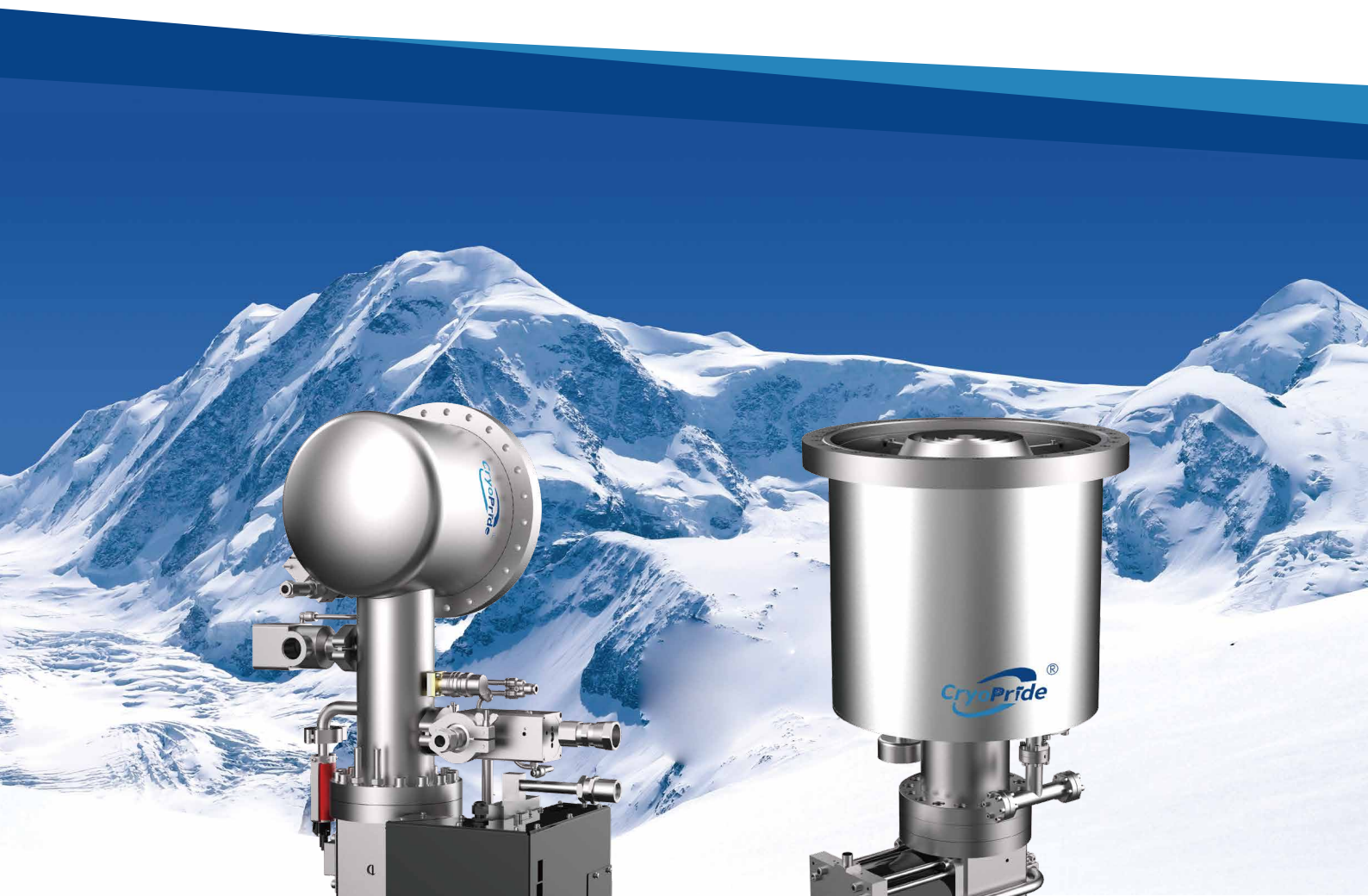




CRYOPUMP

Product Catalog





LEADING NEW CRYOGENICS TECHNOLOGIES



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- Cryogenic products manufacturer
- Cryogenic systems service-provider



Company profile

CISC Pride (Nanjing) Cryogenic Technology Co., Ltd (PRIDE Cryogenics) is a high-tech company founded by China Shipbuilding Industry Corporation, 724 Institute and Nanjing Pride Technology Group. PRIDE Cryogenics is only cryogenic equipment manufacturer who masters 4K cryocooler technology in China and also the only one of the cryogenic equipment manufactures who can supply with 4K cryocoolers, standard and customized cryostats, and large scale cryogenic systems for liquefaction of Natural Gas, Helium and Hydrogen around the world.

PRIDE Cryogenics brings together many talents in technique, management and marketing areas. PRIDE Cryogenics is specialized in the research and development of cryogenic and electronic devices. PRIDE Cryogenics has independent intellectual property rights for several key technologies, such as Inertance Gap Phase Shift Cryocooler, Nano-Filtration Channel Oil Separation Technology, which improve the performance and reliability of products, and thus enlarge the application area of cryogenic products.

PRIDE Cryogenics takes "Optimizing Management, Pursuing Excellence, Continuous Improvement, Customer Satisfaction" as quality policy. PRIDE Cryogenics has obtained ISO9001, CE, UL certificates. With the series of quality detection means, PRIDE Cryogenics's products have high stability and high reliability.

PRIDE Cryogenics takes "Integrity, Diligence, Adherence" as company spirit to create a world leading business, and aims at boosting the nationalization and industrialization of cryogenic technology. PRIDE Cryogenics focuses on the development of cryogenic industry, works hard to meet the customers' needs in all aspects, provides cost effective products, professional technical support and customer-oriented services, and eventually contributes to the industrial and research development all around.

DEVELOPMENT HISTORY

2018

Has successfully developed Ne-He Refining Units in September, 2018.

06

2016

GM cryocooler completed to provide scale selling through abroad marketing.

05

2015

GM cryocoolers were supplied towards MRI companies in large volumes.

