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RUNKEL ELECTRIC HEATING

Profile of Runkel Electric Heating Technology Co., Ltd.

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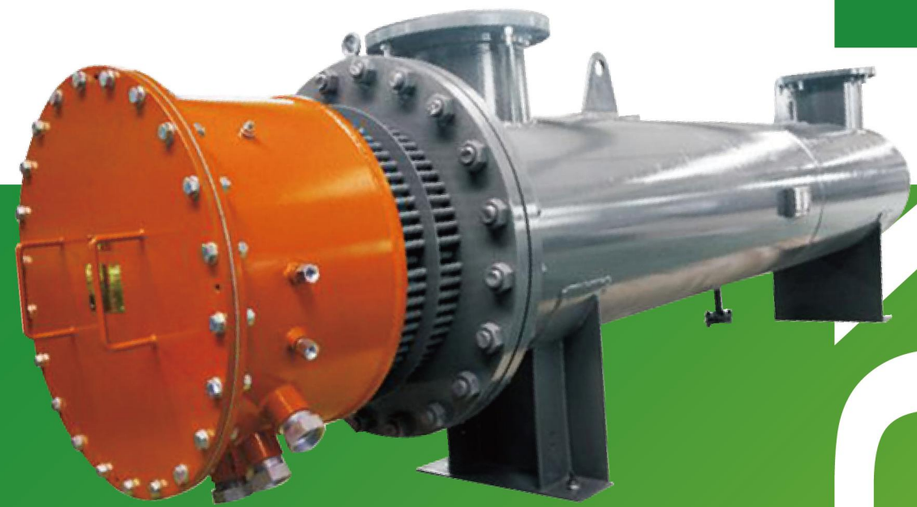
2026

PRODUCT BROCHURE

To Build a Leading Enterprise in Electric Heating and Establish Runkel as a Century-Old Brand



RUNKEL

Profile of Runkel Electric Heating Technology Co., Ltd.

CONTENTS

ABOUT US

Related companies

Shenyang
Enteng Electric Heating

Shijiazhuang
Sanhuan Electric Heating

Yangzhong
Sanhuan Company

Shenyang Enteng Electric Heating, Shijiazhuang Sanhuan Electric Heating, and Runke Electric Heating all belong to Yangzhong Sanhuan Electric Heating Group.

15 Years
Deep Cultivation and Accumulation

03
Collaborative Partners

2015
Establishment Date

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RUNKEL ELECTRIC HEATING

Introduction

Runkel Electric Heating Technology Co., Ltd. was spun off from the well-known domestic electric heating enterprise --- Yangzhong Sanhuan Electric Heating Group, inheriting its profound industrial heritage and outstanding technological pedigree. Initially established as the Group's foreign trade department and based in the vibrant and open port city of Qingdao, we have, through fifteen years of dedicated cultivation and accumulation, evolved into a comprehensive electric heating technology enterprise integrating R&D, production, sales, and service.

Backed by the Group's robust production system and technical support, we maintain close collaboration with Shenyang Sanhuan Electric Heating (Enteng Electric Heating), Shijiazhuang Sanhuan Electric Heating, and our founding base, Yangzhong Sanhuan Company. This synergy has established an efficient supply chain and manufacturing network spanning northern and southern China. This serves not only as a solid guarantee for our formidable production capacity and stable supply cycles but also as the foundation for our continuous technological innovation and superior product quality.

Company Advantages

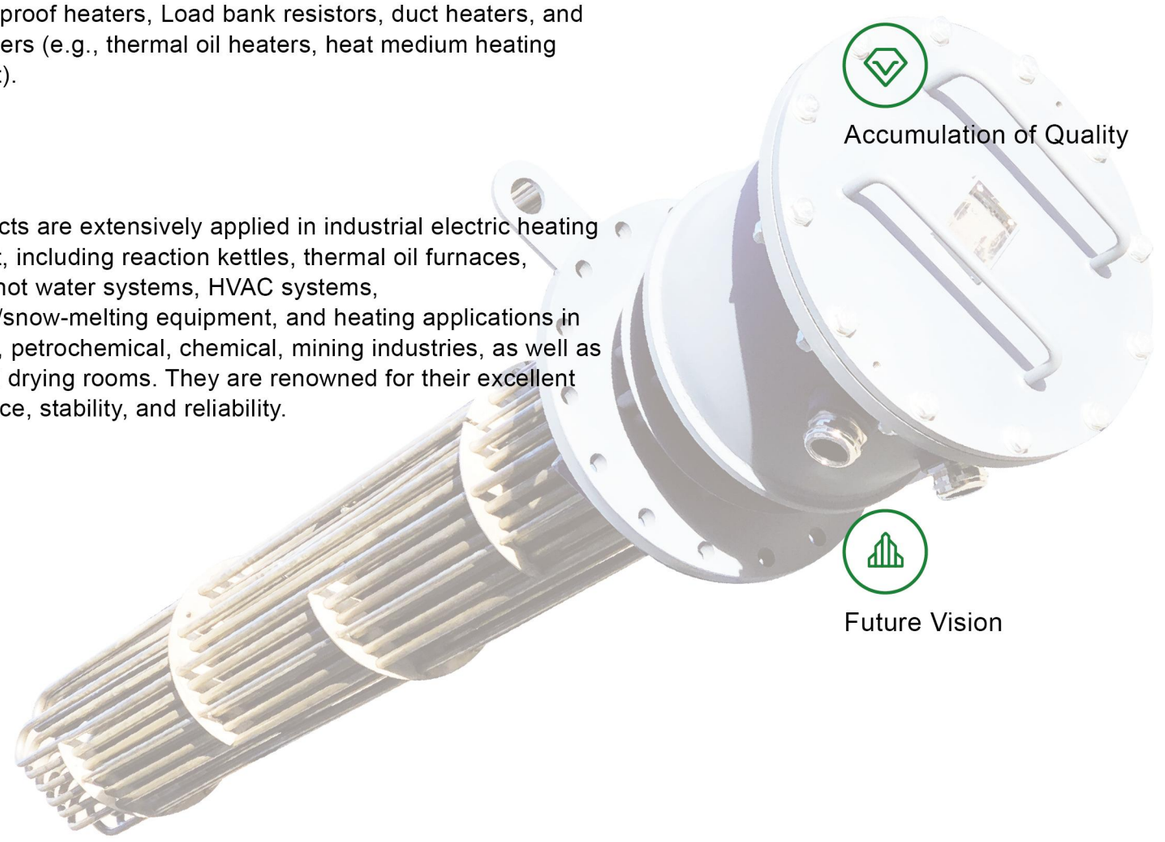
The company specializes in the pioneering research and product manufacturing of electro-thermal technology, possessing extensive expertise and technological advantages across multiple specialized sectors:

Core Products

Encompass ultra-high voltage electric heating tubes, various explosion-proof heaters, Load bank resistors, duct heaters, and liquid heaters (e.g., thermal oil heaters, heat medium heating equipment).

