

Steering Feel Explained

The ratio of your steering gear will determine how quickly your vehicle reacts to your steering input. The steering valve is what gives you the feel of the road. This is often spec'd out in torsion bar size. However, we prefer to calculate it in ft/lbs. The actual effort it takes to turn the wheel and engage the power assist. Although it is true that the larger the torsion bar, the stiffer the feel, it is the sum of all the valve parts that equate to the final result. Most stock Saginaw gearboxes (especially slower ratios) are spec'd with a lightweight valve, typically around 20-25#'s. This lightweight valve results in an effortless (one finger) steering feel. This super easy steering effort also means that you have very little road feel and can feel twitchy at high speeds. When upgrading to a faster ratio gearbox, it is highly recommended to increase the valve weight to match your application. Our most common gearbox ratio / valve weight pairings are listed below.

Classic Cars:

12:1 - 35-40#

14:1 - 30-35#

16:1VR - 30-35#

Road Race Cars:

9:1 - 40-50#

12:1 - 35-50#

Offroad:

12:1 or 14:1 - 30-35# with ram assist

12:1 or 14:1 - 25-30# without ram assist

12:1 or 14:1 – 12-15# with ram assist and 2:1 speeder

12:1 or 14:1 – 15-20# with ram assist and 1.5:1 speeder

Offroad and Racecar applications can vary depending car weight, tire size, linkage ratio and if using a speeder.

Precise valve tuning is probably the most overlooked part of the steering box. Every valve we build is carefully assembled to the last detail and then tested on our unique machine to ensure that the weight is within 3% of what was requested. Then the valve is also balanced so that it has the exact same feel when turning both left and right. This is a very time consuming process, but it gives you the precise steering you are looking for.