

KARTING SETUP IN-DEPTH GUIDE

**You will learn all the setup
changes on your kart and what
they do and when to apply them**

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GOALS AND MYTHS

GOALS:

- **Balance, Not too much or too little inside rear lift**
- **Utilizing tires to maximum potential**
- **Make the kart predictable and drivable at the limit**

MYTHS:

- **"Loose is fast"**
- **"If the kart doesn't have an issue its setup correctly"**
- **"Setup A will always work for a certain track"**
- **"Setup A will work for driver B"**
- **"Certain kart brands are better than the other"**



GENERAL TIPS



- **Small adjustments accomplish a lot, Track width and front geometry 90% of the time**
- **Dont tune yourself out, Big swings in setup will lead to you going from one problem to the other. Tweak with small changes**
- **Stay ahead of weather**
- **Test your setup on practice days**
- **Driver feedback, What do you feel? Is a important step to find the perfect setup**



FRONT TRACK WIDTH

- **Wider front track width = More weight jacking, more turn-in, heavier steering, more inside rear wheel lift**
- **Narrower front track width = Less weight jacking, less turn-in, lighter steering, less inside rear wheel lift**

When to use:

Fine adjustment to change balance, most karts have a baseline you start from



FRONT TORISION BAR

- **Stiffer bar = Faster weight jacking, faster inside rear wheel lift and set down**
- **Softer/removed bar = Slower weight jacking, slow inside rear wheel lift and set down**

When to use:

Medium adjustment to change rate of inside rear wheel lift and overall chassis stiffness



CASTER

- **More caster = More weight jacking, faster inside rear wheel lift**
- **Less caster = Less weight jacking, slower inside rear wheel lift**

When to use:

Medium adjustment to change the amount of weight jacking and inside rear lift.

Shorter/Lighter drivers may need more caster, Taller/heavier drivers may need less caster



CAMBER

- **Negative camber = Less contact path, can make kart pointier on turn-in, heats up front tires quicker, good for quali**
- **Positive camber = More contact path, can make kart a little lazier but increase mid-corner grip**

When to use:

Fine adjustment for controlling tire temp or slightly increase/decrease cornering grip in front



FRONT RIDE HEIGHT

- **Raise ride height = Increase turn-in as the front tire pushes into the track harder**
- **Lower ride height = Lighter steering and less turn-in, as the inside front is not pushed into the track as hard**

When to use:

Medium adjustment to change how effective the front end geometry is and how much work the front tires are doing

SEAT AND POSITION 1/2

- **Moving the seat forward or backwards can have a drastic effect on weight distribution and completely change the kart handling, start at seat chart settings, they should be relatively close, then you can tweak from there**
- **Moving seat up or down can really change the way the kart jacks weight, driver is the largest ballast, shorter/smaller drivers might need seat set higher or weight mounted higher, taller/heavier drivers might need seat or weights set lower**





SEAT AND POSITION 2/2

- **Softer or stiffer seat can change how the kart transfers the driver's weight to the outside rear tire, softer will flex more but absorb some of the forces, stiffer will flex less but transfer more forces, it acts like torsion bar in the middle of the kart**

When to use:

BIG adjustment, typically reserved for fundamental balance issues, seat setup is the first thing to get right, and the last resort if other adjustments are not working/improving karts setup



SEAT STAYS/STRUTS

- **Similar to the seat itself, changes how much weight is transferred to the tires, fewrt seat stays will transfer less weight to the tires**

When to use:

Most of the time you want one per side, though sometimes to transfer more weight you may want to have 2 per side, small adjustment not a big difference from 1 to 2 stays



REAR TRACK WIDTH

- **Wider = Lower relative CoG (center of gravity), less aggressive weight transfer**
- **Narrower = High relative CoG, more aggressive weight transfer**

When to use:

Fine adjustment to control the rate of inside rear wheel lift, adjust in 5mm increments, to tune how karts lift and sets down inside rear, if kart feels to slide narrower, if it feels jumpy/hoppy widen



REAR HUBS

- **Rear hubs control how much of axle is exposed and change how the axle flexes on the ends, which changes how the tire interacts with track surface**
- **Shorter hubs allow more axle flex on the ends, keeping the tire flatter on track surface**

When to use:

Most karts run a medium hub almost all the time. Use when kart feels relatively balanced but the rear tire isn't cooperating (sliding/binding)



REAR RIDE HEIGHT

- **Higher ride height = Faster/more weight jacking, more sidebite**
- **Lower ride height = Less weight jacking, flatter kart on exit, more traction in some cases**

When to use:

Can fundamentally change the way the kart works, if it feels like the kart is balanced but not maintaining lift, raising the ride height can get the outside rear to dig in and generate sidebite.

Shorter/lighter drivers may need higher rear ride height



AXLES

- **Each kart brand tunes with axles differently, each brand has a different scale for what constitutes as a "soft" or "hard" axle, most karts now use what they define as a medium axle for 90% of the conditions, axles fundamentally change how the kart is flexing**

When to use:

Axle changes are a big swing, use when you feel you´re falling behind the grip level of the track and need to get back ahead of adjustment curve, one of the biggest changes you can make, for when you need to make a fundamental change to the balance of the kart

Rain = Softer

Alot grip = Harder



REAR BUMPER

- **Loose = More chassis flex, more inside rear wheel lift**
- **Tight = Less chassis flex, less inside rear wheel lift**

When to use:

**Leave it loose 95% of the time,
Tight in the wet otherwise run it
loose**

A person wearing a blue racing helmet with 'BELL' branding and a blue racing suit with 'OMP' branding is sitting on a kart. They are looking out over a track area with a chain-link fence in the background. The person is wearing pink and blue racing gloves.

NOTES

- **Track width, caster/camber and front torision bar are good first steps in learning how to affect the kart**
- **Use tuning guides from your chassis brand for a baseline rain/dry setup and for high-grip/low-grip**
- **Driver is about 65 to 80% of the speed (experienced driver) beginners drivers stand for 85 to 95% of the speed**
- **Dont change to much at once**
- **Stay ahead of time, predicting track conditions, if you know its getting colder and track is getting less grip narrow down rear track for example**