鑫华东
XINHUADONG

磁悬浮高速离心鼓风机

MAGNETIC LEVITATION HIGH SPEED CENTRIFUGAL BLOWER

高效/节能/无油/免维护/低噪音

HIGH EFFICIENCY/ENERGY SAVING/OIL-FREE/MAINTENANCE-FREE/LOW NOISE

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邮　　编：250201
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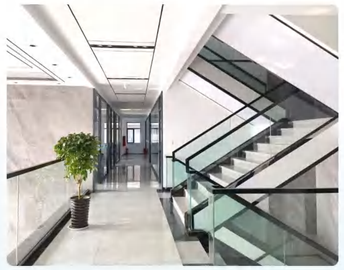
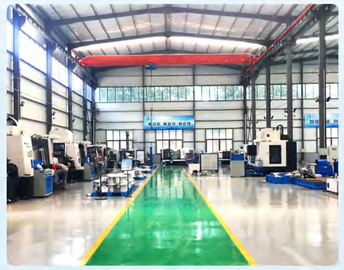
山东华东风机有限公司
SHANDONG HUADONG BLOWER CO.,LTD

公司简介

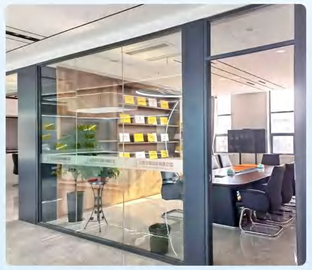
COMPANY PROFILE





山东华东风机有限公司，成立于2010年，位于山东济南章丘明水经济技术开发区，是国家级专精特新小巨人、国家级高新技术企业，占地面积10万平方米，7万平米的标准厂房，200多台数控加工设备，职工500余人，以博士、硕士为核心的研发团队60多人，拥有国家专利及各类知识产权100多项。

Shandong Huadong Blower Co., Ltd., established in 2010, is located in the Ming Shui Economic and Technological Development Zone, Zhangqiu District, Jinan, Shandong Province. The company covers an area of 100,000 square meters, with 70,000 square meters of standard workshops. It operates over 200 CNC machining equipment and employs more than 500 staff members. The R&D team, comprising over 60 Ph.D. and Master's degree holders, has been granted over 100 national patents and various intellectual property rights.



发展历程
Development process

2007-2008年
章丘市消费者满意单位

2010-2012年
章丘市纳税先进单位
章丘市纳税十强单位
章丘市守合同重信用企业

2014年
济南市守合同重信用企业
济南市著名商标

2015年
ISO9001质量管理体系认证

2016年
山东著名商标
文明诚信私营企业
安全生产标准化三级企业
中国通用机械工业协会风机分会会员单位

2017年
工人先锋号
先进共产党员经营户

2018-2019年
章丘质量奖
欧盟CE认证
国家高新技术企业
隐形冠军“培训库”
山东省“专精特新”中小企业

2020年
欧盟CE认证
环境管理体系认证
章丘质量奖-个人奖
ISO9001质量管理体系认证
职业健康安全管理体系认证
中国通用机械工业协会分会会员单位

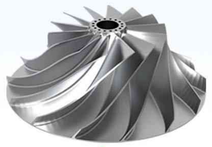
2021-2022年
山东省装备制造业科技创新一等奖
“能效之星”装备产品目录
质量管理体系认证证书
济南优势工业产品目录
绿色工厂

2023年
揭榜挂帅
优秀节能之星
山东省重点项目
山东制造 齐鲁精品
国家级专精特新“小巨人”

2024年
山东省装备制造业科技创新一等奖
2024年济南市创新工业产品
第二届济南工业绿色低碳发展创新成果奖

结构组成
The composition of a structure

高效离心叶轮
High-efficiency centrifugal impellerMagnetic bearing



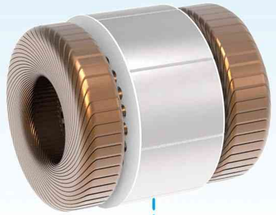
●采用三元流动理论设计及参数优化，使叶轮效率最大化，工作区域广。
●离心叶轮材质采用高强度锻铝或钛合金，抗变形能力强。

Adopt ternary flow theory design and parameter optimization to maximize impeller efficiency and wide working area.
Centrifugal impeller is made of high-strength forged aluminum or titanium alloy, which has strong resistance to deformation.

