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INTEGRITY INNOVATION MUTUAL SUCCESS DEVELOPMENT



辽宁瀛寰科技有限公司

LIAONING YINGHUAN TECHNOLOGY CO., LTD

企业宣传画册

CORPORATE BROCHURE



辽宁瀛寰科技有限公司

LIAONING YINGHUAN TECHNOLOGY CO., LTD



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INTEGRITY INNOVATION MUTUAL SUCCESS DEVELOPMENT

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企业 简介 COMPANY PROFILE

辽宁瀛寰科技有限公司成立于2012年1月4日，注册资金1000万元，母公司为北京东方国信科技股份有限公司。公司是以激光表面改性、焊接、切割和冶金备件修复、加工、绿色再制造等先进技术应用为主，重点围绕耐磨、防腐、表面改性、高端制造等领域进行生产、技术研发和服务为一体的高科技企业公司位于鞍山市立山区激光产业园北园，厂房建筑面积1500平方米。

辽宁瀛寰科技有限公司拥有强大的技术、产品研发和创新能力，并与中国科学院、北京科技大学等科研院所和高校建立紧密的合作关系，深入开展产品研发和技术升级与创新等科研合作，保证技术领先，满足客户不断提升的产品和服务需求。公司在激光再制造、激光熔覆、轧机牌坊修复及现场加工设备等方面拥有二十余项专利技术和十余项相关软件著作权。

辽宁瀛寰科技有限公司主要产品有轧机牌坊在线激光检测与修复；轧机轴承座在线和离线修复；轧机辊道制作与修复；轧辊修复及表面金强化；轧机弯穿辊改造；短应力轧机修复及零部件制造；轧机与轴承座滑板制作；轧机导尺衬板和滑架制作、修复及表面强化；其它轧机设备零部件修复与再制造；汽轮机、发电机和风机等急需零部件的激光再制造等。

近年来，公司与鞍钢股份有限公司、湖南华菱湘潭钢铁有限公司、新余钢铁股份有限公司、日钢营口中板有限公司、包头钢铁(集团)有限责任公司、凌源钢铁股份有限公司、本钢板材股份有限公司、鞍山钢铁集团朝阳钢铁分公司、鞍山钢铁集团鲅鱼圈钢铁分公司、振石集团东方特钢有限公司、中国一重集团有限公司、一重集团(黑龙江)重工有限公司、安阳钢铁有限公司、九江萍钢钢铁有限公司、东海特钢股份有限公司、河北津西钢铁股份有限公司、河北普阳钢铁有限公司、广西柳州钢铁股份有限公司、陕西鼓风机(集团)有限公司、鞍山紫竹重型特钢有限公司、鞍山宝得钢铁有限公司等大型企业合作紧密，产品和服务受到客户信赖和一致好评。

Liaoning Yinghuan Technology Co., Ltd. was established on January 4, 2012, with a registered capital of 10 million yuan. Its parent company is Beijing Eastone Information Technology Co., Ltd. The company focuses on advanced applications of laser surface modification, welding, cutting, metallurgical spare parts repair and processing, as well as green remanufacturing, with an emphasis on fields such as wear resistance, corrosion resistance, surface modification, and high-end manufacturing. It integrates production, technology R&D and services into one high-tech enterprise. With a plant area of 1,500 square meters, the company is located in the Northern Zone of the Laser Industrial Park, Lishan District, Anshan City, Liaoning Province, P.R.C

Liaoning Yinghuan Technology Co., Ltd. possesses strong technical capabilities, product R&D, and innovation capacity. To ensure technological leadership and meet customers' growing needs for products and services, the company closely cooperates with research institutes and universities, Chinese Academy of Sciences, University of Science and Technology Beijing etc, keeps carrying out in-depth research collaborations in product development, technology upgrades, and innovation. The company holds more than 20 patented technologies and over 10 software copyrights, mainly in laser remanufacturing, laser cladding, mill frame repair, and on-site equipment machining.

Its main products and services include: On-line laser inspection and repair of mill Frames, On-line and off-line repair of mill bearing frames, Manufacturing and repair of mill roller tables, Mill repair and surface alloy strengthening, Modification of mill bending and shifting rolls, Repair and component manufacturing of short-stress mills, Manufacturing of mill and bearing housing sliding plates, Manufacturing, repair, and strengthening of mill guides, liners, and sliding frames, Repair and remanufacturing of other mill components, Laser remanufacturing of urgent needed parts for turbines, generators, fans, etc.

In recent years, the company has maintained close cooperation with many large enterprises, including: Ansteel Co., Ltd., Hunan Valin Xiangtan Iron & Steel Co., Ltd., Xinyu Iron & Steel Co., Ltd., Rizhao Steel Yingkou Plate Co., Ltd., Baotou Iron & Steel (Group) Co., Ltd., Lingyuan Iron & Steel Co., Ltd., Benxi Steel Plate Co., Ltd., Anshan Steel Group Chaoyang Branch, Anshan Steel Group Bayuquan Branch, Orient Special Steel Co., Ltd., China First Heavy Industries (CFHI), CFHI (Heilongjiang) Heavy Industry Co., Ltd., Anyang Iron & Steel Co., Ltd., Jiujiang Pinggang Iron & Steel Co., Ltd., Donghai Special Steel Co., Ltd., Hebei Jinxi Iron & Steel Co., Ltd., Hebei Puyang Iron & Steel Co., Ltd., Guangxi Liuzhou Iron & Steel Co., Ltd., Shaanxi Blower (Group) Co., Ltd., Anshan Zizhu Heavy Special Steel Co., Ltd., and Anshan Baode Iron & Steel Co., Ltd. Its products and services have won the customer trust and unanimous praise.

企业资质 ENTERPRISE QUALIFICATION



企业荣誉 ENTERPRISE HONOR



ENTERPRISE HONOR

企业精神

CORPORATE SPIRIT

服务宗旨：

以技术为先导 以质量求生存

以服务为保证 以用户满意为目标

以专业的团队，专业的服务打造瀛寰科技服务品牌

Service Tenet:

Technology as the guide

Quality as the foundation for survival

Service as the guarantee

Customer satisfaction as the ultimate goal

To build the Yinghuan Technology service brand with professional team and professional services together.

企业专利

ENTERPRISE PATENT



一种激光熔要修复预处理装置
A laser cladding repair pretreatment device



一种齿轮修复用激光熔要夹持装置
A laser cladding clamping device for gear repair



一种液压油缸内端面激光熔覆装置
A laser cladding device for the inner end face of hydraulic cylinders



一种可调节型激光熔要修复装置
An adjustable laser cladding repair device



一种激光熔要用快速冷却装置
A rapid cooling device for laser cladding



一种激光牌坊
A laser mill housing

企业专利 ENTERPRISE PATENT



一种激光复合机架辊
A laser composite frame roller



一种轧机牌坊窗口精度检测装置
A precision detection device for the window of a rolling mill housing



一种激光熔要面的探伤滑动头
A laser cladding surface inspection sliding head



炼钢转炉激光强化在线修复施工方法
Construction method for laser enhanced online repair of steelmaking converter



一种烘干效果好的激光熔要用粉末烘干机
A powder dryer for laser cladding with good drying effect



一种多功能的便携式激光器收纳装置
A multifunctional portable laser storage device



一种激光熔要内孔的热量反射装置
A heat reflection device for laser cladding of inner holes



一种套类的快速定心撑紧机夹具
A set of fast centering and tightening machine fixtures



一种中央折起式回旋工作台的稳固装置
A stabilizing device for a central folding rotary worktable



种激光器老化检测装置
A laser aging detection device



一种可换焦激光头
A variable focus laser head

企业专利 ENTERPRISE PATENT

业务板块 BUSINESS SEGMENTS

激光熔覆再制造技术特点

FEATURES OF LASER CLADDING REMANUFACTURING TECHNOLOGY

激光熔覆再制造技术是通过将金属粉末与辅助气体一同供应到母材表面上，用激光热源使其熔融，在母材表面上形成金属熔覆层，实现材料表面耐磨、耐腐蚀、耐高温性能。激光熔覆工艺特点：

