CHECK LIST

Diesel Engine:	Water Drain Separator-Round Brass Valve Located on Bottom of Fuel Filter.
	Bleeder Valve-Located on Top Edge of Fuel Filter.
	110 V. Engine Block Heater-Fastened to top/passenger side of radiator-Use when temperature drops to 10 degrees F.
	Vary Speed-The first 1000 Miles.
	Anti-Gel Additive-Use when Temperature drops to 20 degrees and #1 Diesel if temperature remains below 20 degrees.
Oil & Filter:	Recommend changing at 3000 miles interval - Use a good quality oil and filter meeting Ford Specs Oil SAE 30 SG/CE is preferred for warm weather conditions above 32 degrees and for extended idle conditions. For temperatures expected to be repeatedly below 32 degrees, SAE 10W-30 SG/CE is recommended. SAE 10W-30 SG/CD may be substituted. SAE 15W-40 SG/CE may be used for temperatures 32 degrees and above or when temperatures vary widely. See page 29 in Ford Diesel Supplement.
Warning Lights:	Wait to Start Light-Start engine after light goes out. Do not crank for more than 15 seconds at a time, wait 30 seconds before second try.
	Engine Temperature Warning Light-Stop as soon as possible.
	Water in Fuel Light-Drain water separator as soon as possible. Fuel Filter Light-Change fuel filter as soon as possible.
Chassis:	Align front end at approximately 2500-4000 miles. Have normal load on vehicle. Contact a Truck Alignment Shop.
Tires:	Recommend tires be rotated at 5000-7500 miles and again at 10,000-15,000 miles. Change direction of rotation when rotating tires. Thereafter observe tires for any unusual wear and rotate as necessary.
Skyview Windows:	DO NOT Use Abrasive Cleaning Pads on These Acrylic Windows. Recommend aerosol window cleaner or mild detergent with water-dry with soft, non-abrasive cloth.
Exterior:	Wash on Regular Basis-Monthly recommended with mild soap. DO NOT use abrasive cleaners.
	Wax Twice a Year-Recommend a good, paste wax with carnuba.
	Check Caulking Twice a Year-Replace if needed.
Rear A/C Heater:	Blower Motor is controlled by switch on dash.
Height:	Showvan - 8'10" (9').
	Showmobile - 9'6" (10').
Reminders:	Once Around Before In - Check for obstacles that may be in the Way.
	Think High and Wide. Use Caution when filling fuel tank with the correct fuel. Refer to the Ford Owner's Manuel for truck information.

IMPORTANT NOTICE

There are SEPARATE warranties on the individual components on your Born Free motorcoach & Ford chassis. All warranty work MUST be taken to the CORRECT service center. The manufacturer's name on the product indicates who to contact for warranty or service work.

•• WARRANTY WORK ON THE BORN FREE MOTORCOACH CONSTRUCTION AND FIBERGLASS BODY MUST HAVE PRIOR FACTORY APPROVAL!

To obtain authorization on warranty work, call 1-800-247-1835, toll free; 1-515-332-3755, in Iowa — Monday thru Friday, 8 A.M. to 5 P.M.

- The **Ford chassis** warranty work must be handled by an authorized Ford dealer only.

On-the-road emergency, call 1-800-241-FORD; in Georgia, 1-800-282-0959 — 24 hours a day.

- **Appliances/Equipment** (Refrigerator, furnace, etc.) refer to your owner's packet of manufacturer's manuals for name, location, and telephone number of warranty service center.

- **Tires**, although placed on the chassis, warranty work should be handled by the nearest tire manufacturer's service center.

BORN FREE RECOMMENDATIONS:

- After loading and driving your vehicle for 2,000 - 3,000 miles the unit should have a front end alignment performed by a reliable truck alignment shop.
- Check caulking on your unit in the spring and in the fall. Replace the caulking as needed.
- Without proper care, the fiberglas skin will dull and fade. We advise monthly washing and most importantly to wax twice a year with a good wax. (See the secton on fiberglas in your owner's manual for complete instructions.)

If you have warranty problems that are not being solved to your satisfaction, Born Free may be able to assist. Call 1-800-247-1835, toll free; 1-515-332-3755, in Iowa.

CONGRATULATIONS!
ON THE PURCHASE OF YOUR NEW

BORN FREE
MotorCoach

You have chosen the most outstanding motorcoach available in the market place today. Only the finest materials, accessories, and appliances have been used.

This Owner's Manual has been prepared to help you enjoy using your BORN FREE to its fullest extent by understanding all of its features. We suggest you read the manual all the way through now, and carry it in a convenient place in your BORN FREE model where you can refer to it again if any questions arise. There may be features on some models not applicable to your particular motorcoach.

The manufacturers and suppliers of the truck chassis as well as those of the accessories and appliances used in the BORN FREE have also included literature and information about their products. It is recommended that you go over their material carefully as it too can be very helpful. **The above manufacturers have included warranty cards which need to be mailed promptly in order to properly register your purchase for warranty adjustments.** The benefit of mailing the card to the individual supplier within 10 to 15 days from date of purchase will be that you will be assured of prompt service without question if your warranty is registered.

Following the simple maintenance suggestions outlined in this manual will insure years of satisfactory service with your BORN FREE. Your BORN FREE is built to go, and you will want to keep it that way.

You are now BORN FREE!

Sincerely yours,

BORN FREE MOTORCOACH, INC.

TABLE OF CONTENTS

II. SERVICE

To receive service and warranty on the vehicle chassis, consult the Chassis Manufacturer Owner's Manual and Warranty Schedule for instructions.

To provide convenient and professional service, we have made arrangements with the manufacturers of our appliances for service and "Pass Through" warranty repairs with their authorized service centers. This means that the authorized service center will perform warranty repairs on appliances with proof of time in service as stated by their specific warranty policy.

To receive service and/or warranty repairs on refrigerator, water heater, furnace, water pump, air conditioner, generator, toilet, range, range/oven, microwave oven, etc.; consult the Owner's Manual for that appliance for the nearest authorized service center.

To aid us in providing you prompt service, you should provide us with model number, serial number, date of purchase, and current mileage. The model and serial number information is available from BORN FREE models serial tag and is usually located outside on the rear of the unit.

If you need service and/or warranty work, contact the Customer Service Department at the Factory for information concerning the nearest Service Center.

III. CHASSIS

A. OPERATION AND MAINTENANCE

For proper operation and maintenance procedures, see appropriate Vehicle Owner's Manual and Warranty Schedule. This may be found in the Literature Packet along with other manuals for appliances, etc.

B. TIRE INFLATION AND VEHICLE LOADING

Refer to "Rating Plate" which is located on driver's door lock pillar — with this information, refer to the Specifications and Capacities Chart in the Vehicle Owner's Manual for the proper inflation pressure for front and rear tires.

Refer to the Vehicle Certification Label affixed to the driver's side door frame for proper axle loading limitations.

IV. COACH

A. INTERIOR

1. SEAT BELTS

For seat belt requirements refer to RVIA recommendations and FMVSS (Federal Motor Vehicle Safety Standards). Most states have passed into law the requirement of seat belt use. To add to your safety, BORN FREE recommends the use of seat belts on all passengers while vehicle is in motion.

According to Federal Regulations on recreational vehicles, an automatic restraint diagonal shoulder belt (i.e. a single diagonal shoulder belt) on the right front passenger seating position is not approved and therefore cannot be used to secure a child safety seat. The single lap belt restraints used on the sofa, dinettes, and VIP chairs are recommended and the rear positioning of these seats are safer for children when the child (children) is (are) properly secured. The safety of young passengers is not only your responsibility but also the law.

2. SAFETY DETECTOR/SMOKE ALARM

The safety detector is designed to detect explosive and combustible gases. In case of alarm sounding, investigate all problem possibilities and take proper corrective action. Turn off all gas appliances immediately, ventilate the area, and do not light a flame until all clear is positive.

The alarm gas operates on 12 volt D.C. current, and is fused in the converter panel.

A smoke alarm is provided as protection in case of fire. The alarm operates by a 9 volt battery.

Limitation on Liability —

Remedy under this warranty is limited to repair or replacement of the detector only. We will not be liable for loss or damage due directly or indirectly to occurrences which the detector is designed to detect.

Some states do not allow the exclusion or limitation of incidential or consequential damages; so the above limitations or exclusions may not apply to you.

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

3. EMERGENCY EXITS

Three doors are designated as exits on each BORN FREE model. Please familiarize all occupants with these exits in case of emergency.

4. TABLES

Most BORN FREE models are equipped with removable, pedestal type tables and bases recessed into the floor.

