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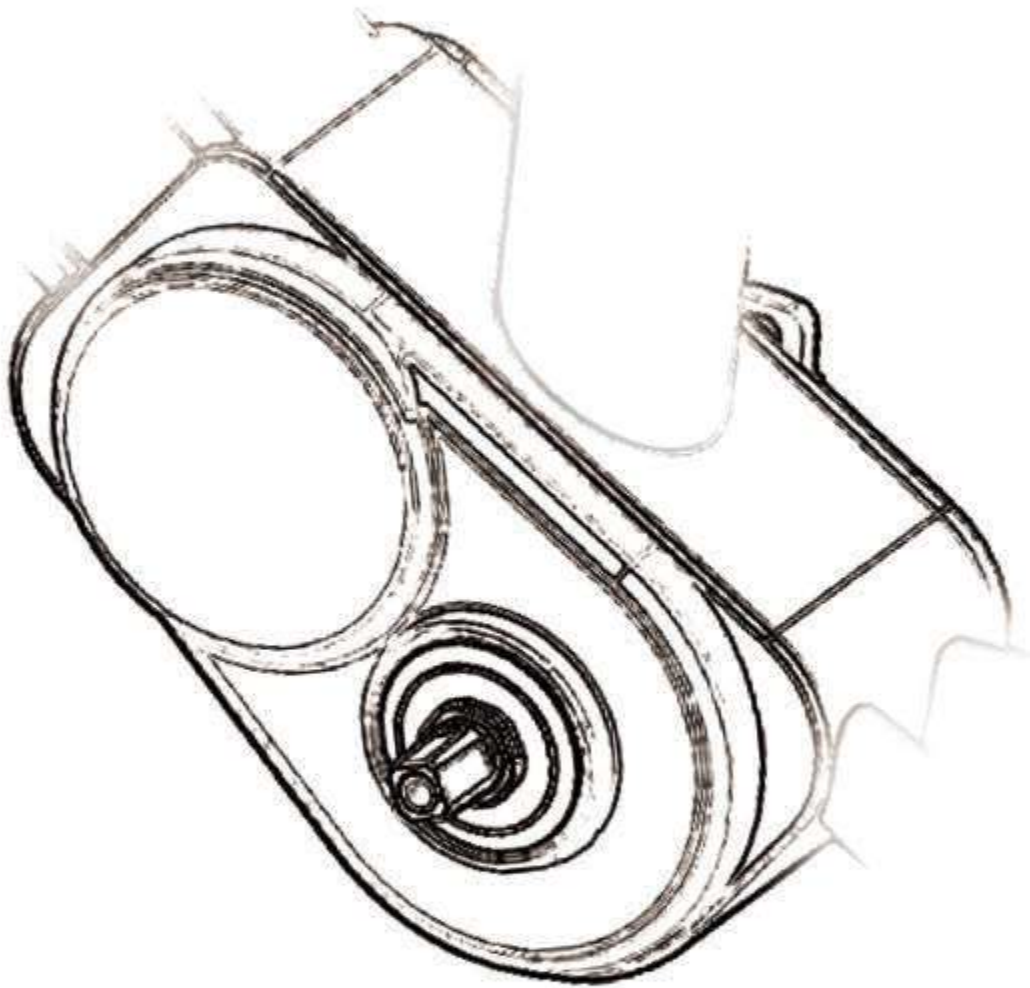
- 6** **The coolest show ever**
Eurobike invests in air conditioning
- 20** **Rocks in their heads**
New gravel bikes, cranks — and forks
- 26** **A gripping tale**
Pirelli returns to bike tires
- 30** **Get a load of these**
Electric drives tame brawny cargo bikes

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409

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◀ **In the clouds:** More than 200 bike journalists got an first look at new bikes at Eurobike Media Days in June, in the alpine air of South Tyrol.

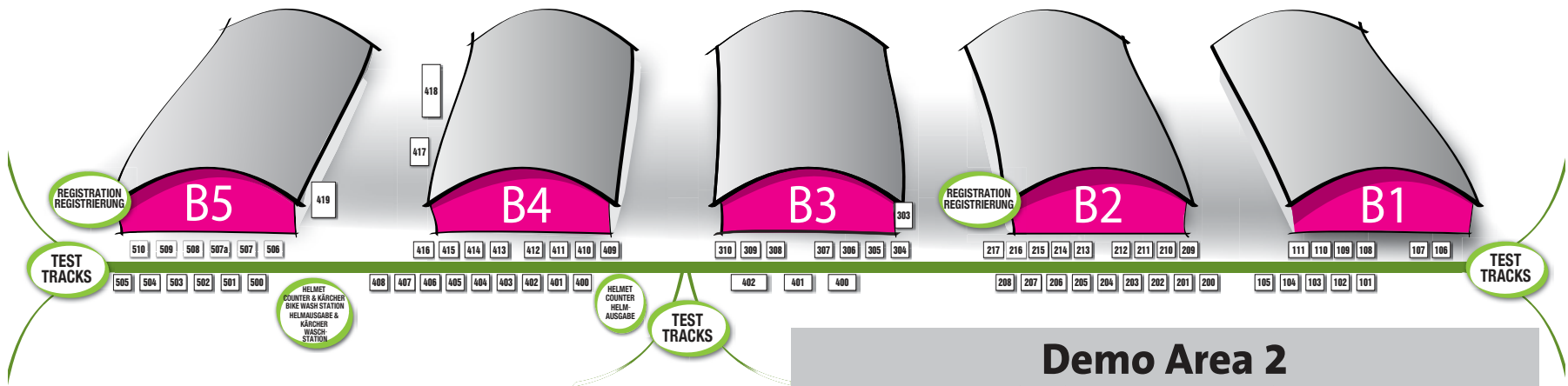
A GUIDE TO EUROBIKE STAND NUMBERS

- A & B** = MAIN INDOOR HALLS
- DA** = DEMO AREA EXHIBITORS COURTS
- FG** = OUTDOOR AREA WEST („FREIGELÄNDE“)
- FGO** = OUTDOOR AREA EAST („FREIGELÄNDE OST“) INCLUDING DEMO AREA 2
- FW** = FOYER WEST
- FO** = FOYER EAST
- ÜE** = PASSAGE EAST („UEBERGANG“)



Guide To Eurobike Demo Areas

Demo Area 1



Demo Area 1 Exhibitors

Outside Hall B1

aidoo	109
FOX Factory	101
IDbike	111
iRiding (Xiamen) Technology	111
Kurt Gudereit	107
Lauf	108
Missile	106
Órbita	110
Pivot Cycles	102
Polygon Bikes	104
Rohloff	103
Surly Bikes	105

Outside Hall B4

3t Cycling	413
Alber	416
Bosch	419
Continental Bicycle Systems	401
Continental Reifen Deutschland	402
Controltech	412
CONWAY c/o Hartje	418
Fazua	411
Free Flow Technologies	406
HARTJE MANUFATUR c/o Hartje	418
i:SY c/o Hartje	418
JBS-Drössiger	412
Marin Mountain Bikes	403
Mobia Bike	400
Momentum Electric	409
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RABBIT Cycles	410
Riese & Müller	407
Tern and Bickerton	417
TQ-Systems	415
TranzX	405
VICTORIA c/o Hermann Hartje	418
YJI Pedelecs	408

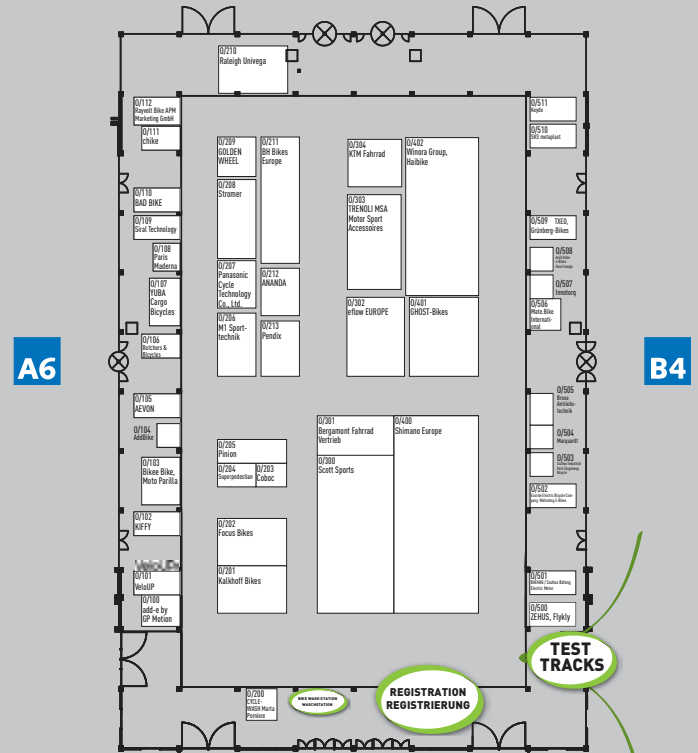
Outside Hall B2 & B3

AZUB BIKE	211
BESV	216
Bike Revolution	209
Douze Cycles	214
Hase Bikes	204
HNF	206
HP Velotechnik	212
HS-OutBraker	215
Klever Mobility Europe	200
Kwiggle@Bike	210
MAGURA	207
Moustache Bikes	205
Qianjiang-Keeway Europe	202
Radkutsche	213
Simplon Fahrrad	203
Velo de Ville by AT Zweirad	217
XCYC_excites cycling	201
YouMo	208
Arkus & Romet Group	305
BASSO Bikes	308
Cycle Union	301
e-bike manufaktur	301
Eurosport DHS	306
F.S.A.	300
Kreidler	301
Merida	302
Centurion	302
Prophete	307
RTI	310
SQlab	303
UCYCLE	309
vivax drive	304

Outside Hall B5

BAFANG/Suzhou	510
Bafang Electric Motor	510
BESV	507
BionX	500
Elby	500
ExtraEnergy Services	510
eZee Kinetic Technology	510
Fantic	506
GO SwissDrive	505
Green Pack	501
Heinzmann	502
Jiaxing Onway Ev Tech	510
Mac Motor	510
Nantong Leisheng Special Motors	509
Pedalpower Schönstedt & Busack	507a
SR Suntour	503
Stevens	504
Tetra	508

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Demo Area 2 Exhibitors

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AddBike	104	KTM Fahrrad	304
AEVON	105	M1 Sporttechnik	206
ANANDA	212	Marquardt	504
Ariel Rider e-Bikes	508	Mate.Bike International	506
BAD BIKE	110	Moto Parilla	103
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Bergamont Fahrrad		Pendix	213
BH Bikes Europe	211	Pinion	205
Bikee Bike	103	Raleigh Univega	210
Brose Antriebstechnik	505	Rayvolt Bike	112
Butchers & Bicycles	106	Scott Sports	300
chike	111	SHIMANO Europe	400
Coboc	203	Siral Technology	109
CYCLEWASH	200	SKS metaplast	510
Deutschland	509	Stromer	208
Ecoride	502	Superpedestrian	204
eflow EUROPE	302	Technology	207
Flykly	500	Tongsheng Bicycle	503
Focus Bikes	202	TRENOLI	303
GHOST-Bikes	401	TXED	509
GOLDEN WHEEL	209	VeloUP	101
GrÄ_nberg-Bikes		Vertrieb	301
Haibike	402	WallerÄ_ng	502
Innotoq	507	Winora Group	402
Kalkhoff Bikes	201	YUBA Cargo Bicycles	107
Keyde	511	Zehus	500



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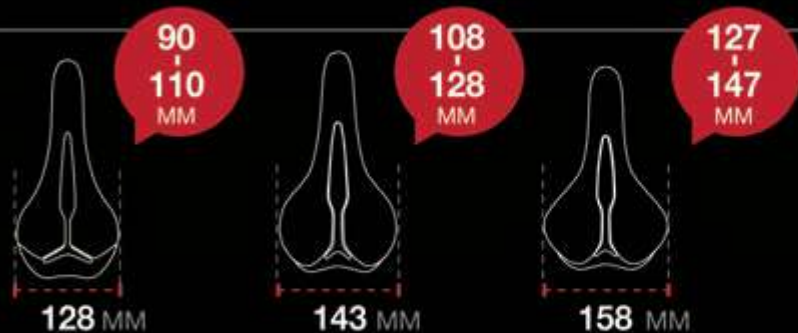
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SIT BONE



Welcome to the coolest Eurobike ever

If Eurobike seems more jam-packed than ever before, it isn't your imagination.

Show officials expect another record year for exhibitors and visitors. But they will be squeezed into less space because of a new demo setup and because the Zeppelin Hall is unavailable this year, Eurobike head Stefan Reisinger said.

"I think we now have a packed and fully booked fairground. It's very compact and it will be busy," he said.

So it's a good thing that Messe Friedrichshafen recently upgraded its air conditioning system. The €5.2 million (\$6.1 million) upgrade got its first workout at the OutDoor show in June. Reisinger said the air conditioning was well received, especially as temperatures soared above 30 degrees Celsius (86 degrees Fahrenheit).

"We managed over the last nine months to redo and rebuild the cooling system, and now it's much better and more sufficient," he said. And with Eurobike moving to early July next year, a better air conditioning system was a much-needed investment.

This year's Eurobike features 1,400 exhibitors, up from 1,350 last year, and Reisinger expects more than 40,000 visitors. Good sales generally lead to a strong trade show, and European bike sales have been solid this year.

"In general, the European market is quite healthy. We also see the e-bike

trend accelerating in southern Europe. It's still very strong in the German-speaking market," he said. E-mountain bikes have been on a tear, and other e-bike categories are also strong.

Eurobike has tweaked its demo program again this year. Now, demo booths will mostly be behind the B Halls and in the Open Fairground East, between the B4 and A6 halls (see our demo maps on page 4).

Officials expect that about 3,000 bikes will be available for test rides during the three trade days and the consumer day on Saturday.

Eurobike is also launching a new area, The Wriider's Club, for bloggers and writers active on social media. It's also emphasizing products for women, and will host an exhibit honoring the 200th anniversary of the bicycle.

Eurobike officials and visitors will also be looking ahead to 2018, when Eurobike opens on July 8, a Sunday, for a three-day run.

Reisinger said he hopes the earlier dates will enable Eurobike to win back some of the big bike brands who quit the show because it was too late for them.

One casualty of the earlier dates, however, is Eurobike's popular consumer day. Although it typically draws more than 20,000 visitors, Eurobike will not

offer one next year.

Reisinger said retailers and exhibitors did not want consumers to see products that are intended for the upcoming year in the middle of the selling season for the current year.

"If we want to make the new timing

work for the business part of Eurobike, then we have to skip the consumer part at that early time," he said. "It would have been very difficult to sell this idea of an early trade show to the clients or the dealers." ■ DM



Eurobike officials expect a packed and busy show this year. This is a scene from last year's demo area during Consumer Day.

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BNI

Eurobike Academy offers 3 days of specialized education

Visiting Eurobike can be quite an education, which is why show organizers are again sponsoring three days of seminars as part of the Eurobike Academy.



In addition to its program at Eurobike, show officials sponsor the "Eurobike Academy On Tour." They plan to offer programs in five German cities next January.

The Eurobike Academy kicks off at 1 p.m. today with a German-language discussion by Patrick Schulte of Lokaso GmbH on a pilot project where small retailers in Siegen are banding together on a "regional" web store, giving them access to an online presence that they may not be able to afford or maintain otherwise.

Jens Stegmayer of Motor Presse Stuttgart gives another German-language presentation about the MountainBIKE Women's Camp, which has successfully given female riders a place to ride and learn. Her presentation fits in with Eurobike's theme for this

year's show: "The (Bike) Future is Female."

English-language presentations include Dirk Evenson, discussing the future of mobility in fast-growing megacities; and René Beckert on streamlining and improving testing procedures for e-bikes.

Thursday's presentations will focus on certifications and standards, with discussions on bicycle and e-bike safety standards; testing bikes and pedelecs in conformance with European laws; and complying with the EU's Waste Electrical and Electronic Equipment (WEEE) Directive, which affects bike and e-bike manufacturers.

There will also be seminars on branding, video marketing, and using Instagram to boost business.

All Academy presentations are in Conference Center East, either in meeting rooms on the first floor or on the Show Stage. Presentations are in German or English.

See the calendar in the Show Daily for a detailed guide to what's on tap at the Eurobike Academy each day.

Eurobike also takes the Academy on the road. In January 2018, it plans to visit five German cities for what it calls "Eurobike Academy On Tour." ■ DM

Media Days — the show before the show — set for 2018 return

Eurobike may be changing its show dates for 2018, but it has committed to a fourth year of its successful Media Days preview program shortly before the 2018 show opens on July 8.

This year's Media Days — a kind of in-depth product preview, where bike industry journalists can sample new bikes in a low-key, ride-friendly setting — attracted 217 journalists from 18 countries. Eurobike hosted this year's Media Days for the first time in Kronplatz, a resort in the northern Italy region of South Tyrol.

"We had a strong field of participants on the brand and media side, and we are looking forward to excellent customer resonance," said Klaus Wellmann, CEO of Eurobike organizer Messe Friedrichshafen.

Exhibitors representing 24 brands had a variety of bikes on hand for riding.

"It's not a mad rush like it can get to be at Eurobike itself. So here it's relaxed, you have time, and that is really important for getting details across to the journalists," said Andrew James, brand manager of Focus e-bikes.

"It's a very efficient way to talk to the international media, also from markets where we are not represented extremely

well, which for us is Eastern Europe," said David Heine, marketing manager for BMC. "It was hard to top last year's view, but it's actually the same or better. I really like the location."

One journalist, Shlomi Deutsch from Israel, enjoyed having more time to spend with brand representatives.

"I have been covering Eurobike for more than 15 years, and this is my first opportunity to participate in such an event, which is kind of a huge three-day demo," Deutsch said. "It gives me a lot of opportunities to have discussions with the companies in a very intimate manner." ■ DM



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What's on today: Wednesday, Aug. 30

All Day Events

Eurobike Show Hours

9 a.m. – 6 p.m.

Foyer West

13th Eurobike Award

Exhibition and Innovation Area

See this year's 43 award-winning products, as judged by an independent panel of expert judges.

Open Air Grounds East / Behind B Halls

Demo Area

Test some 3,000 bikes, including road, mountain, cargo and specialty bikes and pedelecs, on 10km (6 miles) of test tracks.

Hall B2

Vision Area

See non-traditional bikes, including recumbents, cargo bikes, tandems, handbikes and other specialty designs.

Foyer West

Service Partner Area

Specialty retailers can learn more about software, inventory management systems, insurance programs and more to help their stores.

Foyer East

Blogger Base

The Eurobike Blogger Base, supported by the Wriider's Club, provides a platform for international bike industry bloggers. A Social Wall displays all Twitter and Instagram posts with the hashtag #EurobikeShow.

Scheduled Events

11 – 11:30 a.m.

Foyer East / Show Stage

Eurobike Fashion Show

The ultimate catwalk for bikewear

11 a.m. – 12 p.m.

Conference Center East / Room London

Eurobike Academy

Benefit from smart e-commerce

Thomas Ficht analyzes cycling trends and different e-commerce sales channels using insights from 15 million customer visits a month to the Idealo online marketplace. In English.

1 – 2 p.m.

Foyer East / Show Stage

Women's Special Product Presentation

Ten exhibitors present products for female cyclists. Moderated by Regina Marunde. In English.

1 – 2 p.m.

Conference Center East / Room London

Eurobike Academy

Regional and local — jointly exploiting synergies for the digital transformation

Patrick Schulte of Lokaso GmbH describes an e-commerce store for local retailers in the Siegen area. In German.



Judges for the 2017 Eurobike Awards (from left) Julia Milan; Anna Lutén; Fran García; Ernst Brust; Joel Natale; and Tomas Fiegl. Eurobike announces the winners of this year's Eurobike Awards at 5:30 p.m. tonight at the Show Stage in Foyer East.

1:30 – 1:45

AFDC (FW-214)

Fahrradland Deutschland. Jetzt!

Burkhard Stork, director of the German Cyclists' Association, discusses the new "Germany. Cycling Nation. Now!" campaign. In English.

2 – 2:30 p.m.

Foyer East / Show Stage

Eurobike Fashion Show

2 – 3 p.m.

Conference Center East / Room London

London

Eurobike Academy

MountainBIKE Women's Camp – a success story 100% female!

Marketing specialist Jens Stegmayer discusses a successful bike camp for women. In German.

2 – 3:30 p.m.

Women's Special Guided Tour

Media representatives are invited on a 90-minute tour of Eurobike exhibitors with products for female cyclists, followed by a get-together.

2:30 – 2:45 p.m.

AFDC (FW-214)

EU funding for industry

An interactive presentation and discussion about EU financing support for businesses. In English and German.

3 – 4 p.m.

Conference Center East / Room London

London

Eurobike Academy

Best practice -> Next Practice

Wolfram Hartmann describes a German government initiative to support small- and medium-sized companies. In German.

3 – 4 p.m.

Foyer East

Cities (and tech) will decide tomorrow's mobility

Dirk Evenson of Evenson GmbH discusses the challenges facing increasingly crowded cities as they decide which vehicles to ban or promote and which types of infrastructure to mandate, allow or provide. In English.

4 – 4:30 p.m.

Foyer East / Show Stage

Eurobike Fashion Show

4 – 5 p.m.

Conference Center East / Room London

London

Eurobike Academy

How to improve our development and test procedures!

René Bekert, founder of EMEC-Prototyping, outlines testing procedures and equipment for developing and prototyping new e-bikes and components.

5 – 6 p.m.

Conference Center East / Room Rom

The Accelerator Workshop

An interactive workshop for innovators, start-ups, small and medium companies, focusing on issues facing entrepreneurs. With Oliver Kozak of EASME.

5:30 – 6:30 p.m.

Foyer East / Show Stage

Eurobike Award Ceremony

Find out the 43 winners of the 13th Eurobike Award. Judges have selected 11 Gold Awards, one Green Award and — new this year — five Start-up Awards.

5:30 – 8 p.m.

Entrance West / Exhibition Lake

Eurobike Evening Ride by Shimano

Visitors, exhibitors and journalists are invited on a relaxing, guided social ride around Friedrichshafen with local experts from the Freundeskreis-Uphill Club, followed by refreshments. Meet at the lake.

Press events / athlete appearances

All Day

Gore (A7-302)

Two-time Olympic champion Fabian Cancellara

10:30 — 11:30 a.m.

Conference Center West, Room

Schweiz

Zipp Press Conference

In English

11 a.m. — 12 p.m.

Conference Center West, Room

Liechtenstein

Bianchi for Scuderia Ferrari press conference

In English

1 – 2 p.m.

Conference Center East, Room Rom

Gore Wear press conference

Fabian Cancellara and Gore officials discuss the rebranding of Gore Wear. In English.

Hosting a party, an athlete appearance or another special event at Eurobike?

Send us your information no later than 3 p.m. for the next day's Show Daily at EurobikeShowDaily@gmail.com.

Please include your stand number and a contact name, phone number and email address.

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A new icon? Brompton electrifies its classic folder

It's taken 10 years of stops and starts, but folding bike icon Brompton is finally launching its first electric folder.

For **Brompton #2-308**, the Brompton Electric is not just another model; to produce it, the company moved to a new factory in the London suburb of Greenford. Its former factory had one production line; the Greenford plant has three, with two for conventional bikes and one for the e-bike, and it has room to grow.

Will Butler-Adams, Brompton's managing director, believes the Brompton Electric can revive cycling in cities.

"Across mainland Europe, e-bike ownership is growing, encouraging more people to cycle more often," he said, "but sales in cities remain behind the trend, due to the lack of portable and safe-to-store options. The Brompton Electric is a game-changer."

Brompton initially will sell the e-bike only in the U.K. beginning in early 2018, but Butler-Adams said it will begin exports as soon as possible.

"We export nearly 80 percent of our bikes to 44 countries; export has always been part of our plans but we are not rushing into it," he said. "Launch will follow in selected European markets with timings dependent on the scale of the initial demand in the U.K."

Outwardly, the new bike retains the classic lines of the conventional Brompton, with compact 16-inch wheels.

But it wasn't just a matter of bolting on a drive system. Many components had to be redesigned or changed entirely.

"Many of the frame components have been altered to accommodate the extra wiring needed for the electrical system, to withstand the extra loads created by the hub motor and to surpass the stringent safety standards for electric bicycles," Butler-Adams said. "At the same time the components of the electrical system, such as the battery and hub motor, have been honed to minimize their size and weight."

The Brompton Electric weighs 13.4kg (29.5 lbs) without the 300Wh battery, which is housed in a removable bag that is meant to be carried separately. Brompton claims a range of 40 to 60km (25 to 37 miles) on a charge. Like its conventional sibling, the e-bike folds small enough to stow under a desk or in the trunk of a car.

Unlike other folding bike makers, Brompton didn't use an off-the-shelf motor system. One reason for its long gestation was finding the right partner to develop the drive system.

"We started development in 2007 with limited resources," Butler-Adams said, "but when we did not find the right partners to meet the high expectation of our customers, the project was stopped."

The project gained new life in 2014



Brompton Electric

when Butler-Adams met with Patrick Head, then engineering director at Williams Advanced Engineering. Williams designs engines for Formula 1 race cars and worked with Brompton on a system that would fit the bike's unique requirement.

The front hub motor has three

assistance levels and torque and cadence sensors. Riders use a smartphone app to adjust the drive settings and log rides. A USB power port charges their devices.

The Brompton Electric initially will be available with two- or six-speed gearing. U.K. prices start at £2,595 (€2,840 / \$3,345). ■ DA

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Astro pulls a snake-like battery out of its hat

When it comes to electric bike batteries, this is the year of the snake.

Taiwan frame builder **Astro Engineering A4-307** — famous for those straw Vietnamese hats they've been handing out at the show for years — has pulled a surprise out of its own hat.

Astro developed a highly flexible battery pack that can slide in and out of a frame. Each of six elements in what it calls the Snake Battery System — or Snake Pack, for short — is hinged together so they wriggle something like a snake.

The advantage, Astro's general manager Samuel Hu said, is that with a Snake Pack, the battery opening on the downtube can be much smaller than for typical in-frame battery packs.

That means the frame retains its

stiffness and is less complicated to produce.

"Machining for a larger battery pack opening costs a lot of time," Hu said. He added that no plastic cover is needed on the frame or the battery, because the Snake Pack is fully covered by an aluminum alloy.

Here at Eurobike, a few brands are showing 2018 e-bikes equipped with Snake Packs.

Astro developed the system with Simplo Technology of Taiwan, one of the world's largest manufacturers of lithium-ion batteries. The publicly traded company also makes batteries for the iPhone. Hu said Simplo will also manage battery servicing.

Hu said the flexible battery was "very difficult to make, but we took on the challenge because we want the best solution for integrating batteries."

One of the biggest challenges was determining how to secure the battery pack when it is inserted in the downtube. Engineers put a magnet at the bottom of the pack to help guide it in place. Two inner guide rails keep the packs aligned, and they're rubberized to keep things quiet.

At the opening, a pin locks the battery in place when inserted.

Hu said five of the six cells in the Snake Pack hold batteries, and the sixth contains a battery management system and other electronics.

