



**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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# Static Pressure Automatic Molding Line

The static pressure automatic molding line is a new casting process that fills the cavities in the mold by injecting molten metal into the mold and applying high pressure. Compared with traditional casting processes, static pressure molding lines have higher production efficiency, better casting quality and less energy consumption. They are widely used in automobile manufacturing, construction, electric power, aerospace and other fields.



## What is Static Pressure Automatic Molding Line

The static pressure automatic molding line is an automated intelligent mechanical equipment with fast production speed and high yield. It is suitable for the horizontal separated molding of clay sand and can be used for mass production of gray cast iron, malleable iron and ductile iron. It can produce complex castings, such as auto parts, wheels, pipe fittings, manhole covers, engine casings, textile machinery parts, machine tool parts, etc. The static pressure molding line has high production capacity and saves costs. The castings produced are of good quality and high precision. The molding rate of the shapes made with the static pressure line reaches 97%, thus improving the molding yield rate.



## **Introduction to Iron Mold Sand-Coated Casting Plant**

The static pressure automatic molding line is an advanced new type of automobile wheel hub production and forging equipment. It adopts a PLC control system and has high precision and efficiency.

The static pressure automatic molding line consists of a sand processing system, a static pressure molding host, a molding auxiliary machine, a pouring cooling system, a shakeout system, a conveying system and a central control system.

Advanced production technology realizes automated production, improves production efficiency and ensures product quality. At the same time, high-quality raw materials are used to make product quality more reliable.

The series synchronous control system of low energy consumption realizes the power control and adjustment of the production line. At the same time, the air suction inlet of the production line is also equipped with an adjustable speed motor, and the air inlet volume can be automatically adjusted resulting in significant energy saving effects.

The fully automated production process enables intelligent control and monitoring of the production process. At the same time, it also has functions such as automatic feeding, automatic waste discharge and automatic edge alignment, making the production process more convenient and faster, and improving production efficiency and quality.

## High Quality

The size deviation of the casting is small, and the size accuracy reaches CT7~CT8, which is higher than the accuracy of traditional pneumatic microseismic high pressure molding.



## Good Performance

The stable characteristics of the static pressure molding process can produce castings with high repeatability and high dimensional accuracy. It is especially suitable for the production of large-volume castings and reduces labor costs.



## Product Features

The sand mold is hard and dense, and the casting has high dimensional accuracy and smooth surface. Suitable for casting of various metal materials, such as aluminum alloy, copper alloy, zinc alloy, steel, etc.



## Customized Design

Customized design according to the actual needs of customers.

# Working Principle

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## Mold making

One is to use metal molds, which are more suitable for casting small castings; the other is to use fine sand molds, which are suitable for casting large and complex castings.

## Preparing the molten material

The quality of the molten material plays a decisive role in the forming of the casting. Static pressure line casting requires the molten material to have a high degree of purity and uniformity, which can be prepared by smelting, alloying, etc.

## Sand mold making

This step is to continuously send the prepared mold to the casting machine, and add molten material before the machine starts working. The molten material needs to be heated at a set temperature to avoid problems such as solidification, cooling and crystallization. At the same time, the molten material also needs to be stirred evenly to ensure the chemical uniformity of the casting.

## Pre-pressing stage

Pre-pressing is an essential step in the casting process. It can ensure high surface finish and stable performance of castings. After pre-pressing, the surface of the casting needs to be cut off and trimmed.

