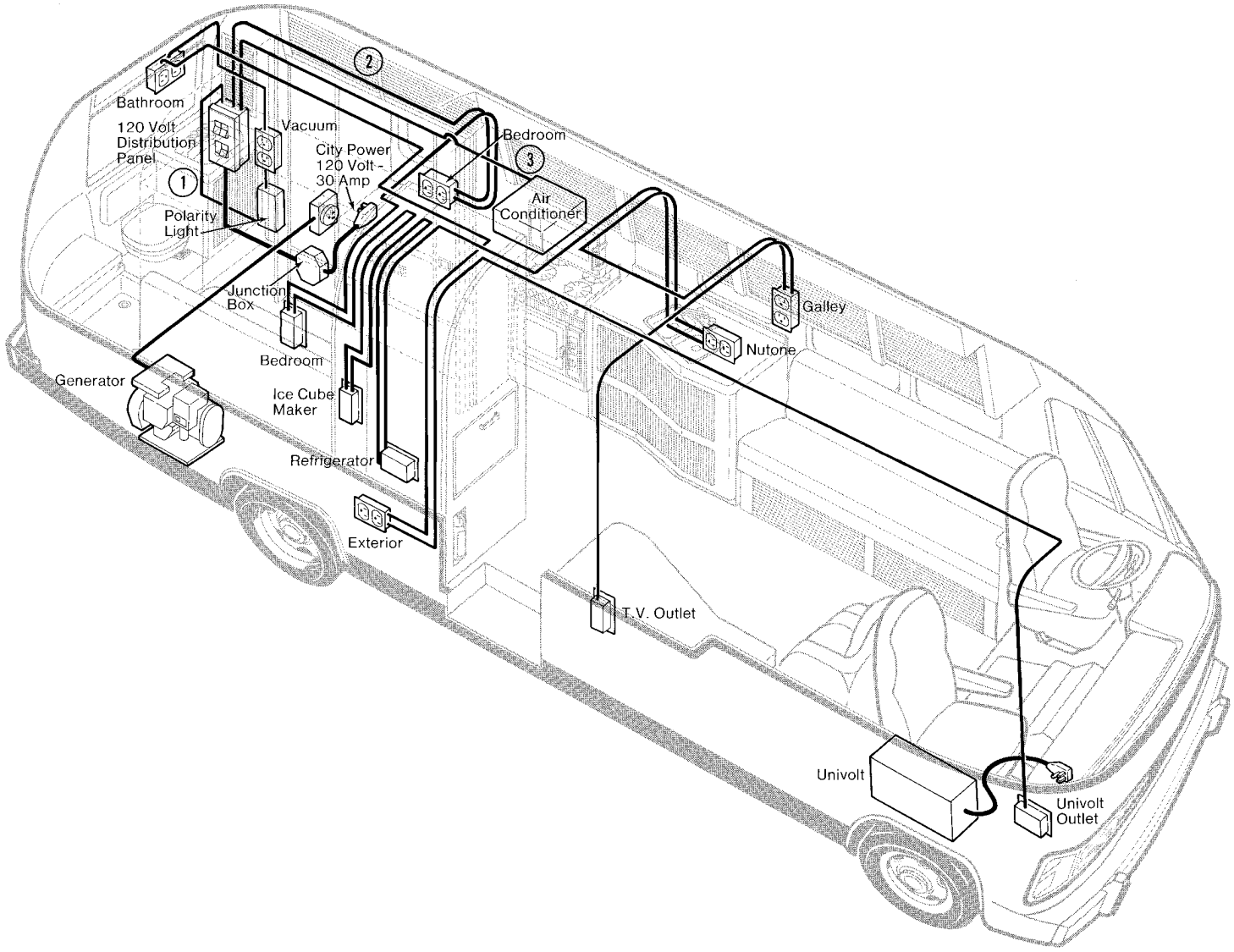
120 Volt Distribution System – 24 Ft. Model



Circuit No. 1—15 AMP (GFI Breaker)
Circuit No. 2—20 AMP
Circuit No. 3—20 AMP
Generator—30 AMP

*Location of outlets varies with floor plan.

