



# 高效离心压缩机

HIGH EFFICIENCY CENTRIFUGAL COMPRESSORS



## 金通灵科技集团股份有限公司

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# JINTONGLING

金通灵科技集团股份有限公司  
JINTONGLING TECHNOLOGY GROUP CO., LTD.

# FLUID MACHINERY

# 企业简介 JINTONGLING

金通灵科技集团股份有限公司 (股票代码 300091) 成立于 1993 年, 是国家科技部认定的国家火炬计划重点高新技术企业。公司多年来一直专注于流体机械领域, 以“服务 + 制造 + 服务”的业务模式向用户提供系统研发设计、流体机械产品制造、系统节能改造服务等端到端完整的、全生命周期的系统解决方案。

公司与美国 ETI 公司合作开发设计的离心压缩机产品, 流量范围  $80\text{m}^3/\text{min}\sim 2000\text{Nm}^3/\text{min}$ , 压力范围:  $2.2\sim 40\text{BarG}$ , 广泛应用于电力、冶金、石化、制药、纺织、汽车、电子、造船、矿山开采等行业的高压气体供气站。该设备运行状态、参数达到国际同类产品技术水平, 部分指标优于国际同类产品水平。确保为用户提供高效、安全可靠的气体压缩机产品, 并提供气体压缩站总承包服务, 如: EPC、BOT、BOO 等模式。

公司将坚持走专业化的道路, 把金通灵打造成全球知名的流体机械品牌, 最终实现“树百年企业、创世界一流”的长远发展目标。

## C company profile

Jintongling Technology Group Co., Ltd. (stock code 300091), established in 1993, is a key high-tech enterprise of the National Torch Program recognized by the Ministry of Science and Technology of the People's Republic of China. The company has been focusing on the field of fluid machinery for many years. With the business model of "service + manufacturing + service", the company provides users with end-to-end complete and full life cycle system solutions, such as system R & D design, fluid machinery product manufacturing, system energy-saving transformation services.

The centrifugal compressor products developed and designed by the company in cooperation with American ETI company, flow range:  $80\text{m}^3/\text{min}\sim 2000\text{Nm}^3/\text{min}$ , pressure range:  $2.2\sim 40\text{Bar(G)}$ , which are widely used in power, metallurgy, petrochemical, pharmaceutical, textile, automobile, electronics, shipbuilding, mining and other industries of high-pressure gas supply station. The running state and parameters of the equipment reach the international technical level of similar products, and some indexes are better than the international level of similar products. Ensure to provide users with efficient, safe and reliable gas compressor products, and provide gas compression station general contracting services, such as: EPC, BOT, BOO modes.

The company will insist on the road of specialization, build Jintongling into a world-famous brand of fluid machinery, and finally achieve the long-term development goal of "building a century old enterprise and creating a world-class".



**技术支持**  
**TECHNICAL SUPPORTS**

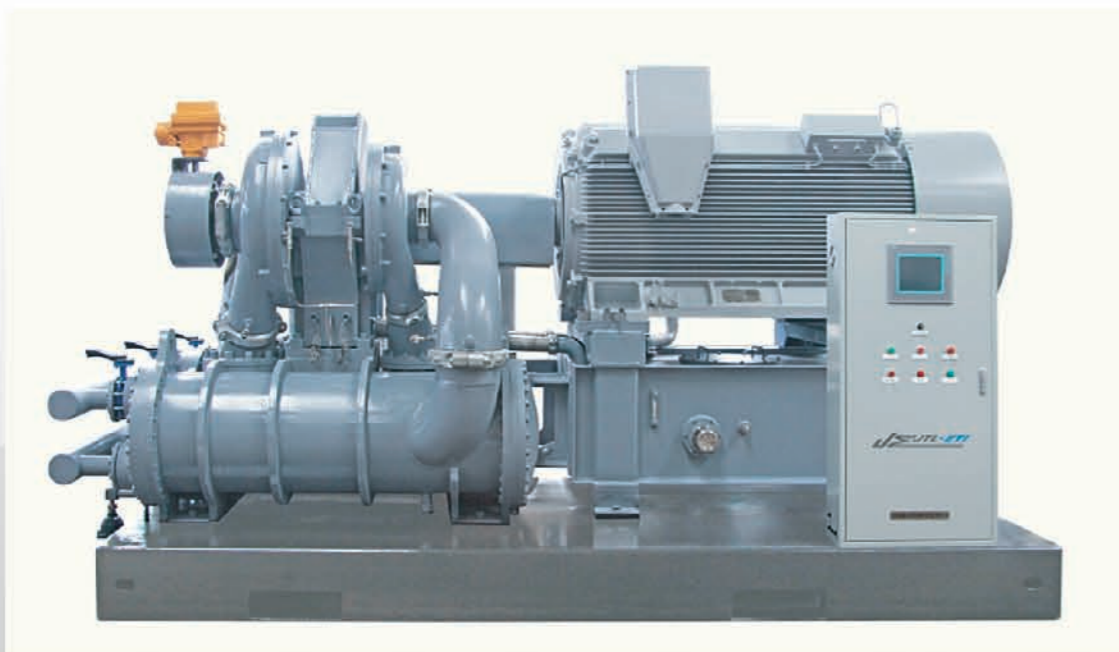
**国内外技术支持** DOMESTIC AND INTERNATIONAL TECHNICAL SUPPORTS



