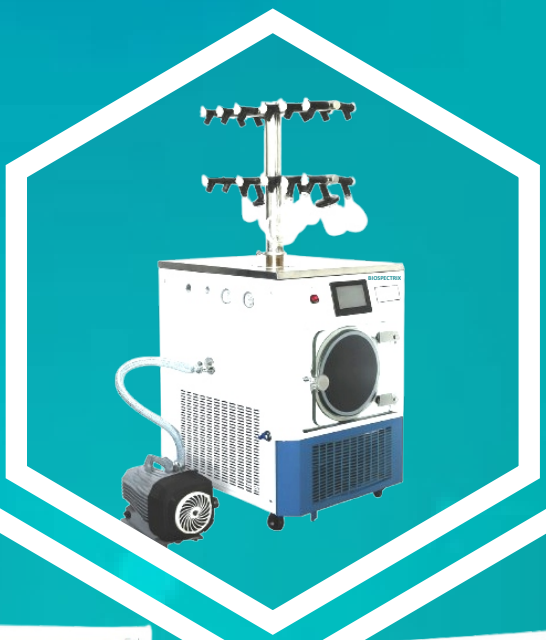
FREEZE DRYER FOR LABORATORY
&
PILOT SCALE PRODUCTION









BioSpectrix Pvt. Ltd | Plot-211, 3rd Floor, Okhla Industrial Area, Phase-3, New Delhi -110020, India | www.biospectrix.co | sales@biospectrix.co

BSFD-18 TP series freeze dryer is suitable for experiment and a small amount production.

Main features

- Control panel display in English
- Vacuum can be displayed in Pa or mbar
- High transparency Condenser door makes it easy to check the ice capture situation of the Condenser
- Small and compact structure , with easy and convenient operation
- Vacuum pump with high pumping speed , to reach good final vacuum
- Condenser device with electrochemical frost, capable of rapid de icing
- Condenser with uniform and good ice capture function
- With USB port to output freeze drying data, open and view data in Excel format
- Color LCD touch screen displays running time, display sample temperature, condenser temperature , vacuum degree, and save data automatically
- Display sample temperature curve, condenser temperature curve and vacuum curve
- Historical curves and records can be checked, and storage cycles can be modified in real time
- The user level and password can be set up, and the operation management can be divided
- Powerful sensor calibration functions to ensure accuracy of measured values in long-term use
- CFC-free refrigerant, international famous brand compressor, low noise,good efficiency
- Stainless steel air inlet valve (drain valve) is safe, anti-corrosion , no leak
- Real-time alarm display, historical alarm query function for fault diagnosis and maintenance

