

**Mobile**

86-15596648075  
86-13991875422

**Fax**

029-88087080

**Tel**

029-88087080

**E-mail**

leonard.kzao@chnzbtech.com

**Website**

www.chnzbtech.com  
www.zbmetaltech.com

**Address**

25-26th Floor, Block A, Merchants Group Silk Road Center,  
International Trade&Logistics Park, Xi'an, China.



**BSBSUCCEED**  
**CHNZBTECH**

**Website QR code**



Chinese



English

**PRODUCT**  
INTRODUCTION



www.chnzbtech.com  
www.zbmetaltech.com



CONSCIENTIOUS || STRICT || INNOVATION



Overall Layout Of Steel Factory

COMPANY PROFILE  
1-12

01

PRODUCT  
13-38

02

TYPICAL CASES  
39-40

03

CUSTOMERS  
41-42

04

## CONTENT

### PRODUCT



<b>STEELMAKING LINE</b>	
Steelmaking Electric Arc Furnace	11
Ladle Refining Furnace (LF Furnace)	13
VD/VOD Vacuum Refining Furnace	15
Continuous Casting Machine	17
Rolling Machine	18
Electrical Automation Control System	19

<b>FERRO-ALLOY PRODUCTION LINE</b>	
Submerged Arc Furnace for Ferro-Alloy	22
<b>DUST COLLECTION SYSTEM</b>	
Steel Plant Dust Collection System	23
Submerged Arc Furnace Dust Collection System	23
Raw Material and Crashing Workshop Dust Collection System	24

<b>SPARE PARTS</b>	
For Steelmaking	25
<b>ELECTRIC CONTROL CABINET</b>	
H.V cabinet	31
L.V cabinet	32
Computer Operation interface	33
<b>TYPICAL CASES</b>	
Typical cases	39

## ABOUT US

BSBSUCCEED was founded in October 2003, more than 300 employees, exported over 100 countries, after 20 years development, it is consecutive years of Shaanxi province Top 50 Private Enterprise, with annual import and export exceeding 350 million USD. CHNZBTECH was established as BSBSUCCEED branch of metallurgical equipment, certified by CE & ISO9001, which is a technology-oriented enterprise providing complete steelmaking & ferroalloy solutions for domestic and overseas industry. Integrating design, engineering, manufacture, erection, and commissioning specially for equipment like IF, EAF, LF, VD/VOD, SAF, CCM, rolling mill, low carbon ferrochrome furnace, combining revamping and upgrading of existing plants. CHNZBTECH has over 30 R&D, design, electrical and mechanical engineers, over 12 of them are senior. More than 120 workers in the main workshop and also supported by other China leading manufacturer to guarantee different supply. CHNZBTECH is taking lead in stage of 3D modeling and intelligent design, applying 3D design software to realize static, dynamic analysis and spatial simulation, parametric analysis, design level is strongly guaranteed. Good reputation, state-of-the-art engineering and design, reliable quality, considerate service after sales wins different customers trust, CHNZBTECH equipment sold through out China, and exported far away to Egypt, Türkiye, Algeria, Iran, Russia, Pakistan, Bangladesh, Kazakhstan and other countries.



## 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.





# TECHNOLOGY CENTER PRODUCT MANAGEMENT

## QUALITY MANAGEMENT

### Material Quality Control

Material Support  
Material Quality management  
Support to Solve the Quality Issue

### In-process Quality Control

In-process Quality Management  
Improve the Quality Level of Product  
Support to Solve the Quality Issue  
Detail Roving Check System  
SFIS Data Collection & SPC  
Abnormal Control

### Quality Reliability Control

Equipment Calibration Center  
Environment Substance Laboratory  
Soldering Failure Analysis Laboratory  
Quality Reliability Engineering Laboratory

### Outgoing Quality Control

Support to Solve the Quality Issue  
Outgoing Level Check Planning  
Outgoing Quality Management  
Customer Inspection

## QUALITY MONITORING TEAM

SECURITY LEADERSHIP TEAM

ISO PROMOTING TEAM

6S MONITORING TEAM

HUMAN RESOURCE SYSTEM

MARKET & PRODUCT SYSTEM

RESEARCH AND DEVELOPMENT

AND SUPPLY CHAIN SYSTEM

## AFTER SALE SERVICES

### Installation

Planning  
Management  
Implementation  
Supervision

### Commissioning

Supervision  
Handover  
Babysitting

### Training

Onsite  
Offsite  
Operators  
Engineers

### Operation

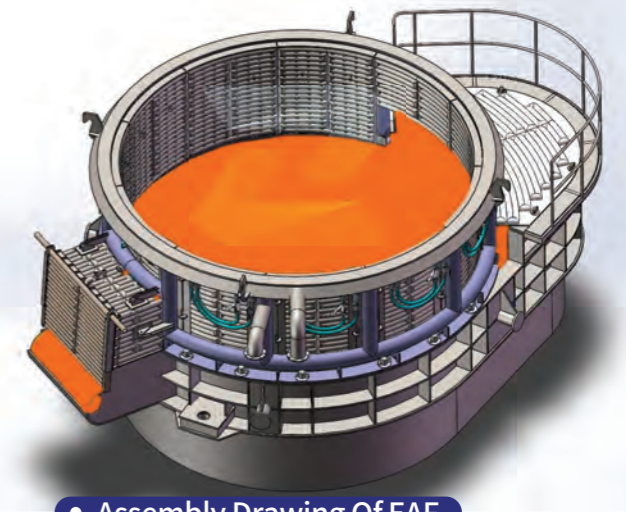
Supervision  
Contact  
Operation

### System Support

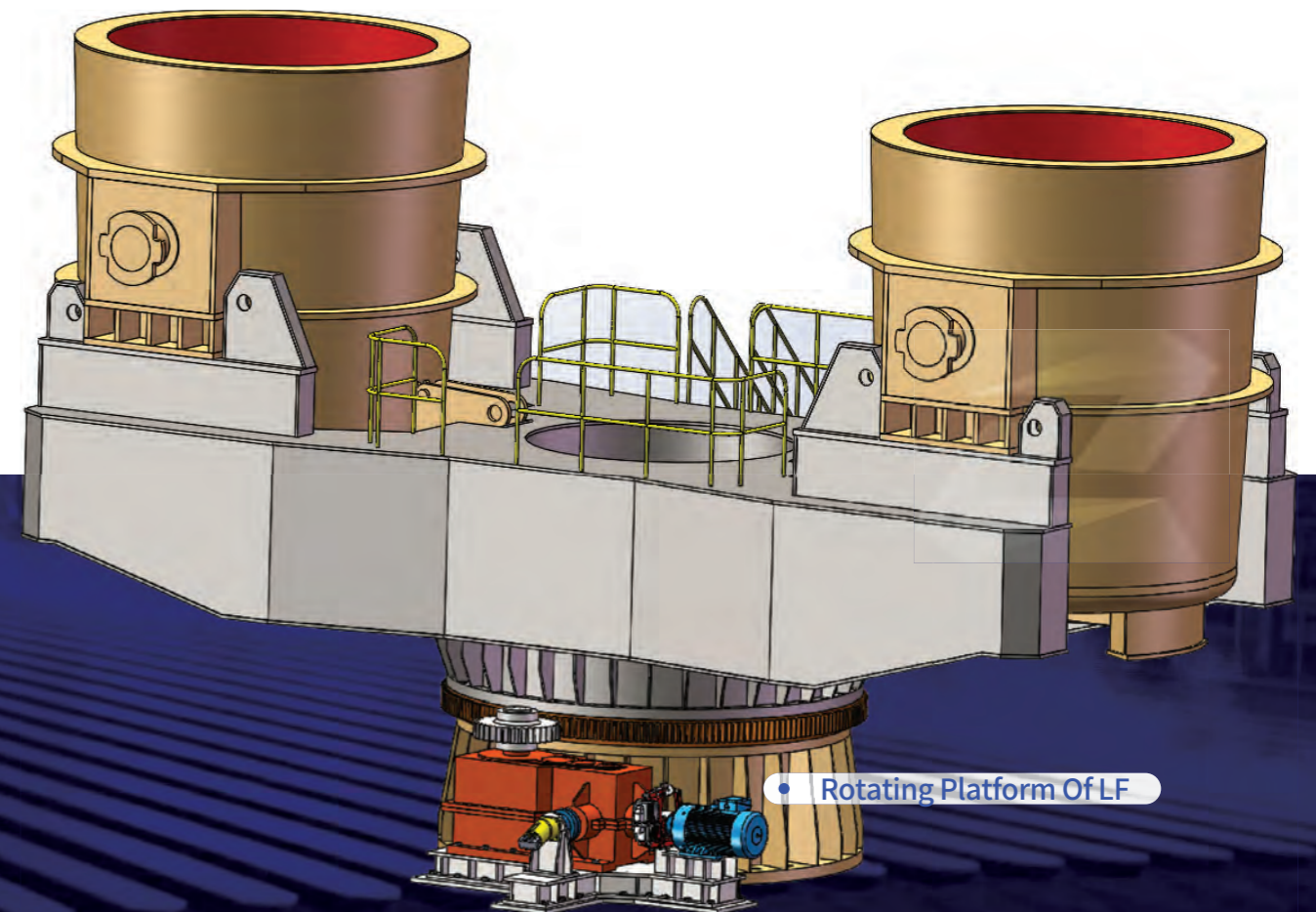
Contracted  
AD Hoc  
Online  
Spare parts



