

Raven Catalyst

Rohloff equipped

issue1.0



St John Street Cycles

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Why are we making a mountain bike now, when we've never made one before?

The staff here have always been into mountain biking, Andy who designs our bikes, has owned and ridden MTB's since 1984.

But we have never thought that it was commercially viable to make one, and we never thought that we had anything new to offer... until now!



RAVEN CATALYST

Our interest in the Rohloff hub for expedition touring bikes has developed into a passion.

(See 'living with a Rohloff hub')

Out of that passion came the realisation that the hub would be perfect for an MTB designed for real world UK conditions.

✗ Who enjoys spending more time cleaning and servicing their bike than riding it?

✗ Who enjoys the sound of a chain slapping on the stays?

✗ Who thinks that stopping to free the muck from front and rear derailleurs in order to be able to change gear is fun?

5 minutes with a hose and the application of an enduro motorcycle chain lube every four rides or so is all the routine care the Raven Catalyst needs... plus a ten minute oil change once a year.

Does this sound good? →

✓ Can you then imagine the benefit of being able to change gear at any time, whether you are pedalling or not?

✓ Being able to get every last bit of service out of your chain ring, sprocket and chain?

✓ Not having to worry about trashing your derailleur on a rock?

Other benefits of the Rohloff hub are;

☆ there are 14 usable gears evenly spaced at 13.6% intervals.

☆ The cable adjustment is not critical... all the "indexing" takes place inside the hub!

☆ All the gears are obtained via a single twist grip, which is as bombproof as the hub.

☆ There is a perfect chain line in all the gears, this means vastly reduced chain wear.

☆ There is no possibility of chain "suck" or chain slap.

☆ The rear wheel is dishless and the spokes are shorter, which produce a much stronger wheel.

☆ When built in to a wheel the hub and the shifter actually weigh slightly less than the parts they replace.

☆ Most importantly of all Rohloff have **NEVER reported an internal failure** and some hubs have now covered 80,000Km of demanding cycling!

For more detailed information please see "living with the Rohloff Speedhub"

This is not just something new... this is something revolutionary!

Look at the high specification and you will see that it is also a bargain!

RAVEN CATALYST

Raven Catalyst

Rohloff equipped



Shown in the smallest size 531S

What are the differences that allow the Catalyst to be multi-functional, whilst the Enduro is so sharply focused?

The **Catalyst** is very similar to the **Enduro**... it uses the same Reynolds 853 tubeset, it has identical geometry, except the **chainstays** are **½" (1.27cm) longer**.

The Catalyst comes in exactly the same range of 5 sizes as the Enduro.



Why a different model if it is so similar to one we already produce?

The Enduro is designed for serious mountain biking in UK conditions, it is designed to carry only the smallest of loads, the Enduro is very precisely focused... the Catalyst is much more multi-functional. It can be built up into a bike which will excel in one of the following categories;

- [1] An easy going, low maintenance, less expensive, Rohloff equipped mountain bike.
- [2] A state of the art, trailer-pulling, round the world touring bike
- [3] A front suspension light touring bike with proper rear carrier and mudguards... in other words a supremely sensible hybrid with more sensibly sized wheels!

Difference One...

The, previously mentioned, ½" (1.27cm) longer chainstays and the provision of rear drop out carrier bosses (made possible by the absence of rear disc mount, which competes for space with dropout carrier eyes) means that **a standard rear carrier can be used**... this carrier can accommodate medium-sized rear panniers with heel clearance for most people, without putting too much weight too far back for optimum stability. (The extra ½" also allows the "maximum tyre width, with sensible clearances" to be increased to 2.3")



Difference Two...

The Catalyst has fittings for a proper rear mudguard...

These are [1] at the dropout [2] under the seat stay bridge [3] the back of the seat tube... this allows for massive mud clearance between the chainstays and bottom bracket when the Catalyst is in its MTB mode.



Difference Three...

The cable routing guides provided are for the standard, 500/14 CC OEM version of the Rohloff hub

This version of the hub costs considerably less than the 500/14 CC DB OEM hub fitted with the EX external gear mech (which **must** be used with the disc brake on the Enduro).

It is still possible to request the external gear mech version of the hub (500/14 CC EX OEM) as an upgrade.



Difference Four...

The Catalyst has V brake bosses... it does not have disc fittings.

