

Tablet Coating Plant HL Pharm Tech HLC Series



All product touching parts are made out of SS 316L steel. Others are out of SS 304.
The loading capacity of the HLC series range from 0,4 to 650 kg.
The machines are conform to GMP standards and CE certificated.

Machine Process:

The plants of the HLC series are used for tablet coating with film and sugar solution.

Automatic coating system is designed with the latest machine concepts to have simple construction but superior efficiency. It realizes the coating economy of various user-friendly control device , dynamically responds to all the necessities of adjustments and controls either film or sugar coating is carried out.

Working Principle:

Tablets are filled into the drum and heated. The solution is sprayed on the tablets with spray guns and then the tablets are dried in the air stream. After the coating process is completed and the tablets are dried, the coater is emptied.

Heat Exchanger



The heat exchanger heats the process air. Normally the heat exchanger is equipped with a steam heater. Optionally it can be delivered with an electrical heater.

The heated air is blown into the interior of the coating drum with the inlet air blower. A temperature sensor controls the inlet air.

Standard: Steam heat exchanger

Exhauster with Filter



The exhauster blower cleans the dust-loaded air out of the tablet bed by blowing it throughout the exhaust filter. A temperature sensor controls the exhausted air.

Solution Tank



There are two different tanks for film and sugar coating solutions.

The sugar solution tank is insulated, heated and equipped with an agitator.

The film solution tank is insulated and equipped with an agitator.

The agitators of both tanks are air driven.

Auto. Air Flaps



The process air is adjusted by the automatic air flaps. The air flaps can work as bypass if necessary. Because of this the plant can work with film and sugar solutions.

Terminal Box



The terminal box is integrated into the housing of the coating unit. All electrical parts of the control system are within there.

The touch screen, integrated into the front of the coating unit, controls the plant.

The displays of the process air and the pressured air are also built into the front.

Coating Unit with the Accessories



Functionality of the Tablet Coaters

The basis of the HL Pharm Tech automatic coating system are 4 perforated segments, which are positioned 60° to each other and are within the drum wall.

Outside the coating drum the exhaust elements are attached which are connected to the exhaust shaft. The exhaust system is designed so that the exhaust air can be sucked through four sections, during the rotation of the drum.

The heated inlet air is blown into the coating drum through an opening in the centre of the drum back wall.

The Process

The air is transported by the inlet air blower through the heat exchanger and the tube system into the coating drum. The heated air heats the tablets within the coating drum so they can be sprayed with a solution. At the same time the exhaust blower sucks the exhaust air out of the coating drum and transports it to the dust filter.

The dust filter cleans the exhaust air from the rest particles.

To maximize the working efficiency the coating unit/coating drum is equipped with a tight closing door and baffles. This allows that the tablet bed flows constantly and rotates within itself. The best conditions for mixing, spraying and drying are achieved through the hermitically-sealed room. All these elements enhance the working efficiency of the coating unit.

To allow the continuation of the process the inlet air and exhaust air are controlled and adjusted through temperature sensors. This is necessary to maintain a constant temperature during the spray process.

Spray System

The spray system consists out of the following components: Solution tank, pump, product tubes, compressed air tubes and the spray gun.

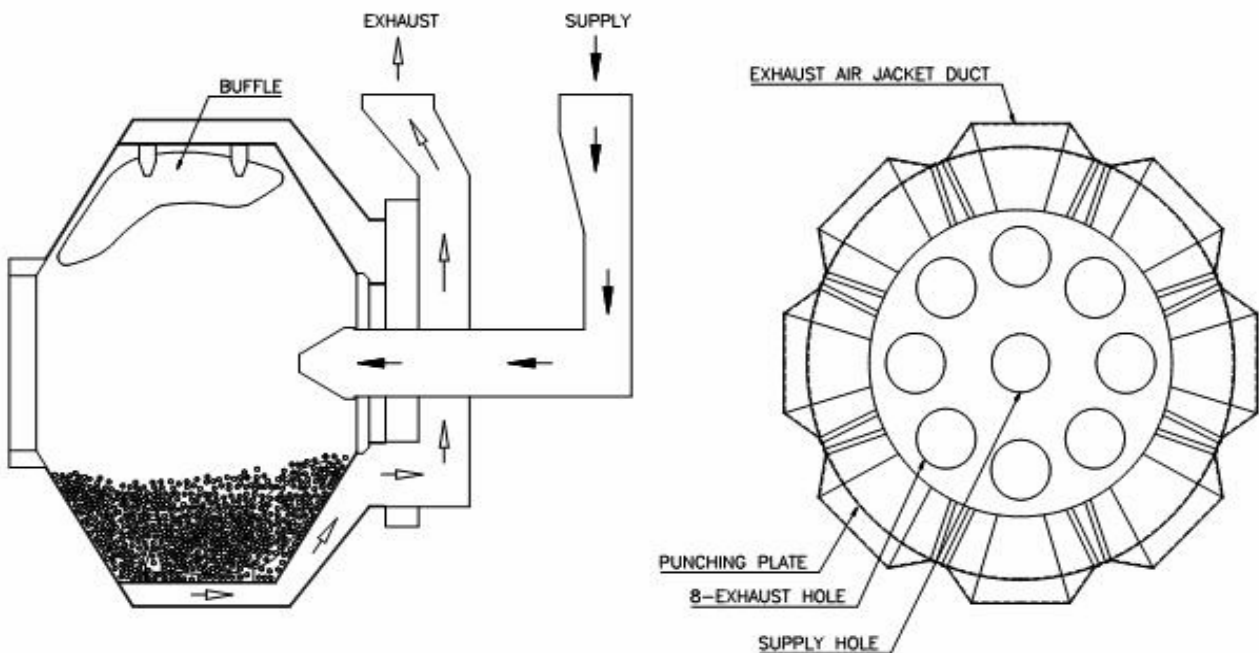
All supply lines of the spray system are led into the coating unit with a pivot arm.