位置传感器
Position sensor

●公司自主研发生产的电涡流位置传感器，可实现高频率，高精度的精确检测。
●具有抗干扰、耐高温，抗冲击，能适应各种恶劣环境的优异性能。

The eddy current position sensor independently developed and produced by the company can achieve high-frequency, high-precision accurate detection.
It has excellent performance of anti-interference, high temperature resistance, impact resistance, and can adapt to various harsh environments.



高速永磁同步电机
High-efficiency centrifugal impellerMagnetic bearing

●采用高速大功率永磁同步电机。
●电机体积小，重量轻，功率密度高。
●电机转速高，最高可达60000转/分钟。
●可实现无级调速控制。
●电机转子和叶轮直连，减少中间耗能，运行故障率低，传动效率高。

High speed and high power permanent magnet synchronous motor.
Small motor size, light weight and high power density.
High motor rotary speed, up to 60,000 rpm.
Can achieve stepless speed control.
Motor rotor and impeller are coupled, reducing intermediate energy consumption, low operating failure rate and high transmission efficiency.

集流器
Current collector

●双曲线形集流器，对气流有一个加速。
●气流均匀的充满叶轮的进口断面，使风机进口处的阻力减小。

The hyperbolic collector accelerates the air flow.
The airflow evenly fills the inlet section of the impeller, reducing the resistance at the blower inlet.

蜗壳
Volute

●强度高，耐腐蚀。
●内壁型线设计成对数螺旋线，对风机冲击小，振动小，噪音低，效率高。
●蜗壳的作用是收集从叶轮出来的气体，并引导到蜗壳的出口，把气体输送到管道中去，有的蜗壳将气体的部分动压转变为静压。

High strength and corrosion resistance.
The inner wall profile is designed as a logarithmic spiral, which has small impact on the blower, small vibration, low noise and high efficiency.
The function of the volute is to collect the gas from the impeller, guide it to the outlet of the volute, and transport the gas to the pipe. Some volutes convert part of the dynamic pressure of the gas into static pressure.

磁悬浮轴承
Magnetic bearing

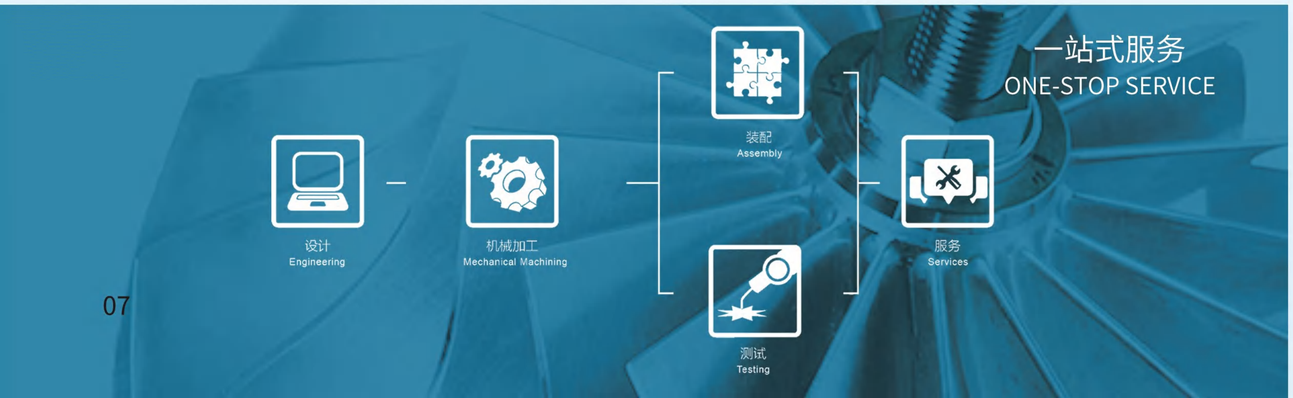
●无磨损/无需润滑，可实现高速运转。
●可监控转子状态，可监控轴承状态。
●无需润滑，减少外壳尺寸和重量。
●半永久性寿命，无需维护。
●采用5自由度主动磁悬浮轴承技术，利用电磁力实现转子悬浮。

