2026.05

海天光机

全 球 高 质 激 光 机 床 制 造 商

海天光机服务号　海天光机视频号

宁波海天激光科技有限公司

地址 / Add：浙江省宁波市北仑区街道黄山路37号　315803

网址 / Web：www.haitianlaser.com　　联系电话 / Mob：17305842590

服务热线：0574-62589299　　邮箱 / E-mail：JGKJ@mail.haitian.com

HAITIAN
LASER MACHINERY



Automobile Brake Disc Laser Cladding Integrated Solution

汽车制动盘
激光熔覆一体化解决方案

制动“焕”新　绿色先行

01 技术指标
Technical Indicators

25~30万片/年
产值 / Output Value

90~130um
磨削余量 / Grinding allowance

≤0.006mm
制动盘厚薄差 / DTV

≤0.02mm
跳动值 / Heartbeat value

Euro 7

为解决制动盘粉尘排放
提供领先成套方案

To address the issue of dust emissions from brake discs
Provide leading complete solutions

减少27%
刹车盘颗粒物排放
Brake disc particulate matter emissions

<7mg
每公里排放
Emissions per kilometer



制动“焕”新　绿色先行

02 我们的使命
Our Mission

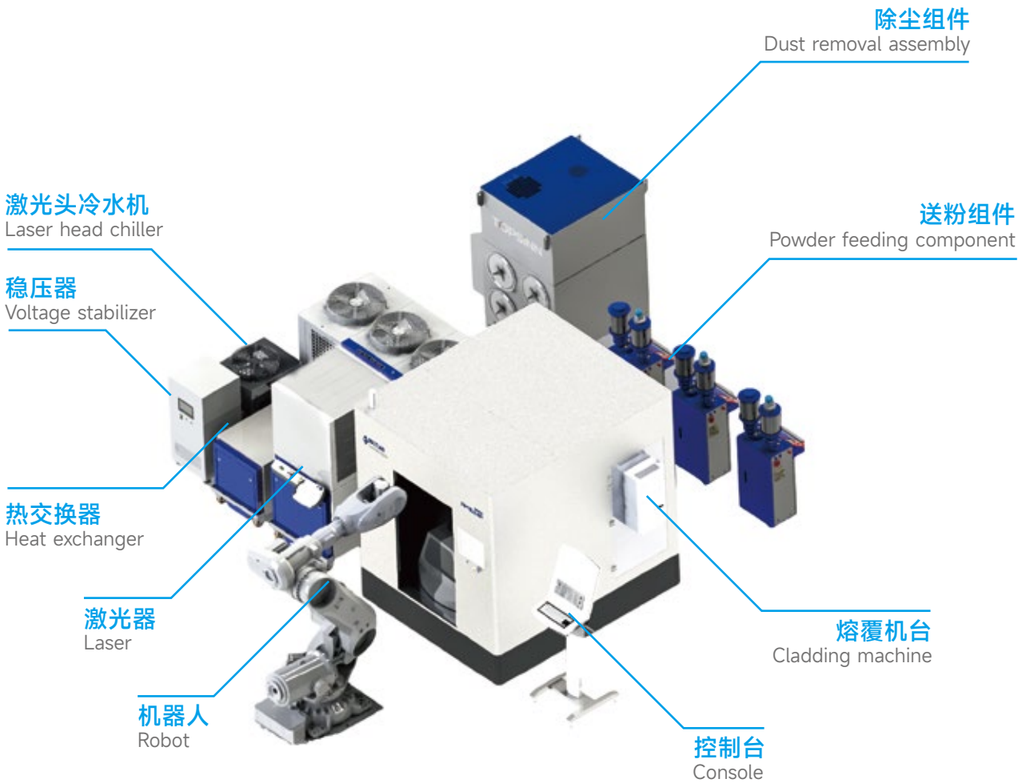
在欧 7 标准之前，刹车盘的设计主要围绕热容量、散热性、抗热衰退性、耐磨性和成本。此前标准主要针对传统内燃机的尾气污染物，而随着电动汽车的普及，人们意识到，汽车对环境的影响并不仅限于尾气。制动磨损、轮胎磨损、蒸发排放等非尾气排放源，成为了不可忽视的污染来源。

Before the Euro 7 standard, the design of brake discs mainly focused on heat capacity, heat dissipation, thermal fade resistance, wear resistance and cost. Previously, the standards mainly targeted the exhaust pollutants from traditional internal combustion engines. However, with the popularization of electric vehicles, people have realized that the impact of automobiles on the environment is not limited to exhaust. Non-exhaust emission sources such as brake wear, tire wear and evaporation emissions have become pollution sources that cannot be ignored.

