

KATUSHA'S CHOICE

What rim depths Tour de France pros race and why

What you can learn from how the pros select Speed Weaponry for each stage of the world's biggest race...

When it comes to Zipp wheels, a few millimeters make a big difference. This is especially true at the Tour de France, which starts Saturday. Just as each rider on Team KATUSHA's Tour de France roster plays a specified role in the race so do the Zipp wheels they ride. Wheel choice - deciding what rim depth is best - is an added element of modern-day cycling strategy. Here we examine how Team KATUSHA goes about matching riders to the best model of Zipp wheels for them, and what lessons amateur cyclists can learn from that.

"We really appreciate that Zipp has so many different rims at different heights," said Torsten Schmidt, sports director for Team KATUSHA. "It's the right amount, from the 202 to the 808." Schmidt gives his quick breakdown for which Zipp wheel matches which type of terrain:

- 202 Tubular (32mm depth)** - "Uphill, long climbs."
- 303 Firecrest (45mm depth)** - "Up and down all day."
- 404 Firecrest (58mm depth)** - "Some up and down, flat."
- 404 Firecrest front, 808 Firecrest (82mm depth) rear** - "Lead outs." (Think about the guys in Alexander Kristoff's sprint train.)
- 808 Firecrest, Super-9 disc** - Time trials.

These are not strict rules but instead guidelines. The 404 Firecrest is Zipp's most popular wheelset because of its high aero efficiency and crosswind stability. It's a sort of starting point for wheel choice - go with the 404 unless the terrain dictates something different. Tour de France always offers opportunities to ride every Zipp rim depth. Running from July 2-24, this year's Tour covers 3,535 km (2,197 miles) over 21 stages including:

- 9 flat stages** - most common wheel choice likely to be 404 Firecrest.
- 1 hilly stage** - tough terrain suited for all around 303 Firecrest.
- 9 mountain stages including 4 summit finishes** - a mix here, with some 202 Tubulars for summit finishes with the 303 Firecrest also as a potentially popular choice.
- 2 individual time trial stages** - Most common setup is Super-9 Disc paired with the deep 808 Firecrest because of its high crosswind stability. Some riders opt for a 404 Firecrest on front.





Team KATUSHA's Tour de France roster and team goals also require a full arsenal of rim depths. The team's nine-man Tour roster is built around supporting two different types of leaders - Norwegian sprinter and Spring Classics strongman Alexander Kristoff as well as Spanish climber and Grand Tour specialist Joaquim Rodríguez. Kristoff is a bigger rider at 181cm and 78kg (5-foot-11, 17lbs) and Rodríguez is built for the climbs at 169cm and 58kg (5-foot-7, 128lbs). Traditionally, you'd see climbers gravitate toward more shallow rims and bigger riders on deeper rims... But that conventional wisdom is evolving, thanks to the gains of crosswind stability in Zipp Firecrest technology.

"It depends on the rider," said Thorsten Wilhelms, who is part of the SRAM's Road Sports Marketing team that serves as tech liaisons to sponsored pro road, track and cyclocross teams and triathletes. "Some guys, of course, they're looking for a breakaway. Some guys, if they're on the front, they are looking for the most aerodynamics as possible."

Wilhelms, a former pro who's based in Germany, said climbers tend to focus on weight, especially for summit finishes. But he added that smaller riders also see the benefit of aerodynamic performance offered by deeper wheels. Many top Zipp-sponsored road pros use the 404 Firecrest Carbon Clincher in training. The aero benefit can motivate riders in training and prompt them think more about wheel choice and aerodynamics.

Kristoff won the flat Stage 5 of this year's Tour of Qatar riding a 404/808 Firecrest combo. At the Tour of Flanders, where he finished fourth, Kristoff choose the 303 Firecrest because of the hilly and technical nature of the course. The 303, the widest of the Firecrest rims,



is the go-to wheelset for the Spring Classics because of its high stability. The 303's wider rim pairs well with wider tires for more air volume and greater comfort.

What about wheel choice for the rest of us? Most amateur cyclists don't have the luxury of a team service course full of wheels at different rim depths as Tour de France pros do. But cyclists of all ages and abilities can apply some of this same thinking: Look at terrain, personal goals, & your discipline. Let's just say you are riding to be fit and to take part in weekend group rides (which you may treat like a race).