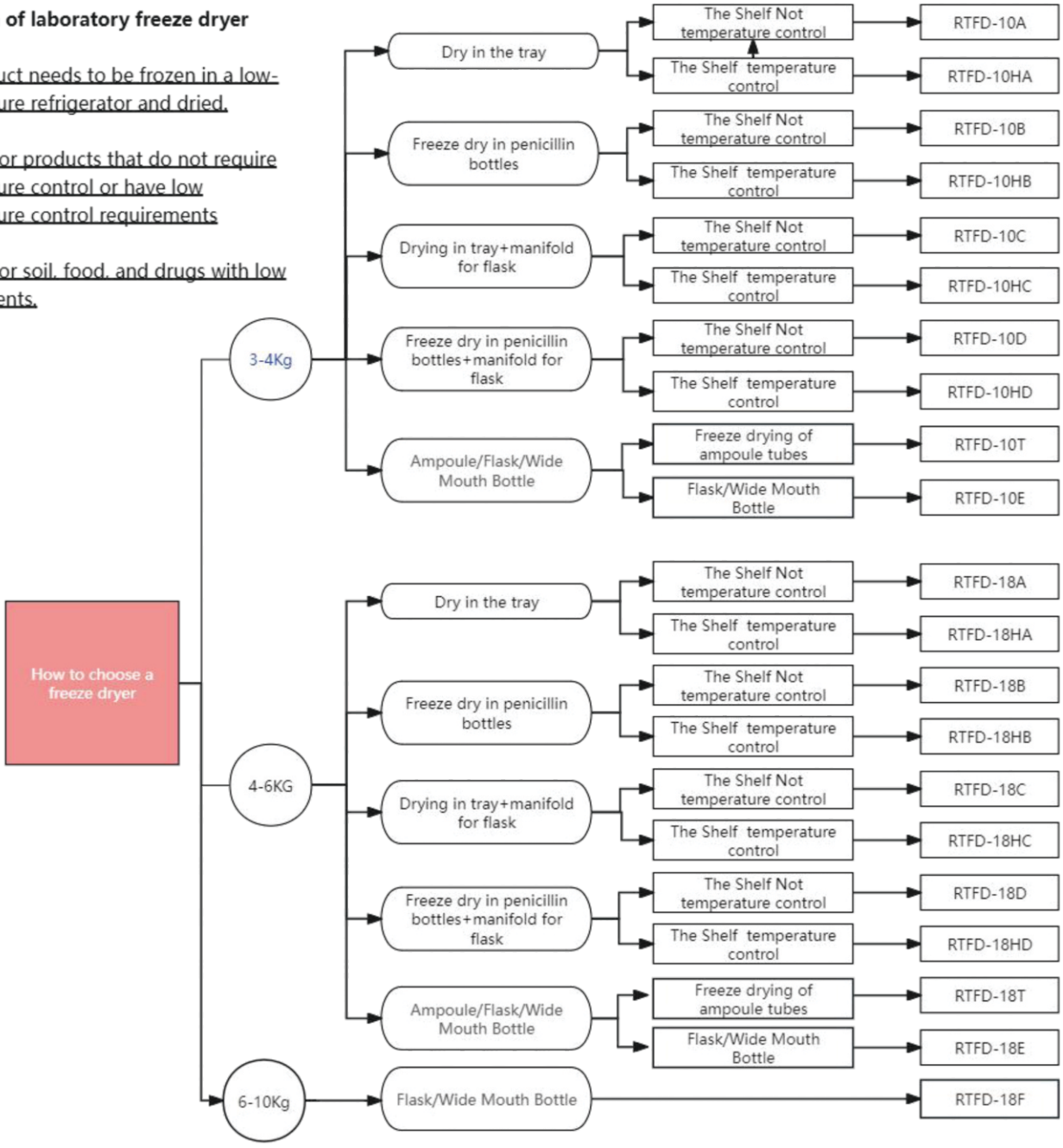
Model	Unit	BSFD-18 TP
Condenser temperature	℃	-60℃/-80℃/-100℃/-120℃
Vacuum degree	Pa	1
Condenser capacity	kg/24 hours	12
Optional manifold	ports	24
Condenser capacity	kg/24 hours	6
Vacuum Pump Flow Rate	L/S	4/6
Voltage	V, Hz	220V ,50 Hz
Power	W	3000
Dimension	mm	800-900-1600
weight	kg	160

Selection of laboratory freeze dryer

The product needs to be frozen in a low-temperature refrigerator and dried.

Suitable for products that do not require temperature control or have low temperature control requirements

Suitable for soil, food, and drugs with low requirements.

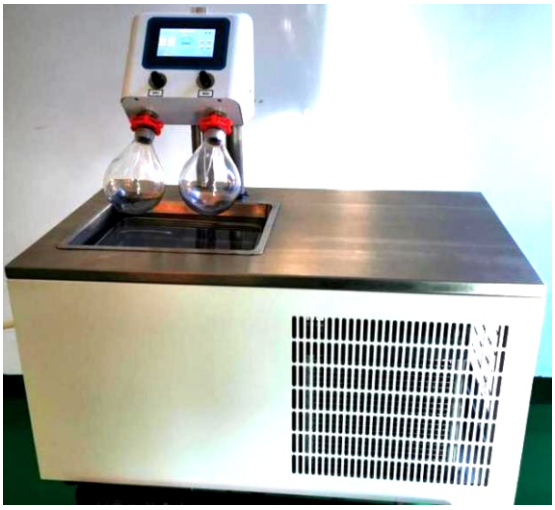


Freezer/Cold trap with rotation device

The dual station rotary freezing device is mainly used for the pre-freezing products in 250ml flasks, it evenly freezes the solution to be thin shell on the inner wall of the flask. Suitable for pre-freezing of liquid products with a freezing point above -40 °C.

Main features

- Dual workstation system, capable of simultaneously freezing 2 flasks;
- Automatic lifting system, more convenient for product loading and unloading;
- Automatic rotation system, adjustable speed, and uniform thickness of the product inside the flask;
- The product is slowly frozen inside the flask, minimizing the impact of rapid freezing on the flask and reducing the possibility of cracking;
- Equipped with built-in magnetic stirring function, the circulating liquid temperature is more uniform;
- The internal coil system directly cools the coolant, making the temperature of the coolant lower and reducing the loss of cooling capacity;
- Touch screen display system, real-time display of system temperature, operating time and other main information;
- Equipped with appointment start function









