



**PCM CHEMICAL
DOSING SYSTEMS**

www.pcm.eu



YOUR DAILY PARTNER FOR CHEMICAL DOSING SYSTEMS

PCM Group UK Ltd has over 30 years of experience in the manufacturing and installation of precision chemical dosing systems spanning a large variety of industries.

Safety is our priority, we understand the difficulties and risks associated with handling chemicals. Our technical expertise can assist with selecting compatible materials and managing the risk with safety systems in place.

















PCM offers complete solutions including the after-sales support and in-field training to share our knowledge and expertise. This can range from hands-on support to explain any issues and resolutions, to presentations tailored to sites to help increase knowledge on maintaining chemical dosing systems.

PCM will work with you every step of the way to optimize your installation. **PCM has mastered the hydraulic design of its pumps and chemical dosing systems** to meet all your challenges.

PCM AT THE HEART OF THE CHEMICAL PROCESS



NON-EXHAUSTIVE LIST OF CHEMICALS

							
Sodium Hydroxide NaOH	Ammonia Liquid NH ₄ OH	Ferric Sulphate Fe ₂ (SO ₄) ₃	Lime CaCO ₂	Hydrogen H ₂	Sulphuric Acid H ₂ SO ₄	Polyelectrolyte SO ₃ ⁻ Na ⁺	Potassium K ⁺
							
Sodium Na ⁺	Ferric chloride FeCl ₃	Phosphoric Acid H ₃ PO ₄	Hydrochloric Acid HCl	Aluminium Al	Sodium Carbonate Na ₂ CO ₃	Sodium Bisulphite NaHSO ₃	Calcium Nitrate Ca(NO ₃) ₂

Step 1 : Dosing systems
 Step 2 : Dosing pumps
 Step 3 : Transfer pumps

STEP 01 DOSING SYSTEMS

› CHEMSKID : OUR COMPLETE PEACE OF MIND SOLUTION

PCM's solution for safe chemical dosing consists of smart dosing technology in a bunded enclosure. Its internal design is totally modular and adaptable to meet with your installation.

Features / benefits:

- Integrated alarms for internal leakage within the drip tray, over pressure and line blockages to maximize safety.
- Outlet connections suitable for dual contained hoses.
- Optional flowmeters and flow switches can also be installed for chemical consumption and monitoring.
- Available with either a diaphragm or peristaltic pumps upon request.
- Wide range of materials available: PVC, PP, PVDF, St/St.

With the electrical termination box, isolators and e-stops located outside the enclosure, this system can be operated with minimal requirement for the operator to be in contact with chemical splashes.

We can offer the CHEMSKID single, double, triple stream configurations to provide you with the best possible support to reach those difficult flow requirements.

This solution is recommended when dosing from a fixed chemical tank.

This system is available in 3 control options:

- **Remote:** all wiring terminated at a local junction box to allow easy integration into your process.
- **Manual:** with smart dosing pump technology, it is possible to operate this system directly at the pump without a control panel for basic continuous chemical dispensing or batching applications.
- **Local:** a control panel can be provided for local control at the system.





› CHEMPACT : TO DOSE DIRECTLY FROM IBC, CARBOY DRUM OR TANK

CHEMPACT is a compact solution suitable for simple chemical dosing or dispensing applications directly out of an IBC, carboy drum or tanks.

This system typically consists of a bunded enclosure with a smart dosing pump, relief valve, suction lance and injection point.

The dosing can either be controlled locally directly at the pump or via a pulse or an analogue signal. Internal leakage can be detected by a bund switch for auto shut off.

Our compact design allows the system to be installed in various positions to simplify your installation. For example, you can fix it on a wall near the chemical storage area, hook on to the side of an IBC or even on a pedestal directly above a carboy bund.

Different options are also available:

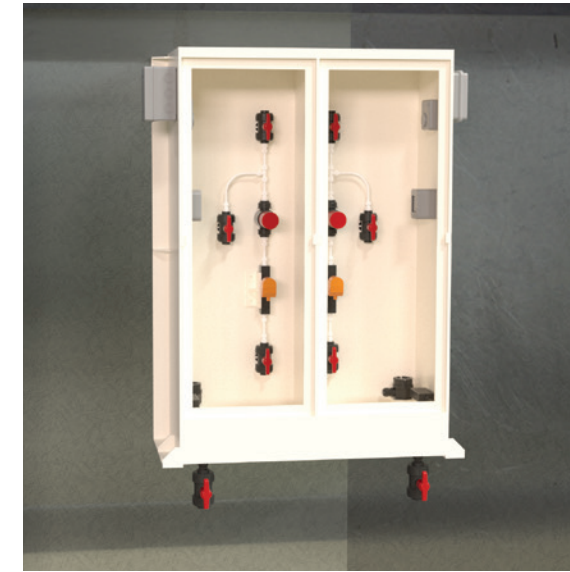
- Various pipework materials (PVC, PP, PVDF, St/St) compatible with the pumped product.
- Available with either a diaphragm or peristaltic pumps upon request.



