

Furnace fixtures & spare parts

Heat-resistant castings support, transport and heat workpieces in industrial furnaces. Standard and custom components serve different loading and process requirements.

Hebei Shinning Metals Co., Ltd.



Customer Oriented. Solution Driven.

About Shinning Alloy

We manufacture heat-resistant castings and furnace components, combining lost-wax casting, centrifugal casting and fabrication for standard and custom requirements.

Shinning Alloy designs and manufactures heat-resistant steel castings using lost-wax casting, centrifugal casting and fabrication. We provide cost-effective solutions for the heat treatment industry.

Our experienced team combines more than 35 years of industry knowledge with advanced technology, modern equipment and quality control.

Products and manufacturing

Standard and tailor-made furnace baskets, trays and charging fixtures. Furnace parts include radiant tubes, furnace rollers, wire mesh belts and other heat-resistant steel castings.

Radiant tubes: diameters from 50 mm to 1,000 mm and lengths up to 5.5 m.

Design and customer support

Nearly 20 years of accumulated mould designs help reduce tooling costs for standard parts. Our design team supports more than 600 customers, including heat treaters and furnace manufacturers, with new designs and improvements.

Our sales and logistics team supports communication, order delivery and customs clearance. ISO 9001 certification, modern facilities and skilled personnel underpin our quality focus.

105

Personnel

200 t

Monthly capacity

US\$25m

2025 turnover

COMPANY DEVELOPMENT

Milestones & recognition

Key stages in our manufacturing development, international market expansion and relationships with heat treatment customers.

2006	Foundry established
2010	Moved to a new site
2012	Cooperation with Bodycote (Wuxi)
2013	Entered the European market
2014	Worked with Hauck Heat Treatment, Germany
2017	Cooperation with Aichelin GmbH
2020	Entered the US market
2022	Annual sales reached US\$16 million
2023	Started working with Can-Eng
2024	Scaled up production capacity to support growing demand
2025	Entered the South American market

Industry recognition



AICHELIN Premium Supplier



UPC Best Partner

Our partners

We work with heat treatment specialists, furnace manufacturers and industrial customers across a range of processing applications.



BORGWARNER



MANUFACTURING

Workshops & equipment

Our workshops cover mould preparation, wax injection, casting, post-processing and machining to support the manufacture of furnace components.



Moulds and semi-finished parts workshop



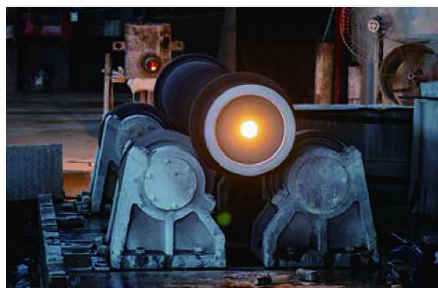
Wax injection machines



Baking furnaces



Lost-wax pouring workshop



Centrifugal casting workshop



Post-processing workshop



Machining workshop

Furnace rollers

Support and convey workpieces through heat treatment furnaces. Heat-resistant roll designs suit elevated-temperature processing and continuous load movement.



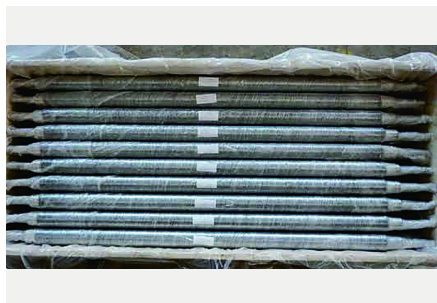
Sink rolls

Material: 316L
Export to Canada



Industrial furnace rollers

Material: HK
Export to USA



Furnace rollers

Material: KHR-35H+310
Export to Korea



Furnace rollers

Material: HN+Mo-Re 1+310
Export to Mexico



Furnace rollers

Material: HK



Furnace rollers

Material: HK



Furnace rollers

Material: HK



Furnace rollers

Material: HK+304
Export to USA

THERMAL COMPONENTS

Radiant tubes

Transfer heat to furnace chambers while separating combustion gases from the process atmosphere. U-, W- and straight-tube arrangements suit different furnace layouts.



Retort for gas generator

Material: Cr25Ni20



U-type radiant tubes

Material: SCH24S



Radiant tube

Material: HP



U-type radiant tubes

Material: ZG40Cr25Ni20Si2



W-type radiant tubes

Material: SCH22



W-type radiant tubes

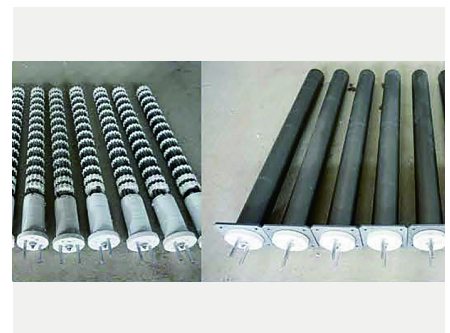
Material: SCH17+SCH23

Export to Japan



W-type radiant tubes

Material: HU



Electric heating radiant tubes

Material: HK40

Heat recuperators

Recover heat from hot exhaust gases to preheat combustion air, improving thermal efficiency and helping reduce furnace fuel demand.



