

# Coating Technology by Bohle

Film Coater BFC | Tablet Coater BTC | BFC 5 | BFC TriPan

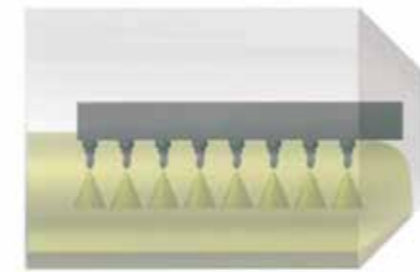


# Bohle Coating Technology

Film coating processes can be divided into three basic operations: spraying, drying and mixing.

Every individual step must be carefully optimized to coordinate with the others.

## Spraying

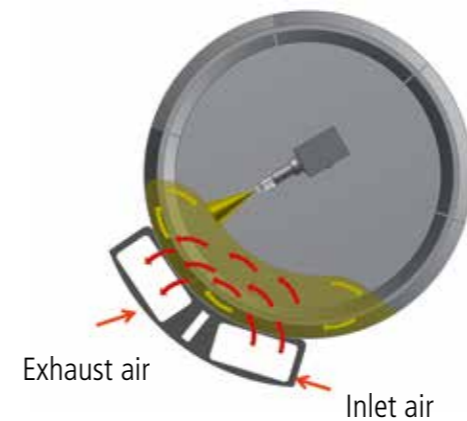


Bohle  
pan geometry

Apart from the coating liquid, two other aspects must be taken into account. First, the spraying equipment: nozzle type, number of nozzles and nozzle-to-nozzle distance. Second, the process parameters: nozzle-to-bed distance, angle spray rate, atomizing and pattern air pres-

sure. The coating nozzles are the key to efficient coating. The adjustable oval spray pattern and so-called "anti bearding caps" are currently state of the art. Another paramount important fact is the design of the nozzle-to-nozzle distance.

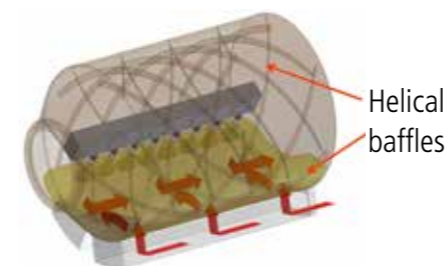
## Drying



Once the coating liquid has reached the tablet, the coating should dry quickly and evenly. To ensure rapid drying, supply air is directed through the pan perforations into the tablet bed. Significant parameters include the supply air temperature and humidity, supply air volume and pan perforations. Excessive moisture or spray drying can be prevented with the appropriate settings. Spray

drying, in particular, frequently accompanies coating. The drying performance can be influenced and optimized through the type of air flow in the coater. Directing supply air and exhaust air through the tablet bed reduces turbulence and creates a cold environment in the spraying area. This internal dynamic counteracts spray drying.

## Mixing



The final – but essential – basic operation in coating is tablet bed mixing. Statistically uniform move of each tablet under the spray. This movement, however, must be done carefully and with minimal mechanical stress to avoid damaging delicate tablets.

The perfect choice is an elongated coating pan with continuously welded spirals as mixing elements. Spirals guarantee constant and careful mixing. Because of the elongated pan, the flat tablet bed ensures minimum static pressure and very careful handling of sensitive tablets.

Today, pharmaceutical film coating is an important process step in the solid dosage production. Bohle coaters guarantee excellent product processing with exceptionally high profitability.

### Benefits:

- best coating uniformity (RSD < 2%)
- excellent mixing thanks to patented spirals
- careful product movement due to low tablet bed thickness
- simple discharge by changing the rotating direction of the pan
- nozzles with AB-caps ensure long service life
- minimal spray losses < 5%
- faster processing due to a high number of nozzles and an efficient air flow system
- high batch size variability
- same pan geometries for easy scale-up
- rapid and simple cleaning



## Bohle Film Coater BFC – patented

The high-end version of the Bohle coater designed specifically for high speed, problem-free coating, providing unparalleled tablet uniformity and efficiencies. A high containment execution is also available.

