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FREEZE DRYING FROM LAB TO FAB

SINCE 2000
CUMULATIVE SALES OF OVER 20,000 UNITS

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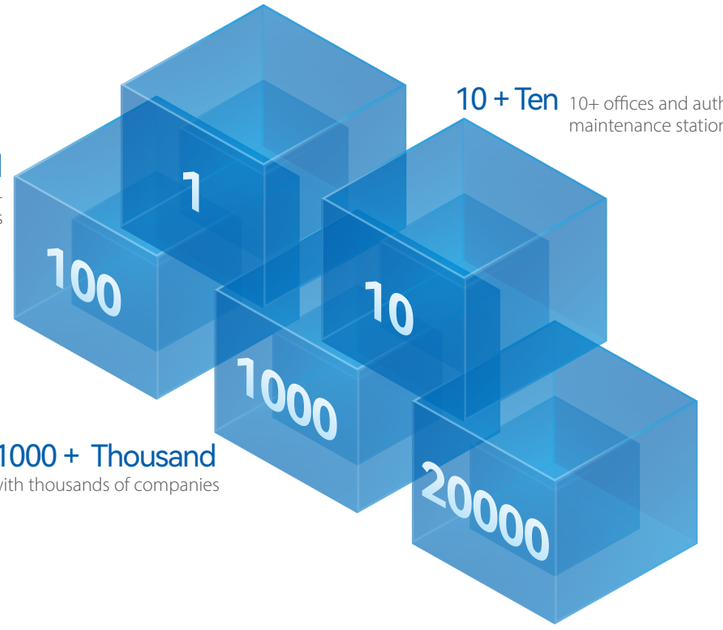
1 Individual Dedicated service for every customer

10 + Ten 10+ offices and authorized maintenance stations

100 + Hundred
Production team with 100+ employees



1000 + Thousand
Accumulated cooperation with thousands of companies

20000 + Myriad
Tens of thousands of freeze dryers serving various industries

ABOUT US

Beijing Songyuan Huaxing Technology Development Co., Ltd. was founded in 2000 and specializes in the R&D, production and sales of vacuum freeze-drying products. With the freeze dryer as the core product, forming different scales and different applications of three series of products as well as targeted solution for scientific research experiment, medical, and food industry. We are well-known on providing the vacuum freeze-drying equipment and targeted solution in China.

Songyuan Huaxing believes that mastering core technologies and building a production-oriented enterprise is the only way for enterprises to become bigger and stronger. Songyuan Huaxing, composed of parent company and three wholly-owned subsidiaries, is a production enterprise integrating R&D, design and production, and its main business is a full range of vacuum freeze dryer products.

BRANCH

Songyuan Huaxing (Zhuozhou) Drying Equipment Co., Ltd.

Specializes in the production of pilot and large-scale freeze-drying equipment. The workshop covers an area of over 10,000 square meters, dedicated to manufacturing excellent equipment and continuous innovation.

Furui Zhinuo (Zhuozhou) Pharmaceutical Equipment Co., Ltd.

Focuses on the research and production of pre-freeze and freeze-drying equipment. The workshop spans over 5,000 square meters, supported by a strong freeze-drying machine R&D team.

Beijing Songyuan Huaxing Biotechnology Co., Ltd.

Focuses on after-sales service, maintenance, and freeze-drying process development, aiming to enhance freeze-drying technology to improve efficiency, quality, and reliability, while meeting diverse application needs.

SALUTE GLORIOUS HISTORY

- 2000 — Founded in 2000
- 2001 — Products enter research institutes and universities
- 2004 — First introduced the pre-freeze function in freeze dryers
- 2006 — Hood-type freeze dryer with shelf heating function developed
- 2007 — Food series freeze dryers launched in the market
- 2008 — Products enter research institutes and universities
- 2009 — Research and production of drying machines for new materials
- 2010 — Pharmaceutical production freeze dryers deployed at user sites
- 2017 — First integrated production line delivered to a pharmaceutical factory
- 2022 — Successfully developed a freeze dryer with shelf temperature reaching -100℃

Lab Assistant

LABORATORY FREEZE DRYER

Freeze dryer is widely used in medicine, pharmacy, biology research, chemical industry and food production ,etc. After freeze drying process, a long term preservation for material is much easier. They can be restored to original state and maintain their chemical and biological characteristics after being watered.

Small samples can be pre-frozen directly inside the cold trap, suitable for laboratory use, meeting most routine freeze-drying needs. Suitable for freeze-drying liquids, pastes, and solids, among other substances.

Typically used for laboratory and small-scale production.
Has a smaller processing capacity.
Usually compact and suitable for small laboratories.
Used for quickly processing small batches of samples or products.
Provides high temperature and pressure control, suitable for research and development work.

Technical Superiority

Cold trap temperature : -60℃/-85℃/-110℃.

The volatile organic solvent is captured by deep low temperature cold trap to prevent the corrosion of organic solvent to the freeze dryer. It is effective for freeze-drying products containing a large number of high-concentration organic solvents, and can handle organic solvent solutions with concentrations below 95%.

The Songyuan Huaxing refrigeration technology team has successfully overcome technical barriers in domestic freeze-dryer cold trap temperatures through repeated experiments and adjustments. They have pioneered lowering the cold trap temperature of laboratory freeze dryers to -110℃, enabling continuous operation for 7 days to meet the freeze-drying requirements of various materials.

