

GHL-600

Rapid Mixer Granulator Machine



**EQUIPMENT
TECHNICAL PARAMETER**

南京翰洋智能设备有限公司
NANJING HANYOO PHARMATECH CO., LTD.



GHL-600 Rapid Mixer Granulator Machine



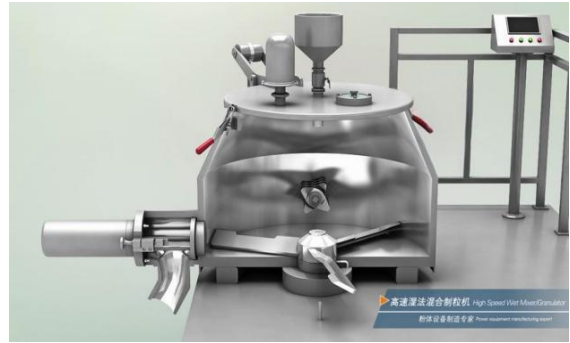
EQUIPMENT PERFORMANCE

1. The particles produced have a uniform texture and good fluidity, providing the most ideal granular raw material for the tablet pressing process.
2. Compared to traditional processes, it reduces adhesive by 25% and shortens drying time.
3. Each batch is only dry mixed for 2 minutes and granulated for 1-4 minutes, which improves the efficiency by 4-5 times compared to traditional processes.
4. The entire operation has strict safety protection measures.

When there is a significant difference between the main and auxiliary drugs, uniform binding can still be achieved without stratification

STRUCTURAL CHARACTERISTICS

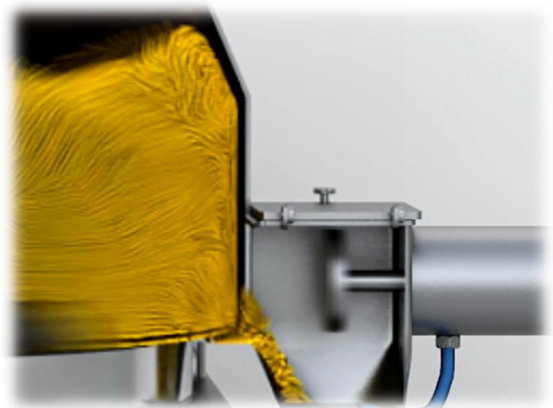
1. The GHL series high-efficiency wet mixing granulator is composed of a host, a reducer, a discharge mechanism, mixing blades, a control cabinet, cutting blades, and a balance support part. Reasonable structure, easy operation, no dead corners, easy to clean;



2. The GHL series high-efficiency wet mixing granulator adopts a horizontal drum structure and advanced design.

3. Inflatable sealed drive shaft, can be switched to water during cleaning.

4. Fluidized granulation produces particles with high sphericity and good fluidity, resulting in better smoothness, disintegration, and release of the compressed tablets.



5. Compared to traditional processes, it reduces adhesive by 25% and shortens drying time.

6. Each batch is mixed dry for 2 minutes and granulated for 1-4 minutes, which improves the efficiency by 4-5 times compared to traditional processes.

7. Complete dry wet mixing granulation in the same closed container to reduce the process and save time. Complies with GMP specifications.

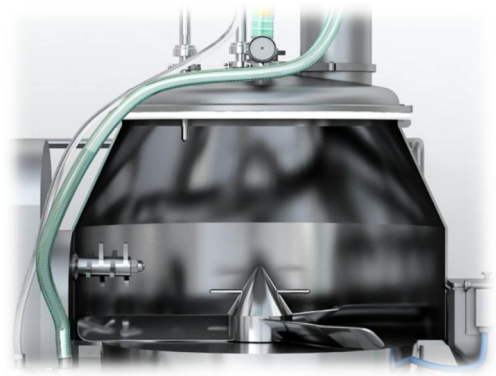
8. Equipped with safety protection measures and magnetic interlocking switches. Prevent the lid of the material pot from being opened while the motor is running.

9. The GHL series high-efficiency wet mixing granulator has a time delay circuit. When the last motor is turned off for 10-15 seconds, the material pot cover can be opened and there is a signal light indicating it. When the main switch is turned off, the lid of the material pot is locked.

