

- ◎ **PCB电主轴系列**
PCB electric spindle series
- ◎ **玻璃磨削电主轴系列**
Electric spindle Glass grinding series
- ◎ **高光及超精加工电主轴系列**
High-gloss and superfinishing electric spindle series
- ◎ **超声波主轴系列**
Ultrasonic spindle series
- ◎ **加工中心主轴系列**
Machining center spindle series
- ◎ **钻攻中心电主轴系列**
Drilling and tapping center with electric spindle series
- ◎ **雕铣电主轴系列**
Electric spindle series for engraving and milling
- ◎ **液压、磨削主轴系列**
Hydrostatic and grinding spindle series
- ◎ **车床主轴系列**
Lathe spindle series
- ◎ **木工电主轴系列**
Woodworking electric spindle series
- ◎ **牙雕电主轴系列**
Engraving electric spindle series
- ◎ **减速器系列**
Reducer series
- ◎ **直线电机系列**
Linear motor series
- ◎ **转台及摆头系列**
Turntable and yawing series
- ◎ **刀柄夹头系列**
Series of tool holder clamps
- ◎ **夹具系列**
Clamp series
- **昊志氢电空压机**
Haozhi hydrogen electric air compressor



www.haozhihs.com

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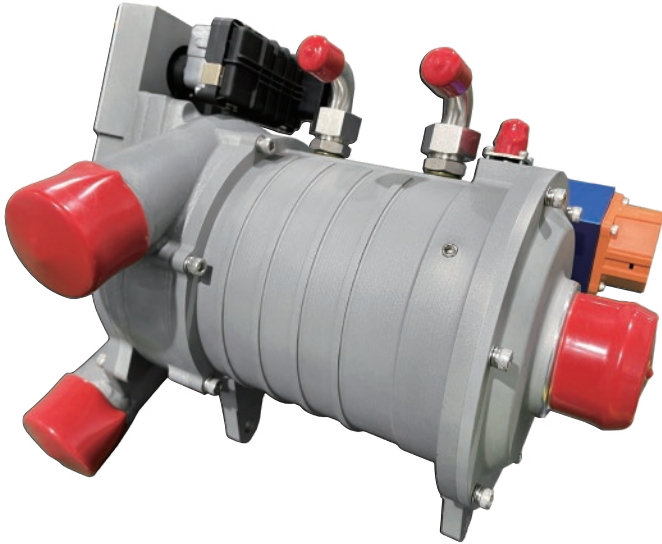
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氢电空压机

Hydrogen Electric Air Compressor



广州市昊志机电股份有限公司
GUANGZHOU HAOZHI INDUSTRIAL CO.,LTD.

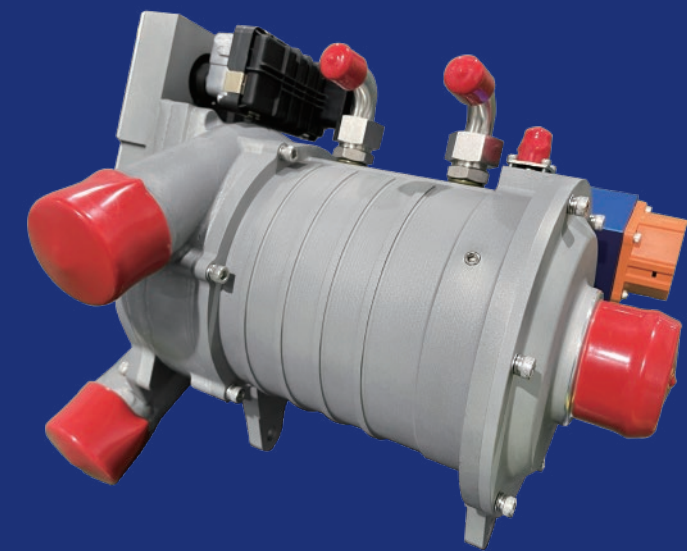
Leading science and technology innovation
inspiring the Era of hydrogen energy

Haozhi hydrogen electric air compressor
makes hydrogen stable and durable

Wide operating range, high efficiency, high power density, long
service life,vibration and noise reduction, more reliable and
energy saving.

昊领科技创新 志启氢能时代

昊志氢电空压机，让氢能行稳致远



宽工况、长寿命、减振降噪

高效率、高功率密度

更可靠、更节能

关于我们

About us

广州市昊志机电股份有限公司成立于2006年,是一家专业从事中高端数控机床、机器人、新能源汽车领域核心功能部件等的研发设计、生产制造、销售与维修服务的国家高新技术企业,于2016年创业板上市(股票代码300503)。

公司有厂房面积约18.9万平方米,员工两千余人,具备年产15万台套主轴和空压机的生产能力。截止2023年12月31日,公司及境内子公司合计拥有专利779项,研发人员300余人。目前已成为国内外主轴领域中研产销规模最大的企业之一。

Guangzhou Haozhi Industrial Co., Ltd., established in 2006, is a National High-Tech Enterprise specializing in the research and development, design, production, manufacturing, sales, and maintenance of key functional components for high-end CNC machine tools, robotics, and new energy vehicles. In 2016, the Company was listed on the Growth Enterprise Market Board (Stock Code: 300503).

Haozhi has a 189,000-square-meter workshop with more than 2000 employees and an annual manufacturing capacity of 150,000 sets of spindles and air compressors. The Company and its domestic subsidiaries had 779 patents and about 300 R&D professionals. Haozhi is now one of the firms with the largest research, production and sales scale in the spindle sector, at home and abroad.



禾丰厂 Hefeng Factory

高速风机事业部介绍

Introduction to the High-Speed Fan Business Division

昊志高速风机事业部成立于2019年,以新能源汽车领域氢电空压机的研发、制造和销售为核心业务。

我们的核心研发团队由公司总工程师教授级高工牵头,带领电机工程师,气动工程师、结构工程师、电气工程师以及测试工程师组成专业技术开发团队。

我们致力于为客户提供更合理的系统匹配方案 and 更贴心、更精准的产品,满足客户的差异化需求,为燃料电池系统提供更好的匹配特性:**工况范围更优、综合效率更高、功率密度更大、启停寿命更长、减振降噪,可靠节能。**

The Haozhi High-Speed Fan Business Division was created in 2019 with the goal of R&D, manufacturing, and selling hydrogen electric air compressors for new energy vehicles.

The chief engineer, a professor-level senior engineer, leads the Haozhi core R&D team, which includes electrical, pneumatic, structural, and test engineers, to form a professional technical development team.

Haozhi is dedicated to providing clients with more reasonable system matching solutions and more considerate and accurate products to meet their differentiated demands, as well as better matching qualities for fuel cell systems: improved operating range, higher comprehensive efficiency, higher power density, longer start-stop life, vibration and noise reduction, reliable performance, and energy saving.