Whilst expensive, top quality disc brakes are very desirable in heavy UK (winter?) mud, they can be a pain to maintain for everyday use. The discs brakes' rim-saving qualities can easily be duplicated by the fitting of ceramic rims. Their awesome braking performance in dry off road conditions or general road conditions can easily be **exceeded** by the fitting of top quality V brakes, especially when top quality levers are fitted, which can be adjusted for increased leverage. **In fact, in these conditions, the V brake is the brake of choice, having a much better "feel" with more modulation than a disc!**

On a tour a V brake needs few tools to maintain and it uses easily available service items (cables and brake blocks). It is often said that having disc brakes makes life easier because having a buckled wheel will not matter... this is not strictly true and please consider that during transportation of the cycle, a disc rotor itself is very vulnerable and once damaged a small warp in the rotor can not be removed... this produces a noticeable drop in the quality of the feel of the brake. A large deformation in the rotor may not be able to be straightened sufficiently to allow the rotor to pass through the calliper at all... if straightened but not perfectly true, the brake will be applied during every rotation of the wheel, making forward progress very frustrating... if possible at all! It is easier to true a buckled wheel than it is to replace a rotor!

V brakes can be easily adjusted to allow a slight buckle of the wheel to pass through them, almost without being noticed and a really seriously buckled wheel would need to be trued before it could be used with a disc brake in any case... it is impossible to ride a bike at speed with a seriously buckled wheel.

Car and motorcycle disc brakes often suffer from seized pistons when exposed to winter road conditions... there is no reason to believe that cycle disc brakes will suffer fewer incidents.

With today's motor vehicles you have no choice other than discs and considering vehicle weights and today's traffic, you would not want any other system... But you do have a much better option available to you, for most applications, on a bicycle!



Frame construction & features...



Why are we using steel for the frame?

Reynolds 853 is the highest quality steel available; our exclusive, medium weight, conical tubeset is, in our humble opinion, the finest 853 tubeset possible. Unlike some manufacturers, we also use ultimate quality steel for the stays, 853 stays are not available so we use Reynolds 725... it is a huge mistake to compromise on the quality of the stays because they contribute more than the main triangle to the quality of the ride!

If you have not ridden one of our state of the art steel frames you will be amazed at how comfortable, resilient and sweet it feels. You will soon see why we say "steel is real!" Top quality aluminium and cheap titanium frames feel vastly inferior. High quality Ti frames feel almost as good as our steel, but they are always expensive, they have few fittings and they often develop cracks. Perhaps it may become possible to join lightweight carbon tubes reliably one day... we will see. We continue to use steel because we believe it is the best material available and we guarantee our frames for life. These are not just empty words, we will still be in business to honour that guarantee if we need to!

How is the frame constructed and how well thought-out are the fittings?

✓ We really like neatness and we hate cable ties (we dislike the look of them, the way they collect muck and the way they cut wet hands), we have had considerable experience with touring bikes (!) So we know how frustrating it can be to have poorly considered braze-ons, it is easier to provide fittings with a steel frame... you may not always wish to use all the fittings, but if they were not there you would have no choice!

✓ The frames are beautifully TIG welded with V brake bosses. The frame has brazed dropouts... these are our own exclusive, socketed, stainless steel, Rohloff-specific dropouts (which obviate the use of a torque arm)



The other fittings are silver brazed, they are:

✓ Comprehensive cable guides for fully enclosed gear cables and brake line... the cables route on the top of the top tube to avoid as much muck being collected as possible and to remove any painful points of contact with shoulder blades if the bike is carried in this way.



✓ Bosses for a CRUD Catcher and two sets of bottle cages; the down tube bottle cage bosses are set high on the tube to allow easy reach of a 'sticky' drink, to allow a CRUD Catcher to shield the bottle from muck and to allow maximum shoulder room (if the seat tube bottle bosses are not being used) if the bike needs to be carried in such a way. The seat tube set are positioned to allow the largest possible size bottle to be used if and when necessary.



✓ The Catalyst has carrier bosses on the seat stays and bosses on the dropouts to allow a conventional rear carrier to be fitted. Whilst the frame certainly feels like it could carry much more, we say that it will carry 12 kg over rough terrain, as long as a little consideration is given to the impacts it is subjected to. If you wish to carry more than this you should use a trailer, in fact the Catalyst's rear triangle has been designed to be especially suitable for this purpose. The Catalyst also has bosses on the back of the seat tube, under the seat stay bridge and a second set on the dropouts to allow the direct fitting of a rear mudguard if desired, whilst retaining the huge clearances essential if mud is encountered.



