



AURUM

BORN FROM EXPERIENCE

AURUM is a bike brand born from experience; the experience of Alberto and Ivan as riders, and the experience of their skilled team of designers and engineers to make the highest performance bike on the market. What makes AURUM bikes so special is the exceptional level of fine-tuned riding performance and attention to detail that has been pursued by Contador and Basso.



With more than 30 years of combined experience in the pro peloton and multiple Grand Tour wins, Contador and Basso spent their careers in the best teams, riding the best equipment available. However, that equipment was always selected by the team and sponsors for them, and that left a desire, a question in their minds, of how it would be if they had the freedom to choose, to design the bike of their dreams.

To create their own bike brand is a desire they have had for many years, they planned and discussed it until the time was right for them to go ahead and create something that was 100% authentic to their dream - and that time is now.

AURUM is the brand, and Magma is the first model, the ultimate racing road bike - fast everywhere - created, designed and tested by Alberto and Ivan.



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MAGMA



AURUM's first model, Magma, is the ultimate racing road bike. It is the best performer in any road terrain, the one to be chosen no matter what the route profile and conditions. It is faster everywhere. Magma is the bike that Contador and Basso wish they had had throughout their careers. Born from experience, it's a project that has kept them busy since they retired from professional racing.

Magma is agile, light and fast. But from the outset Contador and Basso agreed that it must be balanced in its handling: comfortable and compliant enough for long rides, yet stiff while climbing off-the-saddle. Reactive at its front end when cornering to track every tight corner with precision, yet stable to inspire confidence on even the fastest open descents.

"This very special frameset has been the focus of our efforts for such a long time. It's something that we're both truly personally invested in - we've spent so many hours riding it, fine-tuning it and thinking about how to make it better than all the sensational bikes we rode during our careers." - Alberto Contador

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MAGMA: FINDING THE BALANCE

Creating the fastest high-performance road bike on the market is a balancing act between different riding characteristics:

Stiffness – for power delivery and quick, confident handling and cornering

Comfort – for long rides and ensuring that the rider can always get the best out of him/herself

Aerodynamics – reducing aero drag for the best efficiency and pure speed.

Weight – for a lively feel and to save energy, without compromising stiffness and comfort;

GEOMETRY:

- Balanced racing geometry for the highest performance on the road, based on more than 20 years of Professional racing experience and multiple GranTour wins (Tour de France + Giro d'Italia + Vuelta a Espana)

COMFORT:

- ECT carbon layup optimized for comfort without stiffness loss.
- Long and thin seatstays, for vertical compliance and lateral stiffness.
- Thin fork legs for front end comfort and steering accuracy.

AERODYNAMICS:

- Airfoil tube profiles, CFD optimized and wind-tunnel tested.
- Internal cable routing through Head Tunnel.
- Truncated, airfoil shaped fork legs and crown.
- Size-specific, airfoil section downtube shields water bottles.

LIGHTWEIGHT:

- Using multiple carbon grades and orientations depending on the part and size of the frame, we build a strong and light frame. We call it ECT: Experience Carbon Technology

STIFFNESS:

- The size-specific downtube connects with wide BB386 bottom bracket
- Tall chainstays and optimized carbon layup for maximum drivetrain power output and efficiency.
- One piece molded rear triangle for perfect alignment and reactivity.



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GEOMETRY



AURUM Magma is available in 6 frame sizes. For more details on the Magma's fit and geometry please refer to the geometry chart at the end of the document

When discussing frame geometry, it was crucial to both Contador and Basso that Magma's high-performance riding characteristics remained constant across its range of six frame sizes. Smaller sizes often result in compromised handling, mainly with a slacker steering feel, an imperfection that the pair sought to avoid. During the geometry design process, particular attention was therefore paid to ensuring the finely-tuned relationship between the frame's bottom bracket drop, trail and front-center measurement was correctly balanced for every frame size. From their experience and testing more bikes during the concept phase of the design, a Trail figure of 59mm was chosen for all sizes (measured with 25-28mm wide tires) as the ideal balance of quick handling and stability.

Likewise, frames of different sizes withstand different loads and torsional forces in a different way; a large size 61 has much longer tubes and further apart than a size 50 for example. A taller rider on a size 58 or 61 has a higher centre of gravity measured from the Bottom Bracket than a shorter rider does, even without considering that a taller rider often will be heavier as well. Thus the shape and dimensions for each Magma frame size has been designed individually and optimized with advanced FEA software to achieve a balanced and coherent riding characteristics for riders of all heights.



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STIFFNESS



1- Using a BB386Evo standard bottom bracket, the NACA airfoil downtube of the Magma tapers out from the headtube maximizing torsional stiffness. The downtube dimensions of every frame size of the Magma have been scaled individually for a proportionate stiffness level, the result is consistent riding characteristics throughout the size range.

