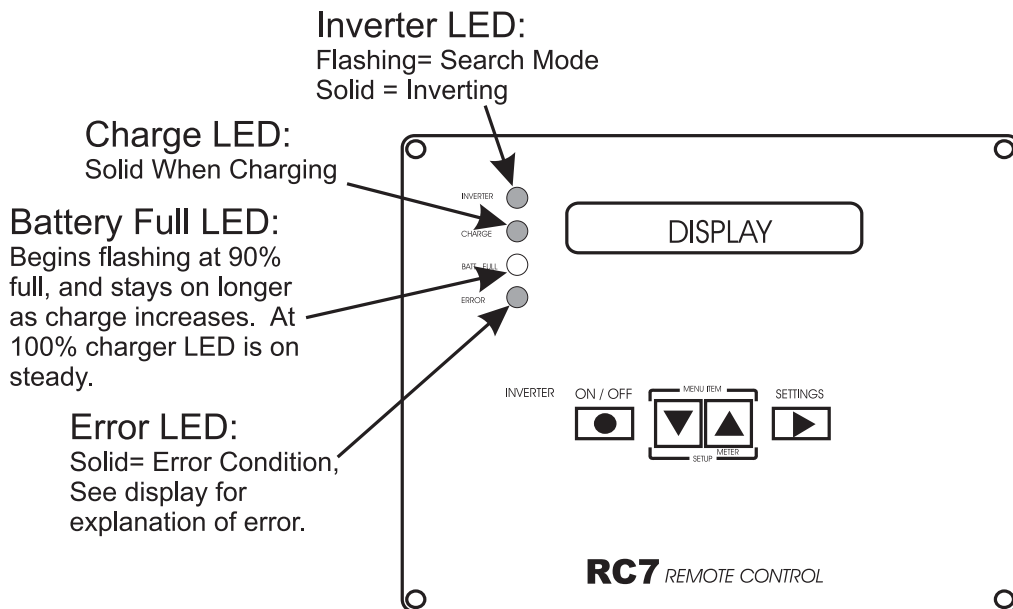


ALL ELECTRIC



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The All-Electric motorhome operates much differently than the standard propane equipped motorhome. All appliances operate from AC, DC, diesel or a combination thereof. For the electrical system to function properly the 120 Volt AC and 12 Volt DC power supply sources must be operating properly, especially the generator . When shore power is not available, appliance operation relies exclusively on the generator, inverter or batteries for power. The auto-genstart feature should be programmed when shore power is not available to help prevent dead batteries. Using the inverter as the power source can quickly consume battery power. Do not allow the batteries to discharge lower than 60% SOC (State of Charge). The batteries ability to obtain a full state of charge and the number of discharge cycles is reduced each time a severe discharge occurs. Eventually the battery will no longer accept a charge, resulting in battery failure.

The SOC of the batteries will determine the length of time the inverter can operate from the batteries. Use arithmetic to calculate inverter run time or DC power loads. When dry camping closely monitor interior light use. Some lights operate only from 120 Volt AC. Also calculate the amount of DC power the inverter requires to operate the refrigerator, cooktop and microwave.



NOTE: At least one inverter will need to remain on to operate the refrigerator when dry camping.

Overview

The All-Electric motorhome is equipped with two inverters. The two inverters and the battery bank they are attached to supply an ample amount of power if they are used wisely. When dry camping, turn the inverters on. The inverters use battery power to supply the 120 Volt AC power to operate most of the appliances, outlets and entertainment system.

The auto-genstart system should be programmed to start the generator when the battery bank is discharged to approximately a 60% state of charge. At that time the generator will begin supplying 120 Volt AC power to the main load center and the inverters. The inverters charge the battery bank. The generator will continue to operate until the pre-programmed stop point. The inverters then supply the 120 Volt AC power repeating the cycle.

Remote

The RC7 GS remote panel (located in the monitor panel) is the master remote. The RC7 panel located adjacent to the monitor is the slave remote. All programming and monitor values are established through the master remote. Programming the inverters or changing the inverter values have a significant effect on the performance of the electrical system.

Shunt

When using two inverters together a common shunt is used. A shunt is used to measure electrical current. A shunt allows a majority of the current to flow through the shunt on the heavy conductors, while some of the current flows through on light conductors. The shunt allows the master inverter to monitor the electrical system values.



NOTE: When programming the inverters make sure the correct shunt option is selected. All remote programming information is stored in the inverter. The remote is a display of stored information only.

