

isaac

TECHNICAL CARBON

INSPIRED BY NEWTON

2007 FIRST EDITION



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LAWS OF PHYSICS

Isaac is deeply inspired by its celebrated namesake, Sir Isaac Newton. This pioneering thinker refused to acknowledge the accepted, irrational explanations of the natural events that he witnessed around him. Newton therefore bravely disregarded convention, and devoted his brilliant mind to satisfying a compelling and single minded quest for truth at any cost.

Isaac Newton was a 'natural philosopher', applying relentless study and considered logic to the natural world, in search of the rational answers that he craved. Amongst many significant revelations, he most famously identified unquestionable, fundamental laws that apply, universally, to all physical matter. Newton demonstrated truths that could not be denied.

Newton discovered order and reason in every sphere of his investigations, and his great works form the foundation of modern physics. Isaac's technical developments are primarily dictated by the laws of physics as defined by Isaac Newton. Isaac brings considered, rational solutions to the challenges of optimising competition-bicycle performance.

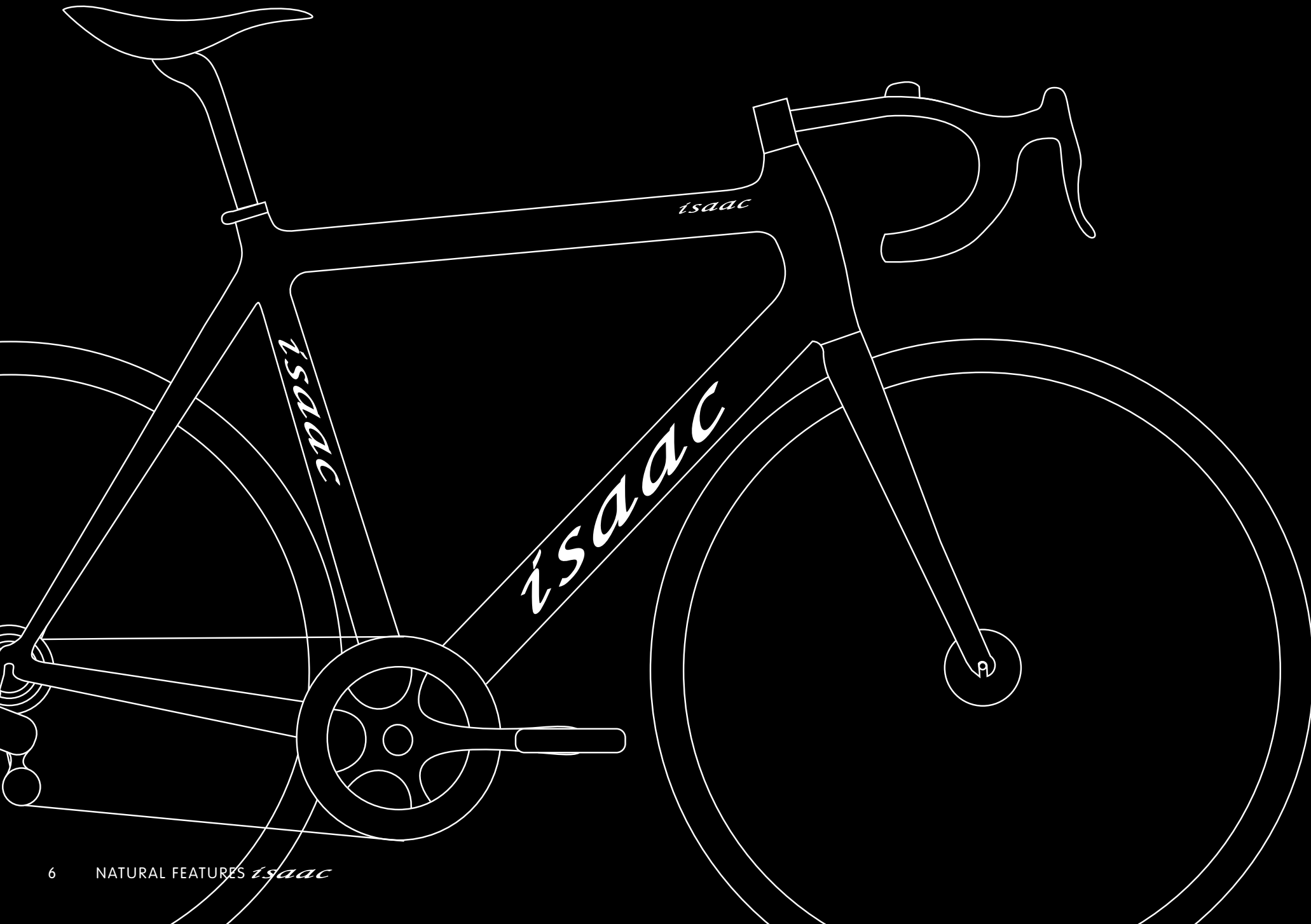
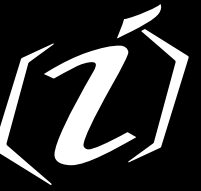


