



**FAST  
BYWAY  
ADVENTURES.  
SECAN.**



**Dom Thomas**  
Co-Founder and Bike Designer

Perhaps the greatest pleasure of designing and manufacturing bicycles is knowing that we are making tools which can affect people's lives. Not in a grand way, but to play a tiny part in someone's precious time in the saddle. We put obsessive consideration and care into our products. We hope that when you ride our bikes, in some small, subtle, fleeting way, you will sense that care. Perhaps, for a short moment, it will put a smile on your face, or contribute to feelings of freedom, immersion and escape. The greatest pleasure of selling a Fairlight is knowing that we have put our hearts and souls into it. We feel proud and we feel grateful.

The gravel bike category covers everything from road bikes with 35mm tyres to, what are essentially, drop-barred mountain bikes. For the Secan, we focused on real-world riding and avoided a box-ticking exercise. A bike to seamlessly transition from road to off-road, but more importantly, a truly versatile bike that you can live with.

The Mk2.5 represents a considered evolution of the proven design; we've added fully modular dropouts with replaceable inserts; should brake or derailleur hanger standards change, we can design and manufacture new inserts. We have also further increased tyre clearance, moved to a heat-treated rear triangle and refined dynamo routing and braze-on positions.

Thanks for your interest in our bikes and thank you for reading.

*Dom Thomas*

## Secan - Concept

The Secan is our gravel bike. The design of the Secan revolves around the simple idea that you can transition between road and off-road, and ride fast everywhere. It can transform your local riding, as you begin to link up all the best lanes with byways, farm tracks, bridleways and even woodland single track. To us, this is what gravel bikes are all about. An area that you think you knew, suddenly becomes a world of unexplored tracks and bridleways; you see and experience the landscape differently. A local loop in even the most ordinary of landscapes can become so much more. This idea of real-world riding drives the design of the bike. A performance tube set that feels lively and eager, not over-built. A lightweight and confidence-inspiring carbon fork. A geometry and ride position that feels familiar and efficient on the road but stable and predictable off-road. A more sloping top tube to aid manoeuvrability and increase comfort when things get rough. Huge tyre clearance, but chain stays only 12mm longer than the Strael. The frame features ports for dynamo rear lighting, with clever solutions for every type of configuration; representing a level of care and detailing that you would normally only see in the custom world.

### New on the Secan 2.5

- Clearance for 650x60mm (width as measured) tyres.
- New 0.8mm heat-treated chainstays.
- New 0.8mm heat-treated seatstays.
- New Bentley x Fairlight Mk.2 dropouts. Featuring fully replaceable drive side and disc side CNC inserts. Future-proof modular design.
- New size specific top tube and seat stays for 61R and 61T sizes. Designed for bigger, stronger riders.



## SECAN 2.5 - Tech & Specs overview

### Place of Manufacture:

- Handmade in Taiwan.

### Dimensions:

- Bottom bracket - BSA 68mm.
- Seat clamp - 29.8mm or 30.0mm.
- Seat post - 27.2mm.
- Front derailleur band - 28.6mm
- Headset specification - ZS44/28.6 | EC44/40
- Rear Axle/hub standard - 142x12mm.
- Axle length - 168mm x 12mm with 1.5mm pitch.

### Brake/dropout Standards:

- Flat mount 140mm direct.
- Max 160mm rear rotor.
- Replaceable derailleur hanger.

### Tyre Clearances:

- 1x - 650x60 or 700x50
- 1x with fenders - 650x55 or 700x45
- 2x - 650x57 or 700x47
- 2x with fenders - 650x48 or 700x42

### Chainset:

- Single ring - 44T max ring.
- Double ring - 50-34T max.
- Triple ring - chainline dependent. Email for info.

### Fork:

- Axle to crown - 398mm
- Rake - 50mm
- Tyre clearance - same as frame.
- Axle length - 130.5mm x 12mm with 1.5mm pitch.
- Internal dynamo sleeve.
- Crown light mount.

### Cages & Racks - Frame:

- 3 x sets of bottle mounts.
- Rear rack mounts.
- Mudguard mounts.

### Cages & Racks - Fork:

- 3 x cargo cage bosses each leg.
- Mudguard mounts.

### Gearing & Wiring:

- External cable routing.
- 1x and 2x guide options.
- Di2 compatible.
- Rear dynamo lighting compatible.

### Torque Settings:

- Brake mount - 8Nm.
- Axles - 12Nm.
- Derailleur hanger - 2Nm.
- For components please refer to manufacturers guidelines.

### Weight:

- Frame - painted 54T frame - without bolts, axle or brake mount = 1,958g
- Frame - Bolts, rear axle, brake mount, derailleur hanger & brass plates = 208g
- Fork - painted - without bolts or axle = 520g
- Fork - 8 x steel bolts & alloy axle = 580g

### Weight Limits:

- Rider weight limit = 115Kg
- Combined max luggage = 25Kg
- Max Fork = 6kg (3Kg per side)
- Rear rack = 25Kg
- Total weight limit - rider & luggage = 115Kg















# TUBING





### **Reynolds 853 Top Tube - Custom for Fairlight**

853 - 25.4mm - 25/30 oval - 0.8/0.5/0.8

The tube starts life as a 25.4mm round tube and is fully ovalized to 20 x 30mm. This tube is critical in providing the excellent comfort of our frames. The stiffness in the horizontal plane is equivalent to that of a 30mm tube, while the narrow 20mm tube in the vertical plane means it provides excellent comfort, effectively flexing as the wheels try to move away from each other under load. A more standard round 28.6mm or 31.8mm top tube would be torsionally (twisting forces) stiffer, but we design the downtube and top tube to work together in how they deal with the various loads/forces. The tube is butted at 0.8/0.5/0.8.

