



# 科华电炉

中频电炉设备生产厂家

Professional manufacturer of medium frequency  
electric furnace equipment

KEHUA ELECTRIC FURNACE



**科华电炉**  
KEHUA ELECTRIC FURNACE



## 科华公司介绍》

## Kehua Company Introduction



江苏科华智能加热装备有限公司主营：全封闭水冷系统、中频感应加热炉、中频熔化炉等产品，我公司位于江苏邳州市。作为专业的中频感应加热设备产品的生产厂家，科华智能加热装备有限公司具有现代化标准的厂房、办公楼和研发中心，是一家集中频感应加热设备高新技术研发、生产、销售、技术服务于一体的综合型经济实体公司，公司所生产的中频熔炼炉、中频感应透热炉、(中)高频感应淬火炉、工业炉、全封闭水冷冷却设备等产品，畅销全国二十多个省、市、地区，在铸造、热处理、锻造、机械加工等行业应用广泛，受到广大用户认可与好评。

我公司对于新一代中频电源领先技术 IGBT 晶体管中频电源的成功开发，表明我公司的中频技术实力水平。

潍坊科华电炉制造有限公司坐落在国际风筝之都——山东潍坊，公司自创立以来，技术研发能力和经济效益不断提高并稳步增长，不断完善产品结构，使公司产品不断向先进节能型迈进，在原有节能型 IGBT 晶体管中频电源的基础上又推出了目前国际上处于领先水平的晶闸管串联型中频电源，适应于一拖二（甚至一拖 N）型中频熔炼炉，可以实现一台炉体熔化，另一台炉体保温的功能并且在功率方面有了新的突破，单台功率可达到 10000kW 以上，容量可达到 15 吨以上，频率由 75HZ 至 8KHZ，完全满足了熔炼、感应加热、淬火等各种加热场合的应用。



科华公司以雄厚的技术力量为后盾，坚持以市场为导向，以科技为动力，以质量为本，走高科技发展的道路，我公司吸引引进现代电力电子先进技术，有从事中、高频行业的丰富经验的技术人员，先后研制出多种 IGBT 系列中频感应加热设备，使我公司的中频技术实力达到了国内领先水平。

科华公司视“质量为生命、诚信为根本”，始终贯彻以服务客户为中心，以先进的质量体系，先进成熟的技术力量和完善的售后服务体系为保证，向广大用户提供更多、更好的产品、技术和服 务，科华人正展开热忱双臂欢迎海内外新老朋友光临。

Jiangsu Kehua Intelligent Heating Equipment Co., Ltd. is mainly engaged in products such as fully enclosed water cooling systems, intermediate frequency induction heating furnaces, and intermediate frequency melting furnaces. Our company is located in Pizhou, Jiangsu. As a professional manufacturer of intermediate frequency induction heating equipment products, Kehua Intelligent Heating Equipment Co., Ltd. has modern standard workshops, office buildings and R & D centers. Comprehensive economic entity company, intermediate frequency melting furnace, intermediate frequency induction diathermy furnace, (medium) high frequency induction quenching furnace, industrial furnace, fully enclosed water cooling equipment and other products produced by the company, selling well in more than 20 provinces and regions are widely used in casting, heat treatment, forging, machining and other industries, and are recognized and praised by users.

Our company's successful development of the new generation of intermediate frequency power supply leading technology IGBT transistor intermediate frequency power supply shows our company's intermediate frequency technical strength level.

Weifang Kehua Electric Furnace Manufacturing Co., Ltd. is located in Weifang, Shandong, the international kite capital. Since its establishment, the company's technology research and development capabilities and economic benefits have been continuously improved and steadily increased. The product structure has been continuously improved, and the company's products have continued to advance into advanced energy-saving models. On the basis of the original energy-saving IGBT transistor IF power supply, a thyristor series IF power supply that is currently leading in the world has been introduced. It is suitable for one-to-two (or one-to-N) IF melting furnace, which can realize the melting of one furnace body, another furnace body heat preservation function and a new breakthrough in power, a single power can reach more than 10,000kW, capacity can reach more than 15 tons, the frequency from 75HZ to 8KHZ, fully meet the melting, induction heating, quenching, etc. Various heating applications.

Kehua company is backed by strong technical force, adheres to market-oriented, technology-driven, quality-based, and follow the path of high-tech development. The experienced technical staff has developed a variety of IGBT series of intermediate frequency induction heating equipment, so that our company's intermediate frequency technical strength has reached the domestic leading level.

Kehua Company regards "quality as life, integrity as fundamental", always implements customer service as the center, takes advanced quality system, advanced mature technical force and perfect after-sales service system as its guarantee, and provides customers with more and more good products, technologies and services, Kehua people are warmly welcoming new and old friends at home and abroad.



## 公司荣誉 » Company Honor



国家电炉质量监督检验中心  
检测报告汇总表

序号	检测项目(中心)	技术要求	检测结果	检测标准	符合性
1	额定容量 (t)	4	4.2	符合标准	无
2	额定功率 (kW)	3000	3000	符合标准	无
3	额定温度 (℃)	1400	1400	符合标准	无
4	额定频率 (Hz)	300	300	符合标准	无
5	功率因数	0.982	0.982	符合标准	无
6	熔化率 (t/h)	0.2-0.3	0.29	符合标准	无
7	单位电耗 (kWh/t)	548	548.1	符合一等	无
8	受检材料表面温升 (℃)	425	40.6	符合标准	无
9	噪声 (dB)	68.2	70.3	符合标准	无
10	冷却水温度 (℃)	41.1	37.7	符合标准	无
11	接地电阻 (Ω)	0.01	0.01	符合标准	无

国家电炉质量监督检验中心  
检测报告

产品名称：节能环保感应炉  
规格型号：KGPS-3000-0.3S/GW4  
委托单位：科华电炉制造有限公司  
检测依据：GB/T10067.3-2015, GB/T10066.3-2014, GB5959.3-2008

检测日期：2018年6月26日-27日

检测地点：山东电炉质量监督检验中心

检测结论：经检测，该产品的额定容量、额定功率、额定温度、额定频率、功率因数、熔化率、单位电耗、受检材料表面温升、噪声、冷却水温度、接地电阻等11项检测项目检测结果符合国家标准 GB/T10067.3-2015、GB/T10066.3-2014、GB5959.3-2008 的技术要求。检测额定温度 1450℃，功率因数高达 0.982，单位电耗 548.1kW·h/t 符合一等标准，对于这个电耗，可以为用户节省的电费相当可观。

## 国家权威鉴定

### NATIONAL AUTHORITY IDENTIFICATION

国家电炉质量监督检验中心对潍坊科华电炉制造有限公司的“KGPS-3000-0.3S/GW4 节能环保感应炉”进行用户现场的型式试验测试，经检测，该产品的额定容量、额定功率、额定温度、额定频率、功率因数、熔化率、单位电耗、受检材料表面温升、噪声、冷却水温度、接地电阻等 11 项检测项目检测结果符合国家标准 GB/T10067.3-2015、GB/T10066.3-2014、GB5959.3-2008 的技术要求。检测额定温度 1450℃，功率因数高达 0.982，单位电耗 548.1kW·h/t 符合一等标准，对于这个电耗，可以为用户节省的电费相当可观。

The National Electric Furnace Quality Supervision and Inspection Center conducted a type test of the "KGPS-3000-0.3S / GW4 Energy-saving and Environmental Protection Induction Furnace" of Weifang Kehua Electric Furnace Manufacturing Co., Ltd., and the rated capacity, power, temperature, rated frequency, power factor, melting rate, unit power consumption, surface temperature rise of heated components, noise, cooling water temperature, grounding resistance, etc. The test results meet the national standards GB / T10067.3-2015, GB / T10066.3-2014, GB5959.3-2008 technical requirements. The rated

temperature is 1450℃, the power factor is as high as 0.982, and the unit power consumption is 548.1kW / h / t, which meets the first-class standards. For this power consumption, the electricity cost that can be saved for the user is considerable.







**专注电炉设备 20 年 让您的选择不后悔**

DEVOTED TO ELECTRIC FURNACE EQUIPMENT FOR 20 YEARS TO MAKE YOUR CHOICE WITHOUT REGRET

## 实力 Strength

**20 年专注于电炉设备生产  
公司实力雄厚**

提供稳定高效的高端感应熔炼系统解决方案。  
建立严格的质量管控体系，从原材料、技术设计、生产过程、售后服务各环节检验品质，并支持优化，以此保障做出一流产品。

**20 years focus on electric furnace equipment  
production Strong company**

Provide stable and efficient high-end induction melting system solutions.  
Establish a strict quality control system to inspect the quality of raw materials, technical design, production process and after-sales service, and support the optimization, so as to ensure to make first-class products.

## 定制 Customized

**专业技术团队 + 量身定制  
一体化解决方案**

聘任多名行业内专家，工程师，致力于感应加热设备的技术创新与研发。  
自主生产，年产量 1500 台满足大批量订单的生产与供货。

**Professional technical team + customized  
Integrated solutions**

Employ many experts and engineers in the industry, and devote to the technical innovation and research and development of induction heating equipment.  
Independent production, annual output of 1500 sets to meet the production and supply of large-scale orders.

## 售后 After sale

**一对一专人为你排忧解难  
完善的售后服务体系**

提供调试、培训使用，排除隐患，一站式解决您的后顾之忧之忧！  
自主研发，从源头节省，网络直营，价格实惠，让设备不再是负担。

**One on one special person for you  
Perfect after-sales service system**

Provide debugging, training and use, eliminate hidden dangers, one-stop solution to your worries!  
Independent research and development, saving from the source, network direct sales, affordable, so that the equipment is no longer a burden.

