THE TOTAL RACE BIKE

THE ALL-NEW
TCR RANGE

GIANT

A ROAD REVOLUTION

The past, present and future of road racing innovation

When the first TCR arrived in the pro peloton more than 20 years ago, it was surrounded by controversy. It looked unlike anything else in professional road racing at the time, and rival teams were left wondering if the Giant-sponsored Team ONCE had an unfair advantage. Officials from cycling's world governing body were called upon to determine if the bike was legal.

The questions and controversy had to do with frame geometry. The name of the bike clearly spelled out its main innovation: Total Compact Road. The brainchild of British bike designer Mike Burrows—who had already introduced some game-changing race bikes including Chris Boardman's gold medal pursuit bike at the 1992 Olympics—the first TCR frame was a clear departure from the standard road bike design that had prevailed for decades. Its radical geometry was marked by a "compact" frameset featuring a toptube that sloped downward from the headtube to the seattube.

Compact Road was inspired by mountain bikes, which were still relatively new in the early 1990s. Burrows worked with Giant to create the Compact Road frames, which offered several obvious advantages. The sloping toptube created a smaller main triangle, which was both lighter and stiffer than standard frames with horizontal toptubes. The rear triangle was also smaller, which in addition to saving more weight also improved power transfer and efficiency.

The first TCR also ushered in a new era in production for high-performance road bikes. Its Compact Road geometry made it far easier to fine-tune the fit and position of the rider by simply adjusting seatpost and stem lengths. Those early ONCE team bikes were instantly recognizable by their longer seatposts, which gave them a profile that more resembled mountain bikes. The other advantage was that longer seatposts could be shaped for better aerodynamics or crafted from carbon fiber to add compliance and smooth out the bike's ride quality.

Ultimately, UCI officials decided the TCR was legal. Team ONCE riders including Laurent Jalabert went on to win dozens of races on it, including grand tour stages and major one-day races. The early TCR was unique in its ability to excel in mountain stages and time trials. With its aerodynamic advantages, it was especially effective against the clock—Jalabert won several stage race time trials on it, and ONCE became a favorite at every team time trial it entered.

Frenchman Laurent Jalabert on his 1998 Giant TCR, the first bike in the pro peloton with Compact Geometry. Cor Vos photo.

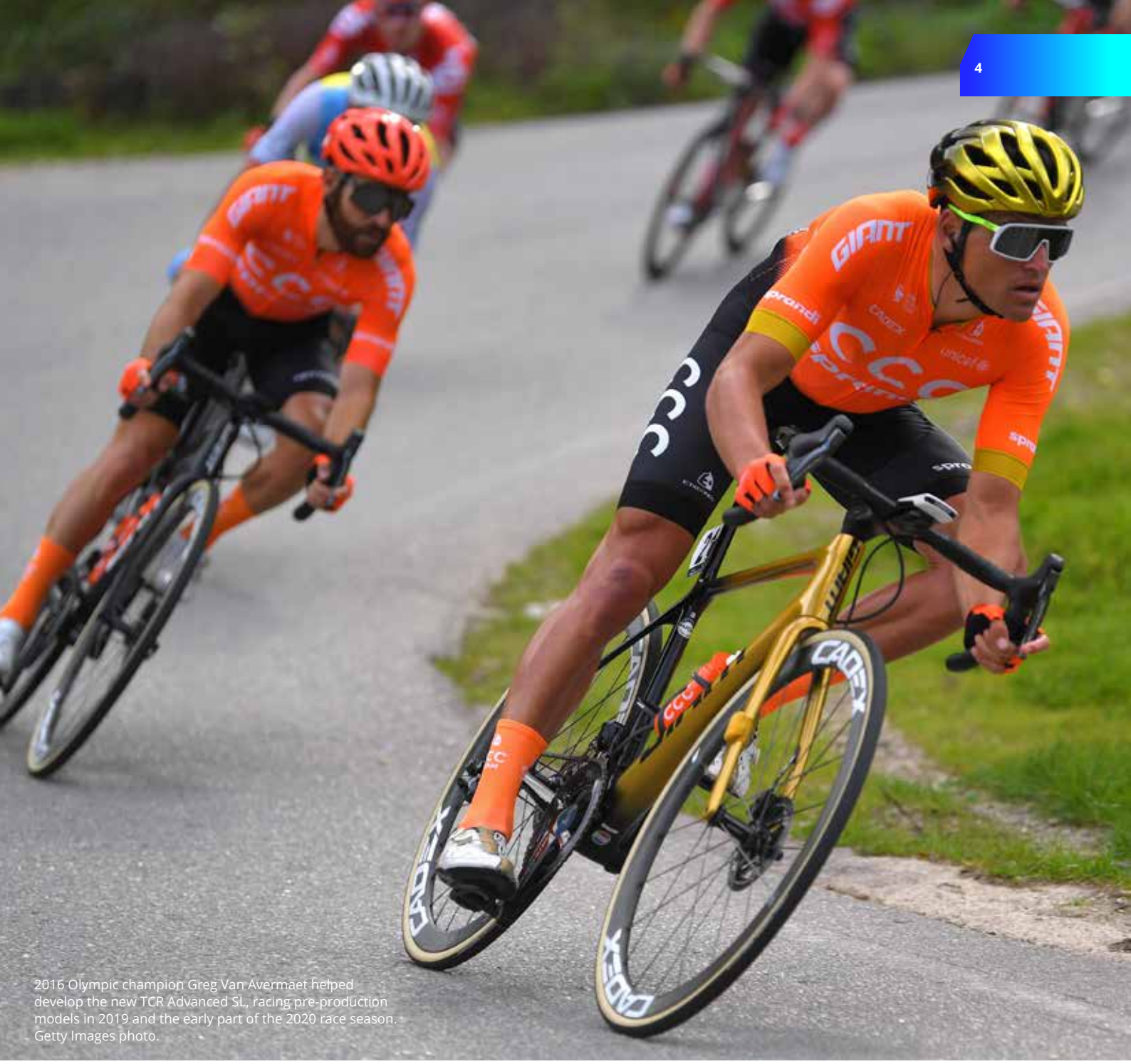
OVER THE COMING YEARS NEARLY EVERY OTHER MANUFACTURER WOULD ATTEMPT TO MIMIC THE TCR'S DESIGN.

Look around the pro peloton today, and it's hard to find a bike that hasn't followed in the footsteps of the original TCR.

But that was just the start for TCR. Since that first-generation aluminum model, this bike has constantly evolved. Giant engineers and athletes have worked together creating new innovations to keep it ahead of the pack. Over the past 23 years, we have made multiple advances in material engineering and introduced new design concepts to continually make it lighter, stiffer and more compliant. And every new generation proved itself on the road, carrying some of cycling's top pro racers to wins at the highest level including multiple stage wins at the Tour de France, two Giro d'Italia overall victories (2009, 2017) and dozens of major classics, WorldTour races and national championships.

The TCR has also introduced breakthroughs in the way a frame interacts with components. Giant created the integrated seatpost (ISP) to reduce weight and add compliance. We introduced new steerer tube and bottom bracket designs to improve stiffness and efficiency. We developed seamless disc-brake integration to give riders better control and more clearance for larger tires. And over the years we have added a long list of other improvements including internal cable routing, cleaner cockpit designs, and the integration of power and data. All these incremental advancements have helped to evolve not just the TCR, but the overall road riding experience.

Mark Cavendish rode the fifth generation TCR Advanced SL to four stage wins at the 2008 Tour de France. Cor Vos photo.



2016 Olympic champion Greg Van Avermaet helped develop the new TCR Advanced SL, racing pre-production models in 2019 and the early part of the 2020 race season. Getty Images photo.

THAT BRINGS US TO THE 9TH GENERATION TCR.

Continuing a tradition that began more than 20 years ago, the flagship model of the new range, the TCR Advanced SL, is the result of a team effort involving Giant engineers and product developers, leading aerodynamics experts, and some of today's top professional racers including Olympic champion Greg Van Avermaet along with other CCC Team riders and technical staff.

The project began with a nearly impossible goal: Make it even more efficient. That's the story of the new TCR Advanced SL—squeezing more speed out of every pedal stroke. To accomplish that, our team analyzed every aspect of the bike, from raw materials to all-new manufacturing processes. Even the paint was created to minimize weight.

In the end, the major breakthrough with this TCR is that it is significantly more aerodynamic than the previous generation while retaining its best-in-class stiffness-to-weight ratio. Every tube shape has been modified to reduce drag without adding a single gram or compromising the qualities that have made TCR a leading pro-level race bike for two decades.

Like the original TCR, it took a complete re-think to accomplish this goal. The following pages present the details on the engineering, aerodynamic development and technical details that make this the fastest TCR ever.

EVOLUTION OF THE TOTAL RACE BIKE

Since it debuted as a controversial aluminum-framed race bike with compact geometry and a radical new look compared to all other race bikes in the late 1990s, the TCR has continually pushed the limits of performance with every new generation. It has been a staple in the pro peloton since 1998, earning wins at major races around the world for more than two decades.

TCR OVER THE YEARS

1997
The first production TCR makes its debut. It is available in three frame sizes (S, M, L) and has an angle-adjustable quill stem available in three different lengths (105mm, 120mm, 135mm).

1998
The Spanish Team ONCE debuts the new TCR at the Tour de France. Giant produces a complete Team ONCE replica bike for consumers with a Campagnolo Record gruppo.

2000
Team ONCE replica bike features a 1-inch threadless headset.

2002
The first full-composite TCR makes its debut at the Tour de France.

2003
The first commercial TCR Composite bikes are available.

2004
The 3rd generation TCR debuts at the Tour de France with the T-Mobile squad, which goes on to win the team classification at the Tour for three straight years (2004-2006).