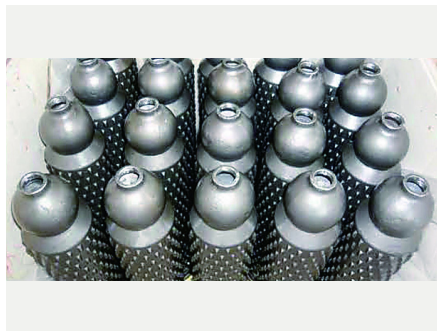
Heat recuperators

Material: ZG40Cr25Ni20Si2



Heat recuperators

Material: ZG40Cr25Ni20Si2



Heat recuperators

Material: HU



Heat recuperators

Material: 1.4848

Export to Germany



Heat recuperators

Material: ZG40Cr25Ni20Si2



Heat recuperators

Material: 1.4848



Heat recuperators

Material: ZG40Cr25Ni20Si2



Heat recuperators

Material: HK

FURNACE COMPONENTS

Heat-resistant sliders

Support and guide moving loads in high-temperature furnaces. Sliding contact surfaces help trays and workpieces move through the heating process.

**Heat-resistant steel sliding rails**

Material: SCH12
Export to Japan

**Heat-resistant steel sliding rails**

Material: SCH12
Export to Japan

**Heat-resistant steel slider**

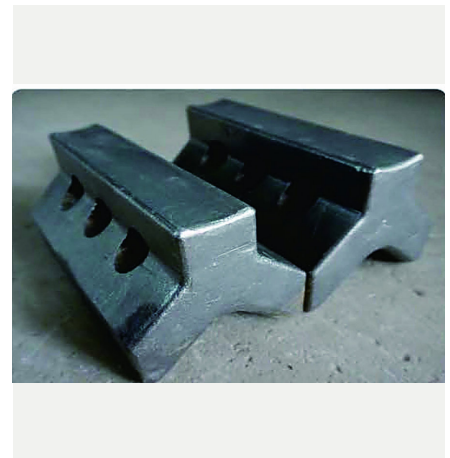
Material: Co20

**Heat-resistant steel slider**

Material: TH101

**Heat-resistant steel slider**

Material: NA22H

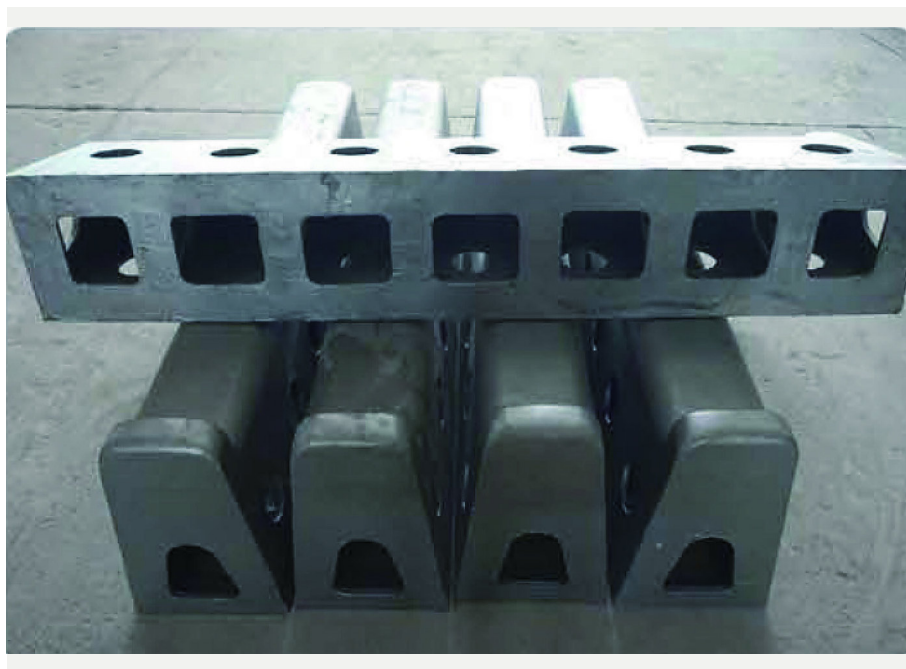
**Heat-resistant steel slider**

Material: NA22H

FURNACE COMPONENTS

Furnace tracks

Guide trays and workpieces through furnace systems. Rails, seats and roller assemblies support stable movement and organized load handling.