› CHEMPOINT : INJECTION POINT SAFETY

Dosing directly into pipework can present many challenges and risks as you can be dosing against a back pressure. This can increase the risks of splashes, increase maintenance intervals or possibly even blockages during winter.

Our lance enclosures help to reduce these risks by installing a bunded enclosure around the injection point with a bund alarm when leakage is detected. Heaters can also be installed to keep the injection point at a safe temperature. The injection lance can also be retractable for ease of maintenance.

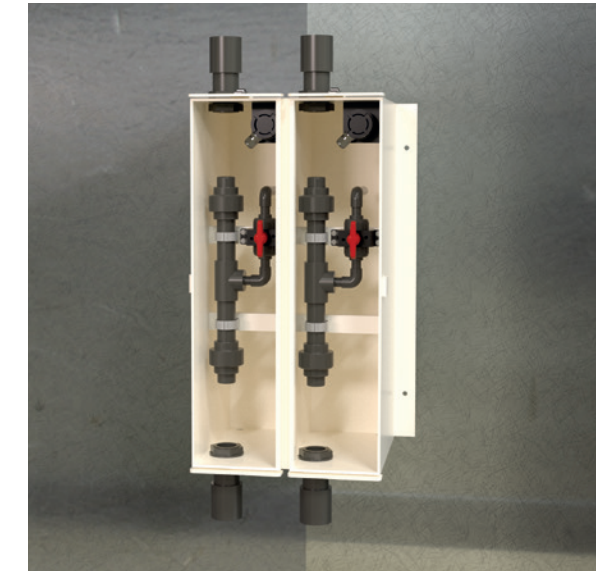


› CHEMPOA : LONG-DISTANCE DOSING

When dosing long distances from your chemical tanks, PCM recommend installing a point of application enclosure.

Function and composition:

- The back-pressure valve is used to improve dosing accuracy with diaphragm pumps.
- The flow meter/switch validates the volume dosed, this helps to quickly identify any loss of chemical product.
- Our POA boxes also contain a bund level alarm.
- They can also have heating if necessary.



› CHEMCATCH : SECURE YOUR PROCESS

Identifying leaks quickly on chemical lines can be one of your most important points to maintain safety and avoid environmental hazards when dosing over long distances.

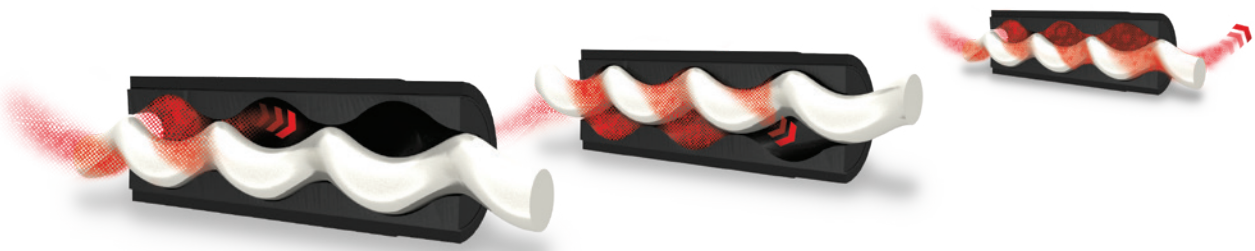
When using our catchpots in conjunction with dual-contained hose technology, you can detect leakages in your chemical lines which can be caused by material breakdown due to the environmental factors, chemical compatibility issues or damages caused by plant equipment.

Our catchpots are installed at a low-level point to allow gravity drainage into the enclosure. The outer hose contains the chemical leakage and directs it within the catchpot. The level sensor detects a rise in chemical levels within the enclosure allowing swift intervention to take place and avoiding any risks.

PCM TECHNOLOGIES FOR YOUR BUSINESS

PRINCIPLE OF MOINEAU™ TECHNOLOGY

A Moineau™ pump consists of a helical rotor turning into a helical stator. When the rotor turns inside the stator, the honeycomb progresses spirally along the axis of the pump without changing either shape or volume. This action transfers the product from the pump suction to the pump discharge without degrading the product. This basic principle of Moineau™ pumps allows a high accuracy of flow and pressure, making these pumps extremely efficient for transferring and dosing the most complex fluids.



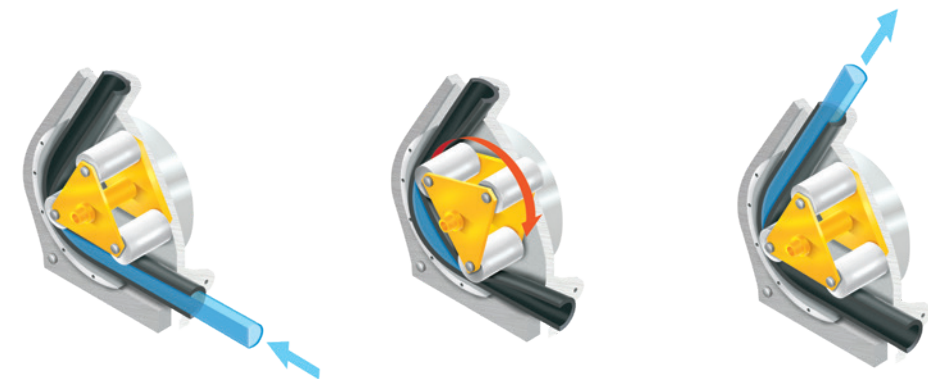
PCM Moineau™ pumps are configurable to perfectly fit to the multiple applications proposed by their users. From the choice of the elastomers of their stator, to the coating of their rotor, through the choice of the types of dynamic seals of their drive, but also many other options, each PCM Moineau™ pump is modular and thus meets all constraints.