2005
The first TCR with an integrated seatpost (ISP) is commercially available in five sizes.

2006
4th generation TCR makes its debut with the T-Mobile team, featuring a larger (stiffer) rear seatstay/brake yoke.

2008
The 5th generation TCR Advanced SL is introduced to consumers. It features a number of breakthrough technologies including a PressFit bottom bracket and integrated cable routing. Team Columbia-Highroad rider Mark Cavendish wins four stages on it at the Tour de France.

2009
Team Rabobank rider Denis Menchov wins the Giro d'Italia on his TCR Advanced SL.

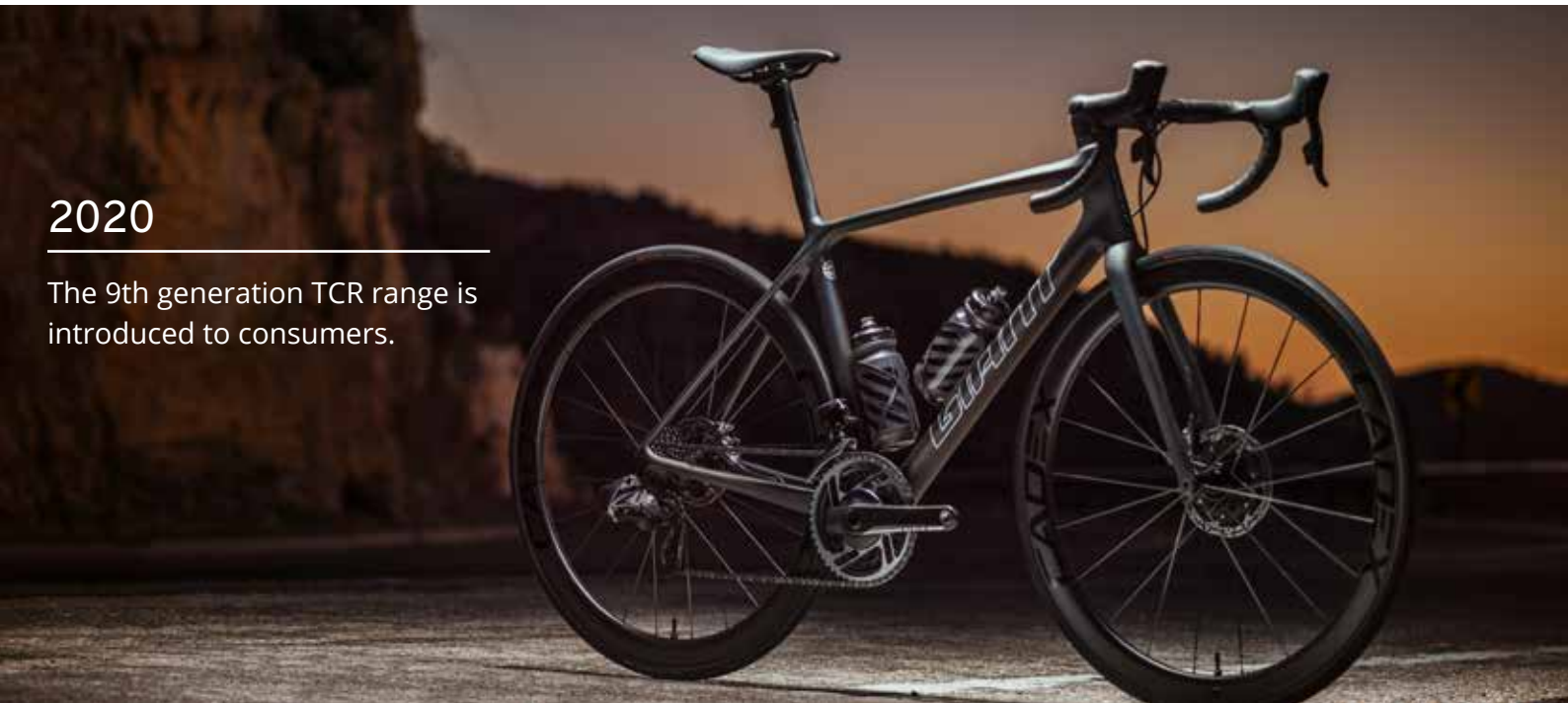
2012
The 6th generation TCR debuts at the Tour de France with Team Rabobank.

2015
The 7th generation TCR debuts at the Tour de France with Team Giant-Alpecin.

2016
The 8th generation TCR, the first with integrated disc brakes, is introduced to consumers.

2017
Team Sunweb rider Tom Dumoulin wins the Giro d'Italia general classification; the team also wins both the points classification and the mountains classification at the Tour de France.

2019
Prototype testing of the 9th generation TCR Advanced SL begins with CCC Team pro racers.



2020

The 9th generation TCR range is introduced to consumers.

KEY PERFORMANCE FACTORS

Every bike in the 2021 TCR range was designed and engineered with the following three performance factors in mind:

CLASS-LEADING EFFICIENCY

A high stiffness-to-weight ratio is a hallmark of the TCR. To retain this critical advantage, the 2021 TCR Advanced SL features new cutting-edge composite materials, reengineered tubing shapes and advanced robotic layup techniques. The result is a livelier ride quality, explosive acceleration and improved climbing efficiency with up to 26.3 percent greater frame/fork stiffness than key competitor bikes*.

*2019 Trek Emonda SLR Disc.

ADVANCED AERODYNAMICS

The new TCR takes a major leap forward in its aero performance. This is where its most quantifiable gains, compared to the previous generation, can be found. Every tube shape was analyzed, engineered and tested to create an overall structure with significantly lower drag at a wider range of yaw angles. The result is a TCR that's faster than ever, especially in sprints and solo efforts.

TOTAL CONTROL

From updated disc-brake integration to all-new composite WheelSystems that offer greater stability in crosswinds to user-friendly tubeless tire setups, the new TCR delivers greater control in a wide variety of road riding conditions. A new composite fork boasts 35 percent greater torsional stiffness over key competitor bikes* for unrivaled steering precision. And added frame/fork clearance allows higher volume tires up to 32mm** for a smoother, faster ride on all types of road surfaces.

*2019 Cervelo R5 Disc

**dependent on brand

DEVELOPING THE TOTAL RACE BIKE

Ultimately the new TCR Advanced SL had one critical goal that would determine its success: it had to produce measurable performance gains for the pros who race it day in and day out. Our team of engineers, product designers, aerodynamic experts and pro athletes worked together to research, develop and test new ways to achieve the near-impossible task of creating a TCR that was more efficient and aerodynamic while retaining the precise handling and control of the bike that came before it.

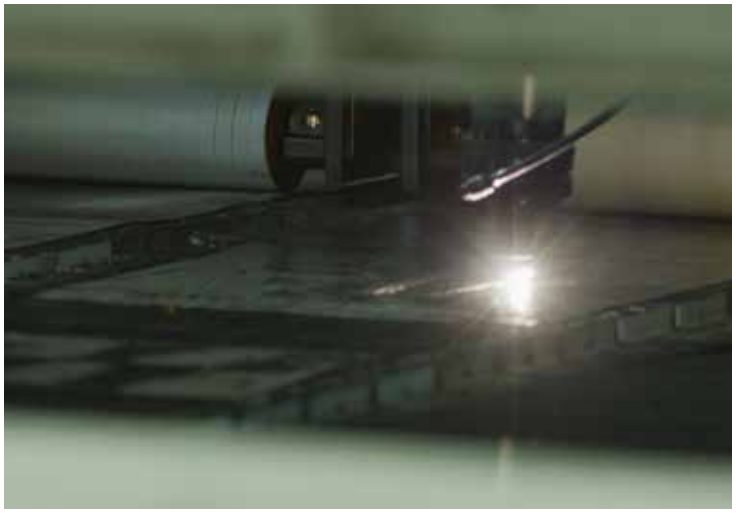
Here's a look at some of the technological solutions that went into creating the 2021 TCR Advanced SL.

CLASS-LEADING EFFICIENCY

Adding aerodynamic elements to a bicycle usually means adding weight. To achieve the goal of maintaining the best-in-class stiffness-to-weight ratio, it was essential to minimize weight wherever possible to make up for the added mass in the areas of the frame that were modified for aerodynamic improvements. This task was achieved in part by using four new state-of-the-art production processes:

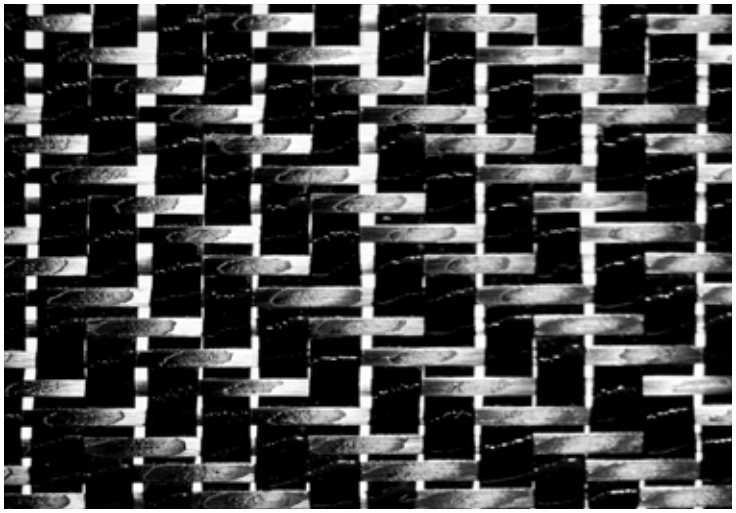
CUTTING-EDGE COMPOSITE MATERIAL

All-new Professional Grade raw carbon material is woven in Giant's own composite factory to produce an even lighter, stiffer frameset than the previous generation. This material also uses Carbon Nanotube Technology resin to improve impact resistance.