BSFD-10FD Vacuum Freeze Dryer for Laboratory



BSFD-10FDA



BSFD-10FDB







Types: standard type, top press type

Main features



- Condenser with uniform and good ice capture function
- Flexible manual and automatic control mode, easy to operate
- With shelf electricity heating function, increasing drying speed
- Shelf temperature can be controlled by program on touch screen
- Safety control system used for shelf heating, to control heating rate
- Color LCD touch screen, display freeze drying curves, save data automatically
- With USB port to output freeze drying data, open and view in Excel format
- Hundreds of recipe can be stored, and each recipe can be set up 36 segments
- Pre-freezing and drying process both finished on shelf, no need to move product
- Inner wall of drying chamber, condenser ,shelf, trays are made of stainless steel 304
- Multilevel password protection for login,effectively prevent illegal operation
- The user level and password can be set up, and the operation management can be divided
- Colorless, transparent acrylic door ,user can observe the whole process of freeze-drying
- With inert gas inflation valve, filling the inert gas after drying can keep products longer
- CFC-free refrigerant, international famous brand compressor, low noise,good efficiency
- Powerful sensor calibration functions to ensure accuracy of measured values in long-term use
- Historical curves and records can be checked, and storage cycles can be modified in real time
- Real-time alarm display, and historical alarm query function for fault diagnosis and maintenance

Options

- Vacuum control valve
- Intake backfilling filter
- Air inlet filter for pump
- Eutectic point test device
- Exhaust filter/oil mist filter for pump
- Automatic backfilling / drainage system
- Cascade refrigeration ,condenser temperature -80℃
- Check valve for pump to prevent oil sucked into chamber
- Leybold pump or other international brand vacuum pump
- External manifold ports to connect round bottom flasks and wide-neck flask
- RS232 and software: Check and keep freeze drying data on computer, control freeze dryer through PC
- Special requirements can be customized

Technical parameter

Model	Unit	BSFD-10FD (-55℃)		BSFD-10FD (-80℃)	
		Standard type	Top press type	standard type	Top press type
Drying area	㎡	0.2	0.1	0.2	0.1
shelf	layer	2	1	2	1
Shelf spacing	mm	70		70	
Shelf size	mm	265x400x25		265x400x25	
Tray size	mm	260x395x25		260x395x25	
Condenser temperature	℃	Min.≤-55	Min.≤-55	Min.≤-80	Min.≤-80
Shelf temperature range	℃	-50~+80		-70~+80	
Bulk liquid capacity	Liter (10mm thickness)	2	1	2	1
Vacuum degree	Pa	≤10		≤10	
Condenser capacity	kg/24 hours	5		5	
Vacuum Pump Flow Rate	L/S	4		4	
Voltage	V, Hz	220V/50 Hz , 110V /120V/60Hz		220V/50 Hz , 110V /120V/60Hz	
Power	W	1700		2100	
Cooling	-	Air cooling，draughty, ambient temperature≤25℃			
Vial capacity Φ12mm	Pcs	1554	777	1554	777
Vial capacity Φ16mm	Pcs	868	434	868	434
Vial capacity Φ22mm	Pcs	440	220	440	220
Style of stoppering	-	N/A	By manual	N/A	By manual
Dimension	mm	605x610x1200	605x610x1330	605x610x1200	605x610x1330
Weight	Kg	240	245	270	280





BSFD-30FD/50FD Series Electricity Heating Pilot Scale Freeze Dryer



BSFD-30FD



BSFD-50FD







Types: standard type

Main features

- Condenser with uniform and good ice capture function
- Flexible manual and automatic control mode, easy to operate
- With shelf electricity heating function, increasing drying speed
- Shelf temperature can be controlled by program on touch screen
- Safety control system used for shelf heating, to control heating rate
- Color LCD touch screen, display freeze drying curves, save data automatically
- With USB port to output freeze drying data, open and view in Excel format
- Hundreds of recipe can be stored, and each recipe can be set up 36 segments
- Pre-freezing and drying process both finished on shelf, no need to move product
- Inner wall of drying chamber, condenser ,shelf, trays are made of stainless steel 304
- Multilevel password protection for login,effectively prevent illegal operation
- The user level and password can be set up, and the operation management can be divided
- Colorless, transparent acrylic door ,user can observe the whole process of freeze-drying
- With inert gas inflation valve, filling the inert gas after drying can keep products longer
- CFC-free refrigerant, international famous brand compressor, low noise,good efficiency
- Powerful sensor calibration functions to ensure accuracy of measured values in long-term use
- Historical curves and records can be checked, and storage cycles can be modified in real time
- Real-time alarm display, historical alarm query function for fault diagnosis and maintenance