- (1) 激光熔覆层与基体为冶金结合（低于5%的稀释率、孔隙率为0）；
- (2) 基体材料激光熔覆时熔覆层厚度为0.3-2.5MM；
- (3) 激光熔覆过程中基体温升不超过180℃，激光熔覆后基本无热变形；
- (4) 激光熔覆技术可对超高熔点材料进行熔覆；
- (5) 熔覆层及其界面组织致密，晶粒细小、无气孔、夹杂、裂纹等缺陷；
- (6) 激光熔覆层可形成梯度功能材料，提高工件的使用性能和安全性能；
- (7) 激光熔覆后可提高表面硬度、强度、耐蚀性和耐磨性。

To improve wear resistance, corrosion resistance, and heat resistance of the substrate surface, Laser cladding remanufacturing, by feeding metal powder with auxiliary gas to the substrate surface, and melting metal powder by means of laser heat source, forms a metal cladding layer on the top of the substrate surface,

Key features:

1. Metallurgical bonding between cladding and substrate (dilution rate <5%, porosity = 0)
2. Cladding layer thickness: 0.3-2.5 mm
3. Substrate temperature rise $\leq 180^{\circ}\text{C}$, virtually no thermal deformation
4. Can clad ultra-high melting point materials
5. Cladding layer and interface are dense, with fine grains, no pores, inclusions, or cracks
6. Cladding layer can be graded functional materials, in which way can improve performance and safety of the work pieces.
7. Enhances the hardness, strength, corrosion resistance, and wear resistance of the surface

业务板块 BUSINESS SEGMENTS

01 激光应用技术

LASER APPLICATION TECHNOLOGY

轧机牌坊激光再制造技术从2007年起实施应用，经过十年数百架次的实用验证，其技术效果及经济效益非常显著。

激光熔覆层寿命可保十年，此项技术获得了国家发明专利。

The mill housing laser remanufacturing technology has been in application since 2007. With more than hundreds of practical verifications in decades, the technical results and economic benefits have been very significant.

The service life of laser cladding layer can achieve ten years, and this technology has obtained national invention patent.

02 热轧板带

HOT ROLLED PLATE AND STRIP EQUIPMENT

主要以牌坊修复，辊道修复，轴承箱修复为主营业务，通过补焊、激光熔覆、在线机加工形式进行修复，对无法运输的设备进行在线修复。对工件表面磨损的位置进行专业化修复或升级改造，使其质量特性达到或优于原有新品水平，同时利用激光跟踪仪，对轧机牌坊和轴承箱检测，实现精度控制。

Main business: repair of mill housing, roller tables, and bearing box. Repair is carried out by means of welding, laser cladding, and on-line machining. Equipment that cannot be transported can be repaired on site. Worn surfaces of work pieces are professionally repaired or upgraded so that their quality can reach or exceed that of new ones. Using a laser tracker, precision control of mill housing and bearing box is achieved.

业务板块 BUSINESS SEGMENTS

03 能源动力 ENERGY & POWER EQUIPMENT

许多大型贵重进口的重大设备，如气轮发动机、飞机发动机、坦克柴油机、石化行业大型动力机、轮船发动机等，造价昂贵，损坏之后影响整个生产线，造成巨大经济损失。有的进口设备临时进口配件周期长，对生产影响更大。实际上损坏往往表面局部磨损，如轴颈、叶片等。常规火焰喷涂、焊接、等离子等修复方法变形大，不能使用。利用激光熔敷原理，修复效果最好。

Many large and expensive imported equipment items—gas turbines, aircraft engines, diesel tank engines, large petrochemical power equipments, and ship engines—are costly, and damage to it can disrupt the entire production line, and causes enormous economic losses. The long delivery cycles of some imported spare parts further affects production. In fact, damage is often limited to local surface wear (e.g., shaft neck, blades). Conventional repair methods such as flame spraying, welding, or plasma spraying can cause severe deformation and cannot be applied. Laser cladding technology provides the best repair effect.

04 型材棒线材 SECTION, BAR, AND WIRE ROD EQUIPMENT

激光合金化技术原理：在高能束激光的作用下，将一种或多种合金元素快速熔入基体表面，在随后的快速冷凝过程中，以基体本体为溶剂，添加物为溶质，在零件表面形成一层新的合金层。满足工件表面高耐磨，耐蚀，耐高温等性能。

Laser Alloying Technology Principle: Under the action of a high-energy laser beam, one or more alloying elements are quickly melted into the substrate surface. During subsequent rapid solidification, the substrate acts as the solvent and the additives as the solute, forming a new alloy layer on the surface of the component. This provides the surface with high wear resistance, corrosion resistance, and high-temperature resistance.

产品介绍 PRODUCT INTRODUCTION

1 热轧轧机机架—现场牌坊修复 Hot Rolling Mill stand—On-site Mill Housing Repair



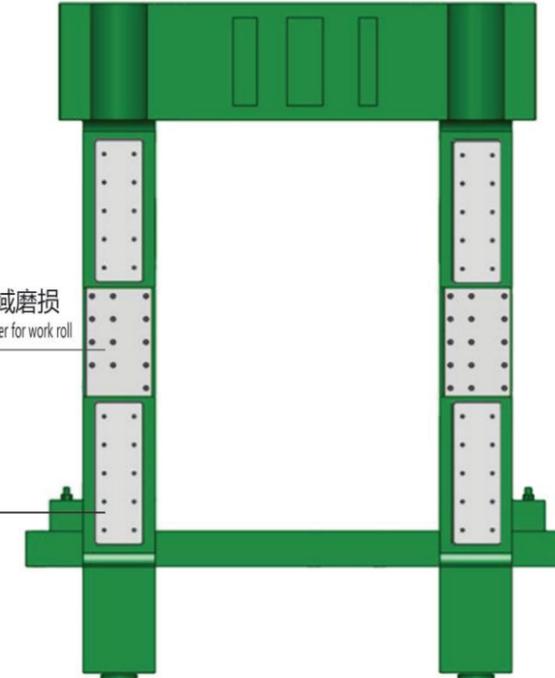
上支撑辊区域磨损
Wear in the area of upper backup roll



工作辊弯辊缸/平衡缸区域磨损
Local wear of bend roll cylinder / balancing cylinder for work roll



下支撑辊区域磨损
Wear in the area of lower backup roll



失效分析：当这些部位出现磨损情况时通常会导致在轧制过程中轧辊轴线交叉，致使轧辊产生轴向力，容易损坏轧辊轴承座、损坏轧机锁门板、导致轧机主传动系统损坏、导致衬板螺栓松动/断裂、带钢跑偏加大轧制难度。

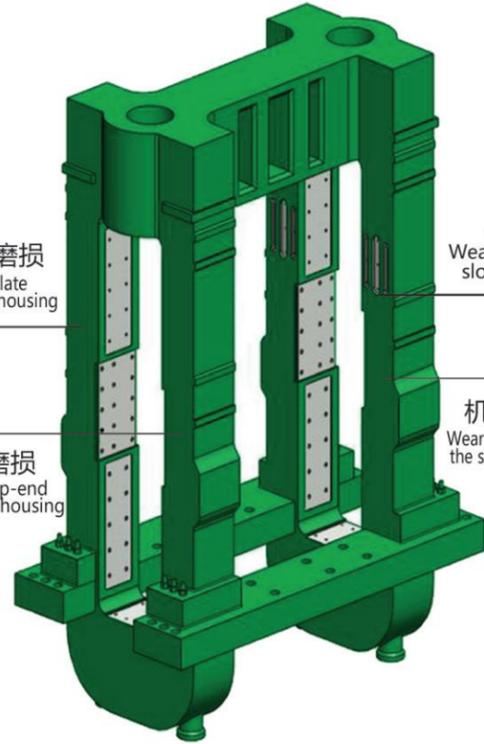
Failure analysis: When these parts are worn out, it usually causes the crossing of the roll axes during the rolling process, leading to the axial forces generated between the rolls, which can easily cause the damages to the roll bearing boxes, the roll locking plate; main drive system breakdown of the mill; loosen/broken of the liner bolts, and increasing the difficulty in rolling due to the steel strip deviation.

