the ART of the Mountain BIKE

Orange
MOUNTAIN BIKES
ENGLAND

the art of winning

Adele

Ed

Global Success

By any standards, the 2001 racing season was the most successful ever for Orange Mountain Bikes with more teams, more riders and more winning results than ever before. Around the world, no less than eight national championships were won on Orange bikes, and guess what? The number 1 ranked downhill rider in the world got there riding an Orange.

Competitive legacy

From the outset Orange have been obsessive about off-road riding and racing. The company came about because founders Lester Noble and Steve Wade were driven to seek the performance they required from the bikes they used for their own racing exploits. To achieve this, they built their own and as history shows, they got it right. Lester rode for the British team in 1987, and with the first Orange design, finished top British rider in the World Championship of that year. Steve, after finally finding some time away from his welding torch, made his mark by becoming silver medallist in the 1996 UK National Championships. It's no wonder then that they have continued to build bikes that demand success. This passion and race sense runs throughout the heart of the company.

Team effort

The key to ongoing success is without doubt the relationships that Orange build with the teams that race their bikes. Understanding the problems encountered in competitive conditions and responding to riders needs, gives us a unique insight into the way to go about developing world class racing mountain bikes. Orange have worked successfully for four years with Team Animal Orange who played a major part in developing the Patriot and 222 chassis. In 2001, the brand new, big budget, Global Racing team could have picked any brand in the world, they chose Orange bikes purely for their performance. We knew that supplying bikes to such a young team would be a challenge, but we were confident because of the unique way we go about bike development, that it would prove fruitful. Unlike other manufacturers that follow perceived trends, we work hard to find our own solutions, listen to the teams and adjust designs accordingly. As a small dynamic company, we are in the enviable position of being able to develop new ideas throughout the year as riders give us feedback. The result, the lightest, sharpest, most reliable bikes on the circuit.

World Cup Success

The strategy paid off for the Global Racing Team who made their mark with an incredible first season of racing. From the season opener at the Sea Otter Classic the riders Missy Giove, Sean McCarroll, Marielle Saner and new boy Mick Hannah blitzed the Dual and Downhill courses to ensure that Global led the team standings from the start. By the final round at Mont-Sainte-Anne, the Global Racing team had accrued over 300 points more than second place Volvo Cannondale. It was also here that Greg Minnaar eclipsed five times champion Nicolas Vouilloz to become the 2001 Tissot-UCI World Cup champion. Two weeks later Greg placed third in the World Championships to be ranked as the world number 1 for the 2001 season. Congratulations Global Racing.

Team Animal Orange also had a successful season with Ed Mosely taking the Men's, and Adele Croxon the Women's UK National Points Series Championships.

One Man's Race

Enough team talk already, Another 2001 success story was that of Ben Bardsley, endurance athlete extraordinaire, who rode solo to win the Red Bull 24-hour Mountain Mayhem race. Ben completed the gruelling 24 hour marathon on an Orange E-six and a full-suspension Sub 3 prototype. In 24 hours of exhausting riding he not only won, but managed to lap the rest of the field, during which, he had plenty of time to consider some final tweaks to the pre-production Sub 3. The following pages are crammed with a whole range of bikes intended for specific disciplines, all developed in the same way - the Orange way.

"...we wanted a bike that the riders would want to ride, and after surveying our team, Orange was the clear and obvious choice... a company that was small enough to react and deliver, but big enough to be supportive and creative."

Martin Whiteley, Team Director, Global Racing.

Greg Minnaar

2001 Championship Winners

Greg Minnaar – 2001 Tissot-UCI Downhill World Cup Champion
Sarah Stieger – 2001 Tissot-UCI Downhill Womens European Champion
Ed Mosely – 2001 UK National Downhill Series Mens Champion
Adele Croxon – 2001 UK National Downhill Series Womens Champion
César Rojo – 2001 Spanish National Downhill Champion
Carlos Barcons – 2001 Spanish National Dual Mens Champion
Eva Castro – 2001 Spanish National Dual Womens Champion
Marielle Saner – 2001 Switzerland Downhill and Dual Champion
Zigmars Skolinsh – 2001 Austrian Downhill Champion
Ben Bardsley – 2001 24-hour Red Bull Mountain Mayhem Solo Champion

"...We are thrilled to have an ongoing relationship with Orange Bicycles, and to have delivered results on their quality bikes in year one."

Martin Whiteley, Team Director, Global Racing.

TISSOT
SWISS WATCHES SINCE 1853

TISSOT-UCI MOUNTAINBIKE WORLD CUP CHAMPIONS 2001

the art of innovation

Innovation isn't complicated

A fact of life; the best ideas are always the simplest. Orange guru's Lester Noble and Steve Wade, hailing from the heart of England's no nonsense industrial north, understand this fact completely. In bike development terms the Orange bikes are just that, a great idea done simply. Always have been, always will be.

To create the finest mountain bikes in the world calls for clear thought and intelligent design. We have no time for whimsical novelties and gimmicky fly-by-night materials. We use proven engineering principles applied to produce the best results.

Take our monocoque construction. It's a sheet of aluminium, bent about and welded up, right? Absolutely, that's the principle, but as we found out whilst developing our factory-secret welding and heat treating processes, it's a complex yet ultimately optimal method for making our high-strength, high-impact bikes, and our lighter weight ones too.

Handbuilt in Halifax

The Orange R&D and manufacturing plant is a very busy place. In the last four years since we started producing our monocoque chassis we have been going from strength to strength, with some of the best engineers and specialist welders in the world building and developing our range of bikes.

> "Designing bikes that win races is always seen as a success. Yet designing bikes that out perform complicated multi pivot systems and at the same time can easily be maintained by privateer riders has always been paramount in our design aims."
>
> *Steve Wade*

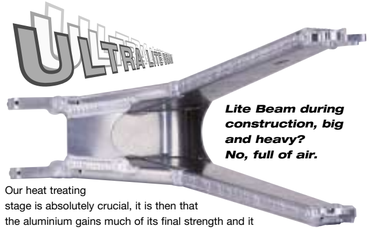
Each frame and component whether it be for a customer or Greg Minnaar receives the same attention to detail.

Built in small batches not mega production runs, each bike starts out as a sheet of aircraft grade 6061 aluminium. The sheet is precision cut by the latest CNC technology then folded precisely into shape. In fact, our folding system is so advanced many people can't see how we end up with that part of the frame, we're happy to keep them guessing.

Lester

Steve

The frame components are then put into a jig and hand-welded into the frame you see in the showroom. If that sounds a bit simplified, it is. Between initial jig set-up and completion the frame and each component goes through four alignment checks, unlike the common practice of welding a complete frame, bolting on the swingarm and then aligning the whole plot, pivot and all, Orange's precise construction technique means that front and rear sections do not have to be made together, the method is so precise that any swingarm will fit any front end in perfect alignment.



