



北京松源华兴科技发展有限公司

Beijing Songyuan Huaxing Technology Development Co., Ltd.

GZLY-1 型 真空冷冻干燥机

Model GZLY-1

vacuum freeze dryer





主要技术参数 Main technical parameter

	项目 Item	GZLY-1
干燥室 Drying chamber	干燥面积 Freeze-drying area	1.152m ²
	隔板层数 Layers of shelf	4+1
	隔板温度范围 Temperature scope of shelf	-50℃-+70℃
	隔板温差 shelf temperature error	±1℃ (平衡时) in balance
	隔板间距 shelf spacing	60-100mm
	隔板尺寸 Size of shelf	480mm*600mm*20m m
捕水冷阱 condenser	冷阱最低温度 Min. Temperature of condenser	≤-70℃
	捕水能力 Water-capture capability	20Kg
	盘装液体 liquid material	10L
	除霜 defrosting	浸泡 soaking
基本参数 Basic parameters	极限真空度 final Vacuum degree	≤5Pa (空载 no-load)
	压塞方式 Tamponade way	自动压塞 (液压) Automatic pressure plug (hydraulic)
	冷却方式 Style of cooling	水冷 water cooling



技术配置一览表 Technical parameters table

结构标准 Structure and Standard	技术参数 Technical parameter	备注 Note
基础设施 Basic configuration		
搁板有效面积 Shelf Area	1.152 m ²	
最大捕水量 Max. Water-capture capability	20Kg/批, 20kg/batch	
电源 Power supply	3 相, 3 phases, 380V/50Hz	
装机功率 installation Power	15Kw (实际运行功率远小于 15KW) (The actual working power is much less than 15KW)	380V/50Hz
整机尺寸 (长*宽*高) Dimension (length*width*height)	约 2500*1100*2000 About 2500*1100*2000	外形供参考 For reference
冷却水 Cooling water	约 8m ³ /h (≤25℃) About 8m ³ /h (≤25℃)	
整机结构 Machine structure	一体式 (制冷机组与箱体组合安装) Integrated style (refrigeration units and chamber combining installation)	
重量 Weight	约 1500Kg, About 1500Kg	
仓体 (干燥室) Chamber		
仓体材料 Chamber material	进口 AISI 304 不锈钢 Imported AISI 304 stainless steel	
门锁方式 Door lock style	手动旋转门锁 Handle lock	
开启角度 Opening angle	> 110 度, > 110°	
开门方向 Opening direction	依据客户实际需要设计 This item may be designed according to user's needs.	
仓门材料 Door material	不锈钢门 stainless steel door	
仓体及门的粗糙度 Roughness of chamber and door	Ra≤0.4um	
制品温度探头 Temperature sensor	Pt-100 热电阻 (每层隔板设置 1 个, 并有温 度显示。) Pt-100 thermal resistance (one unit per shelf, with temperature display)	



保温材质 Heat insulation material	聚氨酯整体发泡（符合环保要求） Polyurethane integral foam Environment friendly	
箱体形状 Shape of chamber	长方形（大圆弧设计，符合 GMP 标准） Rectangle(GMP standard)	
密封 Sealing	箱门口使用特殊截面硅橡胶紧密贴合，确保真空密封。 Special section silicon rubber used to seal tight at door , to insure vacuum	
板层 Shelves		
板层材质 Shelf material	AISI 304 不锈钢（我公司独特专利技术的内焊法，专利号：ZL 2010 20237059.X） AISI 304 stainless steel	
表面粗糙度 Roughness of shelf	Ra≤0.4um	
板层数目（块） Amount of shelves	4+1（最上面一层为温度补偿板） Top shelf as temperature compensating plate	
不锈钢托盘 Stainless steel tray	475mm*595mm*25mm 高 AISI 304 不锈钢 AISI 304 stainless steel	
物料盘数量 Item number plates	4	
板层间距 Shelf spacing	60-100mm	
板层尺寸（长*宽*高） Shelf dimension (length*width*height)	宽 480 mm × 深 600 mm ×高 20 mm width 480mm×depth 600mm×hight 20mm	
板层冷媒降温速率 Temperature decreasing rate	+20℃~-40℃≤60 分钟(空载) +20℃~-40℃≤60 分钟(empty)	
板层冷媒升温速率 Temperature elevating rate	-40℃~+20℃≤60 分钟(空载) -40℃~+20℃≤60 分钟(empty)	
板层最低温度 The lowest temperature	-50℃	
板层最高温度 The highest temperature	+70℃	
加热功率 Heating power	3Kw/380V/50Hz	



