

PINARELLO CROSSISTA WHITE PAPER 1.0



PINARELLO CROSSISTA

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## INTRODUCTION

### a. Pinarello

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 times: 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 Olympics, World Championships and Tour de France.

We make sure that the bikes produced for the best riders in the world are also available for the amateurs, to allow everyone to perform to their potential. Collaborating with the pro riders allow us to develop cutting edge technologies in order to win races. Those technologies are then applied to the bikes for everyone to experience.

### b. The New CROSSISTA Project

When we design a new bike, here at Pinarello, we are always looking to create the best, even if this means improving a bike that is already cutting edge. Hence, with this aspiration we started from the FCX to recreate a completely new bike improved in every aspect.

The main focal points of the project are:

- Better ergonomics in order to obtain the best cyclocross experience
- The introduction of the Pinarello aero concepts in the cyclocross world, where the speeds are getting faster and faster; but always keeping in mind the necessary lightness and responsiveness that must distinguish such a bike.
- Maintain the famous Pinarello ride quality, taking particular care during the structural and geometrical design

## 1. FEATURES AND SPECIFICATIONS

### a. Ergonomics - Design 4 Cyclocross

Ergonomics have been one of the key points of focus for the whole project. We truly believe that in cyclocross, the ease of use and the confidence with the bike is crucial to obtaining the best results. We can synthesize all of these efforts with the concept that we call "Design 4 Cyclocross".

The "Design 4 Cyclocross" philosophy is expressed through the following aspects.

### b. "Hold On Shoulder" top tube

Holding the bike on the shoulder is a typical cyclocross position. Improving the comfort during this particular phase of the race involves a significant gain in terms of the final result. Keeping this idea in mind, we have designed the top tube with a dedicated asymmetrical shape, optimized to accommodate the rider's shoulder.



## 1. FEATURES AND SPECIFICATIONS

### c. Dedicated seat clamp

The mud is an expected aspect of cyclocross races; so we cannot adopt the “Dogma” seat clamp system placed in the upper rear part of the seat tube. Hence, we decided to use a system similar to the one adopted in the new Prince family, placed in front of the seat post and so hidden from the elements.

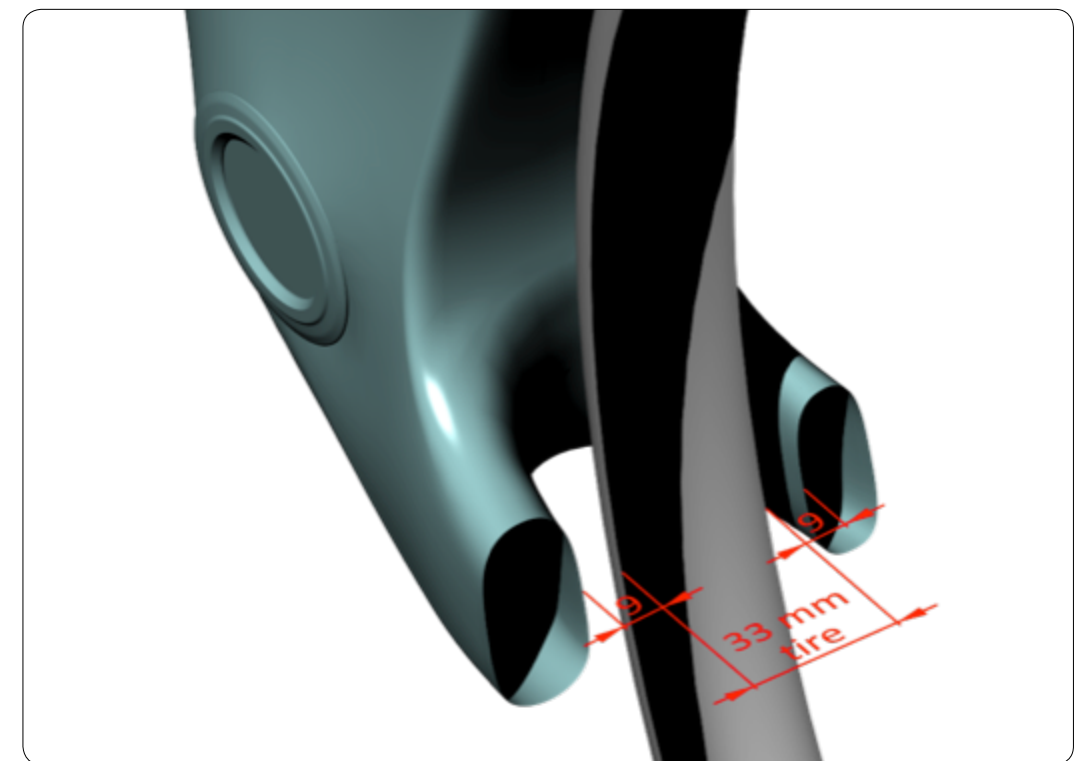
As mentioned the seat clamp is similar but not exactly the same as the new Prince family: the stress that this component must withstand during cyclocross racing is considerably higher than what would occur during a normal road race. For this reason, we have redesigned the existing Prince’s seat clamp in order to obtain stronger clamping force. To do this we have increased the clamping surface by 42%, in addition the new wedge profile guarantees better pressure distribution on the seat post.