Wide Applications

Our products are extensively applied in industrial electric heating equipment, including reaction kettles, thermal oil furnaces, industrial hot water systems, HVAC systems, defrosting/snow-melting equipment, and heating applications in petroleum, petrochemical, chemical, mining industries, as well as ovens and drying rooms. They are renowned for their excellent performance, stability, and reliability.



Technical Strength

We firmly believe that "technological innovation" is the core driver of development. The company boasts an R&D team led by seasoned electric heating experts, capable of not only customizing special-type electric heating solutions for clients but also achieving remarkable success in the independent R&D of production equipment. Our self-designed and manufactured electric heating tube production equipment (such as tube shrinking machines, filling machines, etc.), with its exquisite craftsmanship and outstanding performance, has been successfully exported to global markets including Japan and Europe, fully demonstrating our profound technical expertise and innovative capability.

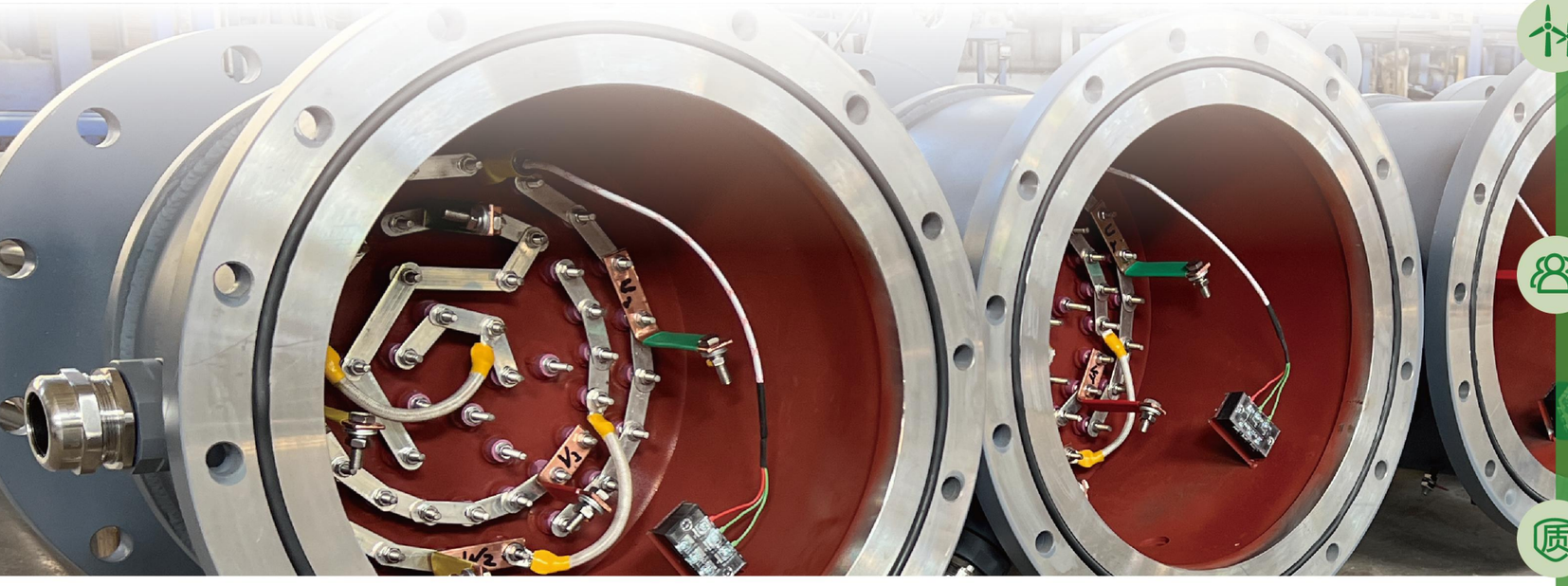
Accumulation of Quality

Adhering to the Group's "Three-Excellence" tenet of "Concentration, Refinement, and Manufacturing Quality Products," Runkel Technology is built upon the cornerstone of "Honesty and Integrity," upholding the business philosophy of "Customer Satisfaction, Employee Contentment, and Business Success." We are committed to delivering globally proven, high-quality electric heating tube products and technologies, validated by fifteen years in the market, to our clients worldwide.

Future Vision

Looking ahead, Runkel Electric Heating Technology Co., Ltd. will continue to improve itself, explore innovations, and make integrity its promise, quality its foundation, and service its bond. We sincerely look forward to establishing long-term and amicable cooperative relationships with domestic and international partners, working together to create a brighter future in the field of electric heating!

Corporate Culture



Corporate Mission

Runkel Electric Heating, The Electric Heating Expert.

Corporate Vision

To Build a Leading Enterprise in Electric Heating and Establish Runkel as a Century-Old Brand.

Corporate Spirit

Concentration, Refinement, Manufacturing Quality Products.

Core Values

Customer First, Integrity as Foundation, Meticulous Management, Innovative Development

Business Philosophy

Survival through Quality, Efficiency through Innovation, Development through Integrity.

High Efficiency and Energy Saving

Product performance excellence and reliability have been verified by applications from major clients.

Professional R&D Team

Guided by the concept of "Innovative Technology," we specialize in designing and manufacturing special-type electric heating tubes for users.

Quality Certification

The Group is an ISO9001-certified comprehensive electric heating technology entity.

Integrity Service

We practice sustainable management through "Customer Satisfaction," "Employee Contentment," and "Business Success." Looking forward, the company will continuously improve, innovate, and provide comprehensive services. The team at Runkel is committed to our core principle: Integrity is our foundation!

Corporate Honors

Technological Innovation, High Efficiency and Energy Saving

Products have been proven by extensive client applications to offer excellent equipment performance. Stable product quality, timely delivery, and thorough service are our hallmarks. "Honesty and Integrity" are the foundation of our existence. We practice sustainable management through "Customer Satisfaction," "Employee Contentment," and "Business Success." Looking forward, the enterprise will continuously improve and innovate, providing comprehensive services. The team at Runkel is committed to our core principle: Integrity is our foundation! Every Runkel employee sincerely hopes to establish long-term, friendly cooperative relationships with domestic and international clients to create tomorrow's brilliance together!

Meeting customer needs, continuous improvement and innovation, and perfect after-sales service to win customer satisfaction are our goals. In actual business operations, we have always been guided by customer requirements, and we will make every effort to meet them.

01

Explosion-Proof Electric Heater Series

Product Overview

With the continuous development and progress of industry, people are paying increasing attention to the safety of industrial production. In industries such as petrochemicals, coal chemicals, and pharmaceuticals, where production processes involve large amounts of flammable and explosive substances, safety issues during production are particularly crucial. To ensure production safety in these sectors, explosion-proof heaters have emerged.

