



**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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# Pit Type Furnace

Pit Type Furnace are energy-saving period-operated industrial furnace. The furnace body and chamber are generally circular pit-type structures, which are suitable for processing long-axis and rod-type workpieces. Pit Type Furnace can operate workpieces by vertical lifting from top to bottom for heat treatment to avoid deformation.



**Rated temperature**  
950°C ~ 1200°C

**Rated Power**  
60 ~ 1500Kw

**Max. Loading**  
800 ~ 20000Kg

## What is Pit Type Furnace

The Pit Furnace is one of the main heat treatment furnaces in current mechanical processing production. The processing effect of the Pit Furnace is better when spherical processing of carbon compounds in steel. Because this equipment often has a protective atmosphere during production, it can ensure the workpieces to have good surface accuracy and ensure the toughness and stiffness after completion. The Pit furnaces are generally placed below the ground in the workshop, but some are placed above the ground, or half above ground and half below ground. It can bear workpieces at the bottom of the furnace or by vertical lifting and hanging at the furnace opening. The furnace body is an energy-saving

structure, and there are different furnace masonry installation methods, like WDS composite furnace insulation which is composed of lightweight energy-saving bricks and high-purity aluminum silicate fiber insulation, and also full-fiber lining insulation structures. Generally, after digging the corresponding foundation, the Pit Furnace is placed in the foundation pit for operation.



## Introduction to Box Furnace

The Pit Furnace can perform high temperature heat treatment at 1200°C, medium temperature at 950°C and low temperature at 650°C. It can be used for heat treatments such as high-temperature quenching annealing, normalizing, and heating. It can also be used for heat treatments such as low-temperature tempering. Mainly used for normalizing, annealing, quenching and tempering heat treatment of alloy steel, high speed steel, high manganese steel, high chromium steel, shafts, pipes and other metal materials and mechanical parts in general atmosphere or simple protection.

The Pit Furnaces are generally installed in foundation pits, it is more convenient to use overhead cranes and hoist to load and unload workpieces. Due to different designs, a loading frame can be made, the workpiece can be placed in it and placed directly on the bottom of the furnace for heating. In addition, the furnace opening can be enhanced with a reinforced load-bearing design, then the workpiece can be heated by hoisting or vertically hanging tools. The furnace cover is generally driven by a motor reducer and automatically lifts by electric driven. After the furnace cover is closed, it is automatically pressed and sealed, and then the temperature control system automatically performs the heat treatment process. After heat treatment, the workpiece can be cooled in the furnace or lifted out for air cooling.

The heating methods of Pit Furnaces are divided into three different types: electric heating, oil heating, and gas heating, they are Pit-type Resistance Furnaces, Oil-fired Pit Furnaces, and Gas-fired Pit Furnaces. According to the chamber structure, it can be divided into: Composite Lined Pit Furnace built with lightweight bricks and insulation fiber, and Full Fiber Pit Furnace.

According to different heat treatment temperatures, the Pit Furnace can be divided into three types 1200°C high temperature Pit Furnace, 950°C medium temperature Pit Furnace and 650°C low temperature Pit Furnace.

According to different uses, the Pit Furnace can be divided into: Pit Quenching Furnace, Pit Annealing Furnace, Pit Tempering Furnace, Pit Aluminum Alloy Quenching Furnace, Pit Aluminum Alloy Aging Furnace, High-precision Pit Furnace, etc.

## High Quality

The temperature control adopts intelligent expert PID self-tuning control and adjustment method, with high temperature control accuracy. The control system has the function of temperature display and temperature curve recording for the heat treatment process. Heating temperature can be controlled automatically.



## Good Performance

Adopt high temperature and high emissivity electric heating alloy flat strip, low surface loading and long service life. The heat capacity is only 1/9 of the lightweight insulating refractory brick furnace lining, which greatly reduces the heat loss of the furnace. The furnace uses fiber modules that are high temperature resistant, non deformable and highly compressible, and the modules have a long service life. Full fiber furnace lining can save 30% energy compared to brick type, and has low thermal conductivity, low heat capacity, excellent thermal stability and anti-corrosion properties.



