

Press release

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MAHLE SmartBike Systems Unveils the XS System: Revolutionizing eBike Integration

- Setting a new standard for eBike system integration by offering unprecedented freedom in bicycle design
- External battery eX1 becomes the sole power source, providing ample energy for daily use applications
- Smaller, more efficient batteries promote sustainability by reducing resource consumption
- Benchmark power-to-weight ratio
- Integration with MAHLE X20 or X30 drive units
- Compatible with the full MAHLE SmartBike Systems Ecosystem

MAHLE SmartBike Systems unveils its new XS System setting a new standard for eBike system integration by offering unprecedented freedom in bicycle design. The XS system simplifies eBike integration by eliminating the need for a large internal battery, instead utilizing the compact eX1 external battery as the exclusive energy source. Paired with MAHLE X20 or X30 motors, the system boasts a weight of just 2.5 kilograms with the X20, generating as much torque as a 55 Nm mid-drive. The XS System is compatible with the full MAHLE Ecosystem and is already available in the market.

“Our passion for innovation and commitment to cyclists inspire us to continually push boundaries. With the XS system, we have distilled the eBike down to its most essential elements, delivering unmatched value,” said Jochen Sommer, General Manager of MAHLE SmartBike Systems. Battery integration has long posed a challenge for bike manufacturers due to size and assembly complexities. MAHLE's XS system solves this by offering a streamlined eBike setup powered entirely by a 1kg external battery, which conveniently fits in a standard water bottle cage. In addition, the newly developed Smart Motor Controller can be mounted inside or outside the frame, allowing for minimalistic, unobtrusive integration—making it possible to use standard muscular bike frames to create fully functional eBikes.

Without sacrificing performance, the XS system is comprised of only the essential components: the eX1 External Battery, XS Smart Controller, X20 or X30 Hub Drive Unit, and a Torque or PAS (Pedal Assist) Sensor. This minimalism reduces the system's environmental footprint by downsizing components and simplifying the system's architecture. Furthermore, its ease of maintenance and broad range of accessories provide limitless customization opportunities.

The eX1 battery fits perfectly for daily use, offering over 170Wh of capacity. "In our research, we found that even less than 100Wh are sufficient for most daily activities —urban commuting, short rides—so we focused on optimizing for what riders need. The result is XS: a light, efficient system that perfectly suits everyday use," said Marco de la Serna, Head of Product, Strategy, and Business Development at MAHLE SmartBike Systems.

Additionally, the eX1 battery serves as a Range Extender for any existing MAHLE X20 or X30 system and as a power bank to charge devices such as phones or laptops thanks to a USB-C port integrated in the Energy Hub charger, which comes along with the system.

The XS system also integrates with the expansive X-series accessory line, enhancing both performance and user experience. Customization is nearly limitless, with optional accessories like the Duo, eShifters, and Pulsar ONE, among others, available for added functionality.

Users can also connect to the MAHLE Digital Ecosystem via their eBike, laptop, smartphone, or Apple Watch, opening the door to the present and future of the smartbike revolution. The MAHLE digital ecosystem enables a multitude of functionalities, providing a perfect symbiosis between user and eBike.

Using the system is very intuitive. With an intuitive control, riders can power on the system, switch between assistance modes, and monitor battery levels directly from the interface atop the eX1 External Battery. The system also offers automatic assistance, enhancing ease of use.

For more information:

Website MAHLE XS: <https://mahle-smartbike.com/XS>

MAHLE SmartBike Systems website: <https://mahle-smartbike.com/>

Note: Press release available at: <https://newsroom.mahle.com/press/en/>

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Complete XS System



XS System with only motor controller



The new XS system simplifies the eBike system integration process by giving more freedom for innovative bicycle designs.



MAHLE's revolutionary technology makes it possible to develop a minimalist and intuitive electric assistance system for eBikes.



MAHLE XS uses only the External Battery eX1 as a power source, eliminating any internal battery.



Avoiding large batteries and minimizing components contributes to greater sustainability.

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About MAHLE SmartBike Systems

MAHLE SmartBike Systems is a subsidiary of MAHLE, a globally operating automotive supplier based in Germany. This highly specialized company is known as a leading European producer of e-bike solutions for road and gravel segments, benefiting from MAHLE's expertise in research and development, production, marketing, and sales. MAHLE SmartBike Systems is headquartered in Palencia, Spain.

The 135-person team based there consists of software and hardware engineers, industrial and electronics engineers, quality specialists, 3D designers, creatives, as well as production and materials experts. An additional 60 employees work at MAHLE locations in Spain, Germany, and Asia.

MAHLE SmartBike Systems' products are ultra-lightweight and compact, comprising motors, batteries, controllers, components, and all types of intelligent solutions for e-bikes. They are seamlessly integrated and perfectly connected to offer cyclists a personalized experience. Thanks to these qualities, more than 60 bike brands worldwide rely on MAHLE SmartBike Systems as the ideal choice for integration, cost, and efficiency in two-wheeled electromobility, including brands that are revolutionizing the bicycle industry with their innovations.

#ePoweredByMAHLE

About MAHLE

MAHLE is a leading international development partner and supplier to the automotive industry with customers in both passenger car and commercial vehicle sectors. Founded in 1920, the technology group is working on the climate-neutral mobility of tomorrow, with a focus on the strategic areas of electrification and thermal management as well as further technologies to reduce CO2 emissions, such as fuel cells or highly efficient, clean combustion engines that also run on renewable fuels, such as hydrogen. Today, one in every two vehicles globally is equipped with MAHLE components.

MAHLE generated sales of almost 13 billion euro in 2023. The company is represented with more than 72,000 employees at 148 production locations and 11 technology centers in 29 countries. (as of 31.12.2023)

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