Safety

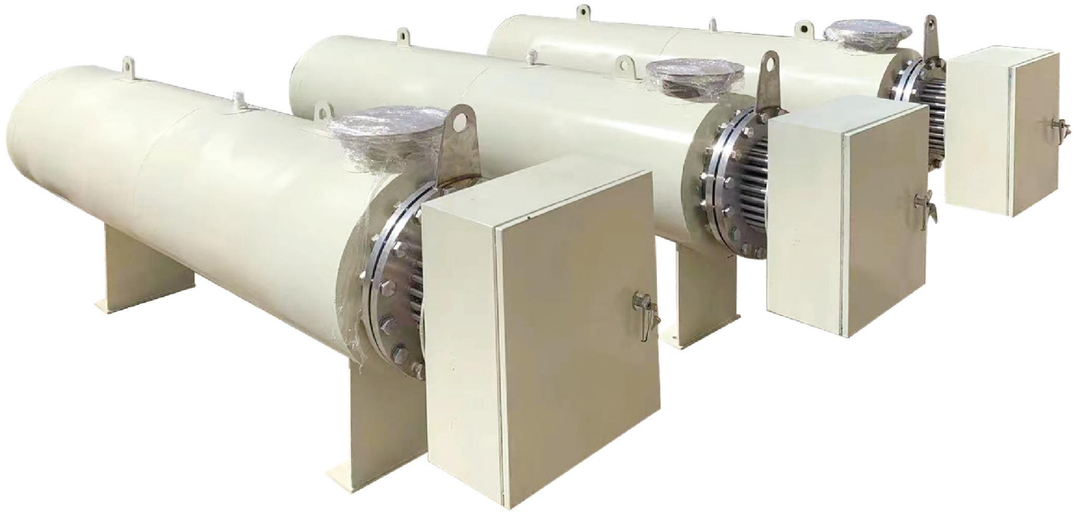
As a special type of electric heating equipment, explosion-proof electric heaters must comply with relevant safety standards in their design and production processes. They incorporate explosion-proof structural design and explosion-proof enclosures, effectively preventing sparks and high temperatures generated by heating elements from affecting surrounding combustible gases and dust, thereby avoiding potential safety hazards.

Furthermore, explosion-proof electric heaters are equipped with multiple protection functions, such as overcurrent protection, overvoltage protection, and phase-loss protection, effectively safeguarding the equipment itself and surrounding installations.

Design Principle

The main components of an explosion-proof electric heater are the heating element, heat dissipation device, and electrical control system. Among these, the heating element is the core part; its quality and service life directly affect the performance and effectiveness of the heater.

In designing and manufacturing heating elements, factors such as heating power and voltage must be considered. Typically, heating elements are made of stainless steel to enhance corrosion resistance and durability. The heat dissipation device effectively dissipates heat generated by the heating element, ensuring stable operation in high-temperature environments. The electrical control system enables precise control over parameters like temperature and pressure to meet actual production needs.



Product Applications

- Heating of chemical feedstock and materials in the chemical industry.
- Powder drying under certain pressures, chemical processes, and spray drying.
- Heating hydrocarbons, including petroleum crude oil, heavy oil, fuel oil, thermal oil, asphalt, paraffin, etc.
- Heating process water, superheated steam, molten salt, ammonia/air, water gas, and other fluids requiring temperature increase.

Thanks to advanced explosion-proof design, the equipment can be widely used in locations with explosion-proof requirements, such as chemical plants, military industry, petroleum, natural gas, offshore platforms, ships, and mining areas.

02

Circulation–Type Electric Heater Series

Product Overview

The ROB-H type circulation electric heater utilizes pump-driven forced convection of fluid, circulating the medium between the storage tank and the heater to heat various gases and liquids.
By functionally integrating the power unit (pump), pipelines, heater, and control components, a complete circulation-type electric heating system is formed.
Its integrated skid-mounted structure is compact, facilitating mobility and installation.

Product Features

A — Sturdy structure, compact and sealed design, high thermal efficiency

B — Maximum heating temperature can reach 950°C, which is difficult for general heat exchangers to achieve

C — Designed with lower thermal load, equipped with multiple protection devices such as overload protection, ensuring long service life

D — Suitable for both ordinary and explosion-proof environments. Explosion-proof rating can reach Class B and C, pressure resistance up to 50MPa. Vertical or horizontal structures available based on user requirements

E — The system can achieve automatic operation with minimal daily maintenance. Through circuit design, automatic control of parameters like temperature, pressure, and flow rate is possible, supporting DCS system control and human-machine interaction

Hazardous Area Classification and Explosion-Proof Type Categories

Zone 0

An area in which an explosive gas atmosphere is present continuously or for long periods; where the hazard exists for more than 1000 hours per year.

Zone 1

An area in which an explosive gas atmosphere is likely to occur in normal operation; where the hazard exists intermittently for 10 to 1000 hours per year.

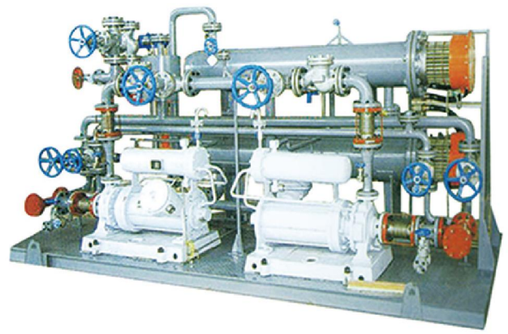
Zone 2

An area in which an explosive gas atmosphere is not likely to occur in normal operation and, if it does occur, will exist for only a short time; where the hazard exists under fault conditions for 0.1 to 10 hours per year.

Explosion-Proof Type	Explosion-Proof Principle	Application Examples
Flameproof "d"	An enclosure that can withstand an internal explosion of a flammable mixture that has entered it without suffering damage, and prevent the ignition of an external explosive atmosphere through any joints or openings.	Explosion-proof circuit breakers, switches, lights, starters, pushbuttons, operator stations, distribution boxes, motors.
Increased Safety "e"	Electrical equipment with additional measures applied to increase safety, preventing the occurrence of dangerous temperatures, arcs, and sparks on internal and external components under normal operating conditions.	Explosion-proof junction boxes, terminal boxes, conduit fittings, adapters, flexible conduits, lights, motors.
Pressurized "p"	Electrical equipment that achieves safety by maintaining the pressure of the internal protective gas higher than that of the surrounding explosive atmosphere.	Explosion-proof analyzer houses, large motor power distribution, instrument controllers.
Intrinsic Safety "i"	Electrical equipment in which all circuits are intrinsically safe, meaning they cannot cause ignition under prescribed test conditions (normal operation or specified faults).	Explosion-proof communication devices, sensors, regulators, measurement and control equipment.
Encapsulation "m"	Electrical equipment where parts capable of igniting an explosive mixture are encapsulated so they cannot ignite the surrounding explosive gas atmosphere.	Explosion-proof transformers, resistors.