## 1. FEATURES AND SPECIFICATIONS

### d. Oversize tire clearance

In order to avoid annoying mud accumulation around the wheels near the BB, we have designed the bike with generous tire clearance. These oversized features allow accommodate tires up to 42mm wide.

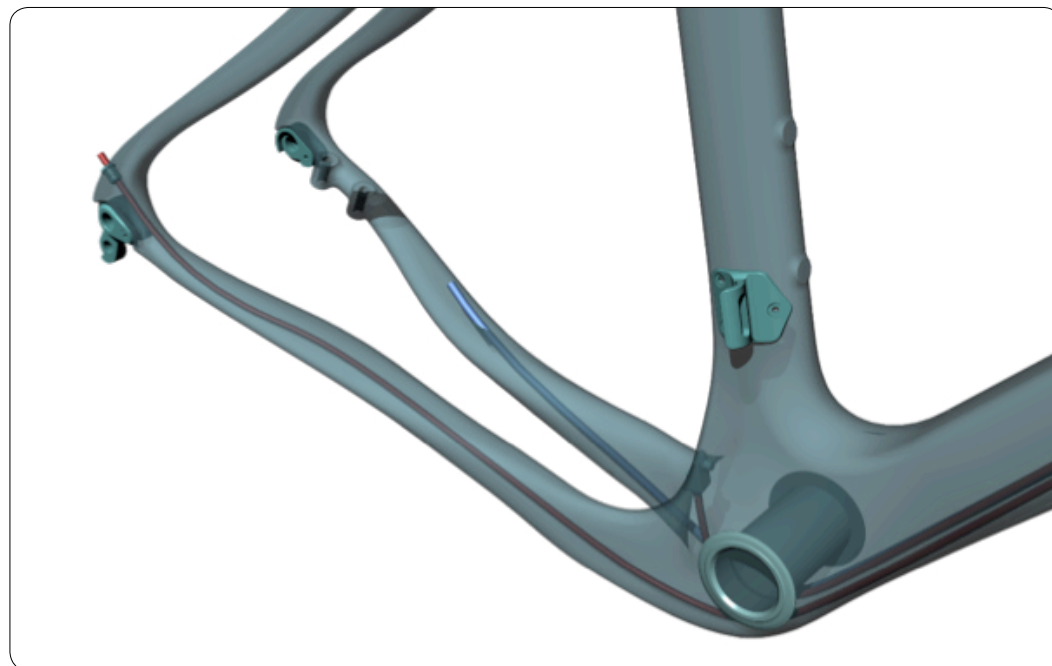


## 1. FEATURES AND SPECIFICATIONS

### e. Dedicated internal cable routing

Mechanical group set cables and the disc brake hoses can be completely housed and protected inside the frame, from the lever to the derailleurs as to the brake calipers. This decision was to prevent dust, dirt and mud that could penetrate inside the frame risking compromised functionality of the groupset.

By Adopting this solution, we can remove the traditional bottom bracket guide, eliminating the potential for mud and dirt to enter the frame. It is precisely at the BB guide where in the other cyclocross frames that the mud accumulates causing damage. This way the complete internal housing and eliminating the BB guide, we ensure the longevity of the bike.