04

2013

Became a member of CSSC

03

2011

Has successfully developed Helium Recovery Purification and Liquefaction system.

02

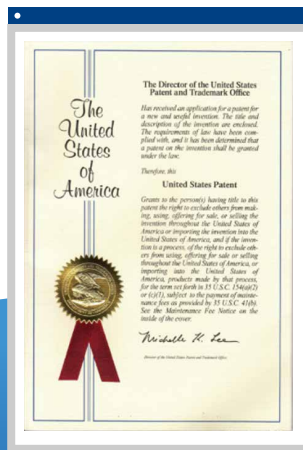
2010

Founded in Jan, 2010 with a registered capital of RMB 30 Million. In August, the first GM cryocooler was developed.

01

Intellectual Property Rights And Technologies

- 1 Gas phase-shifting cryogenic technology
- 2 Nanoscale filtration channel oil separation technology
- 3 Gas purification separation, condensation, liquefaction, recovery technology
- 4 Ultra-low vibration, ultra-precision temperature control, ultra-low temperature cryostat technology
- 5 Large-scale cryogenic cold box, valve box integration technology
- 6 Multi-channel composite pipe technology



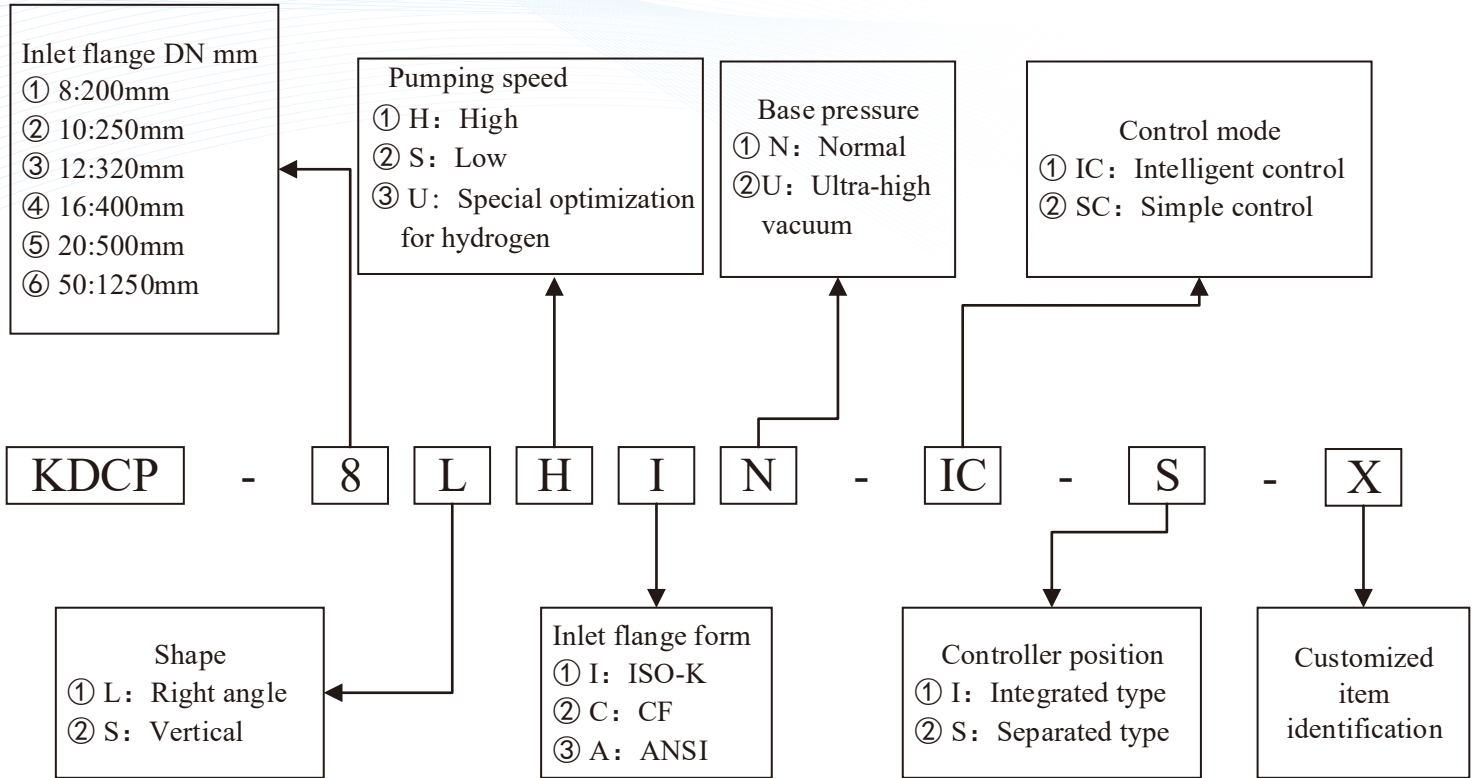
PREVIEW

Cryopump, also known as cryogenic vacuum pump, which is pumped by cryogenic condensation and cryogenic adsorption. It is an oil free and high vacuum environment acquisition device. Cryogenic pumps are suitable for environments requiring clean oil-free and fast pumping ultra-high vacuum circumstances, mainly used in applications such as sputtering coating equipment, evaporation coating equipment, ion implantation equipment, molecular beam epitaxy equipment, space simulation device, high energy physics research device, accelerator beam tube, and ultra-high vacuum devices.

