

**FLP-1.5**

# Fluidized Bed Granulation Dryer



**EQUIPMENT  
TECHNICAL PARAMETER**

**南京翰洋智能设备有限公司**  
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## BASIC WORKING PRINCIPLE

After filtering and heating, the air enters into the granulation room from the airflow distribution plate, and the powder is suspended into fluidized state due to the promotion of airflow and the joint action of its own gravity. The compressed air and binder enter the nozzle from their respective pipes, and the binder is atomized into tiny droplets at the nozzle, which is sprayed on the fluidized powder to make it bonded and gathered to form particles. In this process, the left and right exhaust valves, cylinders cycle alternately, clean up the powder adsorbed on the bag, so that it falls back to the granulation chamber, thus completing the mixing, granulation, coating, drying and other operations.

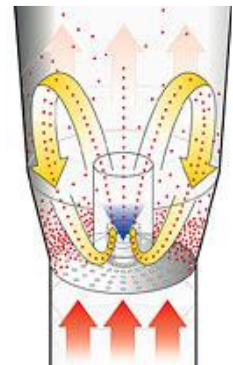
## CHARACTERISTICS OF THE EQUIPMENT

**Top spraying:** combining fluidization and airflow conveying, the material in the trough is driven by the bottom-up airflow to move upward into the expansion chamber and get the slurry bonding, due to the diameter of the expansion chamber. The material in the trough is pushed by the bottom-up airflow, and moves upward into the expansion chamber, and gets the bonding of slurry. As the diameter of the expansion chamber increases, the flow rate decreases and the fluidization state is weakened.



The material itself gravity to overcome the thrust back to the trough Inside, from the trough to the expansion chamber to form a reciprocating flow state. It is characterized by: reverse spray liquid, liquid droplet The traveling time of the liquid droplets is long.

**Bottom Spray:** Combines fluidization and airflow transport. Formation of the center of the rising area and the fluidization area around the ring. The material in the center area is driven by the bottom-up airflow, moving towards the expansion chamber to form the rising area, and when its own gravity overcomes the gradually weakening thrust, it falls into the falling area outside the periphery of the ring. From the center to the ring outside the formation of a recurring flow state, the random fluidization changes into a regular flow. Characterized by: isotropic spraying, nozzle buried in the material, the droplet's stroke is short; particles fluidization through the spray mist particles of high chances; in the spraying area particles are highly dense.



## EQUIPMENT APPLICATION

**Top Spray:** Drying Suitable for heat-sensitive materials, high efficiency, uniform drying; granulation Fast dissolution, low hardness, low bulk density, wide particle size distribution, fluffy and porous, good fluidity, easy to disintegrate and dissolve;

**Bottom spraying:** Coating Common film coating of polymerized materials with water or organic solvent; less material sticking and less solvent evaporation, suitable for coating of organic solution, slow-release or controlled-release coating, enteric coating, coating of microfine particles, and wrapping dressing of active pharmaceuticals.

## TECHNICAL PARAMETER

MODEL		FLP-1.5
Production capacity (Kg/batch)	Granulation/ coating/drying	1-1.5
Fluid application range (g/cm <sup>3</sup> )		<1.3
Material yield (%)		≥99
Finished product moisture content (%)		Up to 0.5
Vessel volume (L)		6
Diameter(mm)		300
Fan power(Kw)		2.2
Electric heating(Kw)		3
Compressed air pressure (Mpa)		0.4-0.6
Compressed air consumption (m <sup>3</sup> /min)		0.6
Operating temperature (°C)		Normal temperature -100°C adjustable
Noise (db)		Fan isolation treatment ≤ 75
Product main dimensions (L×W×H mm)		1500×850×2450

## CONFIGURATION LIST

NAME		MAKINGS	NORM	NOTE	ACCOUTREMENTS
intake system	Primary filter	Strainer	190*190	Class G4	Market Purchase
	Middle Efficiency Filter	Fiber	190*190*50	FB8	Changzhou
	High efficiency filter	Filter paper	190*190*100	H13 class, to ensure that the incoming air reaches 100,000 class purification	Changzhou
	Electric heater	Stainless Steel	3KW	Make the purified air heated to the temperature required by the	Hanyoo
	Air inlet system box	SUS304	$\delta=1.5$		Hanyoo
	Air inlet temperature probe		PT100		Shanghai
	Drainage device	SUS304	$\Phi 25$		Hanyoo
	Air Seal	silicone rubber	$\Phi 200 \times 40 \times 20$	PLC control for jacking seals	Wuxi
Ejector section		SUS304	Type 1.5 $\delta=3\text{mm}$		Hanyoo
Ejector cylinder			SU63 $\times$ 100FB	PLC	Market Purchase
Material Container	Drying/Granulating Beds	SUS304	$\delta=3\text{mm}$	Conical structure facilitates fluidization	Hanyoo
	Sampler	SUS304	Combination, Sealed	Online monitoring of material results	Hanyoo
(Diffusion chamber) Center Cylinder	Cylinder	SUS304	$\delta=3\text{mm}$	Conical structure for fluidization	Hanyoo
	Sight glass	Toughened glass	$\Phi 100$		Market Purchase
	Spotlights	Stainless Steel	$\Phi 100$	PLC control, multi-directional adjustment	Zhejiang
	Top Spray Guns	SUS304	$\Phi 1.2$ two-fluid	Quick-open installation	Wuxi
head cylinder	Heads	SUS304	$\delta=3\text{mm}$ $\Phi 306$		Market Purchase
	Soot cleaning cylinders		SU32 $\times$ 75-FA	PLC	Market Purchase
	Dampers		SU32 $\times$ 40	PLC	Market Purchase
	Bag filter	CCP Fabric Antistatic	Type 1.5	For drying, granulation,	Hanyoo
	Exhaust air temperature probe		PT100	Exhaust air temperature detection	Shanghai

NAME		MAKINGS	NORM	NOTE	ACCOUTREMENTS
exhaust system	Air Duct	SUS304	$\delta=1.5\text{mm}$	Quick-open installation, easy to dismantle	Hanyoo
	Exhaust Valve		$\Phi 102$		Hanyoo
	Induced draft fan		2.2KW	PLC frequency conversion control	Changzhou
	Inverter		2.2KW	Air volume frequency conversion	Shanghai
Peristaltic pumps			BT-100/1515	Single pipe	Hebei
Pneumatic Components			Full set		Zhejiang
electronically control	cabinet	304	Standard	$\delta 1.5\text{mm}$	Hanyoo
	Touch Screen		Kinco 7"		Shenzhen
	PLC Programmable Controller			LG	Korea
	electric element			Chintz	Zhejiang



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