



Specialized in laboratory equipment

## YC-500 MINI SCALE SPRAY DRYER

SHANGHAI PILOTECH INSTRUMENT & EQUIPMENT CO., LTD



**Focused · Perfection Reputation · Innovation**

# The world leading R&D solution for Spray Drying

- Famous brand for spray dryer in China
- 15 years continuous development
- Over 1,500 customers all over the world



The Mini Spray Dryer  
YC-500 - innovative solutions for  
spray drying in the laboratory

The impressive features of the Spray Dryer include its efficient performance with very short set-up times, an effective integrated nozzle cleaning mechanism and a high degree of flexibility thanks to the different cylinder geometries. The system was designed to be stand by a keyboard, conducted by a colorful crystal screen of touch guidance mode , and allowed two modes of run: Auto-automatic-mode, and Eye-monitored mode for the purpose of easily controlling experimental process .

The Mini Spray Dryer YC-500 is the result of 15 years continuous development , is your choice for the quick and gentle drying to powder of liquid material.



## Controls & Functionality

YC-500 mini spray dryer is designed to ensure that all functions are simple to select and adjust, to quickly achieve the optimum conditions for spray drying. Both use a clear touch screen display, the operator can control the following functions:

- Inlet Temperature
- Airflow Volume
- Air compressor flow
- Pump Speed
- De-blocker Frequency



## Easy to use



Color Touch Screen, Fast setup and cleaning times

Scale up to pilot or industrial scale possible.

Visible process due to glass assembly

Adjustable particle size (1 – 25 microns)

## Two Fluid Nozzle with SUS316L stainless steel

The stainless steel spray assembly consists of an inner tube for the liquid sample leading to a small diameter jet. An outer tube directs compressed air to the nozzle. All units are supplied with 0.7mm jets, other sizes are available as accessories.



The spray assembly incorporates an automatic de-blocking device that prevents the jet nozzle from becoming blocked, the de-blocking needle is activated by an integral compressor. De-blocker is sometimes necessary with materials which may solidify or when large particles in suspension cause blockages in the jet.

## Preparation convenience

The minimum of material only needs 20-30 ml, which is convenient for dealing with small amount of sample, and its maximum capacity can up to 500ml/H as well as the dealing with vast material is also very rapidly.

## Temperature protection

The heater has an extreme high temperature when experiment finished, which needs air blower to continue working in order to reduce the inside temperature and ensure the safety of equipment, YC-015 spray dryer can control air blower running automatically, even the operator wants to turn off the air blower, the system would prevent the operator until the temperature of system reduce to the default security state of system ;

## SUS 304 stainless steel

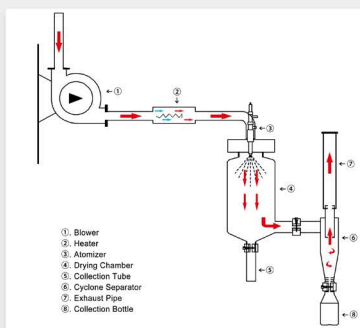
Spray chamber,  
cyclone separator,  
collector are all  
made of SUS 304  
stainless steel. All the  
spare parts are easy  
to install and clean.



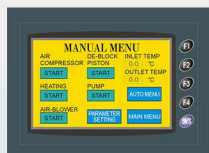
YC-500 mini spray dryer standard tail gas dedusting equipment can  
reduce environmental pollution while effectively improving the yield,  
especially the yield of difficult recycle;

## PRINCIPLE

1. A menu driven micro-processor controller allows the selection of inlet temperature, airflow, automatic de-blocker frequency and pump speed.



2. The self-priming peristaltic pump delivers the sample liquid from a container through a small diameter jet into the main chamber. At the same time an integral compressor pumps air into the outer tube of the jet which causes the liquid to emerge as a fine atomised spray into the drying chamber.



3. Heated air is blown through the main chamber evaporating the liquid content of the atomised spray. The solid particles of the material, which are normally in a free flowing state, are then separated from the exhaust air flow by a cyclone and collected in the sample collection bottle. The exhaust airflow is directed through a flexible 60 mm diameter hose direct to atmosphere or to an existing extraction system.

## Inert Loop YC-501 optional –Spray drying with solvents

At last it is possible to safely carry out laboratory scale spray drying of organic solvents – by using the accessory Inert YC-501. Previously, spray drying of inflammable solvents was associated with the risk of explosion and was consequently prohibited. However, important new areas of research and applications necessitate the use of spray drying from an organic solvent base. To be able to respond to this challenge a new type of accessory has been developed which allows the user to work safely with almost all currently available solvents.

## Trusted by the users

Over 3,000 customers of top universities, enterprises and research institutes use our mini spray dryer. And exported to more than 40 countries & regions such as the United States, Italy, South Korea, Mexico, Singapore, Canada, Malaysia, Chile and Russia etc.



## Wide range of applications

YC-500 mini Spray dryer can be used in a wide range of applications where the production of a free-flowing powder sample is required. This technique has successfully processed materials in the following areas:

- Oxide • Blood • Polymers and Resins
- Beverages • Flavours & Colourings
- Milk & Egg Products • Plant & Vegetable Extracts
- Pharmaceuticals • Heat Sensitive Materials
- Plastics • Perfumes • Dyestuffs
- Ceramics & Advanced Materials
- Soaps & Detergents • Textiles
- Foodstuffs • Adhesives





## ■ Mini spray dryer YC-500 technical data

Sr.No.	Parameter	Pilottech YC-500 Mini Spray Dryer
1	Power	1500W
2	Voltage	220V,50-60Hz
3	Min. Outlet Temperature	80℃
4	Capacity	500ml/h
5	Airflow	0-330 m <sup>3</sup> /h
6	Max. Inlet temperature	200℃
7	Heater power	1500W
8	Temperature precision	±1℃
9	Nozzle jet	0.7mm standard/(0.5/1.0/1.5/2.0mm available)
10	Nozzle type	Two fluid nozzle
11	Possible particle size range	1-25μm
12	Mean Residence time	1.0-1.5 sec
13	Operation mode	Automatic/Manual
14	Minimum sample volume	30ml
15	Spray chamber material	SUS304 Stainless steel
16	Cyclone separator material	SUS304 Stainless steel
17	Receiving tank material	SUS304 Stainless steel
18	Body material	SUS304 Stainless steel
19	Seal of cyclone/cylinder	Silicone
20	Gas type	compressed air(for aqueous)
21	Dimensions	800*600*900(SPRAY DRYER)
22	Display	7-Inch LCD display for Heat, Spray, Pump, Air pressure, de-blocker frequency
23	Thermal protection	Blower does not stop until temp <90℃
24	Deblocking	Automatic
25	Inert loop (for solvents)	Optional



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