技术性能 Technical performance

- 物料与干燥介质接触面大，搅拌激烈，表面更新机会多，热容量大，热传导效 果好，设备利用率高，可实现小规模设备大生产。
- 干燥速度快，物料在设备内停留时间短，适宜于对热敏性物料的干燥。
- 物料在干燥室内的停留时间可由出料口控制，故容易控制制品的含水率。
- 装置简单，设备造价快捷，除风机、加料器外，本身无机械装置，保养容易，维修费用低，清洗方便。
- 密封性能好，机械运转部分不直接接触物料，对卫生指标要求较高的食品干燥十分有利。
- 自动真空上料或手动方式上料。
- 物料自下而上、自上而下形成流化运动。
- 喷枪喷液使原料均匀接触到浆液，顶腔布袋捕集空气中的颗粒，左右交叉使用，防止粉尘堵塞影响风压和风量的变化。

- Material and drying medium have large contact surface, Stirring intense, there are many opportunities for surface updates, heat capacity, good heat transfer effect, equipment utilization is high, Can achieve small-scale equipment production.
- Drying speed is fast , the material in the equipment to stay a short time, suitable for heat-sensitive materials dry.
- The residence time of the material in the drying chamber can be controlled by the discharge port, so it is easy to control the moisture content of the product.
- The device is simple, the equipment cost is quick, besides the fan and the feeder, there is no mechanical device itself, easy maintenance, low maintenance cost and convenient cleaning.
- Sealing performance is good, the mechanical part of the operation is not directly contact with the material, the health requirements of higher food is very favorable dry.
- Automatic vacuum loading or manual loading.
- Material from bottom to top, from top to bottom to form fluidized movement.
- Spray gun to make the material evenly into the slurry, the top of the bag to capture the particles in the air, left and right cross to prevent dust to block the impact of wind pressure and air volume changes.

技术参数 Technical parameter

型号 Model	FG60	FG120	FG200	FG300	FG500
产能 Production capacity (kg/h)	30-60	60-120	120-200	200-300	300-500
原料容器容积 Raw material container volume (L)	220	330	577	970	1500
原料容器直径 Raw material container diameter (mm)	Ø1100	Ø1300	Ø1300	Ø1600	Ø1800
压缩空气压强 Compressed air pressure (Mpa)	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6
压缩空气耗量 Compressed air consumption (M^3/min)	0.6	0.9	1.0	1.5	2.5
蒸汽压强 Steam pressure (Mpa)	0.4～0.6	0.4～0.6	0.4～0.6	0.4～0.6	0.4～0.6
蒸汽耗量 Steam consumption (kg/h)	140	211	284	366	480
风机功率 Fan power (kw)	18.5	22	30	45	55
液体比重 Liquid specific gravity（kg/cm^3）	不大于1.3，流动性好 ≤1.3, good liquidity				
工作温度 Operating temperature (℃)	室温至120℃自动调节 Room temperature to 120 ℃ automatic adjustment				
物料温度 Material temperature (℃)	自动控制、自动显示 Automatic control, automatic display				
物料收得率 Material yield (%)	≥99%				
产品水份 Product moisture (%)	干燥后物料含水量可达1.5 % Dry material moisture content up to 1.5%				
噪音 Noise (Db(A))	风机隔离处理小于75分贝 Fan isolation is less than 75 dB				

注：本公司可按用户要求定制生产
Remark: Our company can customize products according to requirements of users.

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Wonsen 万申智能

多功能沸腾床
MULTI-FUNCTION FLUID BED

万申智能
Yichun Wonsen Intelligent Equipment Co., Ltd.

多功能沸腾床
Multi-function fluid bed

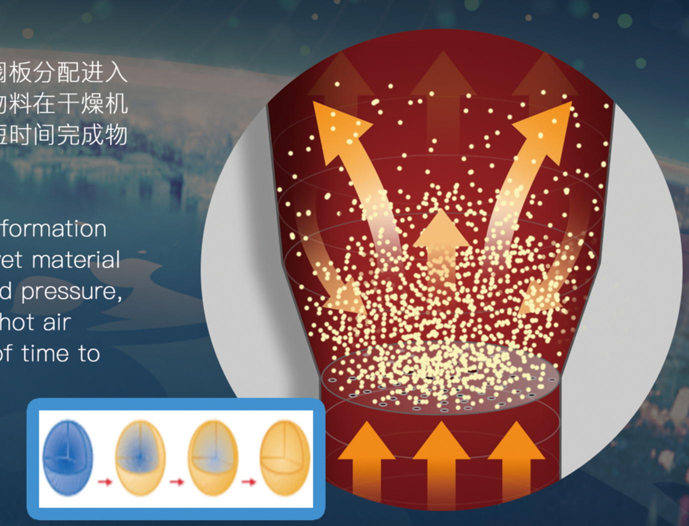
流化床设备是将大量固体颗粒悬浮于运动的流体之中，从而使颗粒具有流体的表观特征，这种流固接触状态称为固体流态化。流化床制药设备集干燥、制粒、包衣于一体化功能型装备，其优秀的干燥性能效果特别显著，在干燥的基础上，拓展出制粒和包衣功能在整个运行过程中得到了充分的发挥热能的干燥效应。从而应运衍生出顶喷制粒流化床&底喷包衣流化床。
是制药、化工、食品领域首选设备。
设备由除湿系统、进风处理系统、主机（出风除尘系统、配液喷雾系统）、二次除尘系统、防爆系统、控制系统、粉尘监测系统、清洗系统等组成，可实行在线清洗等完备的功能设施。