Water-cooled roof of LF



Assembly Drawing Of EAF



Rotating Platform Of LF

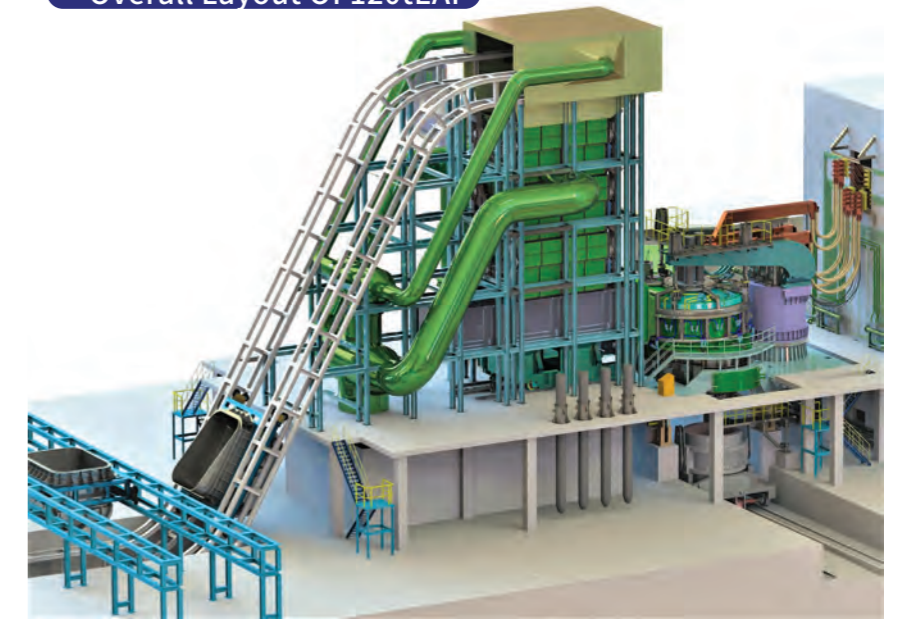
CHNZBTECH is taking the lead in entering the stage of 3D modeling and intelligent design in the industry. Applying 3D design software to realize static dynamic analysis and spatial simulation, parametric analysis. Large capacity steel plant facilities practical experience, EAF up to 350t, LF up to 400t, VD/VOD up to 350t, state-of-the-art design, high operational availability, maintenance friendly and efficient and economical equipment.



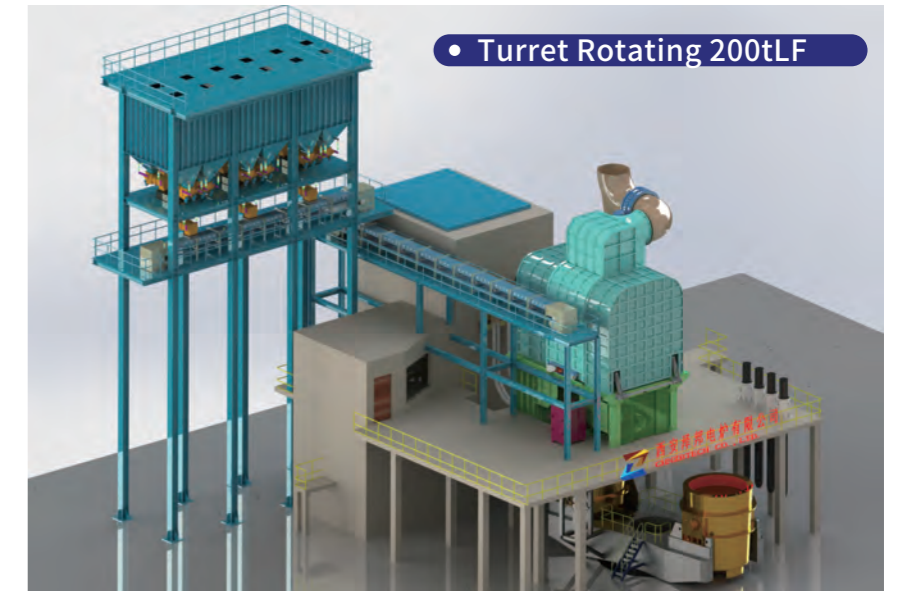
• Overall Layout Of 150t Ultra High Power EAF