产品介绍

PRODUCT INTRODUCTION



轧机锁门板安装面磨损
Wear of the roll locking plate mounting surface of the mill housing



导卫键槽磨损
Wear of the guide keyway slot of the mill housing

机架辊安装面磨损
Wear of the mounting surface for the stand roll of the mill housing



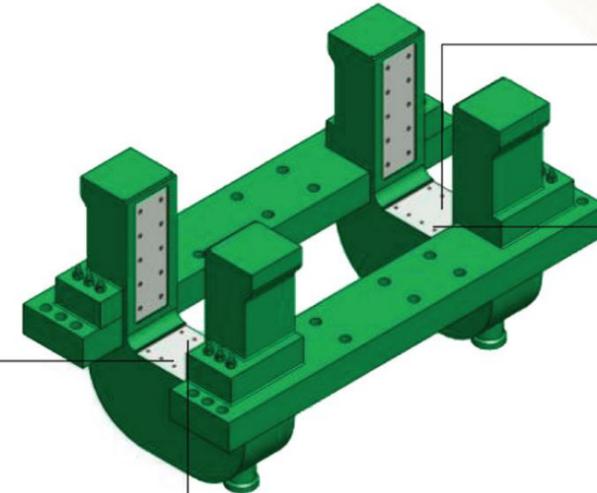
机架辊安装止口磨损
Wear of the mounting stop-end for the stand roll of the mill housing

失效分析：轧机锁门板、机架辊或导卫键槽磨损，将导致导卫及轧辊、机架辊的安装空间位置失效，运行精度降低、紧固螺栓断裂情况，当机架辊安装止口出现磨损情况后如不及时处理，严重时会导致机架辊主传动系统损坏。

Failure analysis : Wear of the mounting surface for roll locking plate, stand roll or guide keyway will lead to the failure of the installation space position of the guide, roll and stand roll, decrease the operation accuracy, and cause the fracture of the fastening bolt. If the wear of the mounting stop-end for the stand roll is not handled in time, it will cause serious damage to the main drive system of the stand roll.

产品介绍

PRODUCT INTRODUCTION



失效分析：当牌坊底面出现磨损情况后势必会导致轧机刚度变差，板厚难控、轧辊两侧倾斜、带钢跑偏/堆钢、加大轧制难度，严重时造成底面螺栓断裂、最终损坏换辊小车/测压传感器/阶梯垫/轴承座等系类零部件。

Failure analysis : When wear occurs on the bottom surface of the mill housing, it will inevitably lead to a decrease in the rigidity of the rolling mill, difficulty in strip thickness controlling, inclination of both sides of the roll, strip deviation/pile-up and increased rolling difficulty. In severe cases, it will cause the bolt fracture at the bottom surface area , and ultimately damage the components such as the roll changing trolley, rolling pressure sensor, step pad, and bearing box .

产品介绍

PRODUCT INTRODUCTION



粗加工过程中
During rough machining



激光熔覆过程中
During laser cladding



精加工后
After finish machining

产品介绍

PRODUCT INTRODUCTION

激光修复效果实例

Example of laser repair effect



激光再制造后牌坊在线使用**1**年后表面无磨损

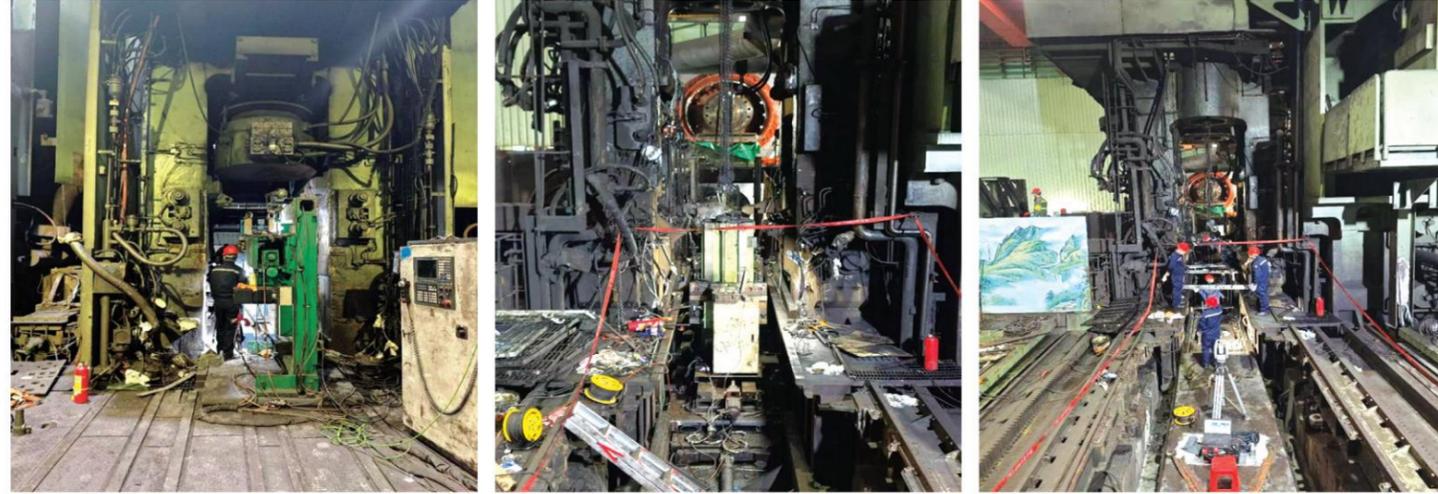
After one year of online use, the surface of the rolling mill housing shows no signs of wear after laser remanufacturing.

产品介绍

PRODUCT INTRODUCTION

案例一 热连轧生产线

Case 1
Hot Continuous
Rolling Production Line



案例二 热连轧生产线

Case 2
Hot Continuous Rolling
Production Line



产品介绍

PRODUCT INTRODUCTION

案例三 中厚板生产线轧机 机架整体激光修复

Case 3
Overall Laser Repair of
Rolling Mill Stand in
Medium and Heavy Plate
Production Line



案例四 中厚板生产线轧机 机架底面激光修复

Case 4
Laser Repair for the Bottom
Surface of the Rolling Mill
Stand in the Medium and
Heavy Plate Production Line

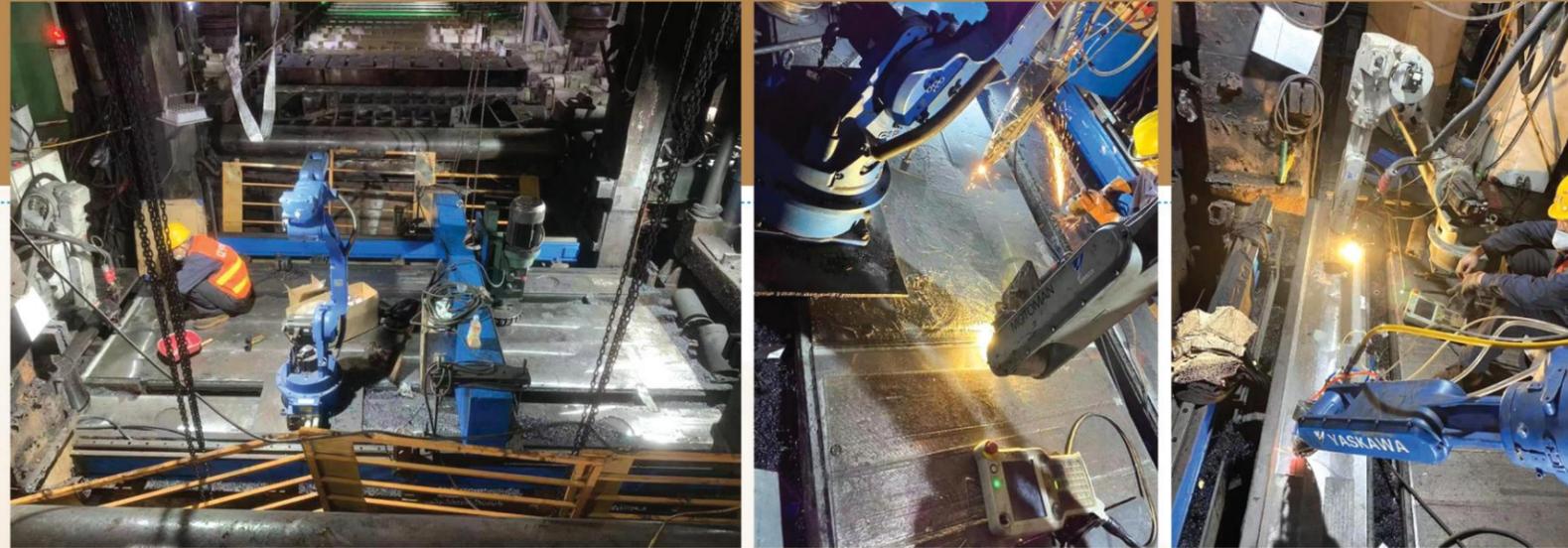


产品介绍

PRODUCT INTRODUCTION

案例五 中厚板生产线矫直机底面激光修复

Case 5 Laser Repair for the Bottom Surface of the Straightening Machine Housing in the Medium and Heavy Plate Production Line