LASER CUTTING

Whereas previous generations of TCR frames relied on machine-stamped composite swatches, new laser technology is now used to produce ultra-precise cuts. This translates into smaller, more exacting swatches, which results in lighter overall weight of the finished structure.



ADVANCED ROBOTIC LAYUP ASSEMBLY

Giant Manufacturing invested in a new robotic assembly process for the critically weight conscious areas of the frame and fork. Ultra-precise placement of 150 smaller, individual composite swatches results in lighter overall frame and fork weights.

FINISHING TECH

Our new ThinLine paint process on the TCR Advanced SL 0 Disc uses a minimum quantity of paint to save up to 50 grams compared to a traditional seven-layer paint application. In addition, a proprietary 3M adhesive protector is used to reinforce the integrated seatpost (ISP) when the saddle clamp is installed, saving more weight without sacrificing security.

These production advancements play a major role in the TCR Advanced SL's class-leading stiffness-to-weight ratio, which proved to be higher than competitor bikes including the Specialized S-Works Tarmac Disc, Trek Emonda SLR Disc and Cervelo R5 Disc.

TESTING STIFFNESS

Stiffness was assessed using the protocols established by Germany's *TOUR* magazine with size medium framesets. Giant tested both steering and pedaling stiffness with its corresponding fork in place. This provides a far more accurate measure of how a bicycle will perform in real-world conditions and helps ensure that our testing procedures translate into performance gains that can be felt on the road.

Our testing determined how much the complete frameset flexed torsionally under load. Each frame was locked at the rear dropouts with lateral force applied to the fork. More frame stiffness means better cornering and response to rider input on the road. The TCR Advanced SL Disc provides up to 26.3 percent greater transmission stiffness than some of its competitors.

Increased frame stiffness means better power transmission, enabling the rider to reach and maintain higher speeds with less effort. The combination of lower weight and higher stiffness adds up to unrivaled overall efficiency.

FRAME AND FORK STIFFNESS COMPARISON

COMPONENT	STIFFNESS TYPE	GIANT TCR ADVANCED SL DISC	SPECIALIZED S-WORKS TARMAC DISC	TREK EMONDA SLR DISC	CERVELO R5 DISC
FORK	Lateral (N/mm)	78.8	67.6	51.9	51
FRAME	Pedaling (N/mm)	70.96	67.4	58.5	73.9
TRANSMISSION STIFFNESS (LATERAL FORK + FRAME PEDALING)	Transmission (N/mm)	149.76	135	110.4	124.9
DIFFERENCE			-9.80%	-26.30%	-16.60%

WEIGHT COMPARISON

While seemingly objective, frameset weight can be a highly subjective variable. It all depends on what is considered a frameset. Giant defines a frameset as follows:

- Size medium, painted/decaled production frame
- Production fork (uncut)
- Headset/expander/top cap
- Seatpost (ISP or seatpost included with frameset)
- Seat clamp/ISP clamp
- Front and rear derailleur hanger/clamps
- All production hardware (water bottle bolts, etc.)

YEAR-TO-YEAR COMPARATIVE TCR WEIGHTS

WEIGHT (g)	2020 TCR ADVANCED SL DISC	2021 TCR ADVANCED SL DISC	DIFFERENCE (g)
FRAME	818	765	-53
FORK	331	330	-1
CONE	7.19	3.64	-3.55
SPACER	14.37	19.59	5.22
TOP CAP	15.6	6.6	-9
ISP CLAMP	118	103.9	-14.1
FRAME PAINT	100	50	-50
FORK PAINT	25	10	-15
	TOTAL WEIGHT SAVINGS		-140.43

Compared to the outgoing TCR Advanced SL Disc frameset, the all-new version saves 140 grams through its state-of-the-art manufacturing techniques and advanced materials usage. Furthermore, comparing its weight against key competitors, the new TCR Advanced SL Disc is lighter than the current Specialized S-Works Tarmac Disc (105 grams) and the Cervelo R5 Disc (322 grams). The significantly less stiff and less aerodynamic Trek Emonda SLR Disc is slightly lighter (17 grams).

COMPARATIVE WEIGHTS

WEIGHT (g)	GIANT TCR ADVANCED SL DISC	SPECIALIZED S-WORKS TARMAC DISC	TREK EMONDA SLR DISC	CERVELO R5 DISC
FRAMESET (COMPLETE AND PAINTED)	1266	1371	1249	1588
TOTAL WEIGHT SAVINGS		105	-17	322

STIFFNESS-TO-WEIGHT COMPARISON

FEATURE	GIANT TCR ADVANCED SL DISC	SPECIALIZED S-WORKS TARMAC DISC	TREK EMONDA SLR DISC	CERVELO R5 DISC
TRANSMISSION STIFFNESS (LATERAL FORK AND FRAME PEDALING)	149.8 (N/mm)	135 (N/mm)	110.4 (N/mm)	124.9 (N/mm)
FRAMESET WEIGHT (COMPLETE AND PAINTED)	1.27 kg	1.37 kg	1.25 kg	1.59 kg
STIFFNESS-TO-WEIGHT RATIO	118	98 (-16% less efficient)	88.3 (-25% less efficient)	79 (-33% less efficient)

In summary, while adding significant shaping to improve aerodynamics, the 2021 TCR Advanced SL Disc frameset remains the category leader in stiffness-to-weight ratio.

ADVANCED AERODYNAMICS

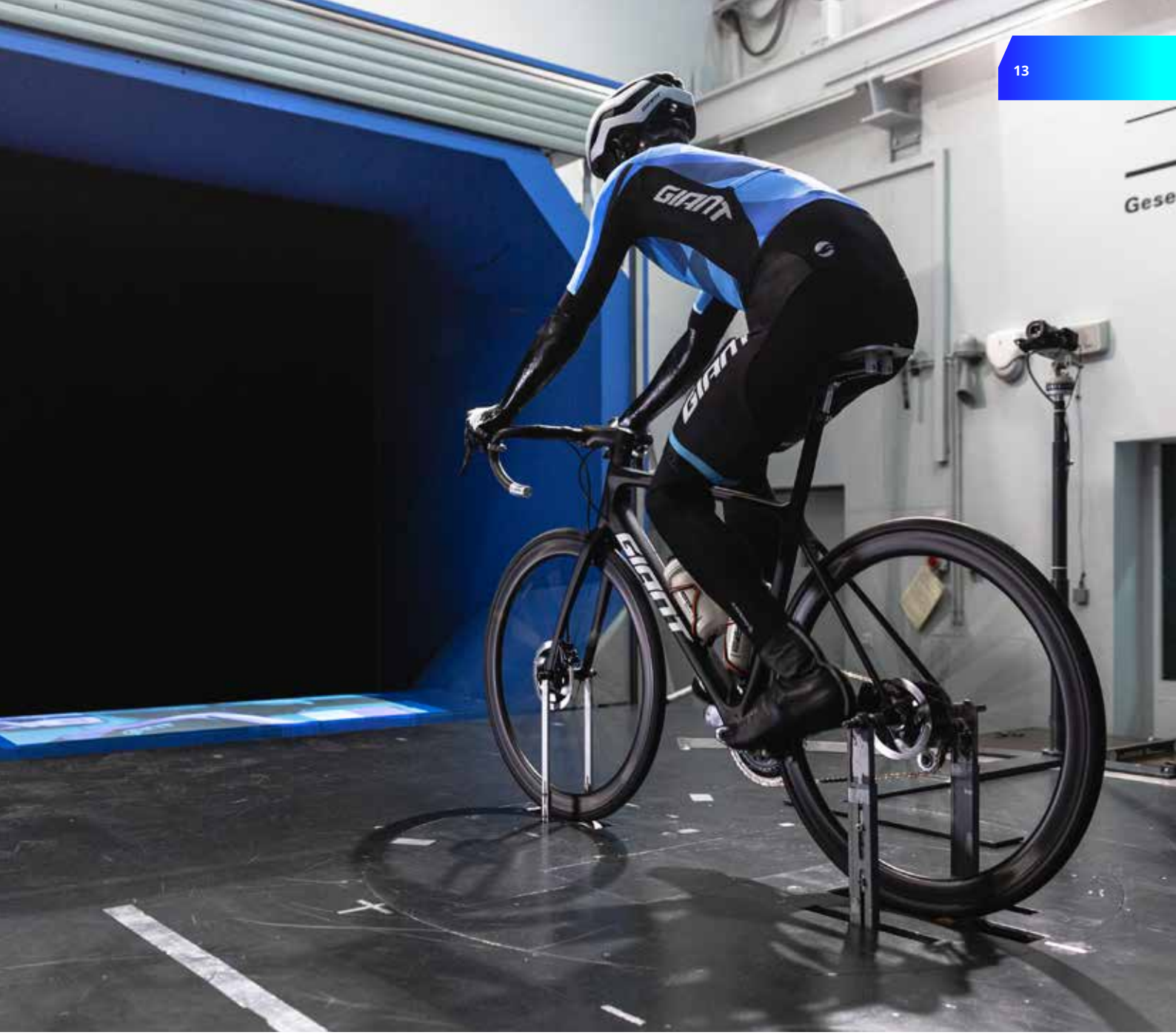
The final frontier of race bike performance is the quest for improved aerodynamics. While weight and stiffness still play an integral role in overall performance minimizing aerodynamic drag remains the single greatest opportunity for real-world gains. Giant's engineering team combined Computational Fluid Dynamics (CFD) and wind-tunnel testing to create shapes that function best as a complete system for superior aerodynamic performance. Central to this process is the belief that any product must perform as well on the road as it does in the wind tunnel.