NATURAL FORMS

Isaac's designs incorporate 'natural forms', using soft, rounded shapes and gentle, unstressed transitions – and Isaac's composite materials mimic those of nature. Many natural structures possess performance characteristics that are difficult for man-made alternatives to match. For instance; trees, bones and spider-webs possess mechanical properties that designers and engineers can only sit back and envy.

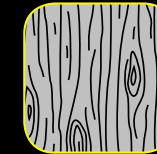
Natural structures and materials don't just happen. They are the exacting result of a multi-million year R&D programme called Evolution. Through natural selection, nature discards its design flaws and optimises its materials. Isaac's R&D work borrows heavily from nature's well proven solutions to complex structural challenges, resulting in forms that, like nature's, are truly fit for their purpose.

Large diameters, gentle transitions, low-density composite materials, high resistance, protective flexibility, and a lack of joints; these are the features of nature's high-performance structures. Similar virtues are also the obvious trademarks of Isaac's innovative high-performance framesets. Benefits to the discerning cyclist are high strength with extremely low weight – and outstanding efficiency with cossetting comfort.



THE HUMAN ELEMENT

The vast majority of Isaac's production processes are carried out totally by hand. The specific detail of Isaac's carbon lay-up technique relies on the input of many highly-skilled technicians. All Isaac frames are therefore truly hand crafted.



SPECIFIC MATERIALS

Carbon composites mimic natural high-performance materials such as timber. Isaac makes clear distinctions regarding the exact materials used. Specific grades give the precise properties which Isaac can then fully exploit.



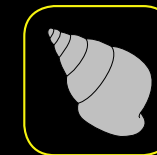
LIGHT AND TOUGH

Isaac frames are amongst the world's lightest, yet conform to the most stringent fatigue standards in the entire industry. Low weight is of little use without the necessary strength and practical robustness.



