

# 威海石岛重工有限公司

2013年三月  
董进平

Shidao Heavy Industry

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泰山集团·石岛重工  
TAISHAN GROUP SHIDAO HEAVY INDUSTRY

威海石岛重工有限公司

WEIHAI SHIDAO HEAVY INDUSTRY CO.,LTD

## 公司简介 COMPANY INTRODUCTION



造大国之重器，彰显硬核担当。威海石岛重工有限公司坐落于拥有中国北方重要的水路交通枢纽和客货集散地、国家一类开放口岸港口的威海石岛，是国家高新技术企业、国家级专精特新“小巨人”企业、中国化工装备百强企业，综合竞争实力位列国内同行业前列。

公司主打产品为大型压力容器，涵盖煤化工、石油化工、精细化工、核电、冶金、医药、海上石油装备以及新能源装备等细分领域，可提供核电及高端化工装备产品从设计、制造、安装、调试、运行、验收到保运以及EPC总承包等全生态、全产业链综合服务，在行业内率先通过了ISO9001、ISO14001、ISO18001管理体系认证、美国ASME、U、U2认证，并配有冷卷280mm、热卷400mm厚三辊卷板机，7.4m×7.6m×36m热处理炉，9MeV直线加速探伤室等一流生产设备。

前进永不停歇，创新永无止境。近年来，公司持续加大研发投入，强化产学研合作和技术迭代升级，灵活焦化装置、高压套管反应器等多种产品填补国内市场空白，并先后与中石化、中石油、中海油、中核、神华等央企，上海核工院、赛鼎、五环、华陆、天辰、寰球等头部设计院，与达涅利、西布尔、俄汽、卢克石油、巴西石油等知名海外客户建立了长期的业务合作关系。

当前，站在能源转型与产业升级的时代浪潮中，石岛重工始终践行“信誉重于泰山，诚信铸就品牌”的理念，以科技创新为航，以卓越品质为帆，致力于为客户提供全方位的解决方案和服务，成为全球信赖的核电与高端化工装备领域综合服务商，不断激起行业高质量发展的澎湃动能。

### 核电装备领域：安全高效 突破关键技术

随着技术的进步和市场需求的变化，核电装备领域正朝着技术复合型、安全高效型、绿色低碳型方向发展。石岛重工凭借先进的设计理念、精湛的工艺水平、严格的质量控制体系，全面掌握了核电常规岛关键性设备以及辅助压力容器等系列设备的研发制造技术。

2023年10月，公司交付了核电的组合式容器——汽水分离再热器（MSR），成为了国内极少数掌握该设备制造技术的企业。2024年公司成功入选国家电力投资集团主导的“国和一号”核电产业链联盟会员单位榜单，未来将为我国核电事业的发展贡献更加强大的“石重”力量。

### 高端化工装备领域：精益求精 打造行业标杆

在高端化工装备领域，从高压加氢裂化反应器到精密分离系统，从耐腐蚀材料应用到智能化控制系统集成，石岛重工不断挑战装备的性能极限，通过定制化设计与优化服务，助力客户实现生产流程的高效、环保与智能化升级。

其中，公司独立设计制造的加氢裂化反应器，单重780t，厚度220mm，直径4.2m，最高工作压力可达16MPa，最高工作温度达到454℃，综合性能稳居国内领先水平。

### 海外服务：量身定制 共创美好未来

高质量参与“一带一路”，开启国际合作新篇章。近年来，公司积极抓住共建“一带一路”战略机遇，大力拓展国际市场，为海外客户量身定制最优方案，创造最大价值。2022年，通过分析设计，采用ASME U2标准，公司仅用不到一年时间，就向非洲客户成功交付了17台单台重达680吨的LPG设备，成为高效服务国外客户的经典案例。

目前，公司在俄语系国家、巴西、非洲、东南亚、南美等海外市场份额稳步扩大。其中，出口到美国、俄罗斯、文莱、巴基斯坦等十多个国家和地区的加氢反应器、换热器系列产品，受到了客户的一致好评。

装备中国、走向世界、超越现在、领先未来。选择威海石岛重工，就是选择了一个可靠、专业、值得信赖的合作伙伴。石岛重工将依托雄厚人才支撑和强大技术积淀，秉承“国内领先、国际知名”的企业愿景，持续加大研发投入，深化产学研合作，与海内外各界朋友精诚合作，携手并进，共襄绿色、智能、可持续的发展盛举，共创新能源与高端化工装备行业更加美好的未来。



# COMPANY INTRODUCTION 公司简介

Accommodating all things, equipping the world.

