

GERMAN ENGINEERING & DESIGN

DESIGN MEETS HERITAGE

eONE-SIXTY

TRUE LEGACY



REINVENTED



M.O.R.E BIKE

eONE-SIXTY

TRUE LEGACY  REINVENTED

The 'original' eONE-SIXTY is the most decorated, tested and awarded bike in MERIDA's history and has shaped what MERIDA is known for today: innovation, quality and outstanding performance. However, after three years at the top of the e-enduro ranking, it was time to distil the essence of the 'old' eONE-SIXTY, incorporate the latest trends and standards, and create the new version: goodbye and hello eONE-SIXTY - the new MERIDA benchmark for dynamic and design.

The new eONE-SIXTY once again embodies e-enduro bikes, instead of the normally needed shuttle to session your favourite tracks, you have your own built-in engine to assist you to the top. On downhill, it still feels like a normal bike, agile due to its perfectly tuned MTB geometry, but more planted because of the higher weight. All in all, it's a super fun bike with a clear focus on trail riding. But the last few years have shown that our eONE-SIXTY is also often used as a kind of 'SUV' bike. Because of the advantages of more travel, bigger tyres and comfortable geometry, it also shines away from the enduro tracks and offers a super fun, comfortable and capable alternative to a 'normal' mountain bike.

The eONE-SIXTY is positioned as a high-end state of the art e-bike. Material, design and integration are cutting edge. Nothing less could be expected after the super successful first generation eONE-SIXTY which influenced a whole generation of e-bikes.



R&D FOCUS

The most visible difference to the old one is, of course, the internal battery. For us, it was super important that we have a seamless battery integration without a weight penalty and loss of stiffness. That's the reason why it's just available in carbon for now.

To maximise the stiffness we made the decision to have a straight down tube and a 1.5" headtube. To avoid that the fork crown hits the down tube we bring back the 'Internal Block' feature which was introduced in 2015 at our NINETY-SIX. Compared to the original version, the block function is not integrated into the headset. Instead, it's now incorporated directly in the frame. Like the original version, a clamp is installed on the fork steerer. If the steering angle is too extreme the clamp hits the rubber protected block. Just in case the clamp does rotate on the fork shaft, there is additionally a rubber bumper on the frame.

Furthermore, it was important to us that the bike is as quiet as possible. And keeps quiet even after long term use. So we invested a lot of time into our battery cover. We have created a 2 component battery cover, where the outer layer reduces noise through its soft material, while the inner layer gives it the structural shape. It is constructed in a way, that if it wears out, the key components, for example, the rubber strap and o-rings, can be replaced. Further to that, for a tighter fit, the o-rings can be replaced with bigger ones. That avoids annoying rattling noises as almost all connection points between battery and frame have a rubber layer between them. Another noise reducing feature is our newly designed chainstay protector (1). The dragon inspired protector is much bigger and is covering almost the complete chainstay.

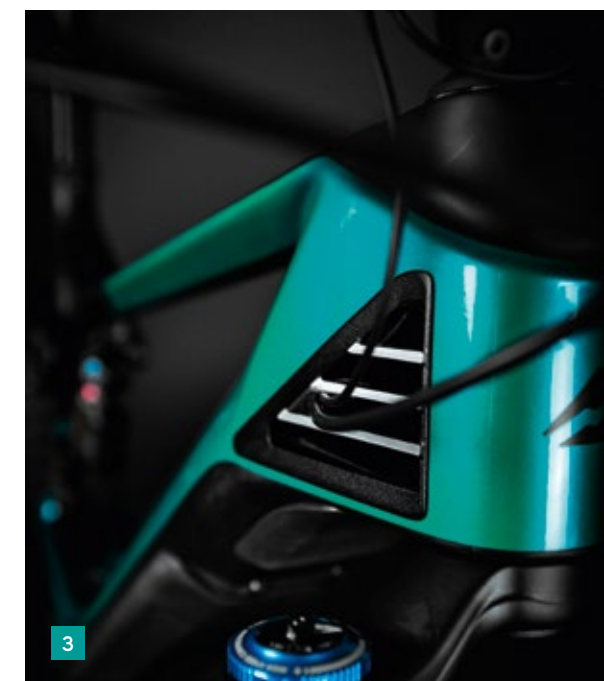
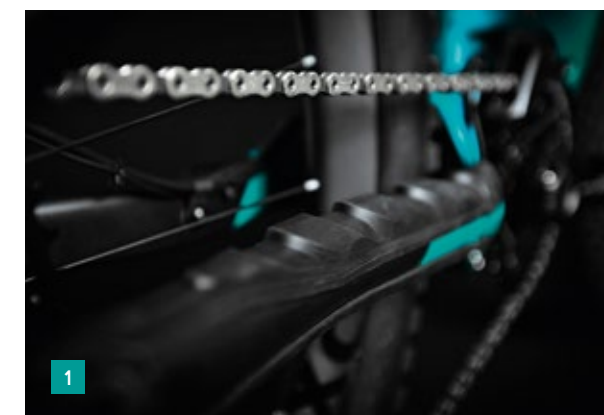
To guarantee that the paintwork looks pristine as long as possible, we put a transparent protection foil at exposed areas. Chainstays, seat stays, down tube and the rear of the seat tube are protected by a plastic layer (2).

Carbon is not a good thermal conductor. To avoid that the battery overheats we developed our feature THERMO GATE (3). It works like a chimney in the way that the hot air can rise up through the gate. Usually, heat build up from the battery is not an issue during riding, but for example, if the bike is laying in the sun for a prolonged time, it helps that the hot air can escape from the down tube quickly.