Furnace tracks

Material: SCH13
Export to Japan



Fengdong guide rails and seats

Material: HK



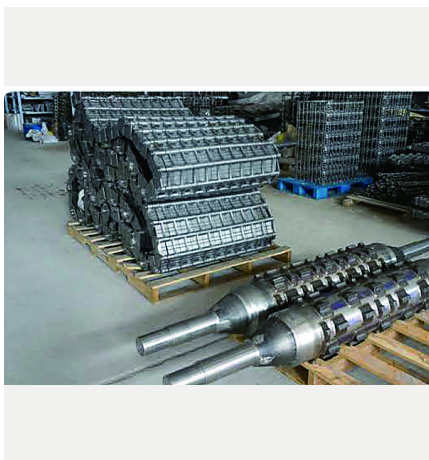
Fengdong push heads

Material: HT



Rollers and roller rails

Material: HT



Cast conveyor plates and rollers

Material: HK



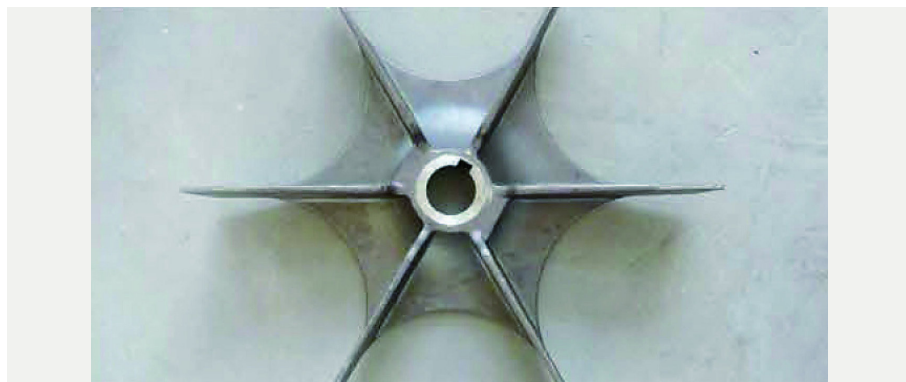
Rollers and roller rails

Material: HT

FURNACE COMPONENTS

Fan blades

Circulate the furnace atmosphere to distribute heat around the load. Blade and shaft arrangements suit different furnace configurations.

**Fan blades**

Material: HK

**Fan blades for Fengdong furnaces**

Material: HK

**Welding fans**

Material: 310S

**Stirring fans**

Material: HT

**Fan blades for mesh belt furnaces**

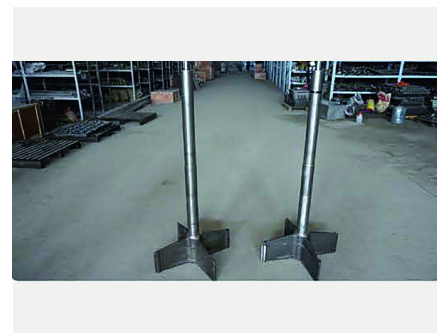
Material: HK

**Fan blades**

Material: HK

**Fan blades**

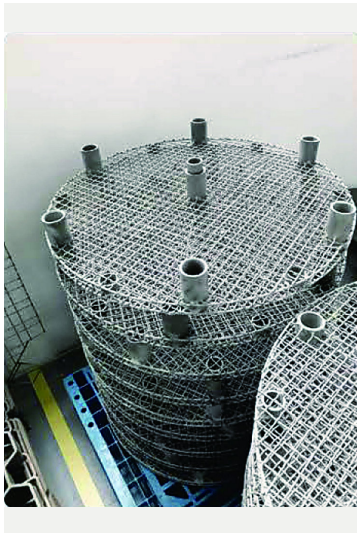
Material: HK

**Fan blades**

Material: HK

Welding fixtures

Hold and support components during nitriding and heat treatment. Fabricated racks and baskets keep workpieces positioned while allowing atmosphere circulation.



Welding fixtures for nitriding furnaces

Material: Inconel 600



Welding fixtures for nitriding furnaces

Material: Inconel 600



Welding baskets

Material: 304



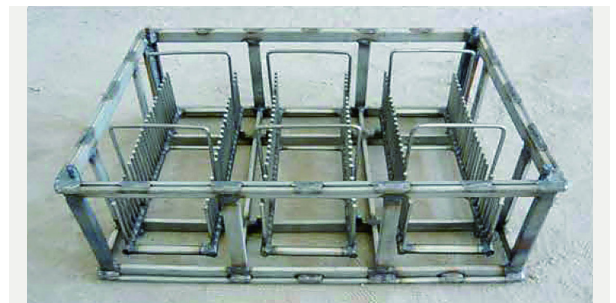
Welding fixtures for nitriding furnaces

Material: Inconel 600



Welding fixtures

Material: 310S



Welding racks for nitriding furnaces

Material: 310S



Welding baskets

Material: 310S

HEAT TREATMENT SYSTEMS

Pit furnace loading systems

Carry batch loads into vertical pit furnaces. Configured fixtures organize components, support stacking and provide space for furnace-atmosphere circulation.