<p>防护栏 Guarding rail</p>	<p>板层与流体分流器直接（焊接）固定，确保板层在长期运动中不漏油且容易清洗，板层的左、右、后三面均设防护条，以防止盘子/瓶子超出板面。 Shelf and fluid splitter directly fixed by welding, to make sure that shelves do not leak oil and easy to clean during long operation. Guard bard are set at left, right, back side of shelf to prevent tray out.</p>	
<p>技术优势 Technical advantages</p> <p>1、不锈钢板材均采用进口板材，保证箱体表面光洁度，从而保证无菌要求； Stainless steel plates are all importation, to ensure the finish of chamber surfaces, and then ensure the asepsis requirement.</p> <p>2、板层具有很高强度，耐压试验可到 0.3Mpa，能够耐受长期使用； Shelves has high intensity and it can reaches to 0.3Mpa in the pressure test which can be able to bear the long term usage.</p> <p>3、板层通过机械加工，可保证高要求平整度； Shelves are processed by machining ,which can ensure flatness demanding level.</p> <p>4、板层控温精度 $\pm 0.5^{\circ}\text{C}$（PID 调节、平衡后）； Temperature control accuracy $\pm 0.5^{\circ}\text{C}$ (adjusted by PID, in balance)</p> <p>5、特殊 O 型门密封条，可防止积水，更加符合无菌要求； Special O-shaped sealing strips for doors can prevent ponding ,which better meets the asepsis requirement.</p> <p>6、箱体、板层均采用氦质谱仪进行泄漏检验； Chamber, shelves are all carried out the leak test by helium mass spectrometer.</p>		
<p>捕水仓 condenser</p>		
<p>捕水仓材料 material</p>	<p>AISI 304 不锈钢 AISI 304 stainless steel</p>	
<p>捕水仓形状以及尺寸 shape</p>	<p>矩形（大圆弧设计） Rectangular, Design of large arc</p>	
<p>盘管材料 Coiling Pipe material</p>	<p>AISI 304 不锈钢 AISI 304 stainless steel</p>	
<p>内表面粗糙度 Roughness of surface</p>	<p>$Ra \leq 0.5 \mu\text{m}$</p>	
<p>盘管形式 Pipe style</p>	<p>蛇形盘管 Serpentine shape pipe</p>	
<p>盘管捕水面积 Water-capture area</p>	<p>$\geq 1 \text{ m}^2$</p>	
<p>观察窗 Observation window</p>	<p>1 个，安装于侧面 1 unit, at side</p>	
<p>冷凝器降温参数 Temperature decreasing parameters</p>	<p>$+20^{\circ}\text{C} \sim -40^{\circ}\text{C} \leq 30\text{min}$(空载) $+20^{\circ}\text{C} \sim -40^{\circ}\text{C} \leq 30\text{min}$(empty)</p>	
<p>温度探头 Temperature sensor</p>	<p>PT-100 铂电阻 PT-100 platinum resistance</p>	



保温材料 thermal insulation material	聚氨酯整体发泡（符合环保要求） Polyurethane integral foam Environment friendly	保温效果好 Good heat keeping effect
防冻玻璃 Antifreeze glass	上海光芒玻璃总汇 shanghai	
冷凝器最低温度 The lowest temperature	-70℃(空载) -70℃(empty)	
化霜方式 Defrost style	水淹没 Water submerge	
最大捕水量 Water-capture capability	20Kg/批 ,20kg/batch	
<p>技术优势 Technical advantages</p> <p>1、不锈钢板材均采用进口板材，保证箱体表面光洁度，从而保证无菌要求； Stainless steel plates are all importation, to ensure the finish of chamber surfaces, and then ensure the asepsis requirement.</p> <p>2、冷凝器、盘管采用氦质谱仪进行泄漏检验； Condenser and coiled pipe are all carried out the leak test by helium mass spectrometer.</p>		
制冷机组 Refrigeration system		
压缩机型号及数量 Compressor model	（德国BITZER比泽尔，北京组装） 1台 1 unit (German BITZER, Assembly in Beijing) ,	
压缩机额定功率 Power rating	4.5 KW （实际运行功率） Actual running power	380V /50HZ 运行电流：24A Running current, 24 A
制冷剂 Refrigerant	R507 国际公认的低温、高能、高效、绿色环保的制冷工质 R507 Internationally recognized low-temperature, high-energy, high efficiency, environment friendly refrigerant	
冷热交换器 Cold -heat exchanger	瑞典ALFA-LAVAL （独资企业，江阴） Sweden ALFA-LAVAL	瑞典技术，换热效率高 Swedish technology
板层制冷 Shelf cooling	1台（间接制冷），1 unit (Indirect cooling)	



