

Automatic Coating System

Automatic Tablet Coating System / Lab Auto Coating System / CF Coater





Automatic Tablet Coating System

Best Solution for Coating Application

Sejong Pharmatech's tablet coating system is designed with the most effective air supply and exhaust structure to maximize drying efficiency while its patent-earned spray gun auto-sliding is designed to enable easy nozzle replacement and cleaning.

It adopts a counter-rotating automatic discharge method by an easily removable discharge scraper that will complete the end of tablet coating process while maximizing ease of use with electric and pneumatic tool boxes embedded in the main body for easy repair and maintenance.

As such, Sejong Pharmatech's tablet coating system has broadened the range of choice for customers from a lab specific SFC-30 to a large-sized SFC-170D and manufactured from a basic touch screen type to a 21CFR part 11 HMI type which is approved by FDA to meet customer demands.

All coating systems are fitted to various GMP standards in different countries.

Their simple and stylish external design further satisfies customers' taste.

STRUCTURE



Digital Device and Alarm Lamp Mounted on the Front Pressure Part of the Machine

We discarded the previous analog-type manometer and regulator on the front, then adopted a digital one to enable users to promptly and easily check the machine operation status on the control screen quickly.

In particular, as pressure adjustment status of the existing spray gun is shown on the touch screen, users can adjust them to maintain desired constant pressure values so that it helps to make a uniform sprayed coating. Also, it is designed to inform users of any problems on key components and/or coating finishing time through the alarm lamp on the front, allowing prompt measures against problems on the machine performance.



Design

The exterior of the coating system is made up of stainless steel in accordance with GMP standards while the middle front is covered by polished stainless steel to enhance a simple and classy look.

Also, a coating pan inside the machine is polished to assist more fluid movement of tablets and ensure hygienically clean coating process.

The newly designed body is round in shape to appeal to customers with enhanced softness and stability.



Separate of Solution Pump

It completely solves the leaking problem that previously occurred on the front part of the existing coating machine by separating a peristaltic pump and diaphragm pump attached to the front part of the machine.

Also, a solution pump separation allows clear distinction and separation between production and mechanical spaces, thereby enabling more hygienic and stable coating. It ensures more convenient maintenance and repair by making it possible to move a pump anywhere.



CIP Box

CIP Box Stand Alone

Automatic C.I.P System

The new CIP system (Clean In Place System) that innovatively complemented the existing WIP system provides perfect cleaning capacity.

It allows you to choose from three types of water including cool water, warm water, and purified water as well as detergents in the order that the user has specified and is programmed to control the time for water supply.

In addition, it has a touch screen on the upper part of the system to allow CIP system to work independently.

A high-pressure CIP pump will ensure remarkable cleaning capability that completely cleans and drains the used coating pan, dust in air supply and ventilation ducts and the remaining coating liquid.



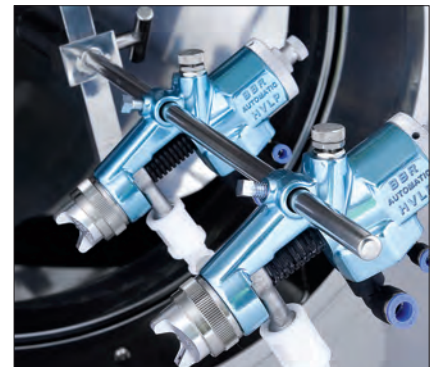
Spray Gun Sliding Pipe-Arm

Installing complicated air-lines inside the sliding pipes has enabled easier maintenance and repair and enhanced usability. Plus, it can be used semi-permanently as the coating liquid line part is not made up of silicon hose but of stainless steel pipes. Thus, it is designed to produce a more hygienic coating.



Stainless Steel Spray Gun - Standard Item

Complementing the existing aluminum gun, this spray gun is fully made of stainless steel materials so that it can be used semi-permanently and is corrosion-free and very easy to clean. Also by a special design that removes a flat jet on the head, it prevents air cap clogging that often occurs when used for a long period of time, thereby exerting consistent coating performance.



HVLP Spray Gun (High Volume Low Pressure) - Optional Item

As the body of the spray gun is made up of alloyed aluminum die-cast material, it is very light. Also the fluid nozzle and needle are made up of stainless steel. The one distinctive feature of HVLP spray gun is that it can spray a high volume of fluid at a low pressure.