5. BEDS

Several types of beds are used in the BORN FREE LINE. These are designed for maximum comfort in seating and sleeping.

a. 48" x 74" SOFA BED
The sofa bed quickly converts from a sofa to a 48" x 74" bed by lifting up and pulling out on the seat cushion. The bed is then ready to be made up for a comfortable nights sleep. To return it to a sofa, simply lift and push in.

b. DINETTE/SOFA BED

The dinette sofa combines sleeping accommodations with dining-style seating. By removing the table between the two halves of the dinette, you can "roll-over" one back cushion to make a bed. Open storage is found under each seat base.

c. CABOVER BUNK BED

This uniquely-shaped mattress fits our cabover bed area. By "flipping-over" the center cushion you are ready to climb the bed ladder to the cabover bedroom. Privacy curtains separate this area from the rest of the coach and the outside. The mattress itself measures 66" x 82" x 6" thick and is covered in cloth to match the furniture of the coach.

d. DOUBLE BED

Available only in the 24' Rear Bed Model and Floor Plan II of the 26' Full Timer Model. A stationary bed, always made up for a good nights sleep or a quick afternoon nap. Under mattress is an access door for repair work and side drawer for storage of bed linen or personal clothing.

e. QUEEN SOFA/BED

Available only in the 23' Rear Lounge MotorCoach and will make into a 60" x 88" queensize bed. Additional storage space under each sofa.

f. TWIN BEDS

Available only in the 26' Full Timer MotorCoach, floor plan II.

g. 54" x 76" SOFA BED
Available only in the 19' Van/MotorCoach, floor plan II. Folded down it provides roomy sleeping for two; folded up, it provides seating and dining for 4. The area under each base is provided for storage.

6. CABINETS AND INTERIOR COVERINGS

The interior of your BORN FREE Model utilizes a combination of deep pile carpeting, solid oak and oak paneling cabinetry, foam padded upholstery cloth, formica and wood parquet in President Models.

7. INTERIOR MAINTENANCE

Curtains, shades, and upholstery — vacuum the upholstery, curtains and shades as regularly as the carpet. When they need a more thorough cleaning, use only good quality cleaning products. Be sure to test product on an out-of-sight location before cleaning entire area.

B. EXTERIOR

1. DOOR LOCKS — most BORN FREE Models are equipped with the following locks and keys:

	Identification	Replacement
a.	Ignition and Chassis Key	See Chassis Dealer
b.	Coach Entrance Door Key	Send number of lock to the Factory
c.	Generator Box or Storage Compartment Key	Order from Factory
d.	Water fill Keys	Order from Factory
e.	Dead Bolt Keys	
f.	Power Cord Door	

2. AUTOMATIC STEP

The automatic step uses 12 volt electricity and has a small "on-off' switch located at the coach entrance door. The truck engine does not effect the operation of this step. By simply opening the door, the step will lower, and will raise up, out of the way, when the door is closed. If a continous down position is required, open the door and flip the switch to "off". This cancels the operation of the step and locks it into this position. This procedure works also for a locked "up" position by closing the door (or pushing in the trigger button in the door frame) and flipping the switch to "off". To engage in normal operation again flip switch to the "on" position.

Be sure to keep step clean of sweeping off excess dirt and grit. At the time of washing your vehicle, use high pressure along the tracks for a thorough cleaning and smoother operation of step.

3. ACCESS DOORS

The coach has several different access/vent doors to service different appliances and utilities. See Section I. Illustrations.

4. RACK AND LADDER

Exterior roof mount rack and ladder is offered as an option to provide access to the roof area for storage purposes. Care should be taken when using this option to prevent serious injury in case of icy or raining conditions. Do not exceed 100 pounds per square foot, or 1000 pounds total weight of storage on roof.

5. ROOF-MOUNTED STORAGE COMPARTMENT

This weatherproof storage pod (compartment) is great for storing large items like suitcases, sleeping bags, etc. Do not exceed 10 pounds per square foot, or 100 pounds total weight of storage in the compartment.

6. GENERATOR STORAGE COMPARTMENT

The generator storage compartment is located under the floor on the driver's exterior side of the vehicle (see Section 1. Illustrations), and is used to house a 4,000 watt, 120 volt generator (optional); or as an outside storage compartment with inside dimensions of 14"H x 35"W x 20"D.

7. WINDOWS

The BORN FREE LINE is furnished with tinted stationary, sliding or Jalousie glass windows with screens. It also is equipped with a tinted plexiglass skyview window.

For proper maintenance, use only aerosol window cleaner or mild detergent and water with a soft, non-abrasive cloth.

8. EXTERIOR LIGHTS

The BORN FREE LINE is equipped with 12 volt clearance, stop, tail, turn, backup, and Coach entrance lights. (Refer to Section 1. Illustrations for location.)

With exception of Coach entrance light, others are controlled and fused by chassis switches.

9. ROOF VENTS

To provide adequate ventilation inside your Coach, crank out roof vents are installed in the ceiling. Be sure all roof vents are closed while traveling to prevent wind damage and unwanted dust inside the Coach.

While using the air conditioner, be sure roof vents are closed to get the maximum efficiency from the air conditioner.

Standard roof vents also serve as interior lights; they are equipped with 12 volt light fixtures. The optional 3 speed roof exhaust fan does not come equipped with a light.

10. GASOLINE TANKS

BORN FREE Models have a single 40 gal. tank and do NOT require switching.

11. FIRESTONE AIR RIDES

Firestone air rides are offered on BORN FREE Motorhomes for several reasons. First, the bags can be inflated to various levels according to the weight in the coach or the towed weight behind. Secondly, they can be used for minor leveling of the coach to increase gas appliance efficiency. Proper inflation according to load can result in the smoothest ride possible by reducing the choppy ride sometimes caused by truck tires and springs.

Also any side to side variance in weight can be compensated for by inflating heavy side of coach with additional air. Coach should appear level when air rides are properly inflated.

Also by adjusting the air, leveling can be accomplished without additional leveling devices. When starting a trip the air bags can be reinflated at a service station for proper road and load balance.

The system is made up of two air bags mounted to the rear axle and inflated by

separate fill valves found just ahead of the driver's side rear wheels.

	Minimum	Maximum	Recommended
Inflation Specifications:	10 lbs. per sq. inch	90 lbs. per sq. inch	45 lbs. per sq. inch

12. FIBERGLAS SKIN

a. LOOKING LIKE NEW

Fiberglas parts have a shiny, beautiful finish when new, but eventually they will dull and fade without proper care, even though made from a high-quality material. The following is a brief explanation of what has happened to dull or fade the fiberglas and what can be done to restore the finish.

Fiberglas parts consist of two basic polyester products, gel coat, which is the outer colored surface; and the structural reinforcement, which is a blend of polyester laminating resin mixed with strands of glass to create a structure that is strong, chemical resistant, and long wearing.

Man-made and natural materials, when placed outside, slowly deteriorate. The material is exposed to sun, water, wind, dust, and chemicals in the air. How much wear and tear depends on how you treat the product and maintain it. A car's exterior surface quickly deteriorates if you do not wash and wax the painted surface. Although the gel-coated surface is approximately ten times thicker than the paint on your car, it reacts similarly when exposed to the elements.

b. GENERAL MAINTENANCE

1. Wash monthly or more frequently, if needed. Wash with a mild soap, such as dishwashing soap; avoid using strong alkaline cleaners and abrasives.

2. Wax the part once or twice a year. When waxing, use a good wax. Normally, the harder the wax is in the can, the higher wax content it has. We recommend the harder waxes as softer waxes have a higher proportion of silicones and solvents in them. If a powerbuffer is used, use a low RPM with light pressure. Keep it moving at all times to prevent heat build-up, which may result in a burn spot or softening of the gel-coat surface.

c. CHALKING

Chalk is the top surface being broken down into an extremely fine powder. The chalk that develops is strictly on the surface. This problem is caused by over exposure to the sun, chemicals in the air, or improper care of the gel-coat surface. To alleviate the chalk, wash the unit and try a little wax to see if this is sufficient to restore the luster. If not, use a fine rubbing compound, followed by wax. If severe chalking has developed, rubbing compound alone may not be strong enough to remove the chalk. You will then be forced to go to a light sanding with 400 or 600 grit wet or dry sandpaper, followed by fine rubbing compound and wax.

d. FADING

Fade means that the color has changed. Fading is caused by (1) chalking, which makes the color lighter, (2) pigments in the gel coat have actually changed in color, (3) or the gel coat is bleached or stained by something. Stains may come from dirt, dust, road tar, plant sap, rust from fittings and screws, or materials that have leaked out from caulking or sealing compounds.

Materials that cause fading are either soluable or non-soluable in water. To determine how to remove a stain, pre-test the stain in an inconspicuous area

first, using mild detergent. A mild abrasive cleanser may be used if necessary, but be careful; the cleanser will remove some of the surface. It may be necessary to rewax the surface after using abrasives.