Options

- Vacuum control valve
- Intake backfilling filter
- Air inlet filter for pump
- Eutectic point test device
- Exhaust filter/oil mist filter for pump
- Automatic backfilling / drainage system
- Cascade refrigeration ,condenser temperature -80℃
- Check valve for pump to prevent oil sucked into chamber
- Leybold pump or other international brand vacuum pump
- External manifold ports to connect round bottom flasks and wide-neck flask
- RS232 and software: Check and keep freeze drying data on computer, control freeze dryer through PC
- Special requirements can be customized

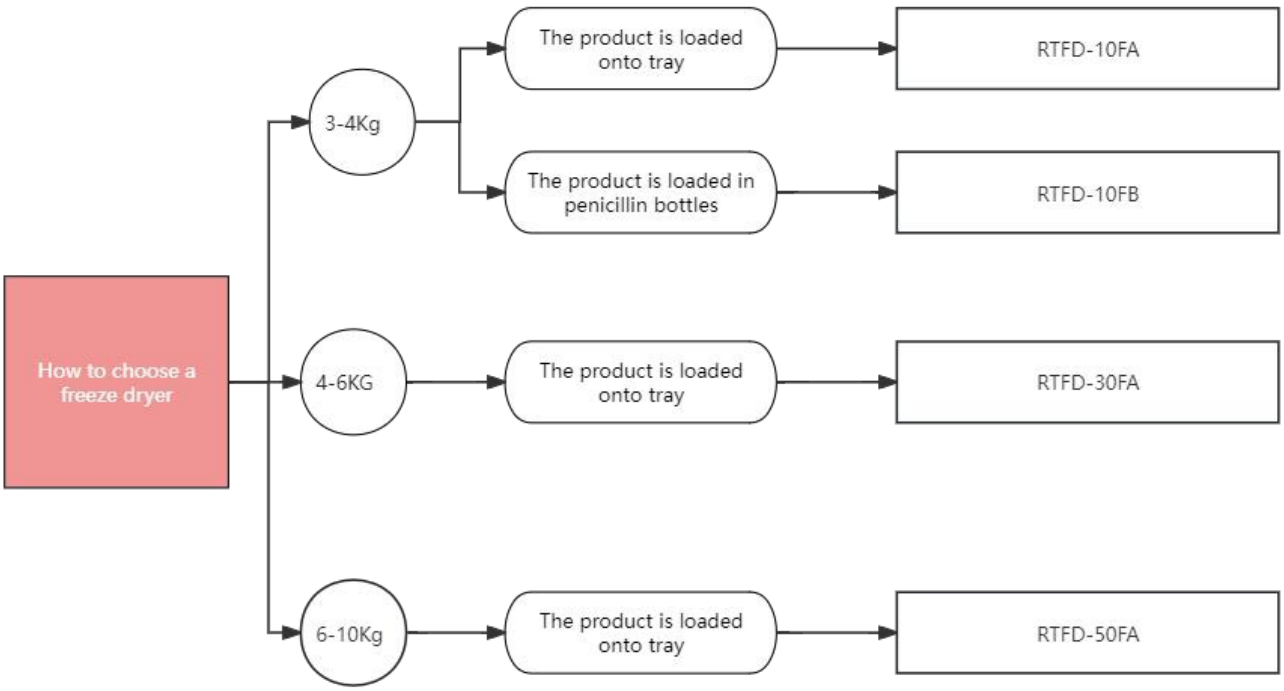
Selection of laboratory freeze dryer

Pre-freezing and drying process both finished on shelf, no need to move product.

Safety control system used for shelf heating, to control heating rate.

There are options for condenser temperatures of -50 ℃/-80 ℃/-100 ℃.

Suitable for freeze-drying products such as food, medicine, new materials, soil, etc.



Technical parameter

Model	Unit	BSFD-30FD	BSFD-50FD
		standard	standard
Drying area	㎡	0.4	0.6
shelf	layer	4	6
Shelf spacing	mm	50	50
Shelf size	mm	300x340x15	300x340x15
Bulk capacity 10 mm thickness	Liter	4	6
Condenser capacity	kg/24 hours	6	10
Shelf temperature range	℃	-50～+80 (-55 ℃) -70～+80 (-80 ℃)	-50～+80 (-55 ℃) -70～+80 (-80 ℃)
Vacuum degree	Pa	≤10	≤10
Condenser temperature	℃	-55 ℃ or -80℃	-55 ℃ or -80℃
Voltage	V, Hz	220V ,50 Hz	380V, 50Hz
Cooling	-	Air cooling，draughty ambient temperature≤25℃	Air cooling, draughty ambient temperature≤25℃
Vial capacity Φ12mm	Pcs	2916	4374
Vial capacity Φ16mm	Pcs	1600	2400
Vial capacity Φ22mm	Pcs	872	1308
Defrosting	-	Off Cycle Defrosting	Off Cycle Defrosting
Installed Power	W	2800	3000
Dimension	mm	700mm*850mm*1230mm	700mm*850mm*1400mm
Weight	Kg	300	400





