

BBAINNOVA

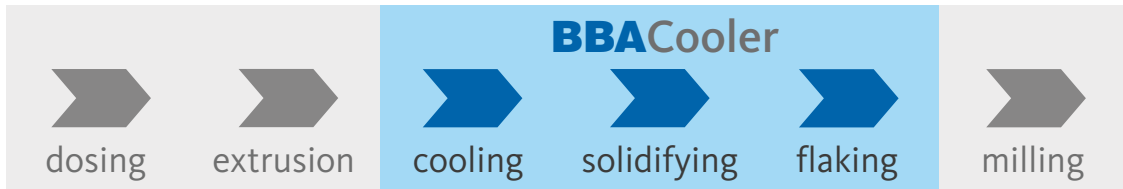
PROCESS SOLUTIONS

Continuous Cooling and Solidifying of Viscous Pharmaceutical Products as part of the HME (hot melt extrusion) process

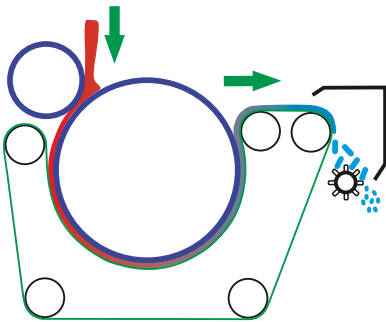
GMP designed Chilled Cooling Rolls



HME Process



Operation Principle Cooling



The BBA Chilled Cooling Rolls (CCR) will cool and solidify your product downstream of an extruder in a production environment. The solidified product will be broken into flakes with the integrated flaking unit.

Especially for lab use we have developed a smaller cooling, solidifying and flaking unit featuring simple setting adjustments from the outside of the machine by an operator.

All gained parameters can be used for an upscaling to the production size Cooler.

Both, the production and lab machine feature the following advantages

- meeting GMP design requirements
- high efficient cooling design (patented design)
- parts in stainless steel 316L/304L or FDA compliant materials
- all parts to remove for cleaning are removable without tools
- controlled flaking of solidified product
- customizable interfaces up- and down-stream
- qualification documentation
- removable process cover for full access to process area
- flexible adjustment of product thickness
- available for installation in hazardous areas
- compact design

Compact cooling system in GMP design for laboratory use and small batches



CCR-20/12-PH

throughput	approx. 0-10 kg/h* / 0-22 lbs/h*
inlet temp. max.	approx. 200°C / 390°F
output	flakes
dimensions	800 x 800 x 1100 mm (l/w/h)
inlet height	900 mm
weight	approx. 330 kg / 730 lbs

* depending on the material

Compact cooling system in GMP design for production use

CCR-40/35-PH

throughput	approx. 0-50 kg/h* / 0-110 lbs/h*
inlet temp. max.	approx. 200°C / 390°F
output	flakes
dimensions	1400 x 1200 x 1800 mm (l/w/h)
inlet height	1100 mm
weight	approx. 1100 kg / 2400 lbs

* depending on the material



Integration into an isolator OEB 5

Integration into an isolator containing APIs in an OEB 5 containment has been demonstrated successfully.

The design allows for manually assembling and disassembling all required parts for cleaning from the outside of the isolator.

Parts can be removed from or inserted into the isolator through the RTP system.

When it comes to an isolator, planning and designing the interfaces is important already at an early stage with all suppliers.

BBA Innova is happy to support you with our know how.



Options include but are not limited to



- storage cabinet for all change parts (picture on left)
- DSC analysis and cooling capacity calculations
- validation packages
- water flow monitor
- water temperature monitor
- product temperature monitor
- observation window package
- different flaker shafts
- air exhaust connection
- safety cover for interface to upstream equipment
- spare parts package
- integrated milling system

Service and Support

Excellent service and support by our Swiss engineers to our customers worldwide is key to a good relationship.

Understanding the needs of both sides to achieve a reliable process with highest efficiency and shortest down times.

Please contact us if you have any requests regarding our machines or solutions that are not covered in this brochure.

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