产品介绍

PRODUCT INTRODUCTION

2 热轧板带生产线

Hot rolling plate and strip production line

<<< 轴承座在线修复

Online repair for bearing box

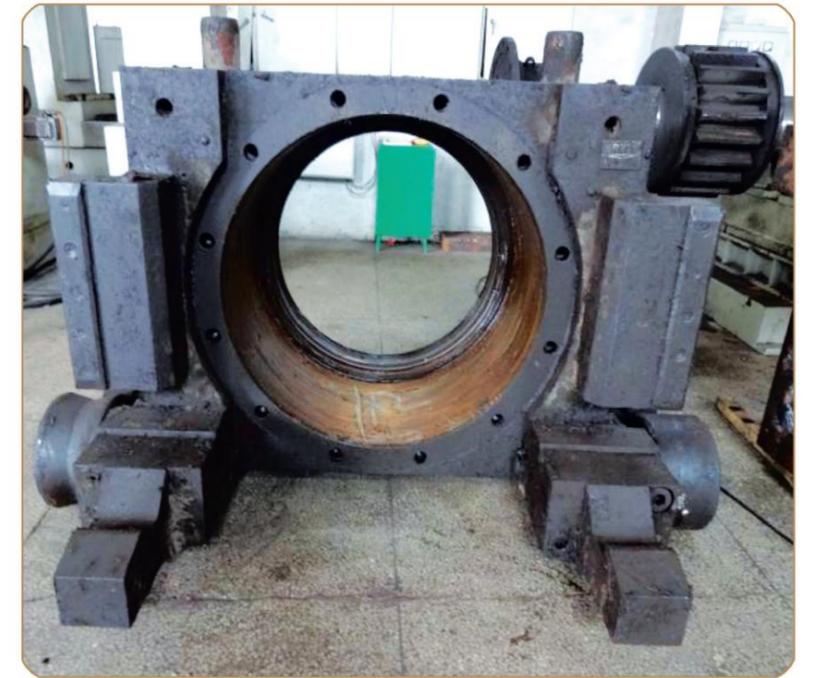
轴承座
磨损危害
Hazards of
bearing box wear

增加机架磨损
Increase the wear of the housing

造成主传动系统损坏
Cause damage to the main drive system

影响产品质量
Affect product quality

增加烧轴承概率
Increase the probability of bearing burnt



产品介绍

PRODUCT INTRODUCTION



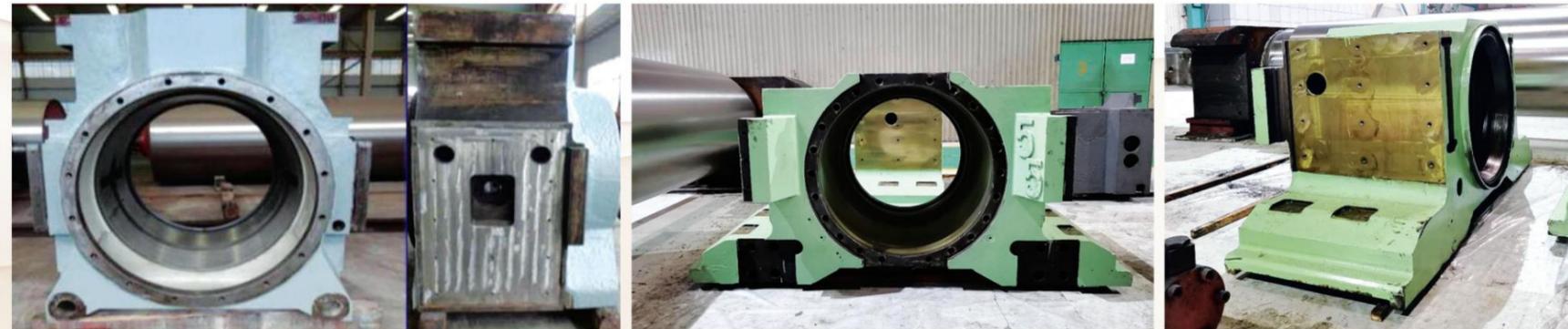
激光检测 / Laser detection

在线加工 / Online processing

在线激光熔覆 / Online laser cladding

<<< 热轧线轴承座—离线修复部分实例照片

Bearing box of hot rolling line — Photos of some offline repair cases



产品介绍

PRODUCT INTRODUCTION

3 热轧板带线—辊类零部件激光修复再制造

Hot Rolling Plate and Strip Production Line Laser Repair and Remanufacturing for Roller Components

支承辊激光再制造实例

Example of Laser Remanufacturing for Backup Roll



转钢辊激光再制造实例

Example of Laser Remanufacturing for Steel Transfer Rollers

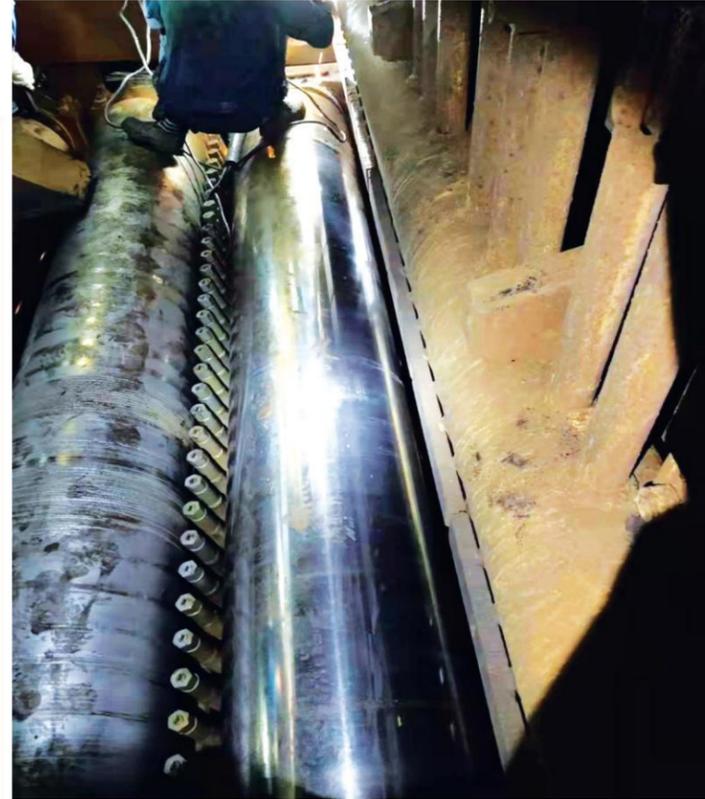
产品介绍

PRODUCT INTRODUCTION

机架辊激光再制造实例 ①
Example of Frame Roll Laser Remanufacturing



2020年4月，包钢激光再制造机架辊，上线使用一年未见损伤。
In April 2020, laser remanufacturing stand rolls were put into service at Baotou Iron and Steel (Group) Co., Ltd. (Baogang). After one year of online service, no damage was found.



机架辊激光再制造实例 ②
Example of Laser Remanufacturing for Stand Roll

2021年4月，湘钢3800生产线激光再制造机架辊（右侧辊），已上线使用8个月未见磨损。

In April 2021, at the 3800 production line of Xiangtan Iron and Steel Co., Ltd., the laser remanufacturing process was applied to the stand roll (rightside one). After 8 months online service, no signs of wear observed.

产品介绍

PRODUCT INTRODUCTION

层流辊道激光再制造实例
Example of Laser Remanufacturing for Laminar Flow Roller Conveyors



激光再制造 / Laser remanufacturing

加工 / Processing

成品 / Finished product

激光熔覆再制造的层流冷却辊道上机使用1年后磨损量仅0.2mm，远远优于原制造新品备件。
Wear of only 0.2mm was observed on the rollers of laminar cooling table remanufactured by means of laser cladding after one year of service, which is far superior to the new ones originally manufactured.

