

ZRP SPEED WEAPONRY

2008



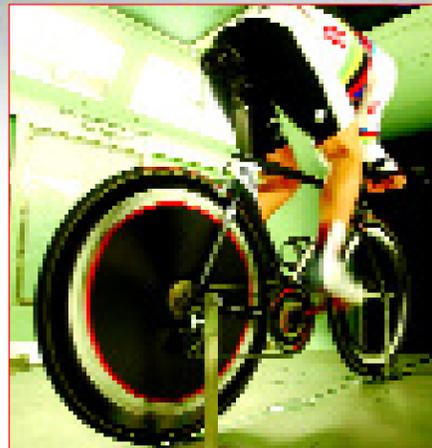
## Zipp Accelerating innovation

No other company in the world puts as much time, energy, and force of will into optimizing the bicycle wheel for maximum speed. It's a constant pursuit. An expectation that every year we'll push the envelope that much farther. Deliver more speed, more performance, and more wins for our riders. Which explains why we're also the only wheel company to own two aerodynamic rim shape patents, each optimized for a different application, that push well beyond the aerodynamic confines of other companies' traditional V-shaped carbon rims. The intentionally radical shaping reattaches the drag-inducing airflow that breaks and swirls off as the inherently un-aerodynamic round tire plows through the air. The smoothed airflow means less drag, faster times on the course and bigger wins for you.

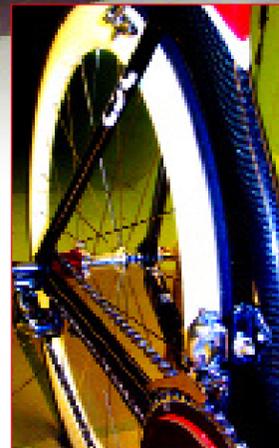
But wheels are only the start. Our passion for perfection in cycling is unlimited. Any opportunity for improvement in the bicycle is fair game for our engineering team to explore. If an optimized tire will make our wheels faster, we'll build it. If our composite research leads to a breakthrough on crank stiffness, stem durability or handlebar comfort – we'll make them. If we see any area of bicycle development we think we know how to improve, it's a guaranteed we'll be up burning the midnight oil, designing, modeling and prototyping the next idea. It's a quest for speed. In any and every form we can think of. That's just what happens when you pull together the brightest minds from the aerospace, Formula 1 and even chemical engineering fields and give them the freedom to focus all their energy on the passion that brought us all together in the first place: winning on the bike.



## The shape of speed.



*San Diego Low Speed Wind Tunnel Feb 15, 2007. The first true negative drag number ever recorded for a bike wheel.*



*SLA rapid prototyping allowed us to bring 13 prototypes to the tunnel to test concepts for just 3 wheel models.*

### Wind tunnel testing is just the beginning.

Excellence. It means never being able to say, “good enough” on a product. We constantly push the development envelope, demanding perfection from ourselves and our products. And that means using the wind tunnel as a true development tool – and not simply a marketing device where we do a few runs and then hang the words “wind tunnel tested” in front of our product. True wind tunnel development goes far deeper.

The 2008 model year prototype trip is a prime example: more than 40 wheels including 13 prototypes (developed for just 3 actual models) plus 14 competitors’ products and our current wheels for baselines. Three full days of testing, measuring and modifying to get exactly the wind-taming shape needed for each model.

So what have we learned to make you faster?

### Model, test and test again.

In twenty years of wheel development, we’ve learned that, in many cases, the Computational Fluid Dynamics (CFD) aero modeling software makes too many assumptions at low speeds to be fully accurate. Its predictions are heavily skewed once the wheel starts spinning (a function no CFD program models well quite yet). So while CFD can get a product “in the ball park”, it’s no substitute for running a series of prototypes with slight variations of the same theory in the tunnel. That’s the basis of our 2-trip design process. The first trip we bring stacks of prototypes and slather them with clay and tape to fine tune the shapes for maximum effectiveness. A few months later we run a second test with pre-production wheels to verify the original testing results. It’s only then that a design goes to production.



### Designing for the aero sweet spot.

Fully 75% of all real-world wind/rider speed conditions occur in the narrow band of 10° – 20° yaw angle. This “sweet spot” is where we focus our attention to maximize real-world speed. As an example, when wind tunnel data shows a wheel performing best from 20° – 30°, it’s really only optimized for less than 10% of all real world conditions.

### Why average drag doesn’t work.

Many companies average their wind tunnel data across the entire performance range to show a low drag number. But this straight-line average doesn’t take into account the relative significance of the sweet spot vs. the rest of the wind angles.

### Shape is even more important than depth.

Conventional wisdom says the more surface area the faster the wheel will be in the sweet spot. While that’s true of standard V-shape rims, the Zipp-patented toroidal shape allows us to tune rim shape and smooth airflow more effectively – all with less wheel surface area so you get the aero benefits, without the crosswind handling penalties. As an example, the 58mm 404 rim with patented Zipp shape tests better than a 65mm non-Zipp shape by 2-6%

### Tuning the shape for maximum speed in the sweet spot.

Zipp has 2 separate patents on rim shape that allows us to continually refine the airflow patterns over the rim for lower and lower drag. Each trip to the tunnel lets us further tweak the rim shape using what we learned from the last trip to the tunnel.

### ABLC- stretching the sweet spot.

Drag data indicates the dimples (our third aero rim patent) do the job of keeping the airflow attached to the wheels an average of 2° farther than the non-dimpled wheels.

### Tires and real world speed.

Most aero wheels are actually tested in the tunnel using 18mm tires. Riding a real-world tire choice to gain durability means a 10-15% increase in total drag with these wheels. But the patented Zipp rim shape means we can optimize our tubular wheels for 21mm tires - you don’t sacrifice a gram of drag and you gain dependability. Even better, our wind tunnel experience has allowed us to engineer around the aerodynamic “speed bump” a clincher rim creates and to optimize the rim shape for 23mm wide tires. Now you can have the speed and the convenience. See all the details at [zipp.com](http://zipp.com).

**The True Aero Edge** We’ve long applied mathematical models to predict how much time is saved using one wheel over another based on wheel only data from the wind tunnel. Traditionally, the numbers are given in time savings per 40k or time savings per 100 miles. In an effort to further hone the math models, Zipp put Fabian Cancellara in the tunnel on his road bike with various wheelsets to show the relative advantages of each. Compared to a high end aluminum wheel set with a bladed spoke, our math model predicted that 404s would have a 58 second advantage per 40k based on wheel only data. The actual wind tunnel data on Fabian in the tunnel, yielded a drag difference of 63 seconds per 40k using a standard pair of 404s, verifying that the wheel only data can be used to predict performance to a relatively high degree of accuracy.

### Only full wind tunnel development can bring you:

- **The world’s first true negative drag disc wheel**
- **The first clincher rims that don’t sacrifice performance for convenience**
- **Optimized speed for real-world tire choices**
- **The fastest front wheel in the world**



## Beyond Structural



**Why stitching?** Rather than simply laying a Kevlar® sheet between the plies of carbon in a 2-dimensional lay-up, the Kevlar needs to be stitched into and around these layers so it surrounds the plies and becomes an integral part of the structure – otherwise the Kevlar and carbon will simply shear apart at impact. Using six separate Kevlar threads in a co-axial helix stitch allows us to bind the plies together in 3 dimensional planes so every impact load is distributed evenly across the tire bed for maximum impact resistance.

## Carbon Bridge™

**New for 2008: Exclusive technology that makes Zipp rims not merely the fastest wheels on earth, but the strongest as well**

Carbon is universally recognized for its stiffness and light weight. The challenge is engineering and designing a lightweight, aerodynamic wheel with the impact resistance you need to survive the harshest race courses (Amstel Gold and Fleche Walonne) – all without compromising ride quality or control.

Using a technique pioneered in the aerospace industry we've done just that. Whereas all previous rims rely on traditional 2-dimensional layup techniques that use epoxy resin alone to hold the plies of carbon in the tire bed together (the area most susceptible to impact damage), we've added Kevlar thread in a co-axial helix stitch to bind the layers of carbon together in all three dimensional planes. The Kevlar thread, while only 1/3 the stiffness of carbon, is 350% more impact resistant – a full seven times stronger than steel by weight – holding the carbon together and distributing the impact force 3 dimensionally throughout the plies of carbon. Further, the helix stitched carbon serves as a "capstone" at the top of each outside diameter bridge distributing the compressive forces down the rim. This process creates a rim with 28% more impact resistance than any other rim ever made at this weight. And without losing road handling. In fact, the arches that form the Carbon Bridge are so strong, we've been able to remove material on the tire bed so the total rim weight remains almost unchanged over our previous design.

Carbon Bridge and the Kevlar helix stitching that makes it possible are a Zipp exclusive. And just one more reason why you can trust your most important races to us.



**Inside the Roman arch: The crown jewel of Roman architectural engineering, Roman arches have stood for thousands of years all across Europe. The secret of their longevity is the way the arch distributes loads into compressive stresses – the same process the Carbon Bridge uses to distribute the force of slamming into a pothole or cobble. We think even Caesar would have been impressed.**

## M2CM®

**A seamless combination of aluminum and carbon so strong even the 29er mountain bike crowd can't break them**

By combining a lightweight, sub-200 gram welded aluminum hoop and the aerodynamic bulge of our structural carbon rim we've created something truly extraordinary – a nearly bomb-proof lightweight aero clincher wheel with no weight restriction, no worries about blown tires from overheating and no need for cork brake pads.