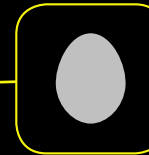
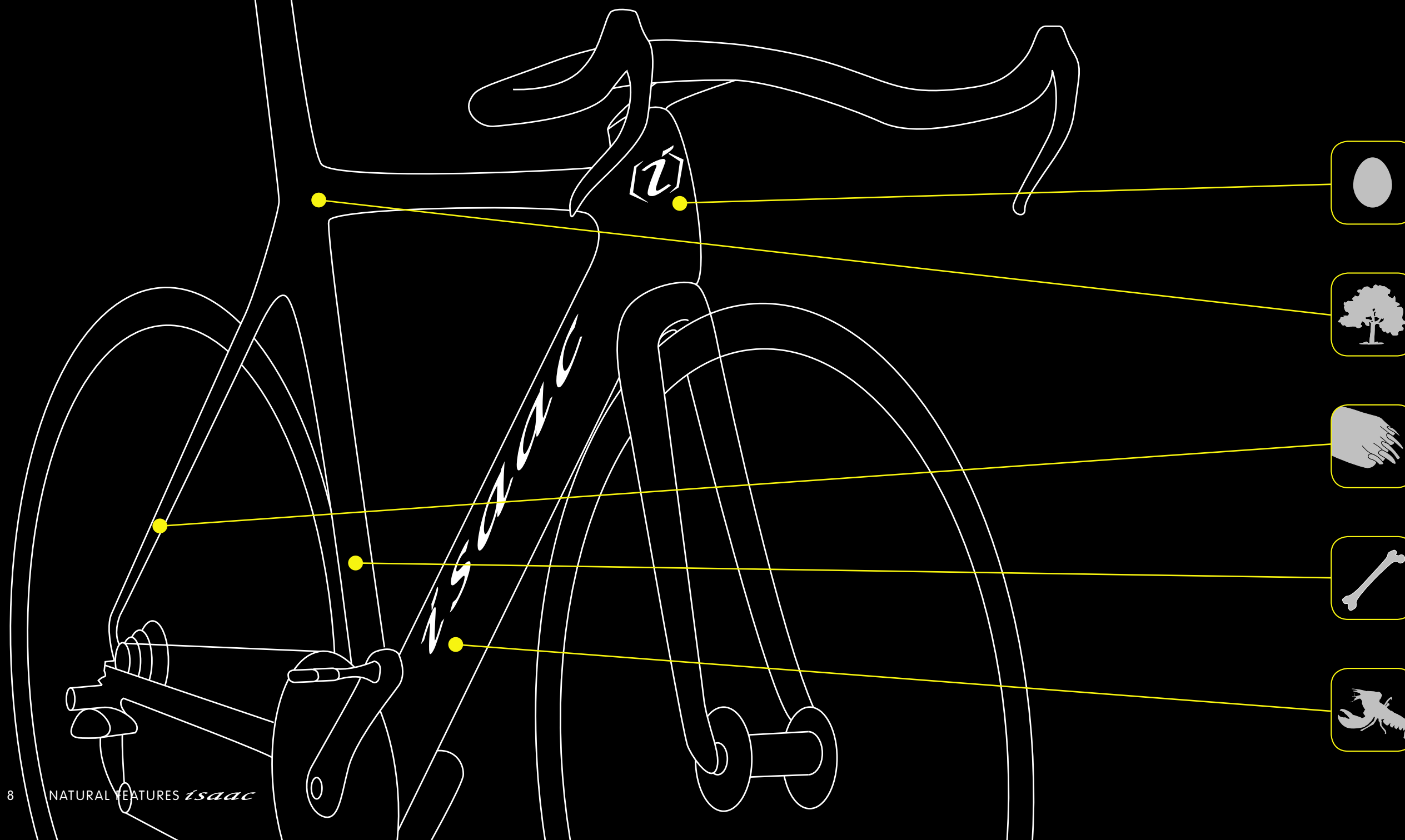
THE CONSIDERED SOLUTION

Because carbon composite structures are not restricted by traditional material conventions, they can be design-engineered to a far greater extent. This allows vastly increased scope for Isaac's considered and truly intelligent innovation.



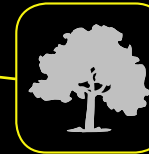
CONTINUOUS MATERIAL

Monocoque means 'one shell'. The front triangle of every 2007 Isaac frame is made in one continuous piece. Nature's structural members do not have joints. Any joint, and the resulting material discontinuity, promotes weakness.



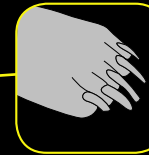
STRONG LIKE AN EGG

Isaac 'head tube' and bottom bracket areas are elliptically shaped – a bit like an egg. An egg shell has immense strength, mainly due to its elliptical form.



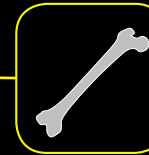
STURDY LIKE A TREE

Isaac's 'Dual Diameter Steerer' has a larger diameter at the base – like a tree. This gives additional strength where the forces are greatest. Isaac's oversize lower bearing, in its asymmetrical headset, better handles loads and impacts.



HARD INTERFACES

Isaac frames have robust component-interfaces of hard-wearing aluminium alloy or stainless steel so that components can be attached with confidence. All Isaac frames also have an aluminium replaceable rear gear hanger.



