DOSING

› NEVER WASTE A DROP

www.pcm.eu

PCM | keep it moving

THE PERFECT DOSE OF ACCURACY AND FLEXIBILITY

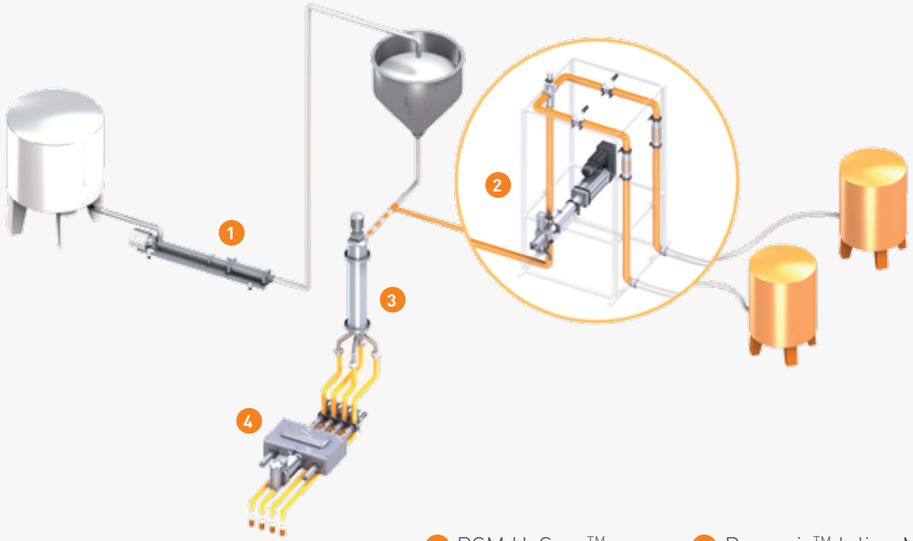
Product loss can represent over half of the total cost of operation of a dosing system. PCM Food inline dosing systems are engineered to keep product loss to a minimum while providing maximum flexibility.

Inline efficiency

PCM inline dosing systems reduce ingredient wastage. By adding the right amount of ingredient at the latest possible moment in your production process, you limit product loss during changeovers, purging and cleaning.

Total flexibility

Typically, small production runs are synonymous with increased product loss due to frequent ingredient changeovers. The low-loss design of our inline dosing systems minimizes this problem, enabling you to supply distributors with small production runs with maximum shelf life. Our dosing systems also have the added benefit of keeping production downtime to a minimum during the changeover process.



1 PCM HyCare™ pump
2 PCM Dosing system
3 Dosymix™ Inline Mixer
4 Filling and Packaging Machine

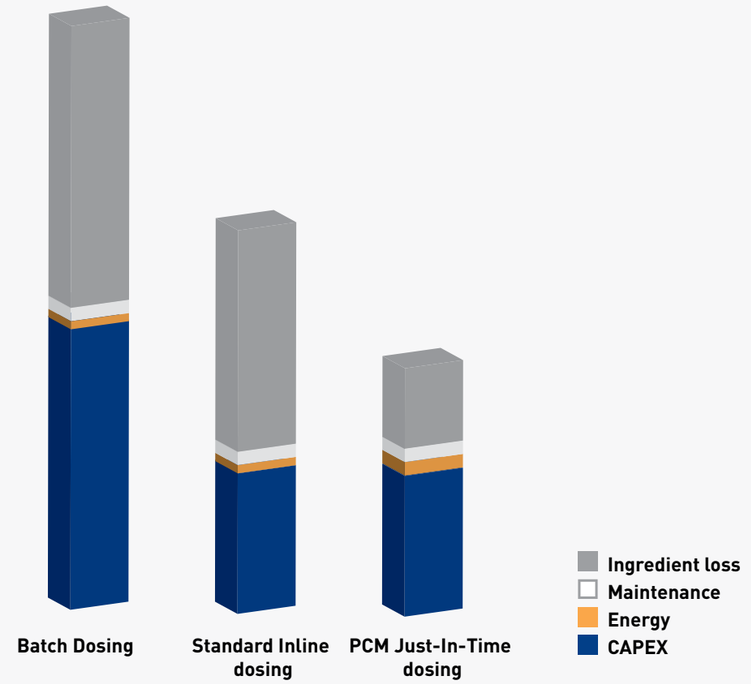
PCM Just-In-Time Dosing

REDUCING TOTAL COST OF OWNERSHIP

In a traditional dosing system, valuable product can be lost due to inaccurate dosing, pump priming, product changeovers, ingredient rotation and production completion. The amount lost during each operation may seem inconsequential, but multiplied by the production volume, it can quickly add up, especially when producing small runs of highly varied final products on the same production line.

