



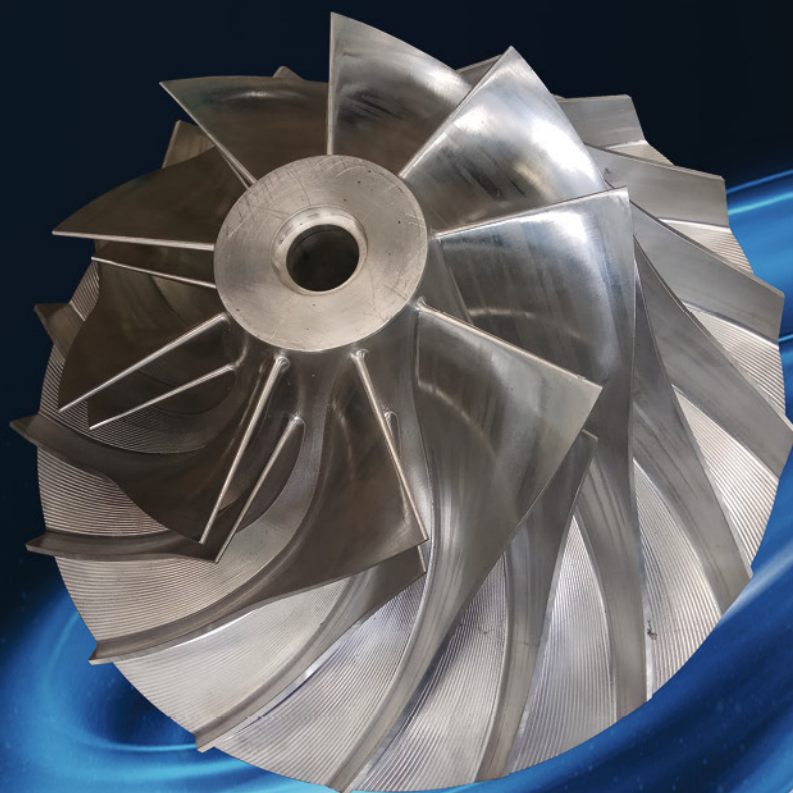
股票代码：002598

TB 系列

透平真空泵

SERIES TB

TURBO VACUUM PUMP



山东省章丘鼓风机股份有限公司

SHANDONG ZHANGQIU BLOWER CO.,LTD

企业简介 Brief Introduction Of Company

山东省章丘鼓风机股份有限公司（以下简称山东章鼓，股票代码：002598）是国家重点风机生产企业，具有近五十年的风机设计、制造技术和经验，是国内值得信赖的罗茨鼓风机生产和销售厂家。公司先后成立了两家中日合资企业，并在美国设立了分公司，成为国内风机行业第一家在国外建立分公司的企业。目前公司已成为集罗茨鼓风机、罗茨真空泵、离心鼓风机，离心真空泵、工业泵、磨机、气力输送设备、电气控制设备、MVR 装置、及系统工程等机械产品研发、设计、生产、制造于一体的现代化企业。2011 年公司在深交所成功上市。

山东章鼓拥有享受国务院特殊津贴的专家，享受省、市政府津贴的高级专业人才十余名，拥有国内一流的产品研发设计中心。工程技术应用研究员，有“泰山学者”、济南“5150”工程引进的日本专家博士，有享受省、市政府津贴的高级专业人才，先后与清华大学、西安交通大学、江苏大学、山东大学、山东科技大学等高等院校建立了产学研基地并保持着密切的合作关系。公司自主研发了多项具有国际领先和先进水平的新产品，拥有一流的产品研发设计中心，建有省级企业技术中心，具有雄厚的设计、科研、开发、试验、检测能力，处于国内机械行业领先地位。

山东章鼓先后荣获“中国机械 500 强企业”、“通用设备制造业”、“自主创新能力十强”、风机行业“用户满意行业”、“山东省利税五十强企业”等多项荣誉，是国家高新技术产业。

Shandong Zhangqiu Blower Co.,Ltd (abbreviated as "ZhangGu", Stock Code:002598) is one of the most important and trustworthy manufacturers and sellers in China with around 50 years of experience in R & D AND production. It has invested to set up two Chinese-Japanese joint ventures, and one also the first American branch in domestic blower industry. Now ZhangGu has becomes one large scale modernized company designing and producing Roots type blowers/pumps, turbo blowers, industry pumps, mills, pneumatic conveying systems, electric control equipment and MVR systems. ZhangGu was successfully listed in ShenZhen Stock Exchange in July of 2011.

