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ZBTECH  
CHNZBTECH CO., LTD.

### Website QR code



Chinese



English

### **VMT**

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# PRODUCT INTRODUCTION

[www.chnzbtech.com](http://www.chnzbtech.com)



## COMPANY PROFILE

Located in XI'AN, China, formerly known as Xi'an Zebang Industrial Co., Ltd, which is a subsidiary of China National Heavy Machinery Research Institute (SINO-HEAVYMACH), in 2019, due to the restructuring of (SINO-HEAVYMACH), ZBTECH (Xi'an Zebang Electric Furnace Co., Ltd) was established to operate independently.

Certified by ISO9001 & CE, ZBTECH adheres to the serious and rigorous design concept of SINO-HEAVYMACH, which is a technology-oriented enterprise providing complete steelmaking & ferroalloy equipment for domestic and overseas industry. ZBTECH covers design, manufacturing, erection, and commissions special for steel-making equipment like EAF, LRF, VD/VOD, ESR. Ferroalloy furnace, integrated revamping and upgrading of existing plants, which is one of few recognized in the sector for its excellence and commitment to technological innovations.



City Landscape



Office Building

**ZBTECH**

State-of-the-art design, high operational availability, maintenance friendly and efficient and economical equipment enable the company sold throughout the country, exported to Vietnam, Iran and Southeast Asia.

ZBTECH established good cooperative relations with Xi'an University of Architecture and Technology, North China University of Technology, Sixth Academy of Aerospace and other scientific research institutes. And long-term cooperation with design institutes such as CERI, WISDRI, MCC-HUATIAN, CISDI, MGDRI on EPC project. At the same time, ZBTECH is a qualified supplier of AN STEEL, ZENITH, SHANDONG SHIHENG, TANGSHAN DONGHUA, TANGSHAN WENFENG and other iron and steel enterprises, On the basis of providing complete sets of equipment and spare parts, we have won customers with excellent technical services.

## MANAGEMENT MODE

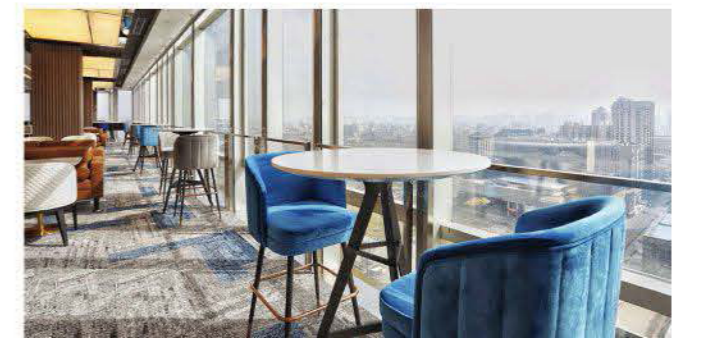
Closely cooperating with you means our engineering team translates your wishes into concrete form, we will extensively plan your plant layout, analyze the interfaces and battery limits as well as the various production stages, equipment, and disciplines, optimize the complex interaction between all investment and process-related factors. This not only reduces interfaces, but also ensures smooth plant integration and short project times.

Our proven procedure will coordinate all activities, guarantee quality, and monitor on-time, on-budget performance. So you always know the exact status of your project because we continually inform you about its progress. Our project management is designed to ensure you are involved in all major decisions. These included in one package are: Project development, Project planning, Project implementation, Project leadership.



ZBTECH is taking the lead in entering the stage of 3D modeling and intelligent design in the industry. Applying 3D design software to realize static, dynamic analysis and spatial simulation, parametric analysis, product quality is strongly guaranteed.

People first, innovative developing, ZBTECH is looking forward to work for you.



## 连铸设备 Casting Machinery



R6米-两机两流弧形连铸机  
R6m-2 Strands Countnuous Casting machine



R6米-130方-150方 钢坯连铸机  
R6m-Billet 130x130mm-150x150mm Countnuous Casting machine

主要技术参数表 Main Technical Parameters

序号 No	名称 Item	单位 Unit	参数 Parameter
1	连铸机型 CCM Type	/	全弧形连铸机 (连续矫直) Fully Arc Continuous Casting Machine (Continuous Straightening)
2	弧形半径 Arc Radius	m	3,4,6,8,12
3	台数×机数×流数 Strands	/	1-8
4	流间距 Strands Space	mm	1000-1500
5	浇铸铸坯断面尺寸 Cast Billet Size	mm×mm	60×60-200×200
6	铸坯定尺长度 Billet Length	mm	3000-12000
7	引锭形式 Dummy Bar Type	/	刚性因锭杆/柔性引锭杆 Rigid/Flexible Dummy Bar
8	切割形式 Shearing Method	/	液压剪/火焰切割 Hydraulic Shear/Flame Torch Cutting
9	拉坯速度 Drawing Speed	m/min	2.2-3.5
10	结晶器长度 Crystallizer Length	mm	850-900
11	浇铸钢种 Steel Type	/	碳钢、合金钢、特种钢 Carbon Steel, Alloy Steel, Special Steel
12	铸机年产量 Annual Capacity	t	50,000-800,000