Lite Beam during construction, big and heavy? No, full of air.

Our heat treating stage is absolutely crucial, it is then that the aluminium gains much of its final strength and it is imperative that this stage goes perfectly. We have developed a cunning method of ensuring that it does, well mostly, and we're happy to keep people guessing about that too.

After the heat treatment the frame is jigged and alignment is checked yet again to ensure absolute accuracy in the chassis. By now the construction is so strong that if the frame is significantly out of line, it cannot be corrected and we have to throw it away. So you can see why we're interested in getting it right at every step of the way.

The resulting frame is strong, light and structurally sound, in essence, the heart of the Orange mountain bike chassis.

Testing in the real world

In this world of click-button CNC trickery, it's easy to lose touch with real-world experience and that indeterminate factor 'feel'. No amount of computer modelling can replace the craftsman's feel for the metal he is working with. There's no substitute for riding what we've built – testing and testing again to see if what we think will work, really does.

Developments to Orange bikes come about through rider feedback, not because we've seen someone else's shiny new feature that we want to emulate. In fact, it would appear to be the other way around. After years of messing with their complicated linkages and suspension, more than a few major teams are rolling out simple, single pivot designs not dissimilar to the Orange philosophy. With Orange bikes being the lightest most reliable bikes on the Tissot-UCI World Cup circuit, we can understand why.

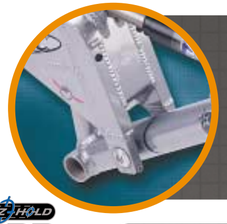
Unique technology

In the pursuit of the ultimate mountain bike we have often travelled the path less travelled. The upshot of this is that we have now developed and perfected some key features that you will not find anywhere else.

When we started with a blank sheet, we looked at all the areas of weakness in suspension mountain bike design. In all honesty making a real hardcore suspension bike has only recently become a reality, because the essential components like forks and shocks just weren't up to the job. They were fine for soaking up trail hits, but making a wheel track extreme terrain was an elusive holy grail.

Other manufacturers tried to compensate for this by adding linkages and pivots everywhere, but this only increased the number of weak areas. Why bother? We didn't want to play that game, so like nagging kids wanting a new toy we pestered the component manufacturers for what we wanted so that we could build our ideal bike. Well, slowly the kit started to appear and in recent years the standard of suspension components has become staggeringly good. Enter the Orange philosophy to building a better suspension bike. We addressed the three major areas we have always seen as weak, basically, where the fork meets the frame and then where frame meets swing arm. Making these areas solid really starts to show up any weaknesses in the back end, so we successfully addressed that area too. Three steps, if you like, to building a better suspension bike.

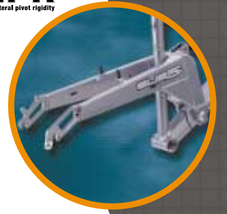
> "We can't always assume that what we've designed and prototyped is right, we've got to be prepared to give it to the riders and let them give feedback, most importantly, when they tell you it could be better we have to listen and make the changes."
>
> *Lester Noble*



Horiz-Hold Pivot

The first step. All suspension bikes have pivots, but no bike has a pivot with the precision and integrity of our Horiz-Hold pivot system. Using a stub-axle design welded into the frame, rather than a 'hole and bolt' system like other manufacturers, it took months of intense application, prototyping and redesigns. We tried different manufacturing techniques to get a pivot welded directly and accurately into the frame. On several occasions respectable industry 'names' reckoned it couldn't be done. Why did we pursue this relentlessly? Because with no play between the axle and the frame (as they are one unit), there's no slop at the rear wheel. This is especially important because play at the front is magnified by the time it reaches the rear axle. We kept this fact in mind when deciding on a wider sealed bearing race rather than compromise lateral rigidity by choosing a slim design. Horiz-Hold is the first step in getting a better suspension bike.

HORIZ-HOLD
ELPR
enhanced lateral pivot rigidity



Lite Beam Swingarms

The second step is to make sure that the stiffness that's built into the pivot system isn't lost by a flexible swingarm. When we became involved with Team Animal, we found that their requirements for suspension travel were secondary to their needs for lateral rigidity. Whilst we had been looking at smooth up and down movement, the speeds and load situations they were creating on a bike meant that they were flexing the swingarm from side to side, causing tracking problems. Any lateral deflection whilst riding a bike at speed means that no matter how much suspension travel you have, it's pointless if you cant keep the bike on a tight smooth line. Make a bike track perfectly and a rider can pick the smoothest route with confidence, saving suspension travel for absorbing the hits.

We had taken tubular swingarm technology as far as we could. We had a rock solid swingarm that worked but it weighed a ton. So we switched each leg into a large box section, in testing we went bigger and bigger on the cross member tubes, until we eventually switched to a large monobox to connect the two arms and arrived at fantastic lateral rigidity. One big section monocoque 'Lite Beam' design, it did twice the job at far less weight.

True Track Head Column

The third element we needed to consider was the head tube junction with the top tube and down tube. This is a prime area where unwelcome flex and twist will creep into a frame. We carefully designed an angular box section at the head of the monocoque downtube to eliminate rotational twisting forces. This keeps the head tube and the fork steerer directly in line with the vertical centre of the frame ensuring that the front wheel is as close to centre as fork flex will allow. Like Horiz-Hold, if you can stop superfluous movement at the pivot (head tube) its deflection is minimised at the end of the lever (fork leg). The exact shape, dimension and material gauge of the box section are of paramount importance to achieve maximum stability without adding extra mass. The True Track head column is a hugely important factor in making our high end downhill bikes the most precise steering bikes on the World Cup circuit.

the art of selection

Components of excellence

We pride ourselves on the quality of our chassis, so it only makes sense that we kit them out with equally high-performance components.

Although the Pennines and Yorkshire Dales provide an appropriate backdrop to our Halifax manufacturing and design house, and our factory assembly plant, we have the flexibility to source equipment from anywhere in the world. We choose the best components, regardless of their country of origin, sometimes we don't have to look very far. For example, we have a very amiable relationship with Hope, who are situated on our doorstep. This enables us to fit Hope disc compatible hubs on our handbuilt wheels, as standard to all our Pro equipped bikes and above. So, if your budget doesn't stretch to fitting disc brakes when you order, at least the change is easy on your pocket later on.

Equally we spec high quality Answer Taperlight riser bars, to our hardcore suspension bike as standard. These bars are the benchmark by which others are judged. For 2002 we are also fitting the ProTaper or Hyperlite Carbon bars and CarboLite Carbon seatposts to our ultra-light suspension bikes and XC racers.