In fact, the M2CM process creates rims so strong our 303 clincher holds the all time record for impact drum testing in the U.S. and in Europe. While not the recommended use or covered by Zipp's warranty, the 404 clincher rim has developed a cult following in the 29er mountain bike world, with some riders putting up to 10,000 off-road miles on a single set of rims.

Where does this strength come from? M2CM permanently fuses the welded hoop into the carbon during the molding process of the rim. Once bonded the aerodynamic bulge of the carbon serves as a leaf spring to reinforce the aluminum rim during impacts. This suspension effect also keeps the tires in contact with the ground for better power transmission.

And, not only is M2CM strong, it's also the first clincher rim with no aerodynamic compromise because we've engineered the shape to compensate for the "speed bump" between the brake track and the tire. M2CM: Added strength, more speed, better comfort. Just another in a long list of Zipp exclusives.

### The Structural Rim Advantage:

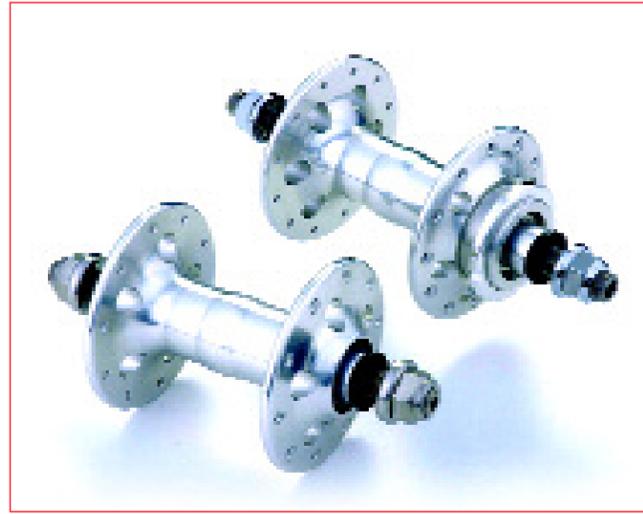
There are 3 key advantages to a structural carbon rim over "faired" models which bond a fairing over a standard box rim:

1. **Strength** – with both Carbon Bridge and M2CM loads can be distributed over the whole rim for greater impact resistance. A fairing simply glues on to the outer rim and does not support any load.
2. **Aerodynamics** – the spokes of a faired rim terminate in the outer rim, which means the spokes actually go through holes at the side of the fairing instead of at the inner diameter of the rim. This disrupts the aerodynamics of the fairing so that, when the wheel spins the rim actually looks shallower to the wind. A 65mm faired rim performs about the same aerodynamically as a 44mm Zipp structural rim.
3. **Comfort** – The integrated construction of our structural rims allow us to use the aerodynamic bulge in our rim as a leaf spring to absorb and distribute shock – much like the suspension on a car. A non-structural fairing affords no damping effect.



## Zipp Hubs

**It only makes sense to pair the world's finest rims with the most durable and technologically advanced hubs on the planet.**



## 182/82 Hub

**When the stakes are high.**

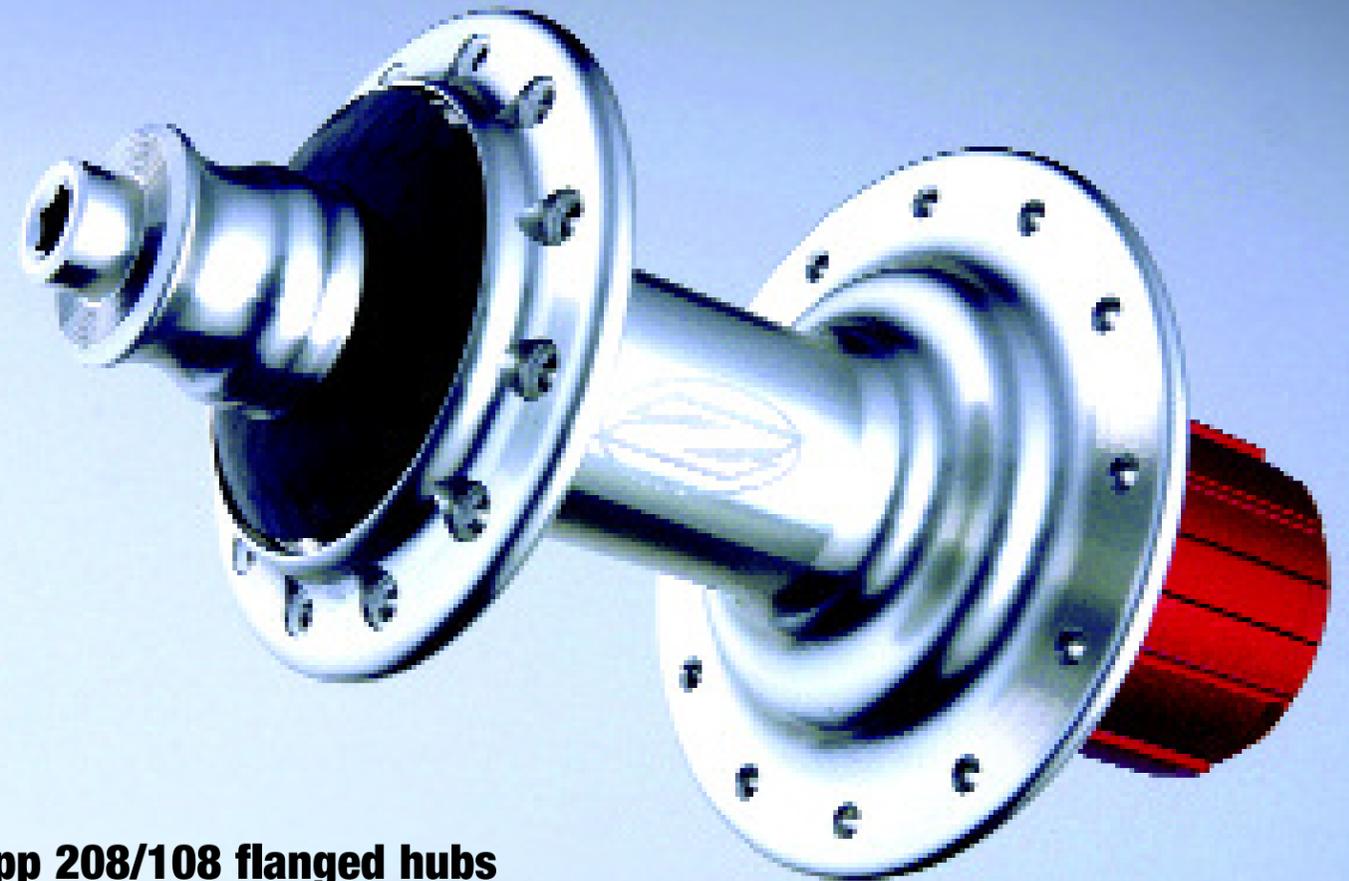
In the end a wheel is only as good as its weakest component. This is why in 2002 we took up the challenge of designing and manufacturing our own hubs. The stakes were simply too high for our riders and the opportunity for improvement too apparent. We wiped the slate clean and built an all-new, completely revolutionary hubset incorporating every lesson we could learn from defense contractors, Formula 1, the aerospace industry and even the medical field. The result is the Zipp 182 and 82 straight pull hubs. Lighter, stronger, faster – just like the rims we lace them to.

## Track Hubs

**The most thoroughly engineered track hubset. Ever.**

Both the front and rear hubs utilize a massive 69mm diameter flange locating the spoke heads on a 60mm diameter hole circle (traditionally this is 47mm). This allows your wheels to be built laterally and torsionally stiffer than any other you've ever ridden. Furthermore, the revolutionary Spoke Hole Impact Forming Technology (SHIFT) makes spoke holes that are over 30% stronger than drilled holes with hole fatigue properties more than doubled. The result is a hub that can be laced radial, one, two, three, or four cross. While most hub manufacturers void their warranty if you radial lace hubs, we encourage it.

**SHIFT Explained – Traditional hub flanges are chamfered for spoke hole heads by removing material with a drill tip. SHIFT formed holes are actually forged into the hub flanges so less material is removed and the local material grain structure is perfectly aligned to handle spoke stress. As a “fun fact” SHIFT technology has been used on aircraft skins for nearly 20 years now, but is still so costly it's only used on the highly loaded under sides of the wings and wing box.**



## Zipp 208/108 flanged hubs

**Nothing traditional about them.**

Our flanged hubs are designed for use with lower profile rims, or more traditional wheel builds into aluminum wheelsets when weight and performance are absolutely your most critical requirements. But that's the last time we'll use “traditional” in reference to these hubs. Because we use the same groundbreaking wire EDM cut ratchet ring and pawls as well as the same ultra-precision 10 millionths ball bearings as the 182/82 hubset. And that's just the start of the technology.

**Zipp Bearings - 2 and-a-half times rounder than the rest.** 1 watt = 2-3 seconds over 40 K. The difference between career-

defining victory and just another finish. This explains our bearing obsession. We knew there was a watt waiting to be saved. That watt kept us awake pouring over reams of friction-study data from defense industry and auto racing contacts and made us pull every string and favor we had stored up with our Swiss bearing supplier to secure the only guaranteed stock of 10-millionth of an inch tolerance steel bearings in the cycling industry. 10 millionths of an inch? Imperceptible to anything but laboratory-grade measuring equipment, but it makes a serious difference on the road. Zipp bearings are a full 2.5 times rounder than the rest of the industry's – even rounder than most of our competitors' ceramic bearing options. Combine that with our industry first Teflon®-impregnated retainer, and perfect radial contact hub flange design and we've just squeezed one more precious watt of efficiency from your racing machine. What you win with that watt is completely up to you.