Why the eccentric bottom bracket?

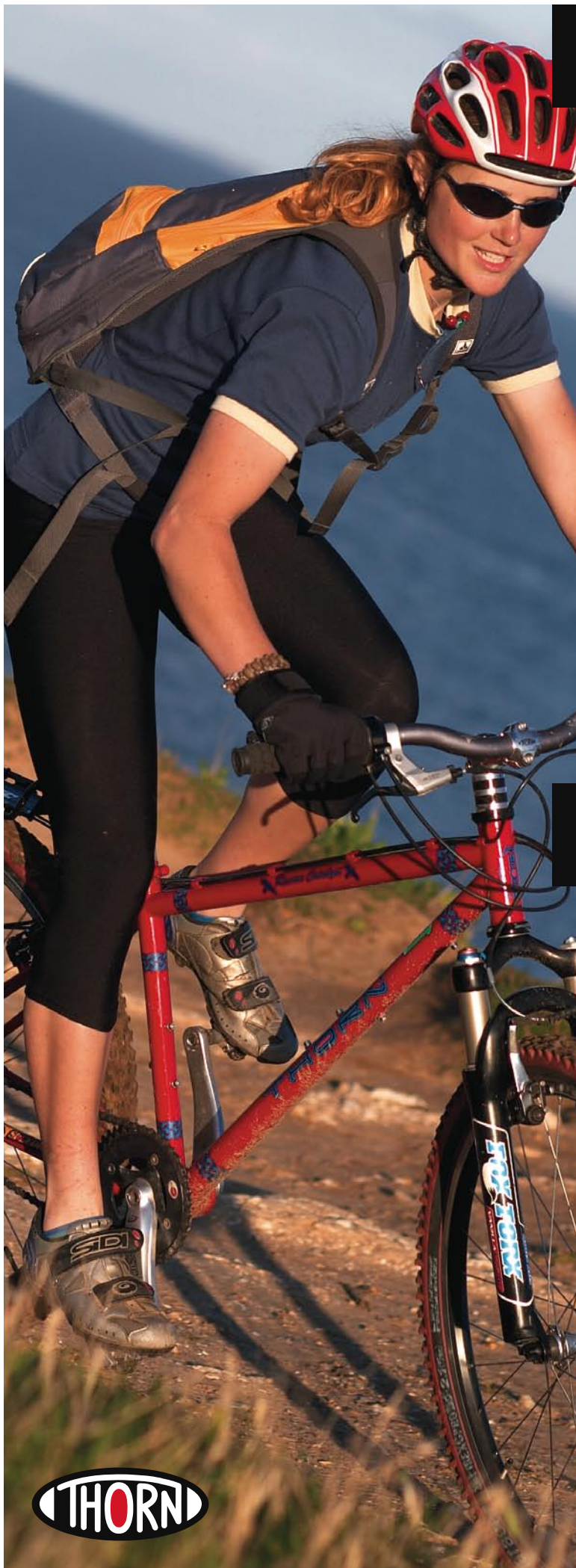
Because, quite simply, it is the best solution to chain tensioning.



Eccentric Bolt Torque:
10 to 17 newton-meter (torque)
7.38 to 12.54 foot-pound-force

Using "track ends" would mean that a torque arm had to be used; this would make wheel removal a chore. Sliding dropouts are more fiddly to adjust than an eccentric bottom bracket. We have sold literally thousands of tandems fitted with eccentrics and as a consequence, we have the most simple, trouble free solution available to us.

A chain tensioner really is a non-starter for us, when the transmission wears, or you fit a new chain, the tensioner will allow the chain to jump. It even gives you something to aim at a rock or jam with mud!



What size Catalyst should I have?

There are 5 sizes available, these sizes range from small to large, with different top tube length options.

Because the suspension fork takes up so much room, and because for UK conditions we wanted to be able to fit a CRUD Catcher, we cannot make any extra small sizes. We have chosen not to make any extra large sizes either because, for the intended uses, we would have needed to commission a new tube set.

Size Small... this is the smallest size we can make using a straight top tube and a diamond frame design, with CRUD Catcher clearance, to allow it to be as small as possible. It has been designed to perform at its best with 80mm travel forks. This size could suit some men but it has a short top tube and it is designed to be perfect for most, averagely proportioned, women from 5'5" to 5'8".