Custom specification

Our needs are specialised, often we can't find exactly the right part for the purpose we need to fulfil, that's when we call on manufacturers to custom supply exclusive items. Rear shocks are a good example, because of the unique chassis designs, we often require special valving or spring rates to give the best results.

When we can't find a part we need, there's nothing for it other than to make it ourselves. The Orange SuperCross 2 handlebar is a true classic. Its wide-bulge profile and lightweight 6061 heat-treated aluminium construction make it an outstanding XC riser bar. Our award winning Friction Addiction grips are still sought after by riders of any marque. It's this kind of attention to detail that sets us apart from the rows of standard bikes that line up in showrooms.

The world is our oyster

Unlike other manufacturers who are tied into deals with component companies, meaning the customer gets what they are given, Orange are truly independent and seek the optimum part from the best source. This allows us to have a range of bikes that are built to a level of performance and not a price tag. It also means that Orange bikes are not the cheapest on the market, but we're not going to apologise for that, as when you buy an Orange, it's not just a bicycle you are investing in, but a high performance piece of sporting equipment.

Some highlights on the 2002 Orange bikes include the new Duke range of XC forks from RockShox, who say the Duke is destined to be the future direction for all RockShox products. This XC focused 80mm or 100mm fork, equipped with 30mm upper tubes, provides excellent steering precision and torsional rigidity for use with disc brakes. A 'weight optimised' casting, upper tubes and crown combined with proven SID derived air technology is exceptionally lightweight. We've been running them for some time and we love them.

We also rate the new Black fork from Manitou with its revolutionary RA (Reverse Arch) technology. Basically a single crown, short travel fork with the arch on the back rather than the front. By having the arch on the rear, Manitou claim much higher rigidity. It's a novel idea and we like it, in our testing the fork performed superbly.

Also new to the range this year, we have specified the superb new Shimano Deore disc brakes on some models, offering stupendous performance at groupset level.

In fact, in terms of the overall package, the Orange 2002 range is the best we have ever offered.

Geometry... is that an art too?

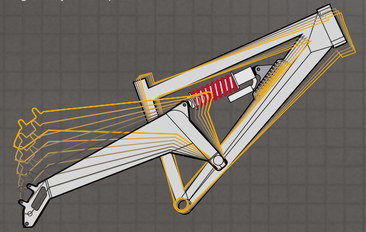
Suffice to say there are some pretty strong opinions in the office about mountain bike geometry. Orange frame guru Steve Wade is a no-nonsense man whose opinion you can't ignore, he's also put Orange bikes at the forefront of World Championship competition. So what's the deal?

In some ways the geometry figures we publish in our specifications mean very little. The numbers are accurate and based on optimum set-up but, these geometry figures are measured when the bike is in a static position, on level ground, with no sag.

These dimensions go out of the window as soon as you sit on the bike, adjust the fork travel, run lots of suspension sag or even lock your fork out. If you have a 222, then moving the top shock mount will change just about every figure in the chart. See, it gets complicated.

What you need to realise is that Orange understand how a bike works. Geometry is not static, it is fluid. And while we can quote figures with the best of 'em, it's not much use. Quite simply Orange design is dynamic, and when you ride an Orange you'll understand that no other bike rides the same.

For each model, we show fork travel recommendations to help you set your bike up to ride as it was designed. Pay heed to the advice and you will certainly have a bike that will give reliable and optimum performance. And your geometry will be spot on.



the Specific Technology thing

STRANGE SPECIFIC TECHNOLOGY

No compromises

STrange – a new way of confirming what we at Orange have always been about, Specific Technology. Where you see this logo you will know that the bike (or component) is designed to perform optimally for its specific purpose. We're not into the generic 'it'll do' attitude that all too often invades the sport. Some manufacturers are still prepared to compromise the frame so they can afford to 'over specify' the rear derailleur in an effort to try and fool customers into thinking they are getting value for money. Mysteriously, last years 'jump' bike becomes this years 'trials' model with a change of a decal. This runs against the grain of the Orange philosophy. With the frame being the prerequisite to a high performance mountain bike, Orange pay particular attention to both the design and materials used on all parts of the bike.
If it's Orange and it's STrange, it's specific!

The Gizmo

To help you match our frames with your talents and riding preferences, you will see a STrange-Gizmo for each frame that will help you choose the right one. The Gizmo's optimum icon ( ) shows what the bike was specifically designed for. However, the indicator lights show where each model also excels, or otherwise, in other disciplines.

The simple LED code is:
Red: Don't do it! You will not be covered by your warranty.
Amber: The bike will perform in that discipline, providing you keep within the extremes.
Green: Go for it, that's what the bike is designed to do.
None: Not specifically designed for that category, but hey, it's your bike, if you decide to race XC on your 222 let us know.

Please note that the STrange Gizmo is only a guide to help you before visiting your Orange specialist dealer for expert advice.

Riding Categories

We felt it necessary to go into a little detail about what we feel each category means. It would seem that some people have different ideas of what activities the various riding disciplines encompass. This came home to us recently when our friend Steve Peat was telling us about his local trailriding exploits. We turned a little pale at his descriptions of 20 foot drops, clearing doubles and the like. Where did all those open hilltop and forest singletrack trails go? Well, they're still around and we all love riding them and to us that's a trail. So for the record, here's what we reckon you should be looking at to keep your Orange bike in one piece:

International Downhill: Obvious really, you think you can beat Greg Minnaar. You're going to hit things hard. Only do this with a big hitting bike – 222

UK Downhill: Much like international downhill, it's hard on the bike, but courses tend to be less severe and more intricate. A minimum of a Patriot.

Dual: Balls out elbow to elbow racing, you will go fast, you will crash, you will win. You need a hardcore bike, whether suspension or hardtail.

Jump: Sessioning the local jump spot can be hours of fun on the right bike. On the wrong bike it will last only a couple of jumps and you will be trying it on with our warranty department.

Freeride: This is a tricky one. Freeriding is a widely used term, but the way we see it, it's downhill riding for fun or 'Steve Peat's trail riding'. Big hits, big drops and a fair pounding on rider and bike, it is important that you understand that the super-lightweight trail bikes are not built for this kind of er... abuse.

Trail: To us trail riding is just getting out there, whether it be the local woods or an epic adventure. Ideal territory for fast lightweights and loads of fun. We're not saying keep your wheels firmly on the ground, essentially just use your common sense. If you're going to go 'trail' riding with Steve Peat don't buy a super-light, buy a Patriot. If you want to keep up with us, a Sub 5 will be right up your street, and it doesn't mind the occasional 'internal' flight, just no 'trans-atlantics' - are you with us?

