

PCM Food ▶



# Filling

Freedom to be creative



Keep it  
moving

## ➤ Put ideas into production

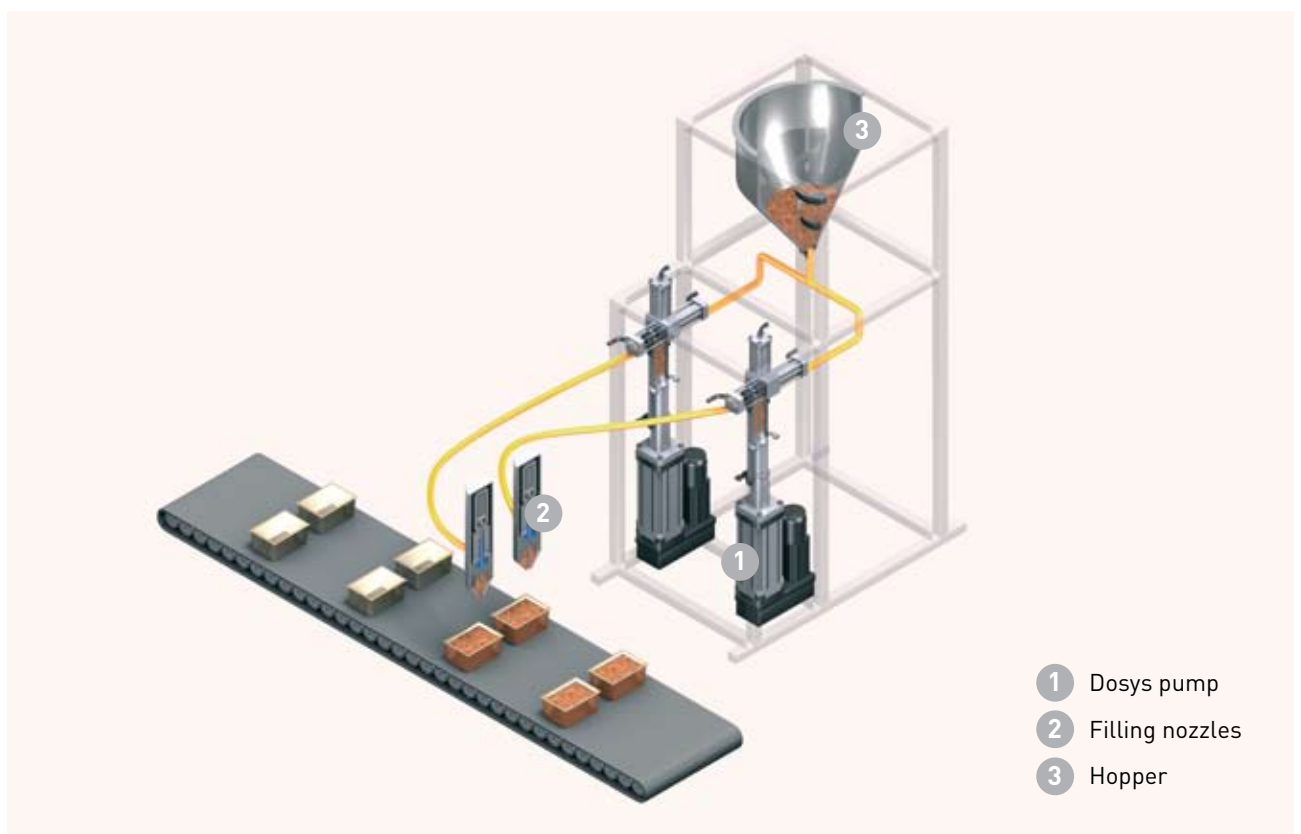
With the right filling solution, you can put more innovation in your packaging. PCM filling solutions enable you to fill, layer and inject a wide range of products using the same system.

### Protecting fragile ingredients

At the moment in your production process when the value of the final product is at its highest, the gentle pumping action of PCM filling systems handles your valuable ingredients with a maximum amount of care. Moreover, all PCM filling systems comply with the strictest hygiene requirements and can be cleaned in place (CIP).

### Powerful versatility

Every PCM filling system is designed to provide maximum volumetric flexibility. In other words, not only can you fill containers of all shapes and sizes, you can also vary the filling volume from one cycle to the next. Versatility extends to its compatibility with a multitude of filling ingredients, from liquid flavorings to viscous jams, from sticky toffee to semi-solid sauces. Finally, PCM filling systems integrate easily with your production line and packaging equipment, thanks to their modular design.



PCM filling system



PCM dosing accuracy is +/- 0.5%

## Precision you can count on

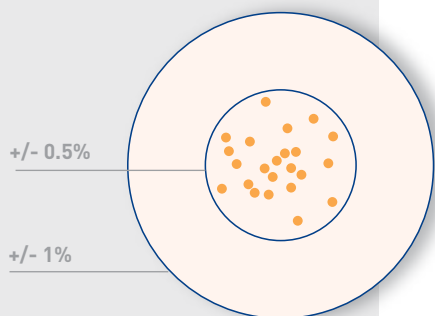
Dosys pump technology makes PCM filling systems incredibly accurate, which results in three key advantages.

