



# PILOT FREEZE DRYER

## PTPQ Series

## Pilot Freeze Dryer - PTPQ Series

### Top press Pilot Freeze Dryer PTPQ 1700

Top press Pilot Freeze Dryer PTPQ 1700 is a top-press type unit with a condensing capacity of 5 kg / 24 h at a temperature of -55 °C. Sensor calibration function and electrical shelf heating facilitates rapid high accuracy testing. Equipped with a flexible manual and automated control mode for easy operations.

#### Features

- ❑ LCD touch screen panel ( shelf temperature control, freeze drying curves )
- ❑ Built-in control system with 32 programs ( 36 segments each )
- ❑ Pre freezing and drying on same shelf to speed up process
- ❑ Optimum ice capture condenser function
- ❑ Login facility with multi-level password protection for sample security
- ❑ Transparent acrylic door for easy process observation
- ❑ Integrated inert gas inflation valve
- ❑ Checking, storage and modification of historical curves and records in real time
- ❑ Over-heating safety control system
- ❑ Alarm system ( elevated temperature, vacuum degree error, operation completion )
- ❑ USB interface to export data

## Pilot Freeze Dryer - PTPQ Series

### Top press Pilot Freeze Dryer PTPQ 1701

Top press Pilot Freeze Dryer PTPQ 1701 is a top-press type unit with a condensing capacity of 5 kg / 24 h at a temperature of -80 °C. Sensor calibration function and electrical shelf heating facilitates rapid high accuracy testing. Equipped with a flexible manual and automated control mode for easy operations.

### Features

- ❑ LCD touch screen panel ( shelf temperature control, freeze drying curves )
- ❑ Built-in control system with 32 programs ( 36 segments each )
- ❑ Pre freezing and drying on same shelf to speed up process
- ❑ Optimum ice capture condenser function
- ❑ Login facility with multi-level password protection for sample security
- ❑ Transparent acrylic door for easy process observation
- ❑ Integrated inert gas inflation valve
- ❑ Checking, storage and modification of historical curves and records in real time
- ❑ Over-heating safety control system
- ❑ Alarm system ( elevated temperature, vacuum degree error, operation completion )
- ❑ USB interface to export data

### Applications

Used in pharmaceutical, biotechnology, bacteriology, ceramics, microbiology, biochemistry, food and agriculture based industries for drying processes of large-scale production units

## Pilot Freeze Dryer - PTPQ Series

### Specifications

Model No	PTPQ 1700	PTPQ 1701
Freeze drying area	0.1 m <sup>2</sup>	0.1 m <sup>2</sup>
Shelf temperature	- 50 °C to 80 °C	-70 °C to 80 °C
Condenser capacity	5 kg / 24 h	5 kg / 24 h
Condenser temperature	≤ -55 °C	≤ -80 °C
Stoppering mode	Manual	Manual
Shelves	1	1
Vacuum degree	≤ 10 Pa	≤ 10 Pa
Vacuum pump flow rate	4 L / S	4 L / S
Cooling mode	Air cooling	Air cooling
Refrigerant	CFC free refrigerant	CFC free refrigerant
Bulk loading capacity ( 10 mm thickness )	1 L	1 L
Vial capacity (Φ 22 mm)	220	220
Vial capacity(Φ 16 mm)	434	434
Vial capacity(Φ 12 mm)	777	777
Power consumption	1.7 kW	2.1 kW
Power supply	220 V / 50 Hz, 110 V / 120 V / 60 Hz	220 V / 50 Hz, 110 V / 120 V / 60 Hz
Product material	SUS304 Stainless steel	SUS304 Stainless steel
Shelf size	265 x 400 x 25 mm	265 x 400 x 25 mm
Inter-shelf height	70 mm	70 mm
Tray size	260 x 395 x 25 mm	260 x 395 x 25 mm
Product dimensions	605 x 610 x 1330 mm	605 x 610 x 1330 mm
Weight	245 kgs	280 kgs

