



TOPYRO
SMELTING FURNACE

TOPYRO

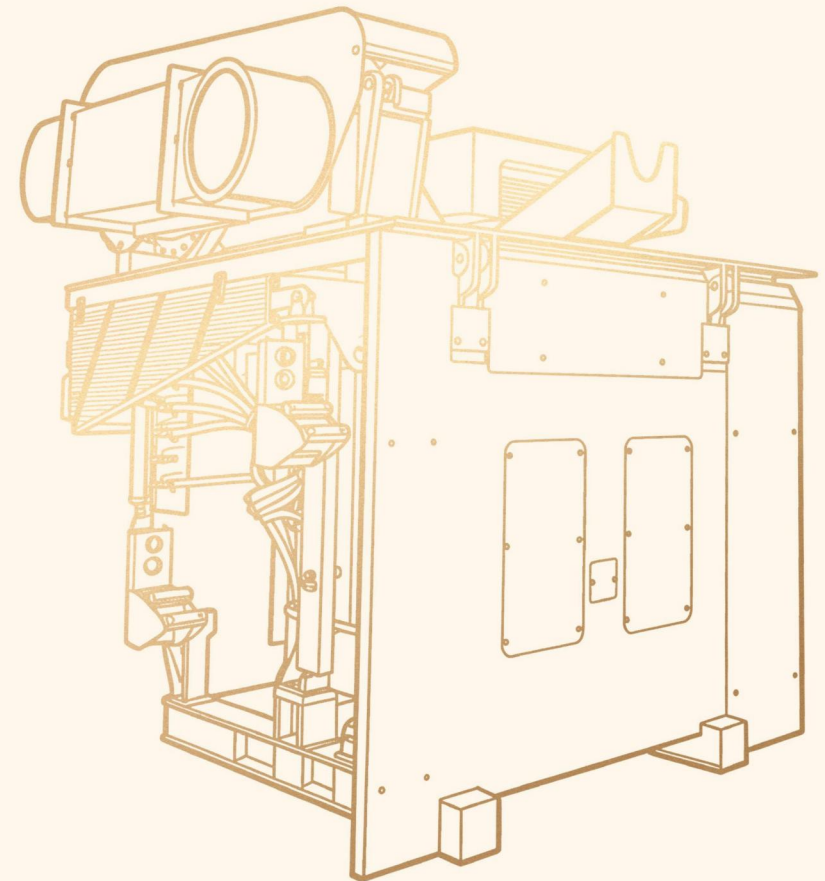
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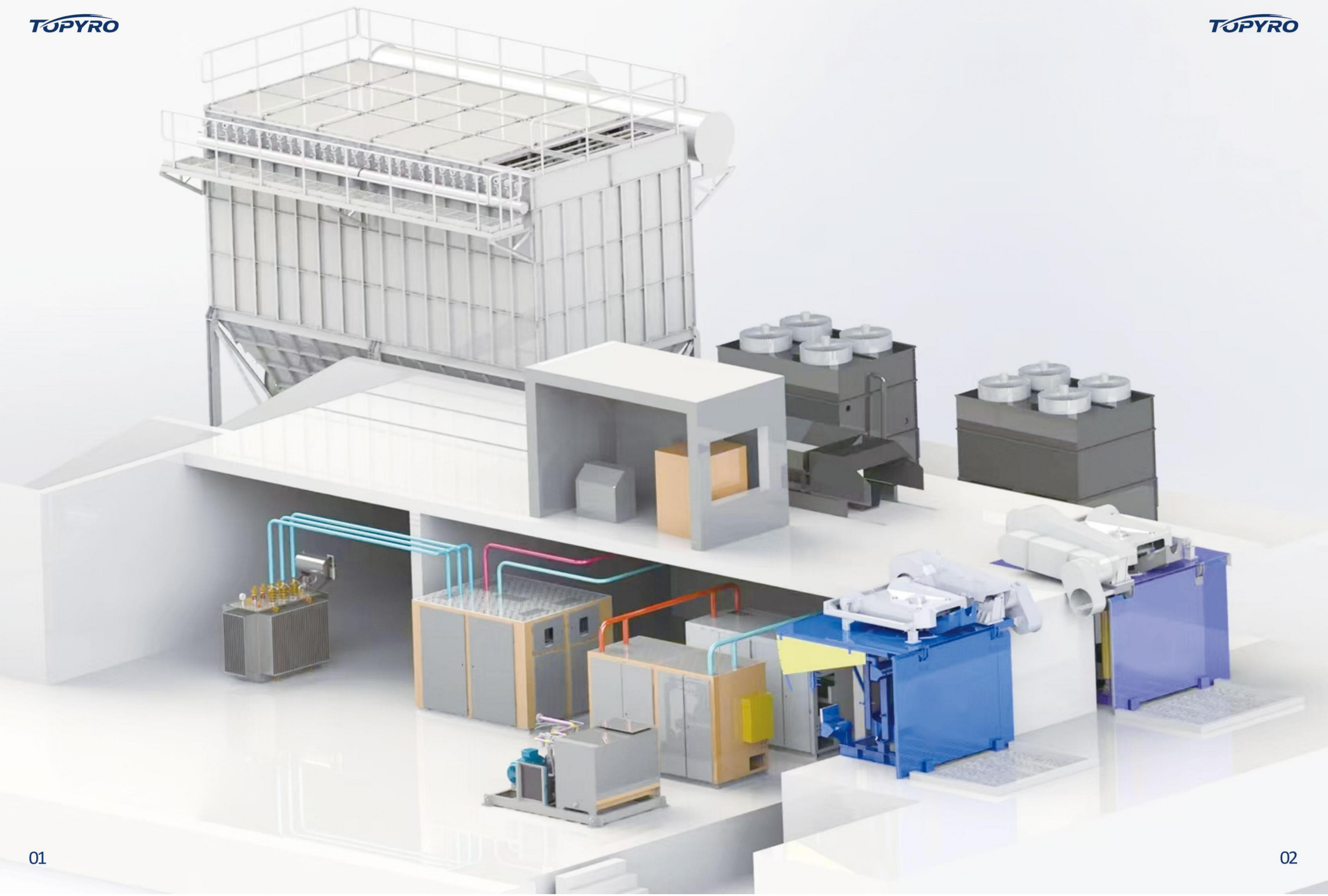
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Topyro International Technology (Luoyang) Co., Ltd.





