

# Press Release

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Palencia, 5 June 2025

## MAHLE SmartBike Systems presents its first full-power MID-drive M40

- MAHLE subsidiary expands successful portfolio of hub drives
- Entry into the e-mountain bike (eMTB) segment
- Full control, power and high efficiency even in demanding environments and even at high assistance levels and cadences
- 105 Newton meters (Nm) torque, 850 watts (W) peak power, 2.5 kilograms light
- M40 is one of the most powerful systems on the market
- Newly developed batteries, controller and display complement the M40 drive system
- Full compatibility with MAHLE ecosystem
- With M40, MAHLE SmartBike Systems is launching the new M series, which will be expanded in the coming years
- M40 is now available

**MAHLE SmartBike Systems, which has been extremely successful for years with hub drives as part of lightweight, integrated and smart eBike systems, is now expanding its range to include a mid-drive for the first time, thereby entering the e-mountain bike (eMTB) segment. The new M40 full-power drive system offers full control, power and high efficiency even in demanding environments and even at high support levels and cadences. The M40 weighs just 2.5 kilograms and generates an impressive torque of 105 Newton meters (Nm) and a peak power of 850 watts (W). This makes the M40 one of the most powerful systems on the market. Newly developed batteries, controller, display and other accessories complement the M40 drive system, which is also fully compatible with all accessories and digital tools of the established MAHLE ecosystem. The M40 is the first drive system in the new M series from MAHLE SmartBike Systems, which will be further expanded in the coming years to complement the existing X series with the X20, X30 and XS hub drives. The M40 drive system is available immediately.**

## **From road pioneer to trail expert**

"Thanks to state-of-the-art technologies, precision engineering and intelligent connectivity, the M40 sets new standards in the category of full-power mid-motors," said Jochen Sommer, Managing Director of MAHLE SmartBike Systems. "With the M40 system, MAHLE SmartBike Systems is reaffirming its claim to continue driving the development of the eBike industry in the mountain bike segment."

The M40 was developed especially for electrified mountain bikes and trekking bikes. It offers off-road e-bikers a powerful but natural riding experience with active yet controlled support that adapts to every riding situation. Thanks to its strengths, M40 is also a very well-balanced system for urban use and can therefore be used in a variety of ways.

## **Performance data of the motor**

True to the "Light. Sport. Smart." philosophy of MAHLE SmartBike Systems, this new drive system is also extremely compact. The centerpiece is the ultra-modern drive unit, which is housed in an ultra-light magnesium casing.

With a weight of just 2.5 kg, a torque of 105 Nm and a peak power of 850 W, the M40 has one of the best power-to-weight ratios on the market: 340 W/kg. In addition, the drive delivers a support ratio of up to 400 per cent.

In conjunction with an optimized aluminum shaft and a Q-factor of 179 mm, the motor offers exceptional versatility combined with top performance.

The drive system is compatible with the ETOR crank standard and therefore ensures simple integration into a wide range of cranksets available on the market. The motor is decoupled from the frame via the MAHLE Decoupling Mounting System (DMS) in order to reduce the transmission of vibrations into the frame.

## **System control and behavior**

The M40 system offers a powerful yet natural riding experience with strong controlled support that adapts seamlessly to every riding situation. It ensures smooth power delivery even at high cadence and enables rider-controlled performance, especially on technical trails and when climbing. Equipped with the most advanced sensors on the market, the M40 offers maximum responsiveness.

The integrated software uses an ultra-precise speed sensor to ensure a smooth, progressive motor response without jerky movements or abrupt power peaks. The system collects riding data and adjusts the assistance dynamically and precisely. With the ability to recognize changes in speed over a distance of less than three centimeters, the system offers greater accuracy than comparable offerings on the market.

The M40 system also includes advanced driving control functions:

Motor Dynamic Overrun: reduces the braking effect of the motor and enables a smooth overrun after pedaling. This makes it easy to overcome obstacles. In addition, thanks to a highly sensitive sensor, the system adapts independently to the riding speed and ensures a more natural riding experience that is customized to the riding requirements.

Hill Brake: prevents rolling back when stopping on steep inclines thanks to the engine's "Auto Hold" function for a controlled safe start.