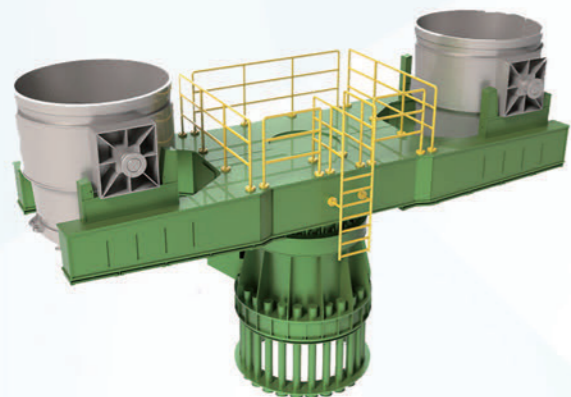


P3控制箱-连铸机拉速控制  
P3 Control Box-CCM Flow Speed Control



多点弧形连铸机  
Multiple-Roll Continuous Casting Machine

### 连铸机配件 Casting Machine Parts



钢包回转台  
Turret Ladle



连铸钢包车  
CCM Ladle Car



中间罐  
Tundish



结晶器 (含铜管)  
Crystallizer with Copper Tube



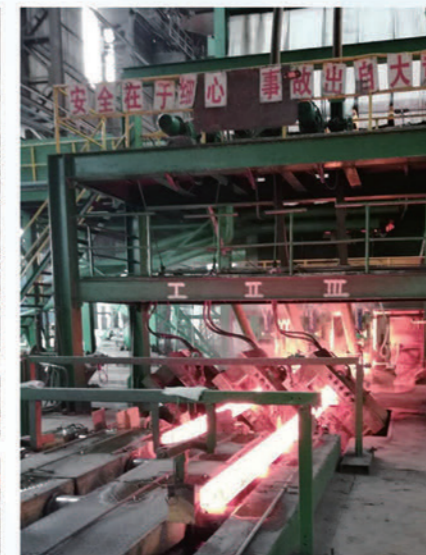
弧形热刚坯-拉矫机  
Ithdrawal&Straightening Machine



震动装置  
Oscillator Device



自动火焰切割  
Auto Flame Torch Billet Cutting

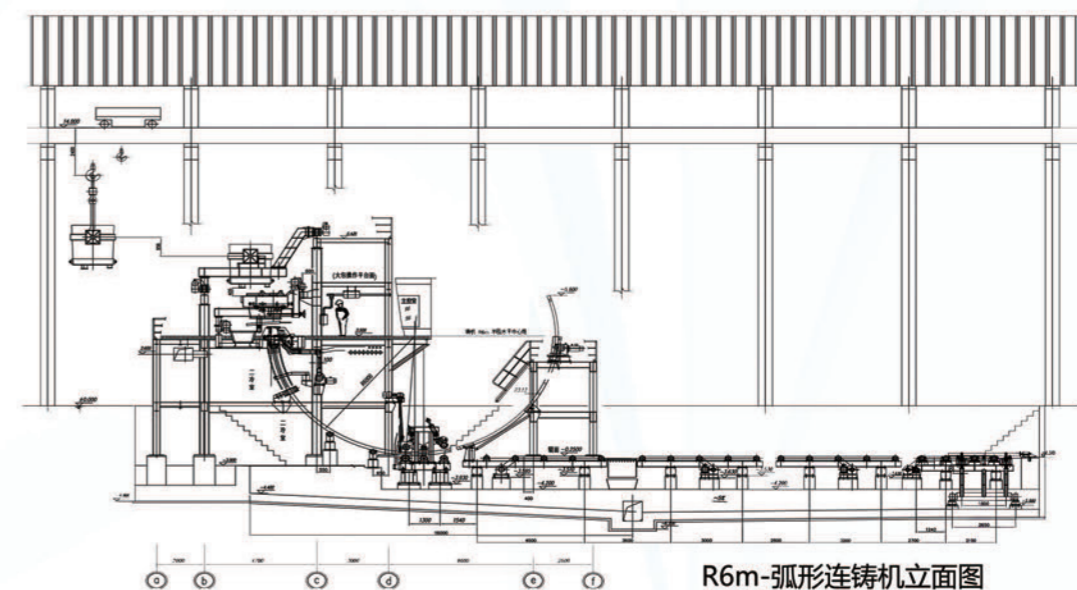


45度钢坯液压剪  
45 Deg-Hydraulic Shear

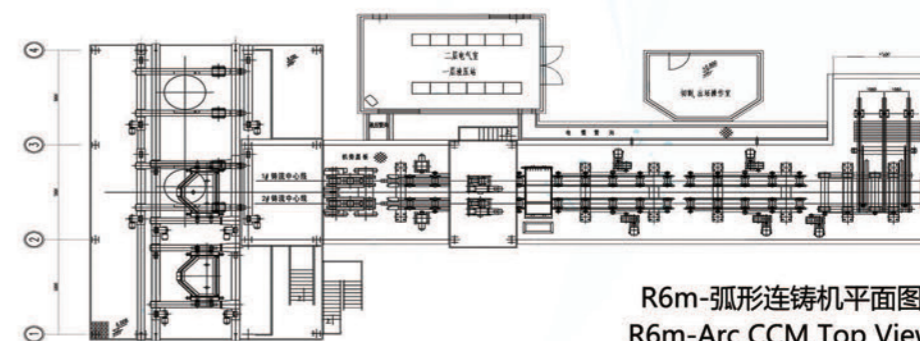


45度钢坯液压剪  
Billet Hydraulic Shear

### 连铸机工艺图 CCM Drawing



R6m-弧形连铸机立面图  
R6m-Arc CCM Side-View



R6m-弧形连铸机平面图  
R6m-Arc CCM Top View

## Copper mould tube

### Product specification:

covering all sizes required by the market

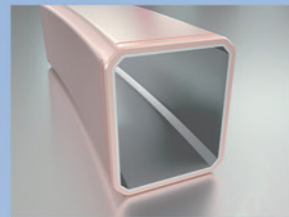
Billet: from 60mm x 60mm to 700mm x 700mm