BASIC TYPE | FLASK TYPE | ELECTRIC-HEATING | HOUSEHOLD | PILOT R&D | PILOT WATER-COOLED | PRODUCTION

Key Features

Complies with GLP requirements

Rapid cold trap defrost

Adjustable vacuum pump startup temperature

Well-sealed drying chamber

Pre-freezing of small sample quantities in the cold trap

Uniform ice trapping in the cold trap

Comprehensive protection features

Top-brand compressor and vacuum pump

Early warning of operation state: prompt information such as over-high ambient temperature, oil change of vacuum pump, instrument running time, sensor failure, compressor and vacuum pump running time, etc.

7-inch LCD touchscreen

Record and display the freeze-drying curve in real time. Data can be exported by USB flash drive.

SH-HPSC-I modular controller+LYO-EMB control system, with low power consumption, fast response and high storage efficiency;

Selection Manual

Flexible Configuration of Drying Equipment

A

Standard

Suitable for bulk materials.

B

Stoppering

Suitable for vials.

C

Multi manifold standard

Suitable for bulk and flasks. It can be combined with a concentrator to achieve the dual purposes of freeze-drying and concentration.

D

Multi manifold stoppering

Suitable for vials and flasks. It can be combined with a concentrator to achieve the dual purposes of freeze-drying and concentration.

E

Ampoule T-Rack

Suitable for ampoule loading materials.

T

Flask T-Rack

Suitable for oval and wide-mouth bottles. Available in 8-hole, 10-hole, and 12-hole racks.

SY-10/12/18

SAMPLE PREPARATION LABORATORY-SCALE FREEZE DRYER

SY-10/12/18 Freeze Dryer has compact structure and simple operation. The whole system comes standard with Cold trap electric defrost. Suitable for laboratory sample preparation, a small number of samples can be pre-frozen directly in the cold trap, which can meet the requirements of routine freeze-drying in most laboratories.

Optional Features

Oil Mist Filtration System

International Brand Vacuum Pump

Vacuum Pump Anti-Backflow Device

Remote Monitoring

		SY-10		SY-12		SY-18	
Specification	Unit	Standard	Stoppering	Standard	Stoppering	Standard	Stoppering
Freeze-drying area	m^2	0.12	0.08	0.12	0.08	0.18 / 0.27	0.09
Cold trap temperature	℃	≤-60 (no-load), optional ≤-85℃, ≤-110℃ (no-load)					
Vacuum degree	Pa	≤1 (no-load)					
Ice Capacity	kg/ 24h	3-4		3-4		6	
Material tray	mm	Φ200	Φ180	Φ200	Φ180	Φ240 / Φ240	Φ200
Layers of tray	piece	4	3	4	3	4 / 6	3
Tray spacing	mm	70		70		70	
Power(-60℃)	w	970		970		1400	
Weight(-60℃)	kg	41		62		105	
Dimension of overall(-60℃)	mm	615×450×370		580×500×720		630×580×970	
Dimension of overall(-85℃)	mm	850×680×405		770×550×720		810×580×950	
Diameter of drying chamber	mm	Φ260×430	Φ260×490	Φ260×430	Φ260×490	Φ300×445	Φ300×540
Diameter of cold trap	mm	Φ215×140		Φ215×240		Φ270×400	
Capacity (vials)	Piece	-	Φ12mm: 492 Φ16mm: 297 Φ22mm: 147	-	Φ12mm: 492 Φ16mm: 297 Φ22mm: 147	-	Φ12mm: 615 Φ16mm: 345 Φ22mm: 183
Defrosting	-	Electric defrosting					
Power	-	Single-phase 3-wire, 220V 50Hz					

SY-18T-24

FLASK TYPE FREEZE DRYER

The SY-18 Flask Type Freeze Dryer offers a cold trap temperature of ≤ -85℃ (optional ≤ -60℃, ≤ -110℃), suitable for various applications. It can be equipped with multiple specifications of hanging bottle T-Rack, with customization available for special requirements. This equipment is ideal for preserving bacteria, fungi, peptides, microbial strains, and other samples, offering advantages such as long preservation periods, minimal variation, and wide applicability.

Key Features

Specifically designed for biopharmaceuticals, peptides, and synthetic freeze-drying needs.

Stainless steel T-Rack use special welding techniques to ensure no leakage.

Internal pipeline structure of T-Rack can be customized with independent channels.

Three-way valve allows for the removal or installation of freeze-drying bottles without stopping the machine as needed.

Songyuan Huaxing freeze-dry-specific vacuum pump ensures rapid, stable, and safe operation.

7-inch industrial touchscreen records and displays freeze-drying curves and data in real time.

Complies with FDA and updated GMP requirements; freeze-drying data can be exported via USB.

Nitrogen gas filling valve for inert gas filling.

Cold trap electric defrosting with safe voltage significantly enhances defrosting efficiency.

Optional multi-functional low-temperature centrifuge for combined use.

Performance Parameters

Cold trap temperature: ≤ -85℃ (no-load), optional ≤ -110℃

Vacuum degree: ≤ 1Pa (no-load)

Flask hanging capacity:24 bottles/customizable

Eggplant shaped flask:100/250/500/1000ml

Wide mouth flask:600/1200ml

Defrosting: Electric defrost

T-Rack Material:SUS 304 stainless steel.
Upgradable SUS 316L.
The trap can be coated for corrosion resistance.

STAR C25

MULTIFUNCTIONAL EXPERIMENTAL FREEZE DRYER

The whole system comes standard with high-performance freeze-drying special vacuum pump,intelligent control system, SH-10KCQ electric defrosting, oil mist filter, and automatic air intake/drainage function.

The modular design and flexible combination of the whole machine provide rich matching functions according to the usage scenarios, and are committed to meeting the diverse needs of different customers.

