







114 REAR SUSPENSION AND SERVICE

FREQUENTLY ASKED QUESTION

What is Axle Windup?

Axle windup is a product of the law of physics, which states that every action produces an equal and opposite reaction. As the axle shafts rotate in one direction to drive the wheels, the axle housing attempts to rotate in the opposite direction. The force of this reaction tends to lift the front end of the vehicle during acceleration. ● SEE FIGURE 114-3.

Axle windup is a particular problem with a solid, driven rear axle because the axle housing concentrates the reacting force. Under extreme acceleration, the reacting force can actually tilt the drive shaft upward and lift the front wheels off the ground. Leaf springs, control arms, pinion snubbers, and torque arms all are means of controlling axle windup.

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Figure 114-3 When the axle housing reacts against the force of axle shaft rotation, the front of the differential tilts upward, creating axle windup.

AXLE WINDUP

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Figure 114-4 A typical rear-wheel-drive pickup truck rear suspension equipped with leaf springs. This type of arrangement is called a Hotchkiss drive and the drive train forces are controlled by the rear suspension components.

LEAF SPRING SUSPENSION - DRIVEN AXLE

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