The coating solution is delivered with the pump through pipelines from the tank to the spray guns. The coating solution is delivered to the nozzles and sprayed with the control air and the spray guns. The spray fog is sucked through the tablet bed and condensate on the tablet surface. This procedure is repeated as often as needed until the tablets reach the necessary coat thickness. The tablets with the sprayed on solution are dried with the air stream in the coating drum.

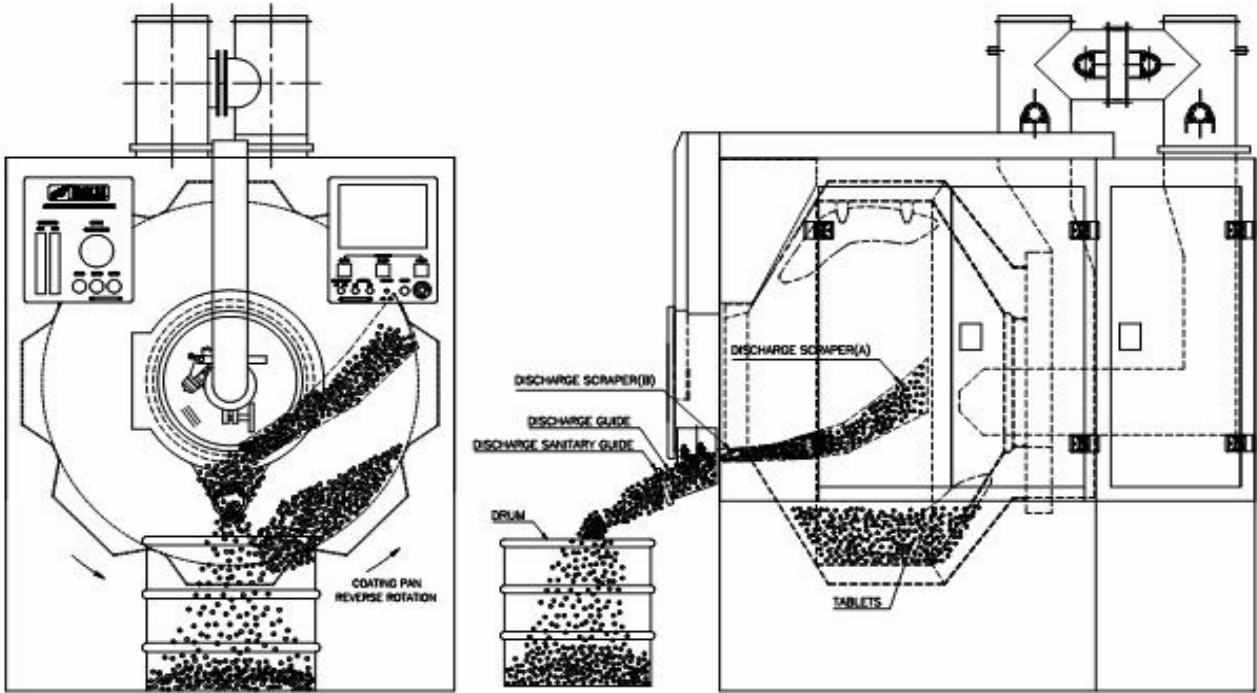
Area of Operation

The tablet coaters are used for different purposes. Firstly the coat protects the tablet and/or the active ingredient from dissociation. Additionally the coat delays the dissolve of the tablet and it hides unpleasant tastes. With coating the tablet durability is increased.

