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精效

精效
Greater Precision Better Efficiency

航天品质 全生命周期服务
Aerospace Quality - Full Life Cycle Services

JX系列空气悬浮高速离心鼓风机
JX Series Air Suspension High-speed Centrifugal Blower

精效悬浮（苏州）科技有限公司
Jingxiao (Suzhou) Technology Co.,LTD

公司简介
COMPANY PROFILE

精效悬浮（苏州）科技有限公司，是一家致力于气体轴承及高速旋转流体机械研发及产业化的公司，坐落于苏州高新区综合保税区，拥有厂房15000平米。

公司核心技术团队来自清华、北航、西工大、哈工大等知名院校，拥有丰富的航天产品研制经验。公司创始团队拥有超过20年的航天发动机设计及超精密设备研制经验。拥有182项知识产权，发明专利近60项。

公司有先进的五轴加工中心、数控车、线切割、充磁机等高端加工设备，高速动平衡仪、三坐标测量仪、圆柱度仪、激光干涉仪等高精密的检测设备和自主开发的气体轴承设计软件与测试平台、鼓风机测试平台。

自2009年以来，公司一直致力于空气轴承的研发，在理论计算、结构设计、材料选择、表面处理、精密制造等方面取得全面突破，为航天、航空、中核、精密加工机械，高速自动化生产线、集成电路生产线、液晶玻璃生产线、半导体生产线等提供了数百种空气轴承及其解决方案。

公司综合空气轴承、高速永磁电机、三元离心叶轮、矢量控制变频器、云端智能控制系统五大核心技术，研制出完全自主知识产权的空气悬浮高速离心鼓风机。2020年被工信部列入《国家工业节能技术装备推荐目录》和《能效之星》。空气悬浮高速离心鼓风机单机功率覆盖5.5kW到600kW，升压覆盖10-120kPa。

公司与航天三院联合成立军民融合实验室，与中核工业成立联合实验室/电机研发中心，希望将先进的气体轴承技术应用于军工产品，并持续不断将先进的军工技术转化为民用产品。

“更精密、更高效”是公司秉持的企业文化理念。公司上下团结一致，以突破底层技术及工业基础部件为必胜信念，立志为我国提供自主可控的范半导体行业用的光刻机、减薄机、划片机、涂布机等超高精度核心产品，彻底改变依赖进口的局面；立志为用户提供更高可靠性、更低能耗、更小噪声、更少维护成本的高端空气悬浮离心鼓风机/压缩机类产品，为全国乃至全人类碳达峰、碳中和贡献力量。

Jingxiao (Suzhou) Technology Co., Ltd. is a company dedicated to the research and industrialization of gas bearings and high-speed rotating fluid machinery. It is located in the Suzhou High Tech Zone Comprehensive Bonded Zone and has a factory spanning 15,000 square meters.

The core technical team of the company consists of professionals from prestigious universities such as Tsinghua University, Beihang University, Xi'an University of Technology, and Harbin Institute of Technology. They possess extensive experience in aerospace product development. The founding team of the company has over 20 years of experience in aerospace engine design and the development of ultra-precision equipment. The company has 182 intellectual property rights and nearly 60 invention patents.

The company has advanced five-axis machining centers, CNC lathes, wire-cutting machines, magnetization machines, and other high-end processing equipment. They also have high-precision detection equipment, including high-speed dynamic balance meters, coordinate measuring instruments, cylindricity meters, laser interferometers, and self-developed gas bearing design software and testing platforms. Additionally, they have blower testing platforms.

Since 2009, the company has been dedicated to researching and developing air bearings. They have made significant advancements in theoretical calculations, structural design, material selection, surface treatment, and precision manufacturing. The company has provided numerous air bearings and solutions for various industries including aerospace, aviation, CNNC, precision machining machinery, high-speed automated production lines, integrated circuit production lines, LCD glass production lines, and semiconductor production lines.

The company has developed a fully independent intellectual property air suspension high-speed centrifugal blower by integrating five core technologies: air bearings, high-speed permanent magnet motors, three-element centrifugal impellers, vector control frequency converters, and cloud-based intelligent control systems. In 2020, it was included in the "National Industrial Energy Conservation Technology and Equipment Recommendation Catalogue" and recognized as an "Energy Efficiency Star" by the Ministry of Industry and Information Technology. The power of a single machine for the air suspension high-speed centrifugal blower ranges from 5.5kW to 600kW, and the boost pressure covers 10-120kPa.

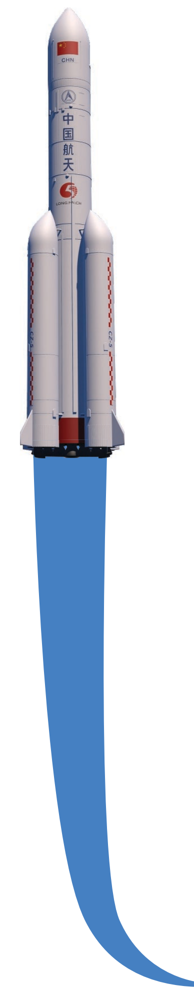
The company has established a military-civilian integration laboratory in collaboration with the Third Academy of Astronautics and Astronautics. Additionally, they have also established a joint laboratory and electric motor research and development center with the China National Nuclear Corporation. We aim to apply advanced gas-bearing technology to military products and consistently transfer advanced military technology into civilian products.