NATURAL FORMS

Isaac road frames use round 'tube' sections. Round tubes are the most resistant to torsion, give optimum mechanical performance - and reduce stress risers. Natural structural members have soft, rounded shapes for these very reasons.



STRONG OUTER JACKET

All Isaac frames have a structural 'skin' of continuous, woven carbon in the visible layer. This adds strength and gives protection. Many natural structures also have a tough outer layer to provide strength and protection.



APPROX. 880g FRAME (SIZE 57) WEIGHT

DEvised FOR ULTRA LIGHT WEIGHT

TRUE MONOCOQUE FRAME 3k

NEW REAR TRIANGLE

HIGH MODULUS CARBON / ULTRA HIGH MODULUS REINFORCED

ISAAC MONOCOQUE FORK WITH DUAL-DIAMETER STEERER

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

ISAAC MONOCOQUE 27.2mm SEAT POST

“STEM NOT INCLUDED IN FRAME SET PACKAGE”



SONIC

Is this the lightest carbon monocoque frame available today? Meticulous lay-up work, by highly skilled hands, ensures that no surplus material is included. Strategic reinforcement with Ultra High Modulus carbon reduces the quantity of carbon in the stressed areas of the structure. Detailed Finite Element Analysis ensures that the necessary efficiency and robustness remain, so that the Sonic can boast fatigue resistance figures previously unheard of in its weight class. All of this fine detail pays back with a ride that is exclusive in its perfect balance of the desired qualities.



APPROX. 980g FRAME (SIZE 57) WEIGHT

DEIGNED FOR LOW WEIGHT AND HIGH STRENGTH

TRUE MONOCOQUE FRAME

NEW REAR TRIANGLE

HIGH MODULUS CARBON 3k

ISAAC MONOCOQUE FORK WITH DUAL-DIAMETER STEERER

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

ISAAC MONOCOQUE 27.2mm SEAT POST

“STEM NOT INCLUDED IN FRAME SET PACKAGE”



IMPULSE

Now even lighter! Carefully considered revision of material specification means that a few more precious grams have been saved from the innovation-packed frame and fork. If the job is regular high-level racing, or conquering mountain passes for pleasure, then this is the perfect tool.

You will feel the benefits. However, there is far more to this story than just a headline weight. Spectacular mechanical performance figures are backed up by outstanding fatigue resistance. Practical robustness and trouble-free serviceability are ensured by tough component interfaces – and a replaceable gear hanger.



APPROX. 1150g FRAME (SIZE 57) WEIGHT

DEIGNED FOR STRENGTH AND STIFFNESS

TRUE MONOCOQUE FRAME

HIGH MODULUS CARBON 3k

ISAAC MONOCOQUE FORK WITH DUAL-DIAMETER STEERER

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

ISAAC MONOCOQUE 27.2mm SEAT POST

“STEM NOT INCLUDED IN FRAME SET PACKAGE”



FORCE

The Force is certainly unconventional – but with thorough technical reasoning. Including several significant innovations, the Force has become the benchmark for robustness and efficiency in a superlight frame.

The unique and obvious aluminium seat stays combine with a true monocoque front triangle and carbon chainstays to permit the stiffness of an aluminium frame with the comfort of a carbon frame. This is a rare combination of qualities, and may not be to everyone's taste. But, those with an open mind and a desire for pure performance will be roundly rewarded by its advantageous characteristics.



APPROX. 1250g FRAME (SIZE 57) WEIGHT

DEvised FOR BALANCED CHARACTERISTICS

TRUE MONOCOQUE FRAME

INTERMEDIATE MODULUS CARBON 12k

ISAAC MONOCOQUE FORK WITH DUAL-DIAMETER STEERER

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

ISAAC CARBON 27.2mm SEAT POST

"STEM NOT INCLUDED IN FRAME SET PACKAGE

PROTOTYPE FRAME SHOWN

PRODUCTION: PAINT SCHEME WILL INCORPORATE CLEAR-LACQUERED CARBON PANELS



KELVIN

Yet another Isaac model that has been on a serious diet for the new season is the Kelvin – and it could never have been described as overweight to start with! This has been an exercise in technical refinement. Enhanced detailing in the hand lay-up, along with the weight saving afforded by further attention to material specification, has brought the Kelvin firmly into the 'Superlight' category. All of the Isaac trademark innovations are there: Ellipse head tube and bottom bracket profiles, Dual-Diameter steerer, 'Natural Form' stress-relieved shapes, and monocoque construction.