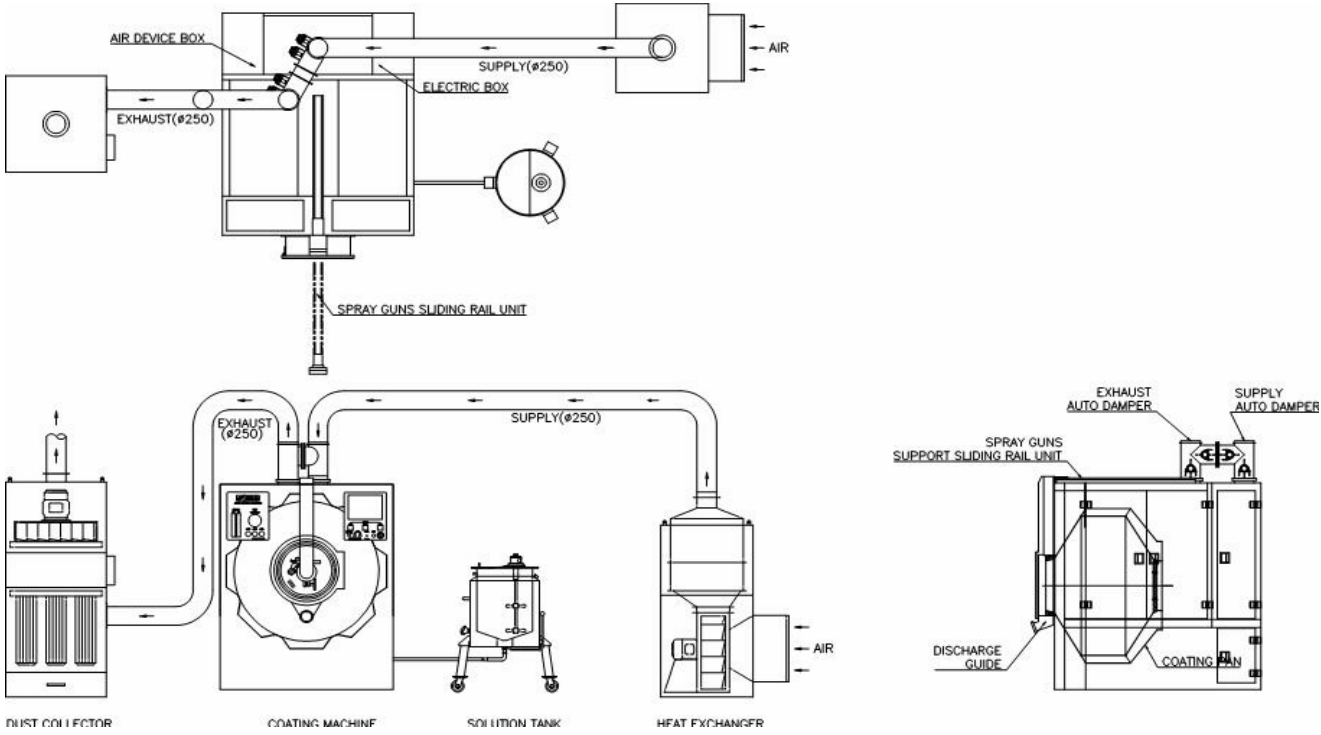
Coating Pan



Discharge System



Machine Layout



Technical Data

No.	Description	HLC SERIES				
		HLC-30	HLC-50	HLC-100	HLC-130	
Coating unit						
1.	Machine width	mm	750	900	1.320	1.550
2.	Machine depth	mm	1.000	1.000	1.590	1.700
3.	Machine height	mm	1.300	1.300	1.520	1.750
4.	Net weight	kg			ca. 1.500	ca. 2.000
5.	Replaceable spray gun fitting and mount					
Material & Construction						
1.	Drum diameter	mm	300	500	1.000	1.300
2.	Drum volume	l	4,6	18	105	225
3.	Loading capacity	kg	0,4-4,5	7-12	50-70	120-200
4.	Four(4) not removable perforation zones					
5.	Replaceable baffle plates on the drum wall					
Drum drive						
1.	AC frequency inverter					
2.	Speed range	rpm			0-16	0-16
3.	Drive motor	kW	2,2	3,7	5,5	7,5
Solution pump						
1.	Glaco Husky pump					
2.	Pressured air min.	bar	5	5	5	5
Spray guns						
1.	[BINKS] guns	pc.	1	1	2	2
2.	Spray nozzles film	mm	1,2 (92P)	1,2 (92P)	1,2 (92P)	1,2 (92P)
3.	Spray nozzles sugar	mm	1,7 (97P)	1,7 (97P)	1,7 (97P)	1,7 (97P)
Heat exchanger						
1.	Width	mm			830	900
2.	Depth	mm			830	900
3.	Height	mm			1600	1800
4.	Steam pressure max.	bar	3	3	3	3
5.	Steam consumption	kg/h			53	53
6.	Heating power	kcal/h			27000	27000
7.	Blower motor	kW			2,2	3,7
Exhauster						
1.	Width	mm	520	620	850	850
2.	Depth	mm	520	620	850	850
3.	Height	mm	1,41	1,58	2100	2100
4.	Weight	kg	ca. 165	ca. 200	ca. 300	ca. 380
5.	Motor power	kW	0,75	1,5	2,2	3,7
6.	Motor speed	rpm	3600	3600	3600	3600
7.	Air consumption	m ³ /min	10	20	30	45
8.	Pressure exhaust air	mbar	200	200	200	200
9.	Cleaning modus		Autom.	Autom.	Autom.	Autom.
			Manual	Manual	Manual	Manual
10.	Flange diameter	mm	150	200	300	300
11.	Number of solenoid valves		2	3	3	4
12.	Filter diameter	mm	145	145	145	145
13.	Filter length	mm	500	400	500	500
14.	Filter surface	m ²	7,5	11,25	16,87	22,5
15.	Number of bag filter		4	6	9	12
16.	Filter bags out of polyester (filter quality: 12 EA)					
Solution tank						
1a.	Insulated tank for film solutions					
1b.	Double jacket tank heated (5kW) with temperature control for sugar solutions					
