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版本 Ver: 2025年12月



真空获得设备

VACUUM GENERATION



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COMPANY PROFILE
公司简介



北京中科科仪股份有限公司成立于1958年，是中国科学院首家事业单位整体转改制企业。专注于电子光学和真空技术领域，业务范围覆盖扫描电子显微镜、氦质谱检漏仪等科学仪器装备和分子泵、真空应用设备等核心零部件及产业设备，是国家级企业技术中心及国家级制造业“单项冠军”示范企业。先后研制出我国第一台扫描电子显微镜、第一台涡轮分子泵、第一台商用氦质谱检漏仪，第一台磁悬浮分子泵，第一台场发射枪扫描电子显微镜，打破了国外技术垄断，填补了国内空白，提升了我国高端科学仪器装备与核心零部件国产化和自主化水平，为我国前沿科学研究、重大工程和战略型新兴产业的发展提供了重要支撑。

Founded in 1958, KYKY Technology Co., Ltd. is the first enterprise of the Chinese Academy of Sciences that has been transformed from a public institution. Focusing on the field of Electron optics and vacuum technology, its business scope covers scientific instruments and equipment such as Scanning electron microscope and helium leak detector, as well as core components and industrial equipment such as turbo molecular pump and vacuum equipment. KYKY is a national enterprise technology center and a national manufacturing "single champion" demonstration enterprise, developing the first Scanning electron microscope, the first turbo molecular pump, the first commercial helium leak detector, the first magnetically levitated molecular pump and the first field emission Scanning electron microscope successively, breaking the foreign technological monopoly, filling the domestic gap, improving the localization and independence level of China's high-end scientific instruments and equipment and core parts, and contributing to China's cutting-edge scientific research and the development of Megaproject and strategic emerging industries.

APPLICATIONS 应用领域

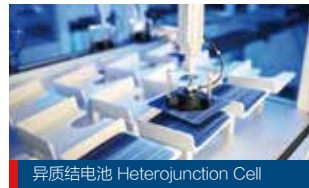
真空获得 Vacuum Generation



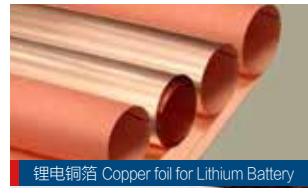
IC制造 IC manufacturing



分析仪器 Analytical Instruments



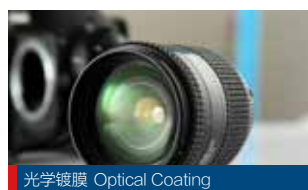
异质结电池 Heterojunction Cell



锂电铜箔 Copper foil for Lithium Battery



平板显示 Panel Display



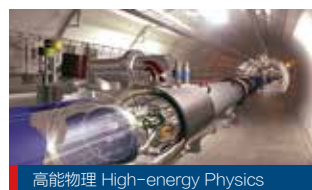
光学镀膜 Optical Coating



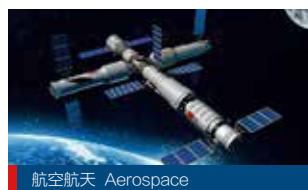
LOW-E玻璃镀膜 Low-e Glass Coating



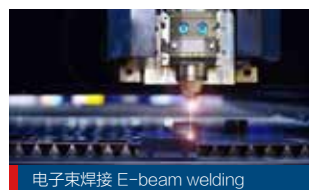
装饰镀膜 Decorative Coating



高能物理 High-energy Physics



航空航天 Aerospace



电子束焊接 E-beam welding



医疗设备 Medical Equipments

真空检漏 Vacuum Leak Detection



能源制造 Energy Production



航天工业 Space Industry



汽车工业 Automotive Industry



电力电气 Electricals and Electrics



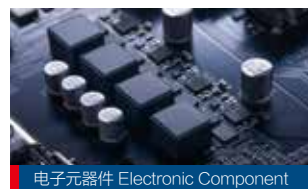
阀门工业 Valve Industry



动力电池 Battery



低温制冷 Cryogenic Refrigeration



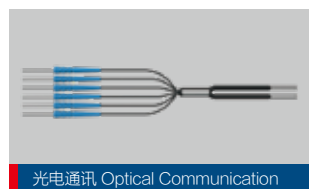
电子元器件 Electronic Component



换热系统 Heat Transfer System



仪器仪表 Instrument & Apparatus



光电通讯 Optical Communication



真空设备 Vacuum System



真空获得业务 / Vacuum Generation

中科科仪在真空获得产品研发与制造方面具有多年经验，产品包括系列分子泵、系列分子泵机组、系列旋片泵、系列插板阀、配套控制器等。自上世纪七十年代研制出我国第一台立式涡轮分子泵以来，中科科仪始终坚持以市场需求为导向、以满足客户需求为目标，秉承创新求发展的企业精神，相继推出了系列油润滑、系列脂润滑和系列磁悬浮分子泵等产品。广泛应用于分析仪器、航空航天、半导体制造、汽车工业、新能源、新材料、节能环保等前沿科学研究和高端装备制造领域，凭借优异的产品性能赢得了广大用户的厚爱。

高品质的产品源于我们不断的技术创新和对质量的不懈追求。通过持续的研发与技术创新和对真空事业的坚守与热爱，我们将坚持为客户提供更加优质的产品和服务。

KYKY TECHNOLOGY CO., LTD. has many years of experiences in R & D and manufacturing of vacuum generation products, including series molecular pumps, series Turbo pumping station, series Rotary Vane pumps, series gate valves and supporting controllers. Since developing the first vertical turbo molecular pump in 1970's, KYKY always orients to the demand-driven market, aims to meet the requirement of our customers, and continuously launches new products in the enterprise spirit of developing on innovation. Sequentially KYKY launches Oil-lubricated series turbo molecular pumps, grease-lubricated series molecular pumps and CXF-series magnetically levitated molecular pumps. KYKY products are widely used in fields such as analytical instruments, aerospace, semiconductor manufacturing, automotive industry, new energy, new materials, energy conservation and environmental protection, as well as forefront scientific research and high-end equipment manufacturing, and have won the favor of a large number of users with their excellent performance.

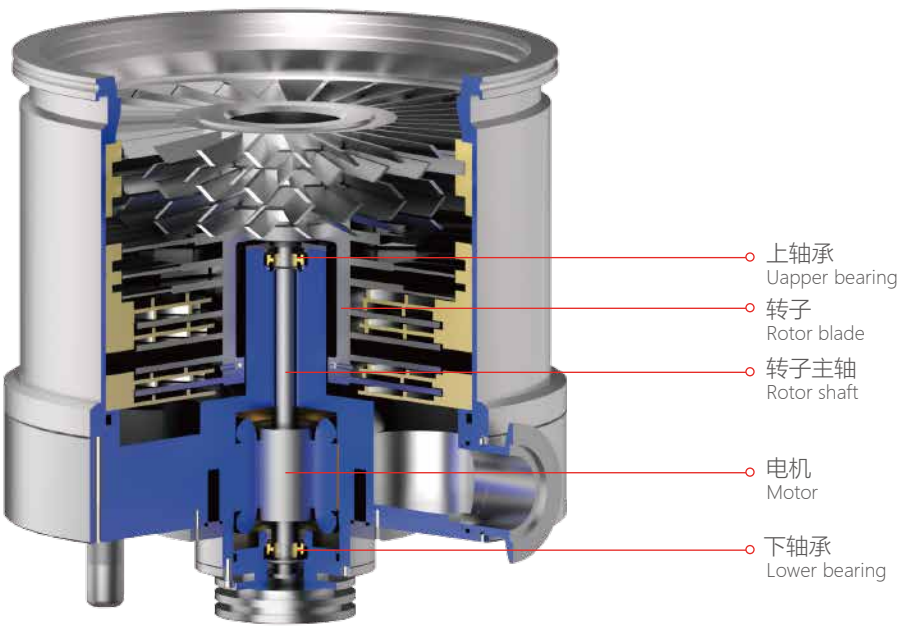
High quality products are derived from our continuous technical breakthrough and pursuit of quality. KYKY will persistently provide better products and quality services for customers by our continuous innovation, passion and commitment.

CATALOGUE
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BEARING TECHNOLOGY – GREASE-LUBRICATED CERAMIC BEARING
轴承技术-脂润滑陶瓷轴承



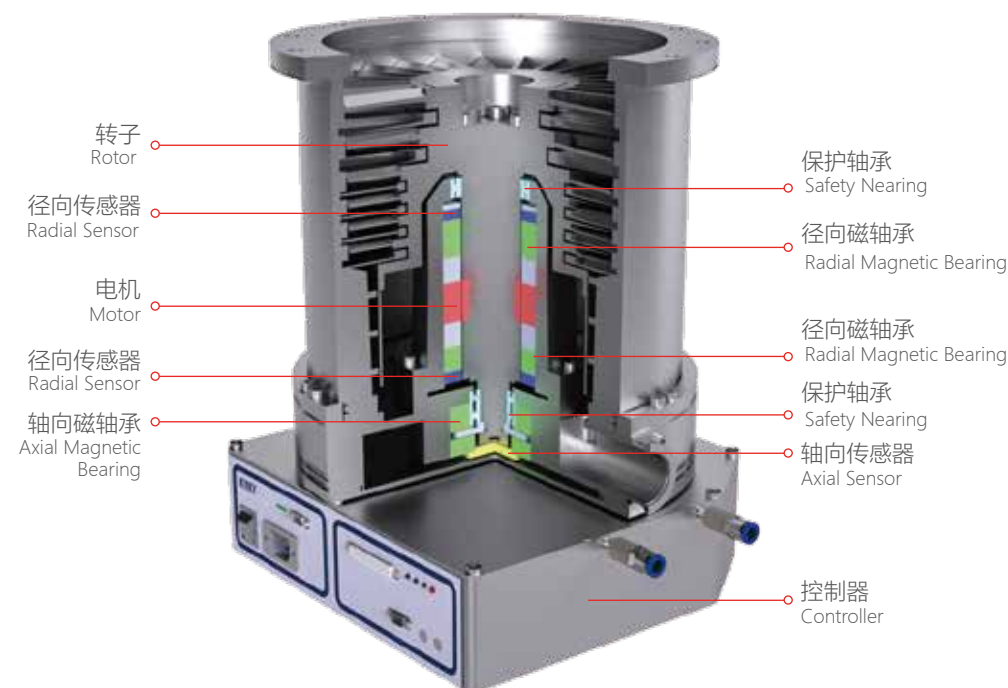
脂润滑陶瓷轴承： GREASE-LUBRICATED CERAMIC BEARING:

脂润滑陶瓷轴承一般采用自封闭的结构，由轴承内圈、轴承外圈、滚珠、保持架、密封端盖和润滑脂组成。其中的润滑脂由润滑剂、粘稠剂和添加剂等混合而成，分子泵专用脂润滑陶瓷轴承内充填的润滑脂具有优良的高速润滑效果，且在高速运转中几乎不会产生挥发，能够保持真空的高洁净度；陶瓷材料则具有优良的物理和化学性能，与金属球轴承相比，更轻、表面更光滑、硬度更高，其运转速度更高、摩擦系数更小、发热量更低。应用脂润滑陶瓷轴承的轴系支撑结构具有结构简单，免维护，功耗小等优点，可以实现分子泵产品的任意角度安装，正常使用条件下只需要每隔3~5年维护保养一次。

The grease-lubricated ceramic bearing is usually of a self-sealed structure, consisting of a bearing inner ring, a bearing outer ring, balls, holders, a sealing end cover and lubricating grease. The lubricating grease is formed by mixing lubricant, thickener and additive. The lubricating grease filled in the grease-lubricated ceramic bearing special for molecular pumps has excellent lubrication effect for high-speed rotation, and almost no volatilization occurs during high-speed operation, thereby keeping a clear vacuum environment. Ceramic materials are characterized by excellent physical and chemical properties, therefore, compared with metallic ball bearings, the ceramic materials have advantages of lighter weight, smoother surfaces, higher hardness, faster rotating speed, smaller friction coefficient and lower heating value. Shafting support structure applied to the grease-lubricated ceramic bearing has advantages of simple structure, free maintenance and low power consumption, so that molecular pump products can be installed in any orientation, and only need to be maintained once every 3-5 years in normal operating conditions.

BEARING TECHNOLOGY – MAGNETICALLY LEVITATED BEARING

轴承技术—磁悬浮轴承



磁悬浮轴承: MAGNETICALLY LEVITATED BEARING:

电磁轴承也被称为“主动式磁悬浮轴承”，由磁轴承、传感器和控制系统构成，在运转时不需要任何机械支撑，依靠磁力悬浮于空中，因此也无需润滑。KYKY磁悬浮轴承为五自由度电磁轴承，利用国际先进控制理论，采用动态主动闭环磁浮控制技术，动态反应迅速、调节及时，保证高速运转轴系悬浮稳定、运行可靠。KYKY磁悬浮轴承能够实时的监测分子泵涡轮运转的位置并将其反馈给控制单元，通过算法能够实现涡轮转子的自动平衡补偿。KYKY应用磁悬浮轴承的分子泵产品突出优点是无摩擦、低振动、无污染、免维护、任意角度安装。

The electromagnetic bearing is also called “active magnetic levitated bears”, consisting of a magnetic bearing, a sensor and a control system. During operation, it can float in air by virtue of magnetic force without any mechanical support; therefore, lubrication is not required. KYKY magnetically levitated bearing is an electromagnetic bearing with 5-axis magnetically levitated Structure. This design has dynamic response and timely adjustment by means of dynamic active closed-circuit magnetic suspension control technology based on advanced international control theory, so as to guarantee such significant advantages of the high-speed shafting as stable levitated and reliable operation. KYKY magnetically levitated bearing can be applicable to monitoring the running position of turbo of the molecular pumps and feed the running position back to the control unit, so that automatic balance compensation of the rotor can be realized through an algorithm. KYKY molecular pumps provided with the magnetically levitated bearing are free of friction, pollution and maintenance and with low vibration, and can be installed in any orientation.

SERIES OF OIL LUBRICATED TURBOPUMPS

油润滑分子泵



SERIES OF OIL LUBRICATED TURBOPUMPS
油润滑分子泵

SERIES OF OIL LUBRICATED TURBOPUMPS
油润滑分子泵

油润滑涡轮分子泵介绍 INTRODUCTION OF OIL LUBRICATED TURBO PUMPS

油润滑分子泵是KYKY自主开发的系列紧凑型高性能分子泵，抽速150L/s-5000L/s，具有结构紧凑、使用方便和安装灵活，适用范围广，性能稳定。

The oil lubrication turbo pumps are products of compact and high-performance developed by KYKY. The pumping speed of the oil lubrication turbo pumps range from 150L/s to 5000L/s. The advantages of the oil lubrication turbo pumps are compact structure, convenient operation, flexible installation, wide application range and stable performance.

产品优势 ADVANTAGES

- ◆ 适用于恶劣的使用环境（高温、粉尘等）
Good performance under harsh environmental(high temperature, dust, etc.).
- ◆ 性能稳定，使用寿命长
Stable performance and long service life
- ◆ 维护保养简单，方便操作
Simple maintenance, convenient operation

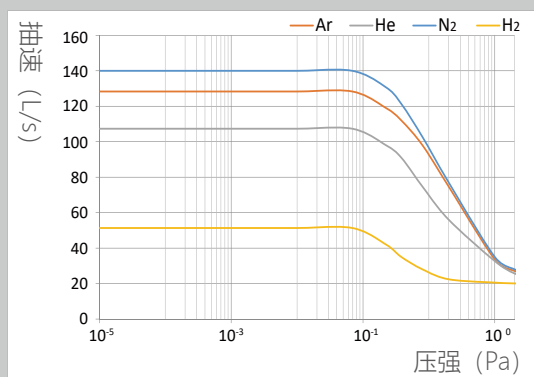
应用范围广 APPLICATIONS

系列油润滑分子泵主要应用在工业检漏、PVD、CVD、离子注入、真空电子元器件制造、Low-E玻璃、ITO玻璃、光学镀膜、太阳能电池、电子束焊接、真空炉等行业。

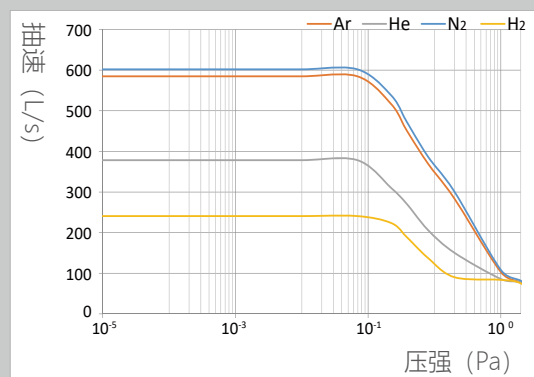
The oil lubrication turbo pumps are mainly used in industrial leak detection, PVD, CVD, ion implantation, vacuum electronic components manufacturing, low-E glass, ITO glass, optical coating, solar cells, electron beam welding, vacuum furnace and other industries

应用领域		F-100/150	FF-160/620	FF-200/1200	F-250/1500	FF-250/1600G	F-400/3500B	F-400/4500	FF-400/5000
分析仪器	电子显微镜 Electron microscopy								
	检漏 Leak detection								
	质谱 Mass spectrometry								
	表面分析 Surface analysis								
	等离子体监测 Plasma monitoring								
半导体	残余气体分析 Residual gas analysis								
	光刻 Lithography								
	物理气相沉积 PVD (Physical Vapor Deposition)								
	化学气相沉积 CVD (Chemical Vapor Deposition)								
	离子刻蚀 Plasma etching								
	注入 - 源 Implantation – Source								
	注入 - 光束 Implantation – Beamline								
	检测 Inspection								
	封装 Bonding								
	分子束外延 MBE (Molecular Beam Epitaxy)								
镀膜	真空锁, 转运箱 Load-locks, transfer chambers, handling systems								
	平板显示 Flat Panel Display (FPD)								
	LED / OLED			■	■	■			
	硬盘镀膜 Hard disk coating			■	■	■			
	光伏 Photovoltaics			■	■	■			
	玻璃镀膜 Glass coating (PVD)			■	■	■			
	CD / DVD / Blu-ray production (PVD)		■	■	■	■	■	■	■
	光学镀膜 Optical coating (PVD)		■	■	■	■	■	■	■
	硬质涂层 Wear protection (PVD, CVD)		■	■	■	■	■	■	■
	卷绕镀膜 Web coating						■	■	■
工业	装饰镀膜 Decoration Coating						■	■	■
	医学技术 Medical technology			■	■	■			
	工业检漏 Industrial leak detection	■	■						
	电子束焊接 Electron beam welding	■		■	■	■	■	■	■
	隔离真空 Isolation vacuums	■	■	■	■				
	灯管制造 Lamp and tube manufacturing		■			■			
	热处理 Heat treatment			■	■	■	■	■	■
	真空干燥 Vacuum drying		■	■	■	■	■	■	■
研发	真空炉 Vacuum furnaces			■	■	■	■	■	■
	核研究 Nuclear research	■	■	■	■	■	■	■	■
	聚变技术 Fusion technology		■	■	■	■	■	■	■
	等离子研究 Plasma research	■	■	■	■	■	■	■	■
	粒子加速器 Particle accelerators		■	■	■	■			
	模拟空间站 Space simulation			■	■	■	■	■	■
	冷冻研究 Cryogenic research	■	■	■			■	■	■
	基本粒子物理学 Elementary particle physics			■	■		■	■	■
	纳米技术 Nanotechnology	■	■				■	■	■
	生物技术 Biotechnology	■	■	■	■	■	■	■	■