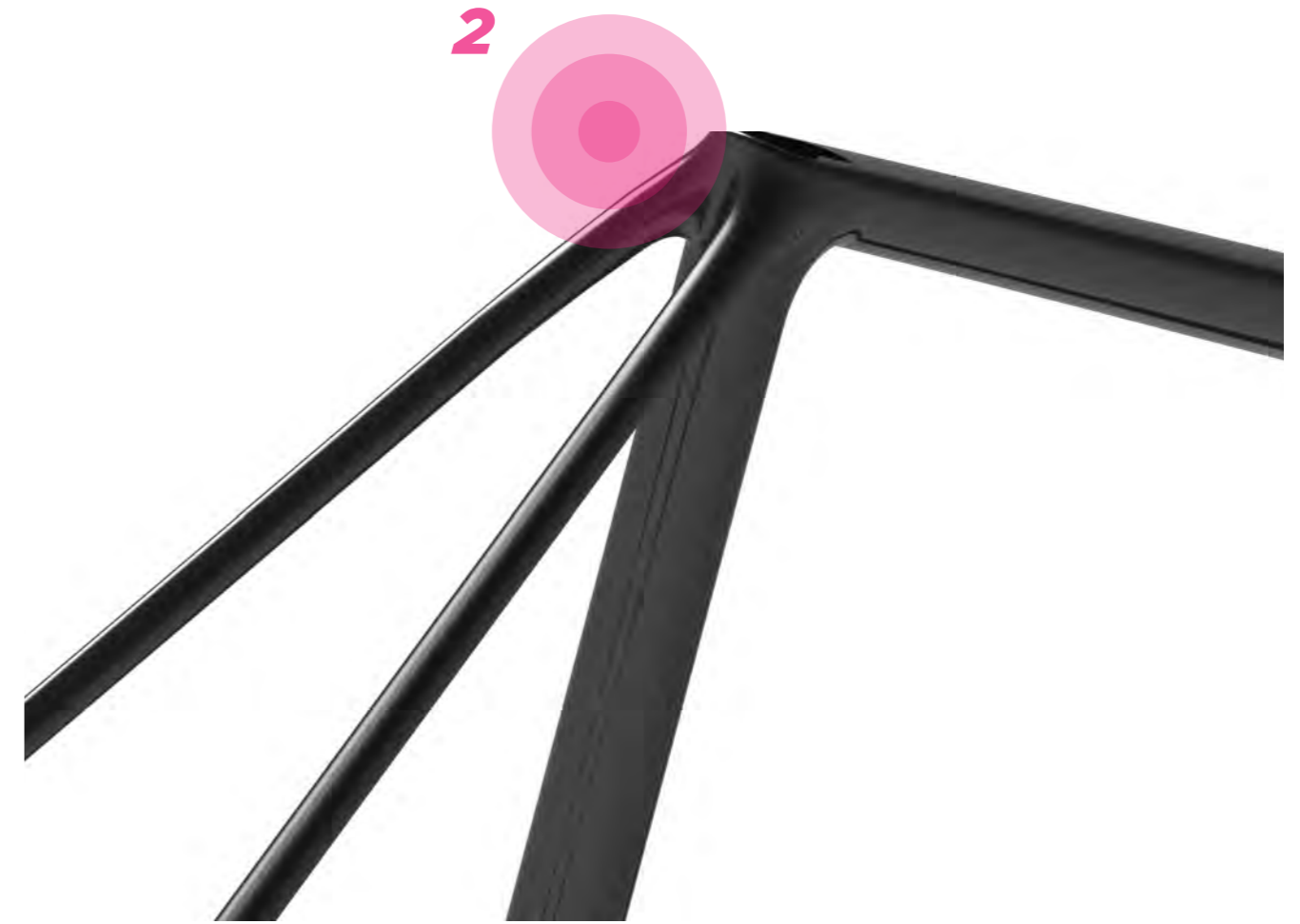
2- The lower end of the seat tube tapers out to blend smoothly into the bottom bracket. This provides additional stiffness to the backbone of the frame, while the thinner round upper part of the seat tube brings some comfort to the rider.

3- Tall and widely spaced chainstays out of the BB create a strong structure for maximum drivetrain efficiency while allowing to fit tires up to 30mm wide.

4- One-piece molded Seatstays and Chainstays: molded together, avoiding bonding joints creates a stronger structure with better alignment. Every frame size has its own rear triangle mold, optimized design for every size to fine-tune riding characteristics.

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COMFORT



1- The Magma frame's long and thin seatstays connect the rear wheel axle to the top-tube at a high position. This long span of thin tubes, together with a special directional carbon layup, provide vertical compliance to the rear triangle for increased comfort over long rides. The vibration damping on the rear triangle helps to keep the tires on the ground for additional grip and control.

2- At the same time, the wide stance of the seatstays and strong connection at the seatpost cluster offer excellent lateral stiffness under power.

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AERODYNAMICS



The front end of the Magma stands out for its subtle blend of airfoil headtube and downtube profiles into the fork crown. Beyond that aero-efficient shaping, the headtube also routes the brake hoses in a clean and simple way to expose nothing to the wind. What we call Head Tunnel.

When conceiving this Head Tunnel design, it was paramount for AURUM to come up with a solution that would be equally aerodynamic, light, easy to adjust and service and compatible with standard round 28.6mm mount stems. The headtube design of the Magma achieves all these goals while not adding any weight in the process and allowing a “hidden” cable setup from the rider’s view.

1- Truncated NACA airfoil headtube.

2- The custom headset top-cover further adds to the integrated and aero features, as well as extending the range of adjustability, supplied in 8 and 20mm heights with every frameset.

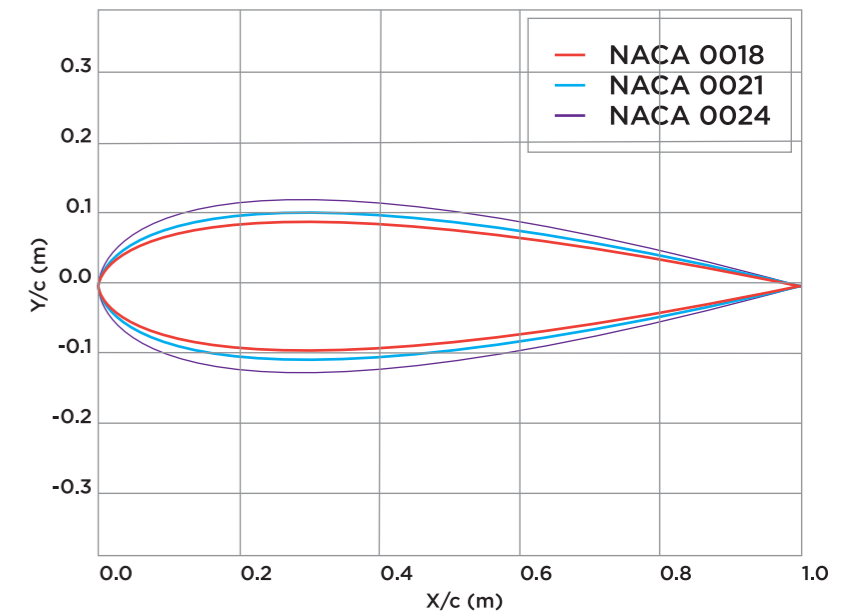
3- Magma uses a tapered 1-1/8” to 1-3/8” headset with angular stainless bearings for a perfect balance of steering precision, durability and low weight.

4- The front brake housing enters the frame at the top of the headtube and exits right at the brake caliper down the bottom of the fork, all hidden from the wind and rattle free.

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Head Tunnel design:
It is simple, clean, and adds no big manufacturing complexity or weight. But most importantly this design was chosen for offering the best overall solution for hiding the brake lines from the wind:

- Standard round fork steerer, stem and headset bearings.
- Easy to install, easy to keep and lightweight.
- Standard stem compatibility allows any rider to find the best position for the best performance



The Magma frame and fork has been designed and developed with the only idea of being the fastest all-round bicycle in the market. In addition to a well-balanced mix of stiffness, comfort, racing geometry and light weight, aerodynamics play an important role in the speed the bicycle is able to sustain and its behavior at different wind angles. For the design of the Magma, our engineering team focused on the aero shape development for the headtube, downtube and fork legs especially, as these are the primary surfaces to battle the aero drag, while blending every other area smoothly.