## Product Features

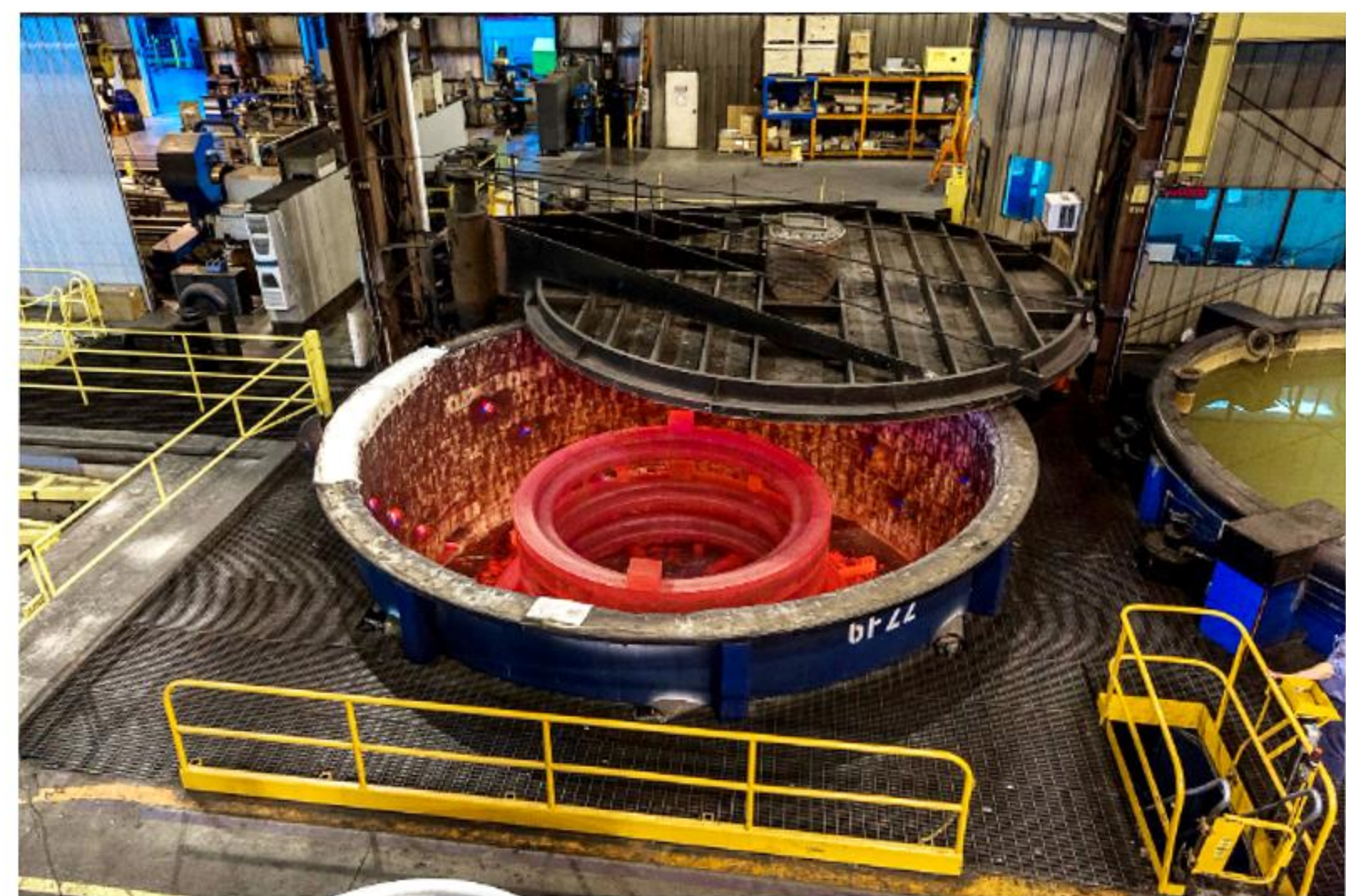
Equipped with a large fan device to improve the temperature uniformity in the furnace. Multi-zone control to further improve the uniformity of furnace temperature. The furnace cover adopts an overhead crane or an automatic hydraulic mechanism to open and close, and it's equipped with a guide column to ensure the opening and closing smoothly. The furnace cover and body are both made of high temperature resistant fiber cotton. They have good thermal insulation performance, save energy and can reduce production costs.

# Customized Design

Customized design according to the actual needs of customers.

# Working Principle

The Pit Furnace is a partial pressure reactor that uses electrical heating. It mainly uses the principle of electric heating to carry out various chemical reactions, complete the heating and treatment under high-temperature and high-pressure conditions. It is a vertically arranged metal cylinder in which reactants and catalysts are added to react under high temperature and high pressure conditions. The furnace chamber and pipes are connected. The reaction fluid is evenly distributed in the pit furnace. The reaction temperature and pressure are stable and the reaction time is short. Therefore, it is very important for some production processes that require high temperature and high pressure reactions.



Furnace Type	Furnace Chamber Size	Rated Voltage	Rated Power	Rated Temp.	Heat Up time
	mm	V	KW	°C	H
RJ2-80-12	800x1000	380	80	1200	3
RJ2-105-12	1000x1200	380	105	1200	3
RJ2-110-12	800x2000	380	110	1200	3
RJ2-125-9	800x3000	380	125	950	4
RJ2-220-12	1000x3600	380	220	1200	4

# 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.