255 Rim



285 Rim



417 Rim



360 Rim



505 Rim



360T Rim



420 Rim



520 Rim



620 Rim



720 Rim



330 Rim



460 Rim



## Born of obsession The world's finest carbon rims

No other company has developed and applied so many technologies to composite rim construction. It's a passion, an obsession, a quest. Every year we set out all over again to build the lightest, stiffest, strongest and yes, winningest carbon rims in the world. It's this endless pursuit that has made Zipp rims, quite simply, the standard by which all others are measured. Every lesson we learn, every technology we develop is yours to win on:

**255 Tubular** No more sacrificing speed for climbing weight. The first ultra-lightweight climbing rim ever developed in the wind tunnel, the 255 represents a holy grail of weight, strength and aerodynamics no other climbing rim can match. The feather-light weight rockets up hills with blinding acceleration while the 32mm aero shape gets you to the climb without wasting a single watt more than you have to.

**285 Tubular / 417 Clincher** At 44mm deep, the 285 packs serious speed into a compact package. A perfect choice for hilly courses, or lighter riders in search of easy handling in crosswinds.

**360 Tubular / 505 Clincher** The ultimate "all rounder" rim. The 58mm profile is ideal for multisport and road racing athletes worldwide due to their uncompromising performance and exceptional acceleration and stiffness characteristics.

**360 Tubular Track** Our 58mm profile rims tailored to the demands of track racers. Custom laminated and molded for track applications, this rim has no braking surface and has a lower rotational inertia and additional lateral stiffness. Built for every track racer looking for the ultimate performance advantage.

**420 Tubular/520 Clincher** At 82mm, these dimpled demons sport a revised Zipp exclusive oval rim cross section (The tubular with a canted silica-ceramic braking surface) for the ultimate in drag-reduction. With minimal side-wind handling issues (thanks to the shape) these rims are a favorite of both road racers and Ironman competitors.

**620 Tubular / 720 Clincher** A full 108mm deep and designed to give riders all the speed advantages of the 420s rim at an even faster depth. Built up, this rim presents the same aerodynamic side pressure of tri-spoke but with a faster shape and a lighter weight. Please note: Due to the side forces, we don't recommend this rim being used for front wheels on riders under 130 lbs.

**330 Tubular (650c) / 460 Clincher (650c)** The 58mm deep 330 is a smooth sided tubular rim in 650c and can be built with any compatible hubset for custom applications. Due to their small diameter they are light and fast.

**Brake Blocks** Zipp Carbon/Carbon pad will increase the performance –and longevity of any high performance wheel whether aluminum or carbon. We do not, however, recommend using the same brake blocks with both carbon and clincher rims.

**Tire Pressure** All Zipp clincher rims are designed to work their best below 125 psi tire pressure. Pressures above 125 psi (8.5 bars) can actually increase rolling resistance.



**Don't just choose your weapon. Build it.**  
**The true competitor knows that every detail, decision, and gram moves you that much closer to the pinnacle of performance.**

From a hub dimpling process so complex most Department of Defense contractors won't touch it, to bearings that are round to one one-millionth of an inch. ZEDTECH is founded on the principle that no material is too exotic, no construction method too time intensive, no detail too microscopic to be considered. We give you access to the Zipp arsenal of aerodynamic rim shapes, composite design, and bearing technology to let you build a one-off wheelset perfectly matched to your needs, tastes, and riding style. Performance refined to the edge of fanaticism.

**Standard ZEDTECH Options:**

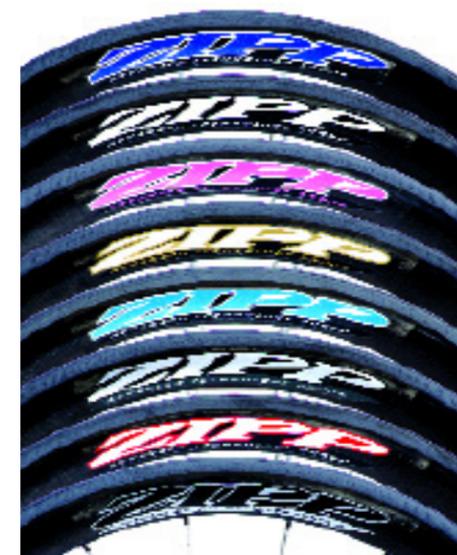
- Smoke grey anodized dimpled hubs (Silver/Black dimpled hubs on ZEDTECH DISC or ZEDTECH Sub-9)
- Your choice of tubular or clincher
- Your choice of ZEDTECH 2, 3, 4, 8, 108, Disc, or Sub-9
- Modified Crowsfoot spoking pattern for more equalized spoke tension, reduced weight, and better aerodynamics
- Eight different logo color options
- Titanium quick releases

**ZEDTECH Ultimate options:**

- Silicon Nitride Ceramic six bearing upgrade – these are the real deal, the finest ceramic bearings in the world and as much as 10 times rounder than other ceramic bearings
- SL laminate structure shaves rim weight to the absolute minimum
- SS laminate builds in the greater stiffness power riders demand
- Semi-custom rear spoking to further enhance wheel stiffness... the choice of our Pro Tour sprint specialists
- Five nipple color options (red, silver, black, smoke and gold)
- ZEDTECH custom embroidered wheelbag... why let the best go unnoticed?



ZED TECH 1080





**ZEDTECH Dimpled hubs**  
**Because at the pinnacle of our sport, 6 seconds is a lifetime.**

1 watt = 2-3 seconds over 40K. And when you consider that the 33k TT at the 2007 Vuelta came down to a few 100ths of a second between 1st and 2nd place you understand why squeezing every precious watt out of your technology is so important. Our wind tunnel data shows there is a mass of turbulence tumbling off the back of a standard hub. Smoothing that airflow allows it to glide over the trailing rim and tire to save 2-3 precious watts at 30 mph. Using the same computer flow software employed by the world's most advanced golf ball designer we created an optimized dimple pattern of varying diameters, depths and shapes to do just that – hey, why squander all that technology on golf?

**Easier said than done.**

Here's the difficult part. Translating a complex dimple pattern to a convex metal surface is a machining task that falls just short of black magic. Our hub has already bagged a Tour de France stage win, and a world time trial championship. Now it's ready to win for you.

**Ceramic Bearings – Excess or excellence? You decide.**

Zipp's standard steel bearings are already 2.5 times rounder than the industry standard. But when Olympic medals and Grand Tours are on the line, when fractions of a second decide podiums, a bearing that's 1,000 times more spherical than any steel bearing ever created is no longer a "gee-whiz" item – it's as essential as breathing. That's why we give you the option of upgrading your ZEDTECH wheels with bearings of the most advanced material man has ever made: Silicon Nitride (Si3N4) Ceramic. The numbers are, frankly, staggering. 30% lighter than steel and 40% stronger, spherical variances of LESS than 2 millionths of an inch among the entire 6 bearing set, perfectly balanced even up to 300,000 rpm, and containing a ceramic specific grease more costly than any previously seen on a bicycle. And the benefit to you? A 0.8-1 watt energy savings at 25 mph. over the ultra-precision bearings in the standard Zipp hub, or a 1.8-2.2 watt savings over the next finest non-Zipp hub. Fanatical? Over the Top? No, simply what you'd expect from the most driven minds in the cycling world.



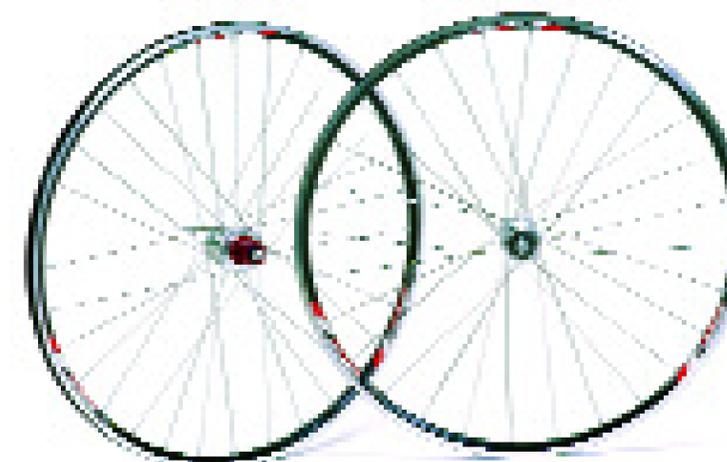
**CSC Wheelset**  
**The classic aluminum training wheel – done the Zipp way.**

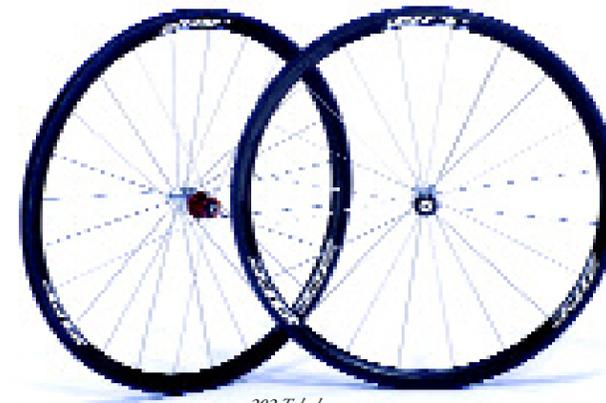
There was a time not long ago when one of the defining marks of your dedication to this sport was your insistence on hand-built training wheels. Crafted by a master using only his gifted hands and carefully selected components, these wheels became the old faithful in your arsenal. Piling on the winter base miles, ripping through the spring race schedule and generally bearing the brunt of your cycling obsession through the summer and into the fall "cider ride" season. Ready to do it all over again next year, of course.