2.	Integrated agitator with air driven motor					
3.	Volume	l	30	50	100	130
4.	Material		SS 316	SS 316	SS 316	SS 316

No.	Description	HLC SERIE			
		HLC-150	HLC-170	HLC-200	
	Coating unit				
1.	Machine width	mm	1.750	1.900	2.100
2.	Machine depth	mm	1.950	2.200	2.450
3.	Machine height	mm	1.900	2.100	2.300
4.	Net weight	kg	2000	3000	
5.	Replaceable spray gun fitting and mount				
	Material & Construction				
1.	Drum diameter	mm	1.500	1.700	2.000
2.	Drum volume	l	350	550	900
3.	Loading capacity	kg	200-230	320-380	500-650
4.	Four(4) not removable perforation zones				
5.	Replaceable baffle plates on the drum wall				
	Drum drive				
1.	AC frequency inverter				
2.	Speed range	rpm	0-14	0-12	0-12
3.	Drive motor	kW	5,5	7,5	10
	Solution pump				
1.	Glaco Husky pump				
2.	Pressured air min.	bar	5	5	5
	Spray guns				
1.	[BINKS] guns	pc.	3	3	3
2.	Spray nozzles film	mm	1,2 (92P)	1,2 (92P)	1,2 (92P)
3.	Spray nozzles sugar	mm	1,7 (97P)	1,7 (97P)	1,7 (97P)
	Heat exchanger				
1.	Width	mm	940	940	
2.	Depth	mm	800	800	
3.	Height	mm	1800	1800	
4.	Steam pressure max.	bar	3	3	3
5.	Steam consumption	kg/h	82	108	
6.	Heating power	kcal/h	42000	55000	
7.	Blower motor	kW	3,7	5,5	
	Exhauster				
1.	Width	mm	1290	1700	1.700
2.	Depth	mm	900	900	950
3.	Height	mm	1830	1715	2.090
4.	Weight	kg	ca. 490	ca. 580	ca.720
5.	Motor power	kW	5,5	2 x 3,7	2 x 5,5
6.	Motor speed	rpm	3600	3600	3600
7.	Air consumption	m ³ /min	65	80	130
8.	Pressure exhaust air	mbar	230	230	230
9.	Cleaning modus		Autom.	Autom.	Autom.
			Manual	Manual	Manual
10.	Flange diameter	mm	300	350	400
11.	Number of solenoid valves		6	8	8
12.	Filter diameter	mm	145	145	145
13.	Filter length	mm	500	500	500
14.	Filter surface	m ²	33,75	45	72
15.	Number of bag filter		18	24	24
16.	Filter bags out of polyester (filter quality: 12 EA)				
	Solution tank				
1a.	Insulated tank for film solutions				
1b.	Double jacket tank heated (5kW) with temperature control for sugar solutions				
2.	Integrated agitator with air driven motor				
3.	Volume	l	150	170	200
4.	Material		SS 316	SS 316	SS 316

Subject to the technical changes