We have chosen mixed wheel sizes to get the best of both worlds. We use a 29" front wheel for better 'rolling over obstacles' behaviour fitted with a 2.5" wide tyre for precise steering. In the rear, we use 27.5x2.6" tyres to achieve maximum traction and comfort. The smaller wheel size allows shorter chainstays for a more agile and playful character.

A new clamp system makes it easy to organise and route the cables while it also works as a bottle cage holder (4). The fixing points for the bottle cage can be adjusted in two positions. The upper one must be used when a piggyback shock is mounted. If a non-piggyback shock is fitted the lower one can be also used. That is important in particular in small frames and if bigger bottles than 0.75l are used.

Through the additional hole in the downtube the battery can be woken up and turned on from deep sleep mode. That's necessary when the bike has not been used for more than 6 months, or when the battery of the on/off switch is empty (this battery is normally charged over the main battery). To wake the battery up again, simply push a 4mm Allen key (best to use the MERIDA EXPERT TR axle) through the hole, pressing the hidden button underneath.



INTENDED USE

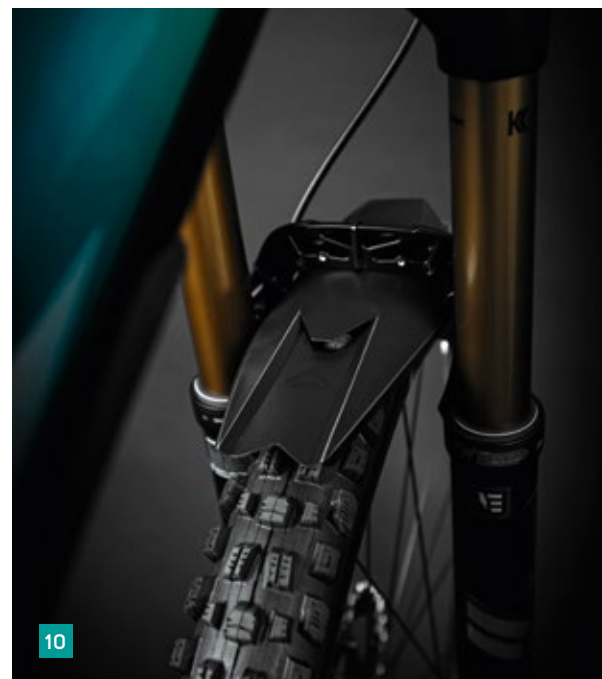
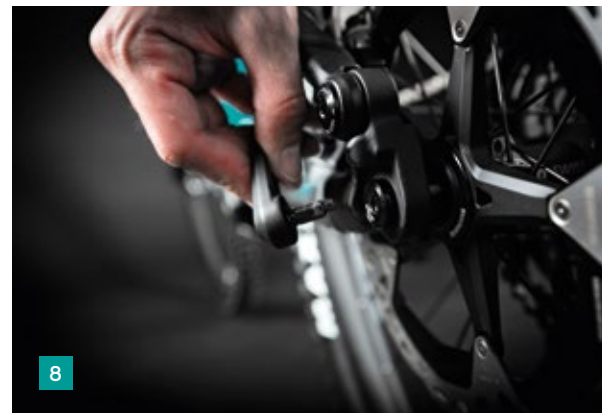
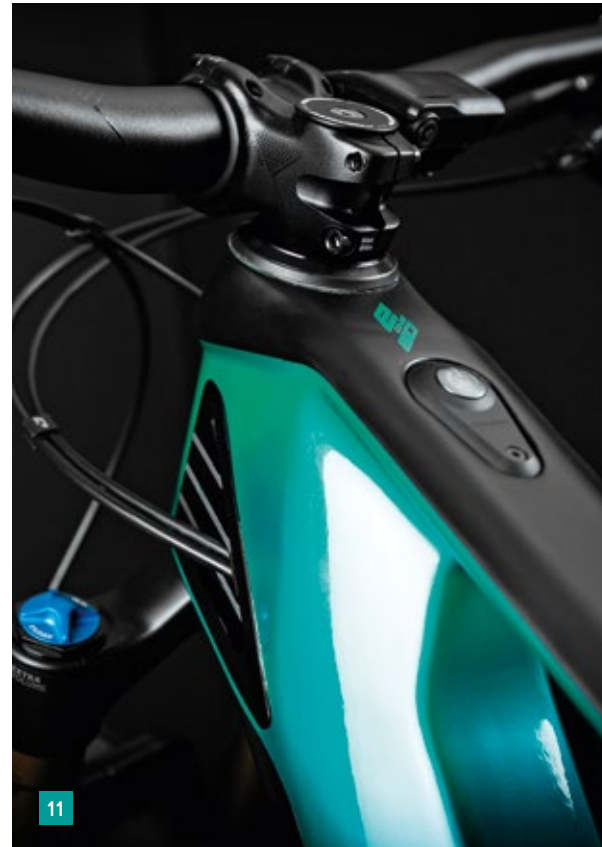
Trail riding! Geometry, travel and specification make this bike perfect for demanding trail riding. It doesn't matter if it's a playful easy trail or a hardcore enduro track. The new eONE-SIXTY loves it all.

But besides its enduro and trail riding abilities, the eONE-SIXTY is also a hugely capable and enjoyable 'SUV' bike. Because of the travel, the comfortable and upright riding position the eONE-SIXTY gives a lot of confidence and offers a real alternative to a 'normal' mountain bike. If a 2nd battery or charging device is carried, it can also be used for all day riding or multi-day excursions.

WHY HAVE WE CHOSEN THE FRAME MATERIALS?

Stiffness was a major focus, in particular for the front triangle, but the big hole in the down tube presents a structural disadvantage and is weakening the frame. Using carbon as a material for the front triangle, we have managed to maintain the stiffness while reducing the weight of the frame in comparison to its predecessor. We achieved this despite the design challenges the battery opening presents. Besides that, carbon gives real design freedom when it comes to creating a unique appearance. At the rear triangle, we decided to stay with aluminium. It is the same rear triangle as we had at the predecessor. Here we know that it has fantastic durability and stiffness characteristics. Furthermore, we have the advantage that all spare parts can be used.

