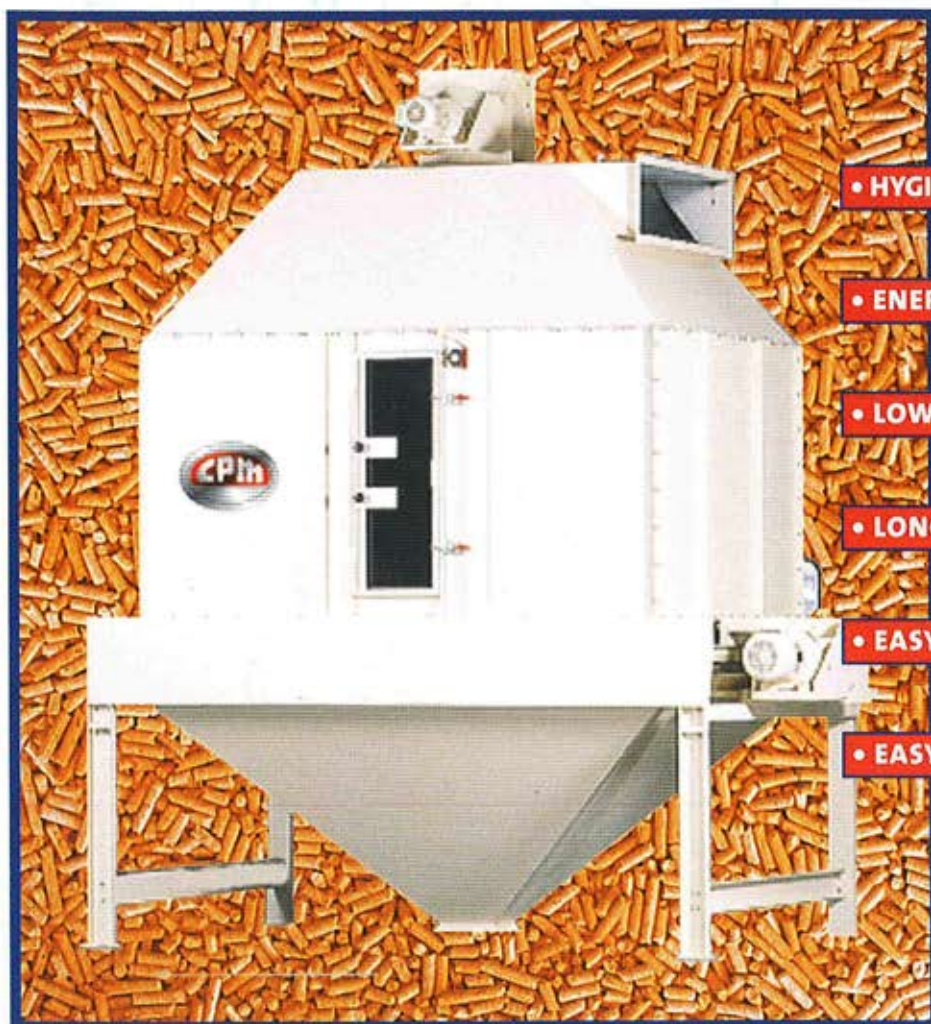




Since 1883

# Counterflow Coolers



• HYGIENIC STANDARDS •

• ENERGY EFFICIENT •

• LOW MAINTENANCE •

• LONG LIFETIME •

• EASY CLEANING •

• EASY INSTALLATION •

## *Efficient* **THE CPM ADVANTAGE**

Innovative engineering and design have been combined with the latest manufacturing technology to provide **the highest quality counterflow coolers** in the world with the best production levels ever achieved, along with excellent cooling and drying results.

■ HIGH PERFORMANCES ■ LOW COST MAINTENANCE ■ MAXIMUM SAFETY

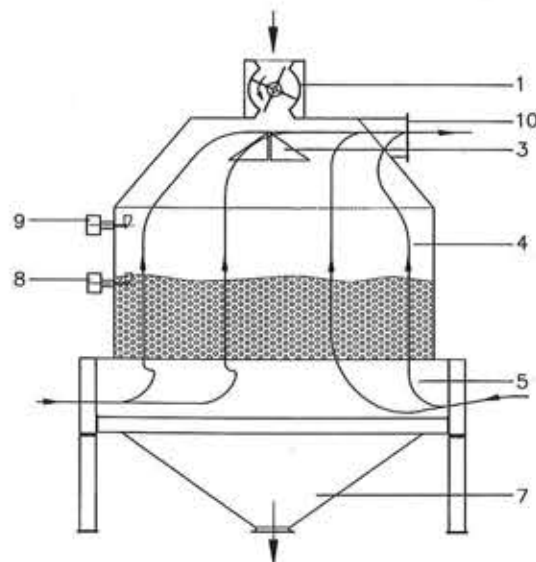
## CPM COUNTERFLOW COOLERS

Counterflow coolers have been an industry standard for over 20 years in pelleted feed. In the last 10 years they have also become popular in many other applications for cooling of granular products and meal. The advantages in footprint, energy efficiency, maintenance costs and investment costs have made this type of cooler the preferred choice for nearly every user of pellet mills, flaking mills, expanders, extruders, heat treatment systems, conditioners etc.