STRUCTURE



Solution Tank

The exterior is covered by stainless steel in accordance with GMP standards. The ingredient-contacting part inside of the tank is made up of stainless steel 316L and polished so as to maximize the fluidity of ingredients. As it is designed using an air motor agitator operation method, there is no risk of explosion while the attached air-regulator enables speed adjustment. In addition, a jacket and single tank are divided and jacket tank is designed with electric heater warm-up method to prevent the coating liquid from hardening. The solution tank is designed with a release clamp on the lid to enable easy cleaning.



Heat Exchanger

Air forced by a blower installed in the heat exchanger is heated by steam heating coils before being directed to the inside of the coating fan. As users can adjust the speed of the blower with an inverter, it is possible to control wind speed and static pressure. In addition, there is a duct flange installed on the upper part which allows a HEPA filter to be installed as a separate option.



Dust Collector (Dry Process)

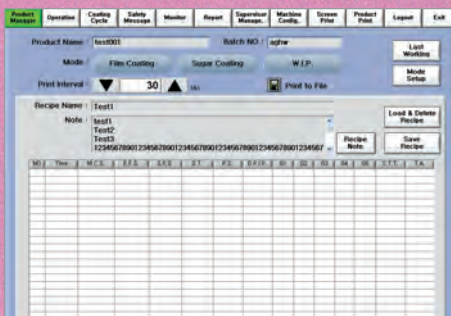
The blower installed inside of the dust collector inhales dust in the coating fan which is then discharged outside after passing through a cartridge filter. The cartridge filter removes the clogging of the filter by automatic shaking at regular intervals and dust generated during this process accumulates in the dust box under the dust collector. As users can adjust the speed of the blower with an inverter, it is possible to control wind speed and static pressure. As an option, it is possible to install a blower motor for hazardous areas or a HEPA filter.



Dust Collector (Wet Process)

machine uses water to prevent from humidity particles, flammable particles and explosive particles. Dust collector-wet process machine uses water to prevent from humidity particles, flammable particles and explosive particles. The blower installed inside of the dust collector inhales dust in the coating fan which is then discharged outside after passing through a water filter. Water (liquid) needs to be changed according to turbidity. User can check the turbidity condition of long residue and bubble through inside glass. Other functions are same with Dust Collector-Dry Process machine.

Touch Screen



Production Management Function

Production Management Function

This screen displays all necessary parameters and system environments for production and allows you to set up the name, manufacturer's serial number and mode for coated products and to input, save and print out a manufacturing recipe for a product.

Operation

This screen is to configure production conditions, system environments and all information on operation including coating system operation and stop, speed modulation, etc.

Coating Cycle

This screen is to configure coating process time, etc., as well as various parameters including film coating, sugar coating and cleaning (CIP) mode etc.



Safety Message Function

Safety Message Function

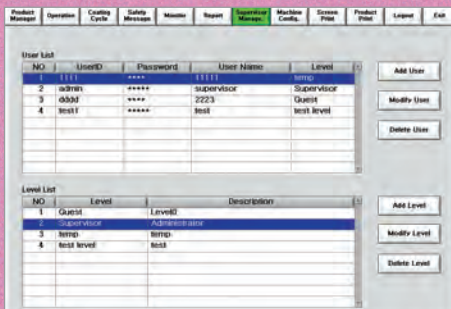
This screen allows users to check a particular part if the alarm rang when a problem occurred during coating process. It also gives solutions for the problems.

Monitoring

This screen displays the overall environment in which the machine runs and various machine operation status and data values by touch screen.

Supervising Function

A supervising function that can assign operating rights on equipment according to different level of production operators.



Supervising Function

Machine Configuration Function

A function to configure various operational functions suitable for different machine types. It allows users to configure a range of features including machine type, account-management, system language, PLC setting, DB path setting, production operation report saving path, etc. This configuration function is only accessible to the manufacturer whereas operators are only able to reference.

※ The above contents are subject to change without prior notice for the technical development.

Option Items



Heat Exchanger - Inlet of the HEPA Filter

Fix hoppers with a high temperature and strong wind HEPA filter fashioned in stainless steel at the upper and lower parts to mount them at the heated wind outlet of the heat exchanger in flange type. Depending on different models and air volumes of coating systems, 1 set, 2 sets are installed.

