Roadtrek Inc. Built Units

The electrical system is comprised of the following:

Underhood Generator

External Voltage Regulator (For LI equipped coaches)

AGM Battery (Kicker)

Lithium Coach Batteries

AGM Coach batteries

Inverter 3000 watt

Shore power connection.

Firefly

Control panel

Roadtrek Inc. Lithium based unit Electrical system explained:

The Design features of the coach are:

400 or 600 amps of Lithium battery power to operate the coach features, 12v functions are managed by the discharge terminal of the lithium battery.

Lithium batteries must be turned on to take a charge.

The 12v system is charged via 3 sources, the first being the Under-hood Generator (GU). The GU is externally regulated by a Balmar VR, The GU produces power as needed whenever the engine is running.

The second source of Charge is the Solar system if the coach is optioned with this. This system is passive and only requires the batteries be turned on for them to take a charge.

The third charging source is through shore power. This is done through the charge feature of the Inverter when plugged into a shore power supply.

12vdc Power is distributed through the Firefly system, this system has a touch screen that allows the control of the features on the van such as lights heater A/C (Thermostat)water pump. There are items that are fused in the Distribution panel this is powered from the battery disconnect.

Lithium Based Units

The Underhood Generator is a high output alternator attached to the engine of the coach and driven by a belt. The unit is coupled to a programable external Voltage regulator that is programmed to match the BMS (Battery Management System) in the Lithium batteries. The output varies based on the requirements of the battery system as well as engine RPM and the GU temperature. The GU system is provided by Nation's starter and Alternator.

AGM BASED

The Underhood Generator is a high output alternator attached to the engine of the coach and driven by a belt. The Alternator has an internal Voltage regulator that is non programable. The output varies based on the requirements of the battery system as well as engine RPM and the GU temperature. The GU system is provided by Nation's starter and Alternator.

Balmar External Voltage regulator

The Balmar VR is programable for multiple functions, it is fused at 15 amps with 2 AUTO style fuses the programmed settings are on the label. It is Switched by the Ignition source.

AGM Kicker battery.

This AGM battery is a group 31 12v deep cycle 105ah. This battery provides power to the Firefly via the Battery disconnect switch. It is charged Via all three sources however it gets solar power even when the coach is shut off.

The main purposes of this battery are to Turn on Firefly control. To excite the GU when the Lithium batteries need to be reset and to absorb any high current if the BMS shuts down the Lithium while being charged.

Lithium Batteries.

The Lithium Batteries are BMS controlled 200- or 300-amp Modules. The operating range of these units is 12.2vdc to 13.6vdc. and a Power distribution temperature range of -20C to +55C/-4F to 131F. Charging of the battery can take place from 0C to +45C /32F to 113F A proper Tester must be utilized to determine state of health in the batteries.

AGM Coach Batteries (Play)

The AGM batteries in the Play are Odyssey PC18000FT CCA-1300 214 Ah They are connected to the Coach electrical system by use of the battery disconnect. This unit is charged by the GU and Solar even when the battery disconnect is off.

Due to the Amount of current to operate the Inverter and appliances the inverter is not impacted by the battery disconnect and can be controlled via the on/off switch at the door. If the coach is plugged in the batteries will charge if the inverter is on, the batteries will be depleted if the Inverter is left on, and no shore power is present.

KS2 3000-watt pure sine wave Inverter/charger

The Inverter is a 3000-watt inverter with a surge power of 9000-watts. It has multiple settings for battery type and charge rates.

The inverter is a Passthrough, this means that the inverter must be turned on to pass power through from shore power to the coach. When plugged into shore power and turned on the charge function will provide the required charge to the batteries and allow the operation of DC appliances.

The AC operating range of the Pass through is 90vac to 135vac.

Shore power connection

The vehicle is equipped with a 30-amp 110v connection This is a twist lock type plug with a threaded lock nut. The inverter must be on to pass power through to the coach.

Firefly.

The Firefly is a system to distribute and control Amperage outputs to Items that are programmed into the unit.

The system can be configured to control multiple like items such as Air Conditioners, since each manufacturer has different protocols, the correct configuration must be selected.

The home page is your controls High Level

The side bar allows you to go into each section with greater detail such as lighting or temperature.

From the side bar you can also enter diagnostics This will provide valuable information for troubleshooting.

Control Panel (Play)

This is a traditional control panel with Tank level gauges and ON/OFF switches to control Items in the coach such as the water pump. With this panel you will have separate controls for the water heater, furnace, and A/C.

FAQ’s

What Is the Roadtrek Website?

www.Roadtrek.com

How do I find a Dealer near me

Locate A Roadtrek Dealer Near You

Where can I find an Owner’s manual?

Roadtrek Owners: Contact Service, Warranty, How To's, Manuals

Using this link will bring you to the Appliance manuals as well.

Where can I find details about my warranty?

