

## Kart Tyre Temperatures

The DIGATRON DT-14 tyre temperature gauge instructions are reprinted here.. These are excellent regardless of the type of instrument used, especially now with the widely varying types of tyres and chassis tuning options.

### Probe Points.

The diagram #1 below indicates the proper probe points for checking the temperatures of an individual tyre. When checking temperature, insert probe at an angle and to a depth of 0.020" or more into the tread, taking care not to puncture the tyre.

Aside from reading relative temperatures among all four tyres in chassis tuning, you can use a tyre pyrometer to check individual tyre pressures. By placing the probe at these three points across the tread width, you can determine over-inflation ( middle reading too high ) or under-inflation ( edge readings too high ).

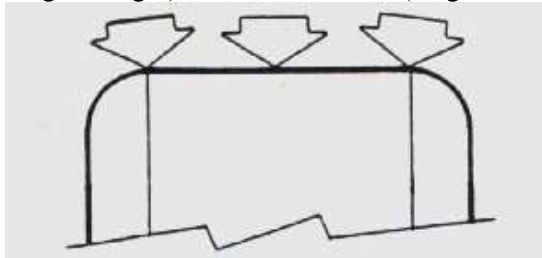


Diagram #1

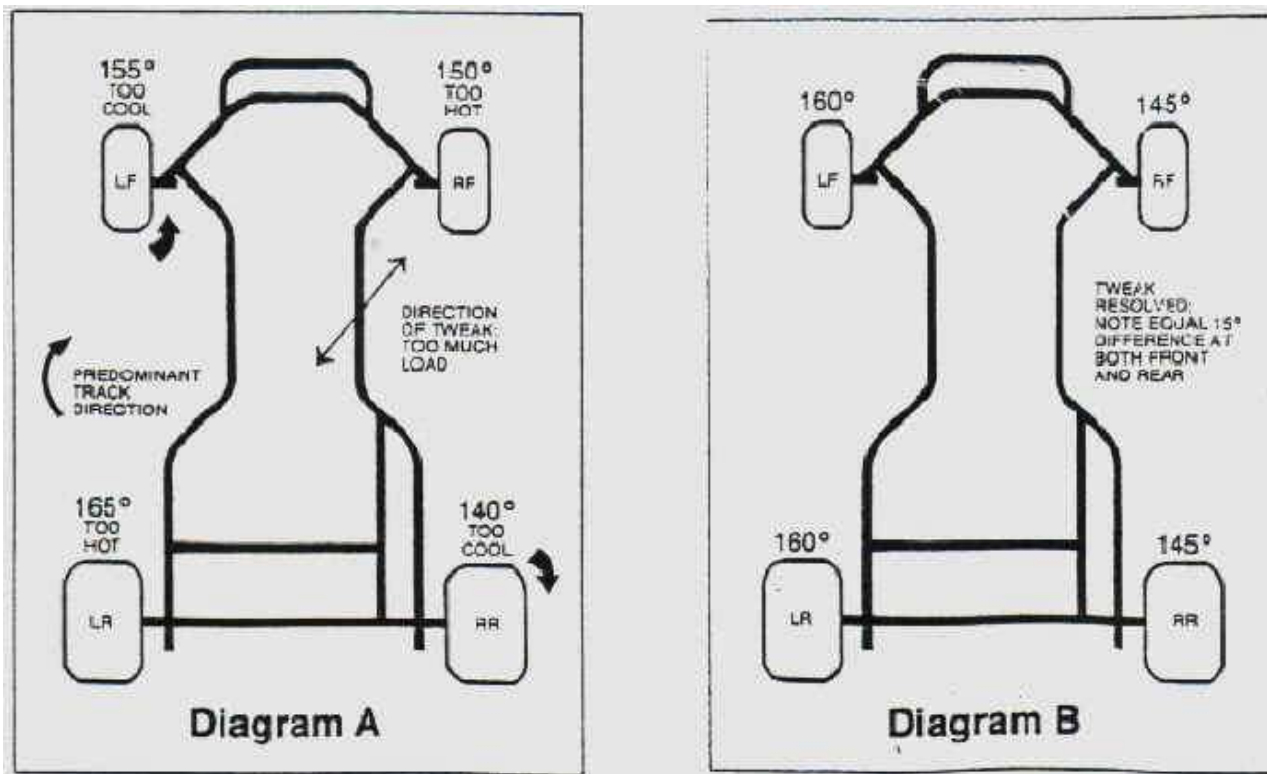
### Determining if the chassis is twisted ( tweaked ).

Run enough laps to get the tyres up to operating temperature before checking the temps. Remember that the temperatures from one side to the other probably won't be the same because race tracks generally have more turns in one direction than the other. For example, if the track has more right-hand turns than left-hand turns, the left side tyres will run hotter.

Put the probe into each of the three reference points on both front tyres ( diagram #1 ) and read the temps. If you are running on a typical track with an unequal number of left and right hand turns and the front tyre temperatures read the same , this is an indication of a tweak. Further proof of a tweak will be that the left rear tyre temp will read **much** hotter than the right rear tyre temp ( as diagram A ).

To cure this problem, adjust the left front wheel **downward**. This will transfer additional load to the right rear tyre. By doing this, you will also take some of the load off the left rear tyre. This adjustment will raise the temp on the left front tyre when the kart is run again.

Make enough laps to get the tyres up to temp and take another reading of all four tyres. Note the difference between the two front tyre temps. Now, note the difference between the two rear tyre temps. If you make enough adjustment on the left front spindle ( king pin ) the two figures should be the same ( as diagram B ).



### Front to rear weight distribution.

Although most drivers have enough **feel** for how the kart is handling to be able to diagnose understeer ( pushing ) and oversteer ( loose ), it's impossible to feel the small amounts of front-rear imbalance that can slow you down slightly.

If **both** front tyres run hotter than the rears, there is too much weight on the front of the kart. There are two ways of curing this problem -- 1) move any ballast lead bolted onto the kart to the rear, and/or 2) relocate the seat toward the rear.

Once the problem is resolved, the front tyres should read cooler and the rear tyres should read hotter than before.

And of course, **reverse** the procedure if both **rear** tyres read hotter than the fronts.

### How hot is too hot ?

According to the tyre manufacturers, most karting tyres are designed to operate in the 165 to 185 degrees F range. Bear in mind that the tyres cool very quickly upon coming off the track. No matter how quickly you read the tyre temps with the gauge, the numbers will be under the 165 - 185 range.

Almost any kart tyre will self destruct if it's operating temp exceeds 200 - 210 degrees F. A kart tyre getting close to the upper edge of it's optimum temperature range will take on a shiny, wet look when on the track.

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