Touring: Load up with kit and ride your bike off to the hills. We would choose a bike with rack mounts (or a large Camelbak) and a tow bar... well alright, maybe not a tow bar.

Polaris/adventure race: Chances are this will punish you more than your bike. We would pick a real lightweight superfast race or trail bike and seek therapy.

XC race: In the cut and thrust world of MTB XC racing you need every advantage you can get. Basically an E-six or the new Sub 3.

the core tool for extreme downhill

When it first debuted on the World Cup scene the 222 undoubtedly turned more than a few heads. It was then in prototype phase with one of our up and coming Orange riders... Greg Minnaar. Greg became one of the key riders in the newly formed Global Racing team at the start of the 2001 season. The team specifically selected a full range of Orange downhill and dual bikes, however the 222 has shone brightly during the season as Greg's bike of choice to take him to the 2001 Tissot-UCI World Cup Championship - probably the most difficult honour to achieve in the sport. The Orange's simplicity and reliable consistency throughout the season in all conditions gave the team the ideal winning platform.

Evolved from the renowned Patriot chassis, the availability of longer stroke shocks allowed us to experiment further with the geometry. In common with the Patriot for its strength, the 222's monocoque 6061 T6 aluminium frame is extremely light. In a survey by German MTB magazine Mountain Bike Rider, the Global Racing Orange 222 was the lightest full DH rig in the World Cup paddock. This is a very significant factor. As anyone knows outright performance is directly linked by power to weight ratios. A light bike with a powerful rider has an advantage, period.

TISSOT
SWISS WATCHES SINCE 1853
TISSOT-UCI MOUNTAINBIKE WORLD CUP CHAMPIONS

The 222 chassis has an adjustable top shock mount which means that the frame angles, ride height and wheel base can all be altered to suit any rider or course. You can get a super-smooth eight inch swing from the new Extreme Beam rear end for big hitting courses, as well as making it into a fast turning, agile sprinter for tight and twisty ones.

The Horiz-Hold welded pivot with beefy 32mm bearings is still the key to our huge handling advantage, coupled with a bolt through rear axle, the 222 is one of the sharpest steering, big hitting downhill bikes ever. It makes sense to keep things simple, without complex linkages and multi-bearing pivots the Orange 222 is the perfect up-to-the-minute downhill competition chassis for a season of trouble free racing – with no constant fiddly maintenance, riders can get maximum time on the course to learn the fast lines.

Rich

Greg

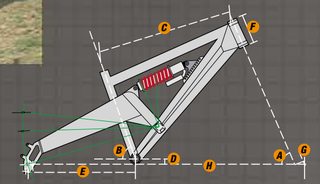
Adele

Caile and Waylon

"Acceleration is one of the strongest attributes of the 222. The high pivot doesn't waste any of the rider's pedal input going through the travel. The 222 jumps when you put the power down out of a corner."
Mountain Bike Action, USA, August 2001

"The 222 is without a doubt a key to me having won the World Cup this year. The lightness of the bike makes it easier to manoeuvre over the World Cup courses, and it's so much quicker out of the tight corners. Its design is simple yet strong, and this meant I never had a problem with the frame all year."
Greg Minnaar (RSA), Global Racing
2001 UCI World Cup Downhill Champion

"Don't let the simple looks fool you; the designers put a lot of thought into this bike. This isn't a bike for riders who mindlessly plow into obstacles – not that it can't handle this style of riding – but it comes alive in the hands of a precise pilot."
Mountain Bike Action, USA, August 2001



FRAME SIZE	15"
A. Head angle (nominal)	66°
B. Seat angle (nominal)	70°
C. Top tube length	521
D. BB height (nominal)	20
E. Chainstay length	438
F. Head tube length	120
G. Fork offset	Dependent on forks fitted
H. Wheelbase	Dependent on forks fitted
Rider height	—
Stem length	50
Seat tube ∅	27.2

Unless otherwise indicated all measurements are in millimetres.

RECOMMENDED 180 mm FORK TRAVEL
Type MAX: 180mm

HORIZ-HOLD ELPR
enhanced lateral pivot rigidity

PATRIOT the Original full on DH and Freeride performer

A privateer classic on the British downhill scene since its introduction. It seems that every car in the car park at race meetings has one on the rack – it's a pure performer. Using our 6061 T6 aluminium monocoque construction techniques including True Track head column and Lite Beam swingarm, we achieved DH strength yet XC lightness with an incredible lateral rigidity due to the Horiz-Hold welded pivot. The Patriot has the bigger 32mm bearing from the 222 to beef up the pivot area even more.

Designed and built in Britain for British DH courses which differ massively from the small 'cliffs' of World Cup races. To be competitive on the intricate wooded courses associated with the north of England and the sprinting courses popular in the south, a lighter, sharper bike was required. Team Animal Orange recognised that to win on these courses they needed a bike which was quicker handling and, most importantly, could be pedalled hard. The Patriot was developed as the new breed of medium-travel deadly downhiller, but with a single chainring and a set of single crown big hitting forks the Patriot has also established itself as a world beating dual competition bike. There are still many riders who like to dual with a solid hard tail like the Mslsle beneath them, but the fact that the Patriot chassis kicks so hard under pedal power is converting from full suspension. Missy Giove and young Mick Hannah of the Orange equipped Global Racing team swear by the Patriot for dual racing, they regularly kick some big name butts to prove it.

We're sure we will see more world podium placings for the sturdy Orange bike in 2002, but the Patriot isn't just about racing, with the lightweight chassis giving between five and six inches of travel it's a firm favourite with the extreme freeriding crowd. Its short wheelbase and precise handling with the facility to take a triple chainset give it all the qualities that make for a whooping freeride bike. As air suspension technology has developed with hardware like the SID shocks and long travel Psylo forks from Rock Shox, we can use the same Patriot frameset to build a radical off-roader, the hardcore rider's dream machine – enter the Patriot XC – a Patriot kitted out with the lightest yet most reliable components we could find. It's heavier than the super-light Sub 5, but aimed at the rider who wants to push all day at the hard hits and heavy terrain with the confidence that only the Orange Patriot series can inspire.