Weihai Shidao Heavy Industry - a leading service provider of nuclear power and high-end chemical equipment Making the pillars of the great power and highlighting the core competence. Weihai Shidao Heavy Industry Co., Ltd. is located in Weihai Shidao, which is an important waterway transportation hub and a port for cargo and passenger distribution in the north of China, as well as a national high-tech enterprise, a national "small giant" enterprise with distinctive features, and a top 100 enterprise in China's chemical equipment industry. Its overall competitive strength is at the forefront of the domestic industry.

The company's main products are large pressure vessels, covering fields such as coal chemical industry, petrochemical industry, fine chemicals, nuclear power, metallurgy, medicine, offshore oil equipment, and new energy equipment. It can provide full-ecological and full-industry chain comprehensive services for nuclear power and high-end chemical equipment products from design, manufacturing, installation, debugging, operation, inspection, operation maintenance to EPC general contracting. It is the first in the industry to pass ISO9001, ISO14001, ISO18001 management system certification, US ASME U and U2 certification. It is equipped with first-class production equipment such as a 280mm cold rolling machine with three rollers, a 400mm hot rolling machine with three rollers, a 7.4m×7.6m×36m heat treatment furnace, and a 9MeV linear accelerator NDT room.

Progress never stops, innovation knows no end. In recent years, the company has continuously increased research and development investment, strengthened industry-university-research cooperation and technological iteration and upgrading. A variety of products such as flexible coking units and high-pressure jacketed reactors have filled gaps in the domestic market. It has established long-term business relationships with central enterprises such as Sinopec, CNPC, CNOOC, CNNC, and Shenhua, as well as leading design institutes such as Shanghai Nuclear Engineering Institute, Sadong, Wuhuan, Hualu, Tianchen, Huanqiu, and well-known overseas clients such as Danielli, Siberzhevsky, Gazprom Neft, and Brazilian National Petroleum.

Currently standing at the forefront of energy transformation and industrial upgrading, Shidao Heavy Industry always adheres to the concept of "credit is paramount, integrity builds brand", takes technological innovation as its navigation and excellent quality as its sail, is committed to providing customers with comprehensive solutions and services, strives to become a globally trusted integrated service provider in the field of nuclear power and high-end chemical equipment, and continuously stimulates strong momentum for high-quality development in the industry.

## Nuclear power equipment field: Safe and efficient, breaking through key technologies

With the progress of technology and changes in market demand, the nuclear power equipment field is developing towards technical complexity, safety and efficiency, and green low-carbon direction. With advanced design concepts, superb craftsmanship, and strict quality control systems, Shidao Heavy Industry has fully mastered the research and development technologies of nuclear power conventional island critical equipment and auxiliary pressure vessel series equipment.

In October 2023, the company delivered a combined container for nuclear power - steam-water separator reheater (MSR), becoming one of the few domestic enterprises that master the manufacturing technology of this equipment. In 2024, the company successfully entered the list of "Guohe No.1" nuclear power industry chain alliance member units led by State Power Investment Group Corporation Limited. It will contribute stronger "Shizhong" strength to the development of China's nuclear power industry in the future.

## High-end chemical equipment field: Striving for excellence and setting industry benchmarks

In the field of high-end chemical equipment, from high-pressure hydrogenation reactors to precision separation systems, from applications of corrosion-resistant materials to integrated smart control systems, Shidao Heavy Industry continuously challenges the performance limits of equipment. Through customized design and optimization services, it helps customers achieve efficient production processes that are environmentally friendly and intelligently upgraded.

The independently designed hydrogenation reactor manufactured by the company has a weight of 780 tons, a thickness of 220mm, a diameter of 4.2m, a maximum working pressure of 16MPa, and a maximum working temperature of 454°C, with comprehensive performance at the leading level in China.

## Overseas service: Tailored for you to create a better future

High-quality participation in the Belt and Road Initiative has opened a new chapter in international cooperation. In recent years, the company has actively seized the strategic opportunities brought by the Belt and Road Initiative to expand its international market share. It provides overseas customers with tailored optimal solutions to create maximum value.



泰山集团是一家主要生产工业锅炉、电站锅炉、压力容器、电力设备、电缆电器、船舶尾气制冷等产品的国家大型企业集团。集团占地面积102万平方米，总资产41亿，员工4500人。

Taishan Group is a large state enterprise groups which is a major designer and manufacturer of industrial boilers, utility boilers, pressure vessels, electrical equipment, cable circuit technology, ship exhaust cooling and other products. Group covers an area of 1,020,000 square metes, total assets of 4.1 billion, and 4,500 employees.