If the stain cannot be removed by a soap and water solution, you are dealing with a non-soluable material. These materials are oil-based substances and can usually be removed by using acetone or rubbing alcohol. Acetone is a prime ingredient in fingernail polish remover. Prevent prolonged contact with the surface. Leaving a solvent-soaked rag on the part can cause deterioration to the gel coat. If acetone or rubbing alcohol doesn't remove the stain, try using xylene or xolvene. These products are commonly used in paint thinners. Again, avoid prolonged contact with the surface. If none of the above reducers work, you may be forced to sand the surface with sandpaper, followed by waxing.

e. MOISTURE

Although more durable than wood and most metals, fiberglas can be vunerable to attack by prolonged exposure to moisture. Condensation can be trapped under a protective cover if the cover is a non-breathing cover. When the sun comes out, the water is warmed up and starts attacking the gel-coated surface. Water can also dissolve chemicals out of the cover that can attack the gel-coat. We recommend that any type of fiberglass part being covered have a breathing cover. This allows any condensation to dissipate.

f. REPAIRING SCRATCHES, NICKS, AND DENTS

On scratches, use the simplest method first and try to contain the area that you are working on as small as possible. Try rubbing compound first, it may make the spot hardly noticeable. If compound doesn't work, sanding the area followed by waxing is another alternative. If the scratch has broken through the gel-coat surface, the area may be touched up by using touch-up paint, or dabbing on catalyzed gel coat.

Punctures and major damage require the expertise of a professional, and we recommend that you seek professional help when you encounter such a problem.

g. MINOR DAMAGE

If damage occurs from a scrape or bump, body putty can be used to reshape the dent or broken area. Repair similiar to body puttying a car fender then spray paint and later rewax.

h. SEVERE DAMAGE

If a severe collision occurs then it may be best to order a specific panel to replace the damaged one.

i. WARNING

The products used to repair and maintain fiberglass parts are usually flammable and may be hazardous to your health if you come in contact with them. Always read the directions and the manufacturers' warnings before using these materials.

C. ELECTRICAL SYSTEM

The MotorCoach is equipped with four electrical systems operating through a converter control center.

These four systems are:

1. 12 volt Automotive Electrical System
2. 12 volt MotorCoach Auxiliary Battery
3. 110 volt Outside Power Source
4. 110 volt Auxiliary Power Plant (Generator — optional)

The two 12 volt systems are essentially the same. Each draws power from the storage batteries.

1. AUTOMOTIVE BATTERIES

a. GASOLINE ENGINE

The chassis battery is located on the passenger side and operates the following:

Head Lamps
Turn Indicators
Console Panel Lights
Windshield Wipers
Engine Ignition System
Speed Control
Starter Motor
Backup Light
Exterior Clearance Lights
Tail Lights, Indicator Light, Stop Lights
Cigarette Lighter (dash mount)
Auto Air Conditioner (engine running)
Radio and Stereo

The Coach with gasoline engines (auxiliary) battery is located on the driver's side and operates the following:

Interior Lights
Interior Roof Fans
Recirculating Toilet
Range Exhaust Fan
Furnace Fan and Start Up
Water Pump
Water Level and Holding Tank Gauge
Power Plant Starting
Safety Detector
Odor Control System

The auxiliary battery is separated from the truck battery during all camping situations, or any time the chassis ignition is turned off. This operation is under control of an electronic relay. Its purpose is to isolate the chassis battery so it will always be charged up and ready to start the engine, and provides no power to the MotorCoach. (May not apply for all diesel models.)

NOTE: In an emergency, the ignition switch can be turned on to supply power from the chassis battery to the Coach. In doing so, it must be remembered that the chassis battery will be run down if this practice were to continue for very long. You will then be unable to start the engine.

In order to be able to recharge the Coach (auxiliary) battery, the electronic relay activates when the ignition switch is turned on, and chassis generator (or alternator) will charge both the chassis and Coach batteries when the engine is running. If the Coach battery becomes run down, start the chassis engine and run it at a fast idle for about 20 minutes which should partially charge the battery back up. The coach battery is also charged when the power cord is plugged into a 110 receptacle or when the generator is being run.

b. DIESEL ENGINE

You will find under the hood two batteries (one on the driver side, the other on the passenger side), both are used for the operation of the chassis only. The auxiliary battery option is located in a separate compartment in the coach.

CARE OF BATTERIES

Check battery water level before every trip, and at least once a week during actual use. If the MotorCoach is stored for the winter, remove the battery(ies) from its carrier and store in a place that is cool but above freezing. Even when idle, the battery(ies) will discharge from chemical action, and should be recharged about once a month. Do not connect it to a charger and leave for the winter as the danger of overcharging is too great. If this happens, the water will be boiled out; and after they dry out, the plates will buckle.

2. 110 VOLT SYSTEM

The 110 volt system operates from the 110 volt auxiliary power plant (optional), or from an outside 110 volt utility service.

The following equipment is entirely dependent on the 110 volt generator or 110 volt outside utility source:

Air Conditioner/Heat Strip
Refrigerator (110 volt or LP gas except when on LP gas)
Electric Appliances
Electrical equipment used at convenience outlets
Auxiliary Electric Heaters
Microwave

a. 110 VOLT UTILITY SUPPLY

A 30 foot U.L. approved, 30 amp heavy duty cable is provided for the connection to a utility supply. Also a 15 amp adapter is provided for usage with a standard three prong outlet.

b. 110 VOLT AUXILIARY GENERATOR (Optional)

The auxiliary generator in your MotorCoach allows you to use 12 volt lights and 110 volt appliances when utility power is not available. The generator operates with regular gasoline from the rear fuel tank of your MotorCoach or on LP gas drawn from the LP storage tank on diesel models. The rear gas tank should be maintained at least one-fourth full for operation of the generator and the LP tank should be maintained 15% full for the propane version.

The propane generator runs on liquid LP that draws from the bottom of the tank. Generally the tanks are designed so you will run out of generator fuel and still have appliance fuel left. The gasoline draw tube is designed in order that after you run out of generator fuel, you will still have a limited gasoline supply to drive on for refueling.

There are two starter switches. The remote control switch and the switch mounted on the generator. The remote control switch is located inside the coach. The panel includes a light that tells when the generator is running; also an elapsed time meter to clock the actual hours of operation.

The manufacturer of the generator has provided a separate booklet on the care and use of the generator. Read it carefully so you will get the benefit of trouble-free operation that has been built into this product.

WARNING: There is carbon monoxide (CO) in the exhaust of all gasoline internal combustion engines. This gas is colorless, ordorless, tasteless, lighter than air, and poisonous. The exhaust system of your generator (power plant) engine has been installed with your safety in mind. However, certain precautions must be taken in its use to protect you from conditions beyond the control of the manufacturer.

1. Do not simultaneously operate your generator (power plant) engine and a ventilator which could draw air into the vehicle resulting in the entry of exhaust gases.

2. Do not open windows or non-powered ventilators on the end or side of the vehicle where exhaust of the generator (power plant) is located.

3. When parked, position the vehicle so the wind will carry the exhaust away from the vehicle. Also note the position of other vehicles parked near you.

4. Do not operate the generator (power plant) engine when parked so that vegetation, snow, building, vehicles, or any other object can deflect the exhaust under or into the vehicle.

3. CONVERTER CONTROL CENTER/BATTERY CHARGER

For Coach battery only.

The power converter takes 110 volt AC, converts it to 12 volt and rectifies it to DC current. It supplies this DC directly to the appliance and lighting circuits in the MotorCoach. It also contains a battery charger to keep the battery up to a full charge. The converter plays no part in the operation of the Coach unless 110 volt AC power is available. When connected to such a source, a relay built into the converter places it in the circuit and all power is drawn from it instead of the battery(ies).

On all electrical circuits, both 110 volt AC and 12 volt DC, shut-off switches, circuit breakers, and fuses are located in the control center. Opening the cover will disclose circuit breakers and fuses with circuits labeled.

All AC circuits employ circuit breakers that are re-set when turned on. The 12 volt DC circuits are protected with cartridge type automotive fuses that snap into place easily. It is a good idea to carry a supply of spare fuses in the sizes used in your MotorCoach.

The following equipment from the 12 volt system can be operated through the converter control center:

Interior Lights
Interior Roof Fans
Range Exhaust Fan
Water Pump
Furnace
Recirculating Toilet
Water Level and Holding Tank Gauge

Power Plant Starting
Safety Detector
Odor Control System

When a fuse blows or a circuit breaker trips, it happens just as some change has been placed on the electrical load. Perhaps an appliance has been turned on or plugged into a wall receptacle. Turn off this appliance or remove the plug before re-setting the circuit breaker or replacing the fuse. If it holds, check the offending appliance before attempting to use it again.