PRODUCT
INTRODUCTION

产品介绍 PRODUCT INTRODUCTION

4 热轧板带线产品—辊端轴套 Hot rolling strip line products – roll end shaft sleeve



激光熔覆再制造的某钢厂扁头套上机使用1年的结果表明：磨损量仅0.5mm，远远优于新品备件。
At a steel plant, one year service result of a flat head sleeve remanufactured by means of laser cladding show that the wear amount is only 0.5mm, far superior to new spare parts.



产品介绍 PRODUCT INTRODUCTION

5 热轧板带线产品—激光复合衬板 Hot rolling strip line products – laser composite lining plate

功能层厚度 $\geq 1\text{mm}$ ，使用寿命比单质衬板长 2-4 倍，性能与Corts旗鼓相当！
The thickness of the functional layer is $\geq 1\text{mm}$, and the service life is 2-4 times longer than that of the unique material liner, with the performance comparable to Corts!



产品介绍

PRODUCT INTRODUCTION

6 建材生产线产品——轧辊表面强化

Building material production line products – surface strengthening for rolling mill rolls

在锻钢和铸钢基体上熔覆一层完美的工作层
Cladding a perfect working layer on forged steel and cast steel substrates



应用激光合金化技术可以显著提高轧辊工作层硬度，单槽轧制量提高0.5—1倍，热裂纹明显减少。
The application of laser alloying technology can significantly improve the hardness of the working layer of the roll, increase single groove rolling quantity by 0.5–1 times, and significantly reduce hot cracks.



轧辊激光合金化加工中
During laser alloying for rolling mill rolls

轧辊激光合金化加工后形貌
Morphology after laser alloying for rolling mill rolls

产品介绍

PRODUCT INTRODUCTION

7 建材生产线产品——短应力线轧机

Building Material Production Line Products – Short Stress Line Rolling Mill



短应力线轧机主要的失效方式:
(1) 强腐蚀条件下的微动磨损，使轧机原有的精度损失。
(2) 轧机防尘密封的损坏。使轧机旋转和滑动部位使之产生剧烈磨损。

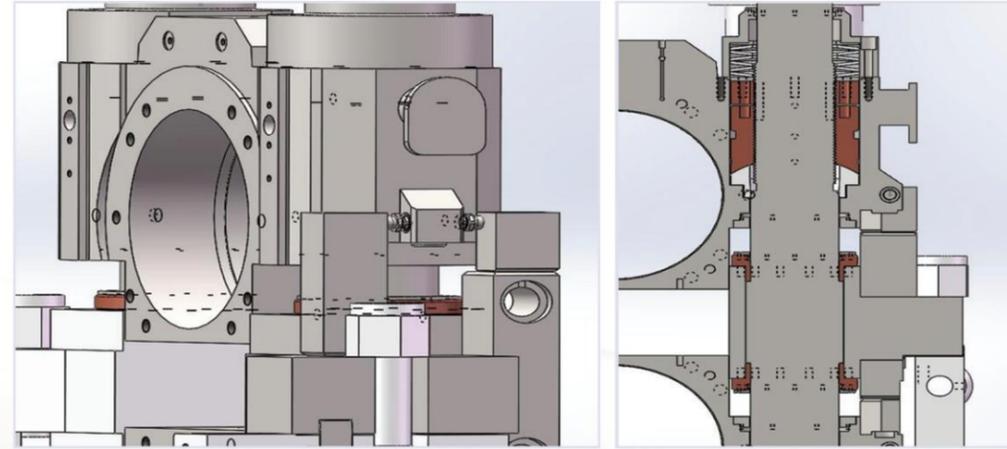
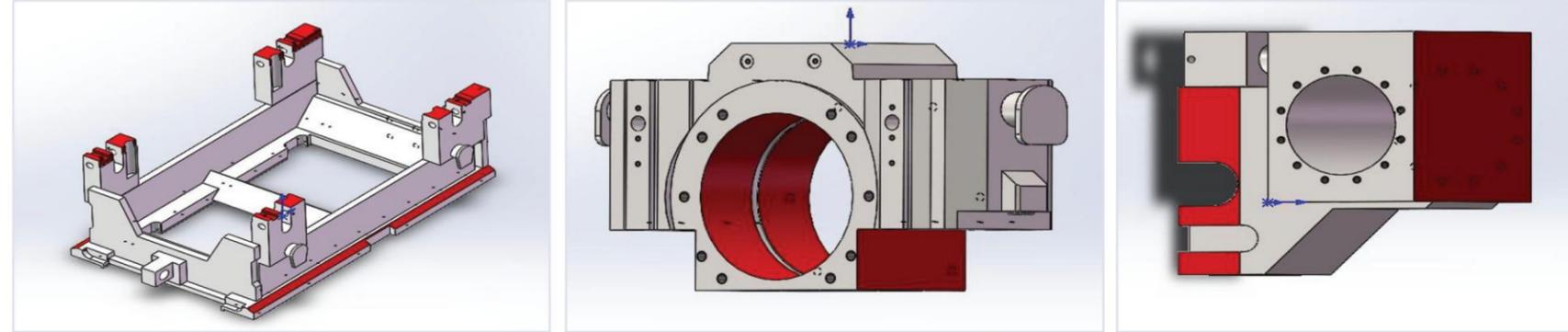
The main failure modes of short stress line rolling mills are:
(1) Micro motion wear under strong corrosion conditions causes the original accuracy lose of the rolling mill.
(2) Damage to the dust seal of the rolling mill. Causing severe wear on the rotating and sliding parts of the rolling mill.

产品介绍

PRODUCT INTRODUCTION

短应力线轧机主要零部件的激光再制造

Laser Remanufacturing for Main Components of Short Stress Line Rolling Mill



短应力线轧机主要零部件设计改造

Design and Renovation to Main Components of Short Stress Line Rolling Mill

图像中的红色区域表示修复位置 / The red area in the image indicates the repair location

产品介绍

PRODUCT INTRODUCTION



- 复合再制造轧机各项性能指标达到、超过新机标准
- 复合再制造核心部件工作面质保五年
- 整机性能质保一年

- The performance indicators of the composite remanufacturing rolling mill have reached or exceeded the standards of the new machine.
- Guarantee for the working surface of the composite remanufactured core components is five years.
- The overall performance is guaranteed for one year.

产品介绍 PRODUCT INTRODUCTION

8 电力行业激光再制造产品—汽轮机 Laser remanufacturing products in the power industry—Steam turbine



华能某电厂，30万千瓦汽轮机转子（汽封）激光熔覆修复实例
Example of laser cladding repair for 300000 kW steam turbine rotor (seal) in a power plant of Huaneng

华能集团某电厂，30万千瓦汽轮机转子主轴颈激光熔覆（含在线机加）修复实例
Example of laser cladding (including online machining) repair for the main shaft neck of a 300000 kW steam turbine rotor in a power plant of Huaneng Group

汽轮机组，动、静叶片组激光熔覆修复 Steam turbine unit, laser cladding repair for dynamic and static blade groups



