

Bosch eBike Systems 2016





# Pioneer of a new era

The bicycle wheel has been turning – for centuries now. It is one of the most successful means of transport and the epitome of mobility. For many, cycling is part of everyday life: whether on the way to work, for sporting activities, for recreation, or for shared experiences with the family. But the cycling scene is at a turning point, and the streetscape is changing. More and more people are saddling up and relying on an electric tailwind. Overcoming distances and hurdles, being mobile, staying mobile - that is what is crucial.

eBikes create unimagined possibilities for individual needs and individual people. The eBike lends you wings. It makes it possible for the rider to engage in agile, convenient, and smart traffic behavior with positive effects on health, the environment, and society. More than two million pedelecs are currently on the road in Germany alone, and the share among bikes is growing rapidly. The eBike is en vogue and Bosch is setting the standard here: with its creative employees and technological expertise, the company has been enabling individual mobility for nearly 130 years - Bosch thinks ahead.

The population is growing, resources are decreasing, the climate is changing. Contemporary and sustainable mobility will be electrified, automated, and networked. We are convinced that eBikes are the introduction to multimodal and mulitlocal mobility.

We at Bosch eBike Systems live for mobility. Together with our customers, partners, and dealers, we inspire the public and shape the future.

The focus this year is on eMountain Bikes - experiencing uphill flow like otherwise is only possible going downhill. eMountain Biking means revolutionizing that which has a cult following - with every turn of the pedal. This brings athletic riding to the next level.

Immerse yourself in the exciting new world of Bosch eBike Systems. Be a pioneer, set out, arrive.

Tamara Winograd Marketing Communications Bosch eBike Systems

# **Bosch eBike Systems 2016**

## PowerPack

## PowerPack 300, 400, and 500

Bosch PowerPacks for the Active Line are available as a frame or rack battery with 300, 400, and now also 500 Wh. With the Performance Line, you choose between the frame variant with 300, 400, and 500 Wh or the rack battery with 400 and 500 Wh.







reddot design award

## On-board computer



Using this clever control center, you control your pedelec experience easily and intuitively. Intuvia informs you clearly and reliably regarding all relevant information about your eBike system.



### Nyon

The all-in-one eBike on-board computer accompanies you from route planning to evaluation of the fitness data and is connected to the online portal and smartphone app.

## **Drive Unit**



### **Active Cruise**

The Drive Unit Active Cruise gives you a unique, natural, and relaxed riding experience up to 25 km/h. It is available in Platinum or Black. Optionally with backpedal function.



## **Performance Cruise/Speed**

The Drive Unit Performance Cruise provides support up to a top speed of 25 km/h, and the Drive Unit Performance Speed can even support you up to 45 km/h.



### **Performance CX**

The optimum drive for off-road – for powerful acceleration, ultimate uphill flow, and a new dimension in riding enjoyment.

# Taken along with uphill flow

At a high Alpine altitude of 2283 meters, the mighty peaks of the Dolomites show themselves from their very best side – the UNESCO Natural World Heritage site is impressive. Stefan Schlie, Trial World Champion and German Champion several times over, takes the participants of the the eMountain Bike riding technique camp on spectacular trails to the summit plateau of the Rosengarten.



"Hardly a cloud, a perfect view into the distance!" says Kurt Resch, owner of Steineggerhof, pointing from the terrace of his bike hotel up to the peaks of the Rosengarten. "We need to take advantage of the great weather!" responds Stefan Schlie. The native of Westphalia leads the eMTB-riding technique camp into the spectacular landscape of the South Tyrolean Dolomites. Here bikers learn all about safe and responsible use of the eMTB on the mountain. The 43-year-old first introduces the participants to the handling of an eBike: Controls, riding modes, on-board computer, start-up behavior, center of gravity - the few special features are quickly explained. Then he puts himself at the head of the group.