• Overall Layout Of 120tEAF



• Turret Rotating 200tLF



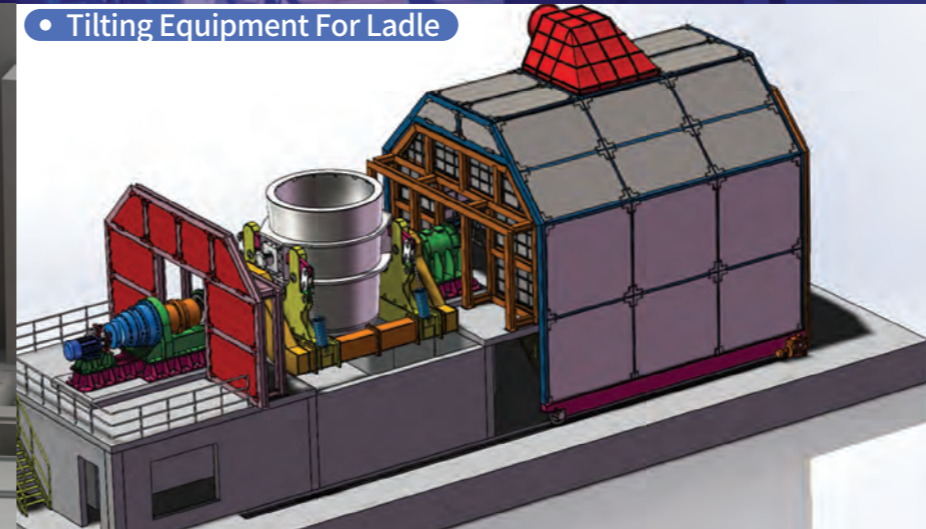
• tapping spout 50tEAF



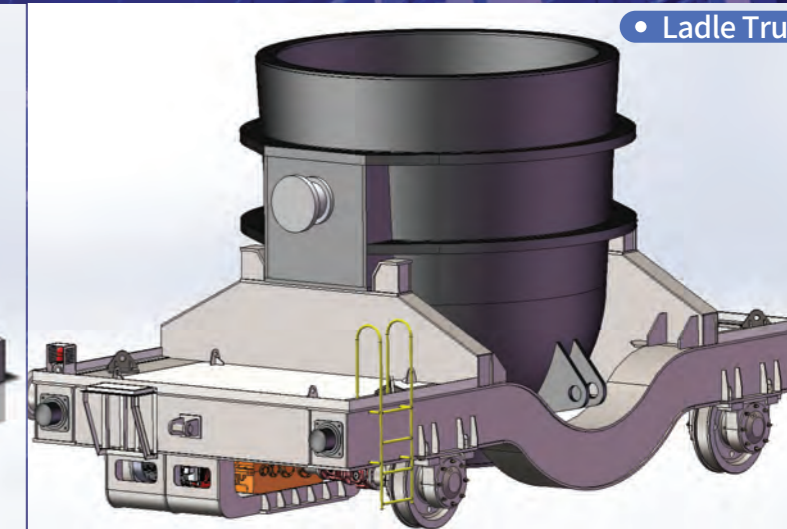
• tapping spout 20tEAF



• Tilting Equipment For Ladle



• Ladle Truck





• Overall Layout Of 300tLF



• Arm Rotating 300tLF



Overall Layout Of 180tVOD Vacuum Refining Furnace



### MANUFACTURE CAPABILITY



8m CNC Horizontal Lathe



10m CNC Vertical Lathe



8m CNC Milling Machine



23mx5.5m8m CNC Milling Machine



28m CNC Floor Type Boring and Milling Machine



CNC Coordinate Type Cutting Machine



28m CNC Vertical Lathe



64m CNC Double-gantry Moving Boring and Milling Boring



Reheating Furnace



16m Floor Type Boring and Milling Machine



Gantry Boring and Milling Machine

**APPLICATION**

For smelting carbon steel, high quality carbon steel and various alloy steel. It applies to all steel scrap, hot metal crap, pelletizing and preheating steel scrap, hot briquetted iron and sponge iron, etc.

**STEELMAKING LINE**  
**Electric Arc Furnace**  
**For Steelmaking**

**Features Of The Equipment**

For smelting carbon steel, high quality Series reactor in main loop improves the system impedance and achieves secondary high-voltage, long-arc and low-current operation with stable arc and high arc power.

On-load tap changer is adopted during the operation of the EAF, which comprises left or right operation, rotating lid, top charging and eccentric bottom tapping.

The furnace body is of frame-type full water-cooling structure, with detachable upper and lower furnace shells, concentric circular tubular furnace cover in the water-cooling structure, oxygen lance at the furnace door and burner on the furnace wall. The propotional valve controls electrode lifting, rotation of furnace cover and furnace tilting. There are a whole set of PLC, and computer control system and computer screen monitoring system.



TECHNICAL PARAMETER FOR HX-STEELMAKING EAF				
Model	Furnace Shell Inner Diameter (mm)	Capacity(T) RATED/MAX	Transformer Parameter Rated Capacity(MVA)	Graphite Electrode Diameter (mm)
HX-0.5	1600	0.5/1.5	0.63	150
HX-1.5	2100	1.5/2.5	1.25	200
HX-3	2600	3/5	2.2	250
HX-5	3200	5/8	3.2	300
HX-10	3500	10/15	5-6.3	350
HX-15	3800	15/20	6.3-8	350
HX-20	4000/4200	20/25	8-12.5	400

TECHNICAL PARAMETER FOR ULTRA-HIGH POWER ELECTRIC ARC FURNACE					
Model	Furnace Shell Inner Diameter (mm)	Capacity(T) RATED/MAX	Transformer Parameter Rated Capacity(MVA)	Electric Reactor Capacity (KVar)	Graphite Electrode Diameter (mm)
HX-30	4600/4800	30/45	25-32	7000	450
HX-60	5400	60/70	45-55	9000-11000	500
HX-70	5600	70/80	55-65	11000-12000	500
HX-80	5800	75/85	60-70	13000-14000	500-550
HX-100	6200	100/120	75-85	15000-17000	550-600
HX-120	6400	120/140	90-110	18000-22000	600-650
HX-150	6800	120/170	120-130	23000-25000	650





STEELMAKING LINE

# Ladle Refining Furnace (LF Furnace)

## APPLICATION

Ladle refining furnace is used for refining molten steel from primary melting furnace (EAF or Converter), can create a slightly positive pressure reducing atmosphere, apply such means as submerged arc heating, argon stirring, white slag refining, alloy composition trimming, wire feeding under the atmosphere to conduct degassing, desulfuration, decontamination for hot metal, and accurately control the ingredients and temperature of molten steel. The equipment also has an effect of buffering and adjusting continuous casting links.

### Type Of LF Furnace

Bridge type or the type with independent rack mount and furnace cover; single arm or three-arm; ladle revolving platform or furnace lid rotary type, etc.



130t Ladle Furnace



200t Ladle Furnace

### TECHNICAL PARAMETER FOR LADLE REFINING FURNACE

Model	Ladle Shell Inner Diameter	Capacity(T)	Transformer Parameter	Heating Rate Of Molten Steel	Graphite Electrode Diameter	Circle Diameter Of Electrode Center
	(mm)	RATED/MAX	Rated Capacity(MVA)	(°C/min)	(mm)	(mm)
LF-15	2000	15-18	3	≥3	250	460
LF-20	2500	20-30	4	≥3	250	460
LF-30	2700	30-40	6	≥4	300	550
LF-40	2900	40-50	8	≥4	300	550
LF-50	3000	50-60	10	≥4	350	620
LF-60	3150	60-70	12.5	≥4	350	620
LF-70	3200	70-80	13.5	≥4	400	680
LF-80	3300	80-90	14	≥4	400	680
LF-90	3400	90-100	16	≥4	400	680
LF-100	3600	100-115	18	≥4	450	740
LF-130	3700	130-145	20	≥4	450	740
LF-150	3900	150-170	25	≥4	450	740
LF-200	4200	200-220	30	≥4	450	740
LF-250	4400	250-270	35	≥4	500	810

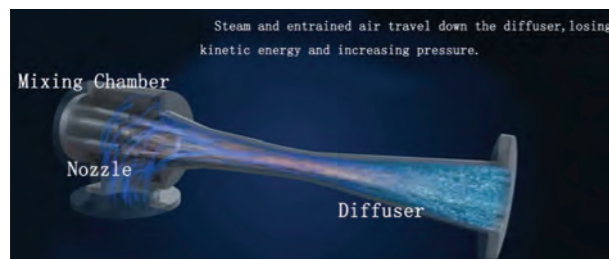
## STEELMAKING LINE VD/VOD Vacuum Refining Furnace

### Main Types

VD/VOD vacuum refining furnace can adopt either single or dual station. Overhead, pit or vehicle-mounted arrangement can be selected for vacuum tank. Unscrewing and vehicle-mounted movement are optional ways for movement of the vacuum tank.

### It Consists Of

Vacuum tank, vacuum tank cover and lifting mechanism of the cover, steel ladle, oxygen lance mechanism, vacuum charging device, temperature measurement and sampling and observation system, oxygen system, argon system, cooling water system, vacuum pump system, etc.



Steam Injection Pump

### APPLICATION

VD vacuum refining furnace can conduct vacuum degassing for molten steel, alloy composition trimming and argon stirring in vacuum. VOD vacuum refining furnace carries out oxygen blowing and decarburization, vacuum degassing and alloy composition trimming in vacuum, mainly used for refining ultra-low carbon stainless steel, electric pure iron, etc.



80t VD Vacuum Refining Furnace



150t VOD Vacuum Refining Furnace



120t VD Vacuum Refining Furnace



260t VD Vacuum Refining Furnace



Vacuum Mechanical Pump

TECHNICAL PARAMETER FOR VD/VOD VACUUM REFINING FURNACE				
Rated Capacity	Ladle Shell Inner Diameter (mm)	Vacuum Pump Suction Capacity (kg/h)	Working Vacuum Degree (Pa)	Size Of Vacuum Tank (mm)
VD-15	2200	150	65	3800*4100
VD-25	2600	180	65	4000*4600
VD-30	2700	200	65	4200*5175
VD-40	2900	250	65	4800*5300
VD-50	3000	280	65	5300*5400
VD-60	3150	360	65	5300*5500
VD-70	3200	380	65	5400*5600
VD-80	3300	380	65	5500*5700
VD-90	3400	380	65	5600*5800
VD-100	3500	400	65	5600*5800
VD-120	3600	420	65	6200*6400
VD-150	3900	450	65	6300*6600

## STEELMAKING LINE Continuous Casting Machine

We can design and manufacture the up-to-date billet continuous casting machine in accordance with the user's steelmaking capacity, billet size, steel grades and the user's field conditions. The detailed design mainly includes:

- Equipment foundation and civil works
- Steel structure platform
- Casting radius, Strand number
- Ladle support, Turret, Ladle transfer car, Fixed support, Tundish, Tundish car, Tundish roaster, Mould, Oscillation device, Secondary cooling system, Dummy bar, Dummy bar storage device, Withdrawal straightening machine, Approach roller table, Automatic cutting machine Transmit roller table, Cooling bed, Pusher, Hydraulic system, Computer and PLC system

This type of CCM can be designed as curved and vertical-bend according to the users requirements. It can cast carbon steel, alloy steel and special steel, such as stainless steel. Automatic hydraulic control, automatic secondary cooling water distribution, compressed air-water cooling system.