Structural Composition

The unit consists of a heater, circulation pumps, pipelines, and a skid. Circulation pumps are configured with one in operation and one on standby. This unit needs to be used in conjunction with a high-level oil tank and can be combined with a low-level oil tank.



Technical Parameters

Rated Voltage	380V
Power	0~3000kW
Working Pressure	≥ 5 MPa
Working Temperature	≤ 390°C
Explosion-Proof Rating	Ex(ia) Ⅱ C T4
Vessel Material	16MnR or Stainless Steel

Partial Model Parameter Table

Model	Power (kW)	Flow Rate (m³/h)	Motor Power (kW)	Inlet DN	Outlet DN
ETRYL-60	60	16	4	40	40
ETRYL-100	100	25	7.5	40	40
ETRYL-150	150	35	5.5	50	50
ETRYL-200	200	40	5.5	50	50
ETRYL-250	250	55	7.5	50	50
ETRYL-300	300	63	15	50	50
ETRYL-400	400	87	15	65	65
ETRYL-600	600	130	22	65	65
ETRYL-1000	1000	250	75	65	65

03
Bundle Electric Heater Series

Product Overview

Flange Immersion Heaters are internationally popular, high-quality, long-life electric heating devices used for heating, temperature maintenance, and temperature increase of flowing liquid or gaseous media. When the heating medium passes through the heater's heating chamber under pressure, it utilizes fluid thermodynamic principles to uniformly effectively dissipate the thermal energy generated by the heating elements, thereby raising the temperature of the medium to meet the user's process requirements.

Product Features

- Compact size, high heating power
- Suitable for various occasions and media, including explosion-proof environments.
- Heating temperature can generally reach up to 720°C.
- The heating system can be fully automated and supports centralized control via DCS systems.
- Long service life, equipped with multiple protection systems for safety and reliability.

Product Applications

Suitable for heating fluids in various containers, tanks, solutions, etc.

04

Duct-Type Electric Heater Series

Product Overview

Duct heaters are primarily used for heating air within ducts. Specifications are divided into low-temperature, medium-temperature, and high-temperature types. A common structural feature is the use of steel plates to support the heating tubes, reducing vibration when the fan stops. A temperature control device is installed inside the terminal box. The low-temperature type can be installed directly in the duct, while the medium and high-temperature types, due to structural differences, incorporate 100mm of insulation material between the duct outer wall and the heater terminal box. This reduces overall heat loss from the duct and also lowers the temperature within the terminal cavity.

Product Features

- Heating tubes use corrugated stainless steel strips on the outer edge, increasing the heat dissipation area and significantly improving heat exchange efficiency.
- Reasonable heating design, low air resistance, uniform heating, no hot or cold spots.
- Multiple protections ensure good safety performance. Thermostats and fuses installed on the heater control excessive air temperature and prevent operation without airflow, ensuring fail-safe operation.

Product Applications

Heating air for drying various substances, vulcanization, heat treatment, reheating, dehumidification, and other similar applications.

High-Temperature Duct Heater

Product Overview

Utilizing high-temperature, high-pressure, high-efficiency heating elements produced by our company, along with two layers of insulation arranged according to specifications to gradually increase temperature and humidity. Features include convenient performance and long service life.

Application Range

Heating air, powder drying, heat treatment, carbon dioxide heating.

Technical Parameters

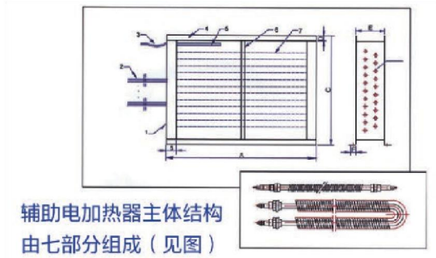
Voltage	220V---380V
Power	10---3000Kw
Operating Temperature	≥650°C
Protection Rating	IP54

Mine Use Duct

Central Air Conditioning Auxiliary Electric Heater

Product Overview

Central air conditioning systems operate based on standard heating conditions. When the ambient temperature differs significantly from the standard condition temperature, the room temperature provided by the central air conditioning unit may deviate substantially from the required room temperature. Low ambient temperatures can cause the water temperature inside the main unit to drop, making it difficult for the main unit to start. Even if it starts with difficulty, it may experience prolonged periods of harsh operating conditions, easily leading to dangers such as compressor liquid slugging and oil loss, greatly reducing the lifespan of the air conditioning unit.



Working principle

If an auxiliary electric heater is configured, it can pre-heat the medium, raising the water temperature to ensure normal startup and operation of the air conditioning unit while also improving the heating efficiency and effectiveness of the main unit. Due to the good sealing and pressure resistance of tubular electric heaters, they can also be used to heat liquids, air, steam, etc., under certain pressures, widely applied in air purification, chemical industries, and various other sectors.

Product Features

- Before use, ensure the voltage is correct.
- Before use, fill the unit with water first, then power on for heating to avoid dry firing and damaging the heating tubes due to lack of water in the tank.
- When decommissioning, drain all water from the cylinder to prevent corrosion of the electric heater and potential freezing damage to the auxiliary heater in winter.

Usage Instructions

This auxiliary electric heater is primarily used in winter in conjunction with air-source heat pump units under low-temperature environments. Therefore, during summer cooling operation: Open Valve 1, close Valve 2 and Valve 3, so that chilled water does not flow through the electric heater.

During winter heating operation: Open Valve 2 and Valve 3, close Valve 1, so that water flows through the auxiliary electric heater and is heated before being sent to the user end.

The temperature measurement component of the auxiliary heater typically uses thermocouples or similar, which must be used in conjunction with a temperature display controller. The power supply to the auxiliary heater is controlled via the temperature display controller.

05
Food-Grade Explosion-Proof Heater

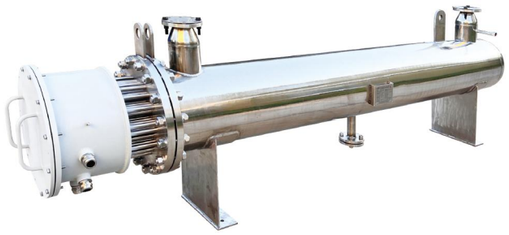
Customizable in various shapes
and sizes per client specifications.

Product Overview

The food-grade electric heater is an electric heating element specifically designed for food processing and handling. It is made of stainless steel 304 or other food-grade materials to ensure no contamination to food during use. Its design and manufacturing strictly comply with food safety regulations, aiming to guarantee hygiene and safety in food processing.