As vented air that contains fine dusts from the basic pre/medium filter flows through a HEPA filter with high arrestance of 0.3 μ m, it enables fresh and clean air to be provided to the coating pan. Designed to meet EURO Class H13 standard, European Filter class.

When it comes to replacing a HEPA filter, the difference pressure gauge on the upper part of the heat exchanger indicates it. If the difference in pressure exceeds 50.8mmAq, it is necessary to replace the HEPA filter.

Description		SFC-60	SFC-80	SFC-100	SFC-130	SFC-150	SFC-170	SFC-170D
HEPA Filter Quantity		1 Set			2 Set			
Air Flow (CMM)		50			100			
Pressure Drop (mmAq)		25						
D.O.P Efficiency (%)		0.3 μ m, 99.97 %						
Separator Material		Aluminum						
Temperature, Max.		121 °C						
Humidity, Max.		100% RH						
Dimension (mm)	W	700			1,370			
	D	700			700			
	H	1,100			1,100			
Weight (kg)		70			125			



Dust Collector - Outlet of the HEPA Filter

As with the heat exchanger, fix hoppers with a high temperature and strong wind HEPA filter fashioned in stainless steel at the upper and lower parts to mount them at the heated wind outlet of the heat exchanger in flange type. Depending on different models and air volumes of coating systems, 1 set, 2 sets, sets are installed.

As vented air that contains fine dusts from the basic cartridge filter mounted in the collector flows through a HEPA filter with high arrestance of 0.3 μ m, it enables fresh and clean air to be provided to the coating pan.

Designed to meet EURO Class H13 standard, European Filter class.

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Temperature, Max.		121 °C						
Humidity, Max.		100% RH						
Dimension (mm)	W	700			1,370			
	D	700			700			
	H	1,100			1,100			
Weight (kg)		70			125			

Dehumidifier

Mainly used in high-temperature and humid regions. It carries out the coating process with consistent humidity conditions designated by users. When moistened air flows into the dehumidifier, this device will exhaust humid air outside with the workings of an absorbent attached rotor, while ventilating fully dried, high temperature air into the coating system.



Description	SFC-60	SFC-80	SFC-100	SFC-130	SFC-150	SFC-170	SFC-170D
Process Air Volume(CMH)	1,800	2,100	2,400	2,700	3,000	3,900	4,800
Process Air Steam pressure (kg/cm ²)	2						
React Air Steam pressure (kg/cm ²)	5						
Operating Voltage	200 / 220 / 380 / 400 / 415 / 440 / 480V, 50/60Hz, 3Phase						
Dehumidify (%)	45~50						
Dimension (mm)	W	3,700	3,700	3,700	3,700	3,700	3,700
	D	1,100	1,100	1,100	1,100	1,300	1,600
	H	1,970	1,970	1,970	1,970	2,250	2,500
Weight (kg)	2,600	2,600	2,600	2,600	3,300	3,300	3,900

- ※ 1. If you have selected dehumidifier option, please inform us of the relevant country's outdoor temperature and humidity so that we can design the capacity of Process & React Heating Coil and the blower motor.
- 2. If you want to maintain the level of humidity under 45%, it may be necessary to embed additional cooling water coils depending on the relevant region's temperature and humidity conditions.



Tablet Bed Temperatures Sensor

A non-contact type infrared temperature sensor that measures and displays the temperature of tablet surface during coating on the touch screen allows user to change locations as they want as it is completely movable. The usage environment is IP65 (NEMA-4) class so it does not affect sensors during CIP cleaning. This tablet bed temperature sensor is applicable to all coating system models of Sejong

Description	Tablet Bed Temperatures Sensor
Temp' Measuring Range	-50 ~ 975°C
Accuracy	Measuring Figure + 1%, or + 1°C
Operating Voltage	DC 8 ~ 36V, 50/60Hz
Sensor Head Material	Stainless Steel
Dimension (mm)	Ø14 x 28
Weight (kg)	0.5