Round billet: from  $\Phi$  80mm to  $\Phi$  1000mm

Rectangular: from 70mm x 110mm to 550mm x 720mm



800 round petal copper tube



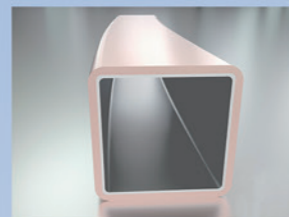
Edge chamfered copper pipe



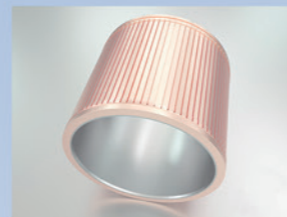
Flanging tube



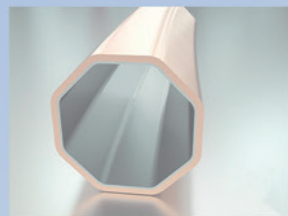
Convex tube



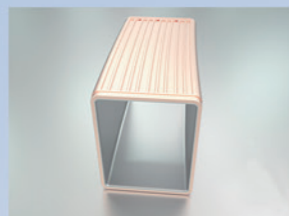
Diamond copper tube



1m round copper tube



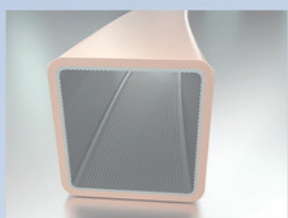
Octagonal copper tube



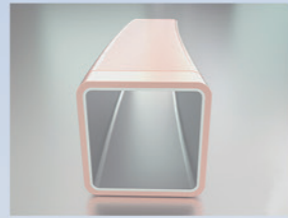
Grooved copper tube



Copper tube with arc hole



Inner corrugated copper tube

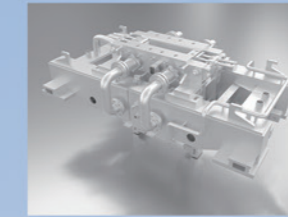


Outer corrugated copper

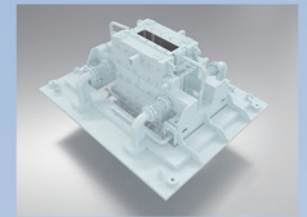
## Slab



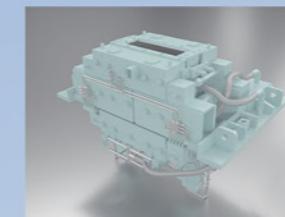
Slab 1



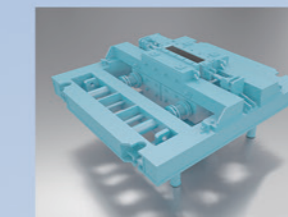
Slab 2



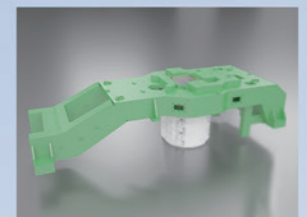
Slab 3



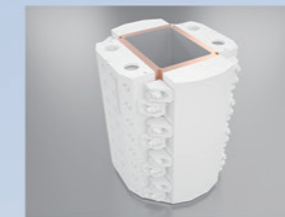
Slab 4



Slab 5



Slab 6



Slab 7



Slab 8

### Product specification:

covering all sizes required by the market

Billet: from 60mm x 60mm to 700mm x 700mm

Round billet: from  $\Phi$  80mm to  $\Phi$  1000mm

Rectangular: from 70mm x 110mm to 550mm x 720mm

# Water jacket

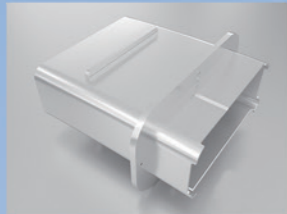
## Product specification:

covering all sizes required by the market

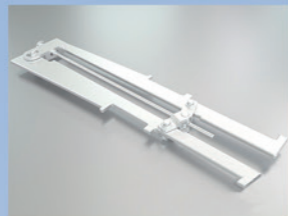
Billet: from 60mm x 60mm to 700mm x 700mm

Round billet: from  $\Phi$  80mm to  $\Phi$  1000mm

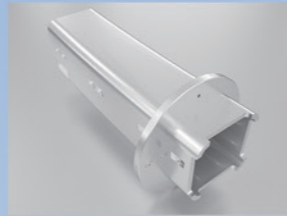
Rectangular: from 70mm x 110mm to 550mm x 720mm