Fluidized bed equipment is a large number of solid particles suspended in the movement of the fluid, so that the particles have the apparent characteristics of the fluid, this fluid-solid contact state known as solid fluidization.
Fluidized bed pharmaceutical equipment set dry, granulated, coated in the integration of functional equipment, its excellent drying performance is particularly significant, on the basis of drying, to expand the granulation and coating functions throughout the operation of the process has been Fully play the heat of the drying effect. Which should be shipped out of the top spray granulation fluidized bed and bottom spray coating fluidized bed. It is the pharmaceutical, chemical, food the preferred equipment
The machine is composed of dehumidification system, into the air treatment system, the host (the wind and dust removal system, liquid spray system), the second dust removal system, explosion-proof system, control system, dust monitoring system, cleaning system and other components, it can be implemented online cleaning Functional facilities.

干燥 Boiling dry

沸腾干燥机是利用空气经热交换器加热后，形成热风经阀板分配进入主机，湿物料从加料器进入干燥机，由于风压的作用，物料在干燥机内形成沸腾状态，并与热空气进行广泛接触，从而在较短时间完成物料烘干过程。

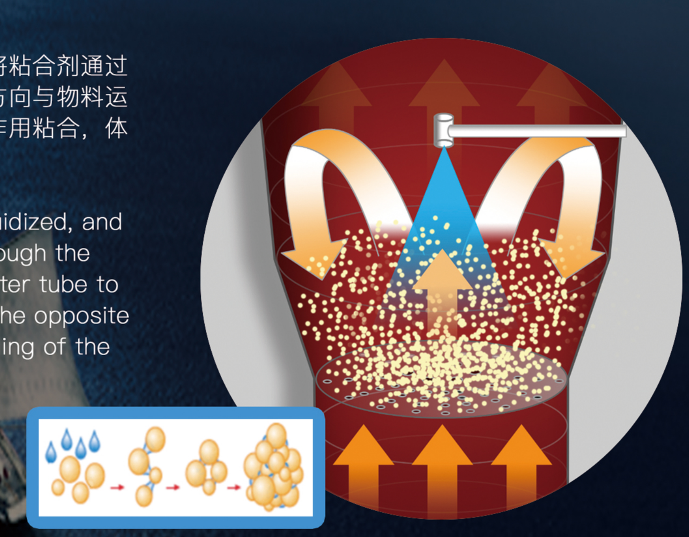
Fluid bed dryer is heated by the heat exchanger, the formation of hot air through the valve plate into the host, the wet material from the feeder into the dryer, due to the role of wind pressure, the material in the dryer to form a boiling state, and hot air Extensive contact, which in a relatively short period of time to complete
the material drying process.



制粒 Fluid bed granulator

空气动力把原料呈流态化运动，通过中筒上设置的喷枪将粘合剂通过喷枪嘴自上而下喷入，将粘合剂雾化成极细小的液滴，方向与物料运动的方向相反，物料的粘合是通过粘合剂的液桥粘合力作用粘合，体积扩大，形成颗粒。

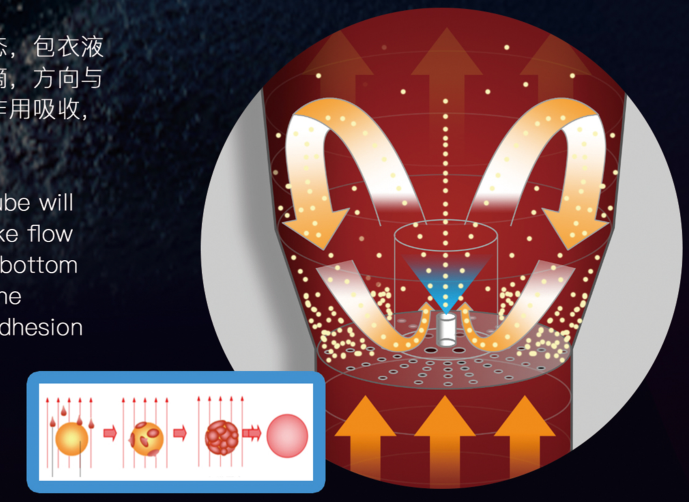
The aerodynamic movement of the raw material is fluidized, and the adhesive is sprayed from the top and bottom through the spray gun through the spray gun provided on the center tube to atomize the adhesive into extremely fine droplets in the opposite direction to the movement of the material , The bonding of the material through the adhesive force of the adhesive bridge adhesion, the volume expansion, the formation of particles.