Accessing the programming menu:

- Press the menu set-up (UP and DOWN arrows) buttons simultaneously for three seconds. When the control panel beeps, release the buttons immediately.
- The programming menu is successfully entered when Search Sense appears on the screen. Use the Up or Down arrows to scroll the programming menu. The *Settings* button will change the value or option.
- Press the menu set-up buttons to exit the programming mode.

There are several settings available in the programming menu. Care should be used when selecting or changing a program setting.

The master inverter remote will be programmed "External Shunt: This Inverter." The slave inverter will be programmed "External Shunt: Other Inverter." The slave remote will then be used as a display only.

The auto-genstart feature can be programmed to start the generator from either a specific voltage or a percentage of state of charge. The auto-genstart feature can be programmed to stop the generator at a point of the charge cycle or a percentage of state of charge.

External Shunt:
This Inverter

External Shunt:
Other Inverter

If the auto-genstart feature is programmed to start or stop the generator from a specific state of charge, the voltage setting of the Fuel Gauge Cutout will affect at what point the generator starts or stops.

Example: If the Fuel Gauge Cut-out voltage is set to 11.8 Volts with the generator set to start at 80% SOC (state of charge), actual voltage when the generator would start would be approximately 12.5 Volts.



NOTE: For optimum battery life the batteries should not be cycled lower than 60% state of charge.

Batteries

Battery Type:
AGM

The battery bank consists of five Type 8-D 255 amp hour AGM (Absorb Glass Matte) batteries. The batteries are hooked in parallel. Due to this type of battery chemistry and construction, voltage readings are the only way to accurately determine the state of charge of the batteries. Accurate voltage readings are measured after 3 hours of battery inactivity. The inverter remote should be programmed Battery Type: AGM with the battery capacity set to Battery Capacity: 1000Ahr. The length of time it takes to charge the battery bank to a full state of charge will vary. How deep were the batteries discharged? What other DC loads are applied during the charge cycle? What is the actual condition of the batteries?

It may take a number of days, with the motorhome hooked to shore power 24 hours a day, to charge the batteries to a full state of charge. During the charge cycle one inverter may be in Bulk charge while the other is in Float. This is normal as the two inverters, though paired together through a common shunt, do not share a common link between the internal chargers.

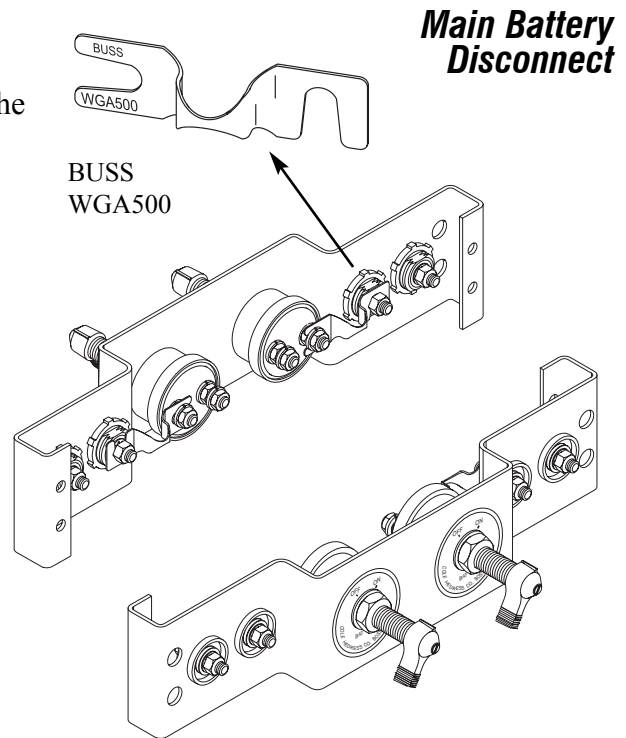
State of Charge (%)	O.C.V./Cell	O.C.V./12 Volt Battery
100	2.13	12.8 or greater
80	2.10	12.6
60	2.05	12.3
40	2.00	12.0
20	1.97	11.8
0	1.93	11.6 or less

These voltage levels are approximate and give an indication of the state of charge of a battery at rest. As the battery ages these voltage measurements will be lower.

Located in the battery bay are two main battery disconnect switches. On the back of each disconnect switch is a 500 Amp fuse. The pair of fuses protects against a shorted battery cable or other over current condition. A weatherproof fuse holder with a 20 Amp ATO fuse for the solar panel is attached to one of the battery disconnects switches.