Size Small Extra Long... this size gives much more reach for slightly shorter than average people with shorter than average legs... it too is designed for an 80mm travel fork.

Size Medium... This frame is almost as small as we can make with 100mm travel forks and CRUD Catcher clearance... it should suit averagely proportioned people from 5'9" to 6'

Size Medium Large Extra Long... This size gives a more aggressive position for averagely proportioned people from 5'10" to 6'2" or a more conventional position for tall people with shorter than average legs (long backs). It is designed for 100mm travel forks.

Size Large... this is the largest size we make, it is designed for 100mm travel forks and is suitable for taller people 6' to 6'3".

Which fork should I choose?

The best fork for you (or the best compromise) will vary with the intended use.

If you want the lightest possible bike then you will save over 1Kg if you choose the Pace RC31 fork. However if you want to cover rough terrain quickly, with maximum comfort, you need a suspension fork.

The Fox Vanilla is a very reliable, efficient and long-lasting fork... buy this if you can afford it and you won't regret the decision. The Rock Shox Psylo XC is slightly lighter and considerably cheaper initially but it will almost certainly cost more in the long run than the Vanillas. The Psylo XC is probably the best and most reliable "budget" fork... anything cheaper than this will almost certainly prove to be only of short term ornamental use! We expect our cycles to be ridden and consequently we do not wish to supply components which we are sure we would have to replace inside the warranty period.

If you want a comfortable fork for day to day use, on rough roads, cycle tracks and towpaths, you could use a suspension fork if you wished. But, it not only costs more initially, it will also cost money to service. We think that the rigid Pace RC31 fork is a better option for most people for this sort of use. The service costs, for suspension forks, is probably 4p per mile... only you can decide if this sounds too expensive, or a bargain!

If you want to go on long "adventure touring" holidays, covering rough terrain, perhaps pulling a trailer, you should choose the Vanilla fork and have it serviced before you leave and again when you get back. (Of course this does depend upon the length of the journey)



If you want to literally tour the world, whilst pulling a trailer, and you don't want to service your own fork en route (or plan your route going from one service centre to another... which might actually be fun!), you should either choose the Pace RC31 fork or reconsider your choice of bikes... a high-specification Raven Tour would probably be a better choice.

If you usually use your bike for day to day travel but you occasionally want to spend long periods of time doing some fairly serious mountain biking (or going on an "adventure touring" holiday), you could consider having both forks. If you also have both forks fitted with V brakes, it should only take 10 minutes to swap them over... and, as a bonus, you would then have no front mudguard to deal with on the suspension fork!



PACE RC31 (Dark Option), very comfortable RIGID carbon fibre blade fork 695g.

- > Hollowform cold-forged, heat-treated C.N.C. machined crown, very light and stiff.
- > Hollowform high modulus composite construction carbon legs.
- > Hollowform 7075 T6 steerer, high purity magnesium dropouts (ISO disc-ready).



Fox Vanilla RLC - 100mm travel (80mm travel on 531S & 532XL) Currently the most reliable, laterally rigid, bomb-proof fork on the market!

- > High-flow, open-bath damper with Shimmed Damping Control and 3-Way top-cap adjusters for on-the-fly convenience.
- > Pre-load adjustable coil main-spring with coil negative-spring system.
- > 12-click, externally adjustable, rebound damping.
- > 9 position low-speed compression adjustment.
- > On-the-fly lock-out feature.
- > Adjustable blow-off threshold.
- > Approx Weight: 4.24lb (1.92kg)



Rock Shox Psylo XC U-Turn

- U-Turn external travel adjuster: 80-125mm travel.
- > HydraCoil 2 damping.
- > External rebound adjustment.
- > One piece magnesium legs.
- > Forged 6061 aluminum crown.
- > Aluminum steerer.
- > 30mm EA70 upper tubes.

What will happen if I use a fork with different travel to that which is intended?

Using an 80mm travel fork on a frame designed for a 100mm travel fork will steepen the head and the seat angles by 1° degree; the change to the seat angle can usually be compensated for by sliding the saddle back on its rails... but the change to the head angle will affect the way the bike handles. The delicate balance between sharp handling on singletrack and stability on fast fire roads will be changed... the bike will be even sharper on singletrack, but may exhibit instability when taking big hits at high speed, especially in strong cross winds. The top tube will also be lowered by approximately 20mm. The converse will also apply when fitting 100mm travel forks to a bike designed for 80mm.