It was those wheels Team CSC asked us to create for the team. A spectacular high-performance and hand-crafted aluminum clincher wheelset that takes all the punishment of training and racing at the world elite level – as well-suited to cutting through the pack as it is slogging through seven hour training rides in freezing rain. In short, a wheelset as committed to excellence as you are.

Team CSC Wheelsets are built around our now legendary Zipp flanged 108/208 hubset, a chronograph-precise cycling instrument. We use Swiss-made ball bearing cartridges – two-and-a-half-times rounder than the rest of the industry's that meets our precise specs. To give the strongest hubshells at the lowest possible weight, we've employed our proprietary SHIFT spoke hole technology. We lace them two-cross for a just-right feel: an excellent blend of lateral and torsional stiffness, and all-day comfort.

More outstanding features: Incredibly strong DT Aerolite spokes with the weight and durability of double-buttet spokes and the aerodynamics of a 16-gauge ovalized spoke. Custom-designed Swiss rims that incorporate not only the Swiss penchant for precision roundness and perfectly machined brake surfaces but single wall eyelets to save 25 grams over traditional eyelets while delivering strength against stress fractures. The final touch is a Zipp exclusive brake wear indicator system machined right into the brake track sidewalls. Hand craftsmanship you will be training and racing on for years to come.





202 Tubular

Pure climbing wheels, as their name implies, do one thing very well. Which in the past has meant they sacrificed elsewhere to get it. Mainly in aerodynamics. You ride the wrong wheel for 80% of the race so you can have the ultra-stiff acceleration and lightweight rocket-ship propulsion so critical in the last few switchbacks on the run-up to the line. But compromise isn't our style. And when we sat down with our riders and analyzed their power data we realized something critical. The climbing wheel was wasting too much energy on the flats and descents and hindering recovery after the stages. The 202 needed to be freakishly light, rigidly stiff on the acceleration AND aero enough to get them to the base of the climb. Mission accomplished.

**Defying gravity, taming the wind.  
Destroying conventional wisdom.  
The all New 202.**

The first climbing wheel ever developed in the wind tunnel, the new 202 packs a 32mm aero tuned rim that rolls along the flats with 4-6 watts more aerodynamic efficiency than our previous wheel at, incredibly enough, the same weight as our previous 202. The full description of the Carbon Bridge™ technology that makes it possible is on page 7, but suffice to say you never have to compromise on your climbing wheels again.



202 Specs*	Front	Rear
Aero Rim Width	23mm	23mm
Rim Depth	32mm	32mm
Weight	470g	590g

Aerodynamics	○○○
Weight	○○○○○○○+
Stiffness	○○○

Available in  
Tubular  
Power Tap Hub

202

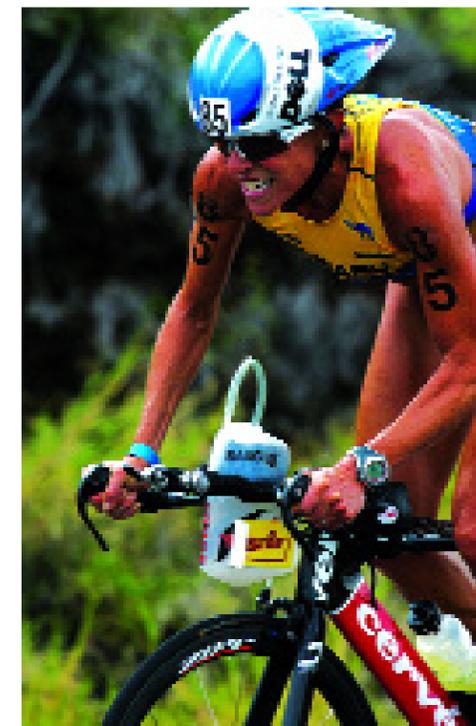


303 Tubular with Power Tap Hub

### 303

**Flyweight speed, unprecedented control in all conditions.**

Steep pitches, white knuckle descents, hairy crosswinds. If you've found yourself in any of these situations you'll want a set of 303s in your arsenal. The 44mm rim depth preserves nearly all the aerodynamic advantage of our deeper rims while not sacrificing weight. The shallower depth makes it an excellent "all-day" wheel choice for flyweight climbers and smaller females who are tired of getting blown around by cross winds. The precise handling and unique damping effect of our patented terroidal rim will inspire confidence as you rocket down the back side of a Hors Catégorie or cut a hot line through the final corner of a crit. And yes, for 2008 we've incorporated our new Carbon Bridge technology into the 303 tubular for greater stiffness and impact resistance. Snappy on the ascent, stable on the descent, and quick on curves, the 303 is as hungry for the win as you are.



303 Specs`	Front`	Rear`
Aero Rim Width	22.35mm	22.35mm
Rim Depth	44mm	44mm
Weight	498g	608g

Aerodynamics	○○○○
Weight	○○○○○○
Stiffness	○○○

#### Available in

- Tubular
- Clincher
- Cyclocross
- Power Tap Hub

# 303



404 Clincher

Put simply, if you were sent on a round-the-world mission to win as many cycling events as possible and could only bring one wheelset, this would be it. Triathlon, road racing, and time trials. Flats, rolling hills and mountains. The 404's supremely versatile 58mm rim profile has earned its place as our top performer in nearly every pursuit over almost every terrain. The patented deep rim profile and patent pending aerodynamic dimpled pattern increases turbulence in the boundary layer of airflow to deliver an energy in nearly every riding condition you'll encounter. Light enough to climb the Tourmalet, slippery enough to forge a 4-hour solo breakaway or to conquer the ITU circuit. No wonder the 404 is the wheel our pros reach for more than any other. Available in both tubular, with our impact resistant Carbon Bridge™ technology, or clincher, with patented M2CM construction.



**Anytime. Anywhere.**  
**404 - The**  
**winningest**  
**wheelset in**  
**our line.**

404 Specs*	Front	Rear
Aero Rim Width	22.5mm	22.5mm
Rim Depth	58mm	58mm
Weight	550g	682g

Aerodynamics	★★★★
Weight	★★★★
Stiffness	★★★★★

- Available in
- Tubular
  - Clincher
  - Cyclocross (Tubular)
  - Track (Tubular and Clincher)
  - 650c (Tubular and Clincher)
  - Power Tap Hub
  - DISC** (Tubular and Clincher)

# 404



808 Tubular

## 808 Criminally fast, amazingly easy to handle, totally legal.

Independently verified by Germany's *Tour Magazine*, as the most aerodynamic non-disc wheelset available anywhere in the world. Yes, faster and lighter than your venerable old dual tri-spoke set up in all conditions and with 28% less side-force for easy handling in crosswinds, the 808 is lethally fast and legal – in all triathlon and road race applications. An arsenal of technology and hundreds of hours of fine-tuning went into this wheel – facts that will strike fear into the hearts of the competition. Peter Reid has scorched the Queen K with these beauties while David Zabriskie threw down with the fastest Tour de France Time Trial ever recorded. And let's not forget the small matter of Fabian Cancellara's rainbow jersey. All thanks to the radical ovoid rim cross-section and 82mm deep rim dimpled surface. Our exclusive aero technology will put you at the finish line before the wind even knows you're out there.

### 808 Track

Using our industry-leading track hubs and maximizing the stiffness of the 82mm deep rim, these are built 20 spoke front and 24 spoke rear for unsurpassed speed either in the 6-day races or at your favorite velodrome.



808 Specs*	Front	Rear
Aero Rim Width	26.25mm	26.25mm
Rim Depth	82mm	82mm
Weight	655g	780g

Aerodynamics	★★★★★
Weight	★★★
Stiffness	★★★★★

Available in

- Tubular
- Clincher
- Track

**DIAPINE** (Tubular and Clincher)

# 808



## 1080 Tubular

**When it's all on the line.**

Call it punishment for being too good at your job. Despite the fact that the 808 is already the world's fastest non-disc wheel – even faster than a disc up to 13° according to *Tour Magazine's* wind tunnel tests – we got calls for even more speed. And for an interesting reason. Many of our dedicated time trial specialists had already mastered the art of manhandling the side forces inherent in a trispoke wheel. So, while they appreciated the 808's dominating performance they asked us why not take the 808's rim shape and craft an even deeper, faster wheel with the same amount of side force as the trispoke? So here it is, a Zipp wheel on the verge of decadent excess even for the most confirmed speed freak. 108mm of patented torodial rim and ABLC dimple technology that tames the wind with a shape no other ultra-deep rim maker can touch. It's a full 29 seconds faster than a trispoke over 40K. 80 grams lighter too so it's the perfect option for rolling-hill courses. If you're a big block V8 kind of a rider who looks forward to cross winds and time trials as a chance to punish all those skinny climbers, this is your weapon. Size does matter.