## Static pressure stage

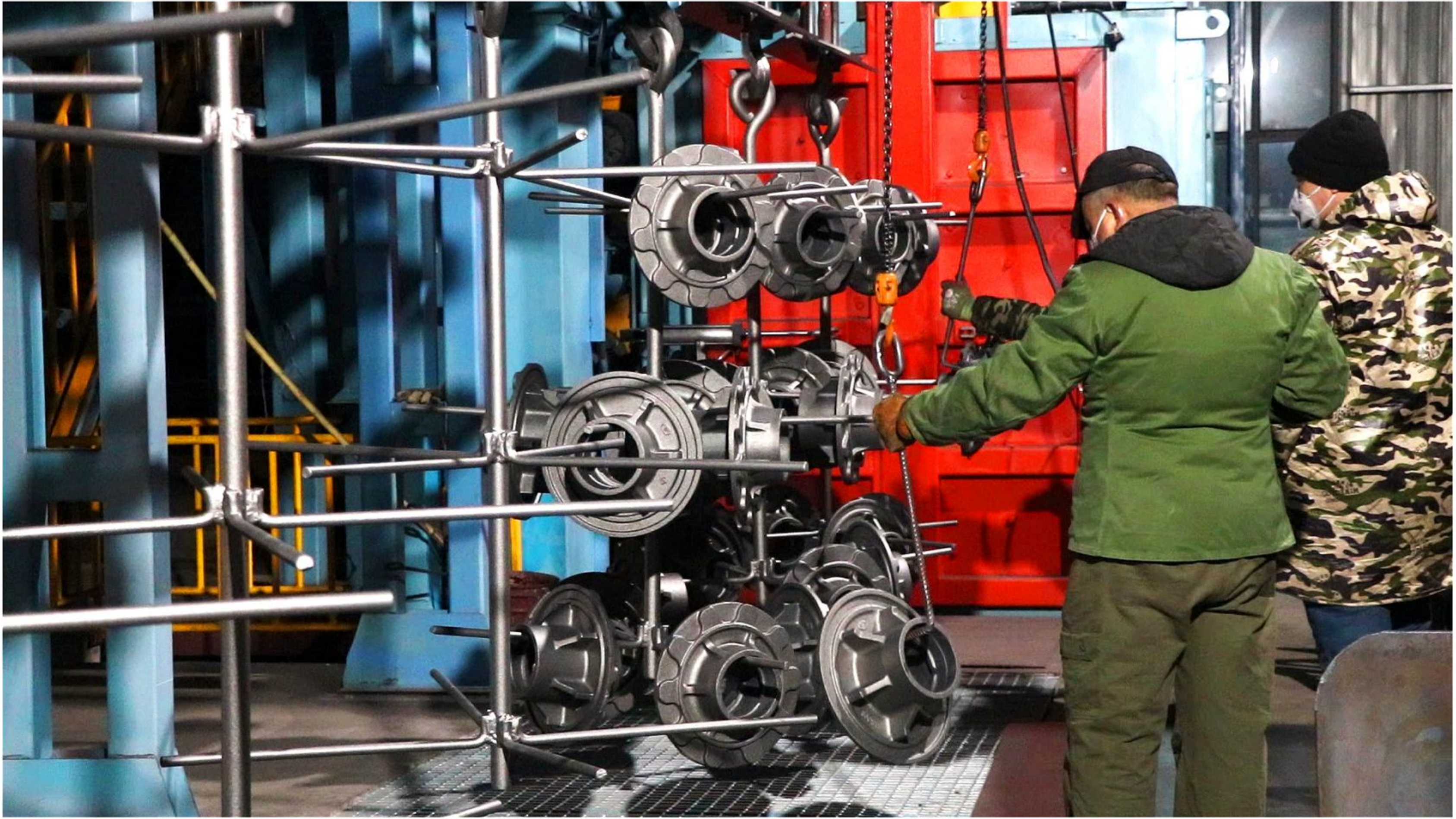
Static pressure is the core part of static pressure line casting, which directly determines the shape and performance of the casting. Static pressure uses a mechanical device to squeeze the melt in the mold so that it evenly fills the entire mold cavity to ensure that the casting has good mechanical properties, chemical composition and structural uniformity.

## Pressure-holding stage

After the static pressing is completed, a certain period of pressure-holding treatment is required to enable the casting to obtain better crystallization and grain boundary clarity, and to improve the structural uniformity of the casting.

## Demold stage

Demold refers to the operation of removing the casting from the mold. This operation requires great care to avoid damaging the surface and internal structure of the casting.



Type	Size of Sand Mold	Compaction pressure	Power	Sand mold weight
	mm	MPa	KW	KG
TZZJ-550*450	550*450	0.6	24	85
TZZJ-600*500	600*500	0.7	28	130
TZZJ-650*550	650*550	0.7	28	150
TZZJ-710*610	710*610	0.7	36	210

# 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.