BSFD-20F Series Pilot Scale Freeze Dryer

Types: standard type and top press type

Main features

- Condenser with uniform and good ice capture function
- Flexible manual and automatic control mode, easy to operate
- Shelf temperature can be controlled by program on touch screen
- Color LCD touch screen, display freeze drying curves, save data automatically
- With USB port to output freeze drying data, open and view in Excel format
- Hundreds of recipe can be stored, and each recipe can be set up 36 segments
- Pre-freezing and drying process both finished on shelf, no need to move product
- Inner wall of drying chamber, condenser ,shelf, trays are made of stainless steel 304
- Multilevel password protection for login,effectively prevent illegal operation
- The user level and password can be set up, and the operation management can be divided
- Colorless, transparent acrylic door ,user can observe the whole process of freeze-drying
- With inert gas inflation valve, filling the inert gas after drying can keep products longer
- CFC-free refrigerant, international famous brand compressor, low noise,good efficiency
- Special PLC control system for freeze-drying machine, with high reliability and stability
- Powerful sensor calibration functions to ensure accuracy of measured values in long-term use
- Historical curves and records can be checked, and storage cycles can be modified in real time
- Real-time alarm display, historical alarm query function for fault diagnosis and maintenance
- Low viscosity medium circulating to control temperature , high precision of temperature control, shelf temperature uniformity ±1℃, drying effect is uniform
- Fuzzy control system, shelf temperature heating and cooling rate can be controlled under slop control

Options

- Data recorder
- Vacuum control valve
- Intake backfilling filter
- Air inlet filter for pump
- Eutectic point test device
- SS316 material can be used
- Water cooling refrigeration system
- Exhaust filter/oil mist filter for pump
- Automatic backfilling / drainage system
- Judgement function of freeze-dried end point
- Isolation valve between chamber and condenser
- Check valve for pump to prevent oil sucked into chamber
- Leybold pump or other international brand vacuum pump
- External manifold ports to connect round bottom flasks and wide-neck flask
- PC and software: Check and keep freeze drying data on computer, control freeze dryer through PC



Model : **BSFD-20FA**

Freeze drying area	0.3 ㎡
Shelf size	400x270 mm
Shelf number	3+1 layers (top shelf for heat radiation)
Shelf spacing	70 mm
Tray size	395x265 mm
Tray number	3 pcs
Condenser temperature	-70℃
Shelf temperature	-50~+70℃
Bulk capacity	3 Liter (10mm thickness)
Final vacuum	＜10 Pa
Vacuum Pump Flow Rate	4 L/S
Ice condenser capacity	6kg /24 hours
Cooling	Air cooling, ambient temperature≤25℃
Vial capacity Φ12mm	2187 pcs
Vial capacity Φ16mm	1200 pcs
Vial capacity Φ22mm	654 pcs
Voltage	220V/50 Hz, 110V/60Hz, 120V/60Hz
Power	3000W
Defrosting	Electric Defrosting
Style of press	N/A
Dimension	770×750×1520mm
Weight	330 kg





Model: BSFD-20FB

Freeze drying area	0.2 ㎡
Shelf size	400x270 mm
Shelf number	2+1 layers (top shelf for heat radiation)
Shelf spacing	70 mm
Tray size	395x265 mm
Tray number	2 pcs
Condenser temperature	-70℃
Shelf temperature	-50~+70℃
Bulk capacity	2 Liter (10mm thickness)
Final vacuum	＜10 Pa
Vacuum Pump Flow Rate	4 L/S
Ice condenser capacity	6kg /24 hours
Cooling	Air cooling, ambient temperature≤25℃
Vial capacity Φ12mm	1554 pcs
Vial capacity Φ16mm	868 pcs
Vial capacity Φ22mm	440 pcs
Voltage	220V/50 Hz, 110V/60Hz, 120V/60Hz
Power	3000W
Defrosting	Electric defrosting
Style of stoppering	Automatic
Dimension	770×750×1520mm
Weight	350 kg