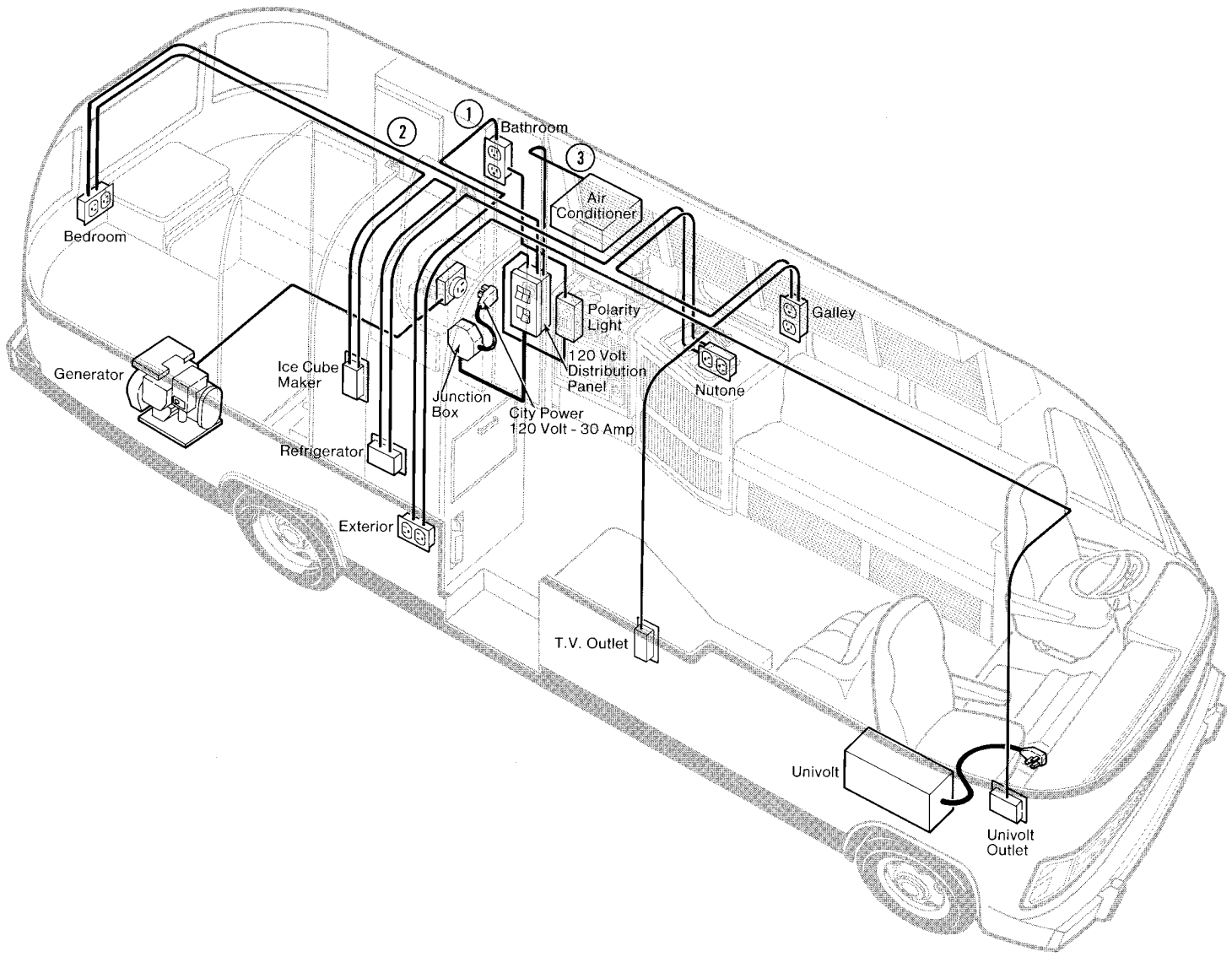
120 Volt Distribution System — 28 Ft. Model (Rear Bath)



Circuit No. 1—15 AMP (GFI Breaker)
Circuit No. 2—20 AMP
Circuit No. 3—20 AMP
Generator—30 AMP

*Location of outlets varies with floor plan.