APPROX. 1350g FRAME (SIZE 56) WEIGHT

HIGH PERFORMANCE-TO-COST RATIO

TRUE MONOCOQUE FRAME

HIGH STRENGTH CARBON 12k

ISAAC CARBON FORK WITH DUAL-DIAMETER STEERER

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

ISAAC CARBON 27.2mm SEAT POST

"STEM NOT INCLUDED IN FRAME SET PACKAGE"



PASCAL

Completely revised for 2007, the Pascal now benefits from Isaac's true monocoque form. Monocoque simply means 'one shell', and the front triangle moulding of the Pascal is just that, without joints or sockets, so that forces flow throughout the structure and are dissipated gradually. Soft, rounded, natural shapes further spread and transfer the loads for greater strength and better damping properties. And, gains in strength afford reductions in weight. This is nature's concept for high performance structures. It is no coincidence that Isaac takes advantage of these well-proven, natural solutions.



TRUE MONOCOQUE FRAME

HIGH MODULUS CARBON / ULTRA HIGH MODULUS REINFORCED 3K

ISAAC CARBON MONOCOQUE FORK WITH DUAL-DIAMETER STEERER

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

INTEGRATED SEAT POST DESIGN

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

INTERNAL CABLE ROUTING

"STEM, BARS AND SADDLE NOT INCLUDED IN FRAME SET PACKAGE"



JOULE AEROTIC

Isaac introduces a radical concept for 2007. The new design carries forward and expands upon the primary virtue underpinning the Joule name – pure speed. Computer Fluid Dynamics have been employed to optimise airflow management for improved aerodynamic characteristics. Finite Element Analysis has refined the structure to provide the necessary resistance for proficient power transfer, along with the cos-eting compliance necessary for that long-distance event. Isaac's highest specification material technology, with reinforcement in Ultra High Modulus carbon, completes a package that makes a real difference against the relentless tick of the clock.



<i>isaac</i> TECHNICAL CARBON
INTERMEDIATE CARBON 320 GPa
SYSTEMATIC HAND LAY-UP PRESSURE-MODULATED MONOCOQUE ANGLO-GERMAN ENGINEERING



APPROX. 1250g FRAME (SIZE M) WEIGHT

TRUE MONOCOQUE FRAME

INTERMEDIATE MODULUS CARBON 12k

MONOCOQUE AERO FORK WITH DUAL DIAMETER CARBON STEERER

INTEGRATED SEAT POST DESIGN

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET

INTERNAL CABLE ROUTING

“STEM NOT INCLUDED IN FRAME SET PACKAGE”

ALTERNATIVE COLOUR SCHEME AVAILABLE – CARBON/BLACK



EFFICIENCY

Isaac is a pioneer in carbon aero frames. Isaac's first model - a superlight, aerodynamic, monocoque design - created a stir and established a genre. Isaac did not relax. The new Efficiency comes from more than four years of considered refinement of that innovative creation. Light, sleek and comfy; these are the qualities that the Isaac Efficiency delivers. During the prologue of a European stage race, amongst the barren vistas of Hawaii, or time-trialling along a damp British highway - the athlete's desires are always the same. Isaac gives you Efficiency.



APPROX. 1250g (SIZE 19) WEIGHT

HIGH MODULUS CARBON 12k

TRUE MONOCOQUE FRAME

CANTILEVER AND DISC BRAKE COMPATIBLE

FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET



IMPACT

Isaac did not rush headlong into the off-road sector. The original brief was quite straightforward: class-leading performance from an exclusive, cross-country competition frame. Only when innovative designs and materials had been carefully considered, to match the established virtues of Isaac's road frames, was this unique project initiated. Isaac's High Modulus material specification has been utilised to provide a cross country frame with outstanding efficiency and low weight for climbing, along with rugged dependability and the trail-smoothing comfort that only an advanced monocoque frame can provide.