FEATURES

- Oil-free and pollution-free, low-temperature cold plate is used to absorb gas to obtain vacuum
- The gas pumping speed is high, and the exhausting speed is fast
- The operation cost is low, no liquid nitrogen is needed
- Simple operation and high performance
- High reliability, long using period

Model type

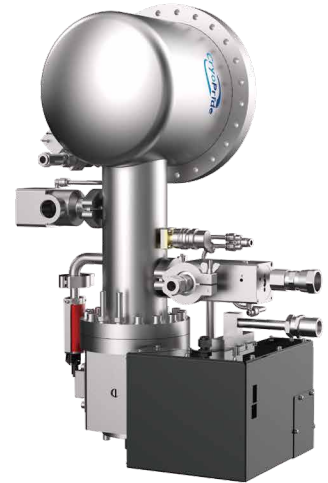


Description:

- 1、 All cryopump provide simple control and intelligent control;
- 2、 The intelligent control version provides functions such as one button regeneration, host communication and control, and supports simultaneous operation of up to 12 cryopumps and 2 compressors;
- 3、 The intelligent control cryopump is divided into two versions, Integrated version(the controller and pump body are integrated) , Separated version(the controller is a separate box and can be placed in other positions);
- 4、 The separated type cryopump's controller requires a central controller CPC-RSC-01 and several branch controllers CPC-SC-01 (matching according to the numbers of cryopump). The casing uses a 3U chassis, which can be placed 15m away from the pump body for operation;
- 5、 Special needs beyond the selection are marked with an X at the end.

KDCP-8L Series

Performance Specifications	Pumping speed (L/s)		KDCP-8LH	KDCP-8LS
		Water	4000	4000
		Argon	1200	230
		Hydrogen	2200	900
	Capacity (Std•L)	Nitrogen	1500	270
		Argon	1300	1600
	Crossover Rating	Hydrogen	12	12
	Throughput (Ar)	150 torr•L		
Cooldown Time	700 sccm			
Interface (IC version)	75mins (from 290K to 20K)			
	Mounting Flange	CF200/ISO-K200		
	Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
	Rough extraction port	ISO-KF NW25		
	Purging interface	3/8"Quick insertion of trachea Gas supply pressure: 0.4 – 0.6 MpaG		
	Exhaust interface	1/2 Ferrule interface		
	Instrument gas	6mm Quick insertion of trachea; Gas supply pressure 0.4 – 0.7 MPaG		
	Backup Interface (SC version)	1/4 VCR interface (1 pc); ISO-KF NW25 interface (2 pcs) ISO-KF NW16 interface (1 pc)		
Compressor Type	KDC2000VH/KDC2000F			



KDCP-8LHCN-IC-I



KDCP-8LHCN-SC

Cryopump Series

KDCP-8SHCU-SC

Performance Specifications	Pumping speed (L/s)	Water	4000
		Argon	1200
		Hydrogen	2200
		Nitrogen	1500
	Capacity (Std•L)	Argon	1300
		Hydrogen	12
	Crossover Rating	150 torr•L	
	Throughput (Ar)	700 sccm	
Cooldown Time	75mins (from 290K to 20K)		
Mounting Flange	CF200		
Base pressure(torr)	5E-10		
Bursting disc pressure relief pressure	0.6-0.8barG		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Backup Interface	CF16, 3 pcs		
Compressor Type	KDC2000VH/KDC2000F		



KDCP-8SHCU-SC

KDCP-10L Series

Performance Specifications	Pumping speed (L/s)	Water	6500
		Argon	1900
		Hydrogen	3600
		Nitrogen	2300
	Capacity (Std•L)	Argon	1650
		Hydrogen	16
	Crossover Rating	150 torr•L	
	Throughput (Ar)	700 sccm	
Cooldown Time	85mins (from 290K to 20K)		
Mounting Flange	CF250/ISO-K250		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Interface (IC version)	Rough extraction port	ISO-KF NW25	
	Purging interface	3/8"Quick insertion of trachea Gas supply pressure: 0.4 – 0.6 MpaG	
	Exhaust interface	1/2 Ferrule interface	
	Instrument gas	6mm Quick insertion of trachea; Gas supply pressure 0.4 – 0.7 MPaG	
Backup Interface (SC version)	1/4 VCR interface (1 pc); ISO-KF NW25 interface (2 pcs) ISO-KF NW16 interface (1 pc)		
Compressor Type	KDC2000VH/KDC2000F		



KDCP-10LHIN-IC-I



KDCP-10LHIN-IC-S

Cryopump Series

KDCP-12LUIN-IC-I

Performance Specifications	Pumping speed (L/s)	Water	11000
		Argon	3000
		Hydrogen	13000
		Nitrogen	3600
	Capacity (Std•L)	Hydrogen	40
	Crossover Rating	260 torr•L	
	Throughput (Ar)	900 sccm	
	Cooldown Time	130mins (from 290K to 20K)	
Mounting Flange	ISO-K320		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Interface (IC version)	Rough extraction port	ISO-KF NW25	
	Purging interface	3/8"Quick insertion of trachea Gas supply pressure: 0.4 – 0.6 MpaG	
	Exhaust interface	1/2 Ferrule interface	
	Instrument gas	6mm Quick insertion of trachea; Gas supply pressure 0.4 – 0.7 MPaG	
Backup Interface (SC version)	1/4 VCR interface (1 pc); ISO-KF NW25 interface (2 pcs) ISO-KF NW16 interface (1 pc)		
Compressor Type	KDC4000F/KDC4000V		



KDCP-12LUIN-IC-I

KDCP-12LHIN-IC-I

Performance Specifications	Pumping speed (L/s)	Water	11000
		Argon	3300
		Hydrogen	7300
		Nitrogen	4000
	Capacity (Std•L)	Hydrogen	2000
	Crossover Rating	260 torr•L	
	Throughput (Ar)	900 sccm	
	Cooldown Time	130mins (from 290K to 20K)	
Mounting Flange	ISO-K320		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Interface (IC version)	Rough extraction port	ISO-KF NW25	
	Purging interface	3/8" Quick insertion of trachea Gas supply pressure: 0.4 – 0.6 MpaG	
	Exhaust interface	1/2 Ferrule interface	
	Instrument gas	6mm Quick insertion of trachea; Gas supply pressure 0.4 – 0.7 MPaG	
Backup Interface (SC version)	1/4 VCR interface (1 pc); ISO-KF NW25 interface (2 pcs) ISO-KF NW16 interface (1 pc)		
Compressor Type	KDC4000F/KDC4000V		