The system consists of a total of 40 individual cells with a capacity of 540 Wh.

Apart from individual brands that are using the Snake Battery System, it's also on display at the Shimano booth. Shimano has authorized use of the Snake system in combination with its Steps e-bike drive system.

Hu said the battery system is also compatible with the Brose mid-drive motor. Brose offers an "open" system where bikemakers can choose different batteries or displays to use with its motor.

As a frame builder, Astro supplies several high-end European brands and, Hu said, often gets ideas from its



The Snake Battery System consists of hinged pieces that can be easily installed or removed from the frame.



Five of the six units in the Snake Pack contain battery cells, and the sixth holds the battery management system that controls the batteries.

customers.

"That doesn't mean we don't have any good ideas of our own," he added.

Astro started handing out those Vietnamese hats, by the way, in commemoration of its factory in Vietnam. It was one of the earliest Taiwan bike manufacturers to move there as an alternative to China. ■ JB

The new E-Bike reference

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CHAORYANG
TIRES

It's a drag as DT Swiss downplays tubulars

Traditionalists may wince, but DT Swiss is moving away from tubular tires based on recent wind tunnel tests that show clinchers are more aerodynamic.

That's why **DT Swiss A3-400** is making its new Road Revolution series of performance road wheels available only in clincher versions.

Road Revolution is the moniker that DT Swiss uses for three new performance road models it is showing at Eurobike.

The ARC series, for triathletes and time trialists, is optimized for narrow 23mm tires and comes with three different rim profiles with depths of 80mm, 62mm or 48mm.

The PRC series, an all-around performance wheel for mass-start races, has been optimized for tires with widths of 25mm to 28mm — pretty much the norm in the pro peloton nowadays. These wheels come with depths of 65mm or 35mm.

The ARC and PRC series are both available for rim or disc brakes, and for either quick release or thru-axles.

Finally, the disc-only ERC series is aimed at increasingly popular endurance and gravel bikes. Rim profiles have been optimized for tires widths of 28mm to 32mm.

DT Swiss, which started making spokes and then hubs, is now one of the industry's biggest producers of high-quality wheels. But because it is a relative newcomer to producing road bike rims, it sought technical help engineering rims

that would work well with recent trends toward wider tires and disc brakes.

To develop the Road Revolution series, DT Swiss worked closely with Swiss Side, a company that has been focused on triathlon products. More important, the principals of Swiss Side have a combined 50 years of experience in aerodynamics. Company founder Jean-Paul Ballard spent more than a dozen years with the Formula 1 team Sauer.

DT Swiss and Swiss Side set out to develop next-generation, aerodynamic road bike wheels that could cut through air, save precious watts and thereby deliver real-world advantages to ambitious cyclists with the dough to spend on high-end carbon wheels.

That required countless hours in a wind tunnel. DT Swiss and Swiss Side turned to GST, which owns a wind tunnel in Immenstaad, just a couple of kilometers from Friedrichshafen.

The GST wind tunnel boasts an accuracy of plus or minus 0.2 watts, which is more precise than most competitors. In addition to measuring translational aerodynamic drag and the sailing effect, the engineers were able to measure steering momentum at different yaw angles — another measurement that is relevant for riding quality.

DT Swiss and Swiss Side also created a



Working with Swiss Side, DT Swiss tested its new Road Revolution wheels at a wind tunnel just outside of Friedrichshafen.

proprietary method for testing rotational drag. That test was to determine the effect of hidden nipples, bladed spokes and long valve stems on overall wheel aerodynamics.

Ballard said rotational drag accounts for about a quarter of a wheel's overall

drag.

Based on the extensive tests, Ballard predicts that the days of tubular tires are numbered: With their rounded shape, they do not allow for an airflow as smooth as with a clincher tire on a rim with the corresponding width. ■ **LVR**

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R&M's 25-year trip from ear warmers to e-bikes



The Delite GT Signature is Riese & Müller's 25th anniversary bike.

In 25 years, Markus Riese and Heiko Müller have come a long way from a garage.

The two were mechanical engineering students at the University of Darmstadt when they debuted their Riese & Müller bike brand at the second Eurobike show. They had come to Eurobike not to sell bikes, but fleece ear warmers.

In the back of their tiny booth, though, was a prototype of a full-suspension folding bike that they hoped to bring to market. That bike, which they put together in a garage owned by Müller's parents, became the legendary Birdy.

Twenty-five years later, **Riese & Müller AG-300** has come a long way from the Birdy, and ear warmers. It was one of the first bike brands to announce it would produce only electric bikes — making a complete transition from one season to the next — and today is one of Europe's leading e-bike brands.

But although Riese & Müller sells full-suspension bikes, it has always been focused on bikes for city use, commuting and other mobility applications, not sport bikes.

To celebrate its 25th anniversary, R&M is offering a special edition of its flagship bike, the Delite GT Signature, which the founders have kitted out with their favorite high-end components.

"Our Delite is and remains our flagship and dear to our hearts," Müller said. He added that the Delite GT Signature "will

appeal to those who enjoy technology, aesthetics and maximum dynamics."

It will also appeal to those who have money to spend: The Delite GT Signature will retail for €11,099 (\$13,000). Each model is numbered and will be delivered with a certificate signed by the two founders.

In addition to a Bosch drivetrain, the Delite GT Signature includes the Bosch Dual Battery system for longer range and R&M's own Control suspension. Other high-end components include a Fox fork and rear shock and Syntace bars, seatpost and headset; Shimano's electronic XTR Di2 shifting, and high-quality disc brakes; and Kashima coatings.

Of course, there is much else to see at the Riese & Müller booth this year, including the latest version of the Birdy, which remains in production and is the only conventional bike the company offers.

The Birdy is still manufactured in Taiwan by Pacific Cycles. Pacific founder George Lin spotted the prototype 25 years ago in the Riese & Müller's first booth and, after studying it for a few seconds, declared, "I want to mass produce this bike."

It turned out to be a profitable decision for both Riese & Müller and for Pacific Cycles — and created the foundation for a successful 25 years. ■ JB



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The next generation is off and running at Joy Group

With a new generation taking the helm at the Joy Group, a significant Taiwan supplier of wheels and hubs, e-bike systems and other components, has come a number of other changes.

In October, president Steven Chen retired and turned the company over to his eldest son, Tate Chen, who as CEO is the third generation of the family to oversee the company. It's in the process of planning its third factory in mainland China, which is scheduled to start production in 2019. Perhaps most visible to its customers, Joy opened a state-of-the-art, six-story headquarters earlier this year.

"We never invested in a project like this," said Kris Lin, a marketing and PR specialist. "All our past investments went into the workplace for production. This is a completely different thing. It's a cultural milestone with showroom, etc., and provides a better image to customers that we are in the bicycle business."

The Joy Group **B1-201** owns the Factor, Joytech and Novatech brands, along with Dienatronic and E-Ram.

The headquarters is next door to the company's factory and former headquarters in Daya, near Taichung. The vacated office space is being turned into production space.

With Tate Chen's promotion to CEO, his two younger brothers have also been

promoted. Jeff Chen, the second oldest, is now in charge of global sales and marketing. Youngest brother Shawn, who had overseen the Joy factory in Kunshan, China, is now general manager of both mainland factories.

Jeff Chen, who also serves as the group's "global voice," ticked off several reasons why the new headquarters is important for Joy.

"First is that we need to set up a brand image," he said. "Second is that we created new space for in-house R&D. This is much more efficient. Third is that we are out of space here in Taiwan."

It's an impressive building, with a showroom and reception area on the ground floor, and a conference room and parking lot upstairs.

The Chens are especially proud of a rooftop terrace with a garden and a break area.

On the mainland, meanwhile, Joy is building a third factory in Taizhou, near



They put the joy in the Joy Group: (from left): Kevin Yu, Milan Krusinsky, Jake Scott, Jeff Chen, Tate Chen, Shawn Chen, Jeffery Tsai, Ivy Chiang, and Frank Lai.

Nanjing. Jeff Chen said the new plant would focus on entry-level steel hubs.

It is expected to boost the number of hubs that the Joy Group produces in China, which currently amounts to 2.5 million to 2.8 million units a month, he said.

Joy Industrial still has plenty of new products to talk about at Eurobike, where this year it is putting its wheels in the spotlight.

All of the group's road and road

disc wheels — carbon and alloy — are sold under its Novatec brand name. At Eurobike it is debuting its first carbon wheels that are tubeless-ready.

The Joy Group is also following the industry trend toward wider rims. Rims that previously had an external width of 26mm expand to 27.4mm, while those that had internal widths of 18mm to 19mm will now be 20mm wide.

All mountain bike carbon wheels are sold under its Factor brand name. ■ JB

The Wolf Ridge gives Marin something to howl about

Marin has something to howl about with its new Wolf Ridge full-suspension, full-carbon mountain bike.



Marin Wolf Ridge (Photo: JB)

The Wolf Ridge from Marin **B4-100** uses the distinctive R3ACT 2Play suspension system designed by former mountain bike pro Darrell Voss and his R&D company, Naild. The 160mm travel suspension first appeared on Polygon bikes, an Indonesian sister brand of Marin.

"This bike can climb and descend equally well. The frame is engineered and built durable enough for trail and enduro use, while being light enough for cross-country riding," brand director Chris Holmes said.

The bike, he said, rides like a hardtail when climbing but provides the necessary suspension on the downhill.

According to Voss, the R3ACT suspension uses a mono-stay, so designers have more flexibility to build the bike around the suspension

system. The mono-stay is elevated so it's less likely to be damaged.

Unusually, the system does not require lockouts of pedaling platforms for climbs or descents.

Marin first showed the Wolf Ridge at the Sea Otter Classic, a big U.S. cycling festival that takes place every spring in Monterey, California. The company said the 29er has been in development for five years.

Although the Wolf Ridge line is its most distinctive, Marin has a few other models to talk about at Eurobike.

The Rift Zone, a full-suspension 29er with 120mm of travel, has been revamped for 2018 to incorporate a new Multi Track suspension system instead of the previously used IsoTrac system. Marin is also offering the Rift Zone with an aluminum frame. ■ JB

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A 'Taiwan in Europe,' as Triangle's ramps up

Europe's first high-quality, high-volume alloy frame factory is now on line in Portugal.

Called **Triangle's, B5-405** the fully automated plant is ramping up production and expects to make 500,000 frames a year by 2019. An estimated 60 to 70 percent of them will be for e-bikes.

Pricing will be at a small premium over Asian-sourced products, but Portuguese officials say the difference will be worth it. The factory offers lead times of weeks, not months, as well as just-in-time delivery — a big advantage for European assemblers.

Cofounded by three local parts makers (Miranda, Rodi and CicloFábril), Triangle's (the apostrophe is part of its official name) is a major step in the repatriation of bicycle production to Europe. It is a centerpiece of the growing Portuguese bike industry cluster known as Portugal Bike Value.

Investment is expected to total around €30 million (\$35 million), of which at least €8 million comes from EU and national subsidies.

Operations began last October at Triangle's state-of-the-art, 20,000-square-meter (215,000-square-foot) plant, which this year will produce 100,000 frames.

Two robotic frame-welding lines are at the heart of the process, with a third currently being installed.

Luis Pedro, Triangle's general manager, said the third line "will allow us to take smaller custom orders of as little as 150 frames." Ultimately, he says, the plant will turn out an alloy frame every 30 seconds.

The process begins with 6-meter lengths of extruded tubing, which are tested for quality, and then cut, bent, drilled and milled by a series of CNC and other automated equipment to precise tolerances. "All our tooling and jigs are developed in-house," Pedro said.

More than 50 percent of demand from European brands is for hydroformed frames. Triangle's is building an extension to the factory that will house a hydroforming press from Taiwan that should be installed in September.

"The shipping cost alone for the new press is €150,000," Miranda said. "We tried to source the press in Europe but the suppliers do not have experience in the bike industry."

However, Pedro noted, 95 percent of all manufacturing and testing equipment at the factory came from European suppliers.

"All of the frames are tested one by one," Miranda said. "We have four testing/alignment machines with the capacity to handle 500,000 frames per year. When the frames come from the robots they are perfectly aligned, but thermic shock from the heat treatment means they have to be re-checked and aligned if needed."

The frames are then shot-blasted to prep the surface for painting by the customer. Triangle's plans to open a wet-painting facility by year's end.

Triangle's is a key element in the plan to transform this region, south of Porto, into Europe's bike manufacturing cluster.

"The idea behind Portugal Bike Value

is to make Agueda the bike parts manufacturing capital for Europe," Miranda said. The region is already home to nearly a dozen bike assemblers and 10 component makers. "It's like having a Taiwan in Europe," said Miranda. ■ TK



The Triangle's frame factory depends on robotic welding lines to keep costs low.

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Overview: Gravel bikes

The definition of 'gravel bike' is all over the map — just like the bikes themselves

Their bikes are rough and ready, but bike brands are still tiptoeing around when it comes to a name for this fast-growing category. Some call them “drop bar,” “multi-surface,” “beyond road” or even, gulp, “non-traditional-use drop bar” bikes. We’ll just stick with “gravel.”

Whatever frame designers call it, the gravel category gives them room to flex a little creative muscle because it encompasses endurance racing, mixed-terrain riding and bikepacking.

There is general agreement that a gravel frame should accommodate wide tires of up to 54mm or, for some monster bikes, even 76mm. Beyond that, frame design varies widely as brands cautiously take the measure of consumer acceptance for this new type of bike.

The variety of gravel bikes also reflects a brand’s own environment, said Nick Legan, author of the forthcoming book, *Gravel Cycling: the Complete Guide to Gravel Racing and Adventure Bikepacking*.

“If an area’s dirt roads are accessible on 28mm tires, a bike company based there will have a different perspective on the idea of ‘gravel.’ Other areas are best covered on a 29er tire,” Legan said. “In both cases, what has become the stereotypical gravel bike, with 40mm tires and a drop bar, isn’t ideal. It’s always a compromise, but that’s part of the fun. Ultimately we’ll have choices to dial in our level of traction, flotation, and gearing.”

For brands that make the right choices, a market is there to be had.

“We took the path of making a more road-centric (or multi-surface) gravel bike and it has paid dividends for us,” said Tom Rodi, sales and marketing director for **Parlee Cycles B3-106**. Parlee is showing a new version of its Chebacco gravel bike, which has become its No. 2 seller since its introduction in 2015.

“Pure road companies were slow to embrace disc brakes and multi-surface, and many of the mountain companies who did enter the space early did so with



Open U.P.

more ‘mountain-centric’ bikes that didn’t appeal to roadies quite as much,” Rodi said in an email.

“We made a big point to show the Chebacco design with ‘normal’ 25-28c road tires — same as we did with 35-40c tires — and that versatility has really clicked,” he added. “We see the intersection of disc brakes, thru-axles, electronic shifting, larger (esp. tubeless) tires and sensor (power and GPS) technology as real catalysts for growth. The bikes are just more versatile, more reliable and more interesting to ride and own.”

The original Chebacco was based on post mount and 15mm thru-axle mountain bike standards. The latest version is newsworthy because of its 12mm thru-axle and Flat Mount brakes. Rodi said new groupsets from Shimano and SRAM, both of which have fully committed to thru-axles and disc brakes,

permit a wider range of wheel and tire options.

The 2018 Chebacco will be offered with the new R8020 and R8070 Shimano Ultegra drivetrains, which allow up to a 34T rear cog, as well as the long-anticipated R9170 Dura-Ace disc drivetrain. Combined with

1x options from SRAM and its new eTap HRD, which is also capable of wide-range gearing, riders have a huge number of options when equipping a Chebacco. Pricing for a complete 2018 Chebacco bike will start at approximately €4,200 (\$4,945).

Open B4-308 is debuting a new version of its award-winning U.P. (Unbeaten Path). The original U.P., introduced in 2015, helped spark the trend toward wider tires and picked up a Eurobike Gold Award along the way.

“We really believe in this category, not so much the standard gravel bike but gravel bikes that also fit bigger tires,” Open cofounder Gerard Vroomen said. “That really allows people to ride in a fast ‘road-like’ position but with mountain bike tires, which let them ride anywhere they want to go without having to worry about grip or flat tires. That sort of freedom really makes the experience a lot different than gravel bikes with standard-sized tires.”

The new U.P. retains the tire philosophy of the original. With 700c tires, it’s a full-on road bike, but it transforms into a capable off-road bike when those tires are swapped out for heftier 54mm 650b mountain bike tires. The frame is a bit lighter than the previous version, and includes Flat Mount brakes and a new, lighter and stiffer U-turn fork. The 2018 U.P. will be available in blue or green, with a complete frameset (frame, fork, headset,



A-Pro G80

thru-axles, and parts) retailing for €3,200.

Taiwan framemaker **A-Pro B2-406** also makes suspension systems under the X-Fusion brand, so it has used its resources to write its own definition of a gravel bike. Its G80 (Gravel 80) is the first full-suspension gravel bike with 80mm of rear suspension. The G80’s lightweight shock mounts to the inner triangle of the seat tube for traction and for more comfort on rough gravel or unpaved roads.

The shock is paired with an X-Fusion Ranger suspension fork. Combined with a more relaxed geometry than a traditional road bike, the G80 should be stable off-road without sacrificing speed or handling on pavement.

“Due to the growing demand for gravel bikes in Asia, the G80 frame and fork are offered under our own brand, Taokas, which focuses on the Asian bike



Parlee Cycles Chebacco



Moots Roult RSL

handle tires up to 38mm. The Roult 45, as its name implies, is made for tires up to 45mm, while the Roult RSL (for "Race Super Light") takes them as wide as 40mm. Late last year Moots added the Baxter, a monster gravel bike with room for tires up to 2.25 inches.

Moots said it was the first to use 3D printed titanium dropout/Flat Mount disc brake mounts, which appear on all three Roult models.

The Roult RSL is a bit longer, with a lower riding position for racing, and uses a double-butted tuberset for reduced weight as well as Moots's carbon fiber Flat Mount fork with 12mm thru-axle and integrated hidden fender mounts.

Suggested European retail pricing before VAT for frame, fork, and headset range from €3,606 for the Roult and Roult 45 to €4,671 for the Roult RSL.

market," said A-Pro's Anny Lee. "The Ranger fork will be sold exclusively through our suspension affiliate brand, X-Fusion, while the G80 frame will be available to our OE customers."

Brands have taken note of riders' eagerness to embrace this new riding style, especially in the United States, which is often quick to adopt trends (and where brands are desperate to make up for dismal sales this year).

While identifying gravel enthusiasts is a bit like throwing darts at a map, new gravel and mixed-surface events are giving this community places to congregate. Officials point to such events as the Gravel Fondo in Germany; La Resistance in France; the Jeroboam 300 km Challenge in Italy; and the new Grinduro in Scotland.

Because many operate with lower liability insurance requirements and looser rules, their informality, combined with the promise of racing away from traffic, are drawing new riders to the genre.

"Riders of all types are looking to get off busy roads and take on something a little less daunting than mountain biking can be," said Jon Cariveau, marketing director for Moots A5-110. "During this spring and now into summer we have found huge value in attending gravel events that span the U.S. Whether a race with timing and numbers pinned to a jersey or a large group ride with a laid-back feel, the gravel scene is reminiscent of the early years of mountain bike racing — the grassroots feel, the challenge taken, and making



Wilier Triestina Jaron Plus

While Moots looks to the Rocky Mountains for inspiration, the Italian brand Wilier Triestina B5-200 puts bikes through their paces in the Dolomites. Its new Jareen and Jaron models — named after the Italian words for "small gravel" and "larger gravel," respectively — are made for gravel racing and adventure bikepacking.

Designers tested the bikes on white gravel farm tracks near Wilier's headquarters in Rossano Veneto.

The Jareen uses a double-butted 6061 aluminum frame built in the Wilier Triestina style with internal cable routing, differentiated diameter headtube, 27.2mm diameter seatpost, Flat Mount disc brakes, and an alloy fork with thru-axle. The

Jareen can be set up as either a training and racing bike, or, with the addition of mudguards and front and rear racks, an adventure bike.

With the clean lines of its internally welded steel frame, the Jaron looks like it was built for speed. Its racing handlebar with a 12-degree flare-out,

and a monocoque, all-carbon fork with thru-axle, distinguish it from the Jareen. The Jaron is designed to be at home on rough roads, jeep tracks and mellow trails. Both the Jareen and the Jaron accommodate tires up to 42mm.

On the other side of the divide from gravel racing, the Jaron Plus is a 29er that is engineered for smooth handling despite beefy 3-inch tires. Intended for bikepacking trips and snowy road adventures, the Jaron Plus is spec'd with a SRAM Rival 1x groupset that provides a wide enough gear range for loaded, long-haul riding on whatever terrain passes under its wheels.

All bikes run 100x12mm thru-axles on the front and 142x12mm on the back. The Jareen will retail for €849; the Jaron for €2,300; and the Jaron Plus for €2,400.

Marin Bikes B4-100 had adventure cyclists in mind when it designed the Four Corners, which it has updated for 2018. Although the Four Corners has been in Marin's lineup for a couple of years, the new version uses a revised geometry based on biometric fit data.

The new Four Corners will come in five frame sizes with either 650b or 700c wheels. Marin said the range accommodates riders from 150cm to 193cm (4 feet 11 inches to 6 feet 4 inches) tall.

Additional braze-ons and mounts for bottles or accessories increase load-hauling options. Bars are set high for comfort and visibility in traffic. Marin uses a steering geometry that's more like a mountain bike, with longer top tubes and shorter stems across all frame sizes, so the bike can handle whatever terrain it's on. With fenders, the Four Corners frames accommodate tires up to 47mm; lose the fenders and it takes knobby tires up to 51mm wide.



Ritchey Outback

The titanium sGravel, from Swiss framemaker Hilite A2-104, leans toward the bikepacking end of the gravel bike spectrum. Because it builds custom frames, Hilite selects each titanium tube to achieve a balance of stiffness, strength, comfort and weight for each rider.

Hilite has also outfitted the sGravel with a generous number of mounts for mudguards and racks for loaded touring. The sGravel's frame weight starts at 1450g (3 pounds, 3 ounces) for a relaxed geometry reminiscent of a road bike, but with greater stability and braking performance thanks to Flat Mount disc brakes and a 142x12mm thru-axle. The frame features clearance for tires up to 48mm. But what really separates the sGravel from others is Hilite's decision to use a Rotor Uno hydraulic groupset.

A custom build that includes a frame, Rotor Uno, CoLab fork, Schmidt Dynamo Hub and light system, carbon rims with Chris King hub and Thomson components will retail for about €9,900.

Ritchey B1-301 debuted its Outback gravel bike at last year's Eurobike, but is relaunching it this week now that the Outback has entered production.

The Outback can handle tires up to 700x40c. Although it has a low, road-style bottom bracket, the 71-degree headtube angle is slacker than a conventional road bike and its chainstays are slightly longer. An Outback frame kit (frame, fork, and headset) retails for €1,499.

"What is now called 'gravel' is a way of using the bike and riding it that Tom [Ritchey] has been doing forever, and that has influenced his design thinking since the beginning," said Riccardo Deliziosi, global sales director for Ritchey, referring to the company's founder and namesake. ■ WB



Marin Four Corners

friends while doing so."

Moots offers the Roult range of gravel bikes, named after its home county in the U.S. state of Colorado. The Roult RSL, Roult and Roult 45 accommodate different tire sizes and rider positions.

The Roult, which has the shortest chainstays of the three at 42.3cm, can



Hilite sGravel

Overview: Suspension forks

New gravel forks get out, but they don't travel much

While most of the big suspension manufacturers are tweaking current products and technologies for 2018, a few have dared to take a chance on the gravel bike trend. It's given them a chance to adapt their existing systems in some surprising ways.

For this category, "gravel" and "travel" seem to be mutually exclusive terms. To be suitable for drop bar frames and skinnier tires, a front fork needs 40mm or less of travel to smooth over oversized

gravel pebbles while maintaining rapid rolling momentum. The only obstacle for gravel enthusiasts is that going off-pavement with one of these forks isn't dirt cheap.

Lauf Forks B1-409 has boldly seized the opportunity to be one of the only suspension fork manufacturers to design, manufacture, and sell a fork specifically for gravel bikes.

For 2018, Lauf has upgraded its Grit fork, which it launched at Eurobike last year, with the Generation 2 Grit. The Grit is a manifestation of Lauf's characteristic zero-maintenance, lightweight suspension forks built around those S-2 glass fiber leaf springs that caused such a sensation at the 2013 Eurobike.

Lauf claims the leaf springs make for unparalleled small bump performance. And it is such a unique technology that it's basically impossible for other brands to match the Grit's key features.

The Generation 2 Grit has a more compact suspension area, so its legs are almost straight instead of curved. It is 50g (2 ounces) lighter and laterally stiffer, but has the same up/down spring rate.

It features a built-in crown race, and the fork now fits up to 45c tires



Lauf Generation 2 Grit



RockShox Pike

instead of 42c. The Generation 2 maintains the same 30mm of travel as the previous version, along with the same hub spacing (100mm), rake (47mm), 160mm rotor, and options for 12mm or 15mm Lauf thru-axes.

It will set riders back some, retailing for €810 (\$950) including VAT, but may be worth it for dedicated gravel riders since it requires no maintenance.

The other big suspension maker that has taken a chance on gravel so far is **Fox, B1-500** which furtively accessorized a custom carbon fiber gravel bike with its AX fork at the North American Handmade Bicycle Show in March.

Since then, the AX (for "Adventure Cross") has made its drop bar gravel and adventure intentions clear. The AX — or, more precisely, the 32 Step-Cast AX — traces its lineage directly to the Fox 32 Step-Cast cross-country fork. Before Fox officially spawned the AX, Fox employees had adapted the 32 Step-Cast to play with it on gravel.

The main objective of moving from the 32 Step-Cast to the 32 Step-Cast AX was to slash the cross-country fork's 100mm of travel to 40mm, so the AX can

fit those drop bar frames and skinny tires.

The AX's post-mount brakes and 15mm thru-axle hint at its mountain bike DNA. Interestingly, the AX accommodates tires up to a maximum of 700x40c, compared to rigid gravel forks that accept tires up to 57mm. In Europe, the AX will sell for €1,089 including VAT.

Beyond gravel, many suspension makers are tweaking and upgrading existing suspension systems. What's "new" for 2018 is mostly just "improved."

This spring, **RockShox A3-300** introduced a new version of its benchmark Pike. The new model has a stiffer chassis, DebonAir air spring and Charger 2 damper cartridge. Both the Lyrik and RS-1 models now boast the Charger 2 damper; all three forks are compatible with RockShox's OneLoc remote for on-the-fly compression adjustments.

Fox also took advantage of the Sea Otter Classic — the huge U.S. cycling festival in Monterey, California — to present its 2018 line with updated Evol (for "extra volume") air spring system, updated 36 air spring, new damper tuning, and new models in the Performance Elite category.



DNM USD-8SA

DNM Industrial, A1-523 however, wasn't satisfied with only incremental improvements. DNM is launching a new air-sprung downhill fork, the USD-8SA.

The new fork is an evolved version of its coil-sprung USD-8S. By losing the coil, the USD-8SA sheds 20 percent of the weight of the earlier version while keeping the same specifications: 203mm of travel; preload, rebound, and air pressure adjustments; a 20x110mm axle for post mount disc brakes, and a design that accommodates 24-, 26-, and 27.5-inch wheels.