The rear triangle has proven durability and function (same as the first generation eONE-SIXTY) and is one of the strongest rear ends MERIDA has ever made.



WHY HAVE WE CHOSEN CERTAIN KEY COMPONENTS?

MERIDA EXPERT TR DROPPER SEAT POST (5)

- Fits completely into the seat tube with maximum travel > 150mm dropper fits completely into a size M frame. 170mm fits completely into size L and XL (6)
- Tested for 140kg system weight

SHIMANO SW-7000 SHIFTER-L (7)

- Perfect access to the dropper seat post lever
- Very compact
- Cockpit looks cleaner

SHIMANO DROPPER SEAT POST LEVER SL-MT800

- Look and ergonomics
- Fits perfect to the new Shimano 12 speed shifters

MAXXIS ASSEGAI 3C EXO+ 29X2.5"

- 2.5" for precise steering
- Most aggressive downhill pattern from Maxxis
- Best control and grip
- 29" for better 'rolling over obstacles' behaviour

MAXXIS DHR II 27.5X2.6"

- 2.6" for max traction and comfort
- 27.5" for agile and playful riding
 - EXO+ enforced sidewalls
 - Stronger sidewall than EXO
 - Better puncture protection
 - Strongly demanded by key members of the cycling press and key customers

- 3C triple compound material > uses a harder, more durable base and two progressively softer top layers in order to optimise traction and stability
- Tubeless ready

MERIDA EXPERT TR AXLE (8)

- With the removable rear axle lever, the front and rear axle can be tightened
- The lever works as a 6mm and 4mm Allen key
- With the 4mm the battery can be removed and the seat clamp, as well as the stem, can be tightened
- The 4mm Allen key can be used to activate the 'wake up button'

MERIDA MINI FENDER (9 & 10)

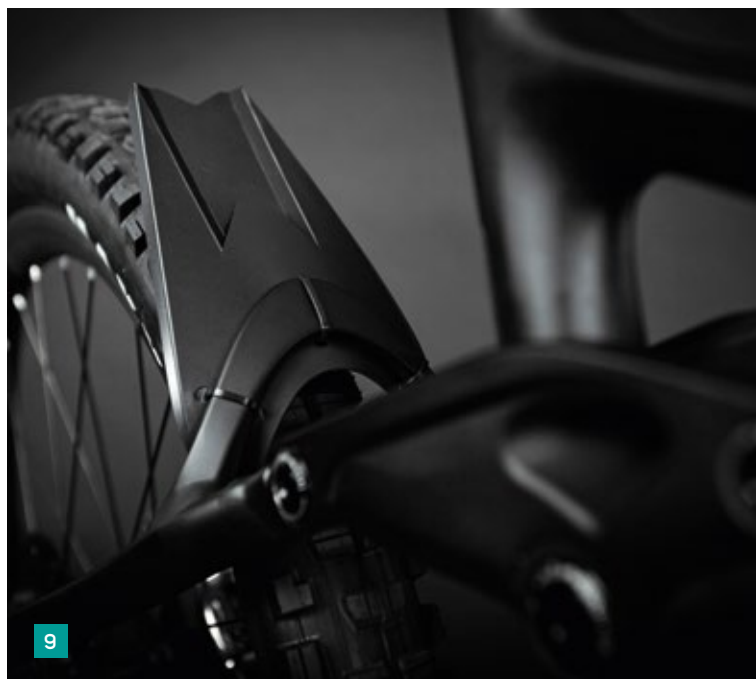
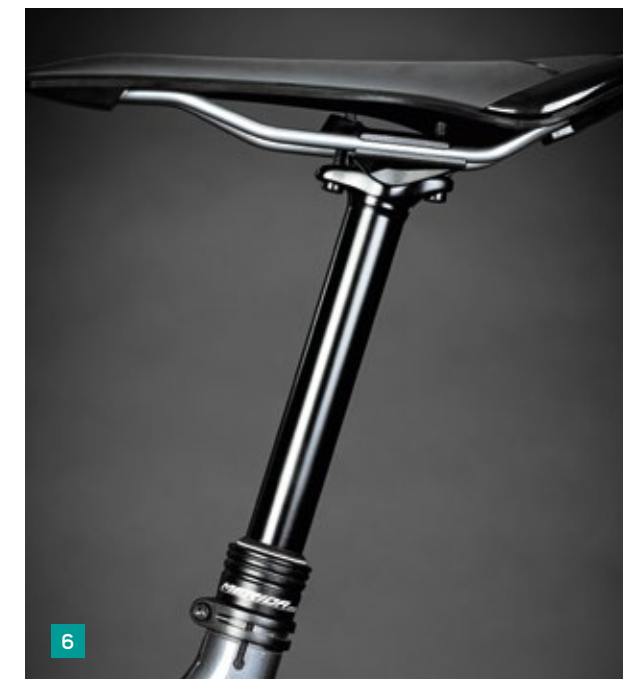
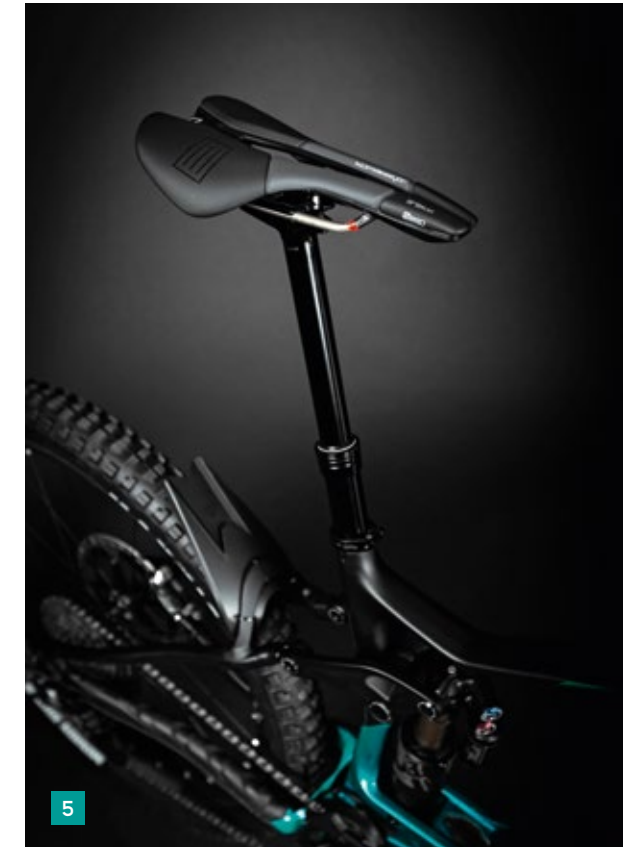
- For front and rear
- The rear mini fender protects the dropper seat post and ensures longer durability

