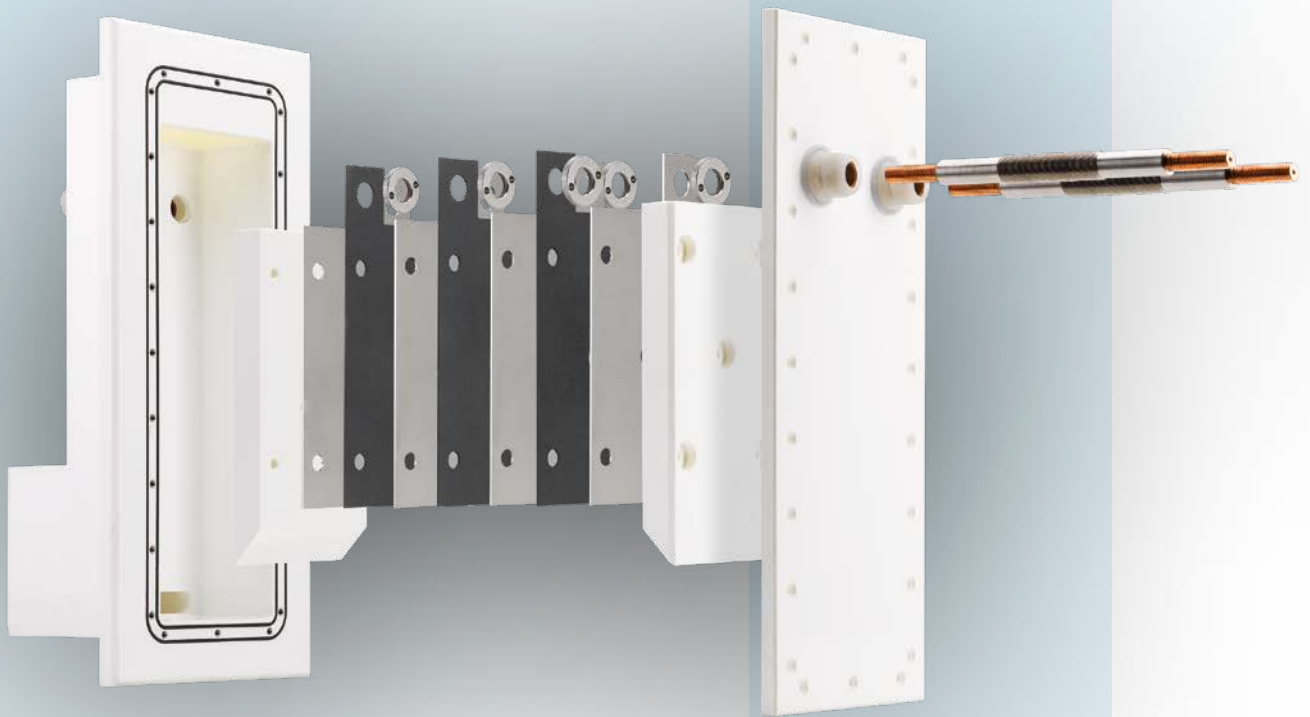
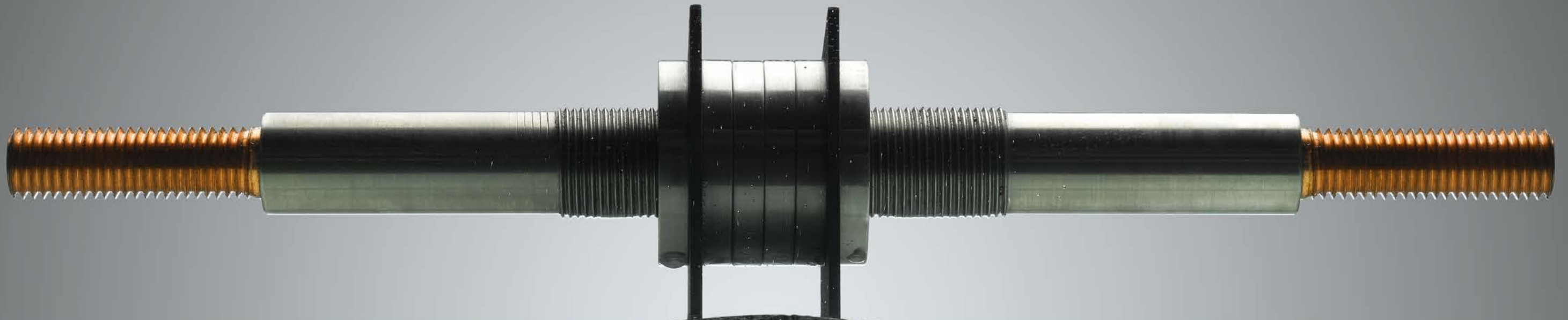