- 与美国 ETI 共建离心压缩机研发中心
- 江苏省流体机械及压缩机工程技术研究中心
- 与中科院工程热物理研究所共建能源动力联合实验室
- 与西交大流体机械国家专业实验室共建流体机械工程技术研究中心
- 与东南大学共建流体机械研究生工作站
  
- With US ETI, Jointly established the centrifugal compressor R&D center
- Jiangsu Province Fluid Machinery and Compressors Engineering Technology Research Center
- Joint Energy and Power Laboratory with Institute of Engineering Thermophysics Chinese Academy of Sciences
- Joint Fluid Machinery Technology Research Center with Xian Jiaotong University National Laboratory of Fluid Machinery
- Joint Fluid Machinery Graduates Workstation with Southeast University



- 全套引进美国 ETI 技术，关键部件具有自主知识产权。
  - 空气压缩系统、冷却系统、润滑系统、控制系统集成一体整体式结构。
  - 高效的气动效率，实现最优的空气动力学特性，叶轮效率达到 92% 以上。
  - 可靠的多轴系转子动力学设计，实现压缩机在全工况范围内稳定运行。
  - 关键的核心部件（齿轮、轴承、密封、油泵、过滤器、油冷却器、监控元器件等）全部采用国内外知名品牌。
  - 标准的模块化设计，维修保养方便快捷。
  - 监控、保护和调节一体的控制设计，界面直观友好。
  - 为客户提供全面的技术服务支持。
- The whole set of American ETI technology has been imported, and the key components have independent intellectual property rights.
  - Air compression system, cooling system, lubrication system, and control system are integrated into a complete structure.
  - High efficiency aerodynamic efficiency can realize the optimal aerodynamic characteristics, impeller efficiency up to 92%.
  - Reliable multi-shaft-rotor dynamics design can realize the stable operation of the compressor in all working conditions.
  - Key core components (gears, bearings, seals, oil pumps, filters, oil cooler, monitoring sensors, etc) are all well-known brands at home and abroad.
  - Standard modular design, convenient maintenance.
  - Design of monitoring, protection and regulation in one control system, the interface is intuitive and friendly.
  - Provide comprehensive technical service support for customers.



### 技术参数

#### Technical Parameters

型号 Model	流量 Flow Capacity (m <sup>3</sup> /min)	出口压力 Discharge Pressure (BarG)	电机功率 Motor Power (kW)	重量 Weight (T)	外形尺寸 Dimensions		
					长/L (m)	宽/W (m)	高/H (m)
JE280-800	80~130	2.2~12.5	280~800	11.0	3.8	2.0	2.0
JE800-1120	130~180	2.2~12.5	450~1120	12.5	4.0	2.2	2.1
JE1120-1700	180~270	2.2~12.5	560~1700	17.0	4.4	2.2	2.3
JE1700-2400	270~380	2.2~12.5	800~2400	26.0	5.2	2.3	2.5
JE2400-3100	380~550	2.2~10.5	1120~3100	41.5	7.6	3.6	2.9
JE3100-6000	550~1000	2.2~10.5	1500~6000	46.5	8.5	4.0	4.8
JE6000-8000	1000~1500	2.2~10.5	2600~8000	70.0	12.5	5.5	5.0
JE8000-11000	1500~2000	2.2~12.5	3900~11000	85.0	14.0	6.0	5.5

