



# About **PILOTECH**

[www.shpilotech.com](http://www.shpilotech.com)



# Leader For SPRAY DRYER

Pilotech has been engaged in spray drying for nearly 20 years. Our products are exported to more than 60 countries. Now we already have over 3,500 users around the world.

## To be The **Leader for Spray Dryer** in the World -Pilotech

Pilotech started to produce laboratory spray dryer since 2005. We have over 50 patents and over 5 software copyrights.

Our company is also the only manufacturer in the world that can produce a wide range of spray dryers, including benchtop spray dryer, vacuum spray dryer, spray-freezing dryer, all-in-one machine for spray drying and fluidized granulator, organic solvent spray dryer and nano spray dryer.

Our laboratory spray dryer has many advantages, such as stable performance, easy operation and durable service. For this reason, the product is very popular among researchers. It has occupied more than 70% of the market in China. It is now used by more than 3,500 users in the world, and exported to more than 60 countries and regions, including USA, UK, Germany, Italy, Russia, South Korea, Singapore, Japan, Malaysia, Canada, Australia, South Africa, Taiwan and Hong Kong.



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# Pilotech JOURNEY

## **YC-015: The first lab two fluid spray dryer in China**

Our laboratory spray dryer is very small, but it solves many problems. For example, with our product, you don't need to face the problems like difficulty in preparing materials, large coverage, and big noise.

**2005**

**2007**

## **YC-1800: The first lab low temperature spray dryer in China**

You don't need to worry that the materials containing sugar will stick on the wall when they are used for spray drying. You don't need to worry that the heat-sensitive materials, such as enzymic preparations, will degenerate when they are used for spray drying.

## **YC-015A: The first inert loop spray dryer in China (for organic solvents)**

It can also ensure safe spray drying of organic solvent in laboratory. With our product, both toxic and oxidizable materials can be treated with spray drying in laboratory.

**2008**

**2009**

## **YC-1000: The first lab spray granulator in China**

Only one machine can realize four functions, including spray drying, spray granulation, fluidized bed drying and fluidized bed coating.

## **YC-2000: The first lab vacuum spray dryer in China**

It is a perfect combination of vacuum drying and spray drying. The heat sensitive materials such as probiotics can remain active after spray drying in laboratory.

**2010**

## **YC-3000: The first lab spray freeze dryer in China**

It is also a perfect combination of spray drying and freeze drying. Compared with freezer dryer, our spray dryer can provide a faster drying process, and the dried materials have better fluidity and solubility.

**2011**

**2012**

## **YC-018: The first pilot scale spray dryer, powder recovery rate can reach 92%**

Our spray dryer for pilot plant test is also very small. It only covers an area of 1 square meter, but it has the processing capacity of 3L/H. It has the advantages, such as low noise, low power (only 5.5KW), and high material recovery rate.

## **YC-500: benchtop spray dryer**

The processing capacity is 500ML/H. The minimum material volume is 30ML. Because it is very small, it can be placed on the workbench.

**2013**

**2014**

## **YC-501 and YC-018A: Inert loop spray dryer**

YC-501 is the smallest organic solvent spray dryer. It can be applied to spray drying of very tinny materials. YC-018A is organic solvent spray dryer for pilot plant test. It applies to the preparation of materials in laboratory and pilot plant.

## **YC-510: Vacuum spray dryer, which contains high temperature type, vacuum low temperature type or inert loop type (optional)**

YC-510 is a multifunctional device. It can be used as traditional laboratory spray dryer, vacuum spray dryer or organic solvent spray dryer (optional) to process different materials.

**2016**

**2017**

## **Developed a new concentric spray nozzle**

If the materials are atomized by traditional spray nozzle, they can be easily sprayed to the wall of bottle, because traditional spray nozzle may have some defects in installation or spraying accuracy. So we recommend the concentric spray nozzle. The concentric spray nozzle has better performance. Its spray will form an umbrella around the nozzle.

# The world leading R&D SOLUTION FOR SPRAY DRYING

- Famous brand for spray dryer in China
- 20 years continuous development
- Over 3,500 customers all over the world



## The Mini Spray Dryer YC-015 – 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 .



The Mini Spray Dryer YC-015 is the result of 20 years continuous development , is your choice for the quick and gentle drying to powder of liquid material.