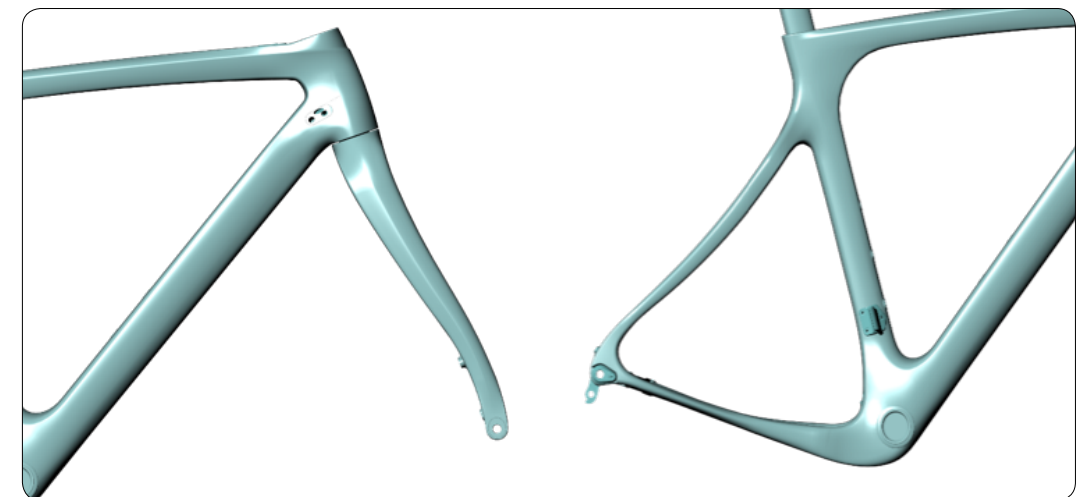
## 1. FEATURES AND SPECIFICATIONS

### f. Flexstays and dedicated Onda fork

Well aware of the fact that during cyclocross races the shock that the frame and the fork transmits to the rider is considerably higher, we have decided to borrow the Flexstays directly from the Dogma K10 to achieve maximum damping performance for this frame.

With the same goal we have designed the fork with a dedicated and typical Onda 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 to the New CROSSISTA outstanding comfort without penalizing the responsiveness and precision typical of a Pinarello bike.