1080 Specs*	Front	Rear
Aero Rim Width	27.50mm	27.50mm
Rim Depth	108mm	108mm
Weight	774g	894g

Aerodynamics	○○○○○○+
Weight	○○○
Stiffness	○○○○

Available in  
Tubular  
Clincher

# 1080

## 900 Clincher Disc

### Advanced aero performance, clincher convenience

This is the first clincher disc to take into account the specific rim geometry required to properly blend the airflow behind the tire. And the result is more speed for you. Historically, clincher discs have used an aluminum rim post-bonded to the outside of a flat or lenticular disc wheel. While this approach leads to a strong and easily manufactured disc wheel, it can cause significant turbulence as the air trips over the interface between the tire extrusion and the disc (See page 4-5 for the full explanation). The other limitation of traditional designs is the necessity of using a rim that is not welded so that the rim can be spread apart and post-bonded onto a pre-cured disc body. In order to address all of these problems we worked for over 2 years on rim shapes, tooling, and manufacturing techniques that allow us to prolong airflow adhesion over the disc and tire, and we've integrated our proprietary M2CM co-molding technology to eliminate post-bonding of aluminum to carbon.

The result is the revolutionary clincher disc that combines our patented bulge rim shape with ABLC dimpled surfaces and a carbon fiber over Nomex honeycomb core to create the world's fastest clincher disc. What's more, the hollow structure at the perimeter of the wheel reduces the rotational inertia while improving road handling due to compliance in the sidewalls. Incorporating Zipp's VCLC technology for the first time in a disc, this disc reduces road vibration by up to 11% while damping high frequency vibrations. The Zipp Clincher Disc is aerodynamically optimized for tires between 19 and 23mm wide, and requires no rim tape.



## 900 Disc

### 950 grams of pure speed

At just over 950g for a 700c disc, the days of being concerned about weight in your time trial wheel are long since over. This disc is generally lighter than most aluminum rimmed "climbing" wheels and the low rotational inertia means it accelerates very rapidly and maintains speed with ease.

The tubular disc was the original product built by Zipp way back in 1988 and it was at that time the lightest and fastest disc wheel available. Since then we've re-invented our disc numerous times, each iteration getting lighter, faster and more aerodynamic. The latest round of technical innovations have taken additional grams out of a wheel that is already one of the lightest and fastest in the business – all while maintaining its ABLC dimpled surface and unsurpassed lateral stiffness. Even better, the Zipp hub system allows any disc to be either Shimano or Campagnolo compatible, plus it can be converted with a track axle kit for competition on the velodrome. The ultimate in adaptability.



900 Specs*	Clincher	Tubular
Aero Rim Width	n/a	n/a
Rim Depth	n/a	n/a
Weight	1222g	950g

Aerodynamics	○○○○○○○+
Weight	○○○○
Stiffness	○○○○○

Available in  
 Clincher  
 Tubular  
 Track  
 650c (840 Disc)  
 Wheelchair  
 Handcycle

# 900



## New Sub-9 True negative drag.

Using the most difficult wind tunnel testing protocol – a 30° down to 0° test run that starts with the airflow already separated from the rim, the all new Sub-9 shatters every drag record in cycling with a -80 gram drag reading at 15° (dead center of the aerodynamic sweet spot). Instead of creating drag, the wheel is actually generating lift relative to the wind direction – just like an America's Cup boat tacking into the wind.



### No compromises. Period.

True, the shape required to achieve this feat is radical and will get a double take from your competition. We've actually used the lessons learned in the development of the 808 in our new 1080 to further control the airflow as it comes off the tire (both when it's acting as a leading and trailing edge in the system) and integrating it into a disc. No small engineering feat, but we wouldn't be true to ourselves, or our

promise of providing you with the ultimate speed weapons, if we weren't willing to take up the challenge. The result is blistering speed without sacrificing a bit of the stiffness, or durability of our previous disc. Even better, you actually get better responsiveness and handling in the corners because the wind-taming torodial bulge also functions like a leaf spring (just like on our standard wheels) to soak up bumps and keep the tire in contact with the road surface – Triathletes take note: This also means this disc is one of the most comfortable to ride over long courses.

The new Sub-9 tubular also shares the structural benefits of our new Carbon Bridge™ technology to improve impact resistance by 25% (in case your local promoter finds a particularly nasty section of road to hold the TT on). Available in road configuration only.

Sub-9 Specs	Front	Rear
Aero Rim Width	n/a	n/a
Rim Depth	n/a	n/a
Weight	n/a	1000g

Aerodynamics 

Weight 

Stiffness 

Available in  
Tubular

# SUB-9 DISC



909 Tubular



## Speed Shop Rear Wheels

- 4** The heart of the 404, this 682 gram (tubular), 58mm wheel is a great match with a 3 front for a win-win in lightweight and aerodynamics.



- 8** The wheel of choice for IM World Champions and the top professional cyclist. Pair this wheel with the 4 and smoke the competition.



- 10** Reach deep for more speed with this incredibly fast, super-aerodynamic wheel that is new to the Zipp line-up. Match this with the 8 or 4 in front and make your way to the podium.



- Disc** The tubular is the pro cyclist time trial wheel of choice. The Clincher is the fastest wheel on Earth. Match either disc with the 10, 8, or 4 and...you guess the rest.



- Sub-9** Our new tubular disc draws on the same technology that created the world's fastest wheel. Pick from the 3, 4, 8, or 10 and turn up the heat.

## Speed Shop Tailored Wheelsets

**Because, in the pursuit of excellence, one size does not fit all.**

Take a good look around you at the start line of any event and you quickly realize competitors come in all shapes and sizes and have an amazing array of personal preferences when tackling the same course. This means there is absolutely no "one size fits all" in aerodynamic bicycle wheels.

This is why we created Zipp Speed Shop. To give you the option of mixing and matching front and rear wheels to create the perfect wheelset for your needs and the riding conditions you face – whether you're a petite woman who's far more comfortable climbing than tackling a crosswind or 6' 5" IM age grouper who couldn't be blown off the course by a hurricane, we can match you up with the right wheel for your riding style, goals, terrain and preferences.

Want a 4 on the front and an 8 on the rear for rapid acceleration and wicked aerodynamics? We'll make it happen. Time to pull out the "quiver" for the regional time trial? The Sub-9 can be paired with a multitude of front wheels to give you the ultimate advantage.

Overwhelmed by the options? Don't know where to start? Talk to your local Zipp dealer or reach out to us.. Our staff of wheel experts eat, breathe, and sleep carbon wheels every day and are happy to make recommendations. We can also point you in the direction of the nearest Zipp demo dealer so you can try before you buy.

You want to win. We want to give you the tools for the job. Sounds like the perfect partnership.



## Speed Shop Front Wheels

- 3** Pairing the front 3 with a 4 in the back is a classic combination of lightweight, speed and control. Designed by Zipp – proven by Emma Snowsill.



- 4** More wins than any wheel in the Zipp line-up. Put this 550 gram wheel on the front with an aerodynamic selection of the 8, 10, Disc, or Sub-9 on the rear and hold on.



- 8** 8 on the front and a Disc on the back... a classic combination of speed with the world's fastest time trial to show for it!



- 10** Look out minute-man – the 10 is Zipp's deepest, non-disc wheel and it is pure speed. Pair with a 10, Disc, or Sub-9 on the rear and you've have the ultimate speed weapons.



## Vuka Bull Strong like Bull!



You're staking a lot on your base bar. It's channeling your torque as you launch from the start house, supporting your weight as you slam over rough roads, and holding the brake levers you hope you won't need in the next 40k. To win, your base bar has to be as stiff, strong and light as any road bar on the market – yet still slice the air with surgical precision. The Vuka Bull does all that and offers adjustability that fully integrated bars may not offer – especially useful for the hands-up “Praying Landis” 30° position, getting you to the bar angle you need without presenting too much surface area on the wing section. And it's built to survive. We've used the same exclusive carbon layup technology as in our

VukaAero. The Vuka Bull passed EFBe fatigue testing devised for top performance racing bicycles. In fact, the Vuka Bull was tested under conditions with 30% more torque than is typically applied. And The Vuka Bull has as the same slippery frontal area, internal cable routing and sculpted, Vuka end pods to put your hands in the most comfortable, controlling position in the business. It's also got the wide center section of our SL drop bars so you have all the contact area and adjustability you need mounting your Vuka Clip for the optimal position.

At just 195 grams, it's the lightest full-aero carbon base bar on the market – at a price that's still compatible with the most fiscally responsible souls on the time trial and Tri circuits. 42 cm o-o, 31.8 mm clamp diameter.



## Vuka Brake Levers The lightest “plug-in” lever on the market.

With a weight of 100 grams per pair these full-carbon levers are as nearly as invisible to the scale as they are to the wind. The full-carbon construction uses the same lever as our wind tunnel-developed VukaAero integrated bar; and the only metal you'll find on this lever is the alloy bolt, expanding wedge and the steel return spring. Center pull design routs the cable directly into the base bar for more refined aerodynamics.



## Vuka Shifter Bosses S-bend riders and gram counters rejoice.

At just 65 grams the full carbon construction of this shift boss and extensions (bonded as one piece) is a weight weenie's dream come true. But weight wasn't actually the first goal of the design. By eliminating the expansion plug, the need for a 1 inch “straightaway” on the end of your S-bends is also eliminated. No more fumbling with hand-position when it's time to shift into the 11. Patent pending. Shimano compatible.