产品介绍 PRODUCT INTRODUCTION

9 通用设备零部件的激光再制造 Laser remanufacturing for general equipment components

电动机转子激光熔覆修复产品 / Laser cladding repair product for motor rotor

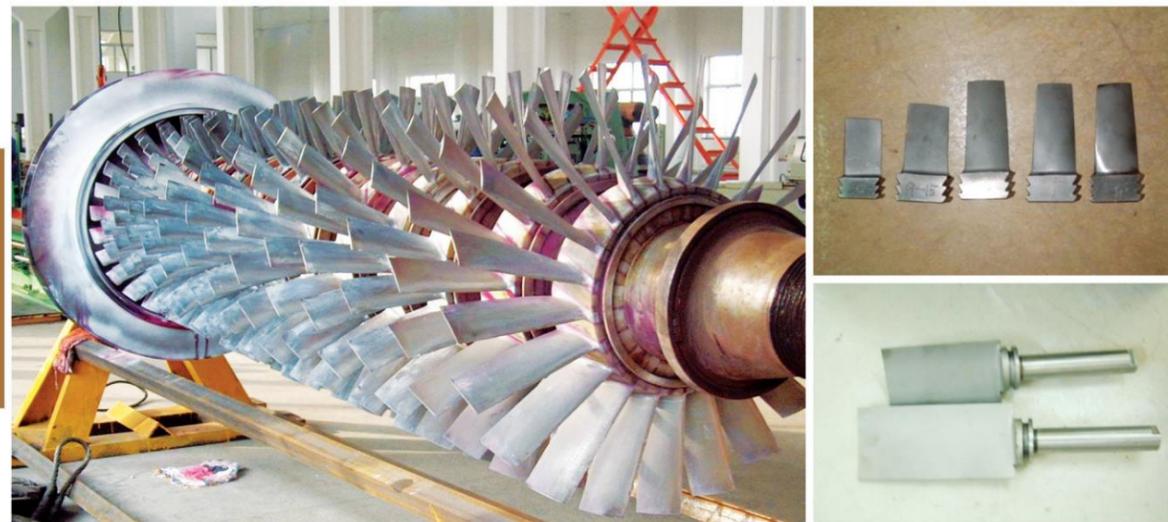


产品介绍

PRODUCT INTRODUCTION

轴流风机转子及动、静叶片

Axial flow fan rotor and moving and static blades



TRT转子、承缸以及动、静叶片

TRT rotor, bearing cylinder, and moving and static blades

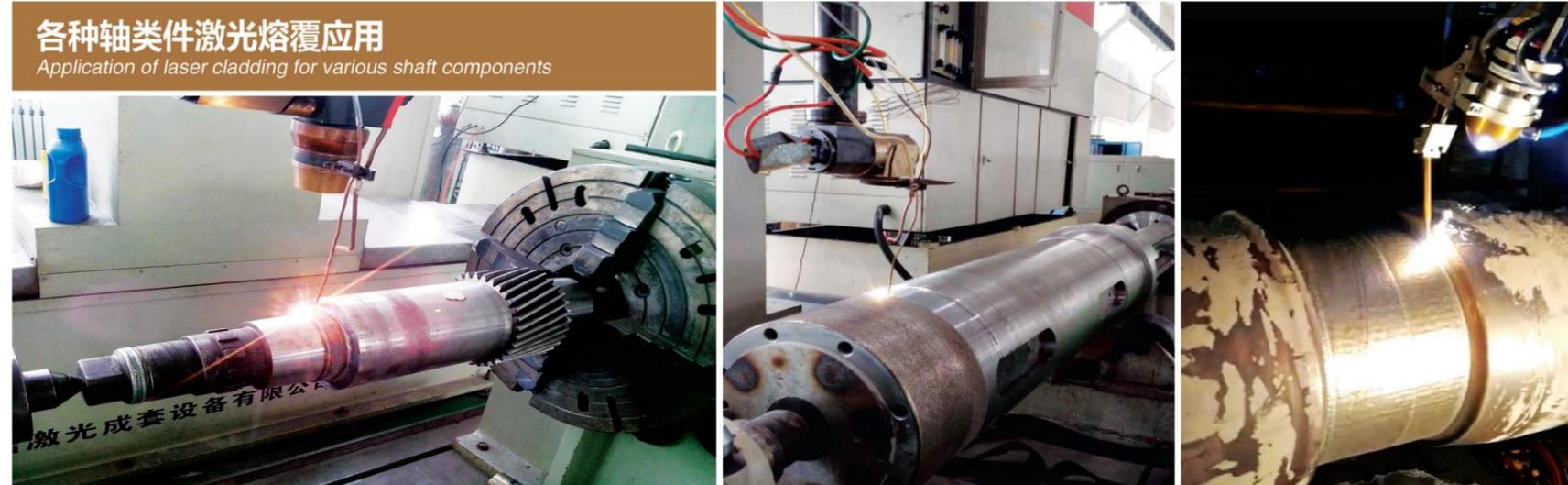


产品介绍

PRODUCT INTRODUCTION

各种轴类件激光熔覆应用

Application of laser cladding for various shaft components



各种异型结构件的激光熔覆工艺需求

Requirements for laser cladding process of various irregular structural components

合作企业

PERFORMANCE HIGHLIGHTS PARTNER ENTERPRISES



近年牌坊修复(激光熔覆)业绩表

PERFORMANCE SHEET OF MILL HOUSING REPAIR (LASER CLADDING) IN RECENT YEARS

序号 No	客户名称 Customer Name	项目(合同) Project (Contract)
1	鞍钢股份鲅鱼圈分公司 Ansteel Bayuquan Branch	鲅鱼圈厚板粗轧机牌坊修复 Repair of the Housing for the Heavy Plate Roughing Mill in Bayuquan
2	鞍钢股份鲅鱼圈分公司 Ansteel Bayuquan Branch	鞍钢鲅鱼圈1580R1牌坊激光熔覆 Laser Cladding for the Housing of Angang Bayuquan 1580R1 Rolling Mill
3	泰尔重工股份有限公司 Tai'er Heavy Industry Co., Ltd	京唐宽厚板粗精轧牌坊修复(泰尔) Repair of Roughing and Finishing Mill Housing for Wide and Heavy Plate at Jingtang (Tai'er)
4	鞍钢股份有限公司 Angang Steel	鞍钢线材轧机牌坊修复 Repair of Housing for Wire Rod Mill in Angang Steel
5	鞍钢股份有限公司 Angang Steel	鞍钢热轧带钢1780F2-F3牌坊激光熔覆 Laser Cladding for the Housing of Stands F2-F3 in Ansteel's 1780mm Hot Rolling Strip Mill
6	五矿营口中板有限公司 Minmetals Yingkou Medium Plate Co., Ltd	五矿厚板机架辊激光熔覆 Laser Cladding of Heavy Plate Stand Rolls for Minmetals
7	鞍钢股份有限公司 Angang Steel	鞍钢大型厂BD2牌坊激光熔覆 Laser Cladding of BD2 Housing in Ansteel Heavy Section Mill
8	泰尔重工股份有限公司 Tai'er Heavy Industry Co., Ltd	德龙精轧机牌坊修复(泰尔) Repair of the Housing for Delong Finishing Mill (Tai'er)
9	鞍钢股份有限公司 Angang Steel	鞍钢热轧2150牌坊螺栓孔修复 Repair of the Housing Bolt Holes for Ansteel's Hot Rolling 2150 Mill
10	五矿营口中板有限公司 Minmetals Yingkou Medium Plate Co., Ltd	五矿5000厚板轧机修复 Repair of Wukong 5000mm Mining Heavy Plate Rolling Mill
11	湖南华菱湘潭钢铁有限公司 Hunan Hualing Xiangtan Iron and Steel Co., Ltd	湘钢宽厚板二分厂牌坊修复 Repair of the Rolling Mill Housing in the Wide and Heavy Plate No.2 Branch Factory of Xiangtan Iron and Steel Co., Ltd.