高精尖5G智能生产体系,为氢电空压机生产制造提供产能和质量保障。

Our high-quality, precise, and sophisticated 5G intelligent production system ensures capacity and quality in the production and manufacturing of hydrogen electric air compressors.



汇聚全球顶尖的加工设备
最高加工精度可达0.1μm

Assemble the world's best processing equipment
The maximum machining precision is 0.1 μm



5G智能制造加持
全自动、智能、无人生产线

Empowered by 5G intelligent manufacturing
Fully automated, intelligent and unmanned manufacturing line

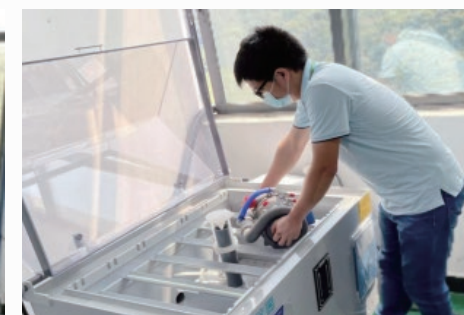


国际一流检测仪器及设备
具备纳米级检测精度

First-rate international testing instruments
and equipment
With nano-level detecting precision

齐全的设备,为氢电空压机提供全面、准确的测试和评价。

Our comprehensive testing equipment allows for thorough and accurate testing and evaluation of hydrogen electric air compressors.





核心技术

Core Technologies

高速永磁同步电机

High-speed permanent magnet synchronous motor

公司拥有丰富的高速电机研发和应用案例，自主开发的离心式氢电空压机最高转速超过12万转，额定功率最高可达60kW。

Haozhi has a plethora of high-speed motor R&D as well as application cases. The Hydrogen electric air compressor, self-developed, has a maximum speed of more than 120,000 rpm and a rated power of up to 60kW.

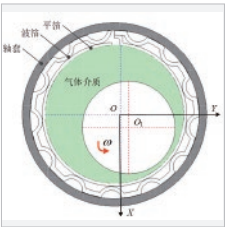


高速气动压轴承

High-speed aerodynamic bearing

公司具备完全自主的空气动压轴承的设计、计算分析、制造和测试能力，研发的高速气动压轴承稳定性高，完全无油，寿命长，启停寿命≥30万次。

Haozhi is capable of autonomously designing, calculating, analyzing, manufacturing, and testing High-speed aerodynamic bearing. The Company's high-speed aerodynamic bearings have exceptional stability, are fully oil-free, and have a long service life with a start-stop life of ≥ 300000 times.

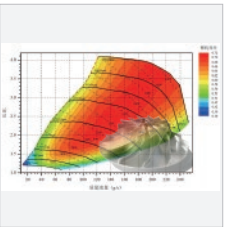


高效率、宽工况气动系统

Pneumatic system with high efficiency and a wide-operating range

公司拥有自主研发、制造和测试气动系统的能力，可根据客户的差异化需求，提供更合理的匹配特性，具有效率高、工况范围宽等技术优势。我司自主研发的涡轮能量回收系统，最高可使空压机节能30%。

Haozhi can independently research, develop, manufacture, and test pneumatic systems, allowing it to deliver better matching qualities in response to a wide range of customer demands. The goods have technical benefits such as high efficiency, a broad operating range, etc. The turbine energy recovery technology developed independently by Haozhi can save up to 30% of the energy used by the air compressor.



高频驱动器

High-frequency driver

公司通过自主研发和定制开发两种路线,使压缩机和驱动器达到最佳的匹配效果，同时降低压缩机系统的配套成本,满足客户性能和成本要求。

Through independent R&D and tailored development, Haozhi compressors and drivers may achieve the optimum matching effect, lowering compressor system matching costs while meeting customer performance and cost requirements.

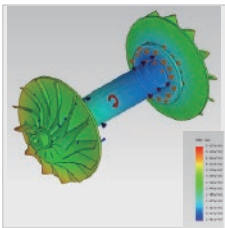


高速精密轴系设计及集成

High-speed precision shafting design and integration

公司拥有丰富的高速轴系研发经验和集成技术。目前公司产品最高转速达到40万转，达到世界先进水平。

Haozhi has extensive experience in high-speed shafting R&D and integration technology. Currently, the highest speed of Haozhi products is 400,000 rpm, putting them on par with the most modern machines in the world.



高效能量回收

High efficiency energy recovery

我司“两级压缩+能量回收+VNT”型能量回收空压机，具有压比高、流量范围宽、效率高的技术优势，最大回收比例>30%。

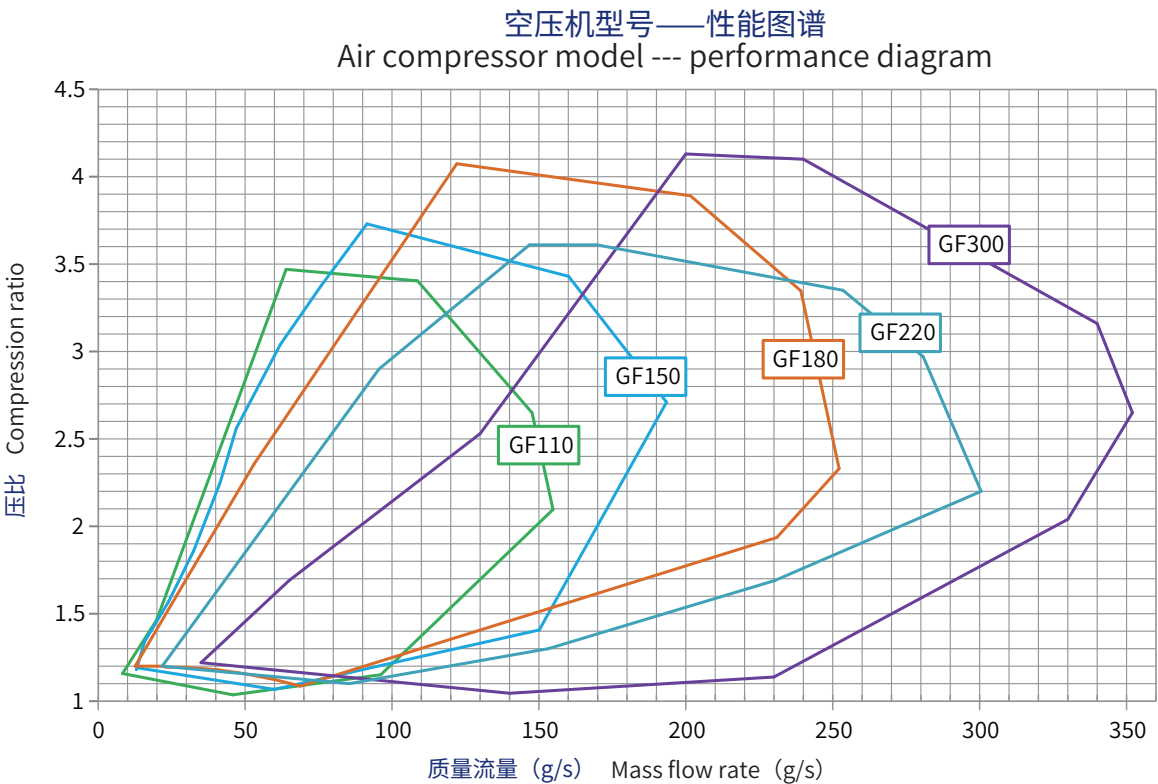
Our "two-stage compression + energy recovery +VNT" type energy recovery air compressor has the technical advantages of high pressure ratio, wide flow range and high efficiency, and the maximum recovery ratio is > 30%.