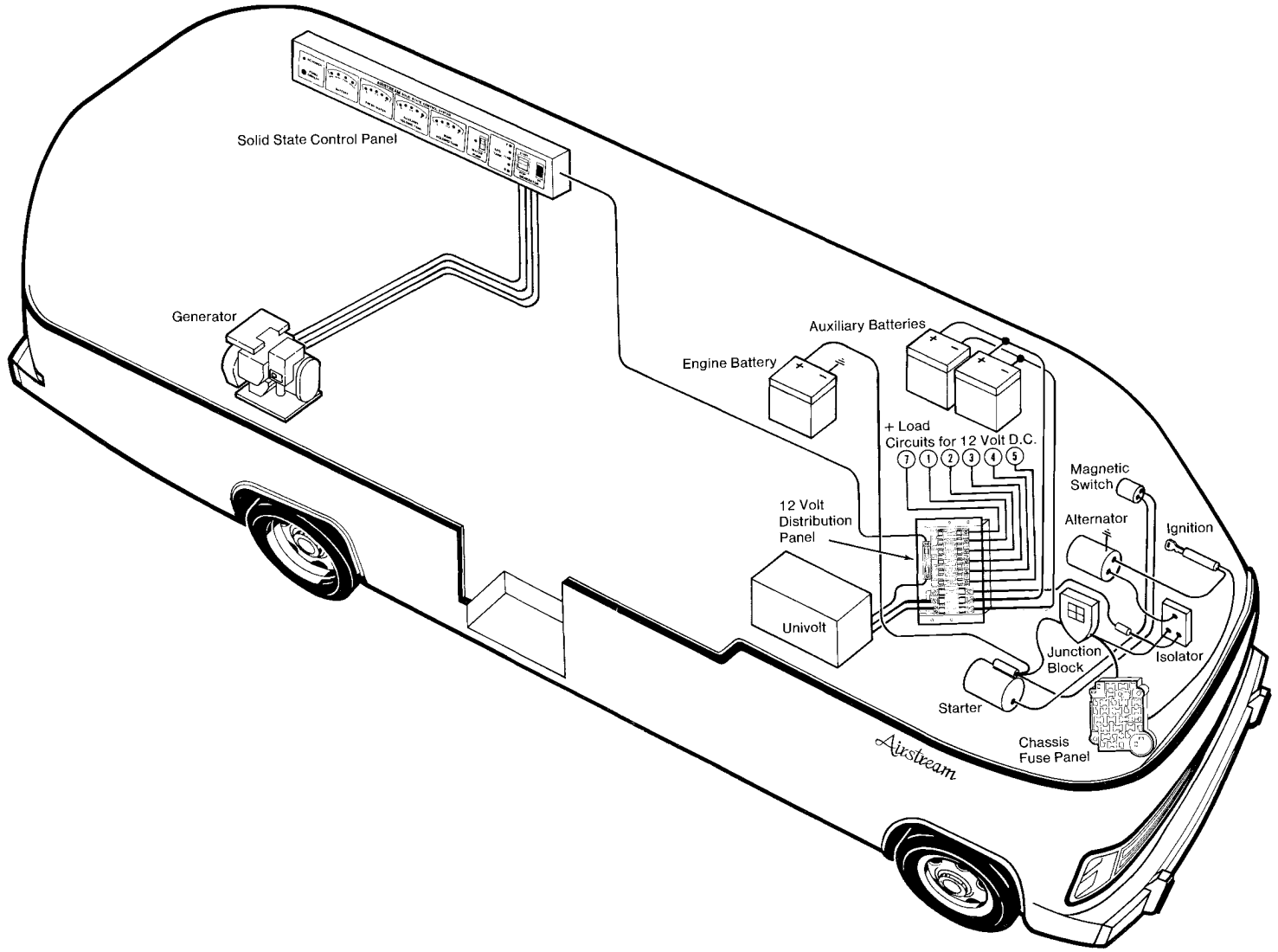
120 Volt Distribution System — 28 Ft. (Center Bath)



