

**AHCBV SERIES CENTRIFUGAL  
STEAM COMPRESSORS**  
**AHCBV 系列离心蒸汽压缩机**

**AirHorse<sup>®</sup>**  
**艾玛压缩机**



广州艾玛压缩机有限公司  
GUANGZHOU AIRHORSE COMPRESSOR CO.,LTD





## AHCBV SERIES CENTRIFUGAL STEAM COMPRESSORS

### AHCBV 系列离心蒸汽压缩机



## 产品介绍

## PRODUCT INTRODUCTION

AHCBV 系列高速离心蒸汽压缩机是广州艾玛压缩机有限公司在多年积累经验的基础上，引进北京航空航天大学专家团队，开发出的新一代高效节能产品。

该系列产品气动性能和结构设计均达到国内外领先水平，根据现场工况定制化设计，可广泛应用于MVR系统蒸汽压缩、蒸汽加压输送等行业。

The AHCBV series high-speed centrifugal steam compressor is a new generation of high-efficiency and energy-saving product developed by Guangzhou Airhorse Compressor Co., Ltd. Based on years of accumulated experience and in collaboration with an expert team from Beihang University. This series of products achieves leading aerodynamic performance and structural design both domestically and internationally. Customized according to on-site working conditions, it can be widely applied in MVR system steam compression, steam pressurization and transportation, and other industries.

## 产品代号

## PRODUCT CODE

### 例：AHCBV8.0-90/117-2D

AHCBV 表示蒸汽压缩机  
8.0 表示蒸发量，单位 t/h  
90 表示蒸发温度（即入口饱和温度）  
117 表示出口饱和温度（蒸发温度 + 饱和温升），单位 °C  
2 表示两级机头串联，无则默认为单机头  
D 表示直接驱动，无则默认为齿轮箱驱动

### EXAMPLE：AHCBV8.0-90/117-2D

AHCBV stands for the steam compressor model.  
8.0 indicates the evaporation capacity in tons per hour (t/h).  
90 represents the evaporation temperature (i.e., inlet saturation temperature) in °C.  
117 denotes the outlet saturation temperature (evaporation temperature + saturation temperature rise) in °C.  
2 means a two-stage series compressor head; if omitted, it defaults to a single-stage head.  
D indicates direct drive; if omitted, it defaults to gearbox drive.

**效率高 叶轮型线先进 定制化设计 节电效果明显**

**HIGH EFFICIENCY, ADVANCED IMPELLER PROFILE, CUSTOMIZED DESIGN, REMARKABLE ENERGY-SAVING PERFORMANCE**

叶轮采用三元流动理论设计，全三维流态仿真，应用流动分析技术预测蒸汽压缩机的性能，使离心蒸汽压缩机绝热效率高达85%。

叶轮根据用户工况参数定制化设计，确保用户需求的工况参数处于叶轮高效区域，更加节能。

The impeller is designed using three-dimensional flow theory, with full 3D flow simulation and computational fluid dynamics (CFD) analysis to optimize performance, achieving an adiabatic efficiency of up to 85% for centrifugal steam compressors.

Each impeller is custom-engineered based on the user's specific operating conditions, ensuring optimal performance within the high-efficiency zone for maximum energy savings.

**流量调节范围宽 真空度稳定**

**WIDE FLOW ADJUSTMENT RANGE  
STABLE VACUUM PERFORMANCE**

蒸发量可通过变频、蒸发温度调节两种方式进行调节，调节范围宽；同时配备防喘振装置可以有效避免蒸汽压缩机发生喘振。

The evaporation capacity can be adjusted via variable frequency drive (VFD) control or evaporation temperature modulation, offering a broad operating range. Additionally, the integrated anti-surge system effectively prevents compressor surge.

**风机结构紧凑 体积小**

**COMPACT & SPACE-SAVING DESIGN**

采用整体撬装式结构，离心蒸汽压缩机本体组装在齿轮箱的壳体上，润滑油系统、电机及齿轮箱布置在共用底座上，底座兼做油箱，重量轻、占地面积小。

The unit features a skid-mounted integrated structure, with the centrifugal steam compressor mounted directly on the gearbox housing. The lubrication system, motor, and gearbox are all installed on a shared base frame, which also functions as an oil reservoir, reducing weight and footprint.