TRUNCATED ELLIPSE TUBING

To engineer the new TCR Advanced SL frameset, we created new airfoil sections using truncated ellipse tubing to consistently produce lower drag coefficients at a wider range of yaw angles compared to traditional “teardrop” tubing. To ensure that the new TCR performs well in real-world conditions, we designed the aerodynamic flow around both the downtube and seattube equipped with standard, 22-ounce water bottles. From there, we refined the entire system including frame, fork, cockpit and WheelSystem at the GST wind tunnel in Immenstaad, Germany.

COMPONENTS INTEGRATION

We learned from developing the Propel Advanced SL aero road bike that clean integration of disc brakes reduces drag compared to traditional caliper brakes. The same applies to the new TCR Advanced SL Disc. The location of traditional calipers (either in front or behind the fork crown/legs) creates “dirty” air. Opening up the fork crown area by placing the disc-brake calipers down at the hub means that the air hitting the caliper has already been disrupted by the leading edge of the tire/wheel. This effect is further enhanced by the TCR’s new symmetric fork that helps smooth out airflow over the caliper. Beyond the frame and fork, we also created a new “aero-influenced” Contact SLR handlebar with modified cable routing to provide a smart balance between aerodynamics, rider ergonomics and user-friendly maintenance.



DYNAMIC WIND-TUNNEL TESTING

After the first phase of engineering and development was completed, we moved on to testing at the GST wind tunnel. To best simulate actual riding conditions, we used a dynamic mannequin to replicate real-world riding forces and conditions without the inconsistent variables inherent to testing with human riders. While other brands typically use a static mannequin, our dynamic version accurately reveals the aerodynamic effects of a rider while pedaling. Testing incorporated a 24 mph (40 kph) wind speed with yaw angles ranging from -15 to +15 degrees. With the dynamic mannequin, spinning wheels and moving drivetrain, we were able to produce the most "real world" aerodynamic analysis possible. This painstaking testing procedure helped us sculpt the design of the new TCR and fine-tune an overall system that considers the aerodynamic forces of rider and bike together. In summary, even with its category leading stiffness-to-weight ratio, the 2021 TCR Advanced Disc also leads the pack when addressing aerodynamic advantage.

COMPARATIVE AERODYNAMIC DRAG

FEATURE	GIANT TCR ADVANCED SL DISC	SPECIALIZED S-WORKS TARMAC DISC	TREK EMONDA SLR DISC	CERVELO R5 DISC
AVERAGE DRAG @ 40KPH WITH BOTTLES/CAGES FROM -15 TO +15 DEGREE YAW ANGLES (WATTS)	247.5	248	261.4	247.9
DIFFERENCE (WATTS)		-0.5 (less aerodynamic)	-13.9 (less aerodynamic)	-0.4 (less aerodynamic)

TOTAL CONTROL

With its fully integrated disc-brake technology, the new TCR Advanced SL Disc delivers superior braking power and greater modulation in wet or dry conditions. This was a critical demand from our pro road racers, who typically race for hours over varied terrain that includes high-speed descents and cornering.

The new frame is engineered with updated flat-mount disc brake technology for consistent braking power in all conditions. Front (12x100mm) and rear (12x142mm) thru-axle setups produce unrivaled steering precision and stiffness while saving weight.

A CADEX WheelSystem further improves control on the flagship TCR Advanced SL Disc model. Both the front and rear wheels feature 42mm rims for aerodynamic consideration, without overlooking handling capabilities in a wide variety of crosswind situations. The result is a bike that not only slices through wind faster, but also corners with greater precision and control.

To boost steering stiffness, our engineers completely redesigned the fork, from the thru-axle up to the crown, to provide up to 35 percent greater torsional stiffness and improve the aerodynamic flow of air over the non-driveside caliper—without adding any weight compared to the fork on the previous generation TCR.

Frame and fork clearance have also been increased on all new TCR models. Riders can now choose high-volume tires up to 32mm* for better cornering grip, rolling efficiency and handling on rougher roads.

*on disc-brake models

ADVANCED COMPOSITE TECHNOLOGY

With more than 25 years of experience in composites engineering, plus a long history of rigorous development and testing with professional athletes, Giant is the industry leader in composite bicycle technology. To meet the needs of high-performance riders, Giant offers two grades of composites: Advanced SL and Advanced. Both feature unique materials, resin formulas and construction techniques.

COMPOSITE TECHNOLOGIES

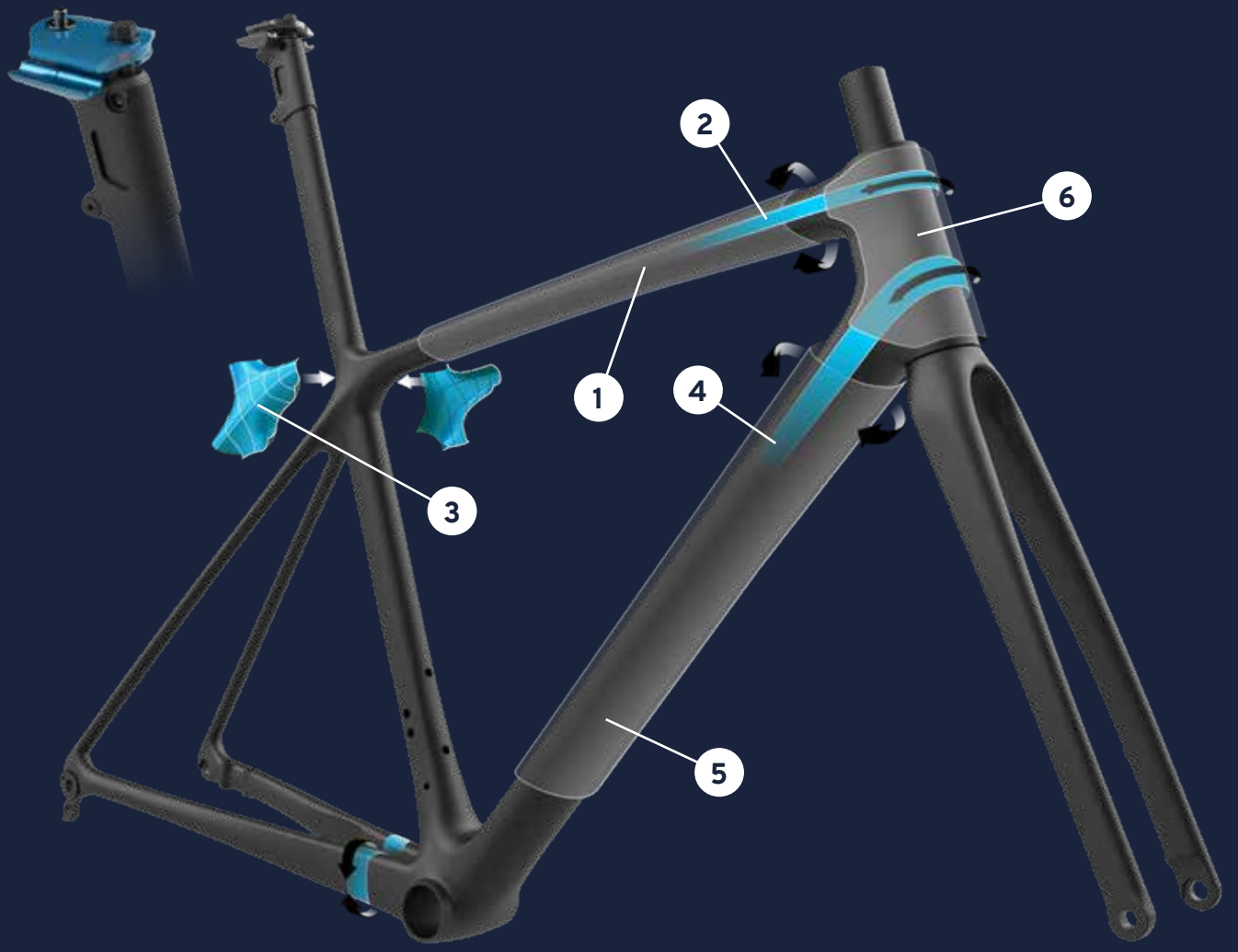
COMPOSITE GRADE	LIGHTWEIGHT CARBON MATERIAL AND RESIN	LIGHTEST WEIGHT CARBON MATERIAL AND RESIN	MODIFIED MONOCOQUE CONSTRUCTION	FUSION PROCESS CONSTRUCTION	CNT RESIN TECHNOLOGY	CONTINUOUS FIBER TECHNOLOGY	LASER-CUT SWATCHES	ROBOTIC FRAME ASSEMBLY
ADVANCED SL		X		X	X	X	X	X
ADVANCED	X		X					

Photo: Chris Auld

Advanced SL
COMPOSITE TECHNOLOGY

Professional Grade raw carbon fiber is woven in our composite factory to produce our lightest, stiffest and highest quality frames. This is the technology used by Giant's pro racers in almost every cycling discipline.

THESE FRAMES FEATURE THE MOST ADVANCED ENGINEERING AND CONSTRUCTION METHODS.



HIGHLIGHTS

1. MATERIALS
Professional Grade raw carbon material is used to engineer framesets with the highest stiffness-to-weight-ratios available today.

2. RESIN
Professional Formula resin features Carbon Nanotube Technology (CNT), a microscopic polymer that acts like miniature buttresses to strengthen the layers of composite. Frames featuring CNT are 14 percent more impact resistant than those without it.

3. FUSION PROCESS
Advanced SL toptubes are "grafted" to the seattube using filament winding and co-molding. This complex process involves hand-weaving the toptube and seattube together, and then re-molding the area under heat and high pressure to unify the junction. Fusion produces a lighter, stronger junction than traditional molding.

4. CONTINUOUS FIBER TECHNOLOGY
This manufacturing process allows Giant to construct the front triangle of Advanced SL frames with larger, and therefore fewer, sections of composite material. With fewer pieces and junctions, these frames are up to 100 grams lighter and significantly stronger.*

5. LASER CUTTING
Used to produce more precise composite swatches than traditional machine-stamped process. This allows for smaller, more exacting swatches to reduce frame weight.

