



Arriva

OWNER'S MANUAL



Mercedes-Benz
3500 SPRINTER CHASSIS



Arriva

LUXURY CLASS "B" MOTORHOME



Mercedes-Benz
3500 SPRINTER CHASSIS

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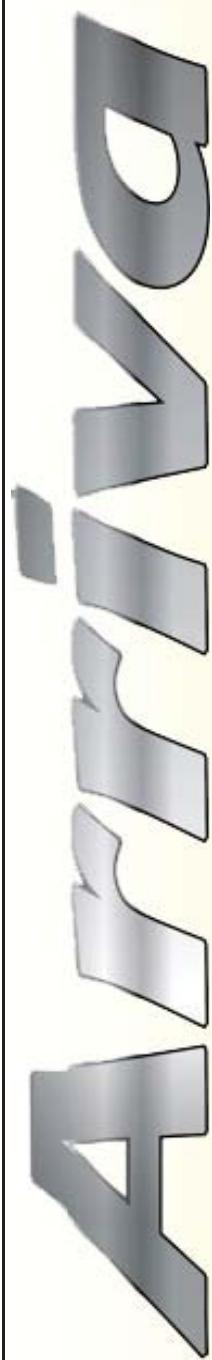
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MERCEDES BENZ 3500 SPRINTER CHASSIS

OWNER'S MANUAL



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Introduction

**General R.V.
Guidelines**

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**Electrical
Systems**

**Electrical
Systems**

L.P.G. System

L.P.G. System

Plumbing / H.V.A.C.

Plumbing / H.V.A.C.

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Galley

Miscellaneous

Miscellaneous

**Optional
Equipment**

**Optional
Equipment**



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Section 1

Introduction

Mercedes-Benz



3500 SPRINTER CHASSIS

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Letter from the Owners

Dear New Coach House Owner:

On behalf of our entire staff, we would like to say "Thank-You" for purchasing one of our Coach House **ARRIVA** Motor Homes and welcome you to the Coach House Family. As part of our growing family, we encourage you to let us know how your **ARRIVA** is performing and always feel free to contact us regarding any problem, complaint, or suggestion.

The following warranty manual was designed to answer many questions about the operation, service, and warranty of your new **ARRIVA**. We have also included a vendor list to assist as a quick reference guide in the event you need to talk to someone about a specific item on your unit.

As part of our Coach House Family, we will send out complimentary issues of our *Coach House Today* newsletters giving you an insight as to our company and our employees, keep you informed about our *Coach House Owners Club* (C.H.O.C.) and updates regarding new ideas, product developments, and other issues that might develop in our industry.

Again, "Thank-you" for your business and we hope your new **ARRIVA** brings you many happy memories and years of safe travel.

If we can be of any service, please feel free to call us at 1-800-235-0984.

Sincerely,

David Gerzeny
President

Steve Gerzeny
Vice President

Mercedes-Benz



3500 SPRINTER CHASSIS

Master Upfitter

Coach House, Inc. has been recognized by Mercedes Benz, U.S.A. as a Master upfitter. We adhere to strict guidelines and quality controls to ensure that your Coach House Motorhome is built to optimize the Mercedes Benz 3500 Chassis. Our plant is subject to inspections at any time by Mercedes Benz, and we comply with all manufacturer notices and advisories to ensure your safety and long-term enjoyment of the premium Mercedes Benz chassis and powerplant which is the heart and soul of your **PLATINUM II**.

If you ever have questions about your Mercedes Benz chassis or need help finding an authorized service center, call Mercedes Benz at 1-800-555-1211 - or go online at www.sprinter.com.



Mercedes-Benz



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**Coach House
Owners Club
(C.H.O.C.)**

APPLICATION

Insert CHOC Application in
See Through Packet Here



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**Family Motor
Coach Association
(F.M.C.A.)**

APPLICATION

Insert FMCA Application in
See Through Packet Here



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Ambassador Program

Ambassador Program

The Coach House Ambassador Referral Program was created to entice our valued customers to share their experience with friends, family, and all the folks you meet during your travels! As you are aware, it is common occurrence to be stopped by people asking about your Coach House **ARRIVA**. Why not get paid for your time and efforts?

Here is how it works:

- Sign up to be an ambassador. We will custom print and mail you a packet of Coach House **ARRIVA** Ambassador business cards with your name and our contact information.
- When approached by a prospect, simply discuss your Coach House **ARRIVA**. Explain the features and benefits, the styles/models and why you purchased.
- Hand them a Coach House **ARRIVA** Ambassador business card and tell them to contact us directly at the Factory.
- If a prospect purchases any **ARRIVA or PLATINUM**, Coach House, Inc. will pay you \$200.00 once the unit is delivered. There's no limit to the number of people you can refer, so there's no limit to how much you can earn!

We sincerely appreciate your assistance. Good Luck and Fun Selling!!!

Sincerely,

Steve Gerzeny
Vice President
Coach House, Inc.

Introduction

Every effort has been made to build your *Coach House® ARRIVA* to the highest quality standards. To help you obtain the most enjoyment and safety while using your motorhome, we strongly urge you to carefully review this owner's manual, paying particular attention to the areas that discuss safety. Some items discussed are optional and only need to be reviewed if that option has been installed on your unit.

The Coach House owner's manual is comprised of many parts:

- 1) **Chassis Owner's Manual** - The Chassis Owner's Manual is supplied by Mercedes-Benz. Please pay specific attention to the recommended service guidelines for your chassis in order to ensure a long life of the engine, frame, suspension, tires, and auxilliary equipment which was provided by the chassis manufacturer.
- 2) **General R.V. Guidelines** - (Section 2) This section is a general guide for RV owners. It contains general usage information and is a comprehensive guide to the safe operation of any Recreational Vehicle.
- 3) **Area Specific Breakdowns** - (Sections 3 - 8) This section has detailed instructions and maintenance manuals from the manufacturers of the appliances installed by Coach House with additional notes and instructions where deemed necessary. If you can not find the information needed to service, or operate any product installed in your motorhome, feel free to call our service department at the factory, or call the manufacturer with the contact numbers provided in this manual. Our telephone number is 1-800-235-0984.

This manual is meant to give the owner a good understanding of the *Coach House®* family of products. Coach House, Inc. should be consulted for specific information concerning your equipment.

Warranty Coverage

This document is intended to provide a general guideline regarding the warranty of your new Coach House, Inc. **ARRIVA** motor home. The original Coach House Inc., Limited Warranty form was signed by you when you purchased and took delivery of your new unit and is the only document which governs the Coach House, Inc. limited warranty. Coach House, Inc. reserves the right to make changes to the limited warranty at any time at its' sole discretion.



Coach House, Inc. warrants only the conversion portion of the motor home for a period of three (3) years or thirty-six thousand (36,000) miles from the date of the first retail purchase or first in-service date. Appliances and auxiliary equipment carry warranties from the individual manufacturer. Please refer to the original equipment manuals included in this Owner's Manual. The warranty period applies only to units used for recreational travel and family camping.



Mercedes-Benz

Mercedes Benz Chassis are warranted for three (3) years or thirty-six thousand (36,000) miles from the date of delivery, whichever comes first.

The emissions and diesel engine are warranted for five (5) years or one-hundred thousand (100,000) miles from the date of delivery, whichever comes first.

California and certain other states require special warranty limits. Please consult your chassis manual to verify your coverage.

Mercedes Benz customer assistance can be obtained by calling 1-877-762-8267.

What is covered?

Defects in material and workmanship caused by Coach House, Inc.

What is NOT covered?

1) Adjustments

EXCEPTION - The following items will be adjusted free of charge for a period of ninety (90) days after retail purchase:

- a. Cabinet Doors
- b. Cabinet Drawers
- c. Latches
- d. Entry Doors, steps, and striker plates
- e. Awnings
- f. Loose Trim
- g. Slide-out adjustments

2) Fuses and Light Bulbs

3) Any product not registered and normally used in the United States or Canada.

4) Components that are warranted separately by the manufacturer of the product, including but not limited to chassis, tires, batteries, generators, plumbing, electrical equipment, air conditioners, furnaces, audio equipment, furniture, upholstery, and appliances.

5) Any product used for commercial purposes, as a permanent residence, or as a rental unit.

6) Window glass breakage. Headlights, Tailights. (Unless noted at the time of Delivery)

7) Lubrication and minor adjustments of locks, latches, hinges, slide-out system, etc.

- 8) Rust, corrosion, oxidation, dents, and other damage as a result of environmental conditions such as, but not limited to, heavy winds, hail, lightning, salt, and sand.
- 9) Fading or normal deterioration of items such as fabrics, exterior paint, decorative items, carpet, etc. due to use or exposure to ultra-violet rays or sun. Coach House does not warranty the conversion due to excessive climate conditions.
- 10) Cleaning of undercarriage/frame - Units delivered during winter months are likely to have been exposed to highway salts and chemicals. It is the responsibility of you, the owner, to wash the frame and undercarriage of the unit to prevent damage from rusting or oxidizing.
- 11) Damage/fading of the exterior caused by chemical cleaning or lack of proper maintenance of the exterior.
- 12) Normal unit maintenance, such as inspecting and resealing exterior seams.
- 13) Damage caused by abuse, misuse, negligence, condensation, overloading, vandalism, collision, road hazards, acts of nature (hail, wind, heavy rain damage, acid rain, flood), rock chips, alterations or modifications, improper non-warranty repairs, lack of normal maintenance, failure in giving prompt notice of water damage, improper operation or storage of components.
- 14) Subsequent damage, loss, or injury beyond warranty repairs as a result of mold or fungi.

APPLIANCE WARRANTY INFORMATION

Appliances installed by Coach House are warranted by the individual appliance manufacturers; refer to the Coach House Limited Warranty. Some of the manufacturers include a list of authorized service centers with their instruction manuals. The following is a partial list of appliance manufacturers with their phone numbers you should call if you experience any problems while under warranty.

<u>Appliance / Item</u>	<u>Manufacturer</u>	<u>Location</u>	<u>Phone Number</u>
Air Conditioner	Dometic	LaGrange, IN	(888) 867-4188
Awning (Motorhome)	Carefree of Colorado	Broomfield, CO	(800) 622-3230
Converter	Progressive Dynamics	Marshall, MI	(269) 781-4241
Furnace	Suburban	Dayton, TN	(423) 775-2131
Generator	Onan	Minneapolis, MN	(800) 888-6626
Home Theater	BOSE	Framingham, MA	(800) 367-4008
Inverter	Xantrex	Elkhart, IN	(800) 670-0707
LPG Tank	Manchester Tank	Lynwood, CA	(800) 640-6327
Microwave	High Pointe	Bristol, IN	(574) 848-4256
Monitor Panel	Ventline	Bristol, IN	(219) 848-4491
Refrigerator	Dometic	LaGrange, IN	(574) 294-2511
Roof Vent	Fantastic Vents	Imlay City, MI	(800) 521-0298
Stove Top	Dometic	LaGrange, IN	(574) 294-2511
TV	LG	Englewood, NJ	(800)-243-0000
TV Antenna	Winegard	Burlington, IA	(800-288-8094
Water Closet (Toilet)	Thetford	Ann Arbor, MI	(800) 543-1219
Water Heater	Truma	Elkhart, IN	(855) 558-7862



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Section 2

General R.V. Guidelines

General R.V. Guidelines

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Reporting Safety Defects

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

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

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at:

1-800-424-9393

or 202-366-0123 in the Washington D.C. area

or write to:

NHTSA Headquarters
1200 New Jersey Avenue, SE
West Building
Washington, DC 20590

or:

www.NHTSA.dot.gov

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



U.S. Department of Transportation
**National Highway Traffic Safety
Administration**

Florida Lemon Law

We have included a pamphlet from the Florida Department of Agriculture and Consumer Services outlining the basic aspects of the Florida Lemon Law. Please pay close attention to Pages 8 - 11 which refer to Recreational Vehicles.

If you have any questions please call:

1-800-321-5366

or

1-850-488-2221 (outside Florida)



Lemon Law

Insert Florida Lemon Law
Pamphlet in Sheet Protector
Here

Weight and Towing

Labels similar to the samples shown below have been placed on the inside of the passenger side door with weight information for your vehicle. If "CALC" appears after the UVW part of the label, this indicates that the UNLOADED VEHICLE WEIGHT has been calculated by using typical completed model actual weights and making adjustments for certain options.

MOTOR HOME OCCUPANT AND CARGO CARRYING CAPACITY VIN: XXXXXXXXXXXXXXX
THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED
XXXX kg OR XXXX lbs
SAFETY BELT EQUIPPED SEATING CAPACITY: 2
CAUTION:
A FULL LOAD OF WATER EQUALS XXX kg OR XXX lbs OF CARGO @ 1kg/L (8.3 lb/gal)
AND THE TONGUE WEIGHT OF A TOWED TRAILER COUNTS AS CARGO

CAUTION:
LOAD CARRYING CAPACITY REDUCED
MODIFICATIONS TO THIS VEHICLE HAVE REDUCED THE ORIGINAL LOAD CARRYING CAPACITY BY

_____ kg OR _____ lbs

VEHICLE WEIGHT DISTRIBUTION

To properly load your vehicle, first determine its empty weight axle by axle and compare this with the GROSS AXLE WEIGHT RATING (**GAWR**), which can be found on the FMVSS sticker located on the driver's door column.

Try to load your vehicle in a manner that proportionally loads the axles according to their available loading capacity. Make sure that your total weight does not exceed the GROSS VEHICLE WEIGHT RATING (**GVWR**) for your vehicle. Be aware that the total of the axle ratings (GAWR) can add up to more than the GVWR. Side to side weight distribution should be considered when loading your vehicle and adjustments made as deemed suitable.

It is recommended that you weigh your vehicle axle by axle when fully loaded especially if the load is close to the NET CARRYING CAPACITY (**NCC**) indicated on the Motorhome Weight Information label for your vehicle. Ensure that none of the stipulated weight capacities have been exceeded. After weighing, make any load adjustments necessary to insure proper vehicle handling and performance.

Towing and Combined Weight

The GROSS COMBINED WEIGHT RATING (**GCWR**) is defined as the maximum permissible gross weight of the vehicle and trailer. See the following page for information about towing.



Quick Facts

<u>Gross Vehicle Weight Rating</u>	G.V.W.R.	11,030 lbs
<u>Gross Axle Weight Rating (Front)</u>	F.A.W.R.	4,410 lbs
<u>Gross Axle Weight Rating (Rear)</u>	R.A.W.R.	7,720 lbs
<u>Gross Combined Weight Rating</u>	G.C.W.R.	15,250 lbs

TOWING GUIDELINES

To determine the towing capability of your vehicle, first refer to the chassis manufacturers Owners Manual and/or manufacturers literature that covers your vehicle. Information on your vehicle you need to know is the **GROSS COMBINATION WEIGHT RATING (GCWR)**, maximum trailer weight, maximum tongue weight, and the weight of your vehicle fully loaded. After determining the above information, you can calculate the maximum size trailer you can tow by subtracting your loaded vehicle weight from the GCWR and compare the answer with the maximum trailer weight for your vehicle. Whichever figure is **SMALLER** will determine the maximum towing capacity (Loaded Trailer Weight) for your vehicle.

It is important to make sure that the tongue weight for your loaded trailer does not exceed the chassis manufacturers rating. Also check the capacity of the hitch installed to make sure you have not exceeded its rating.



Universal Motor Home Hitch

Maximum Trailer Weight	3500 lbs.
Maximum Tongue Weight	100 lbs.

RECOMMENDED TIRE PRESSURE

Maintaining the correct air pressure in your tires is vital to the smooth operation and safety of your vehicle. Please refer to the chart below for the recommended air pressure in the front and rear tires.

<u>MODEL #</u>	<u>FRONT (PSI)</u>	<u>REAR (PSI)</u>
ARRIVA	61	61

EXTERIOR BODY CARE

Premium Paint Care:

Your Coach House Platinum has been painted with base coat and clear coat premium products offered by AXALTA. We recommend that you wash the finish with mild soap and water.

Wax Finish:

The finish may be waxed with an automotive wax that has been labeled as “safe for clear coat”.



TAKING CARE OF YOUR RV FINISH

Following these procedures can provide a long-lasting, high-gloss finish to your RV. These same procedures can also be applied to your everyday automobile, producing the same long-lasting results.

The clear coat used on all painted Coach House RV's is similar to the technology used by automotive manufacturers. the end result is a Master-piece finish which is the highest quality in the industry. The same care needs to be performed and maintained on the RV exterior surface as on an automobile finish.

Make sure the RV's surface temperature is under 90 degrees F, and is not in direct sunlight. Rinse the entire coach to remove all loose dirt and grime.

Never hold a pressure washer close to the surface. Use a fan type spray nozzle, making sure that the water coming out of the gun has a fan and not a single straight stream.

Most automotive stores offer mild car wash shampoos that are safe for clear coat finishes.

We recommend using baby shampoo as it will not leave a film on the painted finish. Adding 1/2 of a cup of food grade vinegar to the water will boost the cleaning ability of any cleaner and also soften the water. This also helps to minimize water spots.

Do not use dish soap, detergents with degreasing agents, or industrial cleaners as they can cause damage to the finish.

Use a 100% cotton or Lambs-wool pad or wash mitt for washing the painted surface of the RV.

Use a different mitt for washing the wheels and undercarriage.

Change water in the wash bucket often or place a "dirt guard" in the bottom of the bucket to keep the cleaning pad or wash mitt free of dirt and debris.

ABSOLUTELY NO BRUSHES SHOULD BE USED ON THE PAINTED SURFACE. USE OF THESE ON YOUR RV'S PAINTED SURFACE WILL CAUSE DAMAGE TO THE FINISH, AS IT WOULD AN AUTOMOBILE FINISH. COACH HOUSE DOES NOT SUPPORT USING ANY STYLE, TYPE, MATERIAL OF BRUSH EVEN THOUGH IT MAY BE MARKETED AS "RV SAFE" OR "APPROVED."

Damage caused by inappropriate or unapplied maintenance is not covered under warranty as expressed in the Coach House Expressed Limited Written Warranty.

DRYING YOUR RV

Drying the RV is just as important as washing it. Today's tap water and well water contains many chemicals that could leave water stains on the finish. After washing, dry the RV with a squeegee or a clean 100% leather chamois. You can also use fresh Microfiber towels for drying. Please use caution as these towels are made partially with polyester (which is plastic) which can break down over time from extended use and washing, eventually causing damage to the clear coat finish.

Waxes and Polishes

Over 90% of all passenger vehicles are clearcoated. The finish on your RV is a state of the art Acrylic Urethane Basecoat / Clearcoat. This means that what you wax and polish is a clear urethane coating designed to protect the basecoat, the pigmented coating that provides color. As its main function of protecting the basecoat, clearcoats need to be maintained, especially in harsh environments. Clearcoats do not fade themselves, but appear to fade or lose gloss as the surface becomes contaminated by the environment. If this contamination is not removed frequently, results will be a dull or low-gloss finish. Occasional washing alone will not adequately remove some forms of contamination and will require polishing.

Polishes and waxes primarily serve the following purposes:

- 1) To remove minor surface imperfections caused by water spots and acid rain.
- 2) To remove minor scratches by filling them and leveling the surface.
- 3) To seal the pores of the finish creating an easier-to-clean surface.
- 4) To beautify the paint finish appearance with more depth and high gloss.
- 5) To protect the paint finish from the elements.

Do not use products that contain harsh abrasives such as rubbing compounds. These products should be used by an experienced technician with proper training and equipment. Most polishes and waxes are designed to clean and polish in one application, whether by hand or machine.

A machine applied polish will last longer than one applied by hand because the high RPM of the buffing wheel creates heat, resulting in a deeper film with higher gloss. However, a hand-applied polish or wax will offer outstanding performance and protect the RV's finish.

When applying polish or wax, do so in a shaded area making sure the RV surface is at the specified temperature according to the polish manufacturer's recommendations. Due to the variations of polishes and waxes, incorporate the following suggestions into the polishing technique:

- 1) Condition the polishing pad by rubbing a slight amount of polish on it.
- 2) Use only the amount of polish specified in the label directions.
- 3) Work a small area at a time.
- 4) Rinse off and remove dried polish from crevices, trim, and moldings.

For optimum results, refrain from waxing or polishing for 60 days from date of manufacture.



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Section 3

Electrical Systems

Electrical Systems

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Special Electrical Statement

Coach House *ARRIVA* Motorhomes are wired with a Master Disconnect Switch. The location and operation of this switch is detailed on page 3-33 of this manual.

Coach House, Inc. recommends
that the Master Disconnect Switch
be turned to the “ON” position
any time your motorhome is in use.
Vital systems including LPG and
Carbon Monoxide detectors will not
function unless the
Master Disconnect Switch
is turned “ON”

Firefly Control System

Your Coach House **ARRIVA** model is equipped with the "Firefly" control system.

This system uses a touchscreen home base to operate many of the electrical components in your motorhome.



The touchscreen pad is located above the sink on the Passenger's Side.



Insert Firely Manual (3 Hole Punch) Here

Power Converter

Your Coach House **ARRIVA** is equipped with a power converter that supplies the motorhome with 110 volts AC (Alternating Current) and 12 volts DC (Direct Current). The source of power can be from the:

- 1) Auxiliary "House" 12 volt batteries
- 2) 110 volt external power cord (Shore Power)
- 3) Generator

Power Converter Location:

MODEL

ARRIVA

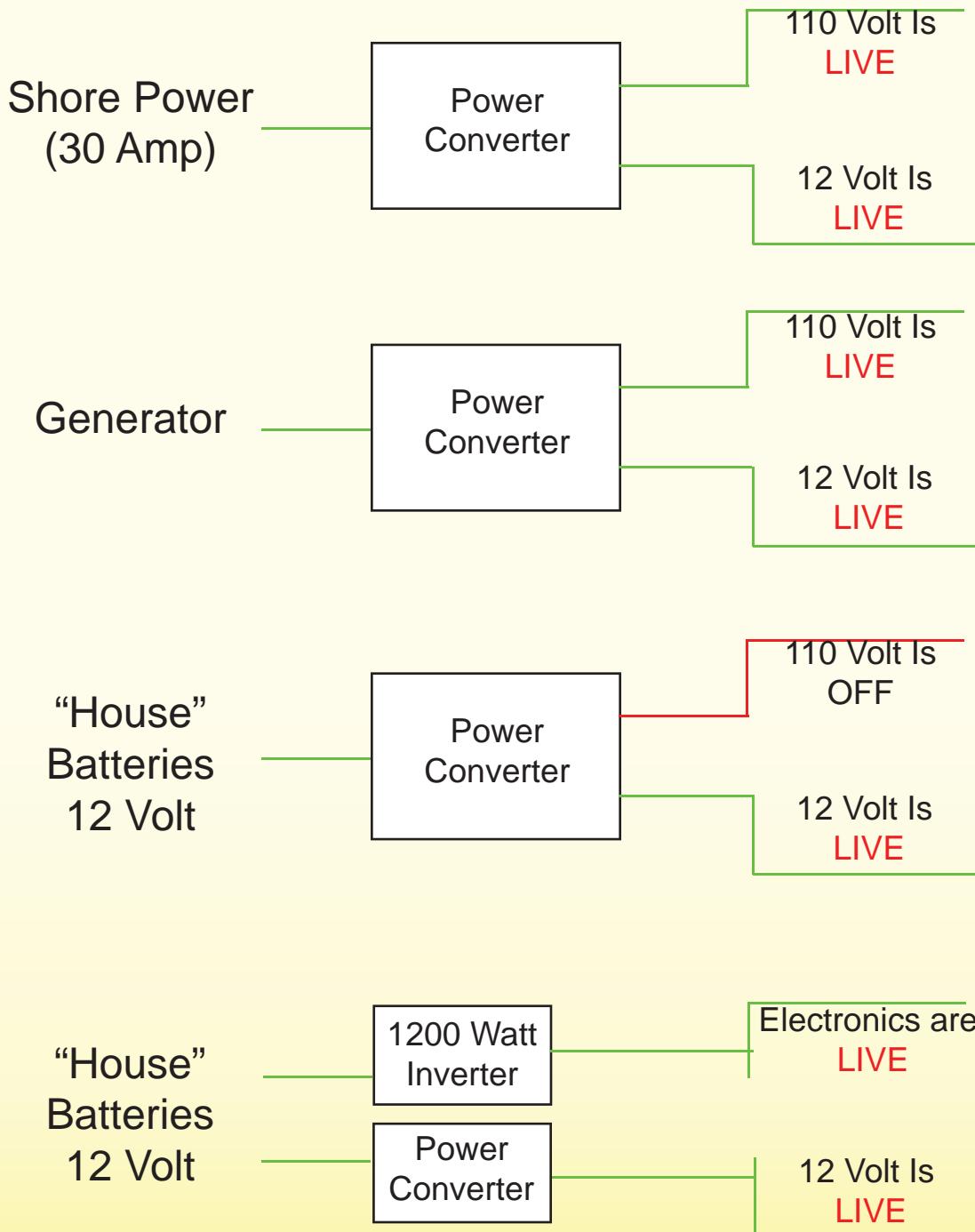
Location

Electrical Panel on Driver's Side Upper Cabinet



The converter is equipped with an automatic switchover relay to prevent both the generator and the external power cord from being connected to the converter at the same time. When either the external power cord or the generator is being used, both the 110 volt AC system and the 12 volt DC system will be activated inside the motorhome. When neither of these is connected, the 12 volt auxiliary batteries will activate only the 12 volt DC system.

The separate 1000 Watt Inverter will power the electronics using only the "House" Batteries.





Arriva
by Coach House®

Progressive Dynamics
Power Converter

Instruction Manual

Insert Progressive Dynamics

Manual Here

Circuit Breaker & Fuses

The location of the power converter can be found by looking for a black plastic box approximately 6" high x 12" wide. Location of the converter for your model is listed on page 3-3.

The door can be opened with a "push" touch and the circuit breakers and fuses can be located. The 110 volt AC breakers are located on the right with the first breaker on the left being the MAIN POWER, and the remaining breakers for the circuits as labeled on the door. The 12 volt DC fuses are the automotive push in type links and are located on the left side. The top two breakers are for system use, and do not feed the motorhome. The 12 volt DC circuits are labeled on the door.