"More precision and efficiency" is the corporate culture philosophy upheld by the company. The company is united in its belief in breaking through underlying technology and industrial basic components. It is determined to provide China with independent and controllable ultra-high precision core products for the semiconductor industry, including lithography machines, thinning machines, slicing machines, coating machines, etc. This will completely change the country's dependence on imports. Additionally, the company is committed to providing users with high-end air suspension centrifugal blower/compressor products that offer higher reliability, lower energy consumption, lower noise, and lower maintenance costs. This commitment contributes to carbon peak and carbon neutrality for the entire country and even humanity.

发展历程
DEVELOPMENT HISTORY

HELLO WORLD!

展望未来



2023

交付460℃、3MPa防爆气悬浮鼓风机。
Delivery of 460 ℃, 3MPa explosion-proof air suspension blower.

“创客中国“大赛50强。
Top 50 Maker China Competition.

4月 April
进口替代高精度减薄机气悬浮电主轴交付。
Delivery of imported replacement high-precision thinning machine air suspension electric spindle.

2022

5月 May
光伏用洁净氮气悬浮鼓风机顺利交付。
The clean nitrogen suspension blower for photovoltaic use was successfully delivered.

June 6月
中国核工业研发中心成立。
The China Nuclear Industry R&D Center was established.

9月 September
北京及涿州公司全面迁苏。
Beijing and Zhuozhou companies are fully relocated to Suzhou.

获得苏州市姑苏创业领军人才奖。
Received the Suzhou Gusu Entrepreneurship Leading Talent Award.

2021

北京市专精特新技术企业。
Beijing specialized and refined new technology enterprise.

获得苏州高新区创业领军人才奖。
Received the Suzhou High tech Zone Entrepreneurship Leading Talent Award.

获得苏国发、苏高新专项投资。
Obtaining special investment from Su Guofa and Su Gaoxin.

9月 September
成立精效悬浮（苏州）科技有限公司。
Establishing Jingxiao (Suzhou) Technology Co.,LTD

2020

8月 August
进入工信部《国家工业节能技术装备推荐目录》和《能效之星》产品目录。
Entered the "National Industrial Energy Saving Technology and Equipment Recommendation Catalogue" and the "Energy Efficiency Star" product catalog of the Ministry of Industry and Information Technology.

9月 September
历时三年研制，中核某气体轴承项目顺利交付。
After three years of research and development, a gas bearing project at CNNC was successfully delivered.

2019

取得武器装备质量管理体系认证。
Obtaining certification for the quality management system of weapons and equipment.

2018

成立航天三院军民融合实验室。
Establishing the Military Civil Integration Laboratory of the Third Academy of Aerospace Science and Technology.

2017

成立北京智拓博科技有限公司。
Establishing Beijing Zhituobo Technology Co., LTD

5月 May
交付首批完全自主知识产权空气悬浮高速离心鼓风机。
Delivery of the first batch of fully independent intellectual property air suspension high-speed centrifugal blowers.

2016

5月 May
全国首个直径Φ1200mm承载力13T的超大空气轴承。
The first diameter in the country Φ 1200mm super large air bearing with a capacity of 13T.

2015

研制气悬浮大功率高速电机。
Developing air suspension high-power high-speed motor.

引入种子轮股东。
Introducing Seed Wheel Shareholders.

2014

3月 March
Φ0.01mm~Φ0.10mm极细/超细线的高张力高速绞线机用空气轴承研制成功。
Φ 0.01mm~ Φ 0.10mm The development of air bearings for high tension high-speed stranding machines withultra-fine/ultra fine wire has been successful.

2013

9月 September
制定战略：全面攻克高速旋转流体机械。
Developing strategy: comprehensively conquer high-speed rotating fluid machinery.

2012

为国内某著名高校交付光刻机部件产品。
Delivering lithography machine component products to a well-known university in China.

2011

交付航天某院气悬浮微重力模拟系统。
Delivery of an air suspension microgravity simulation system to a certain aerospace institute.

2010

为航天某院研制承载能力超6T大型球面空气轴承。
Developing a large spherical air bearing with a load-bearing capacity exceeding 6T for a certain aerospace institute.

6月 June
第一套动压空气轴承研发成功。
The first set of dynamic pressure air bearings has been successfully developed.

2009

5月 May
成立北京牧风，致力于空气轴承的研发与制造。
Beijing Mufeng was established, which dedicated to the research and manufacturing of air bearings.