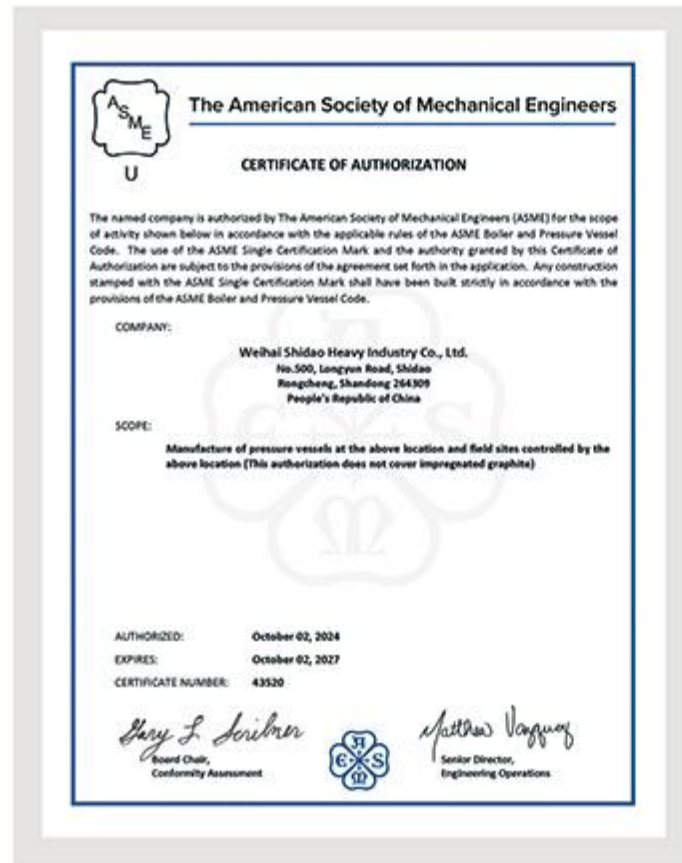
## 泰山集团旗下分公司



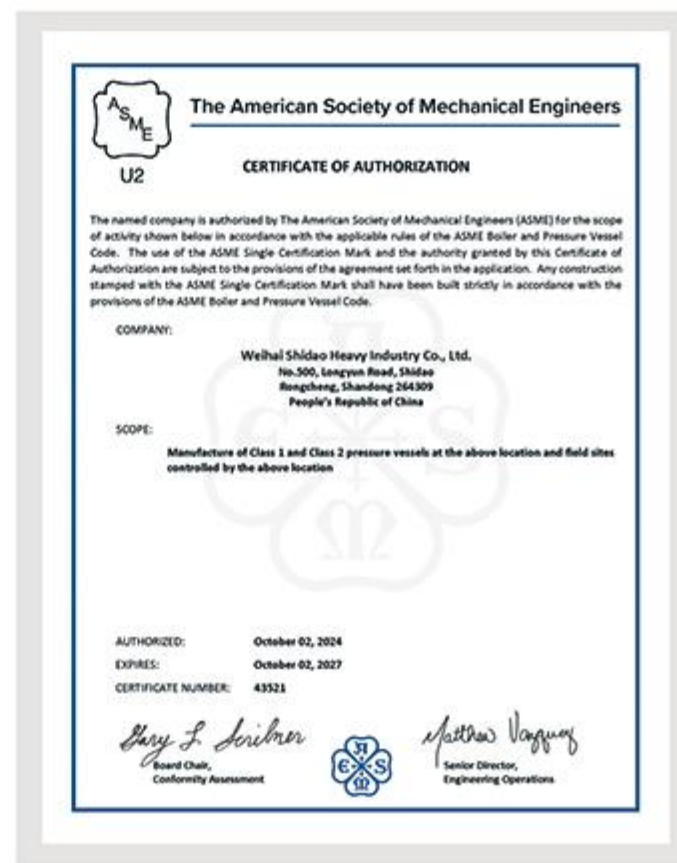


## 公司资质 Company Qualification

## 公司资质 Company Qualification



ASME U 钢印证书  
Seal Certificate of ASME U



ASME U2 钢印证书  
Seal Certificate of ASME U2



ISO9001 质量认证证书  
The Quality Certificate of ISO9001



环境管理体系认证  
The Certificate of Environment Management System



安全生产证书  
The Certificate of Safety Production



职业健康安全管理体系认证  
The Certificate of Occupational Health and Safety Management System