No wear / lubrication for high speed operation.
Monitor rotor status and bearing status.
No lubrication required, reducing case size and weight.
Semi-permanent life without maintenance.
Adopt 5 DOF active magnetic levitation bearing technology to realize rotor suspension by electromagnetic force.

产品特点及优势
Product characteristics and advantages

磁悬浮高速离心鼓风机是将磁悬浮轴承技术和高速电机技术融入传统风机之中所形成的一种高效节能环保的新型鼓风机，具有结构简单、高效智能、一体化、操作维护简单、运行费用低的显著优点，可广泛应用于污水处理（市政、工业及其他）、物料输送、食品医药、纺织印染、皮革造纸、玻璃制造、钢铁冶金、烟气脱硫等项目中，节能效果显著。

High speed magnetic levitation centrifugal blower is one new type blower using magnetic levitation bearing technology and high speed motor technology on the basic of traditional blower. It is in simple blower structure, high efficiency, intelligent, integration, easily operation and maintenance, low operation cost. It could be widely used in waste water treatment(municipla, industrial and others), pneumatic conveying, food, medicine, textile, printing, leather paper, glass production, steel metallurgy, gas desulfurization, and so on, better performance in energy saving.



流量压力范围
Product series & specifications

磁悬浮离心鼓风机流量范围
Magnetic levitation centrifugal blower flow range

压力 Pressure / 型号 Model	40kPa	60kPa	80kPa	100kPa	120kPa
HMGB30 最大流量 Maximum flow	38.1	27.6	21.6	17.2	11.2
HMGB45 最大流量 Maximum flow	53.2	37	31	22	16.1
HMGB55 最大流量 Maximum flow	66	47	37	31	22
HMGB75 最大流量 Maximum flow	85	66	45.5	43	37
HMGB90 最大流量 Maximum flow	110	78	60	50	44
HMGB110 最大流量 Maximum flow	135	96	75	63	49
HMGB132 最大流量 Maximum flow	150	107	80	64.5	49
HMGB150 最大流量 Maximum flow	186	140	103	74	63
HMGB185 最大流量 Maximum flow	205	150	117	100	/
HMGB200 最大流量 Maximum flow	220	172	137	109	80
HMGB250 最大流量 Maximum flow	280	213	170	143	121
HMGB300 最大流量 Maximum flow	330	250	203	170	142
HMGB400 最大流量 Maximum flow	420	340	260	220	185

备注：该选型表仅供参考，如需准确选型，请将相应参数发由我司专业技术人员核算。
Note: This selection table is for reference only. If you need accurate selection, please send the corresponding parameters to our professional and technical personnel for calculation.

工作原理
Working theory

磁悬浮高速离心鼓风机采用了高速永磁同步电机的直驱结构， 将离心叶轮和电机驱动一体化集成设计，它通过内置的位移传感器实时检测转子轴的振动及空间间隙，将得到的信号送入磁悬浮轴承控制器进行调理、解析、运算，产生控制电流， 再将该电流输入磁轴承绕转线圈，产生电磁力，从而实现转子轴的悬浮。