## Irresistible uphill flow

The first experience on the eBike is impressive: The power of the drive and the special riding experience trigger amazement. They quickly go through riding technique training on level ground, on dirt roads, and along lush pastures. Soon the paths narrow and lead steeply onto the mountain. Stefan gathers the attendees together at a clearing. "What is your first impression? Are you managing?" "I have a great feeling. I would not have thought that the drive would be so perfectly adapted to my foot," says participant Michaela.

"Almost all the techniques and tricks for working with the eMTB work just like a bike without a drive," says Stefan. The reason why he succumbed so quickly to the fascination of eMTB was the irresistible flow during the ascent. "This is a feeling I previously only knew from downhill." In addition, he no longer needs to take shuttle transports. "If I feel like it, I just ride the same trail again."

eMountain Biking is experiencing a boom. More and more people are discovering this particular combination of sport, nature, and technology. eMountain Bikes are one of the trends at the Eurobike 2015. The trade fair in Friedrichshafen is a clear indicator of future developments in the industry. Organizers, hoteliers, and tourist regions have also recognized the benefits and are providing the appropriate infrastructure. In addition, the technology in recent years has developed rapidly further and adapted to the needs of the rider.

### Curve boost - new riding experience when turning

The group rides uphill on singletrack trails. The vegetation line is long past - the snowy peaks of the Rosengarten appear before the riders. The group takes a rest at the Rotwandhütte at 2283 meters of altitude. Stefan takes his on-board computer off the handlebar and presents the altitude profile of the section covered. "1379 meters of elevation gain. Not bad for a start!"



A little later, the bikers go into detail. Stefan explains technical features, demonstrates exercises, and talks about risks. "Stay centered over the Drive Unit! Work with the drive!" he calls out to Michaela on the steep slope. When turning the rear wheel in switchbacks, sensitive use of the front brake is required - and exact timing. "You were a bit too early with the hip movement. If the rear wheel is in the air, the bike just follows!" The group shows enthusiasm: "When coming out of the turn, the CX drive brings so much power to the trail that I am immediately in the flow again - a magical feeling," says participant Werner.

## Respect and tolerance on the mountain

When entcountering a group of hikers, one thing became clear: "Actually, we were expecting more skeptical looks," Michaela says. "But what you give is what you get." Because both groups met each other respectfully and politely, a conversation begins among Alpinists in which the mountain climbers learned about the details of the pedelecs. "You need to be considerate of each other and behave in an open and tolerant manner," says Michaela. "That is also true between us bikers, of course", adds Petra. "Downhill is the supreme discipline; eBikers should give way even if they are in the flow uphill." Protecting nature is important to instructor Stefan. "Off-trail rides and closed paths are simply taboo. Hard braking on sensitive surfaces is also not necessary." Those who want to enjoy the beauty of the mountains also in the future must obey a few simple rules. "The riding enjoyment is in no way reduced by following these rules."

After about eight hours of touring, the riders reach Steineggerhof again – tired but happy. Hotelier Kurt Resch is pleased with the positive feedback. He feels confirmed in his decision to give the eMountain Bike a major role at Steineggerhof: "Those who have tried it can understand the fascination – eMountain Biking is not something they can give up."