Product Warranty - Roadtrek

Do you have any information Video’s

https://www.youtube.com/user/RoadtrekMotorhomes

Where can I get My Ram Chassis Serviced?

Find a Ram Dealership Near You | Ram Trucks

Ram Customer care (866) 726-4636

How do I get parts?

All parts are distributed through the Dealer network. Please see the How do I find a dealer link.

Who do I contact with Questions about my Coach?

You should contact your selling dealer they have the history on your coach.

Does Roadtrek have technical support?

If your dealer cannot answer your questions, you can reach support at :888-762-3873.

Please be prepared with the following:

The Last 8 of your VIN Number.

A pen and paper ready for documenting information.

Do I need a Water pressure Regulator for city water connection?

No, you do not. The city water connection has a built-in regulator.

Does my Inverter have built in Surge Protection?

Your inverter has an operating range so you may find that it does not allow power into the coach. It does not have an EMS or Surge protector. It is highly recommended that you utilize a good quality EMS to protect your investment.

What Voltage is my Coach?

Your coach is wired to accept 120VAC at 30 amps The plug looks like a dryer plug or welding plug but does not operate on the same voltage. This will permanently damage the electrical system of your coach.

Can I charge my batteries while plugged into a 110v 15amp circuit at home?

Yes! When plugged into a 15-amp outlet, power is limited if your batteries are low, do not attempt to use other appliances in the coach. Once the Charging has completed you can use limited appliances and you may trip a breaker on the home.

Can I run the air conditioner on a standard 110v 15-amp plug?

No, the minimum requirement for the Air conditioner is 20 amps. Although the Unit may operate you are damaging it.

When Should I winterize my coach?

Your Roadtrek motorhome has plumbing and tanks below the floor, exposed to the elements. If the temperature is forecast to drop below freezing and maintaining that for hours, you should winterize your coach.

Can I blow out the lines to winterize my coach?

It is not recommended to use Air to blow out the lines, due to the routing of the plumbing lines. Water that is left on the side of the lines will pool /accumulate in the lowest points or elbows and freeze cracking the pipe or fitting.

Storage of the lithium batteries

The lithium batteries should be charged or discharged to 13.3v, then turned off. This will allow the batteries to be stored for 90 days regardless of temperature.

Can I use my Lithium in the Winter?

Yes, the battery Management System (BMS) will not allow the battery to function outside the operating range. The Batteries have heaters in them and once they reach operating temperature, they will function the same as in the summer

How do I turn on the heaters?

The BMS controls the heaters, Turn on the battery then with an external charging source Inverter or GU the heaters will receive power . Once at temperature the batteries will charge and discharge.

The correct way to store your coach is:

Charge Discharge the Lithium to 13.2-.3 Then turn them off

Using the Battery Disconnect turn off the Firefly

Lock all doors except the driver's door

Using the Ram supplied Quick connect on the Negative battery terminal disconnect the chassis battery

Close and lock the driver side door with the KEY

Resetting the Lithium Modules.

L, L1 ,L2 and L3 Battery – Low Battery

<u>3x 3 Recovery Process:</u>

1. Connect inverter to shore and turn it ON. If no shore is available, you can also start the engine and give it a little gas to rev up

2. Turn ON the low battery's switch, do this process one battery at a time

3. press the RESET and release Immediately

4. Repeat every 3 seconds

5. Continue for up to 5 minutes non-stop

6. This will force the batteries to stay ON and receive charge

7. Stop after 5 minutes and check if the battery can stay ON by itself

8. If the battery is still low, repeat this procedure

9. Do the same for the other batteries if necessary (one at a time) This procedure will not work with H batteries or before revisions, for those please follow H recovery procedure.

When Should I use my Inverter?

The inverter should be off at all times unless the following requirements are met

1- You are plugged into shore power
2- You wish to use a Household style device Coffee maker curling iron Microwave
3- You want to use the Air conditioner

To charge the batteries, they must be on charging can be accomplished from 3 sources

Inverter Charger when Plugged in and turned on

Solar Controller no Input required from you; it is programmed to match the Vehicle electrical system.

The Under-hood generator When the engine is running this can be Idle or while driving.

There are 2 switches for the inverter the remote switch in the control panel above the sliding door. The second is on the inverter and must be turned off at all times.

What is the Procedure for connecting to Shore power?

Turn on the batteries in the coach

Turn on the inverter

Plug into the Coach (Thread and secure the connection)

Plug into the Supply (Post or Home)

Turn on Power at the Breaker for the Post.

How do I know that I am connected to shore power?

When you turn on the batteries and inverter Note the Battery voltage, once you have plugged in and turned on the power to the Supply. View the Voltage display If shore power is being provided the Charging system will activate and the Voltage displayed will increase.

You can also look at the top of the inverter, the lights will indicate the action of the inverter.

Do I need to Update Firefly?

There is no reason to update the version of Firefly that your coach is equipped with from the factory provide you are above Version 1.14.