



Rohloff eXp Range

issue: 4

The Rohloff equipped eXp Range... created from steel, in Somerset, by Kevin

Thanks, to the phenomenal reliability and success of the Rohloff hubs on our Thorn Raven range of cycles and the fantastic reviews and glowing testimonials we have received over the years for our (derailleur geared) eXp frames, the decision to combine the Rohloff hub and the eXp frame together is, most certainly, the proverbial "marriage made in heaven"! We offer an exclusive range of three, "hand made in Somerset," Rohloff-equipped touring bikes. All the bikes have Reynolds 853 frames with 725 stays, they all have eccentric bottom brackets and they all use our exclusive Rohloff-specific, cast stainless steel, socketed rear dropouts and stainless steel cable guides... these bikes are:-

[1] You have the possibility of having the highly rated and much loved **eXp** with all the guides and fittings for a Rohloff hub... this (not surprisingly!) is known as a "**Rohloff eXp**". The **Rohloff eXp** is the most versatile bike in the range; it will do everything a Raven Tour will do... except it will carry even more weight... should you need it to! (Or it will carry the same load with even more poise). The sealed frame and "531 super tourist" twin plate crown fork, is beautifully fillet brazed, it has many unique touches, it is agonisingly beautiful (in a butch, purposeful way) and, because it is painstakingly hand made in the UK, it is almost twice the price of a Raven Tour! Should you be a strong, powerful rider, who wishes to carry heavy kit, on extended tours, over the worst terrain, you should really try and afford this bike! If you have a more modest physique and/or ambitions but you just want one anyway... we understand completely! The **Rohloff eXp** has clearances for 2.25" Schwalbe Marathon XR tyres with guards (the current expedition tyre of choice). There are 16 sizes, a choice of any colour and many more custom options, including the **choice of cable routing** for the standard Rohloff hub or the option with an EX box.

[2] A slightly more expensive, tighter, more road-going, Rohloff eXp frame, known as the "**Rohloff eXp R**" is now offered. Compared to the Rohloff eXp, it has straight and slightly shorter chainstays, shorter fork blades and a lower BB height, which lowers the centre of gravity, which is ideal, provided you rarely travel over a surface much more "off road" than

Rohloff eXp R



Rohloff equipped 26 inch wheel - Expedition touring cycles

a tow path. This machine is built for 1.75" tyres with guards and sensible, "road" clearances (there is just enough clearance for 2.0 Marathon XR tyres without guards and, because of the BB height, the minimum tyre size is 1.5"). This frame is made from oversize, non tapered 853 (with 31.8mm seat tube) it has flat oval bridges. Kevin has agreed to make a custom fitting, very strong but lighter weight, rear carrier, with 6mm bosses, for these frames but only if it is ordered before the frame is painted (the frame itself is used as a jig for the carrier).

The **Rohloff eXp R** really does look the business... and it is perfect for road use. It was designed to allow you to take full camping kit and provisions, efficiently, over the worst tarmac in (for example) the Alps and still be able to enjoy the thrilling descents. Yet, when you drop your bags at base camp, the bike is sufficiently lightweight and resilient enough to perform in true thoroughbred style! (Which also makes it the best, and probably the most expensive, commuting bike in the world... providing you have somewhere secure to park it at work!) If this is your sort of cycling and you have the funds, the **Rohloff eXp R** is worth a look... be warned though, this thing of beauty will make you want it to be your joy forever... the quality of every detail of our work, the 531 ST fork's twin polished stainless crown plates and the head tube's stainless badges will make your jaw drop! 27 different sizes available! Cable runs for the standard (lighter) Rohloff hub.

