



**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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# Aluminium Cold Rolling Mill

The Aluminium Cold Rolling Mill uses aluminum cast-rolled coils or hot-rolled coils as blanks. After multiple passes of rolling, the finished coils are rolled out to provide blanks for plate finishing and aluminum foil production. It can provide high-quality, high-precision aluminum plates with a wide range of applications, including the manufacturing of automobile bodies, chassis and parts, and aerospace materials.



## What is Aluminium Cold Rolling Mill

The Aluminium Cold Rolling Mill is a complex mechanical equipment that uses a pair or more counter-rotating rollers to pass the aluminum plate through a series of precise cold rolling processes to make its shape and thickness more suitable for various engineering needs. The cold rolling is usually carried out on a four-roller or six-roller mill. The cold rolling process is generally divided into rough rolling, intermediate rolling and finish rolling. Rough rolling and intermediate rolling focus on increasing the reduction, strengthening the production process and shortening the production cycle. Finish rolling focuses more on ensuring the surface roughness and shape of the product.



## **Introduction to Aluminium Cold Rolling Mill**

During operating, the uncoiler unit is used to uncoil the coils, transport them to the main machine for rolling, and generate back tension stress during rolling. The reduction box can slide freely under the control of the centering system to ensure that the center of the coil is consistent with the center of the machine train. Two DC motors are driven in series, and the use of mechanical gear shifting ensures the tension needs of strips of different thicknesses.

Roll cooling system sprays high-efficiency coolant to the rolls through the spray beam installed at the entrance of the rolling mill. The multi-nozzle and independent flow adjustment system can achieve segmented cooling of the rolls and effectively control the roll shape.

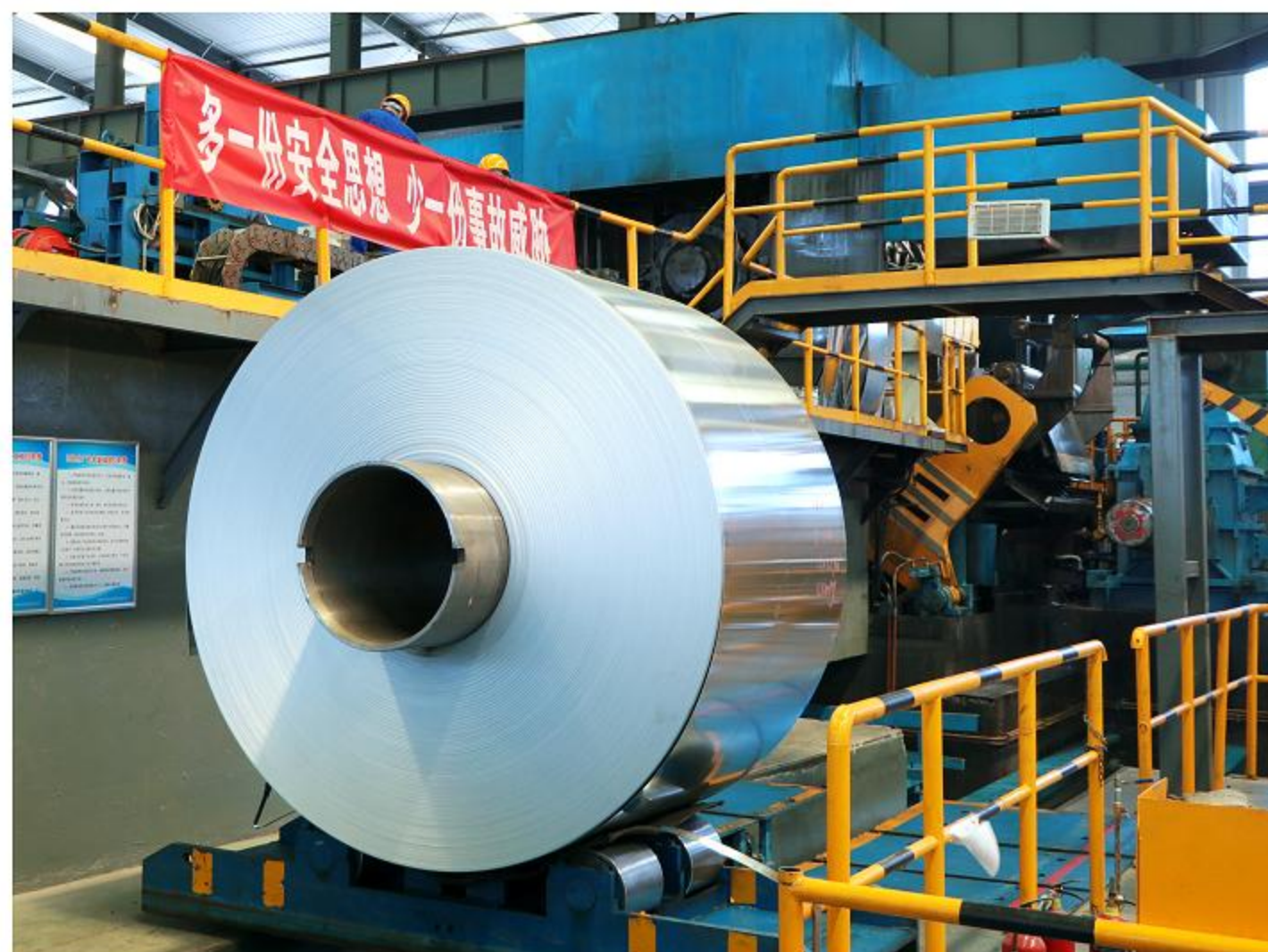
Lubrication system is divided into two parts: thin oil lubrication and oil-gas lubrication. The thin oil lubrication system provides reliable guarantee for the normal operation of the decoiler gear reduction box, main engine gear reduction box, and coiler gear reduction box; the oil-gas lubrication system provides reliable oil-gas lubrication for the roll bearings and guide roller bearings, providing reliable guarantee for high-speed operation of rolling mill.