6. ROBOTIC LAYUP
New automated assembly process used in critical areas of the frame and fork enables precision placed composite swatches for lighter, stronger frameset.

*Found on select 2021 framesets.

Advanced
COMPOSITE TECHNOLOGY

High Performance Grade raw carbon fiber is used to produce custom composite material in our composite factory. Extremely lightweight, stiff and compliant.

THESE HANDCRAFTED FRAMES FEATURE THE FOLLOWING MATERIALS AND PROCESSES.

HIGHLIGHTS

1. MATERIALS
High Performance Grade raw carbon material is used to engineer framesets with optimal stiffness-to-weight ratios.

2. RESIN
The resin used in Advanced Composite provides a high level of void minimization (fewer bubbles) while maintaining outstanding strength characteristics. Vibration-absorbing particles are also added to help disperse shocks and vibrations.

3. MODIFIED MONOCOQUE
The front triangle (downtube, headtube, toptube, seattube) is assembled and molded as one continuous piece. This front half is joined to the rear chainstays and seatstays in a secondary process. This eliminates the outermost woven composite sheet to reduce weight without compromising ride quality, strength or stiffness.

ROAD / PERFORMANCE / RACE

TCR ADVANCED SL DISC SERIES

A legend reborn. The bike that has been at the leading edge of road racing innovation for more than three decades is redesigned to be even lighter, stiffer and more aerodynamic. It's the ultimate all-rounder for the performance obsessed.

Pictured: TCR Advanced SL Disc 0

SERIES OVERVIEW

Updated and improved in all aspects of road racing performance, the new TCR Advanced SL Disc achieves a previously unobtainable stiffness-to-weight ratio for faster climbing and sprinting, plus new aerodynamic gains for all-around efficiency. It's the choice of CCC Team WorldTour racers like Greg Van Avermaet on challenging road courses that demand uncompromised performance in the pursuit of victory. New aerodynamic tube shaping on the headtube, downtube and fork makes it a killer on breakaways, sprints and solo chase efforts. The new TCR Advanced SL Disc also builds on its proven climbing capabilities, boasting the highest stiffness-to-weight ratio ever seen in a TCR. Additional key updates include added clearance in the frame and fork to fit larger diameter tires up to 32mm, the latest integrated WheelSystem technology, and a new aero-engineered Contact SLR composite handlebar to make it even faster against the wind.

KEY PERFORMANCE FACTORS

Class-leading efficiency: With the highest pedaling stiffness-to-weight ratio of any bike in its class and updated aero tube shaping, this frameset is engineered to give Giant pro road racers superior climbing capabilities, aerodynamic efficiency and sprint stiffness for race-winning performance.

Advanced aerodynamics: This is where the TCR's most quantifiable gains can be found compared to previous generation models. Every tube shape was analyzed, engineered and tested to create an overall structure with significantly lower drag at a wider range of yaw angles. The result is a TCR that's faster than ever in sprints and solo situations.

Total control: Integrated disc brakes deliver smooth, powerful stopping power and modulation for added control in variable weather and road conditions. Flat mounts and new thru-axles boost stiffness and improve overall handling, while added frame and fork clearance allows for larger diameter tires up 32mm.

TECHNOLOGIES

Advanced SL
COMPOSITE TECHNOLOGY

COMPACT ROAD

OverDrive2

RS RIDE SENSE

Tubeless System

FRAME GEOMETRY (UNITS IN MM UNLESS OTHERWISE INDICATED)

FRAME	XS	S	M	ML	L	XL
Seat tube length	680	710	740	770	80w0	830
Seat tube angle (Degrees)	74.50	74.00	73.50	73.00	73.00	72.50
Top tube length	520	535	550	565	580	600
Head tube length	120	130	145	165	185	200
Head tube angle (Degrees)	71.00	72.25	73.00	73.00	73.00	73.00
Fork rake	45	45	45	45	45	45
Trail	72	64	59	59	59	59
Wheelbase	976	977	980	991	1006	1020
Chain stay length	405	405	405	405	405	405
Bottom bracket drop	72	69.5	69.5	67	67	67
Stack	517	528	545	562	581	596
Reach	376	383	388	393	402	412
Stand over height	706	725	747	773	800	816
Handlebar width	400	400	420	420	440	440
Stem length	80	90	100	110	110	120
Crank length	170.0	170.0	172.5	172.5	175.0	175.0
Wheel size	700C	700C	700C	700C	700C	700C

TCR ADVANCED SL DISC TECHNOLOGY

From materials to tube shapes to cutting-edge engineering and production, every aspect of the new TCR Advanced SL Disc was researched, designed and tested to improve overall performance on the road. More aerodynamic and efficient than ever, these are the key technologies that make this the fastest TCR ever.

Pictured: TCR Advanced SL 1 Disc

1 ADVANCED SL COMPOSITE
Professional-grade raw carbon material is woven in our own composite factory using our most advanced engineering and construction methods including: Continuous Fiber Technology to add strength while reducing weight; Carbon Nanotube Technology resin to improve impact resistance; and Fusion Process for lighter, stronger frame junctions.

2 TRUNCATED ELLIPSE TUBING
New strategically engineered airfoil sections in the frame and fork, developed through CFD and wind-tunnel testing, improve aerodynamic efficiency, reducing wind drag at a wider range of yaw angles compared to traditional teardrop shaped tubes.

3 VARIANT INTEGRATED SEATPOST
Specifically engineered for the needs of competitive road racers, Variant's refined shape and integrated design result in a ride quality that perfectly balances compliance, aerodynamics and efficiency.

4 CUTTING-EDGE COMPOSITE ASSEMBLY
Up to 150 small individual composite swatches are placed using robotic layup assembly. The swatches are laser-cut so that smaller, ultra-precise sections can be used, resulting in lighter weight framesets. Our Continuous Fiber Technology adds strength while reducing weight. Carbon Nanotube Technology resin improves impact resistance, and our Fusion Process creates lighter, stronger frame junctions.

5 SYMMETRIC COMPOSITE FORK
The new Advanced SL-grade composite fork features a symmetric design and aero shaping, along with disc-brake integration and increased clearance for tires up to 32mm. This new design makes it lighter, stiffer and more aerodynamic.

6 THINLINE PAINT PROCESS*
A minimum quantity of paint is used, saving up to 50 grams compared to traditionally painted framesets. And the integrated seatpost uses a proprietary 3M adhesive to protect it from the saddle clamp and save additional weight.

*found only on TCR Advanced SL 0 Disc model

7 CONTACT SLR HANDLEBAR
New Contact SLR handlebar features modified cable routing to provide a smart balance of aerodynamics, rider ergonomics and hassle-free setup and maintenance.

8 OVERDRIVE 2
The most advanced steerer tube technology in today's Giant bikes. Designed to offer unprecedented front-end steering performance, the system's oversized headset bearings (1 1/2" lower, 1 1/4" upper) and tapered steerer tube work in harmony to provide supreme steering stiffness.

9 MEGADRIVE
A massive rectangular downtube forms the link between the OverDrive 2 headtube area and the PowerCore bottom bracket. This precisely engineered, rectangular shape yields unprecedented steering and pedaling stiffness while optimizing aerodynamic flow over a standard water bottle.

10 POWERCORE
A massively oversized bottom-bracket/chainstay area features a fully integrated, 86-millimeter-wide bottom-bracket design. Symmetric chainstays provide additional stiffness on the driveside and stability on the non-drivesides.

11 ALL-NEW TUBELESS WHEELSYSTEMS
Engineered with proprietary Dynamic Balanced Lacing, all-new composite WheelSystems are set up factory tubeless and provide improved efficiency, comfort and control.

12 DISC-BRAKE INTEGRATION
The frame and fork are engineered with full-composite, flat-mount disc-brake mounts for powerful, consistent braking performance in all conditions.

13 RIDESENSE
Giant's chainstay-integrated, wireless data transmitter. The removable transmitter sends wheel speed and cadence information directly to any ANT+/BLE compatible computer.

ROAD / PERFORMANCE / RACE

TCR ADVANCED PRO DISC SERIES

Climb, corner and descend with unrivaled all-rounder performance. From the mountains to the flats, in all types of conditions, the new TCR Advanced Pro Disc takes it to the next level with a lighter, stiffer frame and new aero-engineered tubing.

Pictured: TCR Advanced Pro 0 Disc

SERIES OVERVIEW

The all-new TCR Advanced Pro Disc gives you the lightweight performance to score the KOM plus the confidence to push your limits on technical descents. This podium-seeking all-rounder is reengineered with an Advanced-grade composite frame that boasts an outstanding stiff-to-weight ratio, along with new aerodynamic tube shaping in the headtube, downtube and fork. It also features added frame and fork clearance for larger diameter tires up to 32mm, making it a versatile race machine for all types of road conditions. With its proven Compact Road geometry, OverDrive 2 front end, flat-mount disc-brake integration and smooth-riding Variant seatpost, this is a race-tuned performer that excels in all aspects of road riding.

KEY PERFORMANCE FACTORS

Class-leading efficiency: With an outstanding stiffness-to-weight ratio and updated aero tube shaping, this frameset is engineered to give road racers and riders superior climbing capabilities, aerodynamic efficiency and sprint stiffness for race-winning performance.

Advanced aerodynamics: This is where the TCR's most quantifiable gains can be found compared to previous generation models. Every tube shape was analyzed, engineered and tested to create an overall structure with significantly lower drag at a wider range of yaw angles. The result is a TCR that's faster than ever in sprints and solo situations.

Total control: Integrated disc brakes deliver smooth, powerful stopping power and modulation for added control in variable weather and road conditions. Flat mounts and new thru-axles boost stiffness and improve overall handling, while added frame and fork clearance allows for larger diameter tires up 32mm.