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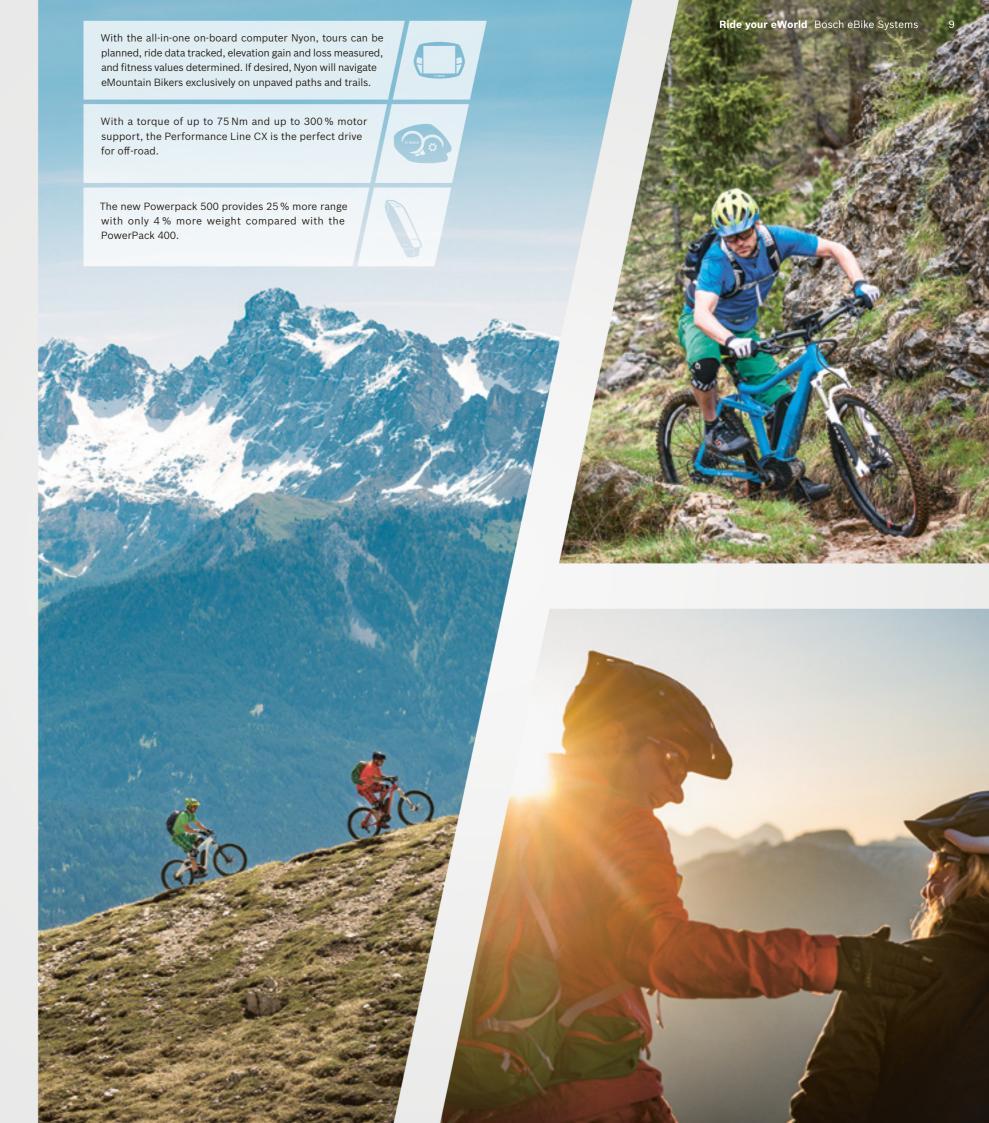
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### #uphillflow

Scan here for the Bosch Uphill Flow II.

