

Toe-in Measurement Aids – an EVOLVE TRIKES TECHNICAL GUIDE

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This guide is for trikes employing Evolve folding technology. Because they are cambered wheel trikes all toe-in measurements between the front wheels **must** be measured at the same height front and back of the front wheels. For reliable measurement we prefer measuring to the rim edge adjacent to the tire. For ultimate accuracy the measurement should ideally be made at axle height.

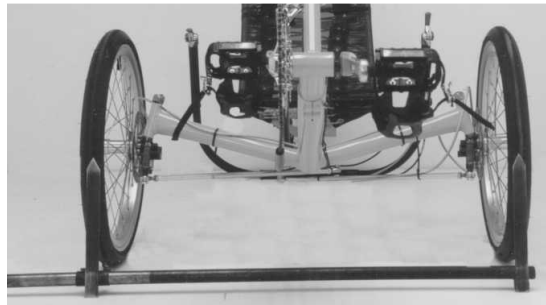
There are several ways of measuring toe-in on cambered wheel trikes, including:

Evolve trikes trammel design

This is the easiest to use. It measures to the rim at axle height. It is made from inexpensive materials but requires simple welding. Drawing attached. The trammel is adjusted to be snug on the outside of the rims and the relative measurement simply read from the scale.

Regular Trammel

If available, a trammel like this is also suitable for cambered wheel trikes:



The trammel has two pointers on a bar, which sit against the tyres with the points at axle height. To measure to the back of the tires any front fenders will need to be detached from the trike and the pointers slid between the tires and the handlebars.

Adjustable length rod and equal height rests

The most inexpensive toe-in measuring aid is an adjustable rod (see Fig.1) that can be made (as posted on several forums) from simple threaded rod and wingnuts (or just one and a plain nut) and rod couplers (long nuts). We have used a standard 90cm/3ft length of threaded rod– ours is M6 thread though 1/4in or 5/16in should be adequate.



Fig. 1 Set-up with simple adjustable rod toe-in measuring aid and equal height rests.

Some posts on forums also suggest using a tight telescopic aerial, or a commercial version.

All of these need to be used with equal height rests to set the rod height the same at each wheel. The rest height needs to position the rod at the maximum height at which the rod can be reliably fit between the rims (at both the front and rear half of the rims) without obstruction. The two rests can be ~40cm (16in) long of the required height and most simply from any stiff board including coroplast/coreflute.

The trikes can vary by manufacturer and model. For 349 wheels we used rests 95mm (3.5in) high. This height yields approx 70% of the accuracy of measuring at axle height which should be quite adequate. The threaded rod needs to be trimmed to the length being measured minus 2.5cm (1 inch) [for a 70cm (27.5in) track a nominal 61.5cm (24.2in)].

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