



TQ-HPR50 PRODUCT PRESENTATION



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WHO IS TQ AND WHERE WE ARE GOING

TQ was formed in 1994 in the blue lake land of Bavaria, Germany. Over the past almost 30 years, we've grown from a two-man shop based in a barn to an international leading tech company of more than 1.700 employees. We come from electrical engineering and manufacturing services and since more than 25 years we develop and produce electronics for the global market leaders. TQ have embarked on the e-bike journey first time in 2008.

TQ stands for **Technologie in Qualität** – simply translated: Technology in Quality, which is the base line for everything we do.

TQ-Drives is a part of the TQ-Group which focus on world leading drive systems. More than 10 years ago, founded in a cooperation with the German Aerospace Center, the development of ground breaking drive technologies has started. Since then, we have been shifting the boundaries of industrial application of frameless motors and creating drive systems with the highest torque density on the market.



WHO IS TQ AND WHERE WE ARE GOING

We tap into the knowledge we've gained from years of applying our drive technology in fields of robotics, space travel, medical robots or automation to create the best possible, innovative and technologically advanced products defined by cyclist's wants and needs.

We share cyclist's rituals, influences, needs and ambitions. This connection, combined with our hard-working mindset and ambition creates the future road map for TQ in the cycling industry.

We have the ethics of a family business and the scale of a global leader. Our products are made in Germany for partners we trust and respect. We produce and assemble all of our parts: the TQ-HPR50 drive unit, battery, display, remote and sensors predominantly in Germany and Europe.

WE TAKE CARE OF THE TECHNOLOGY,
SO YOU CAN ENJOY YOUR RIDE.



THE TQ-HPR50

UNCOMPROMISING EXPERIENCE.

The TQ-HPR50. Uncompromising experience.



When developing the HPR50 system, we focused on providing the best possible solution customized specifically for a modern kind of rider who loves everything about riding bikes but would like to ride a bit further or climb a bit higher without accepting any compromise in weight, noise or frame design.

The HPR50 Drive Unit with our patented Harmonic Pin-Ring transmission is the heart and soul of the system and weighs only 1.850 g. Combined with our 360 Wh battery, the fully integrated 2"-display and our minimalistic remote, we've created the lightest e-bike system in its category weighing just 3.900 grams. However important these numbers might seem, though, they actually don't accurately reflect what the TQ-HPR50 system is about – **the natural ride feel.**

It's the lightest, quietest, smallest in its class. It's cycling but better.



THE TQ-HPR50. NATURAL RIDE FEEL.

The overall size and weight of the drive system allows for the most natural ride feel. Each component was designed for the TQ-HPR50 system to perfectly complement each other.

How do we define natural ride feel? We say, that it's like riding a bike on the fittest day of your life. Easy to forget that you are riding an e-bike. It's not defined by newton-meters, it's defined by rider's experience.

IT'S TECHNOLOGY YOU FEEL.
IT'S ADVANCED, NATURALLY.



THE TQ-HPR50 DRIVE UNIT

The heart of the system – the TQ-HPR50 drive unit – is completely made in Germany and not only developed but also assembled at TQ's factory in Inning am Ammersee, Southern Bavaria.

Believing that the principle of 'less is more' doesn't just ring true when it comes to size, weight and noise, but also when it comes to user friendliness. The system intentionally features only three ride modes which, however, are fully customizable through the TQ App.

Additionally, the Q factor of the drive unit is only 135 mm which allows for the same natural and efficient feel at the pedals as analog bikes.





THE TQ-HPR50 DRIVE UNIT

Through the highest torque density on the market the drive unit brings the most power while taking up as little space as possible. This allows full freedom of integration and kinematics – making TQ-equipped bikes ride just like analog bikes.

The HPR50 drive unit weighs only 1.850 grams, delivers up to 50 Nm of torque and up to 300 Watts of peak power in the most compact, lightweight package.

But for us, the development of the TQ-HPR50 drive unit has never been about torque or power. It's always been about feeling empowered. It's about climbing faster and riding longer to enjoy more of what's most fun – shredding trails and having a blast on the downs – without being held back by a massive weight penalty and cumbersome bike. Uncompromising experience.





THE BATTERY & RANGE EXTENDER

The battery has been specifically developed to power the TQ-HPR50 drive unit with maximum efficiency whilst taking up as little space as possible.

The main battery delivers 316 Wh/dm^3 , which is the highest energy density on the market. The rider gets the most energy in the smallest package. Allowing for the design of e-bikes that look like and have the same kinematics as analog bikes.

Weighing only 1.830 g, the battery features a capacity of 360 Wh which can be further increased by adding our 160 Wh optional range extender for those extra-long all-day epics. In the size and weight of a water bottle, the range extender fits easily into a bottle cage. Thanks to the dual charge port, the range extender can be charged together with the battery without removing it from the frame. And can work as a standalone energy source. The main battery can be charged within two to three hours by using our dedicated charger.





THE DISPLAY

Featuring a 2" O-LED display, the display acts as a frame-integrated control hub and gives riders full control over their e-bike.