- The filling volume is precisely metered to reduce wastage.
- The distribution of different products and semi-solids in the same container is accurate and repeatable.
- There is virtually no mess, thanks to the precision-engineered nozzles and synchronized filling.

## Real-world application

This diagram shows the precision and even distribution we were able to achieve after customizing a PCM system to fill trays with individual doses of a viscous preparation comprised of mashed potatoes with ground beef for one of our customers.

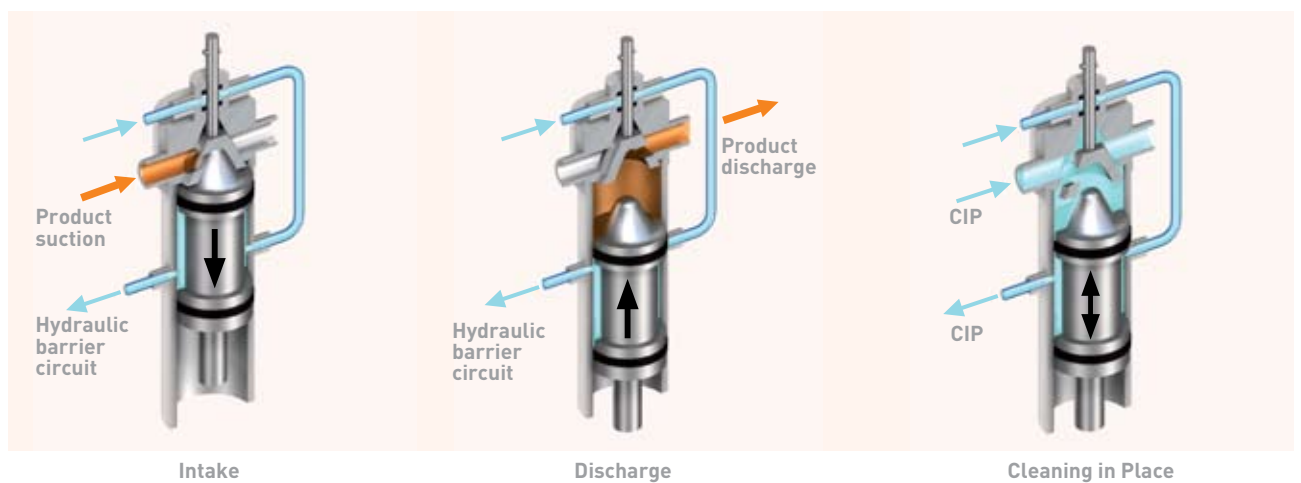
To save time, the trays were filled with meat and potatoes at the same time in a single operation. A special nozzle was used to keep splattering of the potatoes to a minimum. The nozzle provided mess-free distribution despite the viscosity of the potato mixture and the potential for jamming created by suspended solids.



Dosing accuracy test result:  
distribution of mashed potatoes  
with ground beef

## ➤ Dosys pump technology

Dosys pump technology sits at the heart of all PCM filling systems. Invented by PCM, it makes it feasible to replace wasteful filling systems with highly accurate and solids friendly handling.



### Accuracy

Synchronized with filling nozzles, Dosys pump technology meters the ingredients with precision, thanks to the servo-driven piston and a patented flow-control valve.

### Flexibility

Dosys pumps are designed to handle liquids, semi-solids and viscous products. The dosing volume can be easily adjusted by simply increasing or decreasing the piston movement.

### Gentle pumping

Dosys pumps handle ingredients with large semi-solids ( $\varnothing$  48 mm) without damaging them. Because there is no rotating movement, solids remain suspended in the liquid medium; no emulsions or aeration are created.

### Easy cleaning

Dosys pumps can be cleaned in place (CIP/SIP) with no dismantling or the need for complicated bypass systems.

## Dosys pump range

Dosys™ pump	Capacity in cc per cycle		Maximum production rate (Cycles / minutes)	Maximum solid size (mm)	Maximum Pressure (bar)
	Minimum	Maximum			
8/20-8	0,05	1,01	60	8	20
12/20-8	0,11	2,26	60	8	20
24/40-16	0,9	18,1	60	16	20
36/40-16	2	40,7	60	16	11
48/100-23	9	181	50	23	11
63/100-23	15	311	50	23	16
72/100-23	20	407	50	23	12
90/100-35	31	636	50	35	8
130/100-48	66	1327	40	48	3
130/200-48	132	2654	40	48	3

## Electro Thrust Cylinder: flexibility and precision









Dosys pump driven by Electro-Thrust Cylinder

To get the most out of Dosys Pump technology, we recommend using an Electro-Thrust Cylinder. Its electronic controls provide error-free accuracy. For drip-free and splash-free filling of containers, the Electro-Thrust Cylinder can perform variable-speed dosing operations. Finally, the Electro Thrust Cylinder uses less energy than a pneumatic motor.

