



# AHST STEAM COMPRESSOR

## AHST 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





## 单螺杆压缩机技术背景和历史

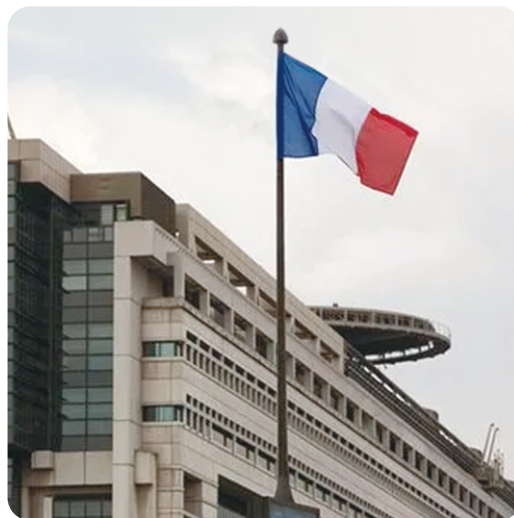
### SINGLE SCREW COMPRESSOR TECHNICAL BACKGROUND AND HISTORY

单螺杆技术于1960年法国的辛麦恩提 出设想并取得专利权，70年代主要用作喷油空压机，80年代由于采用了浮动星轮技术，单螺杆压缩机在技术上才真正成熟，应用范围也日益扩大。美国、日本公司相继引进专利，70年代中期英国Hall公司将此机种扩展到制冷领域。美国海军认为它是当今最好的压缩机，有的国家将它作为21世纪的战略产品，目前仅美、日等少数国家在引进法国专利的基础上掌握了它的生产技术。

在制冷领域，目前全球仅极少数公司设计生产单螺杆制冷压缩机，英国的Hall公司(90年代被美国麦克维尔收购)，美国的麦克维尔(目前已被日本大金收购)、日本大金、日本三菱。日本三井的单螺杆空压机也在国际享有盛名。国内厂商多用于单螺杆空压机。单螺杆技术专利(2008)到期，更多的厂家将此技术推向市场。

Single-screw technology was conceived and patented in 1960 by Simeon in France. In the 1970s, it was mainly used as a fuel-injection air compressor. In the 1980s, due to the adoption of floating star wheel technology, single-screw compressors were technically truly mature and its application scope is expanding day by day. American and Japanese companies introduced patents one after another. In the mid-1970s, the British Hall Company expanded this model to the refrigeration field. The U.S. Navy considers it a good compressor today, and some countries regard it as a strategic product in the 21st century. At present, only a few countries such as the United States and Japan have mastered its production technology based on the introduction of French patents.

In the field of refrigeration, there are currently only a few companies in the world that design and produce single-screw refrigeration compressors. The British Hall Company (acquired by McQuay of the United States in the 1990s), the American McQuay (currently acquired by Daikin of Japan), Daikin of Japan, Mitsubishi Japan. Japan's Mitsui's single-screw air compressors also enjoy a high reputation internationally. Domestic manufacturers mostly use it in single-screw air compressors. With the expiration of the single-screw technology patent (2008), more manufacturers have introduced this technology to the market.



### 单螺杆压缩机结构图

### SINGLE SCREW COMPRESSOR STRUCTURE DIAGRAM

轴封  
SHAFT SEAL

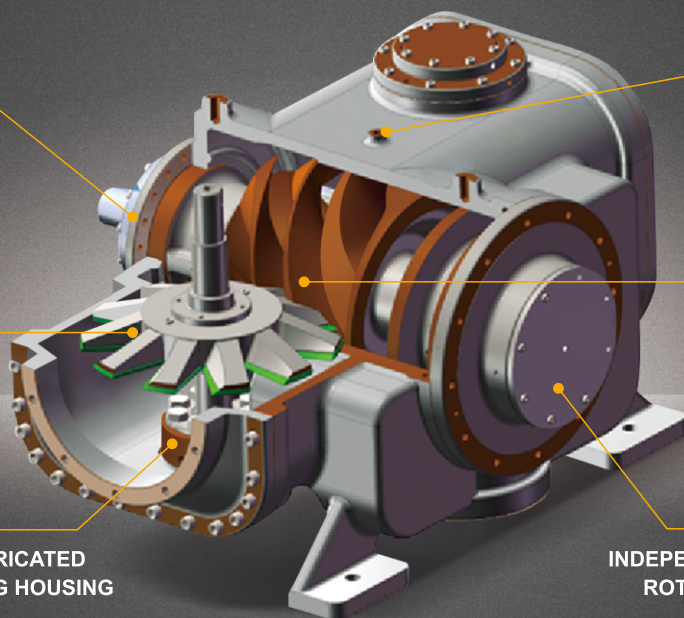
多点喷水  
MULTI-POINT WATER  
SPRAYING

星轮  
STAR WHEEL

主转子  
MAIN ROTOR

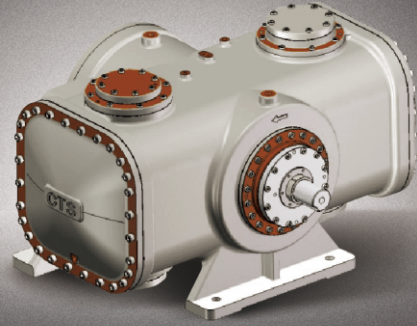
独立润滑的星轮轴承座  
INDEPENDENTLY LUBRICATED  
STAR WHEEL BEARING HOUSING