海天光机一直关注制动盘粉尘排放成套解决方案，致力于用激光熔覆工艺解决制动盘颗粒排放问题，重塑刹车盘的价值与生命。该工艺主要通过在基体上熔覆高性能合金层，实现大幅度降低颗粒物排放的目标，有效减少制动盘磨损，该工艺生产的制动盘完全符合欧 7 标准。

Haitian Laser machinery has always been committed to providing complete solutions for brake disc dust emissions, dedicated to solving the problem of brake disc particle emissions through laser cladding technology, and reshaping the value and vitality of brake discs. This process mainly achieves the goal of significantly reducing particulate matter emissions by cladding a high-performance alloy layer on the substrate, effectively reducing brake disc wear. The brake discs produced by this process fully comply with Euro 7 standards.

03 激光熔覆工作站介绍
Introduction to Laser Cladding Workstations

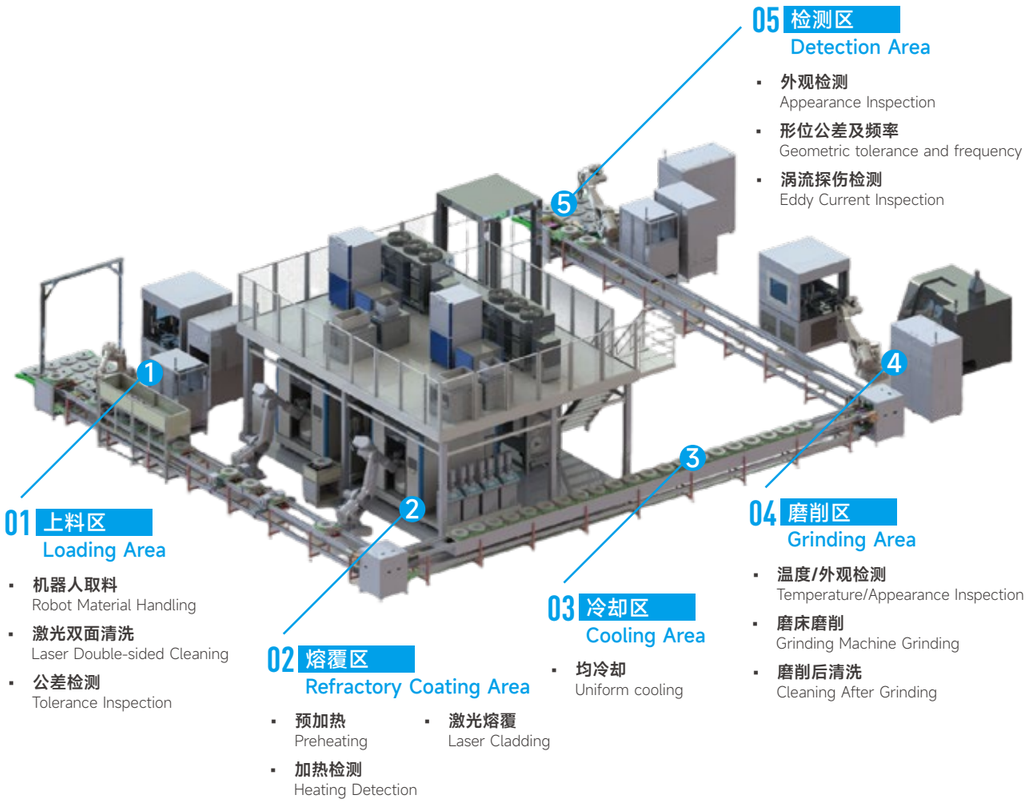


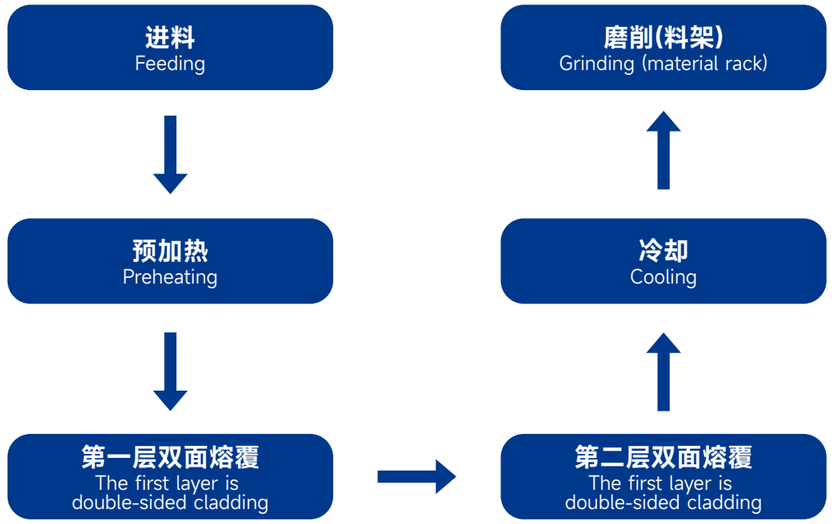
配置24KW激光器，采用多束送粉喷嘴（6-8束独立通道），配备智能控制系统，变形量≤22μm，最大产能可达16万片，良品率可达98%以上。

Equipped with a 24KW laser, it adopts multi-beam powder feeding nozzles (6-8 beams in independent channels), and is equipped with an intelligent control system. The deformation is ≤22μm, and the maximum production capacity can reach 160,000 pieces, with a yield rate of over 98%.

设备配置参数 / Device Configuration Parameters	
产品加工尺寸范围 Product Processing Size Range	直径 / Diameter：φ240-φ450mm
转轴旋转转速 Rotational Speed Of The Rotating Shaft	额定转速 / Rated Rotational Speed：500r/min 最大转速 / Maximum Rotational Speed：1000r/min
转轴角加速度 Axial Angular Acceleration	6.28-7.15rad/s²
转轴最大容许负载惯量 The maximum allowable load inertia of the rotating shaft	0.54Kg/m²
转轴平面跳动精度 The planar runout accuracy of the rotating shaft	≤0.025mm
转轴轴跳动精度 The runout accuracy of the rotating shaft	≤0.005mm
转台重复定位精度 The repeat positioning accuracy of the turntable	±9sec
防护等级 Protection grade	IP40
加工节拍 Processing cycle time	16 万片 (160k pieces) / 年 (Year)