**以市场为导向、以科技为动力、以质量为根本**

Market oriented, technology driven and quality based

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**技术领先 信誉至上**

Technology leading and reputation first



## 串联谐振节能感应电源

### Series resonance energy-saving induction power supply

#### 串联谐振电源技术：

知名品牌可控硅、夹具及水冷散热器

电源柜内铜排和铜管使用国内知名品牌、铜排经过喷砂、钝化、制作规范。电源柜元器件布置合理、走线、布线规范易于维修。

串联谐振设计、模块化设计、宽大的铜排。12 和 24 脉冲整流，带电流显示的全功能主开关（智能断路器）人性化的设计贯穿整个电源柜设计，易于维护。

封闭式的电容柜设计，宽大的输出铜排，损耗低，柜体布局合理。

串联谐振双输出电源柜与 2 个炉体构成一电两炉的双供电熔炼系统。输出功率可以在两个炉体之间无级任意分配。

可以同时两个炉体进行送电，一个熔炼，一个保温。电源柜的整流部分采用全开放的设计，因此功率因数高，高次谐波小。

电源柜同时配有熔炼管理器。PLC 和人机界面组成了一个方便操作的熔炼管理器，功能包括：自动烘炉、冷炉启动、故障诊断、故障信息显示和存储、运行信息显示、系统状态显示等。

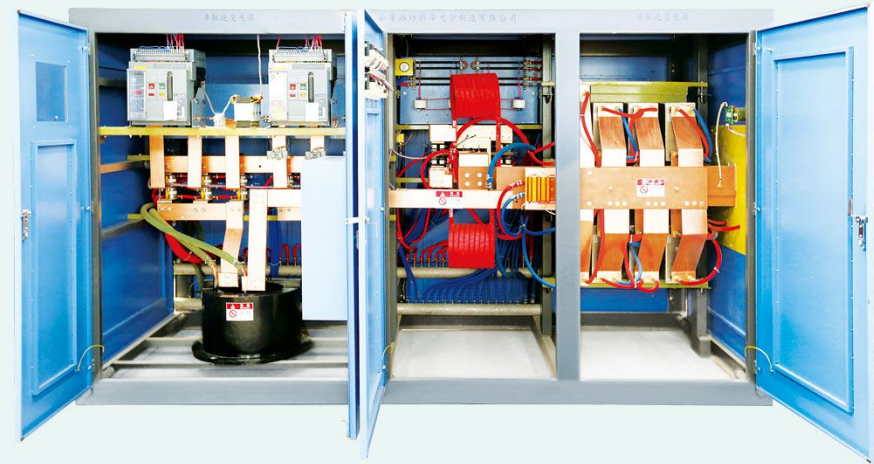
#### Series resonance power supply technology:

Well-known brand SCR, fixture and water cooling radiator

The copper bars and copper tubes in the power cabinet use well-known domestic brands. The copper bars are sandblasted, passivated, and manufactured in specifications. The components of the power cabinet are reasonably arranged, and the wiring and wiring specifications are easy to maintain.

Series resonance design, modular design, and large copper bar. 12 and 24 pulse rectification, full-featured main switch (intelligent circuit breaker) with current display, humanized design throughout the entire power cabinet design, easy to maintain.

Closed capacitor cabinet design, wide output copper bar, low loss, reasonable cabinet layout.



A series resonant dual-output power cabinet and two furnace bodies form a dual-power smelting system with one electric and two furnaces. The output power can be arbitrarily and steplessly distributed between the two furnace bodies.

Two furnace can be powered at the same time, one for melting and the other for heat preservation. The rectification part of the power cabinet adopts a fully open design, so the power factor is high and the high-order harmonics are small.

The power cabinet is also equipped with a smelting manager. PLC and man-machine interface constitute a convenient operation of the smelting manager, the functions include: automatic furnace, cold furnace start, fault diagnosis, fault information display and storage, operation information display, system status display, etc.





## IGBT 中频电源

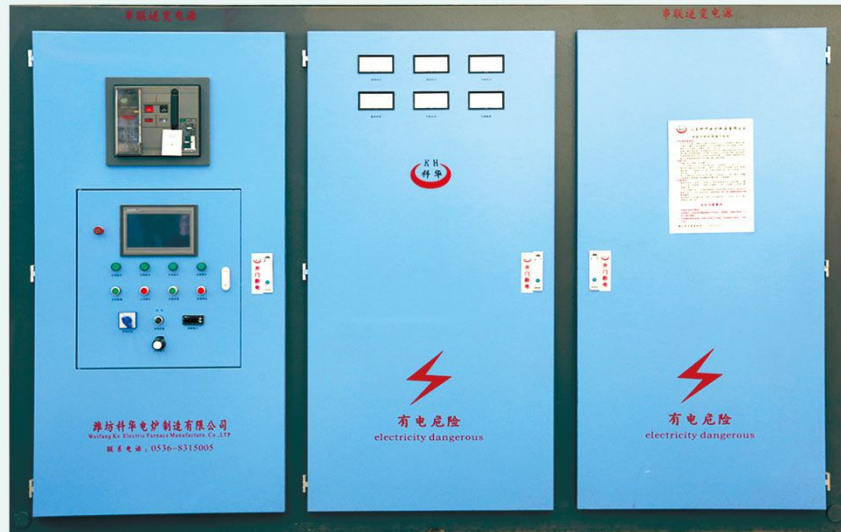
### IGBT medium frequency power supply

IGBT 中频电源是一种以 IGBT 模块为主要元器件的新型节能电源。该设备是由 IGBT 模块与一些辅助元器件组成的单相半桥逆变系统。由 PLC 智能化、数字化大规模集成电路组成其主控系统、驱动系统和逆变触发系统。具有能耗低、稳定性高等特点。IGBT 中频电源优点：

- 1、逆变元器件采用德国原装进口西门子 IGBT 模块。
- 2、功率输出、熔化速度快。
- 3、采用串联谐振线路，逆变电压高能耗低。
- 4、启动率 100%。
- 5、稳定性高。
- 6、具有完善的过流、过压、缺水、缺相、自动断电保护等功能。

IGBT intermediate frequency power supply is a new energy-saving power supply with IGBT module as the main component. This equipment is a single-phase half-bridge inverter system composed of IGBT modules and some auxiliary components. PLC intelligent, digital large-scale integrated circuit composed of its main control system, drive system and inverter trigger system. It has the characteristics of low energy consumption and high stability. IGBT intermediate frequency power supply advantages:

1. The inverter components use Siemens IGBT modules imported from Germany.
2. Power output and fast melting speed.
3. Use series resonance line, high inverter voltage and low energy consumption.
4. Startup rate is 100%.
5. High stability.
6. with perfect over-current, over-voltage, water shortage, phase failure, automatic power off protection and other functions.



## IGBT 超音频感应加热设备

### IGBT super audio frequency induction heating equipment

#### 应用范围:

- ◆ 各焊接：不锈钢壶嘴、壶把、金刚石锯片、冲击钻头、钎头、车刀、散热器堵头焊接等各种焊接。
- ◆ 退火：不锈钢杯、餐具、锅、铆钉、键钉槽等。
- ◆ 淬火：齿轮、锤子、凿子、刀类、曲轴、油泵油嘴、汽车、农机配件等。
- ◆ 透热：热轧麻花钻、锻压扳手、套筒螺栓，标准件加热锻打。
- ◆ 综合应用在金属加热的各个领域。

#### Application scope:

- ◆ Welding: stainless steel spout, handle, diamond saw blade, impact drill, drill bit, turning tool, radiator plug welding, etc.
- ◆ Annealing: stainless steel cup, tableware, pot, rivet, key nail slot, etc.
- ◆ Quenching: gear, hammer, chisel, knife, crankshaft, oil pump nozzle, automobile, agricultural machinery parts, etc.
- ◆ Diathermy: hot rolled twist drill, forging wrench, socket bolt, standard parts are heated and forged.
- ◆ Comprehensive application in various fields of metal heating.



#### 设备型号主要技术参数

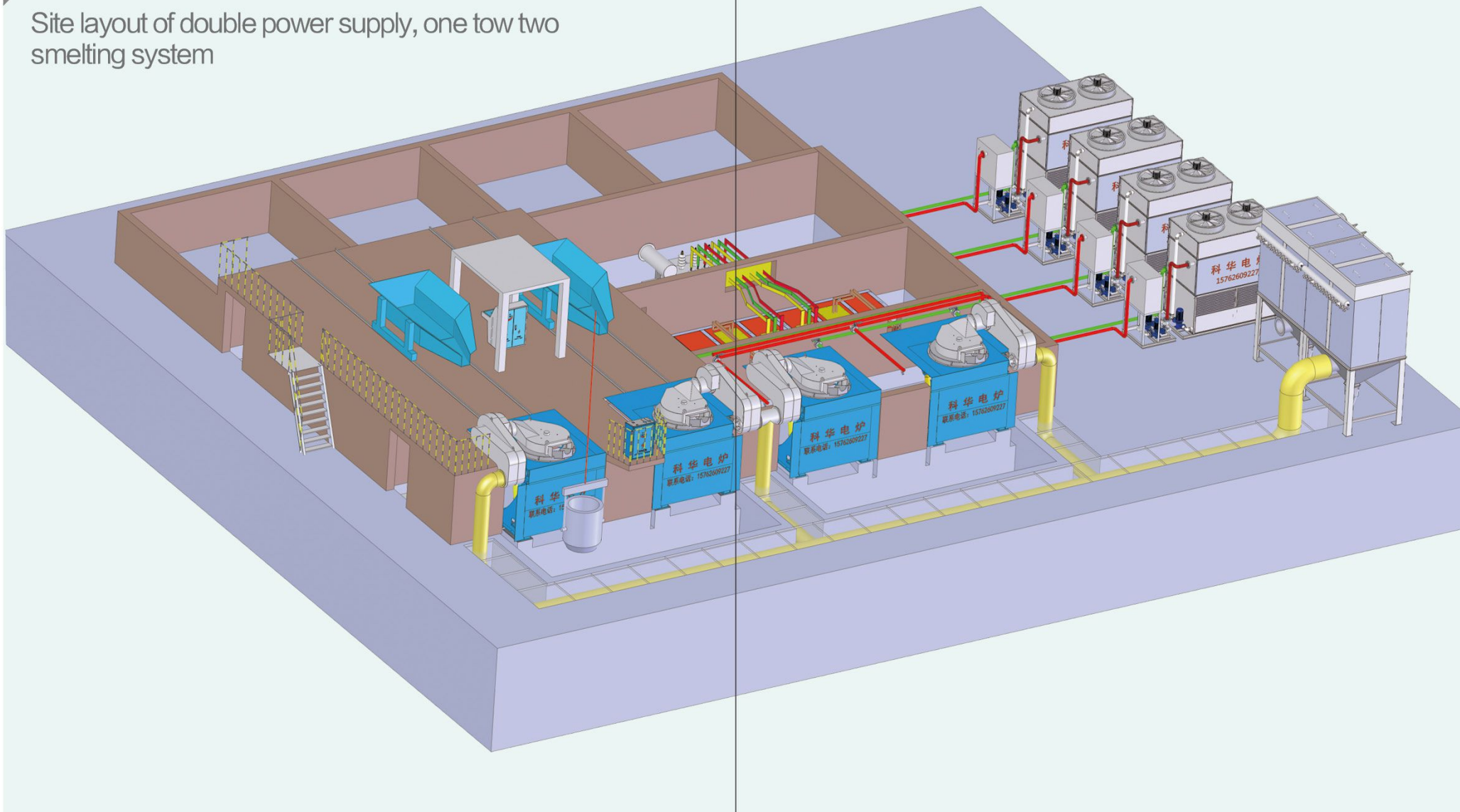
#### Main technical parameters of equipment model

