

HP Velotechnik: E-Trike with fully automated shifting **Eurobike trade show Friedrichshafen 08/31-09.04.2016**



Up front with a motor: The new Shimano STEPS e-drive with automatic Di2 shifting intelligently integrated in the Scorpion Plus26 line-up. The new speed-trike, Scorpion, also can have its power come from the Shimano power unit.

Bilder: HP Velotechnik

Middle to front motor: In a Trike, everything is possible

World Premier: The fully automated e-trike / The combination between the stable trikes from HP VELOTECHNIK with SHIMANO STEPS brings a worry-free package

(Summary) FRIEDRICHSHAFEN. HP VELOTECHNIK brings a world premier to the stage combining a trike and an electric motor with automatic shifting. The rider's advantage: a cleaner cockpit reduced to turning the motor "on" and braking. This revolutionary concept can be viewed at the Eurobike (31 August - 04 September) at HP VELOTECHNIK booth (Foyer West, FW 300).

HP Velotechnik's modular assembly system allows all trikes belonging to the Gekko and Scorpion models to be outfitted with a SHIMANO Steps motor (250 W) and an 8 speed automatic electronic Di2 shifting. System Integration are the keywords from Shimano for all of their products. A major advantage to this system: the most efficient gear is chosen depending upon the speed, cadence, and pedal pressure.

The combination between the absolutely stable trike and the automatic gear selection gives the trike experience a

fully new charm. "An easy riding, no worries experience gives the rider a new riding pleasure", promises Paul Hollants, manager from HP VELOTECHNIK. The rider can concentrate on the traffic or simply enjoy the view while riding.

Unique for such a technical product is the position of the motor. For an upright bike, it would be a middle motor; the stylish trike now has a front motor since the bottom bracket is in the boom. The slim-sized Steps motor (3.2 kg) fits discreetly in the multi-award winning trike line-up which gives the energy efficient lithium ion 418 Wh battery a range up to 125 km.

An E-Trike von HP VELOTECHNIK with the SHIMANO Steps/Di2 system are available starting on 01 November, 2016 starting at 4.670 Euro. More information: www.hpvelotechnik.com or Telefon +49 61 92 - 97 99 20.

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(Long version) FRIEDRICHSHAFEN. The vehicles from HP VELOTECHNIK with their three wheels and go-kart handling abilities always give the rider the feeling of driving a sports car rather than riding a bicycle. Starting in 2017, there will be more automotive technology in the products. HP VELOTECHNIK introduces a world premier combining a trike with an electric front motor and a fully automated shifting system. The rider's advantage: cleaner cockpit reduced to turning the motor "on" and braking.

HP VELOTECHNIK's modular assembly system allows all trikes belonging to the Gekko and Scorpion models to be outfitted with a Shimano Steps motor (250 W) and an 8 speed automatic electronic Di2 shifting. System Integration are the keywords from SHIMANO for all of their products.

The combination between the absolutely stable trike and the automatic gear selection gives the experience a fully new charm. "An easy riding, no worries experience gives the rider a new riding pleasure", promises Paul Hollants, manager from HP VELOTECHNIK. The rider can concentrate on the traffic or simply enjoy the view while riding.

Simpler means easier acceptance

The system is a perfect fit to the "Scorpion plus 26" range, a trike developed for maximum comfort. The Scorpion Plus's elevated seating position (up to 57 cm) and the specially designed, extra wide frame for easy entry and exit is of special interest for seniors, or for people with special needs who do not trust themselves on an upright bicycle.

Under the direction of Prof. Felix Ecker from the college in Fulda, Germany, a research group studied the



handling of e-trikes and focused on seniors and their experiences. Prof. Ecker results showed that senior prioritized simple operation to be the deciding factor. "If the system becomes too complex or gives the impression of complexity, this "perception" overweighs the otherwise positive attributes of a safe, three wheeled vehicle with a comfort motor". In other words, the less confusion at first sight, the higher the acceptance.

Unique for such a technical product is the position of the motor. For an upright bike this would be a middle motor; the stylish trike now has a front motor since the bottom bracket is in the boom. Up until now, it was not possible to integrate a heavy middle motor into the boom. The torque from a motor combined with the tiny chainring would bring too much to tensile stress to the frame and folding joint. SHIMANO Steps is different: the slim-sized Steps motor with its 44 tooth chainring, fits in discreetly, and is absolute trike-compatible in the multi-award winning trike line-up.