[3] After many years' prototyping, by Andy and Fiona, the definitive **eXXp** (E, double X, P) has finally arrived! It has the same frame tubes as the Rohloff eXp R but it uses different stays, which are cranked to allow the fitting of up to 2.4" knobby tyres...

with huge mud clearances, if desired! The **eXXp** is designed for Adventure Touring holidays (long distances, with heavy loads over severe terrain). The eXp is suspension specific, i.e. it is designed for a suspension fork (Magura Odur) with 100mm travel. It has the cable runs for an EX hub, reinforcing tubular gussets at the back, 6mm carrier bosses and, whilst at present there are no discs available (which we would recommend) for Adventure Touring, we have "future proofed" the frame by providing ISO disc mounts and carefully considering the potential for neat routing of a hydraulic line... we have also chosen to fit V brake bosses with removable studs, should a disc be used instead. An additional, extra-long, rigid, twin plate crown fork (to compensate for the suspension specific geometry) can be supplied to allow the **eXXp** to be suitable for economical day to day use or for a really epic journey,

when servicing suspension would be impractical. Compared to the Rohloff eXp, the **eXXp** has slightly longer chainstays, because with a suspension fork, most of the weight has to be carried on the back of the bike and bigger bags need longer chainstays to help keep the weight within the bike's wheelbase. The eXp is both huge and ruggedly good looking... like a Clydesdale... our bikes (Andy and Fiona's) are called "Bertha" and "Hector." These magnificent beasts have just returned from a long holiday in Patagonia, where they performed faultlessly and both flattered and cosseted their owners, by covering the extremely demanding terrain in impeccable style, whilst carrying full camping kit and up to 10 days shopping!

The **eXXp** is, as you might expect, the most expensive of our solo bikes. It is available in just 10 sizes... we can't do "small" with suspension forks!



In anticipation of them, Andy B. answers some questions you may ask

I want one of these bikes, but which bike should I choose?

I have outlined the uses of the bikes in the above text; I am always prepared to talk on the phone, when I am at work. I will say that, if you never intend to fit tyres fatter than 1.75", the Rohloff eXp R does look more elegant than the Rohloff eXp (with the same width tyres) because it is less "gappy"... but I would just like to repeat that, if you are going to do anything much more off road than tow paths, don't have a Rohloff eXp R... the bottom bracket is not high enough... unless, of course, you are contemplating an eXXp as well! If you are considering an eXXp for purely road use, please remember that the running costs (servicing the suspension fork) are much higher than with a rigid fork... and the long rigid fork available for the eXXp does not look as attractive as the rigid fork on the Rohloff eXp. There is a large overlap in the abilities of each of the bikes, so the choice really is yours.

These bikes are expensive, what kit should I have on mine, I don't want to waste money?

These bikes are expensive because, in my opinion, they are the best bikes available anywhere, we have put so much work into them, they deserve the best kit... which will last longer and give less trouble (or provide extra comfort... I'm thinking of carbon seat posts and bars here). If I was on a tighter budget, I would prefer to use a well specified Raven Tour, to a poorly specified member of the eXp family. We give suggested ultimate specifications for each of the bikes and a list of recommended accessories / upgrades. You will notice that we give two ultimate specs for a Rohloff eXp... the first is a general purpose on-road spec, (with the standard Rohloff hub)... that is for day to day use, long camping holidays etc. The second spec is for off-road use or a really long overland trip (cycling the length of the Americas or cycling to Australia for example) this uses the EX box version of the hub.

I see that much mention of your twin plate crown forks is made in your literature, what advantages do these forks have over more conventional forks?

We have rediscovered the multiple benefits of the twin plate crown (TPC) fork; we used to claim three advantages, now thanks, to the need to have a long fork to substitute for suspension, we can claim four advantages: - Firstly, the two plates weigh less than a conventional cast crown of the same width and strength. Secondly, the increased

separation between the plates vastly increases lateral rigidity, which gives far superior handling, without sacrificing any comfort. Thirdly, being of a military grade of malleable steel, the crown is much less likely to suffer from cracks after being straightened, for temporary use following impact damage. And fourthly, a TPC fork can have a large gap between the plates, which means that it can be built much longer...producing a much more effective substitute for suspension forks.



What is the difference between the standard and the EX version of the Rohloff hub and what is the difference in the cable routing?