A 级锅炉部件许可证  
The License of Special Equipment

## 公司资质 Company Qualification



进出口企业资格证书  
The License of Import and Export



公司概况/Company profile	中石油产品目录/Products Catalogue	资质证明/Qualification certificate
<b>基本信息/Basic information</b> 供应商名称: 威海石岛重工有限公司 Supplier name: Shi Dao Heavy Industries Ltd of Weihai 生产类型: 制造业 Supplier Category: Manufacturer 企业性质: 国有企业 Address of Supplier: 威海市威海经济技术开发区 Enterprise Nature: State-owned Enterprise 注册号: 371002000071000 Tax ID: 371002000071000 组织机构代码: 66967102-6 Organization Code: 66967102-6 注册地址: 威海市威海经济技术开发区100号 Place of registration: Binzhong Shidao Zhongyuan Road No. 100 注册地址: 威海市威海经济技术开发区100号 Address: Binzhong Shidao Zhongyuan Road No. 100 注册国家/地区: 中国/China, 山东省/Shandong Province, 威海/Weihai Registered nationality or region: China/China, Shandong/Shandong Province, Weihai/Weihai 所在城市: 中国/China, 山东省/Shandong Province, 威海/Weihai City: China/China, Shandong/Shandong Province, Weihai/Weihai 中石油物资供应站 Oil company of foreign trade 地址: 威海市威海经济技术开发区100号 Address: Binzhong Shidao Zhongyuan Road No. 100	中石油产品目录 Products Catalogue 中石油产品目录 Products Catalogue	资质证书 Supplier certificate 资质证书 Supplier certificate

中石化物资供应商编码  
Material Supplier Code



中石油物资供应商准入证  
Certificate of Material Supplier

## 公司荣誉 Company Honours



# 公司荣誉 Company Honours



# 专利证书 The Patent Certificate



## 装备能力 Equipment Capability

— 车间设备 Workshop equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备加工能力 Processing Capacity of Equipment	
1	吊钩桥式起重机	Gn=320/80t S=34m Ho=26.0m	单台最大起重重量 320t	双台联合起重重量 640t
2	喷砂房	26m×9m×9m	最大工件26m×9m×9m	
3	移动式喷漆房	11m×9.4m×9m	最大工件55m×9.4m×9m	
4	电动平板车	KP-350	载重350t	



喷砂房 Sandblasting Room



喷砂房 Sandblasting Room

吊钩桥式起重机  
Overhead Crane Hook

350t 电动平板车 Electric Flat Car(350t)



移动式喷漆房 Mobile Type Spray Painting Room

## 装备能力 Equipment Capability

— 车间设备 Workshop equipment



卷板机 Super Large Coiling Machine

微控三辊卷板机  
Three-roll Plate-bending Machine2000t油压机  
Large Hydraulic Machine

序号 NO.	设备名称 Device name	型号规格 Model	设备加工能力 Processing Capacity of Equipment		
1	卷板机	WS11K-280/400×4000	额定压下能力（上辊下压力）7500吨		
			最大卷板宽度 4000mm		
			标称卷板厚度	冷卷280mm	热卷400mm
2	卷板机	WS11K-90/130×3200	冷/热弯卷板材最大厚度		冷卷90mm 热卷130mm
			弯卷板材最大宽度 3200mm		
3	框架式压力机	2000t	最大下压力 2000吨		

## 装备能力 Equipment Capability

### —— 车间设备 Workshop equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备加工能力 Processing Capacity of Equipment
4	数控火焰 等离子切割机	PG500	工作长度 24000 (mm) 工作宽度 4200mm
			等离子最高工作速度 6000 mm/min
			火焰切割厚度 6--300mm
			等离子切割厚度 0.5--80mm 定位精度±0.2mm
5	对接用滚轮架	KT-160Z	最大承载重量 160t 防窜精度±1.5mm
	防窜滚轮架	KTF-600	最大承载重量 600t 防窜精度±1.5mm
6	层板包扎机	BZ-1	最大工件φ4000mm 层板厚度16mm 层板宽度2000mm



④  
数控火焰等离子切割机  
CNC Cutting Machine



⑤  
对接用滚轮架  
Docking Roller Frame



⑤  
防窜滚轮架600t  
Anti Channeling Roller 600t system



⑥  
层板包扎机  
Multilayered Machine

## 装备能力 Equipment Capability

### —— 金属加工设备 Metal processing equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备加工能力 Processing Capacity of Equipment
1	磨锉机	2M58ZSM8×7	工件直径范围 φ1000mm—φ6000mm 坡口、焊根清理最大深度200mm 筒节纵缝最大长度 6000mm
2	数控双柱 立式车床	DVT800×40/125Q-NC	最大加工工件直径 8000mm 最大加工工件高度 4000mm
			最大加工工件重量 125t 工作台直径 7100mm 定位精度±0.015mm
3	数控双柱 立式车床	CK5240×31/32	最大加工工件直径 4000mm 最大加工工件高度 3150mm
			最大加工工件重量 32t 工作台直径 3600mm 定位精度±0.015mm
4	龙门移动式 数控平面钻床	PHD5050C/2	工件钻孔中心距最大尺寸 5000X5000mm
			定位精度X、Y轴 ≤0.05mm/全长