产品概述

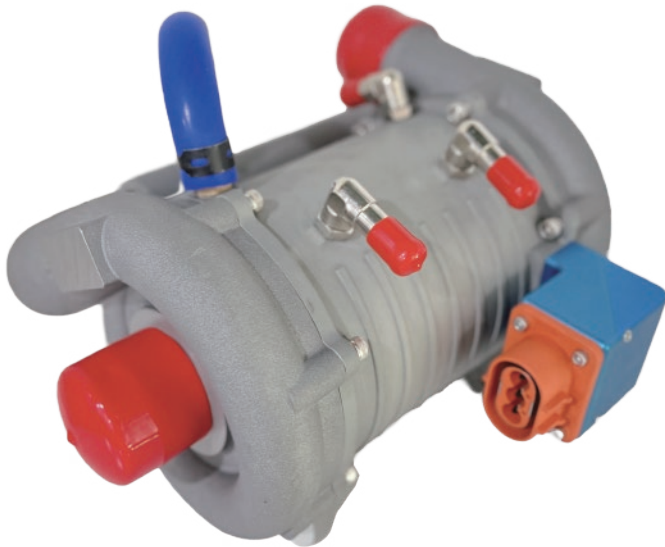
Product Overview

型号 Spindle model	结构形式 Structural form	额定流量 Rated flow	最大流量 Max. flow	最大压比 Max. compression ratio	匹配系统功率 Matching system power
DK-GF110-3.0	两级增压 Two-stage supercharging	110g/s@PR3.0	150	3.5	50~80kW
DK-GF150-3.0	两级增压 Two-stage supercharging	150g/s@PR3.0	190	3.9	80~120kW
DK-GF180B	两级增压 Two-stage supercharging	180g/s@PR3.0	245	3.5	100~150kW
DK-GF220B	两级增压 Two-stage supercharging	220g/s@PR3.2	300	3.6	150~200kW
DK-GF300-3.6	两级增压 Two-stage supercharging	300g/s@PR3.6	340	3.9	150~240kW
DK-GF180A-T	两级压缩+ 能量回收+VNT	180g/s@PR3.0	245	3.8	100~150kW
DK-GF300A-T	两级压缩+ 能量回收+VNT	300g/s@PR3.2	340	4.0	150~200kW



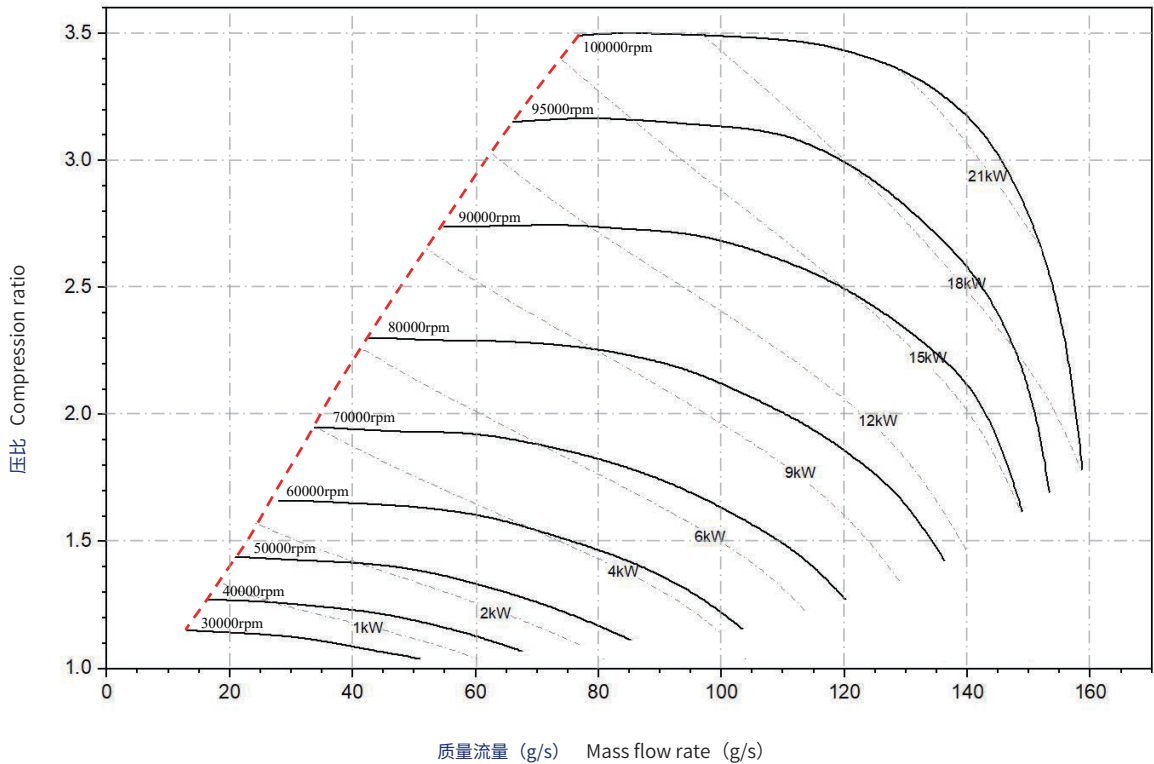
DK-GF110-3.0氢电空压机

DK-GF110-3.0 Hydrogen electric air compressor



压缩系统特性图

Compression system characteristics chart



注:测试环境温度25℃, 环境压力101.3kPa。

Note: The test ambient temperature is 25 °C and the pressure is 101.3kPa.

