GREVIL

WHITE PAPER 1.0

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1. INTRODUCTION

Cicli Pinarello S.R.L. is one of the most famous and winning bike manufacturers in the world. Founded in Treviso (Italy) in 1952 by Giovanni (Nani) Pinarello, its focus was to produce the highest end racing bikes. The name, Pinarello, recalls legendary victories of the greatest cyclists of all time: since 1975, the first victory in Giro d'Italia with Fausto Bertoglio, Pinarello has won all of the most important races in the world, including the Olympics, World Championships and the Tour de France.

Pinarello has always been synonymous with innovation and performance. Our DNA targets research and development of technical solutions which best represent the rider's needs.

That is the approach we had on this new project; create the Pinarello experience for gravel. We developed a gravel racing bike which allows you to play with tire clearance and find the best set up to better answer at your needs.

We started optimization based on the current Grevil by improving aerodynamics using our TiCR internal cable system, race geometry leading to overall better handling. Here is the new Grevil.

2. PURPOSES OF THE PINARELLO GREVIL PROJECT

The analysis of the Gravel riding is decidedly complex as this niche of riders represents many facets of the sport and varieties of different needs. Particularly in recent years, we are seeing more diverse and complex gravel races coming out. For this reason, we had to re-think the Grevil project: adding aero solutions such as the integrated cable and, geometry wise, this new bike is a true competition bike. Additionally, we added a maximum tire clearance of 50mm to allow you to accommodate bigger tires and reach the necessary comfort to ride your Grevil over longer distances.

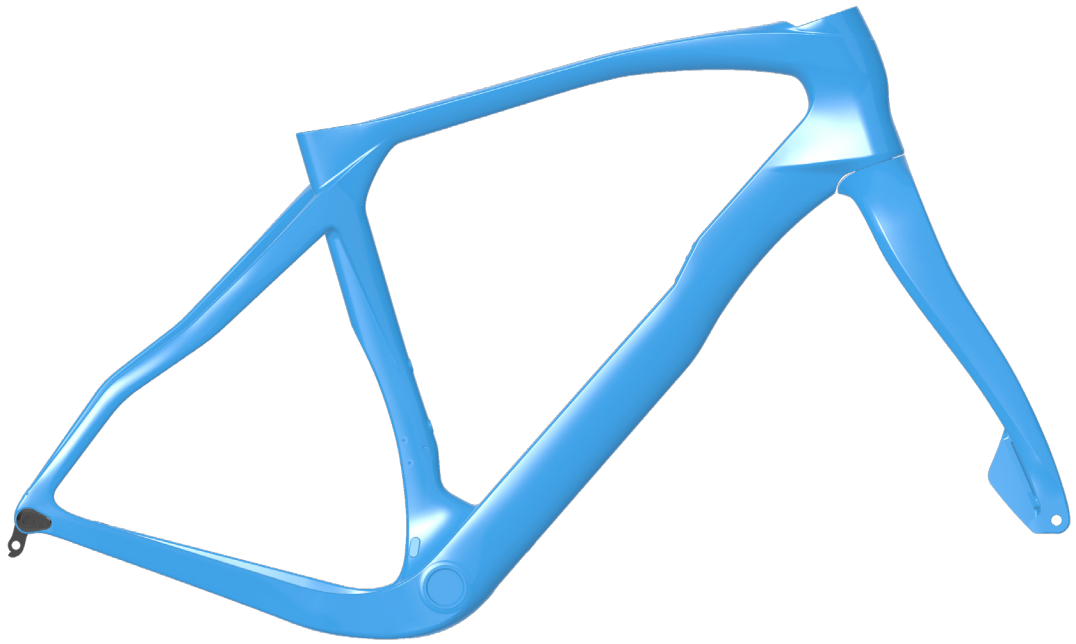
TECH DETAILS:

- Create a gravel bike with true Pinarello DNA. This means a competition bike for all terrains and distances, without compromising the handling, stability, and responsiveness typical of the products made in Treviso.
- Wheel versatility was a key objective. Allowing the rider to be able to choose the most suitable wheels for the route ahead.
- A bike suitable for use both on uneven roads and long distances. A specifically designed frame geometry with continued consideration for aerodynamics. Now even more aero thanks to TiCR.