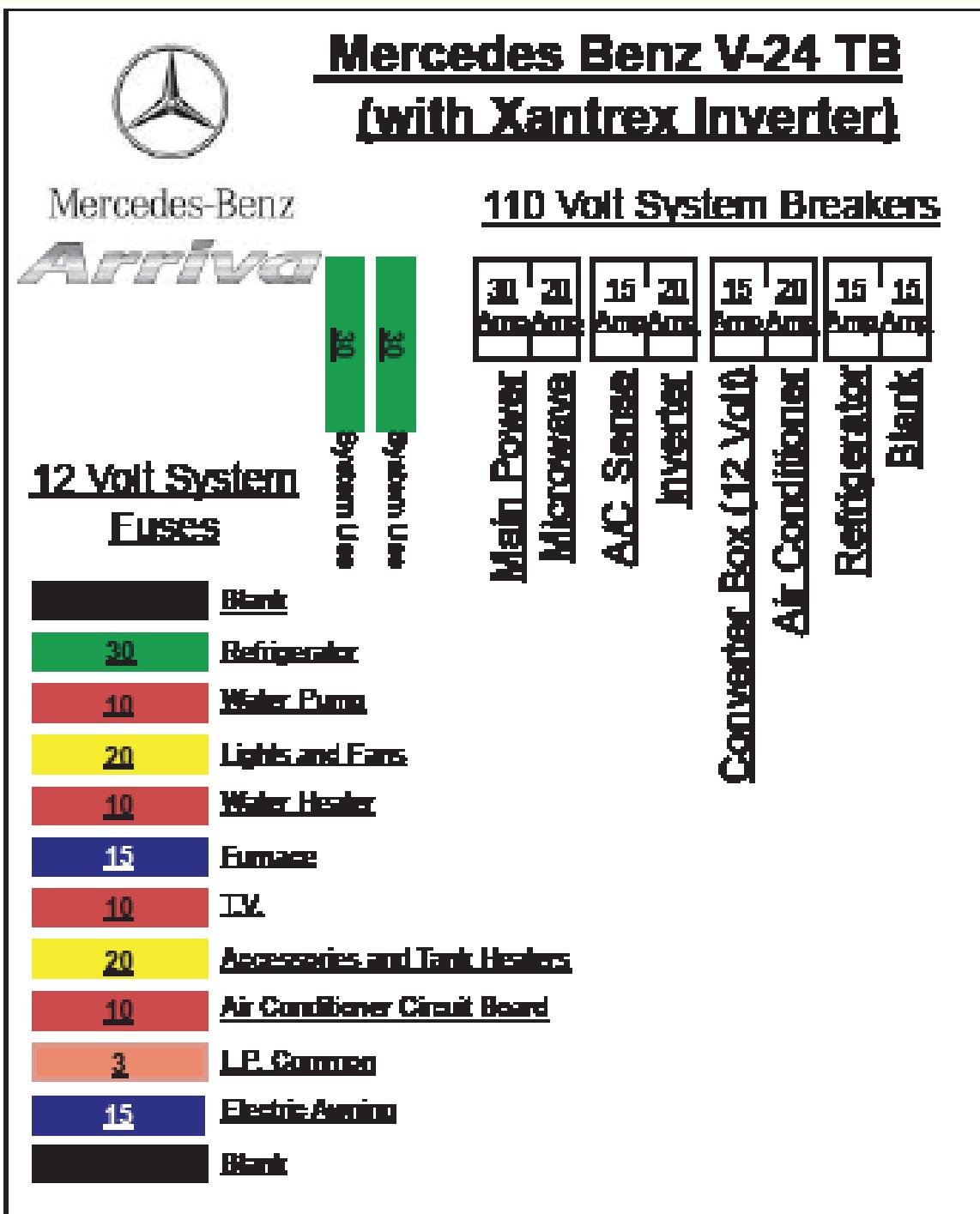
There is an auxiliary 12 volt fuse panel located above the driver's side seat in a compartment behind a smoked plexiglass door.

Diagrams of the Fuse Panels for your model are located on the next page.

CAUTION

Whenever working on the electrical system, the system or circuit being worked on should be deactivated by disconnecting the power and/or throwing the main circuit breaker and safe procedures should be followed to prevent electrical shock. Any modifications made to the system should only be done by a professional to assure compliance with the codes and to assure safe installation practices.

Main Fuse Panel



Auxiliary Fuse Panel

(On Electrical Panel Driver's Side Upper Cabinet)

<u>Circuit</u>	<u>Amp</u>	<u>Device</u>
1		Empty
2	5A	TV Wall Plate
3		
4	7.5A	Satellite (Optional)
5		Empty
6	10A	CO and LP Detectors

Auxiliary Fuse Panel

(Under Driver's Seat Base)

Fuses in Drivers Seat Base (ARRIVA)

Circuit #	_____		
	22	26	40
<u>Circuit</u>	<u>Amps</u>	<u>Device</u>	
26	20	Power for Emergency Start Solenoid	
40	15	Power for Fusion Radio	

Mercedes Benz Battery Seperator



Mercedes-Benz

Mercedes Benz Sprinter Models have a factory installed battery seperator. Please refer to the Mercedes Benz Manual for information about the charging systems on the Sprinter Chassis.

Generator



Mercedes-Benz

Mercedes Benz Chassis models are equipped with a:

Cummins Onan



3.6 kW ONAN LPG (Propane) Microquiet Generator

Your LP Gas Tank should only be filled by a qualified Propane Salesperson. Injury or death could occur if safety precautions are not followed.

The instruction manual supplied with the generator should be carefully reviewed. Care should be taken not to exceed the capacity of the generator to prevent any possible damage to the generator unit.

Insert Cummins Generator Manual Here

Auxiliary "House" Batteries



Mercedes-Benz

Auxiliary batteries are located under the hood on the driver's side of the engine compartment.



"Lifeline" GPL-4CT

Two - 6 Volt Batteries Wired in Series

Rated 242 Amp Hours



The auxiliary batteries are charged either by:

- 1) The *Alternator* of the motor home while driving
- 2) The *Power Converter* when external 120 Volt AC power is connected
- 3) The *Generator*

Care should be taken to prevent the auxiliary batteries from being totally discharged by making sure that all of the lights, fans, and appliances are turned off when the motor home is not in use. Whenever the motor home is not used for a period of time, the 120 Volt power cord should be plugged in once a month for 8 to 12 hours to bring up the charge on the auxiliary batteries. The master 12 Volt electrical switch (found to the right immediately upon entering the main motor home door) must be ON for the converter charger to charge the auxiliary batteries. Refer to the power center instruction sheet for further information. A totally discharged battery will not normally recharge as quickly, or in the same manner as a low battery. Professional help should be used when attempting to charge a totally discharged battery.

The engine battery of the motor home is not charged from the power converter. The engine battery should be periodically checked and maintained. Refer to the Chassis Owners Manual for recommended engine battery maintenance.

Maintenance of Batteries

Batteries have a “life” which is determined by the number of charging/discharging “cycles”. When your system is not in use, proper care should be taken to extend the battery life by following simple procedures:

Short Term Storage:

- 1) Turn off the Interior Battery Switch (located inside the Motorhome on the Galley Wall to the left).
- 2) Ensure that all current drains have been eliminated. (Turn off all appliances)

Long Term Storage:

- 1) Turn off the Interior Battery Switch (located inside the Motorhome on the Galley Wall to the left).
- 2) Disconnect the “House” Batteries by removing the Main “Positive” cable.



Note: The house battery (ies) are located under the engine hood on the driver's side.

- 3) Connect a Battery Maintenance Device (Charging System) to your “House” Battery Bank. Chargers and Maintenance Devices are readily available at Auto Parts Stores, RV Dealers, or your local Hardware Store.

Engine Battery Maintenance:

Please refer to your Chassis Owner's Manual to correctly maintain your engine battery.

**Insert Battery Maintenance Manual in
See Through Pocket Here**

80 Amp Breaker

Your Coach House **ARRIVA** has an electrical system circuit breaker to prevent damage to the 12 volt electrical system. The 80 Amp breaker will 'trip' if an overload situation occurs. Push in the red button to reset the breaker.

80 Amp Breaker Locations

<u>Model #</u>	<u>Location</u>
----------------	-----------------

<i>ARRIVA</i>	Under the Driver's Seat
---------------	-------------------------



150 Amp Breaker

Your Coach House **ARRIVA** has an electrical system circuit breaker to prevent damage to the engine when using the Emergency Start Switch. The 150 Amp breaker will 'trip' if an overload situation occurs. Push in the red button to reset the breaker.

150 Amp Breaker Locations

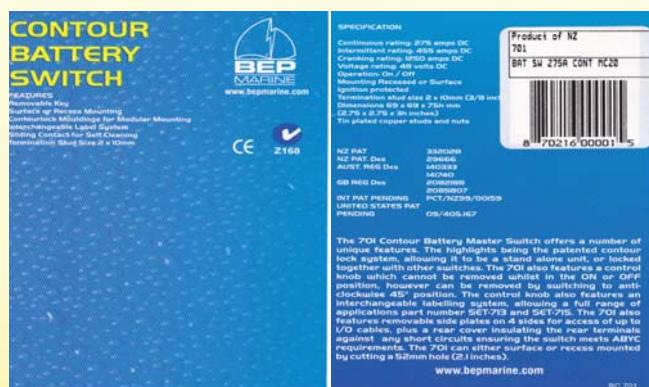
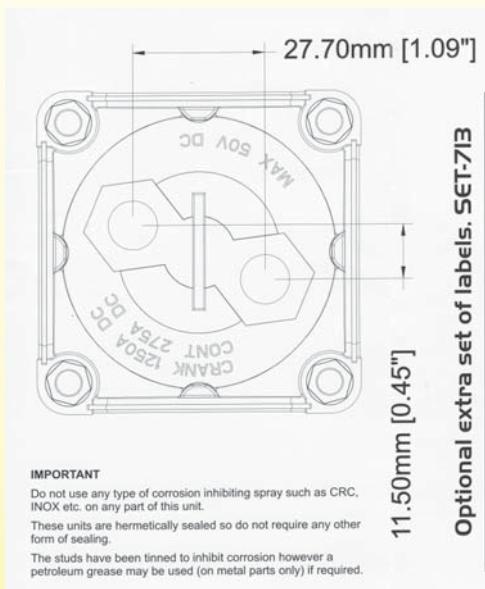
<u>Model #</u>	<u>Location</u>
<i>ARRIVA</i>	Under the Passenger's Seat



Master Disconnect Switch

The battery switch is located on the entrance wall just under the sink. Auxiliary batteries are being used when the switch is in the on position. Always turn the battery switch to the off position when the motor home is not being used to prevent the auxiliary batteries from being drained.

NOTE: Auxiliary batteries will NOT charge from engine alternator or converter with battery switch in the "OFF" position.



Power Inverter

The Xantrex 1200 Watt Freedom X Inverter has been installed in your **ARRIVA** motorhome as standard equipment. The on/off switch for the inverter is just behind the door under the table behind the driver's seat.

The inverter will supply 110 volt power to the electronic components (Television, DVD player, optional satellite receivers and the electrical outlets when you are not hooked up to shore power or running the generator. These devices will drain your "house" batteries if in use for an extended period of time.



xantrex
Smart Choice for Power

Auxilliary Start Over-Ride Switch

In the event that your engine battery does not have the power to start your motorhome, your **ARRIVA** is equipped with an Auxilliary Start Over-Ride Switch which will “tie” the house batteries to the engine battery to give an extra “boost” of power to start your motorhome engine.

Push the red switch and HOLD IT DOWN while starting your vehicle with the key.

The Over-Ride Switch is located under the Driver's Seat next to the 80-Amp Breaker.



GFCI Receptacles

A GFCI receptacle is different from conventional receptacles. In the event of a ground fault, a GFCI will trip and quickly stop the flow of electricity to prevent serious injury. All Coach House **ARRIVA** models have GFCI receptacles in the galley and the bathroom. See the GFCI manual for more information.



Registered Trademark of ESFi

How to test your GFCI Outlet:

Step 1: Plug a lamp into the GFCI.

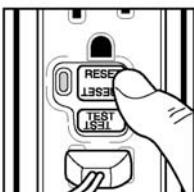
Step 2: Turn on the lamp.

Step 3: Push the TEST button on the GFCI. The GFCI should trip, stopping the flow of electricity to the lamp. Note that the RESET button will pop-out.



If the lamp DOESN'T turn off when the TEST button is pushed, the GFCI is not working properly and should be replaced immediately.

If the lamp DOES turn off when the TEST button is pushed, the GFCI is working properly and should be tested monthly. To restore power, press the RESET button.



If the power is not restored when the RESET button is pushed, the GFCI is not working properly and should be replaced immediately.

For more information on GFCIs and how to test monthly, go to
www.tools.passandseymour.com/gfci
or to participate in an interactive GFCI demo online, go to
www.electrical-safety.org

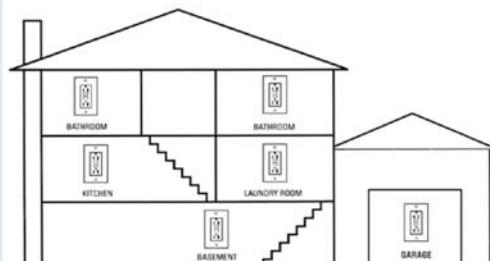
What is a GFCI Outlet?

A Ground Fault Circuit Interrupter (GFCI) Outlet protects you from serious injury due to electrical shock from:

- Hazardous leakage levels from appliances and tools
- Exposure to moisture while operating electrical equipment
- Frayed or damaged electrical wiring

Where are your GFCIs located?

GFCI protection is required per the *National Electrical Code*® (NEC) for outlets servicing bathrooms, kitchen countertops, unfinished basements, garages, utility sinks, and outdoor locations.

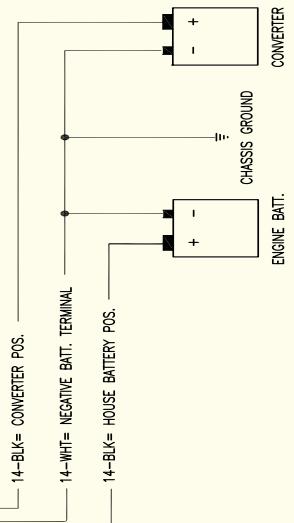
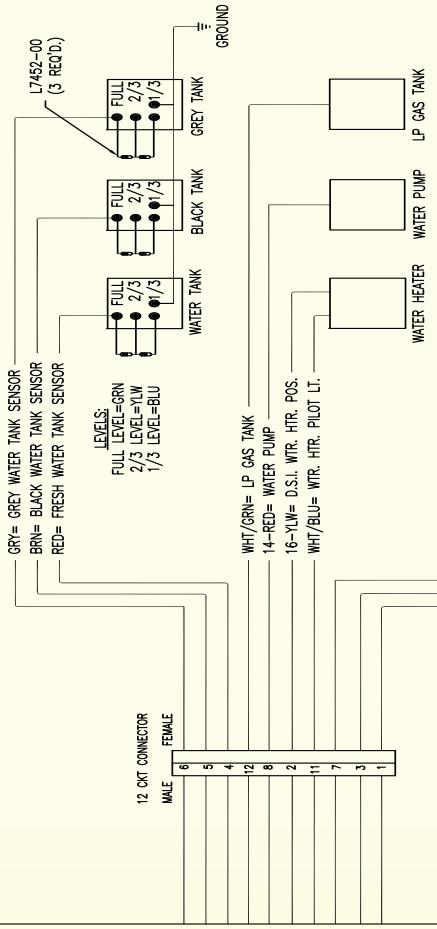
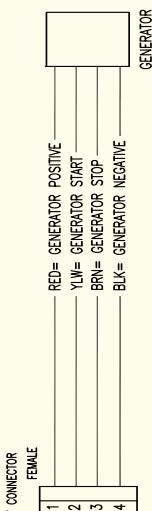
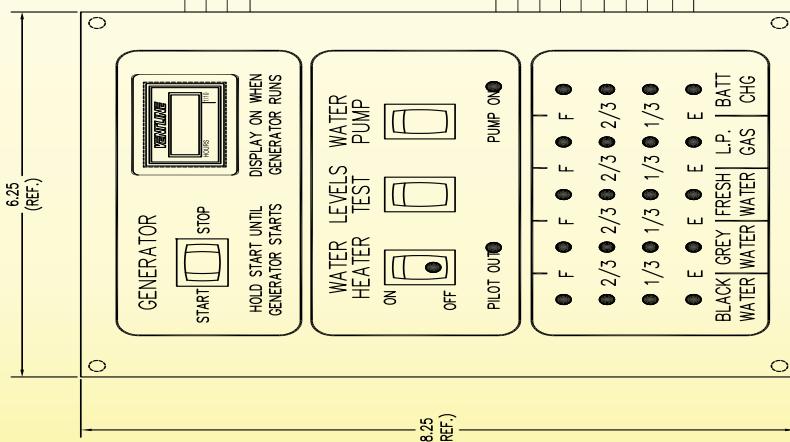


Legrand/Pass & Seymour
is a proud sponsor of:



Main Control Panel

Wiring Diagrams



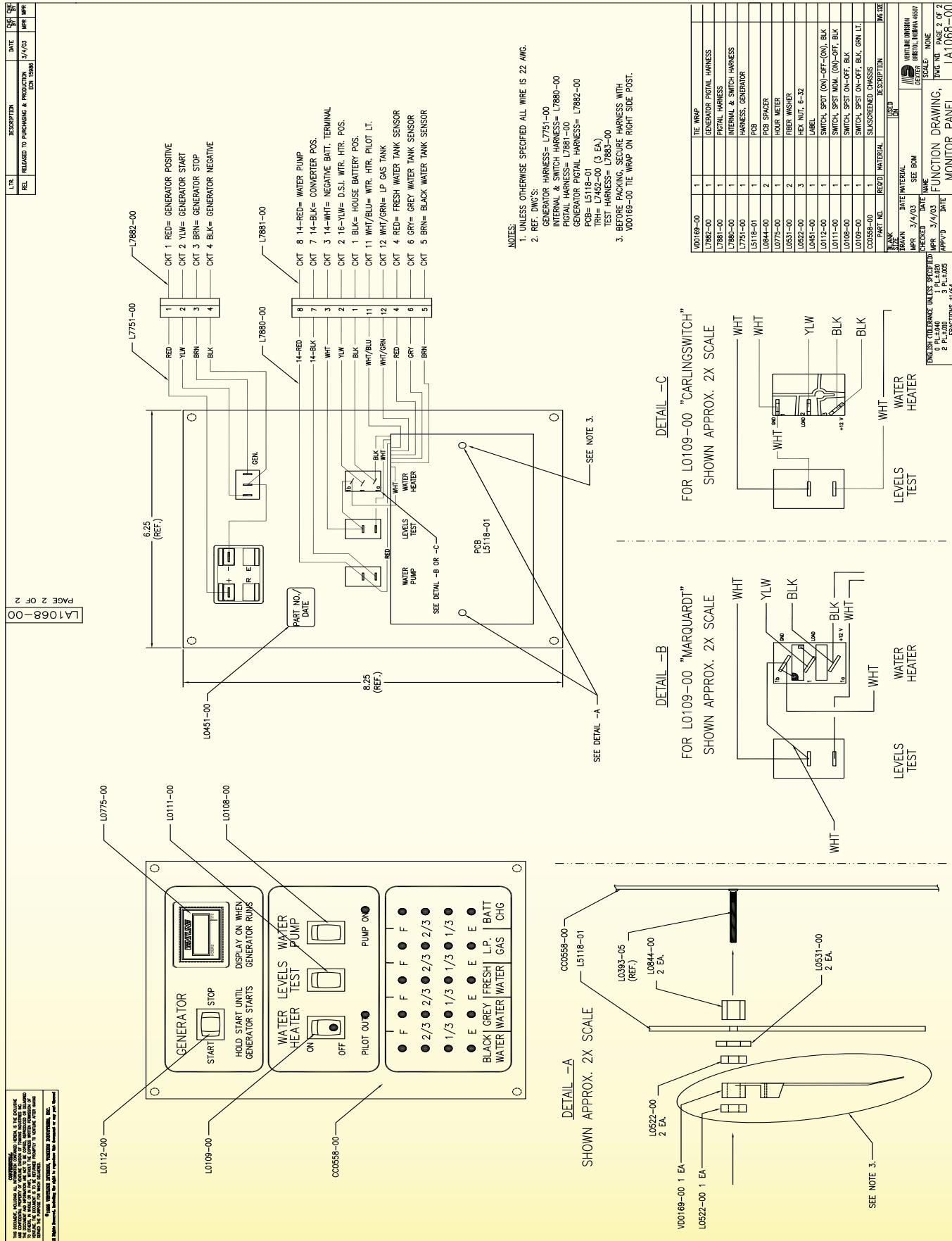
NOTES:

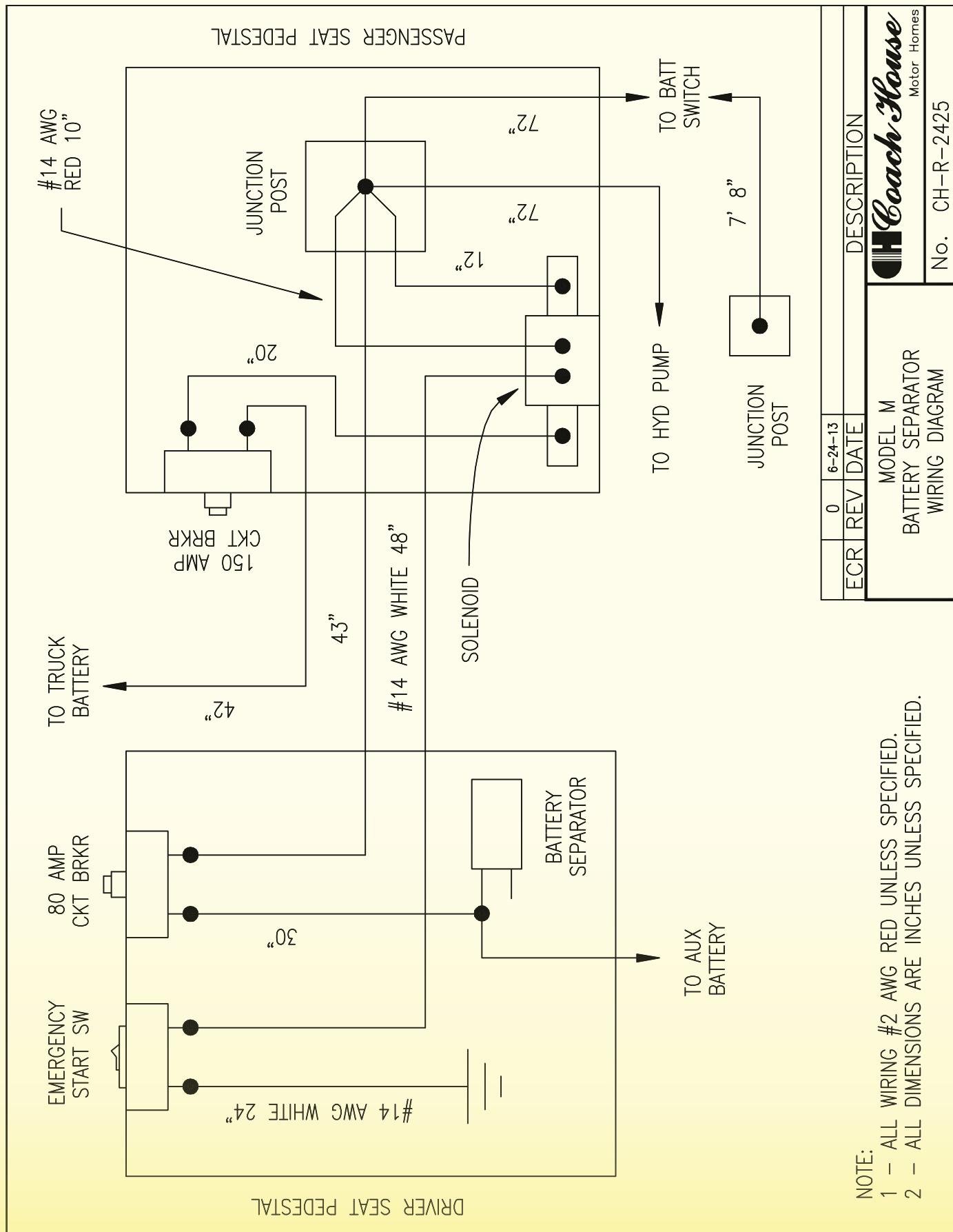
1. UNLESS OTHERWISE SPECIFIED ALL WIRE IS 22 AWG.
2. REF. DNG'S.
GENERATOR HARNESS= L7751-00
INTERNAL & SWITCH HARNESS= L7880-00
PICTAL HARNESS= L7881-00
GEN. PILOT HARNESS= L7882-00
PCE= L5118-01
TRH= L7452-00 (3 EA)
TEST HARNESS= L7883-00
3. BEFORE PACKING, SECURE HARNESS WITH
VDO169-00 TIE WRAP ON RIGHT SIDE POST.

