**Laser cutting of plastic foils and electronic components**

Contact-free and extremely precise

We come across films and electronic components everywhere in our everyday lives. They have become an integral part of our lives and are now taken for granted. In some cases, it is no longer even recognisable to the laymen that some product components were originally foils. One more reason to take a closer look at the subject of foils and electronics and their processing using modern CO2 laser technology.

**Membrane-based operating elements and keypads**

Membrane keypads usually consist of several individual layers. These are placed on top of each other to form the overall structure of the control element. The top layer is known as the decorative foil and is often made of polycarbonate or polyester. Printing is done on the back of the foil to ensure the best possible protection against abrasion. Screen printing is typically used here, but due to the high level of flexibility, there has also been a strong increase in digital printing in this industry segment. The switching foils are located directly under the decorative foil. To accommodate the switching domes, the front and switching foil are separated by a spacer foil. They are usually also made of polyester, but can also be made of polyamide. The conductive tracks and switching points or contact surfaces are located on the switching foil.

Laser cutting scores highly in terms of accuracy. But another special advantage is much more interesting - cutting without any material contact. Processing with the laser beam is contact-free. Foil residue and adhesive cannot stick to the tool, the material does not need to be fixed and there is no crushing or fanning out of multi-layer foils. The thermal process can cause the cut edge to fuse, which in turn creates a kind of seal - automatic protection against contamination without any additional effort. Reasons why laser technology is used for cutting foil-based control elements, especially when it comes to flexibility in production.