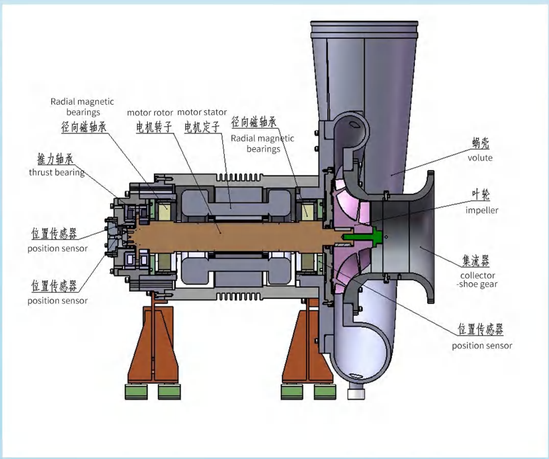
永磁同步电机的主要功能是驱动转子轴的旋转，它通过变频器产生频率可控的电流，将此电流输入电机定子产生的旋转磁场，带动转子轴高速旋转。

风机的主要功能是实现鼓风，随转子轴一同做高速旋转的叶轮带动空气，对空气做功，空气从蜗壳的进气口集流器进入，空气在蜗壳的导向与增压作用下成为具有一定流速与压力的气体，最后从蜗壳的出气口鼓出实现一定压力和流量气体的输送。

Magnetive levitation centrifugal blower uses the direct driving structure of high rotary speed permanent magnet motor, designed together with centrifugal impeller and motor driving. It monitors the vibration of shaft and space gap by the motion detector inside. Then it would transfer the signal to the magnetive levitation bearing controller to adjust, parsing, calculation, and producing controlling current, to transport the current into the magnetive bearing winding coil, and producing electromagnetic force, then realize the levitation of shaft.

The main function of permanent magnet synchronous motor is to driving the rotary of shaft. It produce the frequency controllable current, and transport the current into the rotary magnetic field of motor stator, to drive the shaft rotary in a higher speed.

The blower's main function is to boosting air. The impeller, which whirling together with shaft, works on air. Air enters from the inlet collector of the volute, and the air becomes a gas with a certain flow rate and pressure under the guidance and pressurization of the volute, and finally blows out from the air outlet of the volute, to realize a gas delivery process with certain pressure and flow rate.

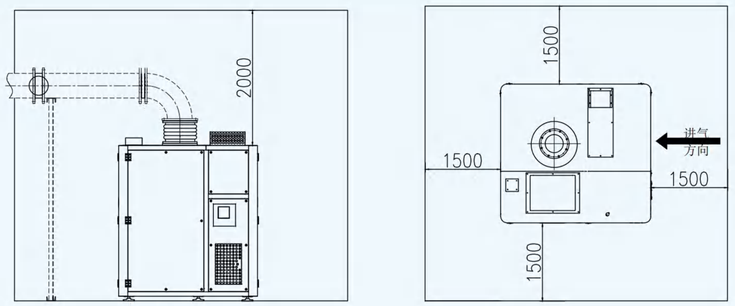


性能比较
Performance comparison

性能比较		罗茨鼓风机	多级离心鼓风机	单级离心鼓风机	华东空气悬浮鼓风机	华东磁悬浮鼓风机
轴承	轴承	滚珠轴承	滚珠轴承	可倾瓦轴承	箔片轴承	自主国产磁轴承，国内最早研究成功，技术成熟，稳定性高
	技术来源	国产	国产	进口/国产	韩国	航天军工
	寿命	1-2年	2-3年	3-5年	半永久性	半永久性
	机械损失	轴承能耗2%	轴承能耗2%	滑动摩擦，能耗3%以上	启停时存在摩擦	电磁感应，轴承能耗低
叶轮	形式	铸造二叶或三叶	焊接碳钢或铸铝	铝合金，不锈钢或钛合金三元流叶轮	航空三元流叶轮	航空三元流叶轮
	寿命	5-8年	10年	15年	20年	20年
	空气动力学效率	低	低	较高	高	高
高速电机	电动机类型	低速异步电动机	低速异步电动机	异步交流电机	自主研发高速永磁电机	自主研发高速永磁电机
	传动形式	皮带或联轴器	联轴器	联轴器	直连	直连
	电机效率	86%	87%	94%	95%	超过97%
	控制转速	不能	不能	不能	调速精确	调速精确
	类型	没有调速系统，电机功率一定，转速一定，风量不变	没有调速系统，除非更换变频电机和增加变频控制器	导叶调节，机械损失	智能化直流调速系统改变轴的转速改变风量	智能化直流调速系统改变轴的转速改变风量
	工作范围	很小	很小，加变频可适当放宽	流量和压力调节幅度较小	流量和压力调节幅度比较大	流量和压力调节幅度大
安装	基础	需要	需要	需要	不需要	不需要
维护	润滑油	每班检查，定期添加，费用中等	每班检查，定期添加，费用中等	每班检查，定期添加费用高	无需润滑油	无需润滑油
	易损件	轴承、齿轮	轴承、密封	轴承、齿轮、润滑油泵	过滤器过滤棉	过滤器过滤棉
	费用	低	中	高	低，服务及时	低，服务及时
运行	运行费用	最高	高	中	低	最低
	投资费用	最低	中	高	高	高
整机效率		57%	61%	68%	76%	77%
整机 价格		低	较低	进口价格高	价格适中，满足国内市场需求	价格适中，满足国内市场需求
售后维保		周期短，费用低，故障率高	周期短，费用高	维保周期长，费用很高	维保及时，自主核心部件，维修周期短，费用低	维保及时，自主核心部件，维修周期短，费用低