Large rectangular billet

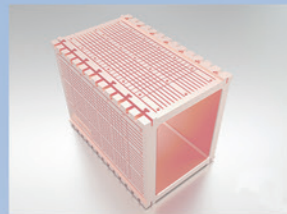


Arc template



High precision water jacket

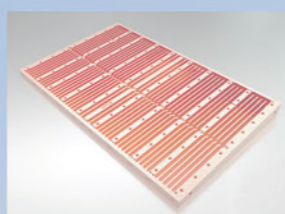
# Copper plate



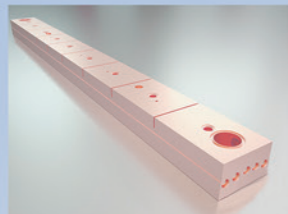
240x320 slotted copper plate



400x500 slotted copper plate



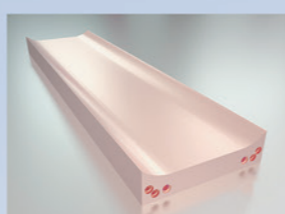
CSP wide face copper plate



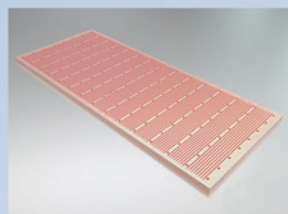
CSP narrow copper plate



H-type copper plate



Chamfered copper plate

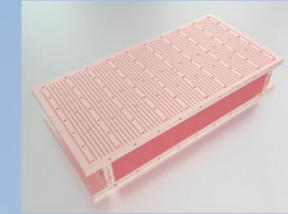


Wide copper plate

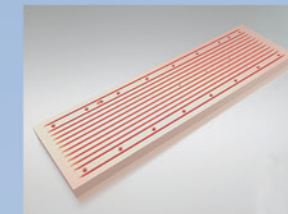


Funnel copper plate

# Copper plate



Copper plate assembly



Narrow copper plate



## Product description:

supplies traditional copper plate, CSP plate, FTSC plate, ESP plate, QSP plate, Beam blank plate, Combined big billet plate and their repairing.

Thickness: 40mm-125mm

Capability: 2000 pcs / year

Material: CuAg, CuCrZr, CuNiBe

Coating: NiCo, Alloy coating, Cermic coating

# Assembly

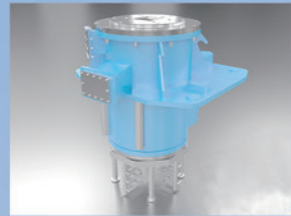
## Product specification:

covering all sizes required by the market

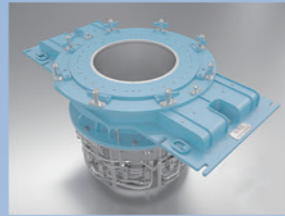
Billet: from 60mm x 60mm to 700mm x 700mm

Round billet: from  $\Phi$  80mm to  $\Phi$  1000mm

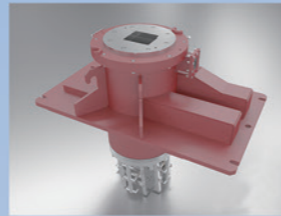
Rectangular: from 70mm x 110mm to 550mm x 720mm



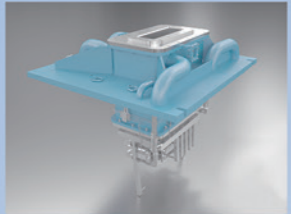
Assembly 1



Assembly 2



Assembly 3



Assembly 4



Assembly 5



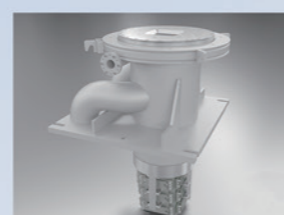
Assembly 6



Assembly 7



Assembly 8



Assembly 9



## Electromagnetic Stirring

### Billet/Round F-EMS:

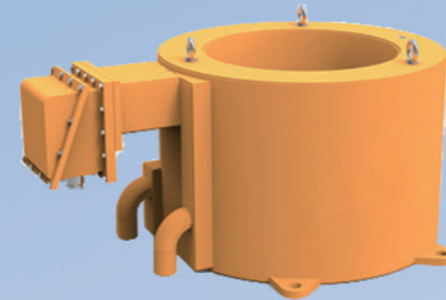
It is generally installed in the final stage where the molten core is 25%-35% of the width of the billet. The main function is to improve the equiaxed crystal rate of the billet, improve the center porosity and shrinkage , and improve the center segregation and v-shape segregation.