## Nozzles

PCM filling systems can be fitted with a wide range of nozzles compatible with different levels of viscosity, solids and stickiness. Our nozzles can handle everything from simple liquid aromas to semi-solid sauces and even sticky caramel.

Whole way	Umbrella	Suckback	Suckback Caramel	Diaphragm	Multi-outlet Diaphragm
					
Viscous, semi-solid ingredients	Rice, jam and chopped potatoes	Drippy sauces	Stringy ingredients	For liquid or low-viscosity ingredients (no solids)	

## ➤ PCM filling systems

### PCM flavor filling station

#### Ready to use

Control cabinet with regulation via flow meter or packaging signal.

#### Dosys pump technology

+/- 0,5% on concentrated flavor.

#### Food safety

Fully cleanable in place, including the suction wand and nozzle plate.

#### Production safety

Suction wand with end of drum sensor.



## Dairy

The PCM flavor filling station is a popular upgrade for yogurt makers. It enables them to add flavored yogurt to their product lines without having to alter their existing production line. By adding a PCM flavor filling station, they get high accuracy (+/- 0.5%), which limits the waste of expensive concentrated flavorings, and perfect synchronization with the packaging machine. They can produce yogurts with multiple flavors at high production speeds, and the station is easy to clean and sterilize.



## PCM pouch filling station



**Efficiency**

Dosys pump driven by Electro Thrust Cylinder enables remote control of quantities and filling speed.

**Versatility**

Control panel contains 50 pre-selected recipes (volumes, sizes).

**Autonomous**

CIP centrifugal pump.

**Food safety**

Removable «whole way» nozzle for sauce with solids, including filling temperature tracking sensor.

### Convenience food

Filling stand-up pouches of different sizes with complex sauces – whether viscous or containing solids such as chopped vegetables – is the challenging application one of our customers brought to us. The PCM pouch filling station was able to accurately dispense a variety of dosing volumes (40-2000 g) with no splashing or dripping. Filling was synchronized with the packaging machine for near-zero waste. For maximum food safety, the station was fitted with a built-in CIP system and a filling temperature sensor.





## ➤ PCM filling systems

### PCM multi-injection station

#### **Synchronization**

Four dosing units with 4 to 16 heads per unit with individual dose adjustment.

#### **Versatility**

Needles distribution plate, with lift-and-lower system to suit different kinds of buns.



### **Baked goods**

Injecting filling into soft baked goods, such as donuts, is a delicate task. One of our customers uses the PCM multi-injection station to inject precise doses of flavoring, jelly and chocolate into trays of donuts. The filling quantity of each needle is controlled individually, while the injection depth is set per tray. The injection system is synchronized automatically with the packaging equipment and is capable of operating at speeds up to 25 strokes/minute. The needles provide clean, drip-less injection and the whole system can be cleaned in place with no disassembly.





## PCM topping station



### Easy integration

Modular design.

### Versatility

Control panel with pre-programmable recipes (volumes, sizes).

### Gentle handling

«Whole way» nozzles for large solids.

### Dosys pump technology

+/- 0,5% accuracy.

## Convenience food

One of our customers uses a PCM topping station to prepare vegetable dishes with sauces. The same station is used to deposit different kinds of vegetable in the containers and then cover them with different sauces. By programming the recipes into the station's control system, the filling speed and the movement of the nozzles adapt automatically to the ingredients. This produces a very clean and time-efficient filling operation. The PCM topping station is capable of handling viscous sauces with solids up to 48 mm in diameter and is 100% cleanable in place.



## Services

We provide a complete range of services that put our expertise to work for you in four key Food industry domains: transfer, dosing, mixing, and filling.

### Co-development

Our expertise can give you a precious edge in bringing new products to market. By determining the economic and industrial feasibility of a system as early as possible we help you reduce the risk of a costly failure and accelerate the path to reward.

### Consulting & training

To ensure optimum operational efficiency of PCM systems, we provide upstream testing of product dosing and filling. We bring solutions online faster with start-up assistance. To accelerate knowledge transfer to our customers, our Field Services Teams provide training services for your staff.

### International parts distribution

Thanks to our worldwide network of sales offices and distributors, you can obtain genuine PCM spare parts quickly. Using PCM spare parts ensures that PCM products last as long as possible, benefit from warranty protection and maintain their CE conformity until their end of life. We also provide a comprehensive portfolio of maintenance services.

### Repairs & upgrades

Maintenance can be performed on site or in our facilities. Our technicians can also upgrade existing systems with new technologies.



Parts management system



Filling system undergoing upgrade



## ➤ About PCM

PCM is one of the world's leading manufacturers of positive displacement pumps and fluid-handling equipment. The company was co-founded in 1932 by the inventor of the Progressing Cavity Pump (PCP), René Moineau.

PCM Food systems enable you to transfer, dose, mix and fill challenging ingredients (including fluids with high viscosity and solids content) with minimal damage.

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