PART NO.	REF'D. MATERIAL	DESCRIPTION	REVISION
BLANK	USED	IN	REV. B
DRAWN	DATE MATERIAL	SEE BOM PAGE 2	
CHECKED DATE	NAME	DEPTER, BOSTON, MASS. 02101	

ENGLISH (REFERENCE UNLESS SPECIFIED)
1 BL 1400 1 BL 1420 1 BL 1400
2 BL 1000 2 BL 1000 2 BL 1000
3 PL 1405 3 PL 1405 3 PL 1405
FRACTIONS #1/64 FRACTIONS #1/64 FRACTIONS #1/64

PART NO.	REF'D. MATERIAL	DESCRIPTION	REVISION
LA 063-00	LA 063-00	FUNCTION DRAWING, MONITOR PANEL	1 OF 2

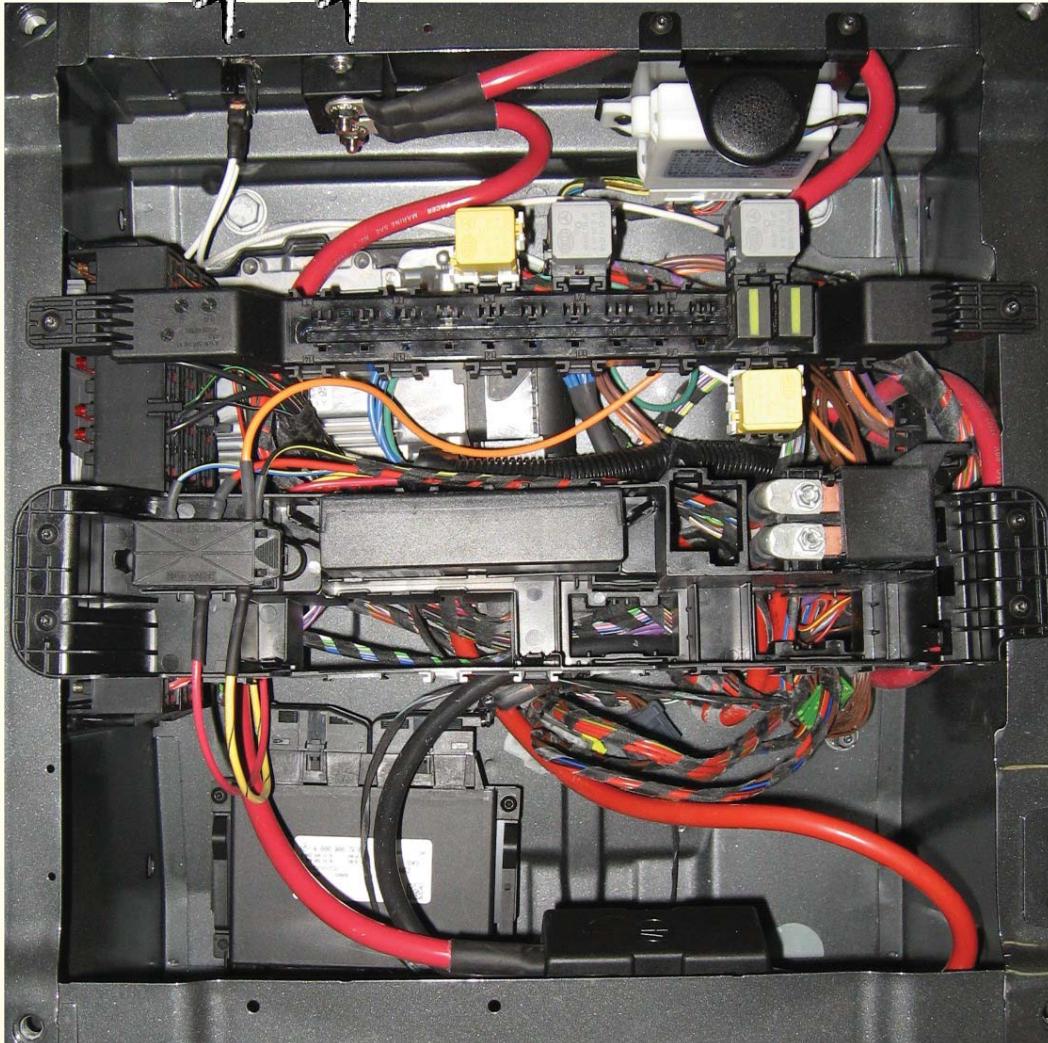




Drivers Door

Auxilliary Start Switch

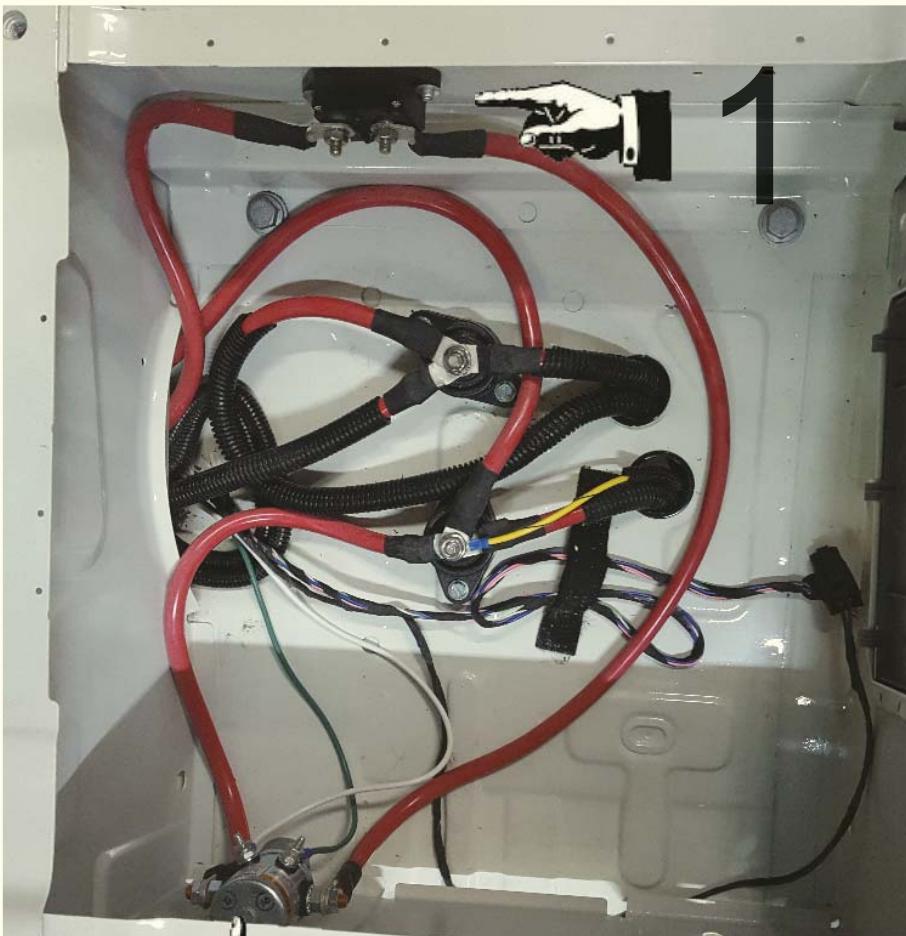
80 Amp Breaker



Coach House has added electrical switches / breakers under the Driver's Seat (In the Pedestal). The 80 Amp Breaker and the Auxilliary Start Over-ride switch are located according to the picture above.

Passenger Seat Pedestal Wiring

Passenger's Door



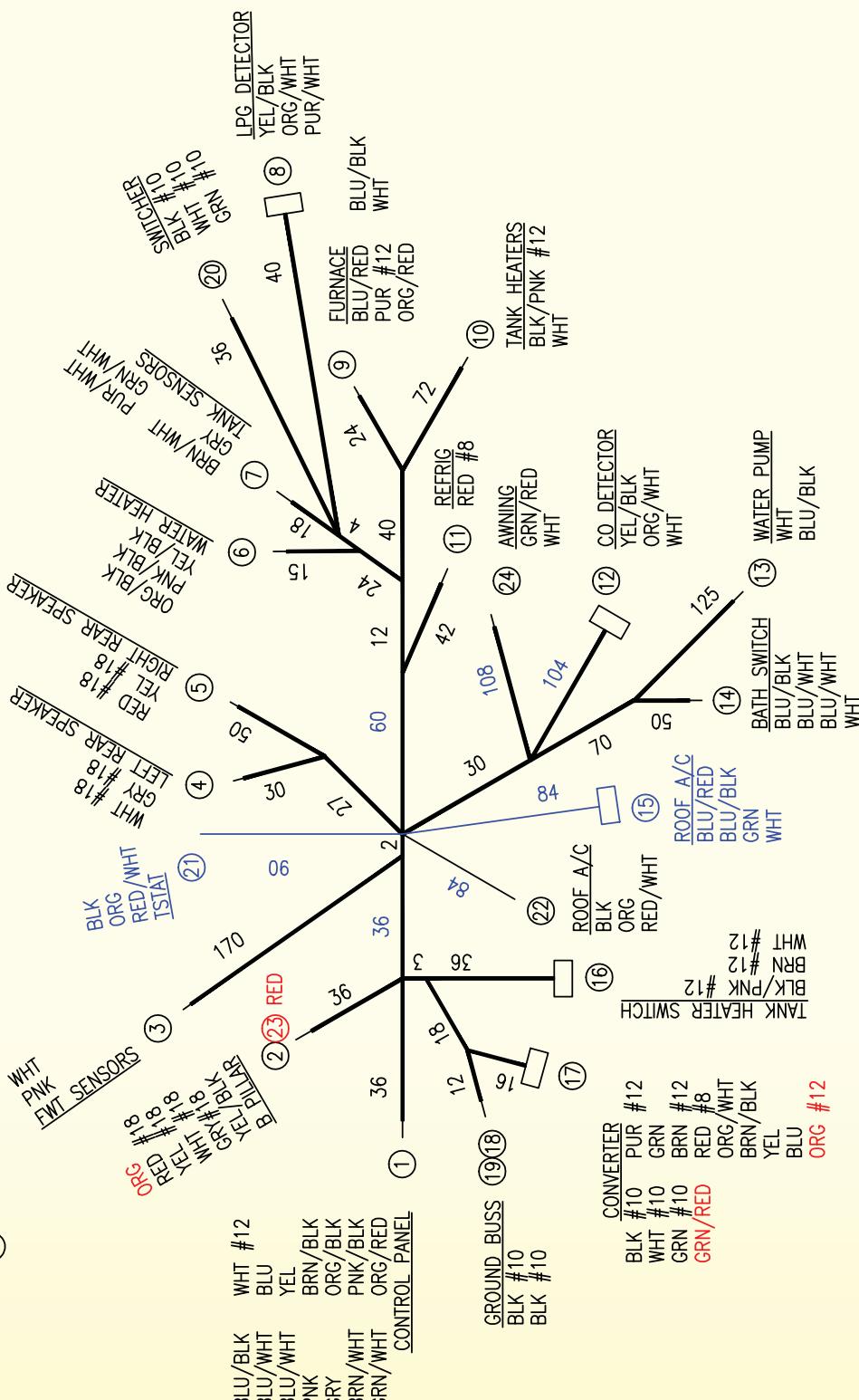
The following electrical items are installed under the Passenger's Seat (In the Pedestal)
They are:

- 1) 150 Amp Breaker (Emergency Start Circuit)
- 2) Emergency Start Solenoid

12 Volt Wiring Diagrams

SHEET NO. 1 2 3 4
REVISION 1 1 1 1

REF: LAST BRANCH NUMBER USED (25)



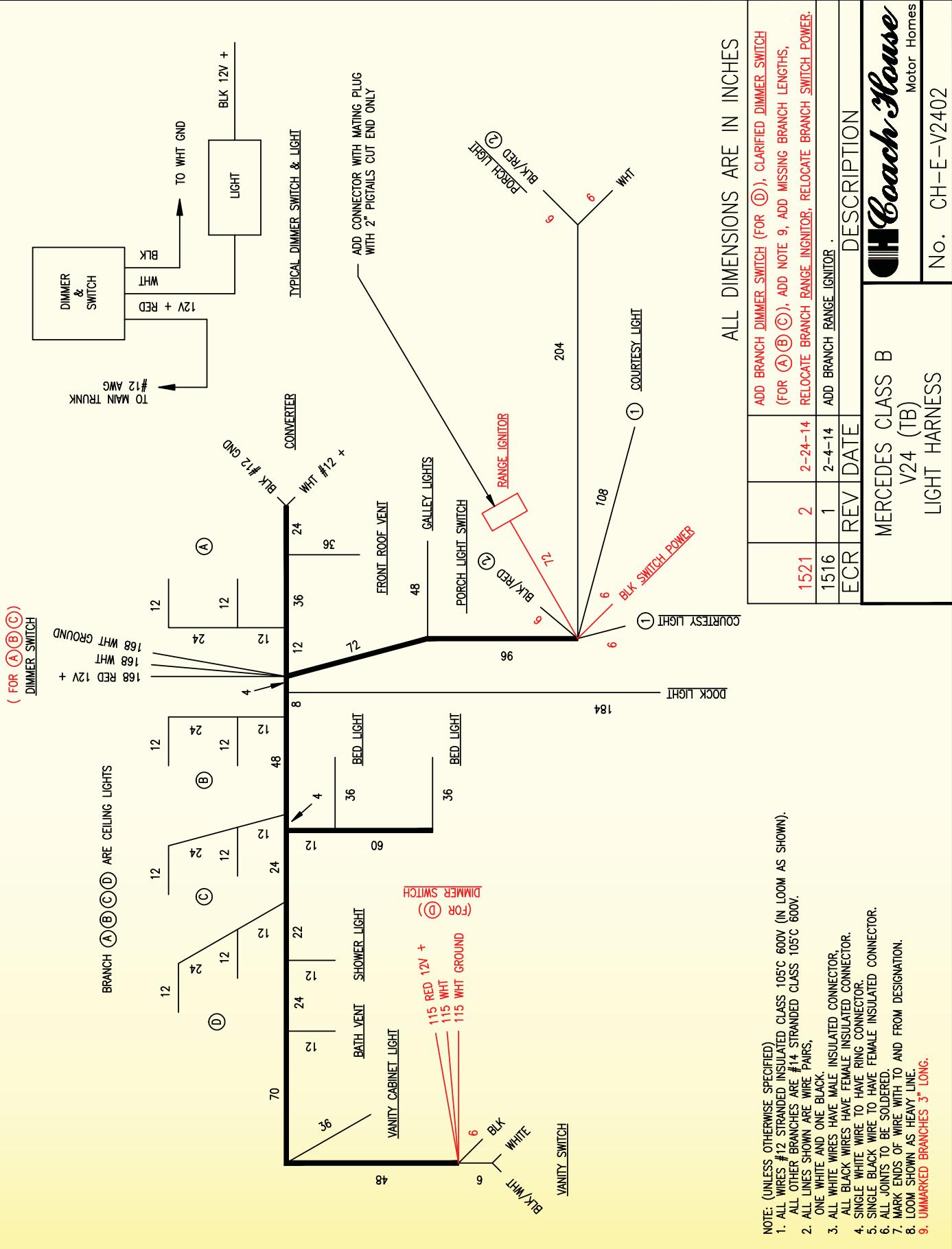
ALL DIMENSIONS ARE IN INCHES

**3480 Technology Drive • Nokomis • Florida
(800) 235-0984 • (941) 485-0984 • (941) 488-4095 FAX
www.coachhousery.com**

NOTE: 1. SIN 2. SPL 3. VFN

NOTE:
 1. SINGLE LINE SHOWN FOR COMMON LENGTHS OF MULTIPLE WIRES AT SAME LOCATION.
 2. SPLIT LOOM SHOWN AS HEAVY LINE, AND WITHIN 3 INCHES OF END UNLESS SPECIFIED.
 3. VENDOR TO SUPPLY MATING PLUGS FOR 8, 12, 15, 16, & 17. (SFF PIGTAIL DETAIL)

ECR	REV	DATE	DESCRIPTION	Coach House	
				MAIN HARNESS	Motor Homes
1521	1	2-24-14	MERCEDES CLASS B V24 (TB) MAIN HARNESS		No. CH-E-V2401
		2-25-14	CHANGE BRANCH LENGTH AS SHOWN IN BLUE. RELOCATE BRANCH & CHANGE LENGTH 15 & 21.		
			BREAKOUT BRANCH 23 WITH BRANCH 2, ADD BRANCH 19 SPLICE TO 24 WHT, ADD BRANCH 17 TO 24 GRN/RED.		





Arriva
by Coach House®

Section 4

L.P.G - Liquid Petroleum Gas Systems

L.P.G. Systems

L.P.G. Tank (Mercedes Benz Models)	4-5
L.P.G. Regulator	4-7
Regulator Freeze Up	4-11
Mandatory Consumer Information	4-13

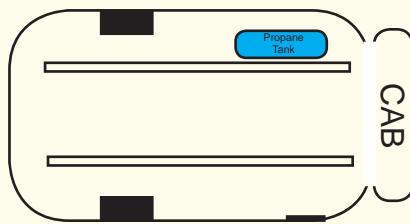
L.P.G. Tank (Mercedes Benz Models)



Mercedes Benz Models

Mercedes-Benz

The L.P.G. tank is located on the driver's side and outside the frame on the Arriva models.



Mercedes Benz models have a direct fill valve. The direct fill valve is located behind the driver's side running board.



Safety Note:

Turn off all L.P.G. appliances when filling the tank.

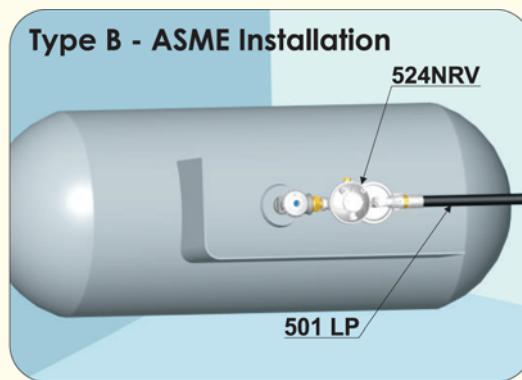
L.P.G. Regulator

The L.P.G. system uses a two-stage regulator manufactured by Fairview Fittings to control the pressure to the L.P.G. appliances to assure the proper functioning and safe operation of the appliances. The regulator is located under the floor of the motor home near the L.P.G. storage tank and is enclosed in a protective shield to prevent damage to the regulator or clogging of the vent. If the motor home is driven through heavy snow or mud, the vent opening should be checked to make sure that it is not clogged by snow, mud or ice. An opening in the bottom of the shelf allows access to the vent.



Recreational vehicles

Gas cylinder and regulator shall be protected by a shelter or in a cylindrical cage, see following diagram (as per NFPA 1192, paragraphs 5.2.15.6; 5.2.15.7; 5.2.15.8).



WARNING:

RV gas piping system must be tested for leakage prior to delivering vehicle to dealer network. Therefore, setting pressure test and leakage test have be done by authorized RV OEM. In case of any detected anomalies, the gas regulator kit is not likely to be responsible because the gas regulators are 100% tested while manufacturing.



TECHNICAL DATA SHEET

LOW PRESSURE TWO-STAGE LP GAS REGULATORS (GR-9950)

Applications:

The model GR-9950 and GR-9959 regulator combines both a high pressure first stage and a low pressure second stage regulator into a single unit. Ideally designed for RV applications, these regulators ensure a smooth and continuous flow of gas to all appliances.

Specifications

- Zinc Die Cast
- Molded Rubber Diaphragms
- CSA Listed
- 2nd Stage Relief Mechanism Per U.L. 144
- Adjusting Screw and Dust Cap Design
- Powder Coated

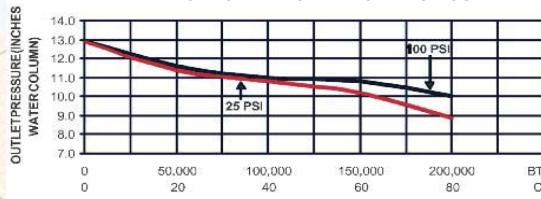


CSA Listed

PART No.	Inlet	Outlet	Vent Position	Capacity BTU/Hr* Propane
GR-9950	1/4 FPT	3/8 FPT	Above Outlet	225,000 BTU/Hr*
GR-9959			9:00 Vent	
GR-5950-M	GR-9950 regulator with Marine style pressure gauge			
GR-9950P	GR-9950 complete with retail Hanger Box Packaging			
GR-9952	GR-9950 regulator with Manifold Tee			
GR-9954	GR-9959 regulator with Excess Flow P.O.L.			
GR-9956	GR-9950 regulator with Excess Flow P.O.L.			
GR-9958	GR-9950 regulator with QCC1 (1-5/16 F. Acme)			
GR-9959P	GR-9959 complete with retail Hanger Box Packaging			
GR-900	Z Mounting Bracket			
BB-GR-900	Z Mounting Bracket complete with retail Blister Box Packaging			
GR-RVB	RV Mounting Bracket			
BB-GR-RVB	RV Mounting Bracket complete with retail Blister Box Packaging			
GR-5950	Protective Cover for GR-9950			
GR-5959	Protective Cover for GR-9959			

*Based on 25 PSIG inlet pressure and 9" W.C. outlet pressure at Manufacturer's set point.
Manufacturer's set point = 100 PSIG and 11" W.C. outlet at 40 SCFH propane.

FLOW CHART CHARACTERISTICS



Regulator Freeze Up

Under some conditions, moisture may be present in the L.P. gas in your tank and this can cause the regulator to freeze up, stopping flow to the appliances. This condition occurs more frequently in cold weather or at higher altitudes and usually can be cured or prevented by having methanol injected into the L.P. G. tank. Only experienced, qualified personnel should do this. Some L.P.G. stations especially at higher altitudes, will already have methanol in the L.P. gas they dispense. It is suggested that if you plan to go to a colder climate or a higher altitude, that you wait until you reach those areas before completely filling your tank. The small cost difference is well worth it to reduce the risk of freeze up.

Mandatory Consumer Information

The following information is being supplied to conform with the mandates of:

ANSI A119.2 / NFPA 501C-1987

and to ensure the greatest possible degree of safety for our customers. Please study this information carefully and keep it in your vehicle at all times.

Should this information be misplaced, additional copies are available from our corporate office for a nominal charge.

A)

WARNING

L.P. Gas containers shall not be placed or stored inside the vehicle.

L.P. Gas containers are equipped with safety devices which relieve excessive pressure by discharging gas to the atmosphere.

B)

WARNING

**IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING!
COOKING APPLIANCES NEED FRESH AIR FOR SAFE OPERATION**

Before Operation:

- 1) Open overhead vent or turn on exhaust fan.
- 2) Open window.

This warning label has been located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen supply is limited to the size of the recreational vehicle, and proper ventilation when using the cooking appliance(s) will avoid dangers. Cooking appliances should not be used for comfort heating as the danger of asphyxiation is greater when the appliance is used for long periods of time.

C) A warning label has been located near the L.P. Gas container. This label reads:

**DO NOT FILL LP-GAS CONTAINER(S) TO MORE THAN 80 PERCENT
OF CAPACITY**

Overfilling the L.P. Gas container can result in uncontrolled flow which can cause fire or explosion. A properly filled container will contain approximately 80 percent of its volume as liquid L.P. Gas. Safety regulation prevents filling over 80%.

D) **WARNING**

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

E) **WARNING**

Storage of L.P. Gas containers, gasoline or other flammable liquids inside your vehicle - even for short periods of time - presents a risk of fire and/or explosion. All flammable liquids should be stored safely in a well-ventilated area outside your vehicle and in proper containers.

F) The following label has been placed in the vehicle near the range area.

IF YOU SMELL GAS

- 1) Extinguish any open flames, pilot lights and all smoking materials
- 2) Do not touch electrical switches.
- 3) Shut off the gas supply at the tank valve(s) or gas supply connection.
- 4) Open doors and other ventilation openings.
- 5) Leave the area until odor clears.
- 6) Have the gas system checked and leakage source corrected before using again.

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



Arriva
by Coach House®

Section 5

**Plumbing / H.V.A.C
Systems**

Plumbing / H.V.A.C Systems

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Black Water Holding Tank Flush System	5-25
Black Water Backflow Preventer	5-27
Tank Diagrams	5-29
 PB 118 (<i>ARRIVA</i>)	5-31

Furnace (L.P.G.)

Refer to the following chart for the location of your Furnace:

<u>Model</u>	<u>Placement</u>
 Arriva	In the Base of the Bed on the Driver's Side

The furnace is controlled by the comfort control center which also controls the air conditioning system. The furnace blower and automatic ignition are powered by the 12-volt DC system. The manufacturers operating instructions, enclosed in this section, should be reviewed before using the furnace. As with all L.P.G. appliances, all precautionary notes and labels should be carefully reviewed for maximum safety and comfort.



Insert Suburban 19,000 BTU Furnace

Manual Here

Air Conditioner

The air conditioner for your Coach House Platinum is manufactured specifically for RV use and is located in the center of the motor home on the roof with outlets in the ceiling. The A/C selector is on the digital combo thermostat located on the sofa/dinette overhead cabinet-driver's side. The thermostat switch should be adjusted to the desired temperature level and controls the operation of the compressor.

The air conditioner operates on the 120 volt A/C system and will operate only when the external power cord is connected to a power source or when the generator is operating.



Insert Dometic A/C Manual Here

Fan-Tastic Roof Vent Fan

There is (1) Fan-Tastic Vent roof fan in your *ARRIVA* Motorhome.

The roof vent fan is located in the ceiling and is operated by cranking up the fan cover and by turning on the switch by the fan and setting the termostat knob. The 12-volt DC system powers the fan. The fan has an automatic rain sensor.

Coach House does not use Fan-Tastic Vents with the 'Reverse' feature. For your safety, this eliminates the unlikely event that noxious fumes could permeate your motorhome while unattended, or while you are sleeping. Please disregard any reference to the 'Reverse' feature in literature from Fan-Tanstic Vents.



How to Use Your Genuine **FAN-TASTIC VENT®**

Ceiling Fan



Operating Instructions:

1. Turn 3-speed knob to desired performance level (0-Off, 1-Low, 2-Medium, 3-High). This activates the fan.
2. Select UP to raise dome, DOWN to close dome.
3. With the fan blade motor reverse switch, pre-select IN or OUT (as dome opens the fan motor will turn in the pre-selected position). IN brings air into the coach from the roof through the vent. OUT brings air into the coach through slightly open window(s) and exhausts hot, stale air out through vent to the roof. When dome closes, either by selecting OFF on controller or via moisture on rain sensor, the fan blade motor shuts off. Anytime you reverse the fan blade motor while system is in operation, you must first select center (neutral position) and allow the fan blade to stop completely. Then select the opposite direction to restart the motor.
4. This fan is equipped with a built-in thermostat, ON is 22°F (deep blue) OFF is 123°F (bright red). Select a setting somewhere in between for your comfort. Fan blade will automatically turn on and off as your coach heats up and cools down. When rain sensor becomes wet, dome will close automatically and shut off fan blade, if it is on. When sensor dries, dome will reopen. If fan blade rapid cycles on/off, select a more extreme temperature setting to minimize.
5. The 6000 RBTA is also equipped with a RAIN SENSOR. When dome (lid) is open and moisture contacts the sensor, the dome closes and turns the fan blade motor off if it is running. When the rain sensor dries, the dome reopens and the fan blade motor will start if it was running when dome closed.
6. Dome adjustment or emergency close knob. To stop dome partially open; apply opposite force to slowly rotating knob, as dome is OPENING ONLY!! To adjust dome, allow it to travel all the way up automatically. Now pull knob down to "MANUAL" position. Turn knob lowering dome to desired height, then immediately push the knob back to "AUTO" position. (NOTE: at 1/3 open, fan blade exhaust efficiency is reduced to 90%). After adjusting, always check knob to ensure it is now "locked into gearbox".

Recommendations: You may use your Fan-Tastic Vent while driving or in windy conditions. In this case keep your dome fully open. When storing your Motorhome, lower your dome until it is completely closed and turn the 3 speed knob to 0-Off.

NOTE: At 1/3 dome open, exhaust efficiency is reduced to 90%.

NOTE: Fan-Tastic Vent does not recommend placing a vent cover over, or using a foam filter on your Fan-Tastic Vent. This greatly restricts airflow, causing accumulation of dust and increased sound levels.

Fan-Tastic Vent Model
6000RBTA



How to Clean the Screen on Your Genuine **FAN-TASTIC VENT®**

C e i l i n g F a n

Cleaning Instructions:

1. Turn fan motor off.
2. Locate the thumb tab on the Pop 'N Lock Screen, grab and pull down to unsnap.
3. Wash Pop 'N Lock Screen and fan blade with a light non-abrasive soap, rinse and dry.
4. Re-install the Pop 'N Lock Screen by gently snapping back in place.