3. DEDICATED GRAVEL GEOMETRY

Different rake and geometry able to keep the same trail and handling for all the sizes is the main feature of Grevil geometry. We focused on headtube angle and the rake of the fork for every size, using different approaches and solutions to reach the end goal. By utilizing a different rake and headtube angle, we are able to keep the same trail for all the sizes, from the smallest to largest size. That means every size literally has its own dedicated geometry, with solutions required by only that specific size. Six sizes, six different ways to develop the geometry, one single goal: keep the trail and the handling quality the same for every size.

THE PINARELLO LABS DETAILED AREAS OF FOCUS WERE:



1. REACH & STACK

The Grevil's reach is shorter, and the stack is higher than a traditional road bike. This enables a position in the saddle with greater extension of the arms. This allows the riders arms to flex more, thus better cushioning the impact of the terrain and the shoulders can be more relaxed for longer distances. The geometry of the frame therefore is more compact and with a slightly higher center of gravity to promote agility in tight corners and difficult terrains.

2. SEAT TUBE ANGLE

More vertical, allowing for room for bigger tires. Now up to 50mm.

3. FORK ANGLE AND RAKE

The fork angle has been moved backward in between 70,25° - 72,25°. This enables the ONDA fork to work the best way possible to reduce vibration. In addition, the rake has been increased to between 50mm – 55mm in size, improving the bike stability in rough terrain.

4. CHAINSTAYS

Extensive research and development was done to determine the correct chainstay dimension. The result is a length of only 420mm which grants the best equilibrium between power transfer to the rear axle and vibration absorption. At the same time, it allows accommodation of both 700c and 650b wheels.

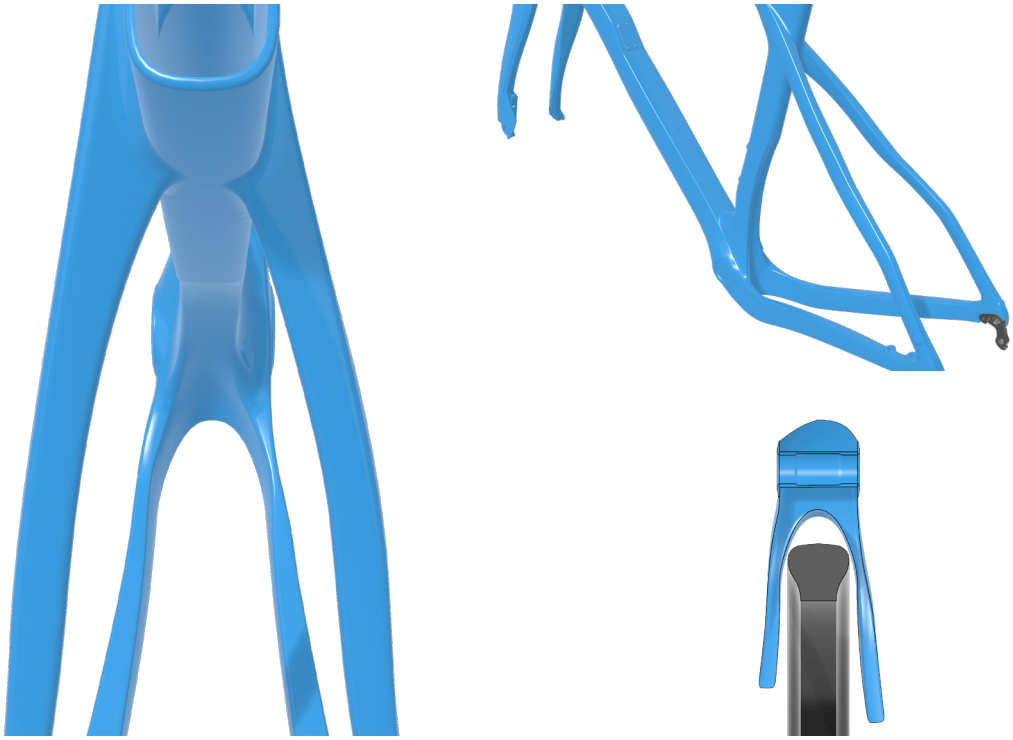
5. SEAT POST

The seat post outstanding is particularly accentuated. This way the seat post can flex more and absorb the stress in the most effective way possible. This increases the rider comfort but also the power transfer from the legs to the bottom bracket.

