

## WHY SHOULD I INSTALL A LITHIUM BATTERY IN MY RV?

Note: For additional benefits and RV Owners reports there are many videos on [Youtube.com](https://www.youtube.com) regarding advantages of Lithium Iron Phosphate Batteries in RV's.

### More Efficient Charging

Modern Deep Cycle LFP Lithium RV batteries are far more efficient than lead acid alternatives and are capable of charging at a much faster rate. When you're ready to get to your next destination, you don't want to be stuck at a campsite all day waiting for your lead acid battery to charge.

Lithium's efficiency is also helpful when you're storing solar power. Perhaps you're trying to charge your battery before the sun goes down. With a lithium-ion RV battery it can absorb the maximum amount of current from your solar panels, so you have more than enough power by the time night falls.

### Increased Dry Camping Time with plenty of power

Modern LFP Lithium Batteries will provide over two times the 12-Volt power you can achieve with the same Amp Hour lead/Acid Deep Cycle battery without noticeable voltage drop. **See article below regarding a team effort between Forest River RV Manufacturing, Relion Battery and Progressive Dynamics** to test and compare a 100 AH Lithium Battery System and a 200 AH Lead/Acid System in an actual RV under heavy loads such as encountered in actual RV use.

### Fewer Maintenance Requirements

There's no way around it: **Lead acid batteries need a lot of maintenance.** When you're on the road, you have enough to worry about without having to take care of your battery. **Lead acid RV batteries have the following upkeep requirements:**

- Need to operate at mild temperatures
- Must avoid deep discharges
- Must routinely require charges lasting longer than 14 hours
- Need to Charge frequently to prevent Sulfation.
- Must Add water when the electrolyte level falls

Fortunately, there's a more practical solution. Lithium-ion RV batteries typically require no maintenance, and they don't need water to operate. If you don't have the time to check your system routinely, Lithium Iron Phosphate (LFP) batteries are a more convenient longer lasting option.

### Longer Shelf Life

Taking summer trips to campsites, monuments and national parks across the country is quite an adventure. However, you may not travel all year with your RV. Maybe your job only allows you a few weeks of vacation, and you spend the rest of your time dreaming of being on the road.

While you may wish, you spent more time living in your RV, you have the comfort of knowing your lithium-ion RV battery is safe when you're not using it. Lead acid batteries deteriorate quickly when they're not recharged every day. On the other hand, lithium has a much longer shelf life, allowing you to store your RV safely without having to fully charge it and it will still be ready to provide power in the Spring without any damage or significant loss of power.

### **Better Safety Features**

An RV is not just a way to travel; it's your home away from home. Whether you're living in a brick house or a home on wheels, you must take safety precautions to prevent fires and other accidents.

Modern LFP lithium RV batteries are equipped with built-in safety measures including a Battery Management System (BMS) to protect you and your family during your RV adventures. When your battery comes too close to overheating, a temperature control mechanism automatically shuts it down.

Most lead acid batteries don't include this fail-safe feature, putting your RV in danger of catching fire. Coming into contact with foreign metals may also cause a lead acid battery to ignite. Remember during charging Lead/Acid Batteries produce Hydrogen & Oxygen gasses, which are highly explosive. Choosing lithium-ion batteries is the much safer option.

### **More Eco-Friendly**

When you're camping in a forest or by a pristine lake, you may be inspired to reduce your environmental impact so future generations are able to enjoy the same experience. Lithium-ion batteries create less waste than lead acid alternatives because they last 10 times as long. Plus, they're easily recyclable. Lithium RV batteries allow you to power your camping trip with clean energy, especially if you're using solar rooftop panels. You waste less energy with 100 percent charging efficiency and reduce your CO2 emissions. For the greenest source of energy, choose a lithium RV battery made from recycled materials.

### **Progressive Dynamics, Inc., Forest River RV and Relion Battery Partner for Lithium Battery System test**



Progressive Dynamics, Inc. has designed PD4060LIK all-in-one 60-Amp lithium-ion battery converter/charger to meet the stringent voltages required for properly charging and maintaining lithium batteries. Lithium-ion batteries require special balancing circuits and chargers to prevent overcharging or

discharging a cell beyond its specifications. These converter/chargers are designed for lithium-ion batteries that typically store twice the energy of a lead/acid battery within the same space, with less weight.

Now with the help of Forest River, Inc. and the results of their tests, a comparison is available on lithium batteries versus lead acid batteries. Forest River used a single RELION™ RB100 lithium-ion deep cycle 100 AH battery as a comparison with two dual lead acid 100 AH batteries commonly used in their RVs. They applied actual electrical loads and simulated higher amp loads like those found in RVs. As a result of this test Forest River has chosen to install the PD4060LIK converter/charger and the RELION™ RB100 lithium battery in their New Forester/Sunseeker Ford Transit series. There were multiple advantages found for the lithium battery over lead acid batteries, including longer life, no freezing in extreme temperatures, lighter battery weight, ability to mount in any direction, no maintenance required, 95% energy efficient, no corrosion, lead free and does not require a fully charged condition for storage. Lithium batteries also offer faster charging times, charging to 99% in 2.5 hours versus up 13 hours for lead acid batteries.

This test showed that the lithium battery performed well compared to the lead acid batteries. Though the initial cost is high for lithium batteries, there are no secondary maintenance costs required for the life of the battery. The lithium batteries have an average life span of 10 times that of lead acid.