

TECH: FRONT END SETUP

INTRODUCTION

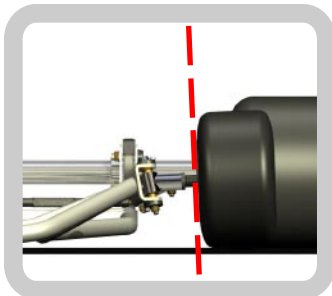
This, the very first tech article for the new Phoenix Race Karts website, concerns one of the most misunderstood, fiddly – and in the hands of the inexperienced, ignored all too often – facets of race kart setup... Front end alignment!

Why is front end alignment critical? Racing karts derive a huge amount of their handling characteristics from the set-up of the front end. Let's go through some of the important design parameters and terminology of kart front-ends.

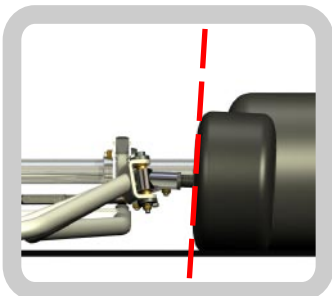
GLOSSARY OF TERMS

Camber: The angle of the outside face of the tyre, measured from the vertical. When the tyre leans into the kart (ie, the top of the tyre is closer to the centreline of the kart than the bottom), the tyre has negative camber. When the tyre leans away from the kart, the tyre has positive camber.

NEGATIVE CAMBER

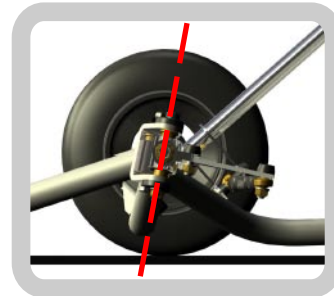


POSITIVE CAMBER



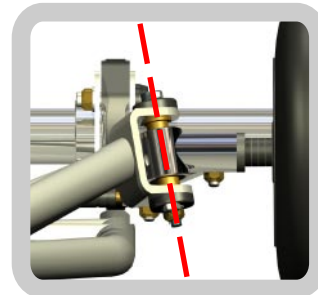
Caster: The angle of the kingpin, viewed from the side of the kart, measured from the vertical. Caster usually ranges from 12° to about 18° on most karts, and varies according to the intended purpose of the kart.

CASTER



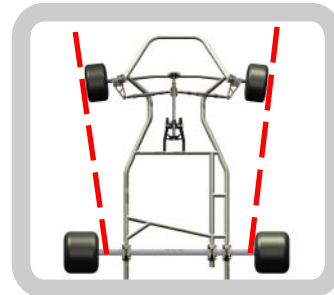
King Pin Inclination: Often abbreviated to KPI, this is the angle of the kingpin, viewed from the front of the kart. Most karts are built with about 10° KPI.

KPI



Toe: Toe is the measure of alignment of the front tyres, viewed from above. When the distance between the outside edges of the tyres at the front is greater than that at the back, the kart has toe out. The opposite condition is described as toe-in. When the distance is the same, the tyres are perfectly aligned and the kart has zero toe.

TOE OUT



TOE IN

