

# ELECTRIFYING: MAGNA TRANSMISSION INNOVATIONS

**MAGNA'S NEW MODULAR TRANSMISSION FAMILY DELIVERS A WINNING COMBINATION: SMART PRODUCTS THAT ARE AFFORDABLE, MODULAR AND SCALABLE AND SET NEW BENCHMARKS IN EFFICIENCY AND DYNAMICS, WHILE PROVIDING ADDITIONAL VALUE TO OEM CUSTOMERS AND CONSUMERS.**

These innovative products and breakthroughs, that have eluded the competition, position Magna at the forefront of electrification, one of the biggest technological developments in automotive powertrains in decades. By combining electrification with reduced mechanical complexity, these Magna transmissions save fuel, reduce CO2 emissions, and help reduce weight.

"Our strategy is not to try to guess what the future will bring, but to be ready with products that make sense, as we maintain our market-leading position in transmissions," said Tom Rucker, president of Magna Powertrain.

The powertrain advances are part of the overall drive for sustainability at Magna, which means doing the right thing for current and future generations.

## COMPLEX PORTFOLIO

Within the new transmission family are base, dual-clutch, 48-volt and high voltage hybrid dual-clutch transmissions that address a wide range of market needs. The hybrid variants use a compact electric motor within the transmission housing, providing an innovative driving feature while improving fuel efficiency.

At the heart of the portfolio is a new Magna dedicated hybrid transmission or DHT including an integrated high voltage E-Machine specifically designed and engineered for hybrid and electric vehicles. The DHT has two main variants the Eco and the Plus. The Eco is designed for smaller C segment vehicles and the Plus is more suited for heavier vehicles, such as SUVs. The gearsets of both have fewer components than that of a conventional transmission and weigh less.



More than 100 Magna engineers working in six development locations in Europe collaborated on the DHT project, which is in the prototype phase and targeted for production in 2024. The DHT transmission is shorter than a regular transmission and provides a wider range of pure electric driving. By the end of 2020, Magna will have a DHT-ready DemoCAR called e6 so the customer can experience the new innovative product.





Flexibility is key to Magna's scalable building-block approach. Depending on the direction of the market, Magna can easily shift to building different variations of its transmission products on the same assembly line.

Brand-specific characteristics, such as the way a vehicle accelerates, can be incorporated into the transmission with virtually no hardware modifications, to better match an OEM's unique DNA.

"Our OEM customers can get the right mix, and respond quickly to market changes because our modular system can be used on everything from base to premium vehicles," said Andreas Felder, engineering project lead.

## ON TREND

The new transmission series debuts at a time of dramatic change in the powertrain component market.

The global automotive industry is experiencing a fundamental shift, with the transition from mechanical systems to a predominantly electric drivetrain occurring even more quickly than some expected. By 2025, it is projected that up to a quarter of Magna's powertrain sales will come from electrified products.

Regulatory requirements are the primary driver, as automakers work to meet tightening fleet-wide emission standards in most major markets.

"We're coming up with new ideas and making complex systems work to improve efficiency," said Sebastian Idler, engineering project leader. "We're on the road to electrification by bringing power sources together in the best way possible."

**TOM RUCKER**, Magna Powertrain president

"Sustainability is one of our biggest goals within Magna and Magna Powertrain. We are fortunate to work in a group that is in the forefront of transformational change in the automotive industry."



**ANDREAS FELDER**, Magna Powertrain engineering project leader

"You are in the heart of the vehicle with this technology, with software engineers making up the biggest group of innovators. There are advantages when you're in a global company doing transmissions. You are linked to different departments all over the world, from Cologne, Germany to the U.S. to China. In the end, the most important question is how we can improve fuel efficiency."



**SEBASTIAN IDLER**, Magna Powertrain engineering project leader

"Apart from the COVID-19 crisis, I believe climate change will have the greatest impact on my life and the lives of my children. It will be an intense effort for all of us to act together. A single person will not change the world. With the power of Magna, we will have the strength to do the right thing together."