性能参数

Performance parameters

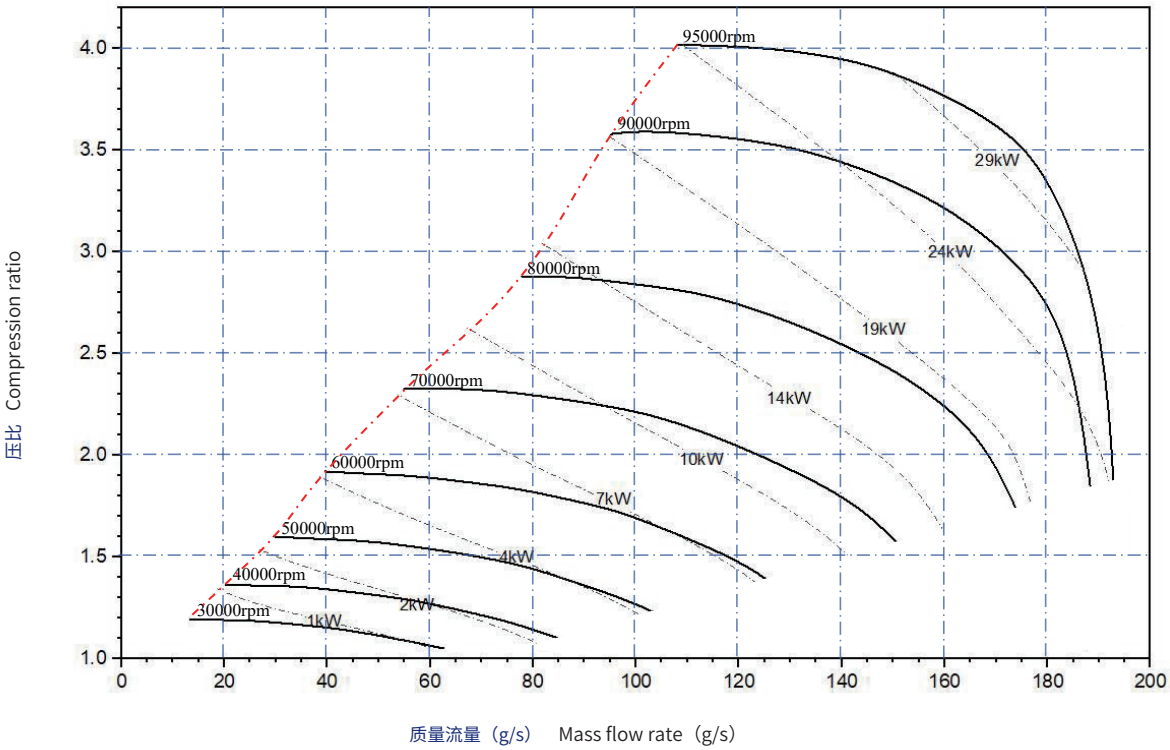
型号	DK-GF110-3.0
结构形式	两级增压
流量范围 (g/s)	8-150
转速范围 (rpm)	30000-100000
电压 (V DC)	450-750
空压机重量 (kg)	12.6
进气温度 (°C)	-30~45
轴承形式	空气悬浮轴承
最高压比	3.5
电机最大功率 (kW)	20
启停寿命 (次)	300000
控制器重量 (kg)	7.3
防护等级	IP67

Spindle model	DK-GF110-3.0
Structural form	Two-stage supercharging
Flow range (g/s)	8-150
Speed range (rpm)	30000-100000
Voltage (VDC)	450-750
Air compressor weight (kg)	12.6
Temperature of the intake air (°C)	-30~45
Type of Bearing	Air suspension bearing
Maximum compression ratio	3.5
Max. motor power (kW)	20
Start-stop life (times)	300000
Controller weight (kg)	7.3
Protection level	IP67

DK-GF150-3.0D氢电空压机
DK-GF150-3.0D Hydrogen electric air compressor



压缩系统特性图
Compression system characteristics chart



注：测试环境温度25℃，环境压力101.3kPa。
Note: The test ambient temperature is 25 °C and the pressure is 101.3kPa.

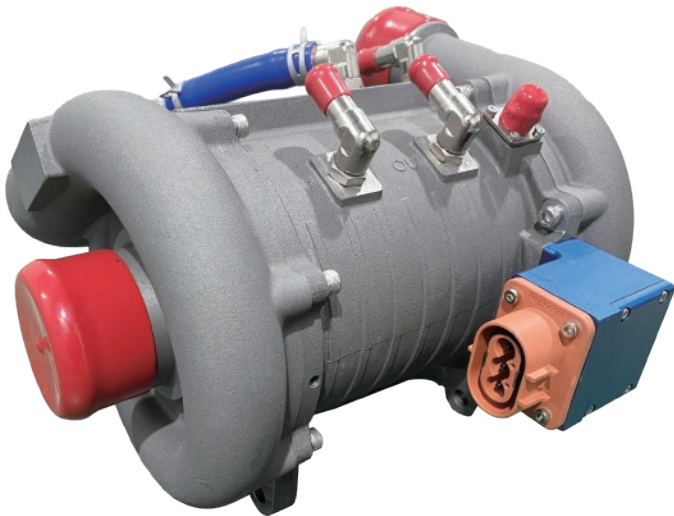
性能参数
Performance parameters

型号	DK-GF150-3.0D
结构形式	两级增压
流量范围 (g/s)	15-190
转速范围 (rpm)	30000-95000
电压 (V DC)	450-750
空压机重量 (kg)	15.2
进气温度 (°C)	-30~45
轴承形式	空气悬浮轴承
最高压比	3.9
电机最大功率 (kW)	30
启停寿命 (次)	300000
控制器重量 (kg)	7.3
防护等级	IP67

Spindle model	DK-GF150-3.0D
Structural form	Two-stage supercharging
Flow range (g/s)	15-190
Speed range (rpm)	30000-95000
Voltage (VDC)	450-750
Air compressor weight (kg)	15.2
Temperature of the intake air (°C)	-30~45
Type of Bearing	Air suspension bearing
Maximum compression ratio	3.9
Max. motor power (kW)	30
Start-stop life (times)	300000
Controller weight (kg)	7.3
Protection level	IP67