**噪音低**

**LOW NOISE OPERATION**

通过先进的蜗壳、叶轮设计技术，抑制离散噪声和宽频噪声，实现对气动噪声的主动控制，更易衰减。

Advanced volute and impeller design technology suppresses discrete-frequency and broadband noise, enabling active aerodynamic noise control for better attenuation.

**易损件少 安装维护方便**

**MINIMAL WEAR PARTS  
EASY INSTALLATION & MAINTENANCE**

整机易损件少，现场维护量少，安装方便。

The compressor has few vulnerable components, reducing on-site maintenance needs, while its modular design ensures quick installation.

**智能化程度高**

**SMART MONITORING & CONTROL**

整机的轴承振动、温升，进出口压力、温度，防喘振控制，启动停机联锁保护，故障报警，润滑系统油压、油温等一系列监测与控制均采用可编程逻辑控制器控制，同时实时传输到智能云平台，用户与项目工程师可以实时监控蒸汽压缩机运行状况。

A Programmable Logic Controller (PLC) manages all critical parameters, including: Bearing vibration & temperature Inlet/outlet pressure & temperature Anti-surge control Start-stop interlock protection Fault alarms Lubrication system (oil pressure & temperature) Real-time data is transmitted to a cloud-based IoT platform, allowing users and engineers to monitor performance remotely.

## 叶轮

## HIGH-EFFICIENCY IMPELLER DESIGN

根据三元流理论设计的叶轮效率高, 经严格的精密加工后作动静平衡校正, 并通过1.15倍额定转速的超速试验, 保证了叶轮强度。为了满足蒸汽压缩机不同工况的需求, 叶轮材料可选用钛材、双相不锈钢等材料。

The impeller is designed using three-dimensional flow theory, achieving superior efficiency. After precision machining, it undergoes dynamic and static balance correction, and passes an overspeed test at 1.15 times the rated speed to ensure structural integrity. To meet various operating conditions, the impeller can be manufactured from titanium or duplex stainless steel materials.



## 蜗壳

## OPTIMIZED VOLUTE DESIGN

采用圆截面蜗壳, 蜗壳壁的型线设计成对数螺旋线, 符合气流的运动规律, 对风机冲击小, 因此风机的流动效率高, 振动小, 噪音低。蜗壳材质根据不同工况可选用304、316L、2205、2507等不锈钢。

The circular cross-section volute features a logarithmic spiral wall profile that follows gas flow dynamics, minimizing fan impact. This results in high flow efficiency, low vibration, and reduced noise. Volute materials can be selected according to operating conditions, including 304, 316L, 2205, or 2507 stainless steel.



## 密封

## MULTIPLE SEALING OPTIONS

根据工况需求, 蒸汽压缩机有多种密封形式的选择, 常规有迷宫充蒸汽、碳环密封充蒸汽、干气密封等。

The steam compressor offers various sealing configurations based on operational requirements, including labyrinth seals with steam purge, carbon ring seals with steam injection, and dry gas seals.



## 电机

## HIGH-EFFICIENCY MOTOR RECOMMENDATION

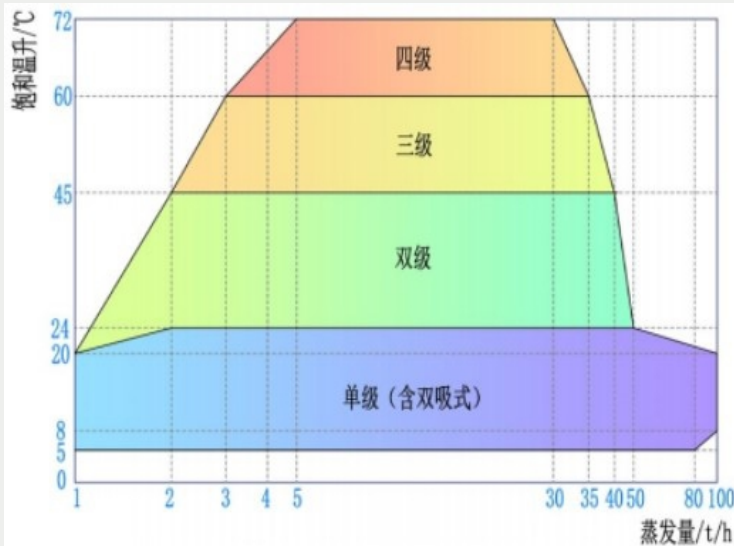
推荐采用永磁同步电机(永磁同步低速或永磁同步高速), 效率高, 满足GB30253-2013标准的1级能效等级, 额定点运行效率94.5~97%, 高于异步电机4~6%, 结构简单, 尺寸更小, 噪音更低, 节能效果更佳。