4. TIRE CLEARANCE

One of the main objectives of the project was to make the bicycle extremely versatile and therefore make the frame compatible with the largest range of wheel options possible. The new Pinarello Grevil was designed to be able to mount road, cross and MTB tires. This way every rider can use the bike on every terrain and condition simply by equipping the wheels that best suits their needs.
Possible combinations allowed by the Grevil frame:

- Road tire: from 25mm and up. Wheel size 700c
- Cross tire: from 32mm to 50mm. Wheel size 700c
- MTB tire: up to 2.1". Wheel size 650b (27.5")



The frame is compatible with 12mmx100mm through axle on the front and 12mmx142mm axle on the rear. This offers the most complete range of compatibility with rims on the market both for road and MTB riding.

5. FRAME DESIGN

A. CHAIN STAY DESIGN

The goal of making the Pinarello Grevil frame compatible with 700c wheels up to 50mm and with 650b wheels up to 2.1" represents a significant challenge in the design of the chainstay. In fact, the area behind the BB is critical due to its intersection between chainrings, wheel and chainstay.

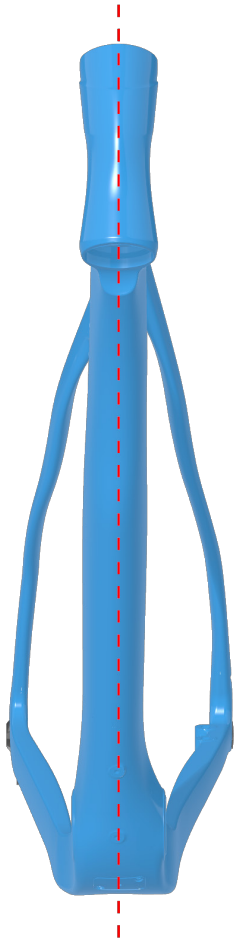
We wanted to keep the Q-factor similar to a road bike and without the need of lengthening the chainstay as to not affect the rideability. Therefore, it was necessary to move the chainstay downwards in order to free the critical intersection zone. This made it possible to guarantee a cross tube section of 14mm for chainstay, thus guaranteeing the optimal rigidity of the component.
To guarantee the comfort of the frame on gravel roads, the chain stays profile has been designed with the well-known Flexstay concept.

B. TWIN ARMS

Twin Arms technology already used in the previous Grevil project allows us to provide a downward rotation of the right seatstay in order to guarantee the same triangle geometry between left and right sides. Advantages of this include: the rear triangles have a similar geometry and consequently they respond symmetrically to stress. Moreover, having two different connection points between seat stays and seat tube disperses and off loads the energy received through the rear axle. The result is the seat tube being able to absorb this energy in a more efficient way.

C. PINARELLO ASYMMETRY CONCEPT

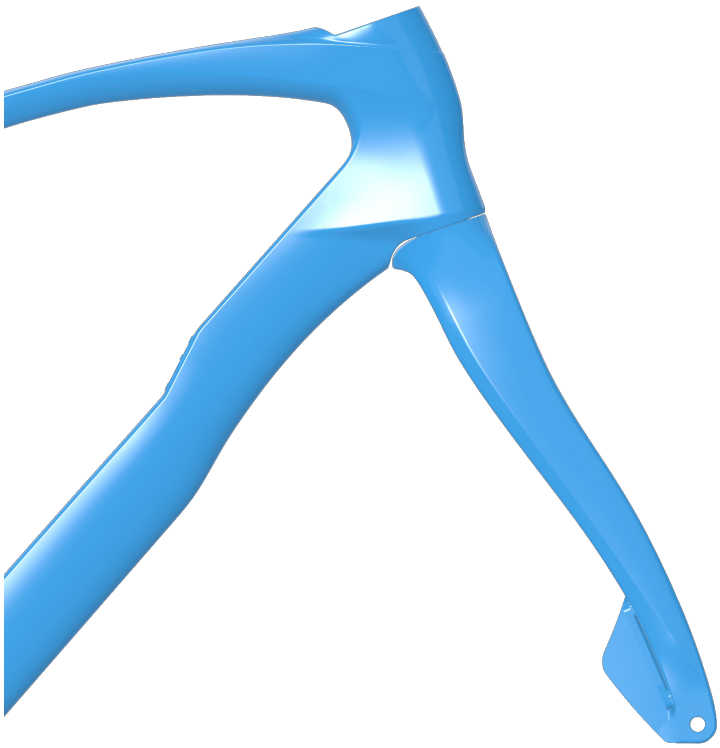
The asymmetry in the frame of the Pinarello Grevil does not stop at the rear triangle. In fact, a Pinarello traditional key feature is that the downtube and BB are also asymmetric. This is to ensure a symmetrical behavior from the frame due to the pull of right pedal and chain.