TECHNOLOGIES

Advanced COMPOSITE TECHNOLOGY

COMPACT ROAD

OVERDRIVE2

RS RIDE SENSE

Tubeless System

FRAME GEOMETRY (UNITS IN MM UNLESS OTHERWISE INDICATED)

FRAME	XS	S	M	ML	L	XL
Seat tube length	425	445	470	500	530	560
Seat tube angle (Degrees)	74.50	74.00	73.50	73.00	73.00	72.50
Top tube length	520	535	550	565	580	600
Head tube length	120	130	145	165	185	200
Head tube angle (Degrees)	71.00	72.25	73.00	73.00	73.00	73.00
Fork rake	45	45	45	45	45	45
Trail	72	64	59	59	59	59
Wheelbase	976	977	980	991	1006	1020
Chain stay length	405	405	405	405	405	405
Bottom bracket drop	72	69.5	69.5	67	67	67
Stack	517	528	545	562	581	596
Reach	376	383	388	393	402	412
Stand over height	706	725	747	773	800	816
Handlebar width	400	400	420	420	440	440
Stem length	80	90	100	110	110	120
Crank length	170.0	170.0	172.5	172.5	175.0	175.0
Wheel size	700C	700C	700C	700C	700C	700C

TCR ADVANCED PRO DISC TECHNOLOGY

Combining lightweight composite frame engineering with strategic aero tube shaping and integrated disc brakes, the new TCR Advanced Pro Disc series delivers versatile road racing performance. Here's a look at its key technologies.

Pictured: TCR Advanced Pro 1 Disc

1 ADVANCED COMPOSITE
High-performance grade raw carbon material is used to produce this custom frame material in our own composite factory with a high stiffness-to-weight ratio. The front triangle is assembled and molded as one continuous piece in a proprietary manufacturing process called Modified Monocoque Construction.

2 TRUNCATED ELLIPSE TUBING
New strategically engineered airfoil sections in the frame and fork, developed through CFD and wind-tunnel testing, improve aerodynamic efficiency, reducing wind drag at a wider range of yaw angles compared to traditional teardrop shaped tubes.

3 VARIANT SEATPOST
This proprietary seatpost design offers the perfect balance of light weight, superior ride quality, aerodynamics and easy saddle installation and adjustment.

4 SYMMETRIC COMPOSITE FORK
The new Advanced-grade composite fork features a symmetric design and aero shaping, along with disc-brake integration and increased clearance for tires up to 32mm. The design makes it lighter, stiffer and more aerodynamic.

5 CONTACT SL HANDLEBAR
New Contact SL handlebar features modified cable routing to provide a smart balance of aerodynamics, rider ergonomics and hassle-free setup and maintenance.

6 OVERDRIVE 2
The most advanced steerer tube technology in today's Giant bikes. Designed to offer unprecedented front-end steering performance, the system's oversized headset bearings (1 1/2" lower, 1 1/4" upper) and tapered steerer tube work in harmony to provide supreme steering stiffness.

7 MEGADRIVE
A massive rectangular downtube forms the link between the OverDrive 2 headtube area and the PowerCore bottom bracket. This precisely engineered, rectangular shape yields unprecedented steering and pedaling stiffness while optimizing aerodynamic flow over a standard water bottle.

8 POWERCORE
A massively oversized bottom-bracket/chainstay area features a fully integrated, 86-millimeter-wide bottom-bracket design. Symmetric chainstays provide additional stiffness on the driveside and stability on the non-drivesides.

9 ALL-NEW TUBELESS WHEELSYSTEMS
Engineered with proprietary Dynamic Balanced Lacing, all-new composite WheelSystems are set up factory tubeless and provide improved efficiency, comfort and control.

10 DISC-BRAKE INTEGRATION
The frame and fork are engineered with full-composite, flat-mount disc-brake mounts for powerful, consistent braking performance in all conditions.

11 RIDESENSE
Giant's chainstay-integrated, wireless data transmitter. The removable transmitter sends wheel speed and cadence information directly to any ANT+/BLE compatible computer.

ROAD / PERFORMANCE / RACE

TCR ADVANCED DISC SERIES

Training, racing, pushing it to the limit. Whether you're attacking the field or digging deep for a new PR, the new TCR Advanced Disc is lighter, stiffer and faster with strategic aero tube shaping, added tire clearance and integrated disc brake technology.

Pictured: TCR Advanced 1 Disc

SERIES OVERVIEW

Reengineered with updated aerodynamic tube shaping in the headtube, downtube and fork, plus added clearance for larger diameter tires (up to 32mm), the new TCR Advanced Disc delivers outstanding on-the-road efficiency. The Variant seatpost adds just enough compliance to give it a balanced, race-tuned feel on the road. And with its integrated disc-brake technology, including flat mounts and 12mm front and rear thru-axles, it's an all-weather, all-conditions race machine to keep you at the front of the pack.

KEY PERFORMANCE FACTORS

Class-leading efficiency: With an impressive stiffness-to-weight ratio and updated aero tube shaping, this frameset is engineered to give road racers and riders superior climbing capabilities, aerodynamic efficiency and sprint stiffness for race-winning performance.

Advanced aerodynamics: This is where the TCR's most quantifiable gains can be found compared to previous generation models. Every tube shape was analyzed, engineered and tested to create an overall structure with significantly lower drag at a wider range of yaw angles. The result is a TCR that's faster than ever in sprints and solo situations.

Total control: Integrated disc brakes deliver smooth, powerful stopping power and modulation for added control in variable weather and road conditions. Flat mounts and new thru-axles boost stiffness and improve overall handling, while added frame and fork clearance allows for larger diameter tires up 32mm.

TECHNOLOGIES

Advanced COMPOSITE TECHNOLOGY

COMPACT ROAD

OverDrive

RS RIDE SENSE

Tubeless System

FRAME GEOMETRY (UNITS IN MM UNLESS OTHERWISE INDICATED)

FRAME	XS	S	M	ML	L	XL
Seat tube length	425	445	470	500	530	560
Seat tube angle (Degrees)	74.50	74.00	73.50	73.00	73.00	72.50
Top tube length	520	535	550	565	580	600
Head tube length	120	130	145	165	185	200
Head tube angle (Degrees)	71.00	72.25	73.00	73.00	73.00	73.00
Fork rake	45	45	45	45	45	45
Trail	72	64	59	59	59	59
Wheelbase	976	977	980	991	1006	1020
Chain stay length	405	405	405	405	405	405
Bottom bracket drop	72	69.5	69.5	67	67	67
Stack	517	528	545	562	581	596
Reach	376	383	388	393	402	412
Stand over height	706	725	747	773	800	816
Handlebar width	400	400	420	420	440	440
Stem length	80	90	100	110	110	120
Crank length	170.0	170.0	172.5	172.5	175.0	175.0
Wheel size	700C	700C	700C	700C	700C	700C

TCR ADVANCED DISC TECHNOLOGY

Combining lightweight composite frame engineering with strategic aero tube shaping and integrated disc brakes, the new TCR Advanced Disc series delivers versatile road racing performance. Here's a look at its key technologies.

Pictured: TCR Advanced 2 Disc

1 ADVANCED COMPOSITE
High-performance grade raw carbon material is used to produce this custom frame material in our own composite factory with a high stiffness-to-weight ratio. The front triangle is assembled and molded as one continuous piece in a proprietary manufacturing process called Modified Monocoque Construction.

2 TRUNCATED ELLIPSE TUBING
New strategically engineered airfoil sections in the frame and fork, developed through CFD and wind-tunnel testing, improve aerodynamic efficiency, reducing wind drag at a wider range of yaw angles compared to traditional teardrop shaped tubes.

3 VARIANT SEATPOST
This proprietary seatpost design offers the perfect balance of light weight, superior ride quality, aerodynamics and easy saddle installation and adjustment.

4 SYMMETRIC COMPOSITE FORK
The new Advanced-grade composite fork features a symmetric design and aero shaping, along with disc-brake integration and increased clearance for tires up to 32mm. The design makes it lighter, stiffer and more aerodynamic.

5 CONTACT HANDLEBAR
A Giant Contact aluminum handlebar provides a comfortable grip, outstanding ergonomics and minimal weight.

6 OVERDRIVE
Giant's original oversized fork steerer tube technology. Designed to provide precise front-end steering performance, the system's oversized headset bearings (1 1/4" lower and 1 1/8" upper) and tapered steerer tube work in conjunction to provide optimal steering stiffness.

7 MEGADRIVE
A massive rectangular downtube forms the link between the OverDrive 2 headtube area and the PowerCore bottom bracket. This precisely engineered, rectangular shape yields unprecedented steering and pedaling stiffness while optimizing aerodynamic flow over a standard water bottle.

8 POWERCORE
A massively oversized bottom-bracket/chainstay area features a fully integrated, 86-millimeter-wide bottom-bracket design. Symmetric chainstays provide additional stiffness on the driveside and stability on the non-drivesides.

9 GIANT TUBELESS SYSTEM
Updated Giant tubeless wheelset and tires for improved comfort, efficiency and safety right out of the box.

10 DISC-BRAKE INTEGRATION
The frame and fork are engineered with full-composite, flat-mount disc-brake mounts for powerful, consistent braking performance in all conditions.

11 RIDESENSE
Giant's chainstay-integrated, wireless data transmitter. The removable transmitter sends wheel speed and cadence information directly to any ANT+/BLE compatible computer.

ROAD / PERFORMANCE / RACE

TCR ADVANCED SL SERIES

From high alpine roads to grueling classics races, this is the choice for ultralight weight, super-stiff pedaling transmission and aero efficiency. Re-engineered to climb, corner and descend with uncompromising all-rounder speed, the all-new TCR Advanced SL is the winning choice.