Multifunctional Module

- Automatic Defrost
- Vacuum regulating system
- Language Switching
- Manual or Automatic Operation Mode
- POST
- Cold trap material AISI 316L stainless steel
- Automatic Pulse Pressure Relief

Application Scenarios

The hood-type freeze dryer plays a critical role in various industries and applications by transforming liquid samples into dry powder or solid, achieving long-term preservation, transport, and rehydration goals. This technology is significant for improving product stability and reducing storage and transportation costs.

Laboratory Research

Used in research laboratories for drying and preserving samples such as cells, bacteria, enzymes, and biological specimens, aiding in long-term preservation and maintaining sample activity.

Pharmaceuticals

Employed for preparing pharmaceutical products like drugs, vaccines, antibodies, enzymes, and biologics that require extended stable storage, thereby extending shelf life through freeze-drying.

Chemical Industry

Utilized in chemical synthesis and research for preparing chemicals, reagents, and catalysts, avoiding decomposition reactions under high temperature or pressure.

Biotechnology

Applied in biotechnology research and production for preparing proteins, DNA, RNA, and other biological molecules that need distribution and storage without the need for a cold chain.

BASIC TYPE | FLASK TYPE | ELECTRIC-HEATING | HOUSEHOLD | PILOT R&D | PILOT WATER-COOLED | PRODUCTION

SH-Lab-10

ADVANCED SAMPLE PREPARATION FREEZE DRYER

Key Features

- Automatic defrosting function, with options for electric or hot gas defrosting to enhance efficiency.
- Automatic air intake/drainage functions with safety interlock technology to prevent vacuum system failures.
- Songyuan Huaxing freeze-dry-specific vacuum pump ensures long-term stable operation.
- Oil mist filter significantly reduces pump oil consumption and indoor environmental pollution.
- Vacuum pump protection function with adjustable start based on cold trap temperature.
- Compressor protection function effectively prevents compressor overload.
- User interface available in Chinese and English, with automatic screen lock during long periods of inactivity.
- Flexible switching of vacuum units (Pa, mBar, etc.).
- System maintenance reminders and alarm functions for enhanced operational safety.
- Calibration capability for time, temperature, vacuum pressure, and other parameters to ensure accuracy.

		SH-Lab-10			
Specification	Unit	Standard	Stoppering	Manifold Standard	Manifold Stoppering
Freeze-drying area	m^2	0.12	0.08	＞0.12	＞0.08
Cold trap temperature	℃	⩽-60 (no-load), option ⩽-85, ⩽-110 (no-load)			
Vacuum degree	Pa	⩽1 (no-load)			
Ice Capacity	kg/ 24h	3-4		3-4	
Material tray	mm	Φ200	Φ180	Φ200	Φ180
Layers of tray	Piece	4	3	4	3
Tray spacing	mm	70		70	
Power(-60℃)	w	970		970	
Weight(-60℃)	kg	41		62	
Dimension of Overall(-60℃)	mm	610×430×360		610×430×360	
Diameter of drying chamber	mm	Φ260×430	Φ260×490	Φ260×430	Φ260×490
Diameter of cold trap	mm	Φ215×140		Φ215×240	
Capacity (vials)	Piece Piece Piece	-	Φ12mm：492 Φ16mm：297 Φ22mm：147	-	Φ12mm：492 Φ16mm：297 Φ22mm：147
Defrosting	-	Electric defrosting			
Power	-	Single-phase 3-wire, 220V 50Hz			

Increase Drying Efficiency

ELECTRIC-HEATING FREEZE DRYER

SY-10FD/30FD/50FD

This series of in-situ freeze dryers prevents material contamination and automates the drying sublimation process.
All units feature shelf heating and programmable functions, with flexible manual + automatic control modes to regulate heating rates.

		SY-10FD	SY-10FD	SY-30FD	SY-50FD
Specification	Unit	Standard	Stoppering	Standard	Standard
Freeze-drying area	m^2	0.2	0.1	0.4	0.6
Cold trap temperature	℃	⩽-60 (no-load), optional ⩽-80℃ (no-load)			
Vacuum degree	Pa	⩽5 (no-load)			
Shelf temperature range	℃	-50~+70 (no-load), optional -70~+70			
Ice Capacity	kg/ 24h	⩽6		⩽8	⩽10
Material tray	mm	395×265	395×265	335×295	335×295
Layers of tray	Piece	2	1	4	6
Shelf dimension	mm	400×270	400×270	340×300	340×300
Shelf spacing	mm	70		70	50
Power(-60℃)	w	2000		2700	4500
Weight	kg	210		280	450
Dimension of Overall	mm	725×600×1270		773×750×1472	795×895×1535
Capacity for materials (10mm thickness)	L	2	1	4	6
Sealing method	-	-	Manual	-	-
Capacity (vials)	Piece Piece Piece	-	Φ12mm：777 Φ16mm：434 Φ22mm：220	-	-
Defrosting		Natural defrosting (optional electric defrosting)			
Power		Single-phase 3-wire, 220V 50Hz		Single-phase 3-wire, 220V 50Hz	Three-phase 5-wire, 380V 50Hz

Embrace a Healthy Lifestyle

BENCHTOP FOOD FREEZE DRYER

SY-LG-01/03/06/09

Perfectly preserve all your favorite foods with minimal effort. Easily create a more delicious, healthier, and diverse home food supply than other food preservation methods.
With a small food freeze dryer, you can control the quality, taste, and natural goodness of your stored food. Plus, your food storage costs will be much lower.