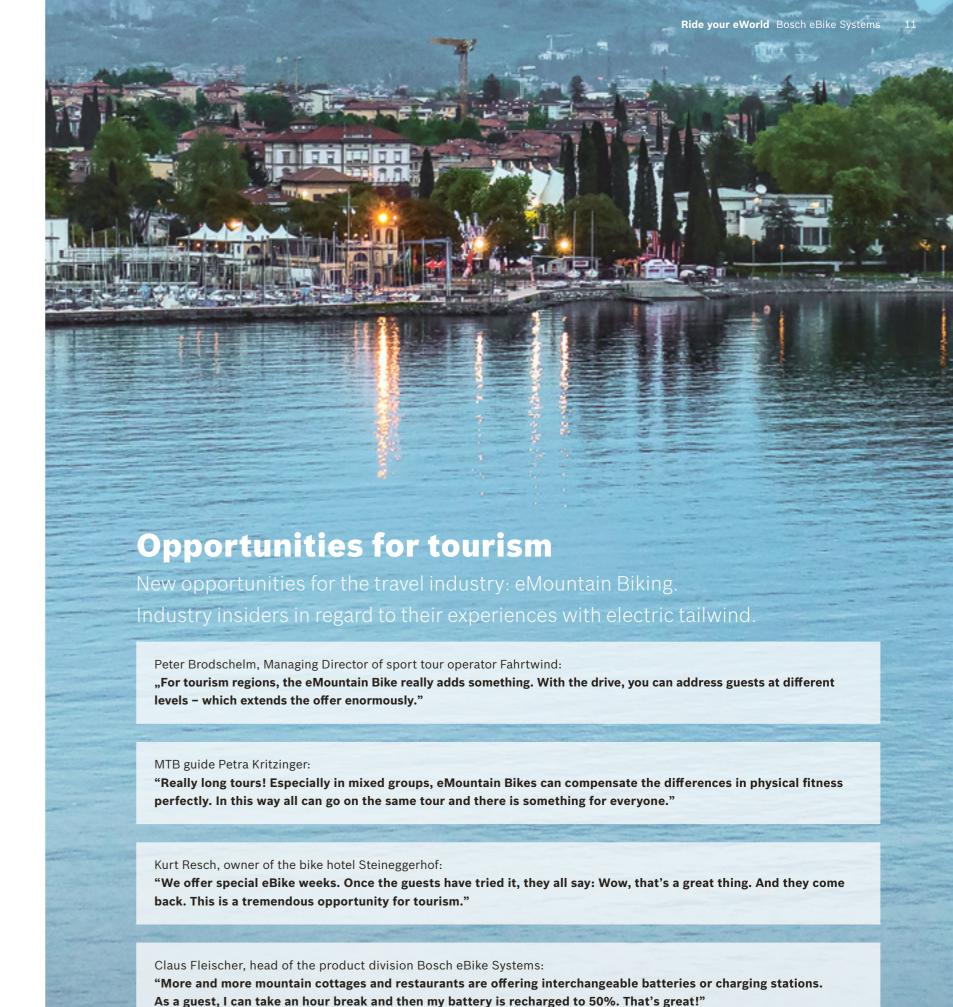




40,000 mountain bikers, some 150 exhibitors on the expo grounds, and lots of races, parties, and fun: In its 22-year history, the Bike Festival Garda Trentino has become the Mecca of the MTB scene. The three-day event is the start of the bike season and is considered a barometer for the entire industry. Staged for the first time: the eMTB Marathon epowered by Bosch.

Never before have so many visitors come to Riva del Garda to jointly open the mountain bike season. This success is no accident. On the north shore of Lake Garda, there are ideal conditions for bikers. Countless trails wind directly from the city center up into the surrounding mountains. For example, the popular Ponale meanders over ten kilometers and approximately 500 meters of elevation gain to the mountain village of Pregasina – including a panorama of the lake. In addition to the charming tours, there is the Mediterranean atmosphere, the friendliness of the hosts, and of course the lake. This particular mixture explains the popularity of the event.

Taking this year's record attendance as the benchmark, you can see how the popularity of the MTB sport is growing. The technological innovations presented in Riva – from 650b+ tires to superlight carbon cranks through to the Bosch Performance Line CX – speak for the fact that fascination with mountain biking continues to increase. There was a premiere in the race disciplines in 2015: For the first time, the Riva eMTB Marathon epowered by Bosch was staged. The winners over the 30 kilometers were Martin Föger from Austria in the men's race and Christina Pfandke of the Bosch team in the women's race.



# Flexible in the city

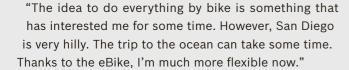
Brett Lindstrom is a former road cycling pro and now works as an expert for the bike industry. A year ago, he and his wife decided to get rid of their second car. The eBike is now his favored means of transportation.