Diameter 600 loading system

Material: HT



Diameter 1600 loading system

Material: 1.4849



Loading system for pit furnaces

Material: HK



Loading fixture for pit furnaces

Material: 1.4848



Diameter 1800 loading system

Material: 1.4848

Export to Turkey



Loading system for pit furnaces

Material: 2.4879

HEAT TREATMENT SYSTEMS

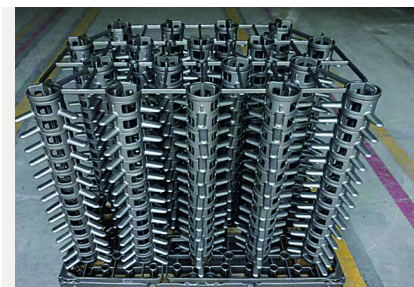
Heat treatment fixtures

Position and support components during thermal processing. Modular layouts organize loads, preserve spacing and make loading and unloading easier.



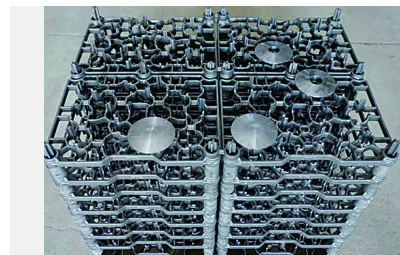
Heat treatment fixtures

Material: HR32



Heat treatment fixtures

Material: Cr25Ni20



Heat treatment fixtures

Material: 1.4849

Export to Germany



Heat treatment fixtures

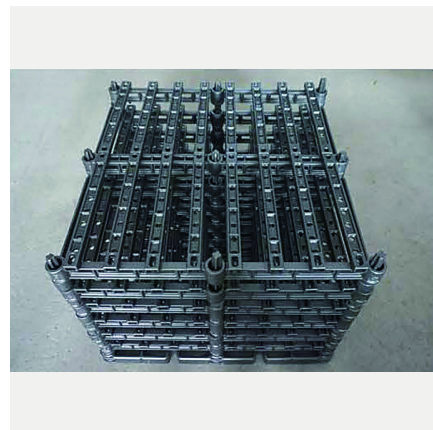
Material: 1.4849

Export to Turkey



Heat treatment fixtures

Material: HK+310S



Heat treatment fixtures

Material: 1.4849

Export to Mexico

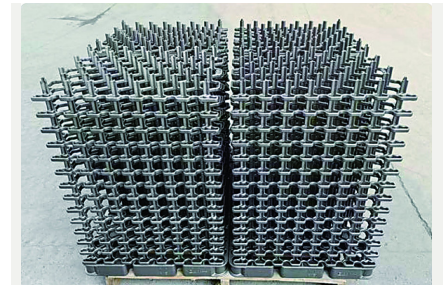
HEAT TREATMENT SYSTEMS

Heat treatment fixtures

Position and support components during thermal processing. Modular layouts organize loads, preserve spacing and make loading and unloading easier.

**Heat treatment fixture**

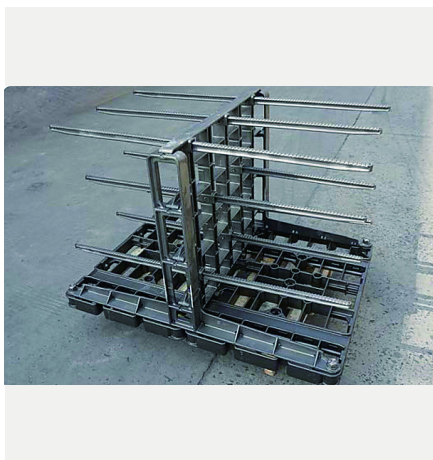
Material: 1.4849

**Heat treatment fixture**

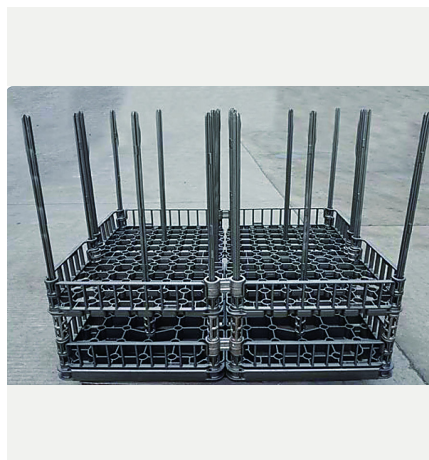
Material: 1.4852

**Heat treatment fixture**

Material: 1.4849

**Heat treatment fixture**

Material: 1.4852

**Heat treatment fixture**

Material: 1.4849

**Heat treatment fixture**

Material: 1.4852

Heat treatment baskets

Contain and transport workpieces during heat treatment. Open basket structures support stacking and allow heat and process atmosphere to reach the load.



