

## Spray Dryer

DL41

Water Evaporation
Max.3000 ml/h
Operating Temperature Range
40deg.C to 300deg.C
Liquid Sample Flux
up to 80 ml/min.
Spray Nozzle
Dual Fluid Nozzle

### Fine particles of 100 $\mu$ m are produced.

The DL41 is a spray dryer which can produce fine particle of 40 to 100 $\mu$ m, which were considered to be extremely difficult to produce in laboratories.

- Capable of producing fine powders approaching the quality of production facilities for fields such as ceramics, medicine, food products, etc., with the fine granule size ranging from 40 to 100 $\mu$ m.
- High sample recovery since sample attachment to the chamber is little.
- It is possible to take enough time for dry needed to get fine particles due to the high-capacity drying chamber.

### Control panel



### Easy operation and maintenance



● The hot air inlet and drying chamber cover automatically move up and down, and since the cyclone and product vessel can easily be removed, cleaning at the finish of your experiment is easy.

● Control functions are conveniently arranged on the control panel for various conditions. The temperature recorder, air flow meter, pressure gauge and other measurements allow easy control of experiment conditions.

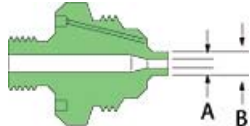


## Spraying nozzle

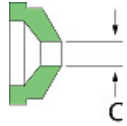
Nozzle size ( $\mu\text{m}$ )

Model		2A	2	3	4	5
Nozzle No.		2050	2850	2850	60100	100150
(F)	A	508	711	711	1530	2550
	B	1270	1270	1270	2550	3825
Nozzle No.		70	70	64.5	120	130
(A)	C	1778	1778	1638	3060	4530

Liquid nozzle (F)

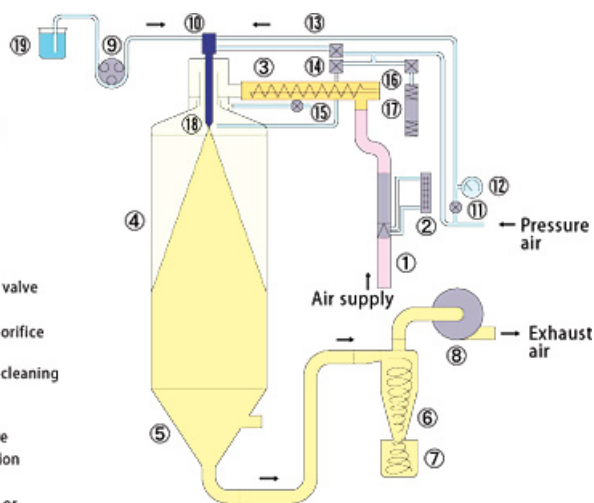


Air nozzle (A)



## System diagram

- ① Orifice tube
- ② Drying air flow meter
- ③ Heater
- ④ Drying chamber upper half
- ⑤ Drying chamber lower half
- ⑥ Cyclone
- ⑦ Product vessel
- ⑧ Aspirator
- ⑨ Sample feed pump
- ⑩ Atomizing nozzle
- ⑪ Atomizing pressure control valve
- ⑫ Atomizing pressure gauge
- ⑬ Electronic control valve for orifice cleaning
- ⑭ Electronic control valve for cleaning of sample spray nozzle tip
- ⑮ Cool air control valve
- ⑯ Head elevation control valve
- ⑰ Air cylinder for head elevation
- ⑱ Air distributor
- ⑲ Sample container (Solution or suspension)



## Specifications

<b>DL41</b>	
<b>■ Performance and Structure</b>	
Water evaporation rate	Max. approx. 3,000 ml/h
Spraying system	Two-liquid nozzle system (Dia. of orifice : 0.7mm)
Spray/hot air contact system	Downward spray parallel flow system
Sample liquid feed pump	Quantitative peristaltic pump, flow rate variable up to 80ml/h.
Aspirator	Bypass-type commutator blower, air flow rate variable up to 1m <sup>3</sup> /min.
Temperature control	Temperature control by thyristor, temperature control range : 40deg.C to 300deg.C
Heating source	Stainless steel pipe heater (2.0kW×2pcs.)
Drying chamber dimensions (mm)	450 (Dia.)×1,000 (H) (Glass part)
Material	Drying chamber, cyclone, product vessel : Super hard borosilicate glass (other tubes are made of stainless steel and silicone rubber hose)
Additional operating features of the nozzle	Automatic orifice clean out (needle knocker), clean out of any powder adhered to the tip (nozzle blower)
Additional operating features of the body	Automatic raising and lowering of the head (for washing of the drying chamber and hot air blower)
Instrumentation	Control function : Inlet temperature, hot air flow, sample pump feed quantity, atomizing air pressure, orifice clean out time. Meter : Temperature recorder of inlet and outlet temperatures, dry air flow meter, atomizing air pressure gauge.
<b>■ Standard</b>	
Power source (50/60Hz)	AC 200/220V, single phase 25A/23A
External dimensions(W×D×Hmm)	1,060×880×1,750
Weight	Approx. 180kg
<b>■ Accessories</b>	
Pump tube	6.4(O.D.)mm×3.2(I.D.)mm x 2(L)m 2pcs.
Air hose	7.9(I.D.)mm×3(L)m 1pc.
Exhaust duct	50(I.D.)mm×3(L)m 1pc.

### Dimensions (Unit:mm)