Pictured: TCR Advanced SL 2 KOM

SERIES OVERVIEW

Whatever the race situation, the legendary TCR Advanced SL gives you an advantage. It's built on the lightest road frameset ever produced by Giant and features new aero tube shaping in the headtube, downtube and fork for pure speed and efficiency. The Variant integrated seatpost design saves weight while also adding compliance for a smoother ride on rough roads. Proven Compact Road Design gives the TCR Advanced SL the perfect blend of razor-sharp handling and confident control, and a new aero-efficient Giant Contact SL composite handlebar and stem complete this race-winning package.

KEY PERFORMANCE FACTORS

Class-leading efficiency: New cutting-edge composite materials, reengineered tubing shapes and advanced robotic layup techniques result is a livelier ride quality, explosive acceleration and improved climbing efficiency with outstanding torsional frame stiffness.

Advanced aerodynamics: This is where the TCR's most quantifiable gains can be found compared to previous generation models. Every tube shape was analyzed, engineered and tested to create an overall structure with significantly lower drag at a wider range of yaw angles. The result is a TCR that's faster than ever in sprints and solo situations.

Total control: From composite WheelSystems with greater crosswind stability to user-friendly tubeless tire setups, this new TCR delivers greater control in a wide variety of road conditions. An all-new composite fork boasts impressive torsional stiffness.

TECHNOLOGIES

Advanced SL COMPOSITE TECHNOLOGY

COMPACT ROAD

OverDrive2

RS RIDE SENSE

Tubeless System

FRAME GEOMETRY (UNITS IN MM UNLESS OTHERWISE INDICATED)

FRAME	XS	S	M	ML	L	XL
Seat tube length	680	710	740	770	800	830
Seat tube angle (Degrees)	74.50	74.00	73.50	73.00	73.00	72.50
Top tube length	520	535	550	565	580	600
Head tube length	120	130	145	165	185	200
Head tube angle (Degrees)	71.00	72.25	73.00	73.00	73.00	73.00
Fork rake	45	45	45	45	45	45
Trail	72	64	59	59	59	59
Wheelbase	976	977	980	991	1006	1020
Chain stay length	405	405	405	405	405	405
Bottom bracket drop	72	69.5	69.5	67	67	67
Stack	517	528	545	562	581	596
Reach	376	383	388	393	402	412
Stand over height	702	722	743	769	793	813
Handlebar width	400	400	420	420	440	440
Stem length	80	90	100	110	110	120
Crank length	170.0	170.0	172.5	172.5	175.0	175.0
Wheel size	700C	700C	700C	700C	700C	700C

TCR ADVANCED SL TECHNOLOGY

With the same unbeatable stiffness-to-weight ratio of the race-winning machines that came before it, the latest TCR Advanced SL adds aero efficiency to its legendary all-rounder capabilities. Here's a look at its key technologies.

Pictured: TCR Advanced SL 2 KOM

1 ADVANCED SL COMPOSITE
Professional-grade raw carbon material is woven in our own composite factory using our most advanced engineering and construction methods including: Continuous Fiber Technology to add strength while reducing weight; Carbon Nanotube Technology resin to improve impact resistance; and Fusion Process for lighter, stronger frame junctions.

2 TRUNCATED ELLIPSE TUBING
New strategically engineered airfoil sections in the frame and fork, developed through CFD and wind-tunnel testing, improve aerodynamic efficiency, reducing wind drag at a wider range of yaw angles compared to traditional teardrop shaped tubes.

3 VARIANT INTEGRATED SEATPOST
Specifically engineered for the needs of competitive road racers, Variant's refined shape and integrated design result in a ride quality that perfectly balances compliance, aerodynamics and efficiency.

4 CUTTING-EDGE COMPOSITE ASSEMBLY
Up to 150 small individual composite swatches are placed using robotic layup assembly. The swatches are laser-cut so that smaller, ultra-precise sections can be used, resulting in lighter weight framesets. Our Continuous Fiber Technology adds strength while reducing weight. Carbon Nanotube Technology resin improves impact resistance, and our Fusion Process creates lighter, stronger frame junctions.

5 ADVANCED SL COMPOSITE FORK
The new Advanced SL-grade composite fork features aero shaping and is engineered to be lighter and stiffer than the previous edition.

6 CONTACT SLR HANDLEBAR
New Contact SLR handlebar features modified cable routing to provide a smart balance of aerodynamics, rider ergonomics and hassle-free setup and maintenance.

7 OVERDRIVE 2
The most advanced steerer tube technology in today's Giant bikes. Designed to offer unprecedented front-end steering performance, the system's oversized headset bearings (1 1/2" lower, 1 1/4" upper) and tapered steerer tube work in harmony to provide supreme steering stiffness.

8 MEGADRIVE
A massive rectangular downtube forms the link between the OverDrive 2 headtube area and the PowerCore bottom bracket. This precisely engineered, rectangular shape yields unprecedented steering and pedaling stiffness while optimizing aerodynamic flow over a standard water bottle.

9 POWERCORE
A massively oversized bottom-bracket/chainstay area features a fully integrated, 86-millimeter-wide bottom-bracket design. Symmetric chainstays provide additional stiffness on the driveside and stability on the non-drivesides.

10 ALL-NEW TUBELESS WHEELSYSTEMS
Engineered with proprietary Dynamic Balanced Lacing, all-new composite WheelSystems are set up factory tubeless and provide improved efficiency, comfort and control.

11 RIDESENSE
Giant's chainstay-integrated, wireless data transmitter. The removable transmitter sends wheel speed and cadence information directly to any ANT+/BLE compatible computer.

ROAD / PERFORMANCE / RACE

TCR ADVANCED PRO SERIES

From daily training rides to your biggest race of the year, this updated composite road racer features new aero tube shaping and added tire clearance. Lightweight, stiff and ultra-efficient, it's pure all-rounder performance to help you aim for the podium.

Pictured: TCR Advanced Pro 1

SERIES OVERVIEW

With its all-new Advanced-grade composite frame, which minimizes weight without sacrificing its best-in-class stiffness, the TCR Advanced Pro puts you in position to win. This next-generation model features aero tube shaping in the headtube, downtube and fork. Legendary Compact Road race geometry blends quick, precise handling with aggressive positioning, and the OverDrive 2 front end delivers razor-sharp steering performance. The Variant seatpost helps smooth out the ride, giving you a well-rounded machine that flies from start to finish, while a composite Giant WheelSystem with tubeless tires delivers a smoother, more efficient ride quality with a reduced risk of punctures.

KEY PERFORMANCE FACTORS

Class-leading efficiency: Lightweight composite materials and reengineered tubing shapes result is a livelier ride quality, explosive acceleration and improved climbing efficiency with greater torsional frame stiffness than key competitor bikes.

Advanced aerodynamics: This is where the TCR's most quantifiable gains can be found compared to previous generation models. Every tube shape was analyzed, engineered and tested to create an overall structure with significantly lower drag at a wider range of yaw angles. The result is a TCR that's faster than ever in sprints and solo situations.

Total control: An all-new composite fork boasts impressive torsional stiffness for unrivaled steering precision. And a composite Giant WheelSystem with tubeless technology allows you to run lower tire pressures for increased grip and a reduced risk of punctures.

TECHNOLOGIES

Advanced COMPOSITE TECHNOLOGY

COMPACT ROAD

OverDrive2

RS RIDE SENSE

Tubeless System

FRAME GEOMETRY (UNITS IN MM UNLESS OTHERWISE INDICATED)

FRAME	XS	S	M	ML	L	XL
Seat tube length	425	445	470	500	530	560
Seat tube angle (Degrees)	74.50	74.00	73.50	73.00	73.00	72.50
Top tube length	520	535	550	565	580	600
Head tube length	120	130	145	165	185	200
Head tube angle (Degrees)	71.00	72.25	73.00	73.00	73.00	73.00
Fork rake	45	45	45	45	45	45
Trail	72	64	59	59	59	59
Wheelbase	976	977	980	991	1006	1020
Chain stay length	405	405	405	405	405	405
Bottom bracket drop	72	69.5	69.5	67	67	67
Stack	517	528	545	562	581	596
Reach	376	383	388	393	402	412
Stand over height	702	722	743	769	793	813
Handlebar width	400	400	420	420	440	440
Stem length	80	90	100	110	110	120
Crank length	170.0	170.0	172.5	172.5	175.0	175.0
Wheel size	700C	700C	700C	700C	700C	700C

TCR ADVANCED PRO TECHNOLOGY

With an impressive stiffness-to-weight ratio and newly updated with strategic aero tube shaping, the new TCR Advanced Pro delivers all-rounder road racing performance for climbing, cornering and sprinting. Here's a look at its key technologies.

Pictured: TCR Advanced Pro 1

1 ADVANCED COMPOSITE
High-performance grade raw carbon material is used to produce this custom frame material in our own composite factory with a high stiffness-to-weight ratio. The front triangle is assembled and molded as one continuous piece in a proprietary manufacturing process called Modified Monocoque Construction.

2 TRUNCATED ELLIPSE TUBING
New strategically engineered airfoil sections in the frame and fork, developed through CFD and wind-tunnel testing, improve aerodynamic efficiency, reducing wind drag at a wider range of yaw angles compared to traditional teardrop shaped tubes.

3 VARIANT SEATPOST
This proprietary seatpost design offers the perfect balance of light weight, superior ride quality, aerodynamics and easy saddle installation and adjustment.

4 ADVANCED COMPOSITE FORK
The new Advanced-grade composite fork features a symmetric design and aero shaping. The design makes it lighter, stiffer and more aerodynamic.

5 CONTACT SL HANDLEBAR
New Contact SL handlebar features modified cable routing to provide a smart balance of aerodynamics, rider ergonomics and hassle-free setup and maintenance.