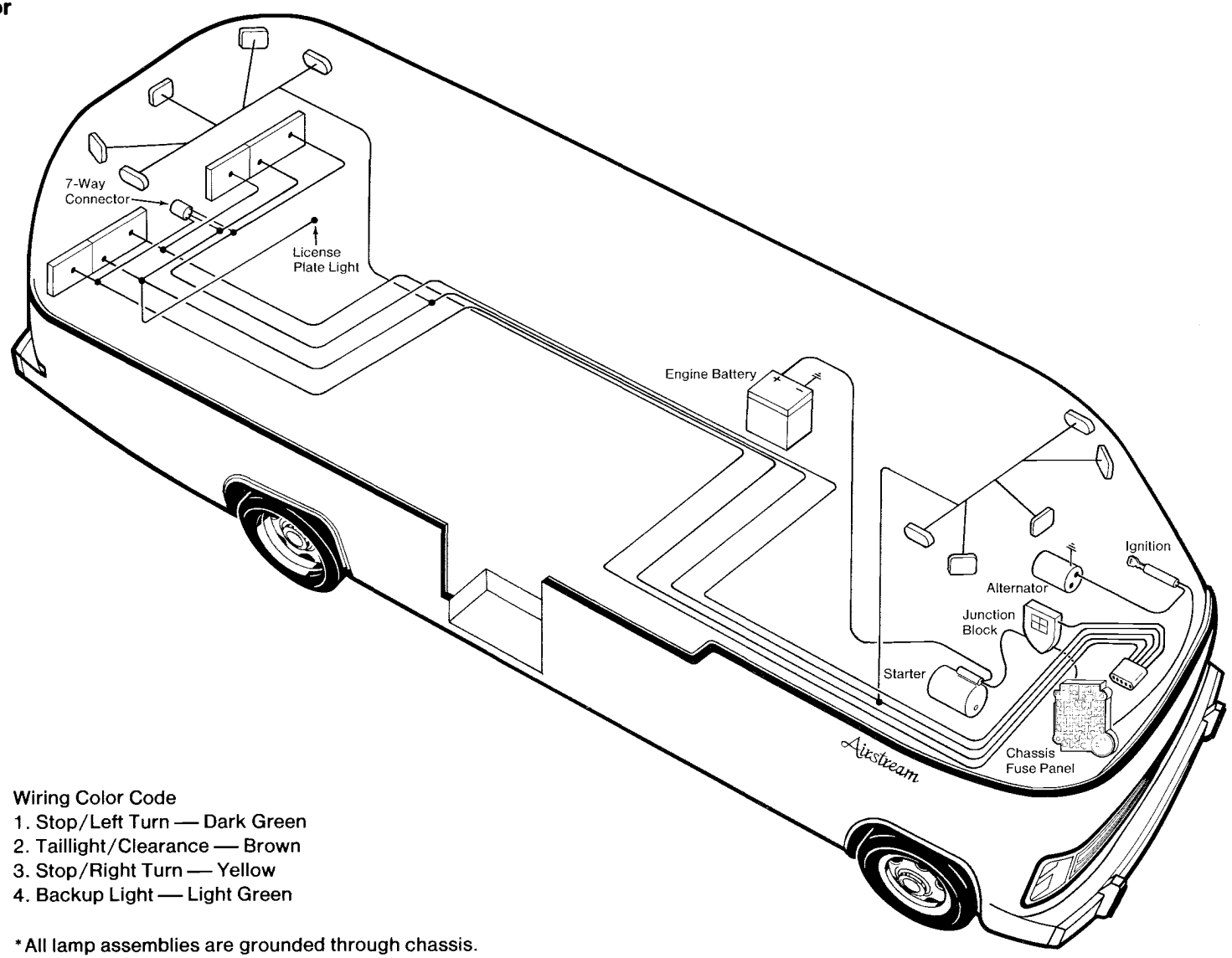
Circuit No. 1—15 AMP (GFI Breaker)
Circuit No. 2—20 AMP
Circuit No. 3—20 AMP
Generator—30 AMP

*Location of outlets varies with floor plan.