**Vuka Clip**  
**The world's most aerodynamic adjustable clip-ons.**

The concept is simple. An aerobar should morph effortlessly to suit your optimal aero position, without mountains of drag-inducing hardware. The Vuka Clip does just that. The revolutionary patented compression sleeve design allows you to adjust both the length and rotational position of the extensions without tools – and without presenting a single mass of hardware to the wind. Functions with chicane, ski tip or straight extensions too. Each extension can also be cut up to 90mm for an overall length adjustment of nearly 120mm and all feature internal cable routing. Carbon fiber arm supports hold EVA foam pads either 12.5mm or 25mm behind the basebar when measured at the pad center and the pad wings can be rotated forward or rearward offering 42 possible positions for comfort. The precision machined aluminum body and compression sleeve are shot peened for optimal stress relief and fatigue strength, and all parts have our exclusive anodizing process to eliminate sweat corrosion. Aircraft grade hardware too. Sized for 31.8mm bars, the Vuka Clip integrates perfectly with Zipp SLC2 drop bar or Vuka Bull.



**What's in a name?** Vuka is the Zulu word for “Wing” and connotes a rising spirit and an awakening. We can think of no more fitting description for a bar that so radically changes the shape of speed.

**VukaAero**  
**Leave “compromise” for second place.**



Traditional aero bar choices are a study in compromise: either a sleek aero bar that doesn't adjust to fit you, or an adjustable bar with drag-inducing bolts and clamps disrupting the air flow over the bar. We know how you feel about compromise. That's why we developed the VukaAero's patent pending biaxial compression sleeve that creates extension adjustability with just 2 hidden bolts and almost no additional frontal area to slow you down. The compression sleeve system allows an industry first +/-2.5° angular adjustability in any direction including vertical so you don't need to angle the entire basebar to tweak your hand position. The fully integrated adjustment system also allows us to route the shifter cables through the extensions and out of the adjustment bolts themselves to further reduce drag.

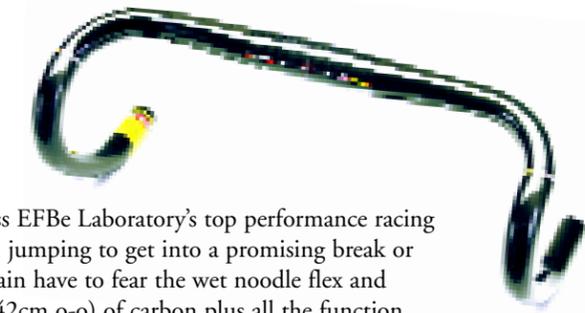
The basebar portion of the VukaAero is equally impressive with an aerodynamic wing section first developed for sail planes that can be angled as much as 5 degrees to further optimize your position without serious drag penalty. This shape also allows for a thicker bar section that increases strength and stiffness without increasing aerodynamic drag. In fact, the VukaAero is the only integrated aerobar on the market that passed EFB's fatigue testing devised for top performance racing bicycles – go ahead, sprint to the finish.

Comfort features include hand grips perfected through electronic and physical prototyping, a 25mm drop and 100mm reach that perfectly replicates the position of the brake hoods on a standard drop bar, and grip ends and carbon brake levers shaped for superior comfort and control. Carbon fiber elbow pads offer 3 width options when bolted to the basebar and over twenty when paired with optional forged adjustment wings. These super-light armrests hold an industry first dual density EVA foam pad covered in stitched anti-bacterial Lycra® for superior comfort and durability. The only feature we didn't build in was compromise.



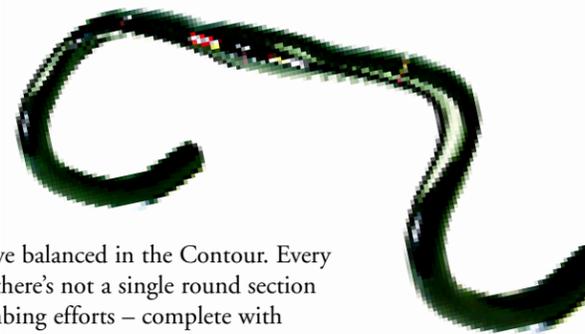
## **SL** **Super light. Super stiff.**

Zipp's SL handlebar is the lightest and stiffest handlebar on the market to pass EFBe Laboratory's top performance racing standard. So whether you're wrenching on the bars to power up a 20% grade, jumping to get into a promising break or slamming your way over your local Tour De Washboard course, you never again have to fear the wet noodle flex and delicacy of a featherweight bar. And when we say light we mean 160 grams (42cm o-o) of carbon plus all the function you need to win: dual cable grooves, tapered top section plus our exclusive VCLC technology to soak up vibration and increase your comfort factor on those long days in the saddle. Your choice of 40, 42, 44 and 46 cm widths in 3 drops – standard: 90 reach, 150 drop; short/shallow: 84.5 reach, 128 drop; traditional round: 87.5 reach/128 drop.



## **SLC2** **Call it our 4000 watt bar.**

If field sprints are where you make your money or if people around the track use affectionate terms like “gorilla”, “animal” or “hoss” to describe you, this is your bar. Massively stiff for serious power outputs, the SLC2's entire laminate structure is built around strategically placed strengthening plies to take repeated thrashing – the EFBe standard is only the beginning for this bar. And, with over 60% of the bar maintaining a 31.8mm diameter, you not only get a stiff handler, but the perfect place to mount clip-ons for time trial or triathlon use. Exclusive VCLC technology means the SLC2 has a very solid yet lively feel without being harsh. All this performance comes with surprisingly little weight penalty. Just 195 grams in 42cm o-o. Your choice of 40, 42, 44 and 46 cm widths in 3 drops – standard: 90 reach, 150 drop; short/shallow: 84.5 reach, 128 drop; traditional round: 87.5 reach/128 drop.



## **Contour Bars** **The stage racer's bar.**

Comfort, ergonomics, stiffness and aerodynamics. The essential elements we've balanced in the Contour. Every millimeter of the shape was designed for all-day comfort and performance – there's not a single round section on it. The airfoil top is not just fast, but fits your hand perfectly on long climbing efforts – complete with elegantly hidden dual cable grooves so your hands don't feel the lumps as you slog away in your 25. What's more, the ovoid-shaped hook portion of the bar is optimized for the perfect wrist angle when you're on the hoods while the drops fit your hands naturally (You'll notice your hand's grip is not actually round). As the day wears on you'll appreciate the fact that our exclusive VCLC technology offers substantial damping of high frequency, fatigue-inducing vibration. Of course, the Contour is stiff enough to fight out a sprint after you've been in the break all day and, considering it's passed EFBe Laboratory's durability test, you know this bar is in it for the long haul. A rouleur favorite. 220 grams.

## **145 Stem** **The end of flex as you knew it.**

Hand wrapped from more than 50 individual pieces of precision cut carbon, the Zipp 145 guarantees maximum stiffness and strength – not to mention a dose of eye-catching elegance. Utilizing the same keylock bonding and full enclosure carbon wrapping we pioneered with our cranksets, the 145 stem is the stiffest, strongest all carbon stem available – and we have the EFBe test results for proof. Every detail of the 145 was aimed at that goal. The forged aluminum faceplate has a micro-thin stainless steel insert to ensure maximum stiffness and durability. The M4 titanium faceplate screws are manufactured alongside those used by Ducati's MotoGP racing crew. Available in both 26.0 and 31.8 diameters, the 145 stem weighs between 135 and 150 grams depending on size/diameter. Carbon steerer tube cap and step-down spacer for 1" use. The ultimate launch platform for your sprint. Lengths: 100 -130mm.



## The new 560g VumaQuad. **Lightest. Stiffest. Strongest.**



The loading in the CEN fatigue test standard increased by 20% last year. We're proud to report we passed with flying colors. Our new VumaQuad tested beyond 100,000 cycles at the new standard of 1800 Newtons. It's a test standard many manufactures said was simply too difficult to pass, but it wasn't enough for us.



## All over again.

### Where to begin?

The rules of advertising say you're supposed to talk about what's new first. The trouble is every last detail on this crankset is truly groundbreaking new technology. We started with a four-arm spider, on a 110 mm bolt circle diameter and integrated the fourth chainring bolt into the crank arm to improve stiffness. Then we designed new 50/34 and 53/39 tooth chainrings to give you the full range of gearing options for any and every racing situation. To further improve system stiffness, we utilized a massive 30mm spindle, a first for external-bearing cranksets. Even the American-made Grade 10 outboard bearings are an industry first.. The result is a crankset that sets a whole new standard in performance – a full 33 % stiffer than the next-lightest crankset on the market, while exceeding the new 20% tougher 2007 CEN crankset fatigue test standard.

### Four-arm Spider

By combining our experience with carbon and partnering with the industry's leading chainring designer, we've been able to create a weight-saving four-arm spider that actually yields greater stiffness than any of the heavier five-arm designs on the market.

### Chainrings

The stiffness gradient throughout our 53-tooth chainring is as much as four times less than that of other five-arm chainrings on the market. The final result is a four-arm, 110mm bolt circle diameter chainring that's at least 14% stiffer than any five-arm/130 BCD chainring on the market.

### Carbon Technology

Zipp uses a revolutionary new bonding system with three times more strength than previous systems to encase two separate lugs in the carbon. The result is a featherweight crankset capable of passing the result is greater stiffness which allows the VumaQuad to pass our battery of internal fatigue tests, including some that are even more rigorous than the new CEN standard.