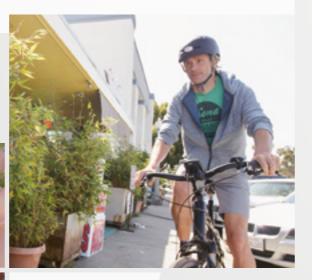
> Driving a car in Southern California is pure stress. Hectic streets and parking nowhere to be found. "So we decided a year ago to get rid of our second car," says Brett.



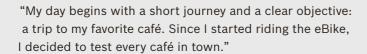
Brett Lindstrom, 39, lives with his family in San Diego. The second largest city in California is known for its attractive beaches and surfing culture. Brett and his wife Kelly ride eBikes with Bosch Performance Line and Intuvia.







9:40 a.m.







"Surfing is my passion. As often as I can, I allow myself a break and go out to the ocean. Previously, I had to put everything in the car, look for a parking space, and unload everything again. Now it is easier: I carry everything with me, lock up the eBike, and take off."



2:10 p.m



4:25 p.m.



"In the afternoon I fetch our son Nico from daycare. From home that is four blocks, four climbs. The eBike makes it



4:50 p.m.

"My wife Kelly is waiting at home. We are planning to meet to go shopping. We do that mostly by bicycle."



"We love to enjoy the sunset in the evening. Half an hour to the beach - previously, it wasn't worth it. Today we do it almost every day. We have a good time together without being exhausted or stressed. That's priceless."



6:45 p.m.

electromobility

Volkmar Denner, Chairman and CEO of Robert Bosch GmbH, on the importance of the eBike for the success of electromobility. The interview was conducted by Tamara Winograd, Bosch eBike Systems.



Mr. Denner, as a leading global automotive supplier, Bosch entered the market for eBike drive systems with its own product range in 2009. Why?

### **Denner:**

For nearly 130 years, Bosch has made individual mobility possible for millions of people worldwide. For more than 100 years, cycling was mechanical and everyone was happy with it - until the eBike came and completely redefined a supposedly steady market. Even back when the Bosch eBike Systems product range was founded in 2009, it was clear: the eBike is an important step for both development and acceptance of electromobility in society.

## Winograd:

How are you doing on this path? Have there been any initial successes?

### **Denner:**

Thanks to the synergies and the great expertise within the company, we quickly achieved major progress. After only three years, we became the European market leader; we continue to grow faster than the market, and we continuously deliver innovations. The harmonious combination of our components and the consistent focus on the needs of users are surely the key to success. In the meantime, the eBike has

become the most successful electric vehicle in the EU. And a very important precursor for the success of electromobility

## Winograd:

Some 500 million people in the EU make up just 7% of the world population. How will Bosch eBike Systems help the eBike achieve breakthrough also outside of Europe?

Our goal is to establish the eBike as a successful model worldwide. We have taken the initial steps to set the course. Since last year we have been pushing ahead with our market activities in North America and Asia. We first opened an office in Irvine, California, and then in Suzhou, China, In this way we can better meet the needs of our customers and the industry as a whole. This is a clear signal to our business partners: We want to work together to expand the eBike business together worldwide. Bosch eBike system has now matured from a start-up to a "global player."

Initially the eBike was considered a means of transportation reserved primarily for "generation 50+." If you take a look at the current streetscape, a lot has changed here. What trends are you observing?

Applications for eBikes quickly became quite diverse. Not least thanks to our drive system that features flexible integration, many manufacturers were able to enter new eBike segments in a relatively short time. The current trends range from comfortable step-through models and everyday bicycles to very sporty eMountain Bikes and practical eCargo Bikes for residential and commercial use. This shows that modern, sustainable mobility that is fun and healthy is important for more and more people. And that's exactly what we want to achieve with our products.