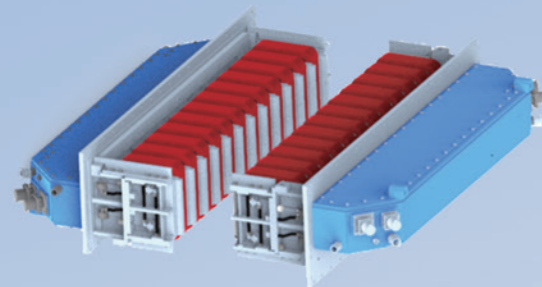
Billet/Round F-EMS



Billet/Round M-EMS



Billet/Round M-EMS



Slab M-EMS

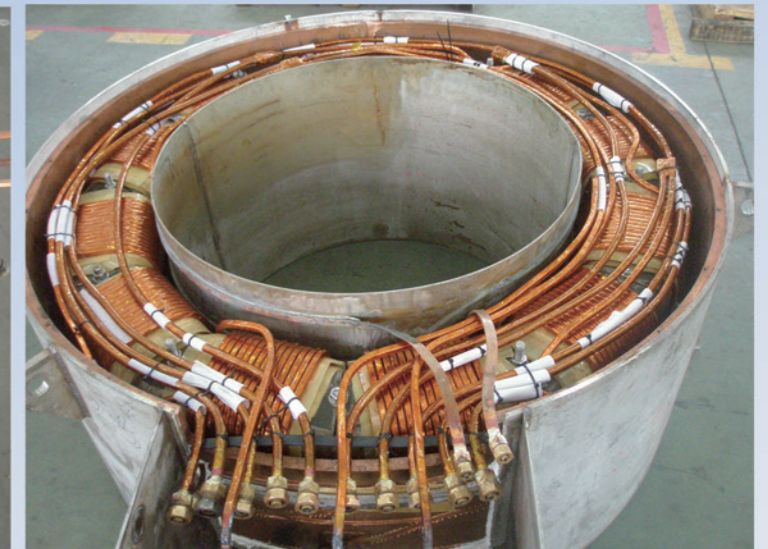
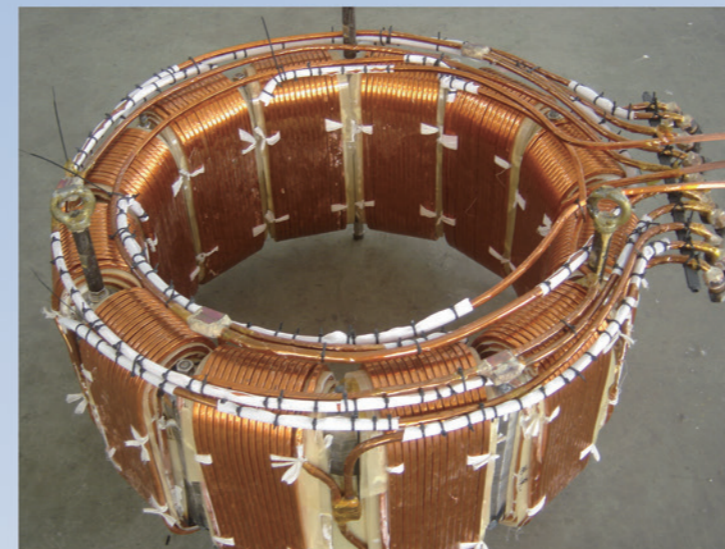
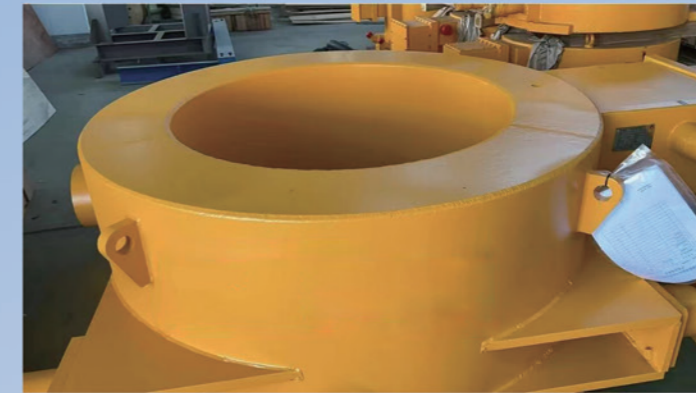


Slab In-roll EMS

### Billet/Round M-EMS:

It is installed inside/outside the mould, its main function is to improve the billet equiaxed crystal ratio, reduce subsurface bubbles and pin-holes, reduce inclusion, homogenize billet shell and improve center segregation.

## Product Photos



### Slab M-EMS:

Slab In-roll EMS is driven by two-phase or three-phase current generated by the frequency converter, linear induction motor with alternating magnetic field. The alternating magnetic field causes the molten steel to generate an induced current, which turns the molten steel into a current-carrying conductor, and moves under the action of the alternating magnetic field, that is, stirring the molten steel.



**轧钢设备 ( 钢坯加热 )**

**Rolling Machinery(Billet Reheating)**

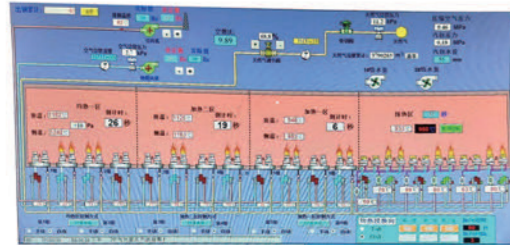
**加热炉 Reheating Furnace**



加热炉入口  
Reheating Furnace Entry



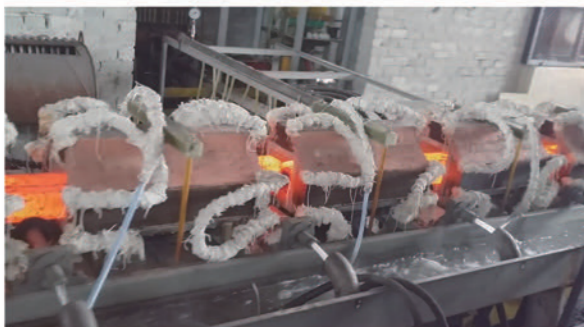
加热炉出口  
Reheating Furnace Exit



加热炉温度控制界面  
R. F Temp Control Interface

项目 Section	单位 Unit	设定值 Parameter
炉子产量 Capacity	T/H	5 - 100
坯料端面尺寸 Billet Size	mm	60x60 - 150x150
坯料长度 Billet Length	mm	1300 - 12000
燃料种类 Fuel Type		天然气, 煤炭, 重油, 渣油 Natural Gas, Coal, Heavy Oil, Residue
加热温度 Heating Temperature	℃	1050 - 1300

**电加热炉 Electrical Reheating**



钢坯加热电感应圈  
Billet Heating Induction Coil

项目 Section	单位 Unit	设定值 Parameter
吨耗电量 Power Consumption	度 Kwh	≅ 390
功率 Power	KW	50 - 6000