型号 Model	输入功率 Input power	输入电压 Input voltage	振荡频率 oscillation frequency	冷却水压 Cooling water pressure	重量 weight	体积 长×宽×高 (mm) Volume Length × width × height
CYP-16	16KVA	单相 (Single-phase) 220V 50-60Hz	30-100KHz	≥ 0.03MPa	18kg	440 × 220 × 460
CYP-26	26KVA	三相 (Three-phase) 380V 50-60Hz	20-80KHz	≥ 0.05MPa	40kg	550 × 380 × 610
CYP-36	36KVA	三相 (Three-phase) 380V 50-60Hz	20-80KHz	≥ 0.03MPa	75kg	800 × 550 × 1300
CYP-50	50KVA	三相 (Three-phase) 380V 50-60Hz	20-80KHz	≥ 0.03MPa	85kg	800 × 550 × 1300
CYP-60	60KVA	三相 (Three-phase) 380V 50-60Hz	20-50KHz	≥ 0.03MPa	110kg	主机 (Host)500 × 800 × 1300 变压器 (Transformer)900 × 600 × 700
CYP-80	80KVA	三相 (Three-phase) 380V 50-60Hz	10-50KHz	≥ 0.03MPa	120kg	主机 (Host)550 × 750 × 1700 变压器 (Transformer)1050 × 650 × 770
CYP-120	120KVA	三相 (Three-phase) 380V 50-60Hz	10-40KHz	≥ 0.03MPa	150kg	主机 (Host)550 × 750 × 1700 变压器 (Transformer)1200 × 700 × 800
CYP-160	160KVA	三相 (Three-phase) 380V 50-60Hz	10-40KHz	≥ 0.03MPa	150kg	主机 (Host)550 × 750 × 1700 变压器 (Transformer)1200 × 700 × 800



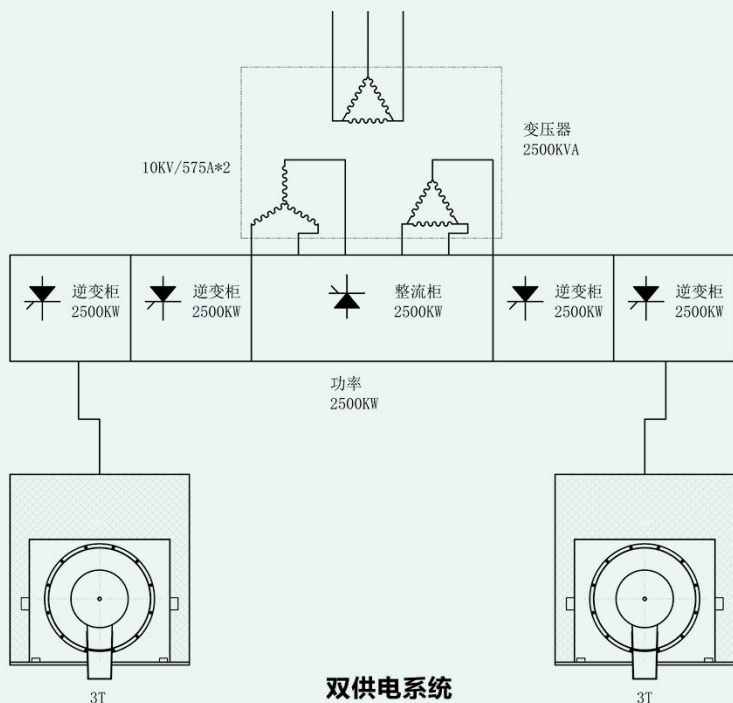
## 双供电一拖二熔炼系统现场布置图

Site layout of double power supply, one tow two smelting system



## 计算机熔炼管理系统

### Computer Melting Management System



双供电系统  
Dual power supply system

#### 远程诊断

第一时间为您检测设备  
remote diagnosis  
Test your equipment for the first time

#### 办公室熔化管理系统

用于管理人员监控所有炉子运行状况，读取熔炼信息数据库

#### Office melt management system

Used by managers to monitor the running status of all roads and read the smelting information database

#### 现场熔化管理系统

用于现场人员获得设备运行参数，管理熔炼信息数据库

#### On-site melting management system

Used by on-site personnel to obtain equipment operating parameters and manage smelting information database

现场熔化管理计算机和数字化主控板以及 PLC 等设备组成了一个网络系统，并且可以通过交换机扩展，如办公室管理、远程诊断、工程师维护、三级网络系统等接口。办公室熔化管理系统上位机连接所有的熔化设备，对每台设备进行数据采集、传输和监控。

- ◆ 现场熔炼管理系统用于观察现场炉子运行参数和管理现场熔炼信息数据库。
- ◆ 办公室熔炼管理系统用于观察所有炉子运行参数和调阅熔炼信息数据库。
- ◆ 远程诊断用于科华工程师异地实时诊断现场运行状况，实时为现场服务。

The on-site melting management computer, digital main control board, PLC and other devices form a network system, and can be expanded through switches, such as office management, remote diagnosis, engineer maintenance, three-level network system and other interfaces. The upper computer of the office melting management system connects all the melting equipment, and performs data collection, transmission and monitoring of each equipment.

- ◆ On-site smelting management system is used to observe on-site furnace operating parameters and manage on-site smelting information database.
- ◆ The office smelting management system is used to observe all furnace operating parameters and read the smelting information database.
- ◆ Remote diagnosis is used for real-time diagnosis of on-site operation status of Kehua engineers, and real-time on-site service

- ◆ 电源柜同时配有熔炼管理器。PLC 和人机界面组成了一个方便操作的熔炼管理器，功能包括：自动烘炉，冷炉启动，故障诊断，故障信息显示和存储，运行信息显示，系统状态显示等。

- ◆ The power cabinet is also equipped with a smelting manager. PLC and man-machine interface constitute a convenient operation of the smelting manager, the functions include: automatic oven, cold furnace start, fault diagnosis, fault information display and storage, operation information display, system status display, etc.





## KGPS12 脉双整流节能感应电源

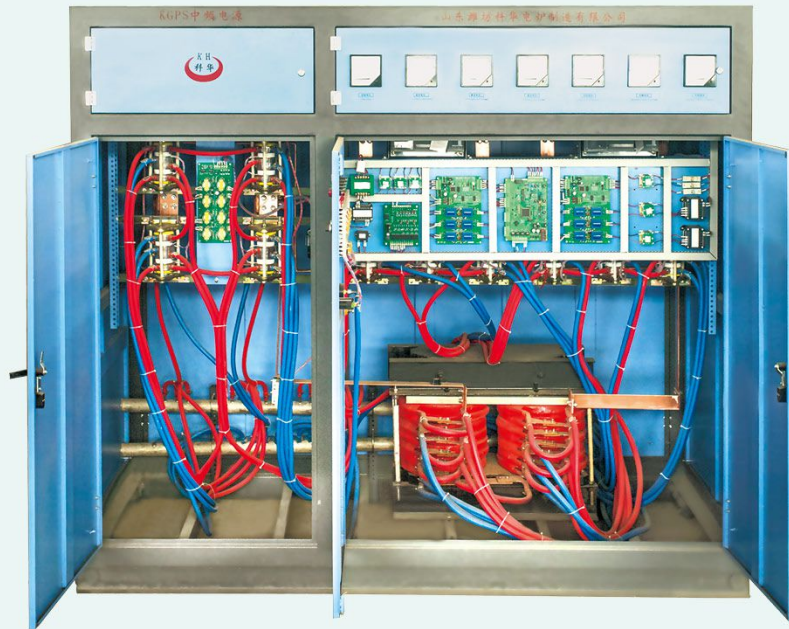
KGPS12-pulse double rectified energy-saving induction power supply

KGPS12 脉双整流设备在使用时采用整流变压器进行供电, 该变压器有两个输出绕组: 一个为星形输出另一个为角形输出。采用 12 脉中频电源的优点:

- 1、有效减少 5 次和 7 次谐波, 减少对电网的污染
- 2、将逆变电压提高一倍有效的降低线路损耗
- 3、方便提高设备功率容量, 大大提高设备的稳定性
- 4、节能效果明显, 效果与 IGBT 晶体管设备相仿。
- 5、自带扩展功能。
- 6、具有完善的过流、过压、缺水、缺相、自动断电保护等功能。

Kgps12 pulse double rectifier equipment uses rectifier transformer to supply power. The transformer has two output windings: one is star output and the other is angle output. Advantages of 12 pulse medium frequency power supply:

1. Effectively reduce 5th and 7th harmonics and pollution to power grid
2. Double the inverter voltage to effectively reduce the line loss
3. It is convenient to improve the power capacity of the equipment and greatly improve the stability of the equipment.
4. The power saving effect is obvious, which is similar to IGBT transistor equipment.
5. Built in expansion function.
6. It has perfect over-current, over-voltage, water shortage, phase loss, automatic power-off protection and other functions.