Patriot Single

"Orange make the lightest, strongest bikes out there. End of story!"
Missy Giove

Mick

Missy

Robin

"The Orange Patriot suits my style, as I like to throw the bike around a lot. It's positive in the turns."
Mick Hannah

Patriot LT

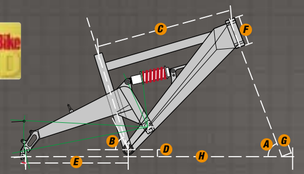
Best 'money no object' LT full suspension bike 2001 — Mountain Bike GOLD

Greg and Sean

Caile

Patriot SE

Robin



FRAME SIZE	14"	16"	18"	20"
A. Head angle	70°	70°	70°	70°
B. Seat angle	72.5°	72.5°	72.5°	72.5°
C. Top tube length	540	560	580	590
D. BB height	0	0	0	0
E. Chainstay length	420	420	420	420
F. Head tube length	120	120	120	120
G. Fork offset	Dependent on forks fitted			
H. Wheelbase	Dependent on forks fitted			
Rider height	4'6"-5'8"	5'6"-5'10"	5'8"-6'1"	6'0"-6'4"
Stem length	Dependent on model			
Seat tube Ø	27.2	27.2	27.2	27.2

Unless otherwise indicated all measurements are in millimetres.

RECOMMENDED 100-125 mm FORK TRAVEL
MAX: 125mm

SUB5 super lightXC Suspension Trailblazer

Sub 5 Deore Disc

The Orange Sub 5 has become the standard by which other full suspension trail bikes are judged. Its gimmick free simplicity and plain-to-see functionality has had test riders gobsmacked at its effectiveness.

The same design features that make the Patriot and the 222 the success that they are in world class competition appear on the Sub 5 too. It takes trail-blazing into a completely different arena, it will go anywhere and do anything. It digs in on climbs, and floats when descending with its fully active rear end with five inches of succulent wheel travel courtesy of a Rock Shox SID air shock. The ultralight 6061 T6 aluminium hand-built monocoque and custom butted tubing construction is now legendary, as are the Horiz-Hold pivot, Ultra Lite Beam swingarm, and True Track Head Column.

Did we mention the handling? You know what we're going to say … spot-on geometry, same rigidity and lighter than a Patriot it's got to be awesome hasn't it?

In all honesty, for an everyday off-road ride out where anything might be chucked at us, this is the bike that we'll grab more often than not. It's also a bike that will be a stalwart ally on the epic adventures where all-day-in-the-saddle comfort combined with pin sharp handling is an absolute must.

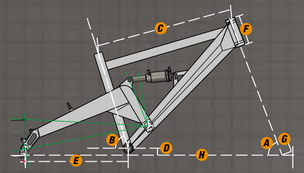
Available in five model specifications or as a frameset only to build into the trickest singletracking suzzer you've ever seen. You're spoilt for choice.

Sub 5 SE

Sub 5 Pro V

"The sub 5 is a firm favourite among MBR testers, thanks to its blend of comfort and big-grin assuredness. In fact we've had more 'fun' on it than just about any other single pivot XC specific bike we've tested. The riding position was spot on, with weight firmly over the middle of the frame for maximum balance and manoeuvrability"

MBR Magazine, September 2001



FRAME SIZE	14"	16"	18"	20"
A. Head angle	70.5°	70.5°	70.5°	70.5°
B. Seat angle	73°	73°	73°	73°
C. Top tube length	540	560	580	590
D. BB height	0	0	0	0
E. Chainstay length	420	420	420	420
F. Head tube length	120	120	120	120
G. Fork offset	Dependent on forks fitted			
H. Wheelbase	Dependent on forks fitted			
Rider height	4'6"-5'8"	5'6"-5'10"	5'8"-6'1"	6'0"-6'4"
Stem length	70	90	110	130
Seat tube Ø	27.2	27.2	27.2	27.2

Unless otherwise indicated all measurements are in millimetres.

Sub 5 SE with Diva package

the Diva package

Across the entire Orange model range for 2002 there is an optional package of parts specifically for women, comprising of a Manitou Mars Diva fork with a spring rate and damping tuned and tested for women. The perennial saddle problem is answered in the shape of the WTB Speed She titanium railed model.

MsIsle the mentalist dualist jumpist

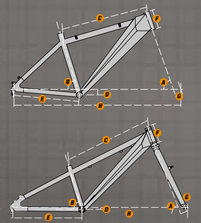
The world of pro-level dual slalom is a tough one. Dual and jump specialists demand strength, durability and a ride that will allow lines to be repeatedly hit with pinpoint precision. For demos and dirt jumps a frame has got to have the integrity to stand repeated beatings, bad landings and huge jumps. MsIsle is Pro-Issue to Global Racing and Team Animal Orange, and the frame you can buy will be a berm-banging hardtail identical to the ones they ride. With big 6061 T6 aluminium monocoque downtube, Quattro Box rear triangle and strong CNCed drop-outs, that keeps the back end planted when you're sprinting hard or nailing turns. The monocoque downtube, including True Track Head Column, holds everything in line for power-pedalling and steering accuracy in the heat of the competition.

The standard set-up is a single chain ring and chain device, but it's available as a frameset only, so you can build it up with a triple chain set for a stomping hardtail freeride bike that can session the local jump spot with the best of them.

"Dès qu'il s'agit de quitter le plancher des vaches, le Orange MsIsle se révèle un véritable avion de chasse, comme le laisse supposer son look radical..."
Velo Vert Juillet 2001

FRAME SIZE	14"	16"	ZERO 12"
A. Head angle	70°	70°	70°
B. Seat angle	72.5°	72.5°	74°
C. Top tube length	543	565	537
D. BB height	35	35	12
E. Chainstay length	420	420	400
F. Head tube length	120	120	120
G. Fork offset	Dependent on fork fitted		
H. Wheelbase	Dependent on fork fitted		
J. Rider height	5'1"-5'8"	5'7"--6'1"	—
K. Stem length	50	50	—
Seat Post Ø	27.2	27.2	27.2

Unless otherwise indicated all measurements are in millimetres.



