

YC-501 LABORATORY SCALE SPRAY DRYER

—— YC-501有机溶剂喷雾干燥机 ——



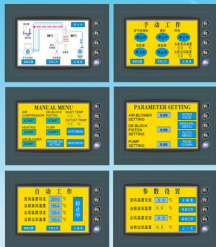
上海雅程仪器设备有限公司

SHANGHAI PILOTECH INSTRUMENT & EQUIPMENT CO., LTD

最新技术，稳定好用 EASY OPERATION

从2005年开始，上海雅程陆续提供实验室喷雾干燥机YC-015，实验室低温喷雾干燥机YC-1800，中试型喷雾干燥机YC-018，实验室真空YC-2000，实验室有机溶剂喷雾干燥机YC-015A和YC-018A系统，目前已成为实验室级喷雾干燥机领域的全球市场领导者。我们在全球的大学、研究所、各类专业研究机构和企业研发部门安装了3000多台喷雾干燥机。2016年，秉承可靠耐用、精确创新的原则，围绕客户实验室实际需求，上海雅程推出全新YC500实验室台式喷雾干燥机和YC-501微型有机溶剂喷雾干燥机，是上海雅程多年喷雾干燥制造经验和现代仪器设备制造技术研制而成的，客户感受、稳定性及便捷性大幅度提升。

Since 2005, Shanghai Pilotech has provided mini spray dryer YC-015, laboratory low-temperature spray dryer YC-1800, pilot scale spray dryer YC-018, laboratory vacuum spray dryer YC-2000, laboratory inert loop spray dryer YC-015A and pilot scale inert loop spray dryer YC-018A system, having been the leader of laboratory scale spray dryer field in global market. We have installed over 3000 spray dryers in colleges, institutes and business R&D departments all over the world. In 2016, in accordance with the principle of providing reliable and durable products with accuracy and innovation, focusing on practical laboratory requirements of customers, Shanghai Pilotech launched brand-new YC-500 mini spray dryer, which was generated from many years of spray dryer manufacturing experience and modern instrument manufacturing. Thus, the user experience, the



适用范围APPLICATIONS

YC-501实验室有机溶剂喷雾干燥机主要适用于高校、研究所和食品医药化工企业实验室生产微量颗粒粉末，对所有溶液如乳浊液、悬浮液具有广谱适用性，适用于水溶液和大多有机溶液物料的喷雾干燥，对热敏感性物的干燥如生物制品、生物农药、酶制剂等，因所喷出的物料只是在喷成雾状大小颗粒时才受到高温，故只是瞬间受热，能保持这些活性材料在干燥后仍维持其活性成份不受破坏。

如：饮料、食品、制药、奶制品、蛋制品、植物和蔬菜制品、陶瓷、聚合物、热敏材料、塑料、树脂、香料、肥皂、清洁剂、氧化物、血液、染料、颜料、粘合剂、纺织品等。

Spray drying 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:

Beverages • Flavours and Colourings • Milk and Egg Products • Plant and Vegetable Extracts • Pharmaceuticals • Heat Sensitive Materials • Plastics • Polymers and Resins • Perfumes • Ceramics and Advanced Materials • Soaps and Detergents • Blood • Dyestuffs • Foodstuffs • Adhesives • Oxides • Textiles • Bones, Teeth and Tooth Amalgam and many others. Most solutions and suspensions can be spray dried providing that the resulting product has the characteristics of a solid material.

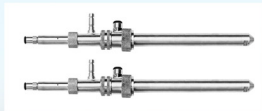
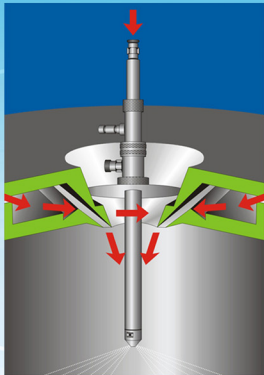
工作原理TECHNIQUE

YC-501微型有机溶剂喷雾干燥机（封闭式喷雾干燥机）采用菜单式微处理控制器（7英寸触摸屏），可以直接设置进口温度、气流量、自动通针频率、泵速，实现数据采集以及过程监控和控制。自吸蠕动泵将样品液体从容器中通过喷嘴进入干燥腔，同时压缩氮气从外层套管进入干燥腔使液体微粒化，加热的氮气从上层进入与喷雾后的液体微粒相遇，物品开始干燥，干燥后的粉粒通过旋风分离器与废气分离后进入收集瓶中，载有有机蒸汽的气流在热交换器冷却下来，然后溶剂在制冷装置中发生冷凝回收，洁净的氮气进入下一个循环中。

A menu driven microprocessor controller allows the selection of inlet temperature, airflow, automatic de-blocker frequency and pump speed. The controller features an RS 232 output for connection to a PC or datalogger and software allows the control and monitoring of all functions and printing of results.

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.

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.



技术参数

TECHNICAL INFORMATION

全自动控制与手动控制双重控制模式，整个实验过程彩色触摸屏动态显示（动画）
Two modes of run: Automatic mode, and Eye-monitored mode for the purpose of easily controlling experimental process .

进风温度控制：60℃～200℃
Air inlet temperature range 60°C to 200°C

出风温度控制：45℃～100℃
Air outlet temperature range 45°C to 100°C

物料处理量：最大500mL/h
Evaporation rate of water at inlet temperature of 200°C using Standard: Approximately 500 ml/hour

最大进料量：蠕动泵可调最大为2000ml/h
Max. Sample feed: 2000ml/h

最小进料量：30mL（视物料性质如固形物含量等差异而有一定变化）
Min. Sample : 30mL

实时调控PID恒温控制技术，加热控温精度：±1℃ 干燥时间：1.0~1.5S
To assure accurate temperature control and easy parameter adjusting, YC-015 applies PID. Temp. Precision: ±1°C, dry cycle time: 1.0-1.5S

彩色LCD触摸屏参数显示：进风口温度/出风口温度/蠕动泵转速 /风量/通针频率
As standard a touch screen to display temperature, airflow volume, air pressure, pump speed and de-blocker frequency.