### 标准条件

#### Standard conditions

- 1. 介质：空气、氮气、富氧等
  - 2. 大气压：1bar (A)
  - 3. 进气温度：35°C
  - 4. 相对湿度：80%
  - 5. 冷却水温度：32°C
  - 性能选择范围宽，流量范围 80m<sup>3</sup>/min~2000Nm<sup>3</sup>/min，压力范围：2.2~12.5BarG，根据客户要求，最高压力可达 40BarG
  - 采用 API 国际标准设计制造
- 1. Medium: Air, Nitrogen, Oxygen enrichment
  - 2. Atmospheric Pressure: 1 bar (A)
  - 3. Inlet Temperature: 35 °C
  - 4. Relative Humidity: 80%
  - 5. Cooling Water Temperature: 32°C
  - Wide range of performance options, the flow range is 80m<sup>3</sup>/min ~ 2000Nm<sup>3</sup>/min, and the pressure range is 2.2 ~ 12.5Bar(G), according to customer requirements, the maximum pressure can reach 40BarG.
  - Designed and manufacturing according to API international standards

### 标准配置

#### Standard scope of supply

- 压缩机核心部件、进口膨胀节、进口 IGV、冷却系统、润滑系统、控制系统、放空组件、排气单向阀、排气膨胀节
- Compressor core components, Inlet expansion joint, Inlet guide vane, Cooling system, Lubrication system, Control System, Relief valve, Discharge check valve, Discharge expansion joint.

### 可选配置

#### Optional scope of supply

- 入口过滤器、干燥机、监控系统、物联网系统、隔音箱、IP54 以上防护等级电机
- Inlet filter, dryer, Monitoring system, Internet of things system, Silencer, IP54 above protection electrical motor.

空气压缩系统 (压缩机核心部件) AIR COMPRESSION SYSTEM (COMPRESSOR CORE COMPONENTS)

- 空气压缩部件: 叶轮、扩压器、蜗壳
- 齿轮传动部件: 齿轮、轴承
- 密封部件: 油密封、气密封、油气隔离
- Air compression components: Impeller, Diffuser, Scroll
- Gear transmission components: Gear, Bearing
- Sealing components: Oil seal, Air seal, Oil vapor isolation

**高效率叶轮** HIGH EFFICIENCY IMPELLERS

- 高效气动设计及参数优化, 工作区域宽
- 硬质不锈钢锻件, 五轴加工而成, 精度高, 防腐性能好
- 无损检测
- 115%超速试验
- Efficient aerodynamic design and parameter optimization, wide operating range
- Forging hardening stainless steel material, 5-axis machining, high precision and better anti-corrosion characteristics
- Non-destructive Testing
- 115% overspeed testing

**扩压器** DIFFUSER

- 采用低稠度叶片扩压器, 兼有叶扩压及无叶扩压之优点
- 高效区更宽
- 不锈钢材质耐腐蚀
- Adopted low-solidity vane diffuser, maintain the benefits of vaned and vaneless diffusers
- Wide efficiency range
- Stainless steel, better anti-corrosion characteristics

**先进的进口IGV** ADVANCED INLET GUIDE VANES

- 根据用气量变化, 调节叶片角度, 实现流量控制
- 在可调范围内保持恒压
- According to the flow capability requirement, adjust vane angle to control the flow capability
- Maintain constant pressure within the adjustable range

**高可靠性轴承** HIGHLY RELIABLE BEARINGS

- 输入端轴承为椭圆瓦, 高速轴承为可倾瓦
- 水平剖分, 安装简易
- 抗振性能和稳定性好
- Cylindrical bored bearings in the import shaft, and tilting pad bearings in the high speed bearings
- Horizontal split bearings, easy installation
- Better vibration attenuation and stability