With wheel choice in mind, we recently posted a Twitter poll on @ZippSpeed asking our followers about the terrain where they live. Of the respondents, 87 percent said they lived in flat or hilly areas. Just 13 percent describe their terrain as the high "Beyond Category" mountains. That means most every rider has plenty of options to consider when it comes to wheels.

If your area is flat and windy like much of Florida or Holland (or around the Zipp factory in Indy) you could go with dual 404s. Or, you could a 404 front/808 rear combo or even dual 808s (a common setup on Zipp lunch rides). Running an 808 in the rear does not drastically affect the handling of your bicycle in the wind thanks to Firecrest technology.

If you live in a hilly region, again, consider 404s. Hilly rides typically involve varying gradients with some flat sections in-between, and often-unpredictable winds. The 404s' aerodynamic advantage will help you maintain speed, and thanks to its neutral center of pressure derived from the



Firecrest or NSW rim shapes, you'll be able to confidently keep your bike in a straight line when in a crosswind,. Both of these features help you save watts on the flats that would otherwise be spent if you weren't riding Zipp wheels. Take those saved watts and spend them on the climbs. If you are maintaining 12mph, you are still getting an aerodynamic advantage. This, in addition to the 404s light weight and stiffness, will help you chase down your favorite KOMs. The 303s are another option here, especially if you're riding prolonged climbs or pitches up to 20 percent.

If you live amid the high mountains, consider either 303s or 202s. The 303 has a good balance of aerodynamics, light weight and comfort. "When you get going 23mph (37mph) and up, you notice the aerodynamic advantage a 303 has over 202s," Zipp wheel product manager Jason Fowler said. "But if you favor a lighter weight product over aerodynamics, than the 202s are your wheel. The 202s are still aero and have the most neutral center of pressure, so handling is top notch."



Amateur cyclists can take heart in one thing. The top pros also love rolling up to the start-line on an eye-catching machine, complete with wheels that compliment their riding goals and the terrain they'll be riding.

"The sportsman and equipment should fit together," KATUSHA's Schmidt said. "If you sit on one of the fastest setups in the whole peloton, you just feel good. You have to feel good!"

2016 Tour de France Roster:

Jacopo Guarnieri (ITA)
Marco Haller (AUT)
Alexander Kristoff (NOR)
Alberto Losada (ESP)
Michael Morkov (DEN)
Joaquim Rodriguez (ESP)
Jurgen Van Den Broeck (BEL)
Angel Vicioso (ESP)
Ilnur Zakarin (RUS)

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202

Tubular



WHEELSET WEIGHT

1180g

303 Firecrest

Tubular



WHEELSET WEIGHT

1390g

404 Firecrest

Tubular



WHEELSET WEIGHT

1505g

808 Firecrest

Tubular



WHEELSET WEIGHT

1700g

SUPER-9

Tubular &
Carbon Clincher Disc



DISC WEIGHT

995g

SUMMIT FINISH	SUMMIT FINISH	SUMMIT FINISH	SUMMIT FINISH	SUMMIT FINISH
MOUNTAINS	MOUNTAINS	MOUNTAINS	MOUNTAINS	MOUNTAINS
COBBLES	COBBLES	COBBLES	COBBLES	COBBLES
ALL AROUND	ALL AROUND	ALL AROUND	ALL AROUND	ALL AROUND
TIME TRIAL	TIME TRIAL	TIME TRIAL	TIME TRIAL	TIME TRIAL

Zipp Speed Weaponry was founded in 1988 with the sole mission of making athletes faster on their bikes. Over the course of the last two decades, Zipp has done exactly that, by drawing on its core competencies of design engineering, composites knowledge, and wind tunnel development. It is these competencies that have allowed Zipp to deliver a series of firsts in the cycling industry. From the first carbon disc wheel to the first carbon crank to the first wheel to achieve negative drag in the wind tunnel. These firsts have helped Zipp athletes to become champions in the toughest races in the world, on the fiercest roads in the world, from the cobbled roads of Belgium to the Queen K in Kona.