### Winograd:

The value chain for eBikes is broad. In addition to system providers such as Bosch, it is primarily the bicycle producers and distributors that characterize the eBike business. What share do manufacturers and distributors have in the successful market penetration in Europe?

### **Denner:**

I am proud that we are able to decisively influence and shape the eBike market with our ideas and our commitment. That was possible only in conjunction with manufacturers and distributors that are just as committed to the great potential of eBikes as we are. The constructive cooperation and the willingness of our customers and partners to invest in the topic are simply overwhelming. So at this point we would like to express many thanks to our customers, business partners, and dealers. Together we have quickly achieved a great deal. Going forward, we will make every effort to meet the high expectations.

Digital networking has long since affected all areas of human life, and changed society, culture, and the economy. Where is the technological journey going with the eBike?

As with cars, networking with the Internet is also a major trend with the eBike. For example, it is very convenient when you are planning bicycle routes on your PC or smartphone to then transfer them to the on-board computer and subsequently evaluate all relevant data. Our on-board computer Nyon is the first fully networked ecosystem of the industry. The new opportunities arising through the networking and interaction between different devices are incredibly versatile and exciting. The networked eBiker is the "next big thing" - I am convinced of that.

What personal relationship do you have with eBikes? Do you ride one yourself?

The electric boost also brings out a lot of enthusiasm in my household. My wife has an eBike with Performance Line and Nyon. I like to use her eBike for the trip to the bakery in the morning. We live on a hillside, which makes the eBike a very elegant and convenient solution for not sitting down at the breakfast table all sweaty. Recently I had the opportunity to ride over a pass in the Alps and got off the bike with the typical Bosch eBike grin.

What has Bosch planned for the future in the area of eBikes?

### **Denner:**

We believe the future of mobility will be electrified, automated, and networked. This applies to the Bosch Strategy as a whole and to our eBike strategy in particular. We will further develop the efficiency of the electric drive systematically. For example, we are already the leader in range and are continuously working to increase it. It helps of course that Bosch has invested large sums in the development of battery technology. When it comes to automation, we are convinced that automatic transmission control represents high added value for customers. With eShift, we have already brought an innovative gear shifting concept to series production. In working with the Internet, Nyon marked the beginning of a new era with the world's first all-in-one on-board computer. In short: We offer exciting products, "Invented for life - epowered by Bosch".

Mr. Denner, thank you for the interview.

Dr. rer. nat. Volkmar Denner is CEO of Robert Bosch GmbH and partner of Robert Bosch Industrietreuhand KG. He was born on November 30, 1956, in Uhingen, is married, and has three children. After graduating from a college-prep high school in 1975, he studied physics at the University of Stuttgart and passed his master's degree exams in 1981. After a research stay in the USA, he received his doctorate in 1985 from the University of Stuttgart in Physics as Dr. rer. nat.

The full interview can be found at www.bosch-ebike.com





## Route planning on the online portal

It is about 210 km between Lucerne and Lausanne on Lake Geneva. Google calculates the time of two hours from A to B without any detours. Those who opt for the eBike suddenly face a variety of possibilities. And a great deal of freedom. "Parks and lakes are lined up one after the other in the Bernese Oberland," says Daniel. "This wealth of impressive natural spectacles was something I was previously unaware of." Together they planned daily stages and routes online – in Jasmin's favorite café in Lucerne. The couple imported the finished schedules and maps into their on-board computer. The next day they took off. Out of Lucerne, passing by Sarneraatal in the direction of Lungerersee.

### Rest stop at Gasthof Rosenlaui

The first challenge: riding over the pass of Grosse Scheidegg. The car-free mountain pass connects the Hasli Valley, through which the Aare flows, with the town of Grindelwald, the stage destination. In about two hours, Jasmin and Daniel overcome the 1280 meters of elevation gain. At Gasthof Rosenlaui there is an opportunity to rest and recharge their batteries. "This landscape gives you a feeling of peace and inner strength," says Jasmin, overlooking the Rosenlaui Glacier. The evening ends on the terrace of the hotel in Grindelwald.

