I started my career in cycling in 2009 with Carbonreparatie.nl - a carbon repair shop that is active in repairing hospital equipment, race car products but with a particular emphasis on bicycle frames and wheels. It was one of the first companies in Europe that specialized in bicycle related carbon repairs. From our inception we received a lot of requests from pro cycling teams to make modifications to their products. This also led to the birth of the Bike settings measurement jigs I produce. This is a mobile measuring device that gives you the exact coordinates of the saddle and handlebar, with the bottom bracket axle as a point zero. The majority of requests that we received to modify standard bicycle products were to find the perfect time trial position on the bike. At first, I only modified existing materials, but soon this lead to producing arm pads, extension poles, and combinations of the two as Speedbar. Speedbar is a one-man-business. It’s my individual choice to stay small. Making bespoke products for high-end consumers and athletes requires a lot of attention to every single detail. By working with a big team this can only led to misunderstandings. I’m quite sure I have the smallest business in pro-cycling, but with over 100 world tour riders using my product, Speedbar is one of the most used brands in bespoke products.

A modern time trial frame is a show case of what’s possible when using cutting edge technology, the latest simulation techniques and the best available materials known to men. Many brands claim that their machine is the fastest one on the market. However, the basics of the bike stay’s the same: You need a person on it to make it fast. This is where it becomes interesting. Not one human being is the same as the other one. We are all individuals. But that cutting edge time trial bike only comes in 3 or 4 sizes? This is where bespoke parts can make the difference.

By Edwin van Vugt, Owner and founder of Speedbar Owner and founder of Bikesettings.com Co-owner and founder of Carbonreparatie.nl

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Time trial bikes are the most advanced, tested and high-end bikes that are produced. However, sales of this specific category of bikes is only a fraction of the market compared to road or mountain bikes. To lower the costs of production, most brands choose to reduce the number of frame sizes. Where race bikes are available in 6 to 10 different sizes, TT bikes come only in 3 to maximum 5 sizes. To be sure that all customers can find their ideal position with only a few sizes available, most major brands have come up with a system of spacers, bolts and clamps to fit the aerobars in every possible height, length, width and angle. But once the perfect position is found, there is no need any more for this adjustability. Recently introduced aerobar systems contain a large number of bolts to set it up. I have seen systems can contain 18 bolts. 18 times an opportunity to overtighten, snap, raddle loose or get stuck. This is the reason why I was contacted by a world tour team after the 2016 Rio Olympics. A small mistake was made during the setup of the aerobar system which resulted in a failure during the race. To prevent this from happening ever again, I was asked to make a one-piece aero bar system with only two bolts to attach it to the base bar. The rider himself also requested longer and higher arm pads for more control of the bike. After the first tests, we saw a lot more benefits. By losing the majority of all bolted connections, not only did the weight drop dramatically, but also the stiffness of the entire structure increased. On top of that the rider experienced a much more comfortable, and therefore, stable riding position because of the extra support for his lower arm. This was the moment when I realized that by maximizing the comfort of the rider, he can maintain his aero position easier and longer.

I created a method that allows me to make a mold of the lower arm of each rider, which I can use to produce the lower arm support. In this way the entire lower arm of the rider is supported by the aerobar. The stability for the riders upper body increases and so there is also a huge aerodynamic gain.

This project was soon picked up by UCI World Tour teams as they are always searching for the marginal gains within their sport. Other brands saw this new upcoming marked and stepped into the game. Most of all world tour teams are now using bespoke time trial bars for their gc riders and time trial specialists. You can say that bespoke has become the standard when it comes to aerobars at UCI world tour level.
In my perception, bespoke is always custom made. But bespoke doesn’t mean it’s not available for other teams or consumers. In some way, a tailor-made suit is a bespoke product as well, but is available for every individual person who is willing to pay the price. On the other hand, quality checks and production control is not as simple as with standard products. Every bespoke product is different from the other in some way. In case of time trial aero bars, there is no standard test method or certification that guarantees the quality of the product. Even the UCI doesn’t have guidelines for this. With 3D printing being available for every individual person, it’s not that hard to make a bespoke time trial aero bar that has all the benefits mentioned above, but doesn’t have the structural stiffness to cope with the forces during racing it.
Another trend that frightens me is that UCI world tour teams are hooking up with companies that only produce for that team. It's within the rules of UCI that every part on the bike has to be available for the consumer. In theory it is, but in reality, it's far from that. Hard to find websites, delivery times that take years, and prices that are not in conformity with reality. When it comes to sports in general, the basics are the efforts of the individual. In a lot of cases helped by high-end sports equipment. In many cases this equipment is sold because it is used by those athletes. If we fool the end consumer by selling any other equipment other than the one their idols are using, we will only fool ourselves in the end.

I truly think that mass produced products can benefit from bespoke parts. In this example you could say that a standard bicycle can become a personalized one by adding a bespoke product. I’m sure there will be many more examples of this in other sports. It doesn’t have to be a competition between mass produced and bespoke. If we can make it a collaboration, more products will be sold.

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