Electronic control system is divided into AC motor control center, DC transmission system, operating console and automation control system PLC of mill, Schneider filter control system, automatic thickness control (AGC) system, and X-ray thickness gauge.

The whole set of automatic co2 extinguish system is provided to guarantee extinguishing fire. In the area of inflammable,co2 nozzle and temperature testing detector are set. And there are two control methods of fully automatic and manual to make sure timely and reliable fire extinguishing and protect the normal production of the rolling mill.

## High Quality

Our Aluminium Cold Rolling Mill has an advanced automatic thickness control system and a complete plate shape control method, which can provide multiple control methods such as roll tilt, positive and negative bending control of work rolls, and segmented roll cooling, so as to ensure the thickness accuracy and shape accuracy of rolled products are optimized.



## Good Performance

Equipped with various complete auxiliary systems such as accurate automatic strip centering system, safe and reliable CO2 automatic fire extinguishing system lubrication system, dry air purging device, smoke recovery device, etc., providing a reliable guarantee for the production of excellent products.



## Product Features

The cold rolling mill is highly automated, and the DC motors are powered by advanced fully digital thyristors and PLC is used for digital logic operations, parameter setting, and automated process control.



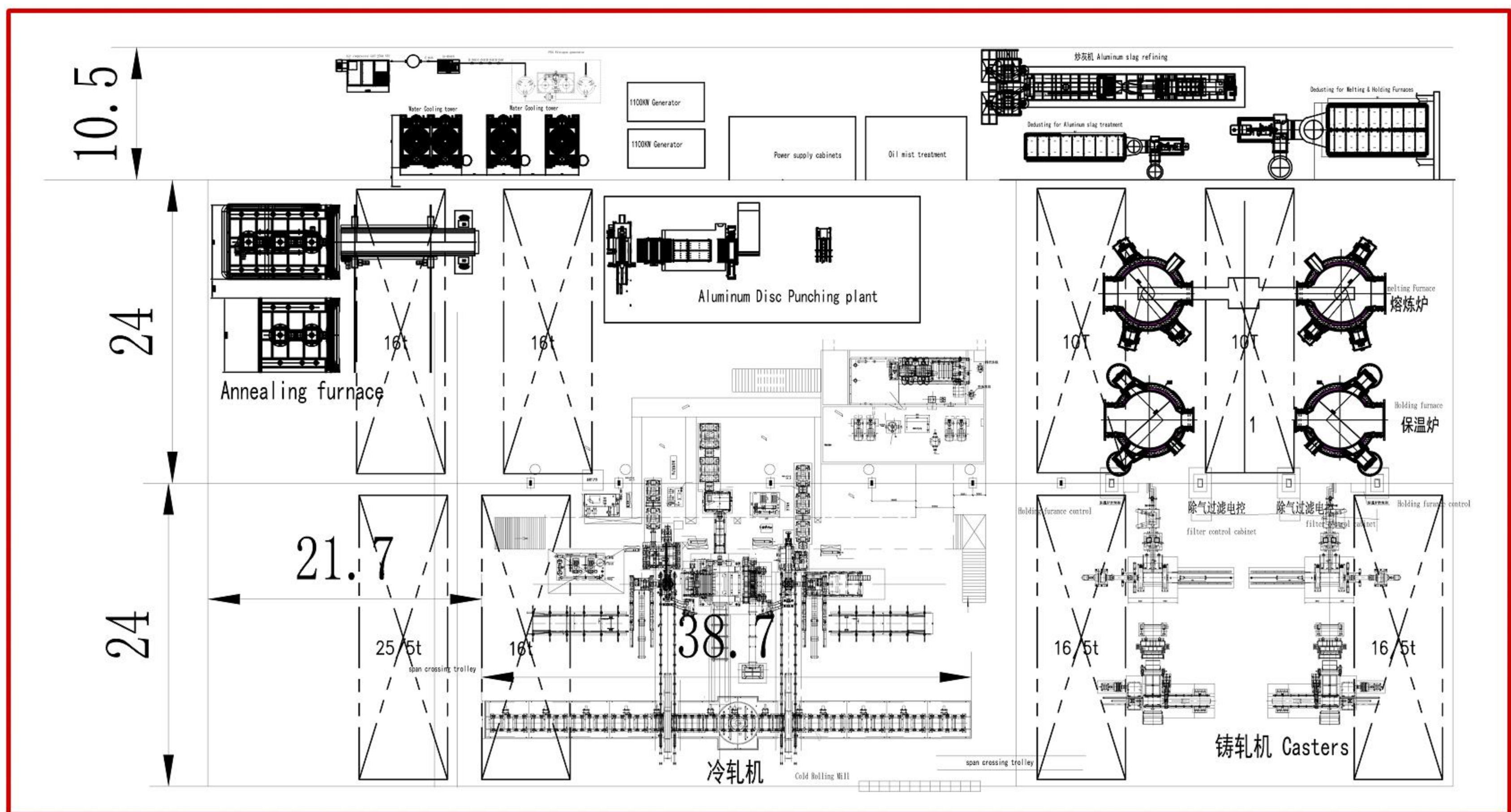
## Customized Design

Customized design according to the actual needs of customers.

# Working Principle

Cold rolling is rolling below the metal recrystallization temperature. Dynamic recrystallization will not occur during the rolling process. The product temperature can only rise to the recovery temperature so cold rolling will produce work hardening. After aluminum and aluminum plates are cold rolled the strength and deformation resistance of the material increase, and the plasticity will also decrease Cold rolling is widely used. Products that require continued rolling after hot rolling and have higher requirements for performance, structure, surface quality and dimensional accuracy must be cold rolled Cold rolling is mainly used to produce aluminum and aluminum plates that cannot be strengthened by heat treatment.