10. There is a travel switch on the discharge mechanism. When the knob of the material gate is released, the motor loses power and cannot be started.

11. The cylinder of the discharge piston of the GHL series high-efficiency wet mixing granulator is flexible and adjustable, ensuring a moderate operating speed.

12. The sandwich pot body can be selected according to the process (optional): Due to the easy shaking, deformation, and instability of the single-layer pot during the production process, the manufacturing process of the single-layer pot cannot guarantee the gap between the mixing blade and the bottom of the pot, nor the R angle between the mixing blade and the bottom and wall of the pot. During granulation, the pot is prone to clumping, and the lower layer of materials is mixed well. The upper layer of materials is transported in waves and cannot be rolled, resulting in uneven mixing. The sandwich pot avoids these problems and can heat or cool certain materials.



13. Mixing mechanism:

The reducer of the mixing paddle motor is installed on the equipment bracket under the material cylinder and is elastically connected to the main shaft, effectively reducing equipment vibration and rotating noise, and facilitating equipment maintenance.



Dual directional support mixing shaft system, domestic reducer and elastic coupling

The rotating support of the agitator blade adopts a high rigidity structure with long wheelbase, multiple bearings, and bidirectional support, ensuring the stability and durability of the equipment during the formation of high viscosity particles



The mixing shaft is fixed on the bearing seat, which is equipped with two sets of bearings corresponding to axial and radial forces on the upper and lower parts of the bearing seat. The working torque of the motor is reduced, which reduces the pressure on the shaft seal and extends the service life of the shaft seal by about



1200 hours;

The Z-shaped blade design is more conducive to the flipping of materials and the effect of explosive flow rate compared to the old-fashioned blade design;

The stirring slurry forms a 35 degree angle with the bottom of the pot, which facilitates the rolling and mixing of materials;

14. Cutting mechanism:

The cutting blade adopts a double-sided blade structure (i.e. a cross shape) with multiple spaced cross installations, which is horizontally inserted into the cylindrical structure of the cylinder body on the inner side of the cylinder body for installation; The cross shaped blade helps to efficiently mix materials, and its structural reason is that the granulation rate is higher than that of the V-shaped or U-shaped cutter. The motor is directly connected to the structure and can be dynamically balanced and adjusted after assembly

△ Variable frequency speed regulation: The cutting blade motor adopts a stainless steel outer cover, and the cutting blade speed is variable frequency regulated on the touch screen display.

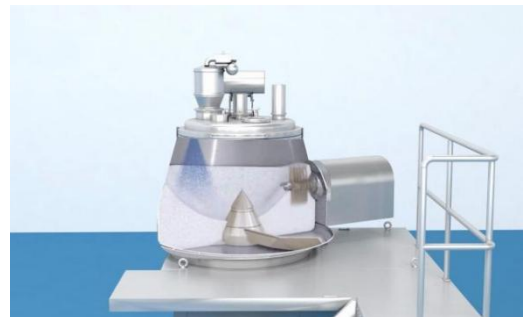
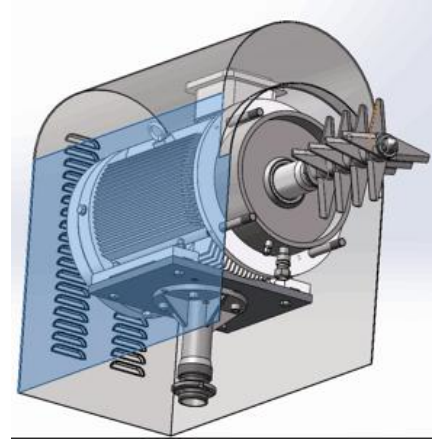
△ Sealing form: The cutting blade components adopt a multi-stage and gas sealed structure, and the installation surface of the granulation blade is equipped with PTFE, which maintains pressure sealing. The shaft sealing pressure is greater than the material cylinder pressure to achieve sealing;

△ Sealing failure alarm: There is a pressure detection at the gas seal of the cutting blade, and the sealing failure system alarms in a chain, stopping the current production state;

The cutting blade has a direct connection structure without bearings, and there is also a leakage port to detect water leakage due to seal failure

△ Lubrication form: The main shaft is sealed without oil, and the bearings are self-lubricating.