### **SIZE 61R & 61T**

### **Reynolds 853 Top Tube - Custom for Fairlight**

853 - 28.6mm - 25/32 oval - 0.8/0.5/0.8

On the 61's we use a 28.6mm tube formed into a 25 x 32mm oval.



### **Reynolds 853 DZB Down Tube - Custom for Fairlight**

853 DZB - 34.9mm - 30/40 opposed oval - 1.0/0.8/0.5/0.8 - with gusset

The tube starts life as 34.9mm round tube but is ovalized at both ends to become 30 x 40mm. The ovals oppose each other; the 40mm horizontal oval at the BB shell adds lateral stiffness, whereas the vertical 40mm vertical oval at the headtube resists the braking and ground forces from the most highly stressed area of the bike.

The tube has double zonal butting, which means an extra butt at the headtube end for strength. The butt profile is 1.0/0.8/0.5/0.8.



### **Reynolds 853 Seat Tube**

853 - 28.6mm/29.8mm - 0.9/0.6/1.2

We use a standard butted seat tube designed for a 27.2mm seat post. The majority of the tube is 28.6mm in diameter, where as the top section is externally butted to 29.8mm to give the correct inner dimension for the seat post and to provide extra surface area for the top tube and seat stay welds. The tube is butted 0.9/0.6/1.2.

### **68mm BSA BB Shell**

Tried, tested, proven. We are huge advocates of the standard 68mm threaded BB shell.



## 4130 CHROMOLY

### 4130 Machined and Relieved Head Tube

The headtubes actually start off as solid billet and are turned into tubes on a CNC lathe. The headtube is 46.5mm in diameter, apart from at the ends where it is 47.8mm to provide sufficient wall thickness for fitting of the headset cups. The internal measurement is 43.95mm and is designed to accept a 1.5"-1 1/8" steerer tube using a ZS44/28.6 top cup and a EC44/40 bottom cup. The wall thickness of the headtube is 1.275mm. On a full carbon steerer tube, the tapered steerer really does make a difference to how the bike rides, especially under hard braking and high-speed cornering. The headtubes are made to order for our R and T frame sizes.





### **14mm 4130 Non-Taper Seat Stays - Custom Shaped**

4130 heat treated - 14mm No Taper - 0.8mm wall.

This is the same diameter seat stay that we use on all other Fairlight models and along with the top tube and chainstays is an important part of the ride quality of our frames. Made from 4130 steel the stays are 14mm in diameter and not tapered. We now heat treat the seat stays on the Secan 2.5 to add extra strength. The wall thickness of the tube is 0.8mm. The majority of seat stays [on steel bikes] are 16mm in diameter and taper down to approximately 11-12mm by the time they reach the dropout. This is largely a hangover from when there were limited dropouts on the market and they were designed to accept a certain sized tube. The wall thickness is still sufficient to cope with large loads if using a rack.

### **SIZE 61R & 61T**

### **16mm 4130 Seat Stays - Custom Shaped**

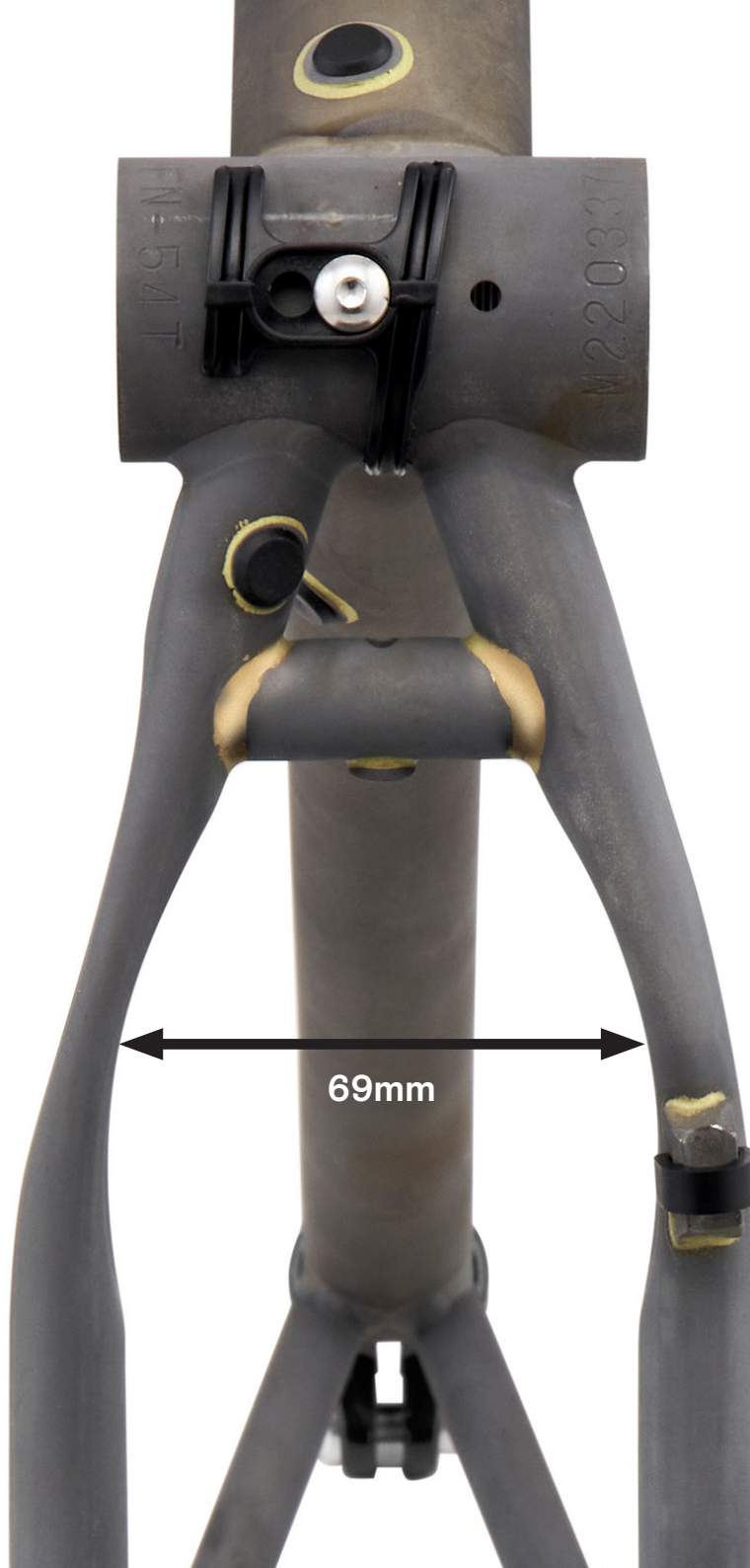
4130 heat treated - 16mm - 0.8mm wall.