12 Volt Interior



12 Volt Exterior



Wiring Color Code
1. Stop/Left Turn — Dark Green
2. Taillight/Clearance — Brown
3. Stop/Right Turn — Yellow
4. Backup Light — Light Green

*All lamp assemblies are grounded through chassis.

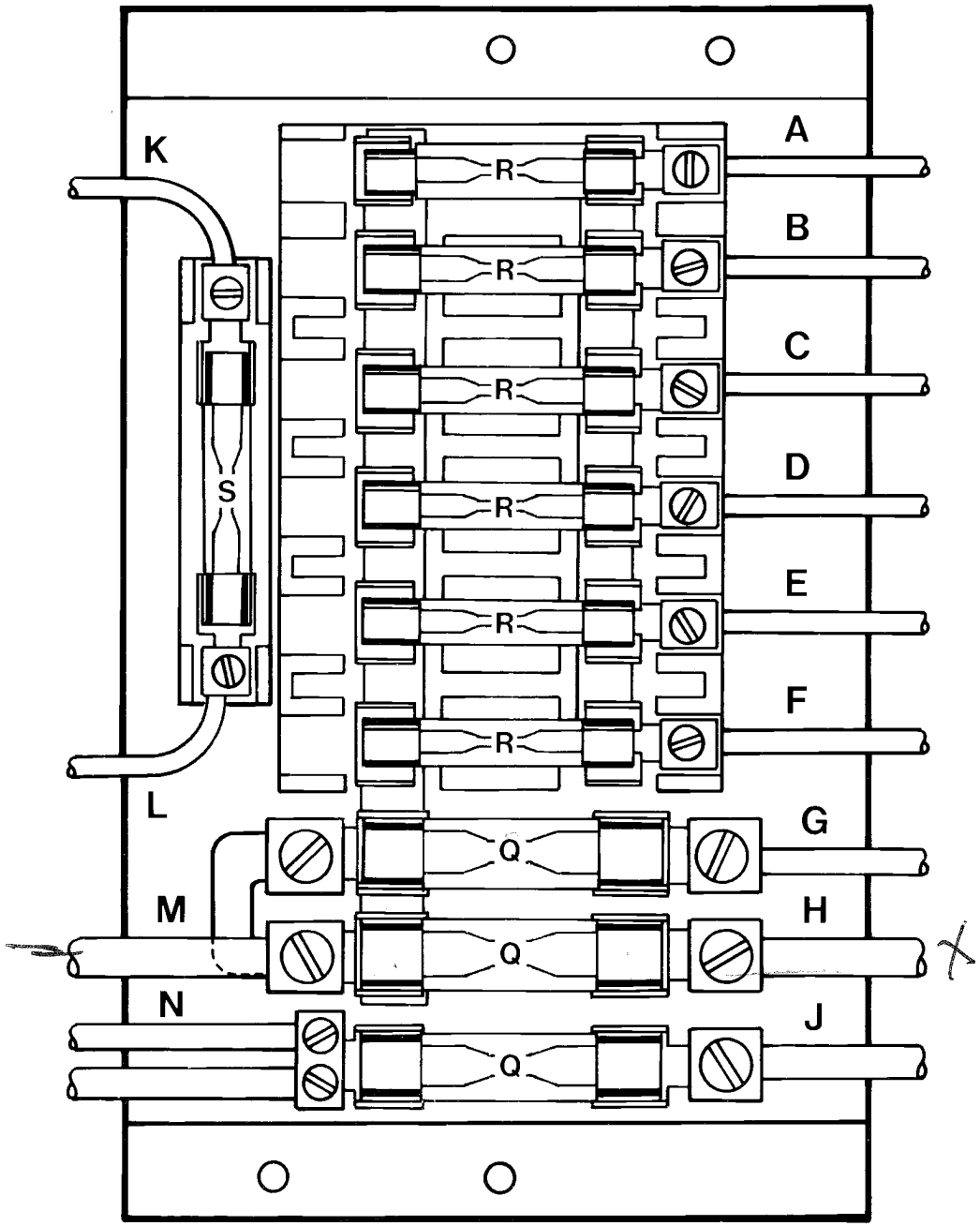
Living Area Electrical Trouble Shooting

Symptom	Possible Cause	Remedy
No 12-volt power (Lights, appliances do not work)	1. Input line and/or battery not connected	1. Make necessary connections
	2. Discharged Univolt battery	2. Charge battery
	3. Univolt battery on wrong polarity	3. See Item 6
Blown fuse	4. Overloaded Circuit (over 50 amps)	4. Turn off switches to reduce load Replace blown fuse in Univolt or next to Univolt
	5. Electrical short	5. Find blown fuse in Univolt and identify circuit From wiring diagrams check the circuit for defective wiring, lamps or motors
	6. Shorted battery	6. Replace battery and fuse
	7. Battery terminals not properly connected to UNIVOLT + and - terminals	7. Make proper connections; replace fuse
Dim lights or sluggish	8. 25- or 50-cycle power (some foreign countries)	8. Use 60-cycle power
	9. Discharged Univolt battery (when operating without 120-volt line)	9. Charge battery
	10. Battery is low on water	10. Add distilled water to battery
UNIVOLT will not charge battery	11. Input line not connected	11. Connect input line
	12. Battery not connected (or polarity reversed)	12. Connect battery to UNIVOLT
	13. Bad battery	13. Replace battery
	14. Too many lights and appliances in use	14. Reduce electrical load
	15. Fuse blown	15. Replace fuse