**大小齿轮组** GEAR TRANSMISSION COMPONENTS

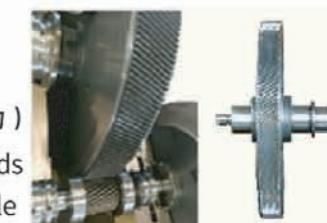
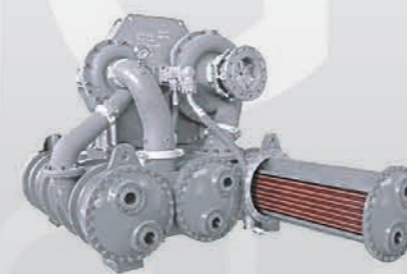
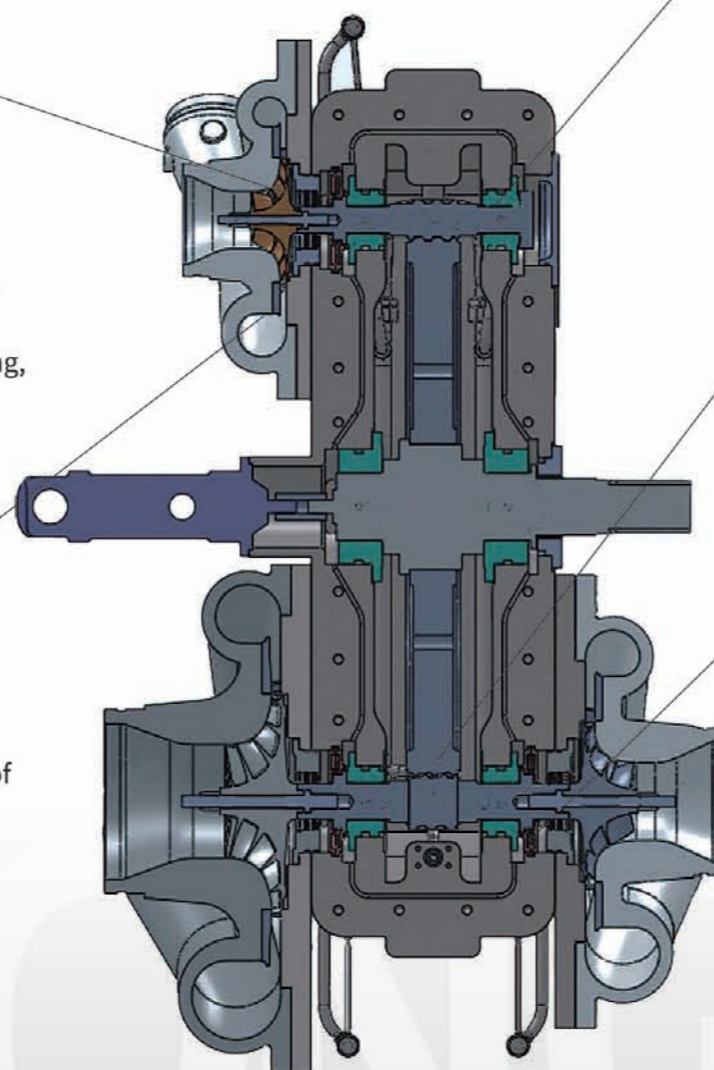
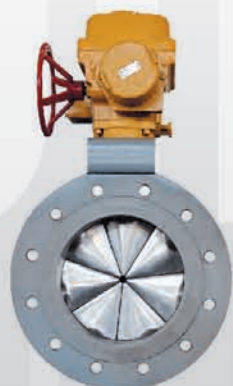
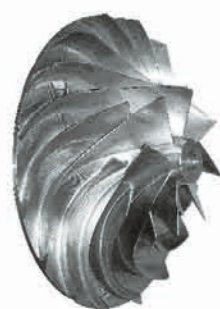
- 按美国航空级标准 AGMA13设计制造
- 齿轮采用真空精锻 (原材料), 单斜齿设计 (平衡部分轴向力)
- Design and manufacturing according to AGMA13 standards
- Vacuum precision forging of raw materials, design of single bevel gear

**100%无油密封** 100% OIL FREE COMPRESSION

- 迷宫式油封, 浮动碳环式气封
- 油、气有效隔离
- 不需要密封气体, 保证100%无油压缩
- Labyrinth oil seals, floating carbon ring air seals
- Effectively separate the oil and air
- No sealing (buffer) air required, 100% oil free compression.