On the 61's we use 16mm seat stays.









**4130**  
**CHROMOLY**

### 19mm 4130 Custom Formed Chain Stays

4130 heat treated - 19mm - 0.8mm.

The Secan 2.5 and Faran 2.5 share the exact same chainstays, utilizing the same tooling and forming dies. Chainstay lengths are identical as are the clearances for tyres and chainsets. For the v2.5 we are doing post-forming heat treatment of the chainstays, which has allowed us to reduce the wall thickness from 0.95mm to 0.8mm; increasing compliance and saving 75g.

As with the Strael, the chain stays round at the BB shell to give max stiffness. On almost all other steel bikes, chainstays are vertically ovalized to make tyre and chainring clearance easier, it gives a perception of stiffness because 'side-on' they look large. The reality is they are big and stiff in the wrong axis. Pedalling forces are horizontal and ground forces are vertical so they should be wide in the horizontal plane and as narrow as possible vertically. These chainstays are difficult to design and to make but the effort pays off in ride quality.

There is a whopping 69mm clearance between the chainstays which allows for clearance of a 27.5 x 60mm tyre. Maximum 700x50mm (1x) or 700x47mm (2x). The frame is compatible with a max 50-34 double chainset or a 44T single ring. The chainstay length is 430mm, only 12mm longer than the Strael 3.0.





Clearance with a 700 x 43mm Panaracer Gravel King SK on a Hope 20Five rim.



The tyre measures up at 43.34mm.



Clearance with a 650 x 48mm Panaracer Gravel King Slick on a Hope Fortus rim.



The tyre measures up at 50.51mm.





Clearance with a 650 x 2.2" Continental Race King on a Hope Fortus rim.