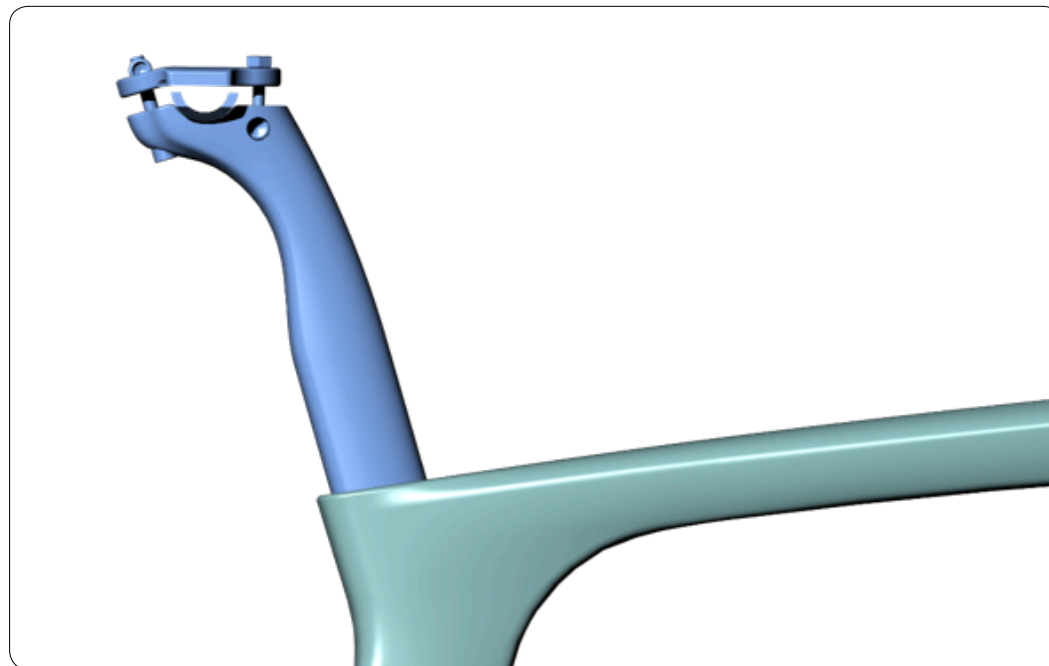
## 1. FEATURES AND SPECIFICATIONS

### g. Seat post

Another feature of the Dogma K10 was transferred to the New CROSSISTA, the seat post. Confirming again the absolute highest attention to detail continuing to drive this project.

This particular seat post had been developed with the aim of absorbing vibration that occurs during bike use. This is of the up most importance for cyclocross riding, so the adoption of this component was a natural choice.

Clearly this choice, much like the consideration for the Flexstays and the Onda fork, improves further the overall bike dampening effect and consequently the comfort for the rider.



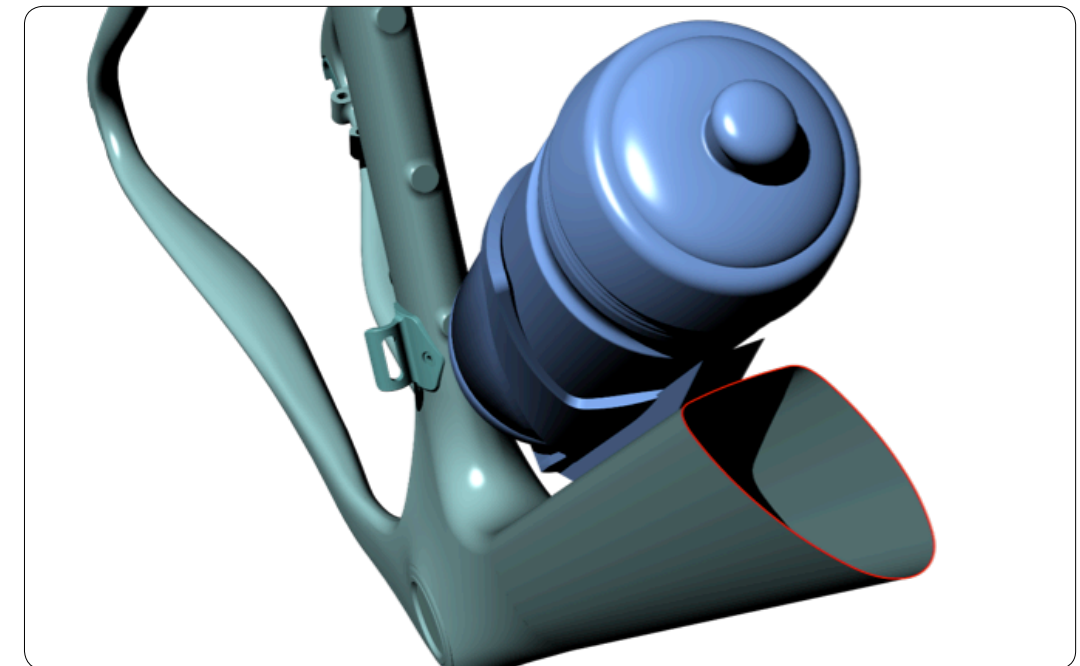
## 2. AERODYNAMICS

As previously mentioned, the speed during cyclocross races is increasing and respectively aerodynamics is growing in importance. For this reason, we chose to introduce some of Pinarello's aero concepts directly from the Dogma.

The first aero feature borrowed from the Dogmas is the seat post. Not only is it improving rider comfort but its aerodynamic profile considerably reduces drag.

The other aero feature that comes from Dogmas is the Flatback profile of the downtube. This well-known tube section permits to obtain the minimum drag resistance while still adhering to the UCI's rules.

While focusing on aerodynamic concepts, we are cognizant that this kind of bike still needs to be a light and responsive frame and fork. The tubes are not oversized and the result is a bike with slim and streamlined lines.