Continuous Casting Machine

## Rolling Machine

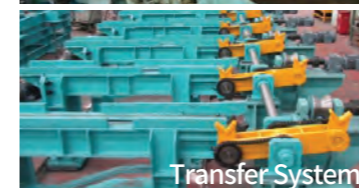
We design and manufacture a complete line of precision rolling mills. It is used for metal rolling process and refers to complete the whole process of rolling production equipment, including the main equipment, auxiliary equipment, lifting transport equipment and accessory equipment, etc. The rolling mill mainly consists of roller, rolling mill house, bearing package, bearing, workbench, rolling guide, rail chair, roller adjustment device, top roll balance device and roller change device, driving device, cooling bed, finishing facilities with cold shear, bundling system with bar counter and wire tying machines etc.



Cooling Bed



Reheating Furnace



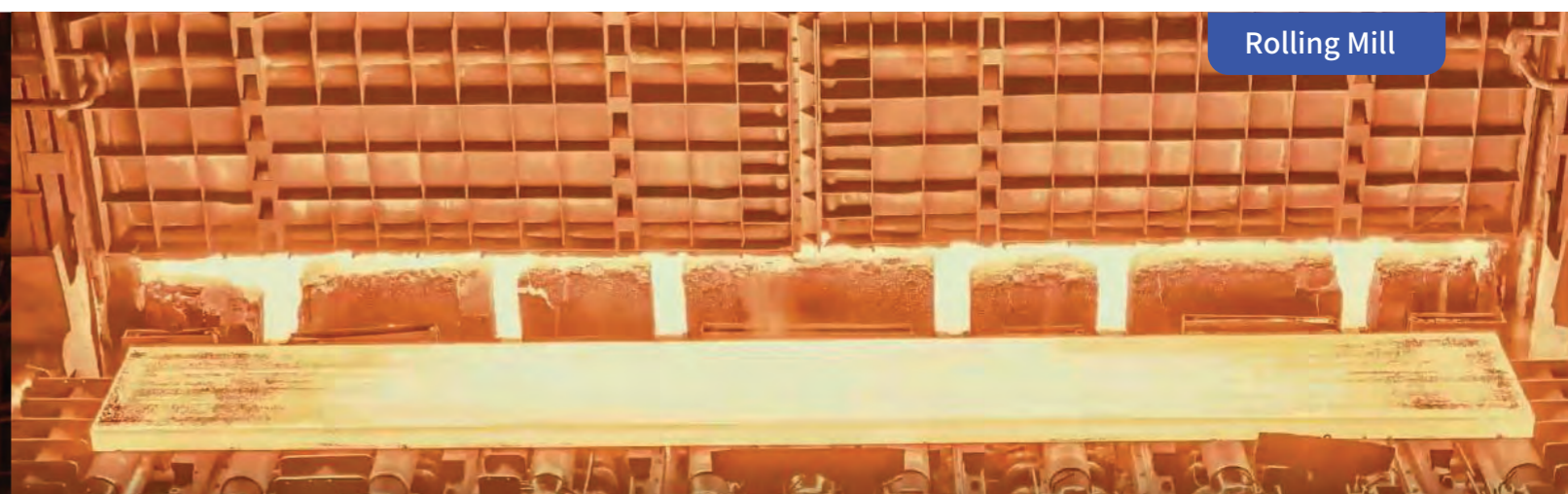
Transfer System



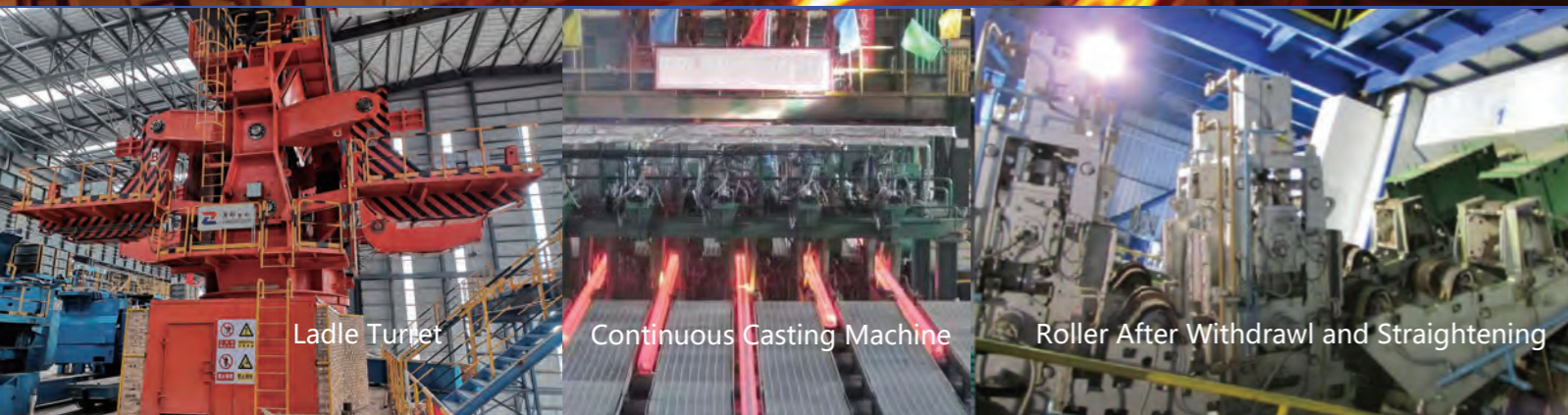
Rolling Mill



Withdrawal and Straightening Machine



Rolling Mill



Ladle Turret

Continuous Casting Machine

Roller After Withdrawal and Straightening

CONSCIENTIOUS || STRICT || INNOVATION

STEELMAKING LINE

# Electrical Automation Control System

## The Electrode Automatic Pressure Release Function

Based process requirements, precisely press and release the electrode can greatly improve the stability, reliability of electric furnace production, reduce electrode fracture rate and ensure the operation of electric furnace safe, high efficiency and stable.

### Electrode lifting function

Based process requirements accurately control electrode operation.

### The function of automatic control feeding

Based process requirement, feed the material to furnace timely and quantitatively, the feeding uniformity and stability can ensure continuous and stable operation of electric furnace, to improve the level of automation.

### Detection and display of operating parameters

Electric furnace operating parameters such as: current, voltage, power factor, temperature, pressure and other parameters in real-time detection and control, and a sound alarm, all parameters, status can be displayed on the color display.

### Automatic and manual switching function

To ensure system reliability, it is equipped with a set of manual control buttons, manual control can be used under any circumstances.

### The operation parameters of storage and Printing function

Instant printing and timing print arbitrary choice, operating parameters can be prolonged storage, retrieve, and manage easily.

### The network function

Connected with the LAN network, the parameter of the furnace can be remote monitored, improve the enterprise automation management level.

### Material transmission electric control cabinet

### The ferro alloy saf electronic control screen

### The electric operating table

### Data monitoring

### Eaf charge mixture system

### Electronic control screen

### The fe-si saf electric control cabinet

FERRO-ALLOY PRODUCTION LINE

# Submerged Arc Furnace For Ferro-alloy

APPLICATION

Submerged arc furnace will be mainly applied for reduction of metallurgical ore to produce the FeSi, FeMn, FeCr, Ferrotungsten, SiMn and Titanium slag alloy, which will be the important material for metallurgical and chemical industries.

