Pioneer of box type freeze dryer

FD-503|FD-304|FD-603|FD-604|FD-605Basic

Jinan Junde Instrument Co., Ltd.

Jinan Junde Instrument Co., Ltd. is a high-tech enterprise with independent intellectual property rights, with a registered capital of 13 million. Company address is located in the "spring city" Jinan. The company specializes in the research and development, production and sales of scientific analytical instruments such as freeze-drying machines. Since August 2019, the self-developed FD-503 box freeze-drying machine has been successfully put on the market, which has opened a new milestone for the development of the company.

"Stand in The Times, dare to be extraordinary", Junde people committed to the instrument industry for years of accumulation, obtained more than 20 product and technology patents. In 2020, more than 10 new patents were applied for, including 5 invention patents and a number of scientific research achievements.

With the attitude of "the Red Army is not afraid of expedition difficulties", Junde Instrument will continue to move forward, to provide customers with more advanced products and more satisfactory service, and to provide more perfect overall solutions for food, biology, medicine, agriculture and other industries, so as to promote the rapid globalization of China's economy.

By June 2022, the company covers an area of 800 square meters, forming a complete large-scale production line. And completed the national sales channel construction, customers throughout Beijing, Shandong, Henan, Hebei, Zhejiang, Yunnan, Jiangsu, Fujian, Guangdong, Guizhou, Gansu, Qinghai, Ningxia, Jilin and other regions. The product series has been continuously improved. Currently, there are five models and different configurations of FD-304, FD-503, FD-603, FD-604 and FD-605 Basic available for customers to choose from, and we can provide personalized customized services according to customers' actual needs.

FD-503

FD-503 – Best Equipment for R&D and small production

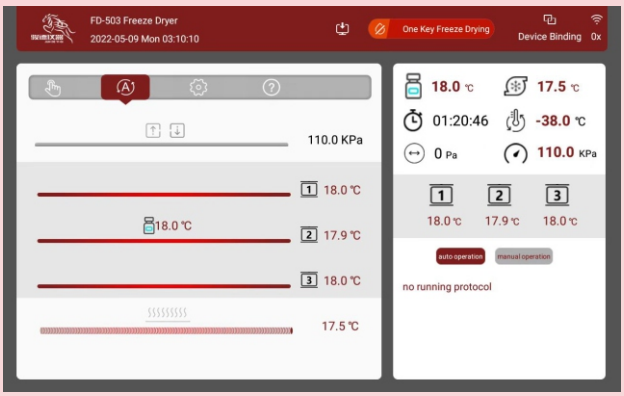
Compact bench top pilot freeze dryer is a perfect small production system applied in research and development for new products. Whole process in-situ, including pre-freezing, sublimation, secondary freeze drying, ensures reproducible results. Advanced Android control system with mass memory can store upto 1000 protocols, real-time display and monitor all freeze drying parameters. The best ever pilot freeze dryer that suits perfectly in your lab!

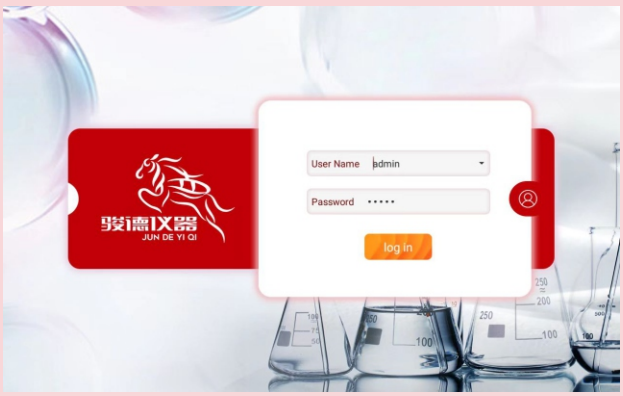
General Features

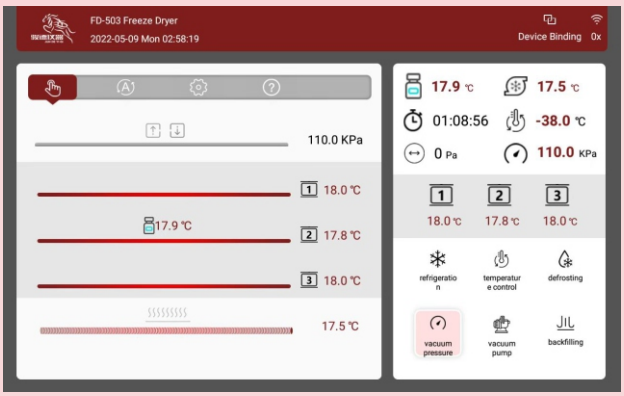
- Minimum space requirements: Chamber structure of only 0.6 m³ makes the freeze dryer small and compact, easy to carry and fits in labs of all sizes.
- Square drying chamber made of medical grade 316L stainless steel, perfect sealing, high temperature stability.
- Powerful shelf temperature control: from pre-freezing to sublimation to secondary freeze drying (-40 to 70℃) all in situ, ensuring perfect repeatability and results.
- Vial stoppering plus flask drying: multi-purpose device with 3 large shelves of total 0.36 ㎡ surface area and connections of 4 flasks.
- Shelf intelligent PID temperature control system enables independent temperature control of every shelf, ensuring preciser temperature control and stable heating, no temperature overshooting
- Chamber door is made of organic glass, corrosion-resistant and transparent, easy to observe experiment process
- Vial stoppering: electric stoppering function can perfectly meet sealing requirements of sensitive samples. (optional)
- Automatic cold trap one-key defrosting, save time between batches
- Inert gas backfilling protects the sensitive products to the maximum extent
- Most efficient condenser design- condenser coils are built inside drying chamber, which can shorten drying time and avoid vapor by pass to vacuum pump. The condenser has a minimum temperature of -55℃
- Intelligent vacuum regulation can adjust vacuum during sublimation and secondary freeze drying process, which can avoid bubbles and blowups of samples, accelerating freeze drying efficiency. (optional)