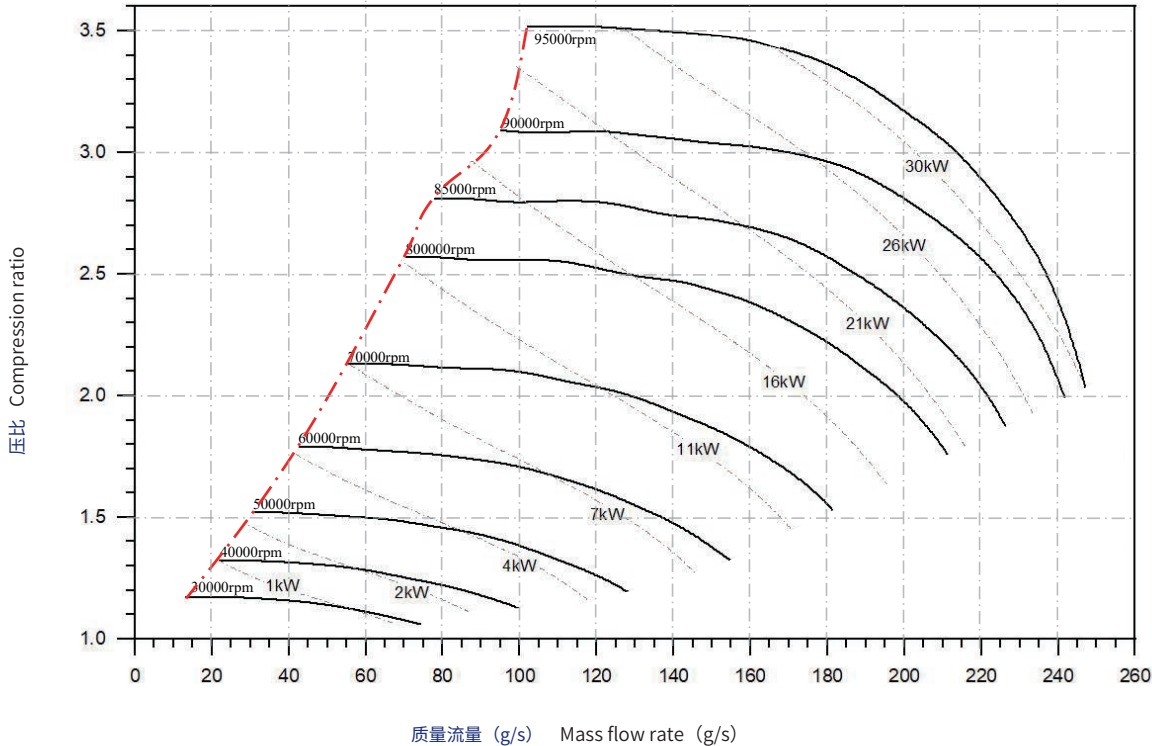
DK-GF180B氢电空压机

DK-GF180B Hydrogen electric air compressor



压缩系统特性图

Compression system characteristics chart



注:测试环境温度25℃, 环境压力101.3kPa。

Note: The test ambient temperature is 25 °C and the pressure is 101.3kPa.

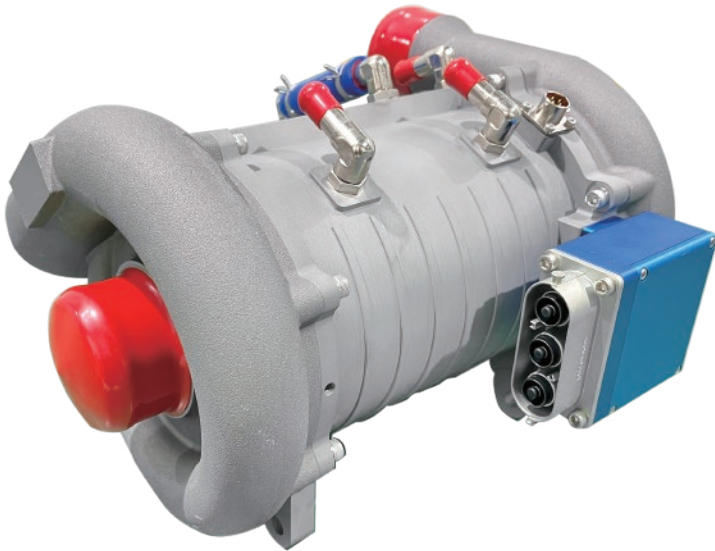
性能参数

Performance parameters

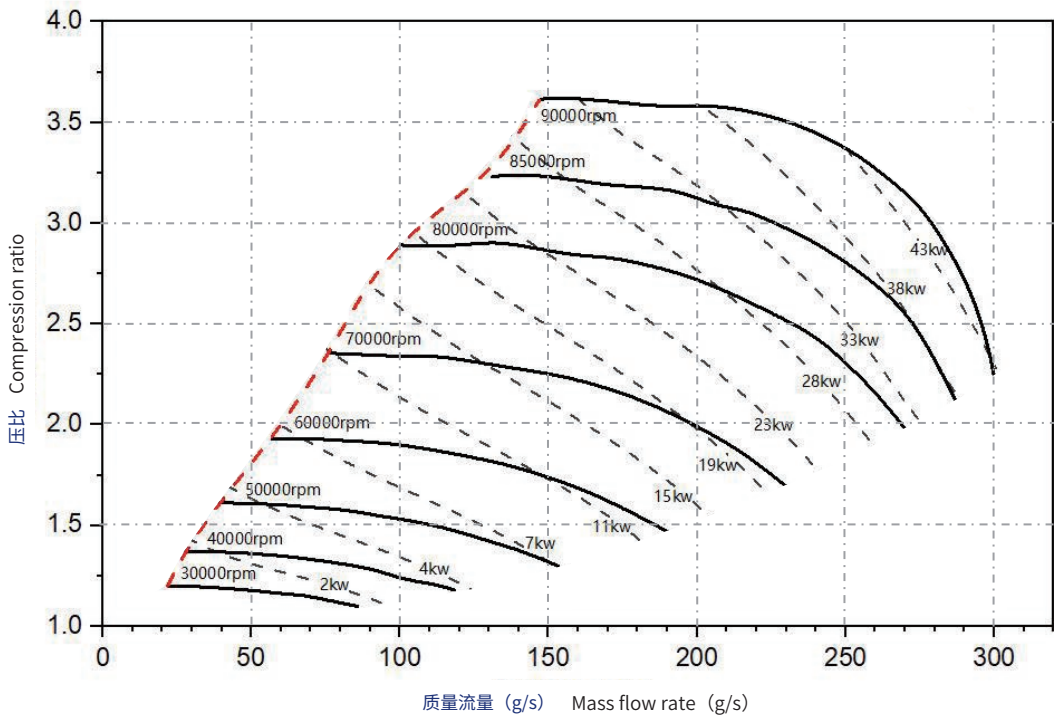
型号	DK-GF180B
结构形式	两级增压
流量范围 (g/s)	13-245
转速范围 (rpm)	30000-95000
电压 (V DC)	450-750
空压机重量 (kg)	15.2
进气温度 (°C)	-30~45
轴承形式	空气悬浮轴承
最高压比	3.5
电机最大功率 (kW)	30
启停寿命 (次)	300000
控制器重量 (kg)	7.3
防护等级	IP67

Spindle model	DK-GF180B
Structural form	Two-stage supercharging
Flow range (g/s)	13-245
Speed range (rpm)	30000-95000
Voltage (VDC)	450-750
Air compressor weight (kg)	15.2
Temperature of the intake air (°C)	-30~45
Type of Bearing	Air suspension bearing
Maximum compression ratio	3.5
Max. motor power (kW)	30
Start-stop life (times)	300000
Controller weight (kg)	7.3
Protection level	IP67

DK-GF220B氢电空压机
DK-GF220B Hydrogen electric air compressor



压缩系统特性图
Compression system characteristics chart



注：测试环境温度25℃，环境压力101.3kPa。
Note: The test ambient temperature is 25 °C and the pressure is 101.3kPa.