04 激光熔覆自动化单线生产介绍
Introduction to Laser Cladding Automated Single-line Production

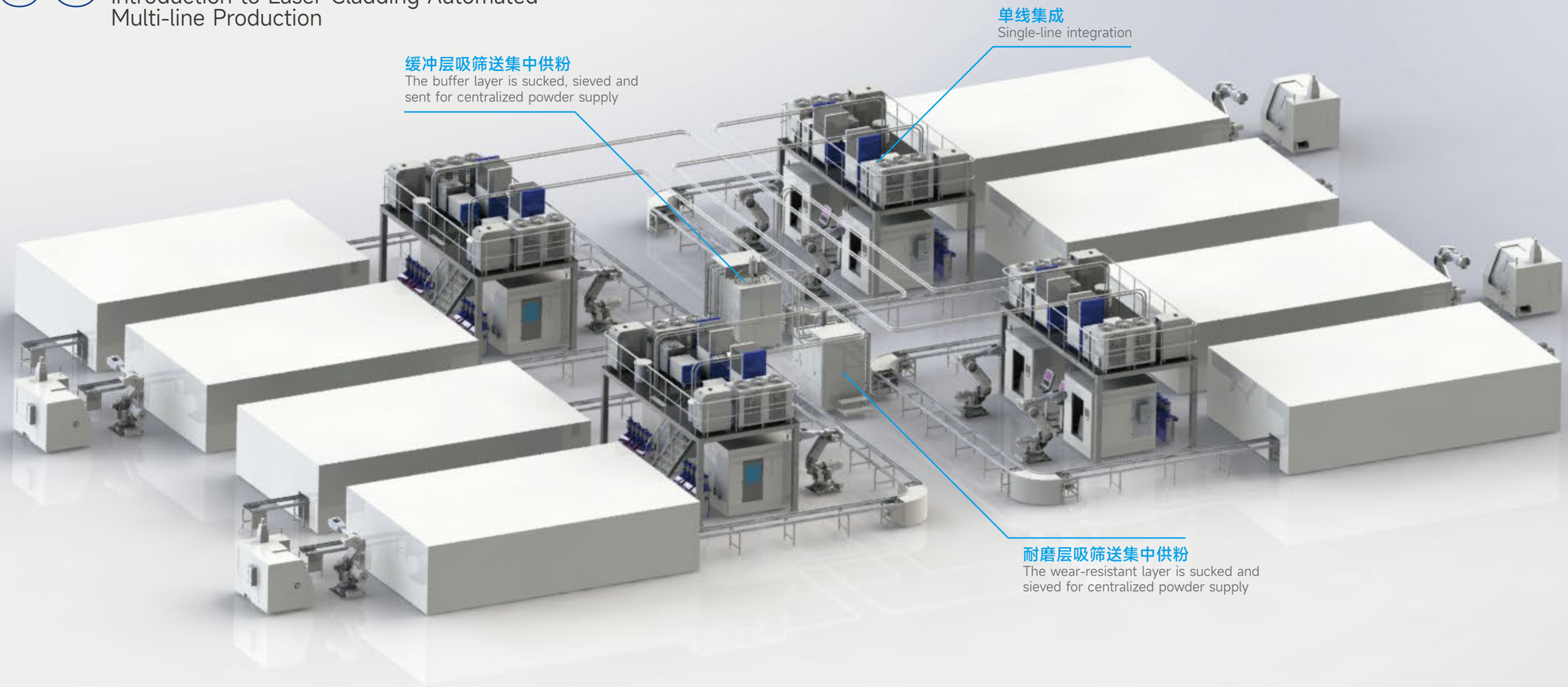




整体集高功率激光器、多束送粉与智能控制于一体成功实现行业突破，以卓越效率与精度，为实现产品的高性能与高经济性提供了可靠保障。

The overall integration of high-power lasers, multi-beam powder feeding and intelligent control has successfully achieved an industry breakthrough. With outstanding efficiency and precision, it provides a reliable guarantee for achieving high performance and high economy of the product.

05 激光熔覆自动化多线生产介绍
Introduction to Laser Cladding Automated Multi-line Production



06 金属粉末介绍
Introduction to Metal Powder



海天光机针对汽车刹车盘激光熔覆应用场景，专门开发适应应用环境需求的专用金属粉末。采用创新的低排放制动解决方案，提供了卓越的耐磨性，更长的制动盘寿命以及更清洁的驾驶体验。

Haitian Laser Machinery has specifically developed dedicated metal powders for the laser cladding application scenarios of automotive brake discs, in line with the demands of the application environment. By adopting an innovative low-emission braking solution, it offers outstanding wear resistance, a longer lifespan of brake discs, and a cleaner driving experience.

我们采用高速激光熔覆技术制备的双层涂层，展现出优异的冶金质量，其组织致密且无裂纹。该涂层体系显著提升了耐腐蚀与耐磨性能，并能有效抑制制动微尘的产生，降幅达30-50%，从而确保符合欧七法规要求。