ZhangGu has experts including the gainers of special allowance from the state council, province, and City level, the researchers with title of "TAISHAN ACADEMICIAN", the foreign talent with Japanese Doctor's degree. ZhangGu also keeps close cooperation with domestic famous universities such as Tsinghua University, Xi'an Jiaotong University, Zhejiang University, Jiangsu University, Shandong University, and Shandong University of Science and Technology. ZhangGu has a provincial level R&D center with leading ability of research, design, test and inspection in domestic machinery industry.

ZhangGu now is ranked the top 500 enterprises in Chinese machinery industry, the top 10 innovation enterprises in the common equipment manufacturing industry. The top 50 taxpayer in Shandong Province, ZhangGu is awarded "The Client Satisfaction Enterprises in Blower Industry", and "The State High-tech. Enterprises".



企业资质 Diplomas of Company



山东省章丘鼓风机股份有限公司

山东省章丘鼓风机股份有限公司

产品简介 Product Introduction

TB 系列透平真空泵是山东省章丘鼓风机股份有限公司与西安交通大学共同研制开发的新产品。该系列产品气动性能和结构设计达到国内外同类产品的先进水平,可广泛应用于纸机真空脱水、生活用纸折纸机真空系统、真空除尘、真空包装等真空系统中。

TB series turbine vacuum pump is a new product developed by Zhangqiu wind blower Limited by Share Ltd and Xi'an Jiao Tong University in Shandong province. The aerodynamic performance and structure design of this series of products has reached the advanced level of similar products at home and abroad. It can be widely applied to vacuum systems such as paper machines, vacuum dehydration, life paper folding machines, vacuum systems, vacuum dedusting and vacuum packaging.



产品特点 Product Features

1. 叶轮型线先进，效率高。

2. 采用变频调节，最大限度的满足用户需求。同时配备了防喘振系统，避免真空泵进入喘振区，更好的保护设备使之不受到损害。

3. 真空泵结构紧凑，体积小。

采用组装式整体结构，真空泵本体组装在齿轮增速箱的壳体上，润滑油系统紧凑地布置在机组的底座内，电机和齿轮增速箱安装在共用底座上，底座兼作油箱。

4. 转子经严格动平衡后，振动小，可靠性高，整体噪音低。

转子的转动惯量小，机组的启动、停车时间短，无需高位油箱和蓄能器。

5. 真空泵结构先进合理，易损件少，安装、操作、维护方便。

整机的轴承振动、温升，进出口压力、温度，防喘振控制，启动联锁保护，故障报警，润滑系统油压、油温控制等均采用可编程序逻辑控制器控制，使整机运行得到实时的监控，日常维护方便。

1. The impeller type line is advanced and the efficiency is high.

2. The use of frequency conversion adjustment, the maximum to meet the needs of the user. At the same time, the anti surge system is equipped to avoid the vacuum pump entering the surge area, and the better protection equipment will not be damaged.

3. The vacuum pump is compact in structure and small in volume.

Adopting the assembled integral structure, the vacuum pump body is assembled on the shell of the gear increasing box, and the lubricating oil system is arranged in the chassis of the unit tightly. The motor and gearbox are installed on the common base, and the base is also used as the oil tank.

4. After the rotor is strictly balanced, the vibration is small, the reliability is high, and the whole noise is low.

The rotary inertia of the rotor is small, the starting and stopping time of the unit are short, and no high oil tank and accumulator are needed.