VELOCITY

REINFORCED DOWNTUBE

BOTTOM BRACKET AN CHAINSTAY AREAS

HIGH MODULUS CARBON 3K

EXCHANGEABLE HORIZONTAL DROPOUTS – 120 OR 130MM OLN

CLASS-LEADING 1.400G WEIGHT (SIZE M)

TRUE MONOCOQUE AERO FORK AND SEAT POST

FSA ORBIT-CARBON ASYMMETRICAL HEADSET

“STEM NOT INCLUDED IN FRAME SET PACKAGE”



PASCAL 06

SURPRISINGLY AFFORDABLE

APPROX. 1370g (SIZE 54) WEIGHT

HAND LAY UP TECHNIQUES

STANDARD MODULUS CARBON

INTERNAL BLADDER MOULDING

DEDICATED ISAAC CARBON FORK

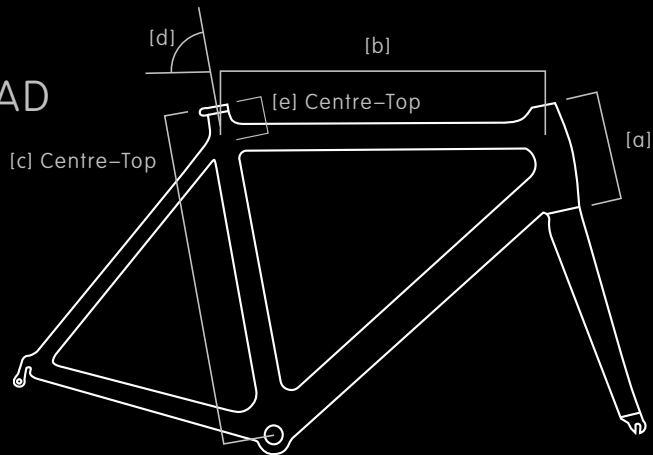
INTEGRATED CARTRIDGE BEARING HEADSET

ISAAC CARBON 27.2mm SET PACKAGE

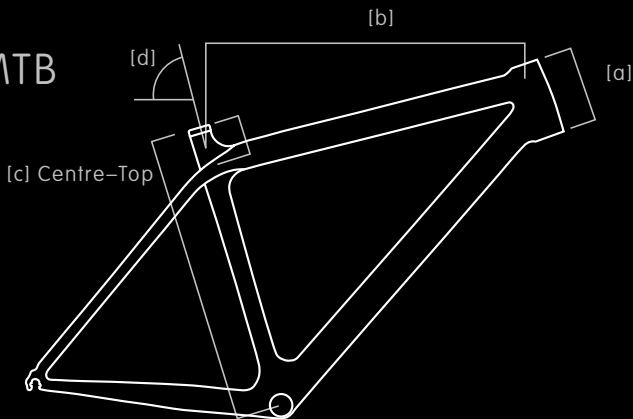




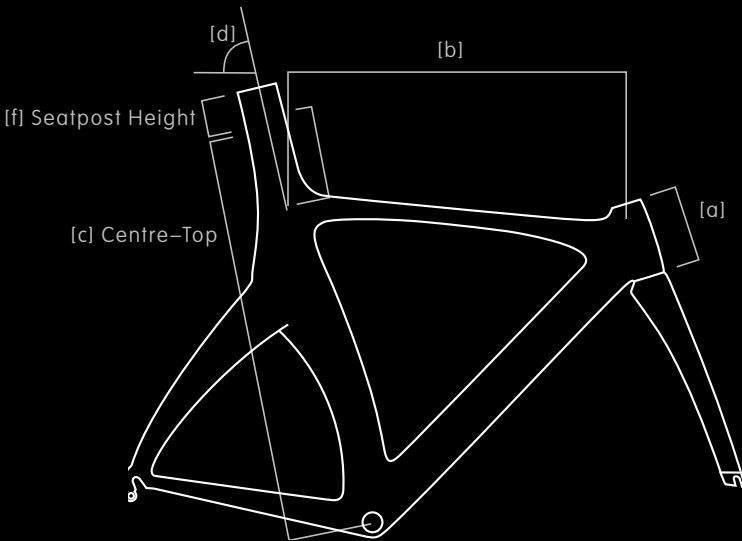
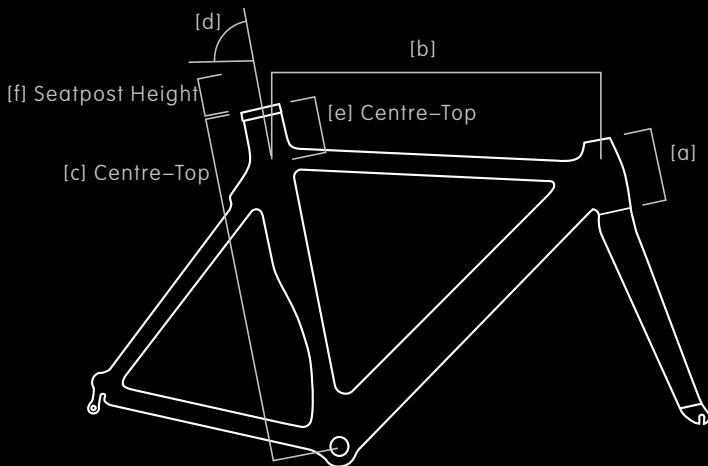