### Benefits:

- state of the art coating technology
- homogeneous mixing due to patented spirals
- gentle mechanical treatment of tablet cores to avoid edging and breaking
- simple and quick discharging by reversing the direction of rotation
- nozzles with AB-caps ensure long enduring operation
- geometrical similarities of all machine sizes ensure secure scale-up conditions
- unique cleaning abilities with integrated high-pressure washing-system
- high sophisticated control system



## Bohle Tablet Coater BTC – patented

The BTC series guarantees first class processing with the highest efficiency. Herewith it is the most economical option for all common coating applications.

### Benefits:

- state of the art coating technology
- homogeneous mixing due to patented spirals
- gentle mechanical treatment of tablet cores to avoid edging and breaking
- simple and quick discharging by reversing the direction of rotation
- nozzles with AB-caps ensure long enduring operation
- minimizing loss of spraying solution to a value below 5 %
- geometrical similarities of all machine sizes ensure secure scale-up conditions
- friendly operator software and visualization

# Bohle Film Coater BFC TriPan



TriPan can be operated with three pans. Pans are changed using a lifting device.

- batch sizes from 7 to 75 liters
- computerized InTouch visualization with extensive batch management tools and a broad range of tools for preparing recipes
- easy cleaning thanks to a high pressure system on the inside of the pan
- suspension supply via a single pump head

# Bohle Film Coater BFC 5

BFC 5 is a stand-alone unit. The entire air handling, electrical and control systems are incorporated in the unit.

- BFC 5 can be operated with one of two different pan sizes. Pans are changed manually
- the capacity of the smaller pan can be reduced with a divider plate
- batch sizes from 2 to 13 liters
- computerized Win CC visualization with extensive batch management tools and a broad range of tools for preparing recipes
- multipanel visualization with touch panel, operator panel is attached to the coater
- manual cleaning



## Laboratory plant size

Bohle Film Coater	BFC TriPan 50 with exchangeable pans <sup>1</sup>		
	pan 1	pan 2	pan 3
Batch size (brim volume) [L]	7–14	11–35	25–75
Diameter [mm]	410	550	700
Pan length [mm] cylindric	630	630	630
Air flow [m <sup>3</sup> /h]	750	900	900
Nozzles	5	5	5
Suspension unit	One peristaltic pump head supplies all nozzles		

Bohle Film Coater	BFC 5 <sup>1</sup>		
	pan 1	pan 2	with divider plate
Batch size (brim volume) [L]	2–6	5–13	0,5–3
Diameter [mm]	320	420	320
Pan length [mm] cylindric	360	360	180
Air flow [m <sup>3</sup> /h]	max. 250	max. 250	max. 250
Nozzles	4	4	
Suspension unit	One peristaltic pump head supplies each nozzle		

## Production size machines

Bohle Film Coater	BFC 100 <sup>2</sup>	BFC 200 <sup>2</sup>	BFC 400 <sup>2</sup>	BFC 600 <sup>2</sup>
Batch size (brim volume) [L]	50–160	100–300	200–650	400–980
Diameter [mm]	940	1110	1430	1640
Pan length [mm] cylindric	1050	1236	1600	1835
Air flow [m <sup>3</sup> /h]	1500	3000	6000	9000
Nozzles	4	6	8	10
Suspension unit	One peristaltic pump head supplies each nozzle individually			

Bohle Tablet Coater	BTC 50 <sup>1</sup>	BTC 100 <sup>2</sup>	BTC 200 <sup>2</sup>	BTC 400 <sup>2</sup>	BTC 600 <sup>2</sup>
Batch size (brim volume) [L]	30–70	50–160	100–300	200–650	400–980
Diameter [mm]	700	940	1110	1430	1640
Pan length [mm] cylindric	850	1150	1400	1800	2000
Air flow [m <sup>3</sup> /h]	750	1500	3000	6000	9000
Nozzles	6	4	6	8	10
Suspension unit	One peristaltic pump head supplies all nozzles				

<sup>1</sup> nozzles with pilot scale

<sup>2</sup> nozzles with production scale

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