

Product Information



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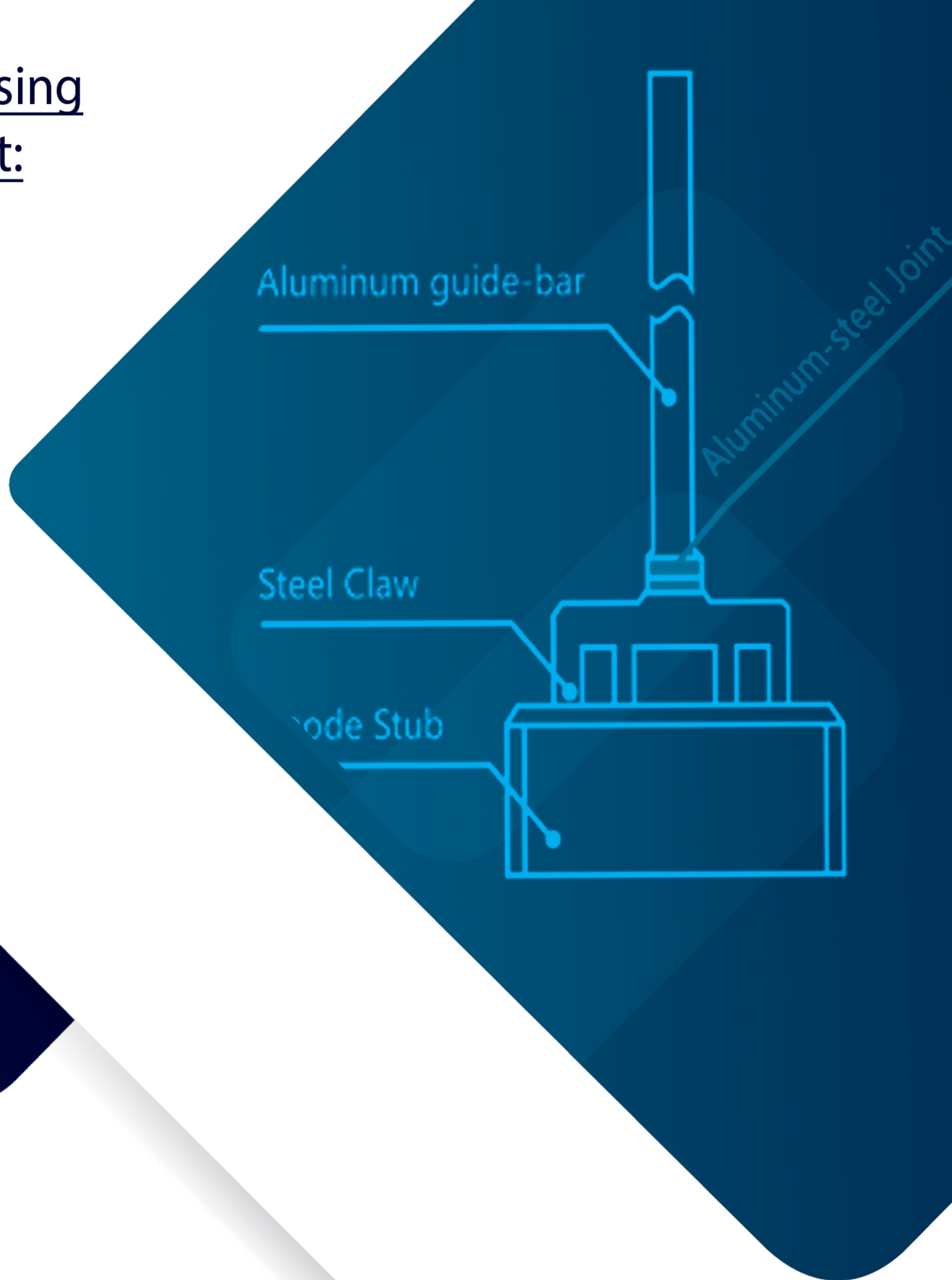
Bimetalllic Electrolyzing Anode Transition Joint (Insert)

In aluminum smelting plants, the main objective is to extract pure aluminum from alumina by passing an electric current through a molten electrolyte. This process typically takes place in large electrolytic cells known as "pots" within a molten alumina reduction bath.

In the related equipment, to establish connections between the aluminum guide-bar and the steel claw, the use of bi-metal components as electrical transition joints (Insert) is essential.

Advantages and Reasons for Using Bi-metal Anode Transition Joint:

- ❖ Reduction of Thermal Expansion Differences effects due to the high shear strength at the joint interface, ensuring serviceability at high temperatures.
- ❖ Reduces galvanic corrosion caused by differences in the electrochemical properties of aluminum and steel, achieved through the use of explosive welding, which eliminates the air gap between the metals and ensures a fully integrated joint design.



Product Specification:

Factor	Al/CS	Al/Ti/CS	Al/Ti/SS
Cost	Low	Higher	Highest
Temperature Service	Up to 350	Up to 500	Up to 500
Corrosion Resistance	Low	High	Very High
Thermal Expansion	Moderate mismatch	Better compatibility with aluminium	Best compatibility with aluminium
Strength & Durability	Moderate approximately 100 Mpa	High approximately 140 Mpa	High approximately 140 Mpa
Fabricating Flexibility	Moderate	More complex due to titanium	Most complex due to titanium and stainless steel
Electrical Resistance	Moderate high for carbon steel	Moderate improved with titanium	High stainless steel has high resistance
Application Environment	Moderate heat and low corrosion	High heat and high corrosion	High heat and high corrosion
Best Suited For	Cost-sensitive applications	High-stress, high-corrosion environments	High-stress, highly corrosive environments

Available Bi-metal Anode Transition Joint:

- ❖ Aluminum + Titanium + Carbon Steel (Al/Ti/CS)
- ❖ Aluminum + Titanium + Stainless Steel (Al/Ti/SS)
- ❖ Aluminum + Carbon Steel (Al/CS)