Suggestion: Once screen and blade are washed and dried, you may wipe or spray 303 protector (a water based protector; do not use a petroleum based protector) on the screen and blade. Buff to a high gloss. This will minimize the amount of dust and dirt build up.



Cleaning Instructions:

1. Turn fan motor off.
2. Remove 8 painted flat head Phillips screws around perimeter of screen insert.
3. Clean screen and blade with soap and water solution and reinstall.
4. Re-Install the screen by reversing step 2.

Suggestion: Once screen and blade are washed and dried, you may wipe or spray 303 protector (a water based protector; do not use a petroleum based protector) on the screen and blade. Buff to a high gloss. This will minimize the amount of dust and dirt build up.

Troubleshooting:

Fan-Tastic Vent wishes to assist any customer with any problem or need. Please call 1-800-521-0298 for assistance between 8 am and 5 pm E.S.T.

FAN-TASTIC VENT®



Brings the Outside in... Instantly®

Arriva
by Coach House

Rev: 022019

3480 Technology Drive • Nokomis • Florida
(800) 235-0984 • (941) 485-0984 • (941) 488-4095 FAX
www.coachhouserv.com

5-15

R.V. Toilet

We have installed a gravity flush toilet in your *ARRIVA* motorhome. This quality toilet was manufactured by the THETFORD corporation.

Model

ARRIVA

Installed Toilet

Gravity Flush - Low Profile



When using the toilet, either the water demand pump should be turned on (water pump switch is located on the side of the lavatory sink cabinet) or the city water connection made and pressurized to assure a water supply to the toilet.

Gravity Flush

The gravity flush toilet in the Coach House is connected directly to a waste holding tank and has a water line routed to it for rinsing and flushing. There are separate levers on the side of the toilet for rinsing and flushing, and the instructions on the toilet should be followed for best results.

Insert Thetford Toilet Manual
Here
(Debbie Print Double Sided)

Outside Shower Assembly

Coach House Motorhomes come with an outside shower assembly which provides hot and cold running water for outdoor applications.

Specifications:

- Designed for use in a pressure regulated, portable water system with a maximum operating pressure of 40 psi.
- Maximum flow rate with the faucets fully opened - 2/5 GPM.
- DO NOT ALLOW TO FREEZE
- Do not connect directly to a high pressure residential water supply.

Exterior Shower									
ITEM NUMBER	DESCRIPTION	FINISH/COLOR	CUTOUT	LISTINGS	CASE QTY				
97022-A-5	Exterior Shower, Latching Door	Arctic White	4.5" x 9"	CSA	10				
97022-B-5		Black							
97022-G-5		Grey							
97023-A-5	Exterior Shower, Locking Door	Arctic White							
97023-B-5		Black							
97023-G-5		Grey							
97022-001	Replacement Shower Head	Arctic White	N/A		N/A				
97022-008	Replacement Faucet Set (Includes: Valve Body, Valve Nuts, Handles)								
97020-080	Replacement Straight Nipple, Seal Collar & O-Rings								
97020-004	Exterior Shower 8' Hose								
97022-006	Replacement Vacuum Breaker								

Exterior Shower

- Compact Unit
- Available in arctic white, black, or grey
- Choose from latching or locking shower door
- Impact & temperature resistant, paintable and UV stable housing
- 5' hose standard with 8' hose option available
- Stainless steel hinge pin
- Anti-siphon vacuum breaker

97022-A-5 | White Latching Exterior Shower

97023-B-5 | Black Locking Exterior Shower

Black and Gray Water Holding Tanks

The connection for draining the holding tanks are located on the left side of the motor home. To drain the system, connect one end of an appropriate drain hose to the drain connection and the other end to a proper dump station. After the connections are made, opening the dump valve or valves can dump the system. The valves are located under the motor home on the driver's side rear and are labeled.

Dump the black water holding tank first, then dump the gray water holding tank.



Black Water Holding Tank Flush System

Drain the black water holding tank and leave valve open.



Attach garden hose to the water inlet (located behind the utility access door behind the drivers side rear tires, black cap). Turn on water (from outside source) to spray the interior of the black water holding tank. Continue to leave drain valve open until flushed. Turn off water, disconnect hose and close valve.

NOTE:

This panel is not the same on all models
Look for the Black Water Hose Inlet on your panel.



Black Water Backflow Preventer

There is a backflow preventer which prevents the black water tank from contaminating the system when flushing with a hose.



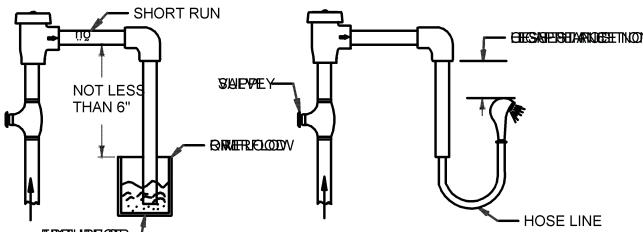
CONBRACO
INDUSTRIES INC.

38-200 SERIES ATMOSPHERIC TYPE VACUUM BREAKERS

#38-200 Series Atmospheric Type Anti-Siphon Vacuum Breaker is available in both pipe applied and deck mounted configurations and incorporates an atmospheric vent in combination with a check valve to prevent back-siphonage of polluted water into a potable water supply. The flow of water through the inlet orifice of the vacuum breaker lifts the float and seal to its seat, sealing the atmospheric vent, suppling water to downstream equipment. If a negative pressure develops in the supply line, the float will drop, sealing the orifice while at the same time the atmospheric vent opens admitting air to the system thus breaking the vacuum. The body is forged brass, the float is polypropylene and the seat disc is silicone rubber.

INSTALLATION INSTRUCTIONS

The Atmospheric Type Vacuum Breaker should be installed with the bottom of the body at least 6" above the flood rim of the fixture or appliance, (does not apply to deck mounted type). When a portable appliance is used, the breaker should be installed at least 6" above the highest point to which the portable appliance can be raised. This device shall not be subjected to continuous pressure for more than twelve (12) hours. Note: Shut-off valves are not allowed downstream of the atmospheric vacuum breaker.



TESTED AND APPROVED
IN ACCORDANCE WITH
A.S.E. STANDARD
#1001 AND C.S.A.
STANDARD # B64.1.1

MAINTENANCE INSTRUCTIONS

Since Atmospheric Type Vacuum Breakers are subject to normal maintenance and replacement, they should be located where emergency water spillage will not create a problem and where they can be accessible for inspection or servicing. To repair a Vacuum Breaker, remove screw, nameplate and cover, then unscrew cap. Replace the cap, cap o-ring, float, and seat disc with components from repair kits. Then replace cover, nameplate and screw.

#38-200 SERIES VACUUM BREAKER REPAIR KITS

VALVE NO.	KIT NO.	KIT COMPONENTS
38-201	38-202-RK	D-4460 Seat Disc, F-3754 Cap, D-3902 Cap O-ring, I-8551 Float
38-202	38-202-RK	D-4460 Seat Disc, F-3754 Cap, D-3902 Cap O-ring, I-8551 Float
38-203	38-203-RK	D-3306 Seat Disc, F-3752 Cap, D-3903 Cap O-ring, I-8547 Float
38-204	38-204-RK	D-4461 Seat Disc, F-3753 Cap, D-3905 Cap O-ring, I-8550 Float
38-231	38-202-RK	D-4460 Seat Disc, F-3754 Cap, D-3902 Cap O-ring, I-8551 Float
38-232	38-202-RK	D-4460 Seat Disc, F-3754 Cap, D-3902 Cap O-ring, I-8551 Float

WARNING: This product contains lead, a chemical known to the state of California to cause birth defects or other reproductive harm.

INSTALLER: California law requires that this warning be given to the consumer.

The device shall be installed in accordance with the requirements of the local plumbing code.

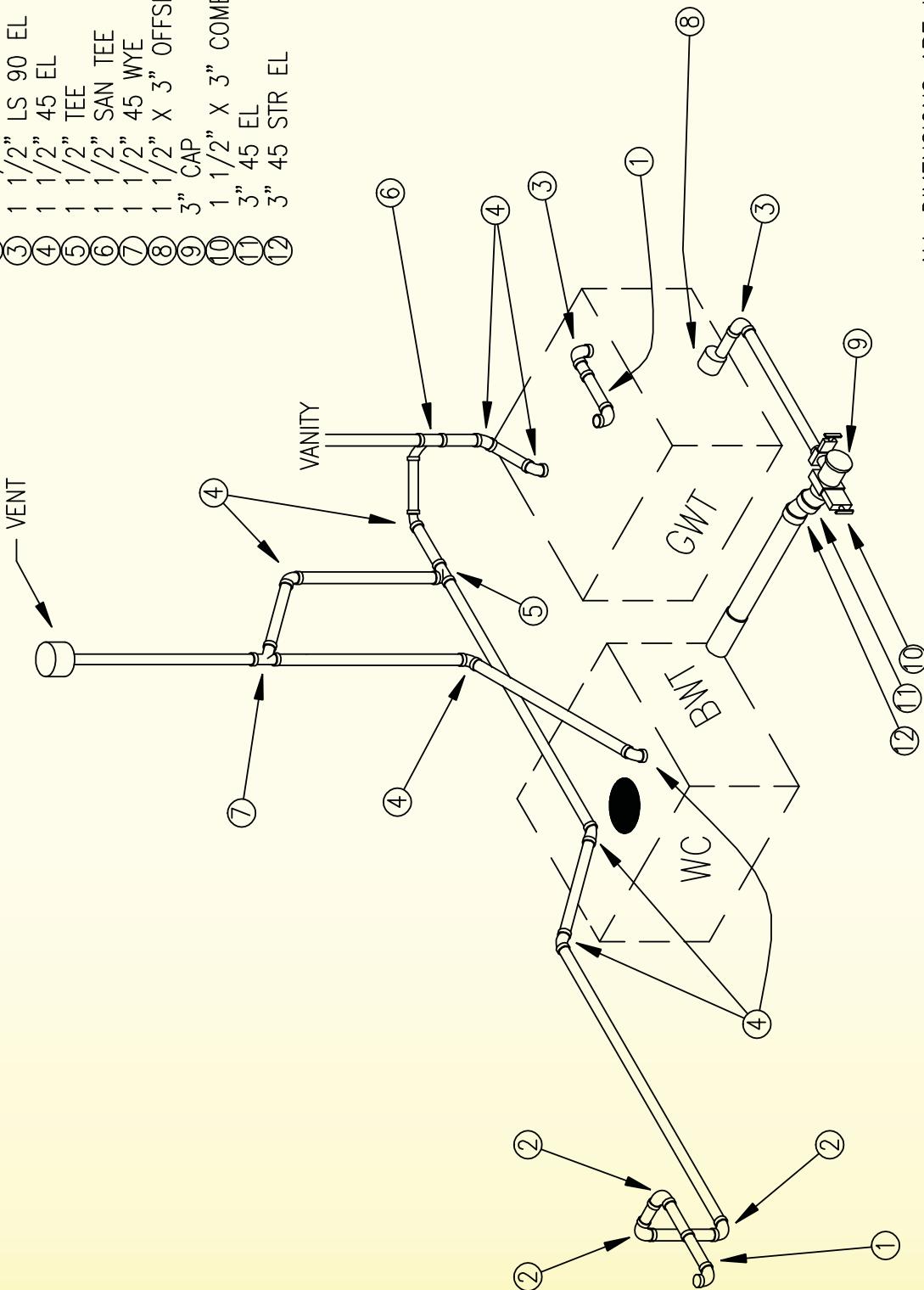
I-6376-00 Rev. B



CONBRACO Industries, Inc., Matthews, NC

Tank Diagrams

① HEPVO VALVE
 1 1/2" MS 90 EL
 1 1/2" LS 90 EL
 1 1/2" TEE
 1 1/2" 45 EL
 1 1/2" SAN TEE
 1 1/2" 45 WYE
 1 1/2" X 3" OFFSET
 3" CAP
 1 1/2" X 3" COMBO VALVE
 3" 45 EL
 3" 45 STR EL
 3" 45 PLUMB & TANK ISO



ECR	X1	1-21-14	REV	DATE	DESCRIPTION
MERCEDES CLASS B V24 (TB)					PLUMB & TANK ISO

Coach House
Motor Homes



Arriva
by Coach House®

Section 6

Galley Systems

Galley Systems

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Refrigerator (3-Way)

All Coach House Motorhomes use Dometic RV refrigerators.

Your Dometic DM2663RBF unit can be energized by electricity using 12 volt or 110 volt. In addition it will run on propane gas. Refer to the refrigerator instruction manual enclosed in this section for lighting and operation of the refrigerator.

A temperature activated fan is mounted in the compartment behind the refrigerator to prevent over heating. This fan will come on when the temperature rises to an unsafe level in the compartment and will not shut off until the temperature has been reduced back to a safe operating level.



DM 2663 Americana Plus **More features, more style,** **more space fridge**

Contemporary exterior with integrated design, optional door insert panels available. Automatic locking handles and right- or left-swinging doors open a full 180 degrees. Lighted fresh food compartment with two crispers Magic Fingers shelf retainers keep bottles and containers from moving.

Efficient Operation Eye-Level Controls, includes automatic LP ignition Dometic's proven absorption technology 3-Way (LP/120V AC/ 12V DC) operation. Climate control system saves energy, and helps prevent condensation.

- Solid Steel Frame offers rugged durability
- Travel latch
- Roomy, versatile 6 cu. ft. interior storage space
- Bright, white, and easy to clean
- Adjustable and removable shelving and door bins in refrigerator and freezer
- Standby feature keeps refrigerator operating in case of malfunction
- Defrost water drain system
- Color: Black frame
- Accepts 2 insert panels
- Superior Warranty Backed by Dometic's Protection Plus Warranty—the strongest warranty in the industry. Extended warranties may also be available. Ask your dealer for details.

Technical Data

Description	3-Way (12V DC/120V AC/LP Gas)
Door type	Double Door
Dimensions (HxWxD) (in)	52 21/32 x 24 7/8 x 26 1/32
Weight. (lb)	121

Insert Dometic Refrigerator Manual

Here

2 Burner Stovetop

The Dometic two burner range has electronic ignition. Push the gas knob in to the "light" position and press the ignition switch at the same time to make a "spark" and ignite the flame. Make sure you turn off the gas flow when done cooking.

(Arriva Models)



Insert Range Manual Here

Solid Surface Countertops

Your Coach House motor home has DuPont Corian Solid Surfaces on all counter top surfaces. The following guidelines will help keep your Solid Surfaces in good condition for years of use.

DuPont™ Corian® Commercial Care In Use

DuPont™ Corian® solid surfaces meet the demanding needs of today's commercial surfacing applications. As a solid, non-porous surface, Corian® can be maintained with minimum care to retain the original appearance. Because it can be repaired, Corian® will still look and perform like a new installation, while other surfacing materials will often need to be replaced. With proper care the Corian® surfaces in your commercial application will stay looking like new.

For more information, call 1-800-4Corian (1-800-430-6072).

Routine Care

There are three types of Corian® Solid Surface finishes: matte/satin, semigloss and high-gloss. Contact your Corian® sales expert if you are unsure of your finish. Most countertops and all sinks and lavatories are finished with a matte/satin finish. Soapy water, ammonia-based cleaners or commercially available solid surface cleaners will remove most dirt and residue from all types of finishes. Stubborn residue will require a little stronger cleaner. Follow the recommendations below to properly clean your Corian® Solid Surface application.

Conventional Cleaning Techniques

- Washing with soap and water is usually sufficient to remove surface dirt or stains. Be sure to wipe surface completely dry.
- Ammonia based liquid cleaner (not window cleaner) may also be used. Always rinse surface thoroughly and wipe dry.
- Drying is an important step, preventing a build-up of soap film or cleaning residue, which can create the appearance of light scratches over time. In the event this occurs, apply a mild abrasive cleaner to a damp sponge or white Scotch-Brite® pad and rub into the surface in a circular motion. When finished, rinse thoroughly to remove all cleaner, then wipe completely dry.
- Stubborn soap film or cleaning residue build-up in Corian® is easily removed with abrasive cleanser and a white Scotch-Brite® pad or a sponge.
- For darker colors, a polish may be used to enhance the shine. For areas where there may be food contact, always use a polish formulated for food contact areas, such as Countertop Magic®. Where food contact is not a possibility, a simple furniture polish may be used. Always follow the manufacturer's instructions for using the polish and for safety concerns.

Cleaning Agents

Corian® is unaffected by common household and commercial cleaners such as

- Powdered abrasive cleansers (like Comet®)
- Ammonia
- Strong detergents
- Oxalic acid solutions
- Dilute hydrochloric acid solutions
- Dilute trisodium phosphate solutions

Acid drain cleaners may cause surface damage and should not be used on Corian® solid surfaces.

Cigarette Burns, Stubborn Stains

Unlike other surface materials stains or marks caused by cigarettes, alcohol, food, lipstick, hair dye, shoe polish, iodine, marking pens, etc. can be removed by using an abrasive cleanser and a Scotch-Brite® pad.

- If the surface has a **matte finish**, use a **green Scotch-Brite® pad**
- If the surface has a **gloss finish**, use a **white Scotch-Brite® pad**

This type of maintenance will not harm the Corian® surface, and will restore it to "like new" condition.

DuPont™ Corian® Commercial Care In Use

Surfaces of Corian® can be repaired with no permanent damage. Tough to remove stains, fine scratches, and small cuts can be removed using standard repair techniques.

Professional repair

Contact DuPont (800.426.7426), or your supplier, for information on how to have your Corian® surfaces professionally restored to their original finish

Making your own repairs

- To restore a matte finish - use 220 grit sandpaper followed by hard buffering with a green Scotch-Brite® pad in a circular motion.
- To restore a semi-gloss - use the 220 grit sandpaper, followed by 320 grit, followed by 400 grit. Then blend the finish in by using abrasive cleanser and a sponge or rag.
- A high gloss finish is best restored by a professional. Contact your supplier or DuPont.
- If the damage is particularly deep, use a random orbital sander equipped with vacuum dust collection. Start with 120 grit sandpaper first, followed by 180-220 grit. After sanding, a uniform matte finish can be obtained by buffering with a green Scotch-Brite® buffering pad. For a semi-gloss, continue sanding with 320 followed by 400 grit. Then buff with a gray Scotch-Brite® pad.

The impact resistance of Corian® allows it to withstand harsh use without chipping, breaking, or cracking. However, if damaged due to extreme abuse, satisfactory repairs can often be made. Contact DuPont for guidance.

Preventing Damage

Avoid Strong Chemicals

Some chemicals are not compatible with Corian®. Avoid surface contact with:

- Strong chlorinated solvents
- Chloroform
- Ketones
- Methylene chloride (paint removers)
- Very strong acids such as concentrated sulfuric and hydrochloric acids
- Acid drain cleaners should not be used.

Surfaces exposed to these agents should be promptly flushed with water. Contact for even a short period of time can cause surface damage, spots, or staining. Follow the recommended repair procedures described above as needed to repair and/or restore the surface to its original condition. Severe damage caused by incompatible chemical contact will require professional repair. Again, contact DuPont, or your supplier for assistance.

While Corian® withstands heat better than most surface materials, do not place hot cookware directly on a Corian® surface. To avoid damage caused by excessive heat:

- Always use a trivet or hot pad under hot cookware
- Always use a trivet with minimum $\frac{1}{4}$ " legs under small electrical appliances such as fryers and cookers

A Corian® surface can be scratched or gouged if used as a cutting or chopping surface for food preparation. Scratches can be repaired, but to avoid the problem, use of a cutting board is highly recommended.

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Scotch-Brite® is a registered trademark of the 3M Company. Countertop Magic® is a registered trademark of Magic America Corp. Comet® is a registered trademark of Proctor & Gamble.

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corian.
SOLID SURFACES

Water Pump

When parked where a city or R.V. park water supply is available, the motor home should be connected by using a hose connected to the city water connection. The water pump should not be used when the motor home is connected to city water. The Coach House has a potable water tank with a 12-volt DC demand pump connected to the system. The switch for the demand pump is located either in the lavatory or on the main control panel located adjacent to the entry door. The pump should only be turned on when water is needed from the potable holding tank. Do NOT operate the pump dry or when there is no water in the potable water tank.

Drain valves are supplied on the potable water tank and in the water system near the pump to allow draining the system to prevent freezing.

The potable water fill is located on the side of the motor home behind the labeled door. The potable water tank can also be filled from city water pressure. Open a valve to fill fresh (potable) water tank - turn off when tank is full. The location of the valve (on all models) is inside exterior door - drivers side behind rear wheel.

Location

The water pump is located in the bed base on the passenger's side.



Insert Water Pump Manual

Here

Water Heater



Your Mercedes Benz Chassis motorhome utilizes the TRUMA Aquago Comfort "on-demand" propane hot water heater. The master control switch is located above the bed on the driver's side of the vehicle.



Warranty questions and information can be obtained from:

Truma Corp.
825 East Jackson Boulevard
Elkhart, IN 46516
1-855-558-7862

Insert Water Heater Manual Here

Microwave/Convection Oven

The microwave oven is mounted above or beside the refrigerator and only operates on the 120 volt A/C system. This oven can be used as a Convection Oven, or a Microwave oven. Refer to the manufacturers instruction manual, enclosed in this section, for operator instructions and helpful cooking hints.

Service Can be obtained at:

Collins & Company
17880 Commerce Drive
Bristol, Indiana 46507
574-848-1118



Monitor Panel

The monitor panel is located in the electrical panel in the upper cabinet just behind the driver's seat. It will indicate the water level in the potable water tank, the level in the holding tanks, the level of propane gas, and the charge level of the auxiliary batteries. To check the level, push the test button on the panel and observe the level indicator lights that are lit to read the level.



Sanitizing the Potable Water System

To assure complete sanitation of your potable water system, the following procedures are recommended for a new system, for one that has not been used for a period of time, and for one which may have become contaminated.

- 1) Prepare a chlorine solution using one (1) gallon of water and one-quarter (1/4) cup of household bleach (2% sodium hypochlorite solution). With tank empty pour one (1) gallon of solution into tank for each fifteen (15) gallons of tank capacity.
- 2) Complete filling of tank with fresh water. Operate all faucets to release trapped air. Pressurize the entire system with a pump, if available, and turn off pump.
- 3) Allow to stand for three (3) hours.
- 4) Drain and flush with fresh potable water.
- 5) To remove excessive chlorine taste or odor, which may remain, prepare a solution of one (1) quart vinegar to five (5) gallons of water and pour into tank. Allow solution to agitate in tank by vehicle motion (several days if possible)
- 6) Drain tank and flush with fresh potable water.

How to Winterize

Blow Dry Method

- 1) Empty and thoroughly rinse both the black and gray waste holding tanks at a sanitary dump station.
- 2) Drain the fresh water tank. The fresh water tank drain is accessible inside an access panel depending on your model:

240	Passenger Side Under the Bed
241 XL (Rear Bed)	Passenger Side Behind the Wheel Well
241 XL (Twin Bed)	Passenger Side Behind the Wheel Well
241 XL (Queen Bed)	Passenger Side Behind the Wheel Well
ARRIVA	Driver Side Behind the Wheel Well

- 3) Drain all water lines. Drain valves are located behind a hinged panel on the rear of the driver's side of motor home. Be sure to drain shower, toilet and all faucets. If a water purifier or filter is in line, remove the cartridge. Close all faucets.
- 4) Install an R.V. "Blow Out Plug" on your city water inlet. These plugs are inexpensive and are available at R.V. Parts stores or Home Improvement stores (Lowe's, Home Depot)



R.V. Blow Out Plug

- 5) Set your air compressor to 30 psi, with a maximum air pressure of 50 psi, and start blowing air into the water inlet. While your compressor is blowing air into your water lines, walk around your RV and open up water valves, one at a time, to blow the water out from the lines. When the water has been blown out then close the valve and move on to the next water opening. Remember to flush the toilet. Don't forget the shower head and the outside shower if you have one. Don't forget to open up both the hot water line and the cold water line. Once you have done each and every fixture in the rig, you should have most of the water out of your freshwater system. Remove the air source and bleed off any

How to Winterize (con't)

remaining pressure by opening a faucet.

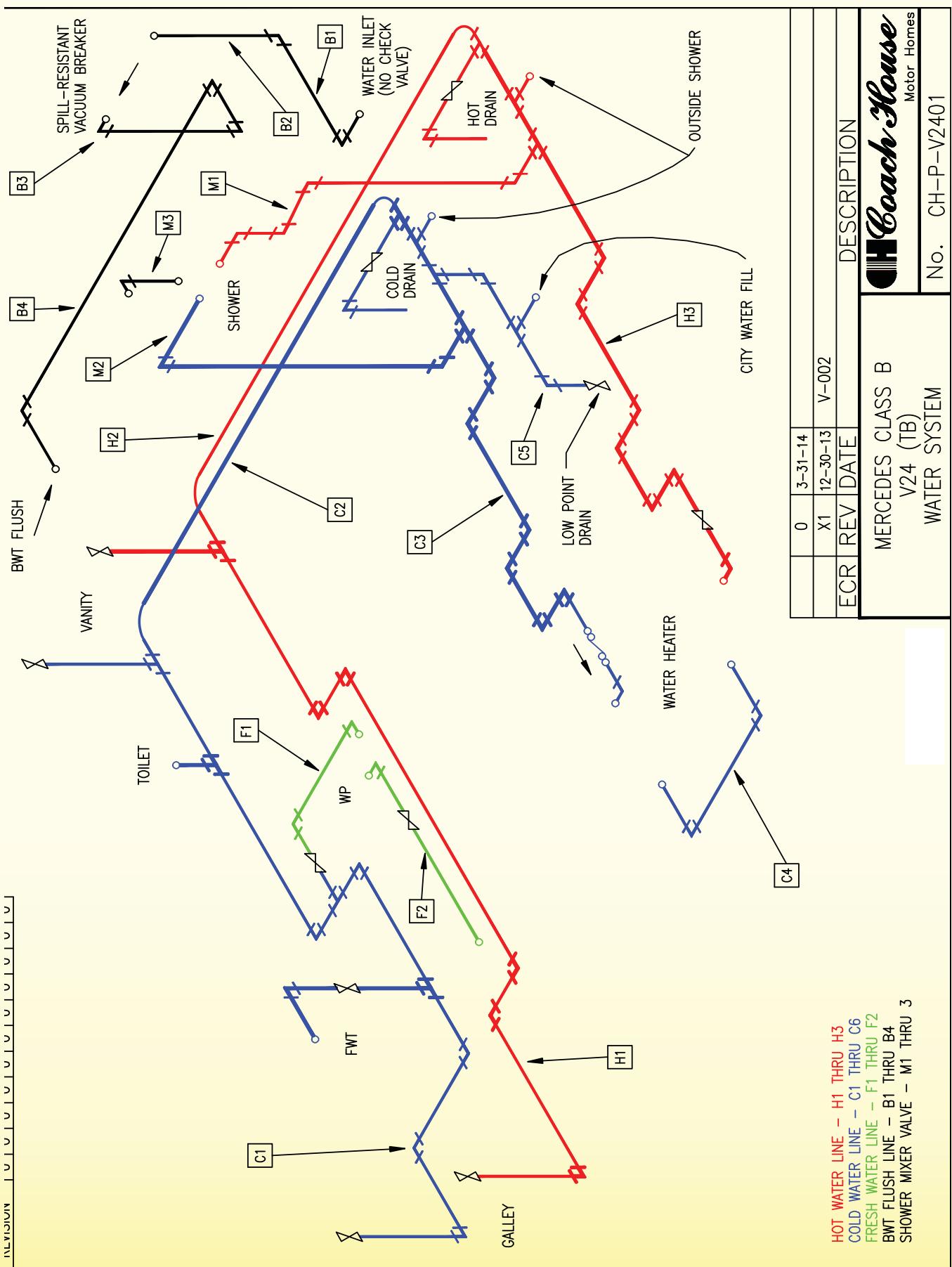
- 6) Technically at this point, your RV has been winterized. However, if you wish to absolutely make sure your water lines are protected you can perform the following. The reason for putting antifreeze through your lines is in case any water collects at low levels of your water lines and freezes. This could be enough to blow a line. Putting RV antifreeze through your lines will eliminate this from being an issue.