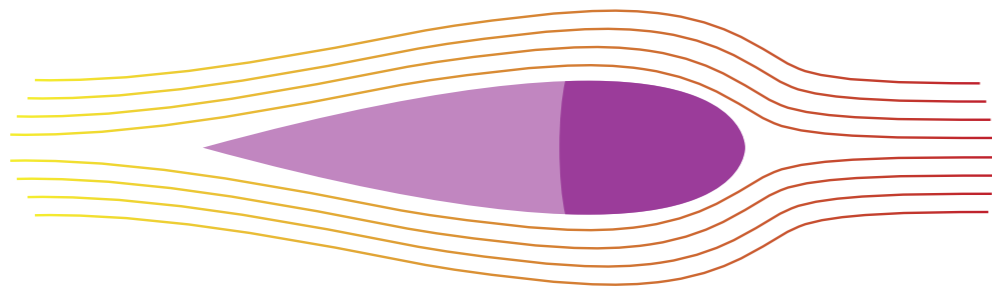
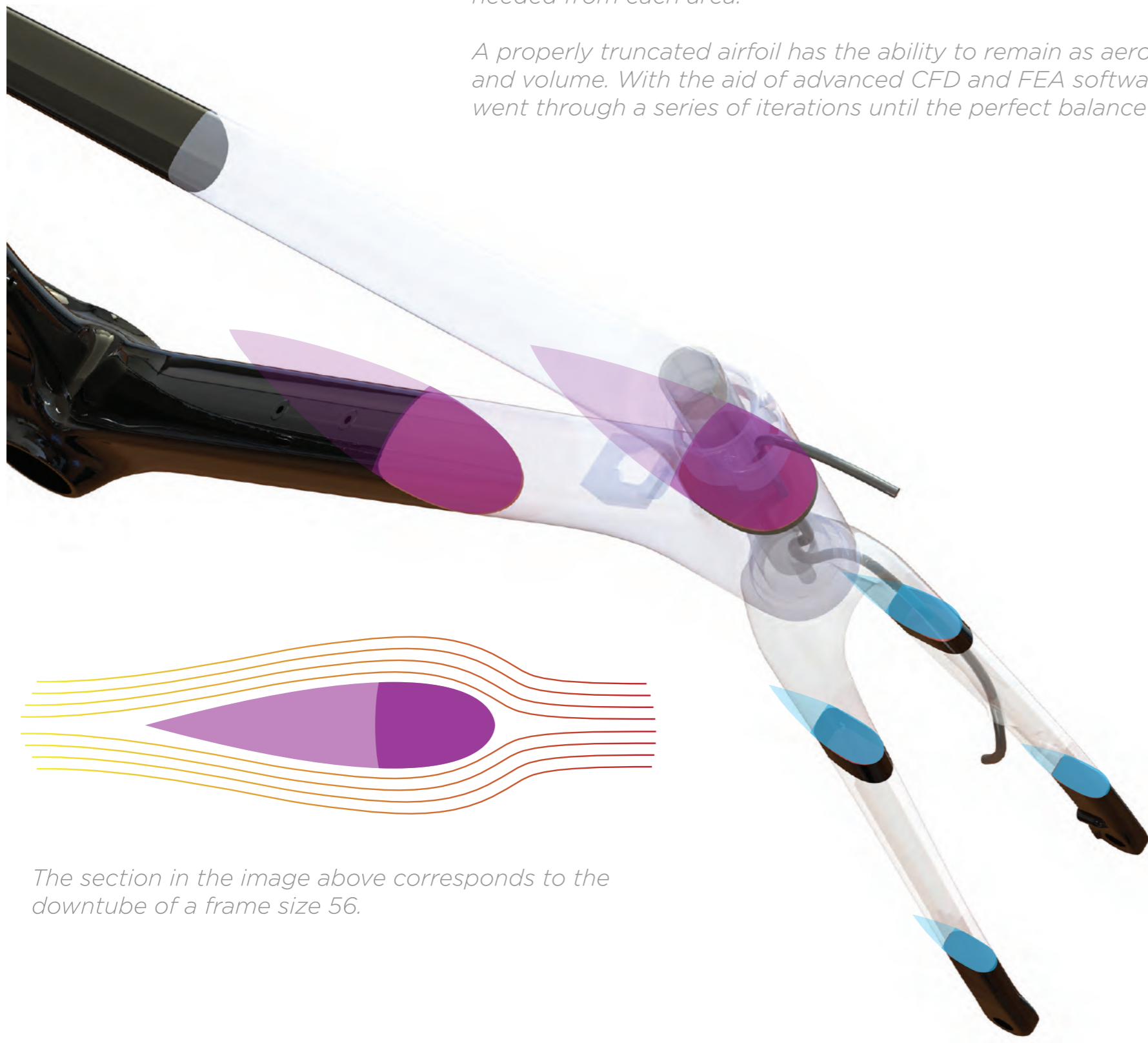
Using aero-proven NACA airfoils, our aero engineers chose 0024 profiles for the headtube and downtube, while the fork legs use a 0021 profile. This choice is based on the needed structural stiffness and strength based on the size of the tubes.

The tubes then got their trailing edge truncated at different depths depending on the frame size and the torsional stiffness needed from each area.