The actual electrical load on that circuit should also be checked because it is possible that there is no trouble in that appliance except that it may present an overload to a heavily loaded circuit.

For further service or warranty, consult the Owner's Manual.

4. AIR CONDITIONER

The air conditioner which is offered as optional equipment in all BORN FREE Models is a combination air conditioner and heater. In addition to the regular cooling features, a 5,600 BTU electric heat strip is built in to provide heat to the interior of the Model at those times when taking the chill off is desired.

To operate either the air conditioner or heating mode, a source of 110 volt AC electric power is needed. This can be from utility power at a campground, or by the optional built-in generator.

The air conditioner will keep your BORN FREE Model cool in the warmest of climates. The five position control switch has two fan settings, two cool settings, plus off. The thermostat control regulates the amount of cooling.

When entering the BORN FREE Coach, turn the theromstat to its highest setting and the fan switch to High Cool. If it is unusually warm in the Coach, open at least two windows slightly; but remember to close these windows as soon as the unit starts to cool down. You may also want to start the exhaust fans to draw out hot air and bring in fresh. After the temperature has reached a comfortable range, the thermostat can be reduced and the control switch to Low Cool to maintain that temperature.

To operate the heater, set the control to Heat. The fan will start and temperature should be set with the thermostat. The unit will cycle on and off as it maintains that setting.

The center plate in the ceiling shroud can be removed to gain access for removing the air filter. It should be washed regularly in soap and water, dried out, and re-installed.

Consult the Owner's Manual for maintenance and/or warranty information.

5. RANGE VENT/LIGHT

The power range hood is used to eliminate undesirable odors and to expel gas fumes. Before starting the fan, push vent latch to the side (located on the exterior) to allow free passage of air. Remember to push latch back to an upright position to prevent it from making noise as traveling. Refer to Section 1. Illustrations.

Clean the filter periodically for efficient operation. Wash in hot water with any household detergent, rinse thoroughly, and dry. Clean dust and grease from fan blades each time filter is removed.

6. REFRIGERATOR

The refrigerator operates on LP gas and 110 volt AC; in some models, 12 volt power is also available.

The refrigerator should be started up a few hours before leaving on any trip or outing. Pre-chill all food and beverages in the house refrigerator before placing in the Coach refrigerator. This will hasten the time that it takes to get the refrigerator cool, and will not raise the temperature inside by placing too great a load on it suddenly. An inexpensive refrigerator thermometer can be purchased in most hardware stores and will prove very valuable in monitoring the temperature inside.

The refrigerator must be level to operate efficiently as the gases and fluids within the cooling unit depend on gravity for circulation. While traveling down the highway regular movement of the Coach causes the unit to be on both sides of the level. Whenever the Coach is stationary, do not dig a hole or trench to level up. Elevate the low side or corner by driving it up on a block of wood. Experienced campers learn to carry a few short pieces of 2 x 4 or 2 x 6 lumber for this purpose. The Air Ride system may also be used for leveling as a last resort. Be sure to inflate air rides again before traveling.

a. ELECTRIC OPERATION

1. Turn Gas/Electric Selector Switch to OFF position, then press the knob inward, and turn clockwise until "ELEC" appears in the slot.
2. Set Electric Theromstat, turn knob 1/4 turn.
3. After refrigerator has had time to cool, adjust Electric Thermostat to a lower setting to maintain the desired cooling temperature.

b. LP GAS OPERATION Refer to Section 1. Illustrations.

1. Turn on LP gas at supply tank.
2. Turn Gas Electric Selector Switch counterclockwise until "GAS" appears in the slot.
3. Set Gas Theromstat, turn knob 1/4 turn.
4. Press starter button to stop and keep it depressed when flashing light goes out. Wait 15 seconds and release button.
5. If the lamp comes on again, repeat the procedure.

c. TRAVEL LATCH

A travel latch has been built into the front of the refrigerator to prevent it from opening during travel. It is located on the top near the middle of the door that opens. To operate it, slide it toward you so the latch part engages the door.

d. DEFROSTING

When the frozen food storage compartment and cooling bins are covered with frost, the refrigerator needs to be defrosted. Turn off the cooling unit and allow the frost to melt. Ice trays can be filled with hot water to hasten this process. Do not attempt to chip the frost or ice off any part of the unit, but allow it to melt.

Before the refrigerator is re-started, it should be completely dried out, the ice trays washed and refilled with fresh water. The drip tray must also be emptied, washed, and dried.

e. CLEANING THE REFRIGERATOR

When returning from a trip, turn the refrigerator off, and remove all contents. Wash the interior lining of the cabinet with detergent and water. The evaporator, ice trays, and shelves must, however, be cleaned with warm water

only. Never use strong chemicals or abrasives to clean these parts, or the protective surface will be spoiled. After the cleaning job is completed, the cabinet doors must be propped open long enough to allow the refrigerator cabinet to dry out thoroughly.

If the door of the cabinet is allowed to close before the interior has dried out, mildew will form inside the box when it is not in use. If this should happen, wash again with a luke warm, weak solution of water and baking soda to remove the mildew.

f. REFRIGERATOR TOUBLE SHOOTING

Pilot flame blow-out. It is not unusual for your refrigerator pilot to blow out occasionally as it is often subjected to strong gusts of wind from other vehicles. If trouble persists, have your service person check the operation. Do not obstruct the outside vent by covering it or placing any kind of material inside the vent door. For proper operation, air must be drawn in through the side vent, allowed to pass over the cooling unit, and then drawn outward through the roof vent. Any blockage of this "chimney action" will impair the operation of the refrigerator.

For maintenance and warranty work, refer to the Owner's Manual.

7. MICROWAVE OVEN

For operating instructions and maintenance, refer to booklet.

D. PLUMBING

1. FRESH WATER SYSTEM FOR MOTORCOACH MODELS

The Fresh Water System can be supplied from two sources — a water tank located in the MotorCoach, or from a campground water source connected to the water intake through a hose.

The tank water supply is equipped with a demand pump.

The demand type system is controlled by a pressure switch built into the pump. When a faucet is opened, pressure in the line drops, causing the pump to start (on demand), and it pumps water to the open faucet. When the faucet is closed, pressure builds up quickly and the pressure switch shuts off the pump. A manual switch is provided near the kitchen sink to cut electrical power to the demand pump when the tank is empty or the system is not in use. The pump operates from the 12 volt DC battery supply.

Other components in the water system include a 33 gallon supply tank and a 6 gallon water heater.

The water tank filler inlet is located on the outside of the Coach on the driver's side. (Refer to Section 1. Illustrations for location). While you can cram your hose coupling into this fitting, it is better to have a special tool for this purpose. One can be made by cutting off the female end of a water hose to a length of about six inches. Connect this short hose fitting to your regular water hose, and place the end into the filler inlet to fill the tank. The water should run at a moderate or even slow flow so all the air in the tank will be able to escape. Filling the tank too fast will trap air inside and allow no more water to enter, giving the false impression that the tank is filled. After the tank is filled, let it set for about five minutes, then try again slowly. You may find you can get in several more gallons.

During the water fill procedure, the water heater tank should also be filled, providing it was not done previously. Open a hot water faucet within the Coach and allow air from the water heater tank to escape. A free flow of water from the hot water faucet will indicate that its six gallon tank is full. If you forget this step until later when a water source is not available, you will be filling the hot water tank from the Coach supply tank and reduce the supply unnecessarily. The water heater is arranged so the water inlet is on the bottom and the outlet of the tank is on the top. Therefore, water cannot be drawn from it unless more is pumped in at the bottom. When the water supply tank is empty, no hot water can be drawn even though the hot water tank is full because no water from the supply tank is available to push the hot water through. This explains why the hot water tank only needs to be filled the first time.

If the pump is cycling on and off occasionally, it will indicate that a water or air leak is present to allow a drop in pressure. Check all water connections and fixtures for the presence of a leak.

NOTE: It is good practice to turn off the pump switch when leaving the Coach for a period of time, and when retiring at night.

In case of uneven water pressure between hot and cold in the kitchen faucet, or pressure in the kitchen compared to the bathroom, check the screen filters inside the kitchen faucet assembly for clogging. This requires the dismantling of the faucet. If you do not feel comfortable about repairing the faucet yourself, take the unit to a Recreational Vehicle Center, or to a plumber.

Refer to Section V. Seasonal Protection for the Bypass Valves.

2. FRESH WATER SYSTEM FOR 19' VAN/MOTORCOACH

Water for the unit is stored in portable tanks. They can be removed from the unit for filling or winterizing. Water is drawn to the sink by a hand pump faucet.