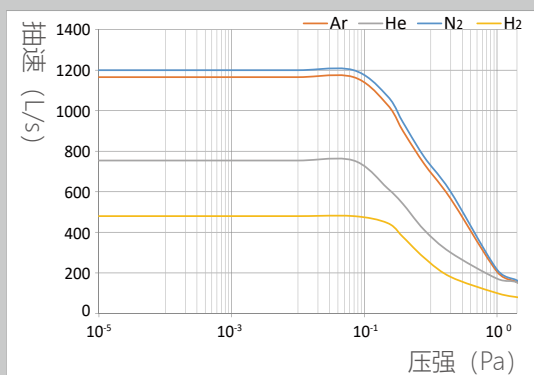
PUMPING SPEED 抽速曲线



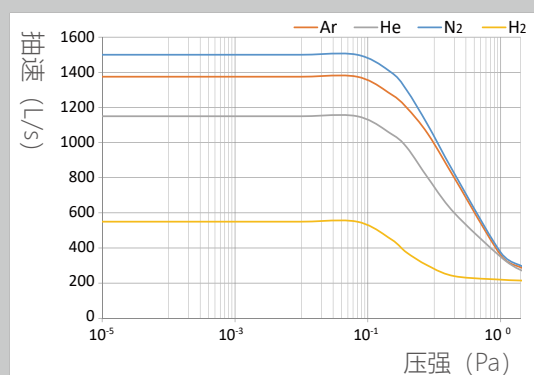
F-100/150



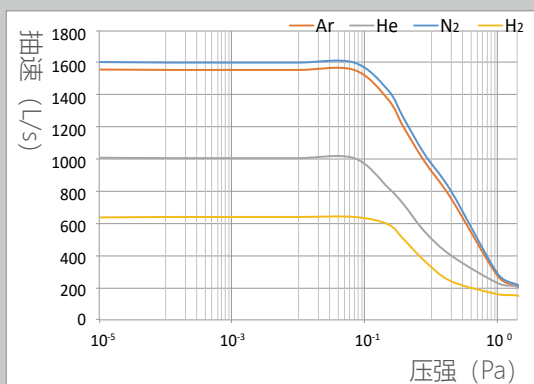
FF-160/620



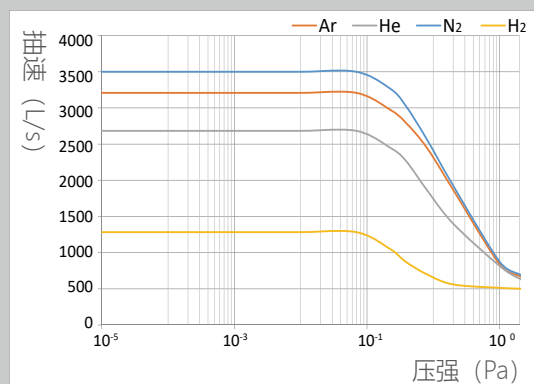
FF-200/1200



F-250/1500

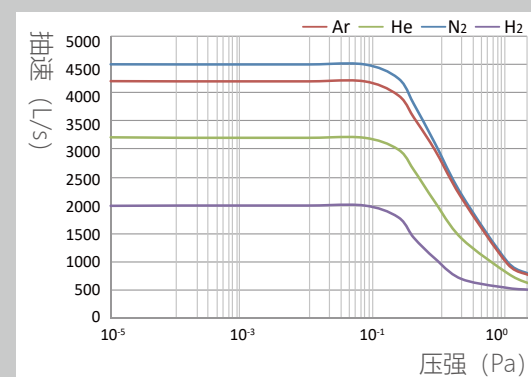


FF-250/1600G

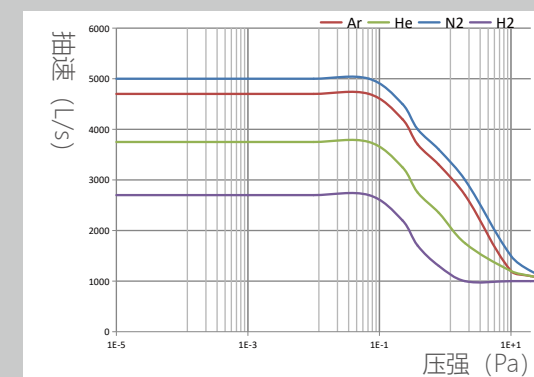


F-400/3500B

SERIES OF OIL LUBRICATED TURBOPUMPS

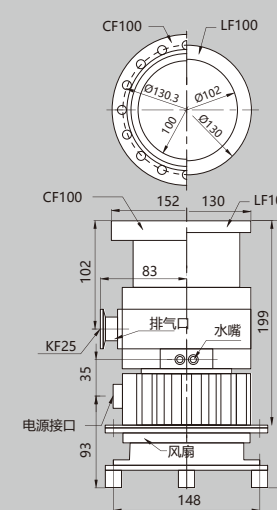


F-400/4500

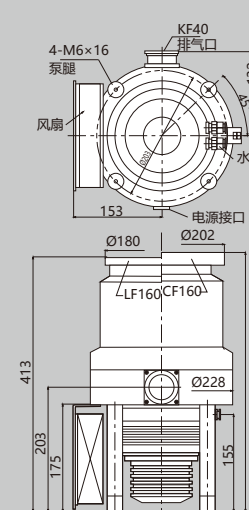


FF-400/5000

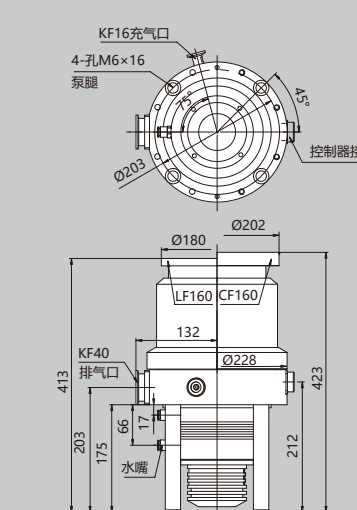
OUTLINE DIMENSIONS DRAWING(mm) 安装尺寸图



F-100/150



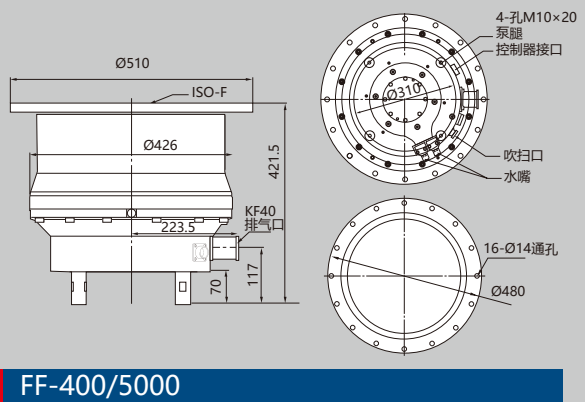
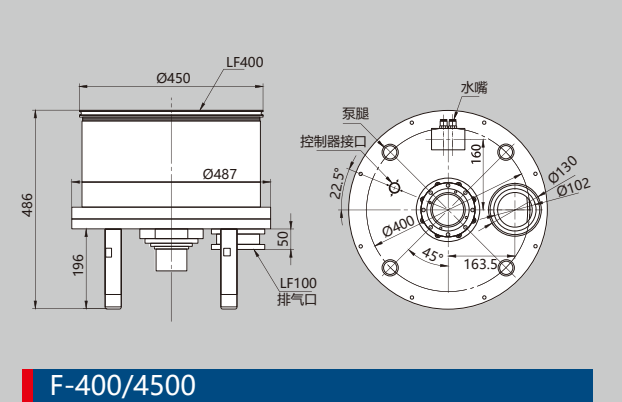
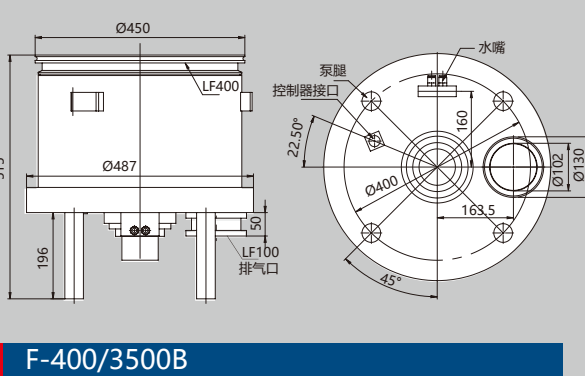
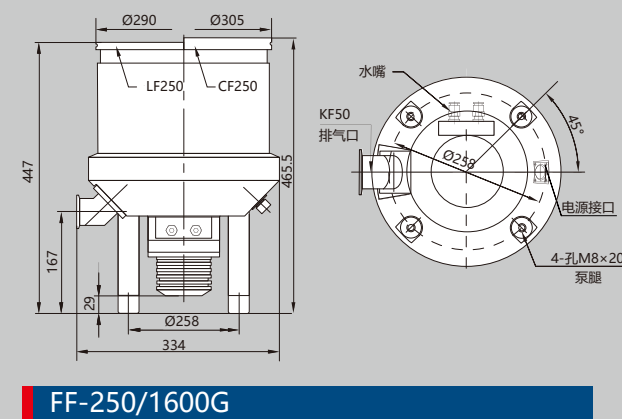
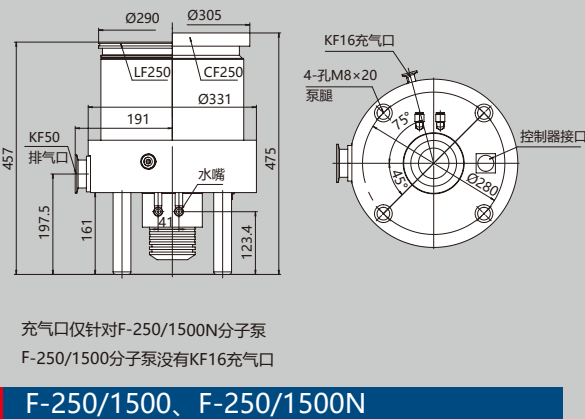
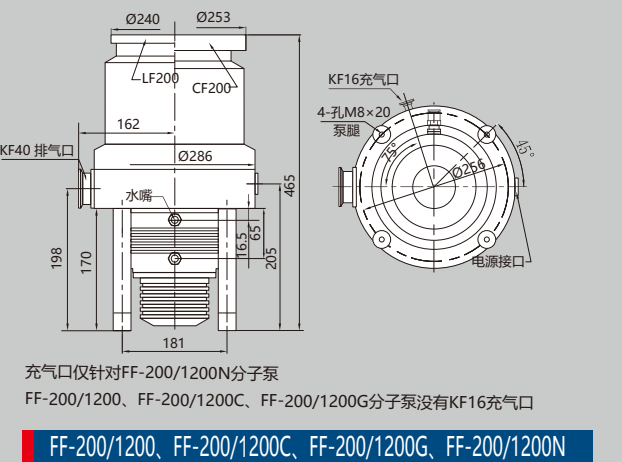
FF-160/620F



充气口仅针对耐腐蚀分子泵，620、620C没有KF16充气口

FF-160/620、FF-160/620C、FF-160/620N

OUTLINE DIMENSIONS DRAWING(mm)
安装尺寸图



SERIES OF OIL LUBRICATED TURBOPUMPS
油润滑分子泵

型号 Model	单位Unit	F-100/150	FF-160/620	FF-160/620C
进气口法兰 Flange (In)		DN100 CF	DN160 CF	DN160 CF
排气口法兰 Flange (Out)	ISO-KF	DN100 ISO-K	DN160 ISO-K	DN160 ISO-K
抽速速率 Pumping Speed	L/s	N ₂ : 150 He: 100 H ₂ : 50 Ar: 130	N ₂ : 600 He: 380 H ₂ : 240 Ar: 580	N ₂ : 600 He: 380 H ₂ : 240 Ar: 580
压缩比 Compression Ratio		N ₂ : 10 ⁶ He: 10 ² H ₂ : 5×10 ² Ar: 10 ⁶	N ₂ : 10 ⁹ He: 10 ⁴ H ₂ : 6×10 ³ Ar: 10 ⁹	N ₂ : 10 ⁹ He: 10 ⁵ H ₂ : 6×10 ⁴ Ar: 10 ⁹
极限压强 Ultimated Pressure	Pa	CF: 6×10 ⁻⁷ ISO-K: 6×10 ⁻⁶	CF: 6×10 ⁻⁷ ISO-K: 6×10 ⁻⁶	CF: 6×10 ⁻⁸ ISO-K: 6×10 ⁻⁷
最大连续前级压强 Max. Continuous Fore-vacuum pressure	Pa	200	240	240
最大前级压强 Max. Fore-vacuum Pressure	Pa	N ₂ : 300 He: 240 H ₂ : 180 Ar: 110	N ₂ : 350 He: 880 H ₂ : 700 Ar: 450	N ₂ : 350 He: 880 H ₂ : 700 Ar: 450
最大气载量 Gas Throughput	sccm	N ₂ : 300 He: 240 H ₂ : 180 Ar: 110	N ₂ : 1200 He: 880 H ₂ : 700 Ar: 450	N ₂ : 1200 He: 880 H ₂ : 700 Ar: 450
额定转速 Rotation Speed	rpm	42300	27000	36000
启动时间 Run-Up Time	min	≤3	≤7	≤9
冷却方式 Cooling Type,Standard		水冷或风冷 (环境温度5-32℃时可风冷)	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	L/min	≥1	≥1	≥1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25	≤25
电源电压 Power Connection:Voltage	V AC	DC24/AC220	DC24/AC220	DC24/AC220
最大功率 Max.Power Consumption	W	≤300	≤500	≤500
适配电源型号Controller Model		FD-110A	TCDP-II、FD-IIB、TD-II/TCP-II	TCDP-II、FD-IIB、TD-II/TCP-II
建议前级泵 Backing Pump	L/s	2	4~8	4~8
重量 Weight	kg	6(ISO-K)8(CF)	29 (ISO-K) 30.5 (CF)	29 (ISO-K) 30.5 (CF)
轴承 Bearing		油润滑陶瓷轴承		

SPECIFICATIONS
技术指标

型号 Model	单位Unit	FF-160/620F	FF-160/620N	FF-200/1200
进气口法兰 Flange (In)		DN160 CF	DN160 CF	DN200 CF
		DN160 ISO-K	DN160 ISO-K	DN200 ISO-K
排气口法兰 Flange (Out)	ISO-KF	DN40	DN40	DN40
抽速速率 Pumping Speed	L/s	N ₂ : 600	N ₂ : 600	N ₂ : 1200
		He: 380	He: 380	He: 750
		H ₂ : 240	H ₂ : 240	H ₂ : 480
		Ar: 580	Ar: 580	Ar: 1160
压缩比 Compression Ratio		N ₂ : 10 ⁹	N ₂ : 10 ⁹	N ₂ : 10 ⁹
		He: 10 ⁴	He: 10 ⁴	He: 10 ⁴
		H ₂ : 6×10 ³	H ₂ : 6×10 ³	H ₂ : 6×10 ³
		Ar: 10 ⁹	Ar: 10 ⁹	Ar: 10 ⁹
极限压强 Ultimated Pressure	Pa	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷
		ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶
最大连续前级压强 Max. Continuous Fore-vacuum pressure	Pa	240	240	400
最大前级压强 Max. Fore-vacuum Pressure	Pa	N ₂ : 350	N ₂ : 350	N ₂ : 500
最大气载量 Gas Throughput	sccm	N ₂ : 1200	N ₂ : 1200	N ₂ : 2300
		He: 880	He: 880	He: 1700
		H ₂ : 700	H ₂ : 700	H ₂ : 1350
		Ar: 450	Ar: 450	Ar: 870
额定转速 Rotation Speed	rpm	27000	27000	24000
启动时间 Run-Up Time	min	≤7	≤7	≤9
冷却方式 Cooling Type,Standard		水冷或风冷 Water or Air	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	L/min	≥1	≥1	≥1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25	≤25
电源电压 Power Connection:Voltage	V AC	DC24/AC220	220±22	DC24/AC220
最大功率 Max.Power Consumption	W	≤500	≤500	≤750
适配电源型号Controller Model		TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II
建议前级泵 Backing Pump	L/s	4~8	4~8	15
重量 Weight	kg	29 (LF) 30.5 (CF)	29 (LF) 30.5 (CF)	39(LF) 41(CF)
轴承 Bearing		油润滑陶瓷轴承		

