Track Side Chassis Tuning Tips

Problems	*Solutions*
Chassis Pushes on Entry:	**1. Increase left front camber** **2. Decrease right front stagger** **3. Increase right rear stagger** **4. Move right rear out**
Chassis Pushes on Exit:	**1. Decrease right front camber** **2. Reduce cross weight** **3. Change to a harder compound on LR** **4. Move left rear out**
Loose on Entry:	**1. Increase rear weight**
percentage	**2. Increase cross weight** **3. Change to more negative LF camber** **4. Add right front stagger** **5. Decrease right rear stagger**
Loose on Exit:	**1. Change to more positive RF**
camber	**2. Change to softer compound on LR** **3. Move left rear in** **4. Increase cross weight**
Real Loose or Four Wheel Drift:	**1. Decrease left side weight**
percentage	**2. Raise the VCG (raise the seat)** **3. Change to the right tire**

compound
4. Adjust tire pressure for increase bite.

The above list of problems and solutions is pretty standard knowledge of fine tuning a chassis for changing track conditions. These basic changes should be used only after a chassis bas been properly scaled with the correct weight percentages, stagger and tire selections.

Every change made will effect another variable of a chassis set up. The ideal set up will be a well balanced chassis with no extreme adjustment in any direction and all variables working in harmony.

Another note of importance is bearing maintenance. Worn bearings at the spindles or hubs in the front end can effect castor / camber and the overall handling of the chassis, it can mask a problem that no changes will cure. Neglected rear axle bearings can rob your engine of horsepower that could be sent to the rear wheels instead.

Toe in / out is vital to the drive ability and speed on the straightaways, a scrubbing front track will make the tires heat up faster and diminish speed when driving straight. Toe settings from 1/16 to 1/8 of an inch out seem to be adequate and help the kart turn in quicker.

Stagger:

Rear stagger is used on a live axle to make the left and right rear tires correspond with each other so the castor doesn't have to completely lift the left rear, meaning the kart will want to turn left at a greater degree as stagger is increased. Too much rear stagger causes a scrubbing effect and increases the rolling resistance.

Front stagger is commonly increased or decreased to change the cross weight on a chassis. Since each spindle is independent of each other, it is not required for the same reasons as rear stagger. Increases of front stagger will create more negative camber in both wheels.

It is intended for the following percentages to be a starting point for offset chassis with no set up sheets or instructions and not to replace any set up guide for any manufacturers chassis.

	Low Cross Kart	High Cross Kart
Left side	55 - 56 %	54 - 55%
Cross weight	53 - 54 %	59 - 65%
Front	44 – 45 %	44 – 46%

Nothing can work correctly without proper percentages, settings and a well balanced chassis. Your first successful race starts on the scales, the information you obtain on the scales is directly related to your success on the track. Notes should be taken at this time using different air pressures and how it will change the cross weight. Front to rear and left to right weight has to be changed by moving the seat or moving added weight.

Although driver comfort is first, close attention to the VCG (vertical center of gravity) is important. The VCG is changed by the seat height and can effect the dynamic weight transfer while cornering. A higher VCG will require a higher left side percentage most of the time to control side bite of the right side tires. A lower VCG has the opposite effect.