

# Case Study | Electric Climber on Steep Terrain

Jeep relies on Webasto power

For all those who are looking for extraordinary journeys, Jeep has been offering an authentic SUV with best-in-class capabilities, quality and reliability for 80 years now. In 2020, Jeep CEO Christian Meunier set the goal of transforming the brand into “the greenest and most sustainable SUV company in the world.

## Key Facts - Jeep Magneto Project

- Full electric concept car
- 0 - 100 km/h: 6.8 seconds
- System: 800 V
- Battery: 70 kWh
- Horsepower: 285



Jeep has now introduced an emission-free vehicle that takes environmental responsibility and performance – both on and off the road – to an entirely new level. Webasto, one of the world’s largest automotive suppliers, with a tradition stretching back over 100 years, is proud to be part of this project as a reliable partner.

## 100 % Webasto power in the North American desert

Across a North American desert with e-power from Webasto: The Jeep Magneto, the latest concept vehicle from the company Stellantis, was presented at the end of March 2021 and Webasto was there. This 4x4 is powered by four Webasto battery packs with a total energy content of 70 kWh, which operates in an 800-volt system.

The custom battery system is based on the CV standard battery system that is produced at Webasto’s battery plant in Schierling, Germany. The Magneto celebrated its premiere at this year’s Easter Jeep Safari in Moab, Utah, USA from March 28 to April 3.



This electric climbing force proved itself on several of the most challenging trails. The lithium-ion batteries are spread around the Magneto in order to distribute the weight evenly to the wheels.

Special brackets secure the batteries for driving through rough terrain and water holes. Custom skid plates protect the battery packs against possible impacts while off road, whereby the Webasto standard battery system is embedded in a robust housing.

## The Vehicle Interface Box is responsible for the communication



Communication between the battery system and the vehicle is managed by the Webasto Vehicle Interface Box (VIB). The VIB also functions as the electrical connection for battery systems and enables other electrical units to be connected.

The Webasto electric high-voltage heater (HVH), which delivers up to 10 kW of power, ensures a comfortable climate in the fully open passenger compartment. The Magneto is based on the two-door 2018 Jeep Wrangler Rubicon, which uses a custom-made axial flux electric motor that can accelerate the vehicle from 0 to 100 km/h in 6.8 seconds.

The e-motor is mated to the factory six-speed manual transmission and transfer case, resulting in a manual electric power train with a clutch that operates like a combustion engine. When there are fast gear changes, the e-motor switches on recuperation when the clutch is engaged to prevent a drop in speed.

### “The joy of cooperation”

Webasto drew on its expertise from its core business for the development and production of battery systems. For example, its know-how in areas of thermal management, in-house electronics manufacturing and its experience with the installation of complex systems into vehicles are important factors for the success of this relatively young company business segment.

In addition, Webasto has also been heavily recruiting numerous experts in electromobility to join the company over the last few years.



The goal is clear: Webasto wants to become a leading system provider for electromobility and provide its customers with optimal support with this transformation.

Hartung Wilstermann, EVP Battery Systems says: “We have had a successful start on our strategic journey into the exciting world of e-mobility and have already made some very important first steps. We already helped make quite a sensation with the Ford Mustang show car at SEMA 2019, and I am certain that we will do the same with the Jeep Magneto. Together, we demonstrate the joy of cooperation and improvement.”

It's not a secret Jeep uses their concept vehicles to test the market and gain feedback from their customers and enthusiasts. According to a video released by Stellantis, Mark Allen, Head of Jeep Design, describes the purpose of the Jeep Magneto project – “The whole reason for doing this was to see what does a battery electric Jeep do in the off-road environment of Moab.

Magneto is set to be a test bed for us to answer those questions that we have curiosities about.” The Jeep Magneto could be the first step in producing a showroom worthy Jeep Wrangler. “Thank you so much Webasto for making the Magneto a reality.” – Mark Allen, Head of Jeep Design.