

**BG-10**

# High Efficiency Coating Machine



**EQUIPMENT  
TECHNICAL PARAMETER**

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# BG-10 High Efficiency Coating Machine



## MACHINE INTRODUCTION

1. BG type high efficiency coating machine is a special equipment for coating Chinese and western medicine tablets, pills and candies with aqueous film and organic film. The equipment is manufactured in accordance with the GMP requirements of the pharmaceutical industry; its entire shell, coating drum (coating pot), hot air blower, spraying device and all parts in contact with the drug are made of stainless steel.
2. The whole process is controlled by microprocessor programmable system, or controlled by

manual operation. The control system is equipped with a variety of applications, operating state selection, closed-loop control of rotational speed and temperature, open circuit control of negative pressure and hot air supply in the coating machine pot, and complete display of control parameters.

3. All coating operations are carried out in a closed state, no dust and spray liquid splash, is a high-quality and efficient, reliable, clean, energy-saving, easy to operate in line with the SOP operation of the new coating equipment.
4. The PLC control system in the coating machine contains automatic control and display of all process parameters such as hot air flow, exhaust air flow, rotating speed and temperature.

## HOST DESCRIPTION

1. Integrated design function: Integrate the mainframe, hot air system, dust removal and exhaust system, compressed air system, touch screen, peristaltic pump and electrical control system.
2. Negative pressure detection: Negative pressure detection point is added in the upper box of the coating machine, and 2 differential pressure meters are installed in the operation cabinet.
3. Streamline deflector plate: the pistil in the streamline deflector plate stirrer role, turning smooth, frequent exchange, eliminating the pistil from the height of the fall and collision phenomenon, to solve the debris and knocking edge, improve the yield. The narrow upper surface of the deflector plate eliminates the adhesion of the dressing on its surface, saves the dressing and improves the quality of the medicine.
4. Temperature detection: temperature sensors are configured in the inlet and outlet of the coating drum, and its temperature signal is input to PLC to automatically control the heat exchanger after comparing with the set value, so as to achieve the control of the coating temperature value.



spoiler (automotive)

## LIQUID SPRAYING SYSTEM

1. Control of slurry spraying volume: the spray gun of the slurry pipeline system is equipped with manual slurry adjustment function: the main door of the high-efficiency coating machine is equipped with a scale adjustment valve, peristaltic pump speed adjustment, can play a role in adjusting the amount of slurry spraying.
2. Spray gun configuration: optional customized high-end spray gun with automatic gun clearing function. 316L material with streamlined structure design, conducive to online cleaning and reduce gas turbulence; designed with timed intervals of automatic gun clearing program and manual gun clearing device, gun clearing time as long as 1 second can be completed. Designed to shoot the gun when 0.3MPa shooting, in the structure to ensure that the dressing in the spray atomization process is always the first to open the atomization gas circuit after the spray, in the shutdown of the gun first off the dressing after the shutdown of the atomization gas circuit function, to put an end to the droplet phenomenon in the atomization process.
3. Magnetic stirrer: suitable for laboratory small amount of proportioning coating liquid, stirring evenly, convenient and quick.



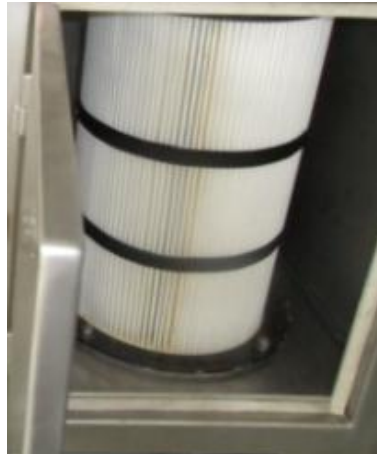
316L high-end customized spray gun

## COMPONENT PHOTOS



Mobile coating drum stand (Optional

Quotation)



Cylinder Filter



magnetic stirrer



Electromagnetic pulse valves

(above for dust removal units)

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## ELECTRIC CONTROL SYSTEM

1. The main core components of the control system PLC selected Germany Siemens programmable controller; selected Delta speed inverter, microcomputer control temperature control system, and equipped with high-quality photoelectric sensors and thermal sensors. The system is stable, low failure rate, convenient maintenance and easy operation.

2.Control object



- ① Main machine (drum operation of coating machine) Frequency conversion speed regulation
- ② exhaust fan operation (negative pressure control of the drum of the coating machine) Frequency conversion speed control
- ③ Hot air blower operation (hot air volume control) Variable frequency speed control
- ③ Hot air blower operation (hot air air volume control) Frequency conversion speed control
- ⑤ dust collector cleaning operation
- ⑥ Heating system control

### 3. Function description

Protection function: the thermal relay used can connect the overload signal to the programmable controller and display it on the touch screen, which is convenient for the user to find out the fault and solve it quickly and protect the electrical equipment effectively.

Clock function: the system has a real-time clock, displayed on the touch screen, according to the need for statistical system running time.

Negative pressure control: use frequency converter to change the speed of induced draft motor to control the negative pressure. Equipped with a pointer negative pressure display table produced by DWYER in the United States, manually manipulate the frequency converter output frequency on the touch screen so as to change the exhaust air volume and maintain the negative pressure in the required range.

Air volume control: use the frequency converter to control the speed of the blower to change the air intake, air volume observation using the pointer-type anemometer produced by the U.S. DWYER, manually manipulate the frequency converter output on the touch screen to change the air intake.

