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24 small hours hot wire : 400-110-9566



# 信然压缩机

## 真空系统解决方案 VACUUM SYSTEM SOLUTIONS



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Shanghai Xinran Compressor Co., Ltd  
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# XR 磁悬浮透平真空泵

XR magnetic levitation transparent vacuum pump



## 无润滑、免维护，100%无油磁悬浮轴承系统

Lubrication-free, maintenance-free, 100%oil-free magnetic bearing system

磁悬浮真空泵是基于磁悬浮轴承技术、高速永磁电机技术、高频矢量变频技术以及高效流体机械技术研发的智能透平装备，比传统设备节能30-70%，节水100%，广泛应用于造纸行业真空脱水工艺节能改造。

Magnetic levitation vacuum pump is an intelligent turbine equipment developed based on magnetic levitation bearing technology, high-speed permanent magnet motor technology, high-frequency vector frequency conversion technology, and high-efficiency fluid machinery technology. It saves 30-70% energy and 100% water compared to traditional equipment, and is widely used in energy-saving renovation of vacuum dehydration processes in the paper industry.

## 磁悬浮透平真空泵工作原理

magnetic levitation transparent vacuum pump operating principle

从真空抽吸点处来的气体在真空泵中经过高速旋转叶轮作用，将动能转换成气体压力势能，形成负压真空，经过蜗壳后转换成高温气体排出。

The gas from the vacuum suction point passes through the high-speed rotating impeller in the vacuum pump, converting kinetic energy into gas pressure potential energy, forming a negative pressure vacuum. After passing through the volute, it is converted into high-temperature gas and discharged.