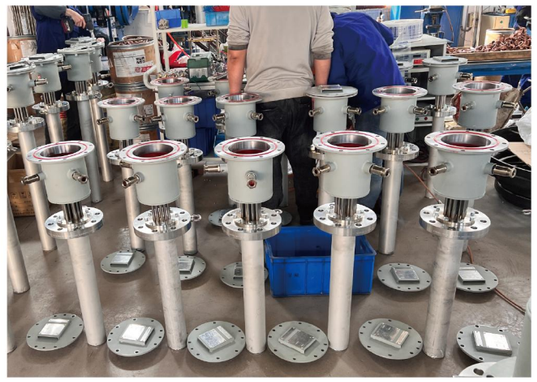
Food-Grade Explosion-Proof Heater

Food-Grade Explosion-Proof Heater



Food-Grade Explosion-Proof Heater

Sheathed Explosion-Proof Heater



06 Electric Heating Tube Series

High-Quality Raw Materials

Heating Wire: High-quality high-temperature alloy resistance wire;

Filling Material: High-purity crystalline magnesium oxide powder;

Tube Material: Depending on the operating conditions, high-quality stainless steel tubes such as 304, 321, 310S, 316L, and imported American series like Incoloy®800 and Incoloy®600 are selected.

Application of Special Post-Treatment Processes

Through high-temperature nitriding treatment at 1100°C, moisture in the heating tube and stress generated during processing are completely eliminated.

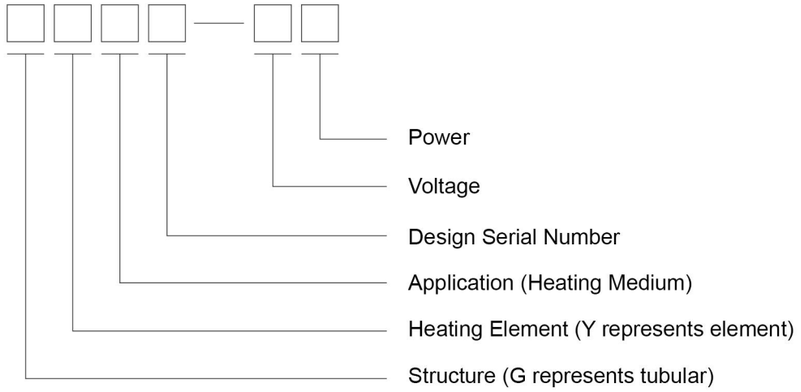
Application of Scientific and Advanced Processes

Fully Automatic Wire Winding: Fully automatic wire winding machines are used to wind the heating wire, with uniform spacing and resistance error ≤0.01Ω;

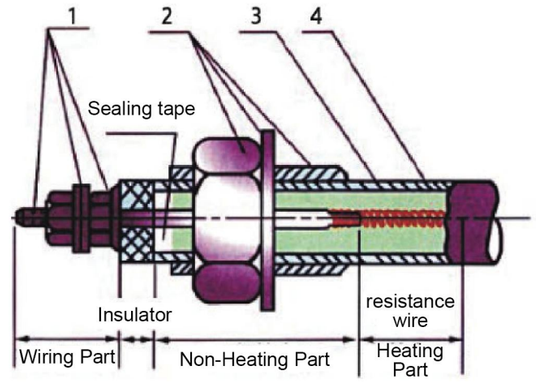
Fully Automatic Powder Filling: Italian imported fully automatic powder filling machines are used to fill magnesium oxide powder uniformly;

Fully Automatic Tube Reducing: Advanced fully automatic tube reducing machines are used, with tube diameter error less than 0.02mm.

Meaning of Various Standard Tubular Electric Heating Element Models



For example: GYQ1-220/0.5 is a tubular electric heating element for air heating.Its working voltage is 220V, and the power is 0.5 kilowatts.



1.Terminal Pin
2.Fastening Device
3.Metal Tube
4.Crystalline Magnesium Oxide

Things to Know When Choosing Tubular Electric Heating Elements

No.	Heater Model	Name	Application	Maximum Operating Temperature(℃)
1	GYQ	Electric Heating Element for Air	For heating air	300
2	GYY	Electric Heating Element for Oil	For heating oil in circulating or non-circulating, open or closed vessels	300
3	GYYX	Electric Heating Element for Nitrate Salt Solution	For heating nitrate salt solution in open tanks	500-550
4	GYJ	Electric Heating Element for Alkali Solution	For heating alkali solution in open tanks	500-550
5	GYS	Electric Heating Element for Water	For heating water in open or closed tanks	100
6	GYM	Cartridge Heaters for Molds	For heating in mold holes	300

07

Liquid Electric Heating Tube Series

Liquid heating tubes mainly consist of metal tubular electric heating elements. The outer tube of the liquid heating tube is made of copper or other metal materials, offering advantages such as high mechanical strength, heat resistance, corrosion resistance, and being less prone to scaling. Moreover, by utilizing the smooth surface of the outer tube and the characteristic of slight thermal expansion and contraction during operation, it overcomes the scaling tendency of stainless steel and copper electric heating elements.

Liquid Heating Tube Flange Structure / Liquid Heating Tube

The flange structures of liquid heating tubes are divided into circular, square, and spiral. Square and spiral structures are concise, occupy less space, and are easy to arrange. Users can choose the suitable structure according to different requirements.

Usage Precautions:

The working voltage should not exceed 1.1 times the rated value, and the casing should be reliably grounded.

The effective heating part must be fully immersed in the liquid to avoid dry burning.

Scale on the tube surface should be regularly removed to prevent affecting heat dissipation and causing excessive temperature.

Components should be stored in a dry place. If the insulation resistance drops below 1MΩ due to long-term storage, methods such as heating at reduced voltage or drying in an oven can be used until the insulation resistance is restored.

Installation Tips:

Avoid overtightening flange bolts during installation to prevent seal damage.

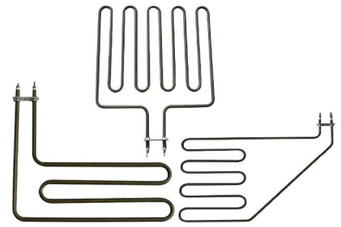
Flange Electric Heater/Medical Flange Electric Heater