D. ONDA FORK

Considering the fact that during a Gravel ride, the shock that a frame and fork transmits to a rider is considerably more than that of a road ride, we have designed a fork with a dedicated and typical Onda wave shape. Coupling this shape with the rake dimension equal to 50 mm we can achieve the ultimate damping effect through the fork.

The combination of the Flexstays and the Onda shape, gives the Pinarello Grevil outstanding comfort without compromising the responsiveness and precision typical of a Pinarello bike.



E. MATERIAL CHOICE

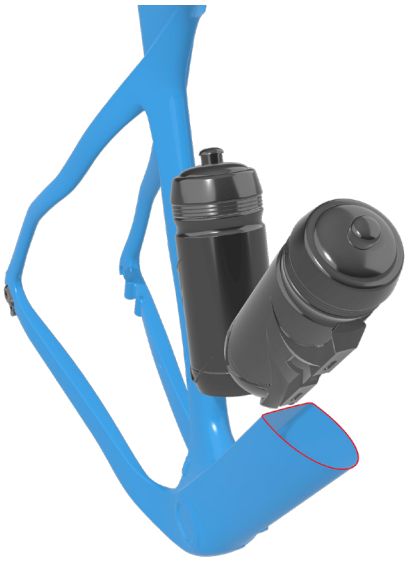
The correct choice of material deeply influences the frames performance. Carbon Reinforced Polymer (CFRP), can be used to optimize every single section of the frame to achieve the desired stiffness and lightness. For example, in areas where the stiffness must be favored, a high modulus fiber (HM) can be used, while where the strength is primary, a high strength fiber (HT) is preferred.
This choice contributes to increased impact strength to prevent breakage. For this purpose, we selected the T700 carbon fiber from our one-and-only carbon fiber supplier Toray from Japan. The well-renowned company is considered one of the best carbon fiber suppliers in the world.

6. AERODYNAMICS

If aerodynamics were not the original objective when thinking about gravel bikes, we are now seeing a larger range of gravel races coming out which require us to. We also know that riders are looking for more dynamic ways to use their bikes. That's the reason that PinaLABs has decided to introduce TiCR system, same as Dogma. Watt saving and better aero performance are the key factors in our integrated cable routing called TiCR. The reason for this decision is simple: even a small aerodynamic gain multiplied by several hundred kilometers can lead to a great gain overall.

1. FLATBACK PROFILE

Reduce the drag of this area, especially with a bottle on. The down tube itself is one of the most aero/ impact areas of the bike, where you can really get benefit from less wind resistance.



2. TICR

our integrated cable routing system on Grevil. It helps the bike to save watts without the cables in front of the handlebar. This helps the bike's overall performance but also streamlines the front are for bike packing.

3. FORK FLAPS:

TA area is a drag area. The fork flaps design helps the front wheel to increase the total aerodynamic of the bike, making the air flow steady and a significant decrease of the drag.

4. AERO SEATPOST

The seatpost role, especially on a competition gravel bike is crucial. It has to consider the weight and aerodynamic performance. On the other hand, it has to work to ensure the maximum vibration dampening. That's the secret behind our design: a mix between performance and functionality.