公司资质
COMPANY QUALIFICATION

生产加工设备
PRODUCTION AND PROCESSING EQUIPMENT

生产设备
Production Equipment

拥有先进的五轴加工中心、数控车、线切割、超高精度磨床、充磁、热处理、表面处理等设备，年生产能力超过3000台。

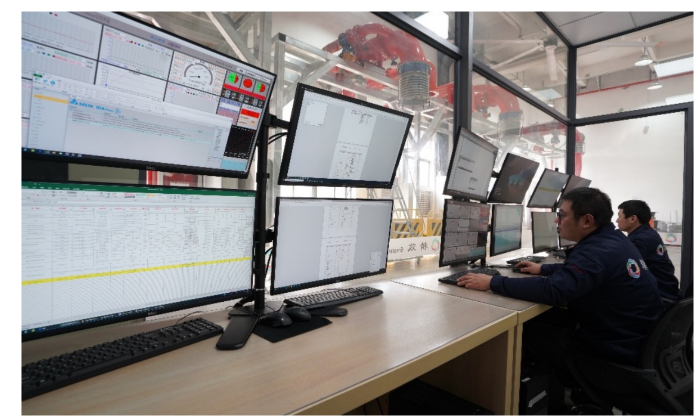
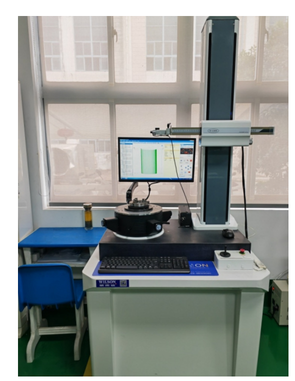
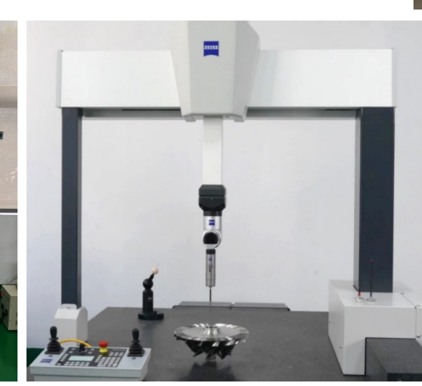
We have advanced five-axis machining centers, CNC lathes, wire cutting, ultra-high precision grinding machines, magnetization, heat treatment, surface treatment, and other equipment, with an annual production capacity of over 3000 units.




检测设备
Test Equipment

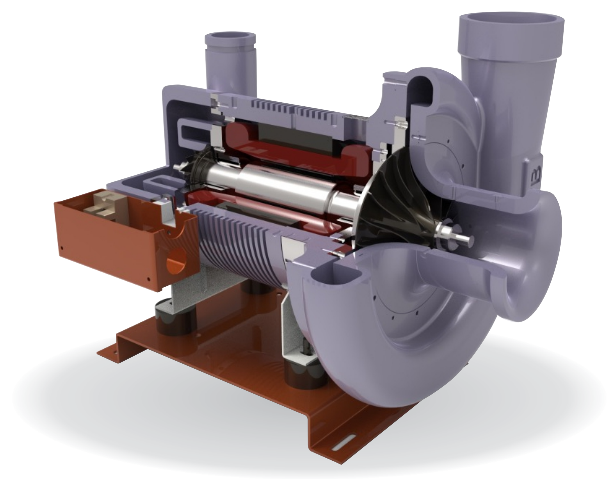
拥有申克高速动平衡仪、蔡司三坐标测量仪、高精度圆柱度测量仪等精密检测设备和自主开发的鼓风机主机、整机测试系统。

We have precision testing equipment, including the Shenke high-speed dynamic balance instrument, Zeiss coordinate measuring instrument, high-precision cylindricity measuring instrument, and our independently developed blower host and machine testing system.

产品介绍
PRODUCT INTRODUCTION

空气悬浮高速鼓风机介绍
Introduction to Air Suspension High-Speed Air Blower



· 长寿命 Long-period
空气轴承无摩擦
Air bearing without friction

寿命大于20年
Life expectancy greater than 20 years

· 体积小 Small size
占地面积小、重量轻
Small footprint and lightweight

无需地基、直接摆放
No foundation required, placed directly

· 易维护 Easy maintenance
仅需根据系统提示定期更换过滤棉
Simply replace the filter cotton regularly according to the system prompts

再无其他维护保养工作
No further maintenance work

· 无极调速 Stepless speed regulation
变频调节
Variable frequency regulation

风量调节范围大
Wide range of air volume adjustment

· 节能 Energy conservation
较罗茨鼓风机节能20%-50%
20% -50% more energy-saving than Roots blower

· 智能控制 Intelligent control
可通过用户移动端、PC端、云端管理，故障预警
Fault warning can be achieved through user mobile, PC, and cloud management

· 无油 Oil-free
鼓风机全无油
The blower is completely oil-free

· 低噪音 Low noise
低噪音系统设计，噪音低于80分贝
Low noise system design, with noise below 80 decibels

· 一体化设计 Integration
高集成度一体化设计
High integration integrated design

接入电源即可工作
Connect to the power supply to work

核心技术—气体轴承
CORE TECHNOLOGY - GAS BEARINGS

气体轴承的特点 Characteristics of Gas Bearings
由于气体的粘性系数极小，无污染，因而在高速、低摩擦、低功耗、高精密以及特殊高低温工况中占有绝对优势。
Due to its extremely low viscosity coefficient and pollution-free nature, gas has an absolute advantage in high-speed, low friction, low power consumption, high precision, and special high and low-temperature conditions.

动压气体轴承 Aerodynamic Bearing
利用气体的粘性，在相对运动的两个刚体之间，产生压力，压力大小取决于气体粘度和相对速度。
By utilizing the viscosity of the gas, pressure is generated between two rigid bodies in relative motion, and the magnitude of the pressure depends on the gas's viscosity and relative velocity.

静压气体轴承 Externally Pressurized Gas Bearing
利用气体的静压，可应用于直线、旋转、曲面等运动副的高精度支撑。
By utilizing the static pressure of gas, it can be applied to high-precision support of motion pairs such as straight lines, rotations, and curved surfaces.

物理原理 Principles of Physics
全压=静压+动压
Total pressure=static pressure+dynamic pressure

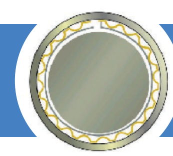
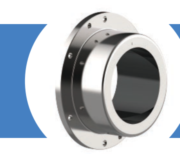
气体轴承 Gas Bearing
利用气体的静压和动压，在一定的条件下，在相对运动表面产生支撑力。
Under certain conditions, the static and dynamic pressures of gas are utilized to generate support forces on the surface of relative motion.