Extensive testing by pro riders was critical to the fork's development process, which lasted two years. The inverted fork design handles big hits and stutter bumps equally. Retail pricing for the USD-8SA is about €550. ■ **WB**



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Overview: Cranks and drivetrains

The Modular Squad: drivetrains and cranksets take the grind out of gravel



Miranda Xmod

“Road riding” isn’t what it used to be, now that the definition of “road” has expanded to include such off-pavement pursuits as gravel racing and adventure bikepacking.

As the definition gets blurry, so does the boundary between “road” and “off-road” components. Take one-by-one (1x) drivetrains: Originally intended for mountain bikes, 1x systems jumped to cross-country and then to road, and now are showing up everywhere in between.

Standard road chainring combos are also shrinking, so riders can climb more easily when their “road” tires start churning up the dirt and the gravel.

The industry is starting to catch up with creative cyclists who have been crafting their own DIY solutions. At Eurobike, you’ll find modular cranksets and super-compact gearing options, as manufacturers develop practical solutions for road bikes that are being asked to do more off-road.

In March, Portuguese components manufacturer **Miranda B5-405** introduced its Xmod “extreme modular” crankset, claiming that it is “the world’s first true bicycle modular crankset” (See related story, page 36).

More of a concept instead of a specific product, Xmod lets riders personalize a crankset.

Currently, riders can choose between three crank arm models (two alloy, one carbon fiber); six independent spindles (four for mountain bike, including Boost, and two for road); and either spiderless or 5-bolt spider for BCD 110 or 130 chainrings for road, or spiderless or BCD 104 chainrings for mountain bikes.

For Eurobike, Miranda is keeping things simple by showing just three

models, but the company plans to add more crank arm options in the future.

Miranda claims that the carbon fiber version with direct mount ChainFlow 3D chainrings will be the market leader for weight and durability when it is released in September.

Xmod gives consumers the flexibility to build a crankset that is unique to their bike setup and physical characteristics.

For example, some cyclists have one leg that is slightly shorter than the other; with Xmod, they can combine crank arms of different lengths.

For mechanics, Xmod offers the ability to provide better service because its interchangeable spindle options fit a variety of bottom brackets. They can replace individual parts without having to exchange an entire crankset.

To demonstrate Xmod’s versatility, Miranda is showing its newly patented ChainFlow 3D 104 BCD chainrings and cold-forged, direct-mount 53/39 double chainrings.

The chainrings’ clever design should have both consumers and mechanics heaving sighs of relief, since the right crank arm’s asymmetrical shape locks flush into the relief design on the chainring surface for a reinforced fit.

This is expected to extend the life of both cranks and chainrings, reduce the probability of creaking, and ultimately save consumers trips to the bike shop for replacement parts.

Miranda is developing other sizes for the double combo, which it will manufacture onsite in Portugal. A complete Xmod alloy crankset with ChainFlow 3D rings will cost approximately €300 (\$350), depending on options.

Elsewhere in the Iberian Peninsula, **Rotor B3-204** is launching its own version of a modular crankset, the ALDHU 3D+, which it is showing officially at Eurobike for the first time.

Like the Xmod, the ALDHU 3D+ features crank arms that are independent of the spindle, and either a standard chainring combo or a proprietary, direct mount double spidering. Rotor CNCs it from a solid block of 7075 aluminum, saving 30g over comparable à la carte Rotor chainrings.

Rotor says the ALDHU 3D+ is its lightest crankset ever, weighing less than 600g for a 50/34 spidering with 170mm cranks. Beyond weight, the Spanish brand wants to draw attention to its new OCP Mount technology, which is based on Rotor’s patented Optimum Chainring Position (OCP) system.

OCP Mount refers to optimized pedaling biomechanics for users of its oval Q-Ring. Instead of the usual one to five positions that adjust in 5-degree increments, the direct OCP Mount spidering adjusts in 1-degree increments.

The ALDHU 3D+ is named for the Alpe d’Huez and commemorates Rotor’s first victory at the 2008 Tour de France with Spanish rider Carlos Sastre. Retail prices starts at €449 for a set of crank arms, axle, and one-piece spidering.

Full Speed Ahead B3-303 claims ownership of its own category of super-compact modular cranksets with three new models: the SL-K Modular Adventure; K-Force Modular Super Compact; and the Energy Modular Super Compact.

All three share a forged BB386EVO spindle and 100 percent CNC’d 48/32 and 46/30 chainrings, both made of 7000-series aluminum, and crank lengths of



Rotor ALDHU 3D+

170, 172.5, and 175 mm.

Where the models differ is in the material used for the crank arms, chainring installation, and weight.

The K-Force and SL-K feature hollow carbon fiber arms, while the Energy uses forged alloy. For chainring installation, the SL-K uses BCD 90 while the Energy is direct mount.

The K-Force weighs in at 572g; the SL-K at 617g; and the Energy at 755g. All cranksets come with crank arms, spindle, chainring, and bolts. Suggested retail prices are €669 for the K-Force; €379 for the SL-K; and €289 for the Energy.

While gravel riding and adventure bikepacking have inspired new crankset designs, manufacturers are now responding to yet another emerging demand: cranksets for gravel racing. For racers, less is more when it comes to setting up a bike for gravel racing; nowhere else is this more evident than in the drivetrain.

Most component manufacturers would unanimously agree that the drivetrain is the most difficult system to engineer on a conventional bike. Shifting has to be crisp and precise with zero loss of pedaling force, and there can be no interference between chain, chainrings, derailleurs, and cogs.

It would seem that using fewer parts would reduce the challenges of keeping a drivetrain running smoothly. But if you remove one part from a technically sophisticated house of cards, the whole structure might collapse.

For example, cyclocross racers started stripping the outer chainring to create 1x cranksets. But bad chainlines and poor chain tension threatened race results, until SRAM **A3-300** stepped in with a 1x solution specifically for 'cross racers.

SRAM (which launched the 1x category for mountain bikes in 2012) commercialized the 1x concept for



FSA SL-K Modular Adventure



Miranda crank at work

'cross with the Force CX1 in 2014. The following year, SRAM expanded the range with chainrings and cassettes intended for non-CX applications, and changed the name to simply Force 1.

SRAM later introduced the Rival 1 and Apex 1 systems for drop bar riders who weren't 'cross racers.

"With the massive success of 1x drivetrains on mountain bikes, we were looking for ways to introduce the technology to drop bar bikes," said Nate Newton, SRAM's marketing technical representative for road.

He added, "Drop bar bike riders have different requirements than mountain bike riders, but some benefits of 1x drivetrains are universal: quiet, chain security, simplicity, sequential shifting, and the ability to tailor the gear range to an individual's needs."

SRAM expected that triathletes

and time trialists would be the next wave of cyclists to adopt 1x drivetrains. Instead, the 1x systems were in demand by gravel racers, who have some of the same demands as 'cross racers, but steeper climbs and more rugged terrain.

Nearly every chainring manufacturer now makes a 1x chainring for their respective cranks.

But to stay competitive in this category, some, such as **AbsoluteBLACK A2-301** and **Hope Technology, A2-209** now make compact or direct mount chainrings that are compatible with competitors' cranks as well.

But they haven't been completely successful in overcoming rear shifting issues, since those are dependent on the drivetrain working flawlessly as the sum of its (proprietary) parts. ■ **WB**

Vroomen, 3T rolled their own 1x cassettes for the Strada

Dutchman Gerard Vroomen is known for taking different ways to get to better results.



Gerard Vroomen with the 3T Strada (Photo: JB)

His latest project is no different, as Vroomen has teamed up with **3T B4-308** to make one-by (1x) drivetrains

a valid alternative for road bikes.

Vroomen and 3T launched the Strada, an aero road bike that is unique because 3T developed its own 1x cassettes, which it offers in two versions. The cassettes are paired with a SRAM Force 1x drivetrain.

"Building a road bike as aerodynamic as possible meant foregoing the front derailleur. But existing 11-speed cassettes have either not enough range or the steps between the cogs are too big for real one-by road applications," Vroomen said.

1x drivetrains have taken mountain biking by storm because they offer a simpler, lighter and more intuitive shifting system. The concept has filtered into the cyclocross

and gravel segments of the road bike market, with SRAM launching groupsets to match.

For the Strada, Vroomen's goal was to offer a shifting range similar to a conventional 2x drivetrain, without sacrificing narrow steps between the gears that are crucial for riders trying to maintain a steady cadence.

At 355 percent, the overall gear range of the cassettes is very close to a state-of-the-art, 22-gear road bike drivetrain.

Both versions of the 3T cassette start with a 9-teeth cog and end with a 32. Stronger riders can choose a cassette with smaller steps between the bigger cogs so it can be combined with a bigger chainring.

The second version has a narrow spacing on the smallest cogs and a bigger step to the 32-teeth cog, making it a true bailout gear.

3T will offer chainrings in versions with 36, 40 or 44 teeth, so the Strada offers a gear range that is comparable to



3T's 1x cassettes include a bailout option

micro-compact, compact and standard drivetrains, respectively.

Another unusual feature is that the Strada is made for wider, 28mm tires, which 3T says are more comfortable and help reduce vibration. ■ **LVR**

A gripping tale: Pirelli returns to bike tires

Pirelli once was such a dominant name in cycling that more than half of the finishers in a Giro d'Italia rode on Pirelli tires.



Pirelli PZero Velo TT

If that doesn't sound familiar, it's because the race was in 1909 — the first edition of the Giro, when 30 of 49 finishers rode Pirellis. In more recent history, the company has been absent from the industry for decades, focusing instead on auto and motorcycle tires.

Now, **Pirelli B3-205** is returning to cycling and is launching a range of high-performance tires at Eurobike. The new PZero line was developed at the same state-of-the-art facilities as the company uses for its F1 tires.

Its first three models are for road bikes, but Pirelli is hinting at bigger ambitions, backed by its considerable R&D capabilities and a patented new compound technology.

"Cycling is growing as a sport and leisure activity, and matches perfectly with our vision for the future," said Antonella Lauriola, COO of the Velo Business Unit.

The compound, which Pirelli calls SmartNet Silica, offers what the company says is a new level of performance. It differs from traditional silicates because of its elongated shape. The molecules naturally align in the same direction instead of being randomly positioned within the matrix.

This longitudinal orientation delivers highly directional performance. Combined with its high elasticity, the compound generates less heat and lower rolling resistance. The molecules'

anti-clustering ability means they spread more evenly within the matrix, which the company says enhances performance in wet conditions.

Pirelli R&D chief Piero Misano said the goal of the new compound and tires was to achieve a "perfect balance": tires with optimal, balanced performance as measured by rolling resistance, wet and dry grip, handling behavior, puncture protection and longevity.

Pirelli researchers worked on three fronts: tire shape and construction; tread pattern; and tread compound. They drew from Pirelli's work in F1 auto racing and Supersport World Championship (WorldSSP) motorcycle racing.

The three models in the new cycling range are all clinchers.

The PZero Velo, for road racing, is

the most versatile of the group. It is optimized for speed and handling along with dry and wet grip and is available in 25mm and 28mm sizes. A 25mm tire weighs 210g.

The PZero Velo TT is the fastest and

lightest of the range. Designed for speed, it made for precise handling, even in wet conditions.

The PZero Velo 4S ("Four Seasons") tires are made for riding in the fall and winter, with high puncture protection and outstanding traction in wet conditions.

Founded in 1872, Pirelli operates 19 factories and sells tires in 160 countries. Lauriola said the company posted revenues in 2016 of €5 billion (\$5.9 billion) and invested €200 million in research and development. The company is based in Milan.

Pirelli is the exclusive supplier of tires to F1 racing as well as 350 national and international motorcycle championships around the world. ■ TK



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Backed by Intersport, the Sunn brand rises again with an extensive lineup



Sunn Special

Just a few years ago, all that remained of the Sunn brand was a trademark and pictures of former BMX champions on their Sunn bikes.

Now, **Sunn [€-85/1]** is shining again. The revived brand brings a full catalog to Friedrichshafen along with bright ambitions to grow across Europe.

Manufacture Française du Cycle (MFC), a French bikemaker in Machecoul, bought Sunn out of bankruptcy nearly four years ago. MFC started rebuilding the Sunn range and made a low-key appearance last year at Eurobike. This year, MFC has fleshed out the Sunn product line to include BMX, mountain, road and electric bikes.

"The Sunn brand is issued from BMX competition and that remains very much a part of our identity," said Baptiste Colrat, an MFC executive in charge of Sunn. "We have widened to other categories but always with an approach that sets us apart from other suppliers, to make sure we complement the assortment of our retail partners."

MFC has undergone some recent changes of its own. The Machecoul factory, near Nantes and the Atlantic coast, was previously owned by Cycleurope. Intersport France, the French arm of the international buying group, bought MFC in 2013 with plans to build private label bicycles for the Intersport sporting goods chain.

The plan has been so successful that MFC decided to buy Sunn so it could complement the business it has built up for Intersport, and for mass retailers, with a brand destined for specialty retailers.

Sunn bikes are a far cry from the cheapest MFC bikes that are shipped to the hypermarkets. Instead, Sunn models command retail prices that range from about €2,000 (\$2,365) to more than €8,000.

Yves Salaün, general manager of MFC, said Sunn has already regained several French IBDs as customers. MFC sold about 6,000 Sunn bikes last year, and has

much larger ambitions.

"The target is to reach volumes of more than 25,000 in the next three to four years, with distribution in the largest European markets," Salaün said. MFC is looking to pin down distribution agreements for Britain, Italy and Spain and is seeking partners in Germany and the Benelux countries.

Sunn made a big investment in its e-bike range and will offer six models for 2018, up from one e-mountain bike model last year. The new range includes two full-suspension e-MTBs and four hardtails.

For the new e-MTBs, Colrat said MFC paid particular attention to the positioning of the battery and motor for better stability and maneuverability.

"We have managed to lower the center of gravity by about 15 centimeters compared with our previous construction, which is particularly relevant for the full-suspension bikes we have added to our range," he said.

Sunn has been busy on the non-electric side. At Eurobike it's launching the Shamann cross-country bike, designed for UCI races. An integrated rear shock and concentric pivot point lower the center of gravity of the bike, which has a carbon monocoque frameset made with high-modulus fibers.

And it has a new endurance road bike, the Special, also made with a high-modulus, monocoque carbon frame.

"Several features are meant to make the ride more comfortable for longer outings, such as our technology for vibration absorption and a riding position

that is a little higher up, for a better distribution of the pressure points," Colrat said.

While it branches into new bike categories, Sunn continues to cultivate its BMX roots. It sponsors 10 BMX riders and five mountain bike racers.

Sunn's revival has contributed to a bigger turnaround for MFC. When it was acquired by Intersport France in 2013, the factory assembled about 130,000 bikes and reported annual sales of €19.7 million.

Last year, MFC produced 376,000 bikes, for sales of nearly €66.7 million. About 200,000 of those bikes went to

Intersport stores, most of them in France.

"We managed to keep the existing customers and then persuaded Intersport to move back to France some of the bicycle production they had outsourced to other European countries," Salaün said.

MFC has also invested in the Machecoul factory, starting with construction of a new painting facility. Salaün says that this reduces transportation costs and gives MFC more flexibility with production. More than 60 percent of the bikes it manufactures are painted on-site.

MFC is also improving its service with its retailers, who can now link their inventory systems with MFC's. By linking up, MFC can automatically replenish a retailer's stock when it runs low. The factory can deliver twice a week.

"That way they no longer need to have much inventory on their premises. They can convert the storage space into selling area," said Salaün, who previously worked for bicycle makers including Cycles Peugeot, Mifa and Planet Fun.

To support the automatic replenishment system, MFC last year opened a new warehouse next to the factory that can store 27,000 units. A second warehouse of the same size is set to open in October.

The new buildings replace a warehouse in the factory that had a capacity of about 25,000 units.

About half of the bikes assembled in Machecoul are mountain bikes, with the rest divided among city, road and BMX bikes.

E-bikes account for about 20 percent of the plant's production across all categories. From 10,000 e-bikes in 2015, MFC plans to assemble about 50,000 in Machecoul this year. ■ BS



Sunn Shamann

CROSS +THE BORDER



G80 is a completely new concept in gravel bikes, utilizing a rear and front suspension system. An extremely efficient 80mm front and rear suspension system reduces vibration and brings the maximum speed and reduced fatigue during endurance gravel road riding. While being faster on the dirt the bike is also great on the roads sprinting and cornering not unlike its full road bike family roots.



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Overview: Cargo bikes

Get a load of these beasts that are made to lighten your burden

Cargo bikes greatly enhance the utility of human-powered mobility. Now, thanks to the emergence of electric drive systems, you don't need to be an athlete to haul a heavy loads by bike.

Cargo bikes have a long and successful history, particularly in Denmark and the Netherlands. These pedal-powered beasts of burden preceded delivery trucks and have been used for short-distance deliveries since the early 20th Century.

More recently, starting in the 1980s, young families in Amsterdam and Copenhagen sparked a revival in the use of cargo bikes. They turned to the bikes as car alternatives for daily errands, like shopping or taking the kids to kindergarten.

These early adopters benefited from a mostly flat landscape and proper cycling infrastructure that gave them room to manoeuvre these big bikes through cities.

Now, cargo bikes are catching on in other cities like London or Stockholm, where congestion and a shortage of parking have led city leaders to restrict car and truck access to city centers.

The city of Cologne, Germany, and some cities in Switzerland, offer cargo bikes as share bikes at low rates, so people can try them out without making a big up-front investment. Some regions offer rebates for cargo bike purchases.

A London company even offers an Uber-like ride sharing service based around cargo bikes, called PedalMe. Users summon rides via the PedalMe app.

A key driver of today's growth is the emergence of electric drive systems. Adding 250 watts of power and some extra torque makes all the difference when hauling goods on a bicycle. It's little wonder that many of the new cargo bikes on display here in Friedrichshafen come with some sort of electric assistance.

Electrified or not, there's a fascinating range of cargo bike designs on display here at the show, made for a wide range of users.

A classic cargo bike design has two wheels and a large, low cargo tray between the rider and a small front wheel. These have plenty of room for

groceries, kids or pets, and the tray can be equipped with padded benches and seat belts.

French manufacturer **Douze B2-112** takes this design and adds two innovative twists: Its bike can be split apart for storage or transport. And the steering mechanism uses cables instead of push rods, which the company says is more stable and permits a much tighter turning radius.

For 2018, Douze offers electrified bikes equipped with a Brose mid-drive motor, or with a GoSwiss rear hub drive and a Pinion gearbox. A Gates belt drive is also offered as an option.

On the heels of its popular Packster 60 and Packster 80 bikes, **Riese & Müller A6-300** is launching an especially compact e-cargo bike, the Packster 40.

With a shorter wheelbase and a slimmed down weight of under 30kg (66 pounds), the Packster 40 is agile in traffic while retaining quite a lot of hauling capacity. The cargo tray is 40cm (16 inches) long, and Riese & Müller offers a variety of accessories for the bike, including its proprietary, modular Carry



Riese & Müller Packster 40

System.

Urban Arrow A4-700 is well known for its modular and flexible designs. The rear part of this Dutch cargo bike brand is equipped with a Bosch mid-drive motor and a Nuvinci internal gear hub. It can be combined with different front cargo or passenger compartments. For example, if a family outgrows the smallest Shorty model, they can swap out the front carrier for the larger Cargo or Family units

In Friedrichshafen, Urban Arrow is making big news — literally — with



Douze e-cargo bike with GoSwiss rear hub motor and Pinion gearbox



Radkutsche Musketier

the launch of the Tender e-cargo trike. The Tender combines bike and car components to make room for hauling a whopping 1,500 liters (53 cubic feet) of cargo. The Tender can carry loads of up to 350kg and is made for commercial use.

Urban Arrow is also showing a new version of the Shorty using an elevated front tray of compressed PPE foam instead of a PU tarp. Urban Arrow says the tray is more durable, and makes the Shorty look and feel more like its larger Family sibling.

The German brand **Radkutsche B2-111** also focuses on the commercial end of the cargo bike market. Its Musketier trike positions the load behind the rider, and a powerful hub motor sits in the front wheel. The Musketier is popular with commercial delivery services across Europe. At Eurobike, Radkutsche is showing a new cargo container that it says will speed up loading and unloading at warehouses.

Three-wheeled cargo bikes, like the iconic Cristiana model from Copenhagen, can haul more stuff and are easier to handle when stopping or starting. But they're big and sometimes cumbersome.

One way to improve handling is to add a tilting mechanism to the front axle so the bike can take corners at higher speeds.

Dutch cargo bike specialist **Baboe A4-701** has tweaked the tilting system with its new, sporty Carve cargo trike. The mechanism can be locked while loading and traveling at slow speeds.

The Carve-E version is equipped with



Bicapace

a Yamaha mid-drive motor.

HNF-Heisenberg A2-204 has updated the Cargo CD1 e-cargo trike that it debuted at Eurobike last year. It's added a foot-operated switch that prevents the tilting mechanism from locking accidentally.

The Cargo CD1 is equipped with a Bosch mid-drive system for extra power. For 2018, HNF-Heisenberg has made other evolutionary improvements such as smaller gears for hills; bigger 180mm rotors for the front disc brakes; a frame lock that uses the same key as



HNF-Heisenberg Cargo CD1



Urban Arrow Tender

in place of the front wheel, so riders don't have to buy a whole cargo bike. The AddBike unit weighs 10kg and can haul up to 35kg of cargo. It is equipped with two disc brakes and a tilting mechanism. AddBike plans to offer accessories for cargo, luggage or kids, and says the base unit will cost no more than €800 (\$940).

Known for its quality folding bikes,

the Bosch battery; and an adjustable stem to accommodate a wider range of rider heights.

The Cargo CD1 features a flatbed cargo tray and is available with either a short or a long wheelbase.

The Chike, another tilting e-cargo trike, makes its debut at Eurobike. From the German brand **Chike**, **FG-0/111** the bike is intended to be more compact and agile than some of its competitors.

The Chike is 73cm (29 inches) wide and less than 2 meters (6 feet, 6 inches) long, so it's petite enough to thread its way through dense traffic. It accepts either a cargo tray or a covered child seat.

The French brand **Kiffy** **FG-0/102** presents



Kiffy

a selection of even more compact and specialized cargo trikes. The rear half looks like an ordinary utility bike with a low toptube.

But the front end is designed like a hand truck. Kiffy offers a version with



AddBike

a fixed front axle for golfers, and another with a tilting mechanism for riders who need help with balancing.

And there's an electrified version, the E-Kiffy, that is equipped with a Pendix crank-based drive system.

Because they are typically big and brawny, cargo bikes aren't inexpensive. **AddBike**, **FG-0/104** from Lyon, France, has come up with an idea to make cargo bikes that regular people can afford.

The company makes a two-wheeled modular cargo unit that looks like a hand truck. It can be retrofitted to a conventional bike



Babboe Carve

Taiwanese manufacturer **Tern** **B4-405** is expanding its lineup with the folding GSD e-cargo bike.

It rolls on compact 20-inch wheels with extra-wide tires and is equipped with a Bosch mid-drive motor for power. Tern says the GSD is shorter than a Dutch city bike but can haul up to 180kg (400 pounds) of passengers and cargo.

Its longtail cargo area can accommodate two pairs of Thule Yepp Maxi child seats or two pairs of Ortlieb waterproof panniers. It also accepts a front tray for more capacity.

Because it folds, Tern says the GSD (for "Get Stuff Done") fits in the back of a mid-sized car and can fit in an elevator.

Another interesting longtail cargo bike



Chike e-cargo trike

on display at Eurobike is **Bicicapace**. The compact cargo bike has a long carrier and a roomy transport box above the front wheel.

The Italian company does not have a booth at the show. But because it participated in the Eurobike Awards, its Justlong model is on display at the West entrance along with other Eurobike Award entries. **LvR**



Tern GSD e-cargo folding bike

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Vaude's new factory can't get much closer to market

Talk about local production: Since 1980, Vaude Sports has made high-quality panniers, backpacks and lifestyle bags just 15km (9 miles) away from Eurobike in the city of Tettang-Obereisenbach.



Vaude CEO Antje von Dewitz with her father and company founder, Albrecht von Dewitz

But when a fire destroyed its factory in 2015, **Vaude A7-300** intensified its commitment to producing German-made products close to market. It built a new, sustainable factory next to its headquarters that opened this year.

The company rented production space while it rebuilt the factory, which it calls Vaude Manufaktur.

"To me, 'Made in Germany' means — and this is very important to me — having a holistic approach here at the company headquarters," Vaude CEO Antje von Dewitz said. The holistic approach, she added, means taking a concept from initial sketches through prototypes to commercial production, along with sales and marketing support, all in a "closed circuit" at the factory.

Von Dewitz, the daughter of Vaude founder Albrecht von Dewitz, said company sales are growing by about 20 percent a year.

With its warm façade of blond wood, Vaude Manufaktur looks as much like a showroom as a factory. Plenty of natural wood and energy-efficient technologies

inside ensure a comfortable, healthy workplace for its 42 employees.

The 1,800 square-meter (19,375-square-foot) factory produces some 100,000 panniers and bags a year. (Other Vaude products, including shoes and bikepacking bags, are made elsewhere.) The company uses high-quality, durable materials that are 100 percent waterproof.

The manufacturing process requires about 20 steps for each product, including sophisticated high-frequency welding techniques as well as old-school finishing work on sewing machines.

As an environmentally progressive manufacturer of outdoor and bike products, Vaude is especially proud of its clean manufacturing techniques. Von Dewitz said production is 100 percent climate-neutral and has been certified by EMAS, the Eco Management and Audit Scheme developed by the European Union.

Instead of environmentally harmful PVC, for example, Vaude uses alternative materials that are just as waterproof but do not have the environmental impact.

Von Dewitz said Vaude enjoys showing the factory to visitors and offers tours during Eurobike. "Interest in the facility is enormous," she said.

Vaude recently launched a line of German-made bags, the Comyou series, for city cyclists and commuters. The bags feature handles of natural bamboo.

Vaude has also revamped its classic Aqua line of panniers. Like its predecessor, the new Aqua line is durable, PVC-free and completely waterproof.

At the show, Vaude is debuting other products that, although not made at Vaude Manufaktur, still live up to its goal of using eco-friendly materials and production techniques.

A new bikepacking range consists of the 12-liter Trailsaddle saddle pack, 8-liter Trailframe frame pack and 19-liter Trailfront handlebar pack.

The Trailfront and Trailsaddle use a clever system where the mounting system stays on the bike, so the bags can be attached or detached with less hassle.

"Mounting systems for handlebars or under a bike saddle can be somewhat tricky and, depending on the bike, even complicated to attach sometimes. This is why we have developed a mounting system that, once it's attached, remains on the bike for the whole tour," product manager Rafael Erath said.

The Trailsaddle, which mounts under the saddle, doubles as a splash guard, and the Trailfront comes with a shoulder strap for carrying off the bike. Riders can adjust the width of the Trailframe bag so it works on bikes with rear suspension.