SERIES OF OIL LUBRICATED TURBOPUMPS
油润滑分子泵

型号 Model	单位Unit	FF-200/1200C	FF-200/1200G	FF-200/1200N
进气口法兰 Flange (In)		DN200 CF	DN200 CF	DN200 CF
		DN200 ISO-K	DN200 ISO-K	DN200 ISO-K
排气口法兰 Flange (Out)	ISO-KF	DN40	DN40	DN40
抽速速率 Pumping Speed	L/s	N ₂ : 1200	N ₂ : 900	N ₂ : 1200
		He: 750	He: 560	He: 750
		H ₂ : 480	H ₂ : 360	H ₂ : 480
		Ar: 1160	Ar: 870	Ar: 1160
压缩比 Compression Ratio		N ₂ : 10 ⁹	N ₂ : 10 ⁹	N ₂ : 10 ⁹
		He: 10 ⁴	He: 10 ⁴	He: 10 ⁴
		H ₂ : 6×10 ³	H ₂ : 6×10 ³	H ₂ : 6×10 ³
		Ar: 10 ⁹	Ar: 10 ⁹	Ar: 10 ⁹
极限压强 Ultimated Pressure	Pa	CF: 1×10 ⁻⁷	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷
		ISO-K: 1×10 ⁻⁶	ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶
最大连续前级压强 Max. Continuous Fore-vacuum pressure	Pa	400	400	400
最大前级压强 Max. Fore-vacuum Pressure	Pa	N ₂ : 500	N ₂ : 500	N ₂ : 500
最大气载量 Gas Throughput	sccm	N ₂ : 2300	N ₂ : 2300	N ₂ : 2300
		He: 1700	He: 1700	He: 1700
		H ₂ : 1350	H ₂ : 1350	H ₂ : 1350
		Ar: 870	Ar: 870	Ar: 870
额定转速 Rotation Speed	rpm	27000	27000	24000
启动时间 Run-Up Time	min	≤9	≤9	≤9
冷却方式 Cooling Type,Standard		水冷 Water	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	L/min	≥1	≥1	≥1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25	≤25
电源电压 Power Connection:Voltage	V AC	DC24/AC220	DC24/AC220	220±22
最大功率 Max.Power Consumption	W	≤750	≤750	≤750
适配电源型号Controller Model		TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II
建议前级泵 Backing Pump	L/s	15	15	15
重量 Weight	kg	39(LF) 41(CF)	39(LF) 41(CF)	39(LF) 41(CF)
轴承 Bearing		油润滑陶瓷轴承		

SPECIFICATIONS
技术指标

型号 Model	单位Unit	F-250/1500	F-250/1500N	FF-250/1600G
进气口法兰 Flange (In)		DN250 CF	DN250 CF	DN250 CF
		DN250 ISO-K	DN250 ISO-K	DN250 ISO-K
排气口法兰 Flange (Out)	ISO-KF	DN50	DN50	DN50
抽速速率 Pumping Speed	L/s	N ₂ : 1500	N ₂ : 1500	N ₂ : 1600
		He: 1100	He: 1100	He: 1000
		H ₂ : 550	H ₂ : 550	H ₂ : 640
		Ar: 1350	Ar: 1350	Ar: 1550
压缩比 Compression Ratio		N ₂ : 10 ⁸	N ₂ : 10 ⁸	N ₂ : 10 ⁸
		He: 10 ⁴	He: 10 ⁴	He: 10 ⁴
		H ₂ : 5×10 ³	H ₂ : 5×10 ³	H ₂ : 5×10 ³
		Ar: 10 ⁸	Ar: 10 ⁸	Ar: 10 ⁸
极限压强 Ultimated Pressure	Pa	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷
		ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶
最大连续前级压强 Max. Continuous Fore-vacuum pressure	Pa	300	300	200
最大前级压强 Max. Fore-vacuum Pressure	Pa	N ₂ : 450	N ₂ : 450	N ₂ : 650
最大气载量 Gas Throughput	sccm	N ₂ : 2400	N ₂ : 2400	N ₂ : 2500
		He: 1800	He: 1800	He: 1850
		H ₂ : 1400	H ₂ : 1400	H ₂ : 1450
		Ar: 900	Ar: 900	Ar: 950
额定转速 Rotation Speed	rpm	21000	21000	24000
启动时间 Run-Up Time	min	≤8	≤9	≤9
冷却方式 Cooling Type,Standard		水冷 Water	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	L/min	≥1	≥1	≥1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25	≤25
电源电压 Power Connection:Voltage	V AC	DC24/AC220	DC24/AC220	DC24/AC220
最大功率 Max.Power Consumption	W	≤750	≤750	≤750
适配电源型号Controller Model		TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II
建议前级泵 Backing Pump	L/s	15	15	15
重量 Weight	kg	60(LF) 63(CF)	60 (LF) 63 (CF)	47 (LF) 50 (CF)
轴承 Bearing	油润滑陶瓷轴承			

SERIES OF OIL LUBRICATED TURBOPUMPS
油润滑分子泵

型号 Model	单位Unit	F-400/3500B	F-400/4500	FF-400/5000 FF-400/5000Y
进气口法兰 Flange (In)		DN400 ISO-K	DN400 ISO-K	DN400 ISO-F DN400 ISO-K
排气口法兰 Flange (Out)		DN100 ISO-K	DN100 ISO-K	DN40 ISO-KF
抽速速率 Pumping Speed		N ₂ : 3500	N ₂ : 4500	N ₂ : 4800
		He: 2750	He: 3200	He: 3550
		H ₂ : 1300	H ₂ : 2000	H ₂ : 2500
		Ar: 3300	Ar: 4200	Ar: 4500
压缩比 Compression Ratio		N ₂ : 10 ⁸	N ₂ : 5×10 ⁷	N ₂ : 10 ⁸
		He: 10 ³	He: 10 ³	He: 10 ⁴
		H ₂ : 5×10 ²	H ₂ : 5×10 ²	H ₂ : 10 ³
		Ar: 10 ⁸	Ar: 5×10 ⁷	Ar: 10 ⁸
极限压强 Ultimated Pressure		≤2×10 ⁻⁶	≤2×10 ⁻⁶	3×10 ⁻⁷
最大连续前级压强 Max. Continuous Fore-vacuum pressure		100	100	100
最大前级压强 Max. Fore-vacuum Pressure		N ₂ : 300	N ₂ : 300	N ₂ : 300
最大气载量 Gas Throughput		N ₂ : 5500	N ₂ : 5500	N ₂ : 5500
		He: 4000	He: 4000	He: 4000
		H ₂ : 3200	H ₂ : 3200	H ₂ : 3200
		Ar: 2100	Ar: 2100	Ar: 2100
额定转速 Rotation Speed		13500	15300	21000
启动时间 Run-Up Time		≤18	≤10	≤15
冷却方式 Cooling Type,Standard		水冷 Water	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption		≥1	≥1	≥1
冷却水温度 Cooling Water Temperature		≤25	≤25	≤25
电源电压 Power Connection:Voltage		DC24/AC220	DC24/AC220	DC24/AC220
最大功率 Max.Power Consumption		≤1100	≤1100	≤1000
适配电源型号Controller Model		FD-III、TCDP-III	FD-III	TCDP-IV(FF-400/5000) TCDP-IVA(FF-400/5000Y)
建议前级泵 Backing Pump		30	30	30
重量 Weight		130	118	98
轴承 Bearing	油润滑陶瓷轴承			

SERIES OF TURBO PUMPS FOR INSTRUMENTS 仪器分子泵



SERIES OF TURBO PUMPS FOR INSTRUMENTS 仪器分子泵

系列仪器分子泵 INTRODUCTION OF PUMPS FOR INSTRUMENTS

系列仪器分子泵是KYKY针对仪器行业开发的系列紧凑型高性能分子泵，抽速22L/s-300L/s，具有结构紧凑、使用方便和安装灵活等优点。实践证明，系列仪器分子泵能够很好地满足仪器行业对分子泵的苛刻要求，转速更高、抽气结构更优化，使得分子泵具有更高的真空性能，兼容多种前级泵，对小分子气体抽气能力更强。

单磁仪器泵又称混合轴承分子泵，其高真空位置采用了无油脂的非接触式永磁轴承，进一步提高了分子泵的转速、压缩比、小分子气体抽速及前级耐压能力，可适应更加苛刻的应用工况。

Series molecular pumps for instruments developed by KYKY for the instrument industry are compact high-performance types, with pumping speed of 22 L/s-300 L/s, and advantages of compact structure, convenience for use and flexibility for installation. Practices show that serial molecular pumps for instruments can perfectly meet the challenging requirements in instrument field; due to higher rotating speed and more optimal extracting structure, the molecular pumps are compatible with multiple backing pumps, and have stronger pumping capability for small molecular gases.

The Single Magnetic Turbomolecular Pump (also known as Hybrid Bearing Turbomolecular Pump) employs an oil-free, non-contact permanent magnetic bearing system in its high-vacuum section. This design significantly enhances the pump's rotational speed, compression ratio, pumping speed for light gases, and critical backing pressure, enabling reliable operation in more demanding application conditions.

产品技术 TECHNOLOGY

集成驱动器：分子泵可直接通过集成驱动器进行驱动和控制，便于仪器等设备系统集成，可以实现DC24V供电后分子泵直接运行。

高效驱动：系列仪器分子泵启动时间短，停机配刹车功能，分子泵快速起停能够给您的生产和科学实验带来巨大好处。同时，分子泵转速控制精准，为分析仪器的使用提供保障。

卓越设计：系列仪器分子泵采用了全新模块化设计思路，抽气、驱动、控制、冷却等模块相互独立又有机统一，共同造就了仪器分子泵卓越的性能和高可靠性，客户使用、维护的便利性也取得了革命性的突破。

Integrated driver: Molecular pumps can be directly driven and controlled via the integrated driver, which is convenient to integrate into instrumental systems, thus the molecular pumps can be powered up by 24V DC directly.

SERIES OF TURBO PUMPS FOR INSTRUMENTS
仪器分子泵

Efficient drive: Series molecular pumps for instruments can be started up within short time and shut down quickly by braking functions, which can bring huge benefits to production and scientific experiments. In addition, rotating speed of molecular pumps can be controlled accurately, which guarantees the good operation of analysis instruments.

Excellent design: New ideas of module design are applied to serial molecular pumps for instruments, so that gas extracting, driving, controlling and cooling modules are independent and also integrated, organically united, which creates excellent performance and high reliability of the molecular pumps for instruments and easy operation and convenient maintenance.

产品优势 ADVANTAGES

- ◆ 紧凑型结构设计，可以满足系统集成需求
Compact structure for system integration

◆ 模块化设计，客户可以有更多选择
Module design for more selections
- ◆ 更高前级耐压
Higher fore-pressure tolerance

◆ 任意角度安装
Any mounting position
- ◆ 转速可调
Adjustable rotating speed

◆ 丰富配件满足客户潜在需求
Wide varieties of accessories for potential demands

应用范围 APPLICATIONS

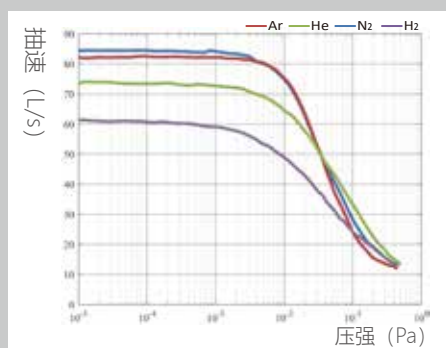
系列仪器分子泵是质谱分析、表面分析和其它科学研究领域高真空获得设备的优秀选择。仪器分子泵可以提供耐腐蚀版本，可以应用于有腐蚀性气体的环境中，比如镀膜和刻蚀等行业。

Series molecular pumps for instruments are suitable choices for high-vacuum generation equipment in fields of mass spectrometry, surface analysis and other scientific researches. Corrosion resistant molecular pumps for instruments can be applied to the processes which corrosive gases involved, such as in coating film and etching industries.

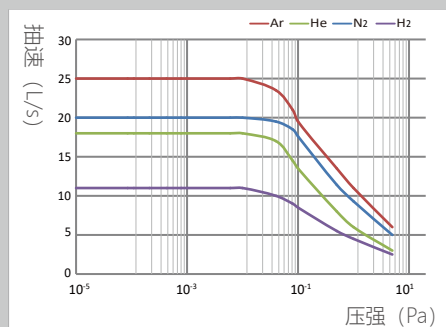
SERIES OF TURBO PUMPS FOR INSTRUMENTS
仪器分子泵

应用领域		DFF-63/80	DFF-100/300	FF-40/25	FF-63/80	FF-63/80HV	FF-100/150	FF-100/300
分析仪器	电子显微镜 Electron microscopy	■	■		■	■		■
	检漏 Leak detection	■	■		■	■		■
	质谱 Mass spectrometry	■	■		■	■		■
	表面分析 Surface analysis	■	■		■	■		■
	等离子体监测 Plasma monitoring	■	■		■	■		■
	残余气体分析 Residual gas analysis	■	■		■	■		■
半导体	光刻 Lithography							
	物理气相沉积 PVD (Physical Vapor Deposition)							
	化学气相沉积 CVD (Chemical Vapor Deposition)							
	离子刻蚀 Plasma etching							
	注入 - 源 Implantation – Source							
	注入 - 光束 Implantation – Beamline							
	检测 Inspection							
	封装 Bonding							
	分子束外延 MBE (Molecular Beam Epitaxy)							
	真空锁、转运箱 Load-locks, transfer chambers, handling systems							
镀膜	平板显示 Flat Panel Display (FPD)							
	LED / OLED							
	硬盘镀膜 Hard disk coating							
	光伏 Photovoltaics							
	玻璃镀膜 Glass coating (PVD)							
	CD / DVD / Blu-ray production (PVD)							
	光学镀膜 Optical coating (PVD)							
	硬质涂层 Wear protection (PVD, CVD)							
	卷绕镀膜 Web coating							
	装饰镀膜 Decoration Coating							
工业	医学技术 Medical technology	■	■			■		■
	工业检漏 Industrial leak detection	■	■			■		■
	电子束焊接 Electron beam welding	■	■					■
	隔离真空 Isolation vacuums	■	■			■		■
	灯管制造 Lamp and tube manufacturing							
	热处理 Heat treatment							
	真空干燥 Vacuum drying							
	真空炉 Vacuum furnaces							
研发	核研究 Nuclear research	■	■		■	■		■
	聚变技术 Fusion technology							
	等离子研究 Plasma research	■	■		■	■		■
	粒子加速器 Particle accelerators	■	■		■	■		■
	模拟空间站 Space simulation							
	冷冻研究 Cryogenic research	■	■		■	■		■
	基本粒子物理学 Elementary particle physics	■	■			■		■
	纳米技术 Nanotechnology	■	■		■	■		■
	生物技术 Biotechnology	■	■		■	■		■

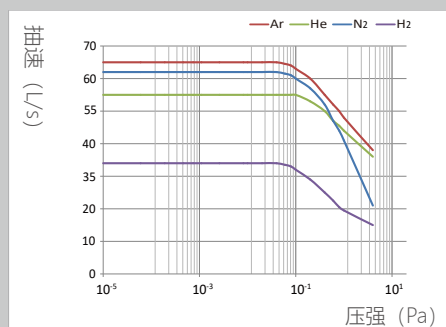
PUMPING SPEED 抽速曲线



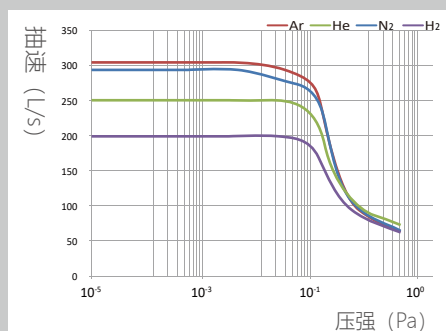
DFF-63/80



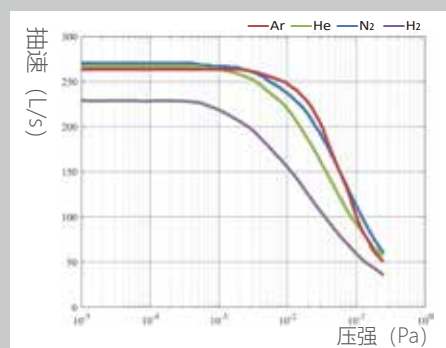
FF-40/25



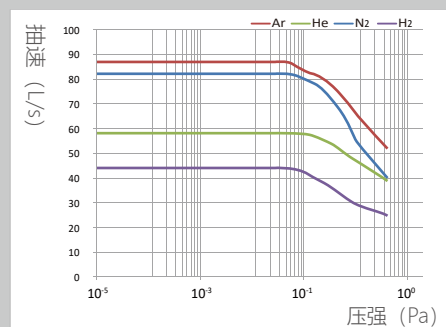
FF-63/80HV



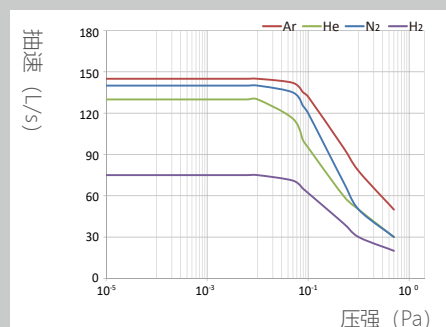
FF-100/300



DFF-100/300

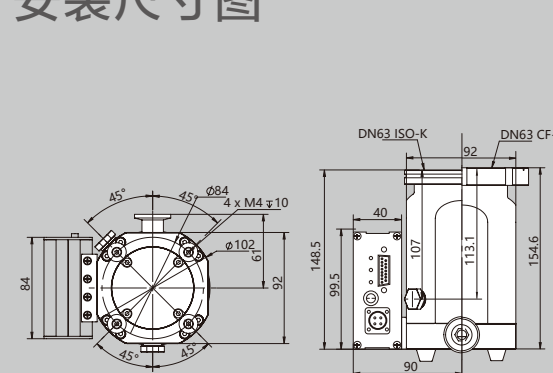


FF-63/80

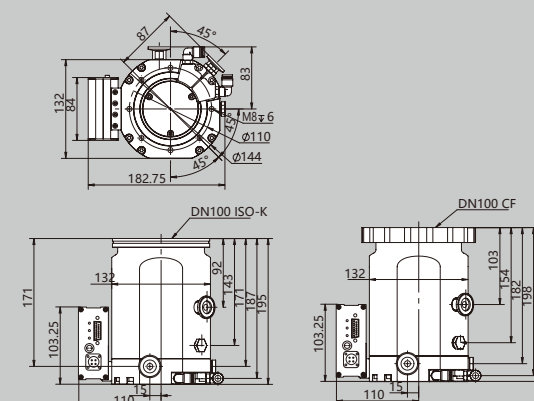


FF-100/150

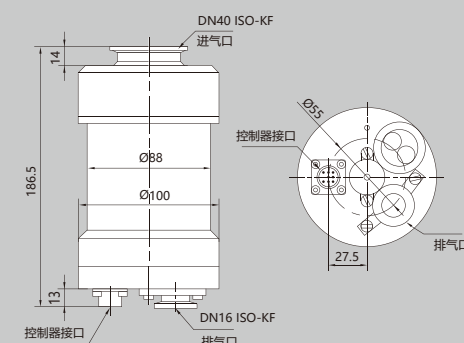
OUTLINE DIMENSIONS DRAWING(MM)