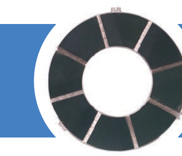
动压气体轴承典型应用
Typical Applications of Dynamic Pressure Gas Bearings

空气悬浮鼓风机
Air suspension blower

静压气体轴承典型应用
Typical Applications of Hydrostatic Gas Bearings

各种气浮主轴，超高精度运动副
Various air-floating spindles, ultra-high precision motion pairs



动压空气轴承通过轴与轴承相互运动，将气体带入滑动副表面之间收敛的区域而形成压力气膜。

在压力气膜的形成过程中，随着速度的提高，轴承承载区依次出现边界摩擦、混合摩擦和流体摩擦。当达到一定的回转速度时，空气压力场使得轴悬浮起来，并起到润滑作用。由于气体粘度很小，空气轴承几乎没有摩擦与能量损失，可以大大提高系统的效率与寿命。

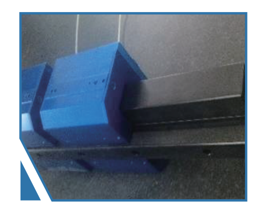
The dynamic pressure air bearing operates by creating a gas film between the shaft and the bearing, which generates pressure in the convergence area of the sliding surfaces.

During the formation of a pressurized gas film, as the speed increases, boundary friction, mixed friction, and fluid friction occur sequentially in the bearing area. When a specific rotational speed is reached, the air pressure field causes the shaft to suspend and provide lubrication. Due to the low viscosity of gas, air bearings have almost no friction and energy loss. This characteristic can significantly enhance the efficiency and lifespan of the system.

静压气体轴承产品
Static Pressure Gas-Bearing Products

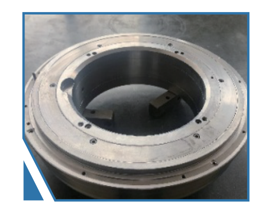
平面运动
Plane motion

- 多段拼接 Multi-segment splicing
- 吸浮复合 Suction floating composite
- 精度<1um/㎡ Accuracy<1um/㎡



直线运动
Rectilinear motion

- 精度<0.5um/㎡
  Accuracy < 0.5um/㎡
- 速度>10m/s
  Speed > 10m/s



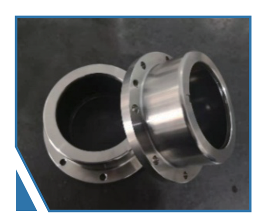
旋转运动
Rotational motion

- 跳动<0.1um Jump<0.1um
- 转速>400,000rpm Speed>400000rpm
- 承载>13T Carrying capacity>13T

球面运动
Spherical motion

- 精度<2”
  Accuracy<2 "
- 阻力<5mN
  Resistance < 5mN

动压气体轴承产品
Dynamic Pressure Gas-Bearing Products



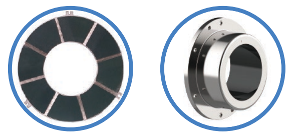
径向轴承 Radial bearing
- 承载力>1000N Bearing capacity > 1000N
- 转速>120,000rpm Speed > 120000rpm
- 起飞转速<3000rpm Takeoff speed<3000rpm

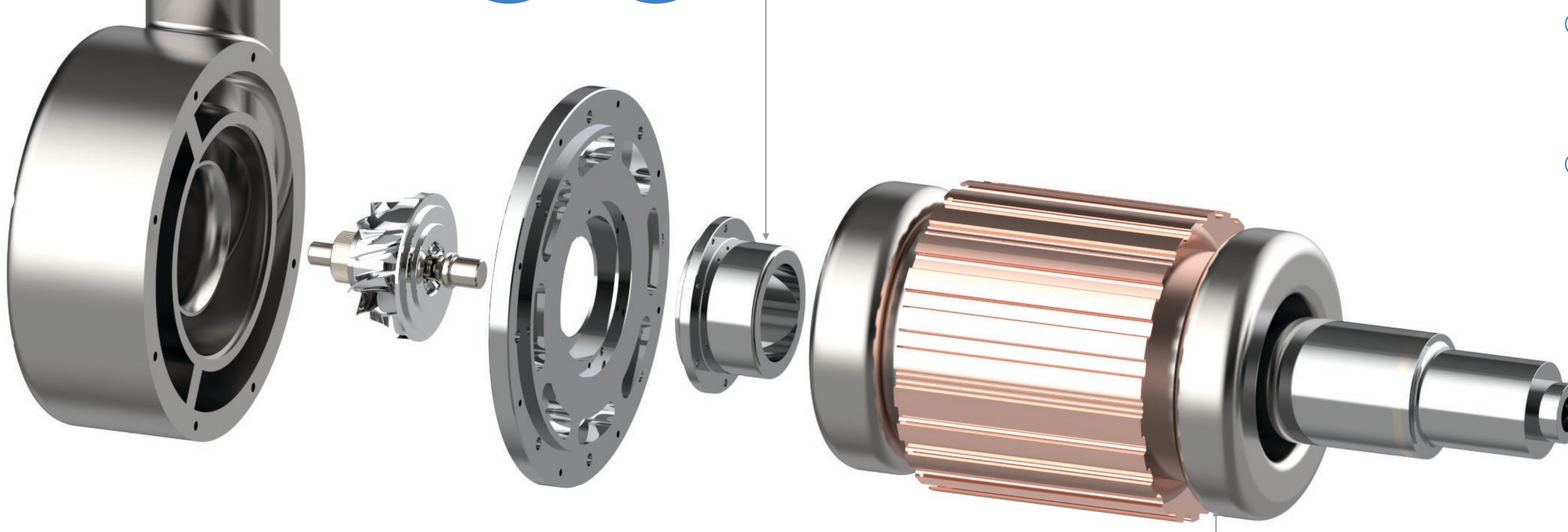
推力轴承 Thrust bearing
- 承载力>1500N
  Bearing capacity > 1500N
- 转速>120,000rpm
  Speed > 120000rpm