KDCP-12LHIN-IC-I

Cryopump Series

KDCP-12SHCU-SC

Performance Specifications	Pumping speed (L/s)	Water	9000
		Argon	2500
		Hydrogen	5000
		Nitrogen	3000
	Capacity (Std•L)	Argon	2000
		Hydrogen	24
	Crossover Rating	260 torr-L	
	Throughput (Ar)	900 sccm	
Cooldown Time	150mins (from 290K to 20K)		
Mounting Flange	CF300 (ASTM E2734/E2734M-10)		
Base pressure(torr)	5E-10		
Bursting disc pressure relief pressure	0.6-0.8barG		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Backup Interface	CF16, 2 pcs		
Compressor Type	KDC4000F/KDC4000V		



KDCP-12SHCU-SC

KDCP-16S Series

Performance Specifications	Pumping speed (L/s)	Water	16800
		Argon	4500
		Hydrogen	12000
		Nitrogen	6000
	Capacity (Std•L)	Argon	6000
		Hydrogen	50
	Crossover Rating	500 torr•L	
	Throughput (Ar)	900 sccm	
Cooldown Time	150mins (from 290K to 20K)		
Mounting Flange	ISO-K400		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Interface (IC version)	Rough extraction port	ISO-KF NW25	
	Purging interface	3/8"Quick insertion of trachea Gas supply pressure: 0.4 – 0.6 MpaG	
	Exhaust interface	ISO-KF NW25	
	Instrument gas	6mm Quick insertion of trachea; Gas supply pressure 0.4 – 0.7 MPaG	
Backup Interface (SC version)	1/4 VCR interface (1 pc); ISO-KF NW25 interface (1 pc) CF40 interface (1 pc)		
Compressor Type	KDC6000V		



KDCP-16SHIN-IC-I

Cryopump Series

KDCP-20S Series

Performance Specifications	Pumping speed (L/s)	Water	30000
		Argon	8300
		Hydrogen	14000
		Nitrogen	9700
	Capacity (Std•L)	Argon	6500
		Hydrogen	55
	Crossover Rating	500 torr-L	
	Throughput (Ar)	900 sccm	
Cooldown Time	170mins (from 290K to 20K)		
Mounting Flange	ISO-K500		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Interface (IC version)	Rough extraction port	ISO-KF NW25	
	Purging interface	3/8"Quick insertion of trachea Gas supply pressure: 0.4 – 0.6 MpaG	
	Exhaust interface	ISO-KF NW25	
	Instrument gas	6mm Quick insertion of trachea; Gas supply pressure 0.4 – 0.7 MPaG	
Backup Interface (SC version)	1/4 VCR interface (1 pc); ISO-KF NW25 interface (1 pc) CF40 interface (1 pc)		
Compressor Type	KDC6000V		



KDCP-20SHIN-IC-I

Cryopump Series

KDCP-50S Series *

Performance Specifications	Pumping speed (L/s)	Water	180000
		Argon	47000
		Hydrogen	60000
		Nitrogen	5700
	Capacity (Std•L)	Argon	9000
		Hydrogen	150
	Crossover Rating	1000 torr•L	
	Throughput (Ar)	1500 sccm	
Cooldown Time	360mins (from 290K to 20K)		
Mounting Flange	ISO-F DN1250		
Helium hose joint	Supply:8# self-sealing female Return:8# Self-sealing male		
Interface (IC version)	Rough extraction port	ISO-K DN63	
	Purging interface	3/8"Quick insertion of trachea Gas supply pressure: 0.4 – 0.6 MpaG	
	Exhaust interface	ISO-KF NW25	
	Instrument gas	6mm Quick insertion of trachea; Gas supply pressure 0.4 – 0.7 MPaG	
Backup Interface (SC version)	1/4 VCR interface (3 pcs) ISO-K DN63 interface (1 pc) ISO-KF NW40 interface (2 pcs) ISO-KF NW25 interface (1 pc) ISO-KF NW16 interface (1 pc) Bayonet interface (2 pcs)		
Compressor Type	KDC6000V		



KDCP-50SHIN-IC-S

* Liquid nitrogen pre cooling is required.

Compressor

KDC6000V

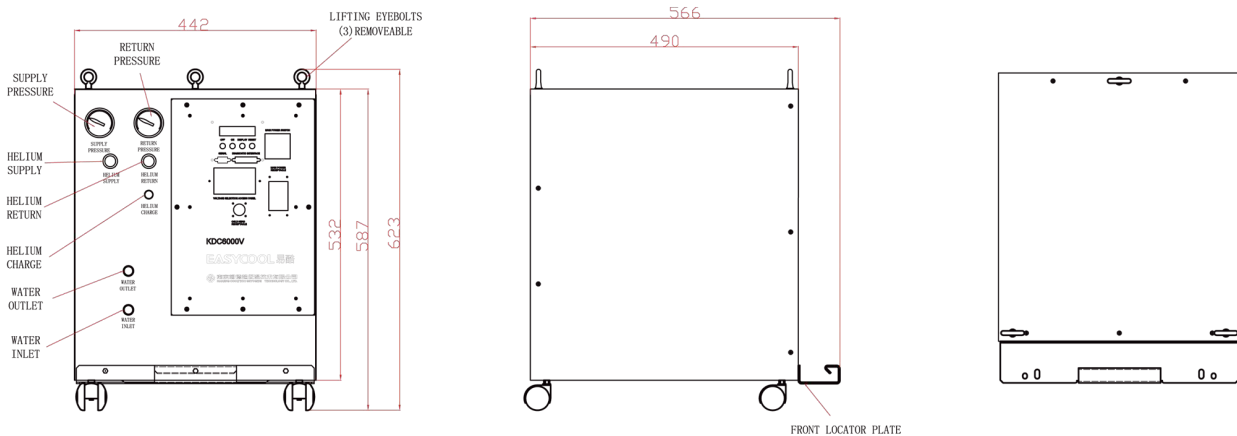
SPECIFICATION	Compressor Type	KDC6000V		
	Electrical Power	380,400V@50Hz 3P 480V@60Hz 3P		
	Helium Purity Requirement	>99.999%		
	Cooling Type	Water		
	Water Flow	7L~10L/min (28°C)		
	Cooling Water Temperature	Inlet	Out	
		5~25°C	< 44°C	
	Power Consumption(50Hz)	Steady	Cooldown	
		6.5kW	7.2kW	
	Pressure Range(Operating)	Supply	Return	
		16.6~23bar	2.8~6.9bar	
	Ambient Temperature	Operating	Storage	
		4~40°C	-20~65°C	
	Standard Flexline	20A×20m		
Warranty Time	36 months			
Weight	118kg			