Heat treatment basket

Material: 1.4852



Heat treatment baskets

Material: 1.4852



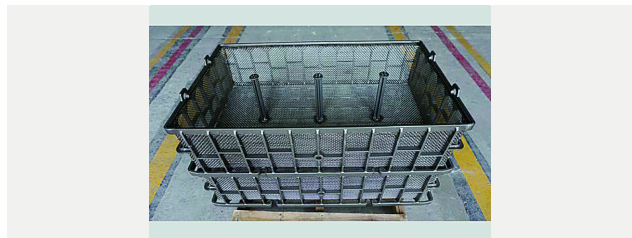
Heat treatment baskets

Material: 1.4849



Heat treatment baskets

Material: 1.4852



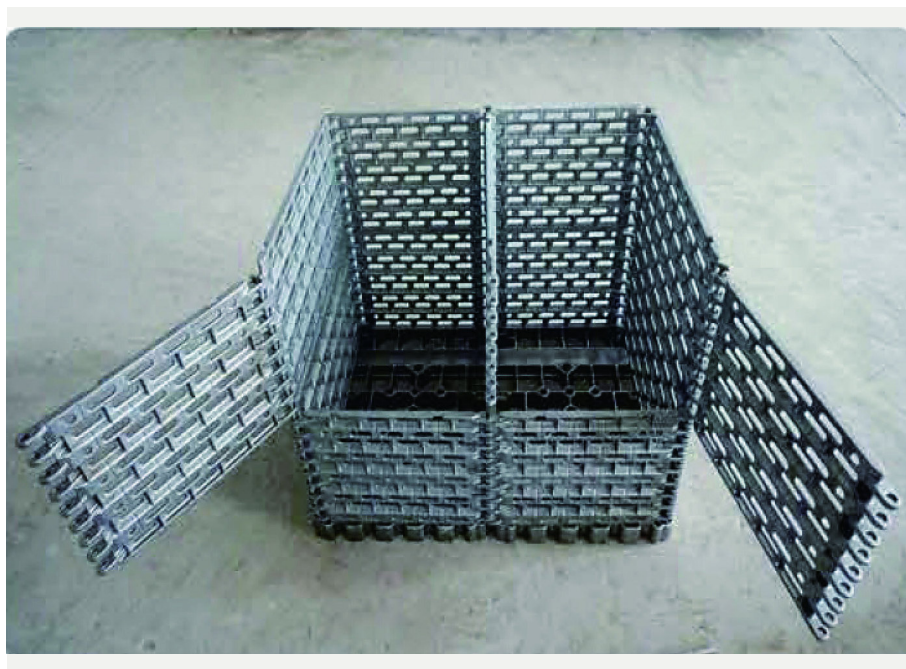
Heat treatment baskets

Material: 1.4849

HEAT TREATMENT SYSTEMS

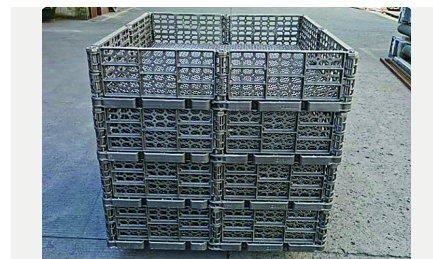
Baskets & fixtures

Contain and support different workpieces during thermal cycles. Open structures promote circulation around the load while keeping parts organized.