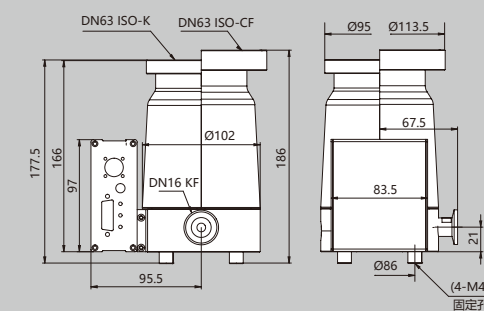
DFF-63/80



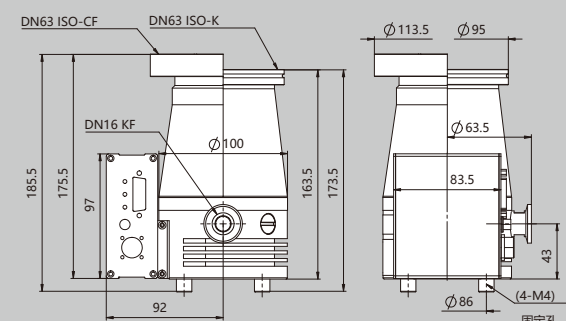
DFF-100/300



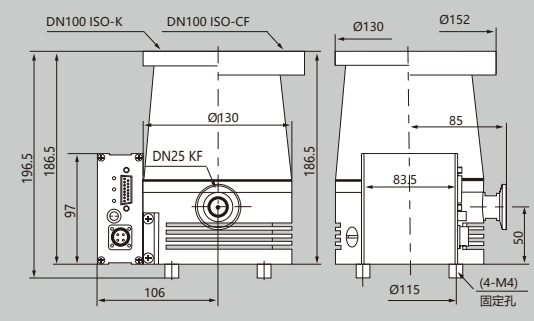
FF-40/25



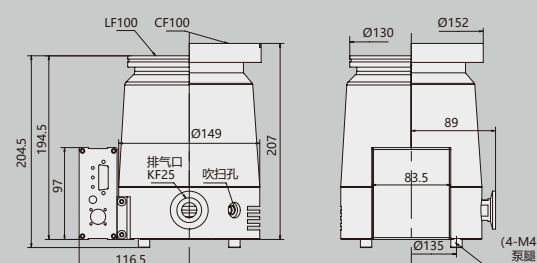
FF-63/80



FF-63/80HV



FF-100/150



FF-100/300

SERIES OF TURBO PUMPS FOR INSTRUMENTS
仪器分子泵

型号 Model	单位Unit	DFF-63/80		DFF-100/300	
进气口法兰 Flange (In)		DN63 ISO-K	DN63 CF-F	DN100 ISO-K	DN100 CF-F
抽气速率 Pumping Speed	L/s	N ₂ : 85		N ₂ : 280	
		He: 73		He: 265	
		H ₂ : 61		H ₂ : 220	
		Ar: 83		Ar: 255	
压缩比 Compression Ratio		N ₂ : >1×10 ¹¹		N ₂ : >1×10 ¹¹	
		He: >1.3×10 ⁷		He: >1×10 ⁸	
临界前级压力	Pa	N ₂ : 2200		N ₂ : 2000	
		He: 2200		He: 2000	
最低工作压力	Pa	<8×10 ⁻⁶	<2×10 ⁻⁷	<8×10 ⁻⁶	<2×10 ⁻⁷
额定转速 Rotation Speed	(rpm)	90000		60000	
启动时间 Run-Up Time	min	<2.5		<3.5	
噪音	(dB)	<48			
振动值	(μm)	<0.05			
设计无故障运行时间	h	>15000			
安装角度		任意角度			
冷却方式		自然冷却、风冷、水冷			
排气口法兰 Flange (Out)		DN16 ISO-K			
建议前级泵 Backing Pump	(L/s)	0.5-2		1-3	
高真空法兰烘烤温度	℃	100			
环境温度	℃	5-30(自然冷却) 、5-35 (风冷) 、5-40 (水冷)			
重量 Weight	kg	2.8	4.5	6.5	9.8

SERIES OF TURBO PUMPS FOR INSTRUMENTS
仪器分子泵

型号 Model	单位Unit	FF-40/25	FF-63/80	FF-63/80HV	FF-100/150	FF-100/300
进气口法兰 Flange (In)		DN40 ISO-KF	DN63 CF	DN63 CF	DN100 CF	DN100 CF
			DN63 ISO-K	DN63 ISO-K	DN100 ISO-K	DN100 ISO-K
排气口法兰 Flange (Out)	ISO-KF	DN16	DN16	DN16	DN25	DN25
抽速速率 Pumping Speed	L/s	N ₂ : 20	N ₂ : 82	N ₂ : 62	N ₂ : 140	N ₂ : 296
		He: 18	He: 58	He: 55	He: 130	He: 250
		H ₂ : 11	H ₂ : 44	H ₂ : 34	H ₂ : 75	H ₂ : 200
		Ar: 25	Ar: 87	Ar: 65	Ar: 145	Ar: 305
压缩比 Compression Ratio		N ₂ : 10 ⁶	N ₂ : 10 ⁸	N ₂ : 10 ⁹	N ₂ : 10 ⁷	N ₂ : 10 ⁹
		He: 6×10 ²	He: 10 ³	He: 10 ³	He: 6×10 ³	He: 6×10 ⁵
		H ₂ : 10 ²	H ₂ : 10 ³	H ₂ : 10 ³	H ₂ : 10 ³	H ₂ : 10 ⁵
		Ar: 10 ⁶	Ar: 10 ⁸	Ar: 10 ⁹	Ar: 10 ⁷	Ar: 10 ⁹
极限压强 Ultimated Pressure	Pa	ISO-K≤5×10 ⁻⁴	CF: 8×10 ⁻⁷	CF: 5×10 ⁻⁶	CF: 2×10 ⁻⁷	CF: 2×10 ⁻⁷
			ISO-K: 7×10 ⁻⁶	ISO-K: 3×10 ⁻⁵	ISO-K: 2×10 ⁻⁶	ISO-K: 2×10 ⁻⁶
最大连续前级压强 Max. Continuous Fore-vacuum pressure		500	200	500	220	500
最大前级压强 Max. Fore-vacuum Pressure	Pa	N ₂ : 650	N ₂ : 650	N ₂ : 1500	N ₂ : 500	N ₂ : 700
最大气载量 Gas Throughput	sccm	N ₂ : 23	N ₂ : 55	N ₂ : 35	N ₂ : 135	N ₂ : 120
		He: 18	He: 40	He: 30	He: 80	He: 50
		H ₂ : 12	H ₂ :	H ₂ : 19	H ₂ : 52	H ₂ :
		Ar: 28	Ar:	Ar: 38	Ar: 143	Ar:
额定转速 Rotation Speed	RPM	30000	72000	72000	51000	51000
启动时间 Run-Up Time	min	≤3	≤3	≤3	≤3	≤3.5
冷却方式 Cooling Type,Standard		风冷 Air	水冷或风冷 Water or Air	水冷或风冷 Water or Air	水冷或风冷 Water or Air	水冷或风冷 Water or Air
冷却水流量 Cooling Water Consumption	L/min		1	1	1	1
冷却水温度 Cooling Water Temperature	℃		≤25	≤25	≤25	≤25
电源电压 Power Connection:Voltage	V AC	DC24/AC220	DC24/AC220	DC24/AC220	DC24/AC220	DC24/AC220
最大功率 Max.Power Consumption	W	70	90	90	90	220
适配电源型号Controller Model		TD-25/TCP-100/ TC-100	TD-80/TCP-100/ TC-100	TD-80HV/TCP-100/ TC-100	TD-150/TCP-100/ TC-100	TD-300/TCP-240/ TC-100
建议前级泵 Backing Pump	L/s	0.5~1	0.5~2	0.5-2	2	2
重量 Weight	kg	3	3.5 (ISO-K) 5 (CF)	3.5 (ISO-K) 4.5 (CF)	6 (ISO-K) 8.5 (CF)	7 (ISO-K) 10 (CF)
轴承 bearing		陶瓷轴承				

SERIES OF GREASE LUBRICATED TURBOPUMPS

脂润滑分子泵



SERIES OF GREASE LUBRICATED TURBOPUMPS

脂润滑分子泵

脂润滑涡轮分子泵介绍 INTRODUCTION OF GREASE LUBRICATED TURBO PUMPS

脂润滑分子泵是KYKY自主开发的系列紧凑型高性能分子泵，抽速700L/s、1300L/s、2000L/s，结构紧凑、使用方便、对系统污染小，适用范围广，性能稳定。

The grease lubrication turbo pumps are a series of high-performance molecular pumps independently developed by KYKY. The pumping speed ranges from 700L/s to 2000L/s. The characteristics of the grease lubrication turbo pump are Compact structure, easy to use, less contamination to system, wide range of application and stable performance.

产品优势 ADVANTAGES

- ◆ 任意角度安装
Installation at any angle
- ◆ 更高前级耐压和紧凑型的结构设计，可以满足系统集成需求
Compact structural design to meet system integration needs

应用范围 APPLICATIONS

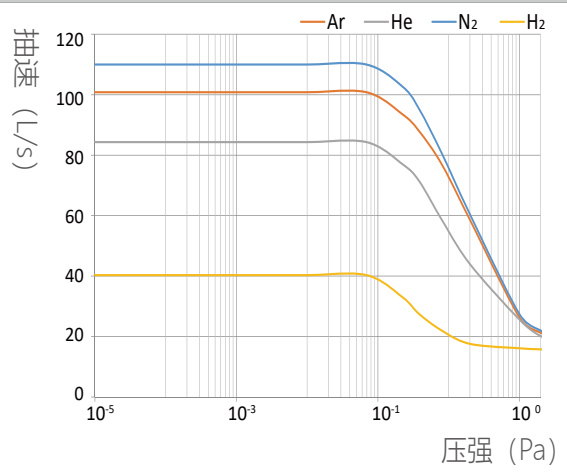
系列脂润滑分子泵主要应用在半导体设备、太阳能电池、Low-E玻璃、ITO玻璃、加速器、等离子技术、制灯、真空检漏等行业。

The grease lubrication turbo pumps are mainly used in solar cells, Low-E glass, ITO glass, accelerators, plasma technology, lamp making, vacuum leak detection and other industries.

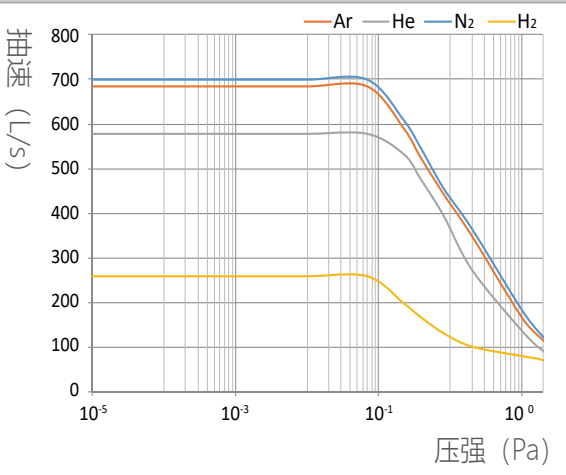
SERIES OF GREASE LUBRICATED TURBOPUMPS
脂润滑分子泵

应用领域		FF-100/110	FF-160/700	FF-200/1300	FF-250/2000
分析仪器	电子显微镜 Electron microscopy	■	■		
	检漏 Leak detection	■			
	质谱 Mass spectrometry	■	■		
	表面分析 Surface analysis	■	■		
	等离子体监测 Plasma monitoring	■	■		
半导体	残余气体分析 Residual gas analysis	■	■		
	光刻 Lithography				
	物理气相沉积 PVD (Physical Vapor Deposition)		■	■	■
	化学气相沉积 CVD (Chemical Vapor Deposition)		■	■	■
	离子刻蚀 Plasma etching		■	■	■
	注入 - 源 Implantation – Source		■	■	■
	注入 - 光束 Implantation – Beamline		■	■	■
	检测 Inspection		■	■	■
	封装 Bonding		■	■	■
	分子束外延 MBE (Molecular Beam Epitaxy)		■	■	■
	真空锁, 转运箱 Load-locks, transfer chambers, handling systems		■	■	■
	平板显示 Flat Panel Display (FPD)			■	■
镀膜	LED / OLED			■	■
	硬盘镀膜 Hard disk coating			■	■
	光伏 Photovoltaics			■	■
	玻璃镀膜 Glass coating (PVD)			■	■
	CD / DVD / Blu-ray production (PVD)			■	■
	光学镀膜 Optical coating (PVD)			■	■
	硬质涂层 Wear protection (PVD, CVD)			■	■
	卷绕镀膜 Web coating				■
	装饰镀膜 Decoration Coating				■
工业	医学技术 Medical technology		■	■	
	工业检漏 Industrial leak detection		■	■	
	电子束焊接 Electron beam welding		■	■	
	隔离真空 Isolation vacuums		■	■	
	灯管制造 Lamp and tube manufacturing		■		
	热处理 Heat treatment			■	■
	真空干燥 Vacuum drying			■	■
	真空炉 Vacuum furnaces			■	■
研发	核研究 Nuclear research	■	■	■	■
	聚变技术 Fusion technology		■	■	■
	等离子研究 Plasma research	■	■	■	■
	粒子加速器 Particle accelerators	■	■		■
	模拟空间站 Space simulation			■	■
	冷冻研究 Cryogenic research	■	■		■
	基本粒子物理学 Elementary particle physics		■	■	■
	纳米技术 Nanotechnology	■	■		■
	生物技术 Biotechnology	■	■	■	■

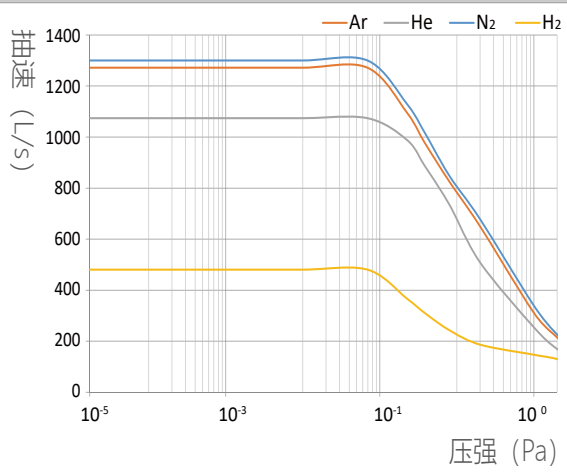
PUMPING SPEED
抽速曲线



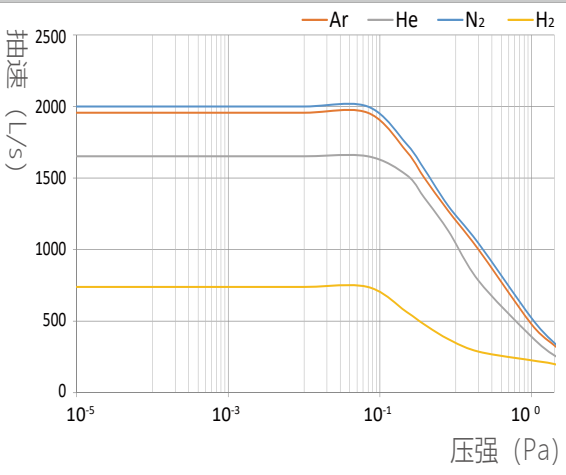
FF-100/110



FF-160/700



FF-200/1300

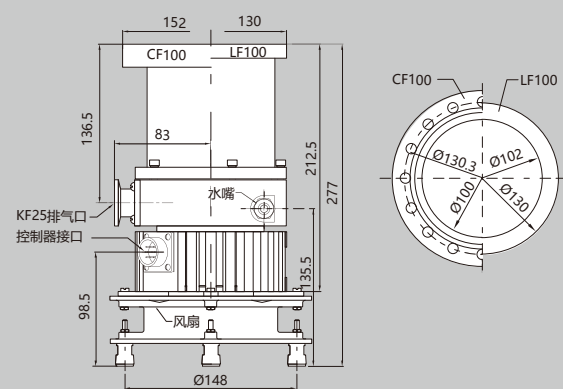


FF-250/2000

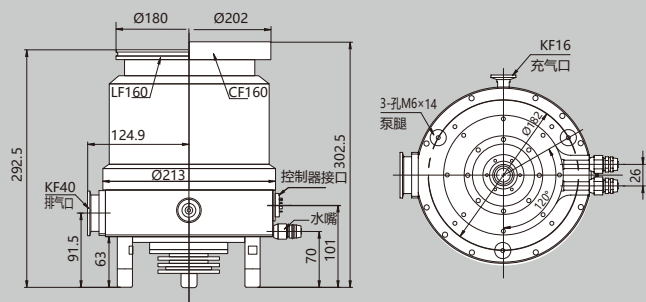
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OUTLINE DIMENSIONS DRAWING(MM)
安装尺寸图

