



TOP SECRET

Balsa GP Gutter Racer

Hop Up and Racing Tips

Your Balsa Grand Prix Racers are light weight cars. This means that aerodynamics play a major role in the performance of your car. On this page we give you tips on how you can improve your chance at winning races.

Aerodynamics: Look to mother nature for the best aerodynamic shape that goes up to a few hundred miles per hour, the raindrop. The front part of the raindrop is round, the back end is pointy. Keep those shapes in mind as you design your Balsa Grand Prix racer.

Working in the axles and the axle tubes: After you have completed your racer, find a smooth surface such as a table. Place your car on the table in front of you and run the car back and forth for a while while applying **light** pressure with your hand.

Lightening the wheels: It is a scientific fact that light wheels will start spinning quicker than heavier ones. What that means for our Balsa Grand Prix racer is that a car equipped with lighter wheels will accelerate quicker from rest to top speed than a car equipped with heavier wheels. Since your car has to run with the O-ring tire or race slick installed, you can fairly easily lighten the wheel by sanding it with sandpaper. Look at the drawing to the side and you see that you should leave the area of the rim that holds the axle in place at original width. You can sand the rim in such a way that it tapers towards the outside of the wheel as shown in the drawing on the right. The reason you want to leave the rim at full width where it holds the axle is that you want your wheels to run true without wobbling. Wobbly wheels would drastically slow your racer.

Compare both wheels to the left and you can see that in addition to being lighter, the wheel on the right is also shaped more aerodynamically as it presents less surface area to the oncoming wind. Double advantage!

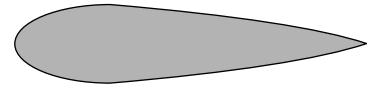
An additional way to lighten the wheels is by carefully drilling holes into them. This should be done by an adult on a drill press. Make sure you distribute the holes evenly across the wheel so it runs balanced.

A straight running car is a fast car!

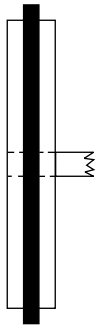
Make sure your racer runs straight as the shortest line between two points is a straight line. This is especially important for the portion of the race where your racer exits the gutter and runs on the ground. Use shimmys, such as a small piece of a toothpick, between the front axle tube and the car body to get your racer to run straight.

Concentrate at the start to launch your car correctly right at the "GO" signal!

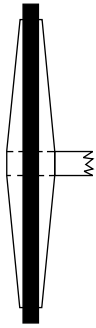
Center your racer in the gutter and place your index finger onto the start line. After you give the official starter the agreed signal that you are ready, concentrate on listening for the "GO" command. Lift your finger up and slightly forward as fast as you can. Even if you are racing a car that runs faster than yours, you can beat that car by launching a split second faster than that driver. Do not let yourself get distracted at the start!



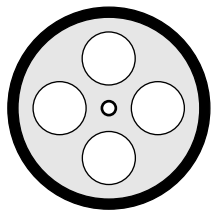
The raindrop or teardrop shape



Standard wheel

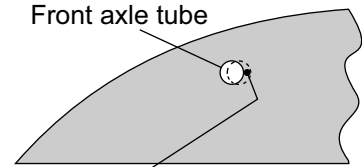


Lightened wheel



Drilled wheel

Front axle tube



Use a shimmy to steer your racer straight