**轧钢设备 ( 传动设备 )**

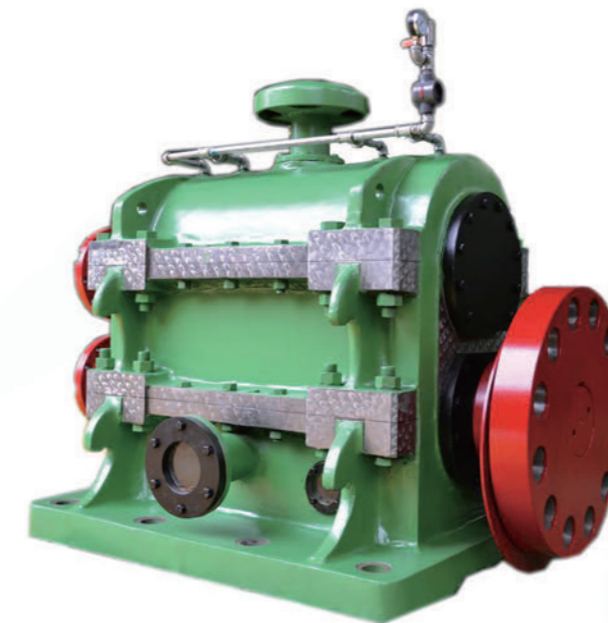
**Rolling Machinery(Transmission Equipment)**



单级圆柱齿轮减速箱  
Single-stage Gear Reducer



一拖二减速箱  
Speed Reducer(1 Input 2 Output)



两芯箱  
Dual Core Box



联合减速箱  
Joint Speed Reducer

### 轧钢设备 (轧机选型) Rolling Machinery(Machine Type)



三辊上调整轧机  
3-Hi Roller-Separate Locking Upper Regulation



二棍涡轮蜗杆下调整轧机  
2-Hi Roller-Worm Gear Bottom Regulation



二棍液压锁紧上调整轧机  
3-Hi Roller-Hydraulic Lock Upper Regulation



二棍涡轮蜗杆上调整轧机  
2-Hi Roller-Worm Gear Wheel Plate Upper Regulation



短应力轧机  
Short Stress Rolling Mill



无牌坊短应力轧机  
Housingless Rolling Mill

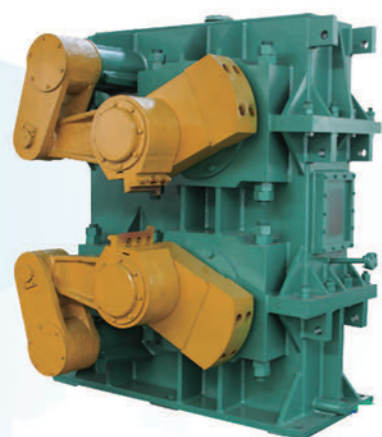


平立交替短应力轧机列组  
H-V Alternating Short Stress Rolling Mill Production Line

## 轧钢设备 ( 辅助设备 )

### Rolling Machinery(Auxilliary Machine)

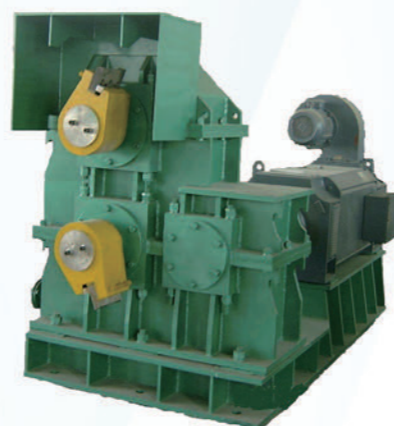
#### 飞剪设备 Flying Shear



1#曲柄飞剪  
Crank Flying Shear



2#回转飞剪  
Rotary Flying Shear



3#倍尺飞剪  
Crop Flying Shear

飞剪型号 F.S Model	1#	2#	3#
剪切速度 Shearing Speed	0.5-3m/s	3-10m/s	6-21m/s
剪切规格 Shearing Size	70×70mm <sup>2</sup> (ø80mm) 80×80mm <sup>2</sup> (ø90mm) 100×100mm <sup>2</sup> (ø110mm)	55×55mm <sup>2</sup>	≤Φ60mm

#### 穿水冷却设备 TMT Water Quenching Box



棒材强穿水设备  
Hi-Pressure TMT Water Quenching Box



棒材穿水前  
Before Quenching



棒材穿水后  
After Quenching

## 冷床設備

### Cooling Bed

该冷床设备主要用于轧后钢材在线缓慢自然冷却。在钢材生产线上，冷床对钢材还具有预弯曲功能，防止钢材在自然冷却过程中因各处质量不等导致出现不规则弯曲。

The cold bed equipment is mainly used for the slow natural cooling of steel after rolling. In the steel production line, the cold bed also has the function of pre-bending the steel, to prevent the irregular bending of the steel due to different quality in different places during the natural cooling process.



