



PLEASURE CRUISE

Installing the Liberty Rider and Joy Rider II suspension systems from RV Improvement Systems results in a dramatically smoother ride that reduces strain on the chassis and components of a trailer or fifth-wheel

Among the many criteria we use to decide which trailer we're going to purchase, ride quality typically isn't one of them. The main reason is simple: we're not in the trailer when it's going down the road, so its suspension system really doesn't seem that important. But the reality is, the thousands of miles of potholes, frost heaves, railroad crossings and other highway imperfections take their toll on a trailer. Items like cabinets, appliances and the overall structure

can be damaged over time by the forces exacted upon them during travel. If you've ever opened your entry door to find the contents of the cabinets or drawers scattered all over the place, you can imagine that your trailer is subjected to a minor earthquake every time you tow it — but instead of lasting a few seconds or a minute, it lasts hours at a time.

There are other reasons a good trailer suspension makes sense. Most trailers, travel trailers in particular, don't come with shock absorbers. That means the trailer



◀ SMOOTH MOVES

The Liberty Rider system (far left) includes four leaf-spring sets and two center sections, plus all hardware and maintenance-free Never Fail roller bushings and washers. The Joy Rider II system (left) includes shock absorbers and a provision for axle alignment included with the mounting system.



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“hops” over lumps and bumps, creating instability that can influence the way the tow vehicle handles. The stock suspension can also be inadequate at coping with emergency braking. During extreme hard braking or a panic stop, the stock equalizers rotate forward lifting the front tires off the ground slightly. At the same time, the rear brakes are forced to do more than 50 percent of the braking.

Most trailers are fitted with nylon leaf-spring eye bushings that commonly wear out prematurely, in as little as 1,000 miles. This can create alignment problems that adversely affect tire wear, not to mention premature wearing

1) This trailer was equipped with electric-over-hydraulic disc brakes, so the first step was to remove the brake calipers. With a traditional drum-brake setup, removing the brake assembly requires fewer steps. **2)** With the calipers removed, technician Darren Wilson drilled a small hole in the frame and attached a hook by which the caliper can be hung while the work is completed. This ensures that the brake line will not get stretched or damaged.

of the equalizer and suspension components, such as pivot bolts, that could lead to a dangerous failure while on the road. And there's no provision for adjustment should an axle alignment abnormality become evident. The result in this case is premature tire wear or even failure.

The new Liberty Rider suspension system from RV Improvement Systems is designed to solve these

problems. You might recall us reporting on this company's Joy Rider shock absorber system, which allows the easy mounting of shock absorbers, in the September 2014 issue. The Liberty Rider system represents the next level of trailer suspension, adding “slipper”-style leaf springs and roller bearings to further improve ride quality and towing stability. The front- and



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3) Next, the leaf-spring U-bolts, equalizer bolts and tie plates were removed and the stock leaf springs cast aside. **4)** A spacer provided in the kit was placed between the two sides of the center hanger or equalizer bracket. This prevents the center hanger bracket from collapsing when the mounting bolt is installed and tightened. **5)** Here, the main bracket has been installed and the bolt snugged but not torqued to spec yet. **6)** The spring support bolts were installed next, to position the springs. These bolts are fitted with Never Fail cylinders and washers that roll as the springs move. Never Fail is a patented, composite material that does not require lubrication and is extremely resistant to wear — and warranted for life. Nuts with nylon inserts assure that the fasteners will not loosen over time.



rear-axle spring sets connect to a patent-pending center section that isolates each axle, so the two springs are no longer connected by a central equalizer. The Liberty Rider is a complete system, meaning that the original suspension — including leaf springs, shackles, equalizers and shocks (if any) — are removed and discarded.

RV Improvement Systems recently provided us with a preproduction Liberty Rider system and a Joy Rider II shock-absorber system, the latter of which adds an axle-alignment provision for precise tracking and even tire wear. To assist with the installation, we called upon our friends at C&S RV Service Center in Oxnard, California, who expertly completed the installation and helped fine-tune the system on a 34-foot fifth-wheel trailer that weighed approximately 16,000 pounds. It's not necessary to include the shock

7) Here, the fasteners have been installed and the end of the Liberty Rider leaf spring placed atop the Never Fail cylinder. 8) The preassembled Liberty Rider system for one axle. Note that the main bracket offers height adjustment (like the hanger bracket to the right). It is designed to work with all versions of the Correct Track suspension alignment system. The top bolt protruding from the right side of the main bracket (arrow) is the top shock-absorber mount. With these steps completed, the calipers were reinstalled but not tightened.

absorbers when installing the Liberty Rider spring system, but the two kits work together to provide the biggest improvement in ride quality.

The owner of the trailer had reported that he routinely found his belongings on the floor after a road trip, so we decided that a back-to-back road-trip comparison was in order. Both before and after the installation, we towed the trailer on a test loop that consists of highway-expansion joints, rutted country roads and a railroad crossing.

At the conclusion of the first test

loop, we found that the forces inside the trailer were sufficient not only to open a bottom cabinet drawer but to cause the bottom to collapse, scattering kitchen essentials across the galley. After the Liberty Rider and Joy Rider II systems were installed, however, the same loop produced no such drama; in fact, nothing in the trailer looked disturbed. The tow vehicle also felt more stable, and there was less “chucking” (rapid forward-aft movement) over uneven pavement and bridge abutments.

The installation process takes

9, 10, 11) The alignment adjuster consists of three pieces. First, the base plate is placed atop the spring, just underneath the spring perch. The center plate has four holes through which the U-bolts pass. The last piece is an adjustment plate that pushes on the spring perch when the bolt is tightened. There is one bolt and adjustment plate on either side so the axles can be moved forward or aft as needed.





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12) After measuring the axles side to side, Darren made small adjustments by turning the adjustment bolt a few times and tightening the set nut. **13)** Next, the U-bolts were placed over the axle, then passed through the middle plate of the alignment adjuster and finally through the bottom plate of the Joy Rider lower shock mount. Again, the U-bolts were tightened but not torqued into place yet. After checking the alignment, all bolts were torqued to specifications. **14)** The finished Liberty Rider/Joy Rider II shock mount system. The ride and handling of this trailer were completely transformed.

about three hours for a professional and can be accomplished by seasoned do-it-yourselfers. The Liberty Rider kit for two axles retails for \$945; the Joy Rider II is \$699.90. The standard Joy Rider shock system for two axles (no alignment feature) retails for \$499.90. All the parts are covered by a three-year warranty.

Whether you own a travel trailer or a fifth-wheel, replacing the original, antiquated suspension just makes sense, especially if you travel a lot of

miles or plan to keep your trailer for a long time — or both. The Liberty Rider and Joy Rider II systems not only help protect your belongings through enhanced ride quality, they can also help protect your investment. 🚐

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