独立润滑的转子轴承座  
INDEPENDENTLY LUBRICATED  
ROTOR BEARING HOUSING



# 单螺杆技术优势

## ADVANTAGES OF SINGLE SCREW TECHNOLOGY



单螺杆压缩机是近二十年发展起来的新型容积式压缩机。它具有重量轻、体积小、结构简单、运转可靠、振动噪音小、维护简单等优点。具有传统的双螺杆压缩机的一切优点，并且具有受力平衡，轴承负载小，转子啮合面不受力，星轮转子可采用润滑性能和耐磨性能极为优良的复合材料等特点，从而机械性能极为可靠，主轴承寿命可达十万小时(100,000h)以上，且噪声及振动极为理想，均优于双螺杆压缩机。

Single screw compressor is a new type of positive displacement compressor developed in the past two decades. It has the advantages of **Light Weight, Small Size, Simple Structure, Reliable Operation, Low Vibration and Noise, and Simple Maintenance**. It has all the advantages of the traditional twin-screw compressor, and has the characteristics of balanced force, small bearing load, no stress on the rotor meshing surface, and the star wheel rotor can be made of composite materials with excellent lubrication performance and wear resistance, thus improving the mechanical performance. Extremely reliable, the main bearing life can reach more than one hundred thousand hours (100,000h), and the noise and vibration are extremely ideal, both better than twin-screw compressors.



**轴向力平衡 / 径向力平衡**

**Axial force balance  
Radial force balance**



**星轮片更换周期10万小时**

**Star wheel plate replacement cycle 100,000 hours**



**轴承寿命长达10万小时**

**Bearing life is up to 100,000 hours**



**运转噪音低**

**Low operating noise**



**振动小，整机的可靠性高**

**Low vibration and high reliability of the whole machine**



**复合材料星轮片**

**Composite material star wheel**

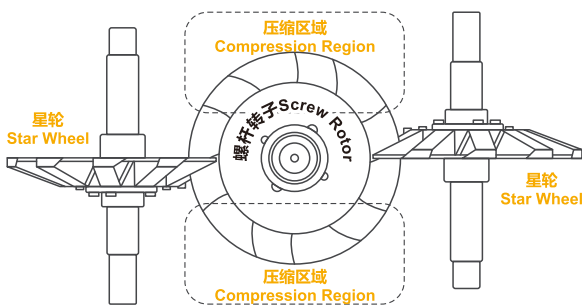
欧洲原装进口，为玻璃纤维和树脂的复合材料层压板，强度高、耐磨性好，最高耐热温度可达200度

Originally imported from Europe, a composite laminate of glass fiber and resin, with high strength and good wear resistance. The maximum heat-resistant temperature can reach 200 degrees

## 单螺杆压缩工作原理

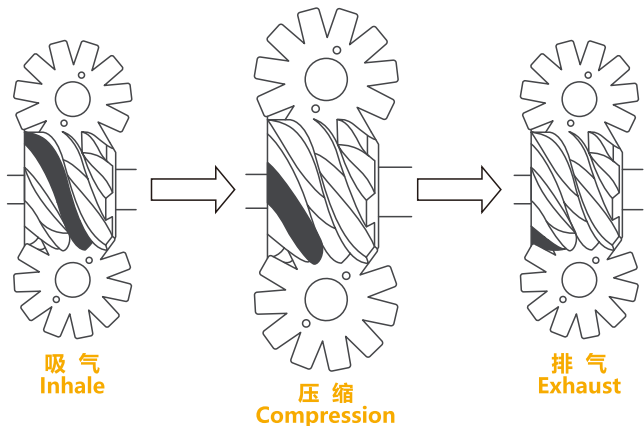
### WORKING PRINCIPLE OF SINGLE SCREW COMPRESSION

#### 结构 / STRUCTURE



- 由一个螺杆转子驱动两个星轮，形成两个对称的压缩区域。  
A screw rotor drives two star wheels to form two symmetrical compression areas.

#### 工作过程 / WORK PROCESS



## 单螺杆压缩机技术特点

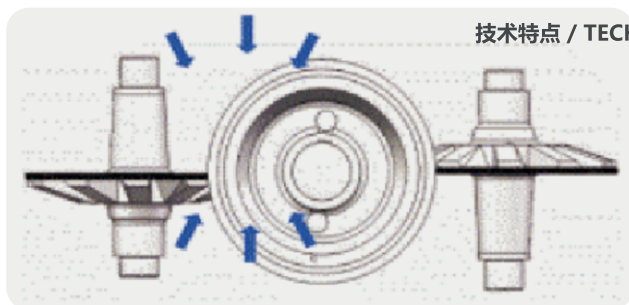
# TECHNICAL CHARACTERISTICS OF SINGLE SCREW COMPRESSOR

