

SUSPENSION NIRVANA

ROADMASTER, EXPERTS IN DINGHY TOWING, INTRODUCES THE COMFORT RIDE SLIPPER LEAF SPRING AND SHOCK ABSORBER SYSTEMS TO ROAD-WEARY TRAILER AND FIFTH-WHEEL OWNERS

Trailers and fifth-wheels take a lot of punishment on the road. Suspensions, designed to counter this abuse, have not changed much over the years, and in most cases are the same ones found on chassis that date back a very long time. (The old line “This isn’t your grandfather’s vehicle” does not apply.) While stock suspensions hold the chassis off the ground, controlling the ride is not a strong attribute.

Leaf springs tied to shackles and a center-mounted equalizer are supposed to counter the bumps in the road but, with few exceptions, are not very effective. Roadmaster,

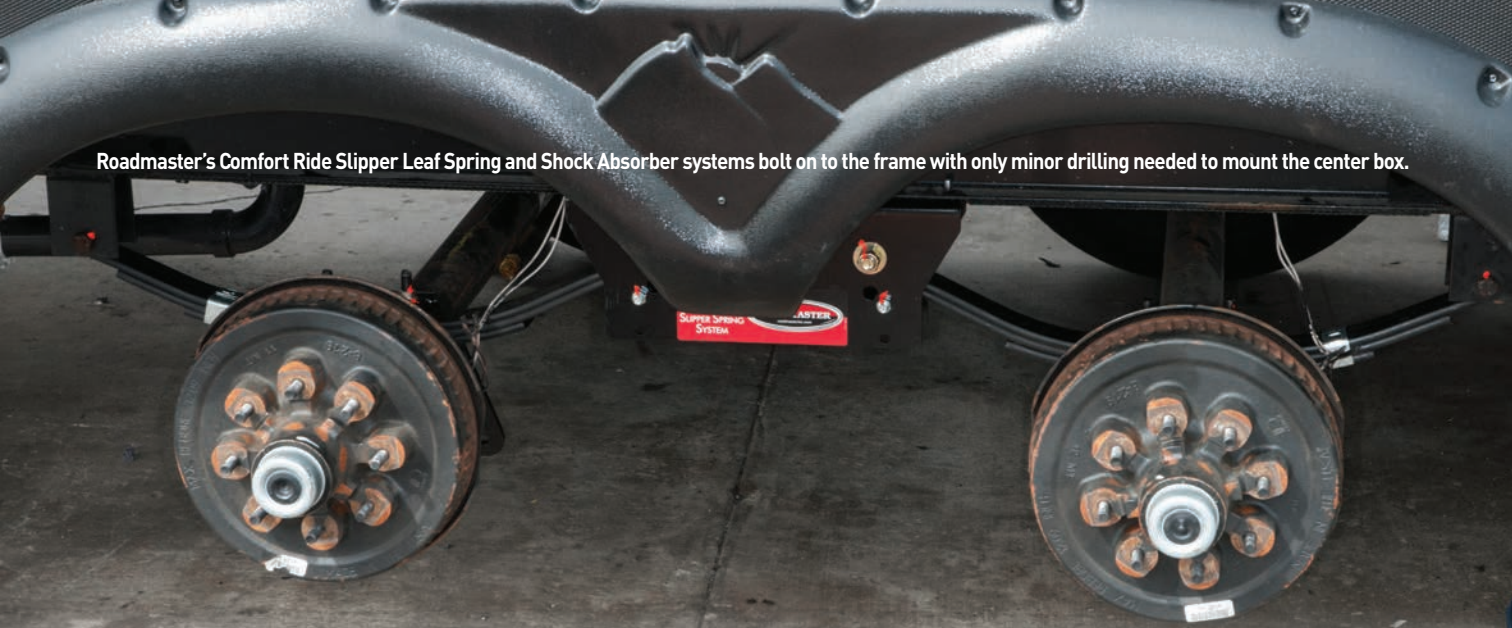
a company immersed in the tow-bar business, catering to owners towing vehicles behind their motorhomes, has expanded its offerings in the towable arena with the introduction of the Comfort Ride Slipper Leaf Spring Suspension and Shock Absorber systems.

The concept is simple, and the result is a game changer in the way trailers and fifth-wheels handle all road conditions.

One might ask, “Why worry about ride quality inside a trailer when towing since no one is back there to feel the shakes, rattles and rolls? That’s a valid question, but subjecting a trailer to a constant 4.0-magnitude earthquake

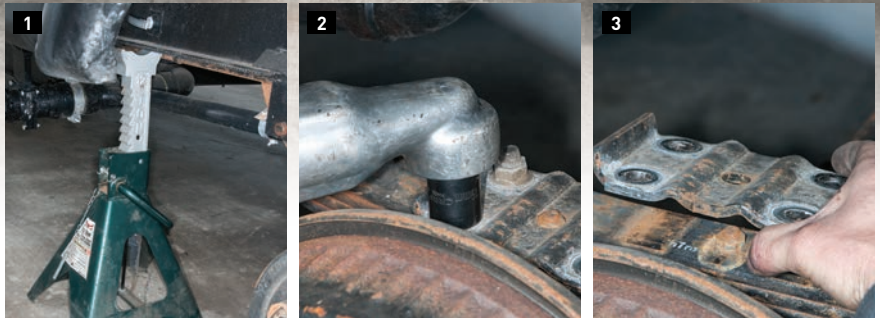


Roadmaster's Comfort Ride Slipper Leaf Spring and Shock Absorber systems bolt on to the frame with only minor drilling needed to mount the center box.



takes its toll over time and leads to premature damage, not to mention the destruction to items stored in the inside and outside compartments. Smooth out the ride, and the trailer will last longer without seams separating and the resultant water leaks. Unfortunately, structural and component fatigue can lead to inconvenient issues while traveling and, ultimately, an early trip to the salvage yard.