BSFD-30F/50F Series Pilot Scale Freeze Dryer



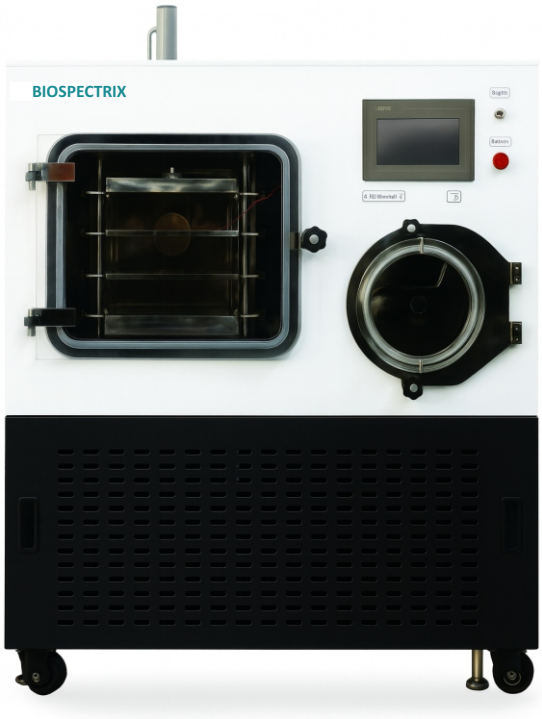
BSFD-30FA



BSFD-30FB



BSFD-50FA



BSFD-50FB

BSFD-30F/50F Series Pilot Scale Freeze Dryer

Types: standard type and top press type

Main features

- Condenser with uniform and good ice capture function
- Flexible manual and automatic control mode, easy to operate
- Shelf temperature can be controlled by program on touch screen
- Color LCD touch screen, display freeze drying curves, save data automatically
- With USB port to output freeze drying data, open and view in Excel format
- Hundreds of recipe can be stored, and each recipe can be set up 36 segments
- Pre-freezing and drying process both finished on shelf, no need to move product
- Inner wall of drying chamber, condenser ,shelf, trays are made of stainless steel 304
- Multilevel password protection for login,effectively prevent illegal operation
- The user level and password can be set up, and the operation management can be divided
- Colorless, transparent acrylic door ,user can observe the whole process of freeze-drying
- With inert gas inflation valve, filling the inert gas after drying can keep products longer
- CFC-free refrigerant, international famous brand compressor, low noise,good efficiency
- Special PLC control system for freeze-drying machine, with high reliability and stability
- Powerful sensor calibration functions to ensure accuracy of measured values in long-term use
- Historical curves and records can be checked, and storage cycles can be modified in real time
- Real-time alarm display, historical alarm query function for fault diagnosis and maintenance
- Low viscosity medium circulating to control temperature , high precision of temperature control, shelf temperature uniformity ±1°C, drying effect is uniform
- Fuzzy control system, shelf temperature heating and cooling rate can be controlled under slop control

Options

- Data recorder
- Vacuum control valve
- Intake backfilling filter
- Air inlet filter for pump
- Eutectic point test device
- SS316 material can be used
- Electricity heating defrosting
- Water cooling refrigeration system
- Exhaust filter/oil mist filter for pump
- Automatic backfilling / drainage system
- Judgement function of freeze-dried end point
- Isolation valve between chamber and condenser
- Check valve for pump to prevent oil sucked into chamber
- Leybold pump or other international brand vacuum pump
- External manifold ports to connect round bottom flasks and wide-neck flask
- PC and software: Check and keep freeze drying data on computer, control freeze dryer through PC

Technical parameter

Model	Unit	BSFD-30F		BSFD-50F	
		standard	Top press	standard	Top press
Drying area	㎡	0.4	0.3	0.7	0.5
shelf	Layer (top shelf for heat radiation)	4+1	3+1	4+1	3+1
Shelf spacing	mm	50	70	50	100
Shelf size	mm	300x340x15	300x340x20	360x480x15	410x410x20
Bulk capacity (10mm thickness)	Liter	4	3	7	5
Condenser capacity	kg/batch	6		10	
Shelf temp. range	℃	-50 ~ +70		-50 ~ +70	
Vacuum degree	Pa	≤10		≤10	
Condenser temperature	℃	Min. ≤-70		Min. ≤-70	
Electricity Power	V, Hz	220V /50 Hz, single phase		380V/ 50Hz , three phase	
Cooling	-	Air cooling，draughty ambient temperature≤25℃		Air cooling , draughty ambient temperature≤25℃	
Vial capacity Φ12mm	Pcs	2916	2187	4676	3705
Vial capacity Φ16mm	Pcs	1600	1200	2772	2058
Vial capacity Φ22mm	Pcs	872	654	1440	1050
Electric defrosting	-	N/A	Available	N/A	Available
Style of stoppering	-	N/A	Hydraulic	N/A	Hydraulic
Dimension	mm	880x735x1310	1230x830x1600	960x785x1450	1165x1310x1950
Weight	kg	360	560	500	860