### 完美的受力平衡

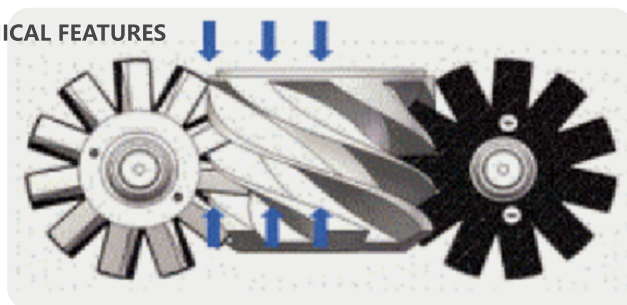
### PERFECT FORCE BALANCE

单螺杆压缩机受力平衡，使其获得以下优势： The force balance of the single screw compressor gives it the following advantages:

- 轴承负载小，寿命长
- 压缩机震动低，可靠性高
- The bearing load is small and the service life is long
- The compressor has low vibration and high reliability



技术特点 / TECHNICAL FEATURES



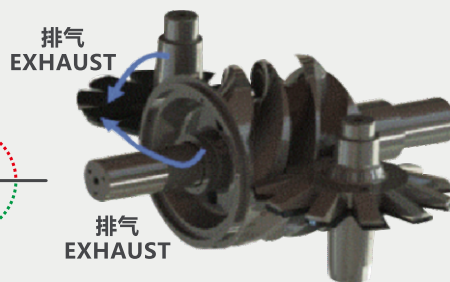
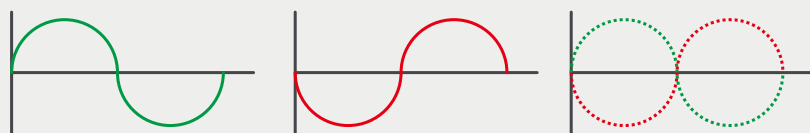
### 排气声波消减

### EXHAUST SOUND WAVE REDUCTION

单螺杆压缩机的独特构造，使其具有双压缩腔。两个压缩腔排气声波相互消减，降低了压缩机的整机噪音。

The unique structure of the single-screw compressor makes it have dual compression chambers. The exhaust sound waves of the two compression chambers attenuate each other, reducing the overall noise of the compressor.

排气声波消减 / EXHAUST SOUND WAVE REDUCTION



## AHST系列单螺杆水蒸汽压缩机

# AHST SERIES SINGLE SCREW WATER VAPOR COMPRESSOR

### 高效、可靠、专为MVR系统设计

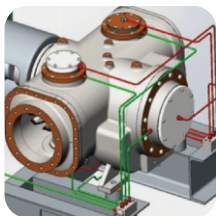
### EFFICIENT, RELIABLE, SPECIALLY DESIGNED FOR MVR SYSTEMS

#### 独立的轴承和机械密封冷却

#### INDEPENDENT BEARING AND MECHANICAL SEAL COOLING

采用独立的润滑油循环系统冷却轴承和机械密封，有效避免高温对轴承和机械密封的影响，确保压缩机高效、长久运行。

An independent lubricating oil circulation system is used to cool the bearings and mechanical seals, effectively avoiding the impact of high temperature on the bearings and mechanical seals, and ensuring efficient and long-term operation of the compressor.

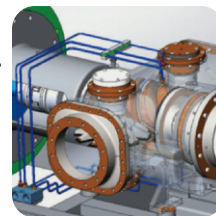


#### 多点喷水，有效润滑

#### MULTI-POINT WATER SPRAYING

压缩机内部最佳位置多点喷水，有效润滑螺杆转子和星轮片，确保压缩机的可靠性。

Water is sprayed at multiple points at the best position inside the compressor to effectively lubricate the screw rotor and star wheel blades, ensuring the reliability of the compressor.

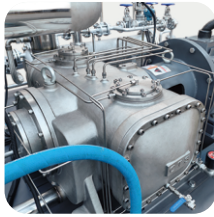


## 耐腐蚀的材质

### CORROSION-RESISTANT MATERIAL

除特殊要求外，所有材质均采用耐腐蚀性极好的316L不锈钢。

Except for special requirements, all materials are made of 316L stainless steel with excellent corrosion resistance.

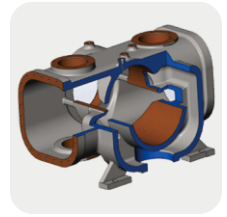


## 优化的吸排气内容积比

### OPTIMIZED INTAKE AND EXHAUST INTERNAL VOLUME RATIO

最优化设计的吸、排气内容积比，使压缩机获得高排气温度的同时避免过压缩损失，有效降低压缩机的输入功率。

The optimally designed suction and exhaust internal volume ratio enables the compressor to achieve high exhaust temperature while avoiding over-compression loss, effectively reducing the compressor input power.



## 特殊的星轮片材料

### CORROSION-RESISTANT MATERIAL

星轮片采用特殊的复合材料，耐200°C高温，强度高、韧性好，耐磨，热稳定性好，不易膨胀和变形。

The star wheel plate is made of special composite material, which is resistant to high temperatures of 200°C, has high strength, good toughness, wear resistance, good thermal stability, and is not easy to expand and deform.



