

## Aluminum Anodizing With Steam

Speaking of the use of Steam, Clayton Steam Generators have various applications in industry, one of the most useful elements in the industry and one of the most indispensable; In general, it is one of those indispensable tools for the correct development of production activities for aluminum anodizing, since the vats have to have different temperatures for each part of the anodizing process.

What is Anodizing?

It is a post-processing operation used for finishing. It is a conversion coating method that converts the surface of aluminum, and other compatible metals, into their oxides. This electrochemical process increases the thickness of the oxide layer that naturally occurs on the surface of metal parts.

Unlike paint, which adds a surface layer to the material, the anodizing process fully integrates the oxide layer with the underlying material, thus preventing it from peeling off. This layer is a very neat and rather porous structure that allows for other downstream processes such as coloring and sealing. The ideal material for anodizing is aluminum. However, other metals, such as magnesium and titanium, can also be anodized. It is a simple yet effective process that improves the durability, wear resistance, hardness, and corrosion resistance of a part. It also improves aesthetics by creating a glossy surface finish, with a choice of color, on the pieces.



Anodizing Process: How Does It Work?

Anodizing is done by the electrochemical process of electrolytic cell. The aluminum to be anodized is thoroughly cleaned to remove impurities and is immersed in an acid electrolyte bath for this process, the vat where this cleaning is carried out has to be at a temperature of 70 °C to ensure that any process residue is completely

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eliminated, for this the use of steam and its good distribution is a fundamental factor since without the use of this it will not be used. I could start with the anodizing process. The cathode is mounted inside the tank anodizing. The immersed aluminum becomes the aluminum anode.

As direct electric current passes between the anode and cathode, oxygen ions released from the electrolyte bath migrate into the aluminum and combine with the aluminum atoms to form aluminum oxide. As a result, an anodic oxide barrier layer forms on the surface of the part. This process modifies the microscopic texture of the metal surface and the crystalline structure of the base metal near the surface. Titanium grids and lead cathodes are the most widespread for anodizing aluminum.



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