3. SYSTEMS MONITORING PANEL (Not available on all models)

The Monitoring Control Panel consists of switches and lights. By pressing either the fresh water, tank one (sewage), or tank two (grey water) switch, the lights glow indicating the level of the tank. Pressing the battery switch indicates the condition of the battery for the Coach only.

4. CITY WATER CONNECTION

When parked in a campground which has hookup facilities for city water, a connection has been provided on the outside of the Coach. To use this connection, connect a water hose to this fitting and turn off the demand pump switch using the city water pressure to provide for the movement of that water. It must be remembered that connection to this water facility bypassed both the pump and the water supply tanks; and, therefore, will not fill the fresh water tank.

NOTE: To guard against damage to the pressure limiting components, do not run water faucet on full force, as some water systems have excessive water pressure, and its force needs to be limited by merely "cracking" the faucet open.

5. BATHROOM UNIT

The total bathroom includes toilet, lavatory sink, medicine cabinet with mirror, light, tub/shower, shower curtain, and full length mirror.

On models without an electric odor control system, it is recommended after emptying sewage holding tank to add chemical deodorant. Per recommendation of manufacturer of chemical deodorant, add prescribed amount of chemical and water through normal flushing operation of bowl.

To operate the shower, set water to the desired temperature by adjusting hot and cold water faucets while running water into the lavatory, then turn shower level located between the faucets to an "ON" position. This will divert the water to the shower head. The shower head is equipped with a shut-off valve which will allow it to be turned off to conserve water while soaping up with the water from the lavatory.

6. RECIRCULATING TOILET (Used in some models)

A recirculating toilet uses a self-contained compartment to hold water, a pump (electric), and a drain system.

To fill storage compartment, pour 3 gallons of water directly into bowl. Press electric switch several times to prime the pump and to start recirculating cycle. To add necessary chemicals, pour contents while recirculating water. (Refer to toilet owner's manual for recommended chemical and warranty restrictions.) For use, press switch for recirculation.

7. DRAIN SYSTEMS

To provide complete self-containment and to comply with requirements of good sanitation practices, your BORN FREE Model is equipped with a dual tank drain system. The sanitary holding tank (or black water tank) receives waste from the toilet. The second tank which is called the grey water tank, collects waste water from the kitchen sink as well as the shower pan.

The two tanks share a common outlet for connecting the regular three inch sewer hose for emptying, but each has its own slide valve so they can be evacuated separately. This

connection along with the two slide valves is located on the driver's side of the Model near the center or at the rear.

a. HOLDING TANK EVACUATION

The holding tank should be evacuated at an authorized sanitary disposal station or sewer hookup in a campground only. Position the BORN FREE Model at the sanitation station so the sewer connection is located near the drain opening. Remove cap on the drain opening and install sewer hose to the connection. Place the open end of the sewer hose in the disposal drain, and hold it in position during the entire evacuation process. Each tank should be drained separately, dumping the black first, and the slide valves opened one at a time to avoid the contents of either tank running into the other. Pull the slide valve handle all the way out so the contents will run out in a quick flushing manner. After the tank is emptied, close the slide valve and run clear water through the toilet into the tank for rinsing. Open drain valve to allow rinse water to run out. Close slide valve and re-engage retaining clips. The grey water tank is emptied in the same manner. Run water through the sewer hose to rinse it, and replace it in its carrier. Recharge holding tank.

Always rinse the tanks well after evacuation to eliminate any accumulation of solid waste which could become a problem. The best method of rinsing either tank is to close the slide valve and fill the tank either through the toilet or one of the sinks. Open the slide valve all the way allowing the water to rapidly run out creating a turbulence that aids in cleaning the complete inside of the tank. This rapid cleaning action also cleans the slide valve so that nothing collects in the tracks to impair its operation or clog it so it will not close completely.

Be sure both slide valves are closed and the cover is in place over the outlet before moving the vehicle in order to keep any road dirt from entering the system.

b. PARKING IN A CAMPGROUND WITH HOOKUPS

When parked in a campsite with sewer hookup facilities, connect the drain hose and open the sink tank drain valve. This will allow complete water drainage during your stay. Showers can be taken as well as free use of sink drains without the worry of filling your tank. However, the holding tank drain valve for the toilet waste should not be left open during your stay. If this is done, liquids will run off quickly; but solids have a tendency to remain in the tank. The proper method is to leave the slide valve closed allowing wastes to accumulate. If this is done, the evacuation procedure will allow the quick-flush principle to carry all wastes out the drain at the same time, and will keep the inside of the tank in a cleaner condition.

8. ODOR CONTROL SYSTEM

The Odor Control System is an option that eliminates the need for chemicals in the sewage holding tank. Probes are located in the sewage tank and periodically the master control unit sends 12 volt electrical charges across the water of the tank, killing odor causing bacteria.

The master panel consists of an "on-off" switch, a test switch, and two lights. By turning on the switch, the system automatically goes to work. Every six minutes the system electrifies the tank for three minutes then is off for six minutes, then back on

for three and off for six and so on. The test switch and two lights are used to check the system. Push the test switch momentarily and the two lights will intermittently flash, indicating that everything is okay. The entire system is fused in the coach convertor.

Remember that water must be as high as the probes of the tank for the Odor Control System to work. Also make sure that the concentration of sewage does not become too thick as this prohibits the system from working as efficiently. If you are storing your vehicle, make sure the tanks are drained and that the system is shut off to prevent the battery from discharging.

E. LP GAS SYSTEM

1. FURANCE

The furnace in most BORN FREE Models is an LP gas burning model which will distribute heat throughout the Coach. It is controlled by a wall thermostat. It is equipped with an electric ignition. Always remember when the Coach is not in use, have the furnace turned "OFF" at the thermostat so the fan will not operate. Refer to Section 1. Illustrations.

2. RANGE AND OVEN

The oven is equipped with a safety pilot which must be ignited before the oven burner will operate. Move oven control by pushing inward, then turning to "OVEN OFF" position. Light the oven pilot with a match and allow it to warm a few minutes before advancing the oven control. The pilot is located inside the oven under the burner shelf approximately mid-way on the burner.

Set the oven heat control to the desired temperature, and it will come on under the control of the pilot and thermostat. Restoring the oven control to "OVEN OFF" will turn off the oven burner, but allow the pilot to remain lighted. It may be left in this position until next time the oven is used. When returning from a trip, restore the oven thermostat to "PILOT OFF" position. **It is extremely important that the oven control be on "PILOT OFF" position when your MotorCoach is in transit.**

MAINTENANCE AND ADJUSTMENTS

If you are using an LP gas range for the first time, you will notice flame height is appreciably lower than the natural gas range which you use at home. LP gas contains more BTU per unit than natural gas and a lower flame will cook as quickly and contain as much heat as the larger flame of natural gas.

The flame should always be a blue color without any yellow on the tips. If yellow starts to form on the tips, it will smoke or soot the bottoms of your pans and cook pots. This condition means more air is needed. Adjust the sleeve shutter which is located just inside the stove body near the individual valve for that burner.

Refer to Appliance Owner's Manual for service and warranty information.

3. WATER HEATER

Before you can light the water heater it must first be filled with water. With the water pump switch on, open a hot water faucet to fill. The pump will push water into the heater tank, and the air will escape from the hot water faucet. A steady flow of water from a hot water faucet will indicate the tank is full. The best time to do this is during the water supply tank filling process if the water heater was previously empty. If you wait until later, you will take six gallons of water from your supply tank to fill the water heater. However, water will always remain in the water heater unless drained because water can only be taken from it, once full, when new water is pumped into it.

On the back of the water heater we have installed a bypass system. This system consists of three valves and is used to winterize the coach's water system for cold weather. Using the bypass system cuts down on the amount of antifreeze needed and keeps antifreeze out of the water heater. If antifreeze is allowed to get into the heater, it can leave a residue that can be tasted in the system during summer use. This bypass system can also be used during cold weather when you may want to use the toilet by placing biodegradable antifreeze in the fresh water tank for a toilet flushing water source.

a. LIGHTING PROCEDURE
   1. Turn on gas at the LP supply tank.

2. Push the water heater ignition switch in the coach to "on". Listen for clicking sounds. This indicates that the heater is trying to light. You will hear the burner when it lights. If it does not light, a light will come on the switch. Shut the switch off then repeat the procedure until all the air is out of the system and the heater lights. Water temperature is factory adjusted and cannot be changed. The unit will shut off when the water temperature is reached and turn on automatically as the water cools.

b. MAINTENANCE

To drain water heater, open drain valve and open lever on pressure relief valve on outside of unit. Remember to turn gas control to "OFF" before draining. Pilot height can be increased or decreased by means of a small screwdriver adjustment. Remove cover to gain access to the adjusting screw. Air adjustment for the burner can be adjusted by moving sleeve to increase or decrease air. Yellowish, smoky flame will indicate that burner needs more air. If adjustment does not reduce yellow flame, problem is likely due to spider web. This particular pipe which is open at both ends, is often a favorite place for spiders to spin web impeding air circulation to the burner. To remove a spider web in the tube or pipe, take a short length of ordinary clothesline or rope about a foot long. Fray one end so it spreads out about one inch. Push the frayed rope into the tube all the way to the other end and then remove it. This action should clear the obstruction.