# CONTROLS & FUNCTIONALITY

YC-015 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 1.0mm jets, other sizes are available as accessories.



# Preparation convenience

The minimum of material only needs 30 ml, which is convenient for dealing with small amount of sample, and it's maximum capacity can up to 1500ml/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 ;

## Borosilicate glass or SUS 304 stainless steel

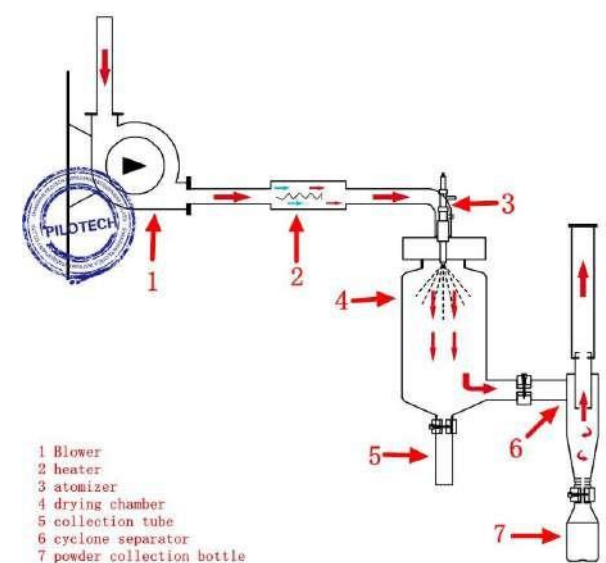
Spray chamber, cyclone separator, collector are all made of Borosilicate glass which can resist strong acid/alkali, high temperature.

It can work in a no-pollution and stable environment, and the whole process can be inspected. And we can provide SUS 304 stainless steel parts . All the spare parts are easy to install and clean.



## PRINCIPLE

- 1 A menu driven microprocessor 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.



## Air compressor built-in

Oil free compressor built-in with cushion technique, lower noise and convenient to move the dryer. Compressed air container made from the SUS 304 stainless steel to avoid vapor corrosive damage;



# Trusted by the users

Over 1,500 domestic customers of top universities, enterprises and research institutes use our mini spray dryer. And exported to more than 60 countries & regions such as the United States, Italy, South Korea, Mexico, Singapore, Canada, Malaysia, Chile and Russia etc.



## Wide range of applications

YC-015 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
- Bones, Teeth & Tooth Amalgam and many others



# Mini spray dryer YC-015 technical data

Sr.no	Parameter	Pilotech YC-015 Mini Spray Dryer
1	Power	3500W
2	Voltage	220V; single-phase, 50/60 Hz
3	Atomizer material	SUS 316 Stainless steel
4	Capacity	1.5 L/h
5	Rated airflow	1.5 m <sup>3</sup> /h
6	max. Input temperature	250°C
7	Heater power	3000W
8	Temperature precision	±1°C
9	Compressed air	32L/min, 0.2-2bar
10	Nozzle jet	1.0mm standard/(0.5/0.8/1.5/2.0mm available)
11	Nozzle type	Two fluid nozzle
12	Possible particle size range	1-25µm
13	Mean Residence time	1.0-1.5 sec
14	Max. Sample feed	2000ml/hr
15	Minimum sample volume	30ml
16	Spray chamber material	borosilicate glass
17	Cyclone separator material	borosilicate glass
18	Receiving tank material	borosilicate glass
19	Body material	SUS304 Stainless steel
20	Seal of cyclone/cylinder	Silicone
21	Compressor	Built-in oilless
22	Sound	<60db
23	Dimensions	750*650*1200mm
24	Weight	110KG
25	Display	7-Inch LCD display for Heat, Spray, Pump, Air pressure, de-blocker frequency
26	Thermal protection	Blower does not stop until temp <90°C
27	Deblocking	Automatic
28	Inert loop (for organic solvents)	Optional

\*This catalog is for reference only. Equipment upgrades may bring changes in parameters and structure. Therefore, this catalog does not serve as equipment acceptance proof. Thanks for your understanding.

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