5. The vacuum pump structure is advanced and reasonable, less vulnerable parts, easy to install, operate and maintain.

Bearing vibration, the temperature rise, the import and export pressure, temperature, anti surge control, start interlock protection, fault alarm, lubrication system oil pressure, oil temperature control adopts programmable logic controller to control the operation of the machine, get real-time monitoring, convenient maintenance.

主要结构 Main Structure

叶轮 Impeller

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，保证叶轮强度。为了满足不同工况的需要，叶轮可选用锻铝、不锈钢和钛合金等多种材料。

According to the three dimension flow theory to the design of high efficiency, the precision machining after strict dynamic balance correction, and through overspeed test 1.15 times the rated speed, ensure the impeller strength. In order to meet the needs of different working conditions, the impeller can be used for many kinds of materials such as forging aluminum, stainless steel and titanium alloy.



高速转子 High-speed Rotor

高速转子由叶轮、高速齿轮及高速轴组成，叶轮与高速轴采用拉杆连接，靠端面销传递扭矩。为了确保真空泵运行平稳可靠，高速转子整体平衡精度达 G1 级。

The high speed rotor consists of the impeller, the high speed gear and the high speed shaft. The impeller is connected to the high speed shaft by the pull rod, and the torque is passed on the end face pin. In order to ensure the smooth and reliable operation of the vacuum pump, the overall balance precision of the high speed rotor is G1.



有叶扩压器 Vaned Diffuser

机翼型有叶扩压器设计，扩压程度大，尺寸小，流动损失小，变工况性能好。

The wing type diffuser has the advantages of large diffuser, small size, small flow loss and good performance under variable conditions.



蜗壳 Volute Casing

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，对真空泵冲击小，因此真空泵的流动效率高，振动小，噪音低。

The circular section spiral case and the profile of the volute wall are designed as logarithmic spiral lines, which conform to the motion law of the air flow and have little impact on the vacuum pump. Therefore, the vacuum pump has high flow efficiency, small vibration and low noise.



齿轮 Gear

增速齿轮对为渐开线齿形，大小齿轮表面均经过研磨，渗氮硬化处理，保证真空泵高速运转稳定，振动和噪声小，寿命可达 20 年。

The speed increasing gear pair for the involute tooth shape, the size gear surface is all grind and nitriding hardening treatment, guarantees the vacuum pump to run at high speed steadily, the vibration and the noise are small, the life can reach 20 years.



轴承 Bearing

高速轴承采用可倾瓦滑动轴承，由多块可绕支点偏转的活动瓦块组成，其抗振性能优良，并可根据载荷变化和转速变化自动调节。

High speed bearings with tilting pad sliding bearing is composed of a plurality of pivot deflection activities can be composed of its anti vibration pad, excellent performance, and can be automatically adjusted according to the change of load and speed changes.



润滑系统 Lubrication System

润滑系统分油箱及润滑油路两部分。机组底座兼作油箱，内设浸入式电加热器和温度变送器，以保证润滑油的温度。润滑油路含主油泵、电动泵、双筒过滤器等，主油泵由低速齿轮轴驱动，机组正常运行时可保证齿轮和轴承有稳定压力的润滑油润滑；电动泵在机组启动前为系统提供预润滑，在紧急情况和停机过程中保持油压稳定，起备用油泵的作用。油过滤器过滤精度 20 μ m，并配置过滤器压差过高报警装置。

The lubricating system is divided into two parts, the oil tank and the lubricating oil road. The base of the unit is also used as an oil tank, with an immersion electric heater and a temperature transmitter to ensure the temperature of the lubricating oil. The lubricating oil containing the main oil pump, electric pump, double cylinder filter, main oil pump driven by a low speed gear shaft, the normal operation of the unit can ensure the gear and bearing lubrication oil stabilizing pressure lubrication; electric pump provides for pre lubrication system in unit before the start, keep the oil pressure stable in an emergency and shutdown process, and set aside the effect of oil pump. The filtration precision of the oil filter is 20 m, and the alarm device of the filter pressure difference is too high.