## KGPS 高压可控硅感应电源

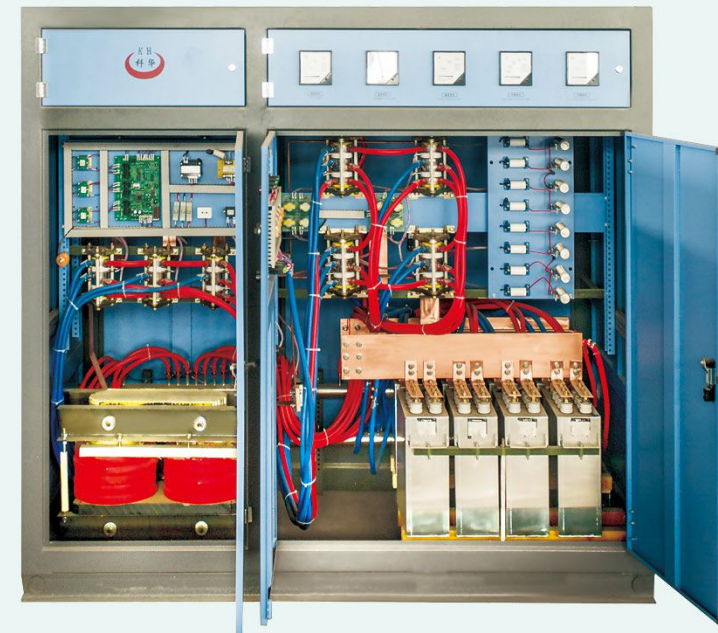
KGPS High Voltage SCR Induction Power Supply

KGPS 高压可控硅中频电源是一种新型节能电源。在不提高进线电压的前提下将负载电压提高三倍。大大降低了负载损耗, 降低了耗电量。KGPS 高压可控硅中频电源优点:

- 1、运行稳定, 维修费用低。
- 2、耗电量低, 效果与 IGBT 晶体管相仿。
- 3、设备制作成本低。
- 4、维修简单、故障率低。
- 5、具有完善的过流、过压、缺水、缺相、自动断电保护等功能。

KGPS high voltage silicon controlled medium frequency power supply is a new type of energy-saving power supply. Increase the load voltage three times without increasing the incoming line voltage. The load loss and power consumption are greatly reduced. Advantages of KGPS high voltage silicon controlled medium frequency power supply:

1. Stable operation and low maintenance cost.
2. Low power consumption, the effect is similar to IGBT transistor.
3. Low cost of equipment manufacturing.
4. Simple maintenance and low failure rate.
5. It has perfect over-current, over-voltage, water shortage, phase loss, automatic power-off protection and other functions.



# 物联网远程检测系统 (IMS)

## Internet of things remote detection system (IMS)

### 一、系统介绍

通过互联网（以太网、GPRS、3G 等），将现场的大量不同区域工业设备的数据或者程序，传输到远端的云数据中心，实现远程数据监控，设备诊断、程序维护和故障报警等功能，我公司设立专项部门，根据故障预警，报警记录等功能，达到在设备故障前及时调整和发生故障后第一时间诊断等效果。

IMS 系统的组成包括设备端、服务器端和客户端。

#### (1) 设备端

FBox 和所连接的设备控制器、HMI 和仪表等。

#### (2) 服务器端

繁易云服务器群或用户自建私有云服务器。

#### (3) 客户端

PC 客户端 / WEB 客户端，手机 APP，以及 OPC/S

### I. system introduction

Through the Internet (Ethernet, GPRS, 3G, etc.), a large number of industrial equipment data or programs in different regions on the site are transmitted to the remote cloud data center to realize remote data monitoring, equipment diagnosis, program maintenance, fault alarm and other functions. Our company has set up a special department to achieve the effects of timely adjustment before equipment failure and first diagnosis after failure according to functions such as failure warning and alarm recording ect. The first time after the failure diagnosis and other effects. The IMS System consists of equipment terminal , sever terminal and client terminal.

#### (1) Equipment terminal

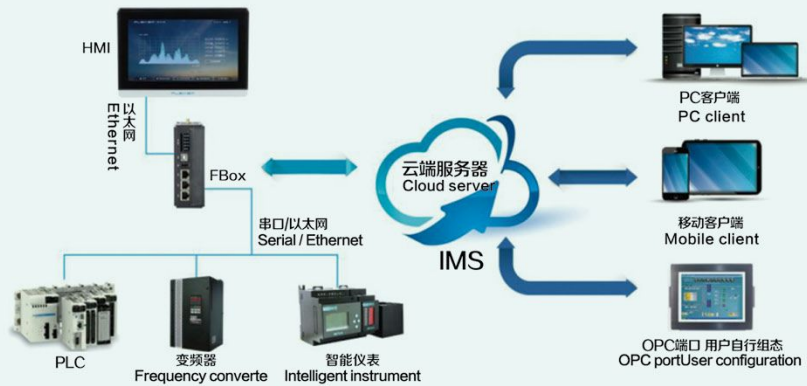
Fbox and connected device controller, HMI and instrument, etc.

#### (2) Sever terminal

Fanyi cloud server group or private cloud server built by users.

#### (3) Client terminal

PC client / Web client, mobile app, and OPC / S



### 二、系统特点

- 1、降低设备维护成本
- 2、降低故障发生概率
- 3、降低了诊断和排查故障的难度
- 4、提高设备维修效率
- 5、方便客户对设备运行情况进行掌握
- 6、方便我公司对设备整体运行状态进行统计

### II. System characteristics

1. Reduce equipment maintenance cost
2. Reduce the probability of failure
3. Reduce the difficulty of diagnosis and troubleshooting
4. Improve equipment maintenance efficiency
5. It is convenient for customers to master the operation of the equipment.
6. It is convenient for our company to make statistics on the overall operation status of the equipment.

### 三、功能简介

客户可以通过手机app实时掌握这些信息

### III. function introduction

Customers can grasp these information in real time through mobile app

历史数据曲线 Historical data curve



(手机端画面)  
(mobile terminal screen)





### 报警记录 Alarm record

报警记录

当前报警 | **历史报警** | 报警登记 | 权限管理 | 全局设置

编码:  名称:

起始日期: 2018-12-17 10: 结束日期: 2019-01-17 11:

编码	名称	信息	状态	值	时间
1	水压保护	设备水压过低	恢复	0	2019-01-16 21:09:58
1	水压保护	设备水压过低	触发	1	2019-01-15 06:43:36
1	水压保护	设备水压过低	恢复	0	2019-01-11 21:08:15
1	水压保护	设备水压过低	触发	1	2019-01-11 07:09:32
3	主板警告	主板有报警信号	恢复	0	2019-01-08 06:08:57
3	主板警告	主板有报警信号	触发	1	2019-01-08 06:08:38

第一页 | 上一页 | 下一页 | 最后一页

### 设备定位 Equipment location

设备定位

基本信息 | 系统设置 | 数据限制 | **位置信息**

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详细地址: 山东省潍坊市安丘市206国道靠近十里铺村

### 数据检测 Data detection

数据检测

数据 (7) | 开关 (13) | 分组设置 | 全局设置

状态	名称	数值	地址	描述	操作
<input checked="" type="checkbox"/>	进料温度	239	VD 124	VD 124	<input type="button" value="编辑"/> <input type="button" value="删除"/>
<input checked="" type="checkbox"/>	出料温度2	508	VD 128	VD 128	<input type="button" value="编辑"/> <input type="button" value="删除"/>
<input checked="" type="checkbox"/>	设备水压	0.17	VD 204		<input type="button" value="编辑"/> <input type="button" value="删除"/>
<input checked="" type="checkbox"/>	水压下限	0.11	VD 208	VD 208	<input type="button" value="编辑"/> <input type="button" value="删除"/>
<input checked="" type="checkbox"/>	功率百分比	61	VD 200	VD 200	<input type="button" value="编辑"/> <input type="button" value="删除"/>
<input checked="" type="checkbox"/>	功率	367	VD 1000	VD 1000	<input type="button" value="编辑"/> <input type="button" value="删除"/>
<input checked="" type="checkbox"/>	进料速度	0.0	VD 132	VD 132	<input type="button" value="编辑"/> <input type="button" value="删除"/>

+ 新建监控 | 批量 | 导入/导出 | 选中: 0 / 7

### 实时报警 Real time alarm

科华电炉——运行状态监测 13:26:11

<input checked="" type="checkbox"/> 设备主板运行状态	<input checked="" type="checkbox"/> 电抗器回水温度
<input checked="" type="checkbox"/> 主回路水压	<input checked="" type="checkbox"/> 逆变部分水温
<input checked="" type="checkbox"/> 主回路冷却水温度	<input checked="" type="checkbox"/> 电容部分水温
<input checked="" type="checkbox"/> 整流系统回水温度	<input checked="" type="checkbox"/> 炉体温度过高

预设落差: 5度 | 调节幅度: 1% |

(手机端画面)  
(mobile terminal screen)

## 钢壳炉

### Steel shell furnace



科华电炉的钢壳炉是感应熔化系统中高安全、坚固、高效率维修方便的设备，并基本设计为上下厚壁圆筒结合厚壁无矩形管结构，独特的吸震、顶固磁轭结构，集合了铝壳、钢壳炉的优点，从各个方向均匀的支撑线圈。

整体浇注设计的炉顶和炉底耐火材料浇注块具有很大的强度。炉平台由耐火材料订制，保护炉平台钢板不变形。线圈表面氧化铝浆料涂层厚度适当。结实耐用。

坚固的磁轭和上下部法拉第环，将感应磁场引导、聚集到熔池中，该设计消除了炉体和炉外金属物的感应加热。每个冷却水回路均有流量、温度保护和温度显示功能。

炉体总成带吸烟环

炉盖配合多种形式吸烟结构获得理想的节能和环保效果

吸尘环的设计，安全可靠且无运动机构，安装简单。适用于某些加料方式和无法使用吸尘罩的生产场所。

炉体总成带前后倾翻式吸尘罩

前后倾翻式吸尘罩、坚固的钢结构设计，打筑有耐火材料的炉盖固定在吸尘罩中间，通过液压油缸整个吸尘罩可以开启。需要通过操作、转换定位销的位置来改变吸尘罩的开启方向。

在电炉熔炼过程中的热损，同时吸尘罩通过一定的吸风量，吸走粉尘、废气、达到和改善废气排放效果。

焊接钢制吸尘罩壳体，可由液压油缸前后开启，通过位于炉体旋转轴上的法兰连接到废气排放和吸尘管道系统内。

整个吸尘罩正向开启时，进行加料操作。

整个吸尘罩可以反向开启，这一设计有利于在不拆卸吸尘罩的条件下进行顶出炉衬的操作。便于感应炉浇注口维修。

前后倾翻式吸尘罩应在满足吸风量的情况下运行。

**注意：**吸尘罩长期工作在无风、或风量不足的状态下会导致设备损坏





The steel shell furnace produced by Kehua is an equipment with high safety, high efficiency and convenient maintenance in the induction melting system. It is basically designed with a thick-walled cylinder combined with a thick-walled non-rectangular tube structure, a unique shock absorption, top fixed magnetic yoke structure. It combines the advantages of aluminum shell and steel shell furnace, and evenly supports the coil from all directions.

The top and bottom refractory casting blocks with integral casting design have great strength. The furnace platform is made of refractory materials to protect the steel plate of the furnace platform from deformation. The thickness of the aluminum oxide coating on the coil surface is appropriate. Durable.

