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E-mobility as a handicap solution:

PARAVAN GmbH offers barrier-free vehicle conversions of the Ford Tourneo Custom and the Peugeot Traveller as electric and plug-in hybrid respectively

When buying a car, the question of a sustainable engine is currently at the forefront: electric, hybrid, or good old diesel or gasoline? This question is also on the minds of PARAVAN customers, and the demand for alternative drives is increasing noticeably. "Our customers are looking very closely at this topic," Joachim Glück, Head of Technical Sales at PARAVAN GmbH reports. This is why some of these solutions will be found in product portfolio this year: among others, e-Traveller from Peugeot as a fully electric variant, initially as a self-driving solution with rear entry, or Ford Tourneo Custom as a plug-in hybrid with PARAVAN cassette lift.



What is a future-proof motorization for me? This question is on the minds of many at PARAVAN GmbH. Electric, hybrid or should I stick with the old combustion engine? Photo: PARAVAN

Practically, any car - whether electric or hybrid - can be adapted to a handicap as long as the customers can get into the vehicle by themselves. However, if he or she is dependent on a loading aid and a wheelchair, it can be difficult. This is because not every vehicle can be converted to be wheelchair accessible. For one thing, there is a lack of the necessary ground clearance to fit an access aid, or there are difficulties with charging the vehicle's battery. This is because sufficient space is needed, and the driver needs his hands to insert the plug into the charging box.

For the Ford and the Peugeot, the PARAVAN innovators have implemented flexible solutions with accessibility in mind. "This means we can offer two future-proof vehicle types that are popular with our customers," Glück says, who believes he is well equipped for the future. Both vehicle types can now be converted according to individual customer requirements, whether with hand-held devices or with the electronic driving and steering system Space Drive. The mobility specialists are also tinkering with Mercedes EQV and other e-models. "The market is picking up speed," adds mobility consultant Maurice Möritz. "The more mature the technology becomes, the more acceptance there will be among customers," he is certain.

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Ford Tourneo Custom plug-in hybrid is offered with a cassette lift, just as customers already know from the combustion engine. "This is a very attractive solution," Glück says. "The customer is independent of the range. He can cover shorter distances, in the city or the way to work, purely electrically. For long distances, he additionally resorts to the combustion engine as a so-called range extender." The floor has been straightened in the vehicle, making Ford barrier-free from the A-pillar to the C-pillar. The vehicle can be customized, whether with simple steering aids, docking station, transfer seat base or if Space Drive is needed.

Peugeot e-Traveller will also soon be the first all-electric vehicle in the product portfolio. Via a rear entry, the driver can drive the wheelchair directly up to the steering wheel or to the passenger side. A self-driving solution for transferring with transfer seat base and Space Drive is also feasible. "The challenge is the permissible total weight," Mario Kütt, head of PARAVAN's design department reports. In addition, the Peugeot Traveller offers a very broad field of application. For example, many municipalities or charitable institutions currently have to equip their range of vehicles with a proportion of electric vehicles, for example when it comes to transporting the disabled or community buses. With the Traveller, PARAVAN GmbH also provides a practical solution for this.

The work on the vehicles has become significantly more complex than on the combustion engine. "We prepared for the changed situation at an early stage and have trained high-voltage specialists in-house," plant manager Lothar Enderle says. That's why our colleagues can adapt a wide range of electric vehicles, from the VW e-Up to the Tesla, for example.

The permissible total weight is still a headache. With 3.5 tons, the technicians quickly reach their limits if the vehicles are equipped with a cassette lift and transfer seat base, among other things, or even an electric wheelchair is to be on board. A similar regulation, which is already common for commercial vehicles since 2019 (German Driver's License Ordinance (FeV) §6), could provide a remedy: According to this, holders of the driver's license B in Germany are entitled to drive vehicles with alternative propulsion, such as electricity or hydrogen with a permissible total weight of 4.25 tons, instead of 3.5 tons. If this regulation were also to apply to mobility for the disabled, for example for people who hold an ID card for severely disabled in accordance with section 3, paragraph 1, nos. 1 to 3 of the Severely Disabled ID Card Ordinance, customers for whom ecological mobility and participation are important in addition to the necessary, disabled-friendly functionalities, Paravan GmbH and other vehicle converters, would be greatly helped."

A plus, the purchase of an electric or hybrid vehicle is supported with a purchase premium in Germany. The subsidy rates for e-vehicles under 40,000 Euros are up to 9,000 Euros and 6,750 Euros for a plug-in hybrid. For vehicles over 40,000 Euros, the purchase premiums are up to 7,500 Euros and 5,625 Euros, respectively. For more information, go to <https://www.bundesregierung.de/breg-de/themen/energiewende/kaufpraemie-fuer-elektroautos-erhoeht-369482>.

It is even more important than in the past that the customer considers the question of the optimum drive system in detail in advance. For what use do I need the vehicle, long-distance, short-distance or city driving, and where can I park or recharge it. "The future viability of the vehicle should play a very important role in the decision for the most suitable type of drive," Möritz emphasizes. The development of registration figures speaks a clear language here.

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Electric or with the support of an internal combustion engine, with Ford Tourneo Custom the PARAVAN customer will have the choice in the future, Photo: Paravan



In addition to an alternative drive, Ford Tourneo Custom also offers a comfortable interior. Cassette lift takes wheelchair directly in front of the steering wheel, or as shown here with a transfer seat base. Photo: Paravan



Also, in planning and under reconstruction in the PARAVAN production hall, the Peugeot eTraveller. The popular model will soon be available in a fully electric version, as a driving or passenger solution. Photo: Paravan

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About Paravan GmbH:

Paravan GmbH is the world market leader for highly customized vehicle solutions for the disabled. Around 180 employees develop and produce, at the Aichelau and Heidelberg sites, individually adapted automobile conversions, power wheelchairs. Paravan pursues a holistic approach with its "all-in-one concept". The technological highlight is Space Drive, an intelligent digital control system based on the drive-by-wire principle. Thanks to the active redundancy of the servo motors, it is completely fail-safe and the first in the world to be approved for road use. With the help of this innovation, severely disabled people, some without arms or legs, can drive independently and safely. It is not possible for these drivers to simply intervene in the steering wheel. Worldwide, Space Drive has proven itself on over one billion road kilometers in the last 20 years and is used by numerous industrial customers for test vehicles in the field of autonomous driving. The system is available as a retrofit kit with an open interface for all known vehicle types. www.paravan.de