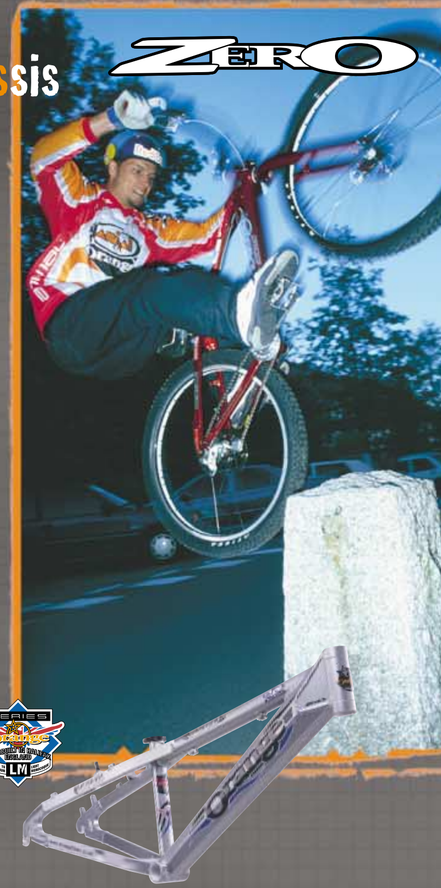
the precision trials chassis ZERO

Starting with a blank sheet of paper for the Zero, we called on some of the top riders in the UK and Petr Kraus from Team Animal Orange to help us get the design nailed. Petr's years of experience in choosing the highest, steepest, and trickiest lines over any terrain meant his little additions to the Zero make it one of the most competitive trials frames on the market today. Using the technology from bikes like the Sub 5 and MsIsle, the frame is nut-tough, while still being competitively light. The box section Quattro seat and chain stays add stiffness, which give the Zero a terrific direct feel. The reinforced head tube keeps your steering straight, no matter what. The rear end is as short as possible meaning that you won't damage the chainstay while you're on your bashring. We also conducted much of our R&D on the Zero using discs, so we're confident in our disc mount to be able to take whatever punishment comes its way. Available as frame only or a package with frame, fork, saddle/seatpost combo.

"Trials riding is all about confidence and nothing inspires it like the Orange Zero. I can take it to the edge, and hold it there."
Petr Kraus, 1999 Trials World Champion

Trials Specific Components

All part of the Zero package, components that perfectly compliment the Zero frame. Beefy trials specific fork with either Magura or V-brake mounts, plus a mini trials saddle and post combo.



SUB3 Radical Ultra-light XC smoothy

"With 3 hours to go I switched permanently to the Sub 3, my full suspension bike, the relief was great, it just rides so smooth."

Ben Bardsley from his 24 hour Red Bull Mountain Mayhem diary

New for 2002 the Orange Sub 3 incorporates the most radical geometry that we have ever applied to a full suspension chassis. With a 3 inch travel rear end, we went for the lowest bottom bracket height we could to significantly lower the centre of gravity. Along with the aggressive seat and head tube angles to keep the rider's weight forward, the Sub 3 gives very direct steering and surefooted handling.

The beautiful custom butted 6061 T6 front triangle has the acclaimed Horiz Hold welded pivot where it meets the new generation of Ultra Lite Beam swingarm – the 'Smoothy'. At first glance a seemingly impossible exercise in metal folding, it gets its name by its remarkable lack of welds. We have constructed the lightest, rigid swingarm structure yet to come out of our Halifax frame building shop. In Pro spec the Sub 3 is a sure fire hit in the 'lift' test. Simply pick it up and you will be astounded by its lightness, even with discs and a rear shock. We've even been asked 'Is it real?'

The short answer is a categorical 'yes'. A Sub 3 prototype was used by Ben Bardsley to race to solo victory in the 2001 24-hour Red Bull Mountain Mayhem marathon. Ben's plan was to ride his trusty E-six for its speed and use the Sub 3 as back-up when he tired. In the event he switched to the Sub 3 and found that his lap times remained just as consistent, but he had the added comfort advantage of 3 inches of plush rear travel. He never switched back. We think you'll feel the same way.

Sub 3 SE

E-six SE

E-six Pro

Pro spec XC racer

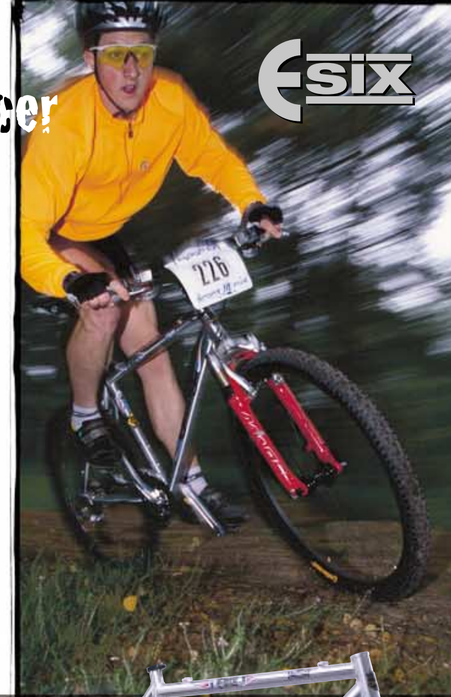
The Orange E-series of super-light cross country race bikes are true pedigree racers. A further refinement to our custom specified Easton Elite Superlight tubing makes this our lightest ever frame. We've always advocated the benefits of the monostay and we've tweaked the sleek 'S' shaped chain stays to provide an even more compliant and comfortable ride that still gives you the the kick-and-go response that you need from a competition race bike. Razor sharp handling, ultra light weight and championship winning heritage blend into a chassis with race blood coursing through its veins, yet it will happily perform all day as a very fast, but fun, trail bike.

Available in two options, the 2002 E-six SE is the lightest build of a bike with a suspension fork and disc brakes we have ever produced.

The E-six is built in limited numbers – you'll have to be quick to catch one.

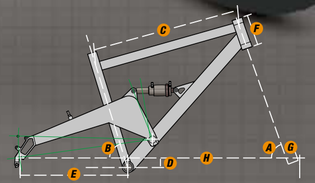
"Attacking the climbs, winging the singletrack and bombing down the descents - I was loving every minute of it. I was flying "This E-six is turbocharged" I thought."

Ben Bardsley from his 24 hour Red Bull Mountain Mayhem diary



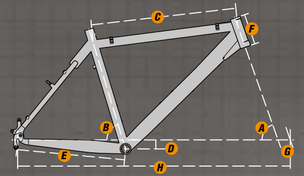
FRAME SIZE	14"	16"	18"	20"
A. Head angle	71.5°	71.5°	71.5°	71.5°
B. Seat angle	73.5°	73.5°	73.5°	73.5°
C. Top tube length	486	521	556	592
D. BB height	37	37	37	37
E. Chainstay length	415	415	415	415
F. Head tube length	120	120	120	120
G. Fork offset	45	45	45	45
H. Wheelbase	1020	1040	1060	1080
Rider height	5'3"-5'7"	5'6"-5'9"	5'8"-6'1"	6'0"-6'4"
Stem length	70	90	110	130
Seat tube Ø	27.2	27.2	27.2	27.2

Unless otherwise indicated all measurements are in millimetres.