WORKING CHARACTERISTICS

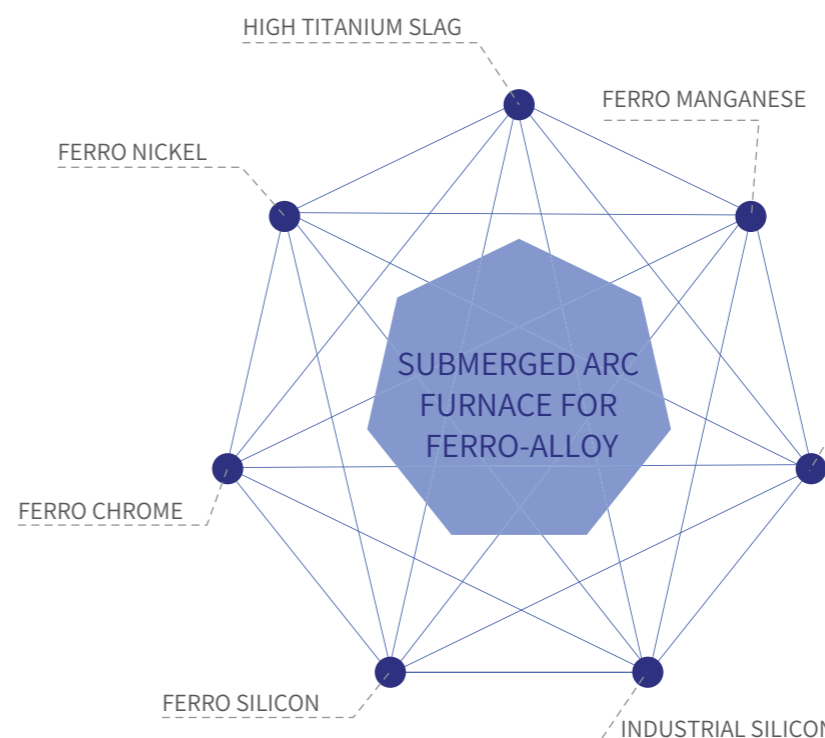
For submerged arc furnaces, the lining will be made of carbon or magnesia refractory material. The electrode is self-baking. The electrode will be inserted into the charging material.

The material will be molten by arc and current. The charging material will be continuously adding. The tapping will be batch type. It is a continuous operation industry furnace.

DEVELOPMENT DIRECTION

Submerged arc furnace is toward to larger automatically, sealed, environmental protection and energy saving. As to core components of submerged arc furnace, the structure of the electrode holding system, our technical team also has carried on the technological innovation.

With copper tile type top tight hydraulic oil cylinder, copper tile type bellows expansion tank, taper ring, big bolt clamping type, modular control device structure etc. According to the requirements of the various ferroalloy products and metallurgical process, we will select the most appropriate furnace type structure for you.



33000kVA Silicon Furnace



22500kVA 75% FeSi SAF



30000kVA FeSi Submerged Arc Furnace



4000kVA Low Carbon Ferrochrome Arc Furnace

## DUST COLLECTION SYSTEM Dust Collection System

### For Steel Plant

In steel making enterprises, the flue gas from arc furnace is one of the main source of pollution, as the exhausting volume is large, the temperature of flue gas is high and it is fine ash powder with hydrophilic property. It is difficult to collect and filter. Along with the development of process in steel and iron industry with ultra-high power, strengthening melting and molten iron, and the environment protection, the flue gas filtering is the key section in steelmaking workshop. According to your workshop layout and local gas exhausting code, you can select our different type of dust collection system, such as "sealed cover/ roof cover" + the fourth flue gas outlet hole + cooler+ separately chamber back blowing bag type filter or pulse bag type filter.



32000Kva FeCr Negative Pressure Dust Collection System

### For Submerged Arc Furnace

During the alloy melting process in submerged arc furnaces, there is large volume of flue gas with high temperature. Also, the composition of flue gas is very complex. Considering the chemical and physical properties of flue gas, you can select the best one for your project. In recent years, the LCM long bag type pulse filter has been widely applied for submerged arc furnaces. It can be also used for calcium carbide furnace, boiler, limestone kiln, metal mixer and asphalt mixing station to meet the requirement of national emission standard.



Dry method electric dust



The Main Body of Dust Collector



SAF-Air Cooler System



The Pipeline of Dust Collection System



2x16500kVA Fe-Mn SAF Dust Collection System

### For Raw Material And Crashing Workshops

The raw material for melting should be crashed, screened and transported to the furnace. During these productions, certain dust will be caused. In the products workshop, there is same problem of dust from crashing and screening. For example, the particles of titanium ore and slag are very fine, it is easy to make the pollution in the workshop and harm to workers, so should install dust collection system.



EAF Dust Collection System



The Negative Pressure Dust Collection System for Titanium Slag SAF



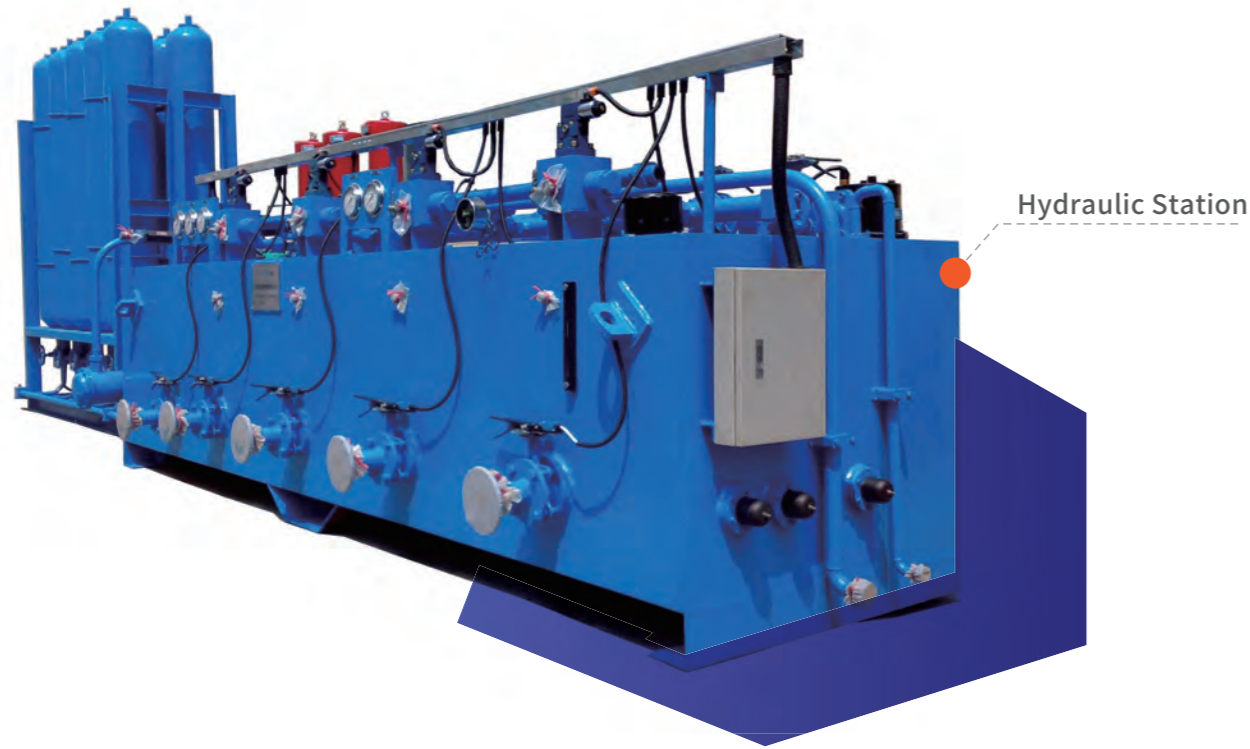
The Positive Pressure Dust Collection System