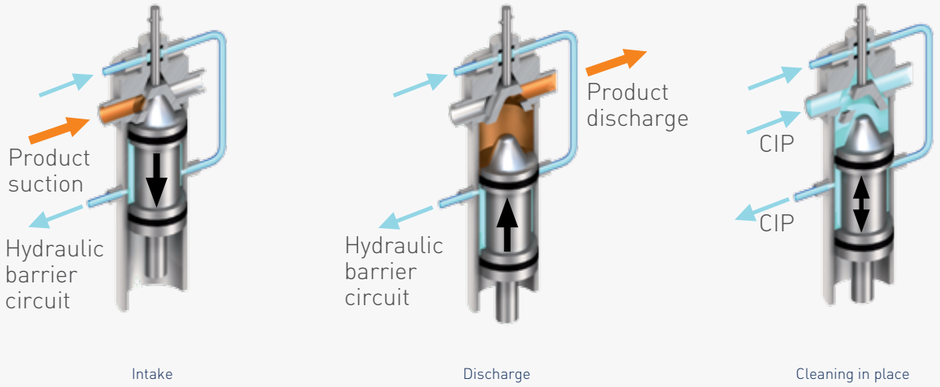
Thanks to our vast experience in the food industry and our unique Dosys pump technology, PCM inline dosing systems substantially reduce product loss at every step of the dosing operation -- from container to packaging -- while delivering superior versatility.

PCM dosing accuracy is +/– 0,5%



DOSYS™ PUMP TECHNOLOGY

Dosys™ pump technology sits at the heart of all PCM Dosing systems. Invented by PCM, it makes it feasible to replace wasteful dosing systems with highly accurate and efficient inline injection.



Accuracy

Dosys™ technology automatically synchronizes dosing volumes with the filling station for optimal performance. It also meters the ingredients with precision, thanks to the servo-driven piston and a patented flow-control valve.

Gentle pumping

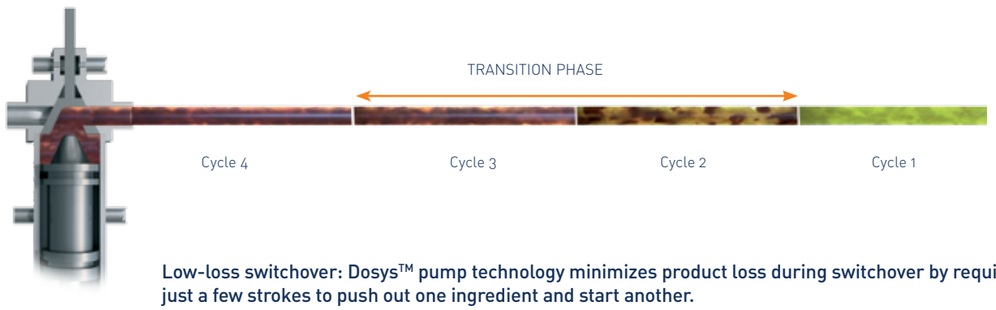
Dosys™ pumps handle ingredients with large semisolids (ø 48mm) without damaging them. Because there is no rotating movement, solids remain suspended in the liquid medium; no emulsions or aeration are created.

Flexibility

Dosys™ pump are designed to handle liquids, semisolids and viscous products. The dosing volume can be easily adjusted by simply increasing or decreasing the piston movement.

Easy cleaning

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



Low-loss switchover: Dosys™ pump technology minimizes product loss during switchover by requiring just a few strokes to push out one ingredient and start another.

DOSYS™ PUMP RANGE

PCM DOSYS™ PUMP	CAPACITY PER CYCLE		MAXIMUM PRODUCTION RATE (CAPACITY: 50%)	MAXIMUM PRODUCTION RATE (CAPACITY: 100%)	MAXIMUM SOLID SIZE	MAXIMUM PRESSURE
	Minimum	Maximum				
008/020-008	0.05 ml	1 ml	80 cycles/min	60 cycles/min	8 mm	20 bar
012/020-008	0.1 ml	2.3 ml	80 cycles/min	60 cycles/min	8 mm	20 bar
024/020-008	0.45 ml	9.1 ml	70 cycles/min	50 cycles/min	8 mm	20 bar
024/040-016	0.90 ml	18.1 ml	70 cycles/min	50 cycles/min	16 mm	20 bar
036/040-016	2 ml	40.7 ml	70 cycles/min	50 cycles/min	16 mm	11 bar
048/100-023	9.05 ml	181.9 ml	50 cycles/min	40 cycles/min	23 mm	20 bar
063/100-023	15.6 ml	312 ml	50 cycles/min	40 cycles/min	23 mm	17 bar
072/100-023	20.4 ml	407 ml	45 cycles/min	35 cycles/min	23 mm	13 bar
090/100-035	31.8 ml	636 ml	40 cycles/min	35 cycles/min	35 mm	9 bar
130/100-048	66.4 ml	1327 ml	25 cycles/min	20 cycles/min	48 mm	4 bar
130/200-048	132.7 ml	2655 ml	20 cycles/min	15 cycles/min	48 mm	4 bar

ELECTRO THRUST CYLINDER: FLEXIBILITY AND PRECISION

To get the most out of Dosys™ pump technology, we recommend using an Electro Thrust Cylinder.