**冷却系统** COOLING SYSTEM

- 进出气均匀流动设计, 减小局部阻力
- 特殊的翅片结构设计, 换热效率高
- 换热器芯和壳体抽取式安装, 更换、维护保养方便
- Uniform flow at inlet and exit, minimize the local resistance
- Special finned vane structure design, high efficiency in heat exchange
- Heat exchange core tube and shell arrangement, easy maintenance and exchange



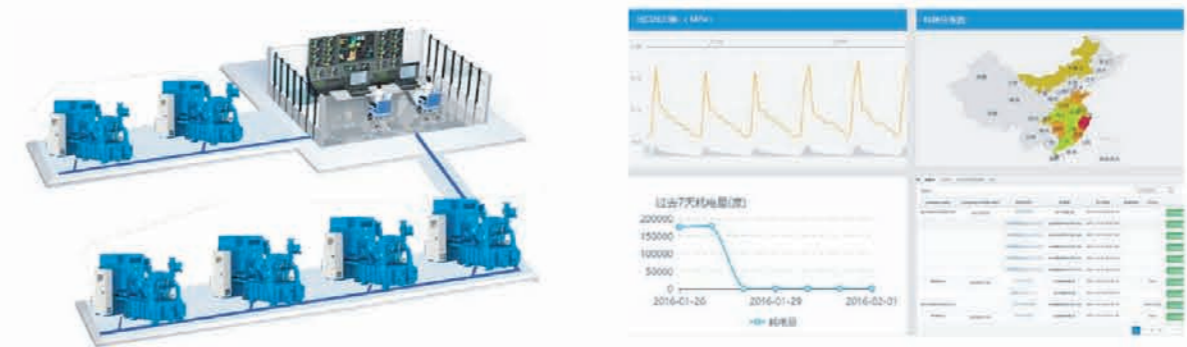
## 控制系统 CONTROLLING SYSTEM

- 一体化控制柜：界面清晰易懂、触屏操作、简单快捷。
- 触摸液晶屏幕：显示各项参数，数据实时监控，为设备可靠运行提供保证。
- 自动控制模式：气量波动较大时，由 IGV 调节气量；气量持续减小时，通过放空阀控制，保持稳定的排气压力，设备始终高效运行。
- Integrated control cabinet: the interface is clear and easy to understand, touch screen operation, simple and fast
- Touch LCD screen: display various parameters, data real-time monitoring, to ensure the reliable operation of the equipment
- Automatic control mode: when the gas volume fluctuates greatly, the gas volume is regulated by IGV; when the gas volume continuously decreases, it is controlled by the vent valve to maintain stable exhaust pressure, and the equipment always runs efficiently