The water heater must be drained if it is operated in temperatures below freezing. It can be safely used, however, even in sub-zero weather providing it remains lit.

Refer to Appliance Owner's Manual for service and warranty information.

Refer to Section V. Seasonal Protection for winterizing instructions on Bypass Valves.

V. SEASONAL PROTECTION

Each year more travelers discover winter camping. Some experts predict eventually year-round use of Recreational Vehicles will be enjoyed by all. With your new BORN FREE MotorCoach, you don't have to wait until then; you are ready now. The Coach is built with adequate insulation, ventilation, and construction principles that can keep you as warm in the winter as in the summer as long as the furnace is operating.

The only additional precautions necessary for you to take are to add non-toxic RV antifreeze to the holding tank and sink drains. The low cost ethylene glycol types which are used in automobiles are not recommended. These are poisonous, and are not approved for portable water systems.

If you choose to store your MotorCoach during the winter months and for periods in between use in that season, protection has to be provided for the water and drain systems. There are drain valves located in the lower cupboards. These are accessible by opening the cabinet doors.

The water heater can be emptied by opening its drain valve and the pressure relief valve at the top of the tank to allow air to enter. During the draining process, the water pump switch has to be turned off and all hot and cold water faucets opened.

A. WINTERIZING INSTRUCTIONS FOR WATER HEATER

1. Turn "OFF" water pump.
2. Drain water tank and lines through three drain valves.
3. Open water heater drain and drain water heater tank.
4. Turn Valves A & C crossways to water lines.
5. Turn Valve B parallel to bypass water line.
6. When system is drained, shut drain valves and install 1-2 gallons of "Non-toxic R.V." antifreeze into water tank.
7. Turn "ON" water pump and open faucets until antifreeze pumps through each of them. Flush stool until antifreeze appears in toilet.
8. Shut "OFF" water pump.
9. Your unit is now "Bypassed" and "Winterized".
10. Pour 1/2 gallon of antifreeze into shower drain to winterize and protect drain plumbing. ("P-traps".)

Refer to Section 1. Illustrations.

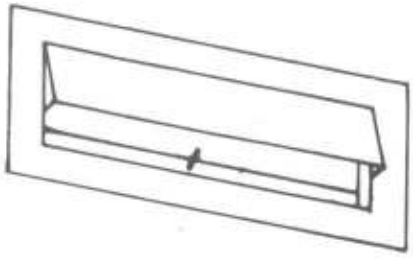
Bypass the water heater before flooding system with antifreeze by locating the back side of water heater (accessible through interior cabinet door).

Proceed with winterizing.

Even though adequate drainage is provided, it does not always insure 100% positive protection. A low spot caused by the Coach not being quite level can retain enough water to freeze and burst a pipe. The water pump itself is difficult to protect unless it is removed from the Coach and traps on sink and shower drains are difficult to protect as they are not all accessible.

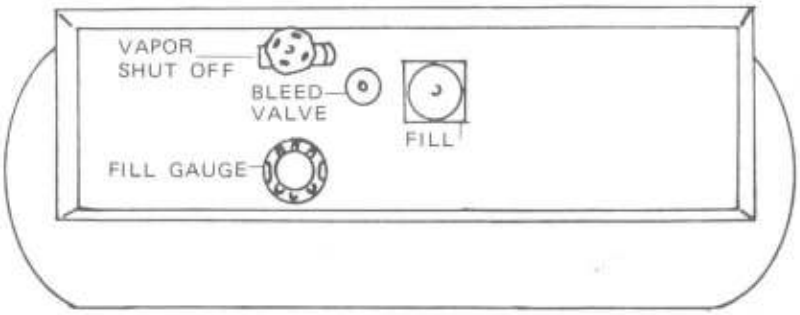
A new type antifreeze was developed several years ago which does provide positive protection down to 40 degrees below zero. This antifreeze is non-toxic and certified safe for use on potable water tanks and lines during storage. It can be quickly rinsed out when the Coach is ready to be used again. Several brands are available, and your BORN FREE service center can service your MotorCoach with one of them for you. If you prefer to do the job yourself, they can sell you a product to use that includes complete instructions. We highly recommend the use of these antifreezes as their cost is only a fraction of a possible repair bill which could result from a freeze-up problem.

To help insure that when the first "shake-down" weekend rolls around in the spring your RV will be ready to roll, too, we have compiled a few suggestions for "winterizing".

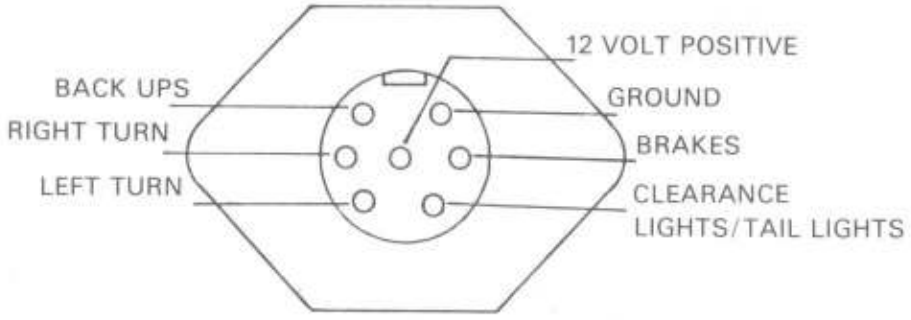


RANGE EXHAUST VENT

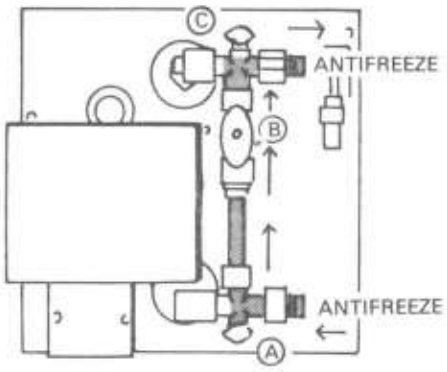
LP TANKS



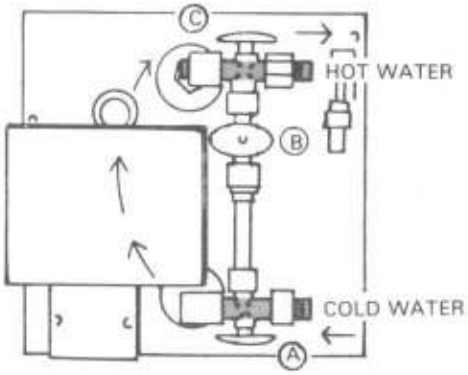
TRAILER LIGHT CONNECTION



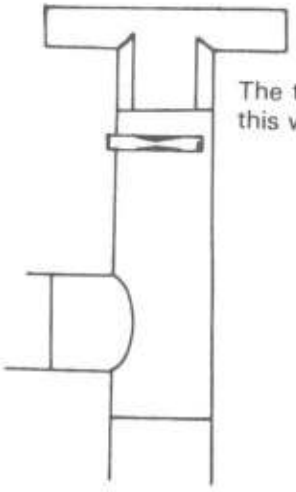
SEASONAL PROTECTION



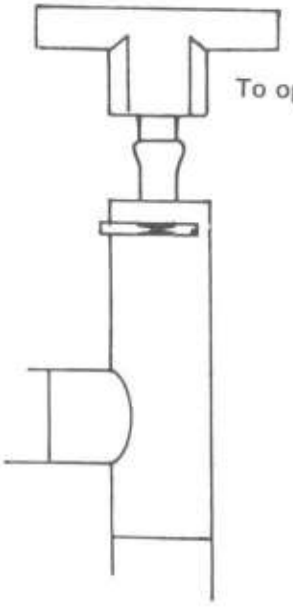
The positioning of the valves (A,B,C) when winterizing with antifreeze. This allows antifreeze to go thru cold water pipe, thru bypass and out thru hot water pipe. (See shaded area.) Antifreeze will not go thru heater if in this position. You should not run antifreeze thru your heater as the tank will "trap" the taste of the antifreeze for summer use.



The positioning of valves (A,B,C) for use of water heater. This allows cold water to go thru heater and come out as hot water. (See Shaded Area)



The three drain valves should appear like this when closed.



To open, simply pull straight up.