MERIDA EXPERT eTR COCKPIT (11)

- Internal cable routing for the e-system cables
- Tested for 140kg system weight

MERIDA TOOLBOX WITH MULTITOOL

- Easy to reach
- Most important tools available
 - 2, 2.5, 3, 4, 5, 6 and 8mm Allen keys
 - 10, 25, 30 Torx keys
 - Phillips 1 screwdriver (PH1)
 - Flat tip screwdriver (SL5)



SHIMANO EMTB ENGINE

- Natural riding feeling
- Q-factor (like at a normal bike)
- Almost no resistance
- Smartphone connectivity
 - Power assist can be customised
 - Smartphone can be used as cycle computer

E8000

- Powerful
- High-end look
- Very compact
- Lightweight (2.88kg)
- Max support 300%

E7000

- Smallest engine in this price class
- More silent than E8000
- More efficient than E8000
- More affordable
- Lightweight (2.88kg)
- Max support 250%

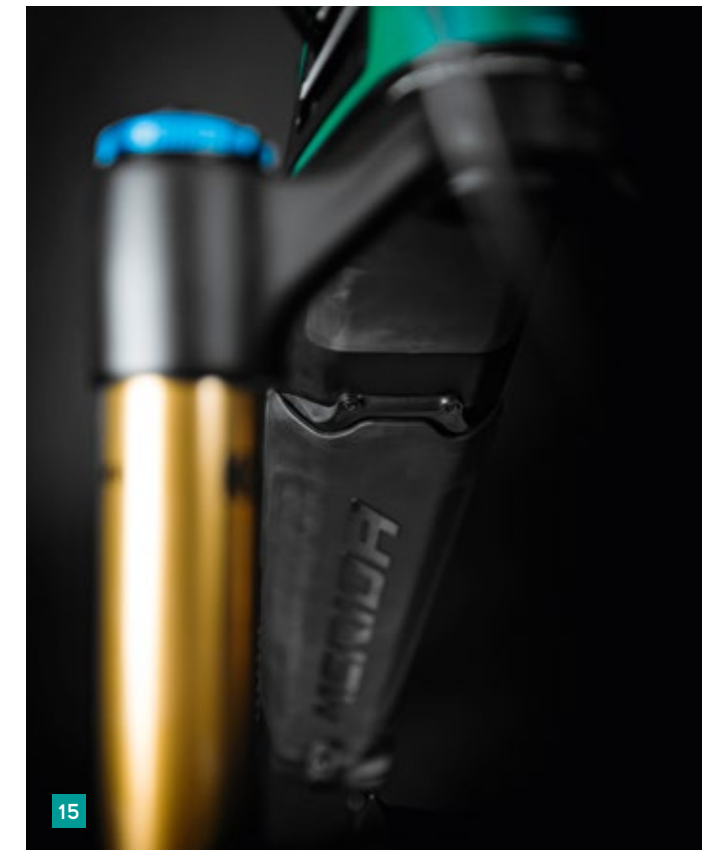


SHIMANO BATTERY MOUNTS

- Very strong
- No rattling
- 2-way release
 - 1st release by 4mm Allen key (12)
 - 2nd release press a button on the battery (13)
 - Avoids that the battery falls out of the frame by mistake
- Allen key version needs no additional hole in the frame
 - Additional hole would weaken the down tube and would mean more weight
 - Appearance is better/cleaner
 - Battery can be changed faster

SHIMANO SATELLITE SWITCH AND BATTERY CHARGING PORT (14)

- Very good access
- High-quality appearance

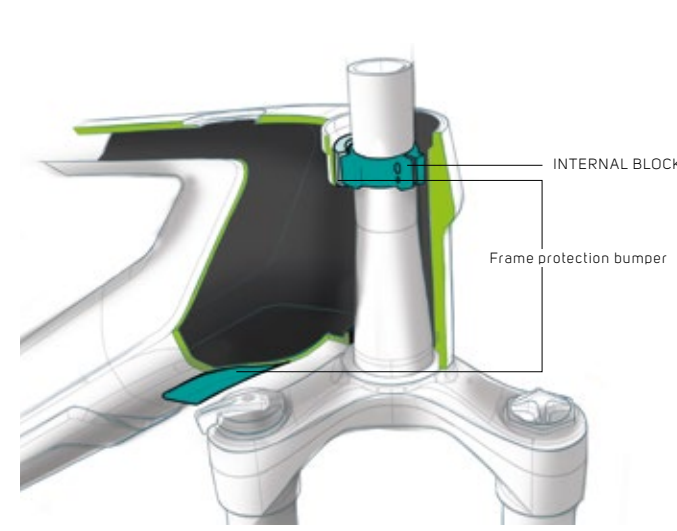


ENERGY GUARD (15)