裙板步进式冷床  
Apron Rack Stepping Type



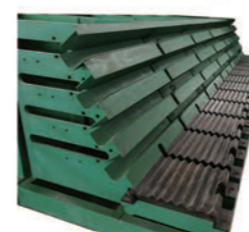
裙板链条式冷床  
Apron Chain Transfer Type



四道跑槽步进式冷床  
4 Channel Rack Stepping Type



转鼓步进式冷床  
Rotary Drum Rack Stepping Type



四道跑槽  
4 Channel Input Mechanism



裙板机构  
Apron Type Mechanism

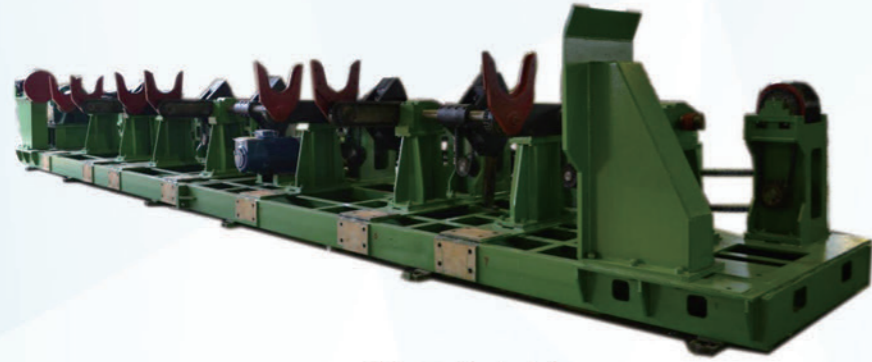


转鼓机构  
Rotary Drum Mechanism



碗槽式机构  
Twin Channel Mechanism

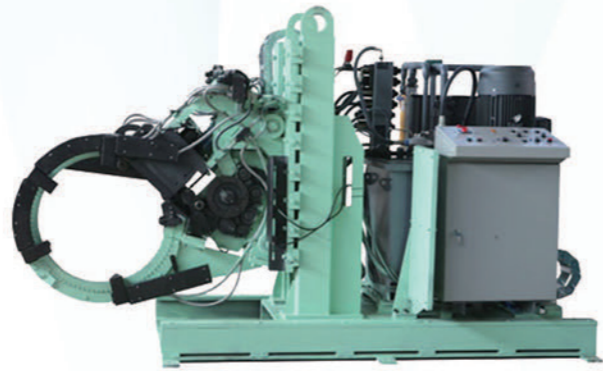
### 集捆打包设备 Bundling Machine



收集震动打包台架  
Oscillation Collecting Bundling Platform



PF线材打包机  
Wire Rod Coil Packing Machine



棒材自动打包机  
Bar Auto Bundling Machine

### 冷剪冷锯 Cold Shear, Cold/Hot Saw



液压冷剪  
Hydraulic Shear

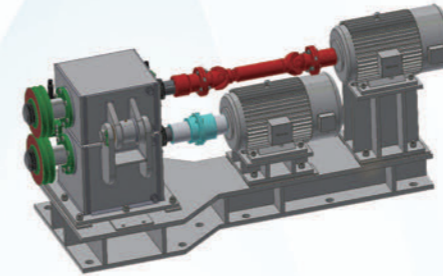


机械冷剪  
Mechanical Shear

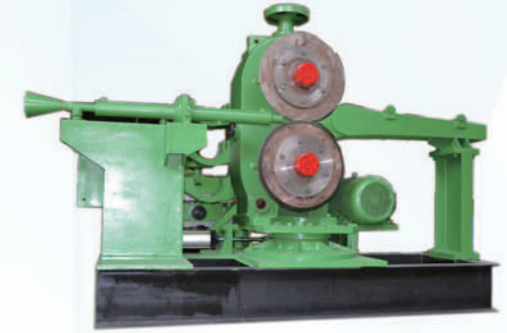


型钢冷锯  
Cold Saw

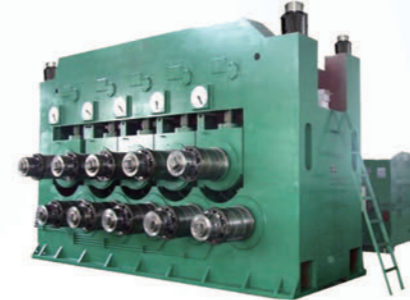
### 其他辅助设备 Others Auxilliary Machine



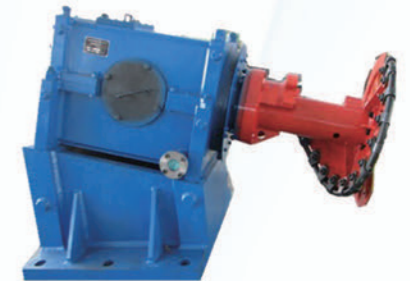
夹送辊  
Pinch Roller



圆盘飞剪  
Disc Type Flying Shear

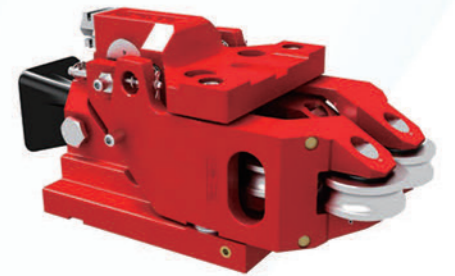
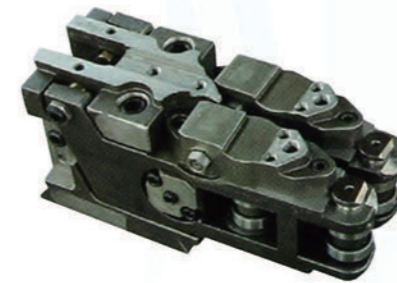
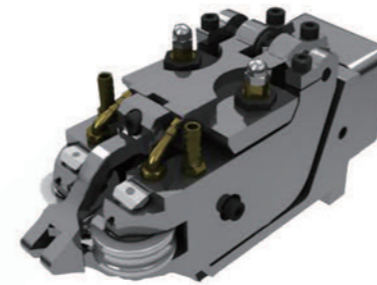