FRAME SIZE	15"	17"	19"	21"
A. Head angle	70.5°	70.5°	70.5°	70.5°
B. Seat angle	73°	73°	73°	73°
C. Top tube length	524	544	563	583
D. BB height	35	35	35	35
E. Chainstay length	420	420	420	420
F. Head tube length	85	85	120	140
G. Fork offset	45	45	45	45
H. Wheelbase	1024	1039	1057	1070
Rider height	5'3"-5'7"	5'6"-5'9"	5'8"-6'1"	6'0"-6'4"
Stem length	70	90	110	130
Seat tube Ø	26.8	26.8	26.8	26.8

Unless otherwise indicated all measurements are in millimetres.



evO2 die hard aluminium trailster

It's not mechanically possible to build 'fun' into a bike, yet we've achieved it on the evO2. Sharing similar geometry to our race winning E-six, the evO2 gets its unique feel from the tuned chassis. Its heart is a huge custom-butted swaged downtube, designed for minimum deflection under steering torque giving great cornering performance and providing strength when landing those necessary moments of air time. Combine that downtube with the rest of our Series 14 7005 aircraft grade tubing, beefy gussets and a design which produces superb power transfer and you have a machine that will sprint, corner, climb, descend with less rider effort and more precision, leaving you to just get on and enjoy the ride.

evO2 disc

evO2 Deore

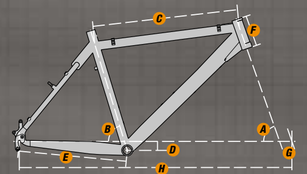
"...a bike that lets you ride how you want to ride, where you want to ride. Jumps, trails, races, whatever. This bike will do it all with confidence."

Maximum Mountain Bike

P7 Pro

FRAME SIZE	15"	17"	19"	21"
A. Head angle	70.5°	70.5°	70.5°	70.5°
B. Seat angle	73°	73°	73°	73°
C. Top tube length	525	546	565	585
D. BB height	35	35	35	35
E. Chainstay length	420	420	420	420
F. Head tube length	100	100	120	140
G. Fork offset	45	45	45	45
H. Wheelbase	1025	1043	1059	1074
Rider height	5'3"-5'7"	5'6"-5'9"	5'8"-6'1"	6'0"-6'4"
Stem length	70	90	110	130
Seat tube Ø	27.2	27.2	27.2	27.2

Unless otherwise indicated all measurements are in millimetres.



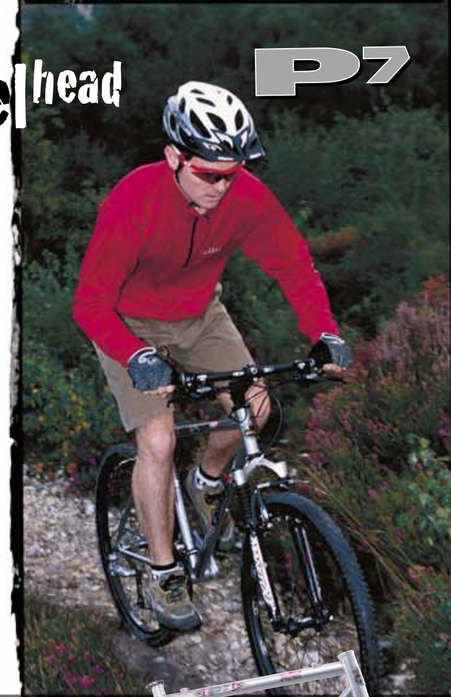
thoroughbred steel head P7

The nucleus of the P7 is the custom drawn Series 8 CroMo steel tubeset, that holds the primeval soul of a pure mountain bike, hand welded into a super-strong lightweight chassis that literally springs to life under your pedal strokes.

Far from old hat, steel frames have never been so technically advanced, albeit that the 2002 P7 chassis is in essence the same bullet proof workhorse as the original, it has up to date tweaks like disc brake frame mounts, new Manitou forks and comes in a choice of two specifications. The P7 is the bike for the hardcore obsessive – reliable, dependable and still the standard by which all other high-performance CroMo chassis are judged. If you are up for it, the P7 will go with you through hell and high water without complaint, it's the mountain bike equivalent of a soulmate.

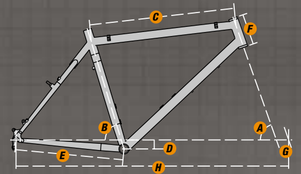
"Steel bikes are getting increasingly hard to find as the price of lighter aluminium frames drop ever lower, but they should still have a definite place in the rugged rider's heart. If you're after dependable, bombproof performance with lively feel then seek out the slim tubes of the P7. Steel is dead. Long live steel."

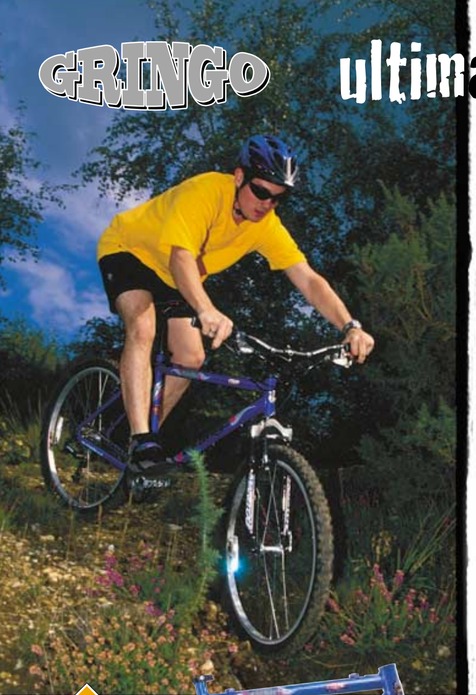
Maximum Mountain Bike



FRAME SIZE	15"	17"	19"	21"
A. Head angle	70.5°	70.5°	70.5°	70.5°
B. Seat angle	73°	73°	73°	73°
C. Top tube length	524	544	563	583
D. BB height	35	35	35	35
E. Chainstay length	420	420	420	420
F. Head tube length	85	85	120	140
G. Fork offset	45	45	45	45
H. Wheelbase	1024	1039	1057	1070
Rider height	5'3"-5'7"	5'6"-5'9"	5'8"-6'1"	6'0"-6'4"
Stem length	70	90	110	130
Seat tube Ø	27.2 shimmed to 29.6			

Unless otherwise indicated all measurements are in millimetres.





GRINGO

ultimate all-round performer

"...the ride is equally complete. Acceleration is prompt and direct while tracking precision is impressive - you get crisp lines through technical sections.
Throw the Gringo through corners and the Continental tyres slide controllably, the quick steering allowing you to regain bite at any moment."
What Mountain Bike - Spring 2001

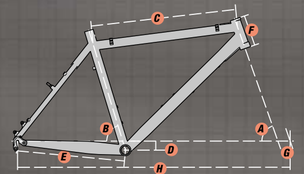
Fast becoming the de facto Orange all-rounder, the Gringo is designed specifically for the rider who wants the lightweight benefits of aluminium combined with optimum usability and comfort. The Gringo boasts a sturdy gusseted Series 12 custom-butted 7005 aluminium frame with features like disc-brake-ready dropouts, making it a fine platform upon which to plan future upgrades. Impeccable Orange geometry lets you dart through singletrack with flickability and finesse, yet the Gringo will also behave itself as the all day tourer with rack mounts as standard, ready to take the luggage. The monostay rear end with its huge mud clearance, Crud Catcher bosses and grease-ported Manitou Six comp forks (or a rigid fork option), make the Gringo an equally ideal partner for winter mud-plugging, as well as blazing those dusty trails on hot summer weekends.