ROAD



MTB



TRIATHLON/
TIMETRIAL



SONIC
IMPULSE
FORCE
PASCAL

Size	[a] Head Tube	[b] Top Tube	[c] Seat Tube	[d] Angle	[e] Slope	Inseam Length
48	124 mm	510 mm	480 mm	75.0°	30 mm	- 79
51	144 mm	525 mm	510 mm	74.5°	30 mm	77 - 82
54	164 mm	545 mm	540 mm	74.0°	35 mm	80 - 83
55.5	176.5 mm	557.5 mm	555 mm	74.0°	35 mm	82 - 85
57	189 mm	570 mm	570 mm	73.5°	40 mm	84 - 87
60	214 mm	595 mm	600 mm	73.5°	45 mm	88 - 93

IMPACT

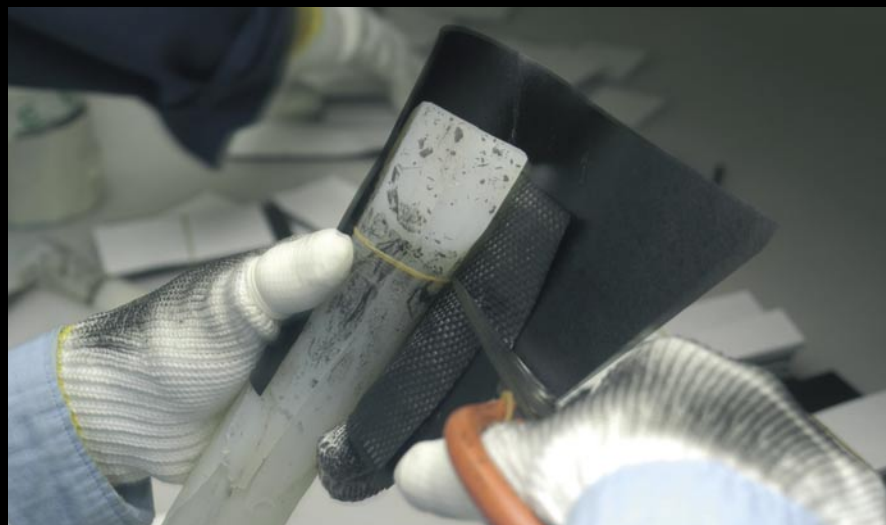
Size	[a] Head Tube	[b] Top Tube	[c] Seat Tube	[d] Angle	[e] Slope	Inseam Length
17.5	125 mm	525 mm	445 mm	73.5°	55 mm	77 - 85
19	135 mm	590 mm	485 mm	73.5°	55 mm	82 - 87
20.5	145 mm	610 mm	525 mm	73.5°	55 mm	86 - 93

