



河南中源钛业有限公司

Henan Central Source Titanium Co., Ltd.

团结 · 高效 · 务实 · 发展

Unity Efficiency Pragmatism Development

Equipment Introduction

100MN Electrode Hydraulic

PressIt is used for the production of titanium and titanium alloy electrode blocks. Starting from the material receiving stage of the mixer, the feeding device delivers sponge titanium raw material into the press mold cavity, where the sponge titanium and other alloy materials are pressed into shape within a mold cavity of a specific form.

The material is pressed into electrode blocks of certain dimensions and density. After demolding, feeding, pushing, matching, and stacking, a specific number of paired electrode blocks are assembled into equivalently sized cylindrical electrodes of a certain length for storage.

During the process of conveying and arranging the electrode blocks, operation remains stable, arrangement is orderly, with no vertical or horizontal misalignment, ensuring that the electrodes can be properly fitted into welding box racks.



Equipment Introduction



Vacuum consumable electrode remelting furnace (VAR furnace)

20-ton furnace 6-ton furnace

The annual production capacity of the smelting system will reach 20,000 tons of titanium and titanium alloy ingots and forging billets. The product is used in subsequent processes such as forging and rolling.

The heat energy of direct current arcs is utilized to remelt metal consumable electrodes under low voltage or in an inert gas environment, and they are formed into ingots in water-cooled copper crystallizers to enhance their quality.

The vacuum system is an important component of the vacuum electric arc furnace, as it determines the ultimate vacuum degree of the furnace.

Alloy ingots are generally smelted three times (First melting from $\phi 620$ to $\phi 720$, second melting from $\phi 720$ to $\phi 790$, and third melting from $\phi 790$ to $\phi 860$)

Equipment Introduction



New type electron beam cooling bed furnace (EB furnace)

Electron beam cold bed furnace smelting is carried out under high vacuum. A high-voltage electric field is used to accelerate and bombard the high-melting-point metal to be melted by the thermal electron beam emitted from the cathode, converting the kinetic energy of the high-speed moving electrons into thermal energy to melt the metal.

This new type of EB furnace is the first in the world to adopt the whole melting of sponge titanium blocks, which is a world first. It minimizes the pollution of nitrogen, hydrogen, oxygen and iron in multiple processes such as slicing, crushing, mixing, packaging, pressing electrodes and welding electrodes of sponge titanium, and reduces the process flow and optimizes the technological process. The special structural design saves 30% of electricity compared with traditional EB furnaces. The new process of preheating and stratified heat transfer smelting is adopted, and the homogenization of elements is more thorough than that of the original process.

Equipment Introduction



50MN rapid forging hydraulic unit

The 50MN rapid forging hydraulic unit is the core equipment of the forging production line. It adopts a three-beam double-column inclined upward pressure structure, with direct pump drive, Siemens control system, and is equipped with workpiece temperature measurement system, convenient operation system, intelligent equipment maintenance system, data forging system, remote debugging and maintenance system, high-definition image monitoring system, etc. The frequency of the unit can reach 90 times per minute, and the control accuracy of the product can reach $\pm 1\text{mm}$.

The entire unit features advanced technology, intelligent operation, rich information means, strong process adaptability, energy conservation and environmental protection, and high reliability. Each product is meticulously crafted, endowing it with extraordinary quality. The products can meet the demands of key components in various fields such as medical care, aerospace, weaponry, ships, nuclear industry, chemical engineering, 3C electronics, and daily necessities, both in regular and large-scale, high-load, and harsh working conditions.

Equipment Introduction



20MN forging machine

It adopts a double-column pull-down structure. The principle of the hydraulic system and control system is the same as that of 50MN. It features high speed, high frequency (up to 110 times), and good coordination with the manipulator.

It can meet the annual demand for 1,500 tons of small-sized titanium and titanium alloy bars (diameters ranging from 100 to 350mm) and forgings.



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