IDM

Carefully crafted to serve the world

LuoYang IDM Metallurgy Trading Co., Ltd.

IDM METALLURGY

LuoYang IDM is committed to the development of industries such as smelting and casting equipment in China, and has its own unique advantages in this field. For many years, the company has always prioritized technological research and development, and has carried out a series of upgrades and improvements to its products, enhancingtheir competitiveness. Currently, we have maintained friendly cooperative relationships with many countries in Central Asia, the Commonwealth of Independent States, South America, and more.

Heat treatment furnace

Melting furnace

Rolling mill

Foundry equipment

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Tempering Furnace

Tempering Furnace is a heat treatment equipment used to improve the hardness and mechanical properties of materials. Mainly used in metal processing, forging, casting and other fields, it softens the metal and makes it easier to process by heating the metal to a certain temperature, maintaining it for a certain time, and finally cooling it quickly.

Rated temperature	Rated Power	Max. Loading
650℃	25 ~ 1600Kw	500 ~ 60000Kg

What is Tempering Furnace

Tempering Furnace is a standard energy-saving industrial electric furnace used for tempering heat treatment. It is used for tempering general metal parts in the air and for quenching, annealing and aging heat treatment of light alloy parts such as aluminum alloy die-casting parts, pistons, and aluminum plates... By heating the steel to a certain temperature, then keeping it warm for a certain period of time and finally cooling it to room temperature, the Internal structure of the steel is changed, thereby improving the performance of the steel. The shell is welded by steel plates and structural steel, and

the trolley is welded by structural steel and steel plates too, the trolley uses soft contact with the furnace lining and a sand sealing mechanism to reduce heat radiation and convection losses, effectively ensuring the sealing of the furnace body.

Introduction to Tempering Furnace

Tempering Furnace can perform low-temperature tempering heat treatment of 150°C-250°C, medium temperature tempering heat treatment of 350°C-500°C, and high-temperature tempering heat treatment of 500°C-700°C. It mainly provides tempering heat treatment for alloy steel products and various metal parts, as well as heat treatment of solid melting, annealing, aging for light alloys, such as aluminum alloys, copper materials.

Tempering Furnaces can heat treat metals before surface coating, making its surface more absorbable to the coating material. The tempering furnace uses a steady heating and cooling method to ensure that the coating evenly covers the entire surface. Stress occurs in metals during machining processes or after welding. Tempering Furnace can remove these stresses and prevent problems such as breaking or stretching during metal use.

Tempering furnaces can help control and adjust the metal quenching speed and temperature. By adjusting the heating time and temperature, the metal material can be brought to the ideal quenching state to obtain the required hardness and strength. The tempering furnace mainly changes the structure of the metal by heating the metal to a certain temperature, then maintaining it for a certain period of time, and finally softening the metal through rapid cooling.

A tempering furnace usually consists of a furnace body, burners, heaters, temperature monitoring and control equipment, etc. The furnace body is usually made of high-temperature refractory materials while burners and heaters are used to provide heating energy.

Tempering furnaces are divided into Continuous Hot Air Tempering Furnaces, Vacuum Tempering Furnaces, All-fiber Trolley-type Tempering Furnaces, and All-fiber Pit-type Tempering Furnaces.

High Quality

The shell of the tempering furnace is welded by national standard steel plates and structural steel. The furnace lining is made of lightweight high-aluminum energy saving insulation bricks, combined with aluminum silicate fiber wool composite furnace lining insulation The electric heating elements are designed for long life and are arranged on both sides of the furnace and at the bottom of the furnace. The furnace door is lifted and lowered electrically or hydraulically, and there is a circuit breaker protection device that stops power supply for heating when it is opened.

Good Performance

The computer temperature control system can control the tempering process with high precision and auto matically complete the tempering heat treatment from entering the furnace to coming out of the furnace. The heating elements are made of high-temperature resistance alloy wires wound into ribbon and spiral shapes, which are hung on the furnace side and place on the wire bricks of the trolley, and are fixed with high-alumina porcelain nails and wire bricks to prevent them from falling out.

Product Features

It adopts full fiber furnace lining, which has fast temperature rise, low power consumption, high heat utilization rate and good energy saving effect. The stainless steel mesh belt runs smoothly and has stepless speed regulation. Continuous automatic operation can greatly improve labor productivity and reduce labor intensity. The complete automatic control system can set any temperature according to process requirements within the furnace temperature of 500°C, with a temperature control accuracy of ±3°C.

Customized Design

Customized design according to the actual needs of customers.

Working Principle

Place the quenched metal material into the tempering furnace. Then, the air or gas in the furnace chamber is heated by heating elements in the furnace. The heating element generates high temperatures that increase the temperature of the airflow or gases in the furnace.

The metal material is then heated to the temperature required for tempering. The tempering temperature of different materials may be different and should be adjusted according to specific requirements After the material is heated, it needs to be held for a period of time, usually measured in hours. During this period, the structure of the material will change, the grains will grow, and the internal stress will be released.

Turn off the heating element, gradually reduce the temperature in the furnace, and cool the temperature of the metal material to room temperature. This cooling process can be achieved by ventilating the air flow in the furnace or using a cooling medium.

The tempering furnace uses heating and heat preservation to heat metal materials to adjust their properties. By controlling parameters such as heating temperature, holding time, and cooling rate the hardness, toughness, and grain size of metal materials can be controlled.

Furnace Type	Furnace Chamber Size	Rated Voltage	Rated Power	Rated Temp.	Heat Up time
	mm	V	KW	℃	H
RJ2-75-6	950x1200	380	75	650	⩽1.5
RJ2-105-6	1200x1400	380	80	650	⩽1.5
RJ2-135-6	1300x1500	380	135	650	⩽1.5
RJ2-150-6	1400x1800	380	150	650	⩽1.5
RJ2-180-6	1500x1800	380	180	650	⩽1.5

Heat treatment furnace factory

Factory Introduction

In order to continuously improve the quality of thermal treatment furnace, we have carried out unremitting research in the four aspects of safety, stability, efficiency, and energy saving for many years, and conducted experiments and explorations around the two major topics of reducing power consumption and reducing heat loss. Today, IDM's thermal processing furnace has an excellent performance in terms of product performance, and has established trust with customers from all over the world to meet their needs for high quality products.

Melting furnace factory

Factory Introduction

The development, production and technical upgrade of the intermediate frequency induction furnace and the sensing heating control system is one of the operating projects of IDM Metallurgy Group. The R & D Center is located in Cangzhou City and Factory of Hebei Province, China, and is located in Tangshan City Hebei Province, China. It covers an area of more than 15,000 square meters. It has a complete sales and after -sales service system. The products are sold to more than 70 countries and have been well received by customers.

Rolling mill factory

Factory Introduction

The IDM Metallurgy Group's rolling machine is located in the industrial park of Tangshan City, Hebei Province, China. It covers an area of more than 20,000 square meters. It integrates production, research and development, and sales. The comprehensive strength is among the top domestic industry. In 2016 technical cooperation with many universities in China, in -depth research in the safety and stability of the rolling machine, continuously improved product quality, and won the recognition of customers at home and abroad.

Foundry equipment factory

Factory Introduction

As the core product of the IDM Industrial Group, the casting equipment has a large proportion in the annual export share. Resin Sand Casting Line, Static Pressure Automatic Molding Line, Iron Mold Sand Coated Casting Plant and other equipment were exported to South America Eastern Europe, Africa, and West Asia, and were widely used in automotive, ships, steel, and aerospace and other fields. Mature production technology and thoughtful after sales service are important guarantees for overseas customers to establish a cooperative relationship with IDM.