All bags have roll-down closures that roll up tight. The bags are made of PVC-free tarpaulin with welded seams and finished with a water-shedding Eco Finish surface treatment that is PFC-free, which means it is made without fluorocarbons.

For enduro and touring, Vaude offers the new Bracket pack range, consisting of four unisex models with volumes of 10, 16, 20 and 28 liters, and a 16-liter women's pack.

"An ergonomically constructed back panel ensures enhanced pack stability with high freedom of movement. A wide hip belt provides extra stability and works as a compression strap as well," said Jochen Geiger, bike sports sales manager for Germany.

All Bracket packs bear the Vaude Green Shape Label, which identifies them as eco-friendly products made from sustainable materials.

Vaude has also revamped and expanded its line of cycling footwear, including the debut of its first road shoes (see related story, page 34).

"The only cycling shoe models we kept from before are the Moab and the Tsali. All other shoes are completely new," Geiger said. Vaude is debuting a total of 17 shoe models at Eurobike. ■ JB



Vaude is showing a new line of bikepacking bags at Eurobike.



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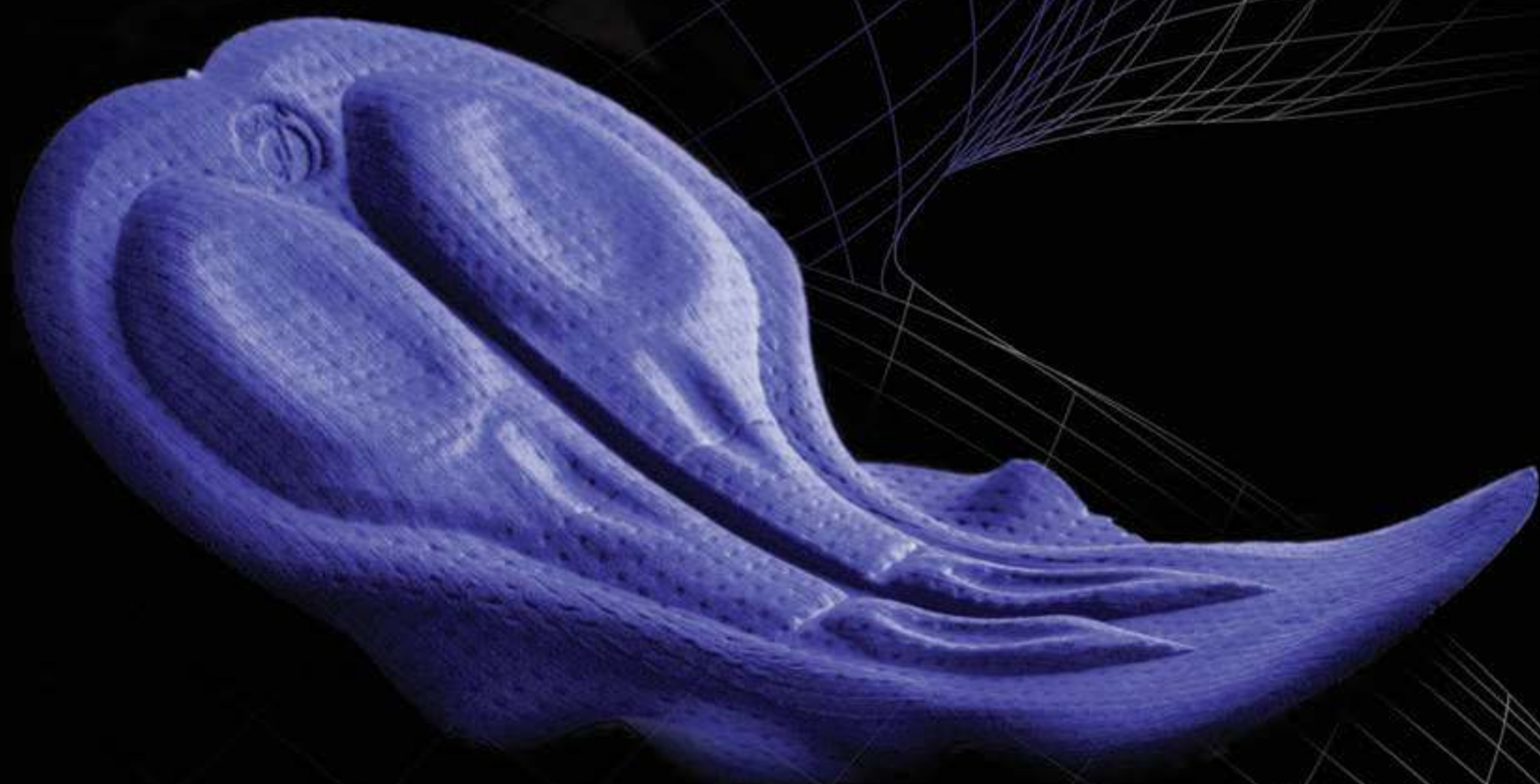
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Overview: Cycling shoes

Shoe brands make sure their uppers won't be downers for powerful riders

Footwear brands may not have figured out how to make cycling shoes lace themselves, but they are pouring a lot of other technology into their shoes to make them more comfortable yet robust — and even help turn the pedals faster.



Fizik Infinito R1 Knit

Some of the most striking innovations are in the uppers. Fizik **B4-309**, for example, claims to have made “the first knitted pro cycling shoes ever.” The company says that the material for its Infinito R1 Knit is highly breathable for efficient temperature management. “It’s extremely light yet strong and supportive,” Fizik says.

Fizik combines the upper with a mesh insole and a laterally stiff and light full carbon outsole, for power transfer and another layer of temperature management. Completing the package is the new Infinito closure system. Two micro-adjustable double Boa dials adjust steel-coated nylon laces. Fizik uses textile shoelace guides to reduce pressure points, making the shoes suitable for high-intensity riding

Louis Garneau **A7-208** is also focusing on upper innovations with its X-Comfort Zone, which is at the heart of what the company calls an “intelligent cycling shoe.” The X-Comfort Zone is an elasticized upper insert that expands to fit a rider’s metatarsal bone. The

Canadian company says that the inserts add up to 4mm or 5mm in width.

The X-Comfort Zone is positioned on the outer side of each shoe and makes extra space for the foot as it pushes on the pedal. Louis Garneau will offer the X-Comfort Zone system on four of its five cycling shoe models for 2018. The concept could let retailers provide more customized solutions for riders who seek shoes that are rigid yet still comfortable.

Scott Sports **B1-101** has teamed up with Carbitex, an American specialist in carbon fiber and other advanced materials, to beef up the high end of its road cycling range. Carbitex works with other footwear brands, but Scott says this is the



Ion Raid



Scott Carbitex RC Road Ultimate

company’s first foray into cycling shoes.

“For us they made a carbon fiber material that allows no stretch in the pulling direction,” said Bruno Schaller, cycling footwear product manager at Scott. “This rigidity means that there is zero loss in power and you can actually gain some watts.”

Because the material is thin, it’s light and flexible where needed for a snug fit. Scott uses the Carbitex material on its new Scott RC Road Ultimate and three other high-end racing models, including a second road shoe and two mountain bike racing shoes. Scott says the new models are the lightest shoes in its range.

For road cycling shoe technicians, weight remains an overarching issue. Giro **A4-2000** says it achieved a breakthrough with its Prolight Techlace,



Louis Garneau X-Comfort Zone shoes

a technical road racing shoe that weighs in at 150g (5 ounces). It’s intended for performance where every gram counts, but adjusts quickly for comfort as well.

Giro’s race day shoe uses the Techlace system, which replaces D-rings and other hardware with laces so it is suppler across the forefoot. The upper consists of a light monofilament mesh with a skeletal, bonded TPU overlay for plenty of ventilation. The outsole incorporates

Textreme carbon fiber. Textreme is woven in flat sheets instead of threads, so it is made with less resin and is lighter than conventional carbon while retaining similar stiffness.

Vaude **A7-300** undoubtedly watched these developments as it prepared to launch its first road cycling shoes. The German outdoor and cycling company (see related story, page 32) expanded into footwear seven years ago and scored with shoes like the Moab flat pedal shoe. Here in Friedrichshafen, Vaude is showing its new RD Snar road

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TVL Skoj

A7-300

Bike Shoes for all Disciplines

On its way to becoming a full-range outdoor supplier, VAUDE takes the next giant step. For the Spring/Summer 2018 season 17 new models are presented, including road bike shoes for the first time. The new range also include shoes for Cross Country and All Mountain segments, as well as innovative products as for example the TVL Skoj for urban commuters, bike travelers and the growing segment of e-bikers. It offers the ideal fusion of bike performance with stylish, sleek looks. The knit upper comfortably

cradles the foot and ensures a pleasant microclimate. The Boa® L6 dial closure system provides a micro-adjustable, secure fit and easy handling. To keep you safe while riding, reflective elements enhance your visibility in early morning and late evening conditions. Medium stiffness (V-Flow 5) of the sole ensures efficient power transfer to the pedal while also allowing for a comfortable foot roll and better walkability.

www.vaude.com



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RAID

A7-204

Perfect for riders seeking casual style, the brand-new Raid is the third model in ION's young family of mountain bike shoes. This stylish yet functional flat pedal bike shoe features ION's SupTraction_Rubber Soul FL to offer reliable traction on the pins and fully meets the demands of leisure trail riding. Thanks to the clean outlines of the upper it's also just a step from the pins to the pints – without losing any stylistic confidence. The pre-shaped heel ensures precise hold and a comfortable fit. Available in two colours (black and stoney grey). Sizes ranging from EU 37 to 47.

www.ion-products.com/bike





Giro Prolight Techlace

uppers and closures. Knitted uppers, for example, appear in the Giro Empire VR70 Knit trail riding shoe. Produced with Xnetic Knit that has been treated for water repellency, the upper attaches to a bonded TPU exoskeleton for structure. The Empire Knit comes with a rubber toe guard and heel for abrasion resistance, while a stretch-knit ankle cuff keeps dirt and scree out of the shoe. Easton provides the carbon fiber sole and Vibram the rubber outsole.

bike line, with three models designed for optimal power transfer, low weight, ventilation and easy handling.

Vaude's road shoes use various combinations of Boa dial closures and Velcro straps. All incorporate a seamless polyurethane upper, laser-perforated ventilation in the forefoot, continuous



Exustar cycling sandals

nylon reinforcement and a stiff performance RD outsole.

Vaude "put particular emphasis on using materials that are as environmentally friendly as possible," Oliver Korden, head of the footwear division, said in a statement. And while its cycling shoes may not all be manufactured to the company's stringent Green Shape criteria, it's working on it.

"We want to become the most sustainable manufacturer of cycling shoes," Korden said.

Many road innovations carry over to their off-road brethren, mostly for

Northwave A7-401 extends its XFrame upper technology to a mountain bike shoe, the Ghost XC, for the first time. Introduced last year, XFrame is used in the upper to eliminate pressure points. The Ghost XC also features inner mesh, a stiffened mid-layer and an outer film for protection. Rubber inserts add protection in exposed areas. The closure is a Dyneema dial cable.

Northwave developed the outsole, which it calls Hyperlight XC, in partnership with Michelin Technical Soles for a rigid, durable sole that isn't heavy.

Michelin also worked with **Gaerne A7-403** to develop soles for its G-Sincro mountain biking shoes. Gaerne offers two styles: a lightweight carbon fiber version for mountain biking, and a carbon power sole.

The MTB sole incorporates carbon and Michelin rubber treads for



Five Ten Impact Pro

performance and traction that resists abrasion. The power sole is made of nylon reinforced with carbon fiber and



Vaude RD Snar

Michelin rubber. Both versions have two holes in the toe cup for screw-on cleats.

Laser-drilled holes in the microfiber uppers enhance breathability. Boa closures — two micro-adjustable reels and four guides for each reel — permit quick, adjustable closure across the entire frontal area of the shoe.

Five Ten FG-A6/1 put the midsole in its Impact Pro all-mountain and downhill



Sidi MTB Defender

shoe on a diet. The midsole in the new version is about 30 percent slimmer than its predecessor. Five Ten replaced the EVA of the older version with polyurethane, which the company says is more durable and impact resistant.

The toe cap of the Impact Pro uses a 3mm layer of impact-resistant Poron foam. Five Ten, now owned by Adidas, will offer the Impact Pro in three colors: black-camo, black-gold and navy.

Sidi Sport A8-108 moves into a new category with its MTB Defender, which it calls a technical enduro shoe. The upper is made of Politex microfiber that looks like suede. Rigid inserts in the rubber sole enhance power transmission between shoe and pedal. The closure is the Italian company's own Techno 3 dial, with a Velcro strap on the toe box. A higher profile protects the inner malleolus area — the bump at the ankle — while the outer side has a polyurethane shock absorber and inner padding.

Ion A7-204 went for a mountain bike shoe with a casual, urban look. The third model in a young line, the Ion Raid is a functional, flat pedal shoe with the Ion's Sup Traction Rubber Soul FL, for reliable

traction on the pins. The upper has the clean outline of stylish urban kicks, making them suitable for post-ride beers. Pre-shaped heels ensure a precise but comfortable fit.

If all this technical innovation is making your head swim and your feet sweat, head to the **Exustar A5-409** stand to see its summer cycling sandals with Bio Sole. Soles are a medium stiffness, the company says, "to make them flexible enough to be reasonably comfortable to walk in." The trick is that the rear 85 percent of the sole is stiff for efficient cycling, and the front part is more flexible for walking.

The sandals come with cleats, but Exustar says they are just as functional without them. They can be worn with or without socks, thanks to a toe guard and four adjustable straps with a breathable underlay, so the straps won't stick to your sweaty feet. ■ **BS**



Gaerne G-Sincro



Northwave Ghost XC

Miranda's modular cranksets make OEMs and consumers less cranky

If finding the perfect crankset makes you cranky, Miranda is launching an ambitious concept that lets bikemakers and consumers mix and match cranks, chainrings, spiders and spindles quickly and easily.



Miranda Xmod cranksets can be configured with more than 100 parts from Miranda and other suppliers.

Miranda B5-405 is debuting its modular crankset concept, called Xmod, at Eurobike.

"We don't see the point in making crankset parts with proprietary bolt circle diameters (BCD)," said João Miranda Jr., the company's chief marketing officer. "Companies such as FSA lock customers into using their parts, with no technical advantage. We use a standard 104mm BCD so users are not tied to our parts.

They can fit their own chainring if they want. They can just replace one part, not the whole crankset."

Bolstered by booming sales of e-bike cranks, the ambitious component maker continues to expand its factory in Agueda, Portugal. Miranda is part of the Portuguese bike industry cluster known as Bike Value Portugal.

Xmod features more than 100 different parts, including carbon fiber

spiders and cranks that will be available in October.

Changing the spider or direct-mount chainring is as simple as removing a single, self-extracting screw, making it ideal for races where riders need to swap out chainrings in a hurry.

Customization options even extend to colors. Miranda's sponsored downhill star, Vasco Bica, has built a crankset in the Portuguese national colors of green, red and yellow.

For OEM assemblers, the Xmod system allows them to minimize inventory because it is so flexible, sales director Agnelo Canas said.

"There's no need to buy in a complete crankset for different applications," Canas said. "Let's say the customer needs to build fat bikes — we have the perfect spindle for that. Maybe he is building entry-level DH models — we can provide alloy cranks and spider with a titanium spindle."

Canas continued, "If he needs to build a higher-grade model, he needs only to buy the carbon cranks, for example. This is a big advantage because the assembler can change the character of the crankset on the spot."

Miranda says one Xmod combination resulted in the lightest crankset on the market at 418g when it tested it in August.

That crankset incorporates a titanium spindle. The company continually refines the spindle to bring the weight down even more without compromising strength.



Chainflow 3D chainring

"Because rear hubs have a lot of variation, assemblers are using washers to maintain a straight belt line. We are now supplying more than ten spiders adapted for each rear hub to ensure a straight belt line. These are high-end bikes, and we're providing a professional solution to the belt line problem."

Miranda has been making bicycle parts since the 1950s, but its decision to produce cold-forged cranks for e-bikes proved to be its springboard into the high-end European market.

The Agueda facility is being continually upgraded and now produces cold-forged chainrings, brakes, seatposts and fork crowns, among other items.

Miranda is investing heavily in automated production. It's installing a third, fully automated forging press, which will join some 21 CNC machines,



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Robots at Miranda's Agueda, Portugal factory polish cranks.

"We want them to last a lifetime," the younger Miranda said. "For the high-end market we want to make the lightest possible, but we know some customers will use them for downhill so we are rigorously testing for reliability."

Miranda is also launching its patented Chainflow 3D chainrings for Xmod in direct mount configuration and also in standard BCD 104. Unique T-shaped teeth guide the chain in three axes: up-down, left-right and front-back, for reduced wear, better performance and chain retention, as well as improved mud expulsion.

Company founder João Miranda Sr. is keen to highlight another recent innovation for a more specialized market: high-end bikes equipped with belt drives.

along with crank polishing stations that are run by robots.

A new 2,000-square-meter (21,527-square-foot) warehouse was completed at the end of last year. Solar panels on the roof generate 113 kilowatts of electricity to feed the plant's power demands.

In one corner of the factory, an injection molding machine churns out battery covers for e-bikes. They may not be as glamorous as the other products Miranda makes, but the company notes that for European assemblers, these humble items replace Chinese-made parts.

"Customers asked us to make them," the elder Miranda said, "But our main focus is high-end alloy parts." ■ TK

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2017, BOOTH NO.A1-409



Rove (Neco3+Neco4)
Dynamo Hub Power
Generator-UPS System



NECO 3
Intelligent Portable Charger

Patent No.Taiwan: M509473
Germany: 202015104197



NECO 4 Global Maximum Bicycle
Dynamo Generator
Dynamo Hub Power Generator

Patent No.China : 5257748
6Vx2.5A=15W

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Overview: Speed pedelecs

Motor mouths: Drive makers, brands talk up more powerful speed bikes

Traveling 45 kph [28 mph] on an e-bike is some experience, so it is no surprise that demand for them is surging.

While critics say 45 kph speed pedelecs are just “mopeds with pedals,” anyone who has actually ridden one knows it takes reasonable effort to reach that maximum assisted speed, even on the flats. So drive manufacturers are looking for ways to deliver more power over the entire speed range of an s-pedelec.



Bafang M600 motor

Bafang, AG-406 the big Chinese producer of e-bike motors, is emphasizing power as it prepares to launch its first s-pedelec system, the M600. The M600 is one of three new mid-drive systems Bafang is showing at Eurobike.

The M600 comes with output options of 350W or 500W and delivers peak torques of 95 to 110Nm

The German company **TQ Drives, AG-106** meanwhile, has redesigned its unusual “pin-drive” motor for 2018 to be what it claims is “the most powerful and compact drive on the market.”

It’s certainly powerful: TQ claims the drive, called the HPR 120S, delivers torque of up to 120Nm without reducing efficiency.

“We believe there is room on the e-bike market for a premium segment that simply isn’t there yet. Performance-wise, we feel we’re setting that premium standard, and we wanted to ensure the design of the motor reflects that — extremely powerful yet also refined,” said Kevin Fencil of TQ.

Fencil said TQ has reduced the weight of its system to 4.4kg (9 pounds, 11 ounces) while making the motor “significantly quieter.” TQ has also reduced the drive’s moment of inertia, which means it responds more dynamically and handles more smoothly.



Riese & Müller Supercharger GX Rohloff HS

TQ offers complete kits for OEMs that include speed and shift sensors, several display options and other components. The company also has several battery options, including TQ’s standard 880Wh battery.

While TQ doesn’t have the name recognition of market leaders like Bosch or Brose, it is starting to accumulate accolades that it can turn into publicity.

The TQ drive was named winner in the E-Bike/Pedelec category of the 2017 Bicycle Brand Contest. This summer, TQ built 12 factory bikes and has been taking them to events like the Riva Bike Festival at Italy’s Gardasee and E-bike Days in Munich.

Bosch, AG-202 the market leader for mid-drives, already equips tens of brands with its Performance Speed 350W system for s-pedelecs. **Brose, AG-301** meanwhile, launched its 45 kph-capable TF drive last year. At this writing, **Shimano, B5-300** has not yet added an s-pedelec drive to its motor lineup.

Powerful drives matter little if there aren’t bikes to put them on. Several brands are expanding their presence in the speed pedelec arena.

Riese & Müller, AG-300 originators of the famous Birdy folding bike, now offer one of the most varied s-pedelec ranges on the market.

For its 25th anniversary this year (see related story, page 16), R&M is releasing four new s-pedelec models, which are branded as HS. All use Bosch mid-drive systems, and R&M offers a touring version with derailleurs and Nuvinci and Rohloff internal gear hub options.

An e-bike traveling at 45 kph consumes more battery power than its conventional 25 kph cousin. R&M’s Supercharger models, the GT Touring HS and GX Rohloff HS, use the Bosch dual battery system to pack 1000Wh of battery capacity into a neat form that is integrated on the frame. The Charger HS model, which is equipped with a Nuvinci hub, has single and dual battery options.

The Roadster Touring HS, with its more conventional appearance, may appeal to urban commuters who are looking to speed to work.

Riese & Müller even offers speed versions of its new e-cargo bike, the Packster 40 HS, with Touring and Nuvinci options.

Klever, B2-206 which believes that thirty-somethings are increasingly looking for fast urban bikes, is showing its X Speed and premium X Speed Limited Edition s-pedelecs at Eurobike.

Because s-pedelecs compete with cars, general manager Fritz Baumgarten is not worried about laws in some countries that prohibit them from using bike paths.

“45 kmh e-bikes are a real



Klever X Speed

alternative to your car, so choosing between e-bike and car becomes a serious option,” he said.

Klever equips its bikes with its own Biactron motor and control system with a Bluetooth-enabled LCD display and electronic theft protection. In a speed

pedelec test earlier this year, the German magazine *Bike Bild* named one of the Klever Speed models the winner. For longer range, the Speed models both offer optional expanded battery capacity of 850Wh.

Carbon fiber specialist **M1 Sporttechnik, AG-306** already offers a range of s-pedelecs and what it calls R-pedelecs, or “race” pedelecs, that can reach 75 kph. While M1 uses the TQ pin-drive, for 2018 it is adding the Brose system to the mix.

The carbon fiber M1 Zell GT will be offered in two versions. The s-pedelec M1 Zell GT comes with fenders, carriers and lights, while the M1 Zell CC is made for off-road.

The M1 models include 500Wh batteries and minimized displays. The



M1 Sporttechnik M1 Zell GT

sponsored by



X Speed

B2-206 / DA-200

Klever, the e-bike brand of KYMCO, presents an S-pedelec version of its award-winning X series. The new X Speed is ideally suited for high-speed commuting and a true alternative to the car. The new model is one of the first fast e-bikes to receive type approval in accordance with new EU regulations.

Developed in-house, the BIACTRON rear hub motor provides 600 Watts, making the X Speed one of the most powerful in its category and capable of speeds up to 45 km/h. LCD-Display with Bluetooth smartphone connection, integrated alarm with sound and motor blocking, 570 Wh battery, Schwalbe Super Moto X tires, MaguraMT4e disk brakes and Shimano Deore XT 11-speed cassette: all this is standard on the X Speed.

Available from 2018 (option or upgrade): 850 Wh battery and a new Connect+module with integrated GSM transmitter which allows the user to locate the bike or activate the alarm by phone.

www.klever-mobility.com





TQ Drives HPR 120S

bikes weigh about 21kg.

Although s-pedelec sales are still in the single digits as a percentage of market sales, M1's managing director, Thorsten Cornils, believes that will change.

"I'm convinced it's a growing market, especially for Germany, Austria, Switzerland and the Netherlands," he said. Cornils said M1's s-pedelec sales have grown "enormously" since 2015.

While most s-pedelecs are made for commuters and urban riders, **Corratec B2-200** is launching a full-suspension speed e-bike for off-road riding.

Called the E-Power RS 150 Performance 45, it's equipped with a Bosch drive and 150mm of front and rear travel.

Other bikes in Corratec's speed range include the E-Bow 29 Performance 45 and the E-Power C29

Trekking Performance 45.

France may not be a leading market for speed pedelecs, but the French brand **Moustache B2-201** sees plenty of potential in the category.

For 2018, Moustache is offering four high-speed models in its e-bike range, all equipped with a Bosch Performance Line Speed mid-drive system.

"Right now the main markets for Moustache for s-pedelecs are Germany and Switzerland, closely followed by the Benelux countries," said Clément Bonneau of Moustache.

The Samedi 27/9 FS Speed is a speed e-MTB with a 29-inch front wheel and 27.5-inch rear wheel. Moustache says the combination boosts agility and stability.

Other models in the range include a couple of well-equipped, high-speed commuters: the Friday 27 Speed and



Simplon Chenoa HS

Samedi 28 Speed.

For the Dimanche 28 Speed, Moustache focused on reducing weight. The bike has a stated weight of 19.7kg (43 pounds, 7 ounces).

Swiss brand **Simplon B1-401** is showing the Chenoa HS at Eurobike. The bike is intended for its domestic market.

S-pedelec sales are booming in Switzerland, where the bikes are allowed on a wide range of roads and bike paths.

"The aim when developing this bike was an ultra stiff, but very lightweight frame, which impresses with its riding comfort and riding safety," the company's Ralph Kessler said.

"Alongside the high-quality carbon materials, the elegantly integrated battery provides a stable, low center of gravity," he added. "It has specially constructed chainstay profiles and a choice of carbon forks or suspension forks and 50mm tires which offer traction through the corners — the perfect set-up for an s-pedelec, we feel."

The Chenoa HS is powered by a Bosch Performance Line Speed drive with a 500Wh battery, and a second 500Wh battery can be installed on the rear rack. For stopping power, it's equipped with Magura MT4e hydraulic



Corratec E-Power RS 150 Performance 45

disk brakes for e-bikes.

Spanish bikemaker **BH Emotion A3-301** produces a range of speed



Moustache Samedi 27/9 FS Speed

pedelecs powered by rear hub motors with mainly 600Wh frame-enclosed batteries. The line includes e-MTBs, trekking and road models. ■ RP

Changing regulations change the rules for s-pedelec helmets, lights

As sales of speed pedelecs grow, so do the number of laws and regulations governing the equipment that bikes and riders are required to use.



Abus Pedelec+ helmet

Those regulations haven't always been helpful to the s-pedelec market. For example, s-pedelec riders are required to wear bulky, heavy moped helmets in many European countries — a mandate that bike brands believe have held back sales of these speedy e-bikes.

But a Dutch regulation, NTA-8776, which went into effect on Jan. 1, allows manufacturers to make helmets specifically for speed pedelecs that aren't as bulky as moped helmets but protect more of the head at higher speeds than a traditional bicycle helmet. The industry is now working to develop a similar standard that would apply throughout Europe.

Abus A5-500 was one of the first companies off the mark

to launch an NTA-certified helmet, the Pedelec+, earlier this year. The helmet has such features as a magnetic chinstrap and an LED "tail light."

MET B4-307 is also launching an NTA-certified s-pedelec helmet, the Grancorso. A reflective bottom half gives the helmet 360-degree visibility. It has a removable visor, magnetic chinstrap and optional LED light, and its interior padding can be hand-washed.