High-Temperature High-Performance Electric Heating Tube

Electric Boiler Heating Tube

Stainless Steel Water Boiler Heating Tube

Energy Storage Heating Tube



Sauna Heater Heating Tube

Sauna Heater Heating Tube

Spin Dryer Heating Tube

Profile Machine Heating Tube

Arced Steam Rice Cart Heating Tube

Water Tank Heating Tube

Submersible Heating Tube

Steam Rice Cart Heater Tube

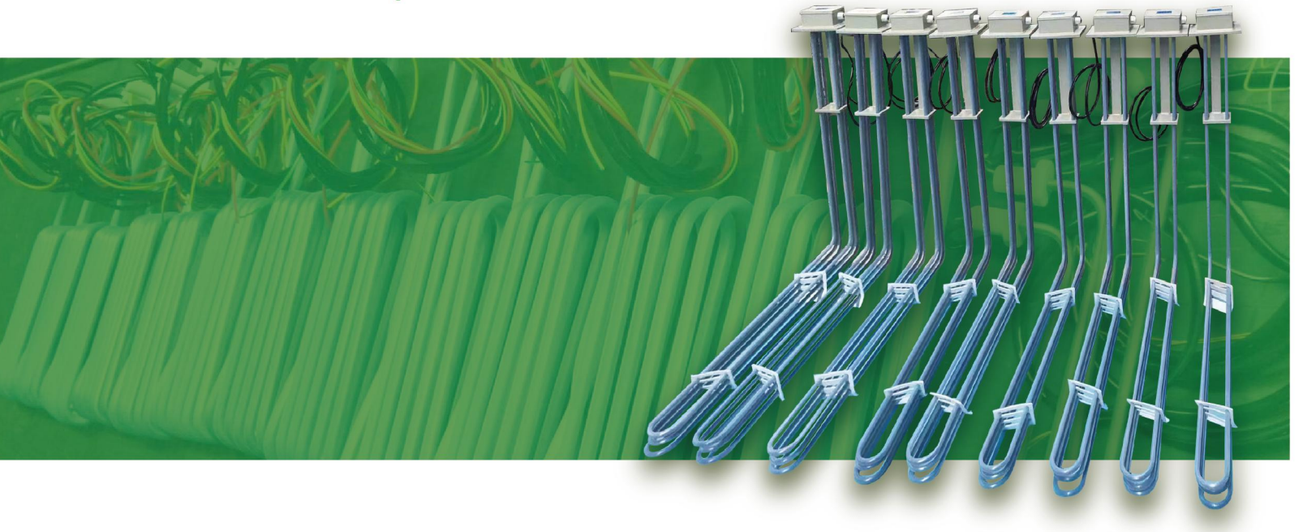
Aluminum Sheet Heating Tube

Mosquito Coil Type Heating Tube

Noodle Cooking Stove Heating Tube

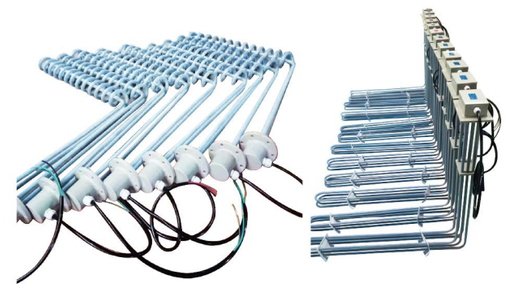
Spiral Liquid Heating Tube

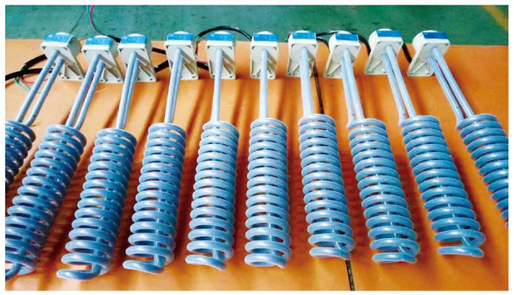
Acid-Alkali Explosion-Proof Heater



The acid-alkali explosion-proof heater produced by our company is specifically designed for heating various corrosive liquids. It offers advantages such as long service life, corrosion resistance, acid and alkali resistance, safety and reliability, excellent anti-aging properties, and good bending performance.

Customizable in various shapes and sizes per client specifications.





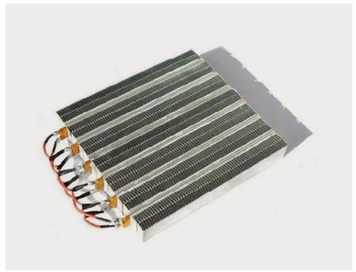
Scope of Application

Suitable for heating various corrosive liquids, widely used in fields such as electroplating, electrolysis, degreasing, pickling, electroless nickel-phosphorus plating, anodizing, aluminum foil, smelting, chemicals, and pharmaceuticals.

Liquid heating tubes mainly consist of metal tubular electric heating elements. The outer tube of the liquid heating tube is made of copper or other metal materials, offering advantages such as high mechanical strength, heat resistance, corrosion resistance, and being less prone to scaling. Moreover, by utilizing the smooth surface of the outer tube and the characteristic of slight thermal expansion and contraction during operation, it overcomes the scaling tendency of stainless steel and copper electric heating elements.

08

PTC Heater Series



Product Overview

Widely used in air conditioners, clothes dryers, fan heaters, dryers, air curtains, mobile phones, etc. PTC thermistors are receiving increasing attention and are widely used in many fields with rapid development momentum due to a series of unparalleled advantages over traditional heating elements, such as constant temperature heating, long natural lifespan, energy saving, no open flame, good safety performance, easy adjustment of heating power, and being less affected by power supply voltage fluctuations.

Utilizing this excellent characteristic of PTC thermistors and reasonably designing the heat sink structure with reference to the electrical parameters of PTC heating elements, our company has successfully developed a series of ceramic PTC heater products. These products feature large output hot air power, fast heating speed, automatic adjustment of air temperature and power consumption, low power decay (< 8%), low leakage current (≤ 0.5mA), high electrical strength (adhesive type > 15KV, clamped type > 18KV), and safe and reliable use. Since being introduced to the market, they have been widely welcomed by users.

The ceramic PTC heaters produced by our company include both aluminum corrugated adhesive-type heaters with or without surface charge, and aluminum sheet mechanical clamp-type heaters without surface charge to meet the needs of different users.

PTC heaters can be custom-engineered to meet specified thermal power, input voltage, and dimensional requirements (including baseplate). Optional integration of temperature control and overcurrent protection components is also available.

Heating Tube Series

- **Single-head heating tube**
  - Right-angle single-head heating tube
  - Single fixed plate-type single-head heating tube
  - Threaded Single-Ended Heating Tube
- **Uniform Heating Heater**

Single-head heating tube

Main Applications

Plastics Industry	Hot Runner Systems
Medical Equipment	Packaging Machinery
Paper Industry	Semiconductor Industry

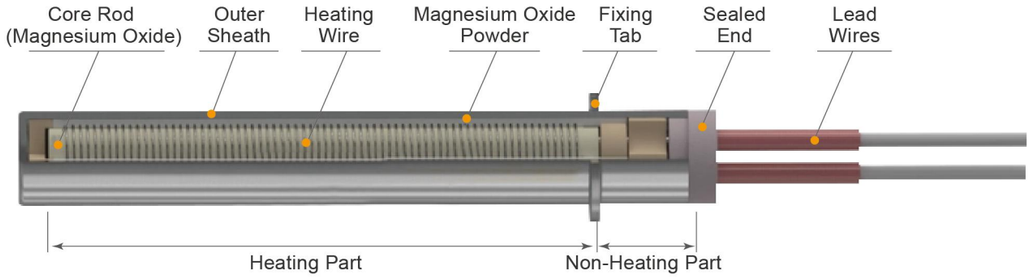
Product Features

Flexible Customization	Rugged and Durable
Efficient Heat Transfer	Uniform Heating
Easy Installation and Removal	Stable Performance

Working Principle

Single-end heating tubes (also known as cartridge heaters, single-end electric heating tubes) use high-quality high-temperature resistant nickel-chromium alloy heating wire (Ni80Cr20), high-purity magnesium oxide, and stainless steel outer sheath as the main raw materials. Combined with special manufacturing processes, they ensure stable heating tube performance even under harsh working conditions.