The next morning the eBikers replan their stage. Instead of a trip through Fribourg, their hotelier suggests riding through Simmental with an overnight stay in Gstaad. This route is more scenic. Even with modified routing, Nyon proves to be flexible and reliable. In the afternoon, the climatic health resort has been reached. Time enough to explore the area in an off-road excursion. Before the final stage to Lausanne, the bike hotel "Rossli" proves to be an ideal host.

"Three really perfect days. So many moments, impressions, experiences," Jasmin says upon arrival in Lausanne. The two have traveled some 300 km on their journey and experienced a great deal more together. 300 km which will be remembered.



Scan here for the Nyon tour report from Switzerland





Connect your Way



The all-in-one on-board computer is rugged and adapted to the needs of eBikers. Control is intuitive using the 5-way joystick on the device or - during the ride - on the separate control unit.

## Overview

Large display, characteristic screen design, clear presentation. The transreflective 4.3-inch color display is readable in all ligh-

Everything you need for your fascinating eBike experience is in view and ready to be accessed. Navigation, riding data, range, fitness, notification of incoming text messages, and much more: Nyon supports you from route planning to the tour to the evaluation of your activities with additional features and custom options. Nyon marks the beginning of a new era: the first fully networked ecosystem of the industry.



## Intelligently networked











### Smartphone app eBike Connect

Through custom adjustments in the smartphone app eBike Connect, you make Nyon into your personal eBike Wizard. You configure your screen or refine the settings of your riding modes just as you wish with our premium feature. Data is exchanged via Bluetooth.

The Bosch online portal eBike-Connect.com creates your own personal eBike information profile for you. You can plan and analyze customized tours in the portal, with an overview of times, altitude, distance, and your fitness. Or you can import a GPX track and transmit it to Nyon via the portal.

## **Overview of features**





All of the most important information relevant to riding at a glance. Speed, riding mode, cadence, range, and much more: You decide for yourself what data is displayed on your Ride screen. And the size and order of presentation is according to your wishes



scenic or fastest eBike routes.

Plan your route online, on your smartphone, or on the on-board computer itself. With intuitively understandable, distinctive symbols, Nyon takes you on the most





Nyon turns your pedelec into your own personal trainer. The on-board computer A pop-up informs you via Bluetooth regarding arrival of a new text message on measures fitness-relevant data such as cadence and pedaling power. And Nyon calculates how effectively you are exercising based on your body data. If you wear a chest strap, Nyon even takes your cardiovascular values into account for this calculation. In this way you have all the information for supporting you in maintaining and improving your fitness and health over the long term.





your smartphone and the sender. In this way you are always up to date - no matter where your eBike adventure takes you.



In the middle of life, in the middle of the city: Being fit and active means a lot to Runhild Reinhard. The 65-year-old former competitive athlete enjoys her independence and knows how important regular exercise is for health and well-being. For the prevention of health risks and for convalescence. her physiotherapist Elmar Radzik considered eBiking to be an appropriate exercise.





As Runhild Reinhard and her friend Michael Lang ride to Stuttgart's Waldfriedhof at half past ten, they encounter the funicular railway opened in 1929. For several years the retired teachers have been meeting two to three times a week to start the day with a ride on the steep, wooded hills of Stuttgart South. "That gets your circulation going; the day begins just great," says Michael Lang. And Runhild Reinhard adds: "We talk. We sometimes stop for a chat. I want to be up to date, to know what's going on. That's part of it for me."

The pedelec opens up new opportunities for the elderly, not just in Stuttgart with its river basin location and steep ascents. The cup of coffee with a view of the city is no longer just a day trip. Even on everyday trips for errands, it is a matter of course that hills need to be climbed. The eBike fills a long-standing gap in the mobility needs of an aging society. Intelligent technologies like the electronic gear shifting system eShift make urban mobility easy.