## 啮合部件特殊性

### SPECIAL FEATURES OF MESHING PARTS

星轮片采用特殊的复合材料(类塑料)，转子采用金属材质，决定了压缩机无火花、安全防爆、应用行业更广。

The star wheel plate is made of special composite material (plastic-like), and the rotor is made of metal, which determines that the compressor is spark-free, safe and explosion-proof, and can be used in a wider range of industries.

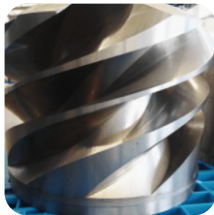


## 优化的内部流道和密封间隙

### OPTIMIZED INTERNAL FLOW CHANNELS AND SEAL CLEARANCES

最优化设计的内部流道和密封间隙，提升高排气温度下压缩机的容积效率。

The optimally designed internal flow channels and sealing gaps improve the volumetric efficiency of the compressor under high discharge temperatures.

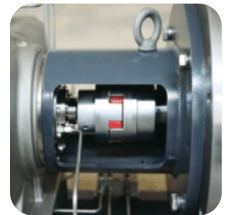


## 变频+直联驱动

### FREQUENCY CONVERSION + DIRECT DRIVE

采用联轴器连接主机和电机，减少了齿轮箱的空间，并提升了压缩机的可靠性。采用变频电机+变频器使用，无极调速，可根据客户实际工况进行调节，适应性更强。

The coupling is used to connect the main engine and the motor, which reduces the space of the gearbox and improves the reliability of the compressor. Using variable frequency motor + frequency converter, stepless speed regulation can be adjusted according to the customer's actual working conditions, making it more adaptable.



**Airhorse**  
艾玛压缩机

选择艾玛·选择好品质

CHOOSE AIRHORSE · CHOOSE QUALITY

广州艾玛压缩机有限公司集多年的压缩机制造和设计经验，现在设计开发和制造了AHST系列单螺杆水蒸汽压缩机，最大单螺杆压缩机吸气量3360立方/小时，最高供应蒸汽温度195°C是世界上供应蒸汽温度最高的蒸汽压缩机。

原有蒸汽生成模式是热泵+蒸汽发生器产生蒸汽，蒸汽使用后变成低温蒸汽，直接排放。艾玛蒸汽压缩机的应用是通过压缩机吸入低温蒸汽，直接升温后输出成品蒸汽，充分利用了低温蒸汽的余热，节约能源，减少碳排放，也给用户带来极大的经济效益。

GUANGZHOU AIRHORSE COMPRESSOR CO., LTD. has many years of experience in compressor manufacturing and design. Now it has designed, developed and manufactured the AHST series of single-screw water vapor compressors. The maximum single-screw compressor suction capacity is 3360 cubic meters per hour, and the maximum supply steam temperature is 195°C, it is the steam compressor with the highest steam supply temperature in the world.

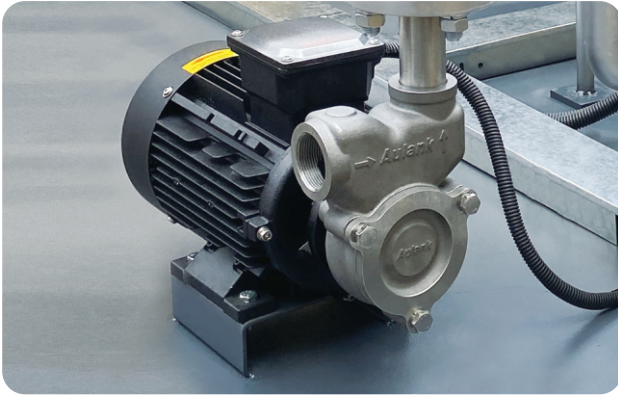
The original steam generation mode is a heat pump + steam generator to generate steam. After the steam is used, it becomes low-temperature steam and is directly discharged. The application of Emma steam compressor is to inhale low-temperature steam through the compressor, directly heat it and output the finished steam. It makes full use of the waste heat of low-temperature steam, saves energy, reduces carbon emissions, and also brings great economic benefits to users.

- 最大单螺杆压缩机吸气量3360立方/小时
- 最高供应蒸汽温度195°C，是世界上供应蒸汽温度最高的蒸汽压缩机
- 节约能源，减少碳排放
- The maximum suction capacity of single screw compressor is 3360 cubic meters/hour.
- The maximum supply steam temperature is 195°C, which is the highest steam supply temperature in the world. The hottest vapor compressor.
- Save energy and reduce carbon emissions.



## 油泵/水泵 OIL PUMP / WATER PUMP

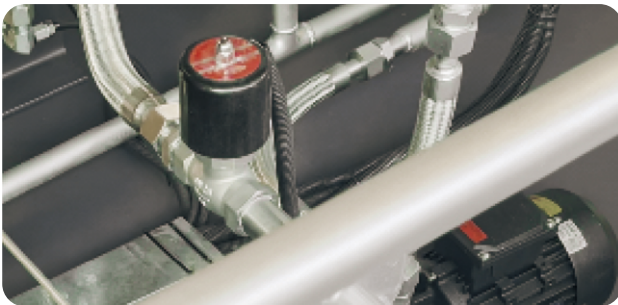
- WH型耐温200°C
- 可以压缩的介质有油、水、气体、水蒸汽，在压缩过程中不会产生火花，可以压缩工业气体。
- WH Type temperature resistance 200°C
- The media that can be compressed include oil, water, gas, and water vapor. No sparks are produced during the compression process and industrial gases can be compressed.



