

HUADA

华达

AIR POWER SYSTEMS

Industrial Air Power Systems · 工业空气动力系统

HDTC-600 磁悬浮空压机

HDTC-600 Magnetic Levitation Air Compressor

无油 · 直驱 · 四级压缩 · 600 kW · 105 m³/min · 8 bar

Oil-free · Direct Drive · Four-Stage Compression · 600 kW · 105 m³/min · 8 bar



泉州市华德机电设备有限公司

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Fujian Huade Group

■ 核心卖点

Core Advantages

01 省电：额定比功率 $\leq 5.7 \text{ kW}/(\text{m}^3/\text{min})$

Energy saving: rated specific power $\leq 5.7 \text{ kW}/(\text{m}^3/\text{min})$

标准工况（吸气压力 0.1013 MPa(A)、20°C、相对湿度 70%）下，额定排气压力 8 bar、额定流量 105 m^3/min 。电机效率 97%（100% 负荷下），变频启动，没有启动冲击。

Under standard conditions (inlet pressure 0.1013 MPa(A), 20 °C, relative humidity 70%): rated discharge pressure 8 bar, rated flow 105 m^3/min . Motor efficiency 97% at 100% load; variable-frequency start with no starting shock.

02 磁悬浮轴承，转子零接触

Magnetic bearings, contact-free rotor

主动式磁轴承，同轴直驱，主机转速 28,000 和 44,000 r/min。没有机械接触、没有润滑油，也就没有换油、换油滤和油污染的烦恼。位置传感器精度 1 μm ，断电时 UPS 保护轴承。

Active magnetic bearings with coaxial direct drive; main-unit speeds of 28,000 and 44,000 r/min. No mechanical contact and no lubricating oil: no oil changes, oil filters or oil contamination. Position-sensor accuracy 1 μm ; a UPS protects the bearings during power loss.

03 四级压缩，流量压力跟着用气走

Four-stage compression, flow and pressure follow demand

流量调节范围 67–105 m^3/min ，压力调节范围 6.5–8.5 bar，用气波动时不用频繁加卸载。

Flow range 67–105 m^3/min and pressure range 6.5–8.5 bar, so the unit does not need to load and unload frequently when demand fluctuates.

04 核心部件按 20 年设计寿命

Core components designed for a 20-year life

轴、蜗壳、叶轮和轴承设计寿命均为 20 年。叶轮采用 7075 航空铝五轴精密加工，轴采用高温合金，动平衡等级 G1。

Shaft, volute, impeller and bearings are all designed for a 20-year life. Impellers are 5-axis precision-machined from 7075 aerospace aluminium; the shaft is high-temperature alloy; balance grade G1.

05 一体式整柜，到货就位

One-piece cabinet, ready on arrival

外形尺寸 4811×2922×2650 mm，水平安装，出气口 DN150。配止回阀、进气过滤棉和中效过滤器，随机附使用说明书、合格证和出厂检验报告。

Dimensions 4811×2922×2650 mm, horizontal installation, DN150 outlet. Supplied with check valve, inlet filter media and medium-efficiency filter, plus manual, certificate of conformity and factory inspection report.

06 监控齐全，运行心里有数

Comprehensive monitoring

出口压力、级间压力、中冷进出水压力、水箱液位和 13 路温度全部在线检测，控制器配 10 通道功率放大器。

Outlet pressure, inter-stage pressure, intercooler water inlet/outlet pressure, tank level and 13 temperature channels are all monitored online; the controller has a 10-channel power amplifier.

技术参数

Specifications

600 kW

额定功率 · Rated power

105 m³/min

额定排气量 · Rated flow

8 bar

额定压力 · Rated pressure

≤ 5.7

比功率 · Specific power
kW/(m³/min)

整机性能 Complete Unit

型号 Model	HDTC-600
额定排气流量（20℃、101.3 kPaA） Rated flow (20 °C, 101.3 kPaA)	105 m³/min，流量调节范围 67–105 m³/min Flow regulation range 67–105 m³/min
额定压力 / 调节范围 Rated pressure / range	8 bar / 6.5–8.5 bar
整机输入比功率 Specific input power	5.7 kW/(m³/min)
排气温度 Discharge temperature	80℃（环境温度 30℃） At 30 °C ambient temperature
外形尺寸 / 整机重量 Dimensions / weight	4811×2922×2650 mm / 7,500 kg
结构 / 压缩 / 驱动 / 启动 Design / compression / drive / start	一体式整柜 / 四级压缩 / 同轴直驱 / 变频启动 One-piece cabinet / four-stage / coaxial direct drive / VFD start
轴承 / 冷却方式 Bearings / cooling	磁悬浮轴承 / 循环水冷加强制风冷 Magnetic bearings / circulating water cooling plus forced air cooling

电机与控制 Motor & Control

电机类型 Motor type	高速永磁同步电机，2 极，S1 工作制，H 级绝缘 High-speed PM synchronous motor, 2-pole, S1 duty, class H insulation
电机功率 Motor power	350 kW + 160 kW
额定电压 / 频率 Rated voltage / frequency	380–400 V，三相，50/60 Hz 380–400 V, three-phase, 50/60 Hz
电机效率 Motor efficiency	97%（100% 负荷下） 97% at 100% load
磁轴承与传感 Magnetic bearings & sensing	主动式磁轴承（径向×2，推力×1），电感式位置传感器，精度 1 μm Active magnetic bearings (radial ×2, thrust ×1), inductive position sensors, accuracy 1 μm
断电保护 Power-loss protection	UPS 保护轴承 UPS protects the bearings