The CPM counterflow cooler is the most reliable and strong counterflow cooler available. With a wide range of different discharge systems, grid sizes, bin wall heights, cyclones and air fans, there is a customized solution available for every type of product and every cooling requirement.

All CPM Counterflow coolers are built to high specifications. Cooler hood and bin walls are always in stainless steel to prolong lifetime and guarantee clean operation. Air systems can be designed to meet your specific cooling needs.



### THE PRINCIPLE OF OPERATION OF THE COUNTERFLOW COOLER

The warm product enters the bin (4) through the inlet rotary valve (1). Underneath the inlet rotary valve a distributor (3) ensures even distribution of product in the cooler. The product is being cooled in the bin by means of an air flow, which enters the bin through the discharge gate (5) and leaves the bin through the air outlet (10). Product layer height is controlled by a level sensor (8), which is adjustable in height. The level sensor ensures that the product layer is kept at a predetermined height. As soon as product activates the level sensor the discharger (5) is operated and product is discharged through the hopper (7). Discharging stops as soon as the product gets below the level sensor.

In order to prevent overflow, the cooler has been provided with an overflow sensor (9), which stops product supply to the cooler.

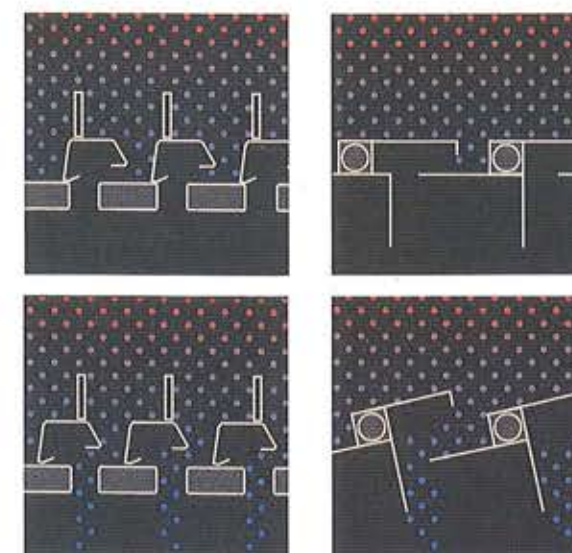
### DISCHARGE SYSTEMS

There are several different types of main discharge systems available:

The **Triple Grid discharger** is typically used for easy-flowing, pelleted products. This cooler is the ultimate in simplicity, there is just about nothing that can go wrong. Product flow is First In First Out, with gradual discharge into the hopper. This system allows easy adjustment to handle pellet sizes between 3 and 10 mm (or 3 and 18 mm with a special grid). The pneumatic system for clean out ensures a totally empty cooler at the end of each production run.

The **Swivel Valve discharger** can be applied to nearly every type of product, including those that have very difficult flowing characteristics. Bridging and blocking cannot occur with this discharger. It also conforms with the highest sanitary requirements. Here also, product flow is First In First Out. The swivel valve discharge system can handle everything from fine meal up to big lumps. It is used for cooling pellets, lumps, chips, flakes, expanded products, extruded products, meal and many other granular products. The integral emptying system ensures a totally empty cooler at the end of each batch.

The **Batch Discharger** is used to dump its entire product bed in one movement. Used typically to cool meal or mash type products, its opening sequence is timer driven.



Triple grid

Swivel valve

### POPULAR OPTIONS

Intermediate cooling deck to buffer product temporarily when switching to a new recipe. This avoids loss of time and capacity during a change over.

Air flow control valve which automatically stabilizes air volume in the cooler, independent of fluctuations in pressure drop.

Clam shell inletvalveto temporarily store small quantities of fat sprayed product to allow the fat to be absorbed by the hot product before cooling begins.

### PRODUCT FLOW

For granular products, Counterflow coolers typically operate in a continuous, First In First Out mode with the discharge system slowly discharging product into the hopper, based on signals received from a product sensor in the bin walls. However, for meal type products it is necessary to apply fluidization of the product bed in order to get sufficient air to flow through. As a result it is better to cool in batch mode, usually in two steps, to allow each batch to be fluidized for a pre-set period of time. Discharging is therefore no longer driven by the product sensor, but by timers.

### MAINTENANCE

One of biggest selling points of all CPM counterflow coolers is the fact that they run reliably with an absolute minimum of maintenance. There are just a few electrical items to be connected and no wear parts.