Temperature control: there are two kinds of heating elements: steam and electric heating. According to the difference between the set value and the actual value, the PLC calculates to control the angle seat valve switch to change the size of the steam volume, so as to ensure that the system hot air temperature.

Record printing function: real-time recording of production data, including temperature, negative pressure, operating instructions, equipment status, running time, etc.. The Weihuang

pin-type printer used is reliable and easy to record information to generate reports.

#### 4.Realization function

Can realize manual control, automatic (program control) function.

##### (A) manual control

In the touch screen manual control of the executable components, such as host frequency converter, hot air frequency converter, exhaust air frequency converter, slurry solenoid valve, vibration motor, peristaltic pump.

##### (B) Automatic control

Realize automatic control of each control object according to process requirements;

realizes the working sequence of each object according to the process requirements;

control the working time of each object according to the process requirements;

simultaneous start and stop of several control objects according to process requirements;

up to 99 cycle operations according to process requirements;

has the control of 9 work steps according to the process requirements;

can have 9 different process programs;

the main machine speed can be adjusted in any way;

program can automatically maintain the set negative pressure, speed and temperature;

hot air exhaust temperature with deviation adjustment function;

negative pressure can be adjusted manually on the touch screen;

air volume can be manually adjusted on the touch screen;

has printing function, including process parameters, operation records, the running time of each equipment.

## TECHNICAL PARAMETERS

MODEL			BG-10
Maximum tablet capacity			5kg, 10kg/time (stacking density of 1)
Main machine volume (L×W×H)/weight			1220×940×1800mm/400kg
Drum speed (rpm)			2-17r.p.m
Motor power of main machine			0.37kw
Electric heating power			6kw
Exhaust cabinet motor power/flow			1.1kw/1100 m <sup>3</sup> /h
Hot air blower power/flow			0.25KW/450 m <sup>3</sup> /h
Hot air temperature adjustment range			0~80°C
Hot air purification efficiency			10class
Peristaltic pump power			0.03KW
Silicone tube wall thickness			1.6—2.2mm
exterior conditions condition	Clean Air	Pressure	≥0.4Mpa
		Air Consumption	0.6m <sup>3</sup> /min
	Electrically heated	Power supply	12KW



## ELECTRONIC PART LIST

NO.	Accessory Name	Model No.	Manufacturer	Remarks	QTY
High-efficiency coating machine mainframe					
1	Main body material	304-2B favorδ3.0	Zhang Pu		
2	Spray gun	BY	Professional Customization		1
3	Motor	YB100L1-4	Radisson	0.37kw	1
4	Cycloid reducer	BWB	Riedesen	0.37kw	1
5	Spherical Ball Bearing	7210	Harshaw		
6	Deep Groove Bearing	6160	Harshaw		
7	Chain	12A-1	Suzhou Chain Factory	A3	1
8	Sight lamp	Absg	New Dawn Explosion-proof		1
9	Differential Pressure Gauge	2300-1KPa	DWYER	Negative Pressure	1
10	Plate pressure reducing valve	LR-1/4-D-O	AirTAC	Gun Adjustment	4
11	Plate pressure gauge	FMA-50-10-1/4	AirTAC	Spray gun adjustment	4
12	Touch screen	Smart700	Siemens	7 inch color	1
13	Emergency stop	ZB2-BE102C	Schneider	Red color	1
electronic control system					
1	Circuit Breaker	65N	Schneider	4P A	1
2	Circuit Breaker	65N	Schneider	C1P 6A	2
3	AC Contactors	LC1E0910M5N	Schneider	220V 9A	1
4	AC Contactor	LC1E2510M5N	Schneider	220V 25A	1
5	Intermediate Relay	RXM4LB2P7	Schneider	220V	2
6	Intermediate Relay Block	RXZE1M4C	Schneider	220V	2
7	Thermal Overload Relay	LRE08KN	Schneider	1—1.6A	4
8	Inverter	Delta EL Series	Schneider	1.1KW	1

NO.	Accessory Name	Model No.	Manufacturer	Remarks	QTY
9	Inverter	Delta EL Series	Delta	0.37KW	2
10	7-inch color touch screen	Smart700	Siemens	7-inch color	1
11	Programmable Controller	Siemens	Siemens	224XP	1
12	Temperature Control Meter		Guolong Instrumentation	TCW--32K	2
13	Power switch	Mingwei	Meanwell	D-30BGD	1
high-efficiency filtration heaters					
1	Fans	CF	Shanghai Yingfa Fan Factory		1
2	Hot Air Motors	YB-90S-4	Nanjing Electric Machinery Factory	1.5kw	1
3	High efficiency filter	320*320*120	Zhongrui Purification	H13	1
4	Electric heat pipe	φ16*600	Jiangsu Xinghua Chushui Electric Appliance Factory	2kw	3
5	Air Supply Duct	Φ89mm	Hanyang		1
Dust muffler exhaust fan					
1	Exhaust centrifugal fan	9-16	Vida	1.1kw	1
2	Pulse dust collector	DMF	Hanyoo	--	1
3	Coated Filter Element	Φ300×Φ250mm	Nanjing Sieve & Filter Factory	---	1
Combined mixing drum					
1	Magnetic Stirrer	DX2000	Shanghai Instrument Company		1
2	Plastic casters	φ75*32	Shinwa		4
3	Peristaltic pump	BT-100	Reiver		1



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