性能参数
Performance parameters

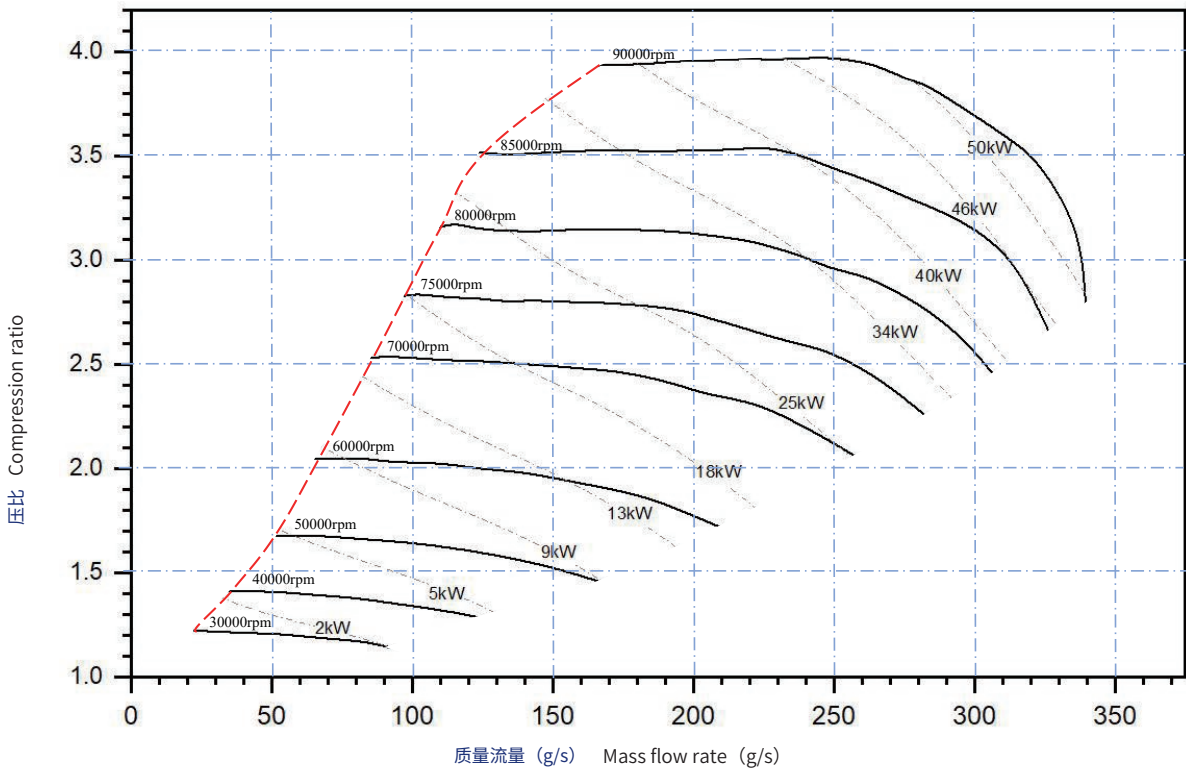
型号	DK-GF220B
结构形式	两级增压
流量范围 (g/s)	20~300
转速范围 (rpm)	30000-90000
电压 (V DC)	450-750
空压机重量 (kg)	20.5
进气温度 (°C)	-30~45
轴承形式	空气悬浮轴承
最高压比	3.6
电机最大功率 (kW)	50
启停寿命 (次)	300000
控制器重量 (kg)	8.0
防护等级	IP67

Spindle model	DK-GF220B
Structural form	Two-stage supercharging
Flow range (g/s)	20-300
Speed range (rpm)	30000-90000
Voltage (VDC)	450-750
Air compressor weight (kg)	20.5
Temperature of the intake air (°C)	-30~45
Type of Bearing	Air suspension bearing
Maximum compression ratio	3.6
Max. motor power (kW)	50
Start-stop life (times)	300000
Controller weight (kg)	8.0
Protection level	IP67

DK-GF300-3.6氢电空压机
DK-GF300-3.6 Hydrogen electric air compressor



压缩系统特性图
Compression system characteristics chart



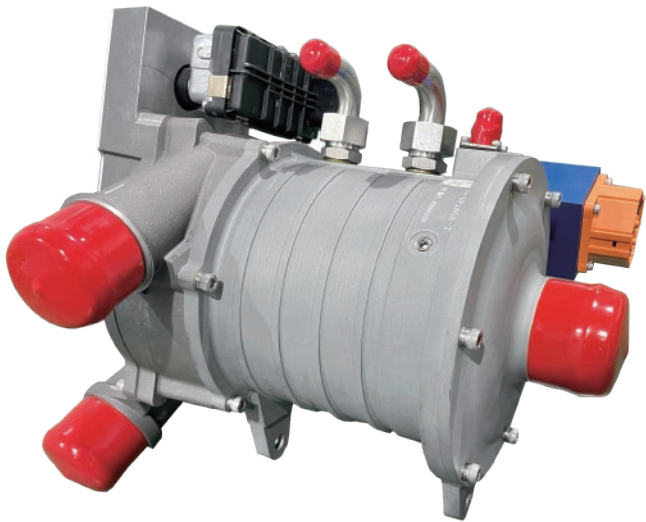
注:测试环境温度25℃,环境压力101.3kPa。
Note: The test ambient temperature is 25 °C and the pressure is 101.3kPa.

性能参数
Performance parameters

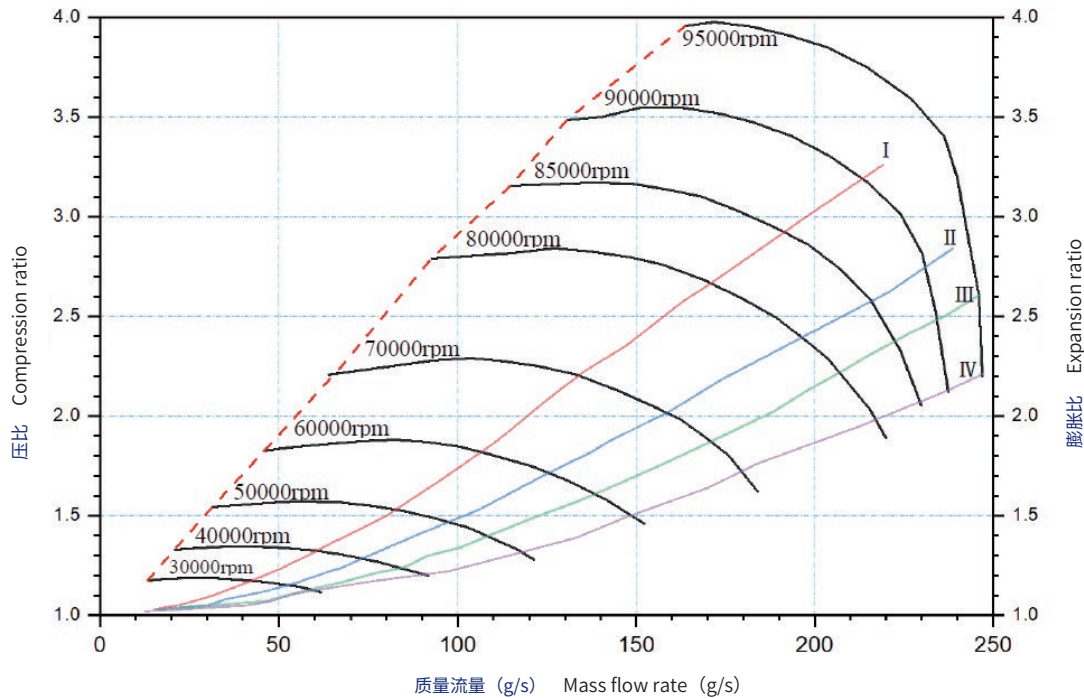
型号	DK-GF300-3.6
结构形式	两级增压
流量范围 (g/s)	20-340
转速范围 (rpm)	30000-90000
电压 (V DC)	450-750
空压机重量 (kg)	21.5
进气温度 (°C)	-30~45
轴承形式	空气悬浮轴承
最高压比	3.9
电机最大功率 (kW)	60
启停寿命 (次)	300000
控制器重量 (kg)	8.0
防护等级	IP67

