



The Labplant SD-06 Spray Dryer

Our flagship SD-06 laboratory scale spray dryer is the result of 30 years continuous development, the unit is self-contained and supplied complete and ready for simple setup and operation out of the box.

After a recent redesign the SD-06 is now sold as one version, with the addition of a plate to the rear of the unit, so it can be purged with nitrogen for solvent use, without it aqueous solutions can be used, it's that simple.

The unit itself is constructed of brushed stainless steel with all components in contact with product being made from 316 stainless steel. Touch screen PLC controlled, free standing, with options for additional nozzle sizes, filters, stands and more.

Technique

Our touchscreen controls allow the selection of inlet temperature, airflow, automatic de-blocker frequency and pump speed.

The 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.

The Integrated fan, pumps heated air 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 50 mm diameter hose direct to atmosphere or to an existing extraction system.



Applications

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 & Colourings
- Milk & Egg Products • Plant & Vegetable Extracts
- Pharmaceuticals • Heat Sensitive Materials
- Plastics • Polymers and Resins • Perfumes
- Ceramics & Advanced Materials
- Soaps & Detergents • Blood • Dyestuffs
- Foodstuffs • Adhesives • Oxides • Textiles
- Bones, Teeth & Tooth Amalgam and many others



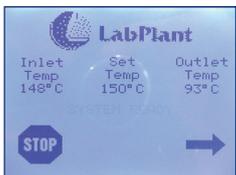
Most solutions and suspensions can be spray dried providing the resulting product has the characteristics of a solid material.

Controls & Functionality

The SD-06 functions are designed for simple adjustment. A clear black and white resistive touch screen controller allows effortless scrolling through the four control screens. At the rear of the machine are the atomiser pressure regulator and gauge, allowing the atomiser spray to be adjusted between 0 and 3 Bar. Functions that can be changed are:



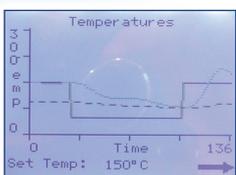
- Start Screen, controls unit start and stop and peristaltic pump on and off.



- Temperature Screen, displays inlet and exhaust temperatures and temperature set point control.



- Controls fan speed, peristaltic pump speed and de-blocker frequency.



- Temperature set point and actual graph

Two Fluid Nozzle

The stainless steel atomiser assembly consists of an inner tube for the liquid sample leading to a small diameter jet. An outer tube directs the supply of compressed air to the nozzle and the close tolerance gap between the nozzle and the jet ensures a fine vaporised spray. All units are supplied with 0.5mm jets, other sizes are available as accessories.



The 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-blocking is sometimes necessary with materials which may solidify or when large particles in suspension cause blockages in the jet.

Construction

The SD-06 is made from a robust chemically resistant stainless steel, this houses all the mechanical and electrical components. All clamps and fittings are designed to allow easy assembly and removal of the glass components in only a matter of seconds.

The rear of the cabinet includes an inlet filter designed to remove 99.99% of air laden particles ensuring that the drying air does not include contaminants.

A stainless steel support stand is available where bench space or height restrictions are a consideration and for dual cyclone or long chamber use.



SD-06 Specification

Application:	Aqueous & Solvent (AG) Aqueous only (A)
Atomiser type:	0.5mm, 2 Channel, 316 stainless steel
Evaporation rate:	Up to ~ 1500 ml/h
Temp. range:	50°C ~ 250°C ±1%
Air Throughput:	15 ~ 30m ³ /hr
Settings:	Touch Screen controlled
Compressor:	2m ³ /hr @ 2 bar - 1.7m ³ @ 3 bar
Heater:	3kW
Feed pump:	Variable speed peristaltic pump
Glassware:	Borosilicate glass
Blower:	Variable; Touch Screen Controlled
De-blocking:	Automatic; 3 Speed settings
Noise (dB):	0.5mtr = 68.6 dB 1.0mtr = 66.8 dB
Dimensions:	1110 x 825 x 600mm
Weight:	80Kg including glassware & accessories
Power:	AC 220/240V 50/60Hz 13A

Spares and Accessories

A number of spares and accessories are available to compliment the unit, from nozzles and needles ranging in size to help adjust particles size, to filters to cleanse the exhaust air, and additional glassware for improved particle collection.



Nozzle assemblies ranging from 0.5mm to 2.0mm



O-rings and tubing



Glassware



Seals and collection bottles

For further information, quotations or advice please contact us at:

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