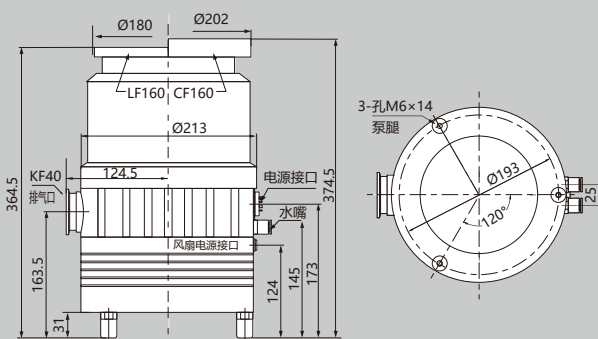


FF-100/110

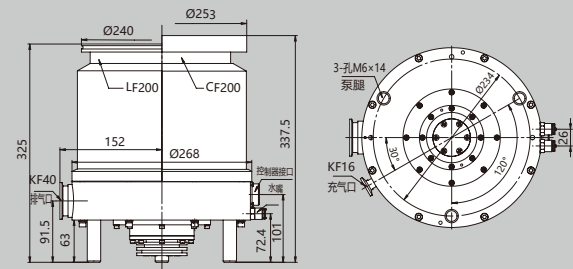


充气口仅针对FF-160/700A和FF-160/700N分子泵
FF-160/700分子泵没有KF16充气口

FF-160/700、FF-160/700A、FF-160/700N

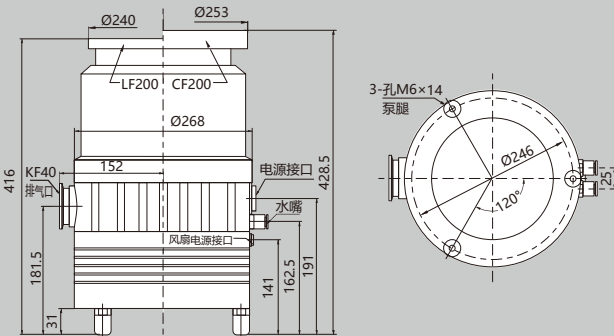


FF-160/700F

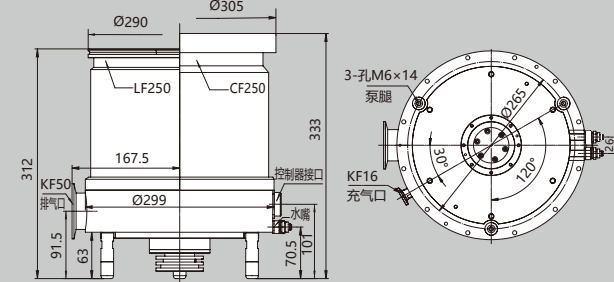


充气口仅针对FF-200/1300A和FF-200/1300N分子泵
FF-200/1300分子泵没有KF16充气口

FF-200/1300、FF-200/1300A、FF-200/1300N



FF-200/1300F



充气口仅针对FF-250/2000A和FF-250/2000N分子泵
FF-250/2000分子泵没有KF16充气口

FF-250/2000、FF-250/2000A、FF-250/2000N

SERIES OF GREASE LUBRICATED TURBOPUMPS
脂润滑分子泵

型号 Model	单位Unit	FF-100/110	FF-160/700	FF-160/700F	FF-160/700N FF-160/700A
进气口法兰 Flange (In)		DN100 CF DN100 ISO-K	DN160 CF DN160 ISO-K	DN160 CF DN160 ISO-K	DN160 CF DN160 ISO-K
排气口法兰 Flange (Out)	ISO-KF	DN25	DN40	DN40	DN40
抽速速率 Pumping Speed	L/s	N ₂ : 110 He: 100 H ₂ : 50 Ar: 100	N ₂ : 700 He: 580 H ₂ : 260 Ar: 680	N ₂ : 700 He: 580 H ₂ : 260 Ar: 680	N ₂ : 700 He: 580 H ₂ : 260 Ar: 680
压缩比 Compression Ratio		N ₂ : 10 ⁸ He: 10 ² H ₂ : 5x10 ² Ar: 10 ⁸	N ₂ : 10 ⁹ He: 10 ⁷ H ₂ : 6x10 ⁶ Ar: 10 ⁹	N ₂ : 10 ⁹ He: 10 ⁷ H ₂ : 6x10 ⁶ Ar: 10 ⁹	N ₂ : 10 ⁹ He: 10 ⁷ H ₂ : 6x10 ⁶ Ar: 10 ⁹
极限压强 Ultimated Pressure	Pa	CF: 6×10 ⁻⁷ ISO-K: 6×10 ⁻⁶	CF: 6×10 ⁻⁸ ISO-K: 6×10 ⁻⁷	CF: 6×10 ⁻⁸ ISO-K: 6×10 ⁻⁷	CF: 6×10 ⁻⁸ ISO-K: 6×10 ⁻⁷
最大连续前级压强 Max. Continuous Fore-vacuum pressure	Pa	200	300	300	300
最大前级压强 Max. Fore-vacuum Pressure	Pa	N ₂ : 300	N ₂ : 550	N ₂ : 550	N ₂ : 550
最大气载量 Gas Throughput	sccm	N ₂ : 300 He: 240 H ₂ : 180 Ar: 110	N ₂ : 1400 He: 1000 H ₂ : 800 Ar: 550	N ₂ : 1400 He: 1000 H ₂ : 800 Ar: 550	N ₂ : 1400 He: 1000 H ₂ : 800 Ar: 550
额定转速 Rotation Speed	rpm	42300	36000	36000	36000
启动时间 Run-Up Time	min	≤3	≤7	≤7	≤7
冷却方式 Cooling Type,Standard		水冷或风冷 (环境温度5-32℃时可风冷)	水冷 Water	水冷或风冷 Water or Air	水冷 Water
冷却水流量 Cooling Water Consumption	L/min	≥1	≥1	≥1	≥1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25	≤25	≤25
电源电压 Power Connection:Voltage	V AC	220±22	DC24/AC220	DC24/AC220	220±22
最大功率 Max.Power Consumption	W	≤300	≤500	≤500	≤500
适配电源型号Controller Model		FD-110B	TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II
建议前级泵 Backing Pump	L/s	2	4~8	4~8	4~8
重量 Weight	kg	7(ISO-K)8(CF)	19 (ISO-K) 20.5 (CF)	23 (ISO-K) 24.5 (CF)	19 (ISO-K) 20.5 (CF)
轴承 bearing		陶瓷轴承			

SERIES OF GREASE LUBRICATED TURBOPUMPS
脂润滑分子泵

型号 Model	单位Unit	FF-200/1300	FF-200/1300F	FF-200/1300N FF-200/1300A	FF-250/2000 FF-250/2000A/N
进气口法兰 Flange (In)		DN200 CF	DN200 CF	DN200 CF	DN250 CF
		DN200 ISO-K	DN200 ISO-K	DN200 ISO-K	DN250 ISO-K
排气口法兰 Flange (Out)	ISO-KF	DN40	DN40	DN40	DN50
抽速速率 Pumping Speed	L/s	N ₂ : 1300	N ₂ : 1300	N ₂ : 1300	N ₂ : 2000
		He: 1000	He: 1000	He: 1000	He: 1600
		H ₂ : 480	H ₂ : 480	H ₂ : 480	H ₂ : 740
		Ar: 1250	Ar: 1250	Ar: 1250	Ar: 1900
压缩比 Compression Ratio		N ₂ : 10 ⁹	N ₂ : 10 ⁹	N ₂ : 10 ⁹	N ₂ : 10 ⁸
		He: 10 ⁴	He: 10 ⁴	He: 10 ⁴	He: 10 ⁴
		H ₂ : 6×10 ³	H ₂ : 6×10 ³	H ₂ : 6×10 ³	H ₂ : 6×10 ³
		Ar: 10 ⁹	Ar: 10 ⁹	Ar: 10 ⁹	Ar: 10 ⁹
极限压强 Ultimated Pressure	Pa	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷	CF: 6×10 ⁻⁷
		ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶	ISO-K: 6×10 ⁻⁶
最大连续前级压强 Max. Continuous Fore-vacuum pressure	Pa	240	240	240	200
最大前级压强 Max. Fore-vacuum Pressure	Pa	N ₂ : 600	N ₂ : 600	N ₂ : 600	N ₂ : 650
最大气载量 Gas Throughput	sccm	N ₂ : 2500	N ₂ : 2500	N ₂ : 2500	N ₂ : 3200
		He: 1850	He: 1850	He: 1850	He: 2400
		H ₂ : 1450	H ₂ : 1450	H ₂ : 1450	H ₂ : 1850
		Ar: 950	Ar: 950	Ar: 950	Ar: 1200
额定转速 Rotation Speed	RPM	24000	24000	24000	24000
启动时间 Run-Up Time	min	≤9	≤9	≤9	≤9
冷却方式 Cooling Type,Standard		水冷 Water	水冷或风冷 Water or Air	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	L/min	≥1	≥1	≥1	≥1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25	≤25	≤25
电源电压 Power Connection:Voltage	V AC	DC24/AC220	DC24/AC220	DC24/AC220	DC24/AC220
最大功率 Max.Power Consumption	W	≤500	≤500	≤500	≤750
适配电源型号Controller Model		TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II	TCDP-II、FD-IIB、 TD-II/TCP-II
建议前级泵 Backing Pump	L/s	15	15	15	15
重量 Weight	kg	29(ISO-K) 31(CF)	33(ISO-K) 35(CF)	29(ISO-K) 31(CF)	32(ISO-K) 35(CF)
轴承 bearing		陶瓷轴承			

SERIES OF MAGNETICALLY LEVIATATED TURBOPUMPS
磁悬浮分子泵



SERIES OF MAGNETICALLY LEVIATATED TURBOPUMPS

磁悬浮分子泵



产品技术 TECHNOLOGY

磁轴承控制技术：为五自由度电磁轴承，利用国际先进控制理论，采用动态主动闭路磁浮控制技术，实现动态反应迅速、调节及时，保证高速运转轴系具有悬浮稳定、运转可靠等显著优点。

Control Technology for Magnetic Bearing: The adopted electromagnetic is a 5-axis magnetically levitated. This design can have dynamic response and timely adjustment by means of dynamic active closed-circuit magnetic suspension control technology based on advanced international control theory, so as to guarantee such significant advantages of the high-speed shafting as stable levitated and reliable operation.

电机驱动控制技术：系列磁悬浮分子泵全部采用高效高速直流电机和伺服控制系统，使得电机能量转化最大化、轴系转速自动补偿，实现启动平稳、运转可靠、动态能量自动调节功能。

Motor Drive Control Technology: High-efficiency high-speed DC motor and servo control system are applied to series magnetically levitated pumps, so to have maximum energy of the motor and to compensate the rotating speed of shafting automatically, thereby realizing stable start-up, reliable operation and automatic regulating function of dynamic energy.

碳纤维复合转子技术：系列磁悬浮分子泵涡轮转子采用高强度铝合金和轻质碳纤维复合而成，相对于全部铝合金转子而言，转子重量大大降低，强度大大提高，实现高转速、高性能、高可靠性目标。

Carbon fiber composite rotor technology: The turbo rotors of serial magnetic suspension molecular pumps are made by compounding high-strength aluminum alloy and light-weight carbon fiber. In comparison with all aluminum alloy rotors, the turbo rotors are characterized of great reduction of weight and great improvement of strength, so that targets of high rotating speed, high performance and high reliability are achieved.

抗腐蚀技术：系列磁悬浮分子泵采用泵腔内零部件表面进行特殊工艺处理，使零件表面能够耐受半导体制备等领域腐蚀性气体长期腐蚀，同时在泵轴系部分充入惰性气体，如N₂等，对泵内低真空部分进行保护，实现稳定长期抽除腐蚀性气体功能。

Corrosion resisting technology: Surfaces of parts in chambers of serial magnetic suspension molecular pumps are treated with special process, so that the surfaces can resist corrosion caused by corrosive gases in semiconductor manufacturing processes for a long time. In addition, such inert gases as N₂ are fully filled in shafting of the pumps to protect the low vacuum parts in the pumps, so that function of stably exhausting corrosive gases for long periods is realized.

加热温控体系：系列磁悬浮分子泵采用配置电加热装置和温度控制装置，实现运行过程对冷却水、气载发热、电加热、保护气体携带热量等动态监察与控制，能够使泵内长期恒定于某一特定温度，避免某些气态物质在常温下变成固态，沉积泵内，满足刻蚀等行业特殊工艺需求。

Heating temperature control system: Series magnetically levitated molecular pumps are equipped with an electric heater and a temperature controller, so that cooling water, air-borne heating, electric heating and heat carried by protective gases can be monitored and controlled during operation, temperature in the pumps can be maintained at some value for long term, some gaseous substances are not converted into solid substances at normal temperature and not deposited in the pumps, and requirements for special process such of etching can be met.

磁悬浮分子泵介绍 INTRODUCTION OF MAGNETICALLY LEVITATED TURBO PUMPS

系列磁悬浮分子泵是KYKY为满足半导体刻蚀、离子注入、薄膜沉积、太阳能光伏、锂电复合集流体、真空镀膜、科学研究等领域开发的真空获得设备，抽速为300l/s-3260l/s，应用压力范围为20Pa到10⁻⁸Pa，包含ISO-K、ISO-F、CF三种气体入口连接形式，并有耐腐蚀、防沉积、分体等型号可供选择。

The series of magnetically levitated molecular pumps developed by KYKY are vacuum acquisition equipment, designed to meet the needs of various fields such as semiconductor etching, ion implantation, thin film deposition, solar photovoltaics, lithium battery composite current collection, vacuum coating, and scientific research. These pumps have pumping speeds ranging from 300l/s to 3260l/s, within a pressure range of 20Pa to 10⁻⁸Pa. available with ISO-K, ISO-F, and CF inlet connections. Additionally, available for anti-corrosion, anti-deposition, and detachable type.

产品优势 ADVANTAGES

- ◆ 运转无摩擦，功耗低
Zero friction during operation, and low power consumption
- ◆ 整泵无需润滑，可以获得真正洁净高真空、超高真空
Easy to acquire really clean high vacuum and ultrahigh vacuum without lubrication for pumps
- ◆ 可以长期抽除腐蚀性气体
Capable of extracting corrosive gases for long term
- ◆ 对于常温下为固态，工艺过程为气态物质具有良好的抽除作用，并能够长期安全运行
Excellent extraction capability on substances which is a solid at normal temperature and a gas during process, with long-term safe operation
- ◆ 任意角度安装
Any mounting position
- ◆ 采用精密保护轴承，安全性高、使用寿命长
High safety and long service life due to protection of bearings with precision ceramic balls
- ◆ 具有发电功能，不怕突然断电
power generating function in case of sudden power-off
- ◆ 控制器具有丰富的外控和通信接口，可提供多样化的集中控制方式
A variety of integrated control modes provided due to multiple interfaces for external control and communication of controller.
- ◆ 满足定制化需求
Available for customization.

应用范围 APPLICATIONS

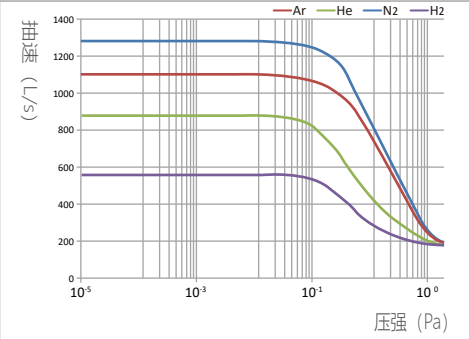
系列磁悬浮分子泵主要应用于半导体材料制备、芯片制造、工业镀膜、科研设备等领域，尤其适用于刻蚀、CVD、PVD、离子注入等存在腐蚀性气体和常温易凝结气体的抽除。

Series magnetically levitated molecular pumps are mainly applied to fields of semiconductor manufacturing, clip manufacturing, industrial plating and scientific instruments, especially to extraction of corrosive gases existing in etch, CVD, PVD and ion implantation and gases easily coagulated at normal temperature.

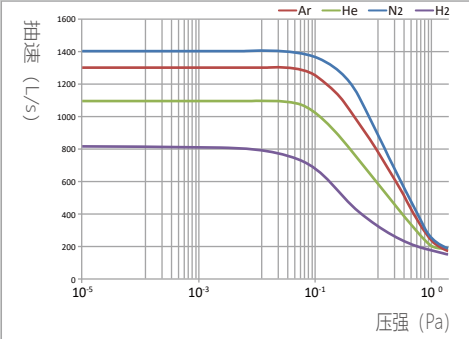
SERIES OF MAGNETICALLY LEVIATATED TURBOPUMPS
磁悬浮分子泵

应用领域		磁悬浮 标准系列、G系列	磁悬浮 CV(CVS)系列	磁悬浮 CS系列
分析仪器	电子显微镜 Electron microscopy			
	检漏 Leak detection			
	质谱 Mass spectrometry			
	表面分析 Surface analysis	■		■
	等离子体监测 Plasma monitoring	■		■
半导体	残余气体分析 Residual gas analysis	■		■
	光刻 Lithography	■	■	■
	物理气相沉积 PVD (Physical Vapor Deposition)	■	■	■
	化学气相沉积 CVD (Chemical Vapor Deposition)	■	■	■
	离子刻蚀 Plasma etching	■	■	■
	注入 - 源 Implantation - Source			
	注入 - 光束 Implantation - Beamline	■		■
	检测 Inspection	■		■
	封装 Bonding			
	分子束外延 MBE (Molecular Beam Epitaxy)	■		■
镀膜	真空锁，转运箱 Load-locks, transfer chambers, handling systems	■		■
	平板显示 Flat Panel Display (FPD)	■	■	■
	LED / OLED	■	■	■
	硬盘镀膜 Hard disk coating	■		■
	光伏 Photovoltaics	■		■
	玻璃镀膜 Glass coating (PVD)	■		■
	CD / DVD / Blu-ray production (PVD)	■		■
	光学镀膜 Optical coating (PVD)	■		■
	硬质涂层 Wear protection (PVD, CVD)	■		■
	卷绕镀膜 Web coating	■		■
工业	装饰镀膜 Decoration Coating			
	医学技术 Medical technology	■		■
	工业检漏 Industrial leak detection			
	电子束焊接 Electron beam welding	■		■
	隔离真空 Isolation vacuums			
	灯管制造 Lamp and tube manufacturing			
	热处理 Heat treatment			
	真空干燥 Vacuum drying	■		■
	真空炉 Vacuum furnaces			
	核研究 Nuclear research	■		■
研发	聚变技术 Fusion technology	■		■
	等离子研究 Plasma research	■	■	■
	粒子加速器 Particle accelerators	■	■	■
	模拟空间站 Space simulation	■		■
	冷冻研究 Cryogenic research	■		■
	基本粒子物理学 Elementary particle physics	■		■
	纳米技术 Nanotechnology	■		■
	生物技术 Biotechnology	■		■