AMBIENT REQUIREMENT

Item	Operating	Storage
Ambient Temperature	4-40 °C	-20-65 °C
Relative Humidity	30%-70%	10%-90%(Requiring No-condensing)
Ambient atmospheric pressure	70kPa~110kPa	20kPa~110kPa

OUTLINE DRAWING



KDC4000F

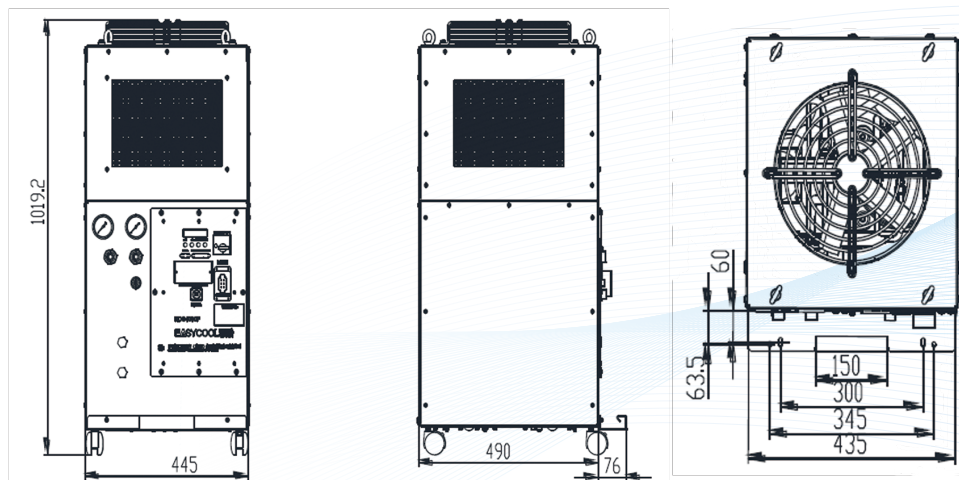
SPECIFICATION	Compressor Type	KDC4000F	
	Electrical Power	380V@50Hz 3P	
	Helium Purity Requirement	>99.999%	
	Gas Pressure	Exhaust	Return
		2.0MPa	0.7MPa
	Power Consumption(50Hz)	5.0kW	
	Cooling Type	Air cooling	
	Air Flow Rate	1300Nm ³ /h	
	Ambient Temperature	Operating	Storage
		4°C~38°C	-20°C~65°C
	Relative Humidity	Operating	Storage
		30%~70%	10%~90%
	Weight	130kg	
Dimension(L*W*H)	445*490*1019(mm)		
Normal Warranty Time	24months		



AMBIENT REQUIREMENT

Item	Operating	Storage
Ambient Temperature	4-40 °C	-20-65 °C
Relative Humidity	30%-70%	10%-90%(Requiring No-condensing)
Ambient atmospheric pressure	70kPa~110kPa	20kPa~110kPa

OUTLINE DRAWING



Compressor

KDC2000F

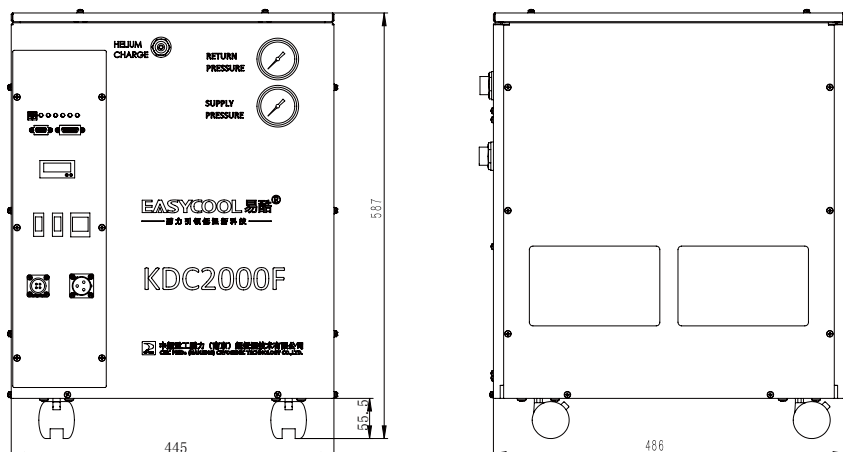
SPECIFICATION	Compressor Type	KDC2000F		
	Electrical Power	220V@50Hz 1P		
	Helium Purity Requirement	>99.999%		
	Cooling Type	Air		
	Air Flow Rate	1800Nm ³ /h		
	Power Consumption(50Hz)	Steady	Cooldown	
		3.2kW	3.5kW	
	Pressure Range(Operating)	Supply	Return	
		16~23bar	2.5~8bar	
	Ambient Temperature	Operating	Storage	
		4°C~30°C	-20°C~65°C	
	Standard Flexline	15A×10m		
Warranty Time	24months			
Weight	86kg			



AMBIENT REQUIREMENT

Item	Operating	Storage
Ambient Temperature	4-40 °C	-20-65 °C
Relative Humidity	30%-70%	10%-90%(Requiring No-condensing)
Ambient atmospheric pressure	70kPa~110kPa	20kPa~110kPa