- Reduce noise
 - One soft outer layer
 - To reduce noise
 - To seal the downtube
 - To absorb hits from stones and trail debris
 - Connection points have a soft rubber layer between them
 - Reduce noise
 - Prevents scratches on the frame
- Hard inner layer
 - Super strong! To assure that the battery can't be damaged
 - Gives the structural shape
- Durable: all important parts can be replaced
 - Rubber strap (16)
 - O-rings (can be replaced by bigger ones. For tighter fit)
- Battery can be changed easily
 - No cover or bumper attached to the battery
 - Big benefit if the rider has a spare battery with him
 - Can be easily done even with gloves or when the cover is really muddy

SHIMANO BATTERY

- After 1000 (500) charging cycles it still has 60% (80%) of the capacity
 - Best in class
- IPX5 protection standard
 - Can withstand water being projected onto the battery by a water jet with a 6.3mm nozzle.
- Aluminium casing
 - Better heat transfer
 - Stronger than plastic
 - High-quality appearance



INTERNAL BLOCK (17)

- Avoids that the fork crown hits the down tube
- Due to the straight downtube a stiffer frame can be achieved



THERMO GATE (18)

- Hot air can quickly dissipate through the openings near the head tube
- This enables the battery to perform at its best, in any condition

SHOCK SET-UP

- 30% sag is recommended for the rear
- For the fork follow the weight recommendation from the fork supplier

Rock Shox

Super Deluxe
70kg:
125 PSI

Fox

DPX2
70kg:
135 PSI

X2
70kg
120 PSI

COMPARISON 'OLD VS/ NEW'

- Integrated battery
- Carbon main triangle
- Mixed wheel sizes
 - Front: 29x2.5
 - Rear: 27.5x2.6"
- Updated geometry
 - Slacker head angle
 - Lower bottom bracket
 - Steeper seat angle

WEIGHT

eONE-SIXTY 10k: 21.93kg without pedals

INTERFACES

- New 8035 Shimano battery
- Shimano engine E8000/E7000
- Shimano satellite on/off switch
- Shimano satellite charging port
- 29" front/27.5" rear (boost)
- 30.9mm seat post diameter
- 1.5" headtube (headset > 1 1/8" - 1.5")
 - Full integrated headset
 - Designed for normal tapered forks
- 205x65mm trunnion mount shock
 - 40x10mm mount
- Post mount 180mm
 - Caliper is inside the rear triangle



STRENGTH AND 'WEAKNESSES' OF THE BIKE

STRENGTH

- Appearance and design
- Geometry
- Riding performance
- Weight
- Battery can be easily changed and charged (19)
- Complete Shimano e-bike system
- Shimano service › global service network
 - It's famous for being one of the best in the industry
 - If there is a problem with the system there is one clear service partner
- Advantage of a smaller battery:
 - Lighter
 - More price economic
 - Can be charged faster
 - Frame stiffness is better › because the hole in the frame is smaller
 - 2nd battery is not so big - can be easily carried in a backpack
 - Lower centre of gravity

WEAKNESSES

Some competitors have bigger batteries

WHO IS THE BIKE AIMED AT / TARGET CUSTOMER?

- People who want to have the best performance on the trails
- 'SUV' riders
 - Comfortable ride
 - Secure feeling
 - A real alternative to a 'normal' mountain bike
- People who want to have an outstanding looking bike. The Ferrari amongst the e-bikes.
- People who want to go on really long tours
 - 2nd battery is currently the only real option to cover more than 2000m meters of climbing or more than 60km in distance with full boost support (always depending on weight, riding style and temperature)
 - The Shimano 8035 battery is very compact and easily fits into a 15l plus back-back



20



19



21

USP OF THE NEW BIKE

Riding performance

- 29" front/27.5" rear wheel
- Precise steering and 'rolling over obstacles' performance in the front
- Maximum traction in the rear
- Optimised geometry for 29"/27.5"
- Customised shock tune
- Progressive leverage ratio

Modern geometry

- Slacker head angle
- Steeper seat angle

Weight

- Best in class with an easily removable battery
- Very stiff for such a big cut out in the down tube

Appearance

- Unique look
- THERMO GATE gives the bike a never seen before high-end head tube area
- Shape of the frame reminds of a high-end sports car

Silent

- Due to specially designed chainstay protector
- Battery cover

Outstanding frame protection

- Chainstays, seat stays, backside of the seat tube and down tube are protected
- Always comes with mini fenders
- Optimised for 165mm cranks
- Tested to 140kg system weight (bike + rider)
- 10K only 120kg due to the wheelset
- Mud clearance
- More than 1cm mud clearance in the rear
- Low standover height
- Internal block
- Protects the down tube from being damaged by the rotating fork crown

MERIDA EXPERT TR dropper seat post fits completely into the seat tube

- 125mm fits into size S and XS
- 150mm fits into size M
- 170mm fits into size L and XL

0.75l water bottle fits into all frame sizes (21)

- In size L and XL even bigger bottles are possible

5 sizes are available

- Most competitors offer only 4 or even 3 sizes
- Very short and also very tall riders can choose the perfect size for them

Complete Shimano e-bike system

- Best e-bike system service worldwide
- Only one service partner
- If a spare battery is needed it's easy to get one, wherever you are in the world (19)
- In some bike destination it's even possible to borrow batteries
- So it's not needed to take the battery into an airplane (which is not allowed by most airlines)

Easy access for the on/off switch and battery charger mount (20)