①  
磨锉机  
Grinding Machine



②  
数控双柱立式车床  
CNC Double-column Vertical Lathe



③  
数控双柱立式车床  
CNC Double-column Vertical Lathe



④  
龙门移动式数控平面钻床  
Longmen Moving CNC Plane Drilling Machine

## 装备能力 Equipment Capability

— 金属加工设备 Metal processing equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备加工能力 Processing Capacity of Equipment	
5	刨边机	B81120A	最大刨削厚度 120mm	最大加工长度 12000mm
6	摇臂钻床	Z3080×25	最大孔加工直径100mm	
7	超高压水切割机	DWJ2040-FB/C50V	最大切割厚度 80mm	切割精度 ±0.1mm



刨边机  
Edge Planer



摇臂钻床  
Radial Drilling Machine



超高压水切割机  
Ultra-High Pressure Water jet Cutting Machine

## 装备能力 Equipment Capability

— 金属加工设备 Metal processing equipment

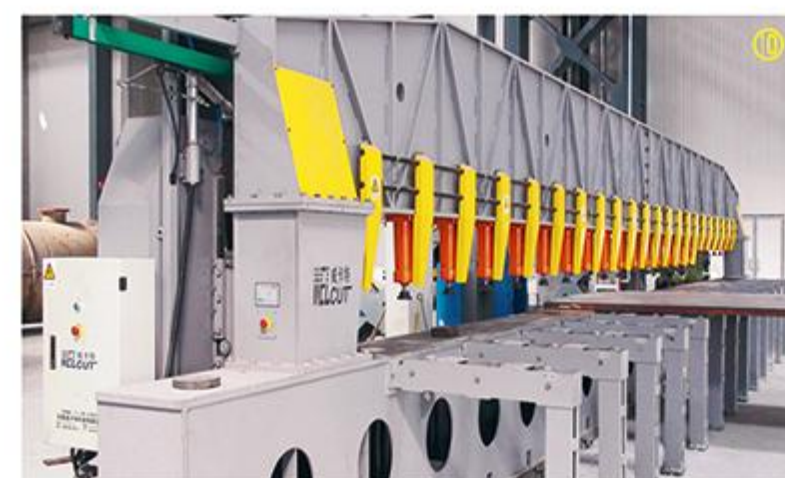
序号 NO.	设备名称 Device name	型号规格 Model	设备加工能力 Processing Capacity of Equipment	
8	卧式双主轴 数控深孔钻床	DD40B/2	钻头为BTA钻和枪钻	工件最大重量 75t
			X轴定位精度0.1mm/全长	Y轴定位精度0.08mm/全长
9	落地镗铣床	TK6920/H55	数控轴数7轴(最多12轴)	联动轴4轴 定位精度≤0.035mm
10	15m双铣头 铣边机	XBS15-00	加工材料: 碳钢板、不锈钢板、复合板、有色金属板材	有效加工行程 15000 mm
			最大铣削板厚 200mm	



卧式双主轴数控深孔钻床  
Horizontal & Biaxial CNC Deep-hole Drilling Machine



落地镗铣床  
CNC Milling & Boring Machine



15米双铣头铣边机  
15m Milling Machine With Two Milling Heads

# 装备能力 Equipment Capability

—— 焊接设备 Welding Equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备参数 Device parameters	
1	单丝窄间隙埋弧焊机	CZ22-7×7	伊萨LAF-1251电源 横臂伸缩行程 7000mm	横臂升降行程 8000mm 单丝窄间隙埋弧焊机头HDS-350W
2	管板封头带极堆焊机	CZ22-9×6	伊萨LAF-1601电源 横臂升降行程 9000m	带极堆焊头苏择凯125-ES1-300 横臂伸缩行程 6000m
3	焊接变位机	HB-1000	最大承载重量 100t	
4	管板自动焊机	EWA408	可焊管子直径 16—108mm	
5	法兰端面堆焊机	KM2025	变位机回转角度 ±360° 堆焊层厚度 2.5~3.5mm (单层)	
6	小直径内壁堆焊机	HZU-350S	内径 φ38mm - φ500mm (堆焊后管内径)	

# 装备能力 Equipment Capability

管板自动焊机  
Automatic Welding Machine for Tube Plate



法兰端面堆焊机  
Overlay Welding Machine for Flange End



单丝窄间隙埋弧焊机机头  
head of monofilament submerged arc welding machine for narrow gap

单丝窄间隙埋弧焊机 Monofilament Submerged Arc Welding Machine for Narrow Gap



100t焊接变位机  
100T Welding Positioner



管板封头带极堆焊机  
Belt Electrode Overlay Welding Machine



小直径内壁堆焊机  
Overlay Welding Machine for Small Diameter Inner Wall

## 装备能力 Equipment Capability

— 热处理设备 Heat Treatment Equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备加工能力 Processing Capacity of Equipment
1	36m燃气 热处理炉	36m × 7.4m × 7.6m	炉膛尺寸 (26m+10m) × 7.4m × 7.6m 最高工作温度 950℃, 台车最大承重 650t
2	21m燃气 热处理炉	21m × 6.8m × 7m	炉膛尺寸 (13m+8m) × 6.8m × 7m 最高工作温度 1200℃, 台车最大承重 200t
3	16米燃气 热处理炉	16m × 4.7m × 5.1m	炉膛尺寸 16m × 4.7m × 5.1m 最高工作温度 1200℃, 台车最大承重 120t



