



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, enhancing their 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

 Tangshan City, Hebei Province, China

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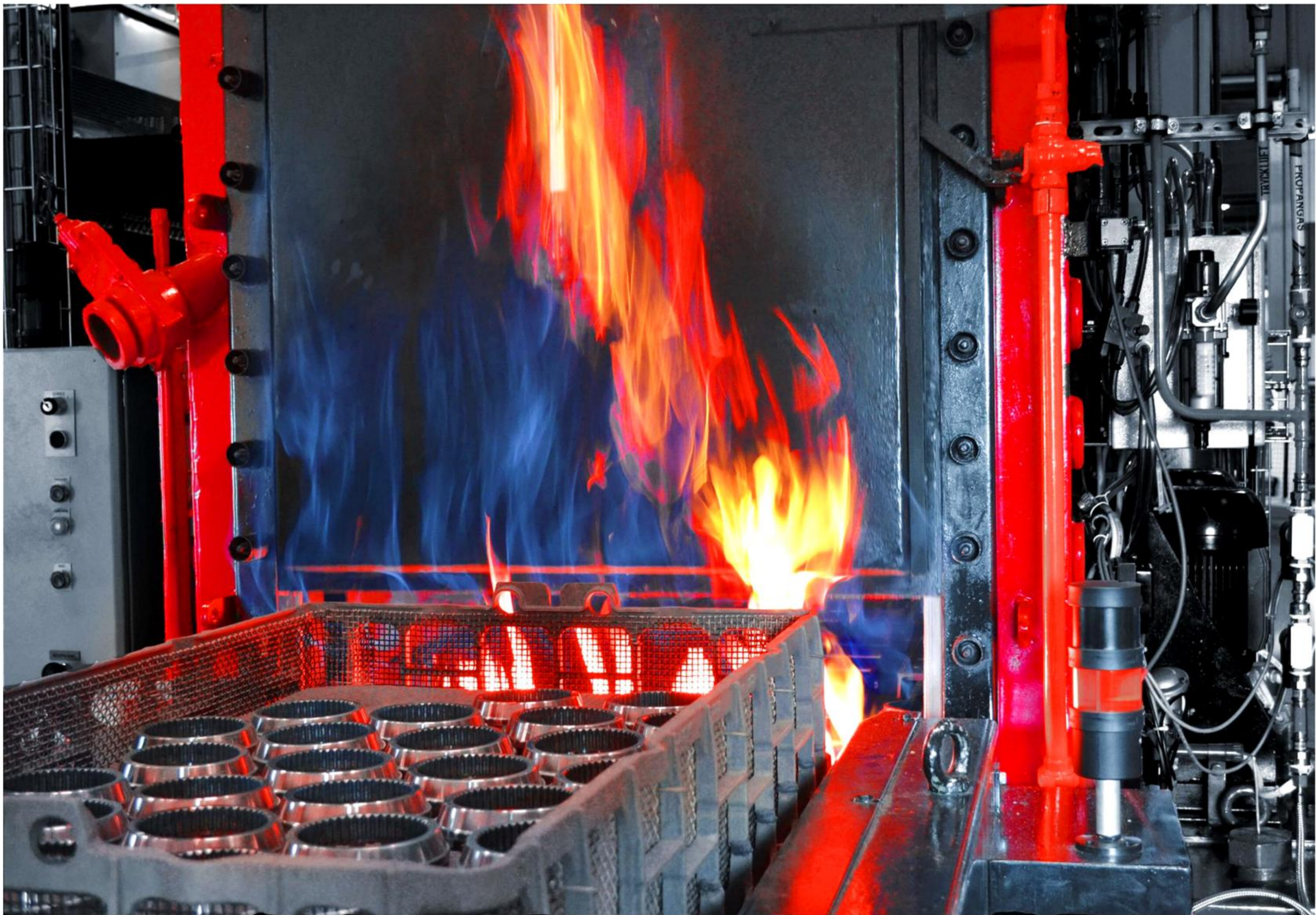
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Vacuum Furnace

In this specific space of furnace chamber, the vacuum system is used to partially discharge the material in it, so that the pressure in the furnace chamber is less than one standard atmospheric pressure, and the furnace chamber thus achieves a vacuum state. The vacuum furnace can realize the process of vacuum quenching, vacuum tempering, vacuum annealing, vacuum solution and vacuum aging treatment vacuum sintering, chemical vacuum heat treatment and vacuum coating, etc. It can realize complex processes that other heat treatment equipment cannot handle.



