

BUDWEG

BETTER BE SAFE



ELECTRONIC PARKING BRAKES ON THE MOVE BUDWEG CALIPER A/S

Electronic parking brakes (EPB) are far from standing still at Budweg Caliper A/S, as the company is ready to serve the growing number of vehicles equipped with the new generation of smart-brakes.

Since the introduction of Electronic Parking Brakes (EPB) to the market in the early 90's, an ever-increasing number of vehicles with EPBs are being put on the roads, and as such the intelligent brake system has become a staple of both the automotive industry and in the daily general use of our vehicles, where the smart-brake has made our lives safer and more convenient.

At Budweg Caliper we are of course investing heavily into being able to provide our customers with the same level of product quality and availability for our EPB products that they have grown accustomed to from our portfolio of re-manufactured brake calipers. As most of you might know, one of the key differences between EPBs and normal parking brakes is the interaction between the vehicle's computer system and the brake system, where the brakes are engaged when certain conditions are met (such as elevations, open vehicle doors, etc.).

Newly Manufactured EPB calipers

To meet the market's demand for EPB calipers, Budweg has invested heavily into new testing facilities, additional electrical engineering resources, and is planning to mount a dedicated assembly line for manufacturing EPBs in 2021. Where Budweg previously has

specialized in re-manufacturing brake caliper cores, the new venture into EPB-systems has required the company to device new testing facilities and dedicate more time and resources into the challenges relating to the development of the EPB systems.



Neu hergestellter Budweg EPB-Bremssattel

- Part of the complexity is that since the EPBs are data-based, the integration between the electrical systems in the car and the brake systems must be flawless, so we are sure that we can deliver OE equivalent quality on all of our EPB caliper models, which requires extensive testing and evaluation, as Mr. Lars-Henrik Nielsen, Chief Electrical Engineer EPB, explains.

Production according to the Budweg standard of quality

But the new focus on the EPBs has also been an opportunity for the company to apply their high standards for manufacturing and product

quality, allowing the company to design the manufacturing process around those values. One instance where this applies is in the lubrication of gaskets and O-rings, where a lack of detail to the lubrication of the rubber parts can lead to fatigue or wear of the metal components, which naturally expands during fatigue, potentially leading to a cracked caliper house that will be vulnerable to water and particles. This is of course easily prevented by proper assembly and lubrication, and this is where Budweg's standards of quality come into play, as extra time and care is taken to ensure that under-lubrication is a very uncommon problem with Budweg calipers.

Extensive testing and a claims-rate below 0.3%

As brakes are a vital part of the vehicle, it is of the utmost importance for Budweg to prevent any unnecessary faults or accidents relating to the brake calipers. By following our general values of no compromises and the highest level of product quality, Budweg has managed also to keep the claims-rate below 0.3% for the entirety of the EPB products range.

To accommodate this level of product quality, Budweg subjects each and every type of EPB caliper to an extensive set of tests particular to the individual make and model of the caliper, which, at the time of writing, includes more than 50 different EPB motors and 75 pairs of calipers, totaling more than 150 EPB caliper sets for sale in the catalogue.

BUDWEG

BETTER BE SAFE



Fatigue testing of EPB-calipers

The testing regiment includes ISO-compliant (ISO 61508 and ISO 26262) testing for fatigue and salt-spray corrosion for each type of caliper, and prior to every single caliper leaving the production line, it is further quality controlled in an end-of-line test with the purpose of ensuring that the customer receives a product that is fully functional upon delivery and has the durability to withstand at least 5 years of use - as is covered by Budweg's warranty.

Fatigue and salt-spray corrosion testing

The testing of the calipers is performed at Budweg's own facilities, where standard-compliant test facilities have been set up to accommodate the testing of the ever-expanding number of caliper-models.

During the monitored fatigue-testing of the brake calipers, the EPB caliper types are subjected to 100,000 test cycles, where one cycle consists of a single activation and release of the brake. If one should translate those

100,000 cycles into the actual use of a vehicle, it would correspond to about 15 years of daily use of a car that performs 20 activations of the EPB each day.

Corrosion caused by salt spray from road salts and wet environments is one of the greatest liabilities to brake caliper durability. Part of what makes Budweg Calipers such an enduring product is the surface treatment, and to ensure that the surface treatment is adequate, every new type of EPB caliper is thoroughly tested in a salt-spray chamber to verify the caliper's resistance to corrosion according to the ISO 9227 standard.

Support

Providing our customers a flawless product is of course a worthwhile endeavor in and by itself, but due to the electro-mechanical complexity of the EPB calipers, we feel obliged to go two steps further and provide online video-guides, troubleshooting, and support concerning the most common issues that mechanics encounter during ordinary maintenance and when changing calipers. Not because Budweg EPB calipers are any more complex than any other make or model, but just to be a 100% certain that even the slightest of doubts concerning correct installation or maintenance can be addressed swiftly with easy-to-understand online support.



EPB-caliper being tested for anti-corrosive properties in a salt spray test.

BUDWEG

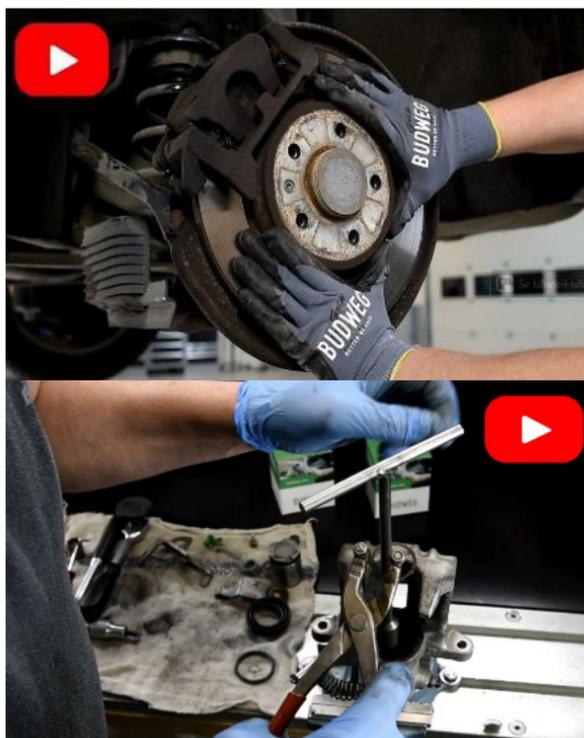
BETTER BE SAFE



- With our product, the mechanic is never alone. He can always call our specialist for technical support. Actually, we are the only supplier of calipers in the aftermarket, who offers that kind of service, Mr. Bertel Ravn, CTO at Budweg, states.

Besides contacting Budweg, online video tutorials concerning the below points are already available (and more will be available in the future):

- How to release an EPB with a test unit
- How to release the EPB manually when the vehicle is not powered
- How to exchange pistons, gaskets and lubricating EPBs with silicone-based lubricants



Trouble-shooting videos for Budweg EPB-calipers on Youtube

Want to know more?

Should you have any questions concerning Budweg's EPB products or spare parts that have not been answered here, then you are more than welcome to reach out to Budweg Caliper (contact information below). Likewise, we recommend you to visit our homepage for more information, and/or follow us on social media for the newest updates:

www.budweg.com

LinkedIn: [Budweg Caliper A/S](#)

Facebook: [Budweg Caliper AS - English](#)

YouTube: [Budweg Caliper A/S](#)



Follow Budweg on social media



[LinkedIn](#)



[Facebook](#)



[Youtube](#)