Emergency Rescue Food
Freeze-dried food for emergency reserves: Nutrient-rich, easily digestible, and quickly restores energy and stamina, providing a balanced nutritional source.

Outdoor Food
Freeze-drying technology preserves nutrients and flavors, offering lightweight and flavorful meals for outdoor adventures.

Healthy Lifestyle
Freeze-dried vegetables and food retain the product's color, aroma, taste, shape, and the nutritional components of natural, green, and safe convenient nutrition.

Pet Food
Freeze-dried meat and poultry are an innovative choice for pet food. The freeze-dried ingredients are rich in high-quality protein and vitamins, promoting your pet's healthy weight and good digestive function.

Advantageous Features

- Adjustable single-feed volume, consuming about 0.8-2 kWh/hour. Simply press one button to complete the entire freeze-drying process
- Integrated Chamber and Trap Design
- This design shortens the sublimation pathway for rapid water vapor removal, reducing drying time
- System Safety Lock
- Prevents accidental modification of system status and process parameters, avoiding freeze-drying failures or equipment damage
- Post-Sales Technical Support
- Our experienced technical team provides support via phone and remote assistance, and on-site service is available when needed

Performance Parameters

- Freeze-drying area(m^2): 0.1/0.4/0.6/1.0/1.5/2/2.8/3/4.15
- Cold trap temperature: ⩽-60°C (No-load)
- Ultimate vacuum: ⩽5Pa (No-load)
- Shelf spacing options: 35mm / 37mm / 50mm / 40mm / 50mm
- Power: AC220V, 50Hz / 380V, 50Hz
- Control System: Manual + Automatic (The system has multiple built-in freeze-drying processes)

Optimize Freeze-Drying Process Exploration

PILOT FREEZE DRYER

SY-20F/30F/50F/100F

Freeze-drying process research and development

This series of pilot freeze-drying machines (R&D) can restore the functions of production freeze-drying machines and are suitable for parameter optimization of industrial freeze-drying. It can be used for process amplification and close to production parameters.

High-performance process parameters can be provided in both early research and development and later process amplification stages.

Biotech | Pharmaceuticals | Materials | Chemicals | Food

The heating and cooling rate reaches 1 ℃/ min, which is the same as that of industrial freeze-dryer;

The top layer of the partition is a heat radiation laminate to ensure that all samples on the partition are heated uniformly.

The materials in contact with the materials are made of high-quality stainless steel and the internal components are easy to clean;

Adopt the same PLC system as the industrial freeze-dryer to provide sufficient control for various processes and ensure the repeatability of the process;

It can design, load and store the process program to record the freeze-drying process in real time, draw the freeze-drying curve, generate reports, historical records, alarms and so on.

BASIC TYPE | FLASK TYPE | ELECTRIC-HEATING | HOUSEHOLD | PILOT R&D | PILOT WATER-COOLED | PRODUCTION

Key Features

- Square chamber in-situ vacuum freeze dryer, automated freeze-drying process.
- Sublimation curve control, allowing for stepwise and ramp temperature changes.
- The main unit consists of dual chambers: cold trap and drying chamber.
- Shelf temperature control accuracy ±1 ℃.
- The casing can be easily disassembled without tools for maintenance access.
- PLC controller, PID temperature control adjustment.
- Each level is equipped with independent sample temperature probes.
- Nitrogen filling device for inert gas during drying.
- Cold trap cooling rate: 20 ℃ to -40 ℃, ⩽20 minutes.
- Maintenance reminder and multiple safety protection functions.

Optional Parts:

Vacuum degree control, Eutectic point testing, Chamber isolation valve, PC or mobile app remote control, International brand vacuum pump, Anti-backflow oil electromagnetic valve, Oil mist filter, etc.

Optional Functions:

Online sampling, Online weighing, Online visualization.

The above models offer optional features including:

Vacuum level control, Eutectic point testing, Chamber isolation valve, Remote control via PC or mobile app, Imported vacuum pumps, Anti-oil backflow solenoid valve, Oil mist filter, and more.

Optional Features: Online Sampling, Online Weighing, Online Visualization

		SY-20F	SY-30F	SY-50F	SY-100F	SY-20FY	SY-30FY	SY-50FY	SY-100FY
Specification	Unit	Standard	Standard	Standard	Standard	Hydraulic Stoppering	Hydraulic Stoppering	Hydraulic Stoppering	Hydraulic Stoppering
Freeze-drying area	m^2	0.3	0.4	0.7	1.03	0.2	0.3	0.5	1.15
Cold trap temperature	℃	＜-80 (No-Load)							
Vacuum degree	Pa	⩽1 (No-Load)							
Shelf temperature range	℃	-55~+70 (No-Load)							
Ice capacity	kg/24h	⩾6	⩾8	⩾10	⩾15	⩾6	⩾8	⩾10	⩾15
Number of shelves	Layer	3+1	4+1	4+1	6+1	2+1	3+1	3+1	4+1
Shelf dimensions	mm	400×270	340×300	480×360	480×360	400×270	300×340	410×410	480×600
Shelf spacing	mm	70	50	50/optional70	70	100	70	100	100
Power	kW	3	4.5	5.5	6.5	4	5.5	6.5	7.5
Main unit weight	kg	300	400	600	700	300	400	800	1000
Dimensions	mm	1033×781×1580	825×928×1366	823×1008×1420	876×1190×1727	1033×781×1704	853×1272×1679	911×1405×1983	1823×1144×2014
Material capacity (10mm thickness)	L	3	4	7	10	2	3	5	11
Capacity for vials	Piece Piece Piece	-	-	-	-	Φ12mm：1554 Φ16mm：868 Φ22mm：440	Φ12mm：2187 Φ16mm：1200 Φ22mm：654	Φ12mm：3705 Φ16mm：2058 Φ22mm：1050	Φ12mm：8624 Φ16mm：4788 Φ22mm：2460
Defrosting mode	-	Independent cold trap electric defrosting	Integrated chamber natural defrosting	Natural defrosting optional electric defrosting	Independent cold trap electric defrosting	Independent cold trap electric defrosting	Independent cold trap electric defrosting	Independent cold trap electric defrosting	Independent cold trap electric defrosting
Safety Devices		Audible alarm, Emergency stop switch, Overpressure protection							
Power supply		Single-phase 3-wire, 220V 50Hz		Single-phase 3-wire, 220V 50Hz Three-phase 5-wire, 380V 50Hz	Three-phase 5-wire 380V 50Hz	Single-phase 3-wire, 220V 50Hz		Three-phase 5-wire, 380V 50Hz	

