

THE BENEFITS OF THE JOY RIDER SUSPENSION CONTROL SYSTEM

Manufactured by RV Improvement Systems

Background:

Controlling vehicle suspension rebound from roadway imperfections is a cardinal objective of ride control engineers. Virtually every type of high speed vehicle is equipped with shock absorbers. The notable exception is consumer operated trailers, including Recreational Vehicles. Only an estimated 15% of RVs are equipped with shock absorbers and many of these have shocks installed in an inefficient operating position. The reason shock absorber equipment is omitted or installed in a compromised position on RVs is insufficient clearance to fit an adequately sized shock in an effective operating orientation. Even a capable RV shock absorber must be within 35 degrees of vertical to efficiently control rebound. This angle is still only 88% efficient.

Problems Caused by Uncontrolled Suspension Rebound:

The effect of the RV bouncing and rocking down the highway is that it unevenly fatigues leaf springs and prematurely wears all of the other suspension system components. Tires begin hopping and the entire coach can adopt a pogo effect or front to back motion on uneven roads. Interior contents are thrown repeatedly and suffer damage as rubbing, colliding, drawers slamming open and furniture walking into nearby walls and other objects continues throughout the trip. In summary, excessive motion will accelerate excessive and uneven tire wear, leaf spring fatigue or failure, worn out suspension components and interior catastrophes such as slide out alignment, refrigerator, water and gas systems and electronics failures.

Compromised Safety:

While underway the uncontrolled motion of the RV combined with its considerable weight, makes the trailer more difficult to safely control. Controlling the motion also improves cornering. Safety is obviously the most important benefit provided by Joy Rider!

Suspension Rebound Control with Sway Restraint:

Joy Rider's patent pending shock absorber installation method expands the space available for fitting a capable and properly sized shock to operate in an effective vertical orientation. Joy Rider's method of shock installation also adds a significant component of lateral suspension sway control and reduces side to side rocking.

Added Safety:

The "inside the spring" placement of the system also helps the driver control the trailer at the time of a tire blowout. In the event of hard or panic braking, the Joy Rider System also reduces the condition known as axle roll up. Axle roll up occurs when the front axle's (two tires) hard grip on the road surface, forcing the rear axle to lift enough to reduce traction. The Joy Rider's suspension design reduces the roll up effect and significantly contributes to better (four tires) braking traction.

Suspension and Frame Preparation:

Two sizes fit most RV suspensions:

2 $\frac{3}{8}$ -inch & 3-inch axles each have modified tie plates, fit standard U-bolts and will be delivered to Lippert or the OEM for tie plate replacement.

Common weld-on top mount brackets will be delivered to Lippert.

Shock absorbers and mounting hardware will be delivered to OEMs.

Installation:

OEM Installation of the shocks, and added brackets to complete the Joy Rider upgrade, is all bolt-on and straightforward.