What Mountain Bike GOLD

Verdict
This is all the trail bike you'll ever need

FRAME SIZE	15"	17"	19"	21"
A. Head angle	70.5°	70.5°	70.5°	70.5°
B. Seat angle	73°	73°	73°	73°
C. Top tube length	525	546	565	585
D. BB height	35	35	35	35
E. Chainstay length	420	420	420	420
F. Head tube length	100	100	120	140
G. Fork offset	45	45	45	45
H. Wheelbase	1025	1043	1059	1074
Rider height	5'3"-5'7"	5'6"-5'9"	5'8"-6'1"	6'0"-6'4"
Stem length	70	90	110	130
Seat tube Ø	27.2	27.2	27.2	27.2

Unless otherwise indicated all measurements are in millimetres.



clobber

A variety of biking and casual wear is available.. We frequently change the designs of these high quality limited edition items, so see your local Orange MTB dealer or check the Orange Mountain Bikes web site for the latest designs and items.

Orange Juice Bottle

Lightweight drink bottle with fast-flow nozzle. Ideal for racing. Features a handy fuel gauge!

Baseball cap

Heavy duty, embroidered baseball caps. Dark grey with Orange Mountain Bikes Wing logo.

8 panel lycra shorts

Anatomic eight panel cut with moulded seamless reinforced Eschler pad, leg grippers and drawstring waist with an Orange logo on the leg.

Printed T's

100% cotton, pigment washed. Orange Mountain Bikes winged logo. Designs can change and new ones are introduced frequently. Keep an eye on our web site
Colours: assorted.

Team Orange downhill shirt

Short or long sleeve, the official Team Orange downhill race shirt is made from 100% polyester, cut to fit over body armour with the Orange wing logo design on the front and back.

International distributors

Australia
Citrus Speed Imports, PO BOX 135 Leura NSW, 2780 Australia
Tel: +61 247 842044 e-mail: citrusspeed@hotmail.com

Austria
Indian Summer, Forchstrasse 232, 8032 Zürich
Tel: +41 (0)43 499 03 43 e-mail: mail@indiansummer.ch web: www.orangebikes.ch

Canada
Orange Mountain Bikes, N.A. 28752 Raintree Lane, Santa Clarita, CA 91350
Tel: +1 661 430 0064 e-mail: royalorange@juno.com

Denmark
TeknoRace, Randvej 22, 7150 Barrit
Tel: +45 75 69 15 83 e-mail: kenny@teknorace.dk web: www.teknorace.dk

France
Torch VTT, 20 Rue Yves Collet, 29200 Brest
Tel: +33 02 98 46 06 07 e-mail: info@torchvtt.fr web: www.torchvtt.com

Finland
Oy MTB Centre Finland, Laavukatu 8 D 14, 33580 Tampere
Tel: +358 (0) 40 511 7169 e-mail: mtbcentre@mtbcentre.fi web: www.mtbcentre.fi

Germany
Indian Summer, Forchstrasse 232, 8032 Zürich
Tel: +41 (0)43 499 03 43 e-mail: mail@indiansummer.ch web: www.orangebikes.ch

Italy
Ten Distribution, via Chiesa di Cortile, 84/b, Cortile di Carpi, MO 41010
Tel: +39 0536 950464 e-mail: guidetti.guidetti@libero.it

Japan
ASAP Co.Ltd, No.101 2-3-3 Okinabashi-cho Sakai, Osaka
Tel: +81-722 338710 e-mail: sales@asap.gr.jp

New Zealand
The Offroad Zone, PO Box 3376, NZ Post House, Wellington
Tel: +64 04 475 3437 e-mail: enquiries@orangebikes.co.nz web: www.orangebikes.co.nz,

Slovenia
Ten Distribution, via Chiesa di Cortile, 84/b, Cortile di Carpi, MO 41010
Tel: +39 0536 950464 e-mail: guidetti.guidetti@libero.it

Spain
Active Life Company, Avda. dr.. Gomez Ulla 18, 8°D Madrid 28028
Tel: +34 91 7253107 e-mail: nacsmith@openbank.es

Switzerland
Indian Summer, Forchstrasse 232, 8032 Zürich
Tel: +41 (0)43 499 03 43 e-mail: mail@indiansummer.ch web: www.orangebikes.ch

United States
Orange Mountain Bikes, N.A. 28752 Raintree Lane, Santa Clarita, CA 91350
Tel: +1 661 430 0064 e-mail: royalorange@juno.com

For the latest distributor information please check our web site at www.orangebikes.co.uk

Website

www.orangebikes.co.uk

The Orange Mountain Bikes web site is your ideal resource to find the latest Orange developments. You can check on team news and race results as well as grab sneak previews of new models.

You will also find the latest range of Orange clobber, components, deals and your nearest Orange dealer from the extensive list.

thanks

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Quote on back cover from This Game of Ghosts
by Joe Simpson.
Brochure designed and produced by
Hitman Design Partnership 01462 459010

‘Planet Earth is 4,600 million years old. We can liken earth to a person of 46 years of age. Nothing is known about the first years of this person’s life... only at the age of 42 did the Earth begin to flower. Dinosaurs and the great reptiles did not appear until one year ago when the planet was 45. Mammals arrived eight months ago and in the middle of last week man-like apes evolved into ape-like men and at the weekend, the last ice age enveloped the Earth.

Modern man has been around for four hours. During the last hour man took to agriculture. The Industrial Revolution began a minute ago. During those sixty seconds of biological time, modern man has made a rubbish tip of paradise.’

Please respect your planet and don’t buzz other trail users.

Naturally, this brochure is printed
on paper made from sustainable forests.

TISSOT
SWISS WATCHES SINCE 1853
TISSOT-UCI
MOUNTAINBIKE
WORLD CUP
2001
CHAMPIONS

Orange Mountain Bikes Limited
Unit 3, Brookwoods Industrial Estate
Burrwood Way, Holywell Green
Halifax, West Yorkshire HX4 9BH
England
Telephone: +44 (0)1422 311113
Web: www.orangebikes.co.uk
E-mail: info@orangebikes.co.uk

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