Heat treatment fixtures

Material: HK40
Export to Turkey



Heat treatment basket

Material: 1.4849
Export to Italy



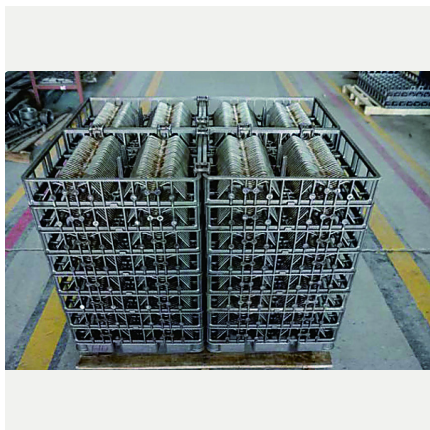
Heat treatment baskets

Material: 1.4849



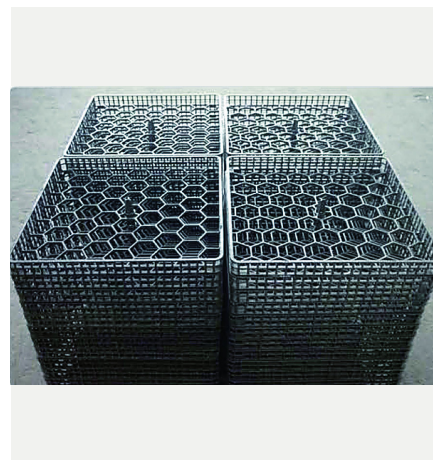
Heat treatment baskets

Material: 1.4849



Heat treatment fixtures

Material: 1.4849
Export to Mexico

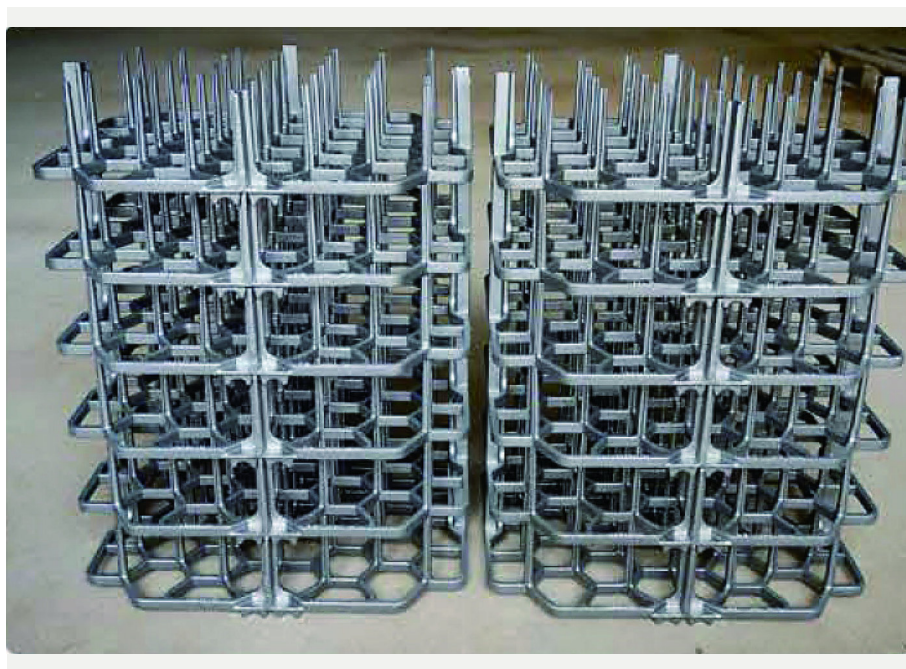


Heat treatment baskets

Material: SCH21

Trays & base grids

Provide stable bases for furnace loads and stacked fixtures. Open grids support workpieces while allowing heat and atmosphere to circulate.



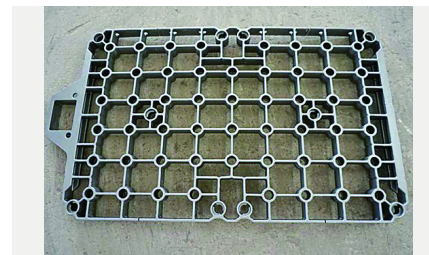
Heat treatment trays

Material: 1.4849
Export to Germany



Trays for multi-purpose furnaces

Material: HK



Heat treatment trays

Material: 1.4849
Export to Germany



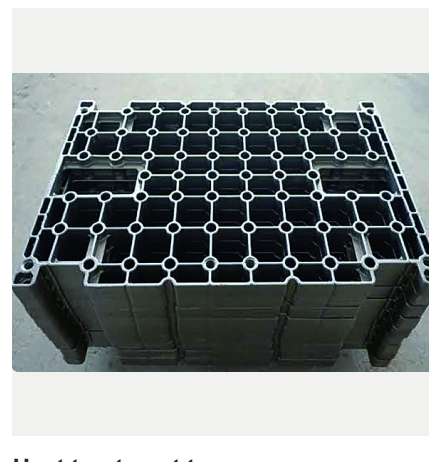
Heat treatment trays

Material: HK



Heat treatment trays

Material: 1.4849



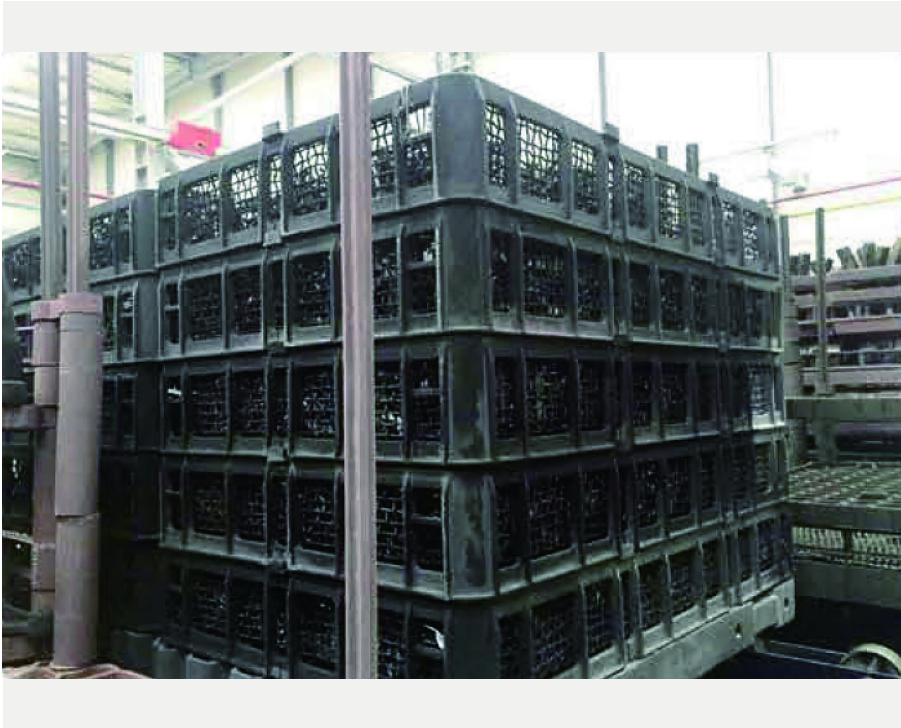
Heat treatment trays

Material: 1.4849
Export to Germany

IN OPERATION

Applications

Examples of baskets, rollers and charging fixtures in operating furnaces show how components are arranged for batch and continuous processing.