## Pilot Freeze Dryer - PTPQ Series

### Optional Accessories

Accessory No	Accessory
1	Vacuum control valve
2	Intake backfilling filter
3	Air inlet filter pump
4	Eutectic point tester
5	Electrical heating – defrosting mode
6	Cascade refrigeration mode
7	Exhaust / oil mist pump filter
8	Automated backfilling / drainage system
9	Manifold external ports
10	RS232 software

## Pilot Freeze Dryer - PTPQ Series

### Top press Pilot Freeze Dryer PTPQ 2700

Top press Pilot Freeze Dryer PTPQ 2700 is a top press type unit with a condensing capacity of 6 kg / 24 h at a temperature of -70 °C. Sensor calibration function and fuzzy control system facilitates high accuracy slop control of shelf heating and cooling temperature. Low viscosity medium circulation provides uniform, high precision temperature control and drying effect. Equipped with a flexible manual and automated control mode for easy operations.

### Features

- LCD touch screen panel ( shelf temperature control, freeze drying curves )
- PLC controller with multiple built-in programs ( 36 segments each )
- Pre freezing and drying on same shelf to speed up process
- Optimum ice capture condenser function
- Login facility with multi-level password protection for sample security
- Transparent acrylic door for easy process observation
- Integrated inert gas inflation valve
- SUS304 stainless steel composition ( optional SS316 material composition )
- Checking, storage and modification of historical curves and records in real time
- Alarm system ( elevated temperature, vacuum degree error, operation completion )
- USB interface to export data

### Features

Used in medicine, pharmacy, biology, pharmaceutical and food industry, research institutes, archaeological conservators, food and beverage industries

## Pilot Freeze Dryer - PTPQ Series

### Specifications

Model No	PTPQ 2700
Freeze drying area	0.2 m <sup>2</sup>
Shelf temperature	-50 °C to 70 °C
Condenser capacity	6 kg / 24 h
Condenser temperature	-70 °C
Stoppering mode	Manual
Trays	2
Shelves( top shelf for heat radiation )	2 + 1
Shelf temperature accuracy	± 1 °C
Vacuum degree	≤ 10 Pa
Vacuum pump flow rate	4 L / S
Defrosting mode	Electrical defrosting
Cooling mode	Air cooling
Refrigerant	CFC free refrigerant
Bulk loading capacity( 10 mm thickness )	2 L
Vial capacity (Φ 22 mm)	440
Vial capacity(Φ 16 mm)	868
Vial capacity(Φ 12 mm)	1554
Power consumption	3.0 kW
Power supply	220 V / 50 Hz, 110 V / 60 Hz, 120 V / 60 Hz
Product material	SUS304 Stainless steel
Shelf size	400 x 270 mm
Inter-shelf height	70 mm
Tray size	395 x 265 mm
Product dimensions	770 x 750 x 1520 mm
Weight	350 kgs

## Pilot Freeze Dryer - PTPQ Series

### Optional Accessories

Accessory No	Accessory
1	Data recorder
2	Vacuum control valve
3	Intake backfilling filter
4	Air inlet filter pump
5	Eutectic point tester
6	Electrical heating - defrosting mode
7	Water cooling refrigeration mode
8	Exhaust / oil mist pump filter
9	Automated backfilling / drainage system
10	Process end point recognition
11	Isolation valve between chamber and condenser
12	Manifold external ports
13	PC and storage software



## Pilot Freeze Dryer - PTPQ Series

### Top press Pilot Freeze Dryer PTPQ 3200

Top press Pilot Freeze Dryer PTPQ 3200 is a top press type unit with a condensing capacity of 6 kg / 24 h at a temperature of -70 °C. Sensor calibration function and fuzzy control system facilitates high accuracy slop control of shelf heating and cooling temperature. Low viscosity medium circulation provides uniform, high precision temperature control and drying effect. Equipped with a flexible manual and automated control mode for easy operations.