包衣 Fluid bed coating

高压空气经底部导流筒将颗粒原料形成类喷泉状流动形态，包衣液通过喷枪嘴自下而上喷入，将包衣液雾化成极细小的液滴，方向与物料运动的方向相同，物料的粘附是通过包衣液的附着作用吸收，体积无差异，形成包衣颗粒。

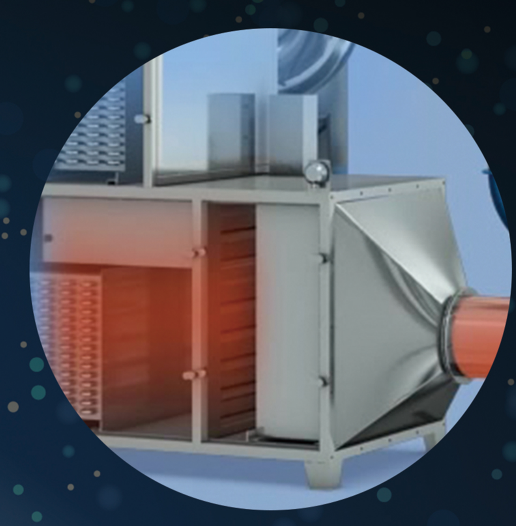
High-pressure air through the bottom of the guide tube will be the formation of granular material like fountain-like flow form, the coating liquid through the gun nozzle from bottom to top, the coating liquid into a very small droplets, the direction of movement with the same material, The adhesion of the material is
absorbed by the adhesion of the coating liquid, and the volume does not differ to form the coated particles.



热风系统 Hot air system

经初、中、高效过滤后的空气，达到D级净化标准，符合"GMP"要求；表冷除湿系统（配置在加热系统的上层--选配项）主要由双层保温柜体、表冷除湿器、水汽分离器、接水盘等组成。冷冻水注入表冷除湿器中，使空气中的水分遇冷凝结成水珠，通过水汽分离器将水汽分离，流入接水盘排出。冷热风控制叶片可以良好的控制双通道的启闭。更好的实现温度的精准控制。

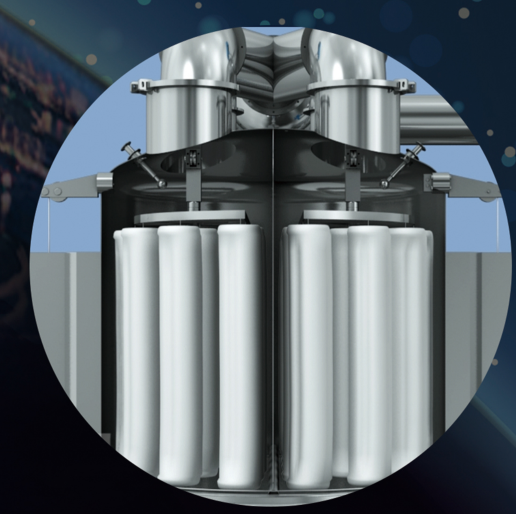
At the beginning, medium and high efficiency filtered air, to achieve D-class purification standards, in line with "GMP" requirements; Table cold desiccant system (located in the upper heating system - optional) mainly by the double insulation cabinet, table cold dehumidifier, water vapor separator, water tray and other components. Chilled water into the table cold dehumidifier, so that the water in the air condensed into water droplets, water vapor separator through the water vapor separation, into the water tray discharge. Hot and cold air control leaves can be a good control of dual-channel opening and closing. It is better to achieve the precise control of temperature.



顶部过滤系统 Top filtration system

双室过滤系统、振荡式除尘机构，保持物料的连续流化状态；左腔密闭阀关闭，左腔气缸抖袋清理粉末，抖完打开左腔密闭阀；右腔采用同样的方式进行，双腔交替抖袋除尘，以保持物料的连续流化状态。

Double chamber filtration system, oscillating dust removal mechanism, to maintain the continuous fluidization of the material state; Left chamber closed valve closed, left cavity cylinder shake bag cleaning powder, shake off the left chamber closed valve; The right chamber is carried out in the same way, double-chamber alternating shake bag dust, in order to maintain the continuous fluidization of the material state.



清洗 Cleaning

设备采用在线式自动清洗装置。双腔安装有旋转式喷淋球，清洗无死角，符合GMP要求。
The equipment uses on-line automatic cleaning device. Double chamber with a rotating spray ball, cleaning no dead ends, in line with GMP requirements.

其他附属设备：
搅拌桶、保温桶、蠕动泵、积尘桶、过滤袋、烧结网、清洗机
Other ancillary equipment:
Mixing bucket, incubator, peristaltic pump, dust barrels, filter bags, sintered net, cleaning machine