Boron doped
**Diamond
Electrodes**
for water treatment and
synthesis



We make
crystalline
diamond

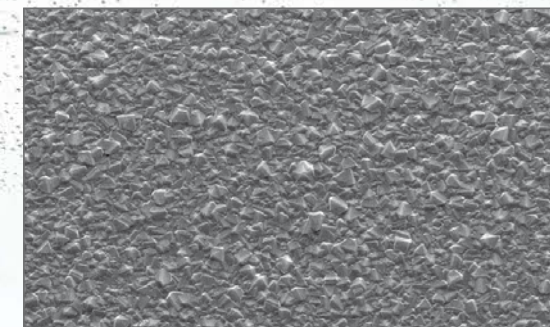


A touch of diamond ...

A few micrometers thick layer of innumerable small diamond crystals cover the surface of the diamond electrodes and thus make them an outstanding material for electrochemistry.

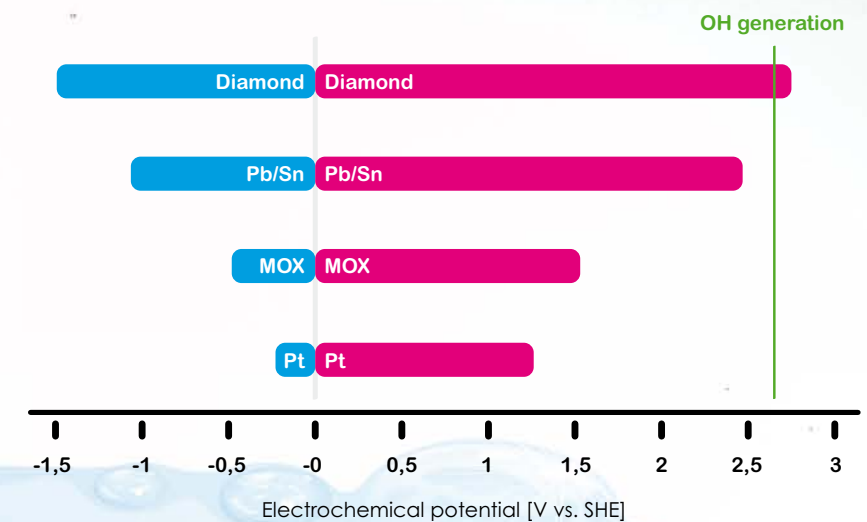
They have the largest known electrochemical potential window of all electrode materials. This leads to a high current efficiency and makes many electrochemical reactions at all possible. Only diamond electrodes with almost 100% current efficiency manage to generate OH radicals directly from the water. Through this, a very effective and clean electrochemical water treatment (disinfection or COD reduction) without additional chemical is possible (Advanced Oxidation Process).

Due to their large potential window, diamond electrodes are also interesting for the electrochemical synthesis. In many cases, new or significantly improved methods are possible for the production of substances.