近年牌坊修复（激光熔覆）业绩表 PERFORMANCE SHEET OF MILL HOUSING REPAIR (LASER CLADDING) IN RECENT YEARS

序号 №	客户名称 Customer Name	项目（合同） Project (Contract)
12	泰尔重工股份有限公司 Tai'er Heavy Industry Co., Ltd	湘钢宽厚板二分厂牌坊修复 Repair of the Rolling Mill Housing in the Wide and Heavy Plate No.2 Branch Factory of Xiangtan Iron and Steel Co., Ltd.
13	包头钢铁集团有限公司 Baotou Iron and Steel Group Co., Ltd	包钢轨梁轧机牌坊修复 Repair of Housing for Bloomer/Broad Plate Mill with Clad Steel Rails
14	泰尔重工股份有限公司 Tai'er Heavy Industry Co., Ltd	河北普阳钢厂牌坊底面修复（泰尔） Repair of the Bottom Surface of the Rolling Mill Housing of Hebei Puyang Iron and Steel Plant (Tai'er)
15	泰尔重工股份有限公司 Tai'er Heavy Industry Co., Ltd	鞍钢热轧2150F1-F6牌坊激光熔覆（泰尔） Laser Cladding for the Housing of Angang Hot Rolling 2150mm Mill Stands F1-F6 (Tai'er)
16	泰尔重工股份有限公司 Tai'er Heavy Industry Co., Ltd	重庆钢厂4100粗、精轧牌坊修复（泰尔） Repair of Roughing and Finishing Mill Housing for 4100 (Taier) at Chongqing Iron and Steel Plant
17	鞍钢股份鲅鱼圈分公司 Ansteel Bayuquan Branch	鞍钢鲅鱼圈5000厚板精轧机机架修复 Repair of the Stand of the 5000mm Heavy Plate Finishing Mill at Angang Bayuquan (Plant)
18	一重集团（黑龙江）重工有限公司 First Heavy Industry (Heilongjiang) Co., Ltd	柳州钢铁厂新制1780激光牌坊（一重） Liuzhou Iron and Steel Plant's newly manufactured 1780 laser mill housing
19	新余钢铁股份有限公司 Xinyu Iron and Steel Co., Ltd	新余宽厚板2690、3000、3800牌坊 Rolling Mill Housing for Xinyu Wide & Heavy Plate (2690, 3000, 3800)
20	泰尔重工股份有限公司 Tai'er Heavy Industry Co., Ltd	柳钢2800粗精轧牌坊修复（泰尔） Repair of the Housing for the Roughing and Finishing Mills of Liuzhou Iron and Steel's 2800mm Rolling Mill (Tai'er)
21	湖南华菱湘潭钢铁有限公司 Hunan Hualing Xiangtan Iron and Steel Co., Ltd	湘钢3800矫直机牌坊底面激光修复 Laser Repair for the Bottom Surface of the Housing of Xianggang 3800 Straightener
22	一重集团（黑龙江）重工有限公司 First Heavy Industry (Heilongjiang) Co., Ltd	一重一分厂1700牌坊激光熔覆 Laser Cladding for the Housing of 1700 Rolling Mill in No.1 Branch Factory of China First Heavy Industries

近年牌坊修复（激光熔覆）业绩表 PERFORMANCE SHEET OF MILL HOUSING REPAIR (LASER CLADDING) IN RECENT YEARS

序号 №	客户名称 Customer Name	项目（合同） Project (Contract)
23	河北津西钢铁集团有限公司 Hebei Jinxi Iron and Steel Group Co., Ltd	津西钢铁850轧机牌坊修复 Jinxi Iron and Steel 850 Rolling Mill Housing Repair
24	江西瑞曼增材有限公司 Jiangxi Ruiman Additive Manufacturing Co., Ltd	新余钢铁公司1580牌坊修复 Repair of the Housing for Xinyu 1580 Rolling Mill
25	上海鼎艺冶金科技有限公司 Shanghai Dingyi Metallurgical Technology Co., Ltd	东海特钢700线牌坊在线检测（上海鼎艺） Online Detection of the Housing for Donghai Special Steel 700 Wire Rolling Mill (Shanghai Dingyi)
26	鞍钢股份有限公司 Angang Steel	鞍钢大型厂轧机底座修复 Repair of Rolling Mill Base in Angang Large-Scale Plant
27	一重集团（黑龙江）重工有限公司 First Heavy Industry (Heilongjiang) Co., Ltd	4300轧机激光牌坊 Laser Mill Housing Pieces for 4300 Rolling Mill
28	湖南华菱湘潭钢铁有限公司 Hunan Hualing Xiangtan Iron and Steel Co., Ltd	湘钢3800牌坊及热矫底面修复 Repair of Rolling Mill Housing and Hot Straightener Base Surface for 3800 Xiangtan Iron and Steel
29	湖南华菱湘潭钢铁有限公司 Hunan Hualing Xiangtan Iron and Steel Co., Ltd	湘钢3800宽厚板厂间隙管理 Gap Management of Heavy Plate Mill for 3800 Xiangtan Iron and Steel
30	鞍钢股份朝钢钢铁分公司 Angang Steel Chaogang Iron and Steel Branch	朝阳卸卷小车轨道牌坊修复 Repair of the Rail and Mill Housing for the Chaoyang Coil Unloading Trolley
31	一重集团（黑龙江）重工有限公司 First Heavy Industry (Heilongjiang) Co., Ltd	小牌坊激光 Laser for Small Rolling Mill Housing
32	安徽晨光新材料有限公司 Anhui Chenguang New Materials Co., Ltd	秦皇岛宏兴钢厂轧机牌坊维修 Repair of Rolling Mill Housing for Qinhuangdao Hongxing Iron and Steel Plant
33	鞍山宝得钢铁有限公司 Anshan Baode Steel Co., Ltd	鞍山宝得钢铁牌坊激光修复 Laser Repair of Rolling Mill Housing for Anshan Baode Steel

近年牌坊修复（激光熔覆）业绩表 PERFORMANCE SHEET OF MILL HOUSING REPAIR (LASER CLADDING) IN RECENT YEARS

序号 No	客户名称 Customer Name	项目（合同） Project (Contract)
34	一重东方股份有限公司 Yizhong Dongfang Co., Ltd	安阳1780线改造现场加工 On site processing of Anyang 1780 line renovation
35	九江集团萍钢股份有限公司 Jiujiang Group Pinggang Co., Ltd	九江萍钢双边剪及牌坊底面修复 Repair of the Bottom Surface of Double-Sided Shear and Rolling Mill Housing in Jiujiang Pinggang
36	江苏振石集团 Jiangsu Zhenshi Group	振石集团东方特钢牌坊修复 Repair of the Rolling Mill Housing of Oriental Special Steel under Zhenshi Group
37	宁波钢铁股份有限公司 Ningbo Iron and Steel Co., Ltd	宁波钢铁1780弯辊改造 Ningbo Iron and Steel 1780 Bending Roll Transformation
38	本钢集团有限公司 Bengang Group Co., Ltd	本溪钢铁公司1700牌坊修 Repair of the Housing for Benxi Iron and Steel's 1700mm Rolling Mill
39	一重集团大连工程技术有限公司 China First Heavy Industries Dalian Engineering Technology Co., Ltd.	一重宝钛3300四辊轧机牌坊修复 Repair of the Housing for the 3300 Four-High Rolling Mill of CFHI Baoti
40	一重东方股份有限公司 Yizhong Dongfang Co., Ltd	广青1780牌坊修复 Repair of the Housing for Guangqing 1780 Rolling Mill
41	酒泉钢铁股份有限公司 Jiuquan Iron and Steel Co., Ltd	大棒线水平机架滑轨修复 Repair of the horizontal rack slide rail of the big stick line
42	一重集团大连工程技术有限公司 China First Heavy Industries Dalian Engineering Technology Co., Ltd.	津西850线牌坊修复及弯辊改造 Repair and rack renovation of the Housing for Jinxi 850 Rolling Mill Line
43	一重集团大连工程技术有限公司 China First Heavy Industries Dalian Engineering Technology Co., Ltd.	连钢2250牌坊修复及弯辊改造 Repair and rack renovation of the Housing for Lianyuan Iron and Steel's 2250 Rolling Mill

能源动力业绩表 ENERGY & POWER PERFORMANCE

序号 No	客户名称 Customer Name	项目（合同） Project (Contract)
1	鞍钢炼铁厂 Ansteel Ironmaking Plant	鞍钢炼铁厂球团焙烧机头轮轴激光熔覆 Laser cladding of rotary kiln head shaft of pellet roasting machine at Ansteel Ironmaking Plant
2	国电投霍林河坑口电厂 SPIC Huolinhe Power Plant	国电投霍林河坑口电厂汽轮发电机转子激光熔覆 Laser cladding of steam turbine generator rotor at SPIC Huolinhe Power Plant
3	湘钢宽厚板厂 Xiangtan Iron & Steel Plate Mill	湘钢风机转子修复 Repair of fan rotor at Xiangtan Steel
4	鞍钢供水厂 Ansteel Water Supply Plant	鞍钢供水厂叶轮修复抢修 Emergency repair of impeller at Ansteel Water Supply Plant
5	锦西化工机械集团电厂 Jinxi Chemical Machinery Group Power Plant	锦西压缩机主轴 Jinxi compressor main shaft
6	鞍山汇鑫制氧厂 Anshan Huixin Oxygen Plant	紫竹汇鑫空压机一级轴推力盘 Zizhu Huixin air compressor first-stage shaft thrust disk
7	新余炼钢厂 Xinyu Steelmaking Plant	特钢厂耳轴及大齿轮修复 Repair of trunnion and large gear for Steelmaking Plant
8	大连泰山热电有限公司 Dalian Taishan Thermal Power Co., Ltd.	大连风机转子轴颈激光修复 Laser repair of fan rotor journal in Dalian
9	葫芦岛锦西化机重工透平有限公司 Huludao Jinxi Chemical Machinery Heavy Industry Turbine Co., Ltd.	锦西石化汽轮机转子修复 Repair of steam turbine rotor for Jinxi Petrochemical
10	大连发电有限责任公司 Dalian Power Generation Co., Ltd.	大连发电汽轮机部件修复 Repair of steam turbine components for Dalian Power Generation