冷阱制冷 condenser cooling	1 台 (直接制冷) 1 unit (Direct cooling)	
油分离器 Oil separator	ZOER	知名品牌 Well-known brand
油压差控制器 Oil differential controller	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand
油平面视镜 Oil level mirror	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand
顶盖阀 top cover valve	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand
防止吸入压力过高的自动保护装置 Automatic protection device to prevent over high suction pressure	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand
制冷剂高压恒压控制装置 Refrigerant control devices of Constant pressure	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand
停机后的制冷剂自动收液装置 Refrigerant Automatic collecting device after machine halt	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand
气液分离器 Gas-liquid separator	AIRMENDER(台湾 taiwan)	知名品牌 Well-known brand
除酸过滤干燥器 Disacidify Filter dryer	壳体及除酸过滤器芯ALCO (美国) Filter chip ALCO (American)	知名品牌 Well-known brand
制冷剂膨胀阀 Expansion valve	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand



压力表 Pressure meter	REFCO (瑞士 swiss) 油浸式压力表 Oil filled type	知名品牌 Well-known brand
安全阀 Safety valve	Caster (意大利 Italy)	知名品牌 Well-known brand
电磁阀 Magnetic valve	DANFOSS (丹麦 Denmark)	知名品牌 Well-known brand
低压避震管 Low-pressure vibration absorber	ZHF0 (韩国 South Korea)	知名品牌 Well-known brand
高压避震管 High-pressure vibration absorber	天津中信 Tianjin	
水冷冷凝器 Condenser	金典 (南京) JinDian (Nanjing)	国内知名品牌 Well-known brand
<p>技术优势 Technical advantages</p> <p>1、压缩机采用“比泽尔”机组，性能更加稳定、可靠； Adopting the BITZER compressor makes the performance more stable and reliable.</p> <p>2、采用符合蒙特利尔公约的环保型制冷剂； Adopt the environmental protection type refrigerant which accords with the Montreal Convention</p> <p>3、制冷系统具有各项保护功能，连锁保护； The refrigeration system has kinds of protection functions and interlock protection.</p> <p>4、冻干后期低负荷条件下的压力自动调整功能； The automatic adjustment function of pressure under the condition of low load in the late of freeze drying period.</p> <p>5、制冷系统油压压力多重保护功能； The multiple protection functions of oil pressure in the refrigeration system.</p> <p>6、压缩机电机多重保护功能； The multiple protection function of compressor motor</p>		
真空系统 Vacuum System		
真空泵 Vacuum pump	德国莱宝真空泵 (天津组装) Leybold vacuum pump (assembly in Tianjin)	
真空泵额定功率 Power rating	1.1 KW	
真空探头 Vacuum gauge	成都正华 Chengdu Zhenghua	国内知名品牌 Well-known brand
极限真空度 Final Vacuum degree	≤ 5.0 Pa (空载 no-load)	



抽气速率 Exhaust rate	大气压→10 Pa ≤30 分钟(干燥条件下) Atmospheric pressure→10 Pa ≤30 minutes(in dry conditions)	
循环系统 Circulatory System		
管道材料 Pipeline material	AISI 304 不锈钢 AISI 304 stainless steel	
循环泵 Circulatory pump	丹麦 GRUNDFOS 原装进口湿转子屏蔽泵 UPS40-120 , Denmark GRUNDFOS imported UPS40-120	1 台 , 1 unit
循环泵额定功率 Circulatory pump Power	0.46 KW	
循环流体采用 Circulating fluid	低粘度硅油 (25℃, 10cSt) Low viscosity silicone oil (25℃, 10cSt)	
热交换器 Heat exchanger	瑞典 ALFA-LAVAL (独资企业, 江阴) Sweden ALFA-LAVAL(Owned enterprises)	1 台, 1 unit
加热速率 Heating rate	>1℃/min	
测温头 (进口/出口) Temperature sensor	PT-100 铂电阻 PT-100 resistance	进口芯片 Imported chips
加热方式 Heating style	电加热管 3kw Electric heating tube 3kw	
控制方式 Control style	PID	
板层最高工作温度 The highest temperature	≥+70℃ (空载, 硅油入口) ≥+70℃(empty, silicon oil entrance)	
控制系统 Control system		
控制形式 Control style	自动控制系统 Automatic control system	
系统组成 System components	双彩色触摸屏+PLC 为控制核心控制系统稳定可靠, 操作灵便; 可以存储 32 组冻干工艺数据, 每组最多可以设置 36 段; 具有显示冻干曲线及自动记录数据功能。可以实现 U 盘导出冻干数据。 double color touch screen, and PLC as control core ,system is stable and easy to operate; 32 groups of freeze drying date can be stored , every group can be set up 36 segments; with display freeze drying curves function and record data automatically; freeze drying data can be output by USB flash disk	
PLC	台湾永宏 FATEK Taiwan	知名品牌 Well-known brand
触摸屏 Touch screen	昆仑通态 MCGS	知名品牌 Well-known brand