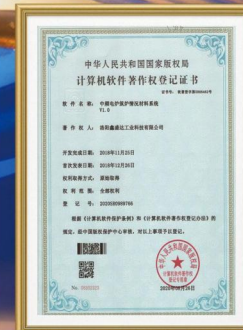
Company Profile

Topyro International Technology Co.,Ltd. Established in 2015 and headquartered in the ancient city of Luoyang is a comprehensive equipment manufacturer and full-line production line integrator in the metal heat treatment industry.

We specialize in providing customized solutions and end-to-end services for industrial applications.



Enterprise Certificate Display



Why Choose Us

Technical Strength and R&D Advantages

The company's R&D team has maintained in-depth cooperation with universities and research institutions at home and abroad for a long time. Relying on more than 20 years of technical accumulation in the induction furnace field, it has achieved independent intellectual property rights coverage for the entire product series, and drives the iteration of product performance and industrial technological upgrading through technological innovation.

Core Business And Products

Centering on the full-process needs of metallurgy and metal processing, the company's core services cover:



Providing overall workshop design for fields such as steel making, rolling, casting, forging, and heat treatment;



Offering efficient processing solutions for the recycling of waste metals like steel, copper, and aluminum;



Research and develop medium-frequency melting/heating furnaces, secondary melting furnaces for used metals, steel water refining and rolling equipment, open and closed cooling towers, medium-high frequency surface quenching equipment, and supporting accessories for steel production lines.

Market Layout and Customer Recognition

With professional technical capabilities and a sound quality management system, the company's products and services have won high recognition from customers at home and abroad, and its business scale has continued to expand:

- ◆ Domestic Market: The service network covers all provinces across China, providing in-depth services to customers in industries such as metallurgy, mining, steel, and automobile manufacturing;
- ◆ International Market: Products are exported to countries including Russia, Uzbekistan, Pakistan, Azerbaijan, Indonesia, Chile, Nigeria, Algeria, and Egypt, with business scope covering all continents except Antarctica.

20 years of experience in induction melting furnaces, metal production lines and induction heating furnaces.

We provide equipment, accessories and services for metal and metal-related product processing.



4 Workshops



Over **20,000** m³



20+ Years



Exported to **35** countries

Partners And Export Countries

Our company boasts exquisite technology and stable product performance. Its products are sold across all provinces and exported to foreign countries.

Adhering to the principle of "everything for the sake of customers", our company is always committed to reducing the high equipment maintenance costs for foundry enterprises.



新疆众和
XINJIANG JOINWORLD



中国一拖



LYC
—中国·洛轴—



明泰铝业



淮海精城



GuangRuiGuFen



洛阳古城机械有限公司



磊磊集团
GOLDEN STONE GROUP



力得科技
LIDE TECHNOLOGY



焦作万方
JiaoZuo WanFang



LYX O.L
回转支承专业制造



强大
KINGDA



ZYNP



SUNS
兹氏实业



天山铝业股份有限公司
TIANSHAN ALUMINUM CO.,LTD.



Power Cabinet(Series Resonance)

The series resonant power cabinet is a core power supply control device developed by Topyro for intermediate frequency furnaces and other heating/smelting equipment.



Enable one power cabinet to control multiple electric furnaces operating simultaneously.