Why don't we have a full suspension frame?

Our bike is not only suitable for cross country use, it is also ideal for extended lightweight tours, day to day transport and (as mentioned several times elsewhere) it is suitable for heavy off road touring if a trailer is used. The Catalyst has been designed to perform any or all of these tasks with the minimum of maintenance... by comparison a full suss bike demands very high maintenance, for very little (if any) benefit in most conditions. Indeed, in many off road situations a "hard tail" would be preferred to a full suss bike even if there was no maintenance penalty... this is especially so when carrying loaded panniers or if a trailer is being pulled.

For down hill racing or fairly extreme free-riding, we accept that you need a full suss frame... indeed, we would want one ourselves for these styles of riding! We also accept that, in certain situations, a full suss XC frame has the edge on a hard tail. But we are convinced that, when using a carefully set up Thudbuster suspension seat post, our steel hard tail is almost as comfortable over long distances and severe terrain, as the most expensive full suss XC frame. But when you get out of the saddle and push hard, there is no comparison... our bike really flies!

Remember our bike is a steel hard tail... in fact to call it a hard tail is most unfair on it... really we should call it a "resilient tail"!

In UK conditions the six or eight pivots now used to try and replicate the ride of a hard tail when pushing hard are very time consuming and costly to maintain. Sooner or later this will consign your new toy to the bin. Furthermore there is not enough clearance on any full suss XC bikes we have seen (or owned) for winter conditions and 2.1" tyres.

Our bike is much cheaper to run, will last much longer, won't clog with mud and most importantly... when you are trying hard it is more responsive too.



Choosing your Catalyst specification...

I like the idea of V brakes... what is the ultimate set up?

Currently, Shimano XTR V brakes and levers and either Mavic XC717 ceramic rims for mountain biking or Mavic EX721 rims for heavier duty work, are the ultimate set up.

I want to tow a heavy trailer very long distances over severe terrain, I want the strongest, most trouble free wheels possible, what rim should I use? Which tyres should I choose?

The Sun Rhino rim will outlast all other rims... its heavy weight is entirely due to the thickness of the aluminium used... especially at the braking surface! We have literally sent tandems around the world on this rim and the wheels have stayed so true they did not have to be touched! If you don't want the weight, if you have sufficiently deep pockets, if you are prepared to use a spoke key occasionally and you do plan to end your journey at some point (!) the Mavic EX721 Ceramic rims are a better option. Whilst Schwalbe Marathon XR 1.9" tyres do not roll as quickly as most other tyres they are really tough and last longer than any other tyre we have tried... you need to have a good reason **not** to use these!

I want to use the bike every day, in all weathers, to commute on tow paths, jump kerbs etc, I would like light weight and minimum maintenance, I want a good spec, but I don't want to blow the budget, what would you suggest?

Shimano Deore V brakes... these are powerful and work sweetly, consider XTR if you live in a hilly area and/or travel at high speed in traffic!

Mavic XC717 ceramic rims... these will last well and, being lightweight, give you a turn of speed.

Schmidt dynamo hub... you will always be able to see where you are going when it gets dark.

Pace RC31 fork... very light weight, no maintenance at all, good comfort on non challenging surfaces and we can easily fit guards to them.

Panaracer Pasela 1.75" tyres... fine on tow paths, great on country lanes, quick in the town.

SKS P55 mudguards... strong, durable and very effective.

Thorn Standard rear carrier... with perfectly aligned Vista LED bracket... carry the shopping home, or the notebook to work... and be confident of being seen in the dark!

I want to use one bike to commute to work, to go on holiday and to take mountain biking at the weekend, what would you suggest?

Shimano Deore V brakes... these are powerful and work sweetly, consider XTR if you are very serious about your mountain biking.

Mavic XC717 ceramic rims... these will last well and, being light weight, give you a turn of

speed, consider **EX721 ceramic rims** if you will be doing a lot of trailer pulling.

Fox Vanilla forx... These are the longest lasting, most reliable, plushest riding and, to our knowledge, the lowest maintenance fork currently available.

Panaracer Pasela 1.75" tyres... fine on tow paths, great on country lanes, quick in the town.

SKS P55 rear mudguard... strong, durable and very effective.

CRUD Catcher... front 'guard'... this will provide some protection during wet commutes, Consider also fitting an Ortlieb bar bag, which will provide even more protection from tyre spray.