The double-layer coating we prepared by high-speed laser cladding technology demonstrates excellent metallurgical quality, with a dense structure and no cracks. This coating system significantly enhances corrosion resistance and wear resistance, and can effectively suppress the generation of braking dust by 30-50%, thus ensuring compliance with Euro VII regulations.

此外，该技术路线兼具高沉积效率与低成本涂层材料的优势，为实现产品的高性能与高经济性提供了可靠保障。

In addition, this technical route combines the advantages of high deposition efficiency and low-cost coating materials, providing a reliable guarantee for achieving high performance and high economy of the product.

较低的摩擦系数
Low Coefficient Of Friction

良好的抗磨性
Good Wear Resistance

高耐腐蚀性
High Corrosion Resistance

高强度
High Strength

高韧性
High Toughness

良好的塑性
Good Plasticity

07 研发体系
R & D system

依托海天集团强大的技术平台优势，持续推动科技创新与产业发展的深度融合。通过**机械、电气、软件、液压、工艺、材料六大专业技术联盟**的协同创新机制，构建起覆盖全产业链的研发体系。

Relying on Haitian Group's strong technology platform advantages, we will continue to promote the deep integration of technological innovation and industrial development. Through the collaborative innovation mechanism of six professional technology alliances in machinery, electrical, software, hydraulic, process and materials, we have built a R&D system covering the entire industrial chain.