- 7) Pour 2-3 Gallons of antifreeze in the City Water Fill outlet which is located on the side of your motorhome.

- 8) Turn on the R.V. water pump which will pull the antifreeze out of the fresh water tank and into the system. Open each fixture, allowing it to flow until you see pure antifreeze. Monitor the level in the antifreeze bottle and make sure it doesn't run dry. Remember to flush the toilet and operate the toilet sprayer if installed. Don't forget the shower head and the outside shower if you have one. Once you have done each and every fixture in the rig, you should have protection against freezing pipes in your water system.
- 9) Once you have the RV parked in it's final storage spot for the winter, pour some RV antifreeze down each drain to protect the trap. Open the toilet flush valve and allow about one quart (4 cups) of antifreeze to flow into the black water tank. Close the toilet flush valve and pour a little antifreeze into the toilet bowl. Pour about one quart (4 cups) down the shower drain to flow into the grey water tank.

Water Systems Diagrams





Arriva
by Coach House®

Section 7

Miscellaneous

Miscellaneous

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Fire Extinguisher

A fire extinguisher is located in your Coach House ARRIVA behind the passenger seat on the right side of the motor home. The gauge on the unit should be checked periodically for pressure level. If the indicator is in the red, the unit should either be re-charged or replaced.



First Alert®



Rechargeable Multi Purpose Fire Extinguisher, 1-A:10-B:C

First Alert® Home Fire Extinguishers are ideal for use in any household location. This Multi-purpose household fire extinguisher fights fires fueled by wood, paper, fabric, flammable liquid and electricity. The Durable metal head is designed to meet demanding household requirements. Includes mounting bracket to keep unit secure. 10-year limited warranty.

SPECS

- UL rated Class 1-A:10-B:C
- Rechargeable
- Commercial Grade Metal Valve and Trigger
- Corrosion Resistant Gauge
- Secure Mounting Bracket
- Monoammonium Phosphate Extinguishing Agent



Fire Control Fire Extinguisher FC10 440161MTL



Product Specification

Net agent weight (Average)	2.9 lb.
Unit weight (Average)	4.0 lb.
Diameter	3.25 inches
Height	14.2 inches
Discharge time	8-12 seconds
Discharge range	6-8 feet
Operating pressure	100 psi
Cylinder	Seamless aluminum
Valve, handle, lever	Aluminum and steel
Strap Bracket	U.S.C.G approved

Smoke Detector

A smoke detector is mounted near the ceiling, behind the driver's front seat. The detector is battery (9 volt) operated and should be tested on a regular basis. Refer to the manufacturers instruction sheet, enclosed in this section, for the proper testing procedure and battery replacement. The smoke detector should be tested after each time the motor home has been in storage, before each use and at least once each week during use of the motor home. Smoke detectors should be replaced periodically as per the manufacturer's instructions.



Carbon Monoxide Detector

A carbon monoxide detector is mounted in the following locations for your model.

Arriva

Passenger Side Overhead

The auxiliary battery and the chassis battery, which ever is stronger, power the detector and 3 amp fuses located behind the panel on which the detector is mounted, protect the unit. A green light on the detector front indicates that it is operating and any failure in the light should be investigated and remedied immediately. The detector should be tested on a regular basis as per the manufacturers instructions.



Insert Stickers for LP/C02 Detectors Here



RECREATIONAL VEHICLE (RV)

Carbon Monoxide Alarm

USER'S MANUAL

65 Series Surface Mount Models:

65-541, 65-541-R, 65-541-MS, 65-541-R-MS

65 Series Flush / Recess Mount Models:

65-542, 65-542-R, 65-542-MS, 65-542-R-MS

ALL RIGHTS RESERVED 65RV120810-1

ATTENTION: This user's manual contains important Carbon Monoxide (CO) alarm installation, operation, troubleshooting and warranty information. Read, follow, and keep this manual for future reference.

NOTE: If you install or purchase this alarm for another person, give this manual to that person.

IMPORTANT: This unit must be replaced within five years of its production date. This unit has an End of Life (EOL) signal that will sound after 5 years of use. Record the installation date in the section, Owner's Replacement Record, in this manual for future use. The replacement date indicates the date beyond which the device may no longer detect carbon monoxide. The device should be replaced.

The electronic CO sensor in your SAFE-T-ALERT™ CO alarm is very sensitive to CO gas. It will not react to most other gases.

WHY EVERY RV NEEDS A 65 SERIES CO ALARM

Everyone is at risk for carbon monoxide poisoning! Particularly sensitive are children, pregnant women, the elderly and people with lung or heart disease or anemia! Carbon monoxide (CO) is an odorless, colorless gas that prevents the blood from carrying oxygen to vital organs. CO is 200 times more likely to replace oxygen in the blood. The Consumer Product Safety Commission (CPSC) recommends using at least one CO alarm located outside of sleeping areas. For the extra security, locate additional CO alarms in each sleeping area.

ABOUT THIS ALARM

Because CO is a colorless, odorless, tasteless and highly poisonous gas; it can endanger lives even at low levels of concentration. The CO Alarm will alert you to potentially dangerous situations. **The following symptoms may be related to CO POISONING.** Discuss these symptoms with **ALL** household members and RV guests:

- **Mild Exposure:** Headaches, running nose, sore or watery eyes, often described as "flu-like" symptoms.
- **Medium Exposure:** Dizziness, drowsiness, vomiting.
- **Extreme Exposure:** Unconsciousness, brain damage and death.

NOTE: Reported cases of CO gas poisoning indicate that while victims are aware they are not well, they are disoriented. They are unable to save themselves by exiting the RV or calling for assistance. **Small children and pets may be affected first.**

Your SAFE-T-ALERT™ Series alarm helps protect your family members and guests from CO produced while using your RV. CO gas is produced when any type of fuel is incompletely burned. Potential sources of CO in and around your RV can include gas or diesel engine exhaust, portable space heaters, gas stoves and ovens, furnaces, defective engine exhaust systems, charcoal, portable grills, other nearby RVs, portable generators, generator exhaust, and other propane-powered appliances. All are sources of CO.

The following are also sources of CO that may affect your RV:

- Extended operation of unvented fuel burning appliances can build up high CO levels.
- An idling vehicle in an open or closed garage.
- Temperature inversions can trap exhaust near the ground.
- CO build up can be caused by reverse/negative venting of fuel burning appliances including; 1) Clogged, loose or faulty stacks or chimneys of (clothes dryers, furnaces and water heaters, etc.), 2) wind direction and/or velocity, 3) simultaneous operation of multiple fuel burning appliances, and/or exhaust fans.

⚠ WARNING:

LIMITATIONS OF CO ALARMS

THIS ALARM WILL NOT WORK WITHOUT POWER. Some reasons for no alarm power; are a blown or missing fuse, broken wire, a faulty wire connection or circuit breaker, a discharged battery, cut lead wires, or improper supply (+) or ground (-) connections.

THIS ALARM WILL ONLY INDICATE THE PRESENCE OF GAS AT THE SENSOR. CO may be present in other areas. MTI recommends installing CO alarms in all sleeping areas. **Do not block or cover** the alarm with any object that can prevent carbon monoxide from reaching the sensor.

THIS ALARM IS INTENDED FOR USE IN RV's. It is intended for use inside the RV. It is not designed to measure compliance with commercial and industrial standards.

THIS ALARM MAY NOT BE HEARD. The alarm's loudness is designed to meet or exceed regulatory standards; however, the alarm may not be heard if alarms are located in remote locations or behind closed doors. Persons who are hard-of-hearing, have consumed alcoholic beverages, taken prescription, non-prescription or illegal drugs, may not hear the alarm.

THIS ALARM IS DESIGNED TO DETECT CARBON MONOXIDE. THE ALARM IS NOT DESIGNED TO DETECT SMOKE, OR FIRE.

THIS ALARM MAY NOT ALARM AT LOW CO LEVELS It is not designed to measure compliance with the Occupational Safety Health Administration (OSHA) commercial or industrial standards. Individuals with medical problems may consider using warning devices, which provide audible and visual signals for CO concentrations under 30 ppm.

HOW TO PROTECT YOUR FAMILY

CAUTION- The SAFE-T-ALERT™ 65 Series combination CO Alarm is designed to protect individuals from the acute effects of carbon monoxide exposure. It will not fully safeguard individuals with specific medical conditions. If in doubt, consult a medical practitioner.

To protect yourself, family and guests, you should:

- **INSTALL THE ALARM PROPERLY.** Carefully read and follow ALL the instructions in this manual. Test your unit every week. Alarms that do not work will not alert you to hazardous levels of CO and need to be replaced. See the section, Test Procedure, in this manual for further information.
- **MAKE REGULAR VISUAL INSPECTIONS.** Check all fuel burning equipment including gas water-heaters, kitchen gas stoves, space heaters, gas dryers and all pilot lights. Check the color of the pilot flame. The color should be blue.
- **MAKE REGULAR VISUAL INSPECTIONS OF THE ENGINE AND GENERATOR EXHAUST SYSTEMS.** Cracked exhaust systems can allow CO to enter the living area.
- **PROFESSIONALLY MAINTAIN YOUR ENGINE AND GENERATOR.** Although gas engines and generators produce CO, a poorly tuned engine and generator will produce greater amounts CO.

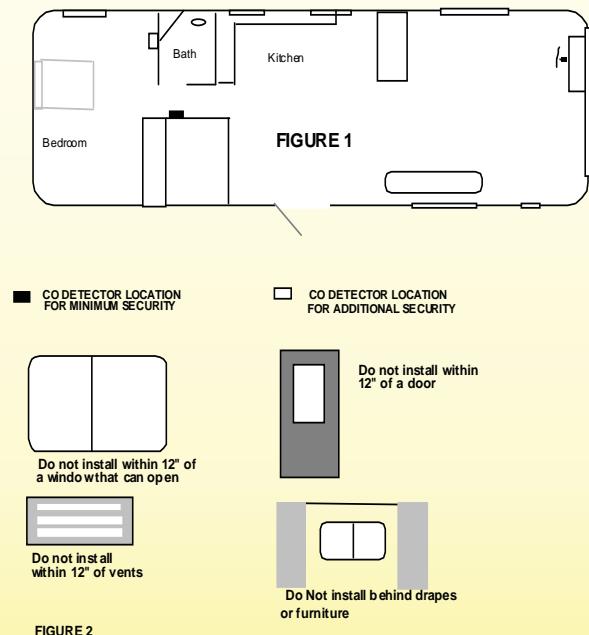
WHERE TO INSTALL

- MTI recommends installing a gas alarm in each sleeping area.
- The NFPA and Consumer Product Safety Commission recommends installing a CO alarm outside the sleeping area. The 65 Series CO alarm complies with that recommendation.
- INSTALL ALARM at least 4 inches off the floor.

WHERE NOT TO INSTALL 65 SERIES ALARMS

- DO NOT INSTALL behind furniture, drapes, in closets or areas that will block air flow to the alarm.
- DO NOT INSTALL within 12 inches (30cm) of opening windows, exterior doors, heating or return vents, or other drafty areas..
- DO NOT INSTALL on an outside wall.
- DO NOT INSTALL on a wall switch controlled by a power line, ground fault circuit or to a circuit breaker.

NOTE: Older RVs may have little or no insulation and therefore are draftier. Carefully consider mounting locations. The following diagrams provide additional alarm installation information:



INSTALLATION INSTRUCTIONS

Models

⚠ WARNING

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A MALFUNCTION OR FAILURE OF THE ALARM AND MAY VOID THE WARRANTY.

SHOCK HAZARD: Turn off power before installing.

Power Supply 12 VDC.

Recommended Wire Size 14 GA. TO 18 GA.

Connect the alarm to a properly fused circuit, maximum over protection device rating 6 amps.

All connections must be in accordance with the National Electrical Code in the Unites Stated and the Canadian Electric Code in Canada.

Connect to wiring or circuit that CANNOT be turned off by a switch or ground fault protector. Only use UL or recognized permanent wire connectors. It is acceptable to connect the 65 Series CO alarm to the main disconnect. The alarm will be off along with all other 12 volt equipment when the main disconnect is turned to the off position. The RV must not be occupied when the main disconnect is in the off position.

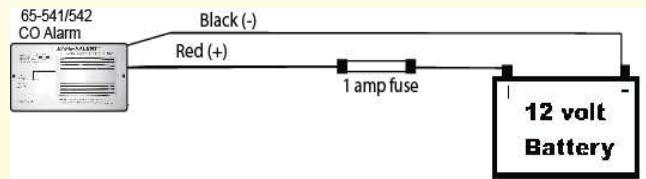
INSTALLATION INSTRUCTIONS

Follow these instructions carefully. Failure to follow these instructions can damage the unit and void the warranty.

Important: The 65 Series Flush / Recess mount case requires 1 1/2" (38mm) clearance behind the wall.

MODEL 65-541 / 65-542

1. Basic Model 65-541/65-542 - Select a wall location at least 4" off the floor. Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole. For the 60-541 Drill a 1/4" (6mm) hole for the wires.
2. Connect Supply (+) to the Red wire lead. Install a 1 amp fuse in the positive (+) circuit. Connect the Black wire to the 12 volt Ground (-).
3. Reconnect the power supply. Warm up 10 minutes then test the alarm.



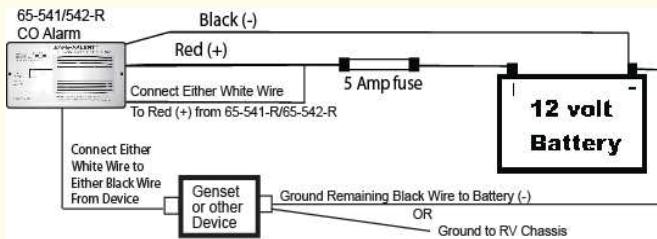
MODEL 65-541-R / 65-542-R (Relay Control)

1. Model 65-541-R/65-542-R - With Normally Closed relay. This unit supplies a relay with contacts rated 12 VDC, 3 amp (max). The relay is energized whenever the alarm is operational. It may be used to shut down a generator or to open an (optional) gas solenoid valve. The relay may also be used to interface to alarm systems, using either the normally closed or normally open contact, depending on the requirements of the alarm system. In the event of an alarm the relay will shut off. It will

automatically re-energize after the unsafe levels of CO clears. Select a wall location at least 4" off the floor. 60-542-R Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole. 60-541-R drill 1/4" (6mm) hole for the wires.

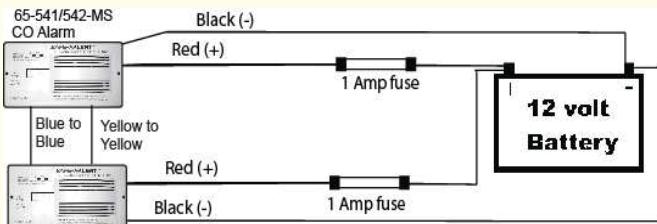
2. Do not connect to a previously installed solenoid. SEE: SPECIAL WIRING NOTICE.

3. Connect Supply (+) to the Red wire lead. Install a 5 amp fuse in the positive (+) circuit. Connect the Black wire to the 12 volt Ground (-).
4. Reconnect the power supply. Warm up 10 minutes then test the alarm.



MODEL 65-541-MS / 65-542-MS

1. Model 65-541/65-542-MS Multi-station interconnect, (Maximum 10 units and 2000 feet of wire). Allows multiple 65-541/542MS alarms to be connected together. When one of the alarms detects unsafe levels of CO or gas it will activate. It will also activate the audible alarm of all the interconnected units. Only the alarm that detected CO or gas will have its Red LED light lit up so that you can determine the cause of the alarm. Select a wall location no between 4" and 20" off the floor. 60-542-MS Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole. 60-541-MS drill 1/4" (6mm) hole for the wires.
2. Connect the Red wire to the 12 volt supply (+). Install a 1 amp fuse in the positive circuit (+). **Note you must use a separate 1 amp fuse for each alarm.** Connect the Black wire to the 12 volt Ground (-).
3. Interconnect Wiring – Connect Blue wires from each alarm and Yellow wires for each alarm. Continue connecting in series (Daisy Chain).
4. Reconnect the power supply. Warm up 10 minutes then test the alarm.

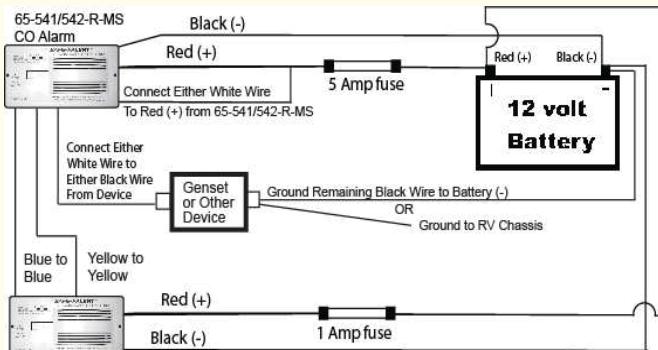


MODEL 65-541-R-MS / 65-542-R-MS

1. **Model 65-541-R/65-542-R-MS - With Normally Closed relay.** This unit supplies a relay with contacts rated 12 VDC, 3 amp (max). The relay is energized whenever the alarm is operational. It may be used to shut down a generator or to open an (optional) gas solenoid valve. The relay may also be used to interface to alarm systems, using either the normally closed or normally open contact, depending on the requirements of the alarm system. In the event of an alarm the relay will shut off. It will automatically re-energize after the unsafe levels of CO clears. Select a wall location at least 4" off the floor. 65-541-R-MS Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole. 65-542-R-MS drill 1/4" (6mm) hole for the wires.
2. **Do not connect to an existing installed solenoid. SEE: SPECIAL WIRING NOTICE.**

3. Connect Supply (+) to the Red wire lead. Install a 5 amp fuse in the positive (+) circuit. Connect the Black wire to the 12 volt Ground (-).
4. Interconnect Wiring - Connect Blue wires from each alarm and Yellow wires from each alarm. Continue connecting in series (Daisy Chain).
5. Reconnect the power supply. Warm up 10 minutes then test the alarm.

Model 65-541-R-MS / 65-542-R-MS Wiring -



Only use UL or recognized permanent wire connectors to replace any unit installed with spade connectors or wire nuts.

TEST PROCEDURE



WARNING

TO REDUCE THE RISK OF CARBON MONOXIDE POISONING, TEST THIS ALARM'S OPERATION AFTER THE RV HAS BEEN IN STORAGE, BEFORE EACH TRIP AND AT LEAST ONCE PER WEEK DURING USE BY PRESSING THE TEST/RESET BUTTON.



WARNING

WARNING: THE TEST BUTTON ONLY TESTS THE ALARM CIRCUIT NOT THE SENSORS. TO TEST THE CO SENSOR USE A CAN OF SAFE-T-ALERT CO TEST GAS TO TEST THE 400 PPM CALABRATION POINT. DO NOT TRY TO GENERATE CO TO TEST THE ALARM. The TEST/RESET button tests all ELECTRICAL functions of the alarm. It does not check the sensor operation.

The alarm may be tested at any time. The TEST/Mute switch is located on the front of the alarm. Press and hold the test button for 1 second. **IMPORTANT - If this alarm does not test properly return it immediately for repair or replacement. If the alarm is over five years old replace it.**

SPECIAL WIRING NOTICE.

⚠ DANGER - FIRE RISK - DO NOT CONNECT A SAFE-T-ALERT alarm to non Safe-T-Alert supplied solenoid. You must use a new solenoid with the correct electrical rating.

OPERATION

When the unit is first powered up, the CO sensor requires a ten (10) minute initial warm-up period to clean the sensor element and achieve stabilization. The GREEN LED indicator will flash on and off during the 10 minute warm-up period. This unit cannot go into a alarm during the warm-up period. See Test Procedure in this manual. After the warm-up period, the GREEN power ON indicator should glow continuously. If the ON indicator light does not light, see the section, Trouble-Shooting Guide, in this manual for further information. **Do not attempt to fix it yourself.**

Brownout Protection - The unit can tolerate short power interruptions and brownouts where the circuit voltage drops as low as 1 VDC. If the brownout lasts too long, the unit will reset and operate as described above.

LOW POWER OPERATION

This alarm will operate normally down to 7 VDC. Do not operate this alarm below 7 VDC.

VISUAL AND AUDIBLE ALARM SIGNALS

This SAFE-T-ALERT™ CO Alarm is designed to be easy-to-operate. The alarm has two indicator lights that display a specific color for each monitored condition. There also is a matching sound pattern for alarm conditions.

CO ALARM

The Red CO LED will flash and the alarm will sound 4 "BEEPS" then silent for 5 Seconds. **IMMEDIATE ACTION IS REQUIRED.** See **Procedures To Take During An Alarm.** This cycle will continue until the TEST/Mute button on the front of alarm is pressed. Ventilate the RV. The RED light will stay ON until the CO has cleared, or the alarm will reactivate in approximately 6 minutes if the CO is still present. DO NOT RE-ENTER THE RV. This alarm will return to normal operation after the RV is properly ventilated.

MALFUNCTION/SERVICE SIGNAL If any malfunction is detected, the Gas LED will remain off and the Operational/CO LED will alternate Red/Green and the alarm will sound once every 15 seconds. Press the Test/Mute button. If the Test/Mute button does not clear the signals, check the battery voltage. If the battery voltage is not low and the unit will not return to normal operation, immediately remove the alarm and return for service or warranty replacement. See the warranty section in this manual.

OPERATION	AUDIBLE SIGNAL	VISUAL SIGNAL
NORMAL	NONE	STEADY GREEN
CO ALARM	4 "BEEPS" 5 SECONDS OFF	STEADY RED
ALARM MALFUNCTION	BEEP" EVERY 25 SECONDS	ALTERNATING RED/GREEN
END OF LIFE SIGNAL	BEEPS EVERY 25-30 SECONDS	RED RED GREEN GREEN FLASHING

MEMORY FEATURE - This alarm has a Peak Level Memory feature that remembers the approximate amount of CO that activated it. The memory feature does not record brief exposure to CO that would not activate the alarm. This alarm will indicate one of four levels with chirps and blinks with the CO LED:

To activate alarm level memory, press the TEST/RESET button for less than 1 second.

- 1 Chirp and 1 Green Blink = CO memory is clear
- 2 Chirps and 2 Red = below 100 ppm
- 3 Chirps and 3 Red Blinks = below 200 ppm
- 4 Chirps and 4 Red Blinks = above 200 ppm

End of Life Signal – The Sensor has a 5 Year Service Life

All 65 Series models include an End of Life (EOL) Signal indicating the sensor has reached the end of its service life and you must replace the alarm. The signal is the LED flashing RED RED GREEN GREEN with a beep every 25-30 seconds. The EOL Signal may be

reset by pushing TEST / RESET button on the alarm. This will reset the EOL Signal for a period of 72 hours (3 days) for a total of up to 30 days. After 30 days the signal cannot be reset and the alarm must be replaced. DO NOT DISCONNECT THE ALARM UNTIL YOU HAVE A REPLACEMENT ALARM AVAILABLE TO INSTALL.

TROUBLE-SHOOTING GUIDE

Use this chart to trouble-shoot problems with this 65 Series Alarm.

PROBLEM	CAUSE/SOLUTION
Green Operational LED Off	1. Wire Connection 2. Reversed Wiring 3. Main Power Off 4. Missing or Blown Fuse 5. Contact Customer Service
No Sound When Testing	Contact Customer Service
No Red LED When Testing	Contact Customer Service
Locked In Alarm	Contact Customer Service
MALFUNCTION ALARM LED Flashing Red/Green - Beeps Every 25 Seconds	1. Check Battery Voltage
Battery Voltage is Good and Alarm Will Not Reset	2. Contact Customer Service
End of Life Signal	1. Press Test/Reset Button to reset for 72 Hours. Can repeat for up to 30 Days
LED Flashing RED RED GREEN GREEN Beeps Every 25 Seconds	2. Replace Alarm

HOW TO TAKE CARE OF YOUR ALARM

This CO Alarm is designed to be as maintenance free as possible. To keep your alarm in good working order, you must:

- **TEST THE ALARM WEEKLY** using the Test/Reset Button. See the section, Test Procedure, in this manual for further information.
- **VACUUM THE DUST OFF THE ALARM COVER.** At least once a year (more frequently in dusty locations), use the soft brush attachment from your vacuum to clean the alarm covers.
- **CLEAN THE ALARM COVER WHEN DIRTY.** Wash the alarm cover by hand. Use a cloth dampened in clean water. Dry with a soft cloth.
- **DO NOT SPRAY CLEANING AGENTS OR WAXES DIRECTLY ONTO THE FRONT PANEL.** This action may damage the sensor, cause an alarm or cause an alarm malfunction.
- **OBSERVE THE COLOR OF THE INDICATOR LIGHT.** At frequent intervals and during your weekly test, check the indicator light on the front panel of the alarm.
- See the section, Operation, in this manual for further information.