Single-end heating tubes can provide sufficient heat in a relatively short time and are widely used in various industrial processing fields. In addition to heating metal molds, they can also be used for heating gases and liquids.



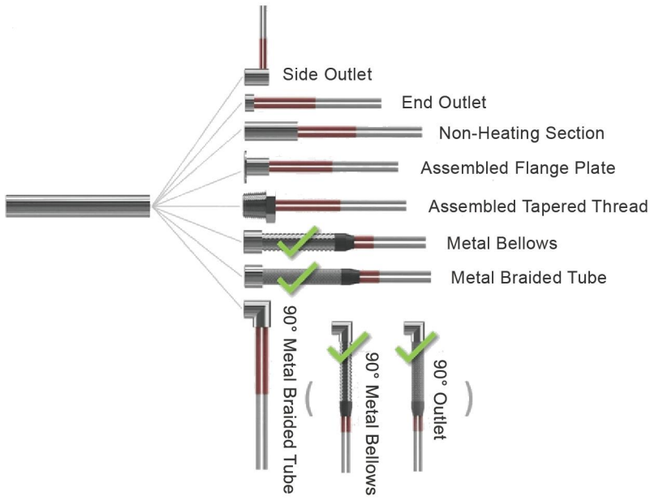
Main Technical Parameters

Heating Wire	Ni80Cr20
Filling Material	99.5% MgO
Diameter	3–32 mm
Voltage	12–480 V
Length	25–2500 mm

Shell Material	SUS304, 310, 316, Incoloy 800
Maximum Surface Temperature	820℃
Length Tolerance	+1.5%, min ±1 mm
Standard Cold End Size	10–15 mm
Power Tolerance	-10%, +5%
Insulation Resistance	≥500 MΩ
Insulation Resistance	≤0.5 mA (2000V)
Leakage Current	Conventional<12 W/cm² Maximum 40 W/cm²
Diameter Tolerance	-0.03 ~ -0.08 mm (L ≤ 300 mm) -0.05 ~ -0.1 mm (L > 300 mm)

Right-Angle Single-End Heating Tube

Right-angle single-end heating tubes are formed by assembling or welding a 90-degree elbow to a conventional heating tube. If the space at the wire outlet of the heated mold or metal component is relatively narrow, this structure can be chosen to avoid excessive bending of the heating tube leads.



Single fixed plate-type single-head heating tube

When using single-end heating tubes, to prevent displacement or falling of the heating tube due to vibration of the mold or metal equipment, single-end heating tubes with fixing tabs can be selected, and the heating tube can be fixed to the mold or metal equipment with screws.

Threaded Single-Ended Heating Tube

Threaded electric heating tubes consist of an electric heating tube and fastening threads. They are commonly used for heating liquids and gases and are installed on fixed brackets via threads. The usage requirements for threaded electric heating tubes are relatively strict, with extremely high requirements for the heating length of the electric heating tube.

Uniform Heating Type Heater

Overview

Algorithm and Analysis Technology: Use algorithm software to solve for uniform heat distribution, then simulate heating based on calculation results using finite element analysis software. After cyclic verification, find the optimal power distribution scheme.

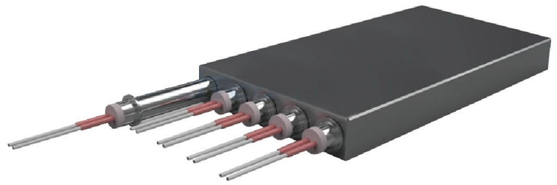
Temperature Difference Control: The maximum temperature difference within the heating section of a single uniform heating tube is within 5°C. The maximum platform temperature difference range: ±2°C - ±8°C (determined based on actual requirements).

Product Features

Customized tube layout based on hot plate dimensions.

Distribute heating tube power according to their layout positions.

High-precision dimensional processing to reduce heat loss.



Built-in Thermocouple:

Thermocouples ("J" or "K" type) can be built into the end or middle of the cartridge heater (single-end heating tube), with grounded or ungrounded options available.

High-Temperature Resistant Materials:

If heating tubes need to be used at extremely high temperatures, ceramic seals can be chosen, sealed with high-temperature ceramic adhesive, with maximum heat resistance up to 800°C. High-temperature fiberglass leads can be selected.

Sealing and Moisture Resistance:

To enhance product sealing and moisture resistance, epoxy resin, silicone resin, or Teflon can be used as sealing materials for the outlet end, with maximum heat resistance up to 245°C. Teflon leads can also be selected in easily soiled environments.

Power Distribution Customization:

Since the temperature at both ends of the heating zone of a cartridge heater is usually lower than the middle part, improvement is especially needed in some applications (e.g., sealing or rubber molds). To solve the problem of uneven heat source distribution, the power at both ends of a single-end heater can be customized to be higher than the middle part. 35/30/35% is a common power distribution.

Non-Heating Section Customization:

The length and position of the non-heating zone can be customized according to actual needs to achieve the best heating effect. The non-heating zone can be located at both ends or the middle of the heating tube.

Heating Zone Options:

The heating zone of cartridge heaters can be customized as needed, such as customizing segmented heating types, or independently controlling heating zones within the same heating tube.

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Crawler-Type Heater Series

Product Overview

Internationally, ceramic heaters are also known as flexible heaters. They are made of high-quality nickel-chromium alloy wire rope sheathed with high-purity ceramic fiber braided components, forming strip-type, high-voltage-resistant heaters, and other forms. They can be manufactured according to the shape and size of the workpiece, can be spliced, bent, and wound tightly around the workpiece for heating, with a maximum surface temperature of 1050°C. They feature a wide range of applications, fast heating speed, high thermal utilization, significant energy savings, low labor intensity, and convenient operation.

Various ceramic electric heaters developed by our factory based on internationally advanced products have a wide range of uses.

Suitable for various metal components, such as preheating for welding, post-weld hydrogen removal, and annealing of large towers, high-pressure vessels and pipelines, large steel frame columns, various castings and forgings. Also suitable for thermal assembly heating of various workpieces and auxiliary heating for chemical pipelines, containers, etc. It is an ideal electric heating equipment.