喷嘴口径：0.5mm/0.7mm/0.75mm/1.0mm/1.5mm/2.0mm可选，并可根据要求定制，设有喷嘴清洁剂（通针），在喷嘴被堵塞时，会自动清除，通针的频率可自动调整
standard with 0.7 mm jet and other sizes are available as accessories

干燥空气流量：最大风量0-330m³/h 最大风压686Pa

Blowing rate: 0-330m³/h, 686Pa

加热器功率：1KW AC220V 单相 + 地

Power: 1KW AC220V

压缩机最大产气量4.2m³/h, 工作压力2-5bar

Air compressor: 4.2m³/h, 2-5bar

喷雾头为同心喷雾头，雾化时确保没有任何偏心而导致
喷到瓶壁一侧，喷雾头安装后可以上下移动，以利于调
整雾化位置改善喷雾干燥效果：

Homocentric spray head: during experiments, the new
spray head would never be off-center in atomization,
and there won't be affected recovery rate by
spraying on the bottle wall. The spray head can
change the spray site to improve the spray effect by
moving up and down; notably, the spray head has
excellent adaptability to material with high
viscosity and few blocking situation;

可用于水溶液和有机溶液的喷雾干燥（用于有机溶剂时
需配备氮气循环系统）

For solution & solvent



主要特点

ADVANTAGES

1) 首创国内桌上型：设备即可安置在实验台上，也可以放置在雅程氮气循环系统YC-501上，设备小巧，方便操作：

The first on-table model: the instrument can be placed on the experiment table, or Pilotech inert loop system YC-501, featuring small size and convenient operation;

2) 可用于水溶液和有机溶剂：YC-500实验室喷雾干燥机分为基本型和有机溶剂型，基本型适用于水溶液的喷雾干燥，选配了YC-501氮气循环系统后，即可升级成有机溶剂型，升级简单：

For aqueous solution and organic solvent: YC-500 mini spray dryer has the basic type and the organic solvent type YC-501 (with inert loop system). YC-500 is for aqueous solution, which can simply be updated to organic solvent type after equipped with YC-501 inert loop system;

3) 基本型升级成有机溶剂型，只需要购买YC-501组件即可：由于预算的限制，很多有机溶剂干燥需求的科研人员，只能购买水溶液型喷雾干燥机，但是后面，又只好再次购买有机溶剂型喷雾干燥机，造成科研经费的极大浪费。YC-500型实验室桌上型喷雾干燥机的问世，彻底解决了这一问题。科研人员购买了基本型后，后期只需要再购买YC-501氮气循环系统，即可组成封闭式喷雾干燥机，而且连接非常方便，干燥水溶液时用压缩空气，干燥有机溶剂时使用氮气，科研人员再无需为这些问题烦恼：

To upgrade the basic type into organic solvent type, YC-501 suit is the only thing to be brought: due to limited budget, many researchers with the requirement of organic solvent drying can only afford the aqueous solution type. However, they may later need to buy aqueous solution, which greatly wastes the scientific research funds. The YC-500 type laboratory on-table spray dryer completely solved this problem. The researchers only need to buy the YC-501 nitrogen cycle system to form the enclosed spray dryer after having the basic type. The connection is convenient. Using compressed air with aqueous solution and nitrogen for organic solvent, researchers will not be annoyed by these problems;

4) 同心喷雾头：实验过程中，该新型喷雾头雾化时绝对不偏心，不会喷雾时喷到瓶壁而影响回收率，喷雾头可以上下移动而改变雾化位置，以改善喷雾干燥效果；尤其值得一提的是，该喷雾头对高粘稠度物料的适应性非常好，很少出现堵塞喷雾头的现象：

Homocentric spray head: during experiments, the new spray head would never be off-center in atomization, and there won't be affected recovery rate by spraying on the bottle wall. The spray head can change the spray site to improve the spray effect by moving up and down; notably, the spray head has excellent adaptability to material with high viscosity and few blocking situation;

5) 尾气除尘装置: YC-500标配尾气除尘装置, 既减少了环境污染, 又有效的提高了得率, 特别是提高了不易回收物料的得率;

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

6) 新型的加热器: 实验室喷雾干燥机的加热丝容易烧断是个难题, YC-500有效解决了这一问题, 科研人员再也不用担心经常需要更换加热器了;

New type of heater: It is a challenge that laboratory spray dryer's heater strip can be easily burnt out. The YC-500 effectively solved this problem and the researchers will not worry about changing the heater frequently;

国内部分客户 (排名不分先后)



武汉大学



中国科学院



广东药学院



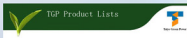
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商务中心地址：上海市徐汇区宛平南路**521号B座1603室 200032**

工厂地址：上海市松江区玉秀路**86号 201600**

电 话：**0086-21-51082915 54243466 54243425**

传 真：**0086-21-51069385**

电子信箱：**sales@pilotplant.cn**

Business Center: Rm 1603, Block B, Everwin Building 521 South Wan Ping Rd., Shanghai, 200032, PR China

Tel: 0086-21-54243466 51082915 54243425

Fax: 0086-21-51069385

e-mail: sales@pilotplant.cn

Http://www.pilotplant.cn

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SHANGHAI PILOTECH INSTRUMENT & EQUIPMENT CO., LTD

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