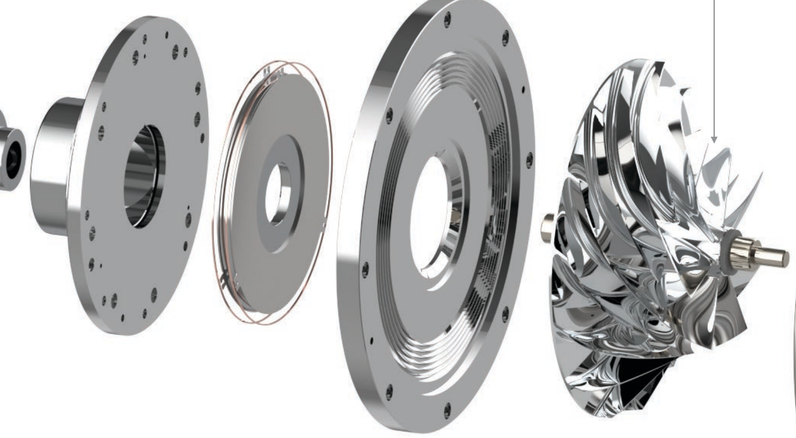
超低能耗 Ultra low energy consumption | 高转速 High speed | 低噪音 Low noise | 长寿命 Long-life | 全无油 Oilless | 微振动 Micro vibration | 免维护 Maintenance-free

五项核心技术
CORE TECHNOLOGY

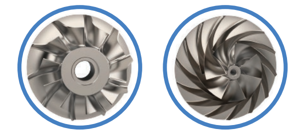
01 动压空气轴承
Self-acting air bearing





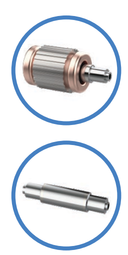


03 航空三元流叶轮
Aviation ternary flow impeller



- 全三元流后弯式气动设计，效率高，工作范围宽
  Full three-dimensional flow rear curved aerodynamic design, high efficiency, and wide working range.
- 五轴联动高速铣削加工成型，制造精度可达um级
  The five-axis linkage high-speed milling processing is formed, and the manufacturing accuracy can reach um level.
- 采用高强度航空铝材料，表面进行硬质阳极氧化，强度高、耐蚀性好、使用寿命大于20年
  Adopting high-strength aviation aluminum material with hard anodizing on the surface, it has high strength, good corrosion resistance, and a service life of more than 20 years.
- 可根据用户实际需求，设计专用高效叶轮，追求最佳节能效果
  We can design specialized and efficient impellers according to the actual needs of users, in pursuit of the best energy-saving effect.

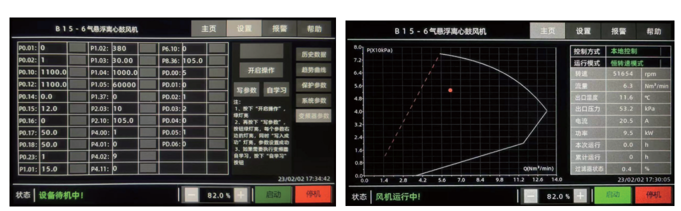
02 高速永磁同步电机
High-speed permanent magnet synchronous motor



- 最高转速可达400,000rpm
  The maximum speed can reach 400000rpm.
- 100,000次以上启停
  Start and stop more than 100000 times.
- 电机效率可达97%以上
  Motor efficiency can reach over 97%.
- 结构简单，体积小
  Simple structure and small volume.
- 电机和叶轮直连，无传动损失
  The motor and impeller are directly connected, without transmission loss.

04 智能控制系统
Intelligence control system

- 运行环境监测
  Operational environmental monitoring.
- 联动运行监测
  Linkage operation monitoring.
- 智能云端系统，提前预警运行状态
  Intelligent cloud system for early warning of operational status.
- 支持多种通讯协议
  Supports multiple communication protocols.
- 全生命周期数据存储
  Full lifecycle data storage.
- 提供多种操作模式，智能调节压力和流量
  Provide multiple operating modes and intelligently adjust pressure and flow.
- 具有多种防喘振保护功能，保障产品安全运行
  It has multiple anti-surge protection functions to ensure the safe operation of the product.
- 现场触屏调整和查看设备运行状态
  On-site touchscreen adjustment and viewing of device operation status.



05 高速变频驱动系统
High speed variable frequency drive system

- 气悬浮高速永磁同步电机专用的驱动控制算法使得电机运转稳定，并且功耗低
  The dedicated drive control algorithm for air suspension high-speed permanent magnet synchronous motor ensures stable operation and low power consumption of the motor.
- 启动电流小
  Low starting current.
- 定制变频器效率大于97%
  The efficiency of customized frequency converters is greater than 97%.
- -20°C~55°C宽范围工作
  Working within a wide range of -20°C to 55°C.
- 转速控制精确
  Accurate speed control.
- 最新一代变频控制器，将喘振、电机保护和本地连续调节控制集成为一体。该技术将大大简化传统控制方法，代表了空气悬浮高速离心风机控制技术的未来
  The latest generation of variable frequency controllers integrates surge, motor protection, and local continuous regulation control. This technology will greatly simplify traditional control methods and represent the future of air suspension high-speed centrifugal fan control technology.