Product Specification

SFC Series

Description	Model									
	SFC-30	SFC-60	SFC-80	SFC-100	SFC-130	SFC-150	SFC-170	SFC-170D	2011 Model SFC-170D	
Pan Diameter (∅)	480	650	950	1,050	1,300	1,500	1,700	1,700	1,700	
Brim Volume (ℓ /batch)	9	28	46	114	220	360	585	930	945	
Output Capacity (kg/batch)	2~5	10~17	20~30	40~70	80~140	129~230	210~380	400~558	290~660	
Pan Speed (R.P.M)	1~25	1~16	1~16	1~16	1~14	1~14	1~12	1~10	1~10	
Pan Drive Motor (kW)	0.75	1.5	2.2	2.2	4.0	5.5	7.5	11.0	11.0	
Compressed Air Consumption (ℓ /min)	400	450	600	600	600	800	1,000	1,200	1,400	
Total Electric Power (kW)	8.65	14.2	17.9	17.9	21.7	21.0	27.2	36.2	36.2	
Supply Air Volume (CMM/mmAq)	11/120	30/60	35/80	40/80	45/80	50/80	65/100	80/100	80/100	
Exhaust Air Volume (CMM/mmAq)	11/250	30/350	35/400	40/400	45/450	50/450	65/450	80/450	80/450	
Supply Heating Type	ele'c	Steam								
Supply & Exhaust Filter	Supply : Pre & Medium, Exhaust : Cartridge									
Spray Gun Type	Schlick ABC Gun (Standard), Binks HVLP Gun(Optional)									
Spray Gun Quantity (ea)	1	1	2	2	2	3	4	6	7	
Solution	Film	Perstaltic (Watson-Marlow 520 Series)								
Pump	Sugar	Diaphragm (Graco Husky 716 Series)								
CIP System	Standard	WIP Pump (Horizontal)								
(Option)	Automatic	CIP System(WIP Pump(Vertical) + 3 Water Selection + Detergent + Air Purge)								
Tablet Bed Temperature Sensor	○									
Inlet of the HEPA (Option)	X	1ea	1ea	1ea	1ea	1ea	2ea	2ea	2ea	
Outlet of the HEPA (Option)	1ea	1ea	1ea	1ea	1ea	1ea	2ea	2ea	2ea	
Control Type	Standard(Manual)	○								
(Option)	H.M.I (21CFR Part 11)	○								
Dimension (mm)	W	1,470	1,100	1,350	1,350	1,580	1,820	2,100	2,100	2,100
	D	1,380	1,720	1,800	1,800	1,950	2,170	2,620	3,400	3,630
	H	1,780	1,500	1,770	1,770	1,890	2,050	2,120	2,120	2,120
Weight (kg)	1,000	1,800	2,400	2,500	3,000	3,500	4,000	4,500	4,500	

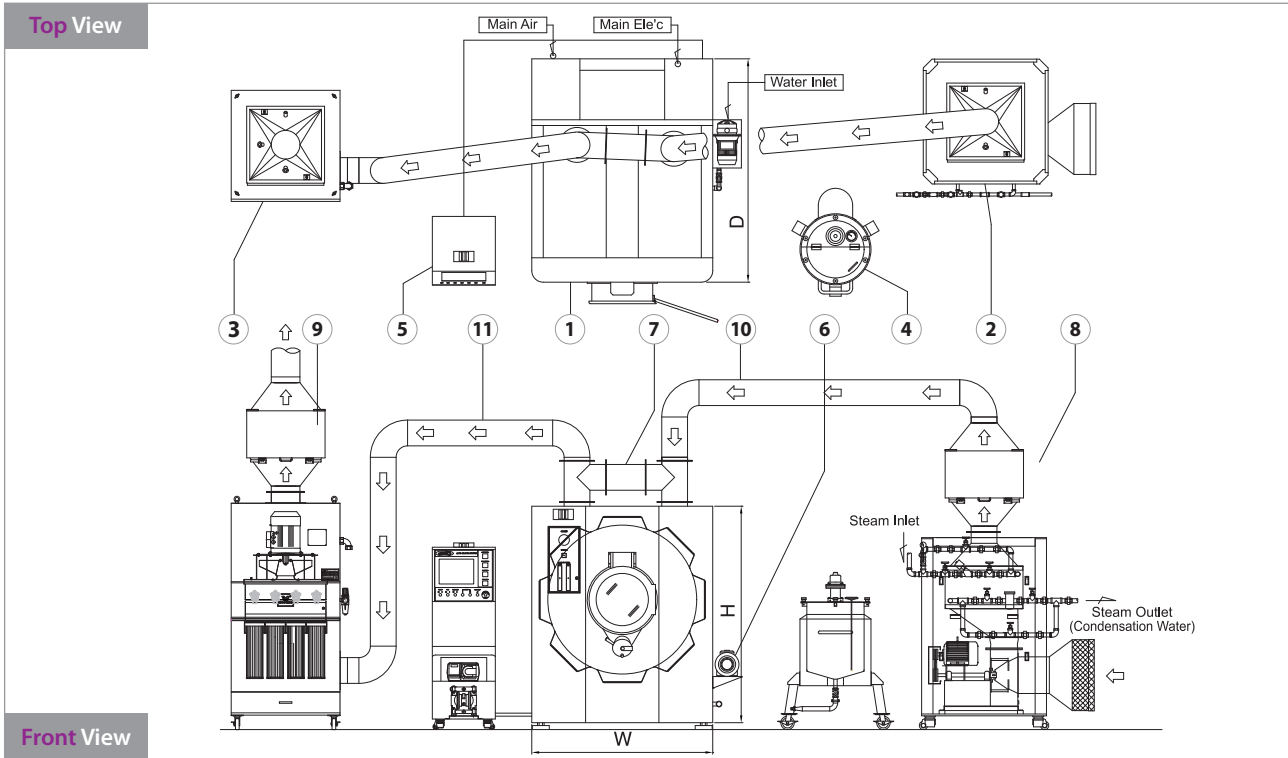
※ The above output capacity is calculated at a density of 0.7 and can vary depending on the density.