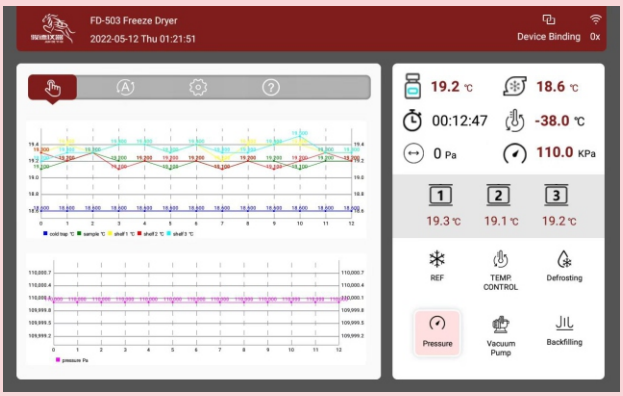
Controller Features

- ☆ 10 inch HD intelligent color touch screen, loaded with Android system, user-friendly panel, easy to operate. Experiment data and operation logs can be output by USB drive.
- ☆ Real-time display vacuum, cold trap temperature, sample temperature, alarm information.
- ☆ Curve optimization technology can control cooling rate in pre-freeze stage and heating rate and vacuum in sublimation and secondary freeze drying stage.
- ☆ JD lyophilization operation system can edit and store up to 1000 protocols, each contains 50 ramps. Freeze drying process can be paused to rectify parameters.
- ☆ Freeze drying data can be monitored and saved automatically, easy to track whole freeze drying process.
- ☆ 3-level user access management, making all the data real, safe and trackable
- ☆ Wireless monitor system, equipped with 4G/wifi wireless control module, mobile APP is available to real-time monitor freeze drying parameters such as vacuum, cold trap temperature, sample temperature, freezing drying duration, etc.(Optional)
- ☆ App will push notification and send message when power supply fails, enabling operator react immediately and save samples (optional)









Technical Parameters	
Cold trap temperature	-55℃
Vacuum	≤5pa(no load)
Inert gas backfilling	0.2um
Shelf dimension	320X400mm
Shelf Qty.	3
Shelf temperature control	-40℃ -+70℃ （no load, ambient ≤ 23℃）
Max. ice capacity	6kg
Pumping Speed	2L/s
* Max freeze drying area	0.36 ㎡
Flask	4X50/4X100/4X250ml/4X500ml (optional)
Electric stoppering distance	60mm
Drying chamber dimension	359X450X364mm
Power	2.8KW
Power supply	AC220V±10%，50HZ
Dimension	630*790*850mm
Weight	177kg

FD-6 Series

FD-6 Series ~ a pilot freeze dryer which can meet freeze drying requirements of 90% samples!

Lab pilot freeze dryer with cold trap of -85 ℃ , suitable for freeze drying of water solutions as well as organic samples. Small footprint makes it easy to move, fitting in most research labs or production plant. Whole process in-situ, including pre-freezing, sublimation, secondary drying, ensures reproductive results. Advanced Android control system with mass memory can store up to 1000 protocols, real-time display and monitor all freeze drying parameters.

General Features

- ☆ Novel appearance design with separate drying chamber and cold trap, whole piece of only 1.2 m³ makes the freeze dryer small and compact, easy to carry and fits in labs of all sizes.
- ☆ Square drying chamber made of medical grade 316L stainless steel, perfect sealing, high temperature stability.
- ☆ Powerful shelf temperature control: from pre-freezing to sublimation to secondary freeze drying (-50 to 60℃) all in situ, ensuring perfect repeatability and results.
- ☆ Inbuilt hydraulic stoppering system meets the requirement of vial sealing under vacuum.
- ☆ Shelf intelligent PID temperature control system enables independent temperature control of every shelf, silicon oil circulating inside shelves ensures precise temperature control and stable heating, no temperature overshooting
- ☆ Chamber door is made of organic glass, corrosion-resistant and transparent, easy to observe experiment process
- ☆ *Inbuilt cold trap system has stronger capture ability, energy and environment saving. Observation window with airtight hollow design can prevent frosting effectively, has better sealing result, easy to observe experiment process.
- ☆ Automatic cold trap one-key defrosting, save time between batches
- ☆ Inert gas backfilling protects the sensitive products to the maximum extent
- ☆ Intelligent vacuum regulation can adjust vacuum during sublimation and secondary freeze drying process, which can avoid bubbles and blowups of samples, accelerating freeze drying efficiency. (optional)