The concept is not rocket science, nor is it new, but the simplicity of



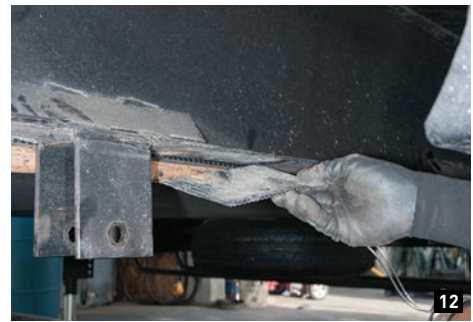
1) Jack stands are needed to support the frame and allow the suspension to hang. The trailer must not be lifted by the axles, which are stabilized only with floor jacks. **2 and 3)** Once the tires are removed, the tie plates are unbolted to free the axles from the springs.



4) The U-bolt is removed and set aside for use later in the install. **5 and 6)** The bolt is removed from each hanger and existing equalizer **(7)** so that the spring assembly **(8)** can be dropped from the frame. **9)** Spring-hanger flanges will need to be spread slightly to make room for the new spring eyes. This can be done easily with an adjustable wrench. It's important not to open the spacing too wide.

Editor's note: Author and Publisher Emeritus Bob Livingston has an equity position in Roadmaster's Comfort Ride Slipper Leaf Spring and Shock Absorber systems.

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the system is brilliant when applied to trailer suspensions. It solves an inherent design problem, whereby leaf springs are tied to equalizer shackles and frame-mounted hangers via eyes in the spring ends, restricting the movement needed to smooth out the ride effectively.

Leaf springs have been around for more than 75 years, and equalizers have been on the scene since 1945, and virtually nothing has changed. This legacy method of damping the ride seems incongruent with the evolution of trailers and fifth-wheels. While the equalizer does move the springs somewhat, securing the springs at both ends minimizes flex needed to cushion the ride and links the front and rear springs and axles, transferring the forces between the front and rear axles. For example, when the rear tires hit the same bump or pothole, the impact migrates

10) Before mounting the center box over the original equalizer hanger, it may be necessary to unbolt the LP-gas line on one side of the trailer and move it out of the way slightly (11). The clamp can be reinstalled after the center box is mounted. 12) In most cases, a piece of the underbelly material will have to be cut with a utility knife and removed from the frame to allow the center box to be seated properly. When the project is finished, the underbelly can be resealed with spray-foam insulation. 13) The center box is placed over the existing equalizer bracket. 14) A 2-inch pipe spacer is used to prevent the flanges from bending. 15) Once the bolt is in place, the box will be centered properly and be ready for bolting to the frame.

to the front axle. The Comfort Ride breaks that connection, creating more of an independent-axle suspension action, which is known to be more effective.

The other issue is bushing wear. Stock bushings seated in the eye ends

of the springs have a tendency to wear out prematurely, creating slop in the system that can affect axle alignment and lead to shackle failure. The bushings in the Comfort Ride springs are made by Never Fail and will last a lifetime. They are made of a super-hard



16) Holes for the 3/8-inch self-tapping bolts provided to secure the box to the frame must be drilled first. An easy way to start this process is to use a 1/8-inch self-drilling (Tek) screw to make smaller pilot holes and keep the box from moving. 17) One screw at a time is then removed, and a 2 1/4-inch bit is used to drill the final pilot holes. 18) Red thread sealer is used on the self-tapping bolts before driving through the box and into the frame with an impact wrench (19).



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material (proprietary secret) impregnated with molybdenum and graphite, and will conform to the shape inside the spring eyes. This is a far cry from brass or nylon, which will deform or wear out, sometimes after the first trip.

While the systems can be installed independently of each other, for the ultimate results, Roadmaster highly recommends utilizing the gas shocks, which bolt on seamlessly. High-quality gas shocks mitigate uncontrolled shock and rebound when traveling over uneven pavement where dips, potholes and other maladies tend to rattle the trailer structure.

Another key element in this shock-absorber system is the mounting position. Rarely are shocks provided by the factory, and they are often installed in a more horizontal position because of space limitations, virtually negating any benefit. The patented Roadmaster brackets solve this problem by keeping the shocks mounted closer to vertical, allowing them to better control spring rate by taking full advantage of the gas-regulated valving. The shocks are also positioned on an outward, 15-degree angle (spring to frame) to help with lateral movement and sway. Configuring the brackets this way improves

23) Spring end is pivoted until relatively level and on the pipe spacer that will be positioned inside the center box. 24) Roller is installed above the spring end. 25) Bolts go through the specified holes in the center box from the inside to allow clearance for the shocks that will be installed later. Thread locker is applied, and bolts are torqued to the specified values printed in the instructions. 26) Springs are indexed into holes in the axle brackets so they line up properly.