角钢、槽钢矫直机  
Angle Bar, Channel Beam  
Straightening Machine

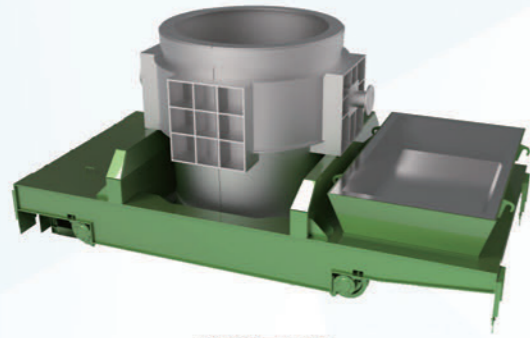


线材吐丝机  
Wire Rod Laying Head

### 备品备件 Spare Parts



辅助设备 Auxilliary Machinery Equipment



炉前钢包车  
Furnace Ladle Car



龙门勾  
Gantry Hook



废钢剪切-液压鳄鱼剪  
Scrap Cutter - Alligator Shear



废钢液压压块机  
Scrap Block Hydraulic Baler



废钢破碎机  
Scrap Crusher



废钢破碎前  
Scrap before crush



废钢破碎后  
After crush process



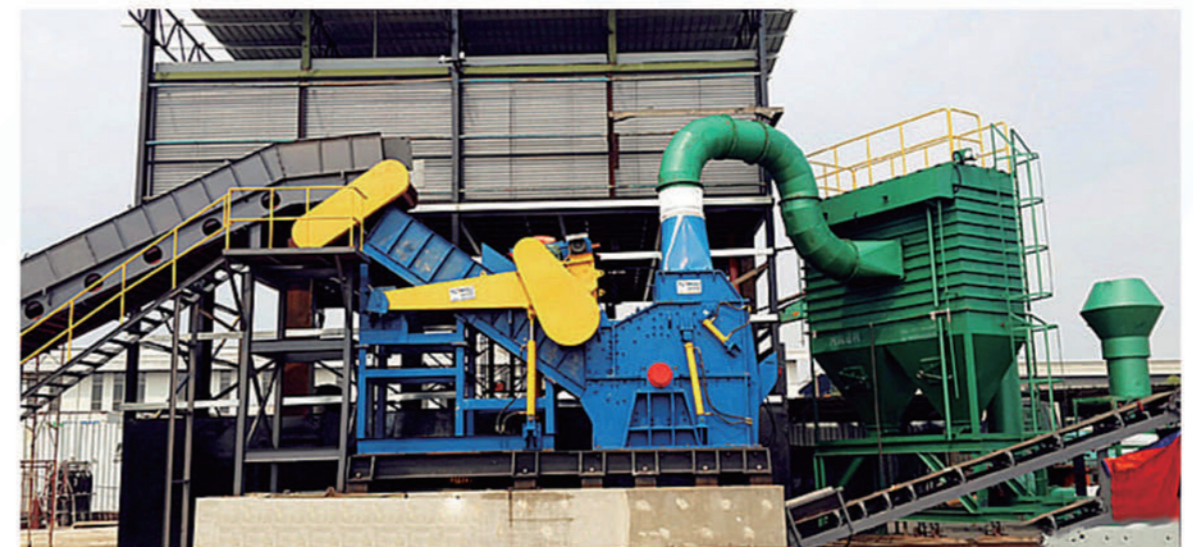
废钢废铁 (大块)  
Steel Scrap ( Large Size)



废钢废铁 (剪切后)  
Steel Scrap ( After Shear)



废钢废铁 (压块后)  
Steel Scrap Block



破碎机整体  
Steel Scrap Crusher Mac hine

### 周边设备 Peripheral Equipment



厂区内高压变电站 High Voltage Power SubStation

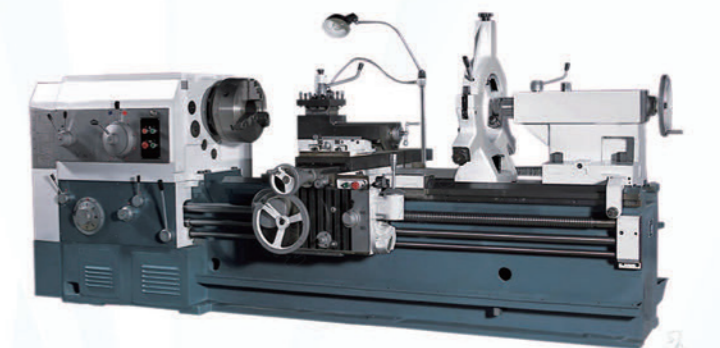


水池处理-水泵房 Water Pool Treatment - Water Distribution Pump Room



炼钢除尘设备 Dust Removal Equipment

### 机修设备 Machine Repair Equipment



## 电控控制系统

### Electrical Control System

控制方式有直接启动控制、星三角降压启动控制、自藕降压启动控制、变频器启动控制、软启动控制等各种控制方式  
 The control mode includes direct start control, star delta buck start control, automatic buck start control, inverter start control, soft start control and other control modes

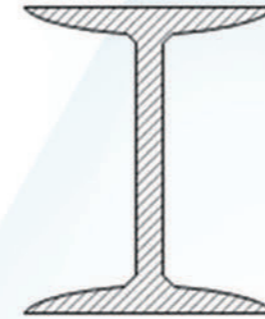
#### 相关标准 Relevant criteria:

- ISO ( 国际标准组织 International Standard Organization )
- IEC ( 国际电气组织 International Electrical Organization )
- IEEE ( 电气与电子工程协会 Association Of Electrical And Electronic Engineering )
- GB ( 国标 National Standard Of China )

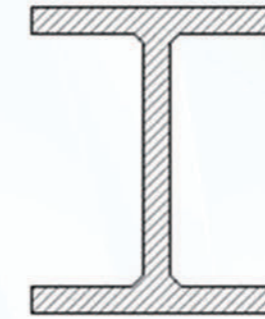


## 轧钢品种

### Steel Rolling Variety



图a: 工字钢



图b: H型钢