## 电磁阀 THE ELECTROMAGNETIC VALVE

防爆耐高温，耐温220°C，不仅防爆，同时能预防潮湿环境对电磁阀的影响。

Explosion-proof and high-temperature resistant, with a temperature resistance of 220°C. It is not only explosion-proof, but also prevents the impact of humid environments on the solenoid valve.



## 喷液系统 LIQUID SPRAY SYSTEM

根据温度和压力进行监测以及流量计，控制调节阀的开启，调节阀开启的度数大小，决定喷出水量的多少，控制我们想要的温度。

Monitor the temperature and pressure and use the flow meter to control the opening of the regulating valve. The degree at which the regulating valve is opened determines the amount of water sprayed and controls the temperature we want.



## 换热器 HEAT EXCHANGER

- 换热器材料使用全不锈钢材料
- 超大换热面积，换热量同比增加30%以上
- The heat exchanger material uses all stainless steel materials
- Super large heat exchange area, heat exchange amount increased by more than 30% year-on-year.



## 流量调节阀 FLOW REGULATING VALVE

防爆耐高温，耐温220°C，不仅防爆，同时能预防潮湿环境对电磁阀的影响，保证我们的机器在恶劣的环境条件下也能长期稳定的使用，使用寿命也能长达20年。通过调节阀的联动调节实现蒸汽温度的精准控制。

Explosion-proof and high-temperature resistant, with a temperature resistance of 220°C. It is not only explosion-proof, but also prevents the impact of humid environments on the solenoid valve, ensuring that our machines can be used stably for a long time under harsh environmental conditions, with a service life of up to 20 years. Precise control of steam temperature is achieved through the linkage adjustment of the regulating valve.



## 汽罐 STEAM TANK

全不锈钢材质，实现液态水存储和供应、蒸汽和水的分离、饱和蒸汽压力缓冲排放三大功能。

Made entirely of stainless steel, it realizes three major functions: liquid water storage and supply, steam and water separation, and saturated steam pressure buffering and discharge.



## 磁翻板液位计

### MAGNETIC FLAP LIQUID LEVEL GAUGE

全不锈钢材质，实现液态水存储和供应、蒸汽和水的分离、饱和蒸汽压力缓冲排放三大功能。

Made entirely of stainless steel, it realizes three major functions: liquid water storage and supply, steam and water separation, and saturated steam pressure buffering and discharge.



## 流量计

### FLOW METER

流量计是监测和管理流量，防爆设计不受潮湿环境影响，自带温度和压力补偿，消除流量误差，喷水量精确控制，保证蒸汽的温度准确，流量根据温度和压力来控制调节阀的开启。

The flow meter monitors and manages flow. The explosion-proof design is not affected by humid environments. It comes with temperature and pressure compensation to eliminate flow errors. The water spray volume is accurately controlled to ensure accurate steam temperature. The flow rate controls the opening of the regulating valve according to temperature and pressure.



## 启机水泵

### START WATER PUMP

增加一个起机水泵，它的工作在系统建立压力的时候，可以快速建立压力，保护机头，防止机头被卡死，当系统建立压力以后，水泵就停止运作，然后两边的单向阀靠自身的吸力和机组的压力形成内循环，此功能可以保证机组长期稳定工作。

Add a starting water pump. When the system builds pressure, it can quickly build up pressure, protect the machine head, and prevent the machine head from getting stuck. When the system builds pressure, the water pump stops operating, and then the one-way valves on both sides close. Its own suction and the pressure of the unit form an internal circulation. This function can ensure the long-term stable operation of the unit.



## 主喷水管

### MAIN SPRINKLER PIPE

当系统建立内部压力，启机水泵停止后，蒸汽会自动走向主喷水管，靠主机的吸力和机组的压力来形成内循环，保证机组长期使用的稳定性。

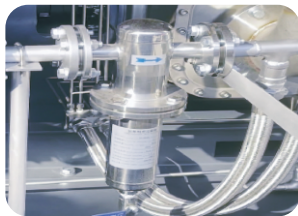
When the system builds up internal pressure and the startup water pump stops, the steam will automatically move to the main water spray pipe, relying on the suction of the host and the pressure of the unit to form an internal circulation to ensure the stability of the unit in long-term use.

## 蒸汽过滤器

### STEAM FILTER

蒸汽过滤器采用不锈钢材质

Steam filter is made of stainless steel

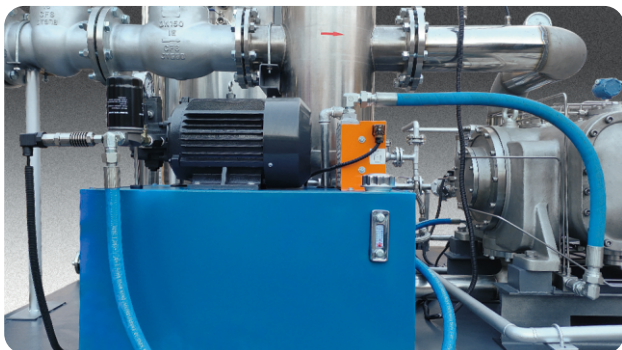


## 油泵站

### OIL PUMPING STATION

油泵站保证我们机头里面的轴承、转动件能够有油润滑，同时进行降温。油站自带超大油箱，更能保证系统油温。

The oil pump station ensures that the bearings and rotating parts inside our machine head can be lubricated with oil and cooled at the same time. The oil station comes with an extra large oil tank, which can better ensure the system oil temperature.