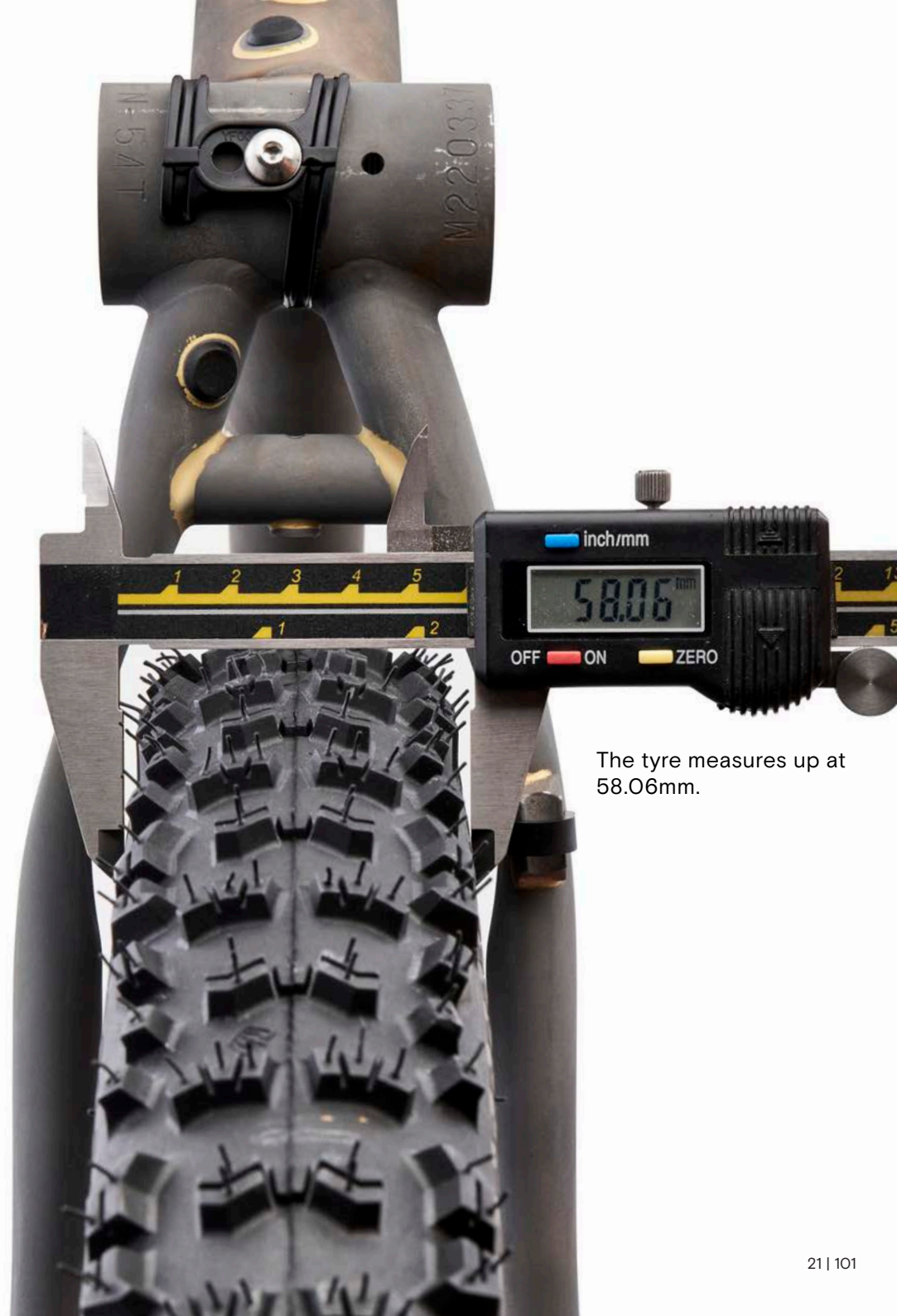


The tyre measures up at 55.3mm.





Clearance with a 650 x 2.2" Continental Trail King on a Hope Fortus rim.

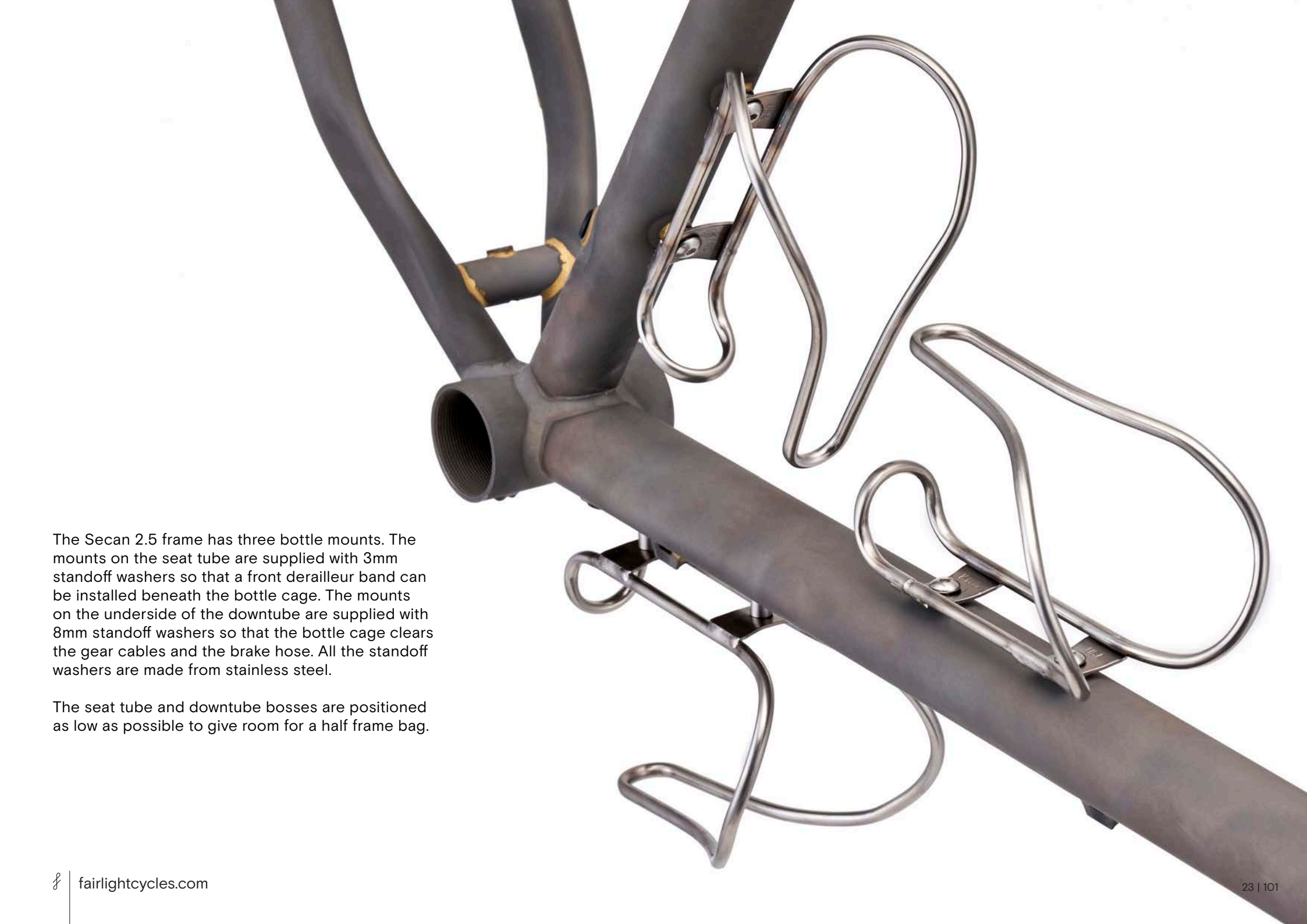


The tyre measures up at 58.06mm.