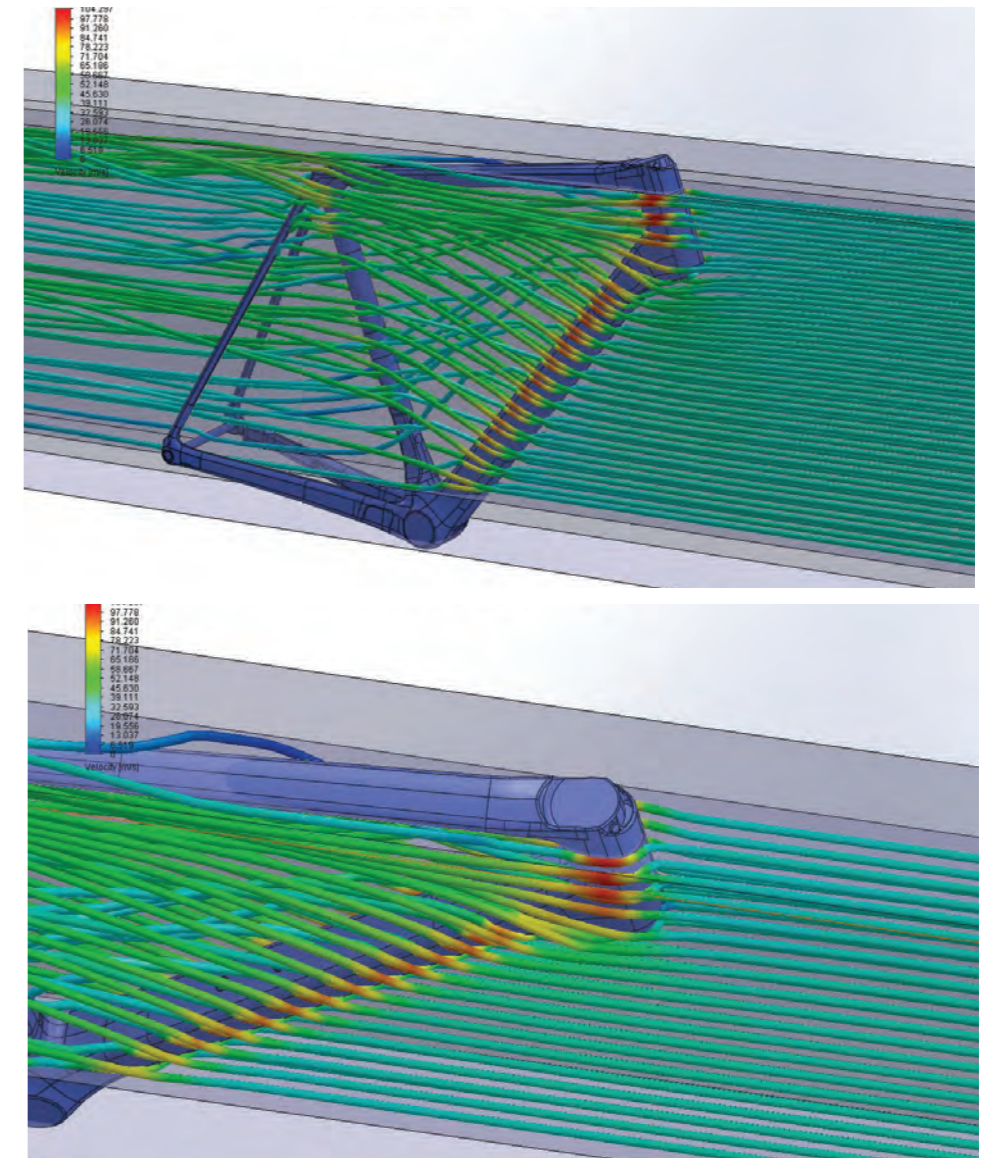
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The image below shows the waterline cross section of the tubes of the front of the Magma frame and fork. The NACA airfoil shaped tubes got their trailing edge truncated at different depths depending on the frame size and the torsional stiffness needed from each area.

A properly truncated airfoil has the ability to remain as aero as the full-depth profile, with the benefits of reduced weight and volume. With the aid of advanced CFD and FEA software during 3D modeling phase, the tubes for each frame size went through a series of iterations until the perfect balance of aerodynamics and other riding characteristics was achieved.

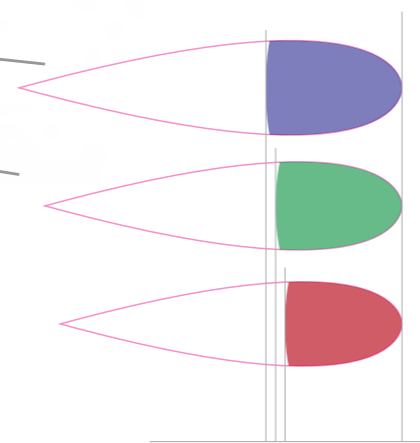
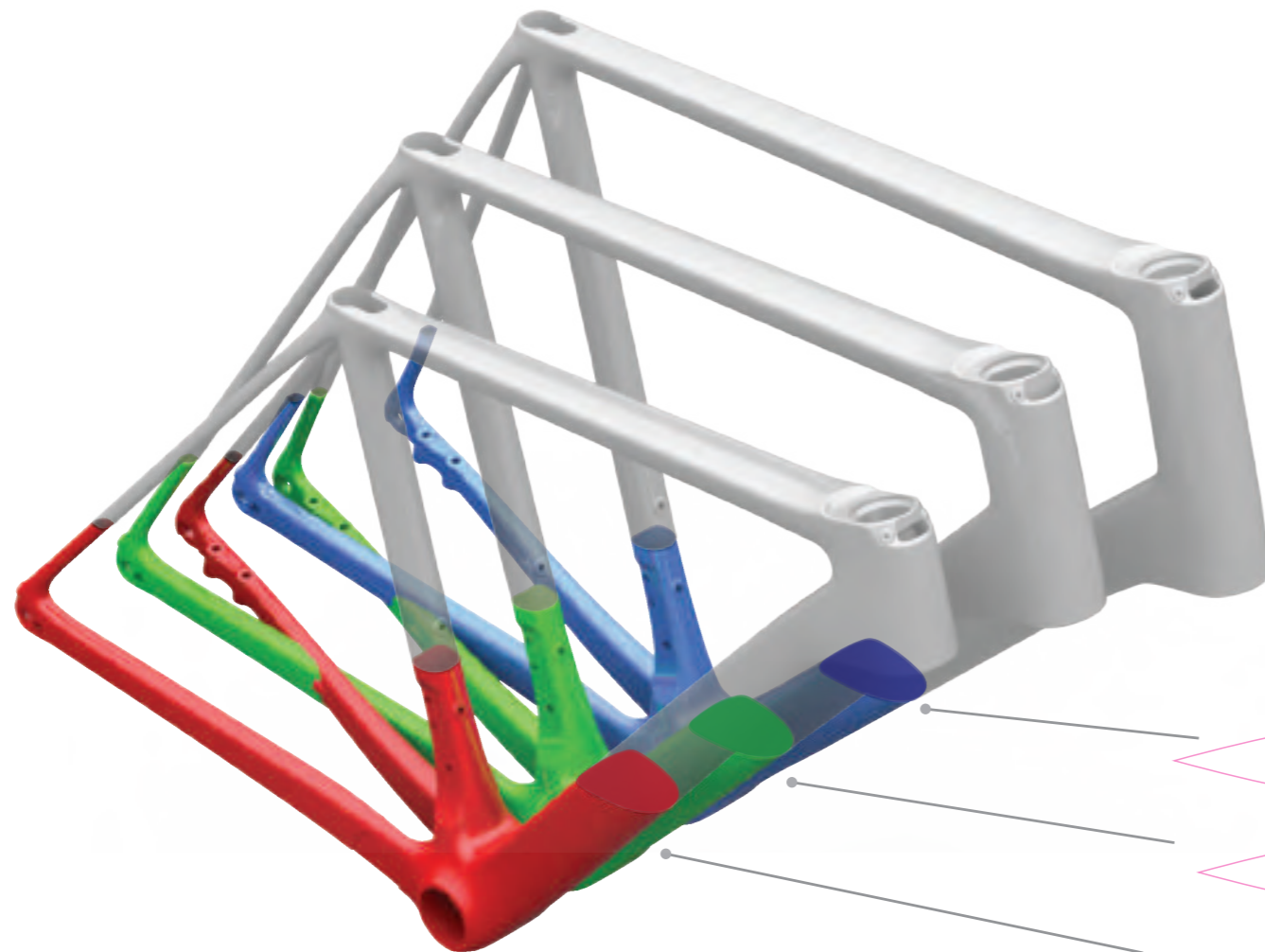