监测控制系统 Monitoring and control system (可选配 /Optional)

监测控制系统是专门为监控透平真空泵运行设计制造的，该系统具备启动条件联锁、防喘振控制、辅助油泵随油压变化自动启停、轴承温度过高和轴承振动过大保护等功能。在真空泵供油管路上配有油压传感器，在冷却器后配有油温传感器，高速滑动轴承配有测温、测振传感器，真空泵进出口管路配有测量气温、气压的一次、二次仪表及变送器，这样，可实时监测各种运行参数，保证真空泵安全、稳定、可靠的运行。

The monitoring and control system is specially designed for the operation of turbine vacuum pump. The system has the functions of interlocking of starting conditions, anti surge control, auxiliary pump's automatic start and stop with the change of oil pressure, high bearing temperature and over vibration protection of bearing. Equipped with oil pressure sensor in vacuum pump oil pipeline, equipped with oil temperature sensor in the cooler, equipped with high-speed sliding bearing temperature, vibration sensor, pipeline with measuring the temperature and pressure of import and export of vacuum pump, a two meter and transmitter, so, real-time monitoring of various operating parameters, ensure the vacuum pump safe, stable and reliable operation.

TB 系列透平真空泵性能参数表

Performance table of series TB Turbo Vacuum Pump

真空泵 型号 Type of Vacuum Pump	流量 Capacity m³/min	真空度 Vacuum Pressure KPa(G)	吸入温度 Suction Temperature °C	出口压力 Pressure KPa(A)	轴功率 Axial Power kW	电机功率 Motor Power kW	进口法兰 Inlet Flange DN (PN1.0MPa)	出口法兰 Outlet Flange DN (PN1.0MPa)
TB100-1.45	100	-30	40	101.32	69.0	90	DN300	DN250
TB100-1.55	100	-35	40	101.32	75.5	90		
TB100-1.7	100	-40	40	101.32	84.6	110		
TB100-1.8	100	-45	40	101.32	86.7	110		
TB100-2.0	100	-50	40	101.32	94.1	110		
TB100-2.2	100	-55	40	101.32	100.8	132		
TB100-2.5	100	-60	40	101.32	103.3	132		
TB100-2.8	100	-65	40	101.32	104.2	132		
TB150-1.45	150	-30	40	101.32	98.6	132	DN350	DN300
TB150-1.55	150	-35	40	101.32	108.3	132		
TB150-1.7	150	-40	40	101.32	122.0	160		
TB150-1.8	150	-45	40	101.32	125.1	160		
TB150-2.0	150	-50	40	101.32	136.1	160		
TB150-2.2	150	-55	40	101.32	146.1	185		
TB150-2.5	150	-60	40	101.32	150.0	185		
TB150-2.8	150	-65	40	101.32	151.2	185		
TB200-1.45	200	-30	40	101.32	128.1	160	DN400	DN350
TB200-1.55	200	-35	40	101.32	141.1	185		
TB200-1.7	200	-40	40	101.32	159.3	200		
TB200-1.8	200	-45	40	101.32	163.5	200		
TB200-2.0	200	-50	40	101.32	178.2	220		
TB200-2.2	200	-55	40	101.32	191.5	250		
TB200-2.5	200	-60	40	101.32	196.6	250		
TB200-2.8	200	-65	40	101.32	198.3	250		
TB300-1.45	300	-30	40	101.32	187.1	220	DN500	DN400
TB300-1.55	300	-35	40	101.32	206.6	250		
TB300-1.7	300	-40	40	101.32	233.9	280		
TB300-1.8	300	-45	40	101.32	240.2	280		
TB300-2.0	300	-50	40	101.32	262.3	315		
TB300-2.2	300	-55	40	101.32	282.3	355		
TB300-2.5	300	-60	40	101.32	289.9	355		
TB300-2.8	300	-65	40	101.32	292.5	355		