The sturdy yoke and the upper and lower Faraday rings guide and concentrate the induced magnetic field into the molten pool. This design eliminates the induction heating of the furnace body and the metal objects outside the furnace. Each cooling water circuit has flow, temperature protection and temperature display functions.

Furnace body assembly with smoking ring

The stove cover cooperates with various forms of smoking structure to obtain ideal energy saving and environmental protection effects.

The design of the dust suction ring is safe, reliable and without movement mechanism, and the installation is simple. It is suitable for some feeding methods and production places where dust hoods can not be used.

Furnace body assembly with forward and backward tilting dust cover

The front-to-back tilting vacuum hood, solid steel structure design, the furnace cover built with refractory material is fixed in the middle of the vacuum hood, and the entire vacuum hood can be opened through the hydraulic cylinder. It is necessary to change the opening direction of the dust hood by operating and changing the position of the positioning pin.

The heat loss in the electric furnace smelting process, and at the same time, the dust hood absorbs dust and exhaust gas through a certain amount of air suction, and achieves and improves the exhaust gas emission effect.

The welded steel dust hood shell can be opened back and forth by a hydraulic oil cylinder, and connected to the exhaust gas discharge and dust suction pipeline system through a flange located on the rotary shaft of the furnace body.

When the entire dust hood is opened in the positive direction, the feeding operation is performed.

The entire vacuum hood can be opened in reverse. This design is conducive to the operation of ejecting the furnace without removing the vacuum hood. It is easy to repair the pouring port of induction furnace. The front-to-back tilting dust cover should operate under the condition of satisfying the suction volume.

**Note:** Long-term work of the dust hood in the absence of wind or insufficient air volume will cause damage to the equipment

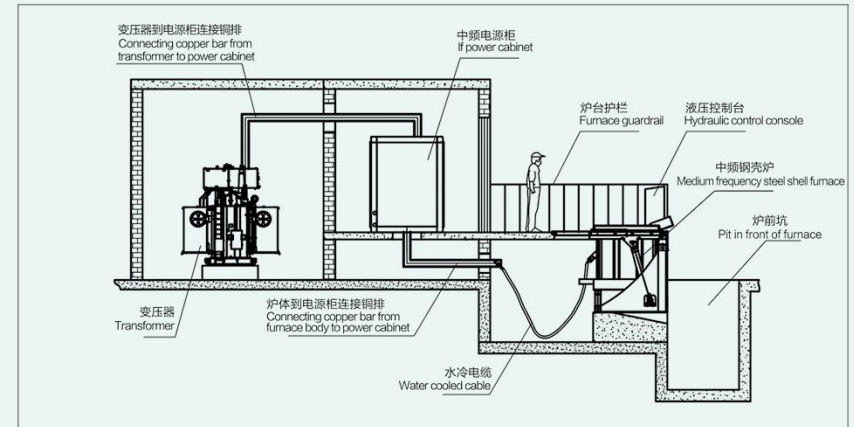


## 钢壳炉安装示意图

### Installation diagram of steel shell furnace

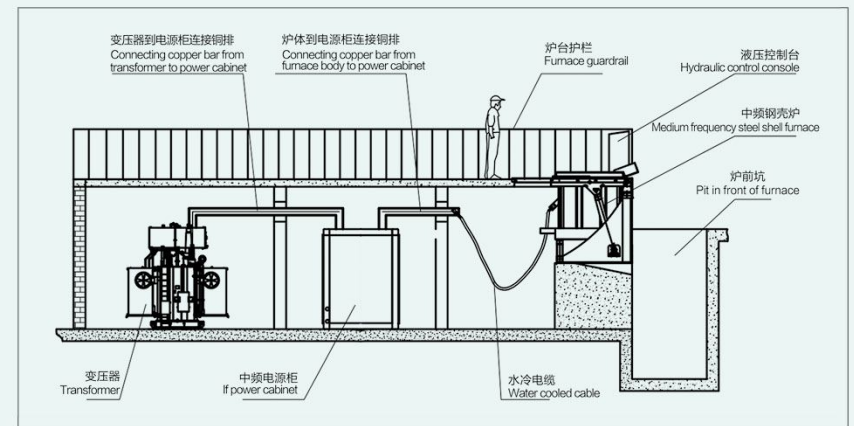
**地上式：电源柜在平台之上，炉体在平台之下。**

Ground type: the power cabinet is on the platform, and the furnace body is under the platform.



**地上式：电源柜和炉体均在平台之下。**

Ground type: power cabinet and furnace body are under the platform.





## 感应线圈技术

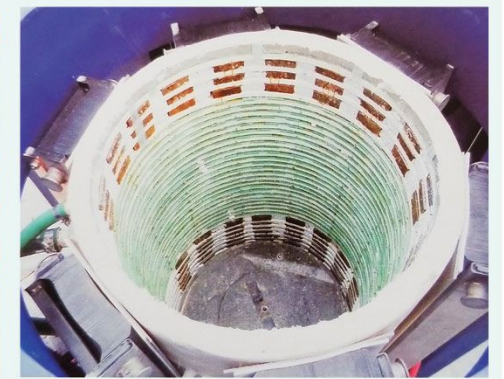
### Induction coil technology

由坚实耐用、高导电的无氧铜管绕制而成。水冷线圈和有效线圈由铜管一体绕制，无分段，感应线圈的两匝相邻铜管间严格绝缘，在相邻感应线圈之间植入绝缘片。线圈经绝缘漆喷涂后，成为一个完整的结构，并在炉体中受到上下钢结构压制，整体结构坚固无变形问题。线圈匝数适当。能获得最大的电效率。线圈由多个水路供应冷却水均匀分配。线圈外部采用绝缘材料紧密缠绕，匝间弧形绝缘垫片同时确保线圈间距均匀，并有利于潮气排出。

在绝缘处理之前，整体经喷砂处理，无氧铜管整体绕制，使用一流的绝缘技术和材料。

It is made of solid, durable and highly conductive oxygen free copper tube. The water-cooled coil and the effective coil are wound by copper tube in one, without section. The two turns of the induction coil are strictly insulated between the adjacent copper tubes, and the insulating sheet is implanted between the adjacent induction coils. After the coil is sprayed with insulating paint, it becomes a complete structure and is pressed by the upper and lower steel structures in the furnace body. The overall structure is solid without deformation. Coil turns are appropriate. Maximum electrical efficiency can be obtained. The coil is supplied with cooling water by multiple waterways and evenly distributed. The outer part of the coil is tightly wound with insulating materials, and the arc-shaped insulating gasket between turns ensures that the coil spacing is uniform and is conducive to moisture discharge.

Before the insulation treatment, the whole is sandblasted, and the oxygen-free copper pipe is wound as a whole, using the first-class insulation technology and materials.





## 真空熔化炉

### Vacuum melting furnace

#### 优点:

真空熔化炉, 加热速度快, 氧化脱碳少, 由于中频炉感应加热的原理为电磁感应, 其热量是由于工件自身产生, 该加热方式升温速度快, 氧化极少, 加热效率高, 工艺重复性好, 金属表面只有很轻微脱色, 轻微抛光就可使表面恢复镜面光亮, 从而有效获得恒定一致的材料性能。自动化程度高, 可实现全自动无人操作, 提高劳动生产率。

#### Advantages:

The vacuum melting furnace has the advantages of fast heating speed and less oxidation and decarburization. Because the heating principle of medium frequency induction furnace is electromagnetic induction, the heat is generated by the workpiece itself. The heating mode has the advantages of fast heating speed, few oxidation, high efficiency, good process repeatability, only slight discoloration on the metal surface, and light polishing can restore the metal surface mirror-bright, resulting in constant and consistent material properties. It has high degree of automation, can realize automatic unmanned operation and improve labor productivity.



## KH 型精密铸造炉

### KH type precision casting furnace

#### 优点:

KH 型精密铸造炉是我公司根据精密铸造的工艺需求, 结合多年的中频炉研发和生产经验, 开发设计的新型精密铸造专用炉。

该设备采用先进的 KGPS、IGBT 新型中频电源和专用炉体。从能耗及稳定性方面较传统设备有了极大的改善, 较传统设备节能 30% 以上。

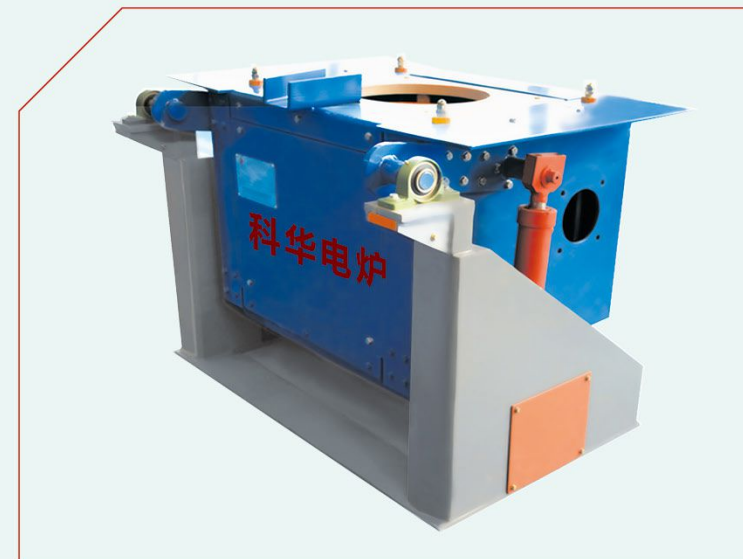
同时大功率电源及合理的线圈匹配, 在降低损耗的同时大大提高了生产效率。

#### Advantage:

KH type precision casting furnace is a new type of special furnace for precision casting developed and designed by our company according to the process requirements of precision casting, combined with many years of experience in medium frequency furnace R & D and production.

The equipment adopts advanced KGPS, IGBT new intermediate frequency power supply and special furnace body. In terms of energy consumption and stability, it has greatly improved compared with traditional equipment, saving more than 30% energy compared with traditional equipment.

At the same time, high power supply and reasonable coil matching can reduce the loss and improve the production efficiency greatly.