36m×7.4m×7.6m热处理炉  
Heat Treatment Furnace(36m×7.4m×7.6m )



16m×4.7m×5.1m热处理炉  
Heat Treatment Furnace(16m×4.7m×5.1m)



21m×6.8m×7m热处理炉  
Heat Treatment Furnace(21m×6.8m×7m )

## 装备能力 Equipment Capability

理化实验设备  
Physical Chemistry Lab Equipment

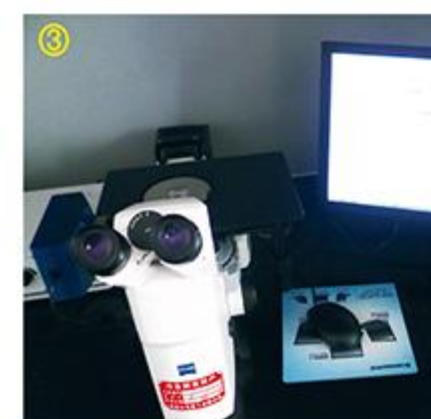
序号 NO.	设备名称 Device name	型号规格 Model	设备检测能力 Detection Capability of Equipment
1	数显摆锤式冲击试验机	JB-S300A	最大冲击量 300J
2	微机控制电源 伺服万能试验机 (含GW-1200高温炉一台)	WAW-600C	最大实验力: 600kN配高温炉 工作温度: 300~1100℃
3	德国蔡司倒置显微镜	Axio Vert.A1	最大放大倍数 1000倍
4	连续变倍体视显微镜	MR5000	最大放大倍数 1000倍
5	扩散氢测定仪	XU610KO-IIIS	控温精度 ±0.2℃



数显摆锤式冲击试验机  
Digital Pendulum Impact Testing Machine



微机伺服万能试验机  
Micro Servo Control Universal Testing Machine



德国蔡司倒置显微镜  
German Zeiss Inverted Microscope



连续变倍体视显微镜  
Zoom-stereo microscope



扩散氢测定仪  
Diffusible Hydrogen Tester

## 装备能力 Equipment Capability

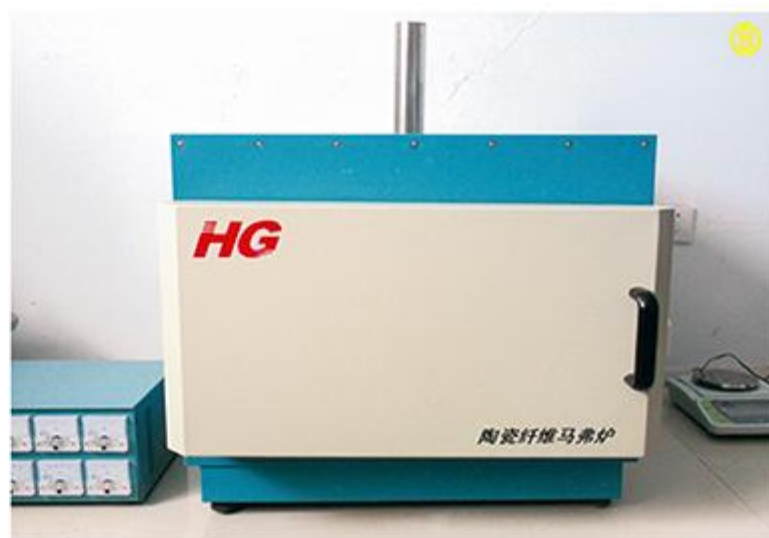
理化实验设备

Physical Chemistry Lab Equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备检测能力 Detection Capability of Equipment
6	分光光度计	723N	波长范围325nm--1000nm 浓度直读范围 0.000--9999 (C)
7	10吨万能电子试验机	GNT100	试验机级别0.5级 最大试验力100KN
8	陶瓷纤维马弗炉	MF-2014P	最高温度 1400℃
9	冲击试验低温仪	DWY-80A-111	最低温度 -80℃ (用液氮可做到-196℃)



分光光度计  
Spectrophotometer



陶瓷纤维马弗炉  
Ceramic Muffle Furnace



10吨万能电子试验机  
Universal Testing Machine (10T)