The section in the image above corresponds to the downtube of a frame size 56.



The images above show the aerodynamic study using CFD software. Multiple conditions and part combinations were used to define the shape for every frame size: frame alone, frame and fork, with handlebars, bottles, wheels and tires, etc.

With the goal of producing the fastest bike, AURUM has worked tirelessly to achieve a perfect balance between handling, aerodynamics, comfort, stiffness and low weight. Aerodynamics were therefore a key feature in the design from the start, a feature that both Alberto and Ivan have strongly pushed to incorporate in the Magma frameset. This aerodynamic advantage is a feature that had to be achieved for all 6 frame sizes without increase in weight or hamper in comfort. AURUM didn't simply design a medium size frame and scale the tubes up and down for the other sizes. Fine balancing between FEA (Finite Element Analysis) and CFD (computational fluid dynamics), progressively larger downtube cross sections and/or deeper chords were designed for every size to result in comparable riding traits for all of them.



Frame size 61 downtube cross-sections

Frame size 56 downtube cross-sections

Frame size 50 downtube cross-sections

Frame size-optimized downtube cross-sections

LIGHTWEIGHT

Achieving a low weight was an important goal for the Magma project, however it was not to be the main focus of the development, but to have balanced overall riding characteristics. Often reaching for the last grams can result in a loss of structural strength or riding comfort. At same time, too much focus on the weight figures could result in a not so aerodynamically optimized shaping, which after all contributes to higher speed in most riding situations.

The riding characteristics were developed using **ECT (Experience Carbon Technology)**.

ECT is about using the right type/grade of carbon for each area of the frame, combined with a optimized layup depending on the frame size and the most advanced tooling and manufacturing equipment.

With minimum overlap between laser-cut carbon sheets and using high-pressure when molding, Latex-covered EPS mandrels inside the frame, more resin is squeezed out resulting in a stronger, lighter frame that better responds to the material properties of every type of carbon used, for better stiffness, comfort and reduced weight.

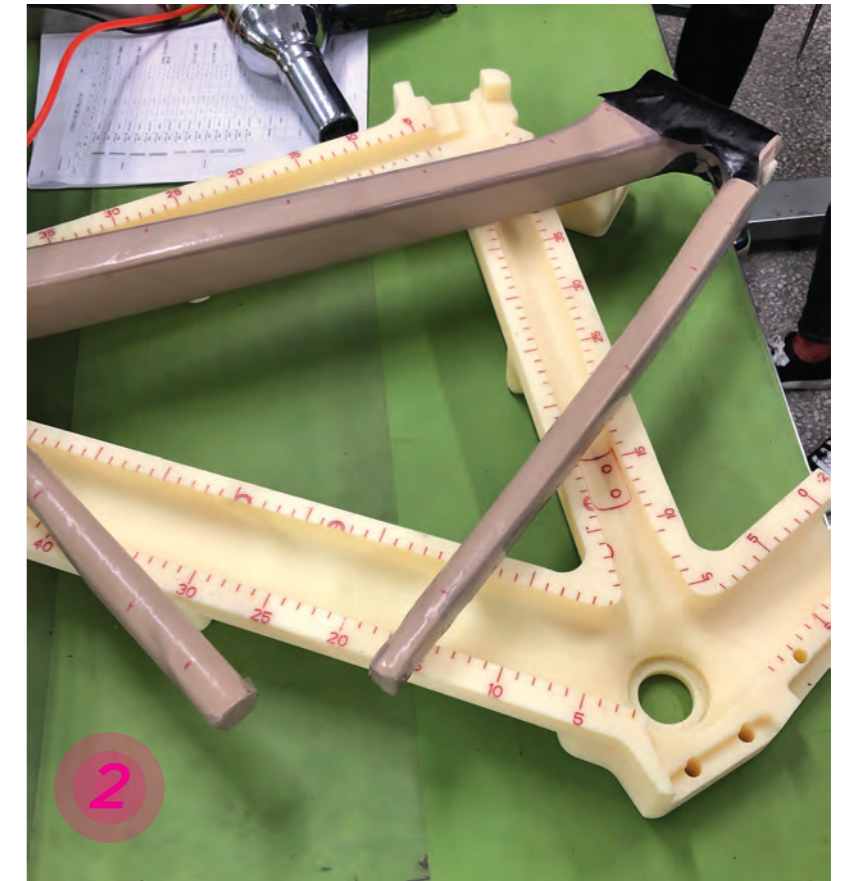
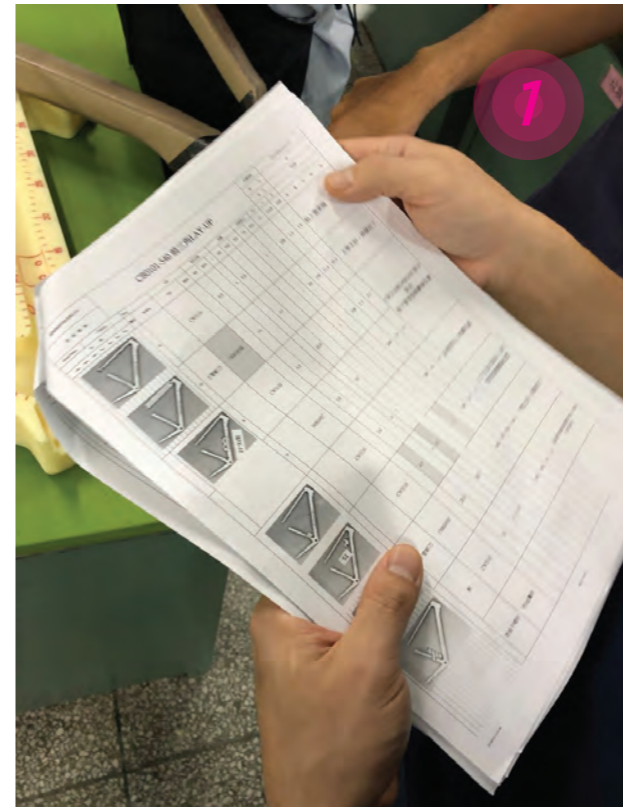
Low weight is achieved through purposeful design and engineering on the Magma frame and fork, and by using the best manufacturing technology and tooling materials.