Rated temperature
1700°C

Rated Power
20 ~ 2000Kw

Max. Loading
300 ~ 3000Kg

What is Vacuum Furnace

Vacuum furnaces generally consist of a sealed furnace shell, a furnace cover, a furnace chamber, an electric heating device, a vacuum system, a power supply system, a temperature control system and a transport vehicle outside the furnace. The sealed furnace shell is welded with carbon steel or stainless steel, and the joint surfaces of the detachable parts are sealed with vacuum sealing materials. In order to prevent the deformation of the furnace shell after heating and the sealing material from deteriorating

after heating, the furnace shell is generally cooled by water cooling or air cooling. The furnace chamber is located in a sealed furnace shell. According to the use of furnace, different types of heating elements are installed inside the furnace, such as resistors, induction coils, electrodes, and electron guns. The vacuum furnace for melting metal is equipped with a crucible, and some are also equipped with automatic pouring devices and manipulators for loading and unloading materials.



Introduction to Vacuum Furnace

The vacuum furnace can perform high temperature heat treatment at 1200°C, medium temperature at 950°C, and low temperature at 650°C. The heating system in the furnace can be directly heated by electric resistance wire, or it can be heated by high-frequency induction. The maximum temperature can reach about 3000°C. Mainly used for ceramic firing, vacuum smelting, degassing and annealing of electric vacuum parts, brazing of metal parts, and sealing of ceramics and metals, etc..

It can be used in the aviation and aircraft manufacturing industry, automobile manufacturing industry and precision machinery manufacturing industry to perform heat treatment and spheroidizing annealing such as heating without oxidation or decarburization, quenching, annealing, and tempering on precision parts. It can also be used in the non-ferrous metal industry for copper materials' bright and non-oxidation annealing, it can also be used for vacuum sintering of metal or non-metal materials and parts in the petroleum machinery industry.

Vacuum Furnaces generally use electric heating, but there are still differences in heating methods which are divided into internal heating vacuum furnaces and external heating vacuum furnaces. According to the requirements of vacuum degree, it is divided into high vacuum furnace and low vacuum furnace. According to the appearance and structure, it can be divided into: Pit-type Vacuum Furnace, Horizontal Vacuum Furnace, and Trolley-type Vacuum Furnace.

According to different uses, Vacuum Furnaces can be divided into: Pre-vacuum Furnace, Vacuum Annealing Furnace, Vacuum Tempering Furnace, Vacuum Sintering Furnace, Pit Vacuum Furnace Horizontal Vacuum Furnace, Trolley Vacuum Furnace, Vacuum Tube Furnace, Vacuum Quenching Furnace, Vacuum Induction Furnace, Vacuum Electric Arc Furnace, Vacuum Carburizing Furnace etc...

High Quality

The accuracy of furnace temperature measurement and monitoring is improved. The indicated value of the thermocouple is within $\pm 1.5^{\circ}\text{C}$ of the furnace temperature. However, the temperature difference between different parts of a large number of workpieces in the furnace is large. If forced circulation of thin gas is used, the temperature difference can still be controlled within the range of $\pm 5^{\circ}\text{C}$.



Good Performance

It completely eliminates the oxidation and decarburization of the workpiece surface during the heating process and can obtain a clean surface without deterioration layer. This is greatly related to the improvement of cutting performance of tools that are ground on only one side during sharpening. The modern advanced vacuum furnace heating chamber uses insulating walls and barriers made of high-quality insulation materials, which can highly concentrate the electric heating energy in the heating chamber, resulting in significant energy saving effects.



Product Features

High degree of mechatronics. On the basis of improved temperature measurement and control accuracy workpiece movement, air pressure adjustment, power adjustment, etc. can be pre-programmed, and quenching and tempering can be implemented follow the steps. It has no pollution to the environment and does not require three-waste treatment.

Customized Design

Customized design according to the actual needs of customers.

Working Principle

When the vacuum system is working, first start the mechanical pump, maintenance pump and diffusion pump to heat, and at the same time open the front valve and maintenance pump valve to evacuate the diffusion pump. When the vacuum degree reaches a certain set value of the system, the Roots pump starts, the bypass valve opens, and the front valve closes, at this time, the vacuum chamber is pumped to a low vacuum. When the diffusion pump is heated to the specified temperature and the vacuum degree is higher than the specified value, the high valve opens, the bypass valve closes, and the front valve opens. At this time, the vacuum chamber is evacuated to a high vacuum, only when the vacuum degree reach the requirements of the process, the heat treatment can be carried out. After the thermal processing process is completed, the heat exchanger fills the vacuum chamber with high-purity nitrogen for forced cooling to complete the entire process.

Furnace Type	Furnace Chamber Size	Rated Voltage	Rated Power	Rated Temp.	Heat Up time
	mm	V	KW	°C	H
ZRJ3-120-9	900x1600	380	120	950	3.5
ZRJ3-150-9	1000x2000	380	150	950	3.5
ZK-20-10	300x300	380	20	1200	2.5-3
ZK-60-10	600x850	380	60	1200	2.5-3
ZK-120-10	800x1500	380	120	1200	2.5-3

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.

