

length of wishbone leg (m). This would work for small rocker angles, although if the relations get larger we'll need to use additional degrees of freedom and second derivatives to describe the hub movement, because in this example the external suspension has moved only vertically, whereas the internal suspension moves in an arc about rRockerC. The minimum required degrees of freedom for this configuration are zHub Sensitivity to aRocker and aSteer Sensitivity to xRack, with a linear relationship. To represent more complex kinematics, you can click on "Properties" and open up other degrees of freedom and a quadratic relationship.

PickUp Point	Definition
rAxC	The axle centre point; at the centre of the wheel in all dimensions.
rAxA	An arbitrary point on the axle axis <i>outboard of the axle centre</i> .
rFLWBI	The front lower wishbone inboard point.
rFLWBO	The front lower wishbone outboard point.
rRLWBI	The rear lower wishbone inboard point.
rRLWBO	The rear lower wishbone outboard point.
rFUWBI	The front upper wishbone inboard point.
rFUWBO	The front upper wishbone outboard point.
rRUWBI	The rear upper wishbone inboard point.
rRUWBO	The rear upper wishbone outboard point.
rTRI	The track rod (or toe link) inboard point.
rTRO	The track rod (or toe link) outboard point.
rPRI	The pushrod inboard point (on the rocker).
rPRO	The pushrod outboard point (on the hub).
rRockerC	A point on the rocker axis, typically at the centre of the width of the rocker.
rRockerAxis	An arbitrary point on the rocker axis, not coincident with rRockerC (position relative to rRockerC is otherwise irrelevant).

Note that the four wishbone members are defined completely independently, rather than as two triangular wishbones. While it is common for the outboard points of the upper or lower wishbones to be coincident this is not always the case, and the Canopy Vehicle Model's internal kinematics make no distinction between *split* and *non-split* geometries.

Further parameters define the extent of rocker rotation and rack displacement and (optionally) the design radius of the wheels:

Parameter	Definition
aRockerMax	Maximum rotation of the rocker.*
aRockerMin	Minimum rotation of the rocker.*
xRackMax	Maximum displacement of the steering rack.
xRackMin	Minimum displacement of the steering rack.
rWheelDesign	Radius of the wheel as it appears on the design drawings. Used to calculate suspension kinematics.

- Some notes about rocker limits:
- The kinematics curves are calculated at a fixed number of points between aRockerMin & Max, therefore higher resolution kinematics can be obtained by avoiding an unnecessarily large range.