能源动力业绩表 ENERGY & POWER PERFORMANCE

序号 No	客户名称 Customer Name	项目 (合同) Project (Contract)
11	大连发电有限责任公司 Dalian Power Generation Co., Ltd.	大连发电中压隔板套密封面激光修复 Laser repair of middle-pressure diaphragm sleeve sealing surface
12	辽阳华瑞工矿工程有限公司 Liaoyang Huarui Mining & Industrial Engineering Co., Ltd.	华瑞工矿工程有限公司窑托轮瓦加工激光 Laser machining of kiln supporting roller bearing pads
13	运城关铝电厂 Yuncheng Guanlü Power Plant	西安热工院关吕电厂轴颈激光修复 Laser repair of shaft journal at Xi'an Thermal Institute Guanlü Power Plant
14	葫芦岛鑫盛工业透平有限公司 Huludao Xinsheng Industrial Turbine Co., Ltd.	葫芦岛鑫盛透平机械主轴转子、汽轮机转子 Huludao Xinsheng turbine main shaft rotor and steam turbine rotor
15	内蒙古锦联铝业 Inner Mongolia Jinlian Aluminum	内蒙古锦联铝业水泵轴修复 Repair of water pump shaft at Jinlian Aluminum
16	鞍钢大孤山球团厂 Ansteel Dagu Mountain Pellet Plant	矿山大球动锥主轴修复 Repair of main spindle of mining large cone crusher
17	吉电白城电厂 Jidian Baicheng Power Plant	吉电白城电厂发电机转子激光修复 Laser repair of generator rotor at Jidian Baicheng Power Plant
18	辽阳华瑞工矿工程有限公司 Liaoyang Huarui Mining & Industrial Engineering Co., Ltd.	辽阳华瑞轴承颈激光熔覆 Laser cladding of bearing journal
19	葫芦岛鑫盛工业透平有限公司 Huludao Xinsheng Industrial Turbine Co., Ltd.	葫芦岛鑫盛透平轴激光熔覆 Laser cladding of turbine shafts
20	鞍山宝得轧钢厂 Anshan Baode Rolling Mill	水泵轴激光覆 Laser cladding of water pump shaft

轴承座业绩表 BEARING HOUSING PERFORMANCE

序号 No	客户名称 Customer Name	项目 (合同) Project (Contract)
1	鞍钢股份有限公司鲅鱼圈钢铁分公司 Ansteel Co., Ltd. Bayuquan Branch	鞍钢5000轴承座激光修复 Laser repair of 5000 bearing housing
2	鞍钢股份冷轧 Ansteel Cold Rolling	鞍钢冷轧硅钢卷取机轴承瓦盖激光修复 Laser repair of silicon steel coiler bearing cover
3	中国第一重型机械(集团)有限责任公司 China First Heavy Industries (CFHI)	一重重装轴承座激光熔覆 Laser cladding of bearing housing for CFHI
4	中国第一重型机械(集团)有限责任公司 China First Heavy Industries (CFHI)	一重京唐工作辊轴承座激光熔覆内孔 Laser cladding of work roll bearing housing at CFHI JingTang
5	中国第一重型机械(集团)有限责任公司 China First Heavy Industries (CFHI)	一重重装轴承座滑板激光熔覆 Laser cladding of bearing housing slide plates for CFHI
6	湖南华菱湘潭钢铁集团有限公司 Hunan Valin Xiangtan Iron & Steel Group Co., Ltd.	湘钢厚板3800轴承座现场修复 On-site repair of Xiangtan Iron & Steel 3800 plate mill bearing housings
7	中国第一重型机械(集团)有限责任公司东方(北京)智能科技有限公司 CFHI Oriental (Beijing) Intelligent Technology Co., Ltd.	日钢营口轧机精度修复及日常维保管理长协项目 Precision repair & maintenance long-term contract at Rizhao Steel Yingkou Rolling Mill
8	中国第一重型机械(集团)有限责任公司 China First Heavy Industries (CFHI)	十五分厂轴承座、钢块激光修复 Laser repair of bearing housings and steel blocks at Plant 15
9	营口钢铁有限公司 Yingkou Steel Co., Ltd.	5000厚板厂支承辊轴承座现场修复 On-site repair of 5000 plate mill support roll bearing housings
10	凌源钢铁集团有限责任公司 Lingyuan Iron & Steel Group Co., Ltd.	第二轧钢厂工作辊轴承座修复 Repair of 2nd rolling mill work roll bearing housings
11	宝钢德盛不锈钢有限公司 Baosteel Desheng Stainless Steel Co., Ltd.	福建德胜轴承座年度维修包保 Annual maintenance warranty for Fujian Desheng bearing housings

辊道业绩表 ROLLER TABLE PERFORMANCE

序号 No	客户名称 Customer Name	项目 (合同) Project (Contract)
1	湖南华菱湘潭钢铁集团有限公司 Hunan Valin Xiangtan Iron & Steel Group Co., Ltd.	湘钢厚板5000轧机转钢辊道中间辊道修复 Repair of middle roller table at Xiangtan 5000 plate mill transfer roller line
2	湖南华菱湘潭钢铁集团有限公司 Hunan Valin Xiangtan Iron & Steel Group Co., Ltd.	湘钢厚板转钢辊激光熔覆 Laser cladding of transfer rollers for Xiangtan Iron and Steel
3	湖南华菱湘潭钢铁集团有限公司 Hunan Valin Xiangtan Iron & Steel Group Co., Ltd.	湘钢机架辊激光熔覆 Laser cladding of stand rollers for Xiangtan Iron and Steel
4	鞍钢股份大型厂 Ansteel Large Plant	鞍钢大型对中辊道激光熔覆年标 Annual maintenance warranty for Ansteel alignment roller tables (Laser cladding)
5	涟钢机电设备制造有限公司 Lianyuan Steel Mechanical & Electrical Equipment Manufacturing Co., Ltd.	涟钢层流冷却辊道激光熔覆 Laser cladding of cooling roller tables

扁头套业绩表 FLAT COUPLING SLEEVE PERFORMANCE

序号 No	客户名称 Customer Name	项目 (合同) Project (Contract)
1	营口钢铁有限公司 Yingkou Steel Co., Ltd.	日钢营口吕板叉头及扁头套长协项目叉头 Rizhao Steel Yingkou plate fork head & flat coupling sleeve long-term contract
2	鞍钢股份有限公司鲅鱼圈钢铁分公司 Ansteel Bayuquan Branch	鞍钢鲅鱼圈1580 R1轧机接轴扁头套 Bayuquan 1580 R1 mill drive shaft flat coupling sleeve
3	鞍钢股份有限公司鲅鱼圈钢铁分公司 Ansteel Bayuquan Branch	鞍钢鲅鱼圈5000轧机接轴扁头套 Bayuquan 5000 mill drive shaft flat coupling sleeve
5	鞍钢集团朝阳钢铁 Ansteel Chaoyang Iron & Steel	1580扁头套修复 Repair of 1580 flat coupling sleeves
6	湖南华菱湘潭钢铁集团有限公司 Hunan Valin Xiangtan Iron & Steel Group Co., Ltd.	湘钢厚板3800扁头套修复 Repair of 3800 flat coupling sleeves at thick plate mill

全国客户分布图 NATIONAL CUSTOMER DISTRIBUTION MAP



辽宁瀛寰科技有限公司服务品牌郑重承诺：

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- 质量异议响应机制：24 小时内响应客户投诉；
- 超预期服务标准：提供从技术咨询、现场指导到售后的全链条服务；
- 诚信承诺：产业链共生共荣，客户信息严格保密，合同履约率 100%。
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