Power allocation for each furnace is freely adjustable, enhancing transformer utilization.

95%

Power factor exceeds 95%.



Achieves 15%-30% greater energy savings compared to conventional electric furnaces.



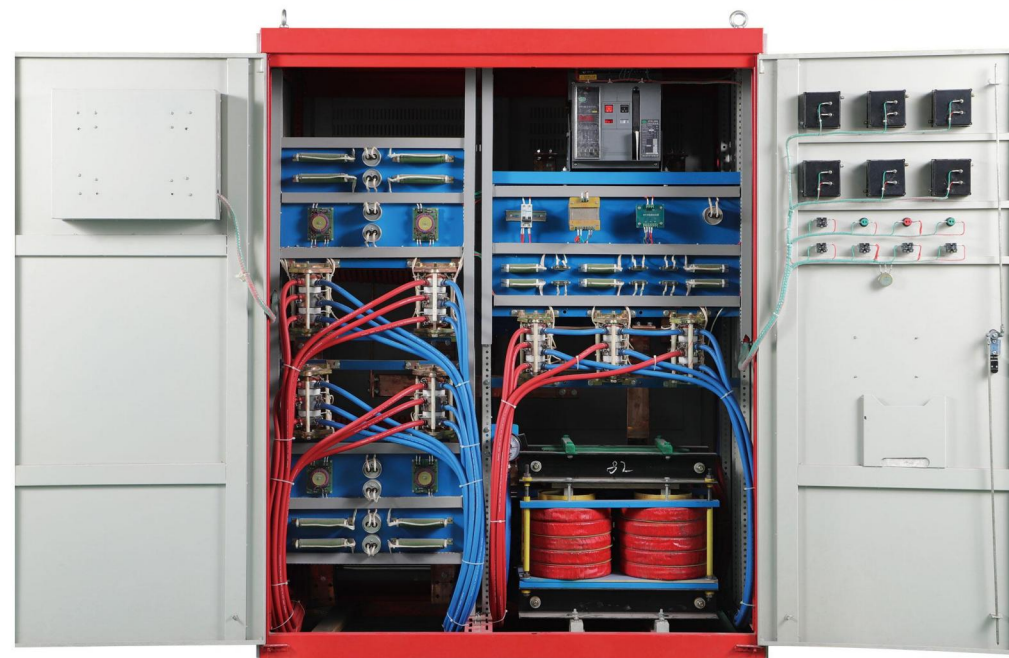
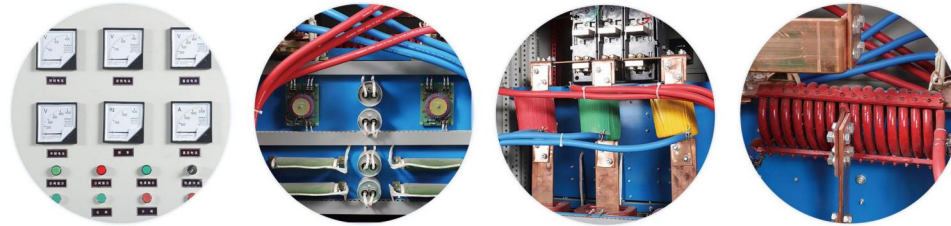
Minimal harmonic pollution, eliminating the need for compensation devices.



Digital control with fiber-optic triggering system.

Power Cabinet(Parallel Resonance)

Parallel Resonant Power Cabinet Developed by Topyro for medium-frequency smelting and heating scenarios, the parallel resonant power cabinet features "mature, reliable technology and high cost-effectiveness".



- ◆ High reliability—technologically mature.
- ◆ Cost-effective—reasonable pricing with low investment costs.
- ◆ User-friendly operation—flexible usage requiring minimal operator skill.
- ◆ Low failure rate—mature design and continuous optimization minimize equipment failures to near zero.

Advantages of IGBT Power Cabinets

Compared with traditional parallel furnace systems, it has the following advantages:

1. High power factor (≥ 0.96) as the rectifier conducts fully.
2. Constant power output via closed-loop control, shortening melting time.
3. Reliable 100% starting under all conditions.
4. Flexible power distribution between two furnaces.
5. Full digital control with high accuracy and stability.
6. Voltage and current dual closed-loop control.
7. Complete protections (over-voltage, over-current, etc.).
8. High efficiency and power factor.
9. Full external control interfaces for temperature control.