1 Layup book: every frame size has its own specific carbon layup; different tube lengths and sizes require different carbon grades and number of layers

2 EPS mandrels covered in Latex are used for best compactation and inner surface smoothness.

3 Heavy, high-grade steel molds are used for molding, allowing higher molding pressure to create a stronger, lighter structure, with better surface smoothness.

4 The result of using high-pressure, precision molds combined with Latex-covered EPS mandrels is a smooth, compact structure in-and-out: lighter yet stronger



A frame and a fork is only part (the biggest part, for sure) of what Magma has to offer, because every frameset is delivered along with another 20 parts, such as thru-axles, headset covers, fork expander, derailleur hangers and more, all of which have been designed and developed exclusively by AURUM using the best materials.

At AURUM we left no stone unturned and we went on to design every single part that comes with the frameset and complete bike. Improving function, reducing weight,

Low-profile, superlight AL-7075 stem top cap and aluminum bolt

Integrated headset top-cover - made of fiber reinforced composite
Available in 8 and 20mm heights
Debossed AURUM logo



Ultralight, low-profile CNC 7075 Aluminum thru-axles



Forged + machined lightweight Centerlock rings

Fiber-reinforced composite drivetrain shift ports - Di2 junction box,
Wireless and mechanical versions all included

3mm shock-absorbing high-performance bartape with superlight,
machined aluminum plugs



Every AURUM bicycle and frameset is delivered with all spare parts
included in this exclusive bag, for a better presentation of the product
and drastically reducing the amount of plastic bags and packaging often
used for this.

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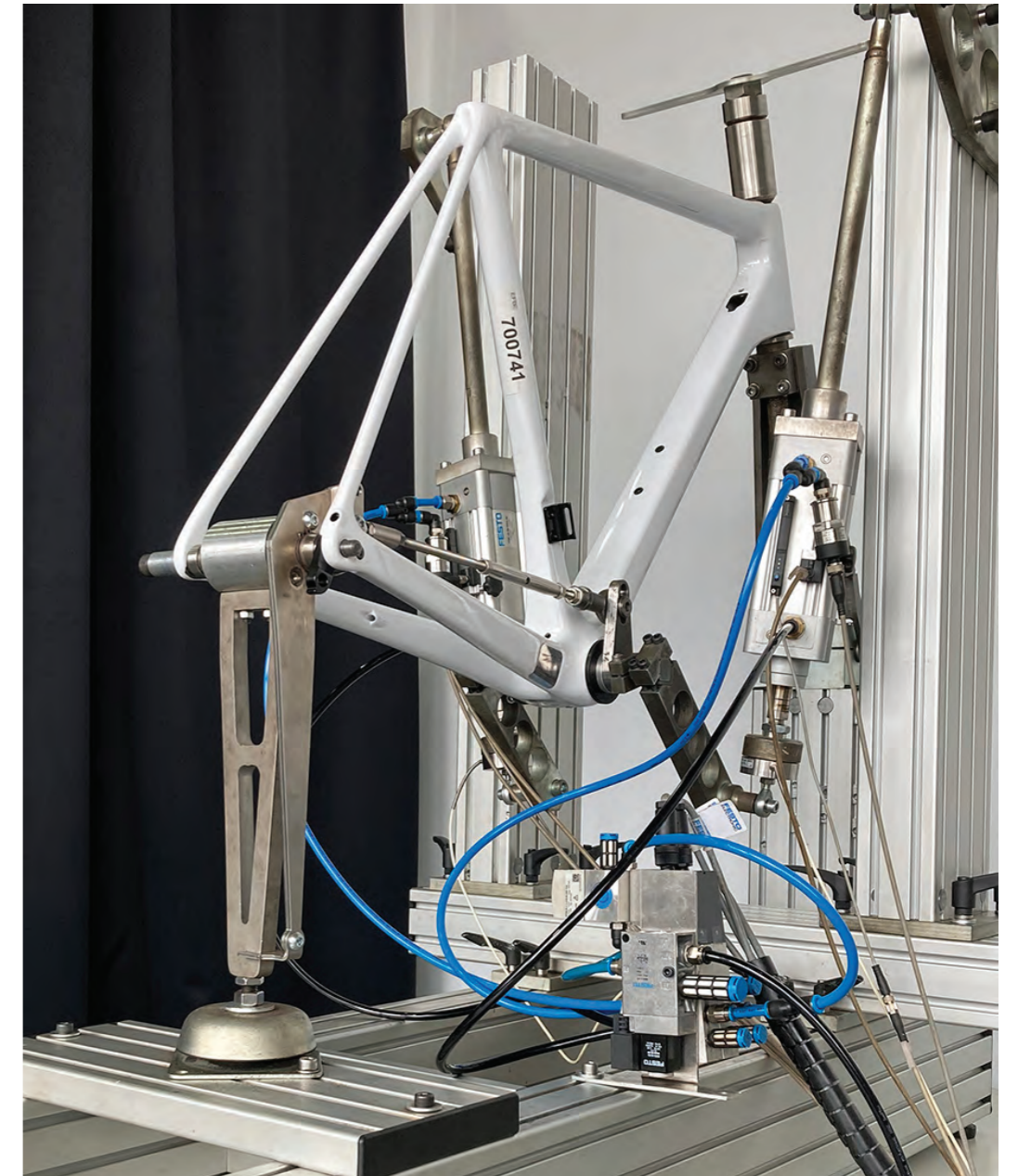
TESTING

During the development of Magma, both Contador and Basso spent countless hours testing different prototypes. This was a necessary exercise to confirm the numbers drawn for the geometry, for both the handling and fitting, and, even more importantly, to fine-tune the bike's riding characteristics. These characteristics are defined not only by the shape and size of the tubes of the frame and fork, but very crucially by the materials used to mold them.