马达及线路保护 Motor and circuit protection	有过载、过热、缺相保护等功能 Protection functions for overload, overheat less phase,etc.	
设计和装配标准 Standard of design and Assembly	符合国家有关标准。公共信号线、输入、输出信号线等导线颜色统一分组、区别明显；强电、弱电部分在导线颜色上有明显区分，有接线号。 Confirm to state standards.The color of Common signal line, input and output signal line is apparent. Strong current and light current wires have different color with connection number.	
电源开关 Power switch	正泰 CHNT	
中间继电器 intermediate Relay	正泰 CHNT	
交流接触器 AC contactor	正泰 CHNT	
样品温度探头 Temperature sensor	PT-100 铂电阻 PT-100 resistance	进口芯片 Imported chips
<p>技术优势 Technical advantages</p> <p>1、友善的人机界面具有各种部件、阀门工作状态及温度、真空度参数显示； There are working state of all kinds of parts and valves , and parameter display of temperature and vacuum degree on the friendly human machine interface.</p> <p>2、“配方管理”可设置 32 条冻干工艺曲线； It can set 32 technologies curves for freeze drying in the “recipe management”</p> <p>3、“冷冻干燥”自动过程有阶段显示功能，并可任意跳段； There is a display function by stages in the automatic process of freeze drying , and it can skip randomly.</p> <p>4、“冷冻干燥”过程中可对配方进行随时调整； The recipe can be adjusted momentarily in the freeze drying process.</p>		
Protect System 保护系统		
水压力报警 Water-pressure alarm	有，水流继电器 Available, water flow relay	
油压差保护 Oil differential Protection	有，油压差控制器，DANFOSS（丹麦） available,Oil differential controller,DANFOSS(Denmark)	
高压压力保护 High-pressure protection	DANFOSS（Denmark）	



电子热保护 Electrical heating protection	BITZER(比泽尔)冷冻机原装内置 BITZER Original built-in	
自动收液功能 Automatic liquid recycling function	有, DANFOSS (Denmark) available	
真空报警 Vacuum alarm	有 available	
超温报警 Over-temperature alarm	有 available	
Other 其他 (加工工艺、售后服务及培训等) (Processing, after sales Service and Training)		
培 训 Training	免费 Free	
安装调试 Installation and test	免费 Free	
保 修 Warranty	整机调试验收后一年。 one year after whole machine installed and tested	



技术培训 Technical training

1 北京松源华兴科技发展有限公司根据合同向每一位用户提供全面、系统的技术培训工作，主要内容：

Beijing Songyuan Huaxing Technology Develop Co.,Ltd. Provide complete and systematic training for customer according to contract:

2 北京松源华兴科技发展有限公司为用户提供及时、迅速、优质服务，免费负责冻干机设备的指导安装及调试，并同时操作人员的技术培训。

Beijing Songyuan Huaxing Technology Develop Co.,Ltd. Provide timely ,fast and good service for customers, free installation and test of freeze dryer , free training for operation staff

3 在设备保修期内，设备损坏时的一切备品、配件，北京松源华兴科技发展有限公司负责免费提供，并迅速派人员及时解决，并同时操作人员的技术培训。

Beijing Songyuan Huaxing Technology Develop Co.,Ltd. Provide all spare piece and accessory for free, when machine do not work during warranty period. Repair Staff will be sent to resolve problems and help train operation worker.