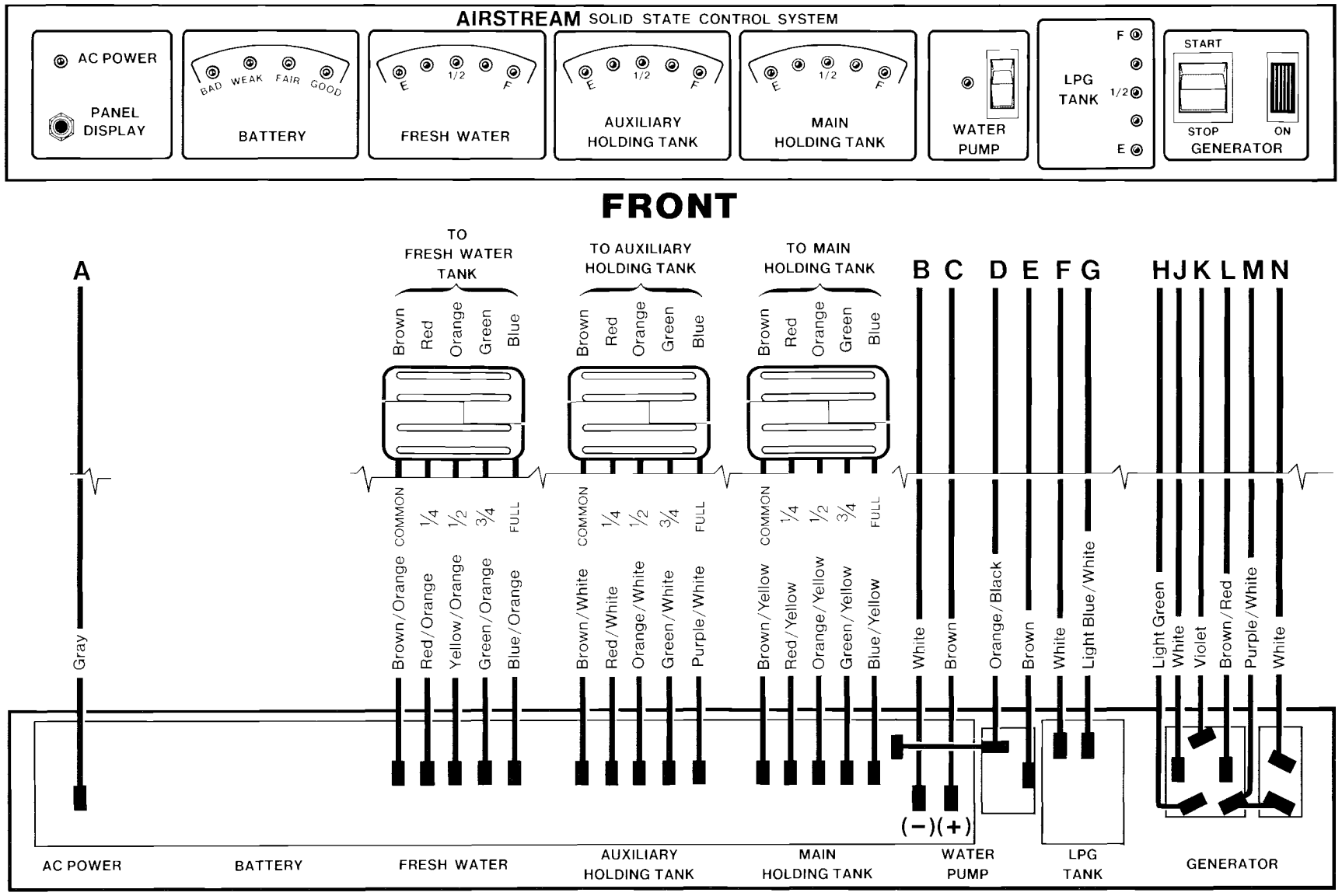
12 Volt Distribution Panel

A — Circuit #7
B — Circuit #1
C — Circuit #2
D — Circuit #3
E — Circuit #4
F — Circuit #5
G — Battery Isolator + (pos)
H — Auxiliary Battery + (pos)
J — Auxiliary Battery — (neg)
K — Power-On-Light (Control Panel)
L — Power-On (Univolt)
M — Univolt + (pos)
N — Univolt - (neg)
Q — AGU 50-amp Fuse
R — SFE 20-amp Fuse
S — SFE 4 amp Fuse

See page 124 for circuits.



Solid State Control Panel



A — Power On Light
B — Ground
C — Generator Start Switch
D — Lamp and Running Meter
E — Start
F — Ground
G — Stop
H — (+) Positive
J — (-) Negative
K — 12V Positive
L — Water Pump
M — 12V Positive
N — Ground

Specifications

Capacities

Appliance	Capacity
Potable Water Tank 24 Ft. Model	40 gal.
Wash Water Tank 24 Ft. Model	35 gal.
Toilet Holding Tank 24 Ft. Model	25 gal.
Potable Water Tank 28 Ft. Model (Rear Bath)	50 gal.
Wash Water Tank 28 Ft. Model	35 gal.
Toilet Holding Tank 28 Ft. Model	25 gal.
Potable Water Tank 28 Ft. Model (Center Bath)	33 gal.
Wash Water Tank 28 Ft. Model	35 gal.
Toilet Holding Tank 28 Ft. Model	30 gal.