### COUNTERFLOW ADVANTAGES ARE:

- High hygienic standards
- High energy efficient
- Little maintenance
- Low operating costs
- Low investment
- Limited space requirement
- Easy installation
- Easy operation
- Easy cleaning
- Long lifetime



Swivel valve discharge



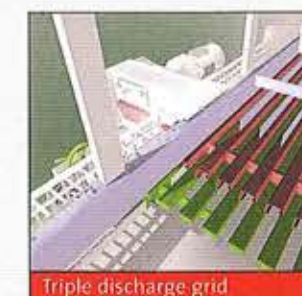
Discharge drive



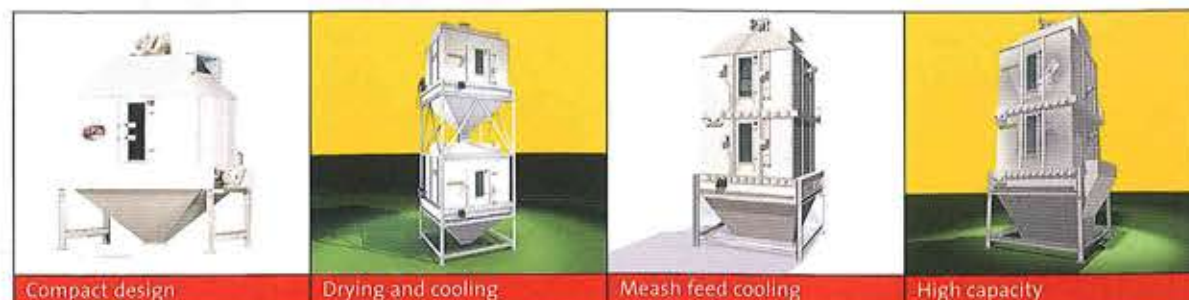
Air operated cleaning



Rotating distributor



Triple discharge grid



Compact design

Drying and cooling

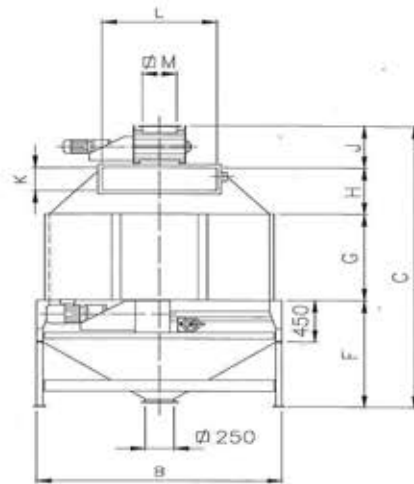
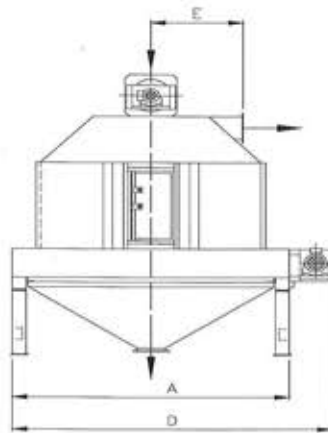
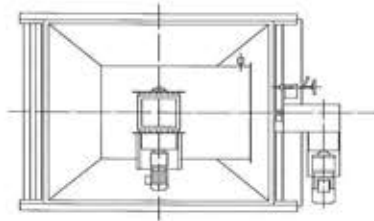
Meash feed cooling

High capacity



Since 1883

# Counterflow Coolers



Type:	SURFACE [m <sup>2</sup> ]	A	B	C	D	E	F	G	H	J	K	L	M	[kg]
VK 14x14	2	1920	1650	2460	2300	700	910	930	300	320	200	600	250	1150
VK 14x19	2,7	2400	1650	2900	2780	850	1150	930	500	320	300	600	250	1350
VK 19x19	3,6	2400	2130	3030	2780	800	1150	930	500	450	250	1000	300	1700
VK 19x24	4,5	2880	2130	3690	3260	1000	1360	1180	700	450	300	1250	300	2150
VK 19x28	5,5	3360	2130	4080	3740	1235	1510	1430	690	450	400	1000	300	2500
VK 24x24	5,7	2880	2610	3690	3260	1000	1360	1180	700	450	300	1250	300	2400
VK 24x28	6,8	3360	2610	4090	3790	1200	1510	1430	700	450	400	1250	300	3000
VK 28x28	8,2	3360	3090	4060	3790	1240	1510	1430	670	450	400	1500	300	3400
VK 24x38	9,2	4320	2610	4890	4750	1915	1800	1940	700	450	600	1250	300	3800
VK 28x38	11	4320	3090	4890	4750	1915	1800	1940	700	450	600	1500	300x600	4500

## WORLDWIDE

CPM offers service through a worldwide network of local agents in nearly every country. They get supported directly from the regional headquarters by teams of pelleting technology specialists.

## SALES DEPARTMENTS

Our establishments are staffed with qualified sales, engineering and service personnel and are well stocked with dies, parts and accessories. This ensures prompt efficient processing of all customer service requirements.

## CONTACT

Please feel free to contact your local agent, our offices or our Internet sites [www.cpmeurope.nl](http://www.cpmeurope.nl) or [www.cpmroskamp.com](http://www.cpmroskamp.com).



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