First, it is a good idea to place your RV on wood blocks (with weight distribution at three points) instead of trailer jacks — this should take the weight off tires and springs. The pressure in your tires should be decreased to 15 pounds and then wrapped either in plastic (black) or heavy sacking.

Unless you take particular care in removing water from your water lines, particularly the low spots (blowing with compressed air is not recommeded), you could have broken lines in the spring. Hence, non-toxic water line antifreeze should be flushed through the fresh water system. Besides protecting, this method also lubricates plumbing components. Also, the sanitary system should be thoroughly cleaned and drained.

One-half cup of propolene base antifreeze should be added to sink, shower traps, and holding tank to prevent trapped water from freezing. Then in the spring, fill your water tank and flush system several times.

Remove all bedding and clothing (tends to mold). Also remove food stuffs, and clean the cupboards. Affix newspapers to inside of windows with masking tape.

The refrigerator should be thoroughly cleaned, and place an open package of baking soda inside, leaving the door open. Clean stove, oven, and stove vents; close LP gas tank valves securely. Remove battery and store off concrete floor; charge once or twice during storage.

For chassis winterizing see your Ford Manual.

During the winter months brush excessive snow from the roof of vehicle. A small amount of care in the fall is worth the trouble-free first "shake-down" weekend in the spring — and you are ready to put your wheels in motion for a fun, carefree summer.

B. SUMMER DE-WINTERIZING OF UNIT

1. Fill water tank with 5-10 gallons clean water.
2. Turn pump "ON".
3. Open faucets and pump water into sinks and toilet until coloration is gone and all foam disappears. Drain remainder of water.
4. Fill water tank.
5. Close water heater drain valve if it was left open over winter.
6. Turn Valves "A" and "C" parallel with water lines. Turn Valve ' **B** ' crossways to bypass water line.
7. Your system is now ready for normal summer use. Antifreeze has been kept out of your heater to prevent lingering tastes and smells. You have saved approximately 3 gallons of antifreeze necessary to winterize an R.V. heater.

Refer to Section 1. Illustrations.

VI. TRAVEL TIPS

Here are some traveling tips to keep in mind when on the road. As you travel, you'll pick up more tips from other RV drivers.

Remember to check clearance. "Think high and wide". Save the top and sides of your MotorCoach.

Taste the water before filling the tanks in an unfamiliar location. Some water contains salt or has a sulphur taste.

Keep an eye on service station attendants. They may accidentally fill your water tanks with gas or vice versa.

Use manned toll gates — usually you will be charged one class more than a car. You do not have to stop at weigh stations unless specifically instructed to.

Showers can take alot of water. Conserve by taking "sea showers". Wet down and soap from water saved in lavatory, then use the on/off button on the shower head. Turn the water on and rinse.

Have the oil checked every time you fill with gas.

Check the wheel lugs and radiator water level every day before you start out.

Keep an eye on the water tank level and holding tank level. It is a good idea to dump the holding tank at least every two days. Carrying full waste tanks just adds weight and takes more fuel to run your BORN FREE.

Do not leave food, or odor-causing material in your vehicle for extensive periods of time. Dry damp clothing, hunting gear, etc., before putting it away.

A fire extinguisher can prevent serious consequences of a fire. Make sure it is always charged. Frequent reviewing of instructions and practicing fire drills will help remove the question of doubt in the time of an emergency. It is also a good idea if everyone using the coach knows where the fire extinguisher is and how to operate it in the time of an emergency.

Conduct a tour of your vehicle before you leave. Be sure all compartment doors are closed and locked up, the step is up, cabinet doors closed, and the refrigerator doors secured tightly. Check objects on the dinette table and sink area. An unexpected stop can send objects flying.

When you are new at driving a motorcoach, you may have a tendency to crowd to the middle of the road. Check your rear view mirror frequently to check on how close you are driving toward the center line.

Dump sewage only at approved dumping stations.

When traveling with children, it is helpful to plan their wardrobe for a week. Place each day's clothing in a plastic bag, and label the name and day on the bag.

Plastic containers with tight fitting caps should be used for storing liquids.

During peak tour seasons and holidays, it is better to phone ahead and make reservations at the park where you plan to stop.

Travelers find sleeping bags save work. In cold climates they take less space, and are warmer than blankets. They are also easier to store and making beds are a snap.

You will be the center of attention when you travel. Watch out for drivers who tend to get curious about your vehicle. They almost drive aboard for a closer look.

Some states will not allow you to pass through highway tunnels with LP gas aboard your vehicle. If your route includes a tunnel, check with the Highway Patrol or the Department of Highways before venturing forth.

When fogging appears on the windows, there is an excessive amount of humidity inside the vehicle. In extreme cold weather this can become frost or even ice. Remove the excess moist air by opening a window or roof vent. Operating power vents will also help.

In starting out on a trip, several things should be taken in addition to the basic clothes, food, and recreational items. Some basic emergency items are:

Flashlight
First Aid Kit
Road Emergency Flares
Tool Box with assortment of hand tools
Plastic Bucket
Tow Chain or Rope
Wheel Blocks for leveling, or extra jacks
Water Hose
100-150 feet of Electrical Cord with at least 30 amp capacity
Fire Extinguisher
Hydraulic Jack and Lug Wrench
Spare Tire, if going to Alaska or Mexico

Check List for Pre-departure Inspection: As a safety pre-caution get in the habit of: ONCE AROUND BEFORE IN - Walk completely around your coach before driving. It could save leaving with a cord or hose still connected and could save a child's life.

- ☐ Have the springs, shocks and steering mechanism inspected.
- ☐ Have chassis, suspension and steering linkage lubricated.
- ☐ Test battery for power; clean terminals if necessary.
- ☐ Check all running lights, turn signals, interior and panel lights.
- ☐ Test horn.
- ☐ Examine tires for wear and have wheels balanced and aligned if necessary.
- ☐ Have the cooling system inspected and tested for wear and potenial leaks.
- ☐ Review the owner's manual for vehicle operation and follow outlined maintenance.
- ☐ Be sure tires are rated in the load range for your estimated gross combination weight.
- ☐ Check brake system, including fluid levels, linings and brake lights. Inspect and adjust parking brake mechanism if necessary.
- ☐ Check condition of windshield wipers and level of windshield washer fluid.
- ☐ Replace worn tires if needed. Always replace both tires on the same axle. Never mix tire sizes and types—mismatched tires can affect handling and stability.
- ☐ Inflate all tires to recommended pressure (check pressure when cold—road friction from traveling increases pressure).
- ☐ Follow scheduled maintenance recommendations for complete engine tune-up, new air and oil filters, fresh oil, new spark plugs and thorough checks of your vehicle's ignition and emission control systems.

Daily Check List for Pre-departure Inspection

- ☐ Keep cargo close to the floor of your coach for best center of gravity.
- ☐ Assemble loose items in bins or boxes with lids.
- ☐ Close and secure all doors, windows, and latches.
- ☐ Doublecheck for loose items such as books, tote bags, shoes, etc. Place in drawers or on lipped shelves.
- ☐ ONCE AROUND BEFORE IN.

VII. DRIVING TIPS

Your new BORN FREE will drive very much like your "own family car." The chassis that carries the Coach is equipped with all of the same deluxe and custom features. The main differences in handling will come from an increase in weight, width, height, and length. All of these differences will become second nature to you in just a few miles of driving.

You will be able to drive your BORN FREE at turnpike speeds, just as you do your car; but it will take longer to reach that speed. You will slow down more when climbing a hill or mountain because of the added weight. When you pass another vehicle on the highway, allow yourself more time and room for overtaking and cutting back in. You are also now a little wider, and will have to allow for that, too, when maneuvering in a tight place.

When backing up, have your co-pilot get out and walk with the Coach as it moves. The best place for them is at the left rear where you can observe their signals in your mirror as they walk along and direct your movements.

You are not likely to forget about your heavier weight, width, or length as the actual driving feel will remind you. However, there is one new dimension you will have to constantly remind yourself of — height. You are up to 10'3" tall on some models, and if you have a roof air conditioner; allow 10½ feet. Always be on the lookout for low hanging branches on trees and for low building canopies. While most buildings will be high enough, there are some that you will have to avoid.

If you travel with a friend who also owns a Recreational Vehicle, don't bunch up on the highway. Leave an interval of 300 feet so other motorists can get around you easily. If you find that in proceeding up a long incline a long string of cars has gathered behind you, pull off the road at the first safe place to allow them to pass.

