



LIPPERT COMPONENTS, INC

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Re: Suspension Fasteners

Suspension fasteners are an important part of the recreational vehicle suspension system. Since RV's are subjected to extremely high stresses, vibration, and environmental conditions it is very important to periodically check suspension fasteners. There are three main fastener areas that make up the suspension system and include wheel studs, u-bolts, and hanger/shackle bolts. These fasteners are designed to be tightened to a certain torque range for proper function. To correctly tighten or check fastener torques a good torque wrench must be used. The 2 most common styles of torque wrenches are the clicker and the dial. Keep in mind though a clicker style torque will click once the fastener reaches the set torque level. A clicker will not tell you what the torque is only if the nut is at the set torque. Also keep in mind tighter is not always better. Torque levels beyond the specified values can be as detrimental to the joint being clamped as a loose condition.

Wheel bolts are the most important and torque should be checked often if the unit is new or if a wheel has been removed and reinstalled. Wheels have a seat-in period and most torque loss is lost in the first few miles. Typical check frequency is after the first 10, 25, and again at 50 miles. Consult your owner's manual for correct torque setting and tire size. Socket size varies depending upon nut manufacturer. Typical socket size for 1/2" wheel nuts is 13/16" and 7/8" for 9/16" wheel nuts.

U-bolts are used to clamp the axle tube and leaf springs together. Torque on the u-bolt nut should be checked every 6 months or 6,000 miles. The proper torque for 3500-8000 lb capacity axles is 65 ft-lbs (u-bolt diameter of 1/2" and 9/16"). The torque for smaller 2000 lb axles using a 3/8" u-bolt should be set at 35 ft-lbs. The torque should be checked with the coach weight sitting on the tires. Use 9/16" socket size for 3/8" u-bolts, 3/4" socket for 1/2" u-bolts, and 7/8" socket for 9/16" u-bolts.

Hanger and shackle bolts should be checked for the proper torque and for wear. These bolts not only clamp the joint but act as pivots for the suspension and are susceptible to wear. The proper torque setting for these nuts is 35 ft-lbs. Socket size for nut is 11/16". Socket size to hold the bolt head is 13/16".

Suspension fasteners are extremely important but commonly neglected. Checking and inspecting are sure ways of maximizing the life of the components and insuring the highest level of safety.

Typical Torque Wrench's -



Clicker style shown above, dial style shown below



Typical suspension layout -

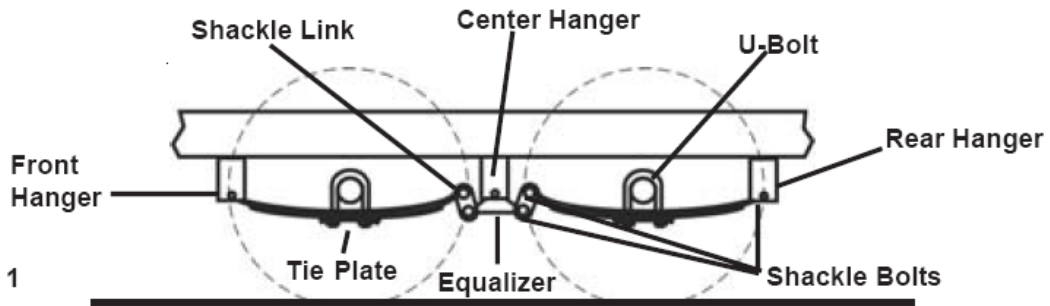


Fig. 1

MAINTENANCE SCHEDULE

Item	Function Required	Weekly	3 Months/ 3000 Miles	6 Months/ 6000 Miles	12 Months/ 12000 Miles
Brakes	Test that they are operational	At Every Use			
Breakaway System	Check battery charge and switch operation	At Every Use			
Brake Adjustment	Adjust to proper operating clearance		★		
Brake Magnets	Inspect for wear and current draw			★	
Brake Linings	Inspect for wear and contamination				★
Brake Controller	Check for correct amperage & modulation			★	
Trailer Brake Wiring	Inspect for bare spots, frays, etc.				★
Hub/Drum	Inspect for abnormal wear or scoring				★
Wheel Bearing & Cups	Inspect for corrosion or wear Clean and repack				★
Seals	Inspect for leakage. Replace if removed				★
Springs	Inspect for wear, loss of arch				★
Suspension Parts	Inspect for bending, loose fasteners, wear			★	
Hangers	Inspect welds				★
Wheel Nuts and Bolts	Tighten to specified torque values		★		
Wheels	Inspect for cracks, dents or distortion			★	
Tire Inflation	Inflate tires to mfr's. specs.	★			
Tire Condition	Inspect for cuts, wear, bulging, etc.		★		