

Vacuum blackening furnace for zirconia ceramics



Zirconia Ceramic Vacuum Blackening Furnace Introduction

Vacuum blackening furnace for zirconia ceramics is a high-temperature sintering equipment for vacuum blackening of zirconia ceramics. Place the firing plate with the product in the blackening furnace and heat it up to a certain temperature in a vacuum state.

Due to the lack of oxygen, zirconia produces a part of oxygen-depleted zirconia ZrO_{2-x} , which turns black after cooling, and is called "black zirconia".

Zirconia Ceramic Vacuum Blackening Furnace Application Fields

This product is mainly used for high temperature vacuum sintering of black zirconia ceramics. Because ZrO_2 partly loses oxygen in this treatment to form non-measured ZrO_{2-x} phase, Y-TZP is gray-black.

The mechanism composition of zirconia ceramic vacuum blackening furnace

The equipment consists of furnace body, vacuum system, circulating cooling system, step-down transformer, power cabinet and controlling system.

Features of Zirconia Ceramic Vacuum Blackening Furnace

1. It adopts horizontal front and rear quick-opening furnace door structure design, which is finely manufactured and beautiful in appearance.
2. The furnace shell adopts a double-layer water-cooled structure design. The inner layer of the furnace shell is made of high-quality stainless steel plate, and the outer layer material and flange are made of Q235A. The metal structural parts in the furnace and the peripheral water pipes are all made of stainless steel.
3. The vacuum obtaining system adopts 2H-70A foreline vacuum pump + ZJY-300A Roots vacuum pump group.
4. The vacuum system is equipped with throttling and slow pumping device and dust filter device (with filter element), which can reduce or avoid the phenomenon of "dusting".
5. The heating element in the furnace adopts the upper and lower distribution form. Three molybdenum sleeve WRe thermocouples are used to control the heating in three groups. With graphite muffles for improved temperature uniformity in the product loading area. Insulated doors and graphite muffle doors can be opened simultaneously for rapid cooling.
6. Open the insulation door and graphite muffle door convection cooling method, argon as the cooling medium.
7. The equipment adopts temperature control instrument to automatically control the temperature.

Main Technical Data

Property	Specification
Maximum Temperature	1600°C
Continuous Working Temperature	1550°C
Temperature Uniformity	± 7°C
Loading Capacity	300KG
Limited Vacuum	1Pa
Pressure Rising Rate	≤ 5 Pa/h (12 hour average)
Usable Space	W400 * H380 * L800mm (can be customized)
Volume	170L
Voltage	3 • 380V/N/PE, 50Hz (can be customized)
Power	150 kVA

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