集团汇聚了高效协作的 1600 人技术团队，并重点打造的材料研究所及国家级 CNAS 认证实验室，为技术创新提供实验验证和技术标准保障，有效促进科研成果的快速转化与应用落地，形成了 " 基础研究 - 技术攻关 - 产业应用 " 的完整创新链条。

The group has brought together an efficient and collaborative technical team of 1,600 people, and has focused on building a materials research institute and a national CNAS certification laboratory, providing experimental verification and technical standard guarantee for technological innovation, effectively promoting the rapid transformation and application of scientific research results, and forming a complete innovation chain of "basic research - technological breakthrough - industrial application".

1600+
高效协作集团技术团队
Efficient Collaboration Group Technical Team

20%
科研投入占公司总投入
Research investment accounts for the company's total investment

50%
研发人员占总人数
R&D personnel account for the total number of people



核心部件自主开发能力
Core components independent development capabilities

软件应用自主开发能力
Software application independent development capability

工艺自主开发及优化能力
Process independent development and optimization capabilities

材料体系设计及制备能力
Material system design and preparation capabilities

精密机床设计及开发能力
Precision machine tool design and development capabilities

基于三“优”一体化解决方案，我们以优质设备集群为基础，整合高精度配套原材料与全流程精益生产工艺，形成**“技术研发-工艺验证-量产保障”的深度协同模式**，为行业提供从核心技术创新到终端产品落地的全栈式研发支持，持续推动智能制造领域的迭代升级与价值转化。

Based on the three 'High-quality' integrated solution, we integrate high-precision supporting raw materials and whole-process lean production processes based on high-quality equipment clusters.
We form a deep collaborative model of 'technology research and development - process verification - mass production guarantee'.
We provide the industry with full-stack R&D support from core technology innovation to end-product implementation.
We continue to promote iterative upgrades and value transformation in the field of intelligent manufacturing.


优质设备
High-quality equipment


优质配套原材料
High-quality supporting raw materials


优质生产工艺
High-quality production process



08 公司介绍
Company Introduction

海天集团创建于 1966 年，经过半个多世纪的创业开拓，现已发展成为全球领先的制造型跨国集团。集团下辖六大产业，业务遍及全球。

Founded in 1966, Haitian Group has grown into a leading global manufacturing multinational corporation through over half a century of entrepreneurial development.The group has six major industries under its jurisdiction, with operations spanning multiple sectors.

50+
制造业经验
Years Experience

130+
客户遍及国家
Countries

30,000+
全球客户数量
Global Customers

海天光机秉承海天集团“装备中国、装备世界”的理念，依托集团五十余年的制造业经验，强大的技术研发能力和生产加工制造能力，从注塑机、数控机床、驱动控制系统、到压铸机及智能制造等机械领域的技术积淀，对智能制造装备领域进行全面战略布局，打造海天机械更完整产业生态链。

Haitian Laser Machinery adheres to the concept of 'EQUIPMENT FOR CHINA, EQUIPMENT FOR THE WORLD' from Haitian Group.
It leverages the group's over 50 years of manufacturing experience, strong technical research and development capabilities, and production and processing manufacturing capabilities.
It accumulates technology across fields such as injection molding machines, numerical control machine tools, drive control systems, die casting machines, and intelligent manufacturing.
It strategically lays out a comprehensive intelligent manufacturing equipment field to build a more complete industrial ecosystem.

09 海天全球布局
HAITIAN WORLDWIDE





10 我们的优势
Our Advantages

Why choose us?

为什么选择我们

50多年海天装备制造经验和技术积累

More than 50 years of Haitian equipment manufacturing experience and technical accumulation

拥有CNAS实险室及材料研究所，确保金属粉末质量稳定

Equipped with a CNAS-certified laboratory and a materials research institute to ensure the consistent quality of metal powders.

10多年工艺数据积累，拥有上万条工艺数据库支持

Over a decade of process data accumulation, supported by tens of thousands of process databases.

全球范围快速响应服务

Global Rapid-Response Service

HAITIAN
LASER MACHINERY