20) The bolts are then torqued to 40 ft-lbs. 21) Thread sealer is applied to the spring eyebolts (22) before driving into the frame hangers. The existing bolts are used for the install, so it's important to refrain from driving out the threads with a hammer when first removed. A center punch will prevent thread damage (not shown).

movement front to back, side to side and up and down, something no other shock mount has ever accomplished.

Installing the kits may seem a little daunting to those who have not tackled this type of project, but in reality it is relatively simple, guided by precise instructions. The trailer frame will have to be lifted and placed on jack stands so the suspension hangs; floor jacks are used to stabilize the axles. Care must be taken with jack lifting points; it's important not to lift the trailer by the axle. From here, the wheels are removed to gain access to the suspension, and it's just a matter of unbolting old parts and installing the new ones. Everything fits like a glove, and only four holes are drilled into the

frame on each side. Figure on about three hours of labor when the job is done at an accomplished service center.

To test the systems, we asked Redlands Truck and RV Performance Center in Redlands, California, to install the parts on a 2018 Keystone Montana fifth-wheel that was factory equipped with 6,000-pound Dexter axles. The techs at Redlands bank on their vast experience servicing and repairing motorhomes, and have recently moved into the towable space, so making the Comfort Ride swap was a piece of cake.

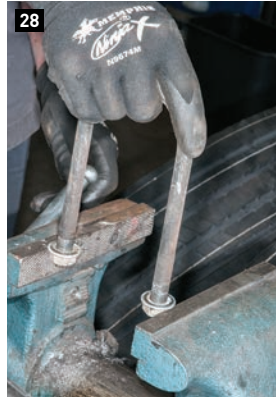
All the parts in both kits were proven by Roadmaster before release to ensure that they will hold up to years of punishment on the road. This is accomplished by using com-



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puterized Finite Element Analysis (FEA), which establishes guidelines to ensure superior product longevity, quality and safety. It's the same type of testing used by NASA when prototyping new designs. The spring and shock components have also been field tested by a number of full-time RVers who have logged more than 50,000 miles. The equipment, which is offered to the OEM market under the All-American Suspension System nameplate, passed the brutal Navistar test track with flying colors.

While I have personally tested the system under a fifth-wheel for 15,000 miles on jaw-rattling highways, the most recent installation solicited the assistance of a professional long-haul truck driver who has logged more than 2 million miles of commercial driving. The driver, who owns the Montana, noticed an immediate seat-of-the pants difference in the way the system improved ride quality and chucking. On his cross-



27) Original U-bolts will need to be closed slightly to fit in the new tie plates. This can be done by placing the nuts on the ends and hitting with a hammer while on a solid surface. 28) A vice can also be used to close the gap. 29) U-bolts are positioned under the axle and through the new tie plate, which is also the mounting bracket for the shock absorbers.

country trip, right out of the Redlands Truck and RV gate, he reported improvements in how supplies fared in cabinets, and continued to gloat over the ride and handling, especially in extremely windy conditions.

During my testing tenure, items were placed strategically inside

the fifth-wheel and monitored for movement. Supplies previously disheveled after stints on the road remained neatly stacked with the new suspension parts in place, a strong indication that the "earthquake" inside the fifth-wheel has been tempered enough to make a big difference in ride

quality. The components, which are maintenance-free, showed no signs of wear in any of the test trailers. I was so impressed with the system that I actually became part of the research and development team and have an equity position in the product.

Kits are available for axles rated at 6,000, 7,000 or 8,000 pounds. The system for the test fifth-wheel has a \$975 MSRP for the Comfort Ride Slipper Leaf Spring kit and \$550 for the shock absorbers. The parts are covered by a one-year warranty.

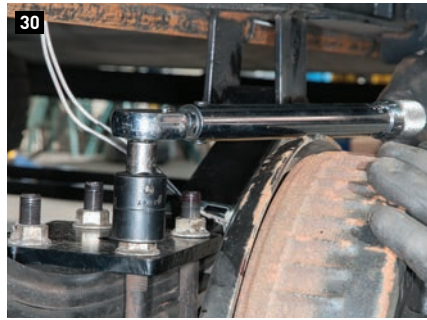
Roadmaster's introduction of the Comfort Ride kits to the towable market represents one of the biggest developments in trailer suspensions since leaf springs were invented. Your trailer will thank you for the "support." 🚚

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30) Once all the bolts are in place and snugged evenly, a torque wrench is used for final tightening. **31)** Redlands Truck and RV Performance Center prefers to use torque paint to let other mechanics know that the bolts have been tightened to specified values. **32)** Shock absorbers bolt to the center box using a wedge to keep them at the proper angle. **33)** Once both ends are bolted and tightened properly, the retaining strap can be cut, allowing the shocks to seat into the mounting brackets.