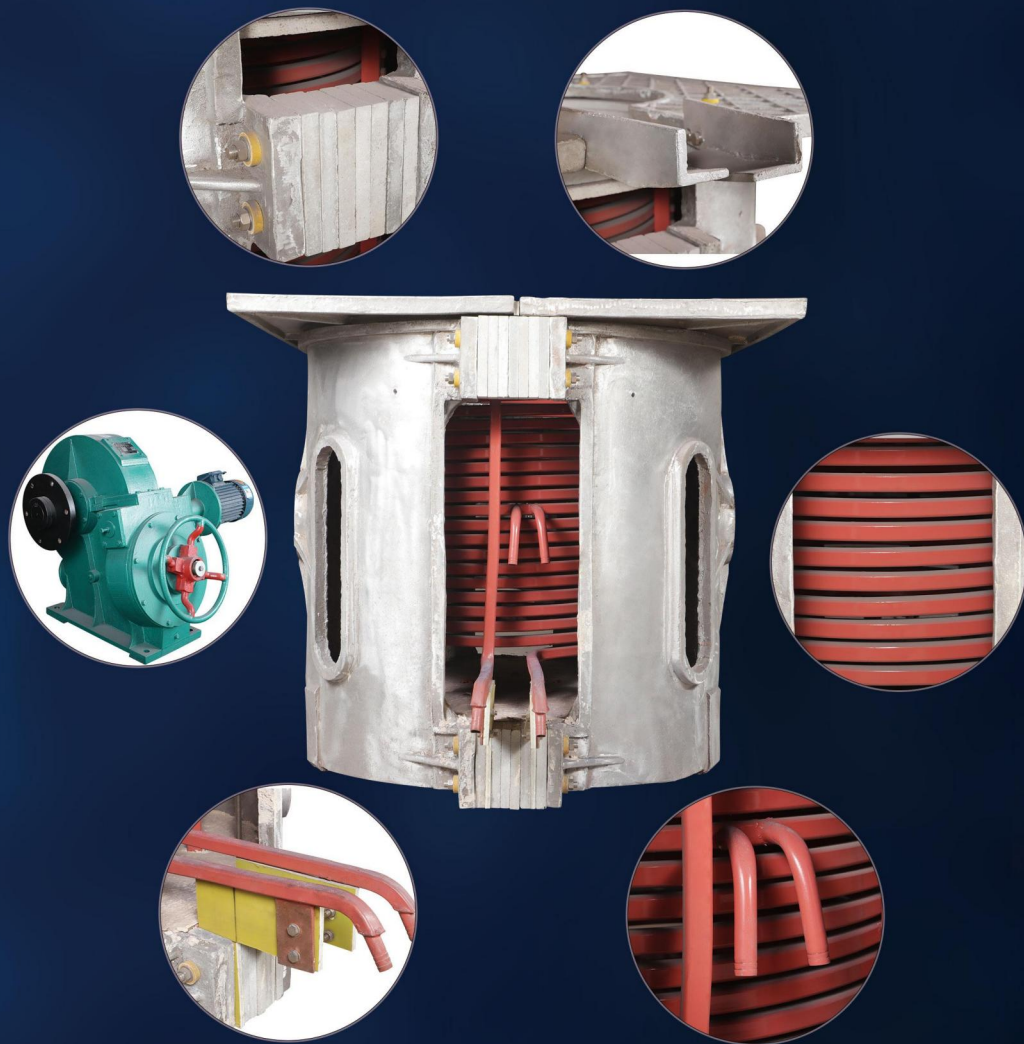
Intelligent Melting Management System

Topyro's Intelligent Melting Management System is a core digital control system developed to meet the "quality improvement, cost reduction, and efficiency enhancement" needs of the metallurgical and metal processing industries. Through real-time data monitoring, closed-loop control, and intelligent analysis, it breaks down information barriers across the entire melting production process, providing an integrated management solution for equipment such as medium-frequency melting furnaces and secondary melting furnaces. It serves as a key support for realizing intelligent upgrading and green production in the melting process.



Aluminum Shell Furnace

As a core component of Topyro's medium-frequency melting furnaces, the aluminum shell furnace body features "simple structure, cost-effectiveness and easy maintenance".