15. Transmission: Many granulators use V-belt and pulley transmission



(with low cost), which results in insufficient mixing power during the production process and easy contamination of materials by black spots caused by belt grinding. Therefore, synchronous belt and pulley transmission are chosen to ensure mixing power and granulation rate.

16. Variable frequency control: In the granulation process, different time periods have different requirements for the speed of the mixing blades. Using only a dual speed motor to control cannot meet the production requirements. Using a variable frequency control can meet the production process.

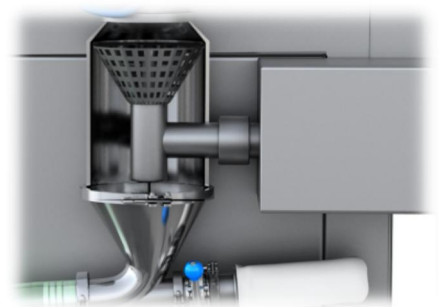
17. The "R" angle inside the bottom of the pot. If the R angle is too large or too small, the material cannot be rolled in three dimensions. The appropriate R angle is crucial for the uniform mixing of materials. The R angle requires high manufacturing technology during the production process. Our company's bottom of the pot is stamped with a mold to ensure the R angle at the bottom of the pot.

18. Sealing: The main shaft components adopt a multi-stage and air sealed structure. The main shaft is equipped with sealing rings from top to bottom, and air and water seals are also equipped with sealing ring damage and leakage monitoring ports, which can be replaced in a more timely manner. During maintenance, only the mixing blades need to be removed, and the operation can be completed inside the pot without the need to remove large equipment such as reducers, making it simple and convenient.

17. The "R" angle inside the bottom of the pot. If the R angle is too large or too small, the material cannot be rolled in three dimensions. The appropriate R angle is crucial for the uniform mixing of materials. The R angle requires high manufacturing technology during the production process. Our company's bottom of the pot is stamped with a mold to ensure the R angle at the bottom of the pot.

19. Pot lid scraper: During the granulation process, the material will adhere to the inner wall of the pot lid due to rolling. Before opening the pot lid, the scraper will remove the material from the inner wall of the pot lid to avoid pollution and waste.

20. Whole grain system (optional)



The whole grain system includes motors, transmission devices, whole grain knives and screens, rotating mechanisms, material conveying interfaces, etc.

The whole granulator is installed below the discharge port of the wet mixing granulator, supported by a set of

double hinge rotating mechanisms on the frame, which can conveniently rotate and connect with the discharge port of the wet mixing granulator.

The motor is directly connected to the whole grain cutter for transmission, with dry lubrication.

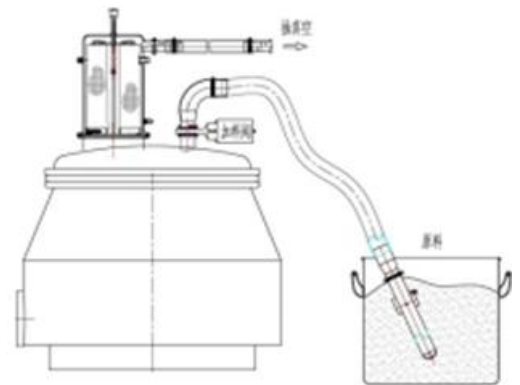
The speed of the whole grain motor can be set on the touch screen display.

The mesh design of the wet particle granulator is square hole, which is easy to disassemble and replace. There are three sizes of mesh available, 10, 12, 14 (mm).