冲击试验低温仪  
Impact Testing Machine (at low temperature)

## 装备能力 Equipment Capability

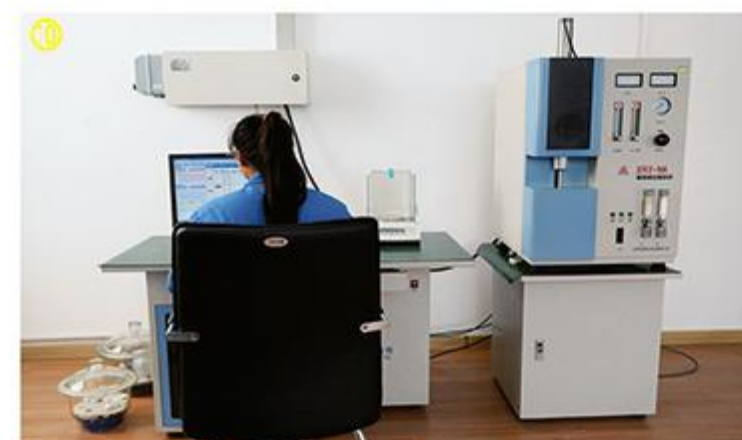
理化实验设备

Physical Chemistry Lab Equipment

序号 NO.	设备名称 Device name	型号规格 Model	设备检测能力 Detection Capability of Equipment
10	高频红外碳硫分析仪	HIR-944B	"测量范围" 碳: 0.0001%--6.0000% 硫: 0.0001%--0.3500% 灵敏度: 0.1ppm"
11	手持式合金分析仪	NITONXL2-980	分析范围Sb, Sn, Pd, Ag, Mo, Nb, Zr, Se, Bi, Pb, Ta, Hf, Re, W, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Cd, Ru, Mg, Al, Si, P, S, 共30种元素。非标准元素可依据客户需求协商添加。
12	直读式光谱仪		可分析铁基 (31种元素, 包含N元素)、镍基 (21种元素)、钛基 (14种元素), 其中可分析铁基小试样样品16种元素, 直径最小可达0.8mm。

Leak Detect Equipment 密封检测设备

序号 NO.	设备名称 Device name	型号规格 Model	设备检测能力 Detection Capability of Equipment
13	氦质谱检漏仪	SFJ-261	最小可检漏率: $5 \times 10^{-12}$ Pa · m <sup>3</sup> /S 极限真空: $5 \times 10^{-4}$ Pa 漏率显示范围: $1 \times 10^{-3}$ ~ $1 \times 10^{-12}$ Pa · m <sup>3</sup> /S 响应时间: <1S 检漏口最高压力: 1500Pa



高频红外碳硫分析仪  
High-frequency IR Carbon-sulfur Analyzer



手持式合金分析仪  
Therom Scientific Niton Handheld XRF All oy Analyzers



直读式光谱仪 Direct Reading Spectrometer



氦质谱检漏仪 Helium Leak Detectors

## 装备能力 Equipment Capability

——无损检测设备 NDE Equipments

探伤设备			
序号 NO.	设备名称 Device name	型号规格 Model	设备检测能力 Detection Capability of Equipment
14	Co60探伤仪	100Ci	最大探伤重量 160t
			最大探伤工件直径 5.2m
			最大检测厚度 200mm
15	9MeV电子直线加速器	DZ-9/3000	最大允许探伤能力 380mm
			最大探伤重量 700t
			最大探伤工件直径 7m



钴60探伤仪  
Co60 Flaw



9MeV探伤仪  
9MeV Flaw



9MeV电子直线加速器 9MeV Electronic Linear Accelerator



## 产品制造过程 Product Manufacturing Process

——严格的产品制造过程 Product Manufacturing Process



## 装备能力 Equipment Capability

### 特材洁净车间

Special materials clean workshop

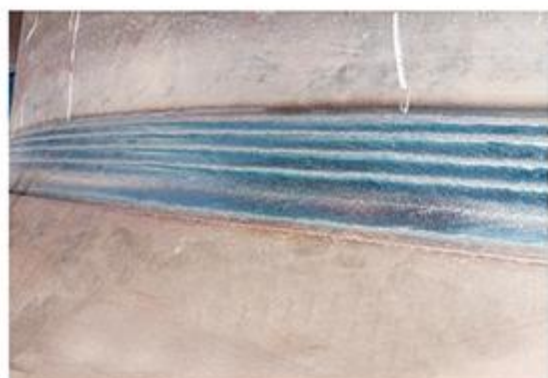


两联轻容车间为面积1.2万平米

12, 000-square meter light vessel fabrication workshop

### 焊接质量保障

Welding quality assurance



不锈钢筒体单丝窄间隙埋弧焊  
Single Wire Narrow Gap Submerged Arc  
Welding for Stainless Steel Cylinders