The display lets the rider monitor essential system data and connects their TQ-powered e-bike to a mobile phone or favorite ANT+ bike computer.

Perfectly readable under all light conditions, the display provides all the information needed at one glance while a simple press of the display button turns the system ON and OFF and let's riders navigate through different screens.





THE REMOTE

The smallest part of the TQ-HPR50 e-bike system is a stealthy little handlebar remote. It lets rider control the bike's support settings without having to move a hand from the grips.

The remote simply mounts onto standard 22,2 mm-diameter handlebars and can be conveniently unplugged from its cable, making it super easy to change or replace components on the bars.

Designed specifically for mountain bikes following TQ's principle of less is more, the remote is a compact, robust and understated piece of technology made specifically for riders who want to ride more and not worry about anything else.





HARMONIC PIN-RING TRANSMISSION



HARMONIC PIN-RING TRANSMISSION

The Harmonic Pin Ring Transmission (HPR) is a result of TQ's decades-long experience in the development and engineering of electric motors for robots, satellites, space stations and mars rovers. By redesigning and reengineering the patented Harmonic Pin-Ring technology used in literal Space-Age applications to fit the needs of cyclists, TQ created an extremely light drive unit (1.850 grams) that has virtually no lag in engagement and allows for seamless and noiseless e-bike system integration.

Utilizing the compact size and technological advantages of the HPR transmission, TQ developed a light and extremely compact nested-like motor construction around the bikes bottom bracket. Consisting of only very few parts this makes the motor **almost invisible at first glance**. The HPR transmission avoids the use of traditional cog wheels which cause friction, noise, wear and potential points of failure.

Foregoing traditional cog wheels enabled the design of e-bikes which sound, look and ride like analog bikes. Lastly, an HPR50-equipped e-bikes pedals like a normal bike when the drive unit is disengaged thanks to an integrated freewheel and drag-free internal components.



THE TQ-DRIVES TEAM

PERFECT COMBINATION OF TECH NERDS AND CYCLING ENTHUSIASTS.



THE TQ-DRIVES TEAM. CREATORS OF DREAMS.



We are TQ-Drives, the team behind the drive technology at TQ. And every technology has couple of humans behind it, creators of dreams who dare to be different. We have some brilliant technical minds, innovators, software magicians amongst us. But that is not the only thing which enables us to create innovative e-bike systems.

Our engineers working alongside the production team in Inning an Ammersee, strive to make the dreams of next generation of bikes reality. Everyone has their own little passion, an inner love for something – and by projecting our passion and enthusiasm into everything we do, we were able to develop the new groundbreaking TQ-HPR50 e-bike system. And we are ready to share it with every cyclist who joins us for the ride.

PERFECT COMBINATION OF TECH
NERDS AND CYCLING ENTHUSIASTS.

THE TQ-DRIVES TEAM. CREATORS OF DREAMS.



Toni Rossberger, the inventor of our patented harmonic pin-ring technology. Local motocross hero and stuntman.



Marc Kirsch is driven by more sustainable mobility solutions. Tests his own software while riding e-bike to work every day.



Daniel Theil is driving the present and future of e-bike systems.

THE TQ-DRIVES TEAM. CREATORS OF DREAMS.



Simon Hoffmann is leading the team towards new challenges.



Felix Heine has been riding and racing (E-)bikes ever since he can remember.



Anna Vodickova is turning products into experiences.

THE TQ-GLOSSARY



TQ-Systems GmbH	Used when talked about TQ as a legal entity.
TQ-Group	A registered brand, used when talked about TQ as a whole company.
TQ	Preferred term, used in a following text to TQ-Group.
TQ-Drives	Used only when specifically talking about a TQ product division developing and producing drive technologies i.e., e-bike systems.
TQ-HPR50	When talking about the whole e-bike system. An e-bike system, drive system, system or e-system, prioritized as to which term is preferred.
HPR	Abbreviation of Harmonic Pin-Ring. Always use the full term Harmonic Pin-Ring first, HPR in the following sentences.
The Hyphen „-“	The TQ-Glossary is build around the hyphen, when using the above mentioned terms, please respect the hyphen.

IMPORTANT LINKS



WEBSITE

tq-ebike.com

YOUTUBE

youtube.com/c/TQEBike

INSTAGRAM

instagram.com/tq_ebike

FACEBOOK

facebook.com/tq.ebike

LINKEDIN

linkedin.com/company/tq-group

TEAM VIDEO

youtu.be/gL6YU6TyWbk

TECH VIDEO

youtu.be/RxaKGjPNUA4

FURTHER INFORMATION



Download area for press release, product imagery and more

<https://shares.tq-group.com/s/KBaJfgXmKN7fxZc>

Password 031159

If you would like to get in touch with us:

Anna Vodickova Product Marketing Manager TQ-Drives

anna.vodickova@tq-group.com

+49 815 39308-375

+49 176 10930898

Wildmoos 1, 82266 Inning am Ammersee