6 OVERDRIVE 2
The most advanced steerer tube technology in today's Giant bikes. Designed to offer unprecedented front-end steering performance, the system's oversized headset bearings (1 1/2" lower, 1 1/4" upper) and tapered steerer tube work in harmony to provide supreme steering stiffness.

7 MEGADRIVE
A massive rectangular downtube forms the link between the OverDrive 2 headtube area and the PowerCore bottom bracket. This precisely engineered, rectangular shape yields unprecedented steering and pedaling stiffness while optimizing aerodynamic flow over a standard water bottle.

8 POWERCORE
A massively oversized bottom-bracket/chainstay area features a fully integrated, 86-millimeter-wide bottom-bracket design. Symmetric chainstays provide additional stiffness on the driveside and stability on the non-drivesides.

9 ALL-NEW TUBELESS WHEELSYSTEMS
Engineered with proprietary Dynamic Balanced Lacing, all-new composite WheelSystems are set up factory tubeless and provide improved efficiency, comfort and control.

10 RIDESENSE
Giant's chainstay-integrated, wireless data transmitter. The removable transmitter sends wheel speed and cadence information directly to any ANT+/BLE compatible computer.

ROAD / PERFORMANCE / RACE

TCR ADVANCED SERIES

Winning race bikes have just the right balance of light weight, stiffness and smooth compliance on the road. The all-new TCR Advanced delivers on all three and adds updated aero performance to make it a versatile performer for competitive road riders.

Pictured: TCR Advanced 2 KOM

SERIES OVERVIEW

With a new composite frameset that shaves every gram possible without sacrificing its pedal-stomping stiffness, the TCR Advanced is built for all-rounder road performance. Reengineered with aero shaped frame tubing, it helps you climb faster, hammer the flats more efficiently, and corner on rails. The OverDrive steerer system and MegaDrive downtube are engineered for precise handling, and the Variant seatpost delivers an ideal blend of efficiency and compliance—so you stay fresh until the finish on those big days in the saddle.

KEY PERFORMANCE FACTORS

Class-leading efficiency: Lightweight composite materials and reengineered tubing shapes result is a livelier ride quality, explosive acceleration and improved climbing efficiency with greater torsional frame stiffness than key competitor bikes.

Advanced aerodynamics: This is where the TCR's most quantifiable gains can be found compared to previous generation models. Every tube shape was analyzed, engineered and tested to create an overall structure with significantly lower drag at a wider range of yaw angles. The result is a TCR that's faster than ever in sprints and solo situations.

Total control: An all-new composite fork boasts impressive torsional stiffness for unrivaled steering precision. And a Giant wheelset with tubeless technology allows you to run lower tire pressures for increased grip and a reduced risk of punctures.

TECHNOLOGIES

Advanced COMPOSITE TECHNOLOGY

COMPACT ROAD

OverDrive

RS RIDE SENSE

Tubeless System

FRAME GEOMETRY (UNITS IN MM UNLESS OTHERWISE INDICATED)

FRAME	XS	S	M	ML	L	XL
Seat tube length	425	445	470	500	530	560
Seat tube angle (Degrees)	74.50	74.00	73.50	73.00	73.00	72.50
Top tube length	520	535	550	565	580	600
Head tube length	120	130	145	165	185	200
Head tube angle (Degrees)	71.00	72.25	73.00	73.00	73.00	73.00
Fork rake	45	45	45	45	45	45
Trail	72	64	59	59	59	59
Wheelbase	976	977	980	991	1006	1020
Chain stay length	405	405	405	405	405	405
Bottom bracket drop	72	69.5	69.5	67	67	67
Stack	517	528	545	562	581	596
Reach	376	383	388	393	402	412
Stand over height	702	722	743	769	793	813
Handlebar width	400	400	420	420	440	440
Stem length	80	90	100	110	110	120
Crank length	170.0	170.0	172.5	172.5	175.0	175.0
Wheel size	700C	700C	700C	700C	700C	700C

TCR ADVANCED TECHNOLOGY

The new TCR Advanced series features an all-new frame and fork to deliver all-rounder road performance from the mountains to the flats. Here's a look at its key technologies.

Pictured: TCR Advanced 1

1 ADVANCED COMPOSITE
High-performance grade raw carbon material is used to produce this custom frame material in our own composite factory with a high stiffness-to-weight ratio. The front triangle is assembled and molded as one continuous piece in a proprietary manufacturing process called Modified Monocoque Construction.

2 TRUNCATED ELLIPSE TUBING
New strategically engineered airfoil sections in the frame and fork, developed through CFD and wind-tunnel testing, improve aerodynamic efficiency, reducing wind drag at a wider range of yaw angles compared to traditional teardrop shaped tubes.

3 VARIANT SEATPOST
This proprietary seatpost design offers the perfect balance of light weight, superior ride quality, aerodynamics and easy saddle installation and adjustment.

4 ADVANCED COMPOSITE FORK
The new Advanced-grade composite fork features a symmetric design and aero shaping. The design makes it lighter, stiffer and more aerodynamic.

5 CONTACT HANDLEBAR
A Giant Contact aluminum handlebar provides a comfortable grip, outstanding ergonomics and minimal weight.

6 OVERDRIVE
Giant's original oversized fork steerer tube technology. Designed to provide precise front-end steering performance, the system's oversized headset bearings (1 1/4" lower and 1 1/8" upper) and tapered steerer tube work in conjunction to provide optimal steering stiffness.

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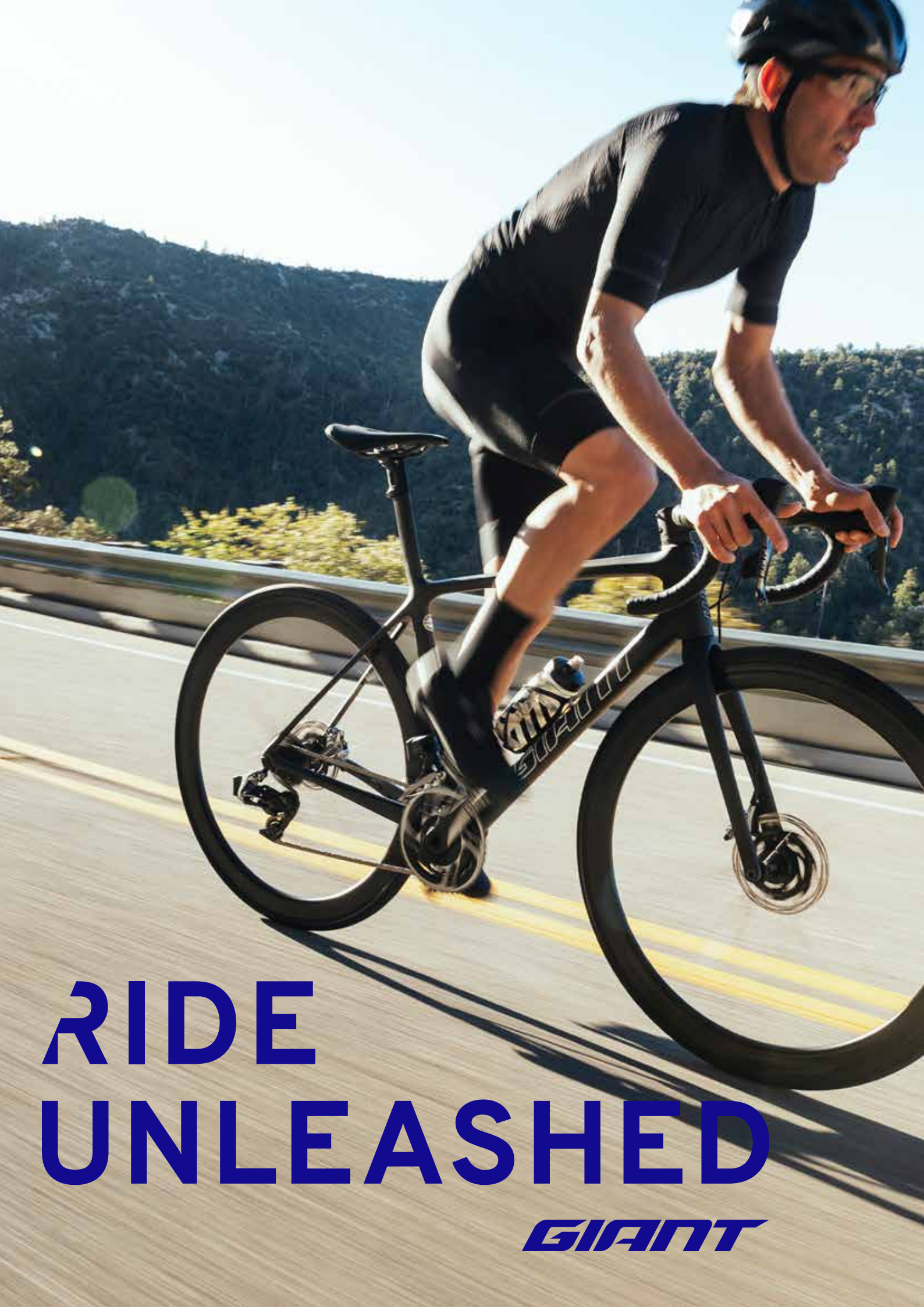
A massively oversized bottom-bracket/chainstay area features a fully integrated, 86-millimeter-wide bottom-bracket design. Symmetric chainstays provide additional stiffness on the driveside and stability on the non-drivesides.

9 GIANT TUBELESS SYSTEM
Updated Giant tubeless wheelset and tires for improved comfort, efficiency and safety right out of the box.

10 RIDESENSE
Giant's chainstay-integrated, wireless data transmitter. The removable transmitter sends wheel speed and cadence information directly to any ANT+/BLE compatible computer.


RIDE
UNLEASHED
GIANT