## 排污系统

### SEWAGE SYSTEM

机组配置完善的不锈钢排污系统，停机自动排空主机内的液态水，防止低温结冰和其他故障隐患。

The unit is equipped with a complete stainless steel sewage system, which automatically empties the liquid water in the main unit when it shuts down to prevent low-temperature freezing and other hidden troubles.



## 控制系统

### CONTROL SYSTEM



## 蒸汽压缩机产品特点

# STEAM COMPRESSOR PRODUCT FEATURES

### 是世界上供应蒸汽温度最高的蒸汽压缩机

IT IS THE STEAM COMPRESSOR WITH THE HIGHEST STEAM SUPPLY TEMPERATURE IN THE WORLD

- 高温升，温升10-100°C
- 高温度，最高供气温度195°C
- High temperature rise, temperature rise 10-100°C
- High temperature, maximum air supply temperature 195°C

### 全不锈钢压缩机

ALL STAINLESS STEEL COMPRESSOR

- 主机除星轮片外，全部是不锈钢材料
- 材料选择包括304, 316L, 2205及2Cr13(主轴)
- 可以面对各种腐蚀性气体 ● 高耐温能力强
- Except for the star wheel, the main engine is all made of stainless steel
- Material options include 304, 316L, 2205 and 2Cr13 (Spindle)
- Can face various corrosive gases
- Strong high temperature resistance

### 轴承独立润滑系统

BEARING INDEPENDENT LUBRICATION SYSTEM

- 压缩机有六个轴承腔
- 每个轴承腔和压缩气体系统通过机械密封隔离开来
- 外置的风冷油站给系统提供循环冷却
- 油站自带油箱，能够给油温提供稳定作用
- 高温应用时(排气温度160°C左右)，油温可以控制在60°C以内(可以设计水冷换热器进一步降低油温)
- 单螺杆压缩机的机械密封，都是在低压侧，而且一直保持油压对吸气压力的正压2公斤左右，气体无法进入油系统
- 独立的润滑油站，使得艾玛蒸汽压缩机能适应高的排气温度，外置的油箱能够很好的平衡从压缩机返回的高温油的热量
- The compressor has six bearing cavities
- Each bearing cavity and compressed gas system are isolated by mechanical seals
- The external air-cooled oil station provides circulating cooling to the system
- The oil station comes with its own oil tank, which can stabilize the oil temperature
- In high-temperature applications (exhaust temperature is about 160°C), the oil temperature can be within 60°C ( A water-cooled heat exchanger can be designed to further reduce the oil temperature )
- The mechanical seals of single-screw compressors are all on the low-pressure side, and the positive pressure of the oil pressure to the suction pressure is maintained at about 2 kg, so gas cannot enter the oil system
- The independent lubricating oil station enables the Emma steam compressor to adapt to high exhaust temperatures, and the external oil tank can well balance the heat of the high-temperature oil returned from the compressor.



供油系统  
OIL SUPPLY SYSTEM

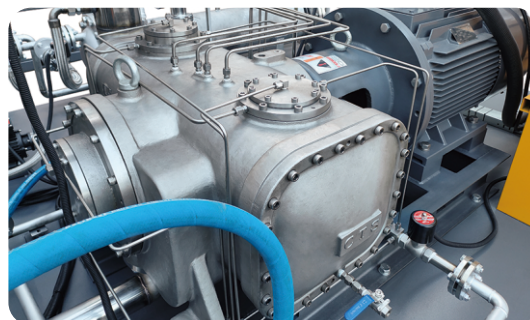
## 蒸汽压缩机产品特点

# STEAM COMPRESSOR PRODUCT FEATURES

### 多点喷液系统

#### MULTI-POINT WATER SPRAYING SYSTEM

- 两个喷水点在压缩阶段
- 压缩机有上下两个压缩腔
- 每个压缩腔都有三个到四个喷水点
- 每个压缩腔的两个喷水点在吸气阶段
- 多点喷液可以保证在压缩的过程中，气体的过热度能够得到有效的消除，保证在压缩过程中，水作为润滑液一直存在
- 多点喷液能够保证压缩机出来的气体温度低，接近等温压缩
- 多点喷液能够保证是饱和气体
- 对于压缩水蒸气而言，配合高温水的喷液，压缩气体的过热量能够转化一部分喷入的水变成蒸汽
- Two water spray points are in the compression stage
- The compressor has two compression chambers, upper and lower
- Each compression chamber has three to four water spray points
- Two water spray points in each compression chamber are in the suction stage
- Multi-point liquid injection can ensure that the superheat of the gas can be effectively eliminated during the compression process, ensuring that water always exists as a lubricant during the compression process
- Multi-point liquid injection can ensure that the temperature of the gas coming out of the compressor is low and close to isothermal compression
- Multi-point liquid injection can ensure that the gas is saturated
- For compressed water vapor, with the injection of high-temperature water, the superheat of the compressed gas can convert part of the injected water into steam