The standard version uses continuous outer casing from the shifter, via the underside of the top tube, to adjusters located on the left hand side V brake studs, the inner wire (1.1mm) then continues as bare wire to bayonet connectors, by which they are connected to the 0.9mm rubber-booted wires, which operate the gear mechanism. With the (100g heavier) EX version, the outer casing and 1.1mm wires run down the side of the down tube, under the bottom bracket and under the left hand side chainstay, to a box which is thumb-screwed to the hub. This is not as neat, or as light as the standard hub but, it uses conventional 1.1mm gear wire throughout, which is easier to obtain worldwide. The main advantage is that the continuous outer casing is better sealed against mud and sand... I think that the standard version is better for road use and the EX version is more suitable for off road or expedition use. **(The extra guides required for the EX version also add to the cost of a Rohloff eXp frame)**



Do I really need XTR V brakes?

No, you don't actually "need" them; they are simply the best V brakes that have ever been made! They are lightweight but very robust and durable, the pivots in each arm and the pivot in the brake levers is an adjustable, re-buildable, well sealed ball race... these bearings give the brakes a very light, smooth action. The heavy-duty, parallel-push linkage design keeps the pads parallel with the rim, giving excellent braking power, modulation and longer pad life. The cartridge system allows quick replacements of the brake pads... new pads simply slide into place on the shoes and no further adjustment is (usually) required. All the hardware is of the highest quality and the brakes are very easy to adjust and maintain... as well as being the most powerful V brakes we have ever used!



Which tyres should I choose?

Given that these bikes are designed for hard use, I don't think that there is any point in having anything other than either Schwalbe Marathon XR or 2.25" or Panaracer Tourguard 1.75" tyres; you should have the Tourguards on a Rohloff eXp R; you should have the Marathons on an eXXp. Which you choose on a Rohloff eXp, depends on what you want to do; the Tourguards are extremely reliable, they are light, they grip well on the road, where they are faster than the Marathons. The Marathons are the ultimate in reliability, they are very comfortable and they work very well on dirt roads, especially at low pressures, where they allow much swifter progress than the Tourguards.



Which rims should I choose?

The EX721 ceramic rims are very strong, the ceramic braking surface is very hard wearing and they keep very clean... I like them. You should certainly choose them for a Rohloff eXp R and probably for an eXXp... if you are going on very extended tours, on poor surfaces, well away from civilisation (and bike shops), you may wish to specify the bomb proof (but heavier) Sun Rhynos on your Rohloff eXp.

Which chain should I choose?

If you intend to look after your chain,

choose the Rohloff 8 speed chain... it is the hardest wearing chain I have ever used! If you don't intend to clean and maintain your chain, you should choose the cheap Sedis chain (and be prepared to replace it frequently).



Should I choose a Schmidt dyno hub upgrade?

If you intend to ride much during the hours of darkness the Schmidt is, beyond doubt, the best solution on a touring bike... they are very reliable and silent; you can see where you are going, you don't need batteries and now is the cheapest time to fit one! I wouldn't want to be without one on my Rohloff eXp R; we chose not to use dyno hubs on our eXXps, because (off road especially!) the plan is to always get the tent up before dark and the Cateye EL400 (LED) front light gets us out of a jam in an emergency if/when we find ourselves in civilization.

What gearing should I choose?

I hate walking up hill with any bike, so I have the lowest gears that I will need, to cycle up just about any hill, with the luggage I am carrying... we carry lots and we enjoy being in challenging terrain, we don't mind freewheeling down hill and we have never had a tailwind on the flat (!)... so we have very low gears indeed! (Especially on the eXXp's and, yes, they often do feel under-geared, especially without a load... but I built our bikes to haul kit!). Whilst you may not wish to have gears as low as we have, I urge you not to over-gear your bike. Count the teeth on the chainring and sprocket, on your current bike and see what gear you need as your lowest gear for the kit you will take, on the roads you will travel. Then look at our "Living with a Rohloff Hub" document and study the gear charts... don't worry too much, it is fairly inexpensive to change a sprocket or a chainring, if you get it wrong.

Can I have disc brakes on my eXp?

We could fit disc brakes to the eXXp (as this uses a suspension fork)... this may make sense, even with the brakes currently available, if you want to cycle camp, almost exclusively, on mucky alpine mountainbike trails and you always remove the rotors before traveling by air or by bus.