空气悬浮离心鼓风机产品型谱

PRODUCT TYPE SPECTRUM OF AIR SUSPENSION CENTRIFUGAL BLOWER

注: (PS)

1.额定流量测定条件：101.325kPa,20℃,65%RH;
Rated flow measurement conditions:101.325kPa,20℃,65%RH;

2.流量误差范围：±5%以内;
Flow error range:within ±5%;

3.室内使用：
Indoor use

4.输入电源规格：AC 3PH 380V±15% 50/60Hz(市电);
Input power supply specification: AC 3PH 380V±15% 50/60Hz (mains power)

5.详细指标参见鼓风机系列产品规格书。
For detailed indicators,please refer to the product specifications of the blower series.

JX系列空气悬浮离心鼓风机产品型谱—Product type spectrum of air suspension centrifugal blower

型号model / 参数parameter		JX5.5	JX7.5	JX11	JX15	JX18.5	JX22	JX30	JX37	JX45	JX55	JX75	JX90	JX110	JX132	JX160	JX185	JX200	JX250	JX300	JX400	JX500	JX600
		流量（m³/min）																					
压力（kPa） pressure（kPa）	40	5.3	7.4	10.9	15	19	23	34	43	53	65	89	108	133	160	195	227	246	310	372	497	622	747
	50	4.3	6	8.8	12	15	19	28	35	43	53	73	88	108	130	159	185	201	254	308	412	518	622
	60	3.6	5	7.3	10	13	16.5	24	30	37	46	66	80	98	118	144	167	181	228	274	367	459	552
	70	3	4.2	6.6	8.9	11	14	20	27	34	42	58	70	85	102	124	144	155	196	236	316	396	477
	80	2.5	3.5	5.2	7.2	9	11	17	23	29	36	51	62	77	93	113	131	142	177	213	285	356	429
	90							16	21	26	32	45	54	67	81	99	115	125	157	188	253	316	380
	100							15	19	24	30	41	50	62	75	92	107	116	146	176	236	295	357
	110										28	39	47	58	70	85	99	108	136	163	219	274	330
	120										26	36	44	54	65	79	91	99	125	151	205	257	309
整机功率（kW） overall power（kW）		5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	200	250	300	400	500	600
轴功率（kW） shaft power（kW）		5.1	7	10.2	13.9	17.2	20.4	27.8	34.3	41.7	51.1	69.6	83.5	102	122	149	172	186	232	278	371	465	557
额定电流（A） rated current（A）		11	15	22	30	37	44	60	74	90	110	150	180	220	264	320	370	400	500	630	800	1000	1260
外形尺寸（mm） size （mm）	长	850			1000			1200					1500						1990		2530		
	宽	500			660			810					1060						1300		2400		
	高	950			1100			1400					1450						1850		2070		
出口管径(DN) outlet pipe diameter(DN)		DN80			DN100			DN200					DN350						DN400		DN500		
重量（kg） Weight （kg）		130	150	185	200	220	250	300	330	350	400	410	450	500	550	600	700	800	1600	1700	2400	3000	3200
线缆规格（mm²） cable specifications （mm2）		3×10 +1×6				3×16 +1×10		3×25 +1×10	3×35 +1×16	3×50 +1×16	3×70 +1×25		3×95 +1×35		3×120 +1×35	3×150 +1×50	3×185 +1×50		3×240 +1×70		2×(3×185)+1×95	2×（3×240）+1×95	
散热出口管径(DN) Heat dissipation outlet pipe diameter(DN)		DN40			DN65			DN100					DN125								2*DN125		
初效过滤棉规格/数量 Specification/quantity of initial filter cotton		25×550×400 1块			25×800×550 1块			25×650×500 2块					25×950×580 2块						25×1080×710 2块		25×1015×680 2件 25×1015×1000 4件		
中效过滤器规格/数量 Specification/quantity of medium efficiency filters		300×470×48 1块			300×470×48 2块			300×470×48 4块					300×470×48 6块						300×470×48 8块		300×470×48 20块		

低压空气悬浮离心鼓风机产品型谱

LOW-PRESSURE AIR SUSPENSION CENTRIFUGAL BLOWER PRODUCT SPECTRUM

注: (PS)

1.额定流量测定条件：101.325kPa,20℃,65%RH;
Rated flow measurement conditions:101.325kPa,20℃,65%RH;

2.流量误差范围：±5%以内;
Flow error range:within ±5%;

3.室内使用：
Indoor use

4.输入电源规格：AC 3PH 380V±15% 50/60Hz(市电);
Input power supply specification: AC 3PH 380V±15% 50/60Hz (mains power)

5.详细指标参见鼓风机系列产品规格书。
For detailed indicators,please refer to the product specifications of the blower series.