BSFD-100F Series Freeze Dryer for Small Scale Production

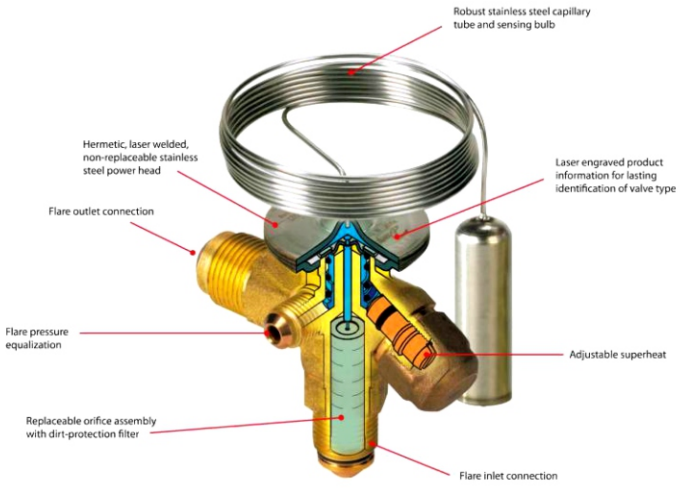


BSFD-100FA



BSFD-100FB







Types: standard type and top press type

Main features

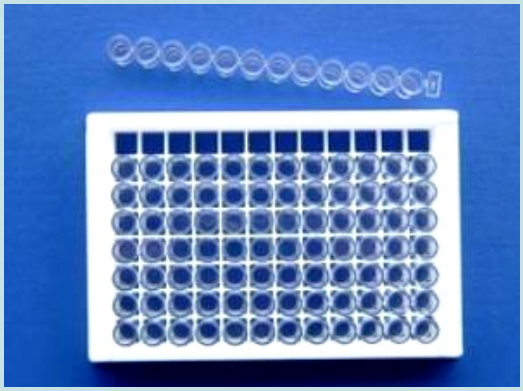
- Condenser with uniform and good ice capture function
- Flexible manual and automatic control mode, easy to operate
- Shelf temperature can be controlled by program on touch screen
- Color LCD touch screen, display freeze drying curves, save data automatically
- With USB port to output freeze drying data, open and view in Excel format
- Hundreds of recipe can be stored, and each recipe can be set up 36 segments
- Pre-freezing and drying process both finished on shelf, no need to move product
- Inner wall of drying chamber, condenser ,shelf, trays are made of stainless steel 304
- Multilevel password protection for login,effectively prevent illegal operation
- The user level and password can be set up, and the operation management can be divided
- Colorless, transparent acrylic door ,user can observe the whole process of freeze-drying
- With inert gas inflation valve, filling the inert gas after drying can keep products longer
- CFC-free refrigerant, international famous brand compressor, low noise,good efficiency
- Special PLC control system for freeze-drying machine, with high reliability and stability
- Powerful sensor calibration functions to ensure accuracy of measured values in long-term use
- Historical curves and records can be checked, and storage cycles can be modified in real time
- Real-time alarm display, historical alarm query function for fault diagnosis and maintenance
- Low viscosity medium circulating to control temperature , high precision of temperature control, shelf temperature uniformity ±1°C,drying effect is uniform
- Fuzzy control system, shelf temperature heating and cooling rate can be controlled under slop control

Options

- Data recorder
- Vacuum control valve
- Intake backfilling filter
- Air inlet filter for pump
- Eutectic point test device
- SS316 material can be used
- Water cooling refrigeration system
- Exhaust filter/oil mist filter for pump
- Automatic backfilling / drainage system
- Judgement function of freeze-dried end point
- Isolation valve between chamber and condenser
- Check valve for pump to prevent oil sucked into chamber
- Leybold pump or other international brand vacuum pump
- External manifold ports to connect round bottom flasks and wide-neck flask
- PC and software: Check and keep freeze drying data on computer, control freeze dryer through PC

Technical parameter

Technical Parameters	Unit	BSFD-100F	
		Standard	Top press
Drying area	㎡	1.0	1.152
Shelf	layer	6+1 (top shelf for heat radiation)	4+1 (top shelf for heat radiation)
Shelf spacing	mm	70	100
Shelf size	mm	360x480x15	480x600x20
Bulk capacity	Liter	10L (10 mm thickness)	
Condenser capacity	kg/batch	15	
Shelf temperature range	℃	-50 ~ +70	
Vacuum degree	Pa	≤10	
Condenser temperature	℃	Min. ≤-70	
Electricity Power	V, Hz	380v /50 Hz	
Cooling	-	Air cooling，draughty ambient temperature≤25℃	
Electric defrosting	-	Available	
Vial capacity Φ12mm	Pcs	7014	8624
Vial capacity Φ16mm	Pcs	4158	4788
Vial capacity Φ22mm	Pcs	2160	2460
Style of press	-	N/A	Hydraulic
Dimension	mm	1020x750x1700	1330x1310x2200
Weight	Kg	700	1000