### Features

- LCD touch screen panel ( shelf temperature control, freeze drying curves )
- PLC controller with multiple built-in programs ( 36 segments each )
- Pre freezing and drying on same shelf to speed up process
- Optimum ice capture condenser function
- Login facility with multi-level password protection for sample security
- Transparent acrylic door for easy process observation
- Integrated inert gas inflation valve
- SUS304 stainless steel composition( optional SS316 material composition )
- Checking, storage and modification of historical curves and records in real time
- Alarm system ( elevated temperature, vacuum degree error, operation completion )
- USB interface to export data

### Applications

Used in pharmaceutical, biotechnology, bacteriology, ceramics, microbiology, biochemistry, food and agriculture based industries for drying processes of large-scale production units

## Pilot Freeze Dryer - PTPQ Series

### Specifications

Model No	PTPQ 3200
Freeze drying area	0.3 m <sup>2</sup>
Shelf temperature	- 50 °C to 70 °C
Condenser capacity	6 kg / 24 h
Condenser temperature	≤ -70 °C
Stoppering mode	Hydraulic
Shelves ( top shelf for heat radiation )	3 + 1
Shelf temperature accuracy	± 1 °C
Vacuum degree	≤ 10 Pa
Defrosting mode ( optional )	Electrical
Cooling mode	Air cooling
Refrigerant	CFC free refrigerant
Bulk loading capacity ( 10 mm thickness )	3 L
Vial capacity (Φ 22 mm)	654
Vial capacity(Φ 16 mm)	1200
Vial capacity(Φ 12 mm)	2187
Power supply	220 V / 50 Hz, ( single phase )
Product material	SUS304 Stainless steel
Shelf size	300 x 340 x 20 mm
Inter-shelf height	70 mm
Product dimensions	1230 x 830 x 1600 mm
Weight	560 kgs

## Pilot Freeze Dryer - PTPQ Series

### Optional Accessories

Accessory No	Accessory
1	Data recorder
2	Vacuum control valve
3	Intake backfilling filter
4	Air inlet filter pump
5	Eutectic point tester
6	Electrical heating – defrosting mode
7	Water cooling refrigeration mode
8	Exhaust / oil mist pump filter
9	Automated backfilling / drainage system
10	Process end point recognition
11	Isolation valve between chamber and condenser
12	Manifold external ports
13	PC and storage software

## Pilot Freeze Dryer - PTPQ Series

### Top press Pilot Freeze Dryer PTPQ 4670

Top press Pilot Freeze Dryer PTPQ 4670 is a top press type unit with a condensing capacity of 10 kg / 24 h at a temperature of -70 °C. Sensor calibration function and fuzzy control system facilitates high accuracy slop control of shelf heating and cooling temperature. Low viscosity medium circulation provides uniform, high precision temperature control and drying effect. Equipped with a flexible manual and automated control mode for easy operations.

### Features

- LCD touch screen panel ( shelf temperature control, freeze drying curves )
- PLC controller with multiple built-in programs ( 36 segments each )
- Pre freezing and drying on same shelf to speed up process
- Optimum ice capture condenser function
- Login facility with multi-level password protection for sample security
- Transparent acrylic door for easy process observation
- Integrated inert gas inflation valve
- SUS304 stainless steel composition( optional SS316 material composition )
- Checking, storage and modification of historical curves and records in real time
- Alarm system ( elevated temperature, vacuum degree error, operation completion )
- USB interface to export data

### Applications

Used in pharmaceutical, biotechnology, bacteriology, ceramics, microbiology, biochemistry, food and agriculture based industries for drying processes of large-scale production units

