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The sharp steering system also stops the inside rear wheel dragging in corners.

## Steering has to be quick and sharp

### KART RACING

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The first Ford Falcons in Australia had a steering system with more than five turns from lock to lock at the wheel.

Even without power steering, this gave very light steering, albeit at the expense of a lot of wheel turning.

The average current model Australian six-cylinder car has just under three turns and that's with power steering.

A go-kart has just over a third of a turn and they definitely have no power steering. Fortunately, karts are very light so the very direct system is not really a hardship. Either way, the

result is razor sharp steering which is a necessary feature, taking into account the on-track antics when karters dart and dive looking for gaps in the traffic to make a hopefully successful passing manoeuvre.

How can karts have such direct steering compared to a car? Easy.

The photograph shows the overall simplicity of a kart steering system.

At the top of the angled steering shaft is the steering wheel. At the bottom is a small arm that connects to two tie rods that go to either side of the kart. At their outer ends, the tie rods connect to an arm on each of the front wheel stub axles. That's it.

However, the simplicity belies an important characteristic. The distance between the front wheel and the stub axle pivot is large, relative to a car where the pivot axis is most usually within the wheel. This

distance, combined with the angling of the stub axle pivot, provides a geometry where the outer front wheel significantly falls relative to the kart chassis and vice versa for the inner wheel. So going into a corner, this allows the outer front of the kart to nose down.

This tilting allows the inside rear wheel to lift off the track.

In an earlier article on the solid rear axle of karts, it was explained that the inside rear wheel must be unloaded from the track to prevent it dragging.

The steering system is a key feature of overall kart design.

Despite the obvious simplicity, there are a myriad of minor adjustments that can be made to optimise the steering of the kart. Fortunately, modern, more refined karts work well out of the box.