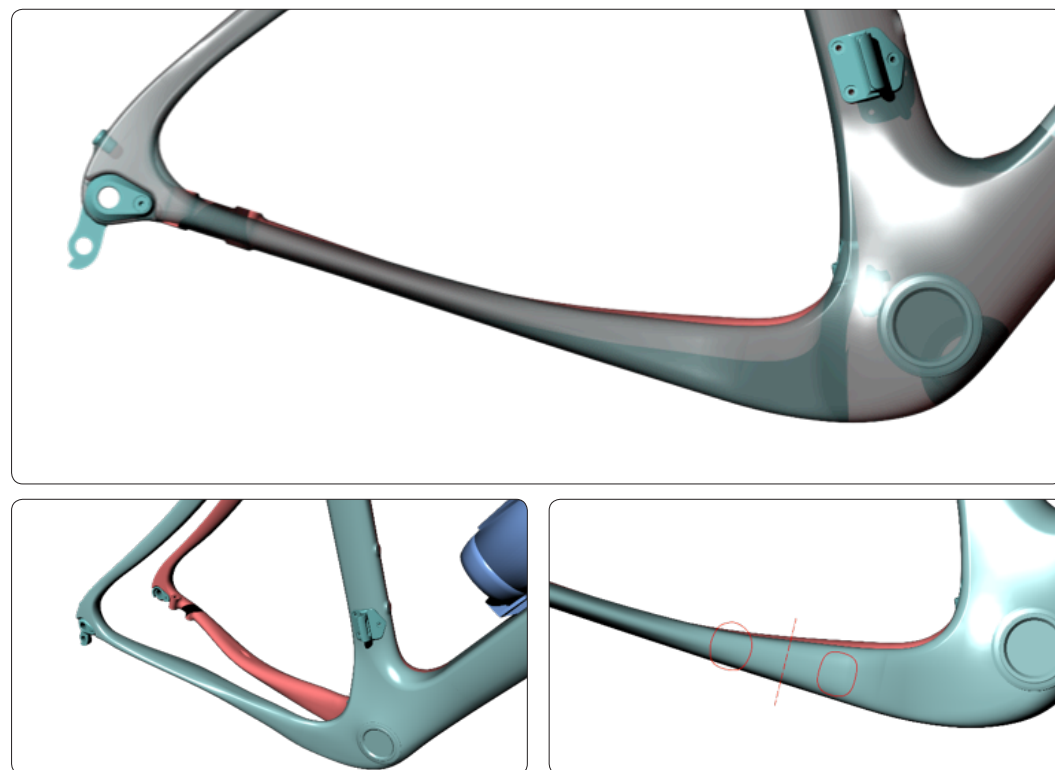


# 3. STRUCTURAL DESIGN

The famous Pinarello asymmetrical design has obviously been followed also during this project. However the asymmetry has not been emphasized and applied like in the normal road bike. Being a cyclocross bike we must reconsider this design.

Most notably we can observe the asymmetry around the bottom bracket and the chain stays. It is easy to see that the right chain stay is positioned lower position than the left one. There are two main reasons for this design concept. One is to permit the adoption of large tires (up to 42mm) as previously explained. The second is to make the right chain stay stiffer.

The power flow in a frame is asymmetric, due to the combination of rider and chain action. So, we make the right chain stay larger and stiffer than the left one. Doing that we are able to create a bike that transfers the power from the rider's legs to the wheel in a more balanced way, considerably increasing the dynamic bike behavior.



## 3. STRUCTURAL DESIGN

Another part of the frame that is heavily asymmetric is the top tube. The main reason for this as mentioned is to better accommodate the rider's shoulder. The other reason for designing the top tube in this way, was to address the aforementioned concept to enhance the asymmetry of this tube. Doing this the top tube's section is evidently unbalanced towards the right side of the bike. The result is again a better compensation of the asymmetrical forces that take place in the frame during riding.



As usual for us now when creating a new model we utilize a 3D printer to complete a sample. This way we can examine our styling and functional choices with the support of a physical model made at full scale. This procedure proves very useful to reach the optimum both from the aesthetical and functional point of view. Our full assembled 3D printed frame and fork helps in order to confirm that all components and feature fit accordingly.