# BOTTLE MOUNTS







The Secan 2.5 frame has three bottle mounts. The mounts on the seat tube are supplied with 3mm standoff washers so that a front derailleur band can be installed beneath the bottle cage. The mounts on the underside of the downtube are supplied with 8mm standoff washers so that the bottle cage clears the gear cables and the brake hose. All the standoff washers are made from stainless steel.

The seat tube and downtube bosses are positioned as low as possible to give room for a half frame bag.



58 & 61 Frames: We realize that the low cage position on the seat tube might be a bit of a stretch for the tall folks; therefore on the 58 and 61 sizes there is a 3rd boss on the seat tube to mount the bottle cage higher if you wish.





The 2 x 8mm stainless stand off washers on the 3rd bottle mount ensure that the cage clears the brake hose and gear cables.

# DROPOUTS



# BENTLEY COMPONENTS



Mark Bentley is the man [and moustache] behind Bentley Components. He is an engineer for scientists by day and creator of beautiful bike parts by night. I started working with Mark 15 years ago when we both worked together at iconic British MTB and suspension brand Pace. He is an extremely talented designer, tool maker and CNC engineer. We are fortunate and grateful to be able to regularly collaborate with him on designs for Fairlight. He understands materials, their limits and specifically how to machine them. There is an enormous value in his hands-on experience. We are very proud to have the Bentley logo on our products, it truly is a mark of quality.

The Mk II dropouts are completely modular, which means, that should brake or derailleur hanger standards change, we can design and manufacture new inserts. All the function is on display; If you saw the dropout and knew nothing about bikes, you would know straight away it was a technical part of the highest quality made for a specific functional purpose.

*Dom Thomas*



### Fairlight x Bentley Mk II - Modular Dropout System

Visually there are some familiarities between the original dropout and the new Mk II version. The main difference is that the dropouts are now completely modular; the axle housing and disc mount are made from one piece of aluminium, while on the drive side the axle housing and hanger are also a single piece. Both sides are completely removable and replaceable. The modular design means we can design new inserts for changing dropout standards and help to future-proof your investment. The stainless washer plate detailing remains but the plates are now larger and have multiple functional purposes. Firstly and most importantly, the plates act as washers for the mechanical fixing of the inserts to the frame. Secondly they provide useful space for detailing and torque information, such as the axle torque (12 Nm); now visible directly beside the axle head. Finally we've used the stainless plates to act as protectors for the mudguard and rack eyelet. The eyelets are a common place for paint to chip when fitting mudguards and/or a rack.

The steel parts of the dropouts are 'fillet brazed' together and the ends of the stays are ground and hand filed to give a seamless transition between the tubes and the plate; these techniques are usually only reserved for the custom world. The aluminum inserts are CNC machined (as oppose to the cheaper mass production method of 'casting') because the level of machining detail from CNC really says everything about how much care we put into our products. We are really proud to be able to show you what is beneath the paint.

**July 2024 update** - We have now introduced Shimano Direct Mount and SRAM T-type (Transmission) drives-side inserts. Both options are available from our web store. See the following pages for more detailed info.





#### **Drive-side Insert Option 1 - Standard Derailleur Hanger**

This insert is compatible with all rear derailleurs except SRAM Transmission (T-Type). This is the standard offering on the Secan 2.5 frameset and full-builds.





#### Drive-side Insert Option 2 - Shimano Direct Mount

This insert can be used with all Shimano Direct Mount compatible rear derailleurs.





Compatible rear derailleurs include:

- **105:** R7000 11-speed, R7100 12-speed.
- **105 Di2:** R7150 12-speed.
- **Ultegra:** R8000 11-speed.
- **Ultegra Di2:** R8050 11-speed, R8150 12-speed.
- **Dura Ace:** R9100 11-speed.
- **Dura Ace Di2:** R9150 11-speed, R9250 12-speed.
- **GRX:** RX810 2x 11-speed, RX812 1x 11-speed, RX820 2x 12-speed.
- **GRX Di2:** RX815 2x 11-speed, RX817 1x 11-speed, RX825 2x 12-speed.

**Note:** GRX 12-speed 1x does not use the Direct Mount standard.





The Shimano Direct Mount kit can only be purchased as a separate kit in our web store. The kit includes the following parts:

- Shimano Direct Mount insert.
- 2 x 11mm M6 T30 bolts.

**Note:** The insert uses the same axle and the same washer plate as the Standard Derailleur Hanger.

[Purchase Shimano Direct Mount insert](#)



### Drive-side Insert Option 3 - SRAM T-type

This insert is compatible with all SRAM Transmission (T-Type) derailleurs.



### **‘A Trojan Horse’ - Our thoughts on SRAM UDH**

SRAM pitched UDH as a Universal Derailleur Hanger system to make life easier for consumers and dealers. However, in large part it was a ‘trojan horse’ designed to get frame makers to build in the required interface dimensions for installation of their Transmission (T-Type) rear derailleurs.

The important point from our perspective, is that there is no guarantee that other groupset brands (e.g. Shimano, Campagnolo etc) will follow the exact same interface standard as SRAM in the future. Our fully modular solution means we should be able to offer inserts for any future standards.