Workshop Dust Removal System



Semi-closed Dust Collection System for EAF



Rotating Platform Of LF



Oxygen Valve Station For EAF



## SPARE PARTS FOR STEEL MAKING



Ladle car



Water-cooled roof of EAF



Water-cooled roof of LF



Electrode arm



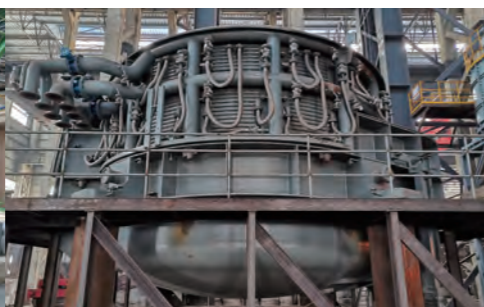
Water-cooled cable



Electrode holder



EAF Upper shell



EAF shell



Copper tube group



Dry compensator



Water-cooled compensator

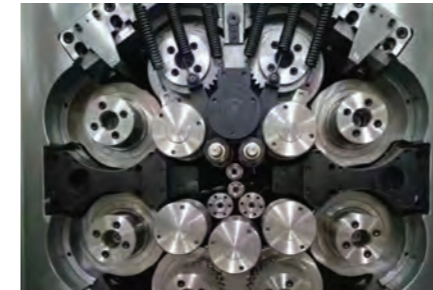


Vacuum Circuit Breaker



# SPARE PARTS FOR STEEL MAKING

Ladle



Hydraulic Valve Stand For Rolling Mill



Robot Automatic Thermometry Sampler System



Automatic Extension Equipment For Electrode



Expansion Pad Type Clamper Pressure Ring



Oil Cylinder for Electrode Lift



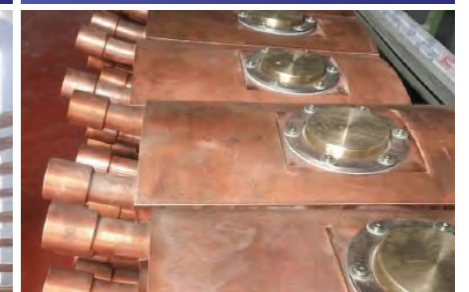
Vacuum Steam Pump



Nozzle Of Vacuum Steam Pump



Electric Network



Copper Brasses



Carbon-Oxygen Lance For EAF



The Ladle Car

# SPARE PARTS FOR STEEL MAKING



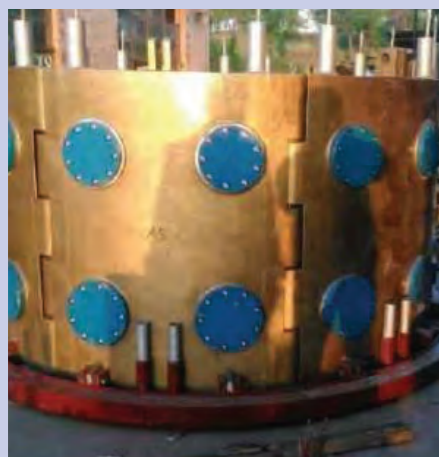
The Holding System After Assemble



Electrical control cabinet of 20t IF induction furnace



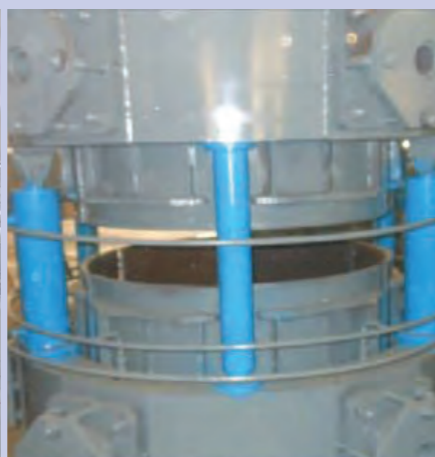
Coil of 20t IF induction furnace



The Copper Double-deck Pressure Ring



Transformer For Submerged Arc Furnace



Hydraulic Brake for SAF



The Water Cooled Protection Sleeve



The Rotating System



The Charging System



## ELECTRIC CONTROL CABINET

Specializing in designing, manufacturing, installation, commissioning, after-sales service for electrical automation (PLC control system, computer control system, etc.), electric drive (AC drive system, DC drive system, servo control system, etc.) computer application (integration of management and control, production process management, production process execution and management, monitoring System, etc.)



### H.V cabinet

#### High-voltage Switchgear:

KYN61-40.5 AC metal enclosed switchgear

#### Low-voltage integrated switchgear (CCC certification):

MNS, GGD2, GCS, DKG power distribution cabinet; non-standard control cabinet, transmission cabinet, computer cabinet, etc.

The low-voltage cabinet adopts the Rittal cabinet/GGD cabinet, and uses the nine-fold profile as the frame; the polyurethane foam sealing ring is used to match the waterproof edge of the door frame; the overall protection grade is up to IP54, which is suitable for the electrical automation control field of the metallurgical industry.



### L.V cabinet

#### L.V inverter and elements use international famous brand:

Siemens, ABB, Schneider.

On-load tap changer use international famous brand: ABB, MR.

Vacuum circuit breakers use international famous brand: ABB, Siemens, Schneider, GE.