When traveling a longer distance, don't get overtired. Stop for a coffee break at least once during the morning, and again in mid-afternoon. Here is an example of one of the best reasons for owning your BORN FREE. You can park at any rest area, and make a pot of coffee or get a soft drink from the refrigerator; and don't send your spouse back to the fridge to get it — you need to stop and get out and stretch your legs. In a MotorCoach like your BORN FREE with all facilities accessible to you as you roll down the highway, some people try to cook or prepare food while in transit. There are even some companies that manufacture and sell brackets for your stove to hold the pans in place for cooking. DO NOT ENGAGE IN ANY SUCH PRACTICES AS THEY ARE EXTREMELY DANGEROUS! Not only is there a tremendous fire hazard, but all persons should remain seated while in motion; getting up and moving around only when absolutely necessary. If the driver is called upon to put on his brakes quickly, a person standing will be thrown around and is almost certain to be injured.

The experienced traveler learns to "walk his rig" at every stop. It takes but a minute to make a trip all the way around looking at the complete unit. Be sure that all caps are in place, access doors secure,and tires are well inflated. The duals should be kicked or hit with an object like a tire iron to be sure that neither of them has become flat. An uninflated tire will move around on the rim causing an excessive heat build-up or even possibly a fire. One soon learns after acquiring this habit that they will drive with a more comfortable state of mind afterward. Once again a reminder: ONCE AROUND BEFORE IN.

The fuel efficiency of your BORN FREE depends on several factors: the load it's carrying, the size and weight of the body, driving habits and general condition and maintenance of the vehicle. Of course,adding a trailer to your motorhome will place additional strain on the engine and reduce fuel economy. To ensure the best possible fuel efficiency:

- Change oil and oil filter according to your owner's manual.
- Manually shift the automatic transmission when appropriate.
- Inspect air and fuel filters more frequently then usual when excessive dust or bugs and debris are encountered.
- Keep cargo to the minimum. Be ruthless in weeding out unnecessary equipment and supplies.
- Make sure tires are properly inflated.

- Restrict air conditioner use when possible.
- Drain waste and grey water holding tanks before leaving campsite and do not travel with excessive fresh water. This just adds weight.

Ice, snow, rain or wet surfaces on roads present hazardous driving conditions. Stopping distances are unpredictable, and braking on slippery surfaces can cause skidding. Under such conditions, downshifting the transmission helps reduce vehicle speed and provide more control. Pumping the brakes tends to prevent skidding. Lowering tire pressure helps considerably.

Caution: To avoid skidding on some slippery road surfaces, do not down shift into first gear (1) at speeds above 10 mph.

On rough roads, proceed at a steady slow rate of speed. It is better to roll slowly over a rough section of road or unavoidable potholes than to hit with brakes rigidly applied. With wheels locked by brakes, all the road shock is transferred directly to the suspension, vehicle and passengers.

VIII. TRAILER HITCH AND ELECTRICAL CONNECTOR

Whenever a MotorCoach is used for towing, the following limitations must be followed:

1. The towing hitch on the BORN FREE is NOT class rated.
2. The Gross Combination Weight (GCW) must not exceed the Gross Vehicle Weight (GVW) unless the trailing vehicle is equipped with adequate brakes.
3. Trailers weighing in excess of 1,000 pounds require trailer brakes. Trailer brakes are also required whenever Gross Combination Weight exceeds the Gross Vehicle Weight of the MotorCoach.

Gross Combination Weight equals the total weight of fully equipped MotorCoach and trailer with cargo, driver, passengers, etc.

Do not restrict air flow through the radiator grille area by mounting a trail bike, spare tire, etc., to the front of the MotorCoach.

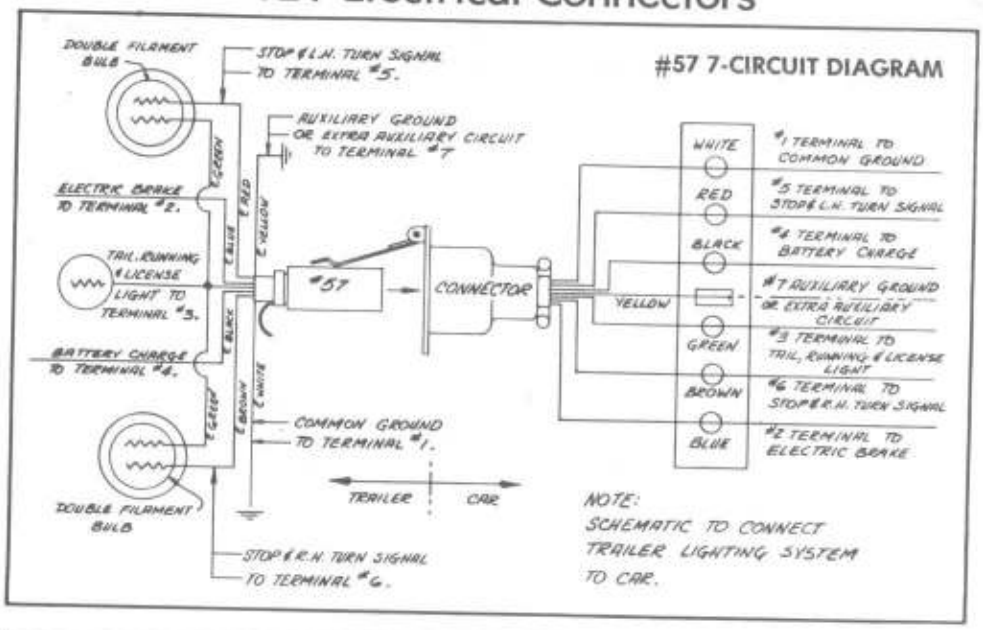
CAUTION: Installation of a frame-type equalization hitch on a MotorCoach is not recommended. Your MotorCoach must be equipped with an auxiliary transmission oil cooler when used for towing operations.

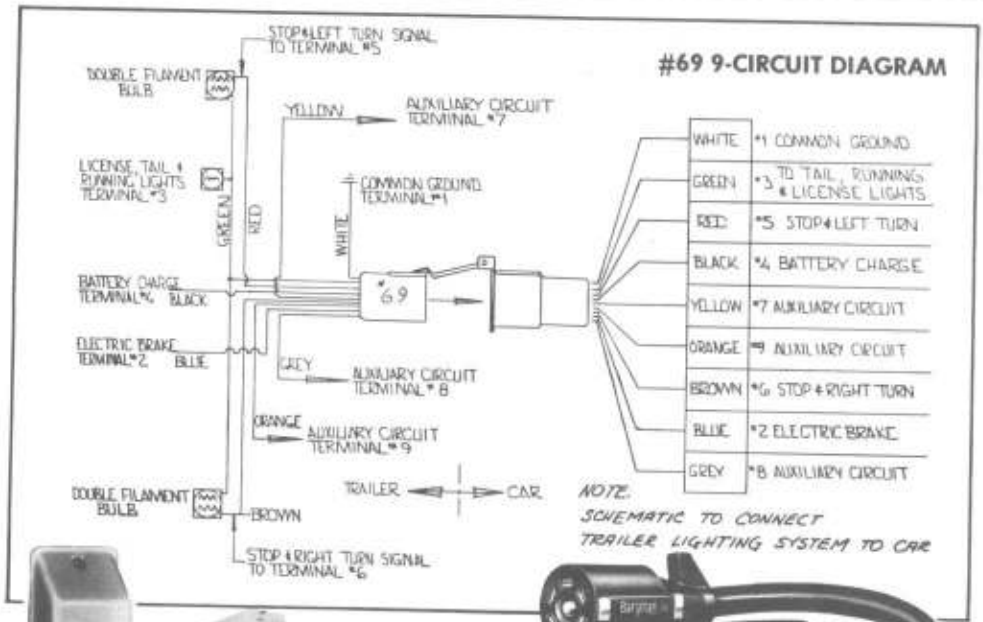
Refer to Section 1. Illustrations.

Additional Trailering Tips

- Make extra-wide turns to accommodate wider turning radius of the trailer.
- When backing up, move trailer to the left by turning the steering wheel to the left with the palm of your hand on the bottom of the steering wheel. To turn right, do the opposite.
- Place wheel blocks (chocks) under the trailer wheels before setting brakes and transmission of the tow vehicle. This will absorb the stress and secure the trailer.
- Frequently check operation of trailer brakes and back-up lights.
- Decrease trailer load substantially for high-altitude driving.
- Continually check lights on trailing vehicle.

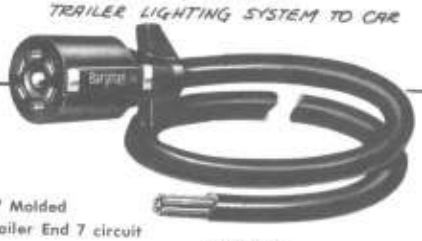
Wiring Diagrams for BARGMAN 7 and 9 Circuit 12V Electrical Connectors





Connector Shelter

77 Molded Car End 7 circuit



67 Molded Trailer End 7 circuit

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