OUTLINE DRAWING



KDC2000VH

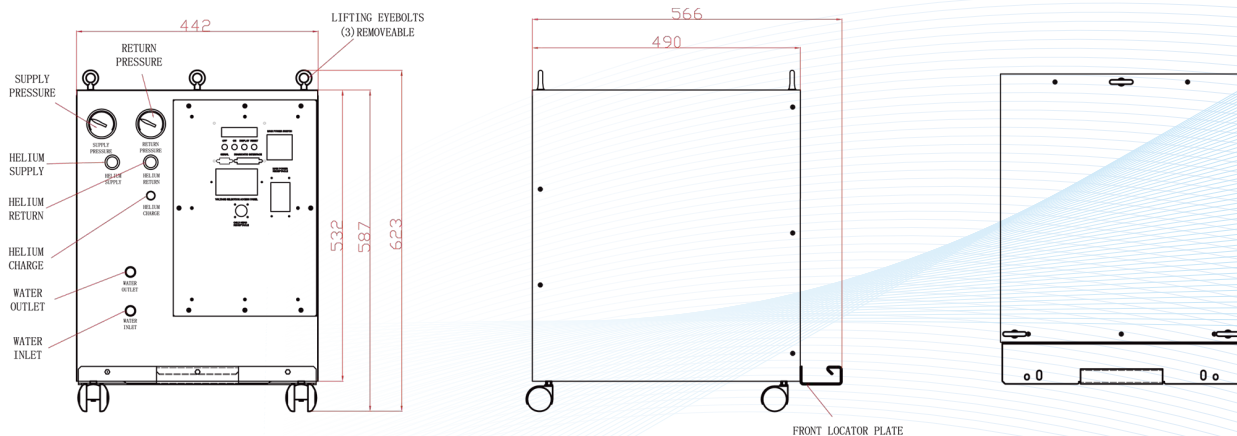
SPECIFICATION	Compressor Type	KDC2000VH		
	Electrical Power	380V@50Hz 3P		
	Helium Purity Requirement	>99.999%		
	Cooling Type	Water		
	Water Flow Rate	4-6L/min		
	Power Consumption(50Hz)	Steady	Cooldown	
		3.2kW	3.5kW	
	Pressure Range(Operating)	Supply	Return	
		16~23bar	2.5~8bar	
	Ambient Temperature	Operating	Storage	
		4°C~30°C	-20°C~65°C	
	Standard Flexline	15A×10m		
Warranty Time	24months			
Weight	105kg			



AMBIENT REQUIREMENT

Item	Operating	Storage
Ambient Temperature	4-40 °C	-20-65 °C
Relative Humidity	30%-70%	10%-90%(Requiring No-condensing)
Ambient atmospheric pressure	70kPa~110kPa	20kPa~110kPa

OUTLINE DRAWING



Cryopump Series

PDT102 Dual channel temperature display

Supply Voltage	15VDC
communication	RS-485 Terminal connectors
Thermometer model type	Diode thermometer (DT-640)
Number of thermometers	2
Size	88×132×38
Cooperate with SC version cryopump for temperature acquisition and communication	



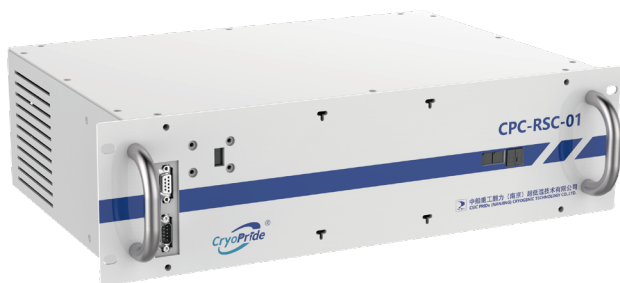
CPC-RC-01 Relay controller

Supply Voltage	24VDC	
communication	Relay controller to cryopump	RS-485 DB9 female
	Relay controller to Host	RS-232 DB9 female
	manual controller	DB9 male
Maximum number of connections for cryopumps	12	
Maximum number of compressor connections	2	
Size	140x202x138	
Cooperate with IC version cryopump to control		



The separated type cryopump's controller

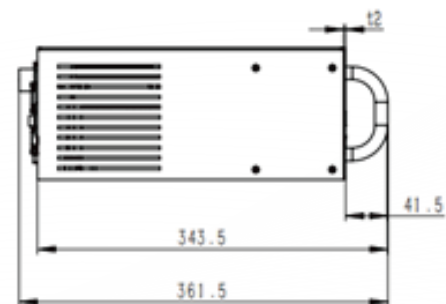
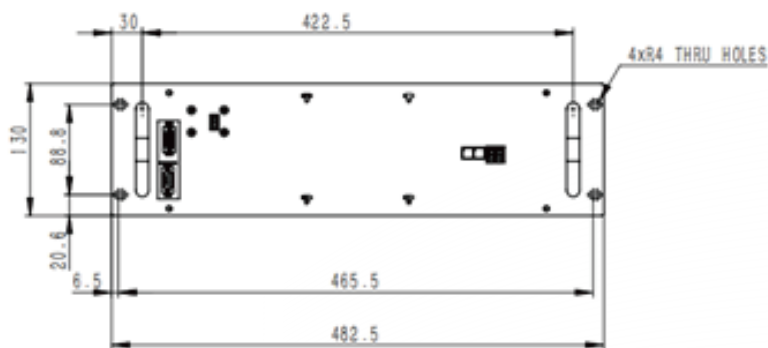
Model type	CPC-RSC-01	CPC-SC-01
Power supply	220V 1P	
Function	Relay controller / Single pump control	Single pump control or two pumps control
Communication	RS-23(to Host) DB9 female	RS-485(to CPC-RSC-01) DB9 male
Controllable number of cryopumps	1	1 or 2
Maximum number of CPC-SC-01 communications	12	/



