



LIPPERT
COMPONENTS

LEAF SPRING SUSPENSION FREQUENTLY ASKED QUESTIONS

QR-112

AXLES AND SUSPENSION

Purpose

This document should be used for reference purposes only to understand shape changes in recreational vehicle leaf springs. It should not be used to determine failure or non-failure of the leaf springs.

Understanding Your RV Springs

There are towing, loading and driving situations that can affect the shape of RV springs. These factors may or may not lead to a cause for concern. RV springs are designed to allow an amount of settling, which will not cause a problem. The amount of arch in many of the springs used in the RV industry is 3" before any weight is applied. After the RV is built onto the axles and the RV is loaded for travel, customers will see loss of around 1.5" in arch. This will leave 1.5" of arch, which can make the spring appear to be nearly flat. Checking tire/fender clearance is a good way to assure the spring is still operating correctly. Contacting the manufacturer of the RV can provide the recommended tire/fender clearance.

There are however, situations apart from the normal settling that can cause an RV spring to lose too much shape. The following information is designed to help the retail owner understand when the loss of shape is a concern which may need to be addressed.

FAQ 1

- Q.** Why has my spring changed shape?
- A.** Typically, a spring will change shape from being overstressed too many times. It will lose its ability to rebound to its original shape. Being overstressed can happen for several reasons:
- I.** The weight of the trailer is not even from one side to the other. When loading your vehicle take into consideration manufacturer's designs can affect how the load is distributed side-to-side.
 - II.** The weight of the trailer and the capacity of the axles does not allow for potholes, curbs, etc. These events put additional stress/load on the springs. LCI generally recommends a 20 percent cushion between the weight of a loaded trailer and the capacity of the springs.

FAQ 2

- Q.** If my spring has lost its original shape, how do I know my spring is not bad.
- A.** The best way to make sure the spring is still functioning properly is to measure the tire clearance inside the fender well. If the tire clearance is still within the manufacturer's specification, the spring is functioning properly.

FAQ 3

- Q.** How can a spring that appears flat offer any suspension qualities?
- A.** The qualities of a leaf spring are not due to the arch of the spring, but rather by the chemistry of the steel which is achieved in the manufacturing process by heat treatment. The arch of the spring is purely a function of what the customer is trying to do. LCI offers springs that are flat, some with very little arch, some with a lot of arch and some that have reverse arch. A leaf spring continues to be the most effective way to attach the axle to the trailer while offering suspension. The arch is required in many trailers to achieve the tire/fender clearance needed.



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FAQ 4

- Q.** Does a spring that appears to have lost its arch affect my trailer's ride?
- A.** A spring that has lost its arch from being fatigued can cause a ride quality issue. It is possible the trailer's tire and fender will hit while operating the trailer.

FAQ 5

- Q.** If the spring appears to have lost its arch, will my tire rub?
- A.** This is possible depending on how much tire/fender clearance there is from the manufacturer.

FAQ 6

- Q.** Can I tow my RV with a spring that appears to have lost its arch?
- A.** Yes, as long as the tire and fender are not touching.

FAQ 7

- Q.** Why do these springs appear to be flatter than the springs on my truck?
- A.** Each spring is designed with a different arch depending on the tire/fender clearance desired by the manufacturer. In some cases, the spring is completely flat or inverted before any load is applied. The truck manufacturers are able to get the tire/fender clearance by using other techniques.

FAQ 8

- Q.** If the springs are supposed to appear flat how do I know when to replace them?
- A.** Measuring the tire/fender clearance will be the best indication of a problem.

FAQ 9

- Q.** My spring appears flat. Am I over weighted/over loaded?
- A.** Possibly. It could also be uneven weight distribution from side-to-side while the overall weight is still within specifications for the axle capacity.

FAQ 10

- Q.** My springs appear flat on one side of my unit. Will that cause my RV to dog track?
- A.** Possibly – dog tracking occurs when one side of the unit or the axle is not in line with the other axle on the RV or not perpendicular to the frame. One side of the axle having a flattened spring could create this condition and there is also a possibility the hanger spacing side to side is unequal.

As a supplier of components to the RV industry, safety, education and customer satisfaction are our primary concerns. Should you have any questions, please do not hesitate to contact us at (574) 537-8900 or by email at customerservice@lci1.com. Self-help tips, technical documents, product videos and a training class schedule are available at lci1.com or by downloading the MyLCI app.



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