鼓风机工作环境和安装示意图

Blower working environment and installation diagram



鼓风机安装于一个相对干净和干燥的室内区域，并留有足够的空间来确保空气流通。请勿将鼓风机安装于室外或暴露在雨、雪和潮湿的环境中。若不具备上述条件，请在安装前咨询我公司。

The blower is installed in a relatively clean and dry indoor area with sufficient space to ensure air circulation. Do not install the blower outdoors or exposed to rain, snow, and humidity. If the above conditions are not available, please consult our company before installation.

01.磁悬浮离心式鼓风机的推荐运行环境温度为-10°C～45°C。 如果环境温度始终低于 0°C，请在鼓风机房增加供暖设备；如果环境温度始终高于 35°C，请务必加强鼓风机房的通风，保证室内热量的散发。

The recommended operating ambient temperature of the magnetic levitation centrifugal blower is -10 °C ～ 45 °C. If the ambient temperature is always lower than 0 °C, please add heating equipment in the blower room; if the a mbient temperature is always higher than 35 ° C, be sure to strengthen the ventilation of the blower room to ensure the indoor heat dissipation.

02.为保证鼓风机可靠工作及安装、维护与保养的方便性，鼓风机四周应有一 定的空间，推荐最小的预留空间范围见图 ，建议在此基础上适当的增加鼓风机房的面积，可降低房间回声。

In order to ensure the reliable operation of the blower and the convenience of installation and maintenance, there should be a certain amount of space around the blower. The recommended minimum reserved space is shown in the figure. It is recommended that the area of the blower room be appropriately increased to reduce Room echo.

03.受制于电子元器件及流体部件性能，推荐将鼓风机安装于海拔小于 1000 米的地区。如果不得不安装于海拔大于 1000 米的区域，请在安装前咨询我公司工程师。

Subject to the performance of electronic components and fluid components, it is recommended to install the blower at an altitude of less than 1000 meters. If you have to install in an area with an altitude of more than 1000 meters, please consult our engineers before installation.

04.鼓风机应尽量安装在洁净的场所，灰尘多会缩短入口过滤器的使用寿命， 导致电机发热严重或过滤器频繁更换。

The blower should be installed in a place as clean as possible. The dust will shorten the service life of the inlet filter, which will cause the motor to generate severe heat or the filter to be replaced frequently.