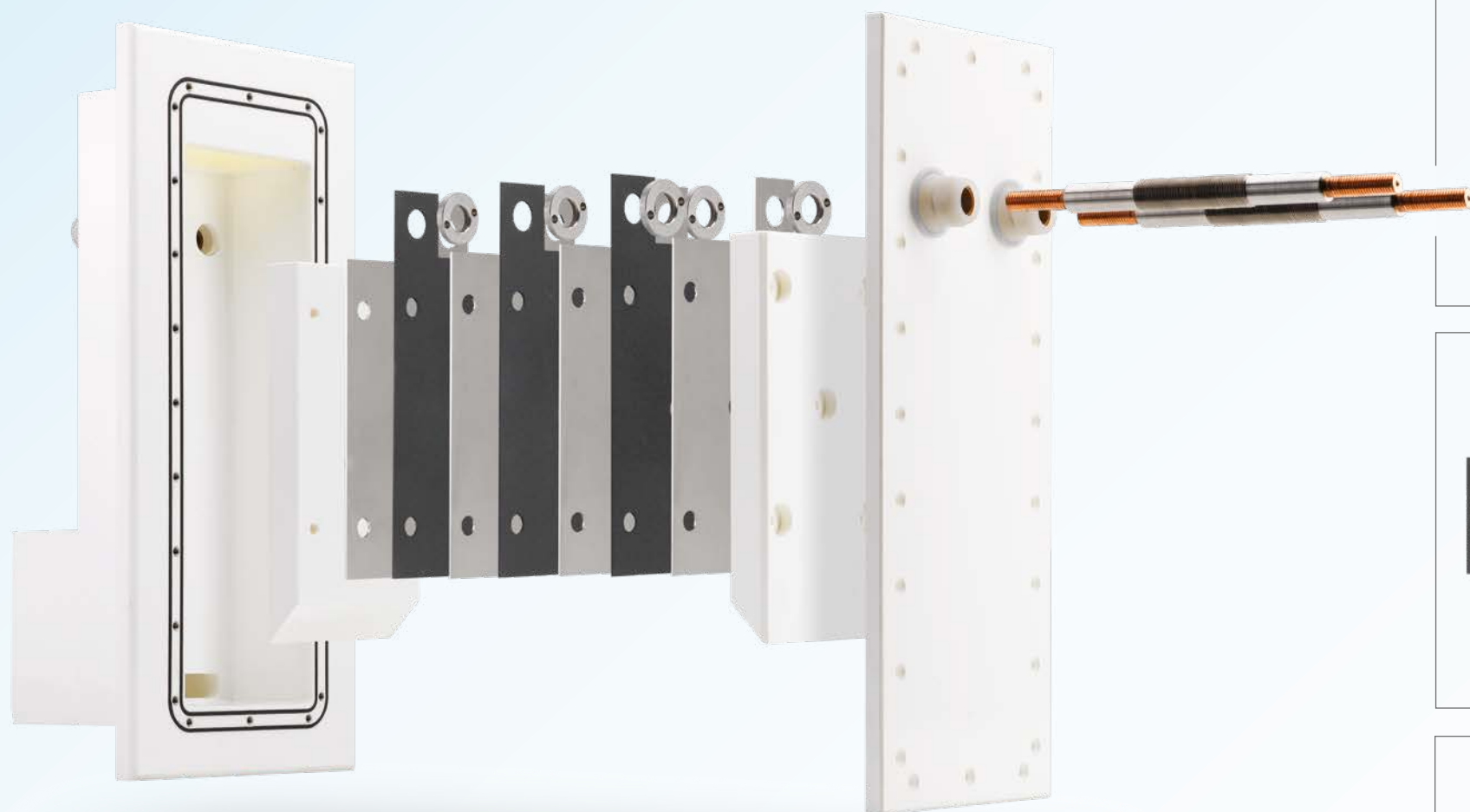


SEM image of a diamond layer

Electrode materials in comparison



Source: Tröster, 2002

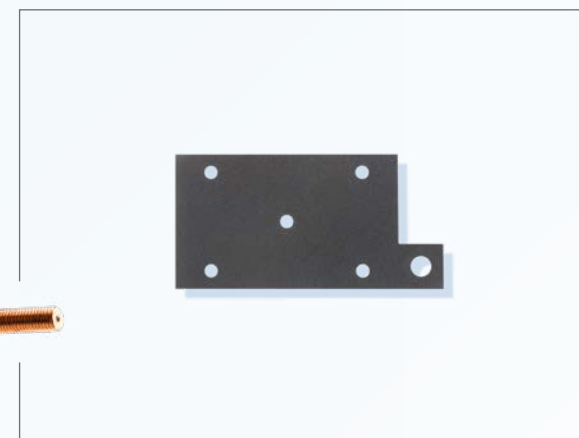


Electrodes

Our diamond electrodes are available in several standard geometries. This involves plate geometries that are excellently suitable in the electrolyzers we offer. In addition, diamond electrodes made of expanded metal or 3D geometry (e.g. rods) can be produced. Processes such as water jet cutting or laser welding allow individual electrode geometries.