We will not fit disc brakes to our own steel forks and we expressly forbid the modification of our forks to accept discs and we give clear notice that we will not accept responsibility for anyone else's (rigid steel) forks... there have been too many accidents... caused by the rotational forces prising the axle out of the dropouts. To make a steel fork safe for a disc, it would need a through axle and it would also need to be so "beefy" that it would no longer be comfortable; in fact it

would be so harsh, that permanent nerve injury would be a distinct possibility... hardly what is required and/or demanded from a touring bike! We care about our customers and, even if some are willing to risk a potentially fatal accident, we also care about our continued ability to trade... **so this issue will never be negotiable.**

Reynolds steel forks are a miracle of engineering; they have been developed to be both strong and comfortable, by a process of trial and error, over many decades (before the current climate of litigation!) Hundreds of millions of tough miles have been covered with them... they work!

We think that there is currently little point in having (and carrying spares and tools for) a V brake at the front and a disc at the back, especially when you consider that there are no international standards for replacement pads or lines, rotors can (and do) get bent on tour and they are virtually impossible to true again, fluid can boil, pads can glaze over, lines can become detached and spare parts are hard (or impossible) to find. To repeat myself, although few people have experienced them, XTR V brakes, acting upon ceramic rims, are wonderful brakes... they are easy to work on, they have great "feel" and they are plenty powerful enough... Fiona and I have reached 75 kph on the "Ripio" in Patagonia (almost random collections of different sized gravel, stones and rocks, masquerading as roads) with full kit, on our eXXp's and were not at all anxious about our ability to "stop within the distance we could see to be clear"! Please note that, because we were using Fox Vanilla forks, we could have chosen discs... had we so wished!

Andy B. (frame designer and test pilot) June 2005

Paint Finish

Andy, our frame designer, knowing he had designed the finest expedition frame wanted it to look good too. There may be a case for having a "doesn't stand out from the crowd" matt black powder coat but you do stand out from the crowd just by having all those bags on board! So Andy wanted a very attractive finish, that may get respect from baggage handlers and that can be easily touched up... Expedition bikes get scratched!

Standard finish is our "full retro finish" in your choice of colours. Because this finish is unique (Andy has done all the artwork), we believe that your cycle is less likely to be stolen... it can be so readily identified.

We don't want you to have your cycle stolen but we do want others to admire it's quality. So we have subsidised this exquisite yet practical finish... if you don't want it you may choose one of our other finishes... but

please remember the issues regarding touch-up paint.

Other Paint Finishes

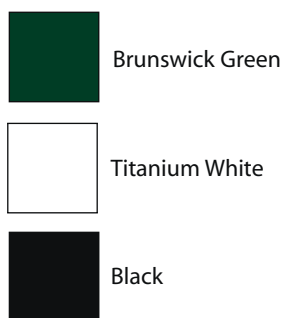
Some cyclists are able to own and use bikes for many years without scratching them... others only have to look at their bike hard for the paint to fall off... baggage handlers will always scratch your bike.

Whilst scratches look unsightly we've yet to see a bike die from external rust unless severely neglected. People's reactions to scratches also vary - if you are a careful owner who doesn't travel by air (or coach) much and you can adopt a philosophical attitude to scratches and see them as noble scars, then you could have any of the beautiful flamboyant finishes available and cover the scratches over with clear varnish.

If you are not only very fussy but also careless (be honest!), accident-prone or use airlines frequently, you must have a paint finish that can be touched up easily ... plain gloss enamel. If you fall between these extremes then you could choose a metallic finish, provided you are prepared to find your own touch-up paint. All of our solo cycles are sprayed with multiple coats of oven baked enamel. This gives a beautiful finish that is fairly durable and can be easily rubbed down and primed and can easily be touched up if a suitable paint is available. Stove enamels don't air dry very well, so using the paint the cycle was sprayed with only pretends to solve the problem. In typical style we have got to the root of the problem. We have **started** with the touch-up paint... "Humbrol" make little tinlets of air-drying enamel, available the world over.

We selected 9 colours and had the stove enamel manufacturer provide paint which would be perfectly matched by our touch up.