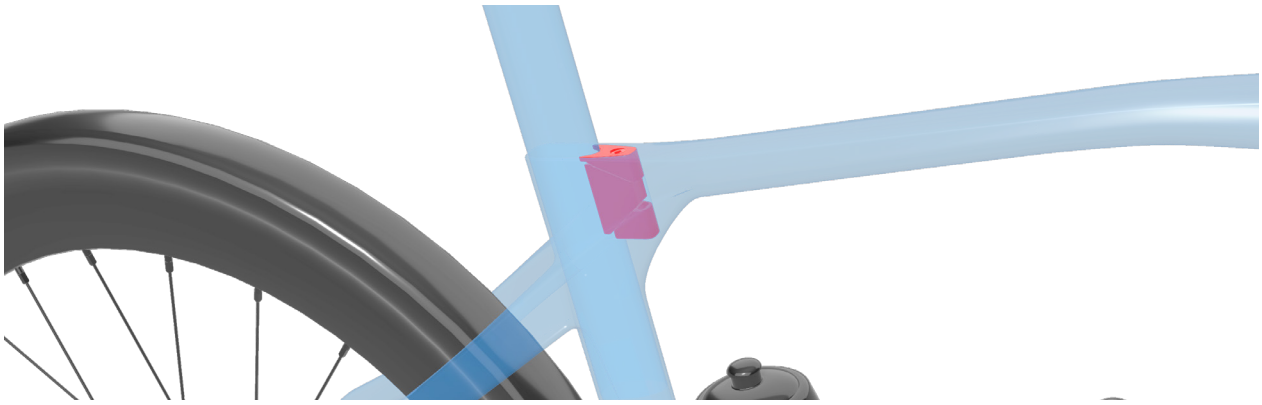
7. SPECIFIC PINARELLO GREVIL FEATURES

A. INTERNAL CABLE ROUTING

TiCR technology is now available for Grevil. Fully integrated cable routing to improve aerodynamics and the overall performance of the bike. Full compatibility with 1x and 2x except for 2x Sram mechanical. thus guaranteeing the optimal rigidity of the component.
To guarantee the comfort of the frame on gravel roads, the chain stays profile has been designed with the well-known Flexstay concept.

B. DEDICATED SEATCLAMP

Mud, dirt and dust are a typical aspect of gravel riding, so we cannot adopt the “Dogma” seat clamp system placed in the upper rear part of the seat tube. Therefore, we decided to use a system like the one adopted in the Prince family, placed in front of the seat post and hidden from the elements.



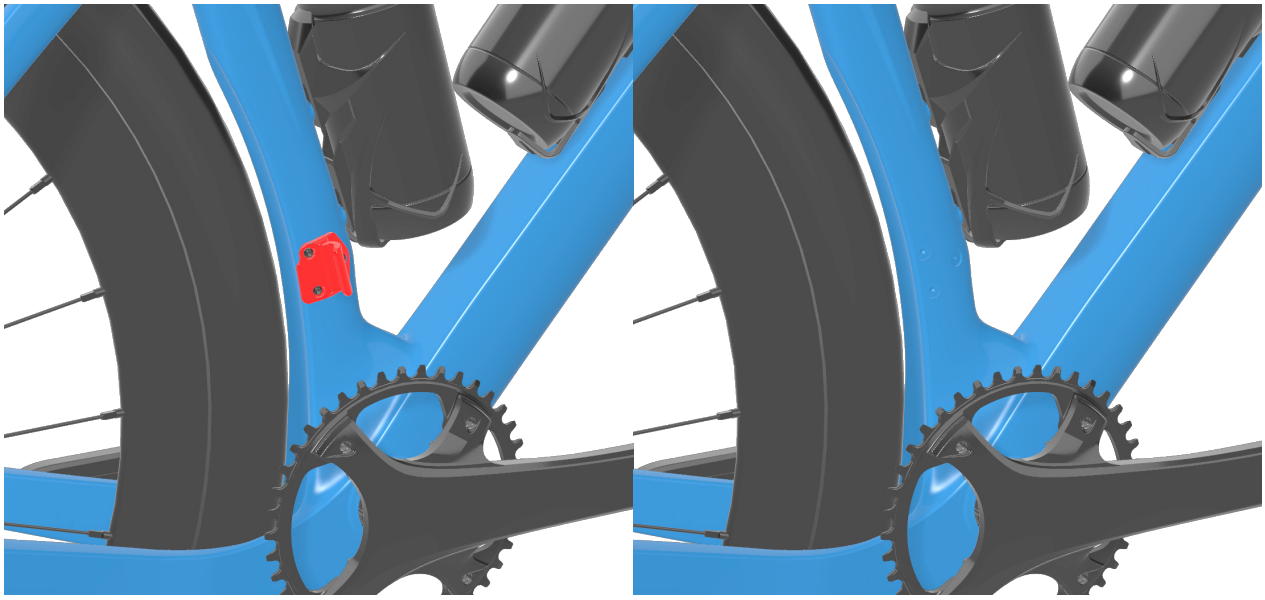
C. DOWNTUBE BOTTLE CAGE INSERTS

Gravel bikes are often used for long trails. Riders can be required to pedal for days in all different conditions, so they need to pack a lot of additional equipment. It is not uncommon to see gravel bikes loaded with bags on the handlebars, the saddle and inside the main triangle.
This allows to have a bag convenient to reach but takes away the possibility of having a double water bottle. To reach that, we adopt a frame design that put a bottle cage insert on the lower part of the downtube by the BB.