PUMPING SPEED
抽速曲线

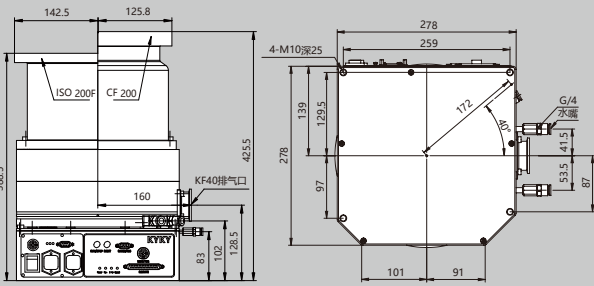


CXF-200/1401、CXF-200/1401CV、
CXF-200/1401CS、CXF-200/1401CVS

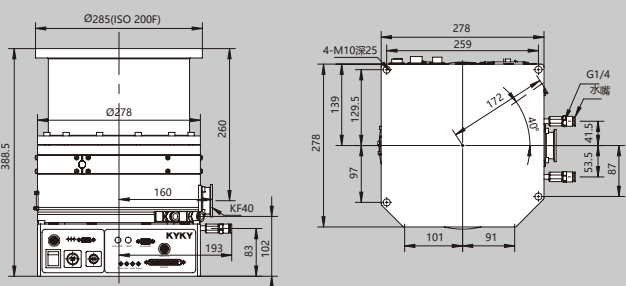


CXF-200/1402、CXF-200/1402CS

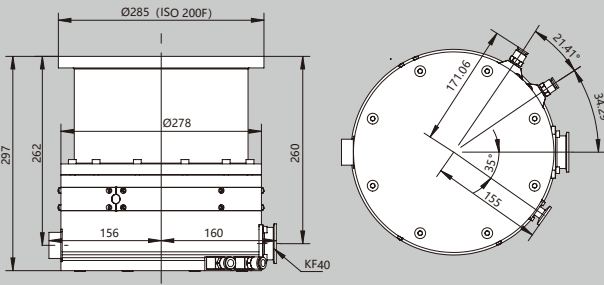
OUTLINE DIMENSIONS DRAWING(MM)
安装尺寸图



CXF-200/1401、CXF-200/1402



CXF-200/1401CV



CXF-200/1401CS、CXF-200/1401CVS

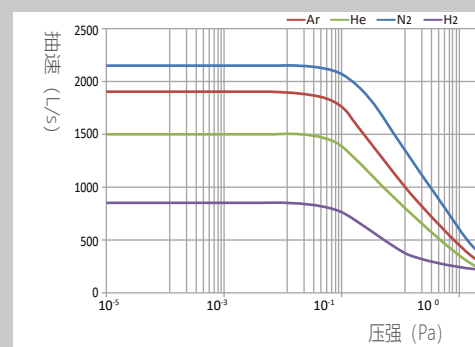
SERIES OF MAGNETICALLY LEVIATATED TURBOPUMPS
磁悬浮分子泵(200口径)

型号 Model	单位Unit	CXF-200/1401	CXF-200/1402	CXF-200/1401CV	CXF-200/1401CS	CXF-200/1402CS	CXF-200/1401CVS
进气口法兰 Flange (In)		DN200 ISO F (标配Standard) DN200 CF (可选Optional) DN200 LF (可定制Customized)	DN200 ISO F (标配Standard) DN200 CF (可选Optional) DN200 LF (可定制Customized)	DN200 ISO-F	DN200 ISO-F	DN200 ISO-F	DN200 ISO-F
加热温度(Heating temperature)				60至70℃			60至70℃
排气口法兰 Flange (Out)		KF40	KF40	KF40	KF40	KF40	KF40
Pumping Speed	L/s	N ₂ : 1280 Ar: 1100 He: 880 H ₂ : 560	N ₂ : 1400 Ar: 1300 He: 1100 H ₂ : 820	N ₂ : 1280 Ar: 1100 He: 880 H ₂ : 560	N ₂ : 1280 Ar: 1100 He: 880 H ₂ : 560	N ₂ : 1400 Ar: 1300 He: 1100 H ₂ : 820	N ₂ : 1280 Ar: 1100 He: 880 H ₂ : 560
压缩比 Compression Ratio		N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³
极限压强 Ultimated Pressure	Pa	10 ⁻⁷ (橡胶密封Rubber seal) 10 ⁻⁸ (金属密封metal seal)					
最大瞬时入口流量 Max. Instantaneous Inlet flow	sccm	1100	1200	1100	1100	1200	1100
保护气入口法兰 (选配) Purge Port Flange(optional)		KF10	KF10	KF10	KF10	KF10	KF10
推荐保护气体流量 Protective Gas Flow	sccm	20	20	20	20	20	20
最大允许磁场强度 Magnetic Field, Max	mT	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15
额定转速 Rotation Speed	RPM	30000	33000	30000	30000	33000	30000
启动时间 Run-Up Time	min	≤6	≤7	≤6	≤6	≤7	≤6
停机时间 Run Down time	min	≤8	≤9	≤8	≤8	≤9	≤8
冷却方式 Cooling Type,Standard		水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	l/min	2	2	2	2	2	2
冷却水温度 Cooling Water Temperature	℃	20±5	20±5	20±5	20±5	20±5	20±5
电源电压 Power Supply :Voltage	V AC	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz
最大功率Max power	W	1000	1000	1000	1000	1000	1000
适配电源型号Controller Model		CXFD-1001	CXFD-1001	CXFD-1001H	CXFD-1001S	CXFD-1001S	CXFD-1001S
控制线缆长度Cable length	m				5或10 (选配)	5或10 (选配)	5或10 (选配)
建议前级泵Backing Pump	L/s	≥16	≥16	≥16	≥16	≥16	≥16
重量 Weight	kg	51	51	51(ISO-F)	51	51	44(ISO-F)

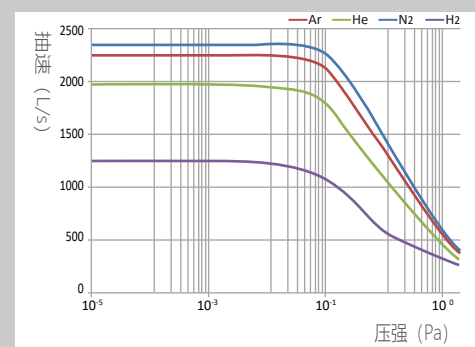
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PUMPING SPEED 抽速曲线

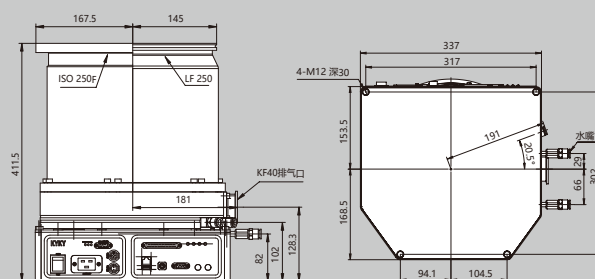


CXF-250/2301、CXF-250/2301CV、CXF-250/2301CS、
CXF-250/2301CVS、CXF-250/2301G

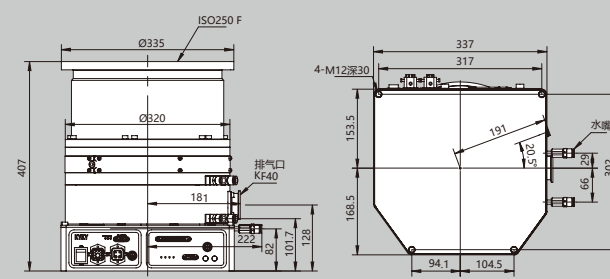


CXF-250/2302、CXF-250/2302CS

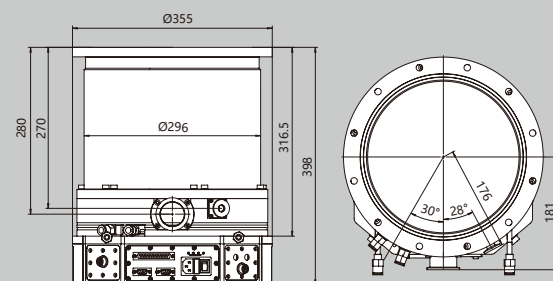
OUTLINE DIMENSIONS DRAWING(MM)



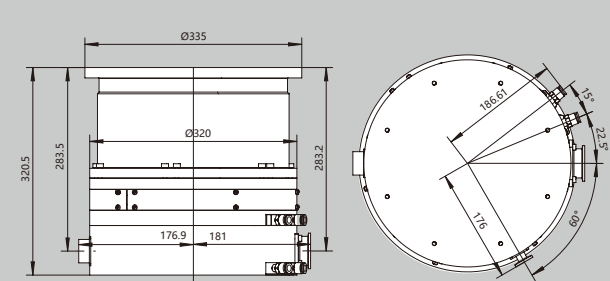
CXF-250/2301、CXF-250/2302



CXF-250/2301CV



CXF-250/2301G



CXF-250/2301CS、CXF-250/2301CVS

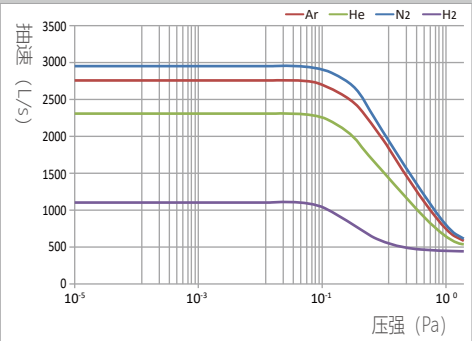
SERIES OF MAGNETICALLY LEVIATATED TURBOPUMPS
磁悬浮分子泵(250口径)

型号 Model	单位Unit	CXF-250/230I	CXF-250/230Z	CXF-250/230IG	CXF-250/230ICV	CXF-250/230ICS	CXF-250/230ZCS	CXF-250/230ICVCS
进气口法兰 Flange (In)		DN250 ISO F (标配Standard)	DN250 ISO F (标配Standard)	DN250 ISO-F	DN250 ISO-F	DN250 ISO-F	DN250 ISO-F	DN250 ISO-F
		DN250 ICF (可选Optional)	DN250 ICF (可选Optional)					
		DN250 LF (可定制 Customized)	DN250 LF (可定制 Customized)	DN250 CF	DN250 CF	DN250 CF	DN250 CF	DN250 CF
加热温度(Heating temperature)					60至70℃			60至70℃
排气口法兰 Flange (Out)		KF40	KF40	KF40	KF40	KF40	KF40	KF40
抽速速率 Pumping Speed	L/s	N ₂ : 2150	N ₂ : 2360	N ₂ : 2150	N ₂ : 2150	N ₂ : 2150	N ₂ : 2360	N ₂ : 2150
		Ar: 1900	Ar: 2260	Ar: 1900	Ar: 1900	Ar: 1900	Ar: 2260	Ar: 1900
		He: 1500	He: 1980	He: 1500	He: 1500	He: 1500	He: 1980	He: 1500
		H ₂ : 850	H ₂ : 1250	H ₂ : 850	H ₂ : 850	H ₂ : 850	H ₂ : 1250	H ₂ : 850
压缩比 Compression Ratio		N ₂ : >10 ⁸	N ₂ : >10 ⁸	N ₂ : >10 ⁸	N ₂ : >10 ⁸	N ₂ : >10 ⁸	N ₂ : >10 ⁸	N ₂ : >10 ⁸
		Ar: >10 ⁸	Ar: >10 ⁸	Ar: >10 ⁸	Ar: >10 ⁸	Ar: >10 ⁸	Ar: >10 ⁸	Ar: >10 ⁸
		He: >10 ⁴	He: >10 ⁴	He: >10 ⁴	He: >10 ⁴	He: >10 ⁴	He: >10 ⁴	He: >10 ⁴
		H ₂ : >10 ³	H ₂ : >10 ³	H ₂ : >10 ³	H ₂ : >10 ³	H ₂ : >10 ³	H ₂ : >10 ³	H ₂ : >10 ³
极限压强 Ultimated Pressure	Pa	10 ⁻⁷ (橡胶密封Rubber seal) 10 ⁻⁸ (金属密封metal seal)						
最大瞬时入口流量 Max. Instantaneous Inlet flow	sccm	1300	1500	1300	1300	1300	1500	1300
保护气入口法兰 (选配) Purge Port Flange(optional)		KF10	KF10	KF10	KF10	KF10	KF10	KF10
推荐保护气体流量 Protective Gas Flow	sccm	50	50	50	50	50	50	50
最大允许磁场强度 Magnetic Field, Max	mT	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15
额定转速 Rotation Speed	RPM	27000	30000	27000	27000	27000	30000	27000
启动时间 Run-Up Time	min	≤8	≤9	≤8	≤8	≤8	≤9	≤8
停机时间 Run Down time	min	≤11	≤12	≤11	≤11	≤11	≤12	≤11
冷却方式 Cooling Type,Standard		水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	l/min	3	3	3	3	3	3	3
冷却水温度 Cooling Water Temperature	℃	20±5	20±5	20±5	20±5	20±5	20±5	20±5
电源电压 Power Supply :Voltage	V AC	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz
最大功率Max power	W	1500	1500	1500	1500	1000	1000	1000
适配电源型号Controller Model		CXFaD-1601	CXFD-1601	CXFD-1601G	CXFD-1601H	CXFD-1001S	CXFD-1001S	CXFD-1001S
控制线缆长度Cable length	m					5或10 (选配)	5或10 (选配)	5或10 (选配)
建议前级泵Backing Pump	L/s	≥22	≥22	≥22	≥22	≥22	≥22	≥22
重量 Weight	kg	60	60	60(ISO-F)	60(ISO-F)	60	60	57(ISO-F)

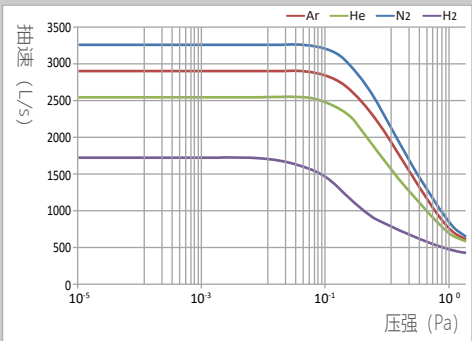
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磁 悬 浮

PUMPING SPEED
抽速曲线

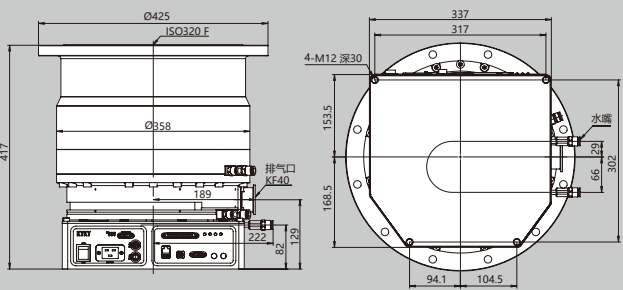


CXF-320/3001、CXF-320/3001CV、
CXF-320/3001CS、CXF-320/3001CVS

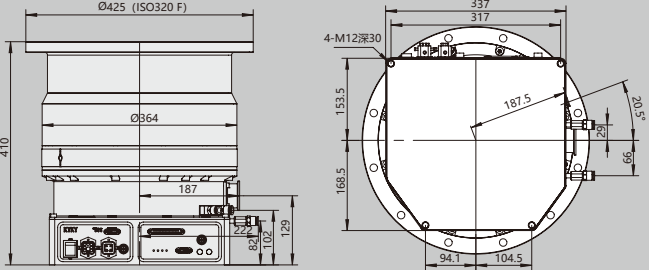


CXF-320/3002、CXF-320/3002CS

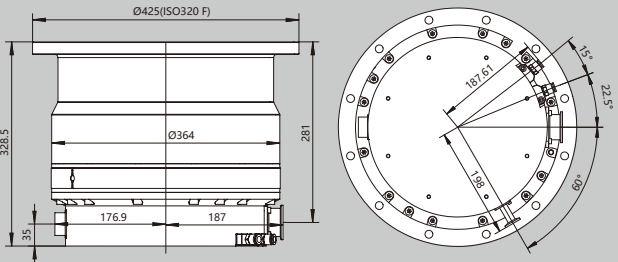
OUTLINE DIMENSIONS DRAWING(MM)
安装尺寸图



CXF-320/3001、CXF-320/3002



CXF-320/3001CV



CXF-320/3001CS、CXF-320/3001CVS

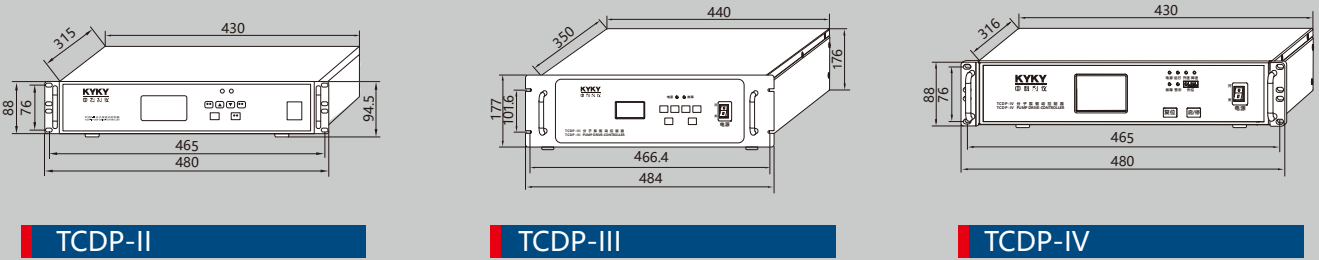
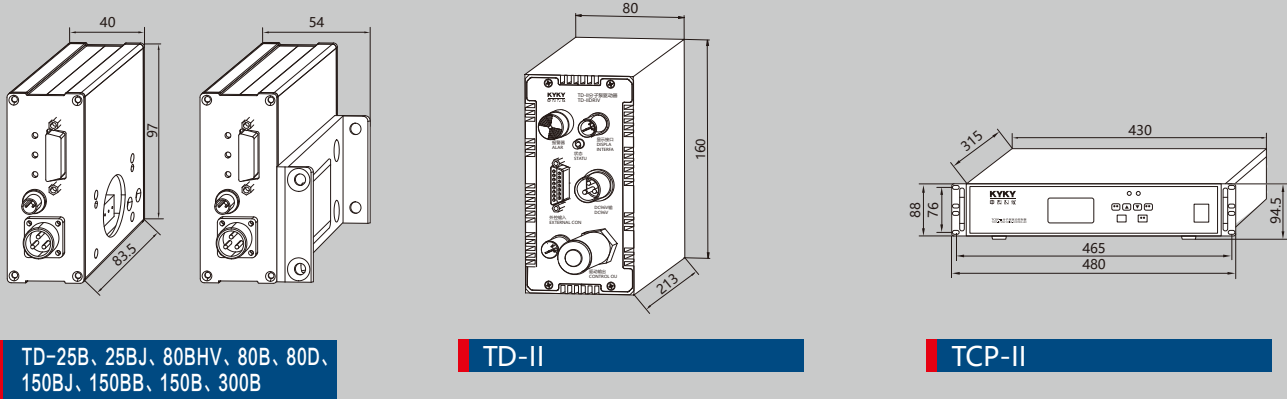
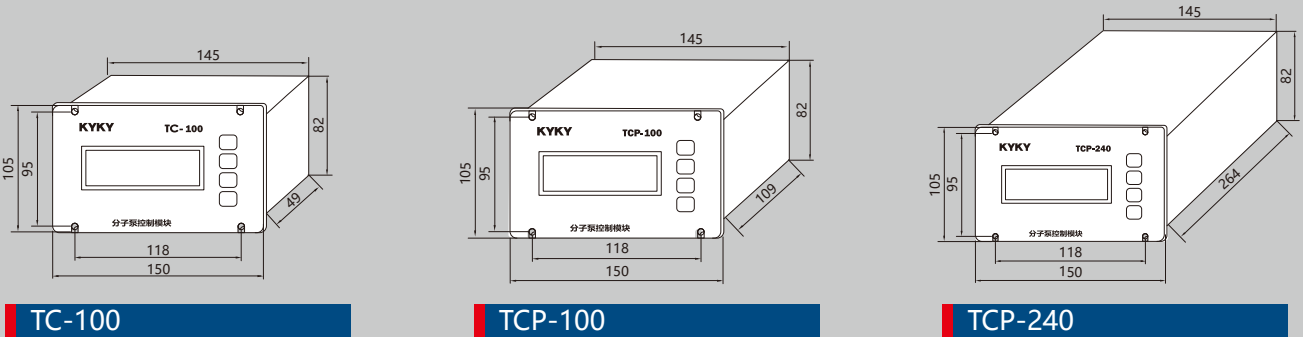
SERIES OF MAGNETICALLY LEVIATATED TURBOPUMPS
磁悬浮分子泵(320口径)