According to the Dutch standards organization NEN, other brands with NTA-certified s-pedelec helmets are **BBB Cycling A3-106**, Bontrager, **Cratoni A4-502**, Specialized and **Strategic B4-318**.

Lights are another focus for regulators.

Supernova A2-309 blazed a trail in 2015 when it launched its exceptionally bright, variable-beam M99 light for s-pedelecs that was certified to ECE 113C



MET Grancorso with removable visor



Busch & Müller IQ-X

standards. Supernova, which calls the M99 a "car headlight for e-bikes," now offers three versions for s-pedelecs: the M99 Pure, M99 Pure+ and M99 Pro. The high beam on the Pro cranks out 1600 lumens, which Supernova says is similar to the output of a car light.

But few other manufacturers have followed Supernova's lead in offering such powerful lights.

Busch & Müller A6-400 has developed a powerful, sophisticated technology for its IQ-X lights, which are used on s-pedelecs produced by the likes of **Riese & Müller A6-300** and **BH Emotion A3-301**.

The IQ-X technology offers 150 Lux output. A homogenous light field enables the cyclist to see more than 40 meters (130 feet) ahead, from immediate obstacles to what's beyond the curbs. A separate set of LEDs serve as integrated daytime running lights.

No regulation says s-pedelec riders have to look fashionable, but the Italian brand Pure Electric offers a range of e-bike apparel that combines protection with style.

"We wondered, why do we all use

a helmet to protect our head from falls, but we don't think about protecting other parts of the body that come into contact with the ground during falls or accidents?" said Veronica Stampacchia of Pure Electric (on display at **Diavelo FG-A9/2**).

The Pure Electric range incorporates CE-certified protective pieces for shoulders, elbows, knees and back in its range of jackets, rainwear, gilets, pants and shorts. Most of the pieces are removable.

"We combine the ergonomics of cycling clothing — light and aerodynamic — with the resistance performance of motorcycle clothing," Stampacchia said. The combination, she said, provides "protection and safety, together with style and elegance." ■ RP



Pure Electric apparel

Moustache 'hides' traditional Bosch batteries in downtube

While other brands are clamoring for Bosch's new PowerTube 500 battery packs, the innovative French e-bike brand Moustache is content to use regular Bosch batteries.



Moustache is expanding its Hidden Power battery technology to all e-MTBs for 2018. (Photo: JB)

That's because **Moustache, B2-201** which uses Bosch drives exclusively on its e-bikes, developed its own method of tightly integrating the batteries with its frames.

Moustache is expanding the application of its homegrown system, called Hidden Power, to all of its e-mountain bikes as well as some of its urban e-bikes, marketing manager Clément Bonneau said.

He said the company is not worried that the PowerTube 500 system will drive its alternative out of the market. "No way. And I'll tell you why,"

Bonneau said. "The PowerTubes are much longer than ordinary battery packs. We want to keep [the battery] in the center of gravity so the weight is balanced and the real cycling feeling is alive."

With Hidden Power, Moustache can conceal the traditional Bosch battery in the downtube. And because the traditional batteries are more compact than PowerTubes, it's easier for riders to throw an extra battery in a backpack for long rides.

Whatever Moustache is doing seems to be working. Bonneau said Moustache sold 11,000 e-bikes last year and expects to sell 18,000 this year. It has expanded its workforce to 50 from 30.

"All bikes are assembled at our factory at the company headquarters in Golbey. And don't forget that we produce all rims and chainguards ourselves," he said.

The French brand is seeing one clear trend in European e-bike sales. "Two years ago, our urban e-bikes accounted for 70 to 80 percent of our production. At the present time, it's a fifty-fifty balance between urban and mountain bikes," Bonneau said.

Some 55 percent of Moustache bikes are now sold outside of France. ■ **JB**

ASI Europe says it will be caught up on e-bikes

Having entered the fast-growing e-bike market only two years ago, ASI Europe will be offering a fleet of 26 e-bike models for 2018.

"ASI has done a great job. Next year we will be caught up" with e-bike offerings, said Armin van Hoogstraten, general manager of **ASI Europe B2-100**. ASI Europe is a sister company of Advanced Sports International, the U.S. parent company of the Fuji, Breezer, and SE bike brands and Oval Concepts components.

In addition to the 21 new European e-bike models, ASI is launching another five models in the United States. While the U.S. e-bikes feature less expensive drives from Bafang, reflecting a less mature and more price-sensitive market, the European models all sport premium drives from Bosch or Shimano.

ASI is acknowledging the boom in European e-mountain bike sales with the introduction of two full-suspension e-MTBs under the Fuji brand. The Blackhill Evo line includes a 29er and a 27.5-plus bike and uses Bosch drives with PowerTube 500 battery packs for better integration of battery and frame.

The Breezer brand, which focuses more on city and utility models, is launching a Bosch-equipped step-through.

"Despite the current boom in e-mountain bikes, for my market

the classic step-through mobility models are very important bread-and-butter products," said Etienne Reinders, sales manager of ASI Germany. "And people love Bosch."

Breezer is also highlighting its non-motorized Allroad range for 2018, which includes the new Doppler models.

The Doppler Pro uses a classic dropbar and borrows some features of traditional randonneur bikes, while the Doppler Café is more of a stylish, fun city bike with a sweeper bar.

Hoogstraten said all ASI e-bikes and conventional bikes with fenders or carriers are assembled at the Ideal Europe factory in Kutno, Poland, a subsidiary of ASI's manufacturing partner Ideal Bike Corporation in Taiwan. ■ **JB**



Breezer Powertrip electric step-through

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Alexrims is on the prowl with Bear Pawls hubs

The brand may be new to Eurobike, but the people behind Bear Pawls premium hubs are not. They are the founders of Alexrims, one of Taiwan's best-known makers of rims and wheels.

General Manager Sally Hsieh said Alexrims A5-205 has invested some \$10 million (€8.5 million) in the Bear Pawls launch, including \$3 million for CNC machines alone.

The investment includes a hub factory, which started production in October. The rented factory is in Fen Yuan, near Taichung, instead of near the Alexrims headquarters in the southern Taiwan city of Tainan. Hsieh explained that qualified employees are easier to find in the Taichung area, which is the heart of the Taiwan bicycle industry.

Before it launched Bear Pawls, Alexrims sourced hubs from Joytech, another Taiwan manufacturer, for its wheels. The company has bigger plans for Bear Pawls and intends to sell the hubs to OEMs and on the aftermarket as well as using them on Alexrims wheels.

Alexrims is now using Bear Pawls hubs on all but some entry-level wheels. It chose the name because the inner workings of the hub look a bit like a bear paw.

Hsieh said Alexrims wants to buy land within three years on which to build a new Bear Pawls factory.

"We wanted to build before but were running out of space and time. Due to

delivery issues we needed our own hub production immediately. That's how we can guarantee no production delays," she said.

Like the Alexrims factory in Tainan, the Bear Pawls manufacturing process is extensively automated. "If we want to keep production in Taiwan we have to rely on automation. Otherwise we can't compete with low labor costs in China" and other countries, Hsieh said.

She said hubs are produced on state-of-the-art CNC machines, while Taiwanese workers oversee quality control throughout the manufacturing process.

Bear Pawls hubs are designed to be compatible with as many drivetrains as possible. Lance Fu, the brand's administration manager, said all rear hubs are interchangeable with eight bodies for Shimano, SRAM, or Campagnolo systems. Other options include alloy and steel hubs and cassette or XD models.

Bear Pawls plans to produce its first carbon hubs next year. It has also patented an "anti-bite" system that protects light alloy cassette bodies from drive damage.

The hubs are also easy to maintain, said Hendrik Tafel, marketing, sales

and service representative for Europe. "All Bear Pawls hubs can be serviced without tools," he said. "Durable cartridge bearings, alloy and steel material are combined to create a hub system that is easy to build and also easy to service."

The launch of the Bear Pawls brand is just one of several changes at Alexrims. The company has retired its A-Class brand for wheels and now offers wheels and rims solely under the Alexrims name, apart from some production for OE partners.

It also closed its Chinese carbon fiber factory and moved carbon wheel production to Tainan, although carbon hubs will be made in Fen Yuan.

"Chinese labor could not guarantee the same quality. Therefore we have chosen to bring it all together in our home country," Hsieh said. "Over here we have everything under control."

Alexrims also changed its logo, which now sports three colors instead of two.



Sally Hsieh with Bear Pawls hubs before (right) and after they have been milled on a CNC machine. (Photo: JB)

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No belt-tightening for Gates on its 10th anniversary

Ten years ago, a new company debuted at Eurobike with a seemingly audacious goal: Replacing the venerable bicycle chain with a hassle-free alternative.

From a handful of customers in 2007, **Gates Carbon Drive A2-204** today supplies belt drives to some 500 bike brands worldwide. The European market in particular has helped the brand, a division of the Gates Corporation, achieve double- and triple-digit growth rates.

"Ten years ago, many people were skeptical that a belt drive could work on bikes. Now we have proven it not only works but that people want it, and for one simple reason: Gates Carbon Drive belts are a clean, strong, no-rust, no-stretch, low-maintenance alternative to chains," said Todd Sellden, global director of the Gates Corp.'s bicycle division.

In Europe, the success of the Gates



Special edition Gates Carbon Drive belt in white

Carbon Drive stems from a collaboration between Gates, a leading supplier of belts for automotive and industrial uses, and industry veteran Karlheinz "Kalle" Nicolai.

Nicolai, who invented the G-Boxx gearbox, is the founder of Nicolai Bikes, a custom bikemaker in Germany. He found Gates when he began looking for a second line of business to complement Nicolai Bikes.

"I studied the suspension market but realized quickly that there were already too many players in that field," he said. "Then I thought about drivetrains. The fact is that, historically, not much has happened in this field. I was focusing on drivetrains in the middle of the bicycle and belt drives."

Gates teamed up with Nicolai's company, Universal Transmissions (UT) in Mühlhausen, which assumed responsibility for European sales and service for the Gates Carbon Drive.

More important, Gates was able to take advantage of Nicolai's extensive knowledge of the bicycle industry, and Nicolai drew on Gates' long experience with belts. Nicolai said he also dedicated his patents to the partnership, such as his SureFit system to reduce belt noise.

Gates, based in the U.S. city of Denver, Colorado, handles the North American



Gates Carbon Drive crew: (from right) Kalle Nicolai, Todd Sellden, Frank Schneider and Thomas Henne

and Asian markets.

UT also works with Gates' European OEM and aftermarket customers. "We offer engineering support and if needed even build prototypes for all customers that want to use Gates and Bosch," Nicolai said.

UT has a business relationship with Bosch as well: It handles OEM distribution for Bosch's European customers that are too small for the big auto supplier to handle directly.

"Bosch doesn't have the time to deal with all of its small customers," Nicolai said. "But there are so many players in the European market. Our UT sales reps are traveling from Poland to Spain. They visit all smaller European OEM

customers in the name of Gates and Bosch."

To celebrate the anniversary, Gates is releasing a special edition belt drive in white to show off its grease- and rust-free features. It has also published 1,000 copies of a photo book commemorating the 10th anniversary that it will give away to retailers who visit its booth.

Other new products at the Gates booth include a new line of lightweight aluminum sprockets for the Pinion C-line gearbox; a new splined sprocket for the Rohloff E-14 electronic shifting system for Bosch drive systems; and other products for Bosch's latest generation of e-bike drives. ■ JB

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To European IBDs, Ryders markets its 'authenticity'

Visitors passing by the Ryders booth might shrug and think it's just another eyewear brand. But general manager Jayson Faulker would beg to differ with them.



Jayson Faulker of Ryders

Faulker says IBDs should pay attention to **Ryders A4-203** because it pays a lot of attention to them. The company makes its Eurobike debut at this show.

"What we have is a very authentic story," Faulker said. "IBDs can best tell the story behind Ryders — and they know their customers."

Brent Martin, winner of the first Canada Mountain Bike Championships in 1986, founded Ryders the same year. Ever since, the company has stayed close to cycling and IBDs. The company is now part of Essilor International S.A., a global maker of corrective lenses that is in the process of merging with another global eyewear giant, Luxottica.

Faulker argues that it's important for IBDs to choose a brand like Ryders that is "authentic" in the cycling market.

"If you don't carry specialty products you are not a specialty store," he said.

"IBDs need unique products." Faulker is a former specialty retailer himself, who in 1990 founded a climbing store in Whistler that expanded to three locations. He sold the retail stores, along with a mountain guiding business he also created, in 2014.

Faulker said Ryders has never changed its focus away from what he calls "two wheel and fast outside sports, like trail running." These are especially difficult sports to design glasses for because of the lens-abusing forces of dust and sweat.

Unlike other eyewear brands, Ryders has never made purely "lifestyle" sunglasses, or goggles for skiing or snowboarding.

Ryders uses only proprietary molds, and handles R&D and testing in-house at its headquarters in Vancouver, British Columbia. It works with Essilor on lenses.

"We design our products all by ourselves. All molds we use are our own," Faulker said.

As Ryders' parent company for the past three years, Essilor has provided more resources to enable the brand to grow.

"We have access to their lens knowledge. Moreover, as a small brand we are well known in our home country of Canada, but not abroad," Faulker said. "I would even say that we are unknown outside of North America. With Essilor behind us we want to grow internationally. That's why we are here at Eurobike."

At Eurobike, the company is looking for distributors and agents to represent the brand in Europe. Its biggest European market is currently the U.K., where Ryders maintains a warehouse.

Essilor expects the Luxottica merger to close later this year, which would bring such brands as Arnette, Oakley, Ray-Ban and the U.S. retail chain Sunglass Hut under the same family umbrella as Ryders. ■ JB

From BH, 68(!) e-bikes

Spanish brand BH Bikes is offering no fewer than 68 e-bike models for 2018, including a new gravel e-bike.

BH A3-301 is expanding the number of models equipped with Bosch mid-drive motor systems, along with other bikes equipped with Brose and Yamaha mid-drives and Bafang rear hub motors.

Its new Gravel E, for example, uses a Yamaha system and shows that electric assist is moving into bike categories once thought "off-limits," such as cyclocross and road.

BH is especially keen on the PowerTube 500 battery packs that Bosch is rolling out on the market. The PowerTube allows brands to better integrate an e-bike battery on the bike frame. Ten of the new BH e-bike models will be equipped with PowerTube 500 packs, said Stefan Krill, market manager for Germany and Austria.

Krill said e-bikes account for about



Steffen Krill with the BH Gravel-E e-gravel bike (Photo: JB)

90 percent of BH sales in those two countries, compared with about 55 percent across Europe. (In the United States, BH e-bikes are sold under the Easy Motion brand name, as the BH brand has a negligible presence.) ■ JB

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Taking control: New CEO Scott Sun moves fast to restructure Controltech

Wei Hau Accessories Co., the Taiwan company better known for its Controltech brand, has been shaking things up this year.



New Controltech CEO Scott Sun with the carbon Pure Cockpit System (PCS) (Photo: JB)

Its board of directors hired a new CEO, Scott Sun, who took over in January. Sun, a former manager for FSA and Specialized, and his management team have since been in a hurry to restructure Wei Hau and restore it to its former strength.

Sun and his team have already decided on a future direction of Wei Hau's **Controltech B4-206**, PZ Racing and Pazzaz brands.

"About 30 percent of Wei Hau's business is within the motorcycle business. We do parts such as handlebars, levers, etc., for motocross," Sun said. "Our Pazzaz brand now focuses on this motorbike business. While our Controltech brand concentrates on our core bicycle business we have put our PZ Racing brand to bed."

Controltech will focus on its brand and work to increase its OEM business.

"Our strength is engineering and innovation," sales manager Alex Chiu said. About 85 percent of Controltech's business is for its aftermarket brand, and

the rest for OEMs.

Another key decision involves production.

"In the past all our production was done in Taiwan by subcontractors," Sun said, while Controltech focused on engineering and innovation. Now the company is in the process of installing a CNC workshop for prototyping at its headquarters in Changhua.

"It should include a CNC printer and maybe also a painting facility. Things such as finishing and painting would add further value to our business," Sun said. "If all works as I hope we will have that all ready next year."

Although he can't commit to establishing the company's own production, he does not rule it out.

"All I can say right now is that if we have a big sales increase over the next three to five years, our own production could become a serious option," he said.

Sun believes Controltech's product line is solid, although it would use more support from marketing and public

relations.

"We offer fine premium bicycle parts made from aluminum, carbon and titanium. We even have a titanium stem made of one piece," Sun said. "While most of them [stems] are welded, we make them out of one piece. This is exactly our secret and value."

Sun, who worked on the OEM side of the business for eight years, said Controltech needs to expand that side of its business as well.

Focusing on the aftermarket "made us slow," he said.

Sun added, "If we want to grow we have to go deeper into the competitive OEM business market. If we can get them, OEM orders are much bigger than aftermarket orders."

As part of review of its PR strategy, Sun expects to consider changing the Controltech logo. "People think that because of the colors in our logo we are a French brand," he said.

Controltech will also return to its roots as a brand for mountain bike components, expanding beyond its current focus on road and tri. Controltech was founded in the U.S. in 1989 as a mountain bike parts brand, and acquired by Wei Hau in 2001.

In Friedrichshafen, Controltech is



Controltech, founded in 1989 as a mountain bike parts brand, was acquired by Wei Hau in 2001. (Photo: JB)

emphasizing two new products.

It is showing an upgraded version of what it calls its Pure Cockpit System, or PCS, where all cables run through the handlebar, stem, fork and frame. The company's prototypes show a bike with no visible cables on the bars.

He said Controltech has figured out a way to route everything internally without sacrificing stability or stiffness. It's showing a carbon fiber version of the PCS, and Chiu said an aluminum version is in the works.

Controltech is also showing a completely new range of road wheels.

Wei Hau employs about 45 at its headquarters, of whom 10 are engineers working on bike and motorcycle products. ■ JB



Brake and shifting cables run through tiny holes in the fork and then through the stem, fork and frame for a very clean look. (Photo: JB)

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SRAM doubles down on Taiwan, premium products

After ending its longstanding production of internal gear hubs, and moving all remaining production from China to Taiwan, SRAM is emphasizing its commitment to premium market segments.



Billy Yu (Photos: JB)

The U.S. component maker also intends to make more components for electric bikes.

Before it quit the business in May, **SRAM 13-300** had been one of the world's biggest manufacturers of internal gear hubs (IGH). Through its acquisition of German component maker Sachs in 1997, SRAM could trace its IGH production back for more than a century — Sachs made its first IGH in 1907.

But Billy Yu, director of Asian sales, said SRAM couldn't sell hubs at the price points that the market was demanding.

"It's not only due to the IGH profit but also due to the market demand decline. Some people say that the currently growing rental bike business will have a positive impact on IGH sales. But see how long it will last," Yu said.

"The fact is that our IGH products hadn't been sold at the price points that the rental bike businesses are looking for. Therefore there was no real business for us. Our drivetrain business will now concentrate on external gear shifting."

Several years ago, SRAM had shipped the Sachs IGH production equipment from the former Sachs factory in Germany to Taiwan. Now, officials say, that equipment has either been repurposed or sold.

"Some of the eight- and nine-speed IGH production equipment, such as

stamping machines, for example, were tuned for other purposes, while others were or will be sold," said Bryan Bos, SRAM's supply chain manager.

In June, SRAM closed down its final Chinese manufacturing operation in Kunshan, which means most SRAM products are now made in Taiwan, Yu said.

Exceptions are Zipp carbon wheels and Quarq power meters, which are made in the U.S., and bike chains, made in a factory in Portugal. Yu estimated that 80 percent of SRAM's sales now come from Taiwan-made products.

Leaving China emphasizes SRAM's increasing focus on the premium market segments.

"First of all, the Chinese bicycle market itself isn't growing. Secondly, our Chinese production was mainly for entry-level products," Bos said. "The growing rental bike business there isn't for us. It's in the hands of low-cost competitors that even our entry-level products could not compete with."

He added that SRAM instead is gaining spec with premium brands at the higher end of the market. "This doesn't mean the overall market is growing, but we definitely are year by year," Bos added.

SRAM still does a significant amount of product development from its offices in Schweinfurt, Germany, in the former Sachs factory.

For example, Schweinfurt engineers designed the Eagle, its newest 1x system for mountain bikes. SRAM, in fact, created the market for 1x systems — popular because they eliminate the front derailleur — with its first 1x mountain bike system in 2012.

1x systems are now appearing on a range of bike models, from mountain to 'cross to gravel to road (see related story, page 24).

"The R&D for this high-end mountain bike drivetrain came out of Schweinfurt," Yu said.

From its German office, SRAM can also observe first-hand the booming European market for electric mountain bikes. Last year, SRAM launched its first drivetrain for e-MTBs, the EX1, with a stiff, 8-speed cassette. ■ JB



Making cassettes for SRAM's newest 1x drivetrain, Eagle

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The secret is out about Rocky Mountain

Rocky Mountain had a big secret at last year's Eurobike that officials kept hidden in a "black box" at the booth. Only a few visitors and journalists were allowed to see it, and they had to leave cellphones and cameras outside.



Altitude Powerplay Carbon 90

It's not a secret any longer, but is the center of attention this year at **Rocky Mountain**. **B4-300**

It is the Canadian brand's first line of electric mountain bikes, the Altitude Powerplay, which it has just launched on the European market. The bikes won't be available in North America for another year or two.

Why all the fuss? After all, just about every other mountain bike company has launched an electrified versions to chase the booming European market for

e-MTBs. Rocky Mountain, in fact, is one of the last to the party.

But the Altitude Powerplay is unusual, because the brand's relatively small parent company, the Procycle Group of Canada, designed the bike's mid-drive motor system itself instead of turning to one of the usual suspects from Bosch, Brose or Yamaha.

Dirk Janz, Rocky Mountain's longtime German distributor, was one of those urging the company to bring an e-MTB to Europe. Janz said the company

wasn't ready to show the bike last year, because, he said, "countless patents for developments in this project that we had asked for hadn't gone through." Janz also represents the brand in several other European countries, including Austria, Benelux, and the Czech Republic.

The Powerplay drive derives from a system Procycle uses on its urban e-bike brand eVox and on e-share bikes that Procycle manufactures for Bewegen.

Adapting the drive for an e-MTB like the Altitude Powerplay was a complicated process, Rocky Mountain officials said.

Janz said the system has one major benefit that other e-MTBs lack. Because the motor is located before the bottom bracket, the Altitude Powerplay accepts a conventional mountain bike crank.

"We can use the same spare parts for this e-MTB as for all of our other bikes," Janz said. "The only

thing that is different is the downtube for the integrated battery pack and mid-motor mount."

The design allowed Rocky Mountain to maintain the same short 425mm chainstay — and, in fact, keep the geometry and pivot points — of its conventional Altitude bikes. That means the Altitude Powerplay rides much like its conventional sibling,

the Altitude.

Rocky Mountain also deliberately chose to launch an e-MTB in a less commercial segment of the market: long-travel, full carbon enduro bikes.

The Altitude Powerplay is available in three versions: the Carbon 50, a €6,000 (\$6,825) "entry-level" model; the Carbon 70, priced at €7,000; and the top-end Carbon 90, priced at €9,700.

Rocky Mountain officials say the brand is developing aluminum versions to hit lower price points, which could be available next year.

For now, the company expects to sell every Altitude Powerplay it can make to hungry European consumers.

"The European market is screaming for e-bikes. There's a huge vacuum of product," said Alex Cogger, Rocky Mountain's product line director. **JB/DM**



Wade Simmons rides an Altitude Powerplay on the French coast.



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Bosch, Magura slam the brakes on brake lockups

While Bosch continues to tweak its best-selling mid-drive motor system for 2018 electric bike models, it is branching into an unexpected new product line: an anti-lock brake system for e-bikes.

Bosch AG-202 developed the ABS system with German brake expert **Magura A2-205**. It is testing the system on rental bike fleets in German-speaking markets this year to gauge performance and consumer reaction. If it passes initial tests, Bosch will offer the ABS system for 2019 e-bikes.

The first-generation system requires a bulky, 600g (1.3-lb.) square box that's mounted beneath the handlebars. The complete system weighs a hefty 800g. But Claus Fleischer, head of Bosch eBike Systems, said the design will become less clunky.

"We always started first with functionality. Integration came later,"

Fleischer said at a recent press event, at Bosch's headquarters in Reutlingen-Kusterdinger, near Stuttgart. "The first e-motor, for example, was also not a beauty."

The initial version will be available only on 28-inch commuter bikes and works only with Magura's CME brake system for e-bikes. Fleischer said the system will be priced at around €500 (\$585), so it will probably first appear on high-end pedelecs. "Bicycle suppliers should think carefully where they will use this product," he said.

The new product category isn't that big of a leap for Bosch, which has made ABS systems for motorcycles for more than 40 years. Sensors monitor the speed of both wheels. If they sense the front wheel is about to lock up under severe braking, the ABS system will keep the rider stable and able to continue steering — especially important in wet conditions. Bosch says the system also helps the rear wheel stay grounded so a rider can use the front brake more aggressively.

Bosch, which currently supplies e-bike drives to more than 70 bicycle brands around the globe,

pulled several other pieces of news out of its pockets.

Its classic Active Line and Active Line Plus systems have been revamped for 2018. Intended for conventional pedelecs with assisted speeds of up to 25 kph (15.5 mph), the new Active Line will generate a maximum torque of 40 Nm and the Active Line Plus 50 Nm. Bosch has shrunk the weight and size of both systems. At 2.9kg (6.4 lbs.), the new Active Line system is about 25 percent lighter and 20 percent smaller than the current Active Line drive system. The new Active Line Plus motor weighs only 300g more.

With two new Power Tube 500 battery packs, Bosch is making it easier for bike manufacturers to integrate a battery into the frame. The 2.8kg battery packs fit different frame types, including step-throughs, and let users charge them in place or remove them to charge indoors.

This July, Bosch launched a software update for its CX e-mountain bike drive system that adds a new eMTB mode, which replaces the existing Sport mode. In eMTB mode, the system switches automatically between Tour and Turbo



Claus Fleischer describes the new Bosch Active Line system. (Photo: JB)



Bosch ABS activation module

modes, so riders can concentrate fully on the trail and not on the console.

Bosch is also updating its Nyon bike computer and console to include a digital keyboard and improvements in the graphics and menu navigation. Bosch has also updated the maps used with its eBike Connect app and its online portal, ebike-connect.com

Finally, Bosch is planning to offer electronic shifting for more rear hubs beginning in 2018. Partners include Shimano, with its 8-speed Nexus Di2 and Alfine Di2 hubs, and Rohloff, with the Speedhub 500/14. Riders can shift gears by pressing a button on the handlebars.

■ JB



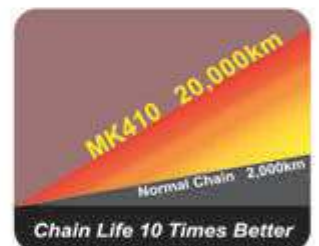
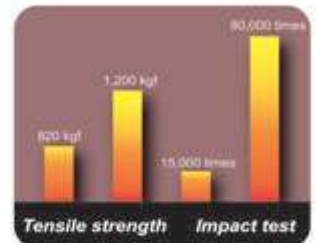
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Overview: Mid-drive motors

Stronger, smaller and lighter e-bike drive systems offer better flexibility

Eurobike is the place to get a first look at several new electric bike drive systems. Bosch, Brose, Continental and Rocky Mountain are among the exhibitors who are debuting new drive options, so there's plenty to see. Motors, like batteries, are getting smaller and lighter, while more retrofit options are coming to market.