01 Excellent stability

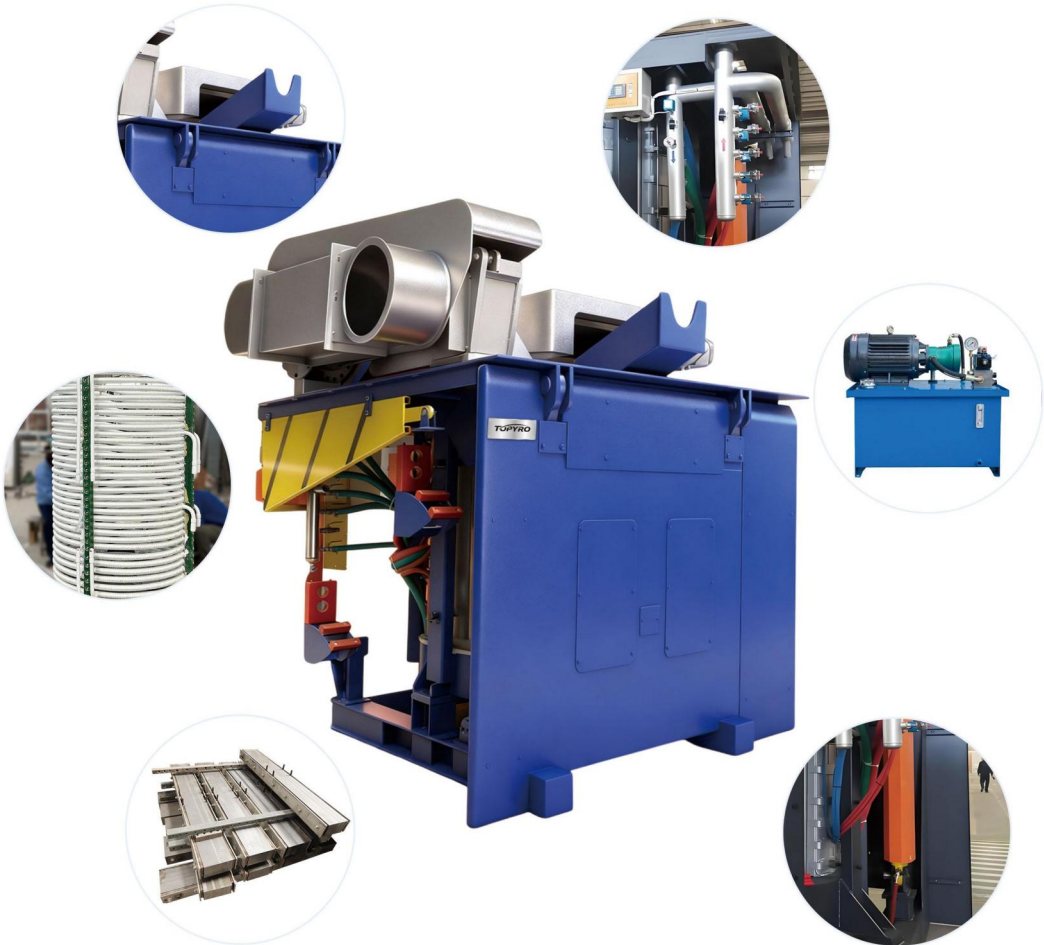
02 Low cost

03 Easy maintenance

04 Simple structure



Steel Shell Furnace



The steel shell furnace is a high-strength core furnace body of medium-frequency melting furnaces developed by Topyro for medium and large-scale metal melting scenarios.

Furnace Shell Constructed with welded steel structure, ensuring high robustness, durability and enhanced safety.	Inductor Wound from a single piece of TU1 oxygen-free copper tube without welded joints. Integrally cast through multi-step insulation treatment processes for superior insulation performance.	Furnace Tilting Enables convenient tilting and pouring, with optional tilting methods including manual, electric or hydraulic.
Magnetic Yoke Covers over 85% of the inductor area, effectively reducing magnetic flux leakage and improving energy efficiency for energy conservation.	Cyclone Dust Collector Hood Integrates excellent dust collection and heat preservation functions, while minimizing heat loss.	Fall Protection Device Equipped to ensure the safety of operators during operation.
Custom Inductor Tailor-made according to the melted metal material to enhance electrical energy utilization rate.	Lining Monitoring System Monitors the lining status in real time, effectively preventing safety accidents.	Lining Ejection Mechanism Facilitates faster and more efficient lining replacement, boosting production efficiency.

Closed Cooling Tower

Working Principle (Dual-Circulation System)



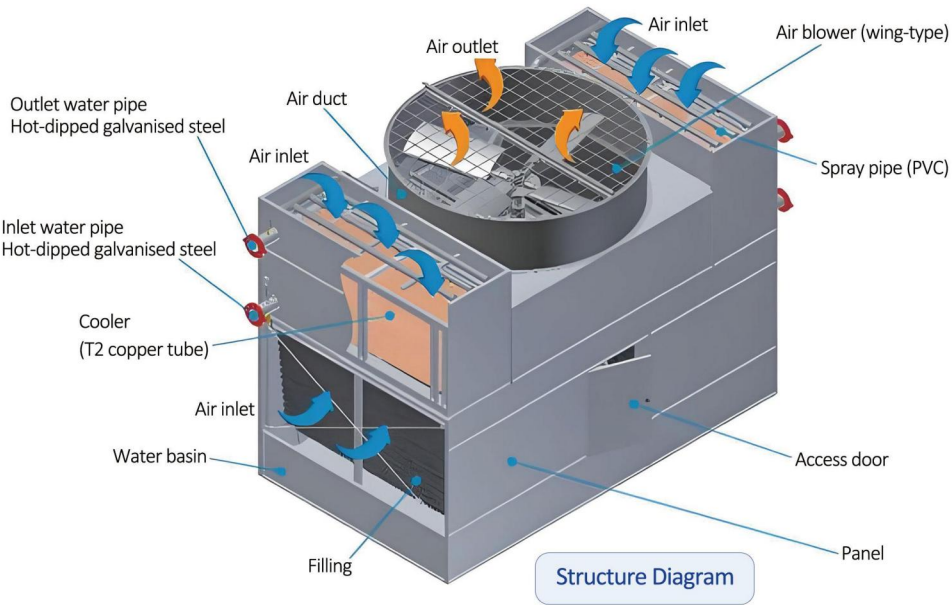
Internal Circulation (Medium Cooling Loop)

Process media (e.g., cooling water, hydraulic oil) circulate in sealed metal coils (no contact with external impurities). High-temperature media transfer heat to the external spray water film via coil walls, then cool down and flow back to the production system.