## **Batteries, range and efficiency**

An outstanding feature of the M40 drive is its optimized energy consumption, particularly at high support levels. This enables the use of smaller, lighter batteries without any loss of performance and offers manufacturers more design freedom for agile and easy-to-handle bikes.

The M40 is powered by the new, powerful 48V batteries from MAHLE, which are developed and manufactured in Europe.

iM5 Battery (534 watt hours - Wh): Together with the iM5 battery, the M40 drive unit weighs close to 5 kg, making it one of the lightest combinations on the market.

iM8 Battery (800 Wh): allows a range of up to 150 km autonomy or 2,500 m altitude.

As both batteries are identical in shape and have the same connections, they can be used and exchanged as required. They are also fast-charging.

## **Individualization**

MAHLE SmartBike Systems develops eBike solutions that every bicycle manufacturer can customize and configure to suit their brand identity and application. This also applies to the M40 system.

The motor settings are defined together with the manufacturer and saved at the end of a bike's production process. This means that every brand that uses the M40 system can offer bikes with unique riding characteristics. Certain components from other manufacturers can also be integrated into the MAHLE ecosystem via the MAHLE Gateway.

## **Accessories**

MAHLE presents new accessories with the M40 system:

Head Unit+: is a compact and modern display with a 1.9" color screen and multiple mounting options. It offers clear and customizable information at a

glance. The Head Unit+ is updateable and can be expanded with future functionalities and improvements.

Trio Remote: is a wireless, compact control unit that is easy to use and provides intuitive access to the most important functions and LED status displays while the rider keeps their hands securely on the handlebars with the possibility of change the levels of assistance. A second Trio unit can be added with shortcuts to control additional functions.

Existing MAHLE accessories such as Duo remote, eShifters or the ANT+ bike computer Pulsar One can also be used for M40 with full compatibility.

## **Connectivity**

In addition, users can connect to the digital ecosystem of MAHLE SmartBike Systems via their eBike, laptop, smartphone or Apple Watch and access its numerous functionalities.

## **For further information:**

Website MAHLE M40: <https://mahle-smartbike.com/m40>

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

Note for editorial offices: This press release and the accompanying image material can be found at <https://newsroom.mahle.com/press/en/>

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The M40 system is the first mid-drive solution from MAHLE SmartBike Systems



The motor weighs just 2.5 kg without compromising its performance



Advanced sensors and firmware ensure smooth, progressive and responsive motor performance



The M40 system was developed for the most demanding conditions



The optimized energy consumption of the system enables the use of smaller batteries without compromising on performance



The M40 system is ready for riders who demand ultimate control, efficiency and excitement

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### About MAHLE SmartBike Systems

The company MAHLE SmartBike Systems is the specialist division for the design and development of drive systems for eBikes as part of the German MAHLE group, an international leader in sustainable mobility solutions for both present and future.

The more than 150-person-strong team is made up of software and hardware engineers, industrial and electronic engineers, quality specialists, 3D designers, creatives, production and materials experts, and a long list of professionals in addition to a further 80 people across the group's different centers in Spain, Germany, and Asia.

With the headquarters of this major project located in Palencia, MAHLE SmartBike Systems brings together MAHLE's R&D, Marketing, Operations and Sales activities within the eBike sector.

The ultralight and compact MAHLE systems are comprised of the motor, batteries, controllers, components, and all types of intelligent solutions for eBikes and are integrated and perfectly interconnected with each other in order to offer cyclists a completely personalized experience. Thanks to all these characteristics, more than 80 brands around the world, including those that as a result of their innovation are revolutionizing the cycling industry, incorporate MAHLE drive systems as the perfect choice in terms of integration, cost, and efficiency for electric mobility.

#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 e-mobility and thermal management as well as further technology fields to reduce carbon emissions, such as fuel cells or highly efficient, clean combustion engines that also run on synthetic fuels or hydrogen. Today, one in every two vehicles globally is equipped with MAHLE components.

MAHLE generated sales of €11.7 billion in 2024. The company has almost 68,000 employees at 135 production locations and 11 technology centers in 28 countries. (as at: 12/31/2024)

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