CPC-RSC-01



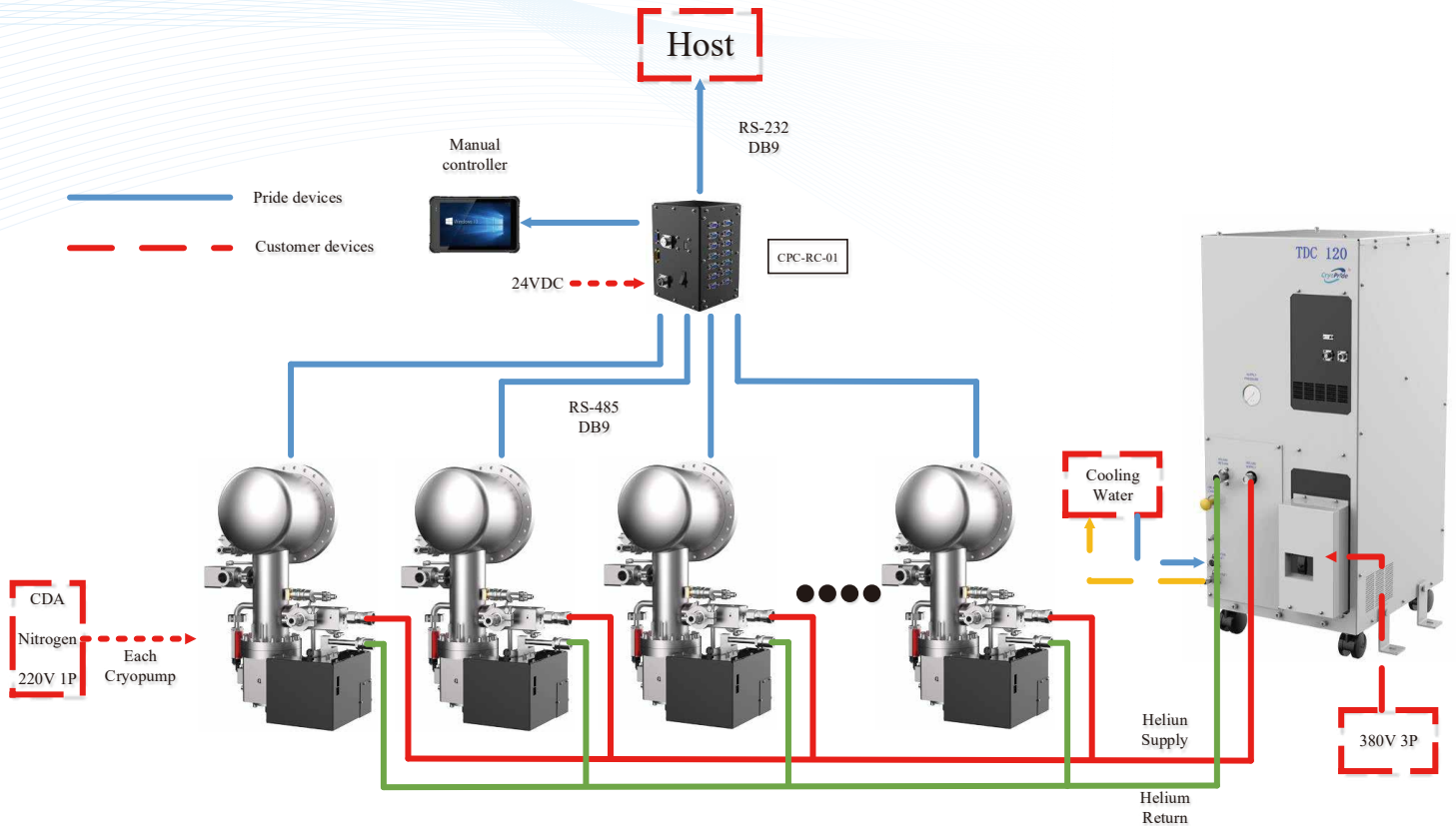
CPC-SC-01 *



* One single pump control module or two single pump control modules can be configured according to actual needs.