多点喷液系统

MULTI-POINT WATER SPRAYING SYSTEM

### 不会泄露

#### NO LEAKAGE

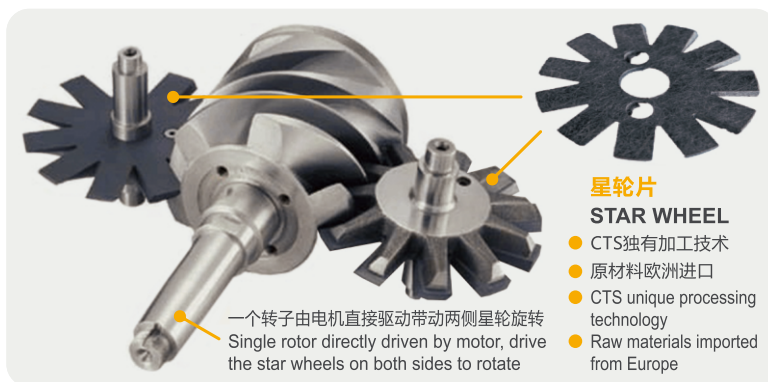
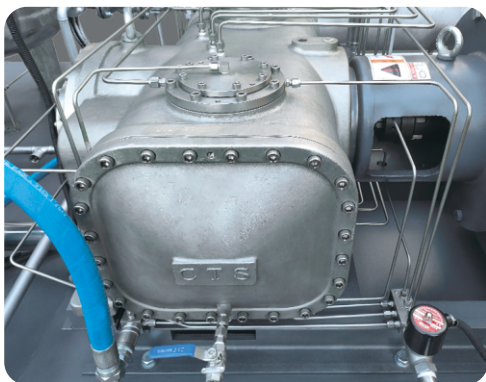
- 密封液(包括油)比吸气压力高1-2公斤，因此，密封液可以向压缩腔的气体内泄漏，而气体不能向油腔泄漏
- 根据压缩机的毒性和逃逸性能，艾玛压缩机静密封采用双密封设计，杜绝气体气体泄漏
- 主轴连电机的位置，气体逃逸必须克服机械密封和骨架油封两层密封。也杜绝了气体的泄漏
- 机械密封采用世界知名品牌约翰克兰，骨架油封采用世界知名品牌圣戈班
- The sealing fluid ( Including Oil ) is 1-2 kg higher than the suction pressure. Therefore, the sealing fluid can leak into the gas in the compression chamber, but the gas cannot leak into the oil chamber
- Based on the toxicity and escape performance of the compressor, the static seal of Airhorse compressor adopts a double seal design to prevent gas leakage
- At the position where the spindle is connected to the motor, gas escape must overcome the mechanical seal and the skeleton oil seal. It also prevents gas leakage
- The mechanical seal adopts the world-famous brand John Crane, the skeleton oil seal adopts the world-famous brand Saint-Gobain



## 针对耐高温进行独特设计

### UNIQUELY DESIGNED FOR HIGH TEMPERATURE RESISTANCE

- 材料耐高温，艾玛水蒸气压缩机零件构成是不锈钢316L和PPS复合材料构成，不锈钢耐温极高
- 星轮片的材料是PPS复合材料，可以在 204°C温度下长期稳定运行
- 星轮片和转子之间膨胀，在设计上已经考虑尺寸的补偿
- 压缩机在高温压缩工况下，壳体，转子和星轮不可避免的会膨胀，因此从设计上应该避免膨胀对压缩机稳定运行的影响
- 轴的设计：艾玛单螺杆压缩机的一个主轴和两个星轮轴，均针对高温变形进行了优化
- 轴的一端采用一对推力轴承，轴的另外一端采用圆柱滚子轴承
- 当压缩机遇到高温时，轴的轴向膨胀部位在圆柱滚子轴承位置，而对压缩机的运行没有影响
- 压缩机六个轴承腔位于压缩机的内部，润滑油在轴承腔和外置的油站之间循环，因此油的温度可能会因为较高的吸气温度而上升。但是艾玛的外置油站会根据压缩机的运行温度进行优化，譬如更大的油箱，更大的换热面积和功率更大的风扇，来改善油的冷却条件，同时，高吸气温度的应用可以用换热器直接换热，保证进入压缩机的油温小于60°C