Controller Features

- ☆ 15 inch HD intelligent color touch screen，loaded with Android system, user-friendly panel, easy to operate. Experiment data and operation logs can be output by USB drive.
- ☆ Real-time display vacuum, cold trap temperature, sample temperature, alarm information.
- ☆ Curve optimization technology can control cooling rate in pre-freeze stage and heating rate and vacuum in sublimation and secondary freeze drying stage.
- ☆ JD lyophilization operation system can edit and store up to 1000 protocols, each contains 50 ramps. Freeze drying process can be paused to rectify parameters.
- ☆ Freeze drying data can be monitored and saved automatically, easy to track whole freeze drying process.
- ☆ 3-level user access management, making all the data real, safe and trackable
- ☆ Wireless monitor system, equipped with 4G/wifi wireless control module, mobile APP is available to real-time monitor freeze drying parameters such as vacuum, cold trap temperature, sample temperature, freezing drying duration, etc.(Optional)
- ☆ App will push notification and send message when power supply fails, enabling operator react immediately and save samples (optional)

Model	FD-603	FD-604	FD-605.Basic
Cold Trap Temperature	-85℃	-85℃	-85℃
Max. Ice Capacity	15KG	15KG	15KG
Vacuum (no load)	≤ 5Pa	≤ 5Pa	≤ 5Pa
Ultimate Vacuum	1Pa	1Pa	1Pa
Drying Chamber Dimension	434mm*496mm*374mm	434mm*496mm*441mm	434mm*496mm*441mm
*Max Freezing Area	0.36㎡	0.48 ㎡	0.70 ㎡
Shelf Dimension	300mm*400mm	300mm*400mm	300mm*400mm
Shelf Qty.	3+1	4+1	5
Shelf Temp. Range (no load, ambient ≤ 25℃)	-50℃ -+60℃	-50℃ -+60℃	-50℃ -+60℃
Shelf Spacing	95mm	70mm	70mm
Stoppering	Hydraulic	Hydraulic	NA
Inert Gas Backfilling	0.2um	0.2um	0.2um
Pumping Speed	4L/s	4L/s	4L/s
Output Power	5KW	5KW	5KW
Power Supply	AC220V±10%,50HZ	AC220V±10%,50HZ	AC220V±10%,50HZ
Dimension	1150mm*795mm*1644mm	1150mm*795mm*1644mm	1150mm*795mm*1644mm
Weight	500KG	500KG	500KG

FD-304

General Features

* Minimum space requirements: Chamber structure makes the freeze dryer small and compact, easy to carry and fits in labs of all sizes.
* Square drying chamber made of medical grade 316L stainless steel, perfect sealing, high temperature stability.
* Parallel design of shelf and cold trap, ensuring maximum temperature uniformity of samples.
* Chamber door is made of organic glass, corrosion-resistant and transparent, easy to observe experiment process
* Automatic cold trap one-key defrosting, save time between batches
* Inert gas backfilling protects the sensitive products to the maximum extent

Controller Features

☆ 7 inch HD intelligent color touch screen, loaded with Android system, user-friendly panel, easy to operate. Experiment data and operation logs can be output by USB drive.

☆ Real-time display vacuum, cold trap temperature, sample temperature, alarm information.

☆ JD lyophilization operation system can edit and store up to 1000 protocols, each contains 50 ramps. Freeze drying process can be paused to rectify parameters.

☆ Freeze drying data can be monitored and saved automatically, easy to track whole freeze drying process.

☆ 3-level user access management, making all the data real, safe and trackable

☆ Wireless monitor system, equipped with 4G/wifi wireless control module, mobile APP is available to real-time monitor freeze drying parameters such as vacuum, cold trap temperature, sample temperature, freezing drying duration, etc. (Optional)

☆ App will push notification and send message when power supply fails, enabling operator react immediately and save samples (optional)

Technical Parameters	
Cold trap temperature	-50℃
Vacuum	≤5pa(no load)
Inert gas backfilling	0.2um
Shelf dimension	220X320mm
Shelf Qty.	4 (Removable)
Shelf temperature control	natural temperature
Max. ice capacity	5kg
Pumping speed	2L/s
*Max freeze drying area	0.28 ㎡
Drying chamber dimension	240X380X385mm
Power	1.2KW
Power supply	AC220V±10%, 50HZ
Weight	135kg
External dimension	740 X 750 X 785mm

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