USP OF THE VARIOUS MODELS IN THE RANGE

10K

- 2 batteries
- XTR
 - 4 piston brake › state of the art brake
 - Outstanding shifting performance 1x12
 - 10-51 cassette
- Fox Factory suspension elements
 - E-bike version of the fork
 - Better durability
 - Certified for higher system weight
 - X2 shock gives the most options for customising the setup
- MERIDA EXPERT TR dropper seat post
- DT Swiss XRC 1200 Hybrid wheelset
 - Dedicated e-bike wheelset
 - Certified to system weight of up to 120kg
 - Carbon
 - Light and strong!
- Evoc FR TRAIL E-RIDE 20l backpack
 - Best e-bike backpack on the market
 - Optimised battery pack
 - Reinforced seams
 - Still very flexible (important for a great fit)
 - Integrated back protector

9000

- Fox Factory Suspension elements
 - DPX2 is easy to adjust
- New XT group
 - 4 piston brake › state of the art brake
 - Outstanding shifting performance
- MERIDA EXPERT TR dropper seat post
- DT Swiss 1501 Hybrid wheelset
 - Dedicated e-bike wheelset
 - Certified to system weight of up to 150kg

8000

- Marzocchi Z1 fork
 - Best price-performance ratio on the market
- Super Deluxe shock
 - Easy to adjustment
 - Fantastic performance
- MERIDA EXPERT TR dropper seat post
- Fulcrum Red Metal wheelset
 - Dedicated e-bike wheelset
 - Certified to system weight of up to 150kg

5000

- Rock Shox suspension elements
- MERIDA EXPERT TR wheels
 - 36 spokes in the rear
 - Because usually there are higher loads at the rear wheel
 - Tubeless ready (tubeless tape, milk and valves must be installed)



DESIGN THINKING BEHIND THE BIKE

DYNAMIC AND DESIGN ARE THE PRIMARY INFLUENCES THAT ARE THE BASIS OF THE eONE-SIXTY.

