

Towing of electrical vehicles

FKFS

Overview of manufacturer specifications on towing or moving in the event of a breakdown.

- Tesla:** Vehicle can be moved in transport mode below 5 km/h for max. 10 m. If the transport mode cannot be activated, maneuvering systems must be used.
- BMW:** With gear in position N the vehicle (i3) can be pushed for short distances (500 m) with max. 10 km/h. In the event of electrical faults, the selection of N may be prevented.
- Mercedes:** Towing with gear in position N possible up to 50 km/h and over a distance of 50 km, except the combi-switch is out of function or shows the message "Towing prohibited".
- Opel:** Towing with gear in position N possible.
- VW:** With ignition switched on and with gear in position N max. 50 km/h and over a distance of 50 km, except error message "Towing damaged electrical system. Refer to Owners Manual!" the vehicle may be moved max. 100 m at walking speed.
- ➔ If these speeds are exceeded, an active short-circuit of the electrical engine occurs, which generates a large braking torque
- Citroen / Peugeot:** With ignition switched on and with gear in position N max. 30 km/h and over a distance of 30 km.
- Renault:** Towing with gear in position N only permitted in case of "power failure" (battery empty).
- Hyundai:** Ready for operation with gear in position N max. 15 km/h and over a distance of 1.5 km.
- Kia:** The vehicle ready for operation and with gear in position N, the vehicle can be moved. To hold the N position, the doors must remain closed for at least 3 minutes.
- Nissan:** Vehicle cannot be towed while front wheels on the ground.

In summary, the behavior of electric vehicles is similar to that of a conventional vehicle with automatic transmission. First the vehicle must be switched to ready for operation in order to engage the neutral gear. This can also be seen in the operating instructions of the Peugeot 208 (see Figure 1).

Fahrzeugtyp (Motor / Getriebe)	Abschleppbedingungen			
	Vorderräder auf dem Boden	Hinterräder auf dem Boden	Flachbett	4 Räder auf dem Boden mit Abschleppstange
Verbrennungsmotor / Schaltgetriebe	✓	✓	✓	✓
Verbrennungsmotor / Automatikgetriebe	✗	✓	✓	✗
Elektrisch	✗	✓	✓	✗

Figure 1 Abstract from Peugeot 208 owner's manual [1]

To move vehicles despite blocked wheels there are several possibilities existing:

Garage Jack:

The jacks are pushed over the wheel from the side and then pulled together by a mechanism or hydraulically, lifting the wheel off the road surface.



Figure 2 Maneuvering system Gojak [2]

Industrial trucks for the transport of passenger cars:



Stringo S2



Stringo S3



Stringo 550

Figure 3 Industrial trucks for the transport of passenger cars [3]

These are used to transport vehicles in areas where the operation of internal combustion engines is prohibited or in the case of inoperable vehicles.

Due to the limited ceiling height on the ferry, loading by means of a vehicle crane is not always possible. Alternatively, however, a compact goggle tow truck can be used to transport vehicles away. If the drive axle cannot be lifted with the goggles or if the vehicle is all-wheel drive, wheel rollers can be used to transport the vehicle.



Figure 4 Compact goggle tow truck [4]



Figure 5 Wheel scooter [2]

Sources:

[1] Peugeot, 2019.

[2] „prolux-shop.com,“ [Online].

[3] „ffb-gabelstapler.de,“ [Online].

[4] „tischler-fahrzeugbau.de,“ [Online].