The colours are:-



Apart from the Ferrari Red, Italian Yellow and Black the other colours are deadly dull and boring on their own.

However our two new paint finishes (paint options 4 and 6), which each use two of these colours in a spectacular stencilled finish, look stunning!

Colour Options:



Any single colour - Option 1.1 / 2.1

Option 1.1 - Any single Gloss, Metallic or Flam colour with Vinyl graphics (choice of colour).

Option 2.1 - Any single Gloss, Metallic or Flam colour with Stencilled paint graphics (choice of colour). Stencilled graphics give a high quality and durable finish & more colour choice.

Option 3.1 - Any two Gloss, Metallic or Flam colours in a faded finish with "Thorn" on the down tube and model name on the top tube in stencilled paint graphics.

Option 3.2 - Any three Gloss, Metallic or Flam colours in a faded finish (as Sturburst but no airbrushing) with "Thorn" on the down tube and model name on the top tube in stencilled paint graphics.



Billiard Cue - Option 4.1

Option 4.1 - "Billiard cue" - headtube, fork crown, and front of both top and down tubes in secondary colour (eg. yellow, white or cream); cut out in fork crown, "Thorn" stencilled on the front of the top tube, bike name stencilled on the front of the down tube and the rest of the frame in the main colour (eg. French Blue, Ferrari Red, Maroon, Brunswick Green, Navy Blue or Black). The join between main and secondary colour is achieved with four long points in each colour... hence "Billiard cue".



Full Retro finish - Option 6.1

Option 6.1 - "Full Retro finish"... Identical to the "Billiard cue" but with the addition of Celtic bands at the top and bottom of the seat tube and a "V" flash between the two bands all in the secondary colour.



Starburst - Option 7.1

Option 7.1 - "Starburst" paint finish is exotic, eye catching and tastefully exclusive.

Option 8.1 - Anything you can think of and provide a clear drawing for. No refund or touch-up paint available.

Not wishing to labour the point, we can **not** supply effective touch up paints for metallics or flams (please put anybody, who says that they can, in touch with us... **if they can supply effective touch up they can have the contract to spray our bikes!**).

(Bikes pictured are for paint finish examples only.)

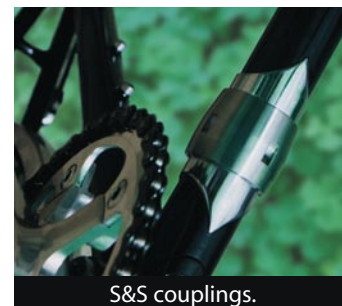
Bike Build-up options...

Each bike is individually hand built from the frame up, to your exact specification, on our premises here in Bridgwater.

We offer many upgrades and custom options as standard, and can accommodate most component requests... Talk to us now about your dream specification.

S+S Couplings

S+S couplings including cable joiners, fitted + £350



S+S couplings.





An explanation of the sizing of the Rohloff eXp series of frames.

For a perfect fit, how much clearance should I have?

This will depend upon your standover height, the type of cycling you are engaged in and, to a certain extent, upon your experience... the "average cyclist" should have 40 to 60mm clearance at the front of the bike, however, if you have short legs you will have a smaller frame but it is still desirable to have 25mm clearance at the front of the bike, however it may be necessary to accept zero clearance (at the front) if you not only have short legs but you also require suspension forks. On the other hand... if you are very tall (say over 6' 6" (1.98m+)) you may well have 125mm clearance or perhaps even more! However, it is also important to get the length of the frame right.

Which length top tube should I have?

This will depend upon your choice of bars, position, choice of cycle and type of cycling, it will also be affected by gender (women generally need shorter frames, for the same standover height, than men do) and age (we are generally comfortably able to adopt a more aerodynamic position as we reach adulthood; and we all end up sitting more upright as we get older!)

Rohloff eXp R frames are produced in an, at first bewildering, 27 different sizes! If you look at the matrix you will see that, in some sizes, 4 different top tube lengths are offered, the **XL frames** (490XL, 510XL and 530XL) are especially designed for cyclists with very short legs (for their height) who wish to use swept-back straight bars (eg our comfort bars) or, in even more extreme cases, those who wish to use "straight" straight bars... assuming that you don't need one of these sizes, then you have only 8 sizes and 3 different top tube lengths to choose from!