钛材筒体等离子机器人焊接  
Titanium Cylinder Plasma Robot Welding



钛材等离子角缝焊接  
Titanium Plasma Corner Welding



管端机器人自动焊接  
Pipe End Robot Automatic Welding



管板带极自动堆焊  
Automatic strip welding of tube sheet



碳钢筒体手工氩弧焊焊接  
Manual argon arc welding of carbon steel cylinder

## 数字化制造 Digital Manufacturing

这是新引进的激光切割设备。采用先进的激光技术，能够实现毫米级别的精确切割。部分坡口带下料一次成型，特别是，带孔的部件，厚度在 $\Delta 14\text{MM}$ 以下，有孔的部件（如预焊件，加强圈之类）复杂图形排版全部一次成型，排版下料效率相对之前提高了3倍，减少了转序，节约了成本，加快了速度，合格率达到100%，下料质量获国内外用户一致好评，综合效益提升45%。

This is the newly introduced laser cutting equipment. Using advanced laser technology, accurate cutting at millimeter level can be achieved. Part of the groove under the material one-time molding, especially, with holes, the thickness of the parts below  $\Delta 14\text{MM}$ , with holes (such as pre-welding parts, strengthening rings, etc.) complex graphics typesetting all one-time molding, typesetting blanking efficiency is 3 times higher than before, reducing the sequence, saving costs, speeding up, the qualified rate reaches 100%, blanking quality has been praised by domestic and foreign users, comprehensive benefits increased by 45%.

全自动等离子焊接设备，比手工焊发生了质的变化和飞跃。人工成本是原来的1/6，速度是人工的3倍，焊接基本不用焊材节省80%多。焊接质量获国内外用户一直好评，被誉为“焊接行业的天花板”。

Automatic plasma welding equipment, than manual welding has taken place a qualitative change and leap. The labor cost is 1/6 of the original, the speed is 3 times that of labor, and the welding basically does not need welding materials to save more than 80%. Welding quality has been praised by users at home and abroad, known as the "ceiling of the welding industry."

管端焊接机器人，采用先进的机器人技术和焊接技术，焊接性能稳定，质量高，焊缝成型光滑美观，焊接开始后基本不用人工操作，机器人自主识别扫描焊接，实现自动化，人工成本是原来的1/2，焊材节省了30%，为管道焊接行业带来了革命性的变化，频频受到客户的赞许和表扬。

Pipe end welding robot adopts advanced robot technology and welding technology, stable welding performance, high quality, smooth and beautiful weld formation, basically no manual operation after welding, robot independent identification scanning welding, automation, labor cost is 1/2 of the original, welding materials saved by 30%, for the pipeline welding industry has brought revolutionary changes, frequently praised and praised by customers.

封头开孔机器人，实现了自动计算切割方位和坡口参数，全自动开孔，切割坡口光滑美观，节省后期机加铣边工序，大大提升了下料工作效率。原来一台封头开孔要至少三十分钟，现在只要两分钟就可以完成，整体速度提升3倍，真正实现了切割生产封头的智能化和自动化。

Head drilling robot realizes automatic calculation of cutting orientation and groove parameters, automatic drilling, smooth and beautiful cutting groove, saving the later machine milling process, greatly improving the cutting efficiency. It used to take at least 30 minutes for a head to open a hole, but now it can be completed in only two minutes. The overall speed is increased by 3 times, and the intellectualization and automation of cutting and producing heads are truly realized.

公司新研发的法兰端面加工设备，解决了压力容器生产及使用过程中法兰密封面修复难题，具有加工精度高、加工效率高、使用成本低的特点。该设备加工工艺流程简便快捷，1至2人可完成操作。目前该设备已用于生产中，未使用该设备前采取外协或人工方式成本约5000-15000元/件，使用该设备后成本约1000元每件，大大节约了维护成本。

The new flange end face processing equipment developed by the company solves the problem of flange sealing surface repair in the production and use of pressure vessels, and has the characteristics of high processing accuracy, high processing efficiency and low use cost. The equipment processing process is simple and fast, 1 to 2 people can complete the operation. At present, the equipment has been used in production. Before using the equipment, the cost of outsourcing or manual mode is about 5000-15000 yuan/piece, and after using the equipment, the cost is about 1000 yuan per piece, which greatly saves maintenance cost.

激光切割设备 Laser Cutting Equipment



全自动等离子焊接设备 Fully Automatic Plasma Welding Equipment



管端焊接机器人 Pipe End Welding Robot



封头开孔机器人 Head Opening Robot



法兰端面加工设备 Flange End Face Processing