TB 系列透平真空泵性能参数表

Performance table of series TB Turbo Vacuum Pump

真空泵 型号 Type of Vacuum Pump	流量 Capacity m ³ /min	真空度 Vacuum Pressure KPa(G)	吸入温度 Suction Temperature °C	出口压力 Pressure KPa(A)	轴功率 Axial Power kW	电机功率 Motor Power kW	进口法兰 Inlet Flange DN (PN1.0MPa)	出口法兰 Outlet Flange DN (PN1.0MPa)
TB400-1.45	400	-30	40	101.32	246.1	315	DN600	DN500
TB400-1.55	400	-35	40	101.32	272.3	355		
TB400-1.7	400	-40	40	101.32	308.5	355		
TB400-1.8	400	-45	40	101.32	317.0	400		
TB400-2.0	400	-50	40	101.32	346.4	450		
TB400-2.2	400	-55	40	101.32	373.1	450		
TB400-2.5	400	-60	40	101.32	383.3	450		
TB400-2.8	400	-65	40	101.32	386.6	450		
TB500-1.45	500	-30	40	101.32	305.2	355	DN700	DN600
TB500-1.55	500	-35	40	101.32	337.7	400		
TB500-1.7	500	-40	40	101.32	383.2	450		
TB500-1.8	500	-45	40	101.32	393.7	500		
TB500-2.0	500	-50	40	101.32	430.4	560		
TB500-2.2	500	-55	40	101.32	463.8	560		
TB500-2.5	500	-60	40	101.32	476.6	560		
TB500-2.8	500	-65	40	101.32	480.8	560		

备注：

1. 当透平泵的使用条件与上表不符时，需进行性能换算，我公司可根据用户要求进行非标设计，以满足用户各种工况的具体需要。

2. 透平真空泵为实现不同的真空度要求，可设计成双叶轮结构。

3. 当输送腐蚀性介质时，我公司对壳体内部及叶轮进行相应防腐处理，更改密封实现零泄露，以满足用户需求。

Remarks:

1. when the condition of the blower is inconsistent with the upper table, we need to perform the performance conversion. Our company can carry out the non-standard design according to the user's requirements, so as to meet the specific needs of users in all kinds of working conditions.

2. In order to achieve different vacuum requirements, the turbine vacuum pump can design a double impeller structure.

3. When transporting corrosive medium,our company will carry out the corresponding anti-corrosion treatment for the inner and impeller of the shell,and change the seal to achieve zero leakage to meet the needs of users.

国际先进的加工设备

International advanced machine





我们在中国各地共设有56个办事处，目前除台湾外全国33个省份行政区域均有完善的销售和服务网络。能够及时便捷的为您提供售前、售中和售后服务，从中了解您的需求，在满足客户定制化需求同时，不断完善服务及质量体系。

We set up 56 sales offices all over China covers 33 provinces Administrative Region except Taiwan. It is perfectly organized sale and service network will offer prompt presale, insale and aftersale service. Your requirements would be fully realized by our tailor made products and improving service and quality system.



山东省章丘鼓风机股份有限公司 SHANDONG ZHANGQIU BLOWER CO.,LTD

地址：山东省济南市章丘区明水经济开发区世纪大道东首

ADD: Mingshui Economic Development Zone, Zhangqiu District, Jinan City, Shandong, China

电话(TEL): 0531-83250578 (透平机械市场部 Marketing Department)

0531-83250025 83250036 (销售公司 Sales Company)

+86-531-83250080 (外贸部 Foreign Trade Department)

传真(FAX): 0531-83250067 (透平机械市场部 Marketing Department)

0531-83225838 (销售公司 Sales Company)

+86+531+83250082 (外贸部 Foreign Trade Department)

E-mail: zgtpjx@blower.cn (透平机械市场部 Marketing Department)

xmb@blower.cn (销售公司 Sales Company)

globalbiz@blower.cn (外贸部 Foreign Trade Department)

Http: // www.blower.cn

邮编(Zip Code): 250200



山东章鼓官方网站



山东章鼓微信公众平台