# Solution



The aluminum plate and strip cold rolling mill uses aluminum cast and rolled coils as billets and rolls out aluminum finished coils through multiple rolling passes. It also provides billets for plate finishing rolling and aluminum foil rolling production. The thickness of the blank material of the aluminum plate and strip cold rolling mill is 5mm-10mm, and the finished product is a pure aluminum plate and aluminum alloy plate with a thickness of 0.1mm to 4mm.

The rolling line adjustment device keeps the rolling line constant and displays it on the operating table. The smoke exhaust device can promptly discharge the smoke generated during rolling to create a clean working environment. The main transmission system of the rolling mill is driven by a high power DC motor, driven by a high-precision combined gear reduction box and universal coupling

which can provide a stable and reliable power source for the rolls. The simple and fast roll changing device and universal shaft bracket as well as the adoption of quick-change joints in the roll system can greatly shorten the roll changing time when the rolling mill is shut down.

The roll cooling system sprays high-efficiency coolant to the rolls through a spray beam installed at the entrance of the rolling mill. Multiple nozzles and a separate flow adjustment system can achieve segmented cooling of the rolls, thereby effectively controlling the roll shape. An oil mist lubrication device is used to provide continuous lubrication for the back-up roll bearings, work roll bearings and guide roll bearings of the rolling mill, ensuring that the rolling mill can operate stably under high speed and heavy-load conditions.

### Equipment list

Gas Melting furnaces, Casters, Cold Rolling Mill, Annealing furnace...Etc.