Comprehensive Quality Assurance System: Includes complete technical documentation such as instrument manuals and operating instructions.

Lifetime Free Consultation Service: Provides lifelong free consultation for technical issues during use.

GMP Workshop-Specific Equipment

GMP FREEZE DRYER

SY-20FQ/30FQ/50FQ/100FQ/200FQ

The SY-Pilot series GMP freeze-drying equipment meets the requirements of the production process. The equipment's internal surfaces, which come into direct contact with drugs, are smooth, even, and free from dead corners, ensuring effective quality control. The equipment itself does not pollute the production environment or contaminate materials. It prevents cross-contamination without affecting product quality, making it easy to clean and maintain.
Optional features include CIP and VHP functions.

Multiple Optional Configurations Available

- Program setting
- Authorization management
- Curve temperature control
- Automatic air intake
- Backfill filtration
- Remote control
- Endpoint determination
- Eutectic point testing
- External vial attachment
- Chamber trap isolation valve
- Vacuum fine-tuning
- Pressure rise experiment
- Data recording and storage
- Capacitance vacuum gauge

Product Diversification

Songyuan Huaxing has introduced differentiated products such as ultra-low temperature freeze-dryers with shelves temperatures of -55℃, -65℃, -75℃ and -100℃ respectively, which have been widely used in domestic scientific research institutes and biomedical enterprises, and become an important part of ensuring life science research.

Special sample process requirements

In the fields of medicine, life science and freeze-drying application of special materials, the key temperature values of some products are relatively low, even lower than the pre-freezing and sublimation temperature control values of conventional freeze-dryers, which puts forward higher requirements for freeze-drying technology. Through targeted structural design, functional upgrade and related process optimization, Song Yuan Huaxing helps users to make breakthroughs in the field of freeze-drying of special samples at the equipment level.In the fields of medicine, life science and freeze-drying application of special materials, the key temperature values of some products are relatively low, even lower than the pre-freezing and sublimation temperature control values of conventional freeze-dryers, which puts forward higher requirements for freeze-drying technology. Through targeted structural design, functional upgrade and related process optimization, Song Yuan Huaxing helps users to make breakthroughs in the field of freeze-drying of special samples at the equipment level.

BASIC TYPE | FLASK TYPE | ELECTRIC-HEATING | HOUSEHOLD | PILOT R&D | PILOT WATER-COOLED | PRODUCTION

GMP and other related requirements

All series of freeze-dryers in Songyuan Huaxing adopt self-developed and copyrighted dryer control system, which has friendly usability and usability. Safe and reliable FAD-LAB, FAD-EMB, FD-PILOT, LYO-CONTROL and LYO-MEGA remote control systems ensure that the freeze-drying process can be carried out smoothly, which meets the requirements of CFR Part 11 of FDA and new GMP.

Verification document

Design Verification (DQ), Installation Verification (IQ), Operation Verification (OQ), Performance Verification (PQ), Factory Acceptance Test (FAT), Site Acceptance Test (SAT), Operation Manual (OM), Maintenance Manual (MM), Installation Manual (IM), Process Flow Chart (P&ID), etc.

		SY-20FQ	SY-30FQ	SY-50FQ	SY-100FQ	SY-200FQ	SY-20FYQ	SY-30FYQ	SY-50FYQ	SY-100FYQ	SY-200FYQ
Specification	Unit	Standard	Standard	Standard	Standard	Standard	Stoppering	Stoppering	Stoppering	Stoppering	Stoppering
Freeze-drying area	m^2	0.3	0.4	0.7	1.03	2.25	0.2	0.3	0.5	1.15	2.2
Cold trap temperature	℃	⩽-75 / ⩽-85 / ⩽-110(No-Load)									
Vacuum degree	Pa	⩽1(No-Load)									
MIN shelf temperature	℃	-55 / -65 / -75 / -100									
MAX shelf temperature	℃	70 / 80									
Ice capacity	kg/24h	⩾6	⩾8	⩾10	⩾15	⩾30	⩾6	⩾8	⩾10	⩾15	⩾30
Number of shelves	Layer	3+1	4+1	4+1	6+1	5+1	2+1	3+1	3+1	4+1	4+1
Shelf dimensions	mm	400×270	340×300	480×360	480×360	900×500	400×270	300×340	410×410	480×600	610×910
Shelf spacing	mm	70	70	70	70	80	100	70	100	100	100
Power	kW	3	4.5	5.5	6.5	13.5	4	5.5	6.5	7.5	14.5
Main unit weight	kg	300	400	600	700	1200	340	400	800	1000	1500
Dimensions	mm	1390×815×1631	1492×780×1570	1662×790×1450	1735×930×1633	2008×1180×1730	1390×815×1590	1687×780×1673	1730×935×1855	1823×1144×2014	2193×1402×2370
Capacity for vials	Piece Piece Piece	-	-	-	-	-	Φ12mm: 1554 Φ16mm: 868 Φ22mm: 440	Φ12mm: 2187 Φ16mm: 1200 Φ22mm: 654	Φ12mm: 3705 Φ16mm: 2058 Φ22mm: 1050	Φ12mm: 8624 Φ16mm: 4788 Φ22mm: 2460	Φ12mm: 13400 Φ16mm: 7600 Φ22mm: 3888
Material capacity (10mm thickness)	L	3	4	7	10	22.5	2	3	5	11	22
Sealing method	-	-	-	-	-	-	Hydraulic, sealing pressure approximately 1.0 kg/cm^2				
Vacuum control	-	Electromagnetic valve + fine adjustment valve									
Defrosting mode	-	Independent cold trap, electric defrosting									
Safety Devices	-	Udible alarm, Emergency stop switch, Overpressure protection									
Casing material	-	304 stainless steel				* Front casing SUS 304	304 stainless steel				
Power supply	-	Single-phase 3-wire, 220V 50Hz		Three-phase 5-wire, 380V 50Hz			Single-phase 3-wire, 220V 50Hz		Three-phase 5-wire, 380V 50Hz		

