

LEGENDS SET-UP WHEELS

Perry Cohn
Angle Consulting Ltd

Angle Consulting is excited to announce the upcoming release of affordable set-up wheels designed specifically for Legends racing cars, based on technology used in NASCAR and Formula 1.



In one-make race series, with controlled engines, tires and bodywork, it can be argued that proportionally greater performance can be gained from careful attention to the setting up of a car.

To this end, cars tend to be set up using wheels and tires specifically for this purpose - clean rubber mounted on nominally true wheels.

A further solution is the use of set-up wheels, which consist of machined plates, normally aluminum, set to exacting parameters.

The solution described in this document concentrates on the use of set-up wheels with existing scales, presenting a cost-effective solution.

There are numerous advantages to using set-up wheels:

- Accuracy of measurement;
- Repeatability of measurement;
- Reduction of stiction and hysteresis;
- Stagger simulation;
- Bump Steer Measurement;
- Time saving;

The system also includes toe bars and alignment bars, which are mounted to the car itself. This means that if the car is moved during setting up, there is no need to re-align string lines – they are always true to the car!

Accuracy of Measurement

The machined surfaces of the set-up wheels provide consistent and accurate locations for measurement. The fixed height of the set-up wheels is not temperature or pressure dependent, as is a tire, and the camber and toe measurement surfaces are not subject to potential wheel run-out issues.

The flat surface of the set-up wheel provides a machined plane on which to accurately rest a camber gauge. The

same flat surface can also be used to measure toe.

Repeatability of Measurement

Due to the fact that all surfaces are machined and the set-up wheel always mounts in the same orientation, ensures that measurements of toe and camber are always measured with the same reference frame. As already mentioned above, the lack of dependence on ambient conditions also ensures a constant reference frame.

Reduction of Stiction and Hysteresis

Spherical balls on the base of the set-up wheels mean that point contact is made with the set-up pads. The point contact of the balls would mark and dig into the relatively soft surface of aluminium scales. For this reason, a stainless steel tray is provided for the balls to run on. There is an added advantage to the tray - it provides a depression for the balls to run in, ensuring that the car cannot be pushed off the scales. It is important to realize that the free running nature of the balls allows the entire car to be moved with the exertion of very little force.

The free running nature of the balls is in fact one of the prime advantages of the system, as toe and camber changes can be made in situ.

This leads to rapid geometry changes, with the used secure in the knowledge that all that has to be done after the geometry change is to allow the springs to settle by bouncing them, as is usually done. There is no need to roll the car backwards and forwards to eliminate the stiction in the tires.

Stagger Simulation

The set-up wheels by Angle Consulting feature an easy-to-adjust rolling radius, whereby the distance from the contact patch to the wheel centreline can be easily changed.

Time Saving

Once familiar with the use of Angle Consulting set-up equipment, there are significant time savings to be achieved. These are due to the fact that car does not have to rolled fore and aft to overcome tire stiction and hysteresis, as well as the fact that the accuracy of the set-up wheels themselves allows for faster, more accurate measurement.

WHO PREPARES, WINS!!!!

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