CAUTION: When working on the batteries use protective measures against short circuits. Place an insulating material over the batteries when working on or near the battery area. Remove any rings or watches. Use extreme caution when working with hand tools. Do not allow the tool to short circuit any battery connection. Always mark cable routing and location before servicing, removing or replacing batteries.

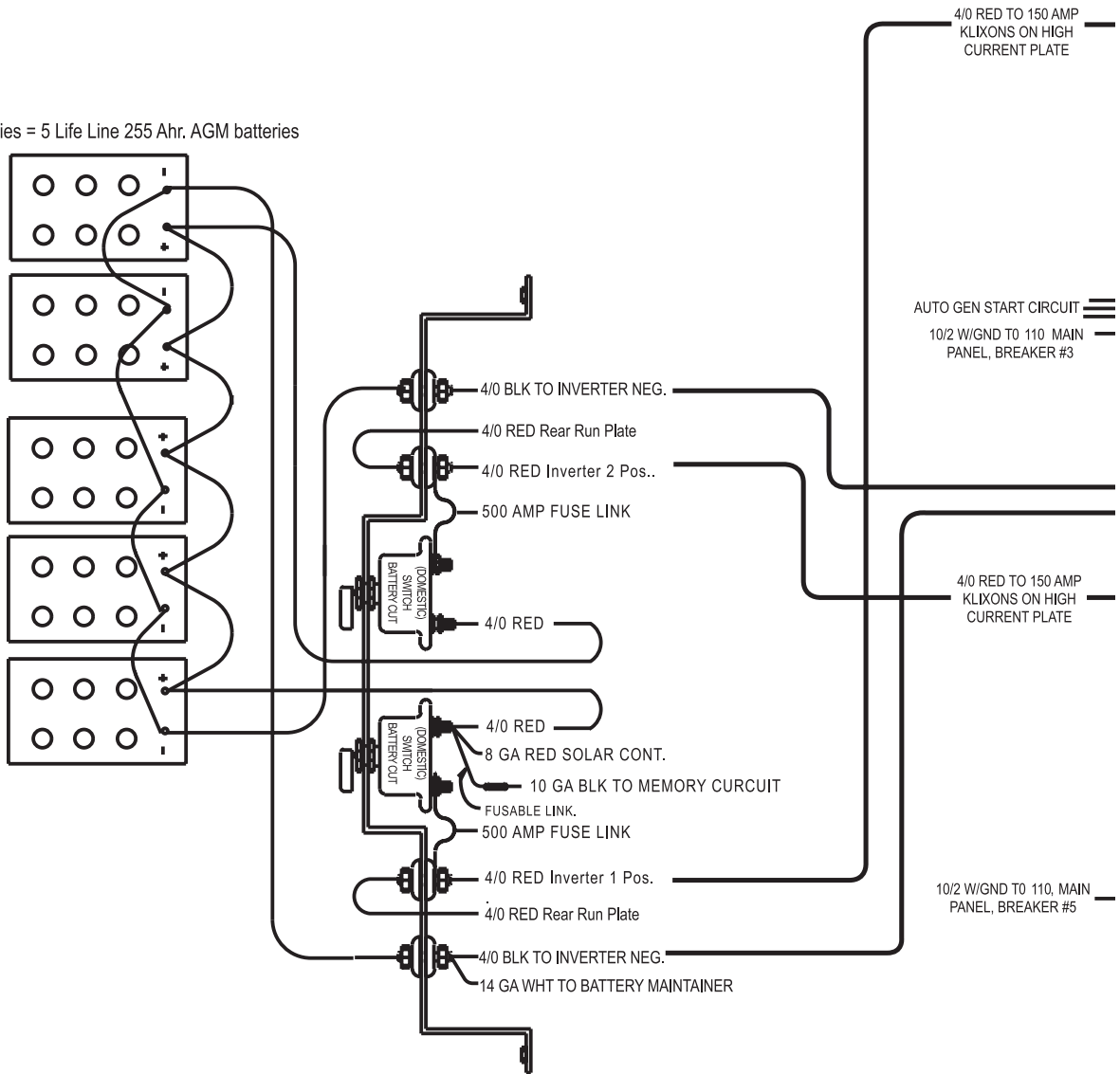


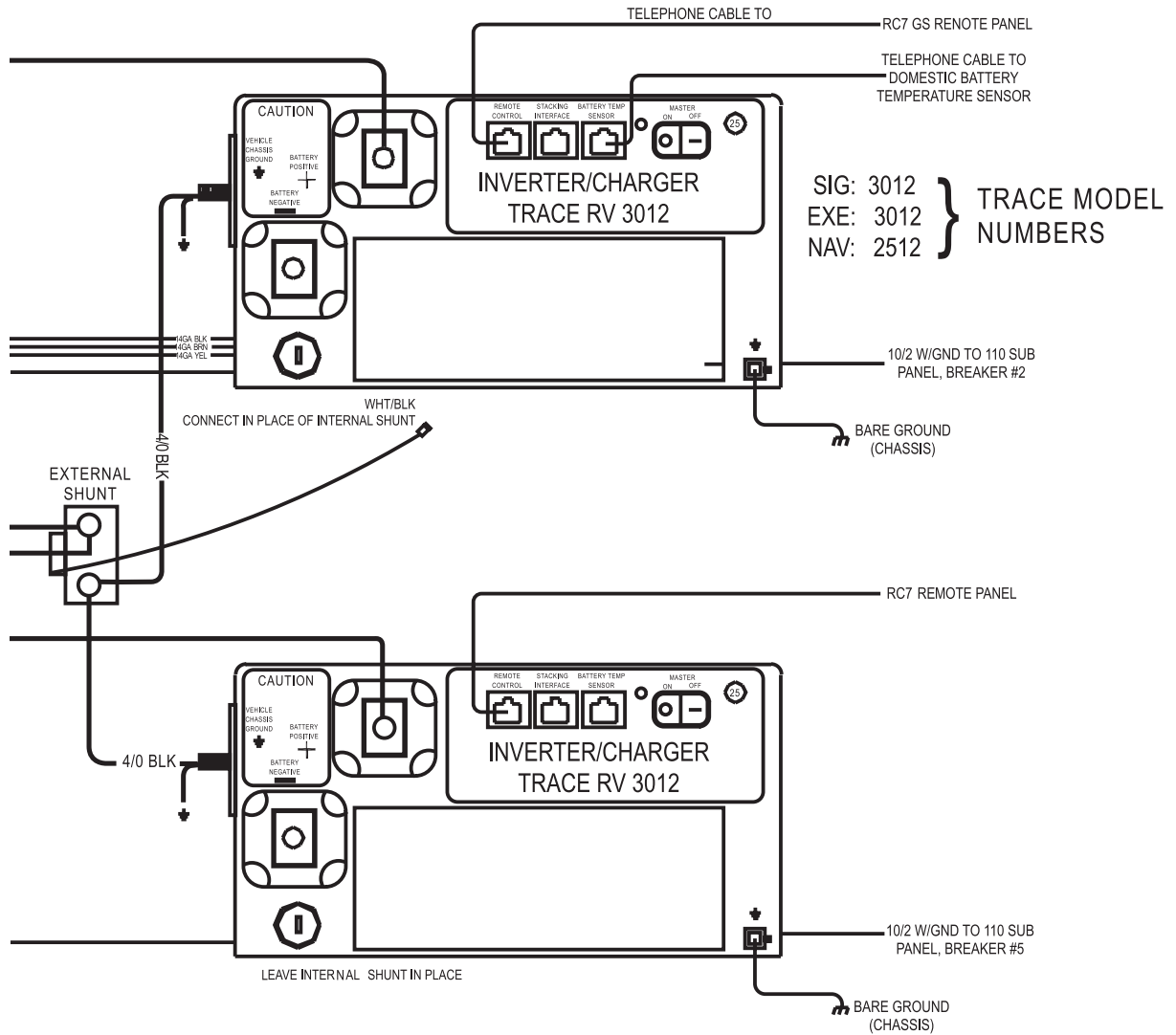
The engine alternator is a 270 Amp Leece/Neville. The alternator is not designed to charge the house batteries from a complete discharge to a full state of charge. The alternator will maintain the battery charge during travel supplying the DC current necessary to operate running lights or other DC loads.

Alternator & Battery Isolator

Due to the increased DC current demands of the all electric motorhome, a larger alternator was installed. To accommodate the output of the alternator a higher capacity battery isolator was also installed. The 300 Amp battery isolator allows the output of the alternator to maintain a charge current to the house and engine batteries when the engine is running. The battery isolator allows DC current to flow in one direction only. Diodes prevent a backward flow of DC current, keeping the chassis and house battery systems separate. There is a typical voltage loss of .09 to 1.1 Volts DC between the input and output terminals of the isolator.

Batteries = 5 Life Line 255 Ahr. AGM batteries





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