Of course, the carbon fiber engineers at AURUM already had a good idea of the frame's behaviour by design, thanks to their experience and data collected in the test lab and the stiffness bench. By the time Alberto and Ivan threw their legs over the saddle of the Magma, the frame and fork had already gone through rigorous lab testing, exceeding the usual bike industry standards and European norms, to ensure the safety and solidity of the structure. But beyond that, what differentiates a great bike from a good bike is the riding feel, the sublime balance of riding characteristics (stiffness, comfort, light weight and aerodynamics all working in unison) that were set as the main goal for the project – and that, in fact, was the primary motivation for Contador and Basso to embark upon this entrepreneurial venture.



"I thought my body's extreme effort would count highly to evaluate the bike's behaviour"
Alberto Contador



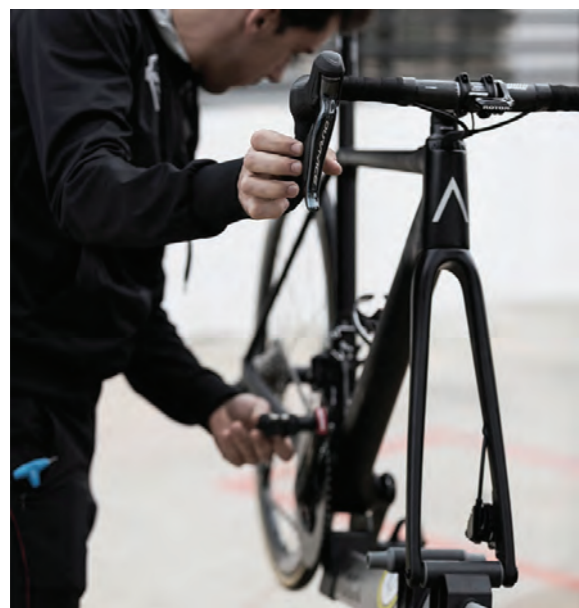
One of the most exhausting tests for Magma was the Everesting by Contador, a challenge that he decided to undertake as much as to test himself as for testing the bike. In a narrow, rough and steep mountain road, Alberto knew that his body's extreme effort would be important in evaluating the bike's behaviour; whether he was tackling the 20% gradient uphill or downhill it would be an strenuous test for the bike's stiffness under power, as it would be to check the stability at high speed, topping over 80km/h, only for having to brake hard to U-turn and ascend again. 78 times.

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Magma's testing phase has also seen visits to the wind tunnel on several occasions. During the early phases of the design it was used for refinement and tuning of the airfoil shaped tubes generated by CFD (Computational Fluid Dynamics), using 3D printed models.

Once molded prototypes were finished, AURUM visited the wind tunnel again to validate the aerodynamic prowess of the complete design and to collect data of the fully assembled bike with different brands of wheels and components, different frame sizes and rider positions. This later testing was also used to compare Magma to other top-level bicycles in the market, with very favourable results that were the confirmation of many months of hard work in the design and development of the frameset.



At the end of 2019 and during the 2020 season, the Fundacion Alberto Contador development teams (including the Kometa-Xstra Continental team) also contributed to test and finish Magma's development phase.

A total of 50 riders, from Juniors to Under-23 to Continental semi-professional riders from all over Europe, have covered close to 500,000Km on the Magma before being launched. Along with the team mechanics, they have helped with valuable feedback on the product and start to show it at bicycle races with success.

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MAGMA

FRAMESET SPECIFICATION CHART

			SPECIFICATION
FRAME	AURUM	Magma	ECT custom Carbon layup
FORK	AURUM	Magma	ECT custom Carbon layup
SP Wedge	AURUM	Custom WG-1	For 27.2mm seatpost / Forged+CNC aluminum
Thru-axles	AURUM	Custom low-profile	AL-7075 CNC ultralight / 122x12 front - 163x12 rear
HEADSET	Tapered	1-1/8" > 1-3/8"	45 degree Campy style molded cups / Stainless Steel angular bearings
BB	BB386Evo	3K shell - no sleeve	CeramicSpeed bottom bracket bearings on complete bike builds
Compressor	AURUM	Custom	AL-7075 CNC ultralight device with all aluminum hardware
BAR TAPE	AURUM	Experience 3mm	Light, Anti-Slip, Shock Absorbing 3mm thickness



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AURUM Magma - Frame sizing chart