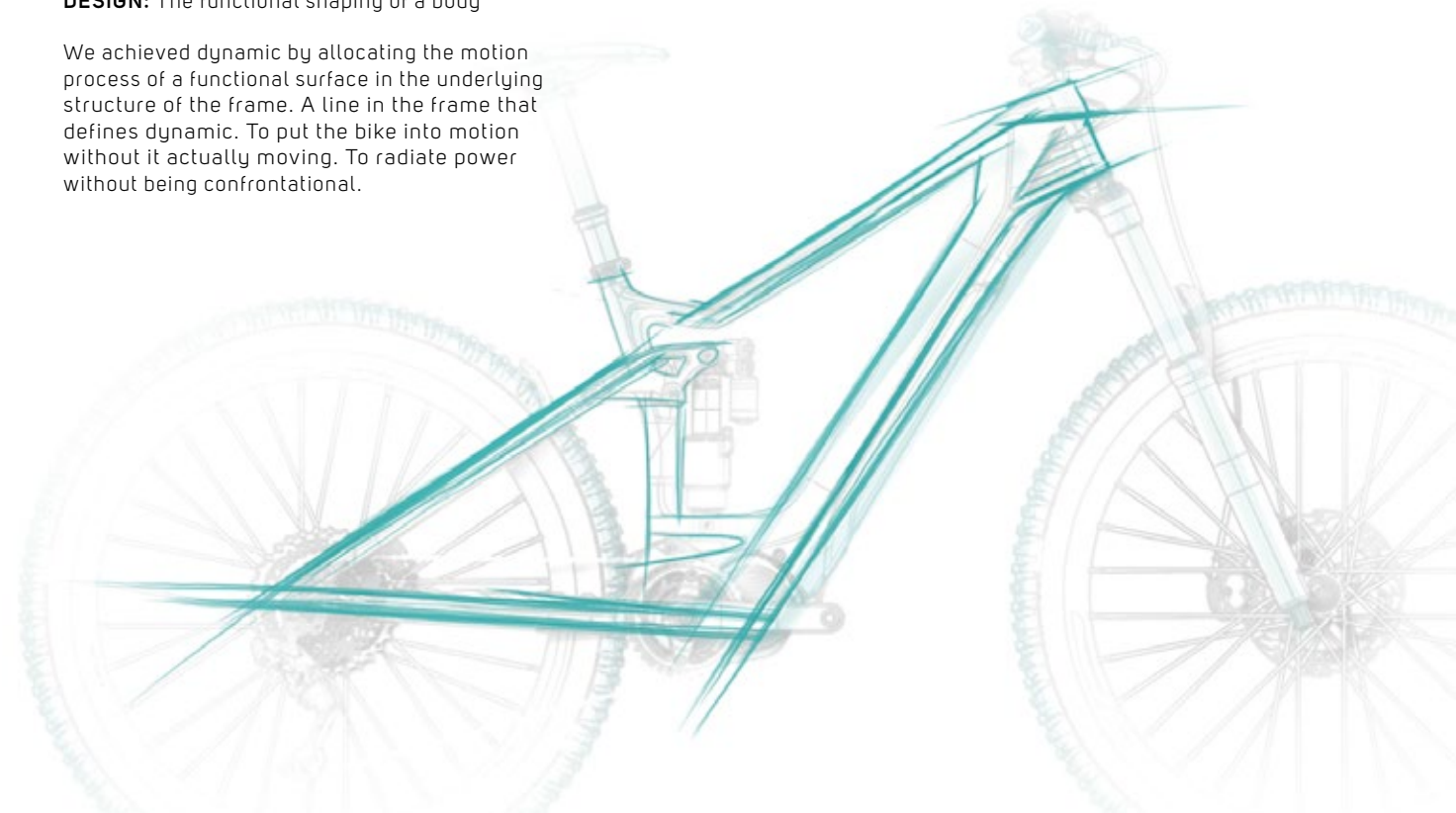
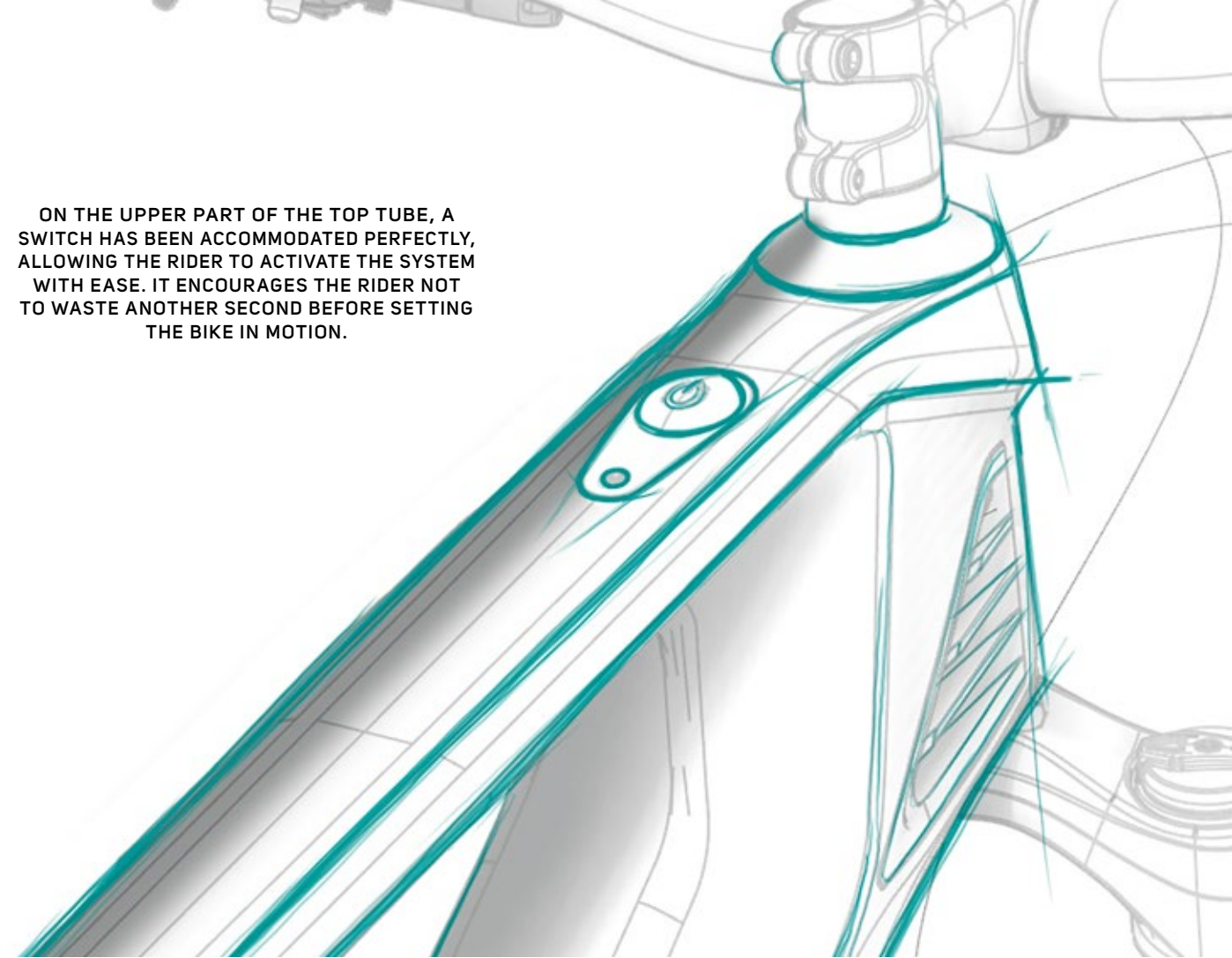
DYNAMIC: In physics, 'dynamic' describes the impact of forces producing motion onto a body. The bike is the body, while the trail is the impact of force that is trying to work against it.

DESIGN: The functional shaping of a body

We achieved dynamic by allocating the motion process of a functional surface in the underlying structure of the frame. A line in the frame that defines dynamic. To put the bike into motion without it actually moving. To radiate power without being confrontational.