SPECIFICATIONS

MODELS	65-541, 65-541-R, 65-541-MS, 65-541-R-MS 65-542, 65-542-R, 65-542-MS, 65-542-R-MS
POWER SUPPLY	12 VDC
NOMINAL CURRENT DRAW	108mA
OPERATIONAL TEMPERATURE	-40° F to +150° F -40° C to +66° C
RELATIVE HUMIDITY	15% (+/- 5%) to 95% (+/- 4%)
AUDIBLE OUTPUT	85 dB @ 10 feet
CO ALARM TRIGGER	4-15 Minutes @ 400 ppm
CASE DIMENSIONS	65-541 5.5" W x 3.5" H x 1.38" D 65-542 6.5" W x 3.5" H, 1.38" D
WARRANTY	1 Year Limited
TESTING LABORATORY STANDARD	Underwriters Laboratories UL 2034, Third Edition

PROCEDURES TO TAKE DURING AN ALARM

Follow the alarm procedures for your country. The emergency number depends on your travel location.

PROCEDURES TO TAKE DURING A CO ALARM IN THE USA

⚠ WARNING: Actuation of this device indicates the presence of carbon monoxide (CO) gas, which can KILL YOU. If signal sounds (4 beeps and flashing or solid red light): **1**) Operate the Test/Mute button; **2**) Call your emergency local service (Phone Number _____) (fire department or 911); **3**) Immediately move to fresh air - outdoors or by an open door/window. Check that all persons are accounted for. Do not reenter the premises or move away from the open door / window until the emergency responders have arrived, the premises have been aired out and your alarm remains in its normal operation. **4**) After following steps 1-3, if your alarm reactivates within a 24-hour period, repeat steps 1-3 and call a qualified appliance technician. (Phone Number _____) to investigate for sources of CO from fuel burning equipment and appliances, and inspect for proper operation of this equipment. If problems are identified during this inspection have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturers' instructions, or contact the manufacturer directly, for more information about CO safety and this equipment. Make sure that the motor vehicles are not, and have not been, operating in an attached garage or adjacent to the residence.

PROCEDURES TO TAKE DURING A CO ALARM IN CANADA

⚠ WARNING: Actuation of this device indicates the presence of carbon monoxide (CO) gas which can KILL YOU. If signal sounds (4 beeps and flashing or solid red light: 1) Operate the Test/Mute. Immediately move to fresh air - outdoors or by an open door/window. Check that all persons are accounted for. Do not reenter the premises or move away from the open door/window until the emergency responders have arrived, the premises have been aired out, and your alarm remains in its normal condition; 2) call your emergency local service (telephone number _____) (Fire department or 911).

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LIMITED PRODUCTS WARRANTY

MTI INDUSTRIES, INC. warrants to the original retail purchaser that its products will be free from defects of material or workmanship for a period of One (1) year from the date of retail purchase. If proven to have been defective in original materials or workmanship and returned, delivery costs prepaid, MTI INDUSTRIES, INC. will replace this product free of charge.

LIMITS OF WARRANTY

Replacement is your exclusive remedy under this limited warranty or any other warranty (including any implied warranty of merchantability for a particular purpose). Any and all implied warranties or merchantability or fitness for a particular purpose shall be limited to the warranty period from the original date of retail purchase. MTI INDUSTRIES, INC., its dealers and distributors shall in no case be responsible or in any way liable for any incidental or consequential damages for any reason. Some states do not allow the limitation or exclusion of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific rights, and you may also have other rights, which may vary, from state to state.

PRODUCT NOT WARRANTED

NOTE- There are no user serviceable parts inside the case. Opening any SAFE-T-ALERT™ product for any reason voids the warranty. This warranty does not cover damage or failure resulting from acts of God, abuse, misuse, neglect, or faulty installation.

WARRANTY RETURN PROCEDURES

It is MTI's experience that a CO Alarm is sounding for a reason. Call, ask your dealer to call, or e-mail our Customer Service Department (as listed below) to trouble shoot the situation.

Customer Service Phone No. - 800-383-0269

Fax No. 847-546-9007

E-mail Service@mtiindustries.com

Web Site: www.mtiindustries.com

If Customer Service determines that the unit is defective, a Replacement Authorization (RA) number will be issued. **No product will be accepted for service or replacement without first obtaining a RA number.**

If authorized, return this product to:

MTI Industries, Inc.

Warranty Dept. RA # (INSERT RA NUMBER HERE)

31632 N. Ellis Drive Unit 301

Volo, IL 60073

NOTE: Mark the RA number in the area shown on the outside of the box!

OWNERS REPLACEMENT RECORD

Replace this SAFE-T-ALERT™ 65 SERIES CO alarm within 5 years, of the installation of the alarm.

Installation Date _____

Replace Date _____

Installer _____

NOTE: The replacement date indicates the date beyond which the device may no longer detect accurately.

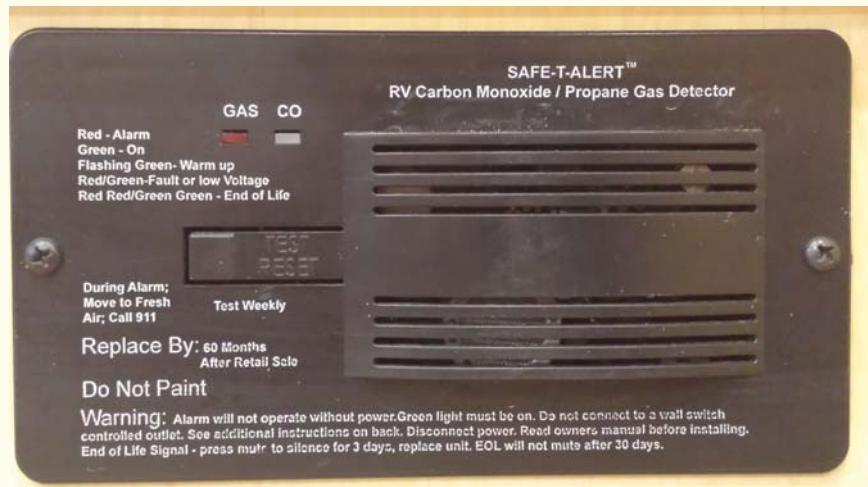
L.P. Gas Detector

A L.P. Gas detector is mounted in the following locations for your model.

Arriva

Base of Rear Bed (Driver's Side)

L.P. Gas is heavier than air and will fall. It also has an odor additive which smells like rotten eggs so that it is readily detected when a leak is present. Check the operation of your detector on a regular basis to ensure it is working properly.





RECREATIONAL VEHICLE (RV) Combination Carbon Monoxide and Gas Alarm USER'S MANUAL

70 Series Models 70-742, 70-742-MS 70-742-R Kit, 70-742-R-MS Kit

PATENT US 7,248,156 ALL RIGHTS RESERVED 70RV062009-6

ATTENTION: This user's manual contains important Carbon Monoxide (CO) and gas alarm installation, operation, troubleshooting and warranty information. Read, follow, and keep this manual for future reference.

NOTE: If you install or purchase this alarm for another person, give this manual to that person.

IMPORTANT: This unit must be replaced within five years of its production date. Record the manufacture date in the section, Owner's Replacement Record, in this manual for future use. The replacement date indicates the date beyond which the device may no longer detect carbon monoxide, propane or natural gas accurately. The device should be replaced.

DUAL SENSOR TECHNOLOGY

The SAFE-T-ALERT™ 70 Series combination CO / Gas Alarm is an alarm that combines into a single compact system, a powerful alarm that detects both Carbon Monoxide (CO) and explosive gases Propane (LPG) and Methane (Natural Gas). The 70 Series uses the latest microprocessor technology combined with two electronic self-cleaning sensors that operate independently of each other. The combined unit can detect both CO and explosive gases simultaneously.

This detector is UL Listed as a CO Propane and Methane (Natural Gas) detector for RV use. Other explosive gases detected, but not tested by UL, include Acetone, Alcohol, Butane, and Gasoline all of which you may have in your RV.

To prevent false alarms from brief "puffs" of gas the detector has a recheck cycle before alarming. If high levels of gas remain during the recheck cycle, the detector will alarm.

The electronic CO sensor in your SAFE-T-ALERT™ CO alarm is very sensitive to CO gas. It will not react to most other gases.

WHY EVERY RV NEEDS A 70 SERIES CO AND GAS ALARM

Everyone is at risk for carbon monoxide poisoning! Particularly sensitive are children, pregnant women, the elderly and people with lung or heart disease or anemia! Carbon monoxide (CO) is an odorless, colorless gas that prevents the blood from carrying oxygen to vital organs. CO is 200 times more likely to replace oxygen in the blood. The Consumer Product Safety Commission (CPSC) recommends using at least one CO alarm located outside of sleeping areas. For the extra security, locate additional CO alarms in each sleeping area. Safe-T-Alert CO alarms are available for secondary installations.

Propane gas can cause explosions! Using propane requires taking safety precautions to avoid injury. These gases are usually identified by an unpleasant odor. Certain conditions may make some people unable to detect this unpleasant odor. These conditions include advanced age, colds, allergies, and the use of tobacco, alcohol or drugs that may diminish the sense of smell.

ABOUT THIS ALARM

Because CO is a colorless, odorless, tasteless and highly poisonous gas; it can endanger lives even at low levels of concentration. The CO Alarm will alert you to potentially dangerous situations. The following symptoms may be related to CO POISONING. Discuss these symptoms with ALL household members and RV guests:

- **Mild Exposure:** Headaches, running nose, sore or watery eyes, often described as "flu-like" symptoms.
- **Medium Exposure:** Dizziness, drowsiness, vomiting.
- **Extreme Exposure:** Unconsciousness, brain damage and death.

NOTE: Reported cases of CO gas poisoning indicate that while victims are aware they are not well, they are disoriented. They are unable to save themselves by exiting the RV or calling for assistance. **Small children and pets may be affected first.**

Your SAFE-T-ALERT™ 70Series alarm helps protect your household members and guests from CO produced while using your RV. CO gas is produced when any type of fuel is incompletely burned. Potential sources of CO in and around your RV can include gas or diesel engine exhaust, portable space heaters, gas stoves and ovens, furnaces, defective engine exhaust systems, portable grills, other nearby RVs, portable generators, generator exhaust, and other propane-powered appliances. All are sources of CO.

The following are also sources of CO that may affect your RV:

- Extended operation of unvented fuel burning appliances can build up high CO levels.
- An idling vehicle in an open or closed garage.
- Temperature inversions can trap exhaust near the ground.
- CO build up can be caused by reverse/negative venting of fuel burning appliances including; 1) Clogged, loose or faulty stacks or chimneys of (clothes dryers, furnaces and water heaters, etc.), 2) wind direction and/or velocity, 3) simultaneous operation of multiple fuel burning appliances, and/or exhaust fans.

⚠ WARNING:

LIMITATIONS OF CO and GAS ALARMS

THIS ALARM WILL NOT WORK WITHOUT POWER. Some reasons for no alarm power; are a blown or missing fuse, broken wire, a faulty wire connection or circuit breaker, a discharged battery, cut lead wires, or improper supply (+) or ground (-) connections.

THIS ALARM WILL ONLY INDICATE THE PRESENCE OF GAS AT THE SENSOR. CO or explosive propane/natural gas gases may be present in other areas. MTI recommends installing CO alarms in all sleeping areas. **Do not block or cover** the alarm with any object that can prevent a gas leak or carbon monoxide from reaching the sensor.

THIS ALARM IS INTENDED FOR USE IN RV's. It is intended for use inside the RV. It is not designed to measure compliance with commercial and industrial standards.

THIS ALARM MAY NOT BE HEARD. The alarm's loudness is designed to meet or exceed regulatory standards; however, the alarm may not be heard if alarms are located in remote locations or behind closed doors. Persons who are hard-of-hearing, have consumed alcoholic beverages, taken prescription, non-prescription or illegal drugs, may not hear the alarm.

THIS ALARM IS DESIGNED TO DETECT CARBON MONOXIDE AND PROPANE GAS. THE ALARM IS NOT DESIGNED TO DETECT SMOKE, OR FIRE.

THIS ALARM MAY NOT ALARM AT LOW CO LEVELS It is not designed to measure compliance with the Occupational Safety Health Administration (OSHA) commercial or industrial standards. Individuals with medical problems may consider using warning devices, which provide audible and visual signals for CO concentrations under 30 ppm.

HOW TO PROTECT YOUR FAMILY

CAUTION- The SAFE-T-ALERT™ 70 Series combination CO and Gas Alarm is designed to protect individuals from the acute effects of carbon monoxide exposure and gas leaks. It will not fully safeguard individuals with specific medical conditions. If in doubt, consult a medical practitioner.

To protect your family, you should:

- **INSTALL THE ALARM PROPERLY.** Carefully read and follow ALL the instructions in this manual. Test your unit every week. Alarms that do not work will not alert you to hazardous levels of CO or explosive gas. See the section, Test Procedure, in this manual for further information.
- **MAKE REGULAR VISUAL INSPECTIONS.** Check all fuel burning equipment including gas water-heaters, kitchen gas stoves, space heaters, gas dryers and all pilot lights. Check the color of the pilot flame. The color should be blue.
- **MAKE REGULAR VISUAL INSPECTIONS OF THE ENGINE AND GENERATOR EXHAUST SYSTEMS.** Cracked exhaust systems can allow CO to enter the living area.
- **PROFESSIONALLY MAINTAIN YOUR ENGINE AND GENERATOR.** Although gas engines and generators produce CO, a poorly tuned engine and generator will produce greater amounts CO.
- If you smell unusual odors you may have a gas leak, immediately call a local propane gas supplier or fire department to check for possible leaks.

WHERE TO INSTALL

- Install the 70 Series in the kitchen area near sources of a potential gas leak. Some potential sources are a furnace, refrigerator, stove or oven. If potential sources of a gas leak are in separate areas, MTI recommends installing a gas alarm in each area.
- The NFPA and Consumer Product Safety Commission recommends installing a CO alarm outside the sleeping area. The 70 Series combination CO and gas alarm complies with that recommendation.
- INSTALL ALARM at least 4inches off the floor but no more than 20 inches off the floor.

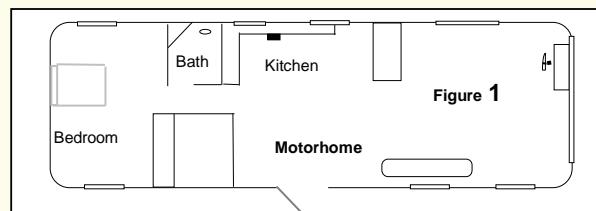
WHERE NOT TO INSTALL 70 SERIES ALARMS

- DO NOT INSTALL behind furniture, drapes, in closets or areas that will block air flow to the alarm.
- DO NOT INSTALL within 12 inches (30cm) of opening windows, exterior doors, heating or return vents, or other drafty areas..
- DO NOT INSTALL on an outside wall.
- DO NOT INSTALL on a wall switch controlled by a power line, ground fault circuit or to a circuit breaker.
- NOTE: Older RVs may have little or no insulation and therefore are draftier. Carefully consider mounting locations.

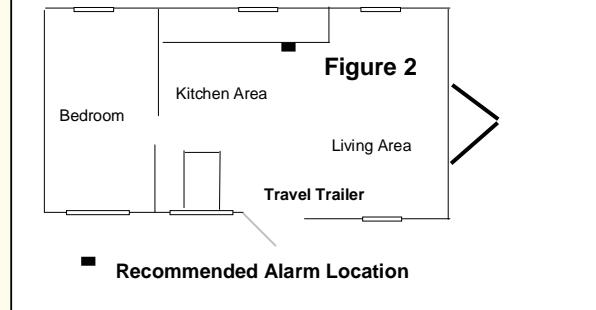
⚠ WARNING

ATTENTION: CCI CONTROLS GAS LEAK DETECTOR REPLACEMENT - DO NOT CONNECT ANY SAFE-T-ALERT alarm to non Safe-T-Alert supplied solenoids. You must use the new solenoid included in your Kit.

The following diagrams provide additional alarm installation information:



■ Recommended Alarm Location



■ Recommended Alarm Location

INSTALLATION INSTRUCTIONS

Models

70-742 70-742-MS 70-742-R Kit
70-742-R-MS Kit

⚠ WARNING

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A MALFUNCTION OR FAILURE OF THE ALARM AND MAY VOID THE WARRANTY.

SHOCK HAZARD: Turn off power before installing.

Power Supply 12 VDC.

Recommended Wire Size 14 GA. TO 18 GA.

Connect the alarm to a properly fused circuit, maximum over protection device rating 15 amps.

All connections must be in accordance with the National Electrical Code in the United States and the Canadian Electric Code in Canada .

Connect to wiring or circuit that CANNOT be turned off by a switch or ground fault protector. Only use UL or recognized permanent wire connectors. It is acceptable to connect the 70 Series CO / LP gas alarm to the main disconnect. The alarm will be off along with all other 12 volt equipment when the main disconnect is turned to the off position. The RV must not be occupied when the main disconnect is in the off position.

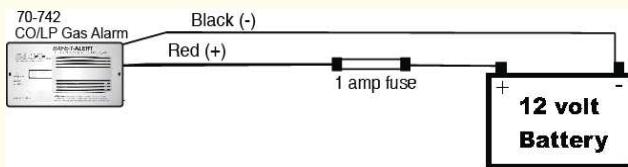
INSTALLATION INSTRUCTIONS

Follow these instructions carefully. Failure to follow these instructions can damage the unit and void the warranty.

Important: The 70 Series case requires 1 1/2" (38mm) clearance.

MODEL 70-742

- Basic Model 70-742** - Select a wall location between 4" and 20" off the floor. Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole.
- Connect Supply (+) to the Red wire lead. Install a 1 amp fuse in the positive (+) circuit. Connect the Black wire to the 12 volt Ground (-).
- Reconnect the power supply. Warm up 10 minutes then test the alarm.



MODEL 70-742-R KIT

- Model 70-742-R Kit - With Normally Closed relay.** This unit supplies a relay with contacts rated 12 VDC, 3 amp (max). The relay is energized whenever the alarm is operational. It may be used to shut down a generator or to open an (optional) gas solenoid valve. The relay may also be used to interface to alarm systems, using either the normally closed or normally open contact, depending on the requirements of the alarm system. In the event of an alarm the relay will shut off. It will automatically energize after the unsafe levels of CO or explosive gas clears.

Select a wall location between 4" and 20" off the floor. Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole.

- Mount the solenoid according to its separate instructions. You must install the solenoid included with the 70-742-R Kit. Do not connect to an existing installed solenoid. SEE: SPECIAL WIRING**

NOTICE. Connect the Red wire and either White wire from the alarm to the 12 volt supply (+). Install a 5 amp fuse in the positive (+) circuit between this connection and the battery.

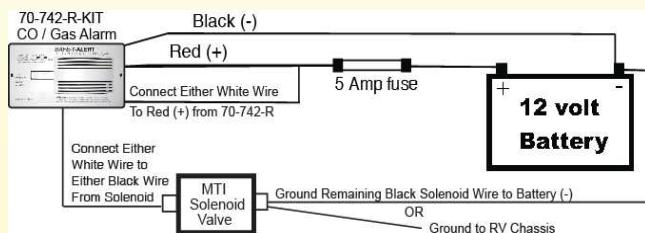
Connect the Black wire to the 12 volt Ground (-).

- Relay Output** - Connect the remaining White wire from the alarm to either black wire from the solenoid.

Ground the remaining Black wire from the solenoid to the negative side (-) of the 12 volt battery OR ground it to the RV Chassis.

Note: Some devices do not require correct polarity and can be connected to either terminal or wire.

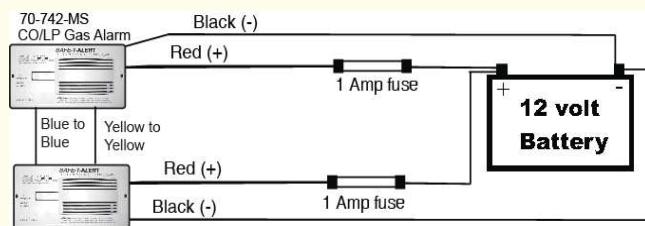
- Reconnect the power supply. Warm up 10 minutes then test the alarm.**



DANGER - FIRE RISK - CCI CONTROLS GAS LEAK DETECTOR REPLACEMENT
- DO NOT CONNECT A SAFE-T-ALERT alarm to non Safe-T-Alert supplied solenoid. You must use the new solenoid included in your Kit. DO NOT CONNECT TO A CCI SOLENOID.

MODEL 70-742-MS

- Model 70-742-MS Multi-station interconnect, (Maximum 10 units and 2000 feet of wire).** Allows multiple 70-742-MS alarms to be connected together. When one of the alarms detects unsafe levels of CO or gas it will activate. It will also activate the audible alarm of all the interconnected units. Only the alarm that detected CO or gas will have its Red LED light lit up so that you can determine the cause of the alarm. Select a wall location no between 4" and 20" off the floor. Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole.
- Connect the Red wire to the 12 volt supply (+). Install a 1 amp fuse in the positive circuit (+). **Note you must use a separate 1 amp fuse for each alarm.** Connect the Black wire to the 12 volt Ground (-).
- Interconnect Wiring – Connect Blue wires from each alarm and Yellow wires for each alarm. Continue connecting in series (Daisy Chain).
- Reconnect the power supply. Warm up 10 minutes then test the alarm.



MODEL 70-742-R-MS KIT

- Model 70-742-R-MS Kit - With Normally Closed relay.** This unit supplies a relay with contacts rated 12 VDC, 3 amp (max). The relay is energized whenever the alarm is operational. It may be used to shut down a generator or to open an (optional) gas solenoid valve. The relay may also be used to interface to alarm systems, using either the normally closed or normally open contact, depending on the requirements of the alarm system. In the event of an alarm the relay will shut off. It will automatically energize after the unsafe levels of CO or gas clears.

Select a wall location between 4" and 20" off the floor. Cut a 5 5/8" (143mm) W x 3 1/8" (79mm) H hole.

- Mount the solenoid according to its separate instructions. You must install the solenoid included with the 70-742-R-MS KIT. Do not connect to an existing installed solenoid. SEE: SPECIAL WIRING**

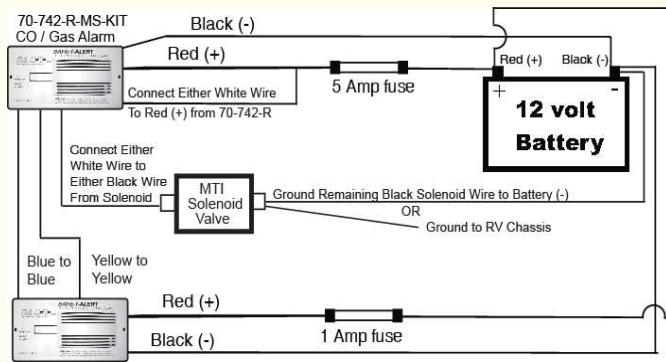
NOTICE. Connect the Red wire and either White wire from the alarm to the 12 volt supply (+). Install a 5 amp fuse in the positive (+) circuit between this connection and the battery. **Note you must use a separate 5 amp fuse for each alarm.** Connect the Black wire to the 12 volt Ground (-).

- Relay Output** - Connect the remaining White wire from the alarm to either black wire from the solenoid. Ground the remaining Black wire from the solenoid to the negative side (-) of the 12 volt battery OR ground it to the RV Chassis.

Note: Some devices do not require correct polarity and can be connected to either terminal or wire.

- Interconnect Wiring** - Connect Blue wires from each alarm and Yellow wires from each alarm. Continue connecting in series (Daisy Chain).
- Reconnect the power supply. Warm up 10 minutes then test the alarm.**

Model 70-742-R-MS-KIT Wiring -



SPECIAL WIRING NOTICE: When replacing CCI Controls LP Gas Leak Detectors they may have two power leads. Safe-T-Alert units only have one power lead. Simply connect the Safe-T-Alert power lead (Red) to the coach/house power supply and cap or remove the other power lead. **DO NOT CONNECT BOTH POWER LEADS TO THE Safe-T-Alert ALARM** – this will result in a dead chassis battery.

Only use UL or recognized permanent wire connectors to replace any unit installed with spade connectors or wire nuts.

TEST PROCEDURE



WARNING

TO REDUCE THE RISK OF CARBON MONOXIDE POISONING OR PROPANE GAS EXPLOSION, TEST THIS ALARM'S OPERATION AFTER THE RV HAS BEEN IN STORAGE, BEFORE EACH TRIP AND AT LEAST ONCE PER WEEK DURING USE BY PRESSING THE TEST/RESET BUTTON.



WARNING

WARNING: THE TEST BUTTON ONLY TESTS THE ALARM CIRCUIT NOT THE SENSORS. YOU MAY USE PROPANE OR BUTANE GAS TO TEST THE GAS SENSOR. Note it may take up to 10 seconds for the alarm to sound.

TO TEST THE CO SENSOR USE A CAN OF SAFE-T-ALERT CO TEST GAS TO TEST THE 400 PPM CALABRATION POINT. DO NOT TRY TO GENERATE CO TO TEST THE ALARM. The TEST/RESET button tests all ELECTRICAL functions of the alarm. It does not check the sensor operation.

The alarm may be tested at any time. The TEST/Mute switch is located on the front of the alarm. Press and hold the test button for 1 second. **IMPORTANT - If this alarm does not test properly return it immediately for repair or replacement.** If the alarm is over five years old replace it.

OPERATION

When the unit is first powered up, the CO sensor requires a ten (10) minute initial warm-up period to clean the sensor element and achieve stabilization. The GREEN LED indicator will flash on and off during the 10 minute warm-up period. This unit cannot go into a alarm during the warm-up period. See Test Procedure in this manual. After the warm-up period, the GREEN power ON indicator should glow continuously. If the ON indicator light does not light, see the section, **Trouble-Shooting Guide**, in this manual for further information. **Do not attempt to fix it yourself.**

Gas Alarm: When you power the alarm, it has a warm-up period of approximately 1 minute. This unit cannot go into a gas alarm during the warm-up period. After 1 minute the alarm can detect explosive gas and will energize the relay on models 70-742-R Kit and 70-742-R-MS Kit.

Simultaneous CO and Gas Alarms— Because the risk of a propane gas explosion is generally a more serious danger, your alarm unit gives the gas alarm a higher priority during simultaneous alarm condition.

If your unit generates alarms for both Gas and CO at the same time, the gas LED will flash red and the beeper will sound. The CO LED will be a solid Red until the CO is ventilated out of the RV, at which time the LED will return to the Green operational/safe color.

Brownout Protection - The unit can tolerate short power interruptions and brownouts where the circuit voltage drops as low as 1 VDC. If the brownout lasts too long, the unit will reset and operate as described above.

LOW POWER OPERATION

This alarm will operate normally down to 7 VDC. Do not operate this alarm below 7 VDC.

VISUAL AND AUDIBLE ALARM SIGNALS

This SAFE-T-ALERT™ CO / Propane Gas Alarm is designed to be easy-to-operate. The alarm has two indicator lights that display a specific color for each monitored condition. There also is a matching sound pattern for alarm conditions.