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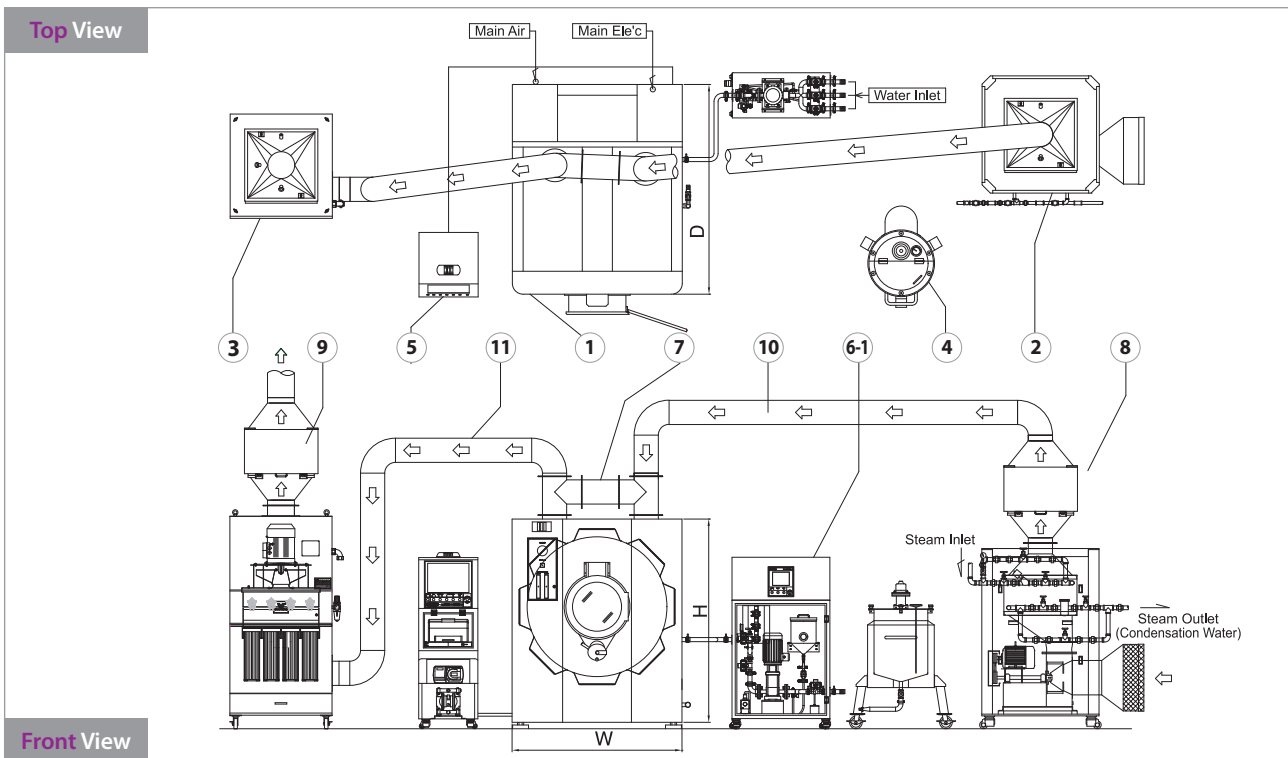
Dimensions with Layout