Permanent magnet synchronous motors (low-speed or high-speed PMSM) are recommended, offering high efficiency that meets Class 1 energy efficiency per GB30253-2013 standard. With rated efficiency of 94.5-97% (4-6% higher than induction motors), they feature simple structure, compact size, lower noise, and superior energy savings.

产品图谱

PRODUCT MAP

AHCBV 系列蒸汽压缩机图谱 / AHCBV Series Steam Compressor Performance Map



操作范围通知:

低温或高温蒸发的情况对蒸发量适用范围有一定影响;

工程支持: 对于非标准应用, 请咨询广州 Airhorse 技术部获取:

- 自定义容量评估
- 专门系统配置

Operating Range Notice:

Capacity variations may occur under:  
Low-temperature operation  
High-temperature operation  
Engineering Support:

For non-standard applications, please consult Guangzhou Airhorse Technical Department for:

- Custom capacity evaluations
- Specialized system configuration

用户实例

USER INSTANCE

河北\*\*\*MVR蒸汽压缩机

HEBEI\*\*\*MVR STEAM COMPRESSOR

型号: AHCBV 2.0-80/98-2  
蒸发量: 2T/h  
饱和温升: 18°C

Model: AHCBV2.0-80/98-2  
Rated Capacity: 2T/h  
Temperature elevation ( $\Delta T$ ): 18°C



宁夏\*\*\*MVR蒸汽压缩机

NINGXIA\*\*\*MVR STEAM COMPRESSOR

型号: AHCBV 8.0-90/107  
蒸发量: 8T/h  
饱和温升: 17°C

Model: AHCBV8.0-90/107  
Rated Capacity: 8T/h  
Temperature elevation ( $\Delta T$ ): 17°C



江苏\*\*\*MVR蒸汽压缩机

JIANGSU\*\*\*MVR STEAM COMPRESSOR

型号: AHCBV 8.0-90/107  
蒸发量: 8T/h  
饱和温升: 17°C

Model: AHCBV8.0-90/107  
Rated Capacity: 8T/h  
Temperature elevation ( $\Delta T$ ): 17°C



济南\*\*\*MVR蒸汽压缩机

JINAN\*\*\*MVR STEAM COMPRESSOR

型号: AHCBV 9.0-70/83  
蒸发量: 9T/h  
饱和温升: 13°C

Model: AHCBV9.0-70/83  
Rated Capacity: 9T/h  
Temperature elevation ( $\Delta T$ ): 13°C





艾玛压缩机在国内具有较完善的经销商服务体系及5个公司直属售后服务办事处，海外40多个国家分布约130家经销商。可有效对接客户及国内外各种订单，并提供及时有效的售后服务。

AirHorse Compressor has a complete dealer service system in China and 5 after-sales service offices directly under the headquarters, and we have about 130 dealers in more than 40 countries overseas. It can effectively provide service for our customers and process various orders in China and abroad market, we will provide timely and effective after-sales service for you.

**AirHorse® 艾玛**

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\*温馨提示：本参数表仅供参考，本公司可能对相关参数进行调整，如有变动，恕不另行通知，若有不明处，欢迎来电询问。

\*FRIENDLY REMINDER: This parameter list is for reference only. We may adjust the related parameter. if there is any change, we will not inform you otherwise. If you do not know, please call us.

\*温馨提示：本公司产品标准适用于海拔1000米以下地区。若使用环境海拔超过1000米，欢迎来电咨询，进行定制化配置，以确保设备性能与运行安全。

\*FRIENDLY REMINDER: The standard specifications of our products are applicable to regions with an altitude below 1,000 meters. For usage environments exceeding 1,000 meters above sea level, please feel free to contact us for customized configurations to ensure optimal equipment performance and operational safety.