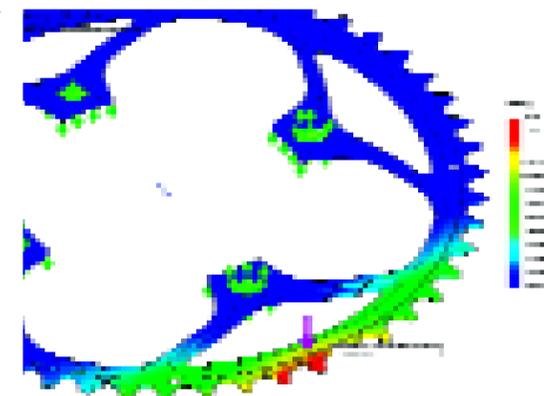


### Compact or full-size versatility

Our new FullRange™ 110 bolt circle design lets you run both 50/34 and 53/39 chainrings without any loss of stiffness.

### Bearings

Zipp set the standard for wheel bearings specing only ABEC 5 races and Grade 10 steel balls – two-and-a-half times rounder than the rest of the steel bearings in the industry. We expect nothing less from our bottom bracket bearings, so we found an American bearing maker who met our standards for quality and consistency – it's the first American bearing ever used in a BB. What's more, the bearings use DuPont™ Krytox® Grease. At \$85 per ounce it's the world's most expensive grease, but it's been tested to give 2-3 times more service life in the most rigorous industrial environments.



• *Ceramic Upgrade* – If two-and-a-half times rounder than the industry norm still doesn't leave you with enough margin for guaranteed victory, consider our ceramic upgrade. The ABEC 7 races and Grade 2 balls conform to the same stratospheric standards as our ZedTech Wheels – not merely ceramic, but the absolute roundest ceramics used in the industry.

• *30 mm Aluminum Spindle* – A 30 mm design not only allows us to create a stiffer spindle while decreasing wall thickness in the spindle to save additional weight without compromising structural integrity or durability.

• *NoNuts™ Chainring Bolts* – NoNuts™ reduces weight and increases overall crank stiffness by eliminating the stepped-down chainring nut. Instead, the small chainring is actually threaded. The result is a savings of 1.2 grams in the chainring bolts, but more importantly, it allows us to use a larger diameter bolt to increase thread engagement and stiffen the interface between chainrings and crank arm.



It's one of the worst kept secrets in the bike business. External BB systems widen Q factor. And while our VumaQuad at 146mm has the narrowest Q-factor of any outboard bearing design, a few of our customers said that still wasn't narrow enough. Here's the solution. The Zipp 300 crank uses the same technology of our VumaQuad for incredible stiffness and durability while paring the weight to just 450 feathery grams. But the use of an ISIS design BB brings the Q-factor in to just 144mm. It's the lightest, stiffest, and most durable ISIS system in the world. In fact, Zipp 300 cranksets have achieved more than 3.5 million cycles at 1500 Newtons (335 pounds) without crack initiation or failure in the bondline.

## **Zipp 300 crankset and 185 Titanium BB** **The narrowest Q-Factor on earth.**

Our 185 BB uses a 6Al/4V titanium spindle and alloy bolts to create a super light combination, riding inside two twin-row ultra-precision German-made 14mm bearings. This larger size bearing guarantees longer BB life (the Achilles heel of previous ISIS systems). To increase overall stiffness, the titanium axle is the standard 21.5mm diameter within the bearings, but nearly 23mm diameter between the bearings. In short, the toughest, most durable ISIS BB ever made.

## **PowerTap** **Measured performance.**

At Zipp we realize the performance potential of not only training with power, but racing with it as well. At a trim 416 grams the SL hub sacrifices very little weight to bring you a wealth of performance information including cadence, heart rate, speed and power – all easily viewed on the fully programmable, easily mounted Pro Pack.

Adding your choice of Zipp rims to the system brings that much more performance technology to bear on your competition. So we offer your choice of the PowerTap SL or 2.4 Wireless PowerTap hub system in numerous wheel combinations. Each PowerTap wheel is custom built in-house by Zipp. And the Pro Pack is optional if you already have another PowerTap wheel in your arsenal. No more guesswork.



## **Tangente Tires** **Every last detail engineered for speed. Again.**

This year we took a third trip to the windtunnel with our new Tangente tire. The mission was, given our reputation, pretty unsurprising. Make it faster. Already the first tire ever developed in the windtunnel, the 2007 Tangente was incredibly fast. But when you consider that the tire that forms the leading and trailing edge of your wheel directly affects aerodynamic performance by up to 30%, you can understand our obsession with constant improvement. For 2008 we've changed the tire profile to further improve performance. This change further improves the effectiveness of our dimples as air travels around the tire and over the rim surface. Another year's worth of hard labor to save your 1-3 precious watts on race day.

### **Where the rubber meets the road.**

While the Tangente is the most aerodynamic tire in the world, it's not just a delicate, special-mission TT tire. It's got the guts of a hardened road warrior thanks to our partnership with Vittoria. Their expertise helped us optimize the handling, responsiveness, and durability of the casing by combining an ultra-fine 290 TPI Corespun fabric with a durable, puncture-resistant belting and, in the case of our tubular, a lightweight latex tube. The silica rubber compound? It's specially made just for the Tangente because the gently scooped dimple pattern is so much more crack resistant than grooved tread patterns we can use a lighter, better-gripping rubber with a lower rolling resistance than any other tire on the market. All without sacrificing a bit of durability. The new Tangente tire. Faster. Tougher. Stronger. Just like you.

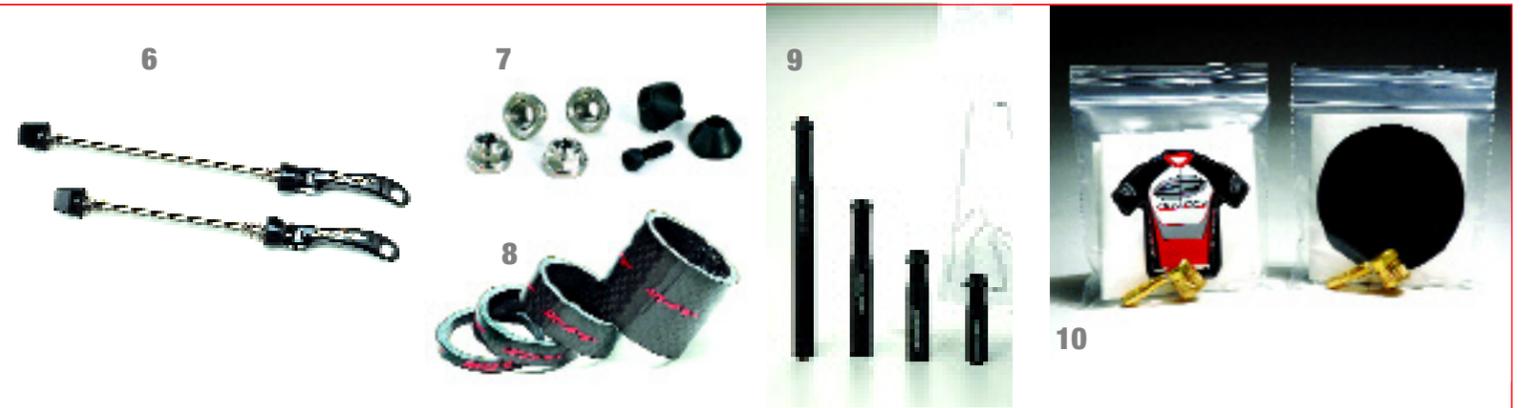


## Zipp Accessories

- 1 End Caps** Cheap plastic plugs in your carbon dream machine? No, that just won't telegraph your true commitment to ultimate performance. These will. And they don't pop out mid-ride like the plastic jobs.
- 2 Track Front Skewer** Solid stainless steel construction so it is guaranteed to hold fast through the highest of bankings. An inexpensive way to squeeze a few more wins out of your favorite speed weapon.
- 3 Handlebar Tape** w/carbon bar end plugs embossed with the logo of your favorite wheel company, our synthetic cork tape comes with Zipp's proprietary carbon fiber bar end plugs. Sure grip, padded comfort, pure Zipp speed. Take your pick of red, white or black.
- 4 Water Bottle** Cool off when the racing action heats up – and show off your preference for speed weaponry while you're at it.
- 5 Carbon Cage** Several models of durable, lightweight and secure bottle cages on the market. But this one is 25 grams of full-carbon construction that says, "Hey, if I pay this much attention to the weight and function of my bottle cages, just imagine how hard I was training this winter while you were slabbed out on the couch." Fits standard water bottles; improved shape holds bottle firmly while allowing for easy removal and placement. Alloy mounting bolts included.



- 6 Titanium Quick Releases** 85 grams of maniacal gripping power. Built with an oversized cam for faster engagement and better gripping than stock skewers. Titanium shaft and alloy hardware keeps the weight low without sacrificing durability. Stainless steel springs too. Laser etched Zipp logo.
- 7 Track Nuts** Unlike standard serrated flange nuts, these Zipp stainless steel combination lock nuts have floating washers made of hardened stainless steel, roll-formed threads for extra strength and a knurled edge on the rear nut for maximum grip. Supplied with every track hubset and track disc conversion kit or available alone. Sold in front (9mm) or rear (10mm) pairs
- 8 Carbon Headset Spacers** Precision ground to ensure parallelism. Clear coated with a red Zipp logo. Available in 1.125 inch diameter and in heights of 4, 8, 12 and 30 mm.
- 9 Valve Extensions** New revised head shape for better pump interface. Five sizes for all your wheel needs. 3mm hex broach in the barrel to guarantee you get a tight, secure fit and perfect seal.
- 10 90° Disc Air Valve Adapter and Valve Patch Kits** Use this handy Adapter to air your disc tire. Machined to the highest standards with an internal "O" ring seal, this is a must have for any track event. Two different valve patch designs to choose from, when covering the air valve on your Zipp disc. Either "stealth" black, to sneak up on your competition, or a mini version of the Zipp team kit jersey, to further show your pride in your favorite wheelset. 5 patches and one Adapter per kit.