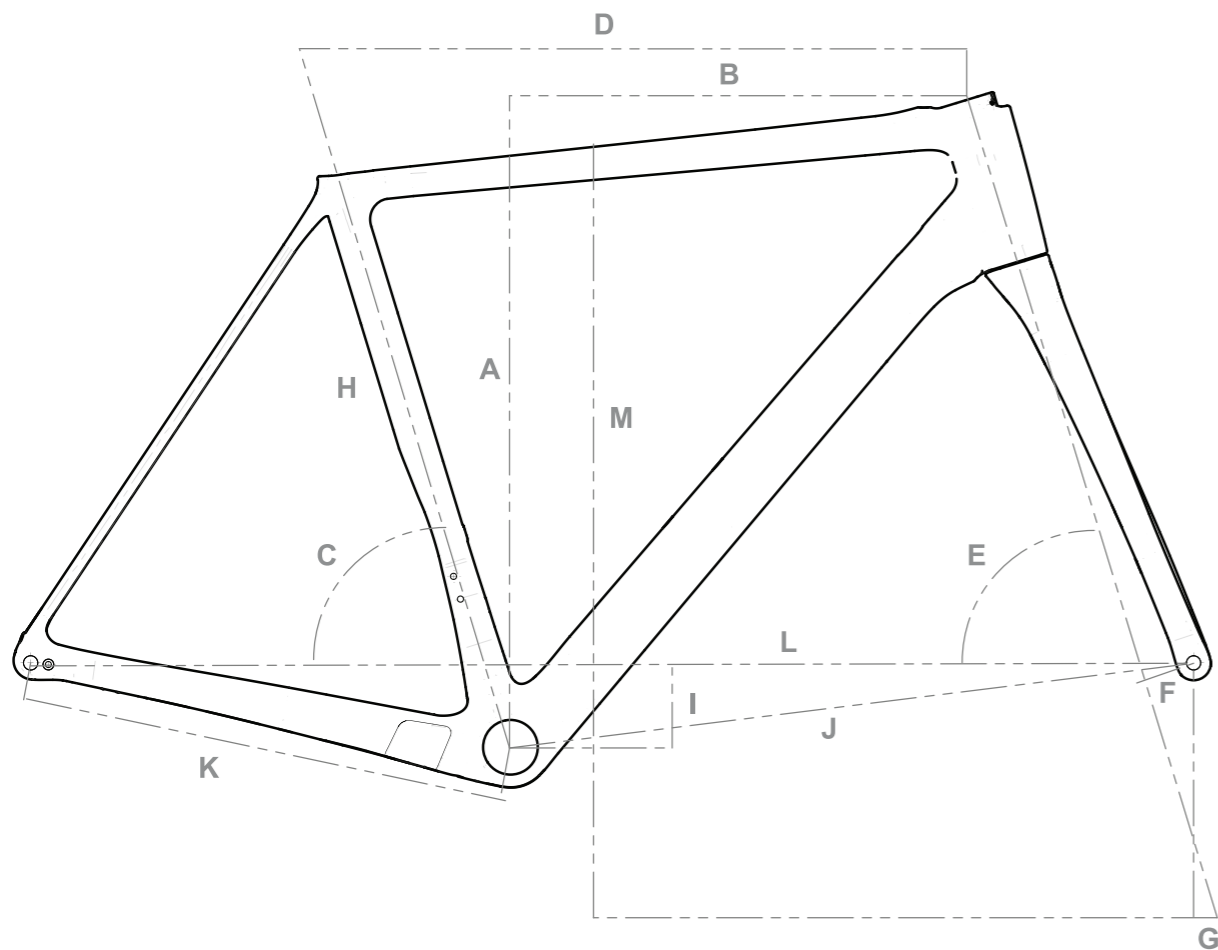
Frame Size	50	52	54	56	58	61
Rider Height (cm)	152-163	161-170	170-177	175-181	180-188	186-195
Rider Height (feet)	5'0"-5'4"	5'3"-5'7"	5'7"-5'10"	5'9"-6'	5'11"-6'2"	6'1"-6'5"

This chart should only be used as a reference, for choosing the correct frame size to your particular body proportions please contact us through our website and/or visit a certified bike-fitter near you.

GEOMETRY CHART

Size	50	52	54	56	58	61
A Stack	505	525	545	567	589	615
B Reach	370	376	384	392	400	408
C Seat Tube Angle	74	73	73	73	73	73
D Top Tube	515	536	551	565	580	596
E Head Tube Angle	71.8	71.6	73	73	73	73
F Fork Offset	50	50	44	44	44	44
G Fork Trail	60	60	59	59	59	59
H Seat Tube Length	453	480	504	526	547	573
I BB Drop	74	71	71	71	71	71
J Front Center	570	584	580	594	608	624
K Chainstay length	407	407	410	410	410	410
L Wheelbase	965	980	979	993	1008	1024
M Stand over height	728	750	782	803	826	850

All dimensions in mm, angles in degrees





AURUM Magma is available in two colors: Glacial Blue and Carbon Black



AURUM Magma Frameset Specifications

Frame	AURUM Magma ECT, BB386Evo, Internal cable routing, flat-mount disc
Fork	AURUM Magma ECT, flat-mount disc
Headset	Tapered 1-1/8" to 1-3/8" Stainless Steel angular bearings
Thru-axles	AURUM CNC stealth 12mm axles

AURUM Magma is available in three different complete bike options:

- Shimano - ENVE
- Shimano - Lightweight
- SRAM - Zipp

All complete bikes are build with Ceramicspeed Bottom Brackets.

Shimano - ENVE

Drivetrain		Cockpit / Wheelset	
Crankset	Shimano Dura-Ace R9100 52/36T, 11 speed	Stem	ENVE Road Carbon
Rear Derailleur	Shimano Dura-Ace Di2 R9150, 11 speed	Handlebar	ENVE Road Compact Carbon
Front Derailleur	Shimano Dura-Ace Di2 R9150	Seatpost	ENVE Carbon 20mm offset
Cassette	Shimano Dura-Ace R9100 11-30T, 11 speed	Saddle	Prologo Scratch M5 Nack Hard Black
Chain	Shimano Dura-Ace 11 speed	Bartape	AURUM Experience 3mm
Brakes	Shimano Dura-Ace R9170 Hydraulic disc	Wheels	ENVE SES 3.4 Disc
Brake rotors	Shimano Dura-Ace 160mm front, 140mm rear	Tires	Schwalbe Pro One Evo 25mm clincher

Shimano - Lightweight

Drivetrain		Cockpit / Wheelset	
Crankset	Shimano Dura-Ace R9100 52/36T, 11 speed	Stem	Lightweight Bügelhalter
Rear Derailleur	Shimano Dura-Ace Di2 R9150, 11 speed	Handlebar	Lightweight Kompaktbügel
Front Derailleur	Shimano Dura-Ace Di2 R9150	Seatpost	Lightweight Leistungsträger - Offset
Cassette	Shimano Dura-Ace R9100 11-30T, 11 speed	Saddle	Prologo Scratch M5 Nack Hard Black
Chain	Shimano Dura-Ace 11 speed	Bartape	AURUM Experience 3mm
Brakes	Shimano Dura-Ace R9170 Hydraulic disc	Wheels	Lightweight Meilenstein Evo Disc TL
Brake rotors	Shimano Dura-Ace 160mm front, 140mm rear	Tires	Schwalbe Pro One Evo 25mm clincher

SRAM - Zipp

Drivetrain		Cockpit / Wheelset	
Crankset	SRAM Red AXS Power Meter, 48/35t	Stem	Zipp SL Speed
Rear Derailleur	SRAM Red Etap AXS, 12-speed	Handlebar	Zipp SL 70 Ergo
Front Derailleur	SRAM Red Etap AXS	Seatpost	Zipp SL Speed 20mm Offset
Cassette	SRAM Red XG-1290, 12-speed, 10-33t	Saddle	Prologo Scratch M5 Nack Hard Black
Chain	SRAM Red 12-speed	Bartape	AURUM Experience 3mm
Brakes	SRAM Red eTap AXS, Hydraulic Disc	Wheels	Zipp 303 NSW Tubeless Disc
Brake rotors	SRAM Centerline XR 160mm front, 140mm rear	Tires	Schwalbe Pro One Evo 25mm clincher



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