After about an hour and a 10-kilometer round trip, the two bid farewell – but not without arranging to meet again the next day: "We want to take advantage of the beautiful weather."

Finally everyone can incorporate sufficient exercise in their everyday life, regardless of age and physical fitness level. It is suddenly possible to visit many new destinations. Elmar Radzik, Runhild Reinhard's physiotherapist, welcomes the new flexibility. "Older people shouldn't stress their joints as much," says the 48-year-old. "To keep fit, it is important to have regular exercise, particularly as one ages. The pedelec is ideal for this because the drive harmonically provides support and prevents overstressing." The successes simply speak for themselves, according to Radzik.

## Confidence in city traffic

After visiting the doctor's office, Runhild Reinhard goes shopping in the city center. She moves among the pedestrians and cyclists in a determined and confident manner. "I like to park the eBike directly in front of the store without searching for a parking space, shop, and then continue on my tour." Runhild Reinhard does not want to do without her eBike. It is her companion in an active, fun-filled life.

The integrated electronic gear shifting solution eShift facilitates the journey. When you come to a stop, eShift automatically switches to a preset starting gear. More information and explanatory films can be found in the Products section of www.bosch-ebike.com



Rad am Ring

Nürburg, GER

**German eMTB Masters** 

Neustadt a. d. W., GER

August 31 – September 3

**German eMTB Masters** 

Friedrichshafen, GER

Trochtelfingen, GER

July 22-24

August 14

Eurobike

October 2

## **Events 2016**

**Velo Vert Festival** 

Villard-De-Lans, FR

Jun 3-5

Roc d'Azur

Fréjus, FR

October 5-9

## The Cycle Show

September 22-25 Birmingham, UK

## Tours (CMT)

Velofollies

Kortrijk, BE

January 15-17

Stuttgart, GER

## February 10-14

Munich, GER

**Bike Days** May 20-22 Solothurn, CH

July 8-10 Bad Goisern, AT

## **Bike and Adventure**

## f.re.e München

## **Vacation Fair Vienna**

January 16-17

## January 14-17

Vienna, AT

## **German eMTB Masters** April 17

Münsingen, GER

## **German eMTB Masters**

May 22 Bad Wildbad, GER

## **Bike Festival Willingen**

June

Willingen, GER

## **Salzkammergut Trophy**

## CES

April 14-17

## Sea Otter Classic Interbike

September Las Vegas, USA Monterey, USA Las Vegas, USA

### **Bike Festival Garda Trentino**

April 29 - May 1 Riva, IT

## Bike Up

June 19-21 Lecco, IT

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Can you explain that to us in detail? With eBiking, the body weight rests largely on the saddle, handlebars, and pedals. In addition, the drive prevents peak stress on the knees and thigh muscles. This protects the knee joints, ligaments, and tendons. I can control

**Low-impact fitness trainer** 

Mr. Radzik, to which of your patients would you recommend a

You of course need to look at each case individually. But one

For those who want to exercise their joints and muscles without

overstressing them. For example, when people suffer from

osteoarthritis, or for rehabilitation after knee or hip surgery.

thing is for sure: the eBike is low-impact training.

For whom is this important?

Physiotherapist Elmar Radzik about the health benefits of pedelec riding.

Ride your eWorld Bosch eBike Systems

the desired training effect by adjusting the riding modes, that is, the level of support.

## And slowly return to my former level of fitness?

At best, yes. Low-impact endurance exercise with the pedelec is ideal for a variety of diseases, such as asthma, circulatory disorders, or obesity. Studies show that eBikers ride further and more frequently than conventional cyclists; getting started is easier. This is encouraged by the sense of achievement...

### ...and social contacts!

Of course. You can't forget that. Those who are on the go with other people and sharing their experiences are certainly happier. And that naturally has an effect on health.

January 6-9