Electrolysers

For our standard electrode types „Bärbel“ and „Barbara“, we offer complete electrolyzers. These are compact and easy-to-use systems, which, as ready-made components, can be easily integrated in your systems. In addition to the variants with stainless steel cathodes, also reversible-polarity designs are available. The modular design allows anode surfaces of 0.075 up to 0.90 sqm per electrolyser.

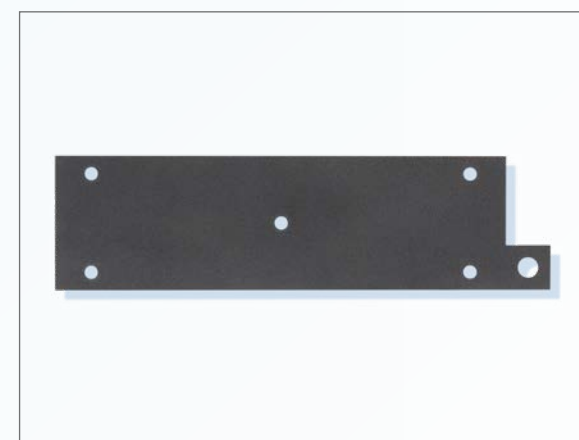


Standard electrode Type Bärbel

Dimensions
(without connection tab):
250 mm x 150 mm

Active electrode surface:
750 cm²

Coating thickness:
≥ 12 µm

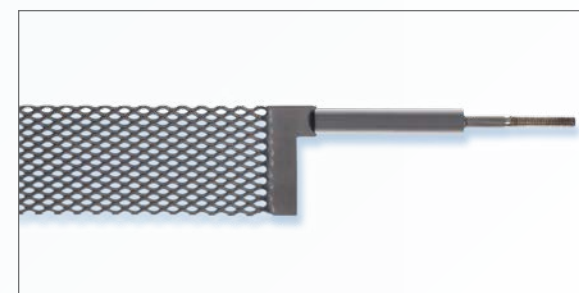


Standard electrode Type Barbara

Dimensions
(without connection tab):
500 mm x 150 mm

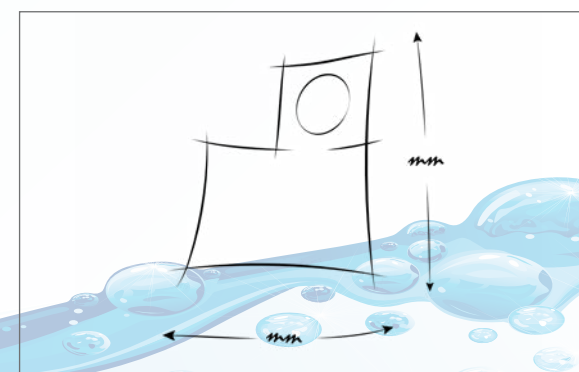
Active electrode surface:
1500 cm²

Coating thickness:
≥ 12 µm



Mesh electrodes

Mesh electrodes of various types with or without welded connection elements



Custom-made electrodes

Custom-made electrodes of various geometries. Economic production by water jet cutting.

