



**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**

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# Annealing Furnace

Annealing Furnace is a standard energy-saving periodic operation furnace with a super energy-saving structure. It adopts a full-fiber furnace chamber structure and saves 30% of electricity. Mainly used for quenching, annealing, aging for high chromium and high manganese steel castings, ductile iron rolls, steel balls, 45 steel, stainless steel ,and doing heat treatment for various mechanical parts.



**Rated temperature**  
**1200°C**

**Rated Power**  
**15 ~3000Kw**

**Max. Loading**  
**50 ~ 100000Kg**

## What is Annealing Furnace

Annealing Furnace uses modules made of full-fiber aluminum silicate blankets to build the furnace body. The furnace bottom is built with lightweight insulation bricks and heavy refractory bricks. The heating elements are heated with resistance wires and resistance tapes. The furnace shell is made of steel plates and structural steel, and the furnace door and trolley adopt mechanical transmission. The specific equipment is designed and equipped according to the customer and furnace temperature requirements. Mainly suitable for heating in heat treatment workshops of steel mills, special steel machining, chemical machinery, heavy industry, metallurgical forging, casting, forging, flange rings steel components, wire drawing, environmental protection equipment, machinery supporting enterprises

loaders, diesel engines, military industry and others. It does not require foundation installation, can be used immediately after being placed on the level ground.



## Introduction to Annealing Furnace

The annealing furnace can perform high-temperature heat treatment at 1200°C, medium-temperature heat treatment at 950°C, and low-temperature heat treatment at 650°C. Mainly used for mold annealing annealing heat treatment of high chromium, high manganese steel castings, gray iron castings, rolls steel balls, wear-resistant lining plates and other workpieces.

The furnace lining is made of high-aluminum fiber cotton. This material has strong high temperature resistance and good thermal insulation properties, and cannot be replaced by ordinary fiber cotton. The load-bearing part is built with heavy refractory bricks to enhance the structural strength of the furnace lining. In order to ensure that the temperature heat transfer at the bottom of the trolley is not very high, the trolley insulation layer uses a composite structure of aluminum silicate refractory fiber and diatomite insulation bricks to improve the thermal insulation performance of the furnace body. Adopting advanced hanging structure, the radiation efficiency is high, which strengthens the heat exchange in the furnace, improves the thermal efficiency of the furnace, and extends the service life of the electric heating element.

The electric heating element is made of 0Cr27Al7MO2 resistance tape, which is processed into a waveform structure using a special mold, and is hung in groups on the furnace wall fixings. It is very convenient to install and maintain, and has a long service life. The furnace body adopts a refractory full-fiber large plate structure and has excellent heat insulation properties. The weight of the full fiber furnace lining is only 1/30 of the refractory brick furnace body. It not only has excellent thermal insulation performance, but also saves about 30% of energy than the brick annealing furnace of the same specification and increases the heating speed.

The heating methods of annealing furnaces can be divided into three types: electric heating, fuel heating and gas heating.

According to different uses, annealing furnaces can be divided into: Trolley Annealing Furnace, Vacuum Annealing Furnace, Box Annealing Furnace, Pit Annealing Furnace, Heavy Pressure Vessel Annealing Furnace, Continuous Wire Annealing Furnace, Spheroidizing Annealing Furnace, Continuous Bright Annealing Furnace, etc...

## High Quality

Adopting advanced hanging structure, the radiation efficiency is high, which strengthens the heat exchange in the furnace, improves the thermal efficiency of the furnace, and extends the service life of the electric heating element. It adopts a composite high-aluminum porcelain nail set, anti-collision sealing bricks for the trolley, automatically seals the trolley and furnace door and integrated rails without the need for basic installation.



## Good Performance

No noise, no environmental pollution, small heat storage and low heat loss. It has high temperature control accuracy, strong furnace temperature uniformity, high degree of automation and simple operation. It can be set by PID programming, fully automatic operation, good sealing, long life, safe and reliable.



## Product Features

It adopts low-nitrogen combustion technology and flue gas waste heat recovery technology, which greatly reduces the emission of harmful substances such as nitrogen oxides. Automated control technology enables precise control of furnace temperature, atmosphere and other process parameters, improving product quality and production efficiency. The protective gas in the furnace is circulated by strong convection by a special fan, and the furnace temperature is uniform, so that the temperature difference in the furnace is controlled within 5°C, thereby effectively ensuring that all annealing materials in the furnace are consistent in softness and hardness, and facilitating deep processing of materials.

# Customized Design

Customized design according to the actual needs of customers.



## Working Principle

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### Heating process

By providing suitable heating method, the metal material is heated to a certain temperature. The purpose of heating is to eliminate stress and deformation within the material and improve its microstructure. Control of heating time and temperature is critical to achieving ideal material properties.

### Insulation process

After being heated for a certain period of time, the material needs to be insulated to ensure a uniform temperature. The holding time depends on the type of material and handling requirements. Insulation can help rearrange the grains inside the material, further improving its mechanical properties and structure.

## Cooling process

After insulation, the material will be gradually cooled. The control of the cooling process is very important. Cooling too fast or too slow may lead to inhomogeneity of the material, thus affecting the properties of the final material. Appropriate cooling rate can make the material obtain uniform grain size and structure, improve its strength and wear resistance.



Furnace Type	Furnace Chamber Size	Rated Voltage	Rated Power	Rated Temp.	Heat Up time
	mm	V	KW	°C	H
RX3-45-9	1200x600x400	380	45	950	2.5
RX3-75-9	1800x900x550	380	75	950	2.5
RX3-90-12	1500x750x450	380	90	1250	2.5
RX3-115-12	1800x900x550	380	115	1250	2.5
RX3-140-12	2000x1200x750	380	140	1250	2.5

# 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.