External Circulation (Heat Dissipation Loop)

Circulating water is sprayed onto coil surfaces to form a water film. Fans draw in ambient air: heat is removed via sensible heat exchange (temperature difference) and latent heat exchange (water film evaporation, main method). Unevaporated water is recycled (only evaporated water needs replenishment).

Core Advantages



- 01** Zero Media Contamination: Internal media flow in closed coils, isolating airborne impurities to prevent scaling/corrosion, cutting maintenance costs and extending equipment life.
- 02** High Water Efficiency: External water is recyclable (only evaporated water needs replenishment), saving over 60% water vs. open cooling towers.
- 03** Strong Environmental Adaptability: Unaffected by dust, salt or humidity, maintaining stable operation in harsh conditions (metallurgy, chemical, coastal areas).
- 04** Stable Heat Dissipation: "Sensible + latent heat" dual exchange ensures it meets cooling needs even in high-temperature/humidity environments, guaranteeing production continuity.
- 05** Long Service Life: Typically exceeding 10 years, with lower maintenance costs over time.

Continuous Casting Machine

Continuous casters are core equipment in the metallurgical industry, continuously casting molten metals (e.g., molten steel, copper, aluminum) into billets (square, round, slab). They act as key hubs linking "smelting" and "rolling" processes.



Core Advantages

Topyro Continuous Caster

Core Features (Aligned with Industry Demands for Efficiency, Quality & Environmental Protection)

Efficient Continuous Production

Continuous mold design enables non-interrupted molten metal casting; daily billet output of a single line meets small/medium rolling production needs for large-scale operations.

Multi-Material Adaptability

Adjust mold specs and process parameters to cast metals (steel, copper, aluminum, etc.) and accommodate billet forms (square, round, etc.) as per customer needs.

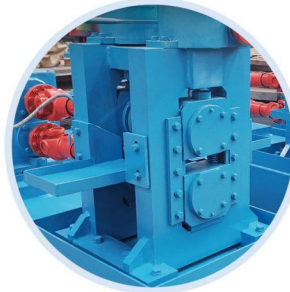
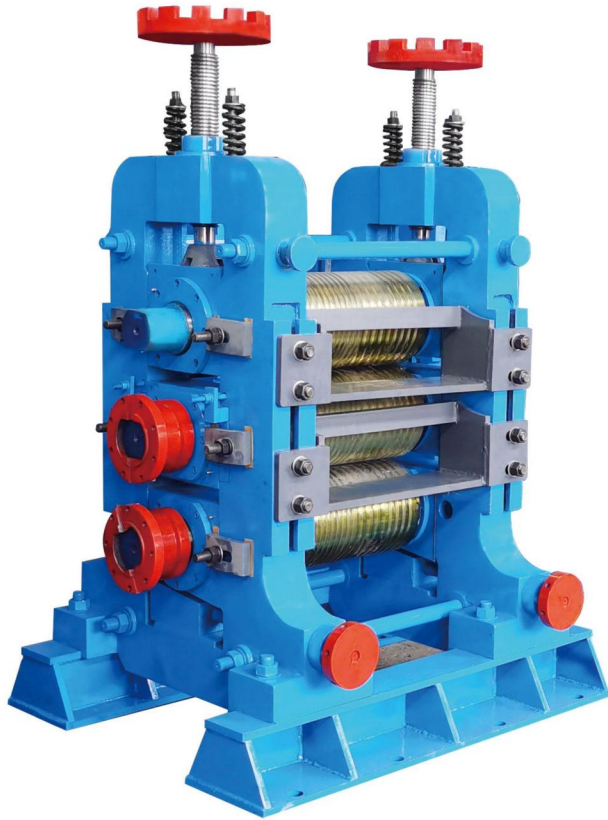
Precise Temp Control & Stable Operation

Equipped with temp monitoring and closed-loop control to adjust mold water temp and casting speed in real time, preventing billet deformation. High-temp/wear-resistant materials for key parts (molds, withdrawal & straightening machines) extend service life and reduce downtime.

Low-Consumption & Environmental Protection

Cuts energy loss from molten metal cooling-reheating vs. traditional mold casting; sealed molds and dust removal reduce smoke emissions, complying with ISO 14001.