- ① Coating Machine ④ Solution Tank ⑥-1 CIP System ⑨ Outlet of the HEPA Filter (Option)
- ② Heat Exchanger ⑤ Touch Screen Panel ⑦ Auto Damper ⑩ Supply Duct
- ③ Dust Collector ⑥ WIP Pump ⑧ Inlet of the HEPA Filter (Option) ⑪ Exhaust Duct

Standard Type SFC-130



HMI Type SFC-130



Machine Details



●	Standard
○	Option
–	Not Applicable

Model	SFC Series									
	SFC-30	SFC-60	SFC-80	SFC-100	SFC-130	SFC-150	SFC-170	SFC-170D	SFC-170D	
Film Coating (Manual Damper)	○	○	○	○	○	○	○	○	○	
Film & Sugar Coating (Auto Damper)	○	○	○	○	○	○	○	○	○	
Film Pump (Peristaltic Type)	○	○	○	○	○	○	○	○	○	
Sugar Pump (Diaphragm Type)	○	○	○	○	○	○	○	○	○	
HMI System (21CFR Part 11)	○	○	○	○	○	○	○	○	○	
Heat Exchanger	●	●	●	●	●	●	●	●	●	
Dust Collector	●	●	●	●	●	●	●	●	●	
Solution Tank (Single)	–	●	●	●	●	●	●	●	●	
Solution Tank (Jacket)	–	●	●	●	●	●	●	●	●	
Programmable Logic Controller (OMRON) / Manual	●	●	●	●	●	●	●	●	●	
Programmable Logic Controller (Siemens) / HMI	○	○	○	○	○	○	○	○	○	
Spray Gun (Schlick ABC Type)	●	●	●	●	●	●	●	●	●	
Spray Gun (Binks HVLV Type)	○	○	○	○	○	○	○	○	○	
Spray Gun Quantity	1		2			3	4	6	7	
Inlet of the HEPA Filter	–	○	○	○	○	○	○	○	○	
Outlet of the HEPA Filter	○	○	○	○	○	○	○	○	○	
WIP System	●	●	●	●	●	●	●	●	●	
CIP System	○	○	○	○	○	○	○	○	○	
Tablet Bed Temperature Sensor	●	●	●	●	●	●	●	●	●	
Dehumidifier	–	○	○	○	○	○	○	○	○	
Explosion Proof for Main Coater Motor	○	○	○	○	○	○	○	○	○	
Explosion Proof for Heat Exchanger Motor	–	○	○	○	○	○	○	○	○	
Explosion Proof for Dust Collector Motor	○	○	○	○	○	○	○	○	○	
Small Baffles	○	○	○	○	○	○	○	○	○	
Fluid Flow Meter	○	○	○	○	○	○	○	○	○	
Tablet Loading (Manual)	○	○	○	○	○	○	○	○	○	
Tablet Unloading (Automatic)	●	●	●	●	●	●	●	●	●	
Spare Parts for 2 Years	○	○	○	○	○	○	○	○	○	
IQ & OQ	○	○	○	○	○	○	○	○	○	
Dimension (mm)	W	1,470	1,100	1,350	1,350	1,580	1,820	2,100	2,100	2,100
	D	1,380	1,720	1,800	1,800	1,950	2,170	2,620	3,400	3,630
	H	1,780	1,500	1,770	1,770	1,890	2,050	2,120	2,120	2,120
Weight (kg)	1,000	1,800	2,400	2,500	3,000	3,500	4,000	4,500	4,500	
Power Supply Data	200 / 220 / 380 / 400 / 415 / 440 / 480 V, 50 / 60 Hz, 3Phase									

※ The above specification is subject to change without prior notice for the technical development.

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