The Active Line motor from **Bosch eBike Systems AG-202** is one of the go-to units for any manufacturer looking to build a good quality, reasonably affordable city e-bike. Bosch, the market leader in mid-drive systems, is showing an updated Active Line motor at Eurobike and launching the new Active Line Plus.



Bosch Active Line Plus motor

"Both these drive systems contain a number of new technical developments and thanks to their smaller size they can be elegantly integrated into modern pedelec frames," the company says.

E-bike riders benefit from a more natural riding experience and a lighter and quieter bike. The new Active Line motor is a direct replacement for the current version, with the Plus version sitting between it and the more powerful Performance Line motor.

An extensive redesign makes the Active Line motor lighter and much quieter. "The gear concept has been completely reworked, thus producing an even smoother and therefore more pleasant riding experience," the company says.

Bosch switched to a direct drive chainring, where the drive ring is fixed to the cranks and the axle is driven, rather than using gearing between the cranks and the drive ring. That's quite a big change, and it pulls the motor into line with the other big players: Shimano, Brose and Yamaha.



Sketch of Bafang M-500 drive

Bosch claims a weight of 2.9kg (6 pounds, 6 ounces) for the new Active Line motor. Combined with a new, 2.8kg internal battery, it means brands can shave about 1kg from the weight of a complete e-bike drive system compared with the current version.

The Active Line Plus motor is a slightly heavier 3.2kg. But that's still lighter than the current Active Line drive, and about the same weight as the Shimano Steps city bike motor with comparable torque.

Bosch also introduces a new battery, the PowerTube, which can be configured as a fully internal unit or recessed into the downtube.

When used as a fully internal unit, the battery can be installed and removed using a two-stage process that protects against dropping and damaging it.

When recessed in the downtube, the unit accommodates a trim unit to match the frame or to fit bottle bosses for a bottle cage. The PowerTube is compatible with all current Bosch systems, which means it can be piggybacked with a second frame- or rack-mounted battery for up to 1,000Wh of capacity.

Bafang AG-406 has a new motor unit that's aimed squarely at the exploding e-mountain bike market. The big Chinese motor manufacturer claims its new M-series motor is the most powerful mid-drive motor on the market.

The M-series comes in three versions. The EU-compliant M500 motor is rated at 250W with an assisted speed limit of 25 kph (15.5 mph). The M600 is available in a 350W version with a top assisted speed of 20 mph for the U.S. market, and a 500W version with a top assisted speed of 45 kph (28 mph) for U.S. and European speed pedelecs. The motors have a peak torque rating of 95-110Nm, well above the Bosch Performance Line CX and Shimano Steps E8000 motors.

The motors are direct drive at the axle, allowing for either single or double chainring setups. It permits chainstays shorter than 450mm for better handling. The motor has a reasonably narrow Q Factor of 177mm.

Bafang claims the M500 weighs less than 3kg, while the more powerful M600 weighs in at about 3.4kg. The



The new Brose Drive S is tuned for e-mountain bikes.

motors are compatible with Bafang's F-Series InTube batteries, which are available in 374Wh and 600Wh capacities and can be integrated in the top or the bottom of the downtube.

Bafang also offers a high-capacity,

semi-integrated 800Wh battery. There's a new display and remote as well, which incorporates a USB port for charging devices, and a Bluetooth Low Energy chipset for connectivity with smartphones and sensors.

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Drive S

AG-301

Brose introduces the new Drive product family at Eurobike 2017. The e-Bike drives are made in Germany and tailored to various bicycle types. For electric mountain bike riders Brose developed the new Drive S. In comparison to the first generation of Brose motors, it offers 15 percent more

torque and supplies riders with appropriate support, even at high pedalling frequencies. A new design ensures consistent, powerful performance under continuous load, even on technically demanding trails. Visit Brose at booth AG-301.



Continental AG-304 has been working with Renault on a 48V electric hybrid drive for the French brand's Scénic and Grand Scénic cars, and they've decided to apply some of what they learned to e-bikes.

The result is a 48V drive with an intelligent, fully automatic and continuously variable transmission, which Continental is launching at Eurobike.

"Bicycles with electrical assistance are now a common sight on streets across the world," said Elmar Degenhart, Continental CEO. "They are an important element of connected mobility and an environmentally friendly lifestyle. The global market is growing, dynamic and full of potential, so we are turning our attention to this pioneering field and its connectivity with other transport systems as part of our holistic approach to mobility."

A neat-looking unit integrates both the drive unit and the continuously variable transmission gearing. "Incorporating both in one unit makes the central drive bit heavier, but avoids the penalty of a rotating mass inherent in some hub-based systems and improves eBike handling by offering a central and low center of gravity," Continental says. The motor can be used with a Continental belt drive.

Several brands use a **Brose AG-301** motor in their electric mountain bikes, but the company is now launching a system, the Drive S, that is tuned specifically for off-road use.

"With the Drive S, we aimed for increased power and efficiency. However, it was important to us that bicycles with Brose drives do not turn into mopeds, but rather can be ridden in the style of a classic bicycle with a natural riding feeling, balance and control," said Horst Schuster, head of marketing and sales for Brose.

Based on the same hardware as the classic Brose motor, the Drive S has been tailored to the demands of off-road riding. It offers 15 percent higher torque output at slower cadences of 60-90 rpm, which means the unit provides maximum power on steep or technical climbs. The motor disengages completely when not in use so the bike rides like a conventional bike.

Like all of the company's motors, Brose makes the Drive S in Berlin. The Drive S can be integrated into a frame and used with a range of batteries and displays, so bike manufacturers have wide latitude to differentiate their models.

Meanwhile, Brose continues to offer its existing Drive T and Drive TF systems for conventional and speed pedelecs,



The Bikee Bike system can be retrofitted to most standard bicycle frames.

respectively.

The Evation drive system from **Fazua AG-310** has been popping up on concept bikes such as Bianchi's e-Doardo and the Focus Project Y road and mountain e-bikes.

The Munich company is now preparing to take the Evation from concept to production. Using a clever modular design, the gearbox bottom bracket remains in the frame, while the motor and battery pack are removable. The gearbox itself weighs just over 1kg, so it doesn't add much to the weight of a complete bike. That means an Evation-powered bike rides like a conventional bike when the motor and battery pack are off the bike.

The drive pack itself adds an additional 3.3kg to the bike and offers 250W of assistance. "Over the long term, eBikes will help convince even more people of the benefits of cycling," Fazua says.

Rocky Mountain B4-300 developed its own mid-drive system for its new e-MTB, the Altitude Powerplay. The 48V motor, developed by a sister company to the Canadian bike brand, was designed so the Powerplay can maintain the geometry of Rocky Mountain's conventional Altitude mountain bike. With the Powerplay drive, Rocky Mountain can keep chainstays as short as 425mm.

The Rocky Mountain motor is also different in that it uses a standard

bottom bracket that's part of the frame, driven by a smaller drive sprocket within the chain. That means that the bits that normally wear out (the bottom bracket bearings and the drive sprocket) are serviceable with normal workshop tools.

The system uses a 632Wh battery and a minimal bar-mounted remote. Thanks to integrated Bluetooth connectivity, riders can use a smartphone app to tune the motor response, track rides and get range estimates.

Shimano has taken a new approach, where the magnet is integrated into the disc rotor. It sits above the central spider, and because it's fixed it is less susceptible to being knocked out of alignment than a spoke magnet. A new slimline sensor, which still attaches to the inside of the chainstay, complements the new rotor. Of course, this solution is only for disc brakes and requires centerlock-compatible wheels.

Shimano's previous bar-mounted



Rocky Mountain developed its own mid-drive system for the Altitude Powerplay e-mountain bike.

Unlike other drive manufacturers, Rocky Mountain has no current plans to offer the drive system to other brands. It is debuting three versions of the Altitude Powerplay for the European market, but they won't be available in North American for up to two years.

Shimano B5-400 which launched its E8000 e-MTB system last year and is still going strong with its E6000 drive for urban e-bikes, isn't launching any major updates at the show. But it continues tinkering around the edges to make its systems better integrated and easier to use.

Because EU rules require e-bike motors to cut out at speeds of 25 kph, e-bikes with a mid-drive motor typically rely on a speed sensor on the wheel.

Generally this means a magnet on the spokes and a sensor on the chainstay.

remote unit was reasonably neat, but its new unit appears to be an improvement. Control buttons (motor power on the left, and Di2 gears for bikes so equipped on the right) are much bigger, and angled so that they should fall more easily to hand.

The motor design and output are unchanged but it is now easier to add lights; compatible lights plus directly into the motor and can be controlled from the head unit.

Shimano has also redesigned the crank arms for better shoe clearance. It has also simplified walk assist logic so riders can press any button for three seconds to activate walk mode.

Italian startup **Bikee Bike FG-0/103** is debuting a motor that installs in minutes on most standard bicycle frames. The



The motor and battery pack for the Fazua Evation drive can be removed from the bike.

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Pendix says its eDrive fits 80 percent of conventional bikes.

... Continued from page 49

motor replaces the original crankset and bottom bracket, and its patented technology both drastically reduces the size of the motor and increases the torque up to a maximum of 120Nm.

The motor uses a double chainring

total weight of 14.4kg (31 pounds, 12 ounces), which for an e-bike is impressive.

Freeflow has spec'd a 4 amp charger, so the battery can be fully recharged in less than three hours. With a full battery, the Freeflow system has a range of 50km (31 miles) on undulating terrain.

Rohloff, A2-300 known for its bulletproof — and pricey — Speedhub internal gear hub, has introduced the E-14 system to offer electronic shifting for the Speedhub, and integration with the Bosch mid-drive system.

“More and more people are turning to the e-bike rather than car, scooter or bus for their daily commute. These customers demand an equal level of quality and reliability,” said Werner Schiller, managing director of Rohloff. “We at Rohloff have proved that it is entirely possible to construct a durable, reliable and



The compact Freeflow drive system

44/28T configuration, which allows for a wide range of gears; the 28T inner ring can be swapped out for a 32T, and a standard front derailleur is used to shift between the two. The motor has four power versions: 250W for Europe, and, for the U.S. market, 500W, 749W and 999W systems. Bikee Bike has already received several awards for its innovative technology.

The Pendix A6-405 eDrive is a motor system that the company says can be installed on 80 percent of conventional bicycles and is compatible with almost every brake and shifting system. It fits to standard 68mm or 73mm BSA-threaded bottom brackets. The direct drive design means it's very quiet, and there's no pedaling resistance when the power is turned off.

The system consists of the motor, which replaces the original chainset and bottom bracket, and a frame-mounted battery available in 300Wh or 500Wh capacities. The system is controlled directly from the battery, with a rotary knob on the battery allowing the selection of three assistance modes. A ring of LED lights around the top of the battery changes color to indicate the battery's charge status.

Another mid-drive newcomer is Freeflow Technologies. FG-B9/4 Its system looks very interesting: Freeflow claims a 90Nm output for the motor, which is at the upper end of what's available from current systems. The company says the motor, including a 300Wh battery, can be built into a rigid hybrid bike for a

low-maintenance bicycle transmission.”

The Speedhub has been a hardy and high-quality IGH, offering a long service life and 14 speeds over a huge 526 percent range — more than just about any other conventional transmission. But it hasn't been a common sight on e-bikes, which Rohloff hopes to change with the E-14.

A remote on the handlebar connects to the Bosch wiring and controls an electronic shifter on the rear hub. By holding the shift button down, riders can shift three gears at a time, so they can move from one end of the hub's range to the other in under three seconds.

When the rider comes to a stop, the Speedhub automatically downshifts to a low ratio for an easy start. All Bosch displays that are compatible with eShift are able to display the currently selected gear in the Speedhub. ■ DA



Rohloff Speedhub with E-14 electronic shifting system for Bosch mid-drive motors

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Apparel from northern Sweden has a hidden glow

The summer sun sets for only a few hours in Umeå, a city in northern Sweden. That inspired Sigr Nordic, a new apparel company from Umeå, to create cycling apparel that could be seen in the dark without using the typical reflective bits that are unnecessary in the daytime.



Reflective elements (left) in this Sigr Nordic jersey are not visible in normal light (right).

The company instead found a way to weave or dye reflective features into the fabric without diminishing a garment's fashion appeal, co-founder Jenny Ferry said.

"You could wear an entirely black jacket and nobody could tell it's reflective, because the reflectiveness is integrated into the fabric," Ferry said. "That way you can cycle to work safely and still look your best."

Ferry and three friends founded **Sigr Nordic** **FE-AL/8** last year. The apparel brand, whose name means "victory" in Old Norse, is making its Eurobike debut.

The four cofounders had moved to Umeå, close to the Arctic Circle, with their young families. They like cycling, but struggled to find functional apparel that fit their taste for uncluttered design and understated palettes.

"Most of the clothing comes from French and Italian brands, where riders apparently appreciate very bright colors," Ferry said. "Our idea was to make cycling gear with Scandinavian design and colors."

The four tested their ideas by selling an initial range of apparel online, and were surprised when the first batch sold out in weeks. Two of the four founders decided to devote full time to creating a full range of cycling wear.

Sigr Nordic has received significant support from the Umeå University SoftLab, a workshop for researching and prototyping textiles and wearable



Sigr Nordic cycling apparel was inspired by long summer days in northern Sweden.

technology. According to the university, the rapid development of "smart materials" and interactive textiles offers huge potential for such innovations as integrating computers and "soft circuits" in clothes, interiors, accessories and more.

SoftLab also researches digital manufacturing techniques, which the university says can enable local production of small-run, tailor-made garments at considerably lower cost.

The lab worked with Sigr Nordic to incorporate "hidden reflectiveness" in technical fabrics.

Ferry says that the concept comes from the auto industry. Sigr Nordic has integrated it into 40 items, including jeans and chinos for commuters and bibs, shorts and jackets for leisure and performance cyclists.

The reflective material can be woven into the fabric to create patterns that shine when lit by a car's headlights.

Sigr Nordic has teamed up with retailers in Sweden and Denmark but sells most of its apparel through its online store. Its largest markets outside Sweden include Germany and the United Kingdom. ■ **BS**

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Overview: Road cycling apparel

From new pads to nano-tech, they've got your back — and your backside

Road apparel can be surprisingly technical. Apparel designers spend time in the same wind tunnels as bike engineers, and researchers can get down to the molecular level to develop fibers and textiles. The result is new cycling wear that can give racers that extra edge, or casual riders that extra boost in comfort to get them through long rides.

It is no surprise that one of the most anticipated apparel launches at Eurobike isn't a garment, but a technical component widely used in many brands' garments. It is W.L. Gore's latest iteration of Gore-Tex Active, a three-layer membrane. In the latest version, **Gore A7-302** has improved the membrane's waterproofing, breathability and touch.

"The backer on the inside is so much softer that it feels like a soft shell," said John Zopfi, sales leader for Gore Wear in central and northern Europe.

Gore, expectedly, is using this latest version of Gore-Tex Active in its own apparel range. But the membrane will make an appearance in products from several other exhibitors as well.

Meanwhile, Gore has rebranded its in-house apparel range to eliminate the distinction between Gore Bike Wear and Gore Run Wear. At Eurobike, the company is adopting "Gore Wear" as the name for all garments.

"We build specific products for running and cycling, which speak for

Bib shorts are a significant focus of industry R&D efforts, and several brands are launching innovations in fabrics, padding and construction.

Giessegi A7-322 named its Graphene bib shorts after the high-tech material it uses. Graphene is a layer of carbon molecules, which are arranged as two-dimensional hexagons. The Italian company says the material is stronger than steel, yet is flexible and is a good heat conductor.

"It's an amazing nano-material that will certainly have a big impact on the cycling apparel market, and even the wider sports textile industry," said Alessandro Costa, marketing manager at Giessegi. "We have used it to make bib shorts that are really light but with very strong resistance to abrasion. The thermal function makes the garment more breathable, and the material provides a compression effect as well."

Giessegi says the graphene hexagons stimulate micro-circulation and help expel lactic acid. The straps are made of breathable, mesh-like fabrics, with invisible seams and flat four-needle stitching.

POC B3-306 uses protective panels of ceramic fabric in its Avip Ceramic bib shorts. The company said it developed an innovative way of treating and integrating the ceramic fabric, which protects the rider's thighs in a fall but remains flexible and aerodynamic while riding.

The Swedish brand's bib shorts come with what POC calls VPDS Multi D padding, in which silicone inserts are strategically placed to reduce vibration and pressure points. The ventilated pad also helps prevent chafing.

Padding is integral to the SQLab shorts introduced by **Maloja FG-B6/4**. The German apparel company is teaming up with **SQLab B3-103**, a saddle specialist that has developed pads tuned to its saddles.

"Most other pads are thick and soft, which fills the space underneath the soft tissue but doesn't actually provide much padding for the bones," said Lukas



Gore Wear

Bucht, pad project manager at SQLab. "We make saddles with thin and hard padding, so we went ahead and designed pads for bib shorts with the same qualities."

The Maloja shorts use a pad that is just 4mm thick. Although the pad comes in one size, Maloja said it fits all riders

innovative pad, the 700 Series Lite, which comes in three widths. It uses "reticulated foam with a more open cell structure than its rivals to enhance moisture transfer," as the Scottish company puts it.

Made with input from the Movistar Team, the bib shorts are meant for warm weather riding, with perforated side panels and a lighter construction.

The women's version comes with the same fabrics and the same technologies, but with an adjusted cut. A new stretch zip improves the whole dropping-your-pants routine during comfort breaks.

"The bib shorts have an athletic fit; they target the more committed female riders," the company's Katrin McDonald said. "Bib shorts are traditionally worn by road cyclists and cross-country racers. However, these days more and more mountain bikers are turning to them. The drop seat function for comfort breaks makes this one particularly suited for all sorts of all-day riding."



Giessegi Graphene bib short

themselves, but otherwise we let the consumers decide how they want to use the product," Zopfi said. "This way we can focus on one brand for marketing. It opens up more opportunities for cross-merchandising."

To help get the word out, Gore has turned to its new brand ambassador, Fabian Cancellara. The two-time Olympic champion is at the Gore booth today and appears at a press conference.



Northwave Ghost jersey



POC Avip Ceramic bib short

regardless of the width between their sit bones. Maloja says the pad won't bunch or distort its shape, and boosts comfort on longer rides.

Bucht said SQLab uses a patented manufacturing process that breaks up about 98 percent of the surface of the bubbles in foam used for the pad. That leaves only the framework between the bubbles, so the pads are thin yet breathable.

SQLab is also showing bib shorts as its booth. From one pad this year, Bucht said it plans to offer three versions next year for mountain biking, road cycling and trekking. He expects several apparel brands to use the SQLab pads in their cycling apparel range.

The bib shorts in the Pro SL range from **Endura A7-201** are built around another



7Mesh WK2 women's bib short



Maloja SQ Lab bib short

gripper elastic and now bonds the gripper to the inside of the leg, which has a laser-cut hem. "This stabilizes the edge fabric while also getting rid of the sausage casing effect," he said.

While weight weenies pore over the details of their bib shorts, **Northwave A7-401** is giving them a jersey they can talk about. The Italian brand says its new Ghost is its lightest-ever full-zip jersey. A size medium weighs 76g (2.7 ounces).

The Ghost is constructed of light, fast-drying Allure fabric that also provides robust UV protection. The jersey opens



Endura Pro SL women's bib short

The young Canadian brand **7Mesh, A7-108** which earned plaudits for its WK1 bib shorts, has re-engineered the WK1 and is launching its first bib shorts for women, the WK2.

Brian Goldstone, marketing manager at 7Mesh, said the brand has redesigned the pattern and incorporated new materials, including a new pad from Elastic Interface for long rides.

"The near-infinite-stretch bib straps are independently attached to the rear along the outside edge, rather than at the center back, to enable pit stops without having to remove any other layer," Goldstone said.

7Mesh has done away with separate



Shimano Evolve

tunnel tests. The jerseys are built with an ergonomic race cut.

Shimano B5-300 launches the Evolve apparel line as a more comfortable alternative to its top-line S-Phyre range. "S-Phyre is the pinnacle of Shimano apparel, intended for the most competitive riders. Evolve targets cyclists who maybe ride two or three times per week," said Cecile Lijding, marketing officer for soft goods at Shimano Europe. "That means the products are packed with technical features but the fit is a little looser and it has more elegant details."

Those details include ribbon-style shoulder straps, gripper-free hems, and inconspicuous reflective bits. The garments have a dry touch construction, integrated cooling vents and a discrete pocket for food wrappers, etc. ■ **BS**

completely with an invisible zip.

Northwave applied its Biomap anatomic construction to the Ghost, which uses few panels and raw-cut edges with gripper for a snug, comfortable fit. Northwave also uses Biomap on its Extreme apparel range.

When **Biehler Sportswear A7-318** designed its Spektrum jersey, cutting weight was top of mind. The German-made Spektrum tips the scales at 110g. Biehler says the Spektrum uses a light, moisture-wicking fabric for hot weather racing or exposed mountain passes.

New details include rear pockets that make gels and bars more accessible. Maximum-length sleeves were tuned for aerodynamics in wind



Biehler Spektrum jersey



German/French/Netherlands/ECE approval

JY-7060 40LUX

Bicycle Dynamo Front Fork Light
Adapte to 6V/2.4W or 6V/3W

JY-7060E

Bicycle Front Light For E-bike
Adapte to 6V-48V



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JY-523M

Bicycle Dynamo Fender Light
1 Super Bright Red 0.2W LED



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German/French/Netherlands/ECE approval

JY-7070 80LUX

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JY-7070EB

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For its rebranding, Gonso asks cyclists to take a seat



Gonso's new line of cycling apparel was inspired by its original 1980 cycling pants.

The late Hans Gonser used to spend hours exercising on a stationary bike. But when his backside started hurting from all that time in the saddle, he began stuffing a cushion into the seat of his bike pants. Then he realized that he could ask the technicians at his family's textile factory to make pants with a cushion sewn in.

That was how, in 1980, Gonso became the first German brand to make bikewear that incorporated synthetic cycling pads instead of chamois.

At Eurobike, **Gonso A7-206** is returning to those roots as it launches a new line, accompanied by an extensive rebranding exercise, for its 2018 apparel range.

"We felt that Gonso wasn't making the best range it could, and that it didn't have a real credible positioning in the bike apparel market," marketing manager Dennis Dietrich said. "We then delved into the history to analyze our strengths and our values, and kept coming back to this point of the technical innovation around the first bike pants with integrated seat pads developed and sold in Germany."

The rebranding effort began when Maier Sports acquired the Gonso brand in 2014 and decided to delve into the company's archives.

The design team met with Hans Gonser's widow, looked at old designs and advertisements, and reviewed some of the details about those first bike pants. The new team used these original advertisements as inspiration for its 2018 line.

Gonso's new line is focused almost exclusive on shorts and pants for four types of cycling: commuting, touring, mountain biking and road riding. The company calls

its approach *Sitivo*, which uses three types of pads: the "blue" pad for recreational, upright riding; green for a more athletic riding position; and red for the most aggressive, in-the-drops racing position.

"They come with a single cut and the same material but with three seat pads adjusted for the pressure points of different types of cyclists," Dietrich said.

Hans Gonser's grandfather established Gonso in the 1950s in Albstadt, a city in southern Germany. In February, most of the company's employees relocated to Maier Sports' headquarters in Köngen, near Stuttgart.

Maier Sports has itself gone through recent changes: Two years ago it was acquired by Schwan-Stabilo, a Germany company best known for pens and highlighters. Maier Sports is part of Schwan-Stabilo's outdoor division, joining Deuter, the leading German supplier of backpacks, and Ortovox, another outdoor equipment brand.

To accompany the relaunch of the apparel line, the company has updated the Gonso logo. The typeface and bright yellow color of the company name remains the same, but the background has been changed to white from black and the words "bike & activewear" have been removed.

■ BS

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Gonso's Old logo



Gonso's new logo

V'lec says its new folding e-bike is as light as air

The electric bike market was already getting crowded when Augustin Charlot began laying plans for his own e-bike brand. The Frenchman knew that to stand out, any new e-bike would have to be unique. So he set out to make a folding e-bike that would be the lightest on the market.



V'lec Pocket R unfolded ...

Charlot, founder of the V'lec brand, claims to have reached his goal with the 10.6kg (23 pound, 6 ounce) Pocket Plus, launched last year. This year, **V'lec FG-B5/A** comes to with the new Pocket R (pronounced like "air" in French), which he describes as a higher-end version of the Pocket Plus.

About 2kg heavier than the Plus at 12.7kg, the Pocket R is still easy to carry and includes a few more practical features. While the Pocket Plus is a single speed bike, the Pocket R has three speeds and incorporates a set of small wheels on the rear rack so it can be rolled around like a suitcase when folded.

In both models, a Panasonic battery is concealed within the aluminum alloy frame. A small 160W motor attaches to the front wheel. V'lec said the bikes have a range of about 25km (15 miles) on a single charge. The Pocket R has a suggested retail price of €1,598 (\$1,890) and the Pocket Plus of €1,349x.

V'lec also offers a non-motorized folding bike with a more conventional design.

"Bicycles have become popular for commuting but we wanted to turn our products into something even more practical and versatile," Charlot said. "What we are selling is not so much a bicycle as an ultra-ergonomic tool for personal transportation."

Charlot, a former business analyst, is a bike enthusiast who has cycled across the United States. He was

enticed by the rise of urban cycling and set out to turn that interest into a business.

He lived in Shanghai for two years to bring his concept for a light, folding e-bike to fruition.

V'lec, based in Strasbourg, launched its first bike five years ago, but it took Charlot time to organize the supply chain to support the launch of the Pocket Plus.

V'lec currently sells through independent retailers in a few European countries and is looking to enter markets with robust e-bike sales, such as Germany and the Netherlands. He is also eyeing North America and Australia.

Customers include commuters and people who buy a V'lec for a boat or caravan.

Along with their light weight, Charlot believes V'lec benefits from its "French touch."

"We are putting this forward to underline the creative aspect of the brand, as well as the industrial competence that we have at our disposal in France," he said.

■ BS



... and folded

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SRAM
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480 G

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Inspired by Europe, Linus now comes to Eurobike

Linus, a U.S. brand that was inspired by European bike design, is exhibiting at Europe's biggest bike show for the first time.

"Coming to Europe in a way is like coming to the market where our intentions were born. We certainly did not invent bicycle commuting, but we offer a unique brand approach to the traditional commuter business here in Europe," founders Adam McDermott and Chad Kushner said in a statement. "We've reinterpreted the age old riding experience with a new perspective rooted in our Californian approach to design and lifestyle."

McDermott and Kusher set out to create a bike for daily use that was simple, elegant and affordable. Their concept blossomed, and **Linus A1-207** now supplies more than 350 IBDs in North and South America, Asia and the Middle East.

McDermott believes Linus can offer something extra to European retailers, even in a bicycle market considered to be more advanced than in the U.S.