型号 Model	单位Unit	CXF-320/3001	CXF-320/3002	CXF-320/3001CV	CXF-320/3001CS	CXF-320/3002CS	CXF-320/3001CVS
进气口法兰 Flange (In)		DN320 ISO F (标配 standard)	DN320 ISO F (标配 Standard)	DN320 ISO-F	DN320 ISO-F	DN320 ISO-F	DN320 ISO-F
加热温度(Heating temperature)				60至70℃			60至70℃
排气口法兰 Flange (Out)		KF40	KF40	KF40	KF40	KF40	KF40
抽速速率 Pumping Speed	L/s	N ₂ : 2950 Ar: 2750 He: 2300 H ₂ : 1100	N ₂ : 3260 Ar: 2900 He: 2550 H ₂ : 1730	N ₂ : 2950 Ar: 2750 He: 2300 H ₂ : 1100	N ₂ : 2950 Ar: 2750 He: 2300 H ₂ : 1100	N ₂ : 3260 Ar: 2900 He: 2550 H ₂ : 1730	N ₂ : 2950 Ar: 2750 He: 2300 H ₂ : 1100
压缩比 Compression Ratio		N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : > 10 ⁹ Ar: > 10 ⁹ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : 10 ⁸ Ar: 10 ⁸ He: 10 ⁴ H ₂ : 10 ³	N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : > 10 ⁸ Ar: > 10 ⁸ He: > 10 ⁴ H ₂ : > 10 ³	N ₂ : 10 ⁸ Ar: 10 ⁸ He: 10 ⁴ H ₂ : 10 ³
极限压强 Ultimated Pressure	Pa	10 ⁻⁷ (橡胶密封Rubber seal)					
最大瞬时入口流量 Max. Instantaneous Inlet flow	sccm	2100	2400	2100	2100	2400	2100
保护气入口法兰 (选配) Purge Port Flange(optional)		KF10	KF10	KF10	KF10	KF10	KF10
推荐保护气体流量 Protective Gas Flow	sccm	50	50	50	50	50	50
最大允许磁场强度 Magnetic Field, Max	mT	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15	径向 Radial: 3 轴向 Axial: 15
额定转速 Rotation Speed	RPM	21000	24000	21000	21000	24000	21000
启动时间 Run-Up Time	min	≤9	≤10	≤9	≤9	≤10	≤9
停机时间 Run Down time	min	≤12	≤14	≤12	≤12	≤14	≤12
冷却方式 Cooling Type,Standard		水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water
冷却水流量 Cooling Water Consumption	l/min	3	3	3	3	3	3
冷却水温度 Cooling Water Temperature	℃	20±5	20±5	20±5	20±5	20±5	20±5
电源电压 Power Supply :Voltage	V AC	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz	220±10%, 50Hz 110±10%, 60Hz
最大功率Max power	W	1500	1500	1500	1000	1000	1000
适配电源型号Controller Model		CXFD-1601	CXFD-1601	CXFD-1601H	CXFD-1001S	CXFD-1001S	CXFD-1001S
控制线缆长度Cable length	m				5或10 (选配)	5或10 (选配)	5或10 (选配)
建议前级泵Backing Pump	L/s	≥30	≥30	≥30	≥30	≥30	≥30
重量 Weight	kg	76	76	76	76	76	73(ISO-F)

TMP CONTROLLER
分子泵控制器



OUTLINE DIMENSIONS DRAWING(mm)
安装尺寸图



控
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SPECIFICATIONS
技术指标

型号 Model		TCP-100	TCP-240	TC-100
分子泵型号 TMPs Models	单位Unit	FF-40/25、FF-40/25J、 FF-63/80、FF-100/150、 FF-100/150J	FF-40/25、FF-40/25J、 FF-63/80、FF-100/150、 FF-100/150J、FF-100/300	FF-40/25、FF-40/25J、 FF-63/80、FF-100/150、 FF-100/150J、FF-100/300
输入电压 Input voltage	V	110VAC±10%/ 220VAC±10%	110VAC±10%/ 220VAC±10%	24VDC±5%
输入电源频率 Output frequency	Hz	47 ~ 63	47 ~ 63	
最大输出功率 Power	W	100	240	
输出电压 Output power	VAC	24VDC±5%	24VDC±5%	
显示方式 Display		LCD	LCD	LCD
使用环境温度Working Environment temp	℃	5 ~ 40	5 ~ 40	5 ~ 40
环境湿度 Humidity	%	80	80	80
重量 Weight	kg	0.8	2.6	0.4

型号 Model		TD-25B	TD-25BJ	TD-80BHV	TD-80B	TD-80D	TD-150BJ	TD-150BB	TD-150B	TD-300B
配用分子泵型号 TMPs Models	单位 Unit	FF-40/25	FF-40/25J	FF-63/80HV	FF-63/80	DFF-63/80	FF-100/150J	FF-100/150B	FF-100/150	FF-100/300
最大加速电压 Max acceleration voltage	V	≤11	≤11	≤18	≤18.5	≤20	≤15	≤15	≤18	≤19
最大启动电流 Max starting current	A	≤6.5	≤6.5	≤5.5	≤5.5	≤6.5	≤10.5	≤10.5	≤10.5	≤13
加速时间 Run-up time	min	≤3	≤3	≤2.5	≤2.5	≤3	≤3	≤3	≤3	≤3.5
输出频率 Output frequency	Hz	600±2	600±2	1200±4	1200±4	1500±4	704±3	704±3	850±3	850±3
正常工作电流 Operation current	A	≤1	≤1	≤1.1	≤1	≤1	≤1.3	≤1.5	≤1.3	≤1.4
正常输出电压 Output power	VAC	≤10	≤10	≤17	≤17.5	≤19	≤13	≤13	≤16	≤16.5
正常输出功率 Power	W	≤10	≤10	≤18	≤18	≤19	≤17	≤20	≤20	≤23
降速时间 Shut-off time	min	≤3.5	≤2.25	≤4	≤4.5	≤7.35	≤2	≤5.5	≤6	≤12

TMP CONTROLLER
分子泵控制器

型号 Model		TCDP-II、TD-II/TCP-II			
分子泵型号 TMPs Models	单位 Unit	FF-160/500G、620、 620N、620NE、620F、 620FE、620E	FF-160/620C、620CE	FF-160/700、700E、 700F、700A、700N	FF-200/1200、1200N、 FF-250/1600G、
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	750	750	750	750
输出频率 Output frequency	Hz	450±10	600±10	600±10	400±10
输出电压Output voltage	VAC	≤66	≤66	≤66	≤66
正常工作电流 Operation current	A	≤4	≤5	≤2	≤5
最大启动电流 Max starting current	A	≤14	≤12	≤9	≤16
启动加速时间 Run-up time	min	5	7	5	6'30"
关机减速时间 Shut-off time	min	6	8	11	9'40"
重量 Weight	kg	8.8	8.8	8.8	8.8
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer				
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.				
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，过流及过热保护，用户密码错误，外部干扰保护。 In case of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit, overcurrent and overheat protection, Password error, external interference protection.				
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facility environment: no highly corrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)				

SPECIFICATIONS
技术指标

型号 Model		TCDP-II、TD-II/TCP-II			
分子泵型号 TMPs Models	单位 Unit	FF-200/1200C、1200CE、1200G	FF-200/1300、1300E、1300F、1300A、1300N	F-250/1500、1500N、1500E	FF-250/2000、2000E
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	750	750	750	750
输出频率 Output frequency	Hz	450±10	400±10	350±10	400±10
输出电压Output voltage	VAC	≤66	≤66	≤66	≤66
正常工作电流 Operation current	A	≤5	≤3	≤5	≤3
最大启动电流 Max starting current	A	≤16	≤10	≤20	≤16
启动加速时间 Run-up time	min	6'30"	6'30"	6'30"	6'30"
关机减速时间 Shut-off time	min	11	11	9'40"	10
重量 Weight	kg	8.8	8.8	8.8	8.8
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer				
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.				
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，过流及过热保护，用户密码错误，外部干扰保护。 In case of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit, overcurrent and overheat protection, Password error, external interference protection.				
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facility environment: no highly corrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)				

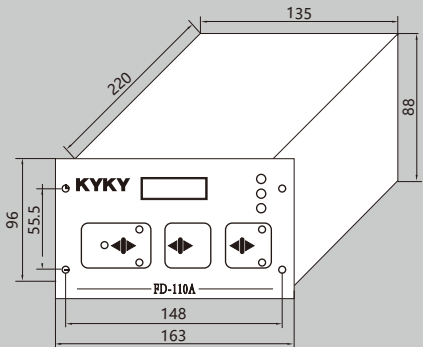
TMP CONTROLLER
分子泵控制器

型号 Model		TCDP-III	TCDP-IV
分子泵型号 TMPs Models	单位 Unit	F-400/3500B	FF-400/5000
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	1500	1000
输出频率 Output frequency	Hz	225±10	350
输出电压Output voltage	VAC	≤66	≤63
正常工作电流 Operation current	A	≤8.5	≤10
最大启动电流 Max starting current	A	≤21	≤17
启动加速时间 Run-up time	min	18	15
关机减速时间 Shut-off time	min	36	15
重量 Weight	kg	9.5	9
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer		
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.		
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，过流及过热保护，用户密码错误，外部干扰保护。 In case of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit, overcurrent and overheat protection, Password error, external interference protection.		
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facility environment: no highly corrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)		

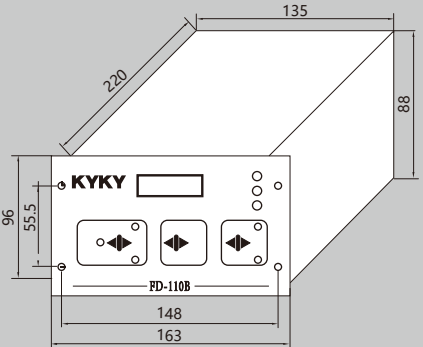
TMP CONTROLLER
分子泵控制器



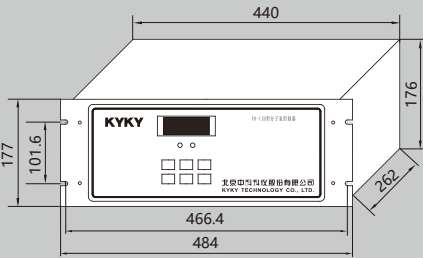
OUTLINE DIMENSIONS DRAWING(mm)
安装尺寸图



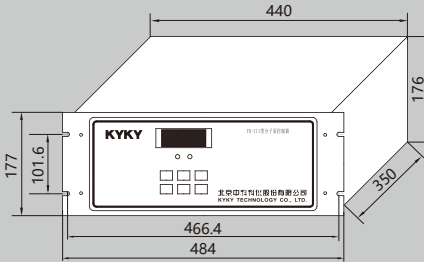
FD-110A



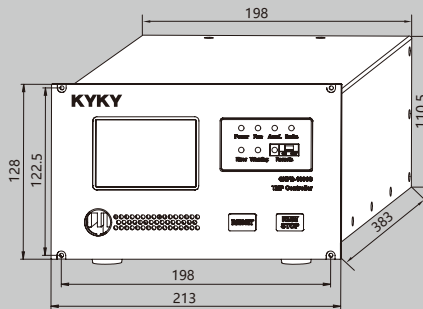
FD-110B



FD-IIB



FD-III



CXFD-1001S

SPECIFICATIONS
技术指标

型号 Model		FD-110A	FD-110B
分子泵型号 TMPs Models	单位 Unit	F-100/150	FF-100/110
输入电压 Input voltage	V	220VAC±20%	220VAC±20%
输入电源频率 Input frequency	Hz	50/60Hz (±3%)	50/60Hz (±3%)
最大输出功率 Max output power	W	150	120
输出频率 Output frequency	Hz	705±10	705±10
输出电压Output voltage	V	≤40	≤40
正常工作电流 Operation current	A	≤7	≤7
最大启动电流 Max starting current	A	≤3	≤3
启动加速时间 Run-up time	min	5 ~ 40	5 ~ 40
重量 Weight	kg	2	2
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer		
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.		
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，过流及过热保护，用户密码错误，外部干扰保护。 In case of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit, overcurrent and overheat protection, Password error, external interference protection.		
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facility environment: no highly corrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)		

TMP CONTROLLER
分子泵控制器

型号 Model		FD-IIB			
分子泵型号 TMPs Models	单位 Unit	FF-160/500G、620、620N、620E、620NE、620F	FF-160/620C、620CE	FF-160/700、700E、700A、700F、700N	FF-200/1200、1200N FF-250/1600G
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	750	750	750	750
输出频率 Output frequency	Hz	450±10	600±10	600±10	400±10
输出电压Output voltage	V	≤66	≤66	≤66	≤66
正常工作电流 Operation current	A	≤4	≤5	≤2	≤5
最大启动电流 Max starting current	A	≤14	≤12	≤9	≤16
启动加速时间 Run-up time	min	4'30	6	4	6
关机减速时间 Shut-off time	min	6	8	11	10
重量 Weight	kg	18.5	18.5	18.5	18.5
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer				
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.				
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，过流及过热保护，用户密码错误，外部干扰保护。 In case of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit, overcurrent and overheat protection, Password error, external interference protection.				
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facility environment: no highly corrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)				

SPECIFICATIONS
技术指标

型号 Model		FD-IIB			
分子泵型号 TMPs Models	单位 Unit	FF-200/1200C、1200G、1200CE	FF-200/1300、1300E、1300F、1300A、1300N	FF-250/1500、1500N、1500E	FF-250/2000、2000A、2000N、2000E
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	750	750	750	750
输出频率 Output frequency	Hz	450±10	400±10	350±10	400±10
输出电压Output voltage	V	≤66	≤66	≤66	≤66
正常工作电流 Operation current	A	≤5	≤3	≤5	≤3
最大启动电流 Max starting current	A	≤16	≤10	≤20	≤16
启动加速时间 Run-up time	min	6	6	8	6
关机减速时间 Shut-off time	min	11	11	10	10
重量 Weight	kg	18.5	18.5	18.5	18.5
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer				
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.				
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，过流及过热保护，用户密码错误，外部干扰保护。 In case of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit, overcurrent and overheat protection, Password error, external interference protection.				
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facility environment: no highly corrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)				

TMP CONTROLLER
分子泵控制器

型号 Model		FD-III	
分子泵型号 TMPs Models	单位 Unit	F-400/3500B	F-400/4500
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	1100	1100
输出频率 Output frequency	Hz	225±10	255±10
输出电压Output voltage	V	≤66	≤66
正常工作电流 Operation current	A	≤8.5	≤8.5
最大启动电流 Max starting current	A	≤21	≤20
启动加速时间 Run-up time	min	18	10
关机减速时间 Shut-off time	min	36	18
重量 Weight	kg	27.5	27.5
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer		
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.		
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，过流及过热保护，用户密码错误，外部干扰保护。 In case of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit, overcurrent and overheat protection, Password error, external interference protection.		
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facility environment: no highly corrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)		

SPECIFICATIONS
技术指标

型号 Model		CXFD-1001S			
分子泵型号 TMPs Models	单位 Unit	CXF-200/1401CS CXF-200/1401CVS	CXF-250/2301CS CXF-250/2301CVS	CXF-320/3001CS CXF-320/3001CVS	CXF-200/1402CS
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	1000	1000	1000	1000
输出频率 Output frequency	Hz	500Hz	450Hz	350Hz	550Hz
输出电压Output voltage	V	≤55/66VAC	≤55/66VAC	≤55/66VAC	≤55/66VAC
最大启动电流 Max starting current	A	≤15	≤15	≤15	≤15
启动加速时间 Run-up time	min	<7	<9	<9	<7
关机减速时间 Shut-off time	min	<9	<15	<15	<9
重量 Weight	kg	10	10	10	10
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer				
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.				
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，外部干扰保护。 Incase of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit,external interference protection.				
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facilityenvironment: no highlycorrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)				