4 北京松源华兴科技发展有限公司及时向用户提供设备使用和维护方面的信息与技术资料。
Beijing Songyuan Huaxing Technology Develop Co.,Ltd. Provide information about usage and maintenance of machine and other technical date in time .

5 用户接受前期的理论及整机结构的基础认识，由冻干技术工程师讲授针对每位用户所冻产品所需涉及的冻干工艺过程（有详细的培训资料）。

User accept early theory and whole machine structure. Engineers tell freeze drying technical process according to material each user want to do freeze drying.

6 通过实际运行冻干机，冻出成功的产品。在冻干过程中，对用户进行整个冻干周期内的系统培训，包括冻干机自动系统与手动系统两套独立系统的操作培训。

Good products are made by running this machine. Systematic training are done during whole freeze and drying process, including automatic system and manual system training

7 对用户进行冻干机的安全操作、保养与应急维修等方面的培训，以便在冻干过程中出现问题时，确保冻干产品的安全。

Training of safety operation, maintenance and emergence maintenance to suer, to make sure products safe when there is problem during freeze drying process

8 在用户现场安装、调试期间，还可为用户的操作人员提供现场培训服务。

We provide site training service during installation and test period

在以上培训完成之后，北京松源华兴科技发展有限公司公司的技术人员还将定期与用户进行技术交流，包括国内外先进的冻干工艺、用户使用中产生的常见性问题以及对用户所冻干产品的一些优化建议等。

After finishing above training, technical staff in our company will make technical communication with user regularly. There are following items: advanced freeze drying process at home and abroad, normal problems in operation and suggestion to products for better freeze drying, etc.

优惠条件：上述的培训、资料、服务及技术交流都是免费的。

Favorable condition : above training service, data ,service and technical communication

售后服务承诺 Aftersales service

1. 质保期内不少于一次的巡回服务。

北京松源华兴科技发展有限公司（以下简称“本公司”）在质保期内对用户的设备进行一次以上技术指导性的维护保养咨询。

1. At least one time tour service in warranty

Beijing Songyuan Huaxing Technology Develop Co.,Ltd (“the company” for short in following parts) give more than one time consultation about technological instruction and maintenance during warranty.

2. 负责对相关人员的培训工作。

本公司负责免费对客户相关人员的理论和操作培训工作，培训内容见《技术培训计划》

2. Training to technical staff



The company takes charges of free training to technical staff about theory and operation, training content refers to 《 technical training plan 》

3. 设备发货承诺。

本公司在收到用户书面通知后五日内将用户所需规格数量的货物运抵用户现场。

3.Machine delivery promise

The company will deliver the requested machine to user's site within 5 days since receiving customer's written notice

4. 质保期。

本公司提供给用户的设备整机进行保修的服务,质量保证期为系统调试验收后壹年。质保期内我对设备的升级、维护、解决设备缺陷和运行中的各类问题都是免费的。

4.Warranty

The company provides user repair service for whole machine, warranty is one year after system adjustment and acceptance of machine.

5. 本公司承担技术培训费用。

本公司对用户的操作人员进行免费的现场技术培训。

5.Free technical training

The company make free site technical training to operation staff

6. 终身维修。

本公司对所制造的设备终身维修。质保期后的维修费用按材料及人工的成本价收取。

6.All life maintenance

The company takes charges of all life maintenance for machine. Maintenance charge calculated as material and labor cost beyond warranty.

售后服务所具备的条件:

Ready condition for aftersales service

1、人员齐备

本公司现有大、中专以上水平的服务人员十余人,可随时对客户进行优质、快捷的售后服务。

1. Qualified staff

There are more than ten staffs with high education in our company, good and fast service is available at any time.

2、技术先进

本公司的服务人员全部为在冻干技术及工艺方面资质较深的技术人员,大部分有5年以上从业和服务经验,能做到及时彻底的解决问题。

2. Advanced technology

Technical staff have rich experience in freeze drying technology and process, most of them have more than 5 years service experience. Problems can be totally resolved in time.

售后服务保证措施

Ensuring measure for aftersales service

1、对售出产品实行质量保证,在质保期内,如出现由产品质量引起的问题,本公司负责及时的维修与更换;对由于其它原因造成的问题,本公司积极协助用户解决问题,以保证产品及时恢复正常运行,把故障损失降低到最低程度。

1. The company guarantee product quality, in charge of timely maintenance and change if problem caused by quality during warranty; If problem caused by other facts, company assist to resolve problems to ensure machine run as soon as possible, make loss to lowest level.