企业文化

Enterprise culture

企业文化：

诚信、踏实、优质、一流

经营理念：

追求卓越无止境，与时俱进创未来

创业动力：

用爱心做事业，用感恩的心做人

团队理念：

负重领先，默契信任，风险共担

Enterprise culture:

Honest, Surefooted, Superior, First-class

Business philosophy:

The pursuit of excellence is endless and we keep pace with the times to create the future

Entrepreneurial motivation:

Do business with love and be a person with a grateful heart

Team philosophy:

Leading the charge, tacit trust, and shared risks

华东与员工心连心

Huadong Blower is heart-to-heart with its employees

品质保障
Quality Assurance

推进工业文明
PROMOTING INDUSTRIAL CIVILIZATION

共创美好未来
CREATING A BETTER LIFE TOGETHER

华东风机拥有先进的检测、试验设备,践行“设计开发一测试验证一运行优化一推向市场一持续创新”的生产制造理念，实现对磁悬浮轴承、大功率高速永磁同步电机、高效离心叶轮等关键设计结果的全方位检验和测试，从而保证所开发的磁悬浮鼓风机在稳定性、可靠性方面具有强大的保障。

Huadong Blower has advanced testing equipment, and implements the manufacturing concept of "design and development - testing and verification - operation optimization - market introduction - continuous innovation", realize the all-round inspection and testing of key design results to magnetic suspension bearings, high-power high-speed permanent magnet synchronous motors, and high-efficiency centrifugal impellers, which guarantees the stability and reliability of the developed magnetic levitation blower.

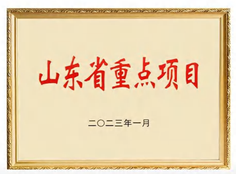
华东风机始终坚持永远比客户期待要好；打造及时、专业、愉悦、周到的服务理念；一切以超越客户需求为使命，为结果负责！

Huadong Blower always insists on always being better than customers' expectations;creating a timely, professional, pleasant and thoughtful service concept. Everything is based on the mission of exceeding customer needs and is responsible for the results!

资质荣誉
Qualifications and honors

公司累计获得荣誉称号超过100项，拥有与主导产品相关的知识产权100余项，其中，发明专利50多项，并通过ISO9001国际质量管理体系认证、ISO24001环境管理体系认证、ISO45001职业健康安全管理体系认证、两化融合管理体系认证、知识产权管理体系认证、欧盟CE认证和EAC认证。

Our company has accumulated more than 100 honorary titles, and has more than 100 intellectual property rights related to leading products, including more than 50 invention patents. They have passed ISO9001 International Quality Management System Certification, ISO24001 Environmental Management System Certification, ISO45001 Occupational Health and Safety Management System Certification, Two Integration Management System Certification, Intellectual Property Management System Certification, EUCE Certification and EAC Certification.



重点合作伙伴
Key partners

上万家客户的共同选择，服务客户永无止境。
A common choice from 10,000 customers ,serving customers endlessly.

中国石化 SINOPEC
中国石油
中国海油 CNOOC
SINOMA 中国中材
中粮 COFCO 自然之源 重塑你我
中国建材
中核集团 CNNC
中国节能 CECEP
中化 sinochem 科学至上
中国三峡 China Three Gorges Corporation
中国水务 CHINA WATER
CUCC 中联水泥
MCC 中国中冶
光大水务 Everbright Water
CONCH 海螺水泥
CNSG 中盐集团
BAOWU 宝武水务
中泰化学 ZHONGTAI CHEMICAL

应用领域
Application area

广泛应用于污水处理、石油、冶金、制药、煤炭、化工、纺织、印染、食品、水泥、电力行业。

Widely used in waste water treatment, oil, metallurgy, medicine, coal ,chemical, textile, printing,food,cement,electric power.

污水处理
Sewage treatment

水泥
Cement

造纸
Papermaking

纺织印染
Textile printing and dyeing

热电
Thermoelectricity

石油化工
Petrochemicals

食品制造
Food manufacturing

制药
Pharmaceuticals

电子
Electronic products

电镀
Electroplating

钢铁冶炼
Steel smelting

经典合作案例
Classic cooperation

石灰行业
Lime industry

食品行业
Food industry

污水处理
Wastewater treatment

水泥建材
Cement building materials

石油化工
Petrochemical industry

钢铁冶金
Steel metallurgy

制药行业
Pharmaceutical industry

物料输送
Material transportation

电厂脱硫
Power plant desulfurization