CNC Shearing Equipment



CNC Bus Punching, Shearing And Folding Equipment



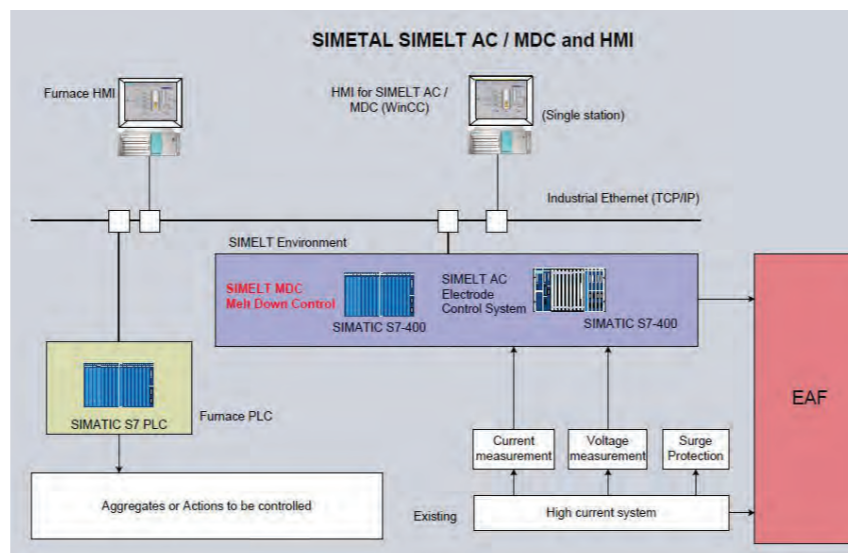
Switch Cabinet Assembly Line



CNC Punching And Folding Equipment



Switch Cabinet Assembly Line



Electric control system

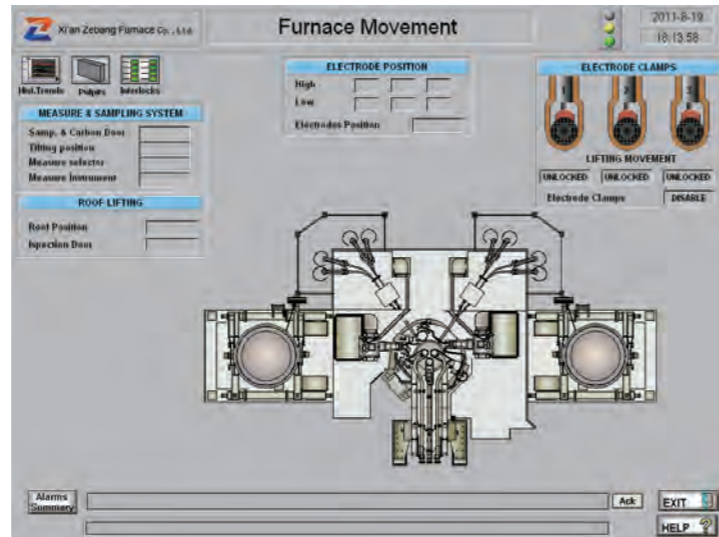
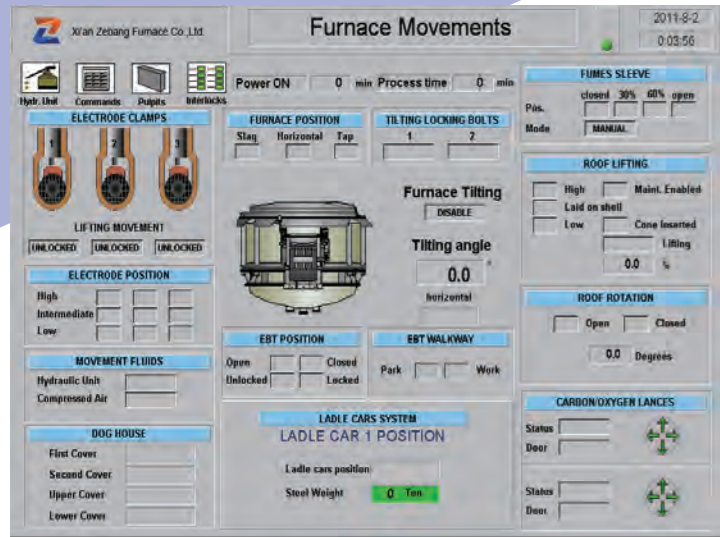
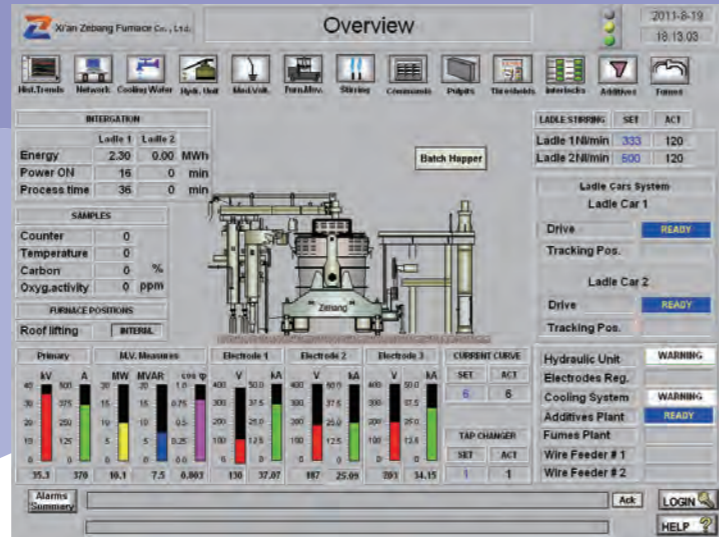
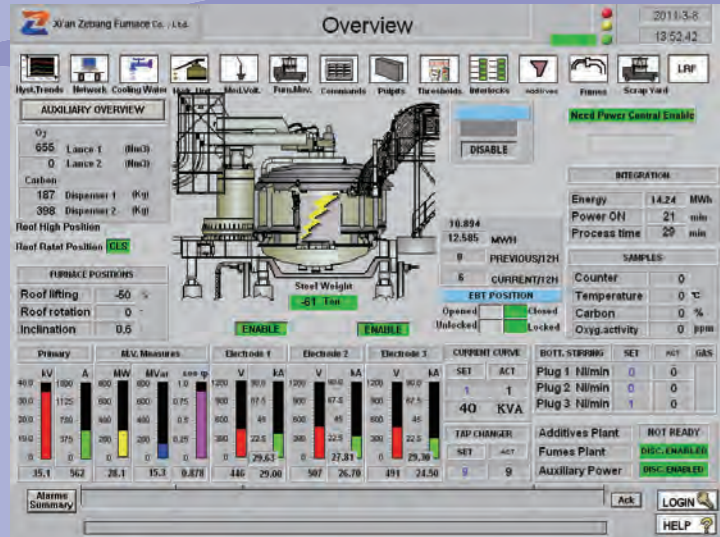


Electrode Control Cabinet



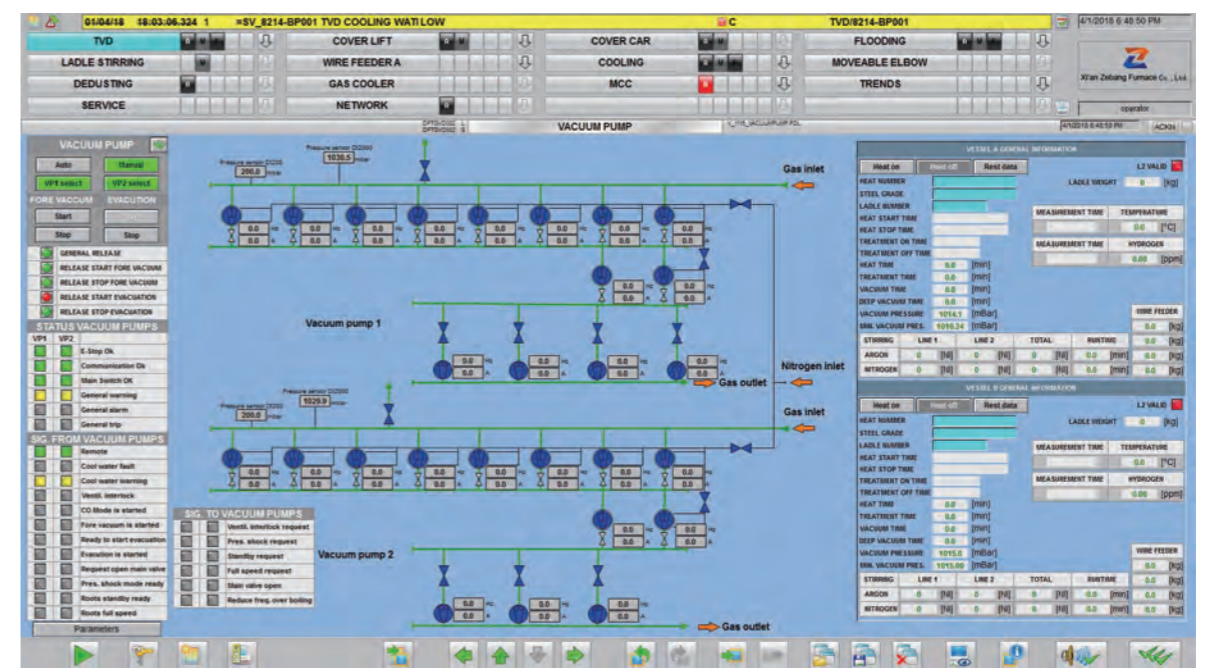
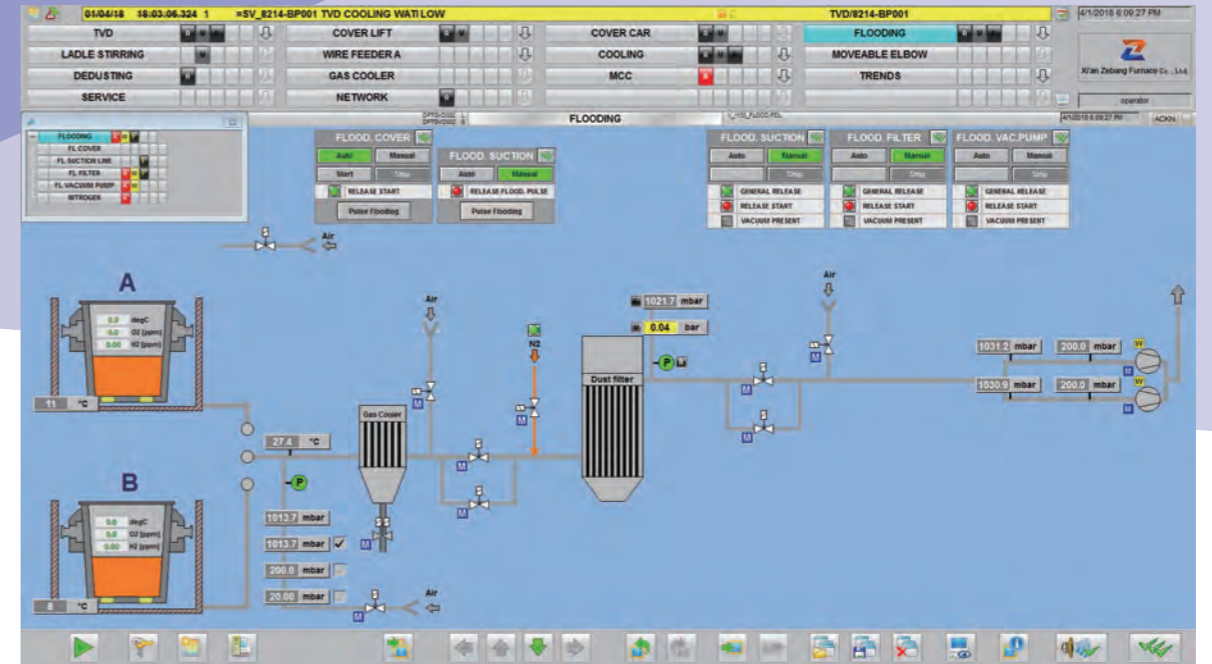
Monitored control system

# ELECTRIC CONTROL CABINET Computer Operation Interface



Electric arc furnace

Ladle refining furnace



VD Vacuum Refine Furnace

## SPARE PARTS Electric Horizontal Arm

The complete water cooling copper-steel compound electric horizontal arm has good property, reasonable structure, low failure rate and easy maintenance to reduce the power compensation and increase the productivity.