### products

0.1mm~4mm Aluminum Coils

### Coil Width

600mm~2500mm

### Capacity Range

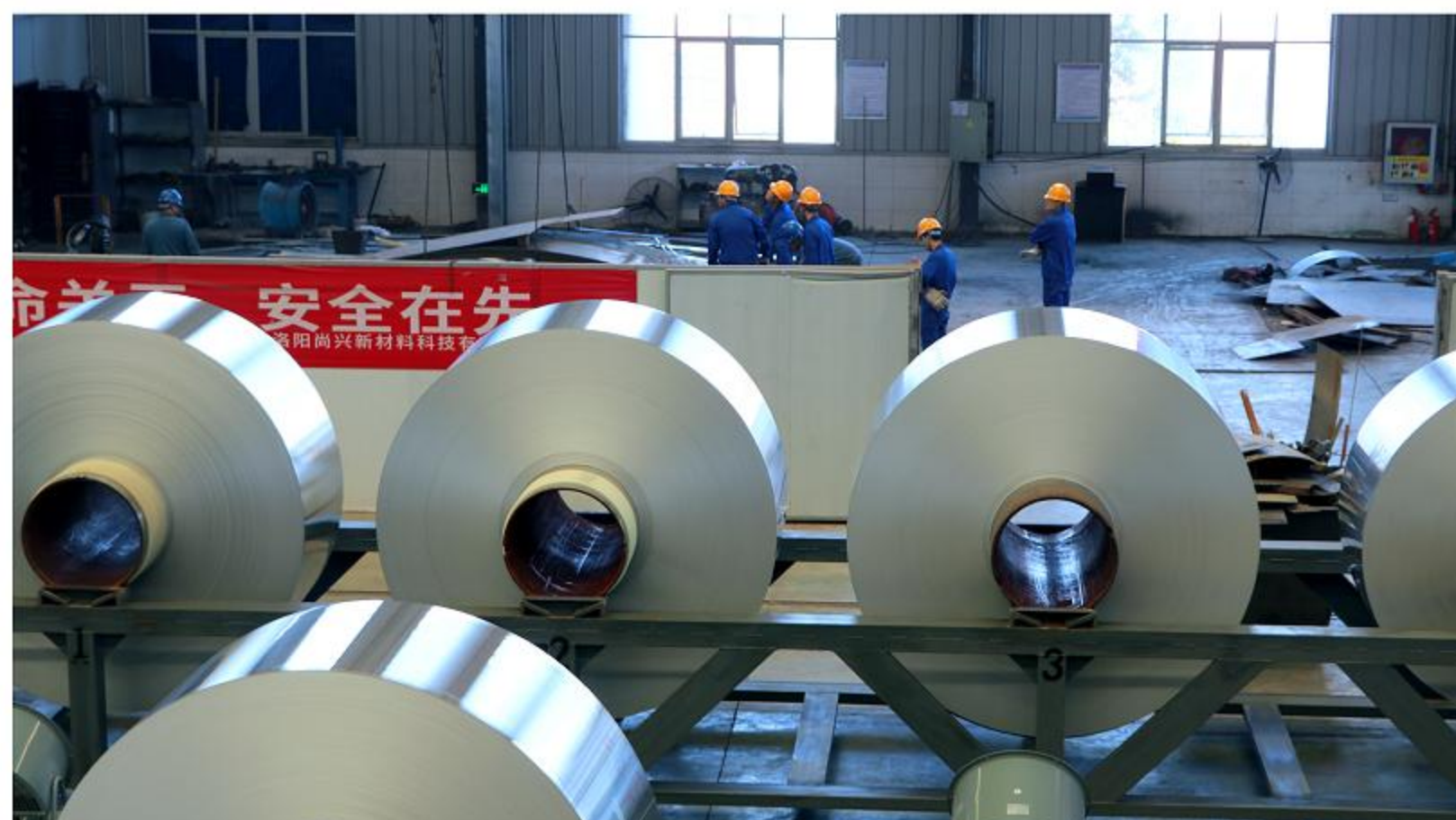
3000TPA ~100000TPA

### Factory area

1,000m<sup>2</sup> to 25000M<sup>2</sup> according to different capacity

### Power volume

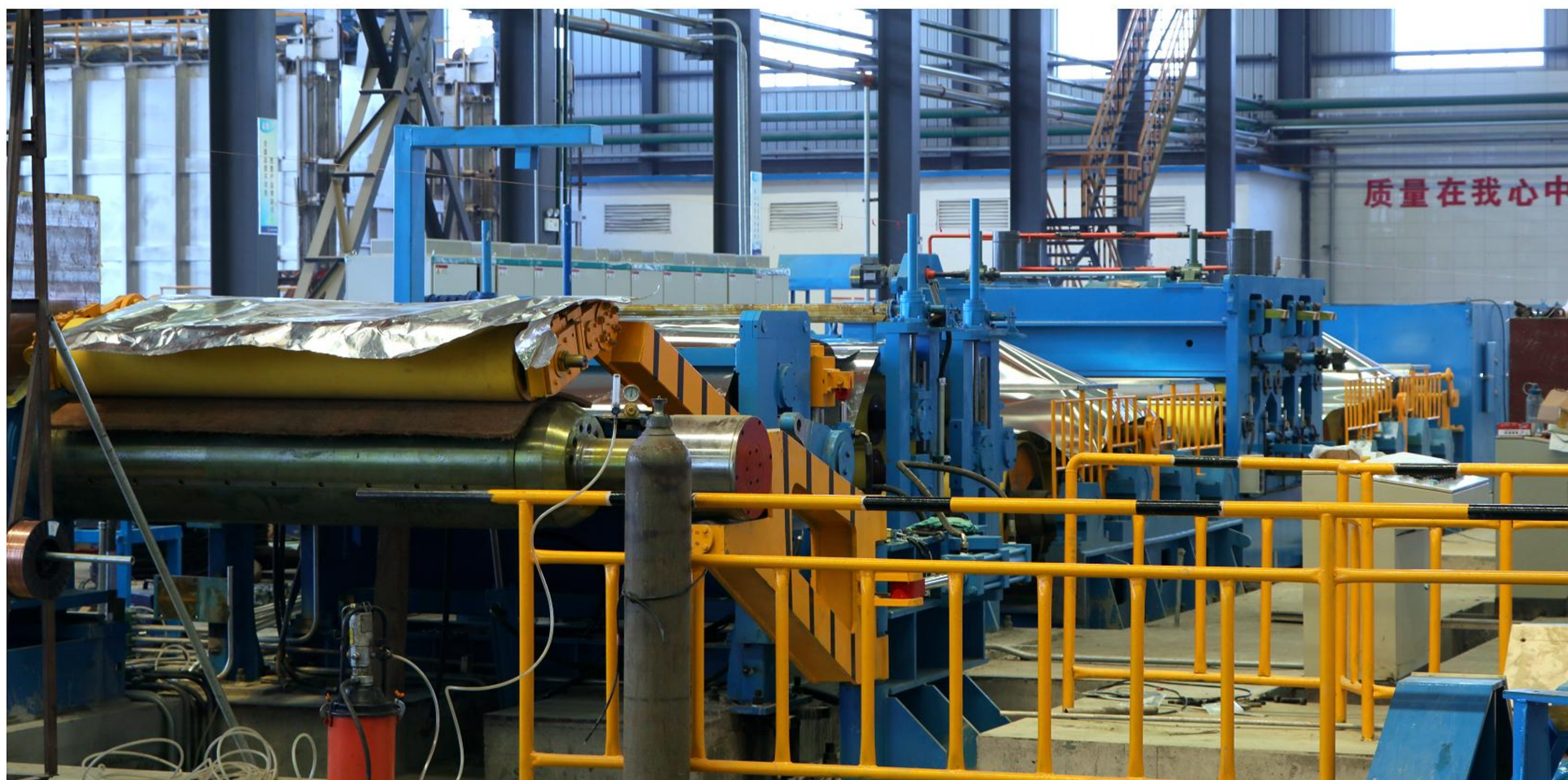
2000KW ~



# How does Aluminium Cold Rolling Mill

The coiled material is transported from the uncoiler to the main machine through the flattening device for rolling. The high-hardness four-roller system and flattening bright rollers ensure that straight and bright strips are rolled out. The segmented cooling system used for the positive and negative bending rolls and rolls ensures the plate shape requirements. The upper and lower support roller cleaners and air roller cleaners ensure the cleanliness of the rolled strip. The sensitive lifting pressure cylinder and high-precision displacement sensor and pressure sensor, under the control of the thickness control system, provide a strong guarantee for rolling strips with qualified thickness and precision.

The advanced X-ray thickness gauge located at the exit of the rolling mill can accurately measure the thickness of the exit strip. The disc edge cutting machine can cut the edge of the strip online to make the edge of the finished coil neat. Hydraulic shearing can cut the head and tail ends of the strip neatly.



Type	Coil Width	Coil Thickness	Foil Thickness	Work roll diameter
	mm	mm	mm	mm
GXG-1250	600~100	8~0.5	0.2~0.01	Ø200
GXG-1350	700~1200	8~0.5	0.2~0.01	Ø230
GXG-1450	800~1300	8~0.5	0.2~0.01	Ø360
GXG-1650	1000~1500	8~0.5	0.2~0.01	Ø380
GXG-1850	1200~1700	8~0.5	0.2~0.01	Ø420

# 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.