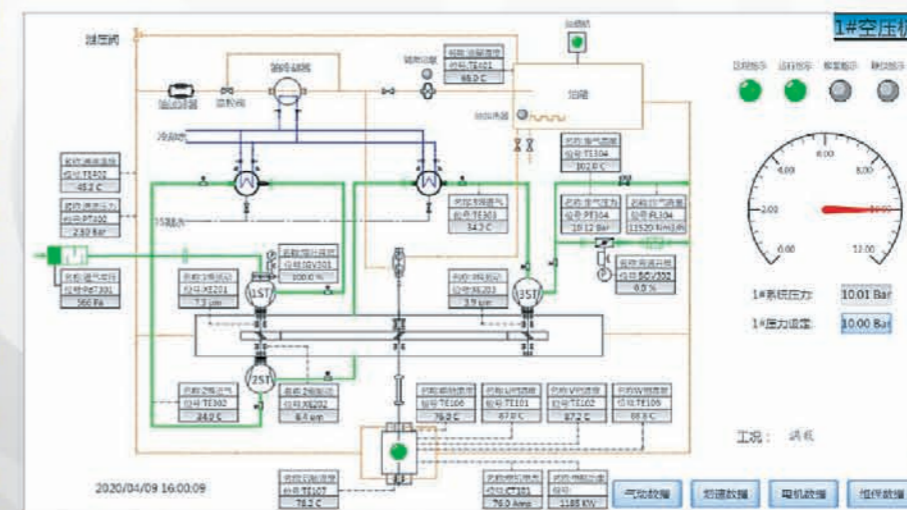
## 集控系统 CENTRALIZED CONTROL SYSTEM

- 联机控制：压缩机可实现多台联控，实现真正意义上的压缩空气网络，提高气体品质和生产效率。
- 能效优化：客户可选择分析软件，对每台空压机进行运行监控、故障预警、能效分析。
- Online control: the compressor can realize the joint control of multiple compressors, realize the real compressed air network, and improve the gas quality and production efficiency
- Energy efficiency optimization: customers can choose analysis software to monitor the operation of each air compressor, fault warning, energy efficiency analysis



## 远程监测系统（物联网）REMOTE MONITORING SYSTEM (INTERNET OF THINGS)

- 实时监控：在网络上监视您的压缩机，实时掌握机组运行信息，包括报警提示、压缩机关闭与维护计划等。
- Real time monitoring: monitor your compressor on the network and master the operation information of the unit in real time, including alarm prompt, compressor shutdown and maintenance plan, etc.