CO ALARM

The Red CO LED will flash and the alarm will sound 4 "BEEPS" then silent for 5 Seconds. These signals indicates that the CO level is over 70 ppm. **IMMEDIATE ACTION IS REQUIRED.** See **Procedures To Take During An Alarm.** This cycle will continue until the TEST/Mute button on the front of alarm is pressed. Ventilate the RV. The RED light will stay ON until the CO has cleared, or the alarm will reactivate in approximately 6 minutes if the CO is still present. **DO NOT RE-ENTER THE RV.** This alarm will return to normal operation after the RV's properly ventilated.

PROPANE GAS ALARM

The Red LED will Flash and the alarm will sound a steady tone whenever a dangerous level of propane or methane gas is detected. **IMMEDIATE ACTION IS REQUIRED.** See **Procedures Take During A Gas Alarm**

The detector will continue to alarm until the Test/Mute switch on the front of the alarm is pressed. Ventilate the RV. The RED Gas LED will continue to flash until the gas has cleared, or the gas alarm will reactivate in approximately 5 minutes if the gas is still present. **DO NOT RE-ENTER THE RV.** This alarm will return to normal operation after the RV's properly ventilated.

MALFUNCTION/SERVICE SIGNAL If any malfunction is detected, the Gas LED will remain off and the Operational/CO LED will alternate Red/Green and the alarm will sound once every 15 seconds. Press the Test/Mute button. If the Test/Mute button does not clear the signals, check the battery voltage. **If the battery voltage is not low and the unit will not return to normal operation, immediately remove the alarm and return for service or warranty replacement.** See the warranty section in this manual.

OPERATION	AUDIBLE SIGNAL	VISUAL SIGNAL
NORMAL	NONE	STEADY GREEN
CO ALARM	4 "BEEPS" 5 SECONDS OFF	STEADY RED
PROPANE ALARM	CONSTANT	FLASHING RED
ALARM MALFUNCTION	BEEP" EVERY 25 SECONDS	ALTERNATING RED/GREEN
END OF LIFE SIGNAL	BEEPS EVERY 25-30 SECONDS	RED RED GREEN GREEN FLASHING

MEMORY FEATURE – This alarm has a Peak Level Memory feature that remembers the approximate amount of CO that activated it. The memory feature does not record brief exposure to CO that would not activate the alarm. This alarm will indicate one of four levels with chirps and blinks with the CO LED:

To activate alarm level memory, press the TEST/RESET button for less than 1 second.

- 1 Chirp and 1 Green Blink = CO memory is clear
- 2 Chirps and 2 Red = below 100 ppm
- 3 Chirps and 3 Red Blinks = below 200 ppm
- 4 Chirps and 4 Red Blinks = above 200 ppm

TROUBLE-SHOOTING GUIDE

Use this chart to trouble-shoot problems with this 70 Series Alarm.

PROBLEM	CAUSE/SOLUTION
Green Operational LED Off	1. Wire Connection 2. Reversed Wiring 3. Main Power Off 4. Missing or Blown Fuse 5. Contact Customer Service
No Sound When Testing	Contact Customer Service
No Red LED When Testing	Contact Customer Service
Locked In Alarm	Contact Customer Service
MALFUNCTION ALARM	
LED Flashing Red/Green - Beeps Every 25 Seconds	1. Check Battery Voltage
Battery Voltage is Good and Alarm Will Not Reset	2. Contact Customer Service
End of Life Signal	1. Press Test/Reset Button to reset for 72 Hours. Can repeat for up to 30 Days
LED Flashing RED RED GREEN GREEN Beeps Every 25 Seconds	2. Replace Alarm

HOW TO TAKE CARE OF YOUR ALARM

This CO / Propane Gas Alarm is designed to be as maintenance free as possible. To keep your alarm in good working order, you must:

- **TEST THE ALARM WEEKLY** using the Test/Reset Button. See the section, Test Procedure, in this manual for further information.
- Test the Alarm every six months with Safe-T-Alert CO Test Gas and with a butane lighter. See Test Procedure Section.
- **VACUUM THE DUST OFF THE ALARM COVER**. At least once a year (more frequently in dusty locations), use the soft brush attachment from your vacuum to clean the alarm covers.
- **CLEAN THE ALARM COVER WHEN DIRTY**. Wash the alarm cover by hand. Use a cloth dampened in clean water. Dry with a soft cloth.
- **DO NOT SPRAY CLEANING AGENTS OR WAXES DIRECTLY ONTO THE FRONT PANEL**. This action may damage the sensor, cause an alarm or cause an alarm malfunction.
- **OBSERVE THE COLOR OF THE INDICATOR LIGHT**. At frequent intervals and during your weekly test, check the indicator light on the front panel of the alarm.
- See the section, Operation, in this manual for further information.

PROCEDURES TO TAKE DURING AN ALARM

Follow the alarm procedures for your country. The emergency number depends on your travel location.

PROCEDURES TO TAKE DURING GAS ALARM

1. Turn off all Gas appliances (Stove, Heater, Furnace, Refrigerator, etc.), extinguish all flames and smoking material.
2. Press the Test/Mute switch. DO NOT DISCONNECT POWER
3. Evacuate the RV. Make sure everyone is accounted for. Leave the door and windows open.
4. Turn off the propane tank valve.
5. Determine and repair the source of the leak. Get professional help if necessary. **CAUTION- DO NOT RE-ENTER UNTIL THE PROBLEM IS CORRECTED.**

PROCEDURES TO TAKE DURING A CO ALARM IN THE USA

⚠ WARNING: Actuation of this device indicates the presence of carbon monoxide (CO) or propane gases, which can KILL YOU. If signal sounds (4 beeps and flashing or solid red light): **1**) Operate the Test/Mute button; **2**) Call your emergency local service (Phone Number _____) (fire department or 911); **3**) Immediately move to fresh air - outdoors or by an open door/window. Check that all persons are accounted for. Do not reenter the premises or move away from the open door / window until the emergency responders have arrived, the premises have been aired out and your alarm remains in its normal operation. **4**) After following steps 1-3, if your alarm reactivates within a 24-hour period, repeat steps 1-3 and call a qualified appliance technician. (Phone Number _____) to investigate for sources of CO from fuel burning equipment and appliances, and inspect for proper operation of this equipment. If problems are identified during this inspection have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturers' instructions, or contact the manufacturer directly, for more information about CO safety and this equipment. Make sure that the motor vehicles are not, and have not been, operating in an attached garage or adjacent to the residence.

PROCEDURES TO TAKE DURING A CO ALARM IN CANADA

⚠ WARNING: Actuation of this device indicates the presence of carbon monoxide (CO) and propane gases which can KILL YOU. If signal sounds (4 beeps and flashing or solid red light: 1) Operate the Test/Mute. Immediately move to fresh air - outdoors or by an open door/window. Check that all persons are accounted for. Do not reenter the premises or move away from the open door/window until the emergency responders have arrived, the premises have been aired out, and your alarm remains in its normal condition; 2) call your emergency local service (telephone number _____) (Fire department or 911).

End of Life Signal – The Sensor has a 5 Year Service Life

All 70 Series models include an End of Life (EOL) Signal indicating the sensor has reached the end of its service life and you must replace the alarm. The signal is the LED flashing RED RED GREEN GREEN with a beep every 25-30 seconds. The EOL Signal may be reset by pushing TEST / RESET button on the alarm. This will reset the EOL Signal for a period of 72 hours (3 days) for a total of up to 30 days. After 30 days the signal cannot be reset and the alarm must be replaced. **DO NOT DISCONNECT THE ALARM UNTIL YOU HAVE A REPLACEMENT ALARM AVAILABLE TO INSTALL.**

MODELS	70-742, 70-742-MS, 70-742-R Kit, 70-742-R-MS Kit
POWER SUPPLY	12 VDC
NOMINAL CURRENT DRAW	108 mA
OPERATIONAL TEMPERATURE	-40° F to +150° F -40° C to +66° C
RELATIVE HUMIDITY	15% (+/- 5%) to 95% (+/- 4%)
AUDIBLE OUTPUT	85 dB @ 10 feet
GAS ALARM TRIGGER	< 25% of the LEL of Propane and Methane
GAS LEVEL CONFIRMATION	8 Second delay before alarm
CO ALARM TRIGGER	4 -15 Minutes @ 400 ppm
CASE DIMENSIONS	6.5" W x 3.5" H x 1.38" D
WARRANTY	1 Year Limited
TESTING LABORATORY STANDARD	Underwriters Laboratories UL 1484, Fourth Edition UL 2034, Third Edition

LIMITED PRODUCTS WARRANTY

MTI INDUSTRIES, INC. warrants to the original retail purchaser that its products will be free from defects of material or workmanship for a period of One (1) year from the date of retail purchase. If proven to have been defective in original materials or workmanship and returned, delivery costs prepaid, **MTI INDUSTRIES, INC.** will replace this product free of charge.

LIMITS OF WARRANTY

Replacement is your exclusive remedy under this limited warranty or any other warranty (including any implied warranty of merchantability for a particular purpose). Any and all implied warranties or merchantability or fitness for a particular purpose shall be limited to the warranty period from the original date of retail purchase. **MTI INDUSTRIES, INC.**, its dealers and distributors shall in no case be responsible or in any way liable for any incidental or consequential damages for any reason. Some states do not allow the limitation or exclusion of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific rights, and you may also have other rights, which may vary, from state to state.

PRODUCT NOT WARRANTED

NOTE- There are no user serviceable parts inside the case. Opening any SAFE-T-ALERT™ product for any reason voids the warranty. This warranty does not cover damage or failure resulting from acts of God, abuse, misuse, neglect, or faulty installation.

WARRANTY RETURN PROCEDURES

It is MTI's experience that a CO / Propane Gas Alarm is sounding for a reason. Call, ask your dealer to call, or e-mail our Customer Service Department (as listed below) to trouble shoot the situation.

Customer Service Phone No. - 800-383-0269

Fax No. 847-546-9007

E-mail Service@mtiindustries.com

Web Site: www.mtiindustries.com

If Customer Service determines that the unit is defective, a Replacement Authorization (RA) number will be issued. **No product will be accepted for service or replacement without first obtaining a RA number.**

If authorized, return this product to:

MTI Industries, Inc.

Warranty Dept. RA # **(INSERT RA NUMBER HERE)**

31632 N. Ellis Drive Unit 301

Volo, IL 60073

NOTE: Mark the RA number in the area shown on the outside of the box!

NOTE:

70-742 is the basic unit (Single-station) with no interconnect, no relay, and no solenoid.

70-742-MS is the Multi-station unit with interconnect, no relay, and no solenoid.

70-742-R Kit is the basic unit (Single-station) with no interconnect, with a relay, and with a solenoid.

70-742-R-MS Kit is the Multi-station unit with interconnect, with a relay, and with a solenoid.

OWNERS REPLACEMENT RECORD

Replace this SAFE-T-ALERT™ 70 SERIES CO / GAS propane alarm within 5 years, of the production date on the back of the alarm.

Production Date _____

Replace Date _____

Installer _____

NOTE: The replacement date indicates the date beyond which the device may no longer detect accurately.

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Parker Solenoid Valve

Your LP Detector is installed with an electric Solenoid Valve which will shut off the flow of LP Gas to your motorhome in the event that the LP Detector senses gas. This automatic valve will help deter the harmful effects of unwanted LP Gas inside your motorhome. In the event that your LP Detector trips, open all windows and doors to immediately “FLUSH” the air inside your motorhome.

Gold Ring™ Solenoid Valve Installation and Maintenance Instructions



2-Way Direct Acting Combustion Valves Normally Closed

NEMA 1
Series NM22-0501
NPT 3/8
Orifice 5/16

Parker Hannifin Corporation
Skinner Valve Division

Bulletin 7262 Effective 1 Sept 87
Revision C Revised 1 Jun 91

Warnings

1. Check nameplate for correct catalog number, pressure, voltage and service. Do not install if unsuitable.
2. For protection and proper operation of the solenoid valve, install a strainer or filter suitable for the service involved as close to the valve inlet as possible.
3. This valve requires periodic cleaning and inspection depending on the service. This should be done at least once every 12 months or every 500,000 cycles, whichever occurs first.
4. Turn off electrical power supply and line pressure to the valve. Bleed trapped pressure from the lines before inspecting, cleaning, servicing, or repairing the valve.

Description:

NM22 solenoid valves are direct-acting and have integral seats.

Operation:

NORMALLY CLOSED

Closed when de-energized; open when energized.

Installation:

1. Application

Refer to Parker Gold Ring™ catalog for application information.

2. Positioning

Unit valves may be mounted in any position. It is recommended that unit valves be mounted vertical and upright to prevent accumulation of debris in plunger tube.

3. Piping

Connect piping to valve according to markings on valve body. Apply pipe compound or sealing material sparingly to male pipe threads only. If applied to valve thread, it may enter valve and cause operational difficulties. Pipe strain should be avoided by proper support and alignment of piping. **Do not use valve as a lever when tightening pipe.**

4. Wiring

Wiring must comply with local and national electrical codes.

5. Solenoid Temperature

Standard catalog valves are supplied with coils designed for continuous duty service. When the solenoid is energized for a long period, the solenoid frame becomes hot and can be touched with the bare hand for only an instant. This is a safe operating temperature. Excessive heating will be indicated by the smoke and odor of burning coil insulation.

Maintenance:

1. Cleaning

Periodic cleaning of solenoid valves is recommended. Frequency will depend on fluid and service, but should never be less than every 12 months or 500,000 cycles whichever occurs first. In general, if the voltage to the coil is correct, sluggish operation, excessive leakage or noise will indicate cleaning or repair is required. Clean valve filter or strainer when cleaning valve. See valve disassembly and reassembly instructions below.

2. Preventative Maintenance

- a. Keep media flowing through valve as free from dirt and foreign matter as possible.
- b. While not in service, operate valve at least once a month to insure proper opening and closing.
- c. Periodic inspection (depending on media and service conditions) of internal valve parts for damage or excessive wear is recommended. Inspect at least every 12 months or 500,000 cycles, whichever occurs first. Thoroughly clean all parts. Replace worn or damage parts with Gold Ring™ Rebuild Kit. Use all parts for best results. Clean valve filter or strainer when cleaning valve.

3. Troubleshooting Guide

a. Faulty Controls Circuit

Check the electrical system by energizing the solenoid. A metallic click signifies solenoid is operating. Absence of click indicates loss of power supply. Check for loose or blown out fuses, open-circuit or grounded coil, broken lead wires or splices.

b. Burned-Out Coil

Check for open-circuited coil. Replace coil if necessary.

c. Low Voltage

Check voltage across the coil lead. Voltage must be least 85% of nameplate rating.

d. Incorrect Pressure

Check valve pressure. Pressure to valve must be within range specified on nameplate.

e. Excessive Leakage

Disassemble valve and clean all parts. Replace worn or damaged parts with a Gold Ring™ Rebuild Kit. Use all parts for best results. Install filtration if indicated. See valve disassembly and reassembly instructions.

4. Coil Replacement

Turn off electrical power supply and disconnect coil lead wires. Refer to exploded view.

5. Valve Disassembly and Reassembly (Refer to Exploded Views)

Turn off electrical power supply and line pressure. Bleed trapped pressure from lines.

- a. To replace coil, remove the two (2) screws and remove the flux frame and coil off the eyelet. Remove coil and spring washer from flux frame. The coil can now be replaced.
- b. Lift off the enclosure tube assembly and the plunger assembly.
- c. All parts are accessible for cleaning or replacement.
- d. Inspect valve body seat for scratches, nicks, dents or other blemishes. Replace if damaged.
- e. Reassemble in reverse order of disassembly, paying careful attention to Exploded Views provided. Apply 44 ± 4 inch pounds of torque to the screws. Lubricate all gaskets with DOW CORNING® DC 200 oil or an equivalent high grade silicone oil.
- f. DO NOT alter, modify, or use parts not obtained in Rebuild Kit from original manufacturer.

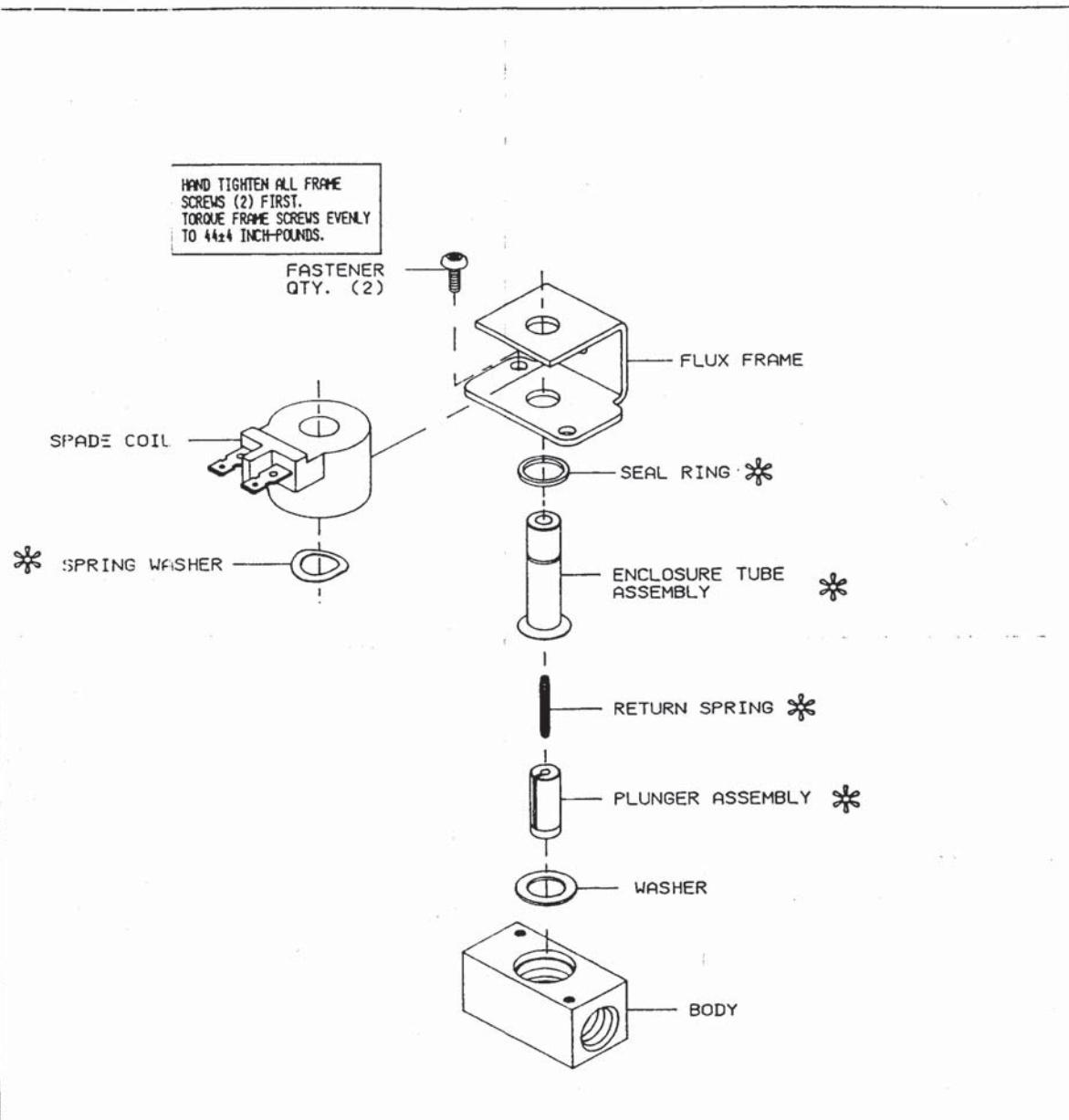
Parker Gold Ring™ Rebuild Kits

Rebuild Kits and Unit Solenoid are available for Gold Ring™ Valves. Parts marked with an asterisk (*) are included in Rebuild Kits (See Exploded Views).

Ordering Information For Rebuild Kits

When ordering Parker Gold Ring™ Rebuild Kits or Unit Solenoids, specify Valve Catalog Number, Serial Number and Voltage.

**NORMALLY CLOSED
3/8" NPT
ALUMINUM**



1. Electrical Rating:

Voltage: 24V
 Frequency: 60HZ
 Rated Current: .294A
 Minimum Current: .237A
 Maximum Current: .337A

* PARTS INCLUDED IN
REBUILD KITS

2. Ambient Operating Temperature Limits:

Maximum 125°F
Minimum 32°F

Parker Hannifin Corporation
147 W. Hwy Road
Madison, MS 39110
(601) 356-4123

High Definition Television Antenna

An external antenna is mounted on the roof of your motorhome. This antenna will receive and supply HD signals over the air to your television.

The signal can vary while the motor home is in motion, parked in a fringe area, or near large obstacles. The antenna automatically searches your immediate area to "lock on" to the strongest television signal it can find. Moving the location of your motorhome will affect the strength and quality of your television reception.



WiFi and Channel Search

The Winegard Connect 2.0+ is a combination High Definition Television Antenna and Wifi Booster.

When both Green Lights are on, the unit is operational and functioning properly. To view television broadcasts, do a channel search on your T.V. and operate normally.

The WINEGARD Wifi system is automatic. If you have VERIZON or A.T.T. you should consult your owner's manual to learn about how to make your system work by changing the SIM CARD in the unit.

See the Owner's Manual or call 1-800-320-9992 for support.



Insert HD Television Antenna

Manual Here

Back-Up Camera / Radio



FUSION RV INFOTAINMENT SYSTEM



A QUALITY EXPERIENCE

SMART CONTROL

The large 8" daylight viewable touch screen allows for easy navigation and music selection with FUSION preview and gesture control. Smartphone app remote and steering wheel controls are also available on compatible vehicles for quick access to music or handsfree calling.

BLUETOOTH AUDIO STREAMING

Connect any compatible Bluetooth smartphone or media device for endless streaming of the family's favorite soundtracks on the open road. With Bluetooth the latest streaming services such as Pandora, Spotify and Apple Music can be enjoyed for a limitless source of entertainment (individual apps are required on connected device).

SIRIUSXM SATELLITE RADIO

With more than 175 channels available on the SiriusXM Satellite network a host of entertainment is on call 24/7. **Note:** A SiriusXM vehicle connect tuner and subscription are required (only available in the United States of America).



HANDS-FREE

On the go real time driving navigation keeps the driver's eyes on the road while the audio prompts lead the way.

If a phone call comes in, the built-in hands-free calling function allows the user to stay focused while the integrated microphone and connected speakers make conversation flawless.

REAR VIEW CAMERA COMPATIBLE

To ensure the safety of those onboard and outside the RV is prioritized, the FUSION RV-IN801 is ready to display the rear view camera feed from a compatible camera.

For the convenience and safety of others, a rear camera feed enables the driver to observe the following traffic and/or tow behinds for complete peace of mind - Safety made Simple.

CUSTOMIZED RV ROUTING



CUSTOM ROUTING

Not all roads are created equal and the size of your customer's RV plays a crucial role in deciding which route to take. By creating a unique RV user profile, inputting height, length, width and weight, the RV-IN801 can suggest the most efficient route to their destination – no more backtracking and close calls.

Pre-loaded with RV-specific route restrictions and warnings, including: bridge heights, sharp curves and related information for most major roads and highways. The RV-IN801 puts confidence in the driver's seat.

ROAD WARNINGS

REAL DIRECTIONS



DIRECTORIES

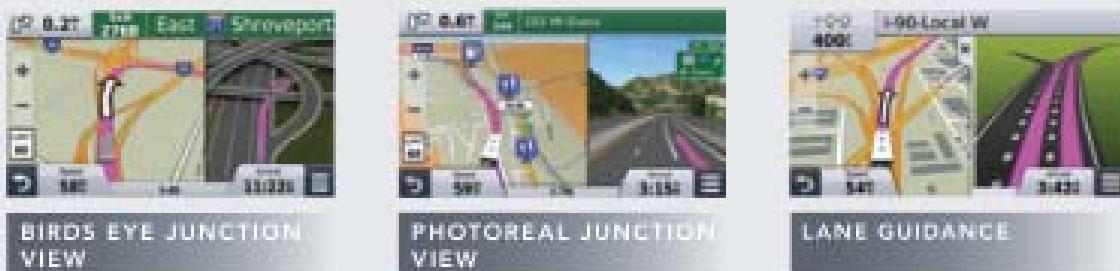
SEARCH & FILTER

UP AHEAD INFORMATION

With a database of close to 20,000 RV parks and campgrounds in Northern America, including state parks, national parks and privately owned campgrounds, the RV-IN801 is a wealth of knowledge and the perfect companion during an on-road expedition.

Destinations can be filtered by amenities to ensure there are no surprises upon arrival, and in addition the database holds the locations of RV-specific facilities such as towing, tire repair and truck stops which can be easily added to the navigation for seamless driving.

THE CONFIDENCE TO EXPLORE



Clearly spoken directions and easy to read information will ensure safe travels and happy campers. Exclusive features such as lane guidance, birds eye junction and photoreal junction view keep the driver firmly on the right path, while the brightly colored on-screen arrows lead the way.

MCD American Duo Roller Shades

Your coach is equipped with MCD American Duo Roller Shades. This system allows you to use the Day Shade or the Night Time Privacy Shade. Refer to the MCD Innovations Owner's manual for care and warranty instructions.



3303 N. McDonald St.
McKinney, TX 75071
972.548.1850
800.804.1757
www.mcdinnovations.com

Insert MCD American Duo

Owner's Manual Here

Illumagrip Entry Handle

Entry Handles installed by Coach House Motorhomes are illuminated by L.E.D. bulbs which are connected to the outside lighting circuits. These handles will light up when the porch/step light circuit is turned on. Follow the care and cleaning guide on the following page for a long life of these handles.



Caring for your IllumaGrip™ Assist Handles

CLEANING:

These handles must be cleaned with mild soap and water only.

Use of any harsh or abrasive cleaning agents will void all warranties.

Clean with lukewarm water a mild, nonabrasive cleaner and a clean, soft cloth.

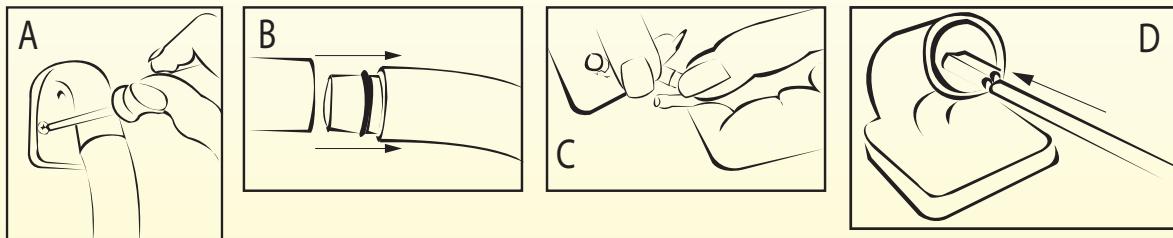
Use only light pressure and avoid rubbing dirt or grit into the surface.