### GW 系列节能感应不锈钢熔炼炉技术参数

Technical parameters of GW series energy-saving induction stainless steel melting furnace

额定容量 (T) Rated capacity	额定功率 (KW) Rated power	电源输入 Power input		电源输出 Power output		适配电力变压器 Adaptive power transformer (KVA)
		进线电压 (V) Incoming voltage	进线电流 (A) Incoming line current	中频电压 (V) Intermediate frequency voltage	额定频率 (KHZ) Rated frequency	
0.1	175	3P-380	280	750	2.5	200
0.15	100 ~ 160	3P-380	160 ~ 260	750	1 ~ 2.5	120, 160
0.25	160 ~ 250	3P-380	260 ~ 410	750	1 ~ 2.5	200, 250
0.35	200 ~ 400	3P-380	320 ~ 650	750	1 ~ 2	315, 400
0.50	350 ~ 500	3P-380	580 ~ 830	750	1 ~ 1.5	400, 500, 630
0.75	400 ~ 600	3P-380	650 ~ 1000	750	0.8 ~ 1	500, 630, 800
1	600 ~ 800	3P-380	1000 ~ 1330	750	0.6 ~ 1	800, 1000
1	600 ~ 800	3N-660	670 ~ 900	1200	0.6 ~ 1	800, 1000
1.5	800 ~ 1200	3N-660	900 ~ 1300	1200	0.5 ~ 1	1000, 1250
2	1000 ~ 1500	3N-660	1120 ~ 1680	1200	0.5 ~ 0.8	1250, 1600
3	1500 ~ 2500	3N-660	1680 ~ 2800	1200	0.3 ~ 0.6	1800, 2500
5	2500 ~ 3500	6N-660	2800 ~ 3900	1200	0.2 ~ 0.5	3150, 3600
10	4000 ~ 6000	6N-1250	2400 ~ 3600	2200	0.2 ~ 0.4	5000, 6500
12	5000 ~ 7000	6N-1250	3000 ~ 4200	2200	0.2 ~ 0.4	6300, 8000

### GW 系列节能感应不锈钢熔炼炉技术参数

Technical parameters of GW series energy-saving induction stainless steel melting furnace

额定容量 (T) Rated capacity	额定功率 (KW) Rated power	电源输入 Power input		电源输出 Power output		适配电力变压器 Adaptive power transformer (KVA)
		进线电压 (V) Incoming voltage	进线电流 (A) Incoming line current	中频电压 (V) Intermediate frequency voltage	额定频率 (KHZ) Rated frequency	
1	150 ~ 300	3P-380	260 ~ 490	750	0.3 ~ 0.5	160, 315
2	250 ~ 400	3P-380	260 ~ 650	750	0.3 ~ 0.5	315, 500
3	300 ~ 500	3P-380	490 ~ 830	750	0.3 ~ 0.5	315, 500, 630
5	600 ~ 800	3P-380	1000 ~ 1330	750	0.3 ~ 0.5	800, 1000
8	700 ~ 1000	3N-660	780 ~ 1120	1200	0.2 ~ 0.4	800, 1250
10	900 ~ 1200	3N-660	1000 ~ 1330	1200	0.2 ~ 0.4	1000, 1250
12	1000 ~ 1500	3N-660	780 ~ 1680	1200	0.2 ~ 0.4	1250, 1600
15	1200 ~ 1600	3N-660	1000 ~ 1800	1200	0.2 ~ 0.4	1600, 2000

### GWL 系列中频熔铝炉技术参数

Technical parameters of GWL series medium frequency aluminum melting furnace

额定容量 (T) Rated capacity	额定功率 (KW) Rated power	额定频率 (KHZ) Rated frequency	进线电压 (V) Incoming Voltage	感应器电压 (V) Sensor voltage	温度 (°C) temperature	熔化率 (t/h) Melting rate	耗水量 (t/h) water consumption
0.15	100	1000	3P-380	1500	780	0.17	3
0.3	160	1000	3P-380	1500	780	0.27	5
0.5	250	1000	3P-380	1500	780	0.42	8
0.75	350	1000	3P-380	1500	780	0.59	10
1.0	500	400	3P-380	1500	780	0.93	15
1.5	750	400	3P-380	1500	780	1.39	20



## 节能感应加热炉

### Energy-saving induction heating furnace



#### 设备用途:

- ◆ 锻前加热: 应用于齿轮、齿圈、半轴连杆、轴承、卸扣、索具等产品锻前加热工艺;
- ◆ 在线加热: 管道防腐喷涂、棒料蓝脆下料、钢(丝)管在线调质等工艺;
- ◆ 局部加热: U型栓折弯、滚筒热装配、钢管弯管等生产加工程序。

#### 性能特点:

- ◆ 在耗电量上能真正达到 360 度以下
- ◆ 生产操作简单、进出料灵活、自动化程度高, 可实现在线式生产;
- ◆ 工件加热速度快、氧化脱碳少, 效率高, 锻件质量好;
- ◆ 工件加热长度、速度、温度等可精确控制;
- ◆ 工件加热均匀、芯表温差小, 控制精度高;
- ◆ 感应器炉体一体化设计, 不同的感应器设计有快换接头, 更换简单方便;
- ◆ 全方位节能优化设计, 能耗低、效率高, 比烧煤生产成本低;
- ◆ 符合环保要求, 污染小, 同时还减少了工人的劳动强度。

#### Equipment purpose:

- ◆ heating before forging: used for heating before forging of gear, ring gear, half shaft connecting rod, bearing, shackle, rigging and other products;
- ◆ online heating: pipeline anti-corrosion spraying, blue brittle blanking of bar stock, online tempering of steel (wire) pipe, etc.
- ◆ local heating: bending of U-bolt, thermal assembly of drum, bending of steel pipe and other production heating processes.

#### Performance features:

- ◆ the power consumption can reach below 360 degrees
- ◆ simple production operation, flexible incoming and outgoing materials, high degree of automation, online production can be realized;
- High heating speed, less oxidation and decarburization, high efficiency and good forging quality;
- ◆ workpiece heating length, speed, temperature, etc. can be accurately controlled;
- ◆ uniform heating of workpiece, small temperature difference between core and surface, high control accuracy;
- ◆ integrated design of inductor and furnace body, quick change connector for different inductor design, easy to change;
- ◆ comprehensive energy-saving and optimized design, low energy consumption, high efficiency and lower production cost than coal burning;
- ◆ meet the requirements of environmental protection, with small pollution, and reduce the labor intensity of workers.

#### GTR中频电炉功率估算公式:

$$P = (C \times G \times T) / (0.24 \times t \times \phi)$$

公式说明: P-设备功率 (KW); C-金属比热, 其中钢铁的比热系数是0.17;

G- 加热工件重量 (kg); T-加热温度 (°C); t-工作节拍 (秒);

$\phi$  - 设备综合热效率, 一般可取0.5-0.7, 异型件取0.4左右。

例如: 某锻造厂有锻件坯料为  $\Phi 60 \times 150\text{mm}$ , 工作节拍为12秒/件 (包括辅助时间), 初锻温度以1200°C。

则需要GTR中频电炉功率的计算:  $P = (0.17 \times 3.3 \times 1200) / (0.24 \times 12 \times 0.65) = 359.61\text{KW}$

根据以上计算, 可以配置额定功率为 400KW 的 GTR 中频感应加热设备。

#### Power estimation formula of GTR medium frequency electric furnace:

$$P = (C \times g \times T) / (0.24 \times t \times \phi)$$

Formula Description: P-equipment power (KW); C-specific heat of metal, in which the specific heat coefficient of steel is 0.17; G - weight of heated workpiece (kg); T - heating temperature (°C); t - working beat (seconds);

$\phi$  - comprehensive thermal efficiency of the equipment, generally 0.5-0.7, about 0.4 for special-shaped parts

For example, a forging plant has a forging blank of  $\Phi 60 \times 150\text{mm}$ , a working beat of 12 seconds / piece (including auxiliary time), and an initial forging temperature of 1200 °C. Then the power calculation of GTR medium frequency electric furnace is required:  $P = (0.17 \times 3.3 \times 1200) / (0.24 \times 12 \times 0.65) = 359.61\text{kw}$

According to the above calculation, GTR medium frequency induction heating equipment with rated power of 400KW can be configured.

## GTR 系列透热炉技术参数

### GTR Series Diathermy Furnace Technical Parameters

型号 Model	电源输入 Power Input		电源输出 Power Output				
	进线电压 (V) 3 相或 6 相 50Hz	进线电流 (A)	直流电压 (V)	直流电流 (A)	中频频率 (KHz)	中频电压 ±10% (V)	中频功率 (KW)
	Inlet line Voltage(V)3 phases or 6 phases 50HZ	Inlet Current(A)	DC Voltage (V)	DC Current (A)	MF Frequency(KHz)	MF Voltage ±10% (V)	MF Power (KW)
GTR-60	380	100	500	120	1 ~ 8	750	60
GTR-100	380	160	500	200	1 ~ 8	750	100
GTR-120	380	200	500	240	1 ~ 8	750	120
GTR-160	380	260	500	320	1 ~ 8	750	160
GTR-200	380	330	500	400	1 ~ 8	750	200
GTR-250	380	410	500	500	1 ~ 8	750	250
GTR-300	380	490	500	600	0.4 ~ 8	750	300
GTR-400	380	650	500	800	0.2 ~ 6	750	400
GTR-500	380	820	500	1000	0.2 ~ 6	750	500
GTR-750	380	1200	500	1500	0.2 ~ 6	750	750
GTR-750	660	680	890	850	0.2 ~ 6	1300	750
GTR-1000	380	1650	500	2000	0.2 ~ 1	750	1000
GTR-1000	660	920	890	1150	0.2 ~ 1	1300	1000
GTR-1500	380	2500	500	3000	0.2 ~ 1	750	1500
GTR-1500	660	1400	890	1700	0.2 ~ 1	1300	1500
GTR-2000	580	2100	780	2600	0.2 ~ 0.5	1170	2000
GTR-2000	660	1850	880	2300	0.2 ~ 0.5	1300	2000
GTR-2000	1250	1000	1650	1200	0.2 ~ 0.5	1300	2000
GTR-2500	580	2600	780	3200	0.2 ~ 0.5	1170	2500
GTR-2500	660	2300	880	2850	0.2 ~ 0.5	1300	2500
GTR-2500	1250	1300	1650	1500	0.2 ~ 0.5	1300	2500
GTR-3000	580	3100	780	3850	0.2 ~ 0.5	1170	3000
GTR-3000	1250	2800	1650	2400	0.2 ~ 0.5	2400	3000
GTR-5000	1250	4600	1650	3800	0.2 ~ 0.5	2400	5000
GTR-10000	1250	9200	1650	7600	0.2 ~ 0.3	2400	1000

## 中频调质生产线

### Medium frequency quenching and tempering production line

在多年感应加热设备设计的经验中，我公司根据中频加热优势，结合传统工艺，为用户设计出大量的中频调质生产线，该生产线广泛应用于矿山机械（单体支柱、悬浮支柱、金属长梁、U型钢架 II 型梁等）、石油机械（石油钻杆、钻铤、抽油杆等）、钢管（厚壁钢管、不锈钢管）、钢绞线、钢丝、钢棒等行业产品的调质处理，并让用户通过使用该生产线，大大提高了生产效率，将原能耗降低 20% 以上，为客户在市场竞争中建立更大的优势。

In many years of experience in the design of induction heating equipment, our company has designed a large number of medium frequency quenching and tempering production lines for users based on the advantage of medium frequency heating and combined with traditional technology, which are widely used in quenching and tempering in mining machinery (single pillar, metal long beam, U-shaped steel frame II beam, etc.), petroleum machinery (oil drill pipe, drill collar, sucker rod, etc.), steel pipe (thick wall steel pipe, stainless steel pipe, etc.), steel strand, steel wire, steel bar and other industries users can greatly improve the production efficiency by using the production line, reduce the original energy consumption by more than 20%, and establish greater advantages for customers in the market competition.