BSFD- 200F/300F Series Freeze Dryer for Small Scale Production

Types: standard type and top press type

Main features

- Condenser with uniform and good ice capture function
- Flexible manual and automatic control mode, easy to operate
- Shelf temperature can be controlled by program on touch screen
- Color LCD touch screen, display freeze drying curves, save data automatically
- With USB port to output freeze drying data, open and view in Excel format
- Hundreds of recipe can be stored, and each recipe can be set up 36 segments
- Pre-freezing and drying process both finished on shelf, no need to move product
- Inner wall of drying chamber, condenser ,shelf, trays are made of stainless steel 304
- Multilevel password protection for login,effectively prevent illegal operation
- The user level and password can be set up, and the operation management can be divided
- Colorless, transparent acrylic door ,user can observe the whole process of freeze-drying
- With inert gas inflation valve, filling the inert gas after drying can keep products longer
- CFC-free refrigerant, international famous brand compressor, low noise,good efficiency
- Special PLC control system for freeze-drying machine, with high reliability and stability
- Powerful sensor calibration functions to ensure accuracy of measured values in long-term use
- Historical curves and records can be checked, and storage cycles can be modified in real time
- Real-time alarm display, historical alarm query function for fault diagnosis and maintenance
- Low viscosity medium circulating to control temperature , high precision of temperature control, shelf temperature uniformity ±1℃,drying effect is uniform
- Fuzzy control system, shelf temperature heating and cooling rate can be controlled under slop control

Options

- Data recorder
- Vacuum control valve
- Intake backfilling filter
- Air inlet filter for pump
- Eutectic point test device
- SS316 material can be used
- Water cooling refrigeration system
- Exhaust filter/oil mist filter for pump
- Automatic backfilling / drainage system
- Judgement function of freeze-dried end point
- Isolation valve between chamber and condenser
- Check valve for pump to prevent oil sucked into chamber
- Leybold pump or other international brand vacuum pump
- External manifold ports to connect round bottom flasks and wide-neck flask
- PC and software: Check and keep freeze drying data on computer, control freeze dryer through PC



BSFD-200FA



BSFD-200FB

Technical parameter

Technical Parameters	Unit	BSFD-200F	
		Standard	Top press
Drying area	㎡	2.2	2.2
Shelf	layer	5+1 (top shelf for heat radiation)	4+1 (top shelf for heat radiation)
Shelf spacing	mm	70	100
Shelf size	mm	500x900x18	610x910x18
Bulk capacity	Liter	22L (10 mm thickness)	
Condenser capacity	kg/batch	30	
Shelf temperature range	℃	-50～+70	
Vacuum degree	Pa	≤1	
Condenser temperature	℃	Min. ≤-70	
Electricity Power	V, Hz	380v /50 Hz	
Cooling	-	Air cooling，draughty ambient temperature≤25℃	
Electric defrosting	-	Available	
Vial capacity Φ12mm	Pcs	/	16864
Vial capacity Φ16mm	Pcs	/	9216
Vial capacity Φ22mm	Pcs	/	4784
Style of press	-	N/A	Hydraulic
Dimension	mm	1200x2100x1700	1400x1220x(1900+500)
Weight	Kg	1300	1800

Technical Parameters	Unit	BSFD-300F	
		Standard	Top press
Drying area	㎡	3.15	3.3
Shelf	layer	7+1 (top shelf for heat radiation)	6+1 (top shelf for heat radiation)
Shelf spacing	mm	70	100
Shelf size	mm	500x900x18	610x910x18
Bulk capacity	Liter	30L (10 mm thickness)	
Condenser capacity	kg/batch	45	
Shelf temperature range	℃	-50 ~ +70	
Vacuum degree	Pa	≤1	
Condenser temperature	℃	Min. ≤-70	
Electricity Power	V, Hz	380v /50 Hz	
Cooling	-	Air cooling，draughty ambient temperature≤25℃	
Electric defrosting	-	Available	
Vial capacity Φ12mm	Pcs	/	25296
Vial capacity Φ16mm	Pcs	/	13824
Vial capacity Φ22mm	Pcs	/	7176
Style of press	-	N/A	Hydraulic
Dimension	mm	1200x2100x1900	1400x2400x(1900+500)
Weight	Kg	1500	2200