The above models can be equipped with:
Eutectic point testing, Chamber trap isolation valve, Data recorder, Chart recorder/online printing, PC or mobile app remote control, Imported brand vacuum pump, Anti-oil return solenoid valve, Oil mist filter, For detailed technical specifications, please refer to our website or contact our staff.

Small-Scale Trial Production

PILOT WATER-COOLED FREEZE DRYER

0.5m²~5m²

In order to obtain effective freeze-drying curves in freeze-drying production, thereby reducing drying time and improving the quality of freeze-dried products, small-scale freeze-drying experiments are typically conducted before formal production begins. Especially when researching a new freeze-dried product, repeated freeze-drying experiments must be conducted in advance to verify the feasibility of freeze-drying.

Small batch deployment | Convenient for repeated experiments | Multiple validations | Laboratory research and development | Pilot trials | Small-scale production | Fast delivery

This series of freeze dryers are designed for laboratory research, small-scale trials, and small-scale production of freeze-drying machines, with performance and functionality equivalent to production-scale freeze dryers. They have shorter delivery cycles. Pilot-scale water-cooled freeze dryers play a crucial role in product development and process optimization stages, providing feasibility validation and cost-effectiveness. They are important tools for a smooth transition from laboratory to industrial production.

Pilot-scale water-cooled freeze dryers have several advantages over small-scale laboratory freeze dryers and large-scale industrial freeze dryers:

Moderate production scale: Pilot-scale water-cooled freeze dryers bridge the gap between laboratory and industrial scales, suitable for medium production demands. They typically have larger processing capacities, making them ideal for small-batch production and pilot-scale processes.

Technical feasibility validation: Pilot-scale equipment can be used to validate and improve freeze-drying processes to ensure optimal results in large-scale production. This helps save time and resources, reducing potential issues during production.

Cost savings: Compared to large industrial equipment, pilot-scale water-cooled freeze dryers are usually more cost-effective while providing reliable performance. This reduces initial investment and operating costs.

Flexibility: These devices often feature adjustable parameters and configurations, customizable according to different product and process requirements. This flexibility makes them suitable for various applications such as pharmaceuticals, food, chemicals, etc.

Precision control: Pilot-scale equipment typically includes highly precise control systems to monitor and adjust parameters such as temperature, pressure, and freeze-drying time, ensuring product quality and stability.

Automated Production Line

PRODUCTION FREEZE DRYER

0.5m²~200m²

With more than 20 years of experience in freeze dryer design and manufacturing, the equipment meets all industry standards.
According to the customer's factory, we can flexibly customize the design and manufacture freeze dryers of different structures.

Pharmaceutical Freeze Dryer

CIP+SIP
Cleaning-in-place and sterilization-in-place.

Meets GMP requirements.

Isolation, integration, modularization, automation, and intelligence.

Food Freeze Dryer

Received energy-saving patents.

Continuous freeze-drying improves efficiency by 50%.

Aerospace-grade panels, dual-sided radiant heating, strong temperature uniformity.

Special Material Engineering Drying Equipment

Ensures equipment and product safety. Optional freeze-drying film available.

Designed according to aerodynamics principles to prevent material drift.

pecialized control system to prevent surface reduction upon vacuum release.

GZL/GZLY/ CIP+SIP PHARMACEUTICAL AND BIOTECH

0.5m²~60m²

Vaccines | Traditional Chinese Medicine | Pharmaceuticals | Biopharma-ceuticals | Biochemical Drugs | Biologics, Probiotics | Extracts | Nutritional Supplements | Diagnostic Reagents | Blood Products