Heat treatment baskets in use



Furnace rollers in use



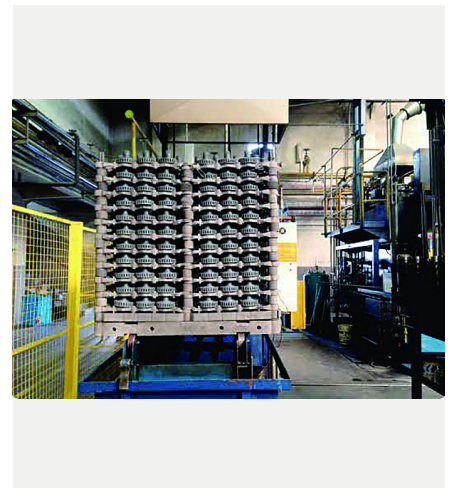
Heat treatment fixtures in use



Heat treatment fixtures in use



Heat treatment fixtures in use



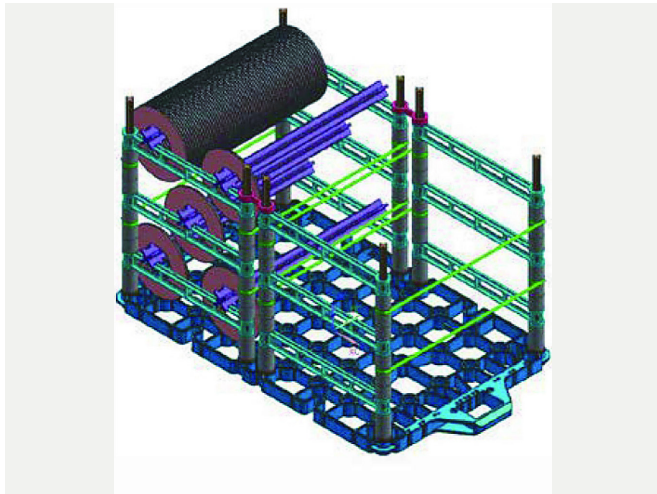
Heat treatment fixtures in use

Design & development

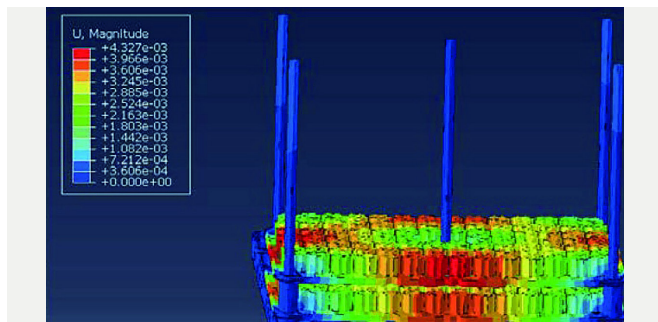
Fixture design and engineering simulations support load arrangements, material selection and assessment of thermal and mechanical behavior.

Heat treatment fixtures are important for safe operation and represent a significant cost for heat treatment plants. Our work focuses on stronger, lighter fixtures with maximum load capacity and longer operating time.

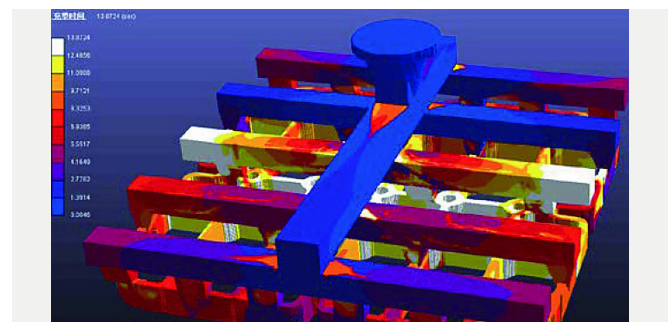
Innovative designs, advanced materials and research support continuous improvement. Our engineers develop fixtures around customer requirements and heat treatment needs.