The **Rohloff eXp R** frames with short top tubes... **S frames**... are for cyclists (usually women) with long legs for their height who wish to sit very upright (WARNING, this may sound an attractive proposition for those with bad backs but it not only makes for very inefficient cycling, it also puts all your weight on your backside... which is usually a recipe for cycling discomfort)

The **S frames** are intended for, and most likely to suit, those who insist upon having dropped bars. The **M frames** should suit most women with swept-back straight bars, some men who need, or like, a more stretched out position with dropped bars and many men who require a relaxed position with swept-back straight bars or a more sporty

position with "straight" straight bars. The **L frames** are for most men who require a fairly relaxed position with swept-back bars, although a few women may genuinely require this length too and some men may wish to have these frame sizes with "straight" straight bars... such a combination would almost always produce a very sporty position!

Rohloff eXp frames are produced in 16 different sizes. The S, M and L frames are sized in exactly the same way as the eXp R frames above.

Please note that if you add a 100mm travel suspension fork to a Rohloff eXp frame the standover at the head tube will increase by 70mm!

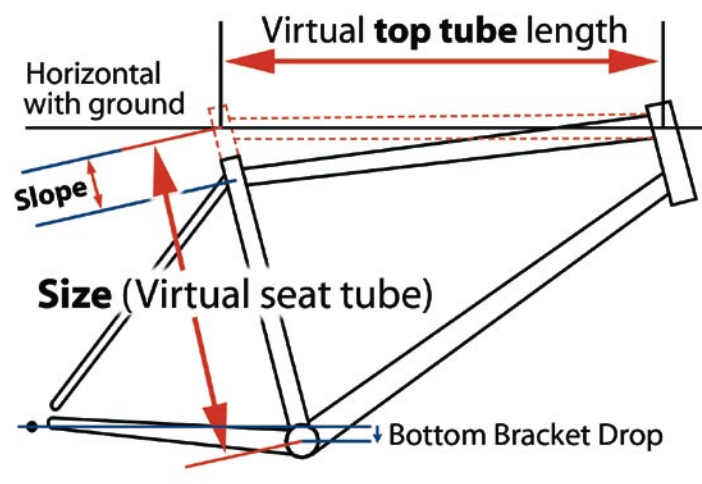
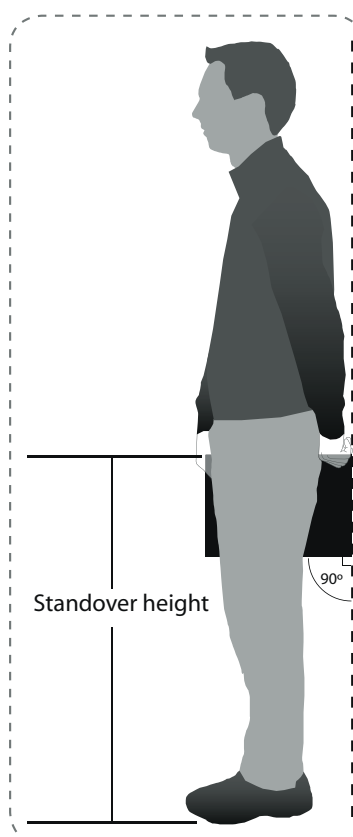
Please also note, it is not quite so important to have clearance above the top tube on a bike with suspension forks... as long as the suspension is not locked out!

Rohloff eXXp frames are only available in 10 different sizes... we can't make a small frame with a suspension fork and we have not made short frames because we know, beyond doubt (by courtesy of experience) that the steering geometry, produced by such a frame, is not suitable for the short fork offsets found on modern suspension forks. Therefore only **M and L frames** (sized as the eXp R frames above) are manufactured.