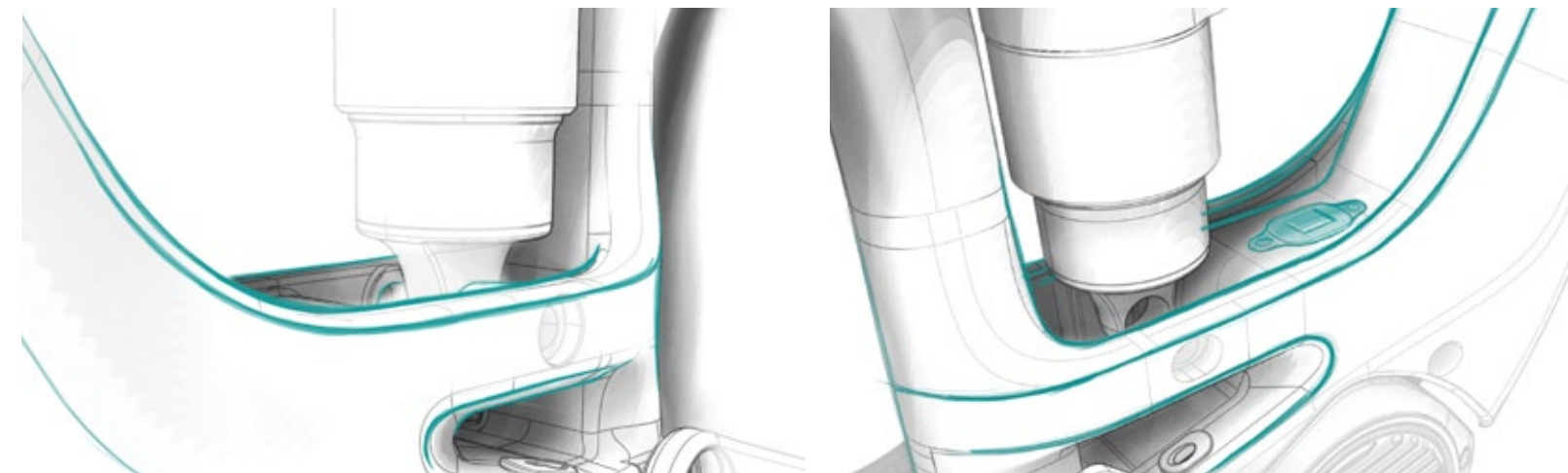
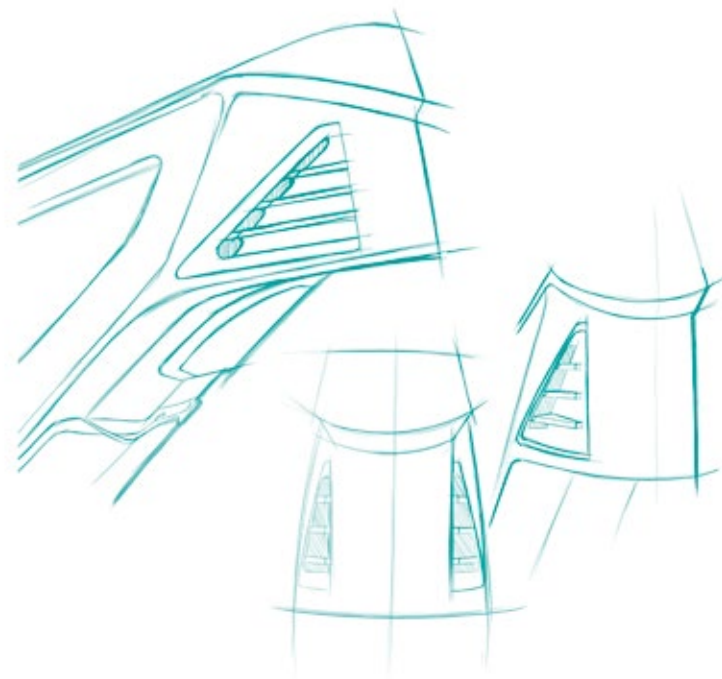
ON THE UPPER PART OF THE TOP TUBE, A SWITCH HAS BEEN ACCOMMODATED PERFECTLY, ALLOWING THE RIDER TO ACTIVATE THE SYSTEM WITH EASE. IT ENCOURAGES THE RIDER NOT TO WASTE ANOTHER SECOND BEFORE SETTING THE BIKE IN MOTION.



A STRONG AND DETERMINED LINE LEADS THE ONLOOKER FROM THE DROPOUT TO THE HEAD TUBE. THE EYE LINGERS AT THE NEW THERMO GATE. A FORGED ALUMINIUM PART THAT HAS BEEN INTEGRATED SEAMLESSLY INTO THE CARBON FRAME. THE MILLED RIPS ARE THE VISUAL HIGHLIGHT IN THE HEAD TUBE AREA AND UNDERLINE THE EXCLUSIVITY OF THE NEW eONE-SIXTY.

THE MOTOR BRACKET WRAPS THE HEART OF THE FRAME WHILE NOT TAKING UP ANY MORE SPACE THAN NEEDED. THE REAR SHOCK ATTACHMENT POINT HOVERS ALMOST WEIGHTLESSLY ABOVE IT. TO PROVIDE THE BIKE WITH NEW ENERGY, THE WELL PROTECTED AND EASY TO GET TO CHARGING PORT IS LOCATED AT THE JOINING POINT OF THE DOWN AND SEAT TUBE.

TO SUM UP - UNCOMPROMISING





GEOMETRY

The bike is optimised for a 29" front wheel which offers better 'rolling over obstacles' performance. The head angle got slacker and the bottom bracket height got lower for better control at high speed. The original eONE-SIXTY was optimised for 175mm crank. As the new bike is designed for 165mm cranks it was possible to lower the BB. To optimise the climbing performance the seat angle got steeper.



FRAME SIZE	XS	S	M	L	XL
seat tube (mm)	405	420	440	470	500
seatpost insert length (mm)	182,5	197,5	217,5	247,5	277,5
top tube horizontal (mm)	563	584	605	628	652
drop out inner width (mm)	148	148	148	148	148
chain stays (mm)	439,5	439,5	439,5	439,5	439,5
head tube angle (°)	65,5	65,5	65,5	65,5	65,5
seat tube angle (°)	75,5	75,5	75,5	75,5	75,5
seat tube angle (°) (max. ext. BB-ST mid)	75,5 (630mm)	75,3 (680mm)	75,1 (730mm)	75,0 (780mm)	74,9 (830mm)
seat tube inner dia.(mm)	30,9	30,9	30,9	30,9	30,9
bottom bracket drop (mm)	17,5	17,5	17,5	17,5	17,5
wheel base (mm)	1168	1190	1212	1238	1265
fork offset (mm)	51	51	51	51	51
head tube length (mm)	110	115	120	135	150
fork length (mm)	571	571	571	571	571
stem length (mm)	40	40	40	40	40
reach (mm)	400	420	440	460	480
slack (mm)	629	633	638	651	665
slack-to-reach	1,57	1,51	1,45	1,42	1,39
crank-arm length (mm)	165	165	165	165	165