	Freeze-drying area	Vacuum degree	Cold trap temperature	Ice capacity	Shelf temperature range	Shelf dimensions	Number of shelves	Capacity for vials	Dimensions	Power
	m²	Pa	℃	kg/B	℃	mm	Layer	φ16(2ml)Piece	mm	kW
GZLY-0.5 CIP SIP	0.5	⩽1	-75	＞10	-55～+80	410×410	3+1	2058	2660×1450×2300	10
GZL-1 / GZLY-1	1.15	⩽1	-75	＞20	-55～+70	480×600	4+1	4788	1640×1100×1830	7.5
GZL-2 / GZLY-2	2.2	⩽1	-75	＞40	-55～+70	610×910	4+1	9216	2500×1560×2020	12
GZL-3 / GZLY-3	3.3	⩽1	-75	＞60	-55～+70	480×600	6+1	13824	2500×1560×2300	15
GZL-5 / GZLY-5	5.25	⩽1	-75	＞100	-50～+70	750×1000	7+1	22540	4000×1360×2800	24
GZL-10 / GZLY-10	10.5	⩽1	-75	＞200	-50～+70	990×1520	7+1	45360	5500×1670×2800	46
GZL-20 / GZLY-20	20.2	⩽1	-75	＞400	-50～+70	1210×1520	11+1	84942	6500×1980×2800	85
GZL-30 / GZLY-30	30.0	⩽1	-75	＞600	-50～+70	1520×1800	11+1	131967	7500×2280×2900	160
GZL-40 / GZLY-40	41.0	⩽1	-75	＞800	-50～+70	1520×1800	15+1	179955	7500×2280×3300	180
GZL-50	51.0	⩽1	-75	＞1000	-50～+70	1520×2250	15+1	-	6200X6200X2900	200
GZL-60	60.0	⩽1	-75	＞1000	-50～+70	1520×2250	18+1	-	9800X2500X3300	230

GZL is the general type, while GZLY is the top-press type, suitable for vial-sealed materials.

BASIC TYPE | FLASK TYPE | ELECTRIC-HEATING | HOUSEHOLD | PILOT R&D | PILOT WATER-COOLED | PRODUCTION

The freeze-drying system is a highly reliable industrial equipment that meets GMP requirements, consisting primarily of freeze-drying chamber, shelf components, condenser, refrigeration system, vacuum system, circulation system, hydraulic system, pneumatic system, control system, CIP system, and SIP system. These components work together to ensure the efficiency, stability, and controllability of the freeze-drying process.

Freeze-drying chamber

Constructed with stainless steel materials that comply with GMP requirements, undergo welding, machining, and surface polishing treatments.
Features large rounded corners, smooth inner surfaces of the chamber and door, and no dead corners for easy cleaning.

Shelf components

Manufactured using patented internal welding technology to ensure temperature uniformity and enhance heat exchange efficiency.
High-precision CNC machining ensures flatness within ±1mm/m.

Condenser

Large ice capacity in the condenser coils with uniform ice formation.
Equipped with precisely designed steam guide devices to maximize condenser surface utilization.
System safety design prevents sublimated water vapor from entering the vacuum pump.

Refrigeration system

Utilizes German BITZER dual-stage compressor units, each refrigeration system operates independently in a closed loop, providing powerful refrigeration capacity and energy efficiency.
Equipped with refrigeration components from internationally renowned brands and multiple refrigeration system protection measures.

Vacuum system

Equipped with high-performance vacuum pump units composed of German Leybold or British Edwards dual-stage rotary vane pumps and Roots pumps.
Large displacement significantly enhances product sublimation and freeze-drying efficiency.

Circulation system

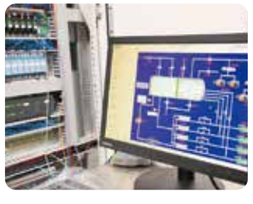
Uses original Danish GRUNDFOS shielded circulation pumps with stainless steel liners, ensuring long service life and low failure rate.
Intelligent fuzzy PID heating control technology provides low shelf temperature difference and high temperature control accuracy.

Hydraulic system

Hydraulic cylinders and hydraulic stations use internationally renowned brands to ensure stable hydraulic performance, preventing slipping and vibration.
Pressure force control with real-time monitoring and protection devices improves vial sealing success rate and prevents bottle breakage.

Pneumatic system

Pneumatic pipelines are equipped with pressure relays and pressure gauges for precise pressure monitoring.
Valves are designed with closed-loop control to provide signal feedback, supporting precise system control and fault diagnosis.



Control system

Advanced PLC and SCADA systems enable operators to easily manage freeze-drying systems and complete complex freeze-drying process cycles. Includes user access management, operation log recording, and report printing to enhance product traceability.
Equipped with UPS uninterruptible power supply to ensure reliable power supply within 30 minutes after emergency power failure.

CIP system

Equipped with internationally renowned brands of cleaning nozzles, pneumatic diaphragm valves, and sanitary-grade pneumatic ball valves.
Uses point fog spray and action program cleaning to ensure thorough cleaning of shelf components.
Uses spherical nozzles and wide-angle nozzles for cleaning inside the condenser to achieve CIP goals.

SIP system

Uses pulsating air inlet method to preheat freeze-drying chamber and condenser, uses multiple steam inlets and water ring pumps to exhaust residual air, achieving pure steam vaporization inside the system.
Equipped with compressed air filters and online integrity testing to ensure safe sterilization.
Offers the choice of ozone or hydrogen peroxide (VHP) sterilization solutions.

Automatic loading and unloading system

This system automatically handles material transfer and loading/unloading operations in an A-grade environment within a B-grade background, minimizing direct contact between operators and drugs, effectively reducing the sterile production operation risk for non-final sterilized products.

GR

SPECIAL MATERIALS PROCESSING DRYER

1m²~60m²

MWTECH Freeze Dryer's patented design for a new material processing dryer, combining years of industry application experience and a completely new design based on aerodynamics, meets aerodynamic requirements, and prevents material drift. Providing technical support for enterprises and institutions.

Advanced design: Uses 3D design and aerodynamics to minimize airflow caused by air intake, maintaining good pressure balance.