## 磁悬浮透平真空泵性能优势

Performance advantages of magnetic levitation turbine vacuum pump



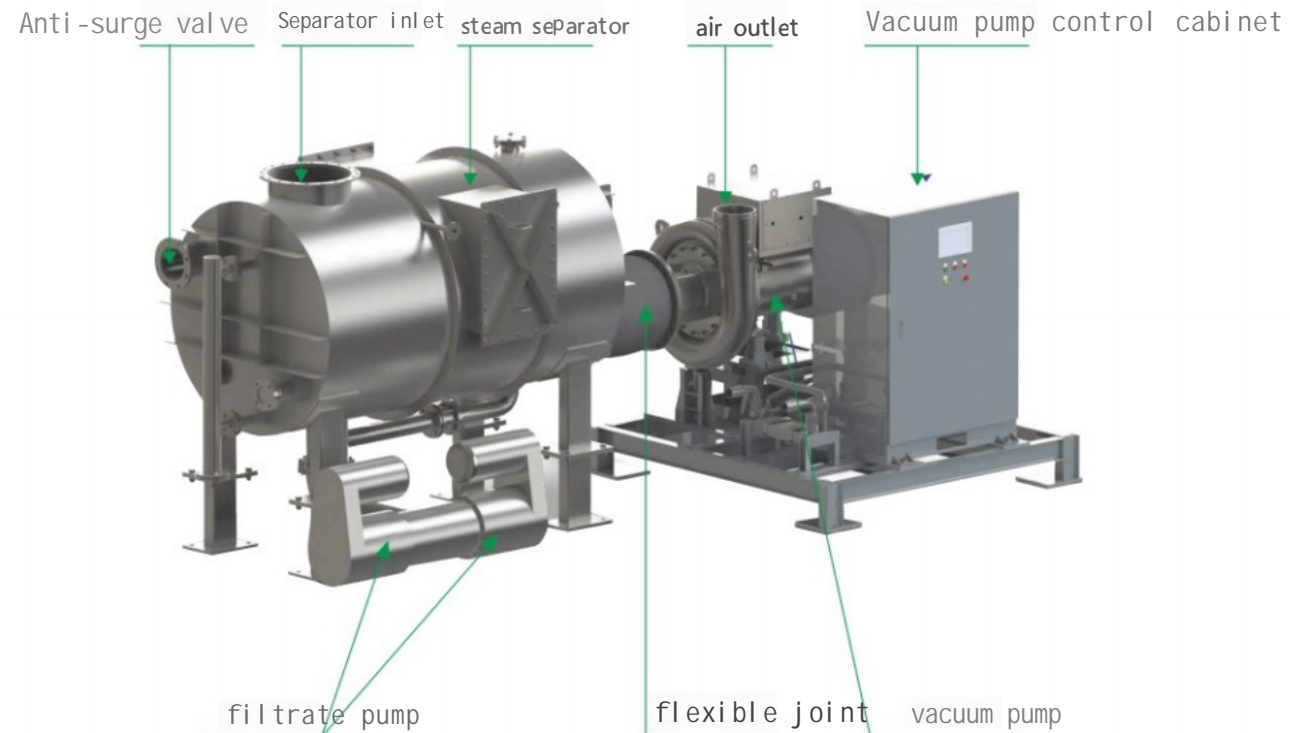
## 性能对比/PERFORMANCE COMPARISON

performance comparison	water ring vacuum Pump	Domestic turbine vacuum pump	Imported mainstream turbine vacuum pump	magnetic levitation transparent vacuum Pump
bearing	ball bearing	tilting-pad bearing	ceramic bearing	Magnetic bearing, the earliest successful research in China, mature technology, high stability independent research and development
technical background	domestic	Import/domestic	import	
mechanical loss	large	large	middle	without
form	Welded impeller	Open/closed impeller	shrouded impeller	Aluminum alloy ternary flow impeller
Aerodynamic efficiency	low	high	high	high
maintain	complex	complex	complex	simple and convenient
Motor type	Low speed induction motor	Low speed induction motor	High speed induction motor	High speed permanent magnet synchronous motor
drive type	Belt or coupling	Coupling and gear	direct connection	direct connection
Control speed	unable	able	able	Precise speed regulation
type	Variable speed control system	variable frequency regulation	variable frequency regulation	The intelligent DC speed control system changes the speed of the shaft to change the air volume
working range	very small	The flow and pressure adjustment range is small	The flow and pressure adjustment range is small	The flow and pressure adjustment range is large
control system	No control and protection system	There are control and protection systems	There is control and protection logic, but it needs to be programmed by the customer	Intelligent control and protection system for vacuum pump operation for comprehensive monitoring and protection
Remote network monitoring	without	without	without	24-hour remote network monitoring of the whole process of operation status can better solve and prevent on-site emergencies for customers
Lubricating oil	Check each shift, add regularly, the cost is higher	Check each shift, add regularly, the cost is higher	Every shift inspection, three months all replacement, the cost is higher	Lube free
quick-wear part	Bearing, sealing, lubricating oil pump	Bearing, sealing, lubricating oil pump, cooling tower	Bearing, sealing, lubricating oil pump, cooling tower, cooling fan	without
cost	low	high	high	low
operating cost	the highest	high	middle	lowest
After-sales maintenance	Short cycle, low cost, High failure rate	The cycle is longer, the cost is higher, and the frequency is higher	The import maintenance period is long, the cost is high and the frequency is high	Fast response, autonomous core components free of mechanical maintenance, low cost



选型参数：

Selection of Parameters



型号 MODEL	真空度 -kpa	气量范围 m <sup>3</sup> /min	功率 kw
XRC11	10~70	14	11
XRC15		20	15
XRC18.5		24	18.5
XRC45		45	45
XRC55		60	60
XRC75		92	92
XRC90		126	126
XRC110		150	150
XRC150		184	184

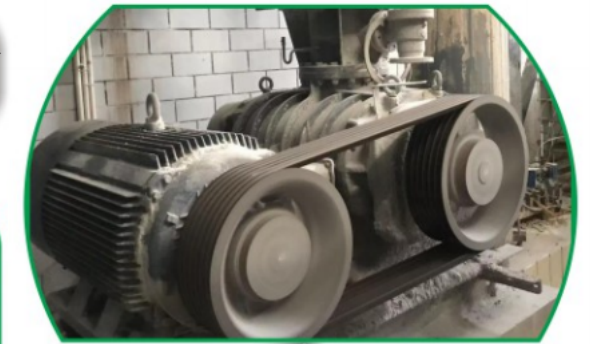
上表中数据为产品标况参数及主要工作范围,具体选型请咨询专业人员  
The data in the above table are the product standard parameters and main scope of work  
Please consult professional personnel for specific selection

磁悬浮真空泵是基于磁悬浮轴承技术、高速永磁电机技术、高频矢量变频技术以及高效流体机械技术研发的智能透平装备,比传统设备节能 30-70%,节水100%,广泛应用于造纸行业真空脱水工艺节能改造。

The magnetic levitation vacuum pump is an intelligent turbine equipment developed based on magnetic levitation bearing technology, high-speed permanent magnet motor technology, high-frequency vector frequency conversion technology and efficient fluid machinery technology. It saves 30-70% energy and 100% water than traditional equipment. It is widely used in the papermaking industry. Energy-saving transformation of vacuum dehydration process.

The energy saving rate of the renovation case is about 69.4%

Baoding De \* Paper is a large-scale pulp and paper enterprise, its pulp production line is one of the largest and most technologically advanced single pulp production lines in China. The company has an annual output of 600,000 tons of chemical bleached kraft pulp and 500,000 tons of paper making.



The original vacuum system of this company runs 5 Roots vacuum pumps, supporting the motor power of 560kW, the actual operating power of 430.53kW, the original equipment due to long running time, old equipment, resulting in high energy consumption, a large waste of electricity resources. In order to further improve the operating efficiency of the company, the company upgraded the five Roots vacuum pumps.

After careful site investigation and technical discussion, Xinran staff selected two XRC110 magnetic suspension turbine vacuum pumps and upgraded the original equipment. After the equipment is powered on, the magnetic suspension bearing system makes the motor rotor stably suspended, driven by the high-speed frequency converter, the impeller continues to do work on the gas, forming a stable vacuum in the inlet pipe of the impeller, compared with the water ring vacuum pump, eliminating the friction loss in the bearing rotation process, and 100% water-free, oil-free, low noise, low vibration, greatly reducing the energy consumption of tons of paper.



After upgrading the vacuum pump of this project, the comprehensive power saving rate is about 69.4%.