Turn the cloth often and replace with a clean cloth frequently.

LED CHANGING:

Many of our handles are lit with an LED assembly in the end cap.
If you need to replace the LED, follow these simple instructions.

1. Remove the screws holding the handle to the mounting surface. (See Fig. A)
2. Gently pull the handle from surface, being careful not to pull too hard on the wiring.
3. Remove the top end cap where the LED is housed. (See Fig. B)
4. Locate the LED assembly wiring that will exit the top end cap.
5. Pull the quick disconnect fittings apart. (See Fig. C) Be careful not to let the wiring fall back into the wall.
We suggest taping the wiring to the side of the mounting surface until you're ready to connect the new LED
6. Push the LED wires until the LED assembly exits the front of the end cap.
7. Pull the LED completely out of the end cap.
8. Push the new LED assembly into the front of the end cap making sure the wires exit through the back side of the end cap. (See Fig. D)
9. Connect the quick disconnect fittings from the new LED assembly to the wiring.
10. Bring power to your light to make sure that the connection is correct. LEDs are polarity sensitive.
If the LED will not light, reverse the connections (quick disconnect fittings)
11. Push the wiring into the wall and reattach the screws holding the handle to the wall.



CORPORATE: 230 E. Lakewood Blvd., PO Box 8338, Holland, MI 49422-8338

Phone: 616-396-1355 ~ Fax: 616-396-1152

ELKHART: 1015 Verdant, Elkhart, IN 46516

Phone 574-389-8986 - Fax: 574-389-8687

E-Mail: sales@itc-us.com

Websites: www.itc-marine.com; www.itc-rv.com; www.itc-industrial.com

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Rev: 022019

3480 Technology Drive • Nokomis • Florida
(800) 235-0984 • (941) 485-0984 • (941) 488-4095 FAX
www.coachhouserv.com

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IllumaGrip™ Installation Instructions

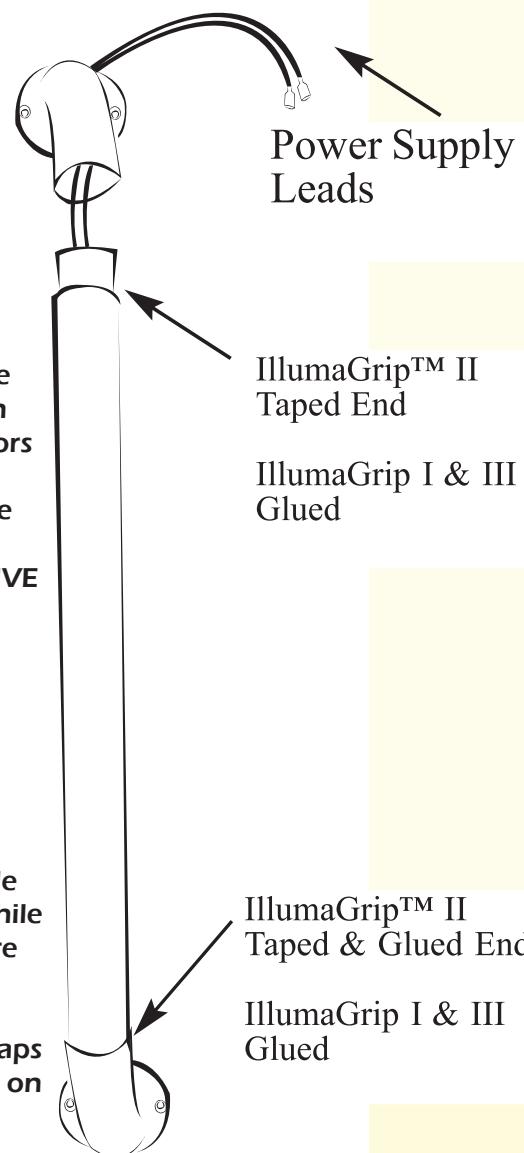
The IllumaGrip™ series of assist handles are shipped completely assembled and either glued or taped in final installation position. This assure that the handle will be in the correct orientation when installed on your unit. In order to maintain the correct orientation of the components, the following installation procedure is recommended.

NOTE:

IllumaGrip™ II end caps are shipped with tape around the joints between the acrylic handle and the end cap. Leave this tape in place until installation is complete. IllumaGrip™ I and III end caps are glued to the acrylic.

MOUNTING YOUR HANDLES:

1. Align the IllumaGrip™ in the desired mounting location and mark screw holes.
IF YOUR HANDLE IS UNLIT, PROCEED WITH STEPS 3-5
IF YOUR HANDLE IS LIT WITH AN LED: Pre-drill the wire access hole through the wall and locate the connection wiring. Connect the supplied wire pigtail and connectors to your internal wiring. Test the light.
CAUTION: LED's are polarity sensitive. The **BLACK** wire must connect to the **POSITIVE** side of the vehicle's 12 volt line. The **WHITE** wire must connect to the **NEGATIVE (GROUND)** of the vehicle's 12 volt line.
2. Feed the wires from the top end cap through the hole you made in step 1.
3. Install #8 flat head screws to mount the end caps.
4. Apply a slight downward pressure on the top end cap may assist in alignment of the top end cap of the handle to the unit and hold the end cap firmly to the acrylic while installing. Torque all screws to the point where they are firmly seated into the countersink of the base.
5. Remove the shipping tape (if present) from both end caps where they join to the acrylic and the protective sleeve on the acrylic (if present).



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Phone 574-389-8986 - Fax: 574-389-8687

E-Mail: sales@itc-us.com

Websites: www.itc-marine.com; www.itc-rv.com; www.itc-industrial.com

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ITC INCORPORATED CONDITIONS OF SALE (Quotation/Confirmation)

1. Expiration of Quotation. Any quotation by ITC, Incorporated ("ITC") will be held open for acceptance for a period of 60 days from the date of the quotation; however, ITC reserves the right to correct clerical and typographical errors, including price and quantity numbers, within 15 days after acceptance of an order based on the quotation.
2. Acceptance. This order is subject to the following terms and conditions. Terms stated by the Buyer in any other communication, prior or subsequent hereto, shall NOT be binding on ITC if different from or in addition to any of the provisions hereof or the quotation, unless expressly agreed to in writing by ITC. Acceptance by the Buyer of this order, orally or in writing, or of any goods provided hereunder or payment therefore, shall constitute acceptance of these terms and conditions.
3. Payment. Payment is due on a NET 30 DAYS basis unless otherwise agreed in writing. All payments not made by the due date shall bear interest at a rate of 1½% per month. If the Buyer fails to fulfill the terms of payment, or ITC has any doubt at any time as to the Buyer's financial responsibility, ITC may either decline to make further deliveries except upon receipt of cash or other satisfactory security, or may terminate the entire agreement. The Buyer shall reimburse ITC for any costs of collection incurred in collecting any past due sums, including attorneys' fees. To secure the Buyer's obligation to pay ITC the purchase price of the goods, the Buyer grants to ITC a security interest in the goods and any proceeds thereof, with full rights as a secured party under the Uniform Commercial Code, and the Buyer appoints ITC as its attorney in fact to sign any financing statements evidencing such security interest on behalf of the Buyer.
4. Shipment and Risk of Loss. The Buyer shall take delivery of the goods F.O.B. ITC's facility, unless otherwise agreed in writing. Method and route of shipment are at ITC's discretion, unless the Buyer supplies instructions otherwise. All expenses and risks of loss or any damages incurred in the transportation of the goods, including any risks of loss in loading or unloading, shall be borne solely by the Buyer, unless otherwise specified. All claims for loss, damage or delay against the carrier must be made by the Buyer. The Buyer shall accept partial delivery of any order and any defect related to said partial delivery or failure to make any subsequent partial delivery shall be severable and not constitute a breach of the entire agreement. Freight shall be shipped on ITC's shipper account unless otherwise agreed to between ITC and Buyer. To qualify for shipping collect (against Buyer's account number), the customer must be in good standing and have reached a minimum of US\$10,000 in annual sales with ITC. If freight for a collect account is invoiced back to ITC for any reason, ITC reserves the right to charge Buyer all the associated freight along with a fee of \$50 for processing. For Buyers with credit card payment terms, freight collect shipments from ITC will not be allowed.
5. Delays and Damages. ITC shall attempt to make deliveries in accordance with its quotation or production order, but if for any reason ITC fails to make such deliveries or to make them within the time stated, or cancels any order, ITC shall not be liable for any loss or damage resulting from any such failure or delay in delivery, or from any such cancellation or for loss of use or loss of profits, or for any other consequential, incidental or special damages on account of delay in delivery.
6. Rejection of Non-Conforming Goods. The Buyer must notify ITC in writing of any rejection of goods deemed non-conforming within 6 months of delivery. The notification shall identify each alleged non-conforming of the goods and describe that the shipment being rejected. If the Buyer shall fail to give such notice or if the Buyer uses the goods in any manner inconsistent with the rights of ITC, the goods shall be deemed to conform to the terms hereof in all respects and the Buyer shall be bound to accept and pay for the goods in accordance with these terms.
7. Cancellation or Modification. Any order accepted by ITC may be canceled or modified by the Buyer only upon the written approval of ITC. The Buyer shall reimburse ITC for all expenses incurred by ITC in connection with such order, including without limitation for engineering drawings and materials. Custom parts specifically designed and/or manufactured for the Buyer are subject to notification in writing to ITC by the Buyer in the event of any one of the following occurrences: 1) the termination of any program that would affect the custom part purchases, 2) any engineering change pertaining to the custom part, and 3) any decision that would cause the Buyer to cease purchases of the custom part. In any one of these occurrences, other than non-performance by ITC, the Buyer agrees to pay ITC for inventory held by ITC.
8. Limited Warranty and Limitation of Remedy and Damages. ITC warrants the goods to be free from defects in material or workmanship under normal operating conditions from the date of delivery, regardless of the date of installation or first use. In the event Buyer supplied the drawings for the goods, ITC's warranty is further limited to manufacturing the goods to the specifications on the drawings and ITC assumes no obligation or liability for design and/or fitness for particular purpose. Any claim under this warranty shall be deemed waived unless ITC is notified within 30 days of the discovery of the defect and given the opportunity to inspect such defect, and, if necessary, the goods are returned to ITC. ITC's obligation under this warranty shall be LIMITED, at its option, to the modification, repair or replacement of the goods by ITC. In no event shall ITC be liable for consequential, incidental or special damages, loss of profit or production, or for transportation, installation or other costs associated with the goods.
- THIS WARRANTY IS EXPRESSLY MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. This warranty shall not apply to any goods which have been subject to abuse, accident, alteration or misuse.
9. Limitation of Liability. ITC's liability on any claim of any kind, including negligence, strict or product liability, or breach of warranty or contract, for any loss or damage arising out of or connected with this contract, or the performance or breach thereof, or the manufacture, sale or use of the goods furnished hereunder shall in no case exceed the price allocable to such goods which gives rise to the claim, and shall not include any liability for any consequential, incidental or special damages.
10. Reliance Upon Buyer's Information. In the preparation of the quotation and the goods, ITC has relied on information supplied by the Buyer. In the event such information is inaccurate, ITC shall not be liable for any claim resulting from such inaccurate information, including negligence, strict or product liability, or breach of warranty or contract, with respect to the goods, the performance of breach of this contract, or any defects of design, material or workmanship.
11. Indemnification. Buyer shall defend, indemnify and hold harmless ITC and its agents from any claims, damages or expenses including attorneys' fees, arising or alleged to arise from any asserted deficiencies or defects in the goods caused by any alteration thereof or without ITC's consent made by the Buyer, the improper handling, storage or installation by the Buyer, or any action taken by the Buyer which voids the UL certification.
12. Non-Performance. Neither party shall be liable to the other for failure to perform its obligation in whole or in part when performance is prevented by flood, drought, fire or any other casualty, war, riot, insurrection, acts of God, restrictions or interference by any government or governmental agency, strike, labor action, or any similar cause beyond the control of the party failing to perform, for the period during which such cause of failure exists.
13. Limitation Period for Bringing Action. No action may be commenced to enforce this contract or for any breach hereof, or for any defect or deficiency of the goods to be delivered hereunder, whether on warranty, contract, negligence, or strict products liability, unless such action is brought within 12 months after accrual of such cause of action.
14. Choice of Law and Forum. This contract shall be governed by the laws of the State of Michigan, notwithstanding any state's choice of law rules to the contrary. The Buyer consents and agrees that any action brought to enforce this contract, or for any breach hereof, or for any defect or deficiency of the goods to be delivered hereunder, whether on warranty, contract, negligence, or strict products liability, shall be brought solely in a state or federal court sitting in the State of Michigan, and the Buyer consents and submits to the jurisdiction of such court.

GENERAL PRODUCT LIMITED WARRANTY

ITC warrants, to the original consumer, that the product will be free of defects in materials and/or workmanship for the period of time set forth herein. This warranty period will begin from the later of the original date of purchase of the product or the date of sale of the recreational vehicle or boat in which the product is installed first sold to the first consumer provided that adequate documentation of said consumer sale date is provided to ITC. Adequacy of the authenticity of the consumer sale date will be determined by ITC in its sole discretion. In the event the consumer sale date is not provided or not determined to be adequate by ITC, then the warranty period will begin on the original date of purchase of the product from ITC. Except as set forth below, this general product limited warranty will extend for three years. All exterior faucets, exterior showers, exterior plumbing products, and clocks will have a one year warranty period. All assist handles will have a two year warranty period, provided that crazing caused by chemical attack from a contaminant is not covered by any warranty. Products that are primarily comprised of 316 stainless steel will have a five year warranty period. Bulbs, including halogen, incandescent, xenon, and light emitting diodes (LEDs) are excluded from the warranty.

MAXIMUM LIABILITY ITC's liability to repair or replace a damaged item shall be limited to the original purchaser of the item at the original invoice price of the damaged unit, acceptable labor charges, acceptable freight charges, and dealer charge backs mandated by state law. ITC will not credit customers for excessive labor or freight charges or unauthorized dealer or customer markup fees. Acceptable freight and labor charges are available from ITC upon request.

INSPECTION ITC reserves the right to review the damaged product and the site where the damage occurred. ITC may require the purchaser to ship the item to ITC for inspection. The damaged item must remain available for inspection until the claim is finalized. In the event ITC requests to inspect the product, it agrees to dispatch its findings pertaining to the alleged defective product within 45 days of receiving the product. Whenever claims are settled, ITC reserves the right to be subrogated under any existing insurance policies the purchaser may have.

EVENTS THAT VOID WARRANTY All above warranties are null and void if any one or more of the following events occurs: (a) the item is not provided to ITC for inspection upon ITC's request; (b) ITC determines that the item has been improperly installed, altered in any way or tampered with; (c) ITC determines that the item was not used under normal operating conditions or in accordance with labels or instructions for the item including, (d) ITC determines the product was not properly maintained, and/or; (e) ITC determines that an unauthorized repair, modification, disassembly, or other changes to the product created the alleged defect. In addition to the foregoing, this Warranty does not protect against damage to the product when ITC determines, in its sole discretion, that the damage resulted from acts of God such as lightning, flood, earthquake, war, vandalism, theft, normal-use wear and tear, terrorism, strikes, and labor stoppages. This warranty specifically excludes damage, deterioration or discoloration caused by sunlight or similar ultraviolet rays and/or wavelengths and/or dents, holes or scratches to the unit caused by stones, rocks, debris and/or vehicles.

EXCLUSIVE REMEDY This Warranty contains the sole warranty of ITC with respect to the product and is given in lieu of all other warranties. There are no other warranties, express or implied, including implied warranties of merchantability or fitness for a particular purpose and any implied warranties that cannot be waived and/or excluded are hereby limited in duration to the terms of this Warranty.

LIMITATION ON LIABILITY In no event shall ITC or any affiliate of ITC be liable for direct, indirect, special, incidental, consequential, or multiple damages arising out of the use of the item, regardless of the legal theory on which such claim is based, even if ITC has been advised of the possibility of such damage. Consequential damages shall include, but are not limited to loss of profits, loss of savings or revenue.

1. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not be applicable.

ITC SAMPLE POLICY

We at ITC understand the necessity of sending out samples to our customers for review for product quality and to determine if the product will work in the application for which it has been suggested. It is not cost-effective for us to send samples to all of our customers without charging or memo-billing for some of the products because of the prohibitive costs involved in doing so. It is the policy of ITC to send out samples at no charge for any items if the accumulated invoice amount of the samples is not over US\$60.00. In the event that the invoice amount exceeds US\$60, it is our policy to send the customers a memo bill. The memo bill would become payable by the customer after 90 days if they have not returned the products to either an ITC representative or returned the products against an RGA. We understand that variations to this policy will sometimes be required. When such circumstances arise, the customer's ITC representative is responsible for communicating the deviation from the policy throughout the ITC organization, which includes, but is not limited to, customer service and accounts receivable.

ITC RETURN POLICY

1) ITC will accept absolutely no returns for product found defective at the distributor or returned by a dealer or customer as a warranty claim without a Return Authorization Number (RGA). Customers should contact our Quality Department (Phone 616-396-1355 or Fax 616-394-5881 or Email: quality@itc-us.com) to obtain a Return Authorization Number (RGA) prior to sending product back to ITC, Inc.

2) All correspondence and credits pertaining to the alleged non-conforming product will reference the RGA number. If your company uses its own return goods numbering system, ITC will make every effort to include both reference numbers on ITC's RGA. All returns must be accommodated by our RGA number or they will not be processed. If product is received without our RGA number written on the outside of the carton, it will be refused upon receipt. All customers have 90 days to return product or the RGA will be voided.

3) ITC will reimburse a customer for credit on returned parts that are determined defective by ITC. Credit is entered based on the current Distributor quoted price for said part, acceptable labor charges and Dealer charge backs mandated by State law. ITC will not credit customers for unauthorized Dealer mark-ups or customer mark-up fees.

4) ITC will not issue credit for parts that were damaged or inappropriately handled by customer. Alterations to an ITC part will invalidate the warranty.

5) To preserve your claim, please securely package all parts before shipping to ITC. All claims are reviewed by ITC's Quality Department to determine the validity of the claim.

6) Invalid returned parts (non-ITC parts) shall be held for 15 days maximum, then destroyed or returned at customer's expense, ITC will notify customer accordingly. Repeated submission of invalid parts will warrant us charging the offending customer a handling fee. If a part is damaged or lost during transit, customer is responsible for directing a claim to the courier service, not ITC.

7) ITC is not responsible for freight charges of parts that the customer has ordered in error or for parts that are found not defective. For all returns and warranty claims accepted by ITC, the chart below shows the maximum amount of ground freight charges allowed which are refundable by ITC (over 20 LBS requires prior approval).

8) A 25% or \$25.00 (whichever is greater) restocking fee will be invoiced or deducted from the return credit for parts that are not defective or parts ordered in error.

9) If a scrap credit is authorized by ITC, we will issue an RGA number and apply the credit to the customer's account without inspecting the product or having it returned to ITC.

10) ITC warranty is attached for reference purposes.

CORPORATE OFFICE:
ITC Incorporated
230 E. Lakewood Blvd., PO Box 8338
Holland, MI 49422-8338

Fax: (616) 396-1152



ELKHART OFFICE
ITC Incorporated
1015 Verdant
Elkhart, IN 46516 Phone: (616) 396-1355 Phone: (574) 389-8986

Fax: (574) 389-8687 Revised 9/14/09

Hardwood Cabinet Doors



Limited Three Year Warranty for Coach House Owners

Congratulations on the purchase of a *Coach House* Luxury Motor Home! This warranty covers the wood cabinet doors found throughout your new motor home.

Wood is a material formed by nature not man and must be handled as such. Characteristics of wood are what give it its beauty and charm. Therefore, there may be some slight color variances due to the natural color variations in wood. The infinite variety in color, grain, and texture is what gives wood its natural character. Because of the differences among varying wood species, even within the same species, no two trees are alike. Climate, light, rainfall and minerals in the soil all create diverse and unique grain and color patterns in each piece of wood. These natural variations are not considered defects. We guarantee our doors free from defect in material and workmanship for three years from the purchase date of your Coach House model. Our warranty applies to the original motor home owner only.

Natural wood will expand and contract with climate and temperature conditions. Our doors are built to allow for proper wood movement. We will not be liable for damages done due to negligence or improper handling and/or cleaning of our doors.

We will guarantee against warpage, twisting or swelling for doors that have been given responsible treatment and are within our minimum or maximum sizes. Warp or twist of 3/16" or less is not considered a defect.

Reasonable Treatment Required for Wood Doors

Doors should not be subjected to abnormal heat, cold, extreme humid or dry conditions or any sudden changes in temperature or humidity and they should never be left open to the elements.

Replacement Policy

Contact your salesperson within one business week of receiving the defective materials. Your representative will arrange to inspect the doors. We may request the defective products be returned for inspection; if so please repackage the doors for shipment. We will have the materials returned to us at no charge to you. In order to minimize the inconvenience to you, Georgia Hardwoods will do our best to replace any defective products as soon as possible.

Contact Information

For Warranty Issues, please contact us at 800-992-6462 to initiate the claim process.



Arriva
by Coach House®

Section 8

Optional Equipment

Optional Equipment

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Carefree of Colorado Awning	8-9
Carefree of Colorado Awning Manual	8-11
Heated Holding Tanks	8-13

Solar Battery Charger

The Carmanah solar charger will charge the auxiliary batteries with the master 12 Volt switch in the “on” or “off” position. A Charge Controller will optimize the charging rate and cut off the charging current when the batteries are fully charged. Optimal charging will be obtained in direct sunlight.



The charge controller panel is located just inside the entry door to the left. It will show the status of the charging system and the status of the “house” battery circuits. Refer to the Carmanah manual for instructions.





Solar Module and Controller

<u>Solar cell type</u>	<u>Monocrystalline</u>
<u>Output power</u>	<u>160 W</u>
<u>Rated current</u>	<u>8.84 A</u>
<u>Rated DC voltage</u>	<u>18.42 V</u>
<u>Open-circuit voltage</u>	<u>22.77 V</u>
<u>Module efficiency</u>	<u>16.4%</u>
<u>Connectivity</u>	<u>MC4 connectors</u>
<u>Solar controller</u>	<u>30 A PWM, multi battery option, 4 stage charging, digital display and flush mount</u>
<u>Frame type</u>	<u>Clear anodized aluminum frame</u>
<u>Certifications</u>	<u>CE</u>
<u>Dimensions</u>	<u>59.1 x 26.3 x 1.57 in / 1500 x 668 x 40 mm</u>
<u>Weight</u>	<u>32 lbs / 14.5 kg</u>
<u>Warranty</u>	<u>25 years power output (module) 5 years (controller)</u>



Digital Solar Controller SPECIFICATIONS

GP-PWM-30

Nominal System Voltage	12V
Max Solar Array Current	30A
Battery Voltage Range	6V -- 15.5V
Max. Solar panel input voltage	28V
Operating Consumption	6mA
Display Consumption	10mA
Temp. Compensation	-13mV/°F (-24mV/°C)
Operating Temperature	-40 to 185°F (-40 to 85°C)
Humidity	99% N.C.
Dimensions (H x W x D)	4.25 x 7.48 x 1.38 in (108 x 190 x 35 mm)
Weight	10.6 oz (300 g)
Maximum Wire Gauge	#4 AWG
Warranty	5 years
Protection	Battery Reverse Polarity, Solar Array Reverse Polarity, Over temperature, Over Current

Carefree of Colorado Awning



Your Coach House **ARRIVA** has been equipped with a Carefree of Colorado Awning. Electrical power is supplied from the 12 Volt "House" Batteries.

Make sure your Battery Cutoff Switch is in the ON position any time the Electric Awning is deployed. Damage to your Awning or Motorhome may occur if power is not available in the event of inclement weather.

The main control for the awning is located just inside the main motorhome door on the Galley wall to the left.

Clean your awning with mild soap and water only.

Insert Carefree Awning Manual Here

Heated Holding Tanks

Heated Holding tanks are installed as optional equipment on your Coach House Platinum.

Manufactured by ULTRA HEAT INDUSTRIES, the tank heaters come in four sizes.

The larger tank heaters are equipped with a thermal sensor which will prevent the heaters from being activated unless the ambient air temperature is below 46 degrees farenheit. This protection is to make sure your heaters do not come on inadvertently and "cook" the contents of your holding tanks.

ULTRA HEAT INDUSTRIES warrants tank heaters for a period of one year from the time of purchase and any failures should be reported directly to them at their factory.



UHI Worldwide, Inc.
1314 Perkins St.
P.O. Box 1454
Elkhart, IN 46515-1454
USA



Product Insert

ONE-YEAR LIMITED WARRANTY

All UHI stock items carry a one (1) year warranty under normal use against manufacturing defects in UHI materials and/or workmanship. The warranty coverage starts on the date of the original purchase. This Limited Warranty covers only those defects which occur or exist within the one (1) year period referenced above. Any modification of UHI products, from original design and/or intended use, or improper installation shall **VOID** all warranties.

All of UHI's obligations pursuant to this Limited Warranty are limited to replacing the product at no additional cost or issuing an account credit memo for the product's cost.

WARRANTY EXCLUSIONS

UHI MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, including any IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, or NONINFRINGEMENT. In no event shall UHI be liable for special, indirect, or consequential damages arising out of the limited warranty.

To the extent that applicable state and/or federal law prohibits the exclusion of any remedy permitted under state or federal law, any such remedy, including, but not limited to, implied warranties of merchantability, fitness, use, or purpose, is limited to **one (1) year** from the date of the original purchase.

PROPER USE OF TRADEMARKS

UHI Worldwide, Inc., Ultra Heat, Inc., UltraHeat®, and Ultra-Heat™ and all individual product trademarks, service marks, logotypes, commercial symbols, insignias, and designs pertaining thereto, as they appear in any advertising medium, are proprietary marks of UHI Worldwide, Inc., and UHI owns all right, title, and interest in and to these proprietary marks. Trademarks and trade names may not be used in connection with any product or service that is not provided by UHI, in any manner that is likely to cause confusion among customers, or in any manner that disparages or discredits UHI. Purchaser shall not remove, alter, or otherwise modify any identification marks or trademarks affixed by UHI to products.

REPACKAGING

UHI products shall not be repackaged without the express, written approval of UHI. Under no circumstances shall UHI product labeling be removed, obstructed, or altered.

www.uhiworldwide.com