## Pilot Freeze Dryer - PTPQ Series

### Specifications

Model No	PTPQ 4670
Freeze drying area	0.5 m <sup>2</sup>
Shelf temperature	- 50 °C to 70 °C
Condenser capacity	10 kg / 24 h
Condenser temperature	≤ -70 °C
Stoppering mode	Hydraulic
Shelves ( top shelf for heat radiation )	3 + 1
Shelf temperature accuracy	± 1 °C
Vacuum degree	≤ 10 Pa
Defrosting mode ( optional )	Electrical
Cooling mode	Air cooling
Refrigerant	CFC free refrigerant
Bulk loading capacity ( 10 mm thickness )	5 L
Vial capacity (Φ 22 mm)	1050
Vial capacity (Φ 16 mm)	2058
Vial capacity (Φ 12 mm)	3705
Power supply	380 V / 50 Hz, ( three phase )
Product material	SUS304 Stainless steel
Shelf size	410 x 410 x 20 mm
Inter-shelf height	100 mm
Product dimensions	1165 x 1310 x 1950 mm
Weight	860 kgs

## Pilot Freeze Dryer - PTPQ Series

### Optional Accessories

Accessory No	Accessory
1	Data recorder
2	Vacuum control valve
3	Intake backfilling filter
4	Air inlet filter pump
5	Eutectic point tester
6	Electrical heating - defrosting mode
7	Water cooling refrigeration mode
8	Exhaust / oil mist pump filter
9	Automated backfilling / drainage system
10	Process end point recognition
11	Isolation valve between chamber and condenser
12	Manifold external ports
13	PC and storage software

## Pilot Freeze Dryer - PTPQ Series

### Top press Pilot Freeze Dryer PTPQ 5140

Top press Pilot Freeze Dryer PTPQ 5140 is a top press type production scale unit with a condensing capacity of 15 kg/batch at a temperature of -70 °C. Sensor calibration function and fuzzy control system facilitates high accuracy slop control of shelf heating and cooling temperature. Low viscosity medium circulation provides uniform, high precision temperature control and drying effect. Equipped with a flexible manual and automated control mode for easy operations.

### Features

- Color LCD touch screen panel ( shelf temperature control, freeze drying curve, data saving )
- PLC controller with multiple built-in programs ( 36 segments each )
- Pre freezing and drying on same shelf to speed up process
- SUS304 stainless steel composition ( optional SS316 material composition )
- Transparent acrylic door for easy process observation
- CFC free refrigeration system
- Checking, storage and modification of historical curves and records in real time
- Login facility with multi-level password protection for sample security
- Adjustable user level
- Inert gas inflation valve for product durability
- Real time alarm display (error diagnosis and maintenance )
- USB interface to export data

### Applications

Used in pharmaceutical, research institutes, archaeological conservators, food and beverage industries

## Pilot Freeze Dryer - PTPQ Series

### Specifications

Model No	PTPQ 5140
Freeze drying area	1.15 m <sup>2</sup>
Shelf temperature	-50 °C to 70 °C
Condenser capacity	15 kg / batch
Condenser temperature	≤ -70 °C
Stoppering mode	Hydraulic
Shelves( top shelf for heat radiation )	4 + 1
Shelf temperature accuracy	± 1 °C
Vacuum degree	≤ 10 Pa
Defrosting mode ( optional )	Electrical
Cooling mode	Air cooling
Refrigerant	CFC free refrigerant
Bulk loading capacity	10 L ( 10 mm thickness )
Vial capacity (Φ 22 mm)	2460
Vial capacity (Φ 16 mm)	4788
Vial capacity (Φ 12 mm)	8624
Power supply	380 V / 50 Hz
Product material	SUS304 Stainless steel
Shelf size	480 x 600 x 20 mm
Inter-shelf height	100 mm
Product dimensions	1330 x 1310 x 2200 mm
Weight	1000 kgs



## Pilot Freeze Dryer - PTPQ Series

### Optional Accessories

Accessory No	Accessory
1	Data recorder
2	Vacuum control valve
3	Intake backfilling filter
4	Air inlet filter pump
5	Eutectic point tester
6	Electrical heating – defrosting mode
7	Water cooling refrigeration mode
8	Exhaust / oil mist pump filter
9	Automated backfilling / drainage system
10	Process end point recognition
11	Isolation valve between chamber and condenser
12	Manifold external ports
13	PC and storage software