Spindle model	DK-GF300-3.6
Structural form	Two-stage supercharging
Flow range (g/s)	20-340
Speed range (rpm)	30000-90000
Voltage (VDC)	450-750
Air compressor weight (kg)	21.5
Temperature of the intake air (°C)	-30~45
Type of Bearing	Air suspension bearing
Maximum compression ratio	3.9
Max. motor power (kW)	60
Start-stop life (times)	300000
Controller weight (kg)	8.0
Protection level	IP67

DK-GF180A-T氢电空压机
DK-GF180A-T Hydrogen electric air compressor



压缩系统特性图
Compression system characteristics chart



注：曲线 I ~ IV 分别对应可调喷嘴最小开度、33%开度、67%开度、最大开度情况下的膨胀机特性曲。

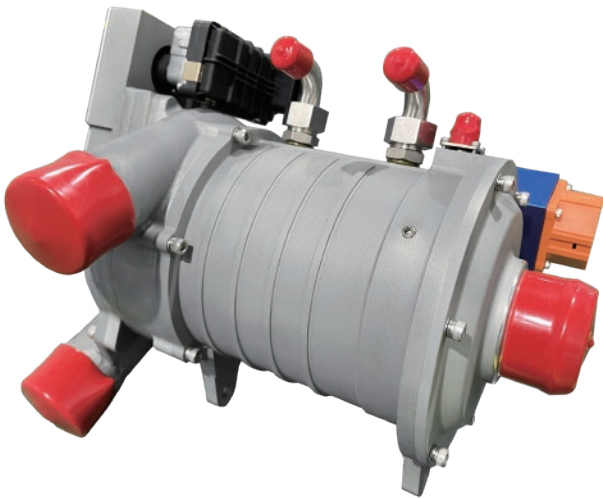
注：测试环境温度25℃, 环境压力101.3kPa。
Note: The test ambient temperature is 25 °C and the pressure is 101.3kPa.

性能参数
Performance parameters

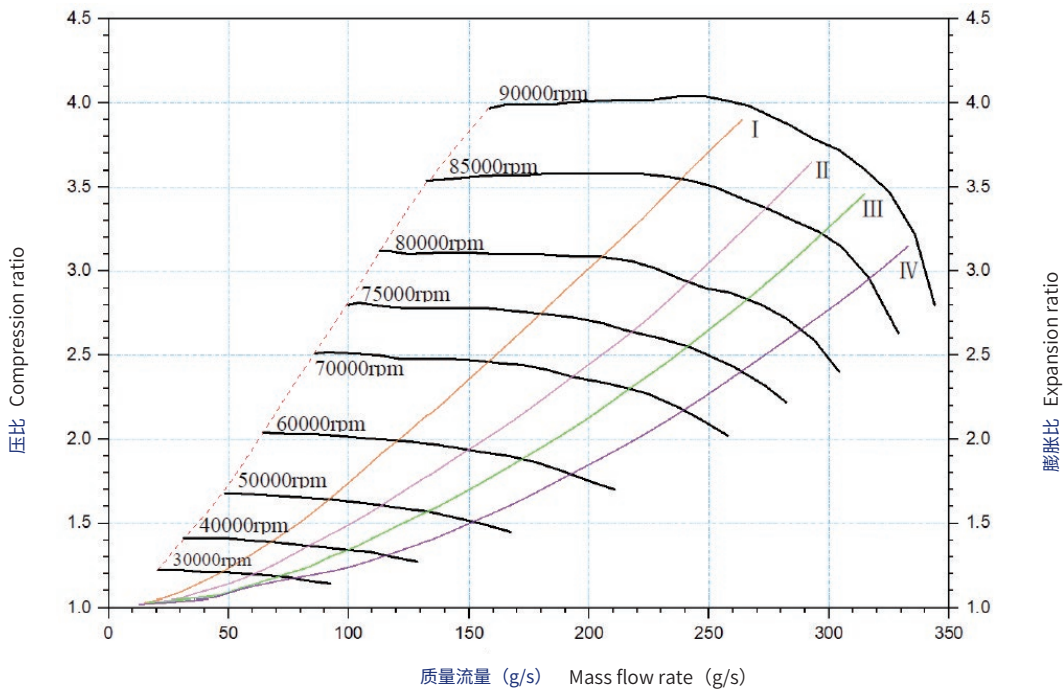
型号	DK-GF180A-T
结构形式	两级压缩+能量回收+VNT
流量范围 (g/s)	15-245
转速范围 (rpm)	30000-95000
电压 (V DC)	450-750
空压机重量 (kg)	16.5
进气温度 (°C)	-30~45
轴承形式	空气悬浮轴承
最高压比	3.8
电机最大功率 (kW)	30
最大能效提升	30%
启停寿命 (次)	300000
控制器重量 (kg)	7.3
防护等级	IP67

Spindle model	DK-GF180A-T
Structural form	Two stage compression+ Energy recovery+VNT
Flow range (g/s)	15-245
Speed range (rpm)	30000-95000
Voltage (VDC)	450-750
Air compressor weight (kg)	16.5
Temperature of the intake air (°C)	-30~45
Type of Bearing	Air suspension bearing
Maximum compression ratio	3.8
Max. motor power (kW)	30
Maximum energy efficiency improvement	30%
Start-stop life (times)	300000
Controller weight (kg)	7.3
Protection level	IP67

DK-GF300A-T氢电空压机
DK-GF300A-T Hydrogen electric air compressor



压缩系统特性图
Compression system characteristics chart



注：曲线 I ~ IV 分别对应可调喷嘴最小开度、33%开度、67%开度、最大开度情况下的膨胀机特性曲。

注：测试环境温度25℃，环境压力101.3kPa。
Note: The test ambient temperature is 25 °C and the pressure is 101.3kPa.