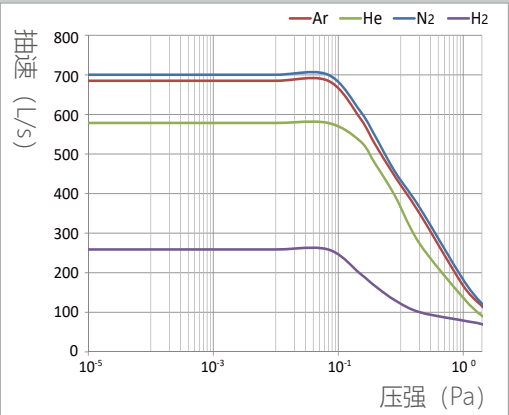
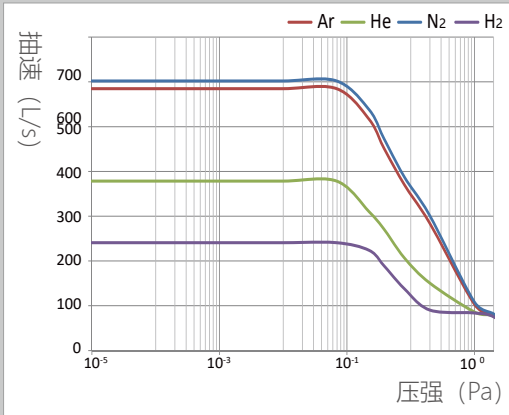
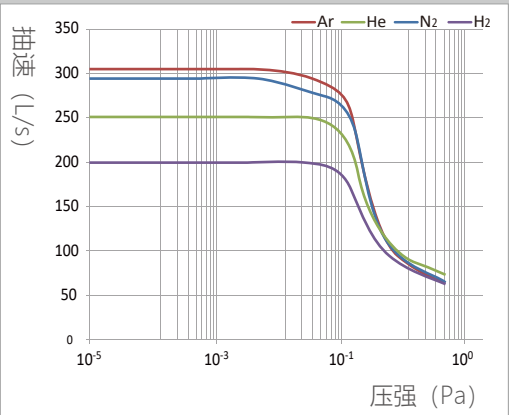
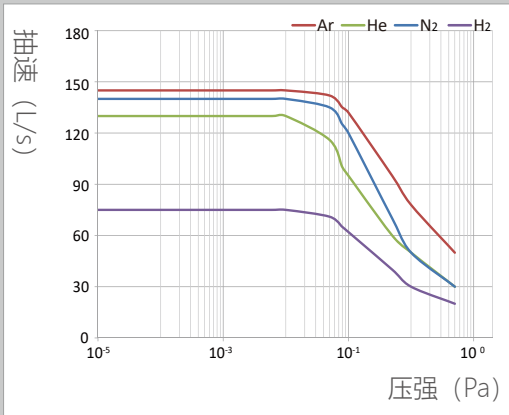
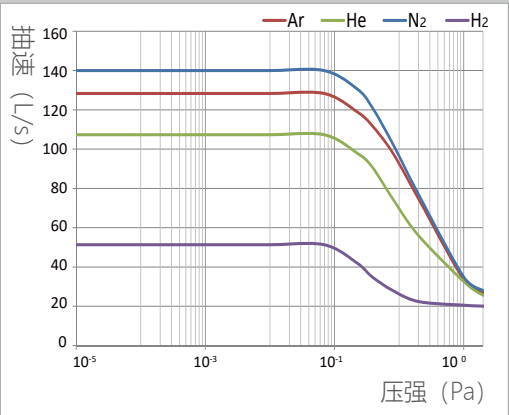
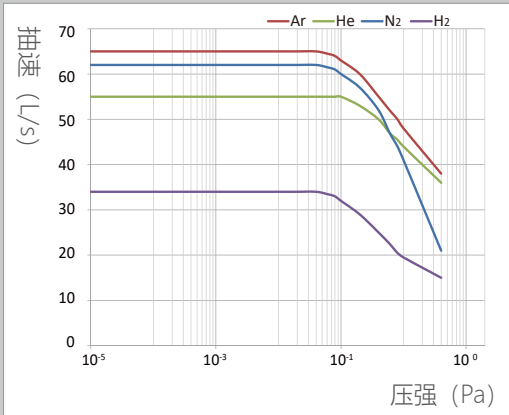
TMP CONTROLLER
分子泵控制器

型号 Model		CXFD-1001S			
分子泵型号 TMPs Models	单位 Unit	CXF-250/2302CS	CXF-320/3002CS	CXF-100/301CS	CXF-160/451CS
输入电压 Input voltage	V	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%	220VAC±10% 110VAC±10%
输入电源频率 Input frequency	Hz	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)	50/60Hz (±5%)
最大输出功率 Max output power	W	1000	1000	1000	1000
输出频率 Output frequency	Hz	500Hz	400Hz	550Hz	550Hz
输出电压Output voltage	V	≤55/66VAC	≤55/66VAC	≤55/66VAC	≤55/66VAC
最大启动电流 Max starting current	A	≤15	≤15	≤15	≤15
启动加速时间 Run-up time	min	<9	<9	<4	<4
关机减速时间 Shut-off time	min	<15	<15	<6	<6
重量 Weight	kg	10	10	10	10
启动/停车控制 Start/Stop	键盘、外控端子和上位机控制。 Available with Key panel , external control terminals and computer				
显示功能 Display	液晶显示屏显示当前输出频率、输出电流、当前输出电压、故障类型以及功能码参数、操作参数和分子泵型号；两个LED 指示灯指示驱动控制器的上电状态和故障状态。In the front panel: Output frequency, Output current, Output voltage, error type and function code, operation code and TMP model, 2 separate LED lights indicate the states of Electrification and Error.				
保护功能 Protection	驱动控制器输入欠压，过压，过流，过热，分子泵过载，限电流输出，外部干扰保护。 Incase of undervoltage, overvoltage, overcurrent, overheat, overload, current output limit,external interference protection.				
环境条件 Working environment	设备场所：无强烈腐蚀性气体和粉尘；环境温度：-10℃ ~ + 50℃； Facilityenvironment: no highlycorrosive gases and dust, Temperature: -10℃ ~ + 50℃ 环境湿度：90%以下（无水珠凝结现象）；振动强度：0.5g（加速度）以下。 Humidity: < 90% (no condensation), Vibration Strength: < 0.5g (gravity acceleration)				

TURBO PUMPING STATIONS
分子泵机组



PUMPING SPEED
抽速曲线



SPECIFICATIONS
技术指标

型号 Model	单位 Unit	FJ-80 FJ-80G	FJ-300Z FJ-300ZG
进气口法兰 Flange (In)		DN63 ISO-K	KF25
		DN63 CF	KF25
排气口法兰 Flange (Out)		Φ8快插接头(FJ-80) Φ8 Fast connection-peg for FJ-80	KF25
		Φ10快插接头(FJ-80G) Φ10 Fast connection-peg for FJ-80G	
抽速速率 Pumping Speed	L/s	N ₂ : 62	N ₂ : 296
		He: 55	He: 250
		H ₂ : 34	H ₂ : 200
		Ar: 65	Ar: 305
压缩比 Compression Ratio		N ₂ : 10 ⁹	N ₂ : 10 ⁹
		He: 10 ⁵	He: 6×10 ⁵
		H ₂ : 10 ⁴	H ₂ : 10 ⁵
		Ar: 10 ⁹	Ar: 10 ⁹
出厂指标Ex-factory Indicators	Pa	5×10 ⁻⁵	5×10 ⁻⁵
建议启动压强 Recommended fore-vacuum pressure	Pa	< 10	< 10
前级泵型号 Forevacuum pump		GHD-031B for FJ-80 SVF-E1-20 for FJ-80G	RV4 for FJ-300Z VPSL15 or WXP-3A-03 for FJ-300ZG
冷却方式 Cooling type,Standard		风冷Air Cooling	风冷Air Cooling
输入电源 Power Supply	V/Hz	220V±20V 10A 50Hz	220V±20V 16A 50Hz
环境温度 Environment Temperature	℃	5 ~ 32	5 ~ 32
相对湿度 Relative Humidity	RH	≤80%	≤80%
最大功率Max power	W	≤290 for FJ-80 ≤180 for FJ-80G	≤1500 for FJ-300Z ≤800 for FJ-300ZG
安装方式 Mounting position		垂直 Veritcal	垂直 Veritcal
长×宽×高 L*W*H	mm	433×320×280	590×616×1300
重量 Weight	kg	16 ~ 21	123(FJ-300Z) 120 or 126(FJ-300ZG)

TURBO PUMPING STATIONS
分子泵机组

型号 Model	单位Unit	FJ-110 FJ-110G	FJ-150 FJ-150G	FJ-300 FJ-300G
进气口法兰 Flange (In)		KF25	KF25	KF25
排气口法兰 Flange (Out)		KF25	KF25	KF25
抽速速率 Pumping Speed	L/s	N ₂ : 110	N ₂ : 140	N ₂ : 296
		He: 100	He: 130	He: 250
		H ₂ : 50	H ₂ : 75	H ₂ : 200
		Ar: 100	Ar: 145	Ar: 305
压缩比 Compression Ratio		N ₂ : 10 ⁸	N ₂ : 10 ⁷	N ₂ : 10 ⁹
		He: 10 ²	He: 6×10 ³	He: 6×10 ⁵
		H ₂ : 5×10 ²	H ₂ : 10 ³	H ₂ : 10 ⁵
		Ar: 10 ⁸	Ar: 10 ⁷	Ar: 10 ⁹
出厂指标 Ex-factory Indicators	Pa	5×10 ⁻⁵	5×10 ⁻⁵	5×10 ⁻⁵
建议启动压强 Recommended Forevacuum Pressure	Pa	< 10	< 10	< 10
前级泵型号 Forevacuum Pump		RV4 forFJ-110、FJ-150、FJ-300 VPSL15 for FJ-110G、FJ-150G、FJ-300G		
冷却方式 Cooling Type,Standard		风冷或水冷 Air Cooling or Water Cooling	风冷 Air Cooling	风冷 Air Cooling
冷却水流量 Cooling Water Consumption	L/min	> 1	——	——
冷却水温度 Cooling Water Temperature	℃	≤25	——	——
输入电源 Power Supply		220V±20V 16A 50Hz	220V±20V 16A 50Hz	220V±20V 16A 50Hz
环境温度 (℃) Environment temperature	水冷方式 Water cooling	5℃ ~ 40℃		
	风冷方式 Air cooling	5℃ ~ 32℃		
相对湿度 Relative Humidity	RH	≤80%	≤80%	≤80%
安装方式 Mounting position		垂直 Vertical	垂直 Vertical	垂直 Vertical
最大功率Max power	W	≤1100	≤1500 for FJ-150 ≤800 for FJ-150G	≤1500 for FJ-300 ≤800 for FJ-300G
适配电源型号 Controller Model		FD-110B	TCP-100	TCP-240
长×宽×高 L*W*H (高=机组最高点与地面之间的距离)	mm	500×540×920 for FJ-110、FJ-150、FJ-300 600×640×920 for FJ-110G、FJ-150G、FJ-300G		
重量 Weight	kg	52 for FJ-110 55 for FJ-110G	52.6 for FJ-150 55.6 for FJ-150G	55 for FJ-300 58 for FJ-300G

SPECIFICATIONS
技术指标

型号 Model	单位Unit	FJ-620 FJ-620G	FJ-620C FJ-620CG	FJ-620F FJ-620FG
进气口法兰 Flange (In)		KF25 KF40	KF25 KF40	KF25 KF40
排气口法兰 Flange (Out)		KF25	KF25	KF25
抽速速率 Pumping Speed	L/s	N ₂ : 600	N ₂ : 600	N ₂ : 600
		He: 380	He: 380	He: 380
		H ₂ : 240	H ₂ : 240	H ₂ : 240
		Ar: 580	Ar: 580	Ar: 580
压缩比 Compression Ratio		N ₂ : 10 ⁹	N ₂ : 10 ⁹	N ₂ : 10 ⁹
		He: 10 ⁴	He: 10 ⁵	He: 10 ⁵
		H ₂ : 6×10 ³	H ₂ : 6×10 ⁴	H ₂ : 6×10 ⁴
		Ar: 10 ⁹	Ar: 10 ⁹	Ar: 10 ⁹
出厂指标 Ex-factory Indicators	Pa	5×10 ⁻⁵	5×10 ⁻⁵	5×10 ⁻⁵
建议启动压强 Recommended Forevacuum Pressure	Pa	< 10	< 10	< 10
前级泵型号 Forevacuum Pump		RV-6 for FJ-620、FJ-620C、FJ-620F VPSL36 for FJ-620G、FJ-620CG、FJ-620FG		
冷却方式 Cooling Type,Standard		水冷 Water	水冷 Water	风冷 Air
冷却水流量 Cooling Water Consumption	L/min	>1	>1	>1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25	≤25
输入电源 Power Supply		380V±20V/50Hz	380V±20V/50Hz	380V±20V/50Hz
环境温度 (℃) Environment temperature	水冷方式 Water cooling	5℃ ~ 40℃		
	风冷方式 Air cooling	5℃ ~ 32℃		
相对湿度 Relative Humidity	RH	≤80%	≤80%	≤80%
安装方式 Mounting position		垂直 Vertical	垂直 Vertical	垂直 Vertical
最大功率Max power	W	≤1600	≤1600	≤1600
适配电源型号 Controller Model		TCDP-II	TCDP-II	TCDP-II
长×宽×高 L*W*H	mm	550×690×960(LF)、 550×690×970(CF) for FJ-620、FJ-620C 650×690×960(LF)、 650×690×970(CF) for FJ-620G、FJ-620CG 585×690×960(LF)、 585×690×970(CF) for FJ-620F 685×690×960(LF)、 685×690×970(CF) for FJ-620FG		
重量 Weight	kg	117 for FJ-620、FJ-620C、FJ-620F 131 for FJ-620G、FJ-620CG、FJ-620FG		

TURBO PUMPING STATIONS
分子泵机组

型号 Model	单位Unit	FJ-700 FJ-700G	FJ-700F FJ-700FG
进气口法兰 Flange (In)		KF25 KF40	KF25 KF40
排气口法兰 Flange (Out)		KF25	KF25
抽速速率 Pumping Speed	L/s	N ₂ : 700	N ₂ : 700
		He: 580	He: 580
		H ₂ : 260	H ₂ : 260
		Ar: 680	Ar: 680
压缩比 Compression Ratio		N ₂ : 10 ⁹	N ₂ : 10 ⁹
		He: 10 ⁷	He: 10 ⁵
		H ₂ : 6×10 ⁶	H ₂ : 6×10 ⁶
		Ar: 10 ⁹	Ar: 10 ⁹
出厂指标 Ex-factory Indicators	Pa	5×10 ⁻⁵	5×10 ⁻⁵
建议启动压强 Recommended Forevacuum Pressure	Pa	< 10	< 10
前级泵型号 Forevacuum Pump		RV-6 for FJ-700、FJ-700F VPSL36 for FJ-700G、FJ-700FG	
冷却方式 Cooling Type,Standard		水冷 Water	风冷 Air Cooling
冷却水流量 Cooling Water Consumption	L/min	>1	>1
冷却水温度 Cooling Water Temperature	℃	≤25	≤25
输入电源 Power Supply		380V±20V/50Hz	380V±20V/50Hz
环境温度 (℃) Environment temperature	水冷方式 Water cooling	5℃ ~ 40℃	
	风冷方式 Air cooling	5℃ ~ 32℃	
相对湿度 Relative Humidity	RH	≤80%	≤80%
安装方式 Mounting position		垂直 Vertical	垂直 Vertical
最大功率Max power	W	≤1600	≤1600
适配电源型号 Controller Model		TCDP-II	TCDP-II
长×宽×高 L*W*H	mm	550×690×840(LF)、 550×690×850(CF)for FJ-700 650×690×840(LF)、 650×690×850(CF) for FJ-700G 550×690×912(LF)、 550×690×922(CF)for FJ-700F 650×690×912(LF)、 650×690×922(CF)for FJ-700FG	
重量 Weight	kg	135 for FJ-700 149 for FJ-700G	139 for FJ-700F 153 for FJ-700FG

VACUUM SOLUTIONS
真空解决方案

中科科仪深耕真空领域60余年，具有国内首屈一指的真空资源整合能力，持续进行真空理论、工程实践和产品应用创新，为您提供全方位的真空解决方案和专业便捷服务。

With 60 years exploration in vacuum industry, KYKY is experienced to provide optimized vacuum solutions and convenient and professional services based on the overall understanding of specific requirements, vacuum fundamental theories, engineering practices and products applications.

半导体工业 SEMICONDUCTOR INDUSTRY

◆ 更长的维护保养时间间隔	Longer interval for maintenance
◆ 更加节能环保的真空产品	Efficient and eco-friendly products
◆ 定制化的真空解决方案	Customized vacuum solutions

工业检漏 INDUSTRIAL LEAK DETECTION

◆ 高灵敏度的检漏设备	Highly sensitive leak detector
◆ 高频率检漏的可靠产品	Reliable products for highly frequent operation
◆ 定制化的检漏解决方案	Customized leak detecting solutions
◆ 及时全面的现场服务	Timely and all-round services on site

研发、大科学工程 R&D AND NATIONAL MAJOR SCIENTIFIC ENGINEERING

◆ 高可靠性的产品	Highly reliable products
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VACUUM SOLUTIONS
真空解决方案

◆ 耐放射性辐射的解决方案	Radiation-resistant solutions
◆ 特殊需求的深度合作	Deeper cooperation for special requirements
◆ 定制化的真空解决方案	Customized vacuum solutions
◆ 及时全面的现场服务	Timely and all-round services on site

分析仪器 ANALYSIS INSTRUMENTS

◆ 模块化设计的多重选择性	Multi options based on modular design
◆ 使用维护的便利性	Convenient operation and maintenance
◆ 控制连接的定制化	Interfaces customization
◆ 转速调节的自主性	Independent speed adjustment

真空服务 SERVICES

◆ 北京及全国真空行业协会的交流平台	Platform of vacuum associations in China
◆ 真空理论和计算交流咨询	Consultancy of Vacuum theory and calculation
◆ 真空工程的经验分享	Experience sharing of vacuum engineering