2、重要设备的安装、调试，现场技术服务由总工程师为首的技术专家带队上门服务，以解决设备在用户方可能出现的各种问题。

2. Main machine 's installation, test, site technical service are given by engineers , to resolve every possible problems

3、建立产品质量档案，定期实行质量跟踪，发现问题及时解决。

3. Establishing product quality documents, quality tracking regularly, finding problems and resolve in time.

4、积极配合用户搞好产品的现场运行和维护管理工作，可随时向用户以成本价提供产品的备品备件及易耗品。

4. Supporting user for site running and maintenance work, providing spare parts and consumable parts at cost value.

5、坚持质量第一、用户至上的原则，随时满足用户的需求。

5. Principle of quality first, customers first , to meet user's requirement at anytime.

6、技术支持服务。本公司提供的技术支持服务包括电话支持、现场技术支持服务等多种形式。用户在维护过程中出现暂时不能解决的问题时，可通过电话或以传真的方式向本公司服务部进行咨询，寻求技术支持，本公司的服务人员接到技术支持的要求后，将首先通过电话对服务要求进行响应。如仍无法解决问题，将立即提供现场技术服务。

6. Technology support service

Support service from our company include telephone support, site technology support and other kinds. If user have problems during maintenance which can not resolved by themselves, they can call or fax to get inquiry and help. When our service staff receive call and inquiry, we will feedback timely by phone. If problems can not be resolved, site technical service will be provided.

(1)电话支持服务：

本公司提供的电话支持服务包括电话咨询和电话技术指导两项服务。

电话咨询服务：对于用户非故障类问题，本公司技术人员提供全天 8 小时的咨询接收服务和全天 8 小时的咨询受理服务。

电话技术指导服务：对于用户故障类问题，本公司技术人员提供全天候 24 小时电话技术指导服务，通过电话指导用户排除设备故障。

(1)telephone support service

Including telephone consultation and technical instruction

Telephone consultation service: as for non breakdown problems , technical staff provide consultation acceptance in daytime for 8 hours .

Telephone technical instruction service: as for breakdown problems, technical staff provide technical instruction service in 24 hours.

(2)硬件支持服务

硬件支持服务包括硬件维修、硬件更换、硬件销售三项服务。

① 硬件维修：保修期内免费保修，保修期后只收取成本费；

② 硬件更换服务：质保期内，实行易损件、故障件的免费更换；

③ 硬件销售服务：提供备件销售服务。

(2) hardware support service

Hardware support include hardware maintenance, hardware change, hardware sell

① hardware maintenance: free during warranty, cost value only charged beyond warranty;

② hardware change: free change for easily damage parts, defective parts during warranty

③ hardware sell: providing hardware selling service for spare

(3)投诉受理服务



本公司设立技术服务热线，随时接待客户的技术咨询

技术支持电话（白天）：010—83390610

(3) complaint acceptance service

The company set technical service hot line to receive any technical inquiry at any time

Hot line (daytime) : 010—83390610

(4)培训与服务

① 现场培训服务：本公司在现场进行安装、调试、巡检服务时，对用户技术人员进行设备安装、运行及维护方面的培训；

② 集中培训服务：在用户所在地提供短期集中技术培训。

(4) training and service

① Site training service: when our technical staff are at site to do installation and test work, they will making training to user's staff about equipment installation, running and maintenance.

② Centralized training: short time centralized training at user's site

(5)资料服务

本公司提供的资料服务包括网上资料、资料索取和用户设备档案等服务。发放资料的内容包括技术手册、GMP 认证资料、技术手册光盘、设备档案等。

(5) technical material and file service

The company provide technical data service include data on internet, information and data request and user's equipment documents, etc.

Content include technical manual, GMP Approved information , technical manual CD, and equipment files.

北京松源华兴科技发展有限公司

地 址：北京市海淀区永定路 88 号长银大厦 C706

邮 编：100039

电 话：010-58895377 58895378

传 真：010-58895379

网 址：www.bjsyhx.com.cn

E-mail : wlh_908@163.com

Beijing Songyuan Huaxing Technology Develop Co.,Ltd.

Address : Room C706, Changyin Building, Yongding Road, Haidian District, Beijing

Post code: 100039

Telephone : 010-58895377, 58895378

Fax : 010-58895379

Web : www.bjsyhx.com.cn

Email: wlh_908@163.com