Phantom Racing Chassis

#TechTipTuesday

Caster

Caster is the lean or angle of the kingpin bolt when viewed from the side of the kart. If the bolt leans rearward (top towards back), then the caster is positive. If it leans forward, it's negative. All karts run positive caster.

It's common to see around 2- to 4-degree caster split. The split is referred to as the difference in the LF and RF (LF is usually lower). The reason for this is the help the kart "pull" to the left which makes the kart run around the track with less effort. More split = more "pull."

The main effect of caster is how "heavy" the steering is to the driver. More caster creates more steering effort felt by the driver, and less caster will make the steering "lighter." Because of this, the most common reason to make a major caster change is when converting from dirt to asphalt/pavement/concrete. These surfaces have much higher grip, therefore the steering will become heavier, and you would reduce your caster to lighten the steering load (reducing driver fatigue).

Now, what the caster actually does in relation to chassis dynamics, is it controls how much camber is gained when there is steering input. The higher the caster, the more camber is gained. The LF will gain positive, and the RF will gain negative camber. For this reason, we can sometimes add more "bite" to the front end by running less overall caster (more tire surface on the track).

There are a few other effects of caster, but because we use such a small amount of steering input, it doesn't do much in regards to chassis tuning. We normally recommend to set the caster, and leave it (once you find your favorite setting).

Remember, any time you change caster (or camber), recheck your scaling numbers - especially your camber and toe.