

HLSG Series High Shear Mixing Granulator



The machine fully complies with GMP pharmaceutical requirements, featuring low consumption no pollution, security. It can complete the process of mixing, humidifying, granulating and other at one time, suitable for pharmaceutical, food, chemical and other industries. And it's 4-5 times higher than the traditional process, which is reflected in about 2 minutes of dry mixing and 1-4 minutes of granulation for each batch. It is mainly composed of conical hopper, impeller, chopper, feeding device, liquid feeding device, discharging and control system, and auxiliary systems such as air sealing, water cleaning, and jacket water cooling. In the container, the material and the binder are fully mixed by the impeller to form a moist soft material, and then cut into uniform wet particles by the high-speed chopper blades.

Working Principle

The process consists of two programs including mixing and granulating. Powder material can be charged into the material pan from the conical hopper and continue to rotate in the container under the action of mixing blade once the hoper is closed. In the meanwhile, all materials grow up the shape of liquid bridge under continuous effects of conical wall. Under the action of extrusion, friction as well as crumb by blade and conical tank wall, all material is gradually turn for loosen. At last while opening the hopper outlet, waterish particles are pushed off under the centrifugal effects blade.

Feature

1. Auto startup of safety pin in fixed position while opening the lid guarantees reliable operation.
2. Belt drive system has advantages of overload protection, simple maintenance, free of oil lubrication and leakage.
3. Oblique designed liner impeller blade applies for the mixture of processed material which drops down at certain height, free of sticking on lid.
4. Container lid is multifunctional design, fitted with observation port, auto/manual dipping port, exhaust port, auto cleaning port, auto spraying port, vacuum loading port.

5. An automatic water circulation system is built under bottom container.
6. Three cycles of seal rings and air seal used for the bearings of impeller and chopper, no dirty or oil backflows to processed container.
7. Air seal system is common for air and water circulation, both for cleaning bearing gaps and pressure setting.
8. Stringent mirror polish technology applied to full container.
9. Outlet Vent filter 0.22 micron allowing evacuation of compressed air used in air purged impeller and chopper seals.
10. Conical sieve mill (Wet Mill) is mounted on discharge port, equipped with milling screen and two rotor arms (square or round) or triangular blades that rotates at a speed up to 3000 RPM (Option).

Technical parameters

Model	HLSG-10	HLSG-30	HLSG-50
Hopper Capacity	10L	30L	50L
Working Capacity	2-8L	6-24L	10-40L
Feed Qty	1-4 Kg/batch	3-12 Kg/batch	8-20Kg/batch
Operation Time	Mixing about 2 minutes granulating about 7-14 minutes each batch	Mixing about 2 minutes granulating about 7-14 minutes each batch	Mixing about 2 minutes granulating about 7-14 minutes each batch
Finished Product Granularity	About $\Phi 0.14$ - $\Phi 1.5$ mm (12 mesh-100 mesh)	About $\Phi 0.14$ - $\Phi 1.5$ mm (12 mesh-100 mesh)	About $\Phi 0.14$ - $\Phi 1.5$ mm (12 mesh-100 mesh)
Mixing Motor	2.2KW	3KW	5.5KW
Mixing Blade Rotating Speed	50-500 rpm	25-500 rpm	25-500 rpm
Granulating Motor	0.75KW	1.1KW	1.5KW
Granulating Blade Rotating Speed	50-3000 rpm	50-3000 rpm	50-3000 rpm
Compressed Air	0.15m ³ 0.7mpa	0.15m ³ 0.7mpa	0.3m ³ 0.7mpa
Cooling Water Connector	$\Phi 8$ mm	$\Phi 8$ mm	$\Phi 8$ mm
Compressed Air Port	$\Phi 8$ mm	$\Phi 8$ mm	$\Phi 8$ mm
Machine Size	1280×530×1320 mm	1500×550×1350 mm	1750×600×1620 mm
Weight	350kg	450kg	600kg

Model	HLSG-100	HLSG-200	HLSG-300
Hopper Capacity	100L	200L	300L
Working Capacity	20-80L	40-160L	60-240L
Feed Qty	15-40 Kg/batch	30-80Kg/batch	30-120Kg/batch
Operation Time	Mixing about 2 minutes granulating about 7-14 minutes each batch	Mixing about 2 minutes granulating about 7-14 minutes each batch	Mixing about 2 minutes granulating about 7-14 minutes each batch
Finished Product Granularity	About $\Phi 0.14$ - $\Phi 1.5$ mm (12 mesh-100 mesh)	About $\Phi 0.14$ - $\Phi 1.5$ mm (12 mesh-100 mesh)	About $\Phi 0.14$ - $\Phi 1.5$ mm (12 mesh-100 mesh)
Mixing Motor	7.5KW	15KW	18.5KW
Mixing Blade Rotating Speed	30-250 rpm	30-260 rpm	30-220 rpm
Granulating Motor	3KW	4KW	5.5KW
Granulating Blade Rotating Speed	50-3000 rpm	50-3000 rpm	50-3000 rpm
Compressed Air	0.3m ³ 0.7mpa	0.3m ³ 0.7mpa	0.5m ³ 0.7mpa
Cooling Water Connector	$\Phi 8$ mm	$\Phi 10$ mm	$\Phi 10$ mm
Compressed Air Port	$\Phi 8$ mm	$\Phi 10$ mm	$\Phi 10$ mm
Machine Size	1760×600×1660 mm	2180×810×1950mm	2420×1060×2150mm
Weight	800kg	1300kg	1500kg

Model	HLSG-400	HLSG-600	HLSG-800
Hopper Capacity	400L	600L	800L
Working Capacity	100L-300L	150L-440L	200L-600L
Feed Qty	50-150Kg/batch	75-220Kg/batch	100-300Kg/batch
Operation Time	Mixing about 4 minutes granulating about 10-15 minutes each batch	Mixing about 8 minutes granulating about 15-20 minutes each batch	Mixing about 8 minutes granulating about 15-20 minutes each batch
Finished Product Granularity	About Φ0.14-Φ1.5mm (12 mesh-100 mesh)	About Φ0.14-Φ1.5mm (12 mesh-100 mesh)	About Φ0.10-Φ2.5mm
Mixing Motor	22KW	30KW	37KW
Mixing Blade Rotating Speed	20-200 rpm	20-200 rpm	20-200 rpm
Granulating Motor	7.5KW	11KW	11KW
Granulating Blade Rotating Speed	50-3000 rpm	50-3000 rpm	50-3000 rpm
Compressed Air	0.5m ³ 0.7mpa	0.5m ³ 0.7mpa	0.6m ³ 0.7mpa
Cooling Water Connector	Φ10mm	Φ10mm	Φ12mm
Compressed Air Port	Φ10mm	Φ10mm	Φ12mm
Machine Size	2420×1060×2150mm	2980×1200×2500mm	3180×1500×2800mm
Weight	1800kg	2200kg	2700kg