"The combined offer of an affordable bike with that California elegance, and a full line of stylish and functional accessories, resonates especially well with woman and young professionals," McDermott said, adding that those types of customers are "two segments often

underserved by bike stores."

He added, "We believe Linus can help European IBDs reach this more lifestyle-, design- and brand-oriented customer."

In addition to bikes, Linus offers a range of cycling accessories including wicker baskets, lights, colorful bells, and saddles.

"We are confident there is great potential for Linus here, and we are really excited to be participating in the world's largest bicycle show, Eurobike," McDermott said. "We especially look forward to connecting with retailers who see the opportunity in offering smart lifestyle products to a new and developing customer segment in the bike market." ■ JB



Linus founders Adam McDermott (left) and Chad Kushner

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Safety

- Liner hold tire and rim together
- No pinch flat
- No run out of rim

Friendly & Economic

- Regular Rim
- Easy Fitting
- Easy Pumping
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Dirk Zedler

Why the industry should celebrate the Product Safety Act's 20th birthday

Happy Birthday to the European Product Safety Act, which turns 20 this year! Is this reason for the bicycle industry to celebrate? The answer, I believe, is "yes." Here's why, along with key things the industry needs to know about the law.



The CE mark is simple, but the rules for using it are not.

At the end of the 1980s, the European Parliament set out to harmonize the laws and regulations that protect EU citizens. Their work led to the 1989 Product Liability Act, a precursor to the Product Safety Act.

Under the Product Safety Act, a manufacturer is liable for a product's safety over 10 long years. Consumers have the right to expect that a product is suitably safe during its intended or reasonably expected life.

Eight years later, in 1997, the more comprehensive, far-reaching Product Safety Act went into effect. Like the Product Liability Act, the Product Safety Act was adopted by member EU states and codified in their national laws.

So far, so good, because the laws apply only when a major loss occurred. Because court proceedings take a long time, and because most cases are settled out of court, only a few bicycle-related cases have gone all the way to a court ruling.

From my experience as an expert witness before many courts, however, I know that a few of these rulings required manufacturers to pay considerable monetary damages. Fortunately, other manufacturers have never been subjected to such legal actions under the Product Liability or the Product Safety Acts.

The "e" changes everything. The Product Safety Act stipulates that manufacturers are prohibited from bringing a product to market if it, or its packaging or documentation, bears a CE mark, but the product doesn't comply with the requirements of CE marking. Nor can a manufacturer sell a product that does not have a CE mark.

The act also gives market surveillance authorities the power to prohibit the marketing or display of a non-conforming product. If one is on the market, authorities have the right to order that it be withdrawn or recalled.

A conventional bicycle is not, and never has been, covered by the law because it can be sold without a CE mark.

Put an electric motor on that bike, however, and everything changes. Pedelecs — e-bikes that have a maximum speed of 25 kph (15.5 mph) and use a motor rated at 250 watts — must have CE

marking. No ifs, ands or buts.

Anyone who rents or sells pedelecs or otherwise makes them available on the market is required to comply with this law. Before a manufacturer can put a pedelec on the market, it must meet all requirements stipulated by the harmonization legislation of the European Union.

Dangerously wrong. Manufacturers who believe a pedelec frame merely has to comply with relevant EN or ISO standards are not just wrong, but dangerously wrong, because that can make them vulnerable to enforcement actions.

It is not enough for manufacturers to ensure that all components have passed mechanical tests. They must also ensure, for example, that all electrical components have been tested for environmental influences and electromagnetic emissions. Rechargeable batteries must be tested in accordance with UN transport regulations.

The sum, not just the parts. As a first step, manufacturers must ensure that a pedelec does not use any component that has not been properly documented. In other words, every component must be tested.

However, it's not enough to only test individual parts. Manufacturers also have to test the complete bike.

Hand on heart, bike manufacturers: Have you ever carried out reach tests on brake levers; confirmed a bike's ground clearance; examined what happens when a mudguard gets clogged; or determined how much pressure it takes to burst a tire when it is on the bike?

The problem is that, after years of experience making conventional bicycles, many manufacturers have adopted the unofficial motto, "it will fit somehow."

Such blind faith is not an option with pedelecs. Only after successfully testing and documenting each component, as well as the complete bike, can a manufacturer legally offer a pedelec for sale in the EU.

That includes tests for electromagnetic compatibility. Again, manufacturers can't just check individual components, but must test the complete pedelec in the electrical engineer's laboratory.

Because frames, handlebars, seatposts and other components act as antennas, electromagnetic emissions from a complete bike may be much higher than from its individual parts.

Ghosts in the Machinery Directory. These are just some of the legal requirements for pedelec manufacturers. They also have to comply with the Machinery Directive 2006/42/EC. The Directive outlines a wide-ranging set of rules that admittedly are poorly suited to pedelecs, yet parts of it still must be strictly followed.

For example, manufacturers have to perform a comprehensive risk analysis for the pedelec's expected lifecycle. Potential risks range from hauling cargo to lubricating the chain.

It quickly becomes clear that simply testing a pedelec under the EN 15194 standard is insufficient because it requires that manufacturers test up to a total weight — pedelec, rider, and cargo combined — of only 100kg (220 pounds).

A pedelec risk analysis also requires that each component be specified on a parts list. This means parts can't be replaced willy-nilly.

Dealers, for example, can't just swap the handlebar on one pedelec with one from a different brand or manufacturer because they don't know if the replacement offers the same level of safety when used with the existing stem.

Finally, laws require manufacturers to offer manuals in the language of the country where the pedelec is sold. The manual must include a declaration of conformity, another legal requirement for selling the machine.

This time, it's personal. So far, most successful claims have resulted in monetary damages paid to the injured party. Damages are usually covered by a manufacturer's insurance policy.

But because pedelecs are covered by the laws and regulations that come with CE marking, responsible parties now can be held personally liable, i.e. convicted by the courts. The person who signs the declaration of conformity confirms that the manufacturer has complied with all applicable rules. If this is not the case, and if the pedelec failed or never underwent any of these mandatory tests, the person signing the declaration may be held personally liable.



Every pedelec model sold in the EU must undergo extensive testing, or manufacturers can be held personally liable.

Reason to celebrate. For bicycle dealers and manufacturers these challenges are quite new; other industries have had to comply with these regulations for years. Setting up the necessary compliance systems within a company is admittedly time-consuming and costly. It doesn't happen overnight.

The good news is that bike manufacturers that have faced up to these challenges — either voluntarily, or because authorities forced them to — are starting to reap cost savings. By creating a quality assurance system for pedelecs, many manufacturers are applying it to conventional bikes as well.

Consistent testing of all components, either in a company's own lab or at a European testing company, has slashed complaints concerning faulty products to near zero. By investing in testing, manufacturers find they are saving money by cutting the number of product failures and complaints.

This, then, is why the bicycle industry should commemorate the birthday of the Product Safety Act. The Act is forcing our industry to professionalize, which means better products and, eventually, higher profits. And that's something to celebrate!

■ DIRK ZEDLER

The Zedler Institute

Since 1993, Dirk Zedler has been an analyst and expert witness for bicycle accidents and product failures on behalf of courts, bike and insurance companies, and private individuals. He holds an advanced degree in engineering.

Since 1994, courts have recognized Zedler as an officially appointed and sworn expert on bicycles and, since 2014, on electric bicycles. His staff prepares some 800 expert's reports every year.

Zedler – Institut für Fahrradtechnik und -Sicherheit GmbH (the Zedler Institute for Bicycle Technology and Safety) has used this wealth of knowledge, derived from its work in thousands of court proceedings and expert's reports, to enhance research and development in the bicycle industry.

The Institute makes testing equipment that helps manufacturers improve the riding quality of their bikes, and prepares user manuals for

bicycles and pedelecs.

These manuals, now available in more than 35 languages, help consumers use their bikes properly — and in many cases have protected manufacturers from liability.

In recent years, the Zedler Institute has been involved in cases across Europe where authorities halted bicycle sales. Many of these issues were created by manufacturers that failed to perform sufficient risk analyses or equipment tests, or published flawed user manuals or conformity declarations.

These are problems that the Zedler Institute can typically resolve within three or four weeks.

For more information, visit www.zedler.de.

New Products 2017

Innova Rubber

Butte tubeless ready tire 27.5x2.25



A tire for aggressive touring and all-mountain riders. With an open tread pattern that features blocks cut with a v-shape profile it provides for fast cross-country performance. The special arrangement of these blocks also allows for excellent self-cleaning properties that should keep the tire free and grippy in all conditions. **A3-710**

Airace Enterprise Windpro V2 MT Pump

Airace's Windpro V2 comes in mountain bike and road varieties, tailored to high-volume or high-pressure applications respectively. With an aluminum inner barrel for durability the exterior is composed of reinforced plastic for low weight and improved ergonomics. Reversible for schrader and presta valves, the head features an aluminium thumb-lock lever and valve cap. This fat tire focused model has a max pressure of 100 psi. **A5-107**



Bevato

BCA-004 Alloy bottle cage holder

An alloy mount for adding an additional bottle cage to your bicycle. Sitting on the seatpost it's available to fit the popular 27.2mm and 31.6mm sizes. Weighing only 65 grams, the angle at which the bottle sits behind the saddle can be adjusted via an integrated pivot. **A5-410**



Knog PWR Rider light

A light with the additional power to charge your electronic devices. With a 450 lumen output and a two hour runtime, the PWR Rider has an integrated battery that can also top-up your phone or Garmin. With a button on the underside for pinching, not pushing, its versatile mounting system means it's as at home on a handlebar as it is a helmet. **B1-303**



Biotex Sportswear

Soffio outfit

Lightweight, breathable and free from seams, the Soffio jersey and bib shorts take the qualities traditionally associated with a base layer and apply them to a garment that can be worn by itself. It's Polypropylene BTX fabric leaves skin free to breathe, without any suffocating outer layer. This ensures thermoregulation and comfort even on the hottest days. **A7-118**



Ahooga Ahooga Bike

The 13 kilogram Ahooga folding e-bike is extremely light. Collapsing into a neat package for storage or transportation, unlike most e-bikes when the assistance is off the Ahooga remains light enough to be easy and fun to ride. Designed in Belgium and made in Europe it's available in 215 different colors. **A3-511**



Borgini Jersey Borgini Jersey 4.0 Technology

A new 40 gauge double knitted fabric. Made of 100% Polyester with great mechanical elasticity and a low weight of around 90 grams it provides permanent fast wicking performance and a cool sensation without the addition of chemicals. The absence of elastane permits quick-drying and despite being lightweight it provides ultraviolet protection, meaning wearers can avoid using sunscreen. **A7-413**



Bloks Display 20c

The Bloks 20c display combines smartphone technology with outdoor-capable design. Thanks to a special coating, the two-inch color touchscreen display remains readable under all lighting conditions. A compact e-bike computer it's based on Bloks Central, a modular smart bike console. Extensive connectivity features enable fully-fledged e-bike navigation, which is further supplemented by a mobile app. **A6-217**



Hutchinson Toro Koloss

Designed for plus-size compatible rims the Koloss is a front tire with an aggressive tread for rough terrain. Its central part is designed to provide for braking stability, while its lateral knobs are sharp and free to distort as required due to their strong supports. The SpiderTech construction enables resistance to puncturing along with steering precision. **B3-308**



3T Cycling Strada Frame

Aerodynamic yet comfortable 3T's Strada is optimized for wider tires. Providing lower rolling resistance these also reduce the draining effect caused by high-frequency road buzz. Traditionally a drag heavy area, a 1x11 drivetrain eliminates the front derailleur and one chainring. This reduces frontal area, improving airflow and allowing the design of the seat tube to shield the rear wheel. **B4-308**



New Products 2017

Simplon Pride Bicycle

The Pride's unique cockpit design integrates all cables to help smooth airflow across the front of the bike while still allowing for numerous ergonomic configurations. The frame and fork feature lightweight construction and aerodynamics profiles. Despite sporting disc brakes and thru-axles the result is a low claimed weight of 6.8kg. **B1-401**



Concrete Technology Wood Saddle

A unique wooden saddle manufactured for everyday use. Constructed of machined walnut wood, it's finished by hand before having its logos laser etched. Despite classic looks it employs a modern anatomical shape with a central relief cut out and comes as standard with stainless steel rails. A carbon framed option is also available. **B5-105**



F.lli Menabò Pro Tour Indoor

Fixed into the boot the Pro Tour Indoor can carry up to three bikes. Equipped with a direct fixing system it's suitable for tool free mounting of both 9mm and bolt-through forks, via an adapter kit. With an adjustable width it happily fits different car models. Installation is quick and easy and once in place the bikes are secured by an additional anti-theft system. **B5-213**



Nutcase Helmets The Zone



The Zone was created to answer the question; how do I get my teenager to wear a helmet? Cool looking, it's ultra simplified design does away with a conventional retention system. Instead the helmet flexes to fit to the head and provide a snug fit that's safe and secure. Deep head-to-shell channels across the interior of the helmet make the most of its vents. Available in three sizes and five colors. **B1-402**

CamelBak Sternum Protector



The first chest protector to combine impact shielding with an integrated action camera mount. Integrated into a fully adjustable bib that readily adapts to all body morphologies, the Sternum Protector is also compatible with all CamelBak packs featuring integrated back protection. When used with camera, the central mounting position cuts down shaking to provide steady, yet dynamic shots. **B4-310**

Croozor Generation 2018

New styling and features for the Croozor range of child trailers. Created with the safety and comfort of the smallest users in mind, the redesigned baby seat includes a zip-on footmuff, while a new user-friendly 5-point harness system guarantees the safety of young passengers. The recently introduced handcart function means the trailer is easily adaptable for cargo haulage. **A2-404**



Malvestiti Cerchi Exense H37 Wheels

Striking a balance between aerodynamics and reactivity, the H37's lightweight 37mm deep rims provide the qualities of a standard road racing clincher wheel, with the additional efficiency of a deeper profile. Using bladed Sapim CX Ray spokes, they roll on SKF bearings and feature an interchangeable freehub for Shimano and Campagnolo gearing. **B5-512**



Beto QD Mini Pump

A dual-action alloy mini pump with a clever quick dial valve change system that allows one aperture to cover both schrader or presta valves. Stored neatly underneath the lever is a further adaptor covering Dunlop valves. The pump barrel is alloy for durability and is combined with a co-molded plastic handle to aid grip. **A5-507**



Egide Atlas & Apollo Helmets

A premium urban cycle helmet brand founded to convince still reluctant cyclists to wear a bicycle helmet. Serious attention is paid to quality finishing as all helmets are handmade in France in Egide's workshops. The Atlas is upholstered in leather, while the Apollo uses materials such as carbon, Kevlar or natural linen fibre. **FG-B5/3**



ByCyclogical Gripster

Scottish brand ByCyclogical describe the Gripster as 'the bike storage solution that's a little bit off the wall'. The Gripster is designed to protect interior decor from repeated handlebar impact damage. A simple design, it's compatible with a wide range of bikes. Simply attach the product to the end of the handlebar before leaning the bike against a wall. **FG-B9/4**



New Products 2017

Ion Rainshorts Shelter

Never let the weather forecast discourage you. Ion's new Rainshorts are a super lightweight waterproof short made of a two-way stretch laminate with a PU membrane that provides excellent protection and breathability. Coming with fully taped seams and a flexible waistband they pack down super small for easy storage when not in use. **A7-204**



Leggero Enso

More than just a children's bike trailer, the Enso combines the functions of a bicycle trailer with those of a sports stroller. With a broad range of accessories included as standard, whether biking, rollerblading, jogging, or walking it's happy to come along. Made in Switzerland, it's extensively tested to ensure predictable handling and impact protection. **A1-508**



DT Swiss RC 1100 Dicut wheels

A very modern carbon wheelset for whatever road you choose. Featuring 47mm deep carbon rims, the RC 1100 Dicut wheels are designed to be aerodynamic, while remaining stable in crosswinds.

A wide profile partners well with voluminous, tubeless tires. Designed for endurance or adventure bikes they employ centerlock rotor mounts and 12mm thru-axle hubs. **A3-400**



Velo Wing Bow Technology



Wing Bow adds support to the saddle. Utilizing a bow-shaped structure that sits under the base, the wing flexes under normal riding conditions, providing initial comfort for pedaling. It then provides progressively more resistance as it travels through its movement. This means that small vibrations can be accommodated for just as well as bigger hits like potholes and curbs. **A4-103**

Elastic Interface Combi Chamois



With special ultra-high density ischial inserts to cushion shocks from the terrain, the Combi Chamois is designed for off-road and long distance rides. The central channel improves blood flow and reduces numbness during prolonged use. The insert also features an innovative multi-directional curvature to deliver a more tailored fit and greater stability in the saddle. **A7-216**

Corratec E-Power RS 150 e-MTB

With new geometry and kinematics, along with 150mm of suspension the E-Power RS 150 is capable of accommodating either fast rolling 29-inch wheels or grippier 650B plus alternatives. Powering these is a Bosch Performance 45 Engine paired with a strong 500Wh frame integrated battery. This combination provides for both uphill performance and improved range. **B2-200**



Limar Ultralight Lux

Having made its first appearance on the head of Jakob Fuglsang during his victory at Criterium du Dauphiné, the Ultralight Lux is now available to non-sponsored riders. Compact and with an emphasis on aerodynamics, its maker claims it matches the record of the brand's Ultralight+ to be the lightest helmet in the world. **A4-500**



VeloUnion Fritz Cargo bicycle-trailer

A light and agile cargo-trailer that offers a smart additional luggage option for almost all bikes thanks to a very flexible mounting design. An optional dynamo wheel can recharge smartphones or notebooks while on tour. Twined with a suitable pair of pannier bags voluminous items like sleeping bags or camping mats can be transported dry and dust-free. **A5-403**



Geobike G-Bike S-Road C

G-Bike is a brand dedicated to high-end e-bikes manufactured by bike makers Geobike. Its S-Road C model is the first CCE certified speed bike from Poland. A fast e-bike with a maximum speed of 45 km/h, its smooth welded frame is equipped with a 500 watt 48 volt Bafang motor and 13 Ah battery, while integrated into its stem is an advanced King-Meter JustOne display. **A4-713**



Kenda Hellkat Pro ATC

A trail version of the Hellkat Pro, a recently launched downhill tire that's already won several world cup races. Its advanced trail casing is characterized by braking control and cornering traction in both downhill and enduro/trail versions. With additional emphasis on the overall weight and the elimination of punctures and casing fractures the construction aims to yield the best results when run tubeless. **A5-501**



New Products 2017

Kryptonite Alley F-650

Kryptonite's new Street Light series includes seven light sets offering high lumen counts and multiple features. With robust safety and convenience attributes the new series provides multiple "see" and "be seen" options. The new 650 lumen USB rechargeable Alley F-650 has six modes including a daylight pulse, nitelite pulse and economic flash. It's also available as a set with the Avenue R-50. **A4-2008**



Yaban Chain SLA1210 12-speed chain

A new chain to match the latest 12-speed cassettes. YBN's SLA1210 12-speed chain has a unique thin design with bevel chamfering on the edges of its plates. The result is a fluid running chain that shows no hesitation to move over the cogs. Smooth and quiet to use it also promises high shift accuracy. **A4-415**



A-Pro Tech R701 Wheelset

The R701 uses an asymmetric rim profile to balance tension on both sides of wheel and provide more stability and comfort on longer road rides. The new straight-pull hub shell is also lighter thanks to precise CNC machining. Four bearings and a 17mm hub axis strengthen the wheels while the four specially shaped pawls and an independent spring design provide rapid and direct engagement. **B2-406**



Schwalbe ADDIX- Compound



Schwalbe is launching a completely new generation of compounds for MTB. With four options; speed, speed grip, soft, and ultra soft they cover every condition and discipline. Produced in a completely new mixer using a process designed in-house by Schwalbe, all 13 tire models from the Schwalbe Evolution series are now available with ADDIX compounds. **A5-300**

Cycle Union E-bikes with Continental drive

Cycle Union bikes now feature drive systems from Continental with integrated stepless NuVinci gearing. Dispensing with the rear derailleur, the selection ranges from comfortable low step-through bikes, to city and trekking machines, and pedelecs with extensive luggage-carrying capacity. The 48er Core motor from Continental powers each with a maximum torque of 70 Nm and a weight of around 4 kg. **B3-200**



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New Products 2017

Jetset K1153 Balance Bike Wheelset

Made for balance bikes the K1153 is a new wheelset offering rim widths of 30mm or 39mm. Completely customizable, its components can be determined by the purchaser, including the hubs, spokes, and edge polishing. This allows product managers and bike designers to perfectly match the wheels to the design of their balance bikes. **A5-225**



JetBlack Cycling WhisperDrive Smart

The JetBlack WhisperDrive Smart is a fully self-generating dual technology electronic trainer supporting ANT+ FEC and Bluetooth Smart protocols. Without the need to plug in it delivers speed, cadence, power, while also featuring ERG and simulation modes. With the ability to connect to your favorite third party training platforms it's also able to recharge your devices while you pedal. **B2-305**



Dr. Pad Doc 125

A pad for long distances, created without glue or stitching. Cutting technology allows the Doc 125's high-density foam to be smoothly shaped. Its transition areas gradually change thickness and support type; from the highest load on the back area, to the medium load on the perineal area, to the light and soft parts where no support is needed. **A7-410**



Bosch Active Line



Both Active Line and Active Line Plus drive systems contain a number of new technical developments and, thanks to their smaller size, can be neatly integrated into modern pedelec frames. Light and quiet, the gear concept has been completely reworked to produce a smoother riding experience. At speeds over 25 km/h, resistance is barely noticeable when pedalling. **AG-201**

NuVinci N330f

A groupset for the rental and commercial market. The N330f transmission components boast durability and weather resistance even in extreme conditions. They provide a 330% ratio range, maximum continuous torque of 80Nm and 200 kg maximum vehicle weight. Protecting even against deliberate abuse the groupset should help decrease operator service and maintenance costs, while a commercial warranty offers additional security. **AG-305**







PREMIUM SIMULATOR INCLUDED

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Smart Pro 2

Smart turbo trainer

 SIMULATES SLOPES UP TO 20%
 VERY QUIET



New Products 2017

Bafang M-series M500, M600



Bafang enters the high-end with three new mid motors for the various global speed and wattage restrictions. Both geared M-series mid motors, the M500 with 250W and the M600 system with 350W or 500W engines offer peak torque values of 95-120Nm. This allows EU compliant 25km/h and 45km/h (S-Pedelec) and 20-28m/h US versions. Combining this with a single or double chainring (32T/44T) option will deliver multiple gearing choices. The ultra-short RC compatibility of less than 450mm and a Q-Factor of only 177mm will make the motor perfect for uphill-ready hardtail and full suspension E-MTBs. With industry-leading system weights less than 3,0 and 3,4 kg, ISIS drive BB, customization of motor covers and alloy bash guards, and potential for private labelling. Available Q2 2018. **A6-406, FG-0/501**

Fox Factory Fox Float Dpx2

A trail shock combining the efficiency of Fox's DPS XC with the performance of the X2 DH. The Dual Piston Base Valve has dedicated compression and lockout circuits for each of the three modes; open, medium, and firm. It also features a recirculating damper design found in X2 shocks, boosting small bump sensitivity while providing mid-stroke damping support. **B1-500**



Zimtstern Kenrickz jersey and Targaz shorts

Zimtstern's Noizy fabric features an integrated WickEx finish to quickly pull moisture away from the body to the outside of the garment where it can evaporate. Cut with a relaxed fit and longer drop tail to provide for wearing comfort, a lift ticket can be safely stored in the specially designed holster with valuables held in a separate zippered pocket. **B1-309**



Roxim Raptor X7 lights

Despite a compact size the Raptor X7 achieves panoramic 180-degree near field lighting, while also projecting a deeper 90-degree wide light spread. Combined these provide illumination for safe turning twinned with long range forward vision. The USB Burst feature increases output and extends run-time via the addition of an external power pack. Delivering up to 700 lumens, anti-glare technology prevents blinding of oncoming road users. **A5-211**



Peruzzo Pure Instinct Towball 4 Bikes

With a quick release system that locks the bikes to the carrier and the carrier to the vehicle, Peruzzo's Pure Instinct Towball rack fits even electric and fat bikes and is tested and certified for loads up to 60 kg. Each bike has its own individual clamp for quick and secure loading and removal. **B5-207**



Merida One-Forty

The One-Forty is billed as a perfect all day bike for challenging trails. Its budget friendly aluminium frame should be attractive to entry-level and advanced riders, while 2.6-inch wide tires provide additional safety on rough terrain. Employing a 1x drivetrain has allowed the chainstays to remain short. Paired with a reduced wheelbase and steeper head angle this creates playful handling. **A3-200**



Pirelli P Zero Velo 4S

Pirelli's all-season tire. Available in a range of widths the P Zero Velo 4S offers superior wet weather grip for autumn and winter, along with increased puncture protection, albeit at a slightly increased weight. Its unique tread design is developed to shed water to provide consistent traction in every weather condition. **B3-205**



Elite Direto trainer

A new interactive direct-transmission trainer with integrated power monitor featuring +/- 2,5% accuracy and able to simulate slopes up to 14%. Suited to both cadence and power based training sessions, it's compatible with Elite, Zwift, The Sufferfest, TrainerRoad, and Kinomap software and interacts with apps, computers, smartphones and tablets with iOS, Android, OSX and Windows. **B5-401**



Gates Carbon Drive Carbon Drive White

A special edition white belt to commemorate a decade of Gates Carbon Drive. Available for OEM production orders with a 120 belt minimum, the white belt highlights the cleanliness and style of Carbon Drive system. It uses the same carbon fiber tensile cord technology as regular Gates belts, but employs a specially formulated polyurethane body created by the company's chemists. **A2-203**



Raceone PR.1 Box

Designed to contain all the necessary equipment for any emergency including a mini pump the PR.1 Box's cap contains a separate storage space, useful for small objects like coins, keys, or chainlinks. Available in two versions with either a 500ml or 600ml capacity, it's possible to customize the color scheme when ordering. **B5-116**



New Products 2017

Quai DWL ISOS 27.5" Pro+ Boost wheelset

The ISOS 27.5" Pro+ Boost wheels are aimed at cross country and all mountain riders and feature a unique variable depth rim which seeks to provide ample stiffness for any trail. Their broad 25mm inner width is combined with Sapim CX-ray spokes employed in a radially staggered lacing pattern and connects them to DT350 Swiss hubs. Weighing in at 1,471 grams all Quai wheels are equipped with regular and boost options. **B1-105**



Alber Neodrives Z20

All of Alber's drive and battery systems are produced in-house at their Albstadt facility in Germany. Their Z20 motor offers five different configurations including drive-only without display. This minimalist option can be paired with a smartphone app to provide some of the metrics that would normally be accessed via a traditional display. Available with both external and integrated battery systems the operation of the motor is noiseless. **AG-311**



ControlTech Falcon clip-on bar

The highly adjustable ControlTech Falcon clip-on bars allow expansive movement of each part for a flexible setup and the ability to fit a variety of body shapes and riding styles. Its stylish appearance and shape promise minimum wind resistance and better control, while its aluminum construction is cost-effective compared to carbon alternatives. **B4-206**



