

DATE: April 26, 2013

NOTICE REGARDING:

UPDATED AXLE MODULUS & APPLICATION SHEET

PART #'s: new part #'s for 50x2x1020-P axle (8150.06.27-P) & 50x2x1040-Taxle (8150.06.13-T)

BULLETIN DETAILS:

Attention Birel & Freeline customers. There are two NEW axles added to the Freeline Axle line, the 1020-P and the 1040-T. Please read below details on these new axles as well as an "application list" of uses for each axle rating.

(1) attachment - updated Freeline Axle Modulus Flyer (pdf)

"P" 1020mm AXLE: The "P" axle is available in 50x2x1020mm with a modulus of 666. It now available through MRP and Birel dealers nationwide. *For description - see below.*

"T" AXLE UPDATE: The "T" axle is a new offering that is in between the "F" and "M" axle with a modulus of 490. It is offered as a 50x2x1040mm. *For description - see below.*

AXLE RATING APPLICATIONS:

"F" AXLE - The "F" axle is typically standard in any new kart. It would be considered a "medium" axle and used when the track is "normal". When the track has an average amount of grip on it and the ambient temps are around 70 degrees.

"B" AXLE - The "B" is soft and we use it when the track is very slippery, wet or when it is cold (spring and fall). The B gives you more traction and flexes "easier" when the track doesn't have enough natural lateral (side-to-side) grip to make the kart flex properly.

"D" AXLE (2.0) - The "D" 2.0 is between the B and the F and we use it under the same circumstances as when we use the B except the D will give you a bit more side bite in the fast corners and will hold the inside rear tire up a bit longer. If you are using the B and the kart pushes from the center of the corner to exit in slow corners, it could be because the axle is too soft and it would be recommended to try the D 2.0.

"D" AXLE (2.5) - The "D" 2.5 is the same material as the D 2.0 but just .5mm thicker. It is primarily a shifter axle when you are looking for a balance between side bite and traction.

"T" AXLE - The "T" is harder than the "F" and is used when the track starts to pick up rubber and you are looking to get more lift out of the inside rear tire. Also if the inside edge of the tire is starting to wear abnormally (excessive wear) while using the "F", it would be recommended to try a "T".

"M" AXLE - The "M" is harder than the "T" and we use this axle when it is very hot out and there is a lot of rubber on the track. The "M" helps hold the inside rear tire off the ground longer, which helps keep the kart from bogging the engine down.

"P" AXLE - The "P" is harder than the "M" and is used in extreme conditions or on a very fast track with not much grip (road race). We have used it when the ambient temps were over 110 degrees and the track had a thick layer of rubber on it. Basically if the "M" isn't enough you need to put the "P" in.

"K" AXLE - The "K" is the hardest axle that Birel makes. It would be recommended for very heavy drivers and for road racing.

AXLE TUNING THEORY:

The theory in changing axles is that a harder axle will give you more side bite on faster corners, however, if there is not enough natural/lateral grip on the track it doesn't matter how stiff you make the rear of the kart. You get to a point that stiffer just makes it slide more. Soft axles will help release/lift the inside rear tire in slower corners but if the axle is too soft the tire will release briefly and then set back down (which either bogs the engine down or could even understeer center off). Axle selection becomes the art of finding the axle that gives you enough side bite on fast corners but is soft enough to let the kart flex properly in the slow corners.