性能参数
Performance parameters

型号	DK-GF300A-T
结构形式	两级压缩+能量回收+VNT
流量范围 (g/s)	20-340
转速范围 (rpm)	30000-90000
电压 (V DC)	450-750
空压机重量 (kg)	18.1
进气温度 (°C)	-30~45
轴承形式	空气悬浮轴承
最高压比	4.0
电机最大功率 (kW)	40
最大能效提升	30%
启停寿命 (次)	300000
控制器重量 (kg)	6.1
防护等级	IP67

Spindle model	DK-GF300A-T
Structural form	Two stage compression+ Energy recovery+VNT
Flow range (g/s)	20-340
Speed range (rpm)	30000-90000
Voltage (VDC)	450-750
Air compressor weight (kg)	18.1
Temperature of the intake air (°C)	-30~45
Type of Bearing	Air suspension bearing
Maximum compression ratio	4.0
Max. motor power (kW)	40
Maximum energy efficiency improvement	30%
Start-stop life (times)	300000
Controller weight (kg)	6.1
Protection level	IP67



设计品质 Design quality

公司拥有行业最先进的人才培训体系和研发团队，常年聘请多名行业专家作为研发顾问管控设计品质；依托PLM系统、CAPP系统,使产品设计更加系统化、数字化、流程化,具备良好的市场适应能力，确保昊志产品一直处于行业领先地位。

Haozhi has the industry's most advanced talent training system and R&D team, and it employs several industry experts as R&D advisors to monitor the design quality. Using PLM and CAPP systems to make product design more systematic, digital, and procedural, Haozhi has good market adaptability to ensure that its products remain industry leaders.

制造品质 Quality of manufacturing

昊志致力于打造先进完善的加工制造车间，严格执行IATF16949质量管理体系、ISO14001环境管理体系，并配备世界顶级加工设备，为产品加工品质提供坚实保障。

Haozhi is dedicated to constructing an advanced and perfect processing and manufacturing workshop, adhering to the ISO9001 Quality and ISO14001 Environment Management Systems, and is outfitted with excellent processing equipment, which can offer a solid guarantee for quality product processing.

核心零部件品质 Core components quality

所有产品关键零部件坚持选用国际一流品牌作为生产原料供应商。所有原材料入库之前均需要经过严格的入库质量检测，只为铸就卓越品质。

As the raw material provider, all critical parts and components of the product are chosen from a first-class international brand. Before warehousing, all the raw materials must pass a stringent warehousing quality inspection to ensure outstanding quality.

完善的质检流程 Perfect quality control process

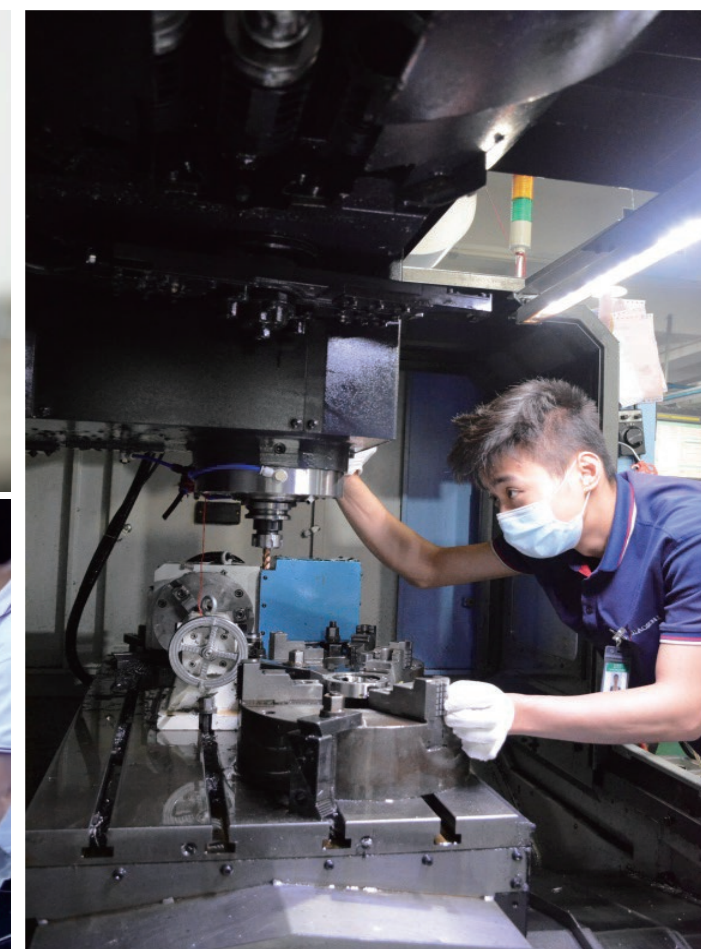
昊志严格按照国家和行业的标准要求，针对不同的零件、产品制定了严格的品质检测标准,保证产品质量的零缺陷，确保客户放心使用。

To assure zero faults in product quality and customer confidence in usage, Haozhi has developed tough quality inspection standards for various parts and products in strict conformity with national and industrial standards.



昊志拥有研发、生产、维修及售后服务一体的专业技术团队，使我们能及时响应客户在产品生命周期内的多层次、个性化需求。

Haozhi has a skilled technical staff that integrates R&D, production, maintenance and after-sales service, allowing us to respond to multi-level and personalized customer demands throughout the product life cycle.



市场布局

Market Layout



 Manufacturing Sites  Sales & Service Locations

Europe

- | | | |
|---|--|--|
|  Barcelona, Spain
MAVILOR MOTORS S.A.U. |  Yverdon-les-Bains, Switzerland
CYBELEC SA |  Lourdes, France
INFRANOR SAS |
|  Hanau, Germany
INFRANOR GERMANY |  Arese (MI), Italy
INFRANOR ITALY |  Barcelona, Spain
INFRANOR SPAIN |
|  Regensdorf, Switzerland
INFRANOR SWITZERLAND |  Lourdes, France
INFRANOR SAS | |

North America

-  Wilmington, MA, USA
INFRANOR USA

ASIA

- | | |
|---|--|
|  Guangzhou, China
Guangzhou Haozhi Industrial Co., Ltd. |  Yueyang, Hunan, China
KLKJ |
|  Shanghai, China
CNCT |  Yueyang, Hunan, China
Hunan Linear Motion |
|  Suzhou, China
Guangzhou Haozhi Industrial Co., Ltd. |  Shanghai, China
IMCT |
|  Bac Ninh Province, Vietnam
Haozhi Industrial (Vietnam) Co., Ltd. | |