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MAINTENANCE MATTERS

Check your battery equalizer to keep power in balance

Chances are, you know a lot about your coach batteries — how long ago you put them in, how long you expect them to last, etc. Yet there's another part of the system that's just as important: the battery equalizer. The purpose of the battery equalizer is to keep the voltage similar in the batteries. The battery equalizer does this by splitting the charging of the batteries in a 12-volt or 24-volt circuit, depending on the loading conditions at the time. This helps to prevent overcharging and boiling of the batteries, which will extend the life of your batteries. The battery equalizer is continuously monitoring the batteries' condition whether the engine is running or not.

The reason you should check your battery equalizer is to ensure that it is operating properly and maintaining the voltage in both batteries equally. An initial check is to measure the voltage of each battery. The voltage difference between the batteries should be within 0.5 volts. If not, start with the functional check below. If, after completing the functional check, you determine that the equalizer may not be working properly, we have provided an advanced testing procedure as well.

To check your equalizer, follow the following procedure.

When conducting tests, please make sure to use proper personal protective equipment and follow maintenance manual guidelines:

Functional Check of the Battery Equalizer: (ENGINE OFF)

1. Measure the voltage between the 24 (+24) volt terminal and the 12 (+12) terminal on the equalizer. The voltage should be approximately 12 volts.
2. Remove the ground cable from the equalizer. **DO NOT allow the cable to touch any other connections to the equalizer** since they are connected directly to the battery.
3. Connect an electrical load such as the headlamp circuit between the 12 (+12) volt equalizer terminal and the ground (GND) terminal. The headlamps should come on and stay on. If the light does not come on or does not stay on, the equalizer is defective and requires replacement.
4. If further verification is required, connect an electrical load such as the headlamp circuit between the 24 (+24) volt connection and the 12 (+12) volt connection of the battery equalizer. Record the voltage reading.
5. Measure the voltage between the 12 (+12) terminal of the battery equalizer and the ground (GND) and record.
6. Compare the two readings in step 5 and 6 by subtracting the reading in step 6 from the reading in step 5. The difference must be between -.5 volts and +0.13 volts. If not, the equalizer is not functioning properly and should be replaced.

Advanced Testing of the Battery Equalizer

1. Reconnect the ground cable to the ground connection (GND) of the battery equalizer removed in the procedure above.
2. Start engine and turn on a 12-volt load such as headlights.
3. Measure the input voltage between the 24-volt terminal and the ground terminal on the battery equalizer. This voltage measured should be between 25.5 volts and 29 volts. If not, check the alternator and 24-volt voltage regulator circuits since a charging system problem exists. The charging system problem must be corrected prior to proceeding with the equalizer testing.
4. If the voltage measured is within the range indicated above, the current of the 12-volt side of the equalizer needs to be measured. If a clamp-on ammeter is used, zero the ammeter prior to using, following the manual for this meter.
5. If a clamp-on ammeter is used, put the jaws of the clamp-on ammeter around all wires that are connected to the 12-volt terminal of the equalizer.
6. If the current on the 12-volt terminal is greater than 3 amps, the equalizer is functioning and no further testing is required.
7. If the current is less than 3 amps, measure the voltage between the 24-volt terminal and the 12-volt terminal of the equalizer.
8. Measure and monitor the voltage between the 12-volt terminal and the ground terminal of the equalizer. Also monitor the current of the 12-volt side of the equalizer.
9. Monitor the 12-volt equalizer voltage and output current for up to 30 seconds or until the current measured exceeds 3 amps. If the 12-volt voltage in this period of time becomes 0.8 volts less than the voltage measured in step 7 and the current does not exceed 3 amps, the equalizer is defective and should be replaced.

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