



COMBINED COMPETENCE UNDER ONE ROOF

Cathode Spacing Device

A special part of the METTOP-BRX Technology





METTOP-BRX Technology

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Innovative technology to us means considering new directions and adopting unconventional approaches to maximize productivity and quality.

Together with Montanwerke Brixlegg AG, Mettop has developed a Parallel Flow Device (PFD) that introduces the fresh electrolyte directly between each pair of electrodes. The device directs the fresh electrolyte in an upward flow upon the surface of the cathode, thus enhancing the already existing flow from natural convection.

Therefore, the settlement of the anode slime is not influenced by using the METTOP-BRX Technology. The PFDs are customer-tailored to guarantee optimum results for each individual tankhouse.

In order to increase the productivity of a copper tankhouse, the current efficiency and/or current density have to be increased by **up to 400 A/m²**. Possible applications are electro-winning and electro-refining, either with starter sheets or stainless steel cathodes.

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Challenge

- ▶ Insufficient productivity of brown field electrolysis projects
- ▶ Demand for continuously increasing productivity
- ▶ Tankhouse as a bottleneck
- ▶ High bound capital due to long lead times
- ▶ Decreasing anode quality

Solution

- ▶ Parallel flow of fresh electrolyte
- ▶ Precise cathode alignment
- ▶ Enhanced flow of electrolyte
- ▶ Increased current density
- ▶ Optimized inhibitor distribution

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Benefit

- ▶ Improved cathode quality
- ▶ Maximized current efficiency and productivity
- ▶ Lower tankhouse footprint (~ 20 %)
- ▶ Less cells (~25 %)
- ▶ Less cathode plates (~25 %)
- ▶ Less electrolyte and edge strips
- ▶ Reduced both CAPEX and OPEX



Cathode Spacing Device

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An effective way to increase the productivity of an existing tankhouse by **up to 3 %** is the use of only one specific part of the METTOP-BRX Technology, the cathode spacing devices.

The customized engineered spacing system based on tested long-lasting materials and optimized geometries is delivered as a complete package and installed by Mettop.



Cathode Spacing Device

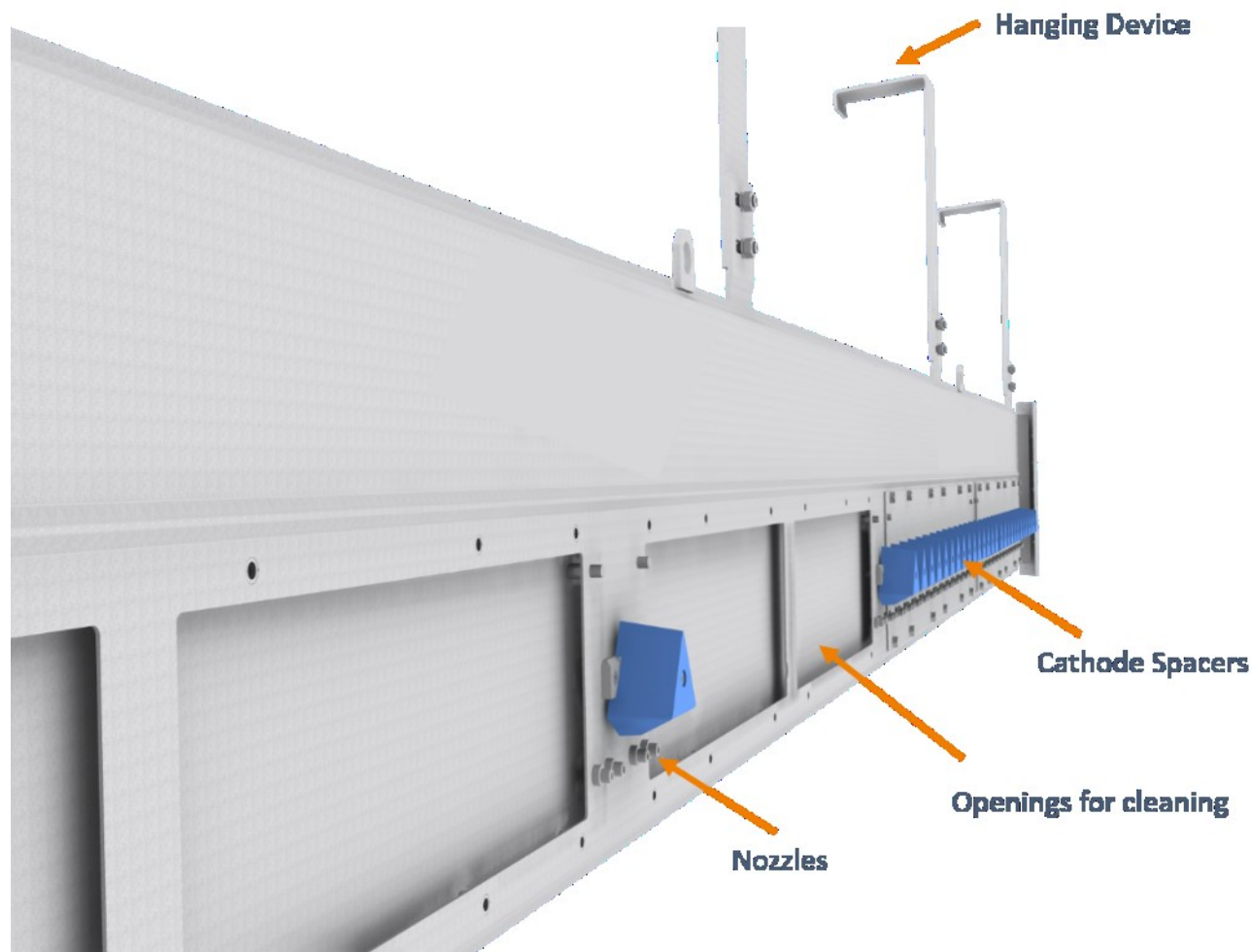
Challenge

- ▶ Ensure homogeneous current flow
- ▶ Ensure homogeneous accretion
- ▶ Improve running electrolysis during operation
- ▶ No downtime for installation

Solution

- ▶ Plug and play solution for existing electrolysis
- ▶ Sophisticated geometry as a result of theoretical calculations and empirical experiments
- ▶ Rely on material science quality standards made at Montanuniversität Leoben
- ▶ Precisely defined space in between each cathode and anode

Cathode Spacing Device



How you can benefit from upgrading your tankhouse

- ▶ Precisely defined space in between each cathode and anode
- ▶ Less shortcuts caused by non-uniform electrode distances
- ▶ Increased current efficiency
- ▶ Easy installation, can be done during planned maintenance, one cell after another



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