D. REMOVABLE FRONT DERAILLEUR HANGER

Versatility is, without any doubt, the key characteristic for a gravel bike. The many versatile ways to use a gravel bike brought about the idea to have a removable front derailleur hanger and give you the possibility to use 1x or 2x solutions without compromises.

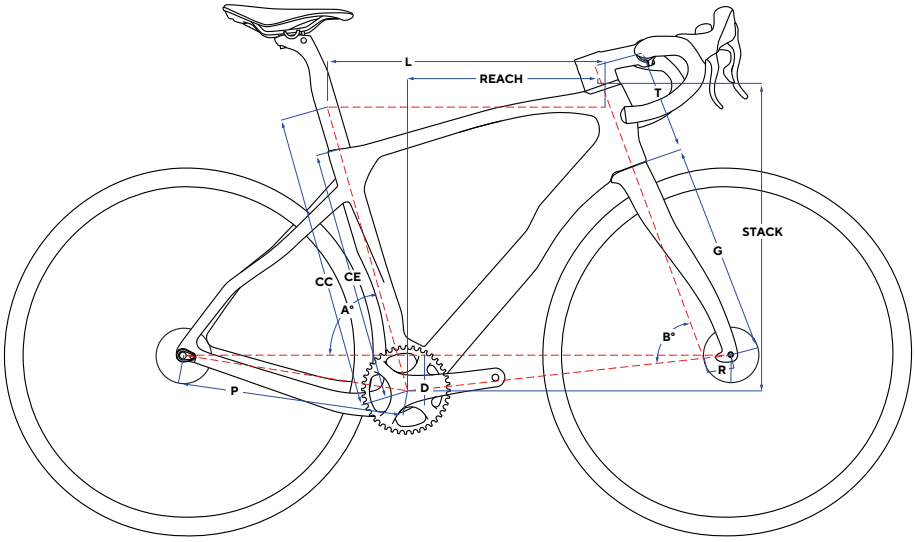
Pinarello Grevil is designed for the rider to make their own choice. The front derailleur hanger is fixed on the frame by 3 removable screws.



8. GEOMETRY

Pinarello continues to offer every single rider the best bike. The well-known “Made4you” concept was applied during development of the Grevil. The result is 6 sizes available that can perfectly fit every rider. Every single size of the frame is design individually. For example, the larger sizes are dimensioned in order better to absorb the increased stress. The main purpose is that every rider can ride their Pinarello with the same feeling and performance.

Below the geometries:



CE	CC	L	A [°]	B [°]	P	T	D	R	G	REACH	STACK
410	470	520	74,50	70,25	422	120	72	55	395	360,1	548,4
445	500	535	74,00	70,50	422	135	72	55	395	367,8	563,5
475	530	547	73,75	70,75	422	155	67	55	395	374,4	578,4
500	550	560	73,50	71,75	425	165	67	50	395	382,0	593,5
520	575	577	73,00	72,00	425	180	67	50	395	389,7	608,8
550	600	597	72,50	72,25	425	200	67	50	395	398,5	628,8

CE: SEAT TUBE CENTER - END **| CC:** SEAT TUBE CENTER - CENTER **| L:** TOP TUBE CENTER - CENTER **| A[°]:** SEAT TUBE ANGLE **| B[°]:** HEADTUBE ANGLE **| P:** CHAINSTAY **| T:** HEADTUBE **| D:** BB DROP **| R:** FORK RAKE **| G:** FORK HEIGHT **| REACH | STACK**

9. TECHNICAL SPECIFICATION

GREVIL

- Carbon T700 UD finish
- Asymmetric frame
- Twin Arms
- Flexstays
- Dedicated Onda fork
- Dedicate aero seat post
- Dedicated FSC Frontal seat clamp, integrated and aerodynamic
- Think 2, to fit electronical or mechanical group sets on the same frame
- TiCR internal cable routing
- TiCR integrated headset (1.5 upper and 1.5 lower)
- Italian thread BB
- Flatback profiles
- Fork Flap
- E-link
- Down tube bottle cage
- Max Tire: 700c x 50 mm
- Max Tire: 650b x 2,1”
- 1x and 2x crankset option. 2x Sram mechanical option not available
- RAD SYSTEM disc brakes
- Disc Flat Mount (max Ø160 mm)
- Front Axle Ø12 x 100 mm Shimano®
- Rear Axle Ø12 x 142 mm Shimano®

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