## 淬火成套设备

### Quenching equipment

各种轴类工作表面淬火，如直轴、变径轴、凸轮轴、曲轴、齿轮轴、机床丝杠等淬火；齿轮等工作表面淬火；套、圈、盘类工件表面淬火；机床导轨、平面淬火；球头等各种机械零件（如汽车，摩托车的各种零配件）的表面热处理；钢筋、棒料的自动热处理；导型工件如锚链等的淬火调质。

Quenching of working surfaces of various shafts, such as straight shaft, variable diameter shaft, camshaft, crankshaft, gear shaft, machine tool lead screw, etc.; quenching of working surfaces of gears, etc.; surface quenching of workpieces such as sleeve, ring and disk, quenching of machine tool guide rail and plane, surface heat treatment of various mechanical parts such as ball head (such as various parts of automobiles and motorcycles), automatic heat treatment of steel bars and bars, and guiding workpieces such as Quenching and tempering of anchor chain, etc.



**中频淬火变压器及电容柜**  
Medium frequency quenching transformer and capacitor cabinet



**中频电源**  
Medium frequency power supply

### 设备型号 Equipment type

型号 Model	功率 Power	输入电源 Input power supply		中频频率 (KHz) Medium Frequency
		输入电压 (V) Input voltage	输出电流 (A) Output current	
GTZ-100	100	3P-380	160	1-8
GZH-160	160	3P-380	260	1-8
GZH-200	200	3P-380	330	1-8
GZH-250	250	3P-380	410	1-8
GZH-300	300	3P-380	490	1-8
GZH-400	400	3P-380	650	1-6
GZH-500	500	3P-380	830	1-2.5
GZH-600	600	3P-380	1000	1
GZH-700	700	3P-380	1150	1
GZH-800	800	3P-380	1330	1

### 异形感应器展示 Special shape sensor display



## 数控淬火机床

### CNC quenching machine

主要用于长轴、花键轴、齿轮、盘类等工件的加热、淬火辅助，通过伺服电机可准确实现工件的旋转及移动，配合中频及超音频电源使用，大大提高了产品的稳定性。该机床采用数字化控制，人性化的 CNC 操作界面，简单易学，主体采用滚珠丝杠传动，其它附件选用国内或国外知名品牌产品，稳定性极强。

It is mainly used for heating and quenching auxiliary of long shaft, spline shaft, gear, plate and other workpieces. Through servo motor, the workpiece can rotate and move accurately. It can be used with medium frequency and super audio power supply, greatly improving the stability of the product. The machine tool adopts digital control, humanized CNC operation interface, simple and easy to learn. The main body is driven by ball screw, and other accessories are domestic or foreign famous brand products, with strong stability.





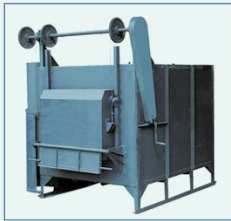
## 工业电炉

### Industrial electric furnace

各种箱式、井式、台车式等标准电阻炉炉体材料采用优质节能材料，能够减少蓄热，电控柜采用智能化编程仪表，实现炉温 PID 调节，提高控温精度，另外还可根据客户要求设计制作非标准电炉和网带炉、振底炉等。

All kinds of box type, well type, trolley type and other standard resistance furnace body materials are made of high-quality energy-saving materials, which can reduce heat storage. The electric control cabinet adopts intelligent programming instruments to realize PID adjustment of furnace temperature and improve temperature control accuracy. In addition, non-standard electric furnace, mesh belt furnace and vibrating bottom furnace can be designed and manufactured according to the needs of customers.

#### 箱式电阻炉 Box type resistance furnace



技术参数 / 产品型号 Technical parameters/ Product model	额定功率 (KW) Rated power	电源电压 (V) Supply voltage	相数 Phase number	额定温度 (°C) Rated temperature	工作区尺寸 长×宽×高 (mm) Workspace size Length × width × height	重量 (kg) Weight
RX3-15-9	12	380	1	950	650 × 300 × 250	1200
RX3-30-9	30	380	3	950	950 × 450 × 350	2000
RX3-45-9	45	380	3	950	1200 × 600 × 400	2500
RX3-60-9	60	380	3	950	1500 × 750 × 450	4100
RX3-75-9	75	380	3	950	1800 × 900 × 550	5200
RX3-20-12	20	380	1	1200	650 × 300 × 250	1500
RX3-45-12	45	380	3	1200	950 × 450 × 350	2200
RX3-65-12	65	380	3	1200	1200 × 600 × 400	2600
RX3-90-12	90	380	3	1200	1500 × 750 × 450	4000
RX3-115-12	115	380	1	1200	1800 × 900 × 550	5000

#### 井式加热炉和回火炉

### Well type heating furnace and tempering furnace

用途: 机械零件加热、退火、正火、淬火、回火用，特别是细长轴类，零件悬挂加热，能够大大减少变形量。  
Application: for heating, annealing, normalizing, quenching and tempering of mechanical parts, especially for long and thin shafts, hanging heating of parts can greatly reduce deformation.



技术参数 / 产品型号 Technical parameters/ Product model	额定功率 (KW) Rated power	电源电压 (V) Supply voltage	相数 Phase number	额定温度 (°C) Rated temperature	工作区尺寸 长×宽×高 (mm) Workspace size Length × width × height	重量 (kg) Weight
RJ2-30-9	30	380	3	950	φ450 × 800	2000
RJ2-40-9	40	380	3	950	φ600 × 800	2300
RJ2-60-9	60	380	3	950	φ800 × 1000	3000
RJ2-65-9	65	380	3	950	φ600 × 1600	4000
RJ2-75-9	75	380	3	950	φ600 × 2400	5500
RJ2-90-9	90	380	3	950	φ1000 × 1200	4500
RJ2-95-9	95	380	3	950	φ800 × 2000	5000
RJ2-125-9	125	380	3	950	φ800 × 3000	6000
RJ2-140-9	140	380	3	950	φ1000 × 2400	6500
RJ2-190-9	190	380	3	950	φ1000 × 3600	8000
RJ2-25-6	24	380	3	650	φ400 × 500	1200
RJ2-35-6	35	380	3	650	φ500 × 650	1300
RJ2-55-6	55	380	3	650	φ700 × 900	2000
RJ2-75-6	75	380	3	650	φ950 × 1200	2800

## 工业电炉

### Industrial electric furnace

#### Trolley type resistance furnace 台车式电阻炉



用途: 适用于950°C以下的大中型零件加热、淬火、退火、正火、回火和烧结用。

Application: suitable for heating, quenching, annealing, normalizing, tempering and sintering of large and medium parts below 950 °C.

技术参数 / 产品型号 Technical parameters/ Product model	额定功率 (KW) Rated power	电源电压 (V) Supply voltage	相数 Phase number	额定温度 (°C) Rated temperature	工作区尺寸 长×宽×高 (mm) Workspace size Length × width × height (mm)	重量 (kg) Weight
RT2-65-9	65	380	3	950	1100 × 550 × 450	1000
RT2-105-9	105	380	3	950	1500 × 800 × 600	2500
RT2-180-9	180	380	3	950	2100 × 1050 × 750	5000
RT-3200-9	320	380	3	950	3000 × 1350 × 950	12000

#### 气体渗碳，碳氮共渗多用炉，气体氮化炉

### Gas carburizing, carbonitriding multi-purpose furnace, gas nitriding furnace



用途: 用于低碳钢、低碳合金钢和中碳合金钢气体渗碳，碳氮共渗和气体氮化用。

Application: for gas carburizing, carbonitriding and gas nitriding of low carbon steel, low carbon alloy steel and medium carbon alloy steel.

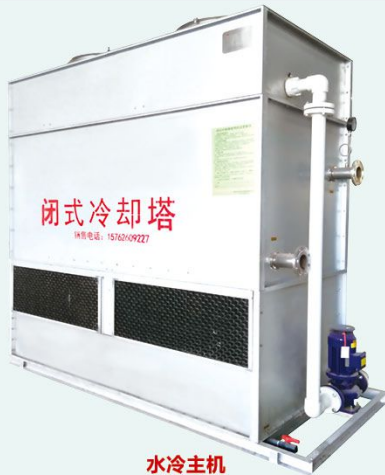
技术参数 / 产品型号 Technical parameters/ Product model	额定功率 (KW) Rated power	电源电压 (V) Supply voltage	相数 Phase number	额定温度 (°C) Rated temperature	工作区尺寸 长×宽×高 (mm) Workspace size Length × width × height (mm)	重量 (kg) Weight
RQ3-25-9	25	380	3	950	φ300 × 450	1650
RQ3-35-9	35	380	3	950	φ800 × 600	1850
RQ3-60-9	60	380	3	950	φ450 × 600	2630
RQ3-75-9	75	380	3	950	φ450 × 900	3000
RQ3-90-9	90	380	3	950	φ600 × 900	3700
RQ3-105-9	105	380	3	950	φ600 × 1200	4100
RQ3-35-6	35	380	3	650	φ500 × 650	
RQ3-60-6	60	380	3	650	φ700 × 900	
RQ3-80-6	80	380	3	650	φ900 × 1000	