21. Feeding system (optional)

Vacuum feeding

User provided vacuum source: vacuum filter on the cylinder head: an anti-static material filter, quick card installation, used for exhaust during feeding. At the same time, the material cylinder is designed with a self vacuum suction feeding method, which is controlled by a set of valves during the feeding process. The user must provide a vacuum source to allow the air in the material cylinder to be discharged, creating an internal vacuum environment and realizing the vacuum feeding process;



TECHNICAL PARAMETERS

MODEL	GHL-600
Total volume (L)	600
Production (Kg/batch)	200
Mixing motor power (KW)	45
Mixing speed (rpm/min)	50-150
Cutting blade motor power (KW)	11
Cutting speed (rpm/min)	150-3000
Compressed air pressure (Mpa)	0.4~0.6
Product granularity (mesh size)	20-80
Working time (min)	5-12
Compressed air consumption (m ³ /min)	1.5

MAIN CONFIGURATION

Pot body part

NO.	NAME	QTY	TEXTURE	SPECIFICATIONS	REMARKS	PLACE OF ORIGIN
1	panel	1	SUS304	Mirror panel $\delta=3\text{mm}$	Surface polishing treatment	Hanyoo
2	Side sealing plate	1	SUS304	Mirror panel $\delta=1.5\text{mm}$	Surface polishing treatment	Hanyoo
3	Granulator pot body	1	SUS304	$V=600\text{L}$ $\delta=6\text{mm}$	Fine turning of inner and outer surfaces	Hanyoo
4	Granulation pot cover	1	SUS304	Flange $\delta=18\text{mm}$ Head $\delta=6\text{mm}$	Equipped with an observation mirror, liquid dispensing device, and exhaust device, with no dead corners inside for easy cleaning	Hanyoo
5	Cover opening device	1	SUS304	Supporting facilities	Adopting pneumatic cover opening, the structure is simple.	Hanyoo
6	Discharge device	1	SUS304	$\Phi 200$	Automatic discharge, using pneumatic control for easy cleaning. And equipped with interlock switch	Hanyoo

Mixing system

NO.	NAME	QTY	TEXTURE	SPECIFICATIONS	REMARKS	PLACE OF ORIGIN
1	Main agitator blade	1	SUS304	600	The material undergoes circumferential, radial, and axial fluidization movement, with strong mixing ability, uniformity, and adjustable speed. The gap between the material and the bottom of the pot is $1.0\text{mm}\sim 1.5\text{mm}$	Hanyoo
2	Airtight sealing component	1	SUS304	Supporting facilities	Avoiding the entry of materials and liquids into the mixing device	Hanyoo

NO.	NAME	QTY	TEXTURE	SPECIFICATIONS	REMARKS	PLACE OF ORIGIN
3	Deceleration device	1	A3	600	Smooth operation and high output torque,	Jiangsu
4	Mixing motor	1		explosion-proof 45KW	50-200, using different rotational speeds at different time periods to meet production process requirements	Jiangsu
5	Frequency converter	1		45KW	Variable frequency adjustment of mixing speed	Delta