低压空气悬浮离心鼓风机产品型谱-Low-pressure air suspension centrifugal blower product spectrum

型号model / 参数parameter		YB7.5	YB15	YB22	YB30	YB37	YB45	YB55	YB75	YB90	YB110	YB150	YB180	YB220
		流量(m³/min)												
压力(kPa) pressure(kPa)	10	24	28	50	70	86	105	128	173	210	257	345	420	513
	15	22	27	49	65	80	98	119	160	195	238	321	390	477
	20	18	28	48	60	74	90	110	148	180	220	296	360	440
	25	12	27	47	55	68	83	101	136	165	202	271	330	403
	30	10	24	39	49	60	74	90	121	147	180	242	294	359
整机功率(kW) overall power(kW)		9	15.6	26	30	37	45	55	75	90	110	150	180	220
轴功率(kW) shaft power(kW)		7.5	14	22	28.5	35.2	43	52	71	85	104	142	170	208
额定电流(A) rated current(A)		19	31	45	60	74	90	110	150	180	220	300	360	440
外形尺寸(mm) size(mm)	长/L	650		1050	1040				1190			1550		
	宽/W	700		750	855				740			1250		
	高/H	650		1050	910				1300			1900		
出口管径(DN) outlet pipe diameter(DN)		DN100		DN150	DN200				DN300			DN500		
重量(Kg) Weight(kg)		140		300	380				750			900		
线缆规格(mm²) cable specifications(mm²)		3X10 +1X6		3X16 +1X10	3X25 +1X10	3X35 +1X16	3X50 +1X16	3X70 +1X25		3X95 +1X35		3X150 +1X50	3X185 +1X50	

离心式鼓风机性能曲线图

Performance Curve of Centrifugal Blower

·鼓风机运行范围 Operating range of blower

理论上，鼓风机可以在额定转速，最低转速以及喘振边界，右边界之间任何一点可靠的运行。选型时，实际工况(压力，流量)只需在区间均可稳定运行。

In theory, the blower can operate reliably at any point between the rated speed, minimum speed, surge boundary, and right boundary. When selecting models, it is only necessary for the actual operating conditions (pressure, flow rate) to remain stable within a certain range.

·恒转速曲线 Constant speed curve

鼓风机每一个转速，都对应一条性能曲线。如转速恒定，鼓风机将工作在该性能曲线的某个点上。改变转速，鼓风机将在不同的恒转速曲线上工作。

Each speed of the blower corresponds to a performance curve. If the speed is constant, the blower will operate at a specific point on the performance curve. By adjusting the speed, the blower will operate on various constant speed curves.

·恒功率曲线 Constant power curve

鼓风机工作在该曲线上，运行功率保持不变。相同的功率，鼓风机可以输出多个流量和压力。

The blower operates on this curve, and the operating power remains unchanged. With the same power, the blower can produce various flow rates and pressures.

·恒压力曲线 Constant pressure curve

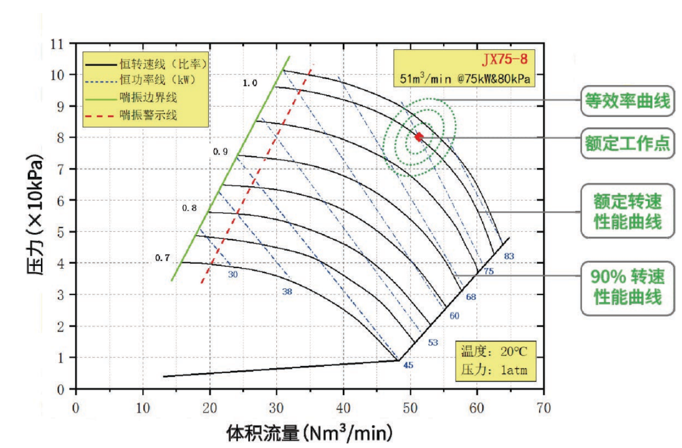
鼓风机在该曲线上工作时，压力保持不变。

When the blower operates on this curve, the pressure remains constant.

·恒流量曲线 Constant flow curve

鼓风机在该曲线上工作时，流量保持不变。

When the blower operates on this curve, the flow rate remains unchanged.



·喘振线 Surge line

离心式鼓风机特有的特性。但当工作点在喘振线左侧时，鼓风机将会发生喘振，而无法正常运行。离心式鼓风机必须具有喘振保护功能。

The Unique Characteristics of Centrifugal Blowers. When the operating point is to the left of the surge line, the blower will experience a surge and will not be able to function properly. The centrifugal blower must have surge protection functionality.

·喘振保护(警示线) Surge protection (warning line)

在鼓风机达到喘振之前，我司的鼓风机即可自动做出保护反应，调整避开喘振区域。

Before the blower reaches a surge, our company's blower can automatically respond to provide protection and adjust to avoid the surge area.

应用场景
APPLICATION SCENARIOS

污水处理 Sewage Disposal
磺化 Sulfonation
气力输送 Pneumatic Conveying
有色金属冶炼 Nonferrous Metal Smelting
垃圾焚烧 Waste Incineration
干燥发酵 Dry Fermentation
水泥生产 Cement Production
电力 Electric Power

应用行业
APPLICATION INDUSTRY

应用于环保污水处理、水泥、钢铁冶炼、印染纺织、造纸、石油、化工、电力、生物医药、食品、酿造、化肥、除尘反吹、制氧、水产养殖等各行业。

Applied in various industries such as environmental wastewater treatment, cement production, steel smelting, printing and dyeing textiles, papermaking, petroleum refining, chemical manufacturing, electricity generation, biomedicine, food processing, brewing, fertilizer production, dust removal and blowback systems, oxygen production, and aquaculture.


市政污水 Municipal sewage


食品酿造 Food brewing


钢铁冶炼 Steel smelting


水泥 cement


印染 printing and dyeing


石油化工 petrochemical industry

服务
SERVICE

◎ 维修服务 Maintenance Services

公司可承接不同进口品牌空气悬浮高速鼓风机的维修。

The company can undertake the maintenance of different imported brands of air suspension high-speed blowers.