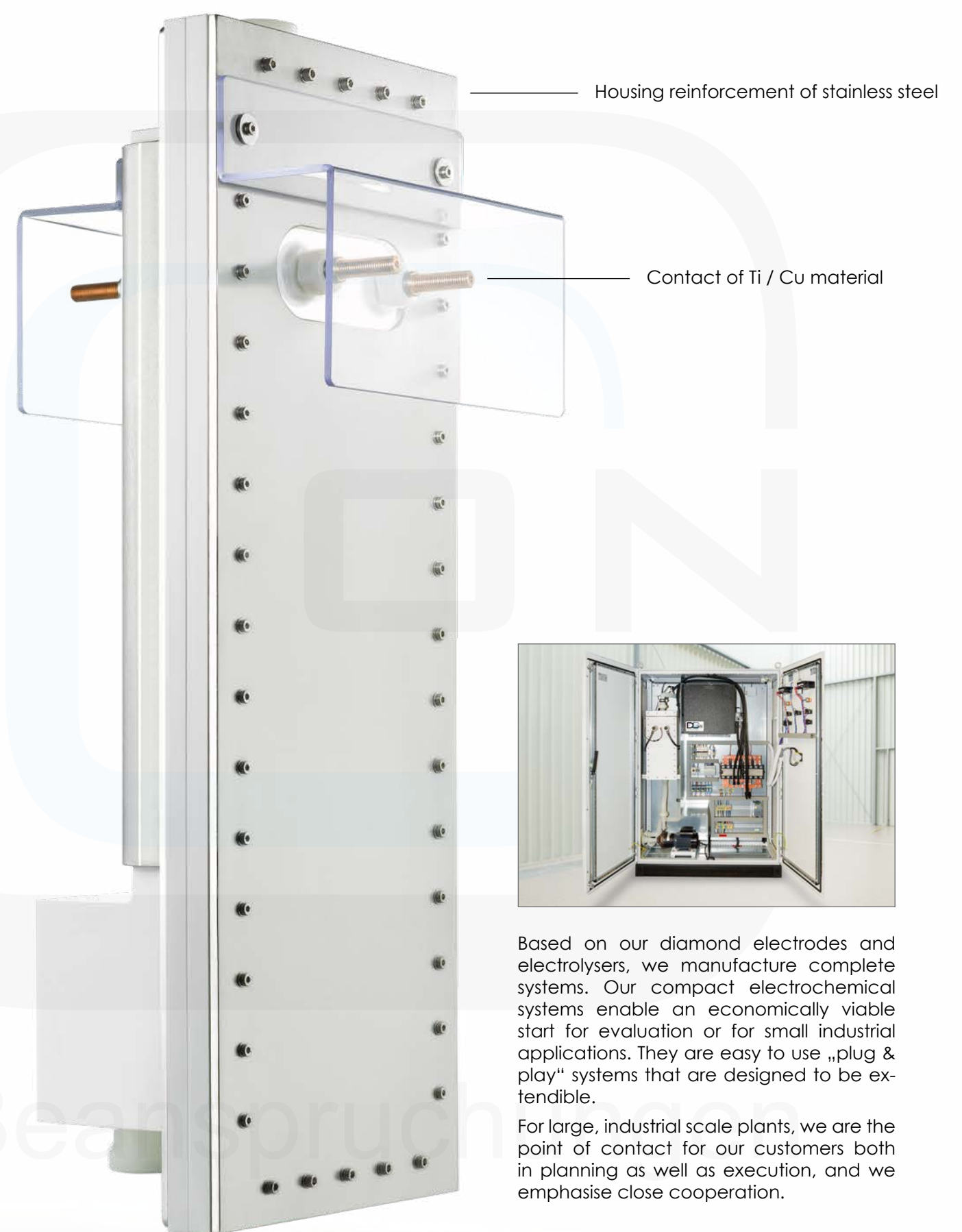


Welded electrodes

Exceptional large electrodes or complex geometries are produced by welding.



655 mm



Housing reinforcement of stainless steel

Contact of Ti / Cu material



Based on our diamond electrodes and electrolyzers, we manufacture complete systems. Our compact electrochemical systems enable an economically viable start for evaluation or for small industrial applications. They are easy to use „plug & play“ systems that are designed to be extendible.

For large, industrial scale plants, we are the point of contact for our customers both in planning as well as execution, and we emphasise close cooperation.

DiaCCon

"our tool is the hot filament"



DiaCCon is a worldwide leading company in the field of CVD diamond coating. We specialise in high quality diamond coating of mechanical seals / bearings, and the production of long-term stable diamond electrodes.



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We make
crystalline
diamond