Air filtration: Comes with standard air intake filtration system to prevent moisture absorption after freeze-drying.

Professional technology: Utilizes endpoint determination technology designed specifically for new material products to optimize freeze-drying processes and reduce energy consumption.

Multiple protection systems: Ensures equipment, product, and production environment safety with multiple protection systems.

Efficient operation: Specifically designed freeze-drying processes and control technology for new material products significantly reduce equipment energy consumption and operating costs.

Research collaboration: As a participant in the field of new material preparation, has years of experience in collaboration with educational institutions, research centers, and manufacturers, developed patented products of new intelligent material drying equipment, supported by local development departments and innovation funds.

Centralized control: Uses a new generation of centralized control systems that are centralized and reliable, with high automation.

BASIC TYPE | FLASK TYPE | ELECTRIC-HEATING | HOUSEHOLD | PILOT R&D | PILOT WATER-COOLED | PRODUCTION

LG

FOOD PRODUCTION FREEZE DRYER

5m²~200m²

High Efficiency

Low Energy Consumption

Long Lifespan

Excellent Product Quality

	Freeze-drying area	Vacuum degree	Cold trap temperature	Ice capacity	Shelf temperature range	Shelf dimensions	Number of shelves	Capacity for materials	Dimensions	Power	Pre-freezing method
	m²	Pa	℃	kg/B	℃	mm	Layer	kg	mm	kW	-
LG-5	5.1	⩽10	⩽-55	80	-40～+90	1650×620	5+1	50～75	2500×1800×2400	24	In-situ freeze-drying
LG-10	10.2	⩽10	⩽-55	160	-40～+90	1650×620	10+1	100～150	3200×1800×2400	45	In-situ freeze-drying
LG-20	21	⩽10	⩽-55	320	-45～+90	1750×930	13+1	200～300	4300×2500×2500	60	In-situ freeze-drying
LG-30	30.3	⩽10	⩽-55	480	-45～+90	1750×1240	14+1	300～450	6000×2300×2700	90	In-situ freeze-drying
LG-50	50	⩽10	⩽-55	800	RT~+90	2900×1200	15+1	500～750	1: 10000×2750×3000 2: 7000×1800×2400 3: 1900×2000×2400	120	Freezer, 2 carts
LG-100	100	⩽10	⩽-55	1600	RT~+95	5800×1200	15+1	1000～1500	Refer to the drawing	200	Freezer, 4 carts
LG-200	200	⩽10	⩽-55	3200	RT~+95	12000×1200	15+1	2000～3000	Refer to the drawing	300	Freezer, 8 carts

PATENT & CERTIFICATION

- National High-Tech Enterprise
- "Specialized, Refined, Unique, and New" Enterprise
- Science and Technology Small Giant Enterprise
- 2 Invention Patents
- 35 Utility Model Patents
- 11 Industrial Design Patents
- 9 Software Copyrights
- ISO 9001:2015 Quality Management System Certification
- EU CE Certification
- Intellectual Property Management System Certification
- Environmental Management System Certification
- Occupational Health and Safety Management System Certification

COMPANY SCALE

Processing Center | Establishing a Large-Scale Production and Processing Base

The company possesses advanced casting and processing capabilities:

- The metal structure workshop is equipped with production equipment such as electric welding machines, CNC cutting machines, large shears, and overhead cranes.
- The machining workshop has facilities including lathes, milling machines, planers, grinders, machining centers, and CNC lathes.

20000+m²
Workshop

1000+
Annual output

$100million+
A year industry

The core technology and production processes are fully autonomously controlled.


Machining

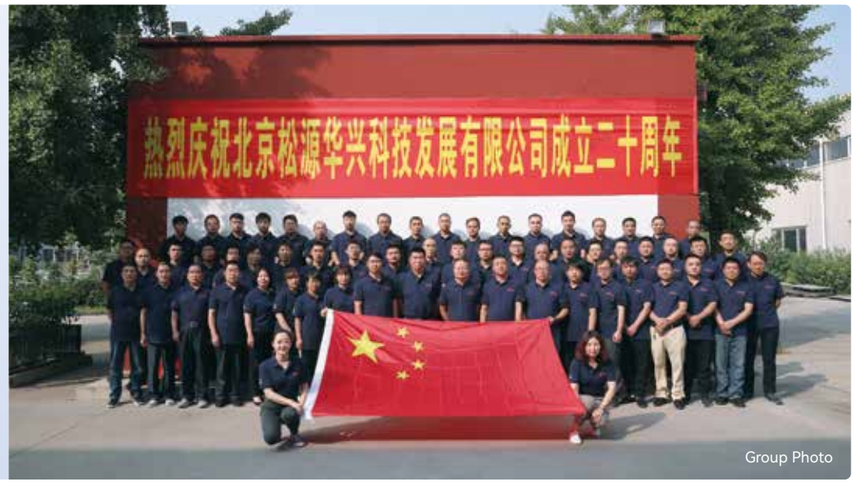

Machining


Workshop


Finished Goods Workshop

OUR TEAMS

Technical Team:
Senior Refrigeration Experts
Senior Vacuum Experts
Senior Electrical Control Experts
Senior Mechanical Experts



Group Photo

Production Plant 1:
4-floor production workshop, totaling 5,000 m².
Indoor production.

Main Functions:
Laboratory Freeze Dryer Production,
R&D Department,
Design Department

Production Plant 2:
4 production workshops, totaling 16,000 ㎡.

Production tasks:
R&D Freeze Dryer,
Production Freeze Dryer,
Design Department,
Quality Inspection Department


Factory Area