"Specifications listed herein are those which are designed to be in your Motorhome. There may be some small differences in the capacities of individual Motorhomes."

Light and Appliance Amperages

Item	Lamp Number	Amperage
Water Pump	——	4.9 max.
Ceiling Fan	——	4.8
Bathroom Exhaust Fan	——	2.0
Range Exhaust Fan	——	2.0
Furnace Fan (Suburban)	——	4.5
Ceiling Light (Hi-Lo)	912 & 904	1.0 each bulb
Bathroom	1141	1.6 each bulb
Galley Lights		
under Roof Locker	912 & 904	1.0 each bulb
Main Door Light	1141	1.6
Exterior Light	1156	
Univolt Battery		80 amp hrs. at 80°F.

Fuses and Circuit Breakers

Circuit	Location	Rating
Main Breaker	120 volt panel	30 amp
Appliance Circuit	120 volt panel	20 amp
Air Conditioner	120 volt panel	20 amp
Charge Line from Engine	Univolt	AGU50
Low Voltage Circuits	Univolt	SFE 20 amp fuse
Univolt Battery Fuse (+)	Univolt	AGU 50 amp fuse
Univolt Battery Fuse (—)	Nxt. to Univolt	AGU 50 amp fuse
Power On Circuit	Univolt	SFE 4 amp fuse
Radio, Radio/Tape	Radio, Radio/Tape	IAG 5 amp fuse
Water Pump Fuse	Water Pump	MDX 6¼ SLO-BLO fuse

Exterior Dimensions

Model	24 Ft.	28 Ft.
Height*	9 ft.	9 ft. 2 in.
Width	7 ft. 9 in.	7 ft. 9 in.
Length (bumper to bumper)	24 ft. 6 in.	28 ft. 2 in.
Wheel Base	158.5 in.	178 in.