Crops EZ500mu auto tail light



The EZ500mu tail light adapts to changing situations. Ride into a tunnel and it will start flashing automatically. Rechargeable via micro USB, its semi-transparent materials improves visibility from the sides, making it easier for the rider to check the light is functioning. It also allows more light to reach the sensor even when installed beneath the saddle where it's usually dark. **A5-104**

XLC Allmtn E23 e-bike rucksack

The Allmtn E23 backpack is made for e-bikers and includes a neoprene pocket for an e-bike battery. Made from water-repellent 210D Nylon Rippstop fabric it also features an integrated protection plate. Equipped with a compartment for a drinking bladder, padded anatomically shaped straps, integrated rain cover, ergonomic back with air vents, multiple pockets, and a removable net for storing a helmet it doesn't skimp on features. **B2-300**



Tern Bicycles GSD

A compact utility bike, the GSD is designed to carry two kids or a week's worth of groceries. Yet it's shorter than a Dutch city bike. With folding technology it packs down small enough to fit a car boot or urban apartment. Coming fully equipped with integrated lighting, rack, mudguards, double kickstand, two XL panniers, and retractable passenger foot pegs a Bosch Performance motor powers it for up to 250km. **B4-405**



Argon 18 Krypton CS

Designed to offer comfort and performance on long rides regardless of the road surface. The geometry of Argon's Krypton CS is derived from their race bikes, but tuned for a more stable and comfortable ride through a less aggressive positioning of the rider. Both tube shapes and the carbon layup itself were designed and optimized for better vibration absorption, aerodynamics, and lightness. **B3-405**



ZC Rubber Chaoyang solid



A new solid tire system created to meet the needs of the expanding mass rental market. Providing flatless and service free operation Zhongce Rubber's Chaoyang brand developed a system based on an environmentally friendly micro cell polymer tire which fits to a customized rim. Available in multiple color and size options their rolling performance and shock absorption rivals numatic alternatives. **A1-606**

FreeFlow Technologies Mechanical Transmission System

Retrofittable to any standard single-speed bike FreeFlow Technologies' Transmission System provides the instant pick up associated with a fixed gear while retaining the ability to coast, providing users a ride experience combining the best of both fixed and freewheel biking. durable single-directional bearings prolong service life and should lower maintenance costs. **DA-406**



Polisport Groovy Rs Plus

A new sturdy and easy reclining system featured on the Groovy and Guppy ranges allow the cyclist to recline the seat in two positions up to 20° without having to remove the child first. The system has been developed so it can be unlocked, reclined, and locked again only by the adult user. The system is childproof to prevent accidents, guaranteeing the safety of the direct and indirect users. **A4-402**



New Products 2017

Battle Singular



Singular is a 27.5-inch hardtail off road e-bike. Based around a lightweight aluminum frame fitted with Rockshox Reba fork, Deore-XT Di2 gears, and Magura MT5 brakes the bike is driven by a powerful Shimano STEPS E8000 motor. Funn take care of the finishing kit, providing bars and a soft silicone saddle. **A3-715**

Topeak PakGo X

Low weight and an upright case design combine with a built-in TSA lock, carry handles, and four multi-directional wheels for luggage-like rolling when traveling. Sporting a shell made from tough Makrolon Polycarbonate, additional wheel bags, protective sleeves, and drivetrain cover provide protection against scratches and stains, while inner pockets keep gear organized. The internal mounting system is compatible with QR axles and 12mm thru axles. **B4-102**



Shimano Ultegra R8000

The new Ultegra offers customizable, ergonomic drivetrain control with disc or rim brakes paired to Di2 or mechanical shifting. With a wide range of crankset options, seven different 11-speed cassettes include ratios as wide as 11-34T. Di2 shifting offers full or semi synchronized shifting or manual Di2 shifting, while the new Ultegra Di2 hydraulic or rim brake levers also include the top-of-the-hoods buttons for remote shifting. **B5-300**



EGO Movement Snow White 2.0

The ideal companion for popping to the shops or commuting to work easily and without sweating. With pedal assistance up to 25 km/h the powerful 250W Bafang Max Drive mid motor twins with a Panasonic battery to offer a range of 70-100 km. Automatic lights, Shimano Deore gears, Tektro Auriga hydraulic disc brakes, and RST suspension complete the package. **A4-803**



ShredXS Full Finger Gloves

Falling off is part of learning to ride, ShredXS specialize in mountain bike clothing for children aged between 3 and 13-years-old to make sure they're protected when they do. With easy openings for small fingers its gloves include neoprene wrist protection and grip pads on the brake fingers. A clean, non padded palm echoes adult designs to offer uninhibited movement. **FG-B9/4**



Velocomp Newton

The Newton+ 6 is the only cycle computer with a fully integrated power meter that doesn't require replacement or mounting of special components such as cranks, hubs or pedals. It uses the combined action of three sensors; an accelerometer, pressure meter and wind gauge plus an inclinometer to produce the most accurate power readings possible. Working 800 times per second they measure the forces opposing rider and bike caused by slopes, wind and friction. **A4-104**



Azub Bike Ti-Fly 26

A fully suspended touring recumbent trike with a unique titanium leaf spring suspension system that provides 40mm of dampening. Using a Syntace X-12 solid thru-axle in the rear wheel, it's available built to customer's needs in the Czech Republic and can be equipped with a variety of components including a Rohloff hub, Pinion gear box or electric drive. **B2-116**



Racer Protective Gear Motion Top

Made with breathable mesh panels, the Motion Top incorporates dorsal protection along with pads on the shoulders and elbows. A perforated EVA foam pad on the chest prevents shocks while ensuring good ventilation. Its sleeves are removable and it features a pocket for a hydration reservoir along with two rear pockets to provide storage space for cellphones, energy gels or tools. **B4-313**



CoModule CoModule smart technology

By integrating CoModule smart technology manufacturers can create new channels of communication between bikes, riders, and themselves. This allows for a more intense product experience, better customer support, and can help create long lasting customer relationships. Simultaneously riders will benefit from controlling bike settings from their app and services like bike insurance, navigation systems or anti-theft-solutions. **A6-207**



Barbieri SNC Carbonaria valve stems

The world's first presta valve stem for tubeless systems made in carbon fiber. Extremely light they'll affect the balance of the wheel less than heavier metal alternatives. The aluminum ring features an innovative self-lock system, while the rubber base is interchangeable allowing mounting with the provided round or squared rubber and ensuring compatibility with all rims. **A4-513**



New Products 2017

Richmond Suzico E-MTN FS AL

A new full-suspension aluminium e-bike using the Shimano E-8000 Steps system. Its neat design hides a 500W capacity lithium-ion battery inside the downtube. With three modes; Eco, Trail, and Boost riders can choose the level of assistance provided by the mid-mounted 250W/70Nm drive unit. **A5-207**



Jiashan Shengguang Electronics JY-7057 Light

A rechargeable front bicycle light from Jiashan Shengguang Electronics. Using a powerful Cree XP-E LED it produces a punchy 110 lumen output. Rechargeable via the included micro USB cable, its user friendly tool free fitting is quick to mount while the light itself meets the relevant German standards. **A3-503**



Standwell E-Bike Carrier

Designed for Shimano STEPS E-bike system, Standwell's new SW-EA151S carrier can carry up to 25kg. It is compatible with CarryMore system components. The 6061 alloy carrier weighs 950g and is available for 26' and 28' bikes. A spring clamp is optional for steel and stainless. **A5 207**



Messingschlager Linka, Smart Bike Lock



An innovative frame mounted lock. You can securely connect Linka via Bluetooth and a phone in order to lock your bike with the tap of a button, auto-unlock as you approach, and be alerted if someone tamper with it. Linka's software is also optimized for use by bike sharing companies and fleet users with a custom bike-share app and fleet management dashboard. **A3-601**

Teo Sport TM Armadillo Plus Pad



An update of the original Armadillo pad. Based on extensive research Teo have placed an extra insert into the middle part of the pad to absorb impacts and abrasion in the perineal area. This slow memory foam patch aims to cushion jolts and vibrations. The pad also features moulded lateral wings and the brand's TMirror solution system. **A7-210**

WORLD'S TOP 2 CYCLE SHOWS 1 Advertising Package

The Official Eurobike Newspaper | www.bikeshowdaily.com Eurobike Day 1 | August 31, 2016

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Eurobites

Working late at the show? These FN restaurants are still serving dinner

As longtime Eurobike visitors know, it isn't easy to find a restaurant open after 9 p.m. This is Friedrichshafen, after all, not Berlin.

But don't worry — fast food is not your only late-night choice. With the help of the Friedrichshafen Tourist Information office (<http://en.friedrichshafen.info>), we've found several late-night restaurants in and around Friedrichshafen that will feed you after 9 p.m. A few bars even keep the drinks flowing until 5 a.m. — but you're on your own from then until you stumble back to the show at 9 a.m.

And remember: Credit and debit cards are not commonly accepted, especially outside of the city. Take cash!

Alpha Hotel Restaurant

Ittenhauser Str. 14 – 16
Greek cuisine and wines.
+49 7541 32107; www.alpha-fn.de
Open until 10:30 p.m. Closed Mondays.

Gasthof Ailinger Hof Häfler Schnitzelhaus

Keplerstr. 48
Steak, schnitzel, and other specialties.
+49 7541 955840; www.ailinger-hof.de
Kitchen open until 9:30 p.m. Closed Sundays.

Restaurant Alte schwäbische Feuerwache

Charlottenstr. 14
Hearty dishes at a reasonable price.
+49 7541 3916090
Open until midnight.

Beach Club Friedrichshafen

Uferstr. 1
+49 175 2444 132; www.beachclub-fn.de
Open daily in good weather — weekdays to 11:45 p.m.; Sat and Sun to 12:45 a.m.

Bernd's Bar

Friedrichstr. 11
Underneath the Lukullum Restaurant.
Open until 5 a.m.; kitchen until 10:30 p.m.
+49 7541 930703

Burger House

Friedrichstr. 49
Burgers and finger food.
+49 7541 3006 995; www.burgerhouse-fn.de
Open daily until 2 a.m.

Restaurant Delphi

Seestr. 20
Greek and Italian food on the promenade.
+49 7541 22160; www.delphi-fn.de
Serving hot food until 11 p.m.

Die Bar at Hotel City Krone

Schanzstr. 7
Cocktails, local wines and beers.
+49 7541 7050; www.hotel-city-krone.de
Open until 1 a.m. Snacks until midnight.

Hotel-Restaurant El Bocado

Paulinenstr. 8
Mexican food, drinks and a smoking area.
+49 7541 35423; www.elbocado.de
Hot meals until midnight.

Hotel-Restaurant Goldener Hirsch

Charlottenstr. 1
Regional, homemade food close to the lake.
+49 7541 92330; www.gold-hirsch.de
Open until 10 p.m. Closed Sundays.

Hotel-Restaurant Knoblauch

Jettenhauser Str. 32, Jettenhausen
Reasonably-priced Swabian, fish and homemade pastas.
+49 7541 6070; www.hotel-knoblauch.de
Open until 9:30 p.m. Closed Sundays.

Ringhotel Krone Schnetzenhausen

Untere Mühlbachstr. 1
Local fish, game, wine and a full cocktail bar.
+49 7541 4080; www.ringhotel-krone.de
Restaurant open daily until 10:30 p.m.
Bar open Tuesday to Saturday from 8:30 p.m.



The Beach Club is open late in good weather.

Lukullum

Friedrichstr. 21
Rustic guest house and restaurant.
+49 7541 6818; www.lukullum.de
Open from 5 p.m.; kitchen open to 10:30 p.m.
Closed Mondays

Hotel-Restaurant Maier

Fischbach, Poststr. 1 – 3
Contemporary, locally sourced cuisine.
+49 7541 4040; www.hotel-maier.de
Open until 11 p.m.; kitchen open to 9:30 p.m.

Gaststätte Pier 40

Friedrichstr. 40
Rustic beer bar with live football.
+49 7541 33335; www.pier40.de
Open daily until 2 a.m.

Café im Rathaus

Adenauerplatz 1
Salads, fish, meat and vegetarian options.
+49 7541 3817766; www.cafe-im-rathaus.com
Open daily to 11:30 p.m.; Fri & Sat to 1 a.m.

Hotel-Gasthof Rebstock

Werastr. 35
Beer garden with international dishes.
+49 7541 9501640
www.gasthof-rebstock-fn.de
Open daily except Friday until 11 p.m.

Gaststätte Bierbar Rotach

Ravensburger Str. 32
Games and food.
+49 7541 72171
Open late. Serves snacks after midnight.

Hotel-Gasthof Schwanen

Friedrichstr. 32
Snacks, fresh fish and beer.
+49 7541 38550
Open daily except Wednesday from 5 p.m.
Closed Sunday evenings.

Restaurant Seehof

Olgastr. 6
Seasonal, locally sourced specialties.
+49 7541 27264
www.seehof-friedrichshafen.de
Open Wednesday to Monday until 10 p.m.

SEEhotel-Restaurants Bodega and Uferlos

Bahnhofplatz 2
International and local cuisine.
+49 7541 3030; www.seehotelfn.de
Open daily until 10 p.m.; bar until 1 a.m.

Tandoori Palace

Schanzstr. 15
Indian and Pakistani specialties.
+49 7541 3746761
Open daily until 11.30 p.m.

Tiffany's Steakhouse & Lounge

Friedrichstr. 73
Steaks, with cocktail bar next door.
+49 7541 23392; www.tiffany-steakhouse.de
Restaurant open daily until 2 a.m.; bar open until 3 a.m.; Friday and Saturday until 5 a.m.
Reservations requested

Hotel-Restaurant Traube

Ailingen, Ittenhauser Str. 4
Croatian and international dining.
+49 7541 53063; www.traube-ailingen.de
Open daily until 11 p.m.
Closed Tuesdays

Hotel-Restaurant Waldhorn

Manzell, Dornierstr. 2/1
German, Austrian and Swiss cuisine.
+49 7541 9570; www.waldhorn-hotel.de
Open daily at 4 p.m.; Sun 11 a.m. – 11 p.m.

Buffalo Steakhouse FN

Messestr. 134
Steaks and seafood, accompanied by a large wine list. Next to the Messe fairgrounds in the Zeppelin Hangar.
+49 7541 7005868
www.buffalo-steakhouse-fn.de
Open daily until 10 p.m.

Restaurant-Café-Bar in the Zeppelin Museum

Seestr. 22
Regional specialties, fresh fish and drinks.
+49 7541 9530088
www.zeppelinmuseum-restaurant.de
Open Tuesday to Saturday until midnight (kitchen to 9:30 p.m.); Sun and Mon to 6 p.m.



Dine at the Ringhotel Krone Schnetzenhausen until 10:30 p.m.

TAIPEI CYCLE

Oct. 31 - Nov. 3, 2018

Taipei Nangang Exhibition
Center, Hall 1 & TWTC Hall 3

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Co-Organizer:



Transport Guide

Eurobike Commuter Services

Whether you're arriving in Friedrichshafen by plane, ship or train, Eurobike offers many shuttles that bring you to the international hub of the bicycle world at Messe Friedrichshafen, and back again.

Hotel Shuttle

No stress and no cost

Take your time at breakfast. The Eurobike hotel shuttle will pick you up at your hotel, or close by. Ten shuttle lines connect the region between Dornbirn, Austria, in the east; Überlingen, Germany, in the west; and Weingarten, Germany in the north. There's no easier way to get to the show!

Airport Shuttle

Zurich, Friedrichshafen, Memmingen



Friday:

After-Party Shuttle

Why worry about how to get back to the hotel when you'd rather be partying?

Relax. On Friday, Sept. 1, Eurobike organizes a free After Party Shuttle Service. There will be four bus routes: Überlingen, Oberteuringen, Weingarten and Bregenz, Austria. Shuttles start at 00:30 from Entry West.

Airport & Train / Ferry Shuttle

At left is a table for bus shuttled running from Zurich Airport, Friedrichshafen Airport and Memmingen Airport to Eurobike and back. For Zurich & Memmingen booking during the show at the information desk foyer East

Ferry Services

You can also reach Eurobike by ferry across beautiful Lake Constance.

The Lake Constance ferry ("Bodenseefähre") connects Konstanz, southwest of Lake Constance, with Meersburg, east of Friedrichshafen. Or you take the catamaran from Konstanz directly to Friedrichshafen. Finally there is also a connection between Romanshorn, Switzerland, south of Lake Constance, to Friedrichshafen. Below are the schedules.

FRIEDRICHSHAFEN Airport/Flughafen - EUROBIKE		
ARRIVAL ENTRANCE WEST / ANKUNFT EINGANG WEST		
Departure Zurich / Abfahrt Zürich		
29.8. 8:00*	9:00 10:00 11:00 12:00	
30.8. 7:30 8:00*	8:30 9:00 10:00 11:00	
31.8. 7:30 8:00*	8:30 9:30 11:00	
1.9. 7:30 8:00*	8:30 9:30 11:00	
2.9. 8:00*	9:00	
DEPARTURE ENTRANCE WEST / ABFAHRT EINGANG WEST		
Departure EUROBIKE Entrance West / Abfahrt EUROBIKE Eingang West		
30.8. 14:00 15:00 16:00 17:00 18:00 19:00*		
31.8. 14:00 15:00 16:00 17:00 18:00 19:00*		
1.9. 14:00 15:00 16:00 17:00 18:00 19:00*		
2.9. 14:00 15:00 16:00 17:00 18:00*		
MEMMINGEN Airport/Flughafen - EUROBIKE		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Departure / Abfahrt Memmingen		
29.8. 8:00 9:00 10:00 11:00 14:30 15:30		
30.8. - 2.9. 8:00	11:00 14:30 16:30 18:30*	
*not on Saturday / nicht am Samstag		
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure EUROBIKE Entrance East / Abfahrt EUROBIKE Eingang Ost		
30.8. - 2.9. 7:00	10:00 13:30 15:30 17:30	
FRIEDRICHSHAFEN Airport/Flughafen - EUROBIKE		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	From / Von	Till / Bis
Airport / Flughafen	8:00	every/alle 30 min 18:30
EUROBIKE Entrance East/Eingang Ost	8:10	every/alle 30 min 18:40
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure / Abfahrt	From / Von	Till / Bis
EUROBIKE Entrance East/Eingang Ost	8:15	every/alle 30 min 18:45
Airport / Flughafen	8:25	every/alle 30 min 18:55

Free Rental Bikes

During Eurobike a total of 500 rental bikes will be available at various locations — and they're free!

Visitors and exhibitors can make their way to the exhibition center easily and quickly. And what could be a more fitting way of arriving at the world's biggest bicycle show? In the evening, it's easy to get back to their starting point. Get in the Eurobike mode before you even reach the center. And the best thing about the bike rental service: it's free. For more details, see www.eurobike-show.com/eb-en/travel/bike.

Borrow a bike from nextbike per App:

Using the App you can either scan the QR code on the bike or simply enter the bike number. The code sent to you only has to be entered into the BikeComputer and then you can unlock the bike.

nextbike in **GooglePlay Store**
nextbike in **App Store**

The bikes can be used free of charge until midnight on Saturday, September 2, and then returned to any of the given stations.

Rental Stations

- Exhibition Grounds Entrance West (staffed, open all day);
- ERIBA City
- Camping Site at the Exhibition Grounds
- Main City Station
- Harbor Station
- Airport/DB stop



FERRY/BODENSEEFÄHRE		
DEPARTURE/ABFAHRT		
Departure Konstanz/Abfahrt Konstanz	From/Von	Till/Bis
Mon - Fri/Mo - Fr	00:05	every/alle 60 min 05:05
	06:35	every/alle 15 min 20:50
	21:05	every/alle 30 min 23:05
Sat - Sun/Sa - So	00:05	every/alle 60 min 06:05
	06:35	every/alle 30 min 07:05
	07:35	every/alle 15 min 20:50
	21:05	every/alle 30 min 23:05
Departure/Abfahrt Meersburg	From/Von	Till/Bis
Mon - Fri/Mo - Fr	00:35	every/alle 60 min 05:35
	06:05	every/alle 15 min 21:35
	22:05	every/alle 30 min 23:35
Sat - Sun/Sa - So	00:35	every/alle 60 min 06:35
	07:05	every/alle 30 min 07:35
	08:05	every/alle 15 min 21:35
	22:05	every/alle 30 min 23:35

CATAMARAN / KATAMARAN		
DEPARTURE/ABFAHRT		
Departure Konstanz/Abfahrt Konstanz	From/Von	Till/Bis
Mon - Fri/Mo - Fr	06:02	every/alle 19:02
Sat - Sun/Sa - So	08:02	60 min 19:02
Departure / Abfahrt Friedrichshafen Ferry Station / Hafen		
Mon - Fri/Mo - Fr	00:35	every/alle 06:35
Sat - Sun/Sa - So	08:02	60 min 19:02

FERRY/BODENSEEFÄHRE		
DEPARTURE/ABFAHRT		
Departure/Abfahrt Romanshorn	From/Von	Till/Bis
Mon - Fri/Mo - Fr	05:36	every/alle 20:36
Sat - Sun/Sa - So	07:36	60 min 20:36
Departure/Abfahrt Friedrichshafen Ferry Station / Hafen		
Mon - Fri/Mo - Fr	05:41	every/alle 20:41
Sat - Sun/Sa - So	07:41	60 min 20:41

www.eurobike-show.com/eb-en/info-center/travel/public-transportation.php



*bus stop / Bushaltestelle
*bus stops directly in front of the hotel / Bus fährt direkt ab Hotel

1 Hotel Shuttle Überlingen - Uhdlingen - Immenstaad - Fischbach		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Überlingen / Andelshofen Hotel Johanner Kreuz*	4:54	8:39
Überlingen ZOB*	6:59	8:44
Mühlhofen Hotel Kreuz*	7:12	8:57
Oberuhldingen Marktplatz*	7:18	9:03
Unteruhldingen Meersburgerstraße*	7:21	9:06
Immenstaad Rathaus*	7:37	9:22
Immenstaad Dornier*	7:40	9:25
Fischbach Hotel Maier*	7:43	9:28
Friedrichshafen Hotel Föhr / Albrechtstraße*	7:49	9:34
EUROBIKE Entrance East / Ankunft Eingang Ost	8:00	9:45
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
2 Hotel Shuttle Meersburg - Hagau		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Meersburg ferry station / Fähranleger*	7:30	9:00
Meersburg Kirche*	7:33	9:03
Meersburg Sababeim*	7:35	9:05
Hagau Mitte*	7:39	9:09
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:30
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
3 Hotel Shuttle Salem - Bermatingen - Markdorf - Oberteuringen - Ailingen		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Salem Hotel Schwanen*	7:11	8:41
Salem Hotel Recks*	7:16	8:46
Salem Hotel Apfelblüte*	7:18	8:48
Bermatingen Markdorfstraße*	7:23	8:53
Markdorf Bahnhofstraße (Reisebüro Lippmann)*	7:28	8:58
Markdorf Hotel Würthhof*	7:33	9:03
Oberteuringen Hotel Adler*	7:41	9:11
Ailingen Hauptstraße*	7:49	9:19
Ailingen Rathaus*	7:51	9:21
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:30
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
4 Hotel Shuttle Weingarten - Ravensburg - Meckenbeuren		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Weingarten post office/Post*	7:17	8:47
Weingarten Charlottenplatz*	7:20	8:50
Weingarten Linse*	7:21	8:51
Ravensburg Marienplatz*	7:30	9:00
Meckenbeuren sports ground/Sportplatz Lenbachstraße	7:41	9:11
Meckenbeuren Hotel Wiesental*	7:42	9:12
Meckenbeuren Buch*	7:43	9:13
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:30
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
5 Hotel Shuttle Weingarten - Neukirch - Tannau - Tetttnang		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Wangen Hotel JUFA (formerly/ehemals Waltersbühl)*	7:00	8:45
Wangen Bahnhof*	7:05	8:50
Neukirch Rathaus*	7:23	9:08
Tannau*	7:30	9:15
Tetttnang Bärenplatz*	7:35	9:20
Tetttnang Seestraße*	7:37	9:22
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:45
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
6 Hotel Shuttle Kressbronn - Kressbronn		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Nonnenhorn Hotel Zum Torkel*	7:25	8:55
Nonnenhorn Hotel Haus am See*	7:30	9:00
Kressbronn Seehotel Nonnenhoner Straße*	7:32	9:02
Kressbronn Hauptstraße*	7:35	9:05
Göhren Langenargenerstraße*	7:40	9:10
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:30
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
7 Hotel Shuttle Lindau Island/Hotel		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Lindau Bahnhof (Island/Insel)*	7:12	8:47
Lindau Casino/Spielbank*	7:15	8:50
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:35
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
8 Hotel Shuttle Neuravensburg - Weßensberg - Lindau - Weßensberg		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Neuravensburg Schwarzenbach*	6:59	8:34
Neuravensburg Gasthof Hirschen*	7:02	8:37
Weßensberg/Rehings B1*	7:09	8:44
Lindau-Reutin Rathaus*	7:12	8:47
Lindau Berlinerplatz/Lindaupark*	7:14	8:49
Lindau Aeschacher Hof*	7:17	8:52
Bad Schachen Kreuzung Schachenstr./Badstr.*	7:25	9:00
Wassersburg Bahnhof*	7:35	9:10
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:35
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
9 Hotel Shuttle Lindau - Oberdorf - Langenargen - Enkirch		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Lindau Casino/Spielbank*	7:15	8:50
Langenargen Oberdorf*	7:30	9:05
Langenargen Marktplatz*	7:40	9:15
Enskirch Moos Hotel St. Theresia*	7:50	9:25
Arrival Entrance East / Ankunft Eingang Ost	8:00	9:35
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30
10 Hotel Shuttle Dornbirn (Austria) - Bregenz (Austria) - Lochau (Austria)		
ARRIVAL ENTRANCE EAST / ANKUNFT EINGANG OST		
Bus Stop / Haltestelle	Tour 1	Tour 2
Dornbirn Rathaus (Marktplatzseite)*	6:30	8:50
Dornbirn Sägerbrücke*	7:42	9:12
(Zustieg für Gäste Hotel Bischof, Hotel Krone)		
Dornbirn Messkreuzung (KIKA/gegenüber Sheraton)*	6:35	8:55
Bregenz Hotel Deutschmann*	6:55	9:15
Bregenz Bahnhofplatz*	7:00	9:20
Bregenz Hafen (nach Kreisverkehr bei HTL)*	7:05	9:25
Lochau Seehotel am Kaiserstrand*	7:10	9:30
Lindau Hotel Marina Star*	7:17	9:37
Arrival Entrance East/Ankunft Eingang Ost	7:45	10:05
DEPARTURE ENTRANCE EAST / ABFAHRT EINGANG OST		
Departure Entrance East / Abfahrt Eingang Ost		
Wed - Sat/Mi - Sa 30.8. - 2.9.		18:30

All timetables are also available on our website www.eurobike-show.com (Info Center) or in our **EUROBIKE app**

naviki App: Use the free navigation app for Android and iPhone. naviki will always show you the best cycling route to the EUROBIKE. More information: www.eurobike-show.com



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