

### ***steering wheel centering***

Hey Eric,

After camber and caster are set, the technician starts the engine, turns the steering wheel back and forth a few times, (lock to lock is not necessary, just a few degrees of rotation is all that's needed.) and then locks the wheel in the straight ahead position with a spring loaded tool placed between the seat and the steering wheel. The engine is shut off and toe is adjusted. This procedure works fine for everything EXCEPT close ratio boxes.

With close ratio gear boxes, they are VERY sensitive and a little different procedure is necessary to obtain a straight steering wheel. Start the engine and turn the steering wheel back and forth a few times. Lock it in the straight ahead position with the spring tool and **leave the engine running**. Adjust toe on the left wheel and tighten the adjuster. Remove the steering wheel lock tool and turn the wheel back and forth a few times, reinstall the tool, and recheck the left toe, readjust if necessary. If it's within spec, adjust the right tie rod until TOTAL toe is achieved.

The mistake most techs make is to adjust toe on both wheels and call it good. The problem with that is the steering shaft moves and the steering wheel ends up off center. With close ratio, if the steering shaft turns, even a little, the wheel WILL be off center. The most accurate way to set toe in is to set one wheel, then bring total toe to spec with the opposite wheel. Each wheel has its own spec for toe in, and total toe is the toe in for both wheels added together. Once you have one wheel where it needs to be in relationship to the steering wheel, it can't change, tighten her down! Don't be concerned with individual toe after that, total toe is what you're looking for. The reason for leaving the engine running is to remove as much play from the power steering gear centering valve as possible. Rocking the steering wheel back and forth between checking/adjusting the first wheel is key in this procedure and you can't do it too much, the more the better. Check and recheck, readjust as necessary. Get one wheel perfect, then bring total toe to specification with the opposite tie rod and you'll be a happy camper! Follow these steps and it'll work every time, guaranteed!

Take care,  
Chuck (Old Master)