Fixture design



ABAQUS stress simulation

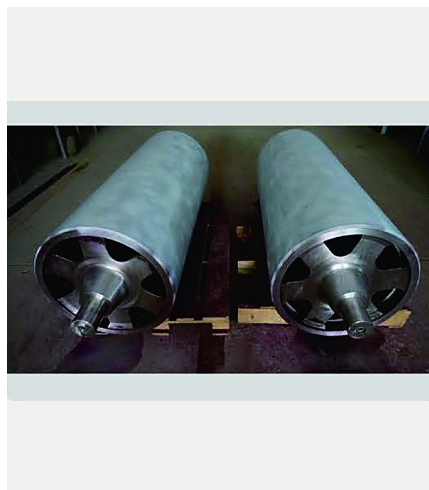


ANYCASTING process simulation

QUALITY ASSURANCE

Quality inspection

Dimensional checks, ultrasonic testing, pressure tests, endoscopy and penetrant inspection help assess geometry, integrity and surface quality.

**Dimension inspection****Radiant tube UT inspection****Radiant tube pressure test****Endoscopy inspection****PT inspection for sink rolls****PT inspection for rollers**

Inspection facilities

Laboratory instruments support chemical analysis, metallographic examination, hardness measurement and mechanical testing of cast materials.



Laboratory



Olympus metallurgical microscope



Oxford direct-reading spectrometer



Rockwell hardness tester



Wolpert hardness tester



Carbon sulfur analyzer



Universal testing machine

MATERIAL REFERENCE

Heat-resistant steel grades

No.	GB	DIN	ASTM	JIS	Chemical composition (%)							Maximum operating temp.
					C	Si	Mn	Cr	Ni	Nb/Cb	Mo	
1	ZG40Cr27Ni4	1.4823	HD	SCH11	0.30-0.50	≤2.00	≤1.00	24.00-28.00	4.00-6.00	-	≤0.50	1050°C
2	ZG40Cr22Ni10	1.4826	HF	SCH12	0.30-0.50	1.00-2.50	≤2.00	19.00-23.00	8.00-12.00	-	≤0.50	950°C
3	ZG30Cr28Ni10		HE	SCH17	0.20-0.50	≤2.00	≤2.00	26.00-30.00	8.00-11.00	-	-	1050°C
4	ZG40Cr25Ni12	1.4837	HH	SCH13	0.30-0.50	1.00-2.50	≤2.00	24.00-27.00	11.00-14.00	-	≤0.50	1050°C
5	ZG30Cr28Ni16		HI	SCH18	0.20-0.50	≤2.00	≤2.00	26.00-30.00	14.00-18.00	-	-	1100°C
6	ZG40Cr25Ni20Si2	1.4848	HK	SCH21	0.30-0.50	≤1.75	≤1.50	23.00-27.00	19.00-22.00	-	≤0.50	1100°C
7	ZG30Cr20Ni25		HN	SCH19	0.20-0.50	≤2.00	≤2.00	19.00-23.00	23.00-27.00	-	-	1100°C
8	ZG40Cr19Ni39	1.4865	HU	SCH20	0.35-0.75	≤2.50	≤2.00	17.00-21.00	37.00-41.00	-	-	1020°C
9	ZG40Cr15Ni35	1.4806	HT	SCH15	0.35-0.70	≤2.00	≤2.00	15.00-19.00	33.00-37.00	-	≤0.50	1000°C
10	ZG40Cr25Ni35Nb	1.4852	HPCb	SCH24Nb	0.30-0.50	≤2.00	≤2.00	24.00-28.00	33.00-37.00	0.8-1.8	≤0.50	1100°C
11	ZG40Cr19Ni38Nb	1.4849			0.30-0.50	1.00-2.50	≤2.00	18.00-21.00	36.00-39.00	1.2-1.8	≤0.50	1020°C
12	ZG40Cr24Ni24Nb	1.4855			0.30-0.50	1.00-2.50	≤2.00	23.00-25.00	23.00-25.00	0.8-1.8	≤0.50	1050°C
13	ZG40Cr25Ni35	1.4857	HP	SCH24	0.35-0.50	1.00-2.50	≤2.00	24.00-28.00	33.00-37.00		≤0.50	1100°C
14	ZG1Cr20Ni32Nb	1.4859			0.06-0.15	0.50-1.50	≤2.00	19.00-21.00	31.00-33.00	0.5-1.5	≤0.50	1050°C
15	ZG45Cr12Ni60		HW		0.35-0.75	≤2.00	≤2.00	10.00-14.00	58.00-62.00			1100°C
16	ZG45Cr18Ni66		HX		0.35-0.75	≤2.00	≤2.00	15.00-19.00	64.00-68.00			1100°C
17	ZG1Cr28Co50	2.4778			0.05-0.25	0.50-1.00	≤1.50	27.00-30.00	≤1.00	≤0.50	≤0.50	1200°C
18	ZG30Cr28Co50Nb	2.4779			0.25-0.35	0.50-1.50	0.50-1.50	27.00-29.00	-	1.50-2.50	≤0.50	1200°C
19	ZG40Cr28Ni48W5	2.4879		SCH42	0.35-0.55	1.00-2.00	≤1.50	27.00-30.00	47.00-50.00	-	≤0.50	1150°C



PUT OUR EXPERIENCE TO YOUR WORK

We offer a wide array of designing services. We take great pride in finding unique solutions to meet each individual customer's requirements.

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