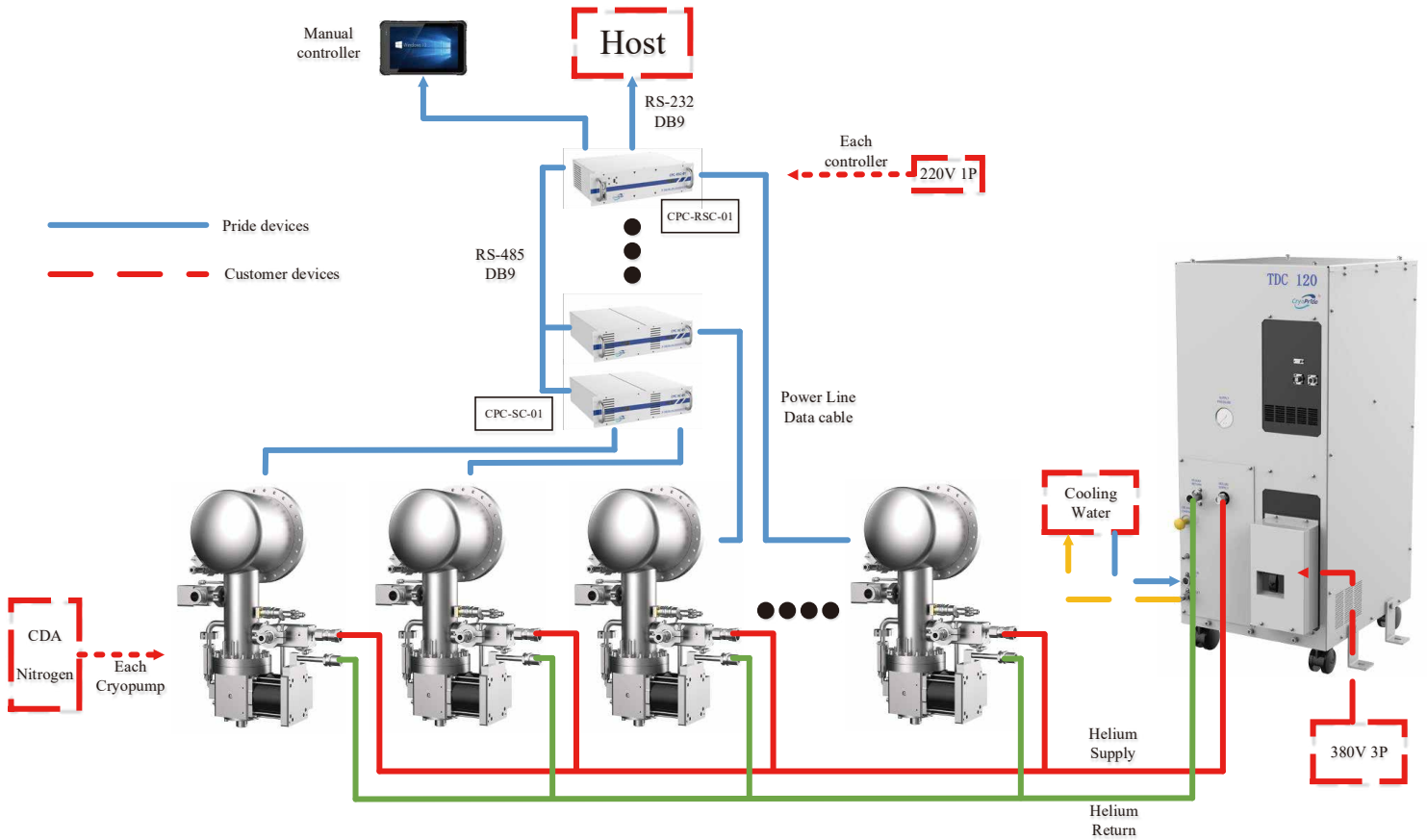
Cryopump Series

Integrated control system



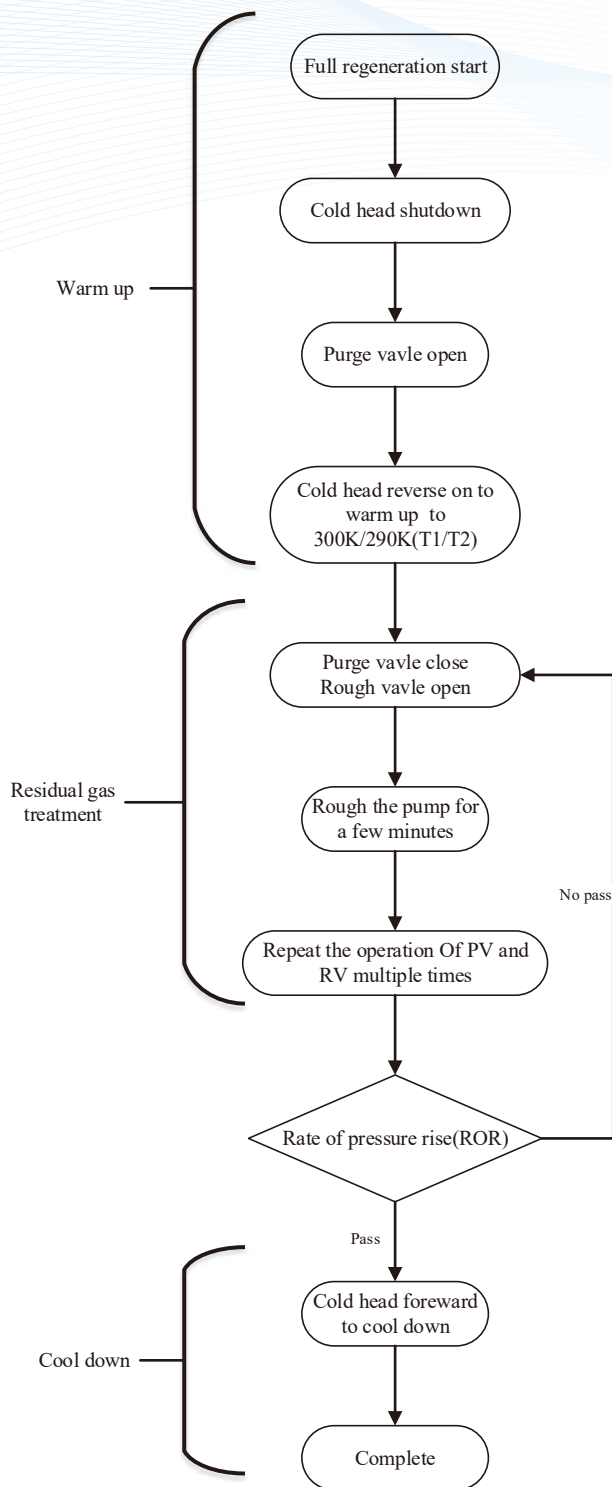
Integrated control system, where the pump controller is integrated with the pump head and communicates with the relay controller through RS-485. The relay controller and Host controller system provide data feedback and receive control commands. One relay controller can connect up to 12 cryopumps and 2 compressors. This system has a small footprint and is suitable for compact systems.

Separated control system



The separated control system adopts a 3U chassis shell to meet the cabinet layout requirements, and can be placed 15 meters away from the pump body for remote wiring control. CPC-RSC-01 central controller can realize the control of a single pump and host communication. CPC-SC-01 branch controller can control two cryopumps and communicate with the central controller. The number of cryopump systems is configured with one central controller and multiple branch controllers.

Brief introduction to the regeneration process



When the following conditions occur to the cryopump, it means that the gas stored in the cryopump has reached the limit value, and the cryopump has lost its pumping capacity. The temperature of the cryopump needs to be raised, and the gas stored in it will be discharged and the cryopump is cooled again to restore the pumping capacity.

- 1、 The pumping speed of the cryopump is reduced to 50% of the initial pumping speed
- 2、 The temperature of cryocooler's second stage coldhead exceeds 20K
- 3、 The vacuum degree cannot be reduced to within 5E-7torr within 30 seconds after closing the intake valve (8-inch pump)

Appreciation to Partners



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Add: No.32 Changqing Street, Jiangning Development District, Nanjing, P.R.C

Web: www.724pridecryogenics.com

E-mail: cryosales@724pride.com

Tel: 025-87173705