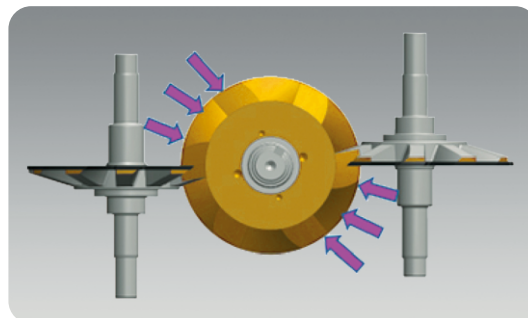


- The material is resistant to high temperatures. The parts of Airhorse's steam compressor are made of stainless steel 316L and PPS composite materials. Stainless steel has extremely high temperature resistance.
- The material of the star wheel plate is PPS composite material, which can operate stably for a long time at a temperature of 204°C.
- The expansion between the star wheel plate and the rotor has been designed to compensate for the size.
- Under high-temperature compression conditions, the casing, rotor and star wheel of the compressor will inevitably expand, so the design should avoid the impact of expansion on the stable operation of the compressor.
- Shaft Design: One main shaft and two star wheel shafts of Airhorse single-screw compressor are optimized for high temperature deformation.
- One end of the shaft uses a pair of thrust bearings, the other end of the shaft uses a cylindrical roller bearing.
- When the compressor encounters high temperatures, the axial expansion of the shaft is located at the cylindrical roller bearing, without affecting the operation of the compressor.
- The six bearing chambers of the compressor are located inside the compressor, and the lubricating oil circulates between the bearing chambers and the external oil station, so the temperature of the oil may rise due to the higher suction temperature.
- However, Airhorse's external oil station will be optimized according to the operating temperature of the compressor, such as a larger oil tank, a larger heat exchange area and a more powerful fan to improve the cooling conditions of the oil. At the same time, the high suction temperature For applications, a heat exchanger can be used to directly exchange heat to ensure that the oil temperature entering the compressor is less than 60°C.

## 绝对无油

### ABSOLUTELY OIL-FREE

- 碳环密封和干气密封的使用，使得压缩过程中没有油的存在
- 单螺杆是金属的转子对非金属的星轮片的啮合，所以可以用水等低粘度的气体为润滑液
- The use of carbon ring seals and dry gas seals eliminates the presence of oil during the compression process
- The single screw is a metal rotor meshing with a non-metallic star wheel, so low-viscosity gases such as water can be used as lubricants



## 艾玛蒸汽压缩机性价比高

# AIRHORSE STEAM COMPRESSOR IS COST-EFFECTIVE



## 蒸汽压缩机的主要作用

## THE MAIN FUNCTIONS OF STEAM COMPRESSOR

- 节省能耗，将达不到温度要求的蒸汽余热回收利用  
Save energy consumption and recycle the waste heat of steam that cannot meet the temperature requirements
- 把低温蒸汽升温，达到需求的蒸汽温度  
Raise the temperature of low-temperature steam to reach the required steam temperature

## 使用条件

## CONDITIONS OF USE

### 必须有蒸汽

#### 产生蒸汽的有：热泵、锅炉

热泵升温的是水，把热水进行升温，升到用户想要的温度，然后通过蒸汽发生器把热水变成蒸汽，当产生的蒸汽温度不满足客户需求时就会排放，也可以回收低温蒸汽，把蒸汽变成热水，再用热泵压缩，加热，通过蒸汽发生器变成蒸汽。这个过程和蒸汽压缩机相比，相差40%以上的能耗，相比蒸汽压缩机利用低温蒸汽升温效率更高更省电。

### THERE MUST BE STEAM

#### STEAM IS GENERATED BY: HEAT PUMPS AND BOILERS

The heat pump heats water. It heats the hot water to the temperature desired by the user, and then turns the hot water into steam through the steam generator. When the temperature of the generated steam does not meet the customer's needs, it will be discharged, and low temperature can also be recovered. Steam, turn the steam into hot water, then use a heat pump to compress and heat it, and turn it into steam through a steam generator. Compared with the steam compressor, this process has a difference of more than 40% in energy consumption. Compared with the steam compressor using low-temperature steam to heat up, it is more efficient and saves electricity.

目前市面上蒸汽基本上300-400元/吨，艾玛蒸汽压缩机能够将使用后的废弃蒸汽进行升温，达到使用温度，且成本能控制在200元/吨左右，每吨蒸汽能节省费用100元以上。

**如果排量1吨/小时，一天下来就可以节省¥2400元**

**一年(按300天计)就可以节省 ¥720,000元**

蒸汽压缩机节约能源，让用户能在短期内收回投资成本。

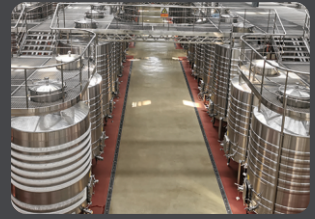


# 行业解决方案

# INDUSTRY SOLUTIONS

艾玛蒸汽压缩机适用蒸汽温度范围广，运行进气温度 70-165℃，排气温度最高可以达到 195℃，适用各种蒸汽使用场合；已经广泛应用于酿酒、发酵(食品)、化工、服装(丝绸印染、烘干)、制药等行业。

Airhorse steam compressor is applicable to a wide range of steam temperatures, with an operating inlet air temperature of 70-165°C and a maximum exhaust temperature of 195°C. It is suitable for various steam use occasions. It has been widely used in brewing, fermentation (food), chemical industry, clothing (silk printing and dyeing, drying), pharmaceutical and other industries.



酿酒行业  
Brewing Industry



发酵(食品)  
Fermentation (food)



化工行业  
Chemical Industry



服装行业  
Garment Industry



制药  
Pharmaceutical



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**

**广州艾玛压缩机有限公司**

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