



Specialized in laboratory equipment

## YC-03 MINI SPRAY GRANULATOR

SHANGHAI PILOTECH INSTRUMENT & EQUIPMENT CO., LTD



**Focused • Perfection • Reputation • Innovation**

# The world leading R&D solution for Granulator

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



Mini Spray Granulator YC-03  
The world leading R&D solution  
for Spray Granulating /Drying /  
Coating

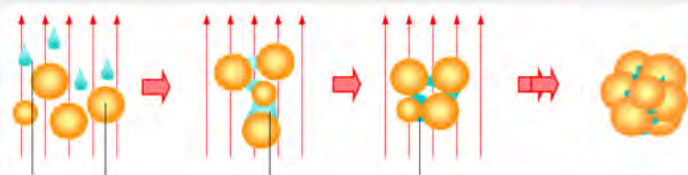
Developed by Shanghai Pilotech  
Instrument & Equipment Co., Ltd.,  
YC-03 laboratory spray granulator  
(fluidized bed granulation)  
combines spray granulation and  
coating focusing on large particles  
powder granulation in laboratory.

Frequently, only small quantities of expensive products are available for research, development, universities and technical colleges. But sometimes less is more –with Lab Spray Granulator YC-03 .

**Pilotech**  
雅程设备

## Principle of granulation

The top spray device consists of a conical material tank and an expansion chamber. The material rises and falls, forming a fluidized motion. In the conical tank the reciprocation of the material brings about a fluidized state like the shape of a fountain. The spray gun sprays liquid evenly onto the material, where liquid bridge is formed, followed by solid bridge, thus bigger granules are made.



## Greater efficiency

Suitable for almost all fluid bed processes: Spray Drying, granulating /agglomerating and coating using bottom-spray process.



## Suitable operation & adaptable

Stable operation: Core components of the equipment, including the touch screen, blower, heater, and control system, are imported, ensuring stable and reliable operation of the equipment;

The pot can be replaced with ones of different sizes, which meet the testing demand of various volumes materials;

The air inlet is equipped with class 100 purification & filtering device to ensure that the material is free of secondary contamination;

The atomizer can be replaced online, which facilitates adjustment and optimization of the test process;

## Controls & Functionality

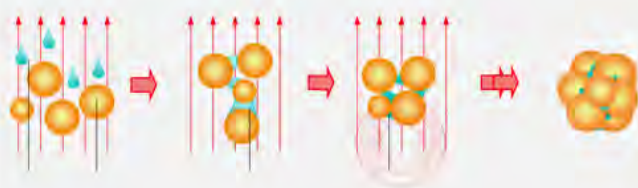
Convenient operation: Automatic PLC control is adopted for the control system, featured by one button startup, color touch screen operation, and real time modification of the test parameters during testing, such as inlet air temperature, outlet air temperature, material temperature, blow speed, and spray pressure, which is convenient for the user. The touch screen has USB ports, and data can be exported to memories sticks or printed out online;

- Inlet Temperature
- Outlet Temperature
- Airflow Volume
- Pump Speed



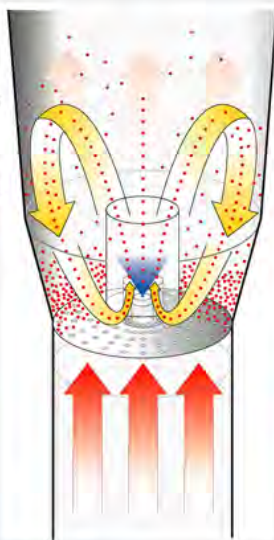
## Principle of coating

The bottom spray device, a significant breakthrough in coating technology, has made coating of small particle size possible. With the development of the technology, powder as small as 50  $\mu\text{m}$  can be coated. The bottom spray device comprises a conical pot and a guide cylinder. The bottom of the pot has a dual-path air intake structure so as to control the air flow state both inside and outside the guide cylinder.



The material in the guide cylinder ascends at a high speed, enters the expansion chamber and falls outside the guide cylinder, which is a cycle that goes repeatedly.

The spray nozzle at the center of the guide cylinder atomizes the liquid drops upwardly from the bottom so the liquid drops spread evenly on particle surface and forms patches of coating film. In this process the coating film becomes thicker steadily and dries until the coating process is complete.



## Trusted by the users

Over 1,500 domestic customers of top universities, enterprises and research institutes use our mini spray dryer/granulator. And exported to more than 40 countries & regions such as the United States, Italy, South Korea, Mexico, Singapore, Canada, Malaysia, Chile and Russia etc.



The atomizer can be replaced online, which facilitates adjustment and optimization of the test process;

The heater, atomizer and the blower are furnished with online alarm functions;

Material temperature and inlet air temperature feedback function: With material temperature feedback, inlet air temperature and timing of liquid spray are automatically adjusted and controlled, which ensures stability of the testing process so as to meet the optimum process requirement.

New type of pneumatic sealing ring is used, which facilitates operation and ensures gas tightness.

In order to meet users' requirement of adjusting various parameters within the testing range, PID thermostat control technology with real time regulation is adopted for temperature control so that temperature is accurately controlled when experimenting, ensuring stable temperature in the process of granulation and coating.

Unique dual control system for air flow inside and outside the guide cylinder: Stepless online adjustment can be performed of the guide cylinder internal and external air flow, as a result even if the pill diameter and/or specific gravity changes in the process of coating and granulation, the fluidization inside and drying outside the cylinder can still be adjusted online to optimum state.

## ■ YC-03 spray granulator parameters

| Sr.no | Parameter                 | Pilotech YC-03 spray granulator                    |
|-------|---------------------------|----------------------------------------------------|
| 1     | Function                  | Spray granulator, coating, fluid bed drying,mixing |
| 2     | Spray granulator capacity | Max. 3000g/batch                                   |
| 3     | Minimum sample volume     | 150g                                               |
| 4     | granulator temperature    | 40-150°C                                           |
| 5     | Compressed air            | 1-4 Bar                                            |
| 6     | Coating                   | Max. 3000g/batch                                   |
| 7     | Mixing                    | Max. 3000g/batch                                   |
| 8     | Nozzle type               | Two fluid nozzle                                   |
| 9     | Nozzle jet                | 0.7mm standard/(1.0/1.5/2.0mm available)           |
| 10    | Airflow                   | 0-300 m³/h                                         |
| 11    | Peristaltic pump          | Max. 3000ml/h                                      |
| 12    | Main chamber volume       | 30L                                                |
| 13    | Heater power              | 380V 8KW                                           |
| 14    | Main chamber material     | SUS304 Stainless steel                             |
| 15    | Body material             | SUS304 Stainless steel                             |
| 16    | Seal of cyclone/cylinder  | Silicone                                           |
| 17    | Dimensions                | 1450*1180*2290mm                                   |
| 18    | Operation mode            | Automatic/Manual                                   |
| 19    | Display                   | 7-Inch LCD display ,USB port                       |