Rolling Mill



Topyro International Industrial Technology Co., Ltd. focuses on the full spectrum of rolling process requirements, specializing in the R&D and production of 250-650 series rolling mills and supporting auxiliary equipment.

High Efficiency & Energy Saving

Matched with Topyro's medium-frequency heating system and intelligent management system, it cuts comprehensive energy consumption by around 15% vs. traditional rolling mills, while reducing metal oxidation loss and improving raw material utilization by 3%-5%.

High Finished Product Precision

Rolls are customized with wear-resistant materials; precise control of rolling pressure and speed keeps finished product dimensional deviation within industry standards, meeting precision needs for subsequent deep processing (e.g., mechanical processing, welding).

Easy Maintenance & Operation

Simple structure design enables convenient replacement of key components (e.g., rolls, drive bearings); supports PLC control system linkage, requiring low operator skills and reducing daily operation & maintenance costs.

Customized Adaptability

Customizes rolling mill parameters and supporting production line solutions based on customers' processing materials (e.g., ordinary steel, stainless steel, aluminum alloy) and finished product specs (e.g., wire diameter, plate thickness), adapting to personalized needs of industries like automotive steel rolling and construction wire rolling.



"One to Two" Project Soultion Main Equipment Description

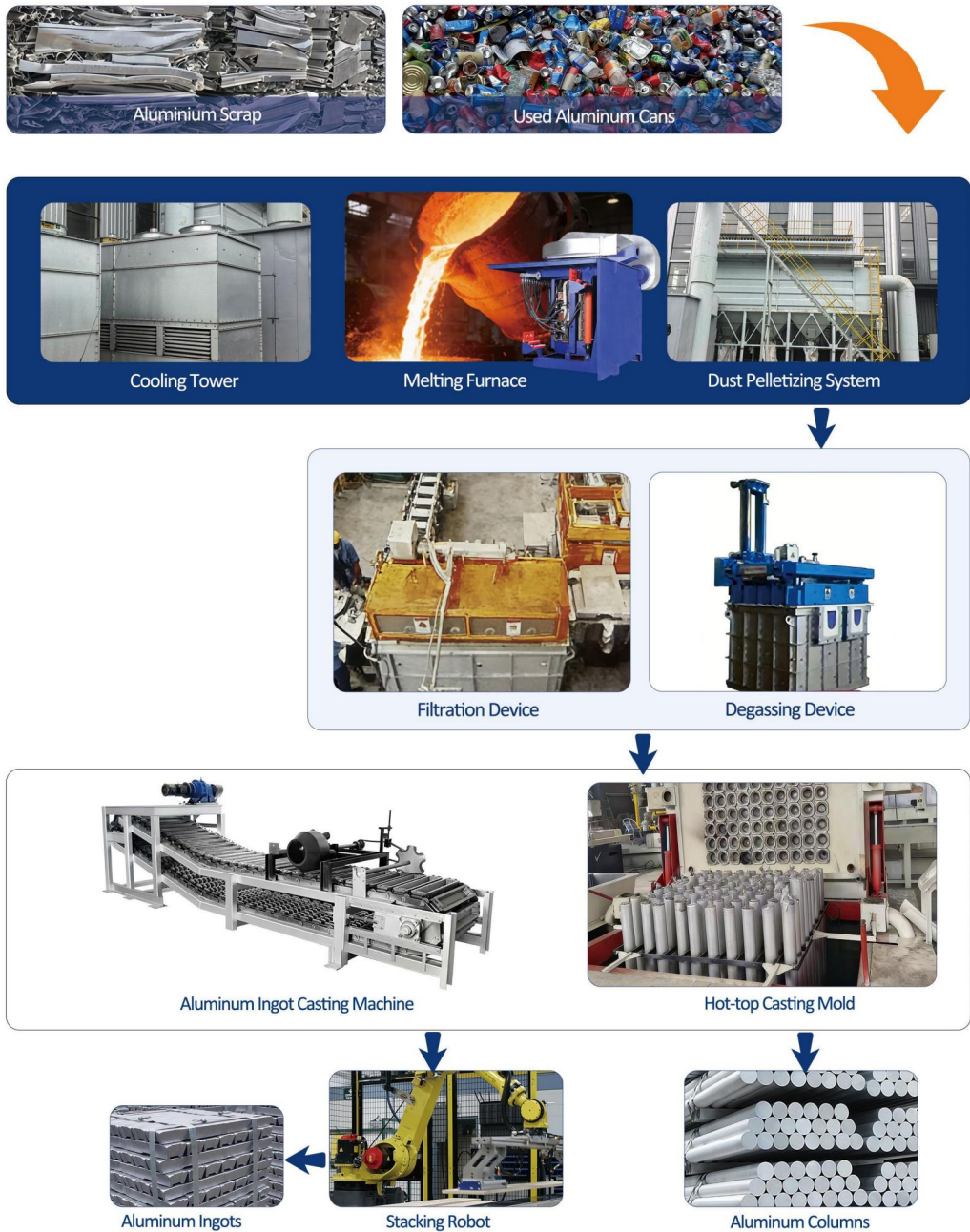
Picture	Name	Quantity	Description
	Medium Frequency Power supply	1unit	Three-phase power-frequency AC power is first converted into adjustable DC power via three-phase bridge rectification, then filtered by a reactor and sent to a single-phase inverter bridge. Under pulse control, the bridge's diagonals switch alternately to produce 1000 Hz single-phase medium-frequency current, which is delivered to the induction coil through a resonant circuit composed of the coil and compensation capacitor, generating medium-frequency eddy currents in the metal charge and heating metal to melting.
	Steel-shell Melting Furnace	2unit	Its core component is the medium-frequency induction coil, which forms a series resonant circuit together with the heating capacitor. The induction coil generates a strong alternating magnetic field, causing the metal placed inside it to melt.
	MF Induction Heating Furnace	1unit	A medium frequency induction heating furnace uses electromagnetic induction to generate eddy currents inside metals, producing heat rapidly and uniformly. It features high efficiency, precise temperature control and energy saving, and is widely used in metal forging, melting, heat treatment and continuous casting.
	Bag Filter Dust Collector	1unit	A large quantity of metal dust and fumes are produced during metal melting and production. The baghouse dust collector uses filter bags as core components: dust-laden airflow enters the cabinet, dust is trapped by the bags, and purified gas is discharged. When dust accumulates to a certain thickness, pulse jetting cleans the bags, dropping dust into the ash hopper for collection and regenerating the bags.
	Water Cooled Cable	1set	Given the large current in the resonant circuit formed by heating capacitors and induction coils, water-cooled copper bars and water-cooled cables are used to connect the medium-frequency power supply to the furnace body, serving as the flexible connection part of the resonant circuit.
	Closed-system Cooling Tower (Optional)	1set	A large portion of medium-frequency equipment failures stem from pipe blockages caused by scale buildup. Thus, we recommend users opt for fully enclosed water-cooled systems when purchasing equipment: these systems feature a closed circulation loop with non-conductive, non-scaling deionized soft water as the medium, offering benefits like low water loss, small temperature fluctuations, no scaling, no need for water tanks, and a compact footprint.
	Rolling Mill	1set	It applies pressure to metal billets via rolls to achieve metal plastic deformation and produce various profiles such as angle steel and flat steel.