Thorn Standard rear carrier... with perfectly aligned Vista LED bracket... carry the shopping home, your panniers on B&B tours, or the notebook to work... and be confident of being seen in the dark!

Cateye HL-EL500 front LED light... ultimate in reliability with high visibility, consider an additional high performance rechargeable system if you travel on unlit routes.

The above spec will work well as a commuting or light touring bike... For cycle camping holidays, simply tow a trailer;

For weekend MTB use, remove the carrier and rear guard, change the tyres to 2.1" Panaracer fire XC and away you go!

What other upgrades should I consider?

With a Rohloff transmission and a high quality chainring, you really do not need expensive components. Of course for some people carbon bars, stems and seatposts enhance their enjoyment... they certainly look good, save a little weight and give small increases in comfort... they are desirable but not essential. More expensive chainsets, bottom brackets and chains may also be desirable but far from essential.

If you ride at night a Schmidt dyno hub is certainly worth having... specifying one when you purchase the bike is, by far, the most cost effective option.

Ceramic rims are a good (if expensive) option for most people and upgrading the brakes to XT levers or full XTR will be of benefit to those who really push the limits.

We can offer a multitude of options... you can specify every detail of your bike if you wish, or simply accept that one of the standard bike specifications will give excellent service and value for money. For more specific uses, the options outlined above are highly recommended.



3 Colours

Gloss Red Powder Coat



Gloss Blue Powder Coat



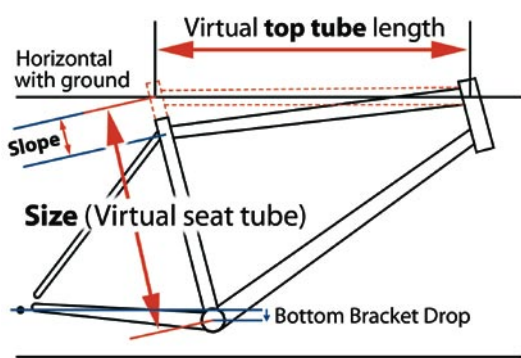
Satin Charcoal Powder Coat



St John Street Cycles is a trading style of Thorn Cycles Ltd (Incorporated in England 4121096 - registered office: St John Street Cycles 91-93 St John Street, Bridgwater TA6 5HX)

Please Note:- Occasionally some items become unavailable for long periods of time. We reserve the right to substitute items of similar (or greater) value where there will be no adverse difference in function. No surcharge will be made.

Frame Geometry & Sizing.



Size Virtual Seat Tube (mm)	Frame to suit Riders...	Seat Tube (centre to top) (mm)	Seat Tube (centre to centre) (mm)	Slope (mm)	Fork Travel (mm)	Virtual Top Tube Length (mm)	Seat Angle° (degrees)	Chainstay Length (mm)	Bottom Bracket Drop (mm)
531 S	Mainly for women (short top tube) 5'4" or taller	380	330	203	80	570	74°	408	32
532S XL	People with short legs & long bodies (long top tube) 5'6" to 5'10"	410	360	174	80	615	73.5°	408	32
558 M	Average sized men & tall women 5'8" to 6'	444	394	165	100	600	73°	408	25
564 ML/XL	Taller than average with shorter than average legs 5'10" to 6'2" or modern sporty/racing type position (long top tube, short stem)	465	420	145	100	635	73°	408	25
588 L	Taller men (very tall women?) 5'11" to 6'3"	482	432	157	100	625	72.5°	408	25

Why the bikes are called Ravens

Rohloff have long used the raven as their logo; we asked their permission to use their artwork and the name 'Raven' on our new, Rohloff-specific bike, and Rohloff were kind enough to grant us permission.

Had Rohloff used a wild boar as their logo, we would not have asked to use the name.

We admire ravens because they are considered to be the most intelligent of birds, they are also very social birds and in the wild they are only to be found high up in the mountains.

We like to think that fellow cyclists are intelligent, social creatures and cycling is usually at its best in the mountains.



UNIQUE
THORN
100
DAY
PLEDGE

Find out for yourself why so many of our customers own more than one Thorn bike!

- ☆ We are so convinced of the superiority of our product that we will make you the following offer...
- ☆ Buy a Thorn Raven Catalyst, ride it for 100 days & if you are not totally delighted, we will give you all your money back...

Beat that!



Mud & Muck...
No worries!



Look at the bar...
LEVEL!

is it heavier?... No!