使用条件与供货范围

Operating Conditions & Scope of Supply

使用与冷却条件 Operating & Cooling Conditions

进气温度 / 储存温度 Inlet / storage temperature	-10 至 40°C / -10 至 45°C -10 to 40 °C / -10 to 45 °C
环境湿度 Ambient humidity	0-90%
冷却水量 / 进水温度 Cooling water flow / inlet temperature	≥ 120 m³/h / ≤ 32°C
冷却水质 Cooling water quality	软水、纯化水，或符合 GB/T 50050-2017 的工业循环冷却水 Softened or purified water, or industrial circulating cooling water complying with GB/T 50050-2017
出气口 Air outlet	DN150，水平出气 DN150, horizontal outlet

标准供货 Standard Scope of Supply

序号 No.	名称 Item	规格 / 说明 Specification	数量 Qty
1	磁悬浮空压机 Magnetic levitation air compressor	HDTC-600，含箱体、气动部分、高速永磁同步电机、磁悬浮轴承、变频器、智能控制系统、冷却系统 HDTC-600, including cabinet, aerodynamic section, high-speed PM synchronous motor, magnetic bearings, VFD, intelligent control system and cooling system	1 台 1 unit
2	进口空气过滤棉 Inlet air filter media	G4 粗效 G4 coarse filter	1 套 1 set
3	进口空气过滤器 Inlet air filter	中效过滤器 Medium-efficiency filter	1 套 1 set
4	止回阀 Check valve	DN150，PN16，含配套螺栓 DN150, PN16, with matching bolts	1 套 1 set
5	随机资料 Documentation	使用说明书、合格证、出厂检验报告 Operation manual, certificate of conformity, factory inspection report	1 套 1 set

建议维护周期 Recommended Maintenance Intervals

G4 粗效过滤棉 G4 coarse filter media	2 个月或运行 3,000 h 2 months or 3,000 running hours
中效过滤器 Medium-efficiency filter	3 个月或运行 5,000 h 3 months or 5,000 running hours
UPS 电源 UPS	建议 2 年一换 Replacement recommended every 2 years
主机密封碳环 Main-unit carbon seal ring	建议运行 13,000 小时更换 Replacement recommended at 13,000 running hours

■ 性能保证与质保服务

Performance Guarantee & Warranty

24 个月

整机质保 · Warranty months

2 年

核心部件保修 · Core-component warranty (years)

±3 %

实测偏差 · Measured deviation

20 年

核心部件设计寿命 · Design life (years)

性能保证 Performance Guarantee

标准工况（吸气压力 0.1013 MPa(A)、吸气温度 20℃、相对湿度 70%）下，额定排气压力 800 kPa，额定流量 105 m³/min (FAD)，实测偏差 ≤ ±3%；额定工况比功率 ≤ 5.7 kW/(m³/min)。

Under standard conditions (inlet pressure 0.1013 MPa(A), inlet temperature 20 °C, relative humidity 70%): rated discharge pressure 800 kPa, rated flow 105 m³/min (FAD), measured deviation ≤ ±3%; specific power at rated conditions ≤ 5.7 kW/(m³/min).

质保服务 Warranty & Service

整机质保至出厂后 24 个月，叶轮、蜗壳、高速永磁同步电机、磁悬浮轴承及控制器核心部件保修 2 年，以先到日期为准。质保期内因设备本身质量问题造成的故障，维修费用由厂家承担。

The complete unit is warranted for 24 months from ex-works delivery; the core components (impeller, volute, high-speed PM synchronous motor, magnetic bearings and controller) carry a 2-year warranty, whichever date comes first. Failures caused by defects of the equipment itself during the warranty period are repaired at the manufacturer's expense.





关于 HUADA

About HUADA

HUADA 是福建华德集团旗下专注工业空气动力系统的旗舰品牌，1985 年立厂于福建泉州。集团下设研发、制造、贸易、海外控股等多家子公司，产品出口 20 多个国家。

HUADA is the flagship industrial-air-power brand of Fujian Huade Group, founded in Quanzhou, Fujian, China in 1985. The group operates R&D, manufacturing, trade and overseas-holding subsidiaries, exporting to 20+ countries.

41 年只做工业空压一件事 —— 把自研做厚，把制造门槛做硬。让客户的车间，从半导体洁净工艺、到钢铁工艺空气、到煤矿井下，不必为气源停一次班。

41 years on one thing — engineering depth, manufacturing rigour. So the shop floor — semiconductor clean-air lines, steel-mill process air, coal-mine workings — doesn't stop for the compressor.

1985

HUADA 品牌创立 · Brand
Founded

41

年 · Years

50,000 m²

厂区 · Plant

500

员工 · Staff

80

全球服务点 · Global service
points

300

国内服务点 · Domestic
service points

20+

出口国家 · Export countries

49

授权专利 · Patents

品牌与公司 Brand & Company

品牌 · Brand	HUADA · 华达
运营 / 合同主体 · Operating Entity	泉州市华德机电设备有限公司 Quanzhou Huade Mechanical & Electrical Equipment Co., Ltd.
集团 · Group	福建华德集团有限公司 · Fujian Huade Group Co., Ltd.

把自研做厚，把制造门槛做硬

Engineering depth, manufacturing rigour.

HUADA

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AIR POWER SYSTEMS

让客户的车间，不必为气源停一次班

So the shop floor doesn't stop for the compressor.

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本册产品参数以最终技术协议为准。
Product parameters in this brochure are subject to the final technical agreement.

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