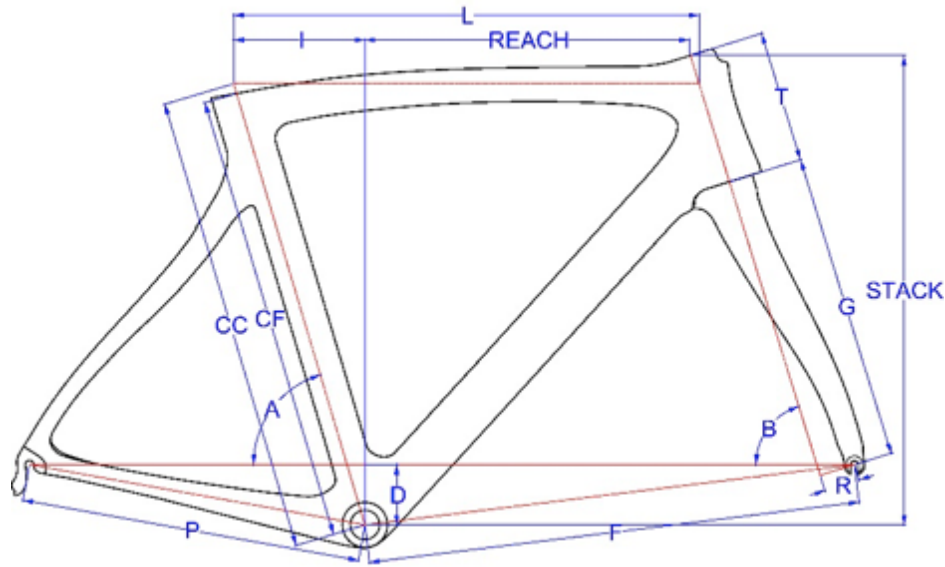


## 4. SIZES AND GEOMETRIES

Pinarello continues to offer every single rider the best bike. The well-known “Made4you” concept was applied during development of the new CROSSISTA. The result is 6 sizes available that can perfectly fit every rider.

Every single size of the frame is design on its own, for example the larger sizes are dimensioned in order to better absorb the increased stress. The main purpose is that every rider can ride his Pinarello with the same feeling and performance.

These are the detailed New CROSSISTA geometries:



CF	CC	L	I	A [°]	B [°]	F	P	T	D	R	G	REACH	STACK
480	490	510	127	75,00	70,50	584	425	100	65	50	402	366	522
495	505	525	135	74,50	71,00	592	425	118	65	50	402	371	541
510	520	540	143	74,00	71,00	603	425	135	65	50	402	377	557
530	540	555	153	73,50	71,00	614	425	155	65	50	402	382	576
550	560	570	164	73,00	72,00	615	425	170	65	50	402	387	594
570	580	585	174	72,50	72,00	625	425	187	65	50	402	392	610

## 5. TECHNICAL SPECIFICATIONS

### CROSSISTA +

- Carbon fiber T1100 1K with NANOALLOY Technology
- Asymmetric frame
- Italian thread BB
- Drop In bearing system with tapered headset ( 1" 1/8 up; 1" 1/2 down)
- “Hold On Shoulder” top tube
- Flexstays
- Dedicated Onda fork
- Dedicate aero seat post
- Think 2, to fit electronical or mechanical groupsets on the same frame
- Dedicated internal cable routing (BB guide removed)
- Dedicated FSC Frontal seat clamp, integrated and aerodynamic
- Flatback profiles
- Dedicated E-link
- Max Tyre 700c x 42 mm
- Possibility to mount both double and single chainring (removing the front derailleur hanger)
- RAD SYSTEM disc brakes
- Disc Flat Mount (max Ø160 mm)
- Front Axle Ø12 x 100 mm Shimano®
- Rear Axle Ø12 x 142 mm Shimano®
- UCI approved

### CROSSISTA

- Carbon fiber T700 UD finish
- Asymmetric frame
- Italian thread BB
- Drop In bearing system with tapered headset ( 1" 1/8 up; 1" 1/2 down)
- “Hold On Shoulder” top tube
- Flexstays
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