The SRAM T-Type kit can only be purchased as a separate kit in our web store. The kit includes the following parts:

- T-Type insert.
- Stainless threaded back plate.
- 171.5mm axle M12x1.0. Note: This is different to our standard rear axle as it screws directly into the T-Type rear derailleur.
- 2 x 12mm M6 T30 bolts.
- 2 x Nylon stand-off washers.
- 2 x Metal stand-off washers.

[Purchase SRAM T-Type kit](#)



The T-Type insert is mounted to the outside face of the dropout. The bolts are fitted from the outside and screw into the stainless threaded plate which is mounted to the inside face.



The T-Type insert kit is supplied with 4 x stand-off washers, in case mudguard stays or rack feet need spacing away from the dropout. The 2 x black nylon versions are for use with mudguards, where as the 2 x metal versions are for use with rear racks. Some mudguards/racks will not require use of the spacers.



f | b





### Brake-side Insert - Flat Mount 140mm/160mm

The only brake side insert we currently offer is the 140mm flat mount standard, designed to fit a calliper directly for a 140mm rotor, or a calliper with an adaptor to fit a 160mm rotor.















**Please note:** Threaded hole on the base of the disc side insert is for routing of a rear dynamo wire. More info later in the document.

















# MODULAR CABLE GUIDES




## Modular Cable Guides

We use this system on all of our models. The cable guide is 3D printed which allows us to design and manufacture the intricately detailed part without requiring CNC machining or injection moulding. The guide is made from PA2200 Nylon which is strong and smooth. It has good chemical resistance and there is no strength degradation from UV exposure. The nylon has just the right level of malleability so that the surfaces fit together well with no risk of creaking. It is a great material for this application.

The part is beautifully simple and it only requires a single M5 threaded boss to secure it. It then utilizes an integrated pin which inserts into the Di2 hole to locate the part and stop it rotating. In the centre of the location pin is a 4mm hole which allows dynamo rear lights to be routed internally. A grub screw keeps the hole sealed when not in use. More on this feature further down in the lookbook.

There are specific guides for 1x and 2x. For using Di2 11 speed simply use the standard 6mm port below the guide. For Di2 12 speed and SRAM eTap AXS a 6mm rubber bung is provided to cover the Di2 hole.



2x guide

1x guide



Di2 11 speed  
set-up



Di2 12 speed  
& eTap AXS set-up





A dark, foggy street with power lines stretching into the distance. The scene is dimly lit, with the street receding into a thick mist. Several power lines run diagonally across the upper half of the frame. The overall mood is somber and atmospheric.

# **FABRICATION DETAILS & WORKMANSHIP**





















# CEMPA 2 FORK





## Cempa 2 Fork

The Cempa 2.0 fork is more or less identical in shape and form to the original Cempa fork. However we machined an entirely new mould to make the fork. The most significant updates are the addition of pack mounts on the legs, as well as fully-sleeved internal dynamo routing.

Fork axle to crown length of 398mm.

Fork offset of 50mm.

1.5"-1.1/8" tapered carbon steerer tube. 330mm long.

100 x 12mm thru axle dropouts. Supplied with axle. Axle length is 130.5mm and thread pitch is M12x1.5.

Flat mount brake fitting. Compatible with 140/160mm. Internal fully-sleeved disc hose routing.

Dropouts have 'proper' rack mount eyelets on the rear so no bending of mudguard stays needed.

Front and rear M5 mounts in the crown. Front for light mount, rear for mudguards. We chose threaded bosses versus a hole as they can be adjusted independently and it makes for a lot easier fitting.

Fully sleeved internal routing for a dynamo wire. Designed around a 3.5mm Son co-axial wire, but also compatible with a 3x4mm Supernova wire.

3 x bottle/adventure cages mounts on each leg. All 3 mounting points are joined by a single CNC'd piece of aluminium that is bonded to the inside of each leg. This spreads the load evenly across the leg and provides great strength. Each leg is rated up to 3kg.

Tyre clearance: 27.5"x 61mm, 700 x 51mm. With mudguards: 27.5"x 55mm, 700 x 45mm.

Weight: 520g with paint but without axle. 584g with paint, 8 x bolts and axle.

Forks are colour matched to the frames on all colour options









Pictured with  
a 700x43mm  
Panaracer Gravel  
King SK 43mm on  
Hope 20Five rim.  
The tyre measures  
43.3mm.





Pictured with a  
27.5x2.2 Conti Race  
King on Hunt rim.  
Tyre measures  
56.5mm.









SON Edelux 2 lamp with co-axial port for charging a battery pack.

The internal dynamo wire routing is fully sleeved. Simply push the wire in by hand and it will exit at the bottom of the leg.









Simply solder a male co-axial fitting to your choice of dynamo powered USB charger.




Pictured USB charger is the Sinewave Revolution. Tried, tested and recommended by a number of Fairlight riders, staff and ex-racers. We are now selling these with a pre-soldered co-axial fitting [here](#).

Male co-axial fitting soldered to the charger.





The fork is supplied with 6 x nylon washers. When fitting a cargo cage to the fork blades, put the nylon washers between the cage and the fork. They protect the paint and also add damping to reduce the risk of rattling.

A close-up photograph of a bicycle frame, specifically the area where a cage is being installed. The frame is dark-colored. A silver-colored metal cage is attached to the frame using three black nylon washers. The washers are visible as small, dark, rectangular pieces between the cage and the frame. The background is out of focus, showing more of the bicycle's frame and a silver-colored metal component.

Installed cage with the  
nylon washers fitteed.



