

Guidelines for the parts replacement on CE marked e-bikes / EPACs / EAPCs with 250 watts and a pedal assist of up to 25 kmh (15.5 mph)

CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4
Parts that may only be replaced after the vehicle manufacturer/system provider has given approval	Parts that may be replaced after the vehicle or parts manufacturer has given approval*	Parts that do not require specific approval	Special notes for mounting accessories
<ul style="list-style-type: none"> > Motor > Sensors > Electronic control unit > Electric cables > Control unit on the handlebar > Display > Battery pack > Charger 	<ul style="list-style-type: none"> > Crank arms (Provided that both the length (centre of axle mount – centre of pedal thread) as well as the distance crank arms – frame centre (Q-factor) are observed) > Wheel without hub motor (Provided that the ETRTO is observed) > Chain/Toothed belt (Provided that the original width is observed) > Rim tape (Rim tapes and rims must be compatible. Modified combinations may result in rim tape shifting and thus in defective inner tubes) > Tyres (The stronger acceleration, the additional weight and the more dynamic cornering require the use of tyres approved for e-bike use. In this respect, observance of the ETRTO is essential) > Brake cables / Brake hoses > Brake pads (Disc, roller, drum brakes) > Handlebar-stem unit (Provided that there is no need of changing the lengths of cables and/or hoses. A modification of the seating position for the benefit of the consumer should be possible within the original cable lengths. A modification beyond results in a significantly changed load distribution on the bicycle and may potentially lead to critical steering properties) > Saddle and seat post unit (Provided that the offset to the rear does not exceed 20 mm with regard to the series / original field of use. In the case of a suspension seat post this applies when the cyclist adopts the typical riding position. In this case, as well, a modified load distribution beyond the intended adjustment range may lead to critical steering properties. The length of the saddle rails at the saddle frame as well as the saddle form are also an issue) > Headlights (Headlights are designed for a specific voltage which must be compatible with the rechargeable battery of the vehicles. In addition, the electromagnetic compatibility (EMC) must be ensured whereas the headlight may be responsible for a part of the potential disturbance) <p>* Note: Approval can only be given by the component manufacturer, if the component was tested sufficiently according to its intended use and the respective standards in advance and if a risk analysis was made.</p>	<ul style="list-style-type: none"> > Headset > Bottom bracket > Pedals (Provided that the pedal is not wider than the series/original pedal) > Front derailleur > Rear derailleur (All gear change parts must be suitable for the number of gears and compatible with one another) > Shifters / Twist grip > Cables and housings > Chainwheels / Belt sprockets / Cassette sprockets (Provided that the number of teeth and the diameter is identical to the series/original field of use) > Chainguard > Mudguards (Provided that the width is not smaller than that of the series/original parts and the clearance to the tyre is 10 mm at least) > Spokes > Inner tube of identical design and with identical valve > Dynamo > Battery/rechargeable battery-operated headlights (Only, if provided with a K-number) > Rear light (Dynamo-operated or powered by rechargeable e-bike battery) > Reflector > Spoke reflector > Kickstand > Grips with screw clamps > Bell 	<ul style="list-style-type: none"> > Bar ends are permissible, provided that they are mounted appropriately towards the front (The load distribution must not be modified severely) > Rear-view mirrors are permissible. > In Germany, additional battery/rechargeable battery-operated headlights with K-number (test certificate) are permissible according to section 67 of the German road traffic licensing regulations. (Inform yourself about the legislation in your country). > Trailers are only permissible after approval by the vehicle manufacturer. > Child seats are only permissible after approval by the vehicle manufacturer. > Front baskets are to be considered critical due to the undefined load distribution. Permissible after approval by the vehicle manufacturer only. > Pannier bags and top cases are permissible. The permissible total weight, the maximum loading of the luggage carrier and a correct load distribution have to be observed. > Permanently mounted weather protection devices are only permissible after approval by the vehicle manufacturer. > Front and rear luggage carriers are only permissible after approval by the vehicle manufacturer.
Parts that may only be replaced the vehicle manufacturer has given approval			
<ul style="list-style-type: none"> > Frame > Rear shock > Rigid and suspension fork > Wheel for hub motor > Brake system > Brake pads (rim brakes) > Luggage carrier (Luggage carriers directly affect the load distribution on the bicycle. Both negative and positive modifications potentially result in a riding behaviour that differs from that implied by the manufacturer) 			

Translation and layout: Zedler-Institut
www.zedler.de
As of: 05/2023

⚠ This is the translation of the original guidelines issued by ZIV, VSF, BIV (German umbrella organisation for the German cycle industry guilds) and velotech.de in cooperation with Zedler-Institut, updated in 2023. In the event of any misunderstandings, the original German version (Leitfaden für den Bauteiletausch bei CE-gezeichneten E-Bikes/Pedelecs mit 250 Watt und einer Tretunterstützung bis 25 km/h) shall be applicable.

Experts of the following associations/companies were involved in drawing up the present guidelines (in alphabetic order):



This work is licensed under a Creative Commons Licence. The complete licence is available at <https://creativecommons.org/licenses/by-nc-nd/4.0/> or get in touch with us by letter at: Zedler – Institut für Fahrradtechnik und -Sicherheit GmbH, Ludwigsburg. Internet: www.zedler.de