- 11 Vuka Bar Riser Kit** Two different height options, 4mm and 8mm, to help you maximize your balance between comfort and aerodynamics. Customized aircraft aluminum extruded construction, with specific bolt length options to match. With this Track Skewer you can legally race your front road wheel on the track. Very inexpensive way to get more race use from your carbon wheels.
- 12 Vuka Aero Collet Tool** This Integrated Aero Collet Tool is made from steel and designed so you do not exert excessive force that may damage your collet system or your extension bars. Comes with a drilled hole for hanging on your tool board; black oxide coated with a laser etched Zipp logo.
- 13 Vuka Bar Pad Kit** Two EVA foam pads covered with anti-bacterial Lycra. Both comfy and durable. Kit comes with two pads and replacement die cut velcro strips.
- 14 Vuka Bar Grip Tape** The beta version of this 3M exclusive product is right on the mark. It has the proper amount of roughness, is forgiving on the hands, and will stay put even under the toughest Kona conditions. Custom die cut to give you traction only where you need it, with no penalty on looks or aerodynamics.
- 15 Vuka Bar Pad Wing Extensions** Forged from 7000 series aluminum, these light and strong extensions allow 12 additional positions for pad wing placement on your VukaAero bar.



- 16 Campagnolo and Shimano Bodies** Forged Hub Bodies red for Shimano, blue for Campagnolo and easily swapped. Change your wheels to whatever 10 speed or 9 speed configuration you need!
- 17 Track Lock Rings** Ordinance-grade 7XXX alloy is 40% harder and 33% stronger than industry standard 7075 aluminum lock rings. Cut to exacting ISO standards for perfect thread contact.
- 18 Rim Tape** Durable 1 pc design slips securely onto the rim and is thin enough to guarantee sufficient space in the tire well for tight fitting clincher tires. Very light, very strong. 1 box contains 2 tapes.
- 19 Brake Blocks** Formula 1 stopping power for carbon or aluminum rims. Working with Kool Stop, BP-Amaco and SGL-Hitco (the number 1 manufacturer of brakes for Formula 1 racing) we've engineered the first thermally conductive, low temperature brake pad for the bike market. You stop faster and with less wear and tear to your aluminum or silica-ceramic braking surfaces. And, because Zipp pads are one of the few pads that don't contain abrasives, the possibility for heat-flattening under extreme conditions with aluminum rims is minimized – add a further dimension of safety to your riding.



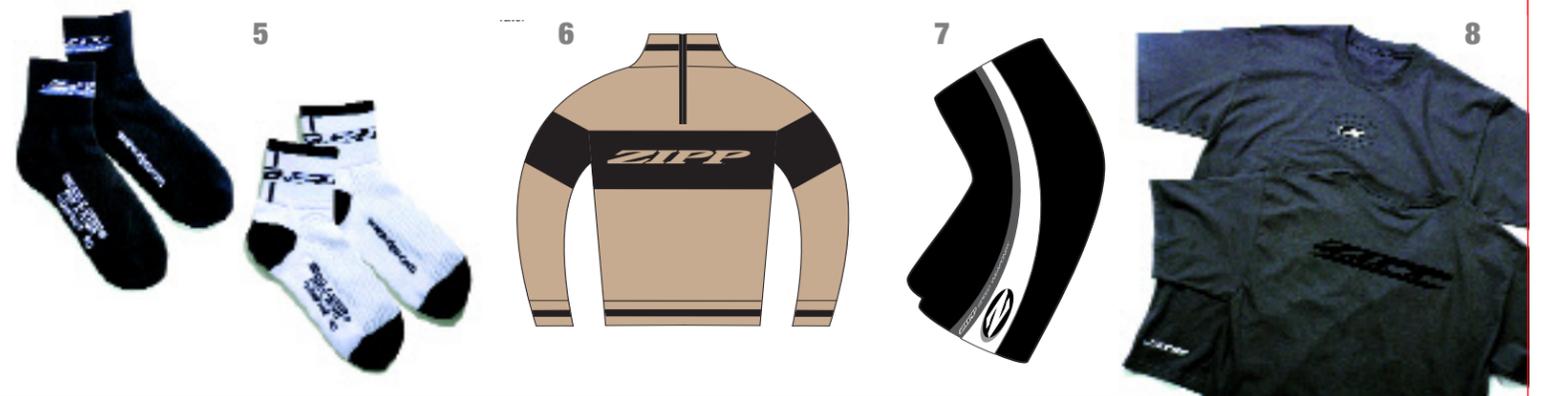
(More Zipp gear online. Check it out at [zipp.com](http://zipp.com))

## Zipp Soft Wear

- 1 Dimple T-Shirts (Dark Brown)** Our quest for speed knows no limits – even in the morning dressing routine. The ABLC dimpled logo has shown vast improvements in T-shirt selection times in the wind tunnel. Not to mention more style points. Available in slate grey and brown. medium-XX large.
- 2 Wheel Bag** Armor plating for your speed weaponry. Each bag holds two wheels plus race supplies like quick releases, CO2 cartridges, mini-pump, spare valve extensions or tubes – there's even a stuff sack for little goodies. Two individual padded pockets hold each wheel to minimize the chance of damage while all accessories slip into separate pockets to prevent scratches. The outside is "belted" with a thick layer of high-density foam to soak up the bumps while the thick-skinned nylon cover resists punctures and tears. Removable, adjustable shoulder strap plus padded hand strap. Total protection. Mesh ID pocket with key clip. Imported.
- 3 Cycling Jersey** Cool in more ways than one. Moisture-wicking 100% polyester is light, comfortable in the hottest of conditions. 8-1/2" zipper lets you vent. Large "Zipp" logos will mark you as a person of exquisite taste in wheels. Available in small-XXX large.
- 4 Podium Cap** The fastest cure we've found for helmet head. Expertly embroidered "Z" logo will get nods of approval, maybe a few jealous stares too, from your roadie and tri brethren. 100% cotton twill with moisture-wicking headband. Fabric adjustment strap for a perfect fit on any head. Spot clean. Imported.



- 5 Socks** Be fast on your feet. Made by DeFeet, these are the finest riding, running and hanging out socks we've found. Festooned with the Zipp "retro" logo, they're the perfect match to our retro wool jersey. Available in small and large sizes.
- 6 Sweater** Go old school. This is the classic wool trainers jersey in no-scratch Merino 2-ply wool. Beautiful quality and comfort, perfect for staying warm on a chilly evening. Limited Availability in medium-XXX large.
- 7 Bibs and Shorts** High-performance eight panel design and "Original Elastic Interface Technology" chamois. Printed with the Zipp Logo in small-XXX large also. (Bibs not shown.)
- 8 Dimple T-Shirts (Slate Grey)** ABLC dimpled logos front and back. Available in slate grey and brown. medium-XX large.



- 9 Surf T-Shirt** A nice relaxing Surf and Tri Club shirt to show off your favorite non-racing activity. Even if you don't surf, you'll love that the woody carries your bike and wheels in style. Khaki. medium-XX Large sizes.
- 10 Arm Warmers** Stay warm during the Spring Classics with Zipp's arm warmers. Available in black with embroidered "Z" logo.
- 11 Decal Sheet** Tell the whole world who makes your favorite wheels with this full-page Zipp sticker kit. Includes 24 stickers in a variety of sizes.
- 12 Towels** Anything else is just a rag! Any and every high-performance product technology catches our eye. In this case the fabric in our transition towel. The high-tech engineered fabric absorbs up to 8 times its weight in water and keeps soaking it up even when wet to the touch. Sublimated "Z" logo.



(More Zipp gear online. Check it out at [zipp.com](http://zipp.com))

- 13 Women's T-Shirt** Ride like diva! Display your affinity for speed weaponry with the ladies logo T-shirt emblazoned with the Zipp logo. 90/10 stretch blend w/women's cut "cap" sleeves. Available in black and brown. Sizes small - XL.
- 14 Gear Bag** The ultimate transition zone and race-day bag. Keep all your race-day essentials organized and instantly accessible – you can stop worrying about what you forgot and start focusing on posting great results. We asked a lot of questions of our sponsored athletes to build a race-day bag that keeps all your essentials in their place and within easy reach. 13 individual pockets for everything from helmet and water bottles to IDs and energy gels. We include our Transition Towel that absorbs up to 8 times its weight in moisture without dripping. And the Gear Bag is large enough to carry everything you need for the transition zone in one shot – no more "Oops, I forgot that" trips back to the car. Zip-away backpack straps mean you can even carry it while riding your bike to the start. Pure function and utility. Spot clean. Imported.
- 15 Tri-Suit** Kona - Yes! High performance tri-suit that performs as well as it looks. What every triathlete needs to complete their arsenal of speed weapons. Sizes small - XXL.
- 16 Zipp Banners** Hang one up in the game room to set the mood as you watch the tour coverage. Durable polyethylene construction and brass grommets. Large size measures 72"x 18", and small measures 36"x 9".







[www.zipp.com/zippcasts](http://www.zipp.com/zippcasts)



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