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## WHAT TUBING SIZE SHOULD I CHOOSE?

On a regular basis our technicians get the question, "What chassis model will work best for me?" Birel offers a range of chassis designs that utilize various size tubing depending on application of class (engine size, tire compound and driver weight). Below you will find some valuable information on the differences in the chassis and what they are best suited for.

### What is the difference between a 30mm, 31mm & 32mm chassis?

Essentially, the difference is all in the tubing. A 30mm chassis, such as an RY30-s2, is designed completely with 30mm diameter tubing throughout the chassis. A 31mm chassis, such as an RY31-s2, uses a mixture of 30mm and 32mm tubing. Typically the main frame rails the run the length of the chassis are 30mm while the cross tubes are 32mm. Finally, a 32mm chassis, such as Birel's RX32-s2, is constructed of all 32mm tubing.

### So what does this mean and how do I choose?

To define how you choose one from the other, it is best to decide your application and know how a chassis is designed to operate.

In a **high grip** situation (such as national events with a lot of rubber build up or soft-tire classes) you want the kart to "work". By "work", we mean to twist in the middle, release the inside rear tire, hold it up and then drop it down gently after the center of the corner. A 30mm chassis does this very well while the 32mm chassis might be too stiff to be perfectly effective. Generally in a high grip situation a 32mm kart will pick the inside tire up just fine but set it down too soon since it is stiffer (At least in typical high-grip situations). HOWEVER, once you increase the hardness of the tire, then add additional weight (driver weight of 200 lbs and/or classes over 400 lbs.), the 32mm chassis promises to be more appealing.

In a **low grip** situation you need stability and traction and the kart never really "works" very much of the time at all. It is difficult to release the inside rear tire and when you do get it off the ground it goes up and then right back down. In the end you actually want both tires on the ground for more traction (except in hairpins). Since the 32 doesn't deflect as much as the 30 it makes more grip (works less) and thus is better suited for low grip tracks.

### Recommendations:

Birel chassis are extremely versatile and it is not uncommon to see 30mm, 31mm and 32mm models all racing at the front of the pack. This is due to different driving styles, weight, set-ups and the many tuning options each kart has in the form of Freeline components (hubs, axles, caster/camber pills, torsion bars, etc) that can adjust the grip level of the kart. We offer a rule of thumb below that we choose to stick by.

30mm chassis - is used for junior and senior classes that don't exceed 350-375 lb. class weights and for drivers of a maximum weight of 180 lb.

32mm chassis - is best suited for low grip situations with drivers of over 185 lbs or 385+ lb. weight classes.

31mm chassis - is a very versatile mix between the others that may offer the best of both world's, but is not recommended for lower hp junior categories.

More information can be found at [www.GoBirel.com](http://www.GoBirel.com)