Please note in addition : The effective length of the top tube can be altered and fine-tuned with a change of handle bar stem... our smallest frames are designed for an 80mm stem... but a 50-105mm stem could be fitted without problems. Our largest frames are designed for a 120mm stem but 100-150mm could be fitted. Our medium sized frames are designed for 105mm stems but 80-135mm could be fitted.

To measure your standover height...

1. Stand in cycling shoes with your back against a wall, feet together.
2. Place a large coffee table style book (a thin hardback book is best) against the wall between your legs.
3. Raise the book as high as it will go. Without moving the book step forward and note the position of the top of the book.
4. Measure from the floor to the top of book... that is your standover height!



Rohloff eXp						
Size Virtual seat tube length (centre to centre) (mm)	Actual seat tube length (centre to centre) (mm)	Slope (mm)	Virtual top tube length (mm)	Chainstay length To centre of 51.3mm alloy eccentric (mm)	Mid tube standover with 1.75" tyres (mm)	Standover at front of bike with 1.75" tyres (mm)
485 M	385	100	520	< 440	715	748
485 L	425	60	565	< 453	735	755
510 S	440	70	530	< 440	755	785
510 M	440	70	550	< 447	755	785
510 L	440	70	585	< 460	755	785
535 S	455	80	545	< 447	780	810
535 M	455	80	570	< 460	780	810
535 L	455	80	600	< 466	780	810
560 S	470	90	560	< 453	800	835
560 M	470	90	585	< 460	800	835
560 L	470	90	610	< 466	800	835
585 S	485	100	570	< 460	820	855
585 M	485	100	595	< 466	820	855
585 L	485	100	620	< 472	820	855
610 M	530	80	605	< 466	865	895
610 L	530	80	635	< 479	865	895

Rohloff eXp R						
Size Virtual seat tube length (centre to centre) (mm)	Actual seat tube length (centre to centre) (mm)	Slope (mm)	Virtual top tube length (mm)	Chainstay length To centre of 51.3mm alloy eccentric (mm)	Mid tube standover with 1.75" tyres (mm)	Standover at front of bike with 1.75" tyres (mm)
470 S	370	100	500	< 440	682	712
470 M	370	100	540	< 440	682	712
470 L	370	100	570	< 447	682	712
490 S	415	75	525	< 440	720	745
490 M	415	75	555	< 447	720	745
490 L	415	75	580	< 447	720	745
490 XL	415	75	600	< 453	720	745
510 S	420	90	540	< 440	732	762
510 M	420	90	570	< 447	732	762
510 L	420	90	590	< 453	732	762
510 XL	420	90	610	< 453	732	762
530 S	430	100	550	< 447	747	780
530 M	430	100	580	< 447	747	780
530 L	430	100	600	< 453	747	780
530 XL	430	100	620	< 453	747	780
550 S	440	110	560	< 447	767	804
550 M	440	110	590	< 453	767	804
550 L	440	110	610	< 453	767	804
570 S	450	120	570	< 447	782	824
570 M	450	120	600	< 453	782	824
570 L	450	120	620	< 453	782	824
590 S	490	100	580	< 447	812	845
590 M	490	100	610	< 453	812	845
590 L	490	100	630	< 460	812	845
610 S	530	80	590	< 453	847	874
610 M	530	80	620	< 453	847	874
610 L	530	80	640	< 466	847	874

Rohloff eXXp						
Size Virtual seat tube length (centre to centre) (mm)	Actual seat tube length (centre to centre) (mm)	Slope (mm)	Virtual top tube length (mm)	Chainstay length To centre of 51.3mm alloy eccentric (mm)	Mid tube standover with 1.75" tyres (mm)	Standover at front of bike with 1.75" tyres (mm)
525 M	350	175	565	< 453	730	780
525 L	390	135	605	< 453	750	790
545 M	410	135	580	< 453	775	820
545 L	410	135	610	< 460	775	820
565 M	430	135	590	< 453	800	845
565 L	430	135	615	< 466	800	845
585 M	460	125	595	< 453	825	865
585 L	460	125	625	< 472	825	865
605 M	520	85	600	< 460	870	900
605 L	520	85	635	< 472	870	900



Rohloff eXp
EX gear mech version



Rohloff eXXp