Error-free accuracy

The Electro Thrust Cylinder precisely drives the Dosys™ pump piston. Electronic controls let you remotely adjust pump operations and dosing quantities, reducing the risk of quantity errors caused by manual adjustment.

Mess-free flexibility

For drip-free and splash-free filling of containers, the Electro Thrust Cylinder can perform variable-speed dosing operations in which the piston starts slowly, reaches full speed and decelerates in a very short lapse of time.

Environmentally friendly

Electro Thrust Cylinders use less energy than pneumatic motors, which require an air compressor. They are also very quiet, compared to pneumatic cylinders.

Dosys™ pump driven by Electro-Thrust Cylinder

PCM SEALED CONTAINER STATION: DOSYFRUIT™

- Connect multiple sealed containers (tote or bag-in-box)
- Fully automatic operation
- Best Return On Investissement for complex processes

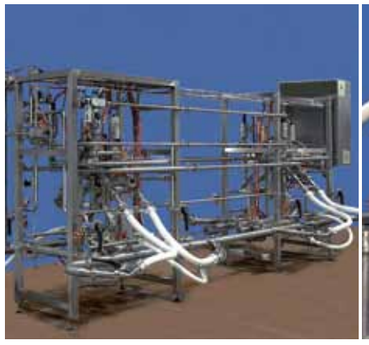
FUNCTIONAL ADVANTAGES:

Productivity

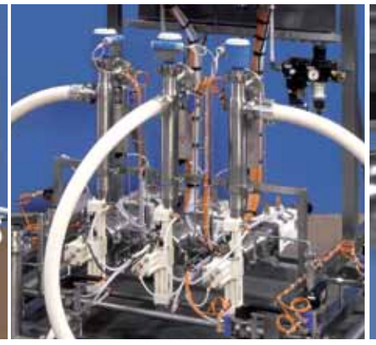
- Injection synchronized with packaging machine and labeling
- No ingredient left in tank thanks to empty container detection
- Dosyfruit™ automatically purges air trapped in the line upstream
- Easy hose management for efficient CIP/SIP and priming
- Empty container detection
- Automatic change over

Efficiency

- 100% repeatability and reliability, thanks to Electro-Thrust Cylinder
- Loss-less ingredient switchover thanks to "push" instead of "flush" transition
- Ideal for assorted flavor packs due to easy management of multi-source priming and end of run



Dosyfruit™ DualFlavour



PCM Dosys™ pumps and ingredients detection device

Container suction hose connected to CIP line

DAIRY

Following an internal audit, a major Asian yogurt manufacturer estimated that one of its high-volume production lines was wasting 110,000 € of valuable fruit annually, due to the functional inefficiencies of the flow meter based dosing system.
By replacing it with a Dosyfruit, it reduced fruit loss by 40%, enabling amortization of the investment in less than three years.

DOSYFRUIT™ PERFORMANCES

- Food safety: CIP/SIP
- Fruit wastage: as low as 1% (three times less than other systems)
- Same ingredient switching time: instantaneous
- Different ingredient switch time: as low as 2 cycles
- Flavor management: 6 max (12 containers)
- Dosing accuracy: +/- 0.5%
- Max production rate: 60 cycles/min.
- Max capacity/cycle: 2 600 ml
- Max pressure: 20 bars

PCM HOPPER STATION

- Cost efficient
- Manual feeding
- Semi-automatic or manual operation

Production safety
Cleanable in Place hopper including level probe

Ready to use
Utility connections and control cabinet. Regulation via flow meter or conditioning pulse