## FL 内循环封闭式冷却设备

### FL internal circulation closed cooling equipment

- ◆ 全封闭式循环冷却，杜绝杂物引起的管路堵塞。
  - ◆ 采用软水循环冷却，防止水垢生成后引起的电源、可控硅、电容器、IGBT 模块，感应线圈等过热损坏。
  - ◆ 不需挖水池、占地小、移动方便、降低成本。
  - ◆ 散热效率高、运行成本低。
  - ◆ 封闭式循环水耗量很少，符合环保节能的要求。
  - ◆ 高、中频、超音频感应设备的冷却方式传统做法是开挖一定量大小的水池或使用敞开式冷却塔，用硬水直接进行冷却，往往因为水质不好而引起水路管壁结垢，造成循环水流量逐渐减少甚至堵塞，从而引起元件损坏（例如：电子管、可控硅、电抗器、电容器、IGBT 模块、感应线圈）等。
  - ◆ 在我公司对中高频感应加热设备维修中，总结出因水而引发的设备故障约占设备损坏情况的 80%。如改进冷却循环水的质量，并充分对设备进行冷却，就会降低 80% 的设备故障率。
  - ◆ 本公司针对以上问题成功研制出 FBN 系列封闭式水冷却系统。
- cool directly with hard water, which often causes scaling on the water pipe wall due to poor water quality, gradually reducing or even blocking the circulating water flow, thus causing component damage (such as: electronic tube, thyristor, reactor, capacitor, IGBT module, induction coil, etc).
- ◆ In our company's maintenance of medium and high frequency induction heating equipment, it is concluded that the equipment failure caused by water accounts for about 80% of the equipment damage. If the quality of cooling circulating water is improved and the equipment is cooled sufficiently, the failure rate of equipment will be reduced by 80%.
  - ◆ Our company has successfully developed FBN series closed water cooling system for the above problems.

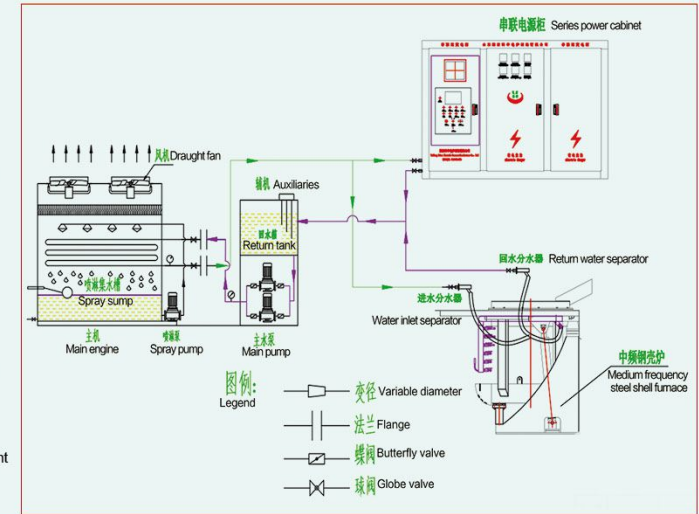


#### 适用范围:

- ◆ 工频、中频、高频及 IGBT 电源
- ◆ 熔炼炉、保温炉、透热炉
- ◆ 感应加热成套设备
- ◆ 中、高频淬火成套设备

#### Scope of application:

- ◆ power supply of power frequency, intermediate frequency, high frequency and IGBT
- ◆ melting furnace, heat preservation furnace and diathermy furnace
- ◆ Complete induction heating equipment
- ◆ complete set of medium and high frequency quenching equipment



### 标准水冷型号汇总明细表 Summary list of standard water cooling models

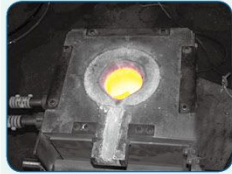
水冷型号 Water-cooled model	冷却量 Cooling capacity (kcal/h)	工作压力 Working pressure (Mpa)	工作流量 Work flow (M <sup>3</sup> /h)	进出管径 In and out diameter (mm)	主泵功率 Main pump power (kw)	喷淋泵功率 Spray pump power (kw)	风机功率 Fan power (kw)	主机外型尺寸 Host size (mm)	设备重量 weight (kg)
FL-160	48160	0.15	12.5	DN50	2.2	1.1	0.75	2900 × 1000 × 2400	680
FL-250	75250	0.15	12.5	DN50	3	1.5	0.74	2900 × 1000 × 2400	820
FL-350	105000	0.15	25	DN65	4	1.5	0.74	2900 × 1250 × 2400	950
FL-500	150500	0.2	25	DN65	4	2.2	1.5	2800 × 1250 × 2430	1080
FL-600	180600	0.2	25	DN65	5.5	2.2	1.5	2800 × 1250 × 2430	1150
FL-750	228000	0.2	35	DN65	7.5	2.2	1.5	2800 × 1250 × 2730	1300
FL-1000	301000	0.2	50	DN80	7.5	2.2	3	2800 × 1500 × 3160	1520
FL-1250	352000	0.2	90	DN100	7.5	2.2	3	2800 × 1500 × 3160	1700
FL-1500	451500	0.25	100	DN100	11	4.4	3	2800 × 1500 × 3160	1980
FL-2000	602000	0.25	112	DN125	18.5	4.4	4.4	2800 × 2000 × 3160	2180
FL-2500	752500	0.25	130	DN125	18.5	4.4	4.4	3800 × 2000 × 3160	2410
FL-3000	903000	0.3	130	DN150	30	4.4	4.4	3800 × 2000 × 3660	2620
FL-4000	1204000	0.3	150	DN150	45	5.5	9	4600 × 2300 × 3160	3010
FL-5000	1505000	0.35	200	DN200	55	7.5	9	4600 × 2300 × 3960	3420
FL-6000	1806000	0.35	260	DN250	75	11	12	6000 × 2300 × 3960	4260



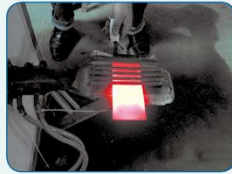
## 客户使用现场

### Customer use site

多年为用户设计产品的过程中，我们积累了大量客户的使用经验，并保存部分客户的使用现场。  
In the process of designing products for users for many years, we have accumulated a large number of customers' use experience and saved some customers' use sites.



IGBT 小容量贵金属熔化  
IGBT small capacity  
precious metal melting



板簧端部加热  
Plate spring end heating



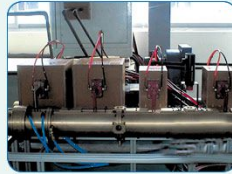
履带轨节淬火  
Track joint quenching



钢丝在线调质加热  
steel wire online heating for  
quenching and tempering



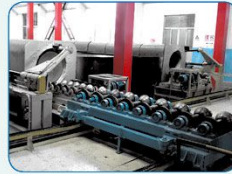
钢管淬火  
Steel tube quenching



不锈钢管退火加热  
stainless steel pipe  
heating for annealing



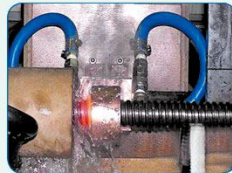
小轴淬火  
Small shaft quenching



棒料连续加热  
Continuous heating of bar



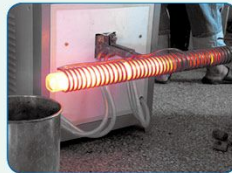
工件在线加热  
Workpiece online heating



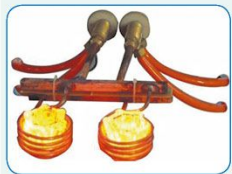
滚轴丝杠淬火加热  
Roller lead screw heating  
for quenching



引导轮表面淬火  
Guide wheel surface  
hardening



棒料加热  
Rod heating



双工位同时加热  
Double station heating at  
the same time



齿轮内齿淬火加热  
Gear inner teeth heating  
for quenching



花键轴淬火加热  
Spline shaft heating for  
quenching



异形齿轮内孔淬火  
Inner hole quenching of  
special gear

## 配件系列 Accessories series



铝壳炉体  
Aluminum shell  
furnace body



钢壳炉体  
Steel shell furnace body



透热炉感应器  
Diathermy inductor



可控硅水套  
Silicon controlled  
water jacket



智能断路器  
Intelligent circuit  
breaker



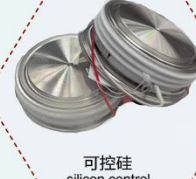
ZL-B 电动筑炉机  
ZL-B electric  
furnace builder



水冷电缆  
Water cooled cable



手提式测温仪  
Portable thermometer



可控硅  
silicon control



主控板  
Main control panel



可控硅散热块  
Silicon controlled  
cooling block



减速机  
Reducer



气动筑炉机  
Pneumatic furnace  
builder



一拖四脉冲板  
One matching four  
pulse boards



进线电感  
Incoming inductance



电热电容器  
Electric heating  
capacitor



分水器  
Water separator



IGBT 模块  
IGBT module



电抗器线圈  
Reactor coil



无芯电抗器  
Coreless reactor



## 合作客户

Cooperating customers



中央美术学院  
CHINA CENTRAL ACADEMY OF FINE ARTS



北京市阀门总厂股份有限公司  
BEIJING VALVE GENERAL FACTORY CO., LTD.



中车戚墅堰机车有限公司  
CRRC QISHUYAN CO., LTD.



中磁电科  
ZHONG CI DIAN KE



金瑞集团  
JINRUI GROUP



山东华源莱动内燃机有限公司  
SHANDONG HUAYUAN LAIDONG ENGINE CO., LTD.



NACO®  
合成润滑技术引领者



河北永红铸造机械有限公司  
HEBEI YONGHONG FOUNDRY MACHINERY CO., LTD.



一诺机械  
YINUO MACHINERY



友通管道  
YOU TONG GUAN DAO



玉柴机器  
YC DIESEL



中国中铁  
CHINA RAILWAY GROUP LIMITED



中国航天  
CHINA AEROSPACE SCIENCE AND TECHNOLOGY CORPORATION



中孚实业  
ZHONGFU INDUSTRIAL



东风精密铸造有限公司  
DONGFENG INVESTMENT CASTING CO., LTD.



华电重工股份有限公司  
HUADIAN HEAVY INDUSTRY CO., LTD.



华宸高压容器集团  
Huachen High Pressure Container Group



济南东方结晶器有限公司  
JINAN EASTERN MOULD FOR CCM CO., LTD.

# 共创未来

Create the future together

合作共赢  
Win win cooperation  
Work together for the future

携手合作 共创未来



Customer success  
Equal to our success

客户的成功  
等于我们的成功