# REAR LIGHT ROUTING





### Rear Light with Mechanical Gears

As already mentioned in the cable guides section, our modular 1x and 2x cable guide are fully dynamo compatible. Simply remove the grub screw to reveal a 4mm hole for the wire to be routed through. The hole size is compatible with SON and Supernova wires.



### Rear Light with Di2 11 speed

If using Di2 11 speed then the dynamo wire needs to be routed through the M5 boss which is used to secure the cable guide.

### Rear Light with Di2 12 speed & SRAM eTap AXS

For Di2 12 speed & eTap put a blanking bolt into the M5 thread and use the 6mm Di2 hole for the dynamo wire. The frame is supplied with a rubber grommet for the wire.





### Dropout Mounted Lamp on Drive Side with Mechanical Gearing

In choosing locations to mount a rear dynamo light, our preference is to mount it on the dropout. Alternatively on the back of a rack or the back of the mudguards, but only if either is planned to be permanent. Rear lights mounted on the back of the seat tube or back of the seat post can be obstructed by saddle packs, especially on smaller frames. We like this dropout location as other parts can be fitted or removed without it affecting the light, apart from maybe having to space it out or change eyelet. The other benefit is that the light marks the edge of the bike and thus a driver is likely to give you more space.

If mounting the light on the drive side then there are 2 x 7.5mm ports to choose from. In this instance we've used the top one and shrink wrapped the wire to the derailleur housing.

Grommets are supplied with the frameset/bike for SON and Supernova wires.



### Dropout Mounted Lamp on Drive Side with Di2 Gearing

If using Di2 and a dynamo then we recommend using the port on the underside of the chainstay for the Di2 wire and using the port on the top for the dynamo.



**Dropout Mounted Lamp on Drive Side with SRAM  
eTap AXS gearing**

For eTap you can choose to use either port for the dynamo and use a blanking grommet in the other. We think the bottom port gives the neatest routing.





### Dropout Mounted Lamp on Disc Side

If you ride on the right hand side of the road (most of Europe and the US) then we recommend that you mount the light on the disc side. There is a port on the underside of the chainstay and we've added an M5 thread and clip into the bottom of the aluminium dropout insert. The result is super clean routing of the wire. The additional wire routing clip is supplied with the frameset/bike.





### Rear Rack Mounted Light

We recommend Tubus rear racks and you can route the wire directly into the rack leg. The additional wire routing clip is supplied with the frameset/bike.





Simply drill a 4mm hole into the rack for the wire to enter/exit.

Please note: This will almost certainly void the warranty of the rack but is a relatively common modification in the custom world. With the wall thickness of the rack tubing it won't cause an issue.



### Routing for Chainset Axles Larger Than 24mm - to Driveside

If using a chainset with an axle larger than 24mm (e.g. SRAM DUB-29mm, Praxis-30mm, Hope-30mm) then there is not enough room to route the dynamo wire through the BB shell. Therefore we have an additional 6mm dynamo port at the base of the downtube so the wire can enter/exit in front of the BB shell.

If mounting the rear light on the drive side the wire can enter/exit back into the chainstay via another 6mm port, A clip on the BB cable guide holds the wire and keeps it tidy.







### **Routing for Chainset Axles Larger than 24mm - to Disc Side**

Again exit/enter the wire at the port in front of the BB shell. Then join the lighting wire to the brake hose using short sections of heat shrink, between the hose guides. Follow the brake hose all the way to the dropout where the dynamo wire can then be routed away from the brake hose by using the clip on the bottom of the brake mount.

### **Mudguard Mounted Rear Light**

If mounting a light on the back of the mudguard then we recommend exiting the wire at the base of the downtube, going over the BB (using the clip) and into the mudguard at the chainstay bridge. We recommend using aluminum tape (or similar) to route the wire along the inside of the guard.



# GEOMETRY



	Size	51R	51T	54R	54T	56R	56T	58R	58T	61R	61T
A	Top Tube Horizontal	536	535	553	553	567	566	584	581	597	598
B	Seat Tube (BB to top ST)	490	495	510	515	520	535	540	555	560	575
C	Seat Tube Angle	74	74	73.5	74	73.5	73.5	73	73.5	73	73.5
D	Head Tube Angle	70.5	70.5	71	71.5	72	72	72.5	72.5	72.5	72.5
E	Chainstay Length	430	430	430	430	430	430	430	430	430	430
F	Fork Rake	50	50	50	50	50	50	50	50	50	50
G	Wheelbase	1021	1022	1029	1030	1034	1034	1041	1045	1054	1062
H	Trail - 650 x 47 = 685mm	68.2	68.2	65.1	61.9	58.7	58.7	55.6	55.6	55.6	55.6
	Trail - 700 x 38 = 697mm	70.4	70.4	67.1	63.9	60.7	60.7	57.5	57.5	57.5	57.5
	Trail - 650 x 2.2" = 702mm	71.3	71.3	68	64.7	61.5	61.5	58.2	58.2	58.2	58.2
I	Bottom Bracket Drop	77	77	77	77	77	77	77	77	77	77
J	Front Center Distance	603	604	611	611	616	616	622	626	635	644
K	Head Tube Length	100	130	120	150	130	170	150	190	170	210
L	Stack	538	567	559	589	572	610	593	631	612	650
M	Reach	380	371	386	383	397	385	402	394	410	405
N	Standover height (with 650x47 tyre)	751	768	771	789	782	809	802	829	821	848
	Fork Length - Axle to Crown	398	398	398	398	398	398	398	398	398	398

## A fat-tyred Strael

We occasionally get asked if we will ever make a Strael with larger tyres for gravel usage. The reality is, the Secan is that bike. When you make a physical change (tyre size) and a usage criteria change (off-road riding), every element of the design has to be re-considered. Using the Strael as the starting point, below you can see the geometry updates we made for the Secan.