At a stop light, shifts to smaller Gear

A further advantage to the automatic shifting: the most efficient gear is chosen depending upon the speed, cadence, and pedal pressure. At a stop light: The Di2 hub then shifts to a smaller gear to allow a quick start when the light turns green. That reduces wear-and-tear, and reduces the power needed to start.

The rider still remains in control of the riding experience. The automatic shifting can be turned off and shifting can be manually, but still electronically, shifted. The system then can learn how the rider shifts and will apply this knowledge once the automatic mode is chosen again.



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Advantage: System Integration

A further comfort feature with the SHIMANO Steps system is the integration of the lighting system which is powered from the battery.

HP Velotechnik sees the introduction of a further e-drive system as an exciting alternative to the GO SWISSDRIVE rear hub motor. The SHIMANO Steps is at 2090 Euro, 500 Euro less expensive than the premium GO SWISSDRIVE from Switzerland. Both systems offer a low center of gravity battery mount under the seat as well as the new "Top View" placement of the display on the end of the handlebar.

HP VELOTECHNIK Chief Designer, Daniel Pulvermüller, sees the advantage for people who shy away from active shifting or who wish to use e-trikes in hilly terrain where the Shimano Steps system allows, due to its geared transmission, a lower cadence making overheating no longer an issue. The rear hub motor from GO SWISSDRIVE has many advantages: almost absolutely silent, a reverse gear, and the ability for custom programming for people with special needs.

Technical data Steps (according to SHIMANO)

Rated power:	250 W
Maximales torque :	50 Nm
Support:	up to 25 km/h (15 mph)
Weight (motor):	3,2 kg
Force amplification:	Eco: up to 70 % (30 Nm) Normal: up to 150 % (40 Nm) High: up to 230 % (50 Nm)
Range:	Eco: up to 125 km* Normal: up to 85 km* High: up to 60 km*
Energy content:	418 Wh (36 V / 11,6 Ah)
Weight (battery):	2,7 kg
Charging time:	100 % (4 hours) 80 % (2 hours)
Battery life:	1000 charging cycles**
Price:	from 2.090,- Euro

Steps/Di2 is as an option you can choose from the modular options system of HP Velotechnik, available from November 2016.

*Measuring conditions: total weight trike and rider 100 kg, 23 km/h in flat terrain, 7th gear in Stop & Go mode (very 2 km)

**After 1000 charging cycles 60 % of the battery's capacity are utilizable

Hint for editors:

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You will find the press release in a download version at www.hpvelotechnik.com/presse/neuheit-liegerad-steps_e.html

HP Velotechnik at the trade shows:

Eurobike: August, 31st – September, 4th 2016: Friedrichshafen, Foyer West, booth FW-300

Test parcours Demo area: DA-205

Interbike: September, 21st – 23rd: Las Vegas; Mandalay Bay Convention Center, booth 31.15

RCC: October, 7th – 9th: Cincinnati, Ohio; Sharonville Convention Center, booth 15

Background information on HP Velotechnik

HP Velotechnik was founded by Paul Hollants and Daniel Pulvermüller in 1993. Its production site in Kriftel near Frankfurt employs 35 people (including four trainees) and manufactures approximately 2,000 recumbents per year, making it the European market leader. The bikes are individually built to order by hand and sold via specialist bike dealers. Signs of growth are evident: The recumbents are sold in Germany and Europe; increasing numbers are also being exported to more distant regions such as U.S.A., Australia, and Japan.

HP Velotechnik has developed 15 recumbent models across the entire class spectrum from everyday bikes to racers. All models are available with powerful electric motors on request. Recently, the full suspension trikes of the Scorpion class won three times in a row the renowned Eurobike Design Award: In 2012 the speed pedelec Scorpion fs 26 S-Pedelec, in 2013 the mountain trike Scorpion fs 26 Enduro, and in 2014 the SUV trike Scorpion plus 20.

Even as students, the company founders Hollants and Pulvermüller were national champions with their cabin trike in the Association of German Engineers' 1992 JUTEC youth and technology competition. This provided the foundation stone for their development from a garage laboratory to one of Germany's most innovative bike companies. During the last ten years, HP Velotechnik was repeatedly named as one of Germany's three best bike manufacturers by the bike industry association VSF. For further information, please visit www.hpvelotechnik.com