◎ 售后服务 After-sale Service

公司及合作伙伴，为用户提供快速专业的服务。独特设计的产品，可完成远程故障排除和指导用户操作。

The company and its partners provide users with fast and professional services. A uniquely designed product that can complete remote troubleshooting and guide user operations.

◎ 定制服务 Maintenance services

- 负压抽吸正压供气 Negative pressure suction and positive pressure gas supply
- 更低噪音 Lower noise
- 耐高低温 High and low-temperature resistance
- 电器防爆、机箱防爆 Electrical explosion-proof and chassis explosion-proof
- 特殊控制模式 Special control mode
- 户外风机 Outdoor fan
- 腐蚀性环境 Corrosive environment
- 高磁环境 High magnetic environment
- 输送特殊气体(二氧化硫、氮气、一氧化碳) Transporting special gases (sulfur dioxide, nitrogen, carbon monoxide)

合作客户
COOPERATIVE CLIENTS

中国空间技术研究院 China Academy of Space Technology
中国航天科工二院
中国航空工业集团有限公司 AVIATION INDUSTRY CORPORATION OF CHINA, LTD.
中国航天空气动力技术研究院 China Academy of Aerospace Aerodynamics (CAAA)
中国原子能科学研究院 CNNC CHINA INSTITUTE OF ATOMIC ENERGY
上海航天技术研究院 Shanghai Academy of Spaceflight Technology
CETC 中国电子科技集团公司 CHINA ELECTRONICS TECHNOLOGY GROUP CORPORATION
中国核工业集团有限公司 China National Nuclear Corporation
中国航天科工三院
中国科学院 CHINESE ACADEMY OF SCIENCES
清华大学 Tsinghua University
西安交通大学 XI'AN JIAOTONG UNIVERSITY
西北工业大学 NORTHWESTERN POLYTECHNICAL UNIVERSITY
北京航空航天大学 BEIHANG UNIVERSITY
BEWG 北控水务
碧水源 OriginWater
北京环卫 BEIJING HUANWEI
思普润 SPRING
光大水务 Everbright Water
衡水老白干
XWG 西安水务
VEYONG 威远生化
中环环保
999 三九医药
SYNERGY
同和药业 SYNERGY PHARMA 证券代码：300636
深圳水务集团 SHENZHEN WATER GROUP
中国节能 CHINA ENERGY CONSERVATION AND ENVIRONMENTAL PROTECTION
扬子 YANG ZI
中持股份 CSD Environmental Technologies Inc.
HS 江西华士药业 Jiangxi huashi Pharmaceutical
北京绿恒科技有限公司
东方希望 EAST HOPE
康普药业 KAMP MEDICINE
中环股份 ZHONGHUAN SEMICONDUCTOR
山东胜利生物工程有限公司 SHANDONG SHENGLI BIOENGINEERING CO.,LTD.
KOBELCO 神钢集团
南通醋酸纤维有限公司 NANTONG CELLULOSE FIBERS CO., LTD.
国投电力 SDIC POWER
西南水泥有限公司 Southwest Cement Co.,Ltd
天瑞水泥 TIANRUI CEMENT
国家电投 SPIC
中电投集团公司
中国华能 CHINA HUANENG
金隅
冀东水泥
广西新振锰业集团有限公司 GUANGXI XIN-MANGANESE GROUP CO., LTD
安阳市新普钢铁有限公司
德鑫物联 GSIT
HUAWEI
TZTEK 天准
LAFARGE
JIDD
CORNING Discovering Beyond Imagination
浙江大学 ZHEJIANG UNIVERSITY
HAN'S LASER 大族激光

应用案例
APPLICATION CASE

工业应用


安阳钢铁 赤峰热电 广西新材料 宁夏临河电厂 漳州电镀


咸阳长庆石化 南京亚什兰化工 江苏利港电厂 南通市华能电厂 北骄热电蒙泰电厂


中节能资阳垃圾焚烧 中节能抚州垃圾焚烧 霍林河坑口电厂 天津石化

工业污水应用


东盛印染 福建绿麟食品 甘肃兰州三毛工厂 赣州餐厨垃圾 河北威远生物 衡水老白干酒厂 上海大众汽车厂


嘉兴市印染 江苏蓝素生物 招远污水厂项目 江西同和药业 焦作华康糖醇 南通醋酸 山东三九药业


绍兴展望印染 张家口华恒制药 绍兴中环印染 神钢汽车铝材 葫芦岛食品 济南生物医药 山东东营人民医院

矿山行业应用


广西华银氧化铝 贵州胜威化工 山东黄金选矿 云南祥丰项目 湖北祥云项目 湖北三宁浮选


湖北兴发浮选项目 内蒙古东升庙矿业 新疆楚疆铜浮选 湖北龙蟒项目 广西华晟氧化铝 黑龙江冀东


酒钢宏达建材 邦普循环项目 包头东方项目 河北文丰项目 冀东邢台牛山 内蒙蒙维电石二厂

市政污水应用


安徽宣城污水处理厂 北京庞各庄污水厂 北京顺正污水处理厂 承德丰宁污水厂 绿恒汕头项目


北控绵阳污水厂 沧州南皮污水厂 中持博爱县污水 中信海安污水 丰台再生水厂 中信南通常安水务


北控南和污水厂 广西崇左污水厂 航天三院涞水 济南康达环保 深水南山项目 顺义汉石桥 中持清河污水 山阳县污水处理厂


西安第三污水处理厂 中核简阳 中核张掖 中信河南渑池 中信山东柳疃 湘潭顺业污水 霸州信环水务