Electric Horizontal Arm

### TIP HOLDER

It is made of chromium-bronze with good property. It will be forged and machined with water cooling to increase the conductivity and working life against arcing.

### ELECTRODE CLAMP

There are two kinds of electrode clamps, such as water cooling or non-water cooling types. It will be made of non-magnetic stainless steel. The isolation area will be coated with ceramic powder under the advanced international processing. It has the reliable performance and long working life to be applied for LF and Arc furnaces.

### SOFT COMPENSATOR

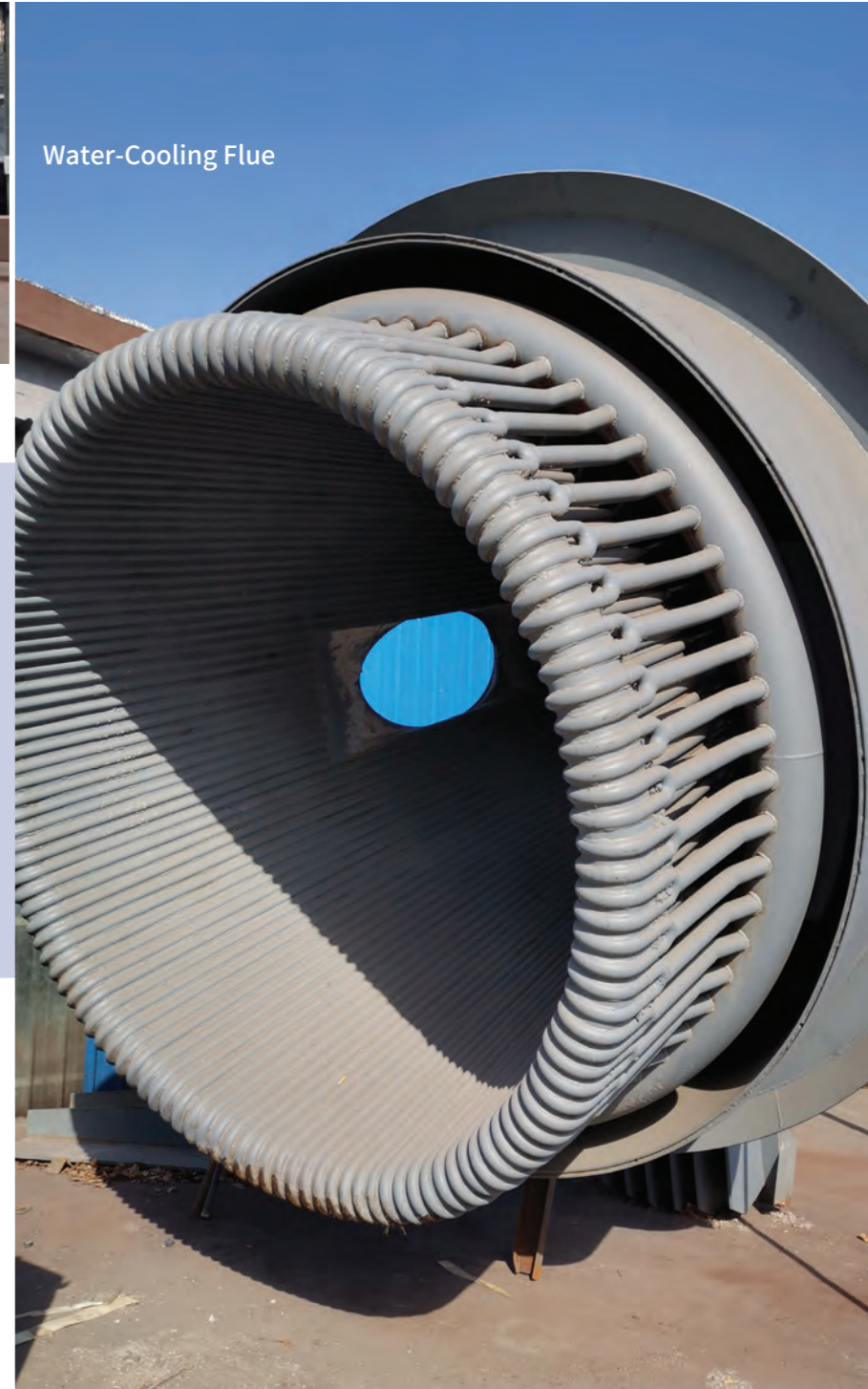
It will be made of high quality copper by reliable processing to get excellent performance.

### WATER COOLING CABLE

It is made of high quality oxygen-free copper wire and extruded to connector with good electric conductivity and mechanical strength. As the bending ratio will be small, the arrangement will be compact. As its out lay will be made of flame retardant rubber, it has a long working life.

### FORGED COPPER SHOE

The shoe will be made of forged copper T2, machined and heat treated. It will be without any air holes, or slag. It has good electricity and cooling to increase the working life more than 2 times of normally shoe.



Water-Cooling Flue



Hot Charging Plug Rod



Cooling Pipe Furnace Roof



Tilting Equipment For Ladle



Tip Holder Electrode Clamp



The Ladle Roaster



The Ladle Car

# TYPICAL CASES



Reheating Furnace



The Charging System



The Belt Conveor Corridor of Feeding System



DC Arc Furnace



27000kVA FeSi SAF



25t Tilting Ladle Furnace



80t VD Vacuum Refining Furnace



The 80t Ultra-High Power EAF



Finishing Round Bar Transfer and Integrated System



33000kVA Silicon Furnace



30000kVA FeMn Plant Layout



The Cooling Water Pipe Row of SAF



# TYPICAL CASES



100t Ladle Refining Furnace



Cooling Bed for Rolling Mill



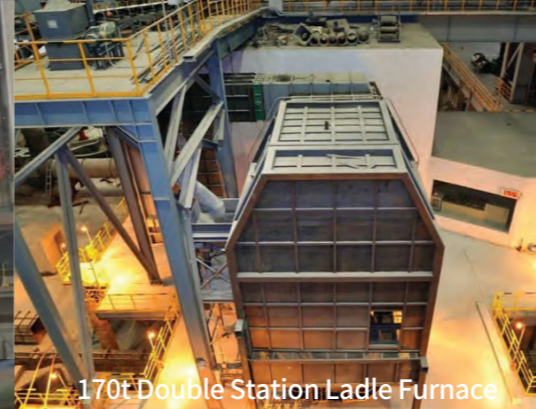
Product Crashing Workshop of 75% FeSi



100t Ultra High Power EAF



Waste steel workshop for continuous feeding plant



170t Double Station Ladle Furnace



22500kVA FeSi SAF



Exhaust Gas Purification Plant



150t EAF with continuous feeding device



100t VD Vacuum Refining Furnace



Waste steel basket feeding of 120t EAF



white corundum furnace



120t EAF lance is blowing oxygen



200t Ladle Refining Furnace



Continuous feeding device of 120t EAF



100t VD Vacuum Refining Furnace



# Domestic and foreign customers