Ergonomic
Flow plate to manage production phases

PCM Dosys™ Pump technology

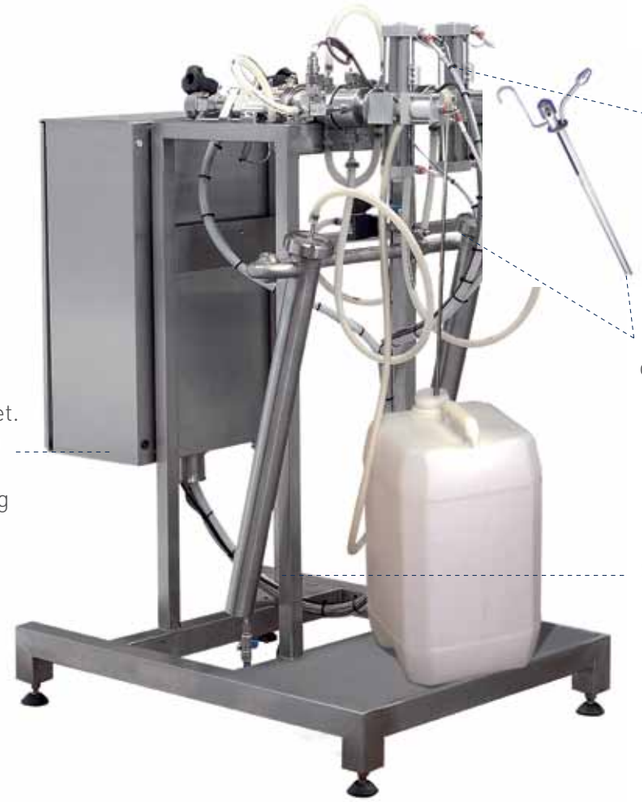
PCM ADDITIVE STATION

- Ideal for aromas and other liquid additives
- Manual suction wand
- Electronic intake adjustment

PCM Dosys™ Pump technology

Production safety
Suction wand with end of drum detection device

Ready to use
Control cabinet. Regulation via flow meter or conditioning pulse



Food safety
Suction wand CIP sleeve

DAIRY

When an island-based dairy goods manufacturer decided to begin producing real-fruit yogurt, it opted for the PCM Hopper Station, because tote and bag-in-box containers were not available locally at a cost effective price.

The customer calculated that the PCM Hopper Station would be amortized in less than two years. This was because it wastes 30% less fruit on average than a flow meter based dosing system, and because the fruit can be fed using affordable manual labor. In addition, the system is upgradeable to tote or bag-in-box containers, when they become available at a better price.

BEVERAGE

In West Africa, a palm oil manufacturer picked the PCM additive station to dose vitamin A into the bottles of oil. Before PCM, the vitamin additive was mixed with the oil in vats, which required large quantities of vitamin to make sure each bottle contained the required dose. By switching to PCM in-line dosing, the company now uses 50% less additive.

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.

INTERNATIONAL PARTS DISTRIBUTION

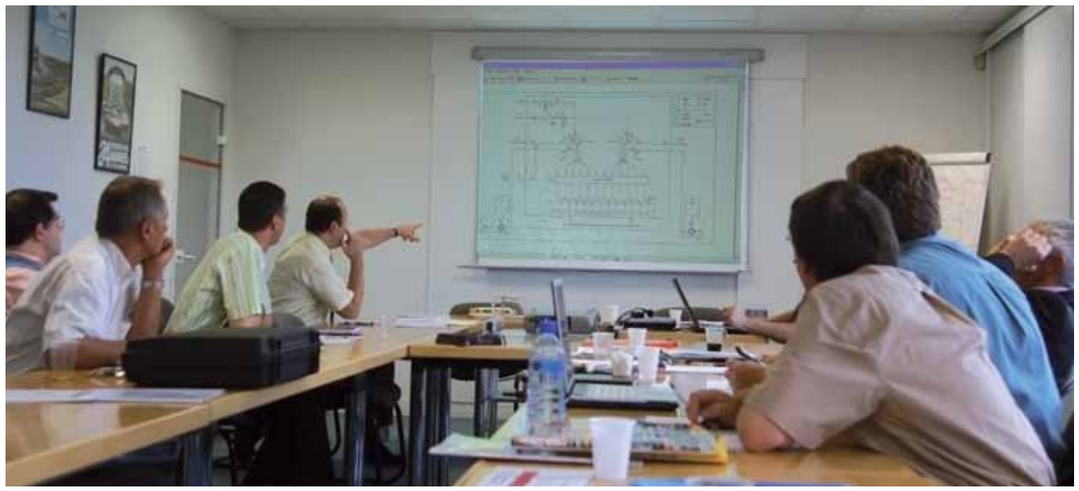
Thanks to our worldwide network of sales offices and distributors, you can obtain genuine PCM spare parts quickly. Using PCM spare parts ensures that PCM products last as long as possible, benefit from warranty protection and maintain their CE conformity until their end of life. We also provide a comprehensive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

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.

REPAIRS & UPGRADES

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



PCM on site training

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.

contact@pcm.eu
www.**pcm.eu**

keep it moving

Ref. : B-000198-C - June 2014