Production Lines

Steel Rebar Wire Rod Production Line



Aluminum Ingot Rod Production Line



Casting Production Line



Auxiliary Equipment



Transformer

As the core power supply component of medium-frequency induction melting furnaces, this transformer converts grid voltage to required medium-frequency power, boasts compact structure, high efficiency, and reliable protection, and supports customization for smelting aluminum, steel, lead and other metals.



Bag Dust Collector

The bag dust collection system efficiently captures and filters dust generated during metal smelting, ensuring compliance with environmental emission standards and maintaining a clean workshop environment.



Hydraulic System

The hydraulic pump station is designed for tilting the fully-loaded furnace, operating the dust hood, driving the ejection mechanism, etc. It consists of a hydraulic pump and its drive motor, an emergency pump, a motor starter, an oil tank, oil return and suction filters, as well as an anti-overflow device.



Electric resistance

Electric resistance is a fundamental property that opposes electric current flow in a circuit. Measured in ohms (Ω), it is influenced by material, length, area and temperature. It converts electrical energy into heat and is widely used in heaters, resistors and electronic circuits.



Furnace Lining Ejection Device

For easy furnace lining ejection, reduced labor intensity and higher efficiency, our company provides an automatic furnace lining ejection device.



Continuous Casting Machine

It is the core equipment in modern iron and steel production. It pours high-temperature molten steel continuously into a water-cooled mold, and through cooling forming, strand drawing, secondary cooling and fixed-length cutting, directly produces qualified steel billets, efficiently connecting the steelmaking and rolling processes.



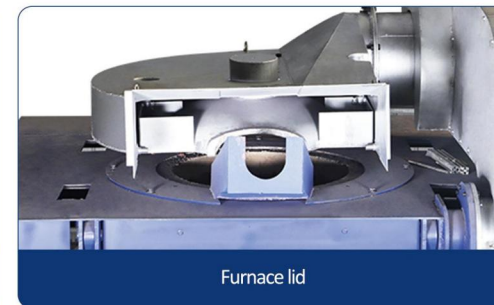
Dust Collection Hood



Loading trolley



PLC control desk



Furnace lid



Shop crane



Infrared thermometer



Dregs remover



Electric/ Gas furnace building machine

Accessories Display



Cases



Pre-Sales



After Sales