EFFICIENCY
VELOCITY
*JOULE AEROTIC

Size	[a] Head Tube	[b] Top Tube	[c] Seat Tube	[d] Angle	[E] Extension	[F] BB to Saddle Rail	Inseam Length
XS	116mm	525mm	510mm	76.0°	50mm	min 630mm - max 760mm	- 83
S	116mm	539mm	540mm	76.0°	50mm	min 660mm - max 790mm	80 - 86
M	135mm	557mm	560mm	76.0°	50mm	min 680mm - max 810mm	84 - 88
L	158mm	575mm	580mm	76.0°	50mm	min 700mm - max 830mm	88 - 95

The given inseam measurements are approximate suggestions only. They are provided to give a simple overview of sizing. A complete geometrical diagram for each model and size can be found at www.isaac-carbon.com. Isaac recommends use of the Bikefitting system for a correct determination of specific frame size and optimum cycling position. www.bikefitting.com

* Joule Aerotic is available in four sizes. The max./min. saddle height dimensions, and complete geometrical data, can be found at www.isaac-carbon.com



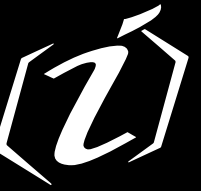
MAKING OF ISAAC

Every Isaac model starts off as a creative idea with a set of desired values. These values are not imagined; they are simply the real demands of the committed competition cyclist. Strength, weight, efficiency, handling, robustness, comfort, aesthetics and cost are the major elements that have to be considered. Success comes with a frameset that delivers the optimum balance of these elements. This is Isaac's mission.

The process begins with simple hand sketches where ideas become visible for the first time. These initial visuals are transferred to a computer and rendered as a 3D model using the latest CAD Technology. Simulated loads can then be applied using Finite Element Analysis to reproduce the forces that must be endured by the structure in use.

When the form has been optimised, and all of the necessary design criteria have been satisfied, work can begin on the first prototype moulds. Like the process of birth, creation of an initial prototype frame finally brings physical reality to the project – but much more work lies ahead. have a look!





CRASH REPLACEMENT

An exclusive service for an exclusive brand – Isaac Crash Replacement.

Crashing hurts and, when the scrapes and bruises have healed, replacing a frame can really hurt! So, we have devised a scheme to soften the blow somewhat. Damage your Isaac frame set in a mishap within two years of purchase, and get a replacement frame set at around half price. We sincerely hope that you never need this service. But unfortunately, just sometimes, the unthinkable does happen.

Terms and conditions apply. Please go to www.isaac-carbon.com for more details.



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Please ensure that the appropriate Isaac manual or instruction sheet is provided by the retailer when purchasing any Isaac product. Frame sets are supplied with an owner's manual, and all other products are supplied with an instruction sheet. It is important that the instructions are read and understood by the consumer, prior to use of the product. As with any complete cycle or cycle part, failure to follow the instructions for correct fitting procedure and/or conditions of use could result in an accident. Please retain any manual or instruction sheet for future reference.

Isaac products have been developed and manufactured with great care for the purpose of competition and training cycling appropriate to their specific type. Under European (EU) consumer law the purchaser has full statutory warranty rights within the first two years of purchase.

For frames only, Isaac International Limited offers a further warranty extension period of an additional three years. Thus giving a total of five years warranty cover (from date of retail purchase), against failure of the frame due to defects in materials or workmanship.

The manufacturer's extended warranty is offered in addition to the consumer's statutory rights, which remain unaffected. The manufacturer's extended warranty is subject to specific limitations, terms, and conditions. The extended warranty offer applies only to the original retail purchaser (the consumer) on completion/submission of the extended Warranty Registration Form, to be found on the Isaac website: www.isaac-carbon.com.

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