* Roof air conditioner — add 14 in.
T.V. antenna, folded — add 10 in.

Living Area Lubrication and Maintenance

Item	Every 1,000 miles or 30 days	Every 5,000 miles or 90 days	Procedure
All Exterior Door Locks	X		Lubricate by shooting in dry graphite
Battery	X		Check water level—fill with distilled water only
Generator			See pages 108-119
Entrance Door Hinges	X		Lubricate with light household oil
Main Door Step		X	Lubricate moving parts
Range Exhaust Hood	X		Clean fan blades and wash filter
Refrigerator Flue Cleaning			See page 91
Roof Vent Elevator Screws	X		Lubricate with light household oil
Strike Pocket on Main Door	X		Coat with paraffin
Window Seals/Door Seals		X	Clean with mild detergent
Exterior Seams (24 months)			Check for gaps and seal with Ten X
Holding Tank Valve Rod		X	Coat rod with Vaseline
TV Antenna (every 6 months)			Lubricate all moving parts w/WD-40

Interior Maintenance Record

Date	Mileage	Address	Dealer	Service Performed	Remarks

Pre-Travel Check List

Interior

1. Turn off water pump switch.
2. Check battery water level.
3. Close windows and vents.
4. Turn off gas to range and oven.
5. Latch all interior cabinet doors.
6. Lock refrigerator door (seal containers first).
7. Hold down or stack securely all loose, hard and sharp objects.
8. Fasten sliding and foldette doors.
9. Drain toilet bowl.
10. Turn off interior lights when not being used.
11. Secure and lock the main door.
12. Switch refrigerator to 12V.

Exterior

1. Disconnect and stow:
   a) electrical hook-up cord
   b) sewer-hose hook-up hose (flush out)
   c) water hook-up hose
2. Turn off gas line shut-off valve to appliances.
3. Check clearance and stop, turn, and back up lights.
4. Check lug bolts.
5. Check tires, for correct pressure see page 44-45.
6. Check that TV antenna is pointed forward and dipoles closed.
7. Adjust mirrors.
8. Pull forward some 50 ft., test brakes, and check site for forgotten objects and cleanliness.

Home

1. Leave your key with your neighbor.
2. Store valuables and important papers in a safe place.
3. Discontinue newspaper, milk and other deliveries.
4. Ask the Post Office to hold your mail for you.
5. Arrange with the Telephone Company for discontinued or 'Vacation Service'.
6. Arrange care for your pets.
7. Have your lawn, garden and house plants cared for.
8. Lock all windows and doors securely. Keep shades open for a lived-in look.
9. Cover all food to keep out mice and insects.
10. Eliminate all fire hazards. Place matches in a tin box or glass jar.
11. Store oil, gasoline and other inflammables properly.
12. Destroy all newspapers, magazines and oily rags.
13. Notify police.

Personal

14. Automobile insurance to cover you and your family fully.
15. Avoid cash. Use travelers checks and credit cards.
16. Confirm reservations.
17. Have sunglasses for everyone.
18. Pack cameras and films.
19. Make a check list of clothing for everyone, and toilet articles.

Motoring Essentials

1. Display Motorhome registration properly.
2. Carry driver's license. In Canada you will need a non-resident liability insurance card.
3. In Mexico you must have special auto insurance.
4. Carry an extra set of ignition and trunk keys in a separate pocket, or in your wallet.
5. Keep an operating flashlight with fresh batteries handy.
6. Keep sharp or hard articles securely packed wherever they may be.
7. Do not pack things in the passenger sitting area, you need maximum space for comfort.
8. Wear easy-wash, drip-dry traveling clothes.
9. Do not make your vacation trips a mileage marathon! Stop and relax frequently.
10. Carry a first aid kit.
11. Carry your pet's dish, food, leash and health and registration papers.

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