**Chainstay length** – The chainstay length is 430mm. Only 12mm longer than the Strael. The chainstay has to get longer to accomodate larger tyres so that they do not foul on the seat tube. It is also contributing to a longer wheelbase which is desirable for off-road riding.

**BB Drop** – We lowered the BB by 9mm to give a ride position that feels familiar and efficient on the road but stable and predictable off-road. We favor a lowish BB (77mm) as it gives great stability and is especially noticeable when cornering. The Secan is not a dropped bar mountain bike, so it doesn't need to be any higher.

**Seat tube Length** – The Secan has a shorter seat tube and thus a more sloping top tube for more standover height; this aids maneuverability off-road and increases comfort.

**Fork Length** – As with the chainstays, the fork length increases to accommodate larger tyres. The Cempa fork is 17mm longer than the Anraed fork on the Strael.

**Head angle** – As the overall wheel & tyre diameter is larger on the Secan, the head angle is slacker to move the wheel away from the rider. As with the longer chainstay – this increases wheelbase.

**Fork rake** – As the head angle is slacker, the fork rake is increased by 5mm (50mm vs 45mm) to reduce the 'mechanical trail.' See below.



## The importance of Trail

So what is trail? Trail [or mechanical trail] is the relationship between head angle, fork offset and wheel/tyre diameter. As the illustration to the right shows, it is the horizontal distance between where the front wheel touches the ground (line directly vertical from axle centre) and where the steering axis (governed by head angle) intersects the ground.

So how does trail effect handling? Well, trail is what makes a bike want to straighten out when you aren't giving a steering input. The more trail a bike has the more it wants to self centre and vice-versa. By adding a load to the fork, it makes the bike want to self centre more. So by this logic a high trail bike with a front load will have a large self-centering force and so it will take more input to make the bike turn.

The other thing we need to take into account is 'pneumatic trail', which is the effect that a larger tyre contact patch (because of deformation under load) has on the stability of the bike. Effectively a larger tyre at lower pressure is more stable than a narrower tyre at higher pressure. An example of this is that a 700 x 28mm tyre has the same outer diameter as a 650 x 47mm tyre, so if both were used on the exact same frame, each at their recommended pressures, the mechanical trail number would be the same. However, the 650 x 47mm tyre would feel more stable because of the larger contact patch, which represents an increase in pneumatic trail.

Many gravel bikes opt for high trail geometry (like an XC MTB) which gives great stability but can feel unresponsive on the road. When designing the Secan we based the trail numbers to be roughly the same as the Strael and simply allowed for the fact that the increased pneumatic trail from the larger tyres with lower pressures [combined with the slightly longer wheelbase] would provide the extra stability needed for gravel riding. The result is a bike that felt stable enough but still lively and engaging. The geometry goes hand in hand with the bike concept: 'The design of the Secan revolves around the simple idea that you can transition between road and off-road and ride fast everywhere.'



*“Despite throwing everything I can think of at it I’m yet to find a fair chink in its armour; it handles every kind of riding with such composure that it makes you think it was designed specifically with whatever terrain you’re on in mind. On mixed terrain rides you get all the fun off the off road sections, but the geometry and position is such that it feels efficient and planted on tarmac too, never sluggish or sloppy as overly gnarly gravel bikes can be” – Will Jones – Cycling News*

**cyclingnews**

*“Despite the handling being quicker than my usual trail bike, the Secan dragged me into the woods time after time. I’d just be out for a ramble around some roads and gravel trails and without fail I’d end up on chunky singletrack with a big smile on my face. The Secan strikes an interesting balance between off-road capability and on-road manners – just how much you’d like of one or the other depends on your tire choice.” – Morgan Taylor – The Radavist*

**THE  
RADAVIST  
SHRED LIGHTLY**

*“The combination of the geometry and the tyre clearnace makes this a proper jack-of-all-trades, and a master of most. It is one of the best bikes I’ve ever ridden, and I don’t mean just on the gravel either. The geometry gives you a bike that feels pretty much custom made” – Stu Kerton – Road cc*

**road.cc**

# WEIGHTS





### **Secan 2.5 - Frameset**

#### **Painted frame without bolts, rear axle & dropout inserts:**

54T frame - 1,958g  
56T frame - 1,980g  
58T frame - 2,005g

Bolts, rear axle and dropout inserts = 208g

#### **Faran Fork:**

520g with paint but without axle or bolts.

Bolts & axle = 60g

### **Secan 2.5 - Full build examples**

54R GRX820 2x 12-speed, 700c Hope FIVE20 Pro5 wheels with Gravel King SK tyres - 9.77 Kg

51T GRX820 1x 12-speed, 650B Hope Fortus Pro5 with Gravel King Slick 48mm tyres - 10.11 Kg

56R GRX820 1x 12-speed, 700c Hope FIVE20 Pro5 wheels with Gravel King SK tyres - 10.35 Kg

56T GRX800 2x 11-speed, 650B Hope Fortus Pro5 with Conti Race King 2.2" tyres - 10.54 Kg



**INCLUDED IN  
THE BOX**

# SECAN 2.5 FRAME





# CEMPA 2 FORK



# **FIT FUNCTION FORM**

 **FAIRLIGHT**