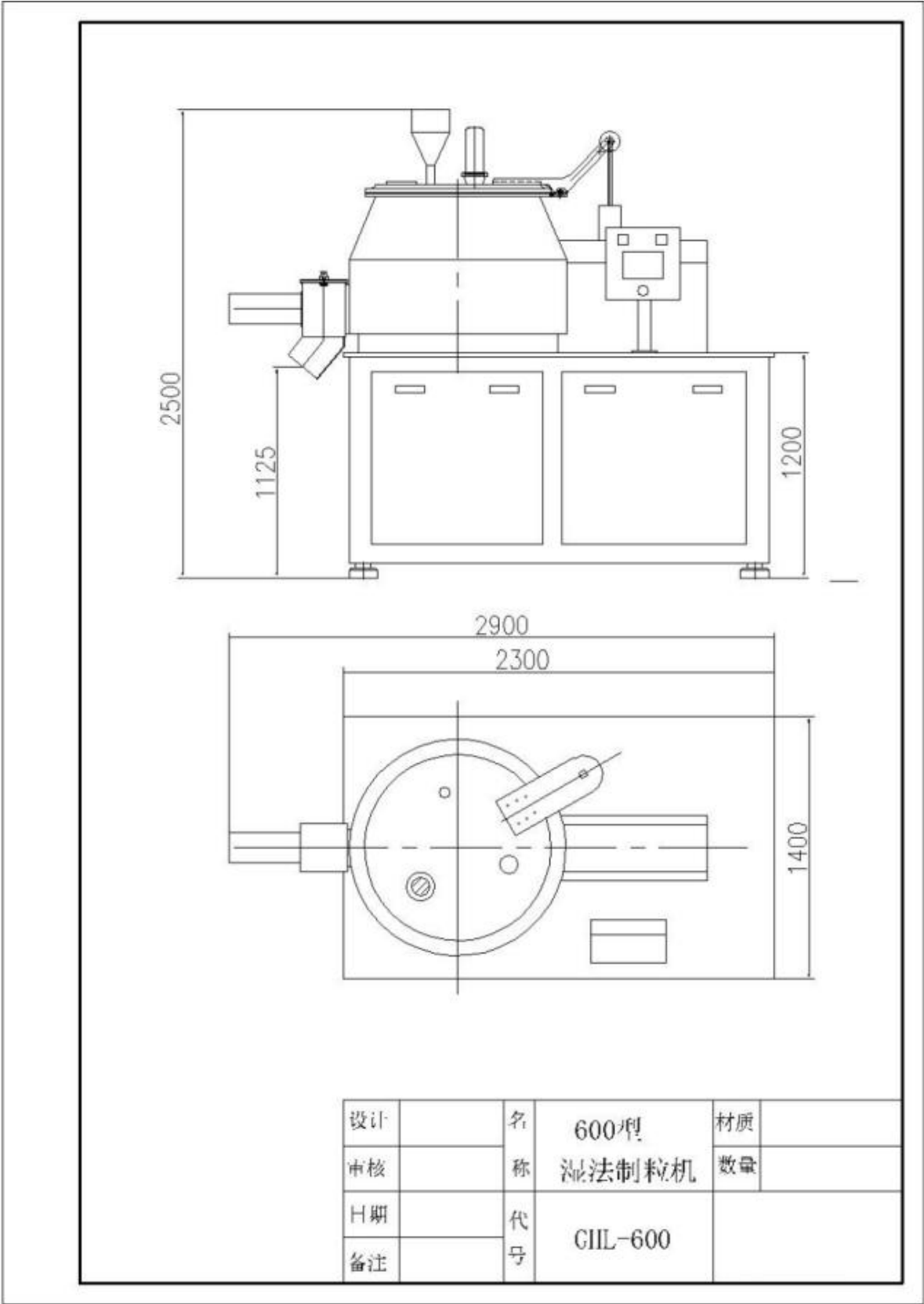
Cutting system

NO.	NAME	QTY	TEXTURE	SPECIFICATIONS	REMARKS	PLACE OF ORIGIN
1	cutter knife	1	SUS304	Supporting facilities	Multiple U-shaped cutters with strong shear force, fast granulation, and good particle size	Hanyoo
2	Cutting motor	1		explosion-proof 11kw	(150-3000), using different rotational speeds at different time periods to meet production process requirements	Changzhou
3	Frequency converter	1		11KW	Variable frequency adjustment of cutting speed	Siemens
4	Elastic coupling	1		Supporting facilities	Claw shaped, stable transmission, convenient disassembly and assembly	Changzhou
5	Airtight sealing component	1	SUS304/A3	Supporting facilities	Avoiding the entry of materials and liquids into the cutting device	Hanyoo

Control system

NO.	NAME	QTY	TEXTURE	SPECIFICATIONS	REMARKS	PLACE OF ORIGIN
1	Explosion proof control cabinet	1	SUS304	δ 1.5mm	Placed in explosion-proof room	Hanyoo
2	Main electrical components	1		Schneider	Supporting facilities	Germany
3	touch screen	1		Siemens 7 "	SMART700	Germany
4	PLC programmable controller	1		Siemens	S7-200	Germany

EQUIPMENT SIZE



The banner features a dark blue background with several white line-art icons related to medicine and healthcare. These include a blister pack of pills, a medicine bottle with a cross, a pill being poured from a container, two pills, a syringe, and another blister pack.

HANYOO

翰洋科技

Add:No.380 Sanqiaogeng,Gaochun District,Nanjing,China

Tel:+86-025-5621 6295

[Http://www.hanyoopm.com](http://www.hanyoopm.com)