Model	Heating Dimensions(mm) (Bendable edge × Straight edge)	Working Voltage(V)	Rated Power (KW)
LCD26-220	680 × 340	220	10
LCD33-220	880 × 260	220	10
LCD39-220	1020 × 220	220	10
LCD44-220	1160 × 200	220	10
LCD52-220	1360 × 160	220	10
LCD70-220	1860 × 120	220	10
LCD19-220	500 × 460	220	10
LCD16-220	420 × 530	220	10
LCD19-110	500 × 220	110	5
LCD16-110	420 × 260	110	5
LCD23-110	600 × 180	110	5
LCD10-55	260 × 200	55	2.5
LCD16-55	410 × 120	55	2.5

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Bolt-Specific Heater Series

Bolt Heating Rod(AC/DC)Temperature Control Cabinet

Product Application

To meet the needs for disassembling and assembling high, medium, and low-pressure bolts in steam turbines and improve work efficiency, our company has developed and produced this series of products.

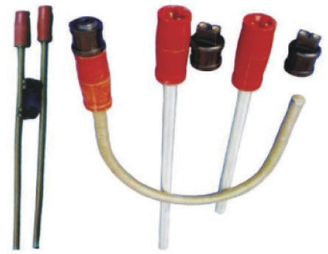
Main Technical Parameters

Model	Rated Power(KW)	Rated Voltage(V)	Rated Current(A)	Output Voltage(V)	Output Channels	Dimensions (mm)
WQJ-1	30	1	3×200	45-55	1	600×800×1400
WQJ-2	60	3	3×400	45-55	3	600×800×1400
ZKJ-1	30	3	3×45	0-220V×3	3	750×950×1200
ZKJ-11	60	3	3×90	0-220V×3	3	750×950×1200

Steam Turbine Bolt Heating Rod(Flexible/Rigid Tube Type)

Usage Precautions

- The temperature control cabinet casing should be reliably grounded.
- The connection between the temperature-controlled heater plug and the cabinet socket, and between the cabinet and the neutral line must be correct. Loose or incorrect connections are strictly prohibited.
- When installing or removing the temperature-controlled heater, the power switch must be turned off. For ZKJ series control cabinets, voltage adjustment and indication should be at the minimum position; for WQJM series voltage control cabinets, changing voltage under load is strictly prohibited.
- Special bolt heaters need to be customized according to the specific geometric dimensions of the bolt. The following information must be provided when ordering:
  A.Bolt outer diameter/B.Bolt hole diameter/C.Bolt length



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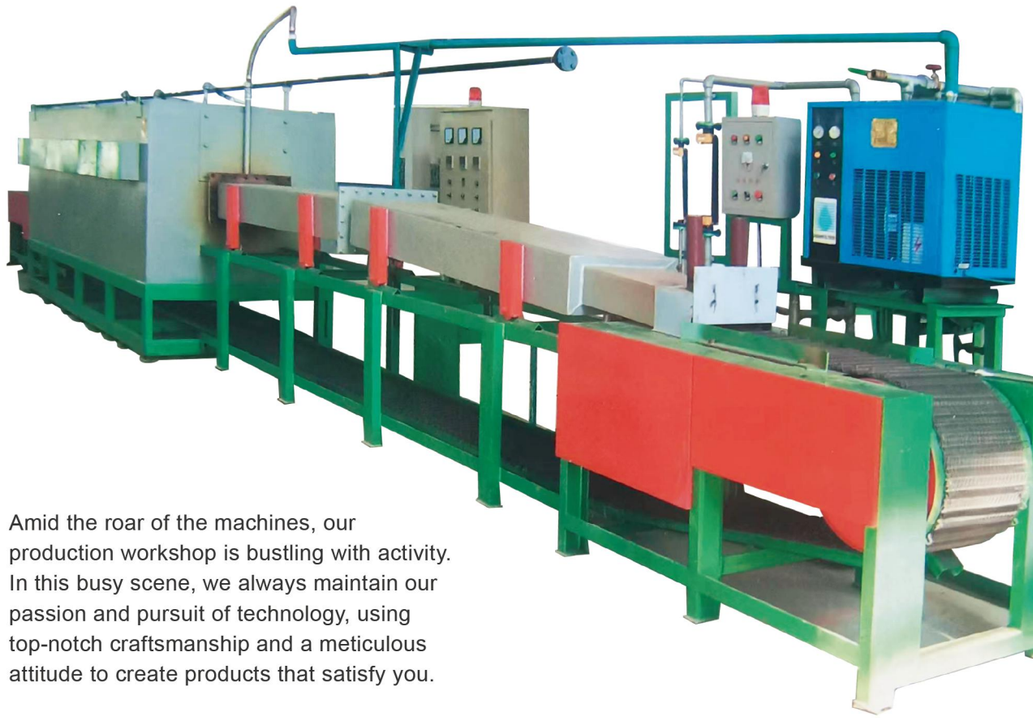
Complete Equipment Series

Production Equipment



Amid the roar of the machines, our production workshop is bustling with activity. In this busy scene, we always maintain our passion and pursuit of technology, using top-notch craftsmanship and a meticulous attitude to create products that satisfy you.

SH-SG-01 Type 12-Stage Tube Reducing Machine

SH-SG-02 Type 12-Stage Reducing Machine

SH-TF-01 Automatic Powder Adding Machine

SH-QG-O2 Automatic Tube Bending Machine

SH-TH-02 Local Annealing Machine

SH-SG-02 Type Tapping Tube Reducing Machine

SH-YH-01 Single-Head Automatic GTAW (TIG) Welding Machine

SH-WGU-05 Mosquito Coil Bending Machine

SH-LX-02 Spiral Tube Bending Machine

SH-PS-01 Manual Dry Sandblaster with General Pressure

SH-RP-O1 Type Energy Storage Spot Welding Coil Winding Machine

SH-TP-01 Fully Automatic Flat Head Machine

SH-DPT-01 Single-Head Tube Facing Machine

SH-TP-02 Semi-Automatic Flat Head Machine

SH-TZ-01 Straightening Machine

QUALITY ASSURANCE SYSTEM

Quality Management System

Management Standard

The company strictly implements production process management according to the ISO9001:2015 Quality Management System.

Process Control

Each process has dedicated personnel responsible, and strict inspection standards for raw materials, components, and finished products are established.

Technical Workers

Possess a large number of professional technical workers with composite skills, ensuring the stability and reliability of product quality.

Quality Service System

Efficient Response:

The Runkel service team will quickly establish more effective communication with the site upon receiving customer feedback to reduce customer downtime.

Value-Added Services:

Provide free customer training, installation guidance, and regularly conduct product testing and operation consultation.

Quick Maintenance:

Timely maintenance and servicing. When faults occur, professional service personnel can quickly resolve the issues.