压缩机加工设备 COMPRESSOR PROCESSING EQUIPMENTS



斯特拉格五轴加工中心 Starrag 5-Axis Universal Machining Center



三元流叶轮加工 Ternary flow impeller machining



哈默五轴联动加工中心 German HERMLE 5-Axis Universal Machining Center



数控卧式车床 CNC Horizontal Lathe

压缩机加工设备 COMPRESSOR PROCESSING EQUIPMENTS



耐尔斯磨齿机 NILES Grinding Machine



数控滚齿机 CNC Gear Hobbing Machine



凯伦数控立式磨床 CNC Vertical Grinding Machine



压缩机检测设备 COMPRESSOR INSPECTION EQUIPMENTS



叶轮测量 Impeller Measurements



克林贝格齿轮测量仪  
Klingelnberg Gear Measurement Machine

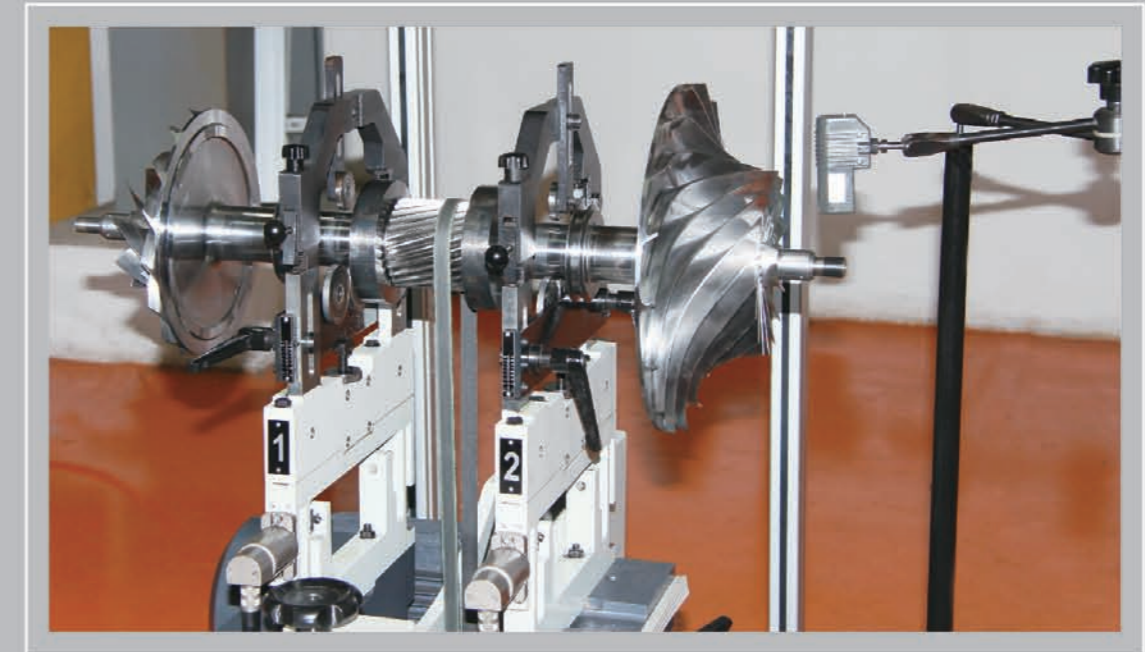


蔡司三坐标测量仪  
Zeiss Coordinate Measurement Machine

压缩机检测设备 COMPRESSOR INSPECTION EQUIPMENTS



申克超速试验台 SCHENCK Overspeed Test Stand



转子组平衡  
Rotor Assembly Balancing



申克平衡机  
SCHENCK Balancing Machine

压缩机装配 COMPRESSOR ASSEMBLY



齿轮箱装配  
Gear Box Assembly



机头装配  
Head Assembly



压缩机装配 Compressor Assembly

压缩机检测试验台 COMPRESSOR TEST INSPECTION LABORATORY



4000kW变频控制室  
4000kW Frequency Converter Control Room



压缩机运转试验台  
Compressor Operating Test Stand



压缩机性能试验台 Compressor Performance Test Stand

公司实验室 COMPANY QUALITY INSPECTION LABORATORIES



金相分析实验室 Metallographic Analysis Inspection



叶轮无损探伤 Impeller Non-Destructive Test



理论实验室 Physical and Chemistry Test Laboratory



光谱分析仪 Spectrum Analyzer



齿轮无损探伤 Gear and Pinion Non-Destructive Test



冲击试验机 Impact Test Laboratory

电拖工程应用案例 MOTOR DRIVE ENGINEERING APPLICATIONS



汽拖工程应用案例 STEAM DRIVE ENGINEERING APPLICATIONS



## 应用与服务 APPLICATION & SERVICE

### 产品应用范围

#### Product applications

- 广泛应用于钢铁、有色冶炼、石化、制药、造纸、纺织、汽车、家电、电子、造船、玻璃制造、矿山开采等行业的高压气体供气站。
- Widely used in iron and steel, nonferrous metal smelting, petrochemical, pharmaceutical, paper mills, textile, automotive, appliance, electronics, shipbuilding, glass manufacturing, mining and other industries of high-pressure gas supply station.

### 销售模式

#### Sales model

- 设立国内销售贸易部和国际销售贸易部；
- 在国内直辖市及各省会城市建立销售服务网点，销售辐射到全国各地；
- 提供空气压缩机产品及空气压缩站总承包服务，如 EPC、BOT、BOO 等模式。
- Establish the domestic and international sales and trade departments;
- Establish the sales and service network stations in municipalities and provincial cities, sale reaches the entire country;
- Provide air compressor products and air compressor station general contract services, such as EPC, BOT, BOO and other modes.

### 产品服务

#### Product service

- 免费向用户提供技术服务、产品维护保养培训（工厂培训或用户现场培训）；
- 建立在线运行产品监控网络，免费向用户提供三个月一次的巡检服务。
- Provide free technical services and product maintenance training to customers (Factory training or user on-site training);
- Establish on-line product operation monitoring network, provide free inspection service every 3 months to customers.

### 备品备件服务

#### Spare parts Service

- 产品部件标准化设计，产品易损件、备件批量性库存，可随时向用户提供叶轮、齿轮、轴承、密封、冷却器、油滤器等，用户可实现备件零库存；
- 用户设备维护、备件更换成本下降 20% 以上。
- Standard parts design and batch inventory of wearing parts and spare parts can provide customers with impellers, gears, bearings, seals, coolers, oil filters, etc at any time, and customers can realize zero inventory of spare parts;
- The cost of equipment maintenance and spare parts replacement decreased by more than 20%.

### 快速反应服务

#### Quick response service

- 用户的技术服务和培训指导需求；
- 用户现场设备故障诊断，24 小时内回复，技术服务人员 48 小时内到达用户现场。
- The user's technical services and training guidance needs;
- User on-site equipment diagnosis and troubleshooting, within 24 hours of reply, technical service personnel within 48 hours to reach the user site.

## 专利证书 PATENT CERTIFICATE DISPLAY