BENEFITS

- Preserves the texture of fragile fluids (no shearing compared with lobe or centrifugal technologies)
- Handles fluids with solids
- High suction capability
- Self-priming
- Constant non-pulsating flow
- Reversible flow
- One of the highest pumping efficiencies

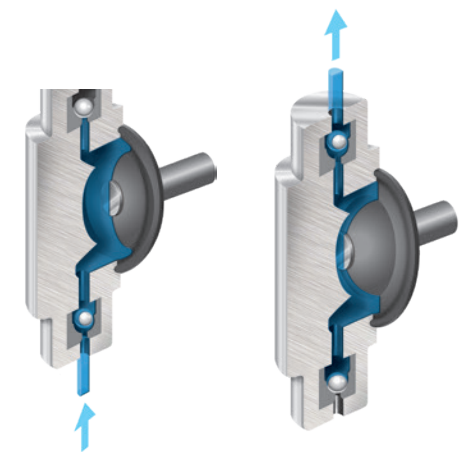
PRINCIPLE OF THE PERISTALTIC PCM DELASCO™ TECHNOLOGY

The peristaltic pumping principle is based on the capacity of a soft elastomer hose to accept a deformation and subsequently recover its initial shape. Peristaltic pumps are provided with either high- or low-pressure hoses, covering a wide range of applications which need versatility and flexibility. Thanks to its all-elastomers construction, this technology is perfect for the dosing of reagent and chemicals that are not compatible with metallic parts. Moreover, the peristaltic pumps are seal-less constructed, are able to dry run and are quiet (very low shear of the pumping action).



PRINCIPLE OF THE METERING PUMP LAGOA

The PCM Lagoa pump is composed of a diaphragm connected to a piston of which the alternating movement successively fills and empties the pump head. This pump is most used in the dosing of chemically aggressive reagent, thanks to its stainless steel or plastic mono-material construction, with a PTFE membrane. Dosing accuracy and repeatability are guaranteed.



STEP 02

DOSING PUMPS



PCM ECOMOINEAU™ MF & CF : FLOATING DOSING STATOR PUMPS

PCM EcoMoineau™ progressing cavity pumps with floating stator, based on Moineau™ technology, are ideally suited to space-constrained environments.

Fitted with a frequency converter they can be used as a metering pumps, outperforming conventional metering pumps for viscous, charged or abrasive liquids.

Their compact, robust design makes them an ideal choice for integration into machines or systems.

With its simple design, this range combines numerous advantages:

- Small footprint, with the rotor directly connected to the drive unit.
- Simple, robust construction in stainless steel or cast iron to suit all types of applications.
- Ideal for dosing fragile and viscous fluids.
- Very low maintenance costs (few wearing parts).
- Easy to fit into small spaces or existing installations.
- Can be mounted on a trolley for versatile use.

PCM ECOMOINEAU™ MF

PERFORMANCE

- Flowrate : 15 à 6500 l/h
- Pressure : 5 bar (10 bar – 4M12F)
- Maximal temperature : 80°C
- Particles size : 8 mm

CONSTRUCTION

- Cast iron body
- 316 L stainless steel or chromed 100µ rotor
- NBR, CR or FKM PCM stator

PCM ECOMOINEAU™ CF

PERFORMANCE

- Flowrate : 15 à 21 000 l/h
- Pressure : 5 bar
- Maximal temperature : 80°C
- Particles size : 8 mm

CONSTRUCTION

- Stainless steel body
- 316 L stainless steel rotor
- NBR, CR, FKM PCM stator
- Various connections

PCM LAGOA PRECISION AND RELIABILITY FOR SUCCESSFUL BLEND

Lagoa PCM pumps are designed to dose a wide variety of products for chemical and environmental applications.

The part of the diaphragm in contact with the product is chemically inert, and the dosing heads are available in a range of materials to ensure total compatibility with different types of fluids.

The pump's capacity is adjusted by a graduated micrometric vernier, which can be locked to prevent unintentional adjustment. This makes the PCM Lagoa diaphragm pump an effective solution for precise, reliable dosing in all types of industries.

Customizable, the PCM Lagoa range offers several advantages:

- Pumps can be multiplexed for proportional dosing of different fluids.
- Different metering head materials available to meet the requirements of all types of fluids.
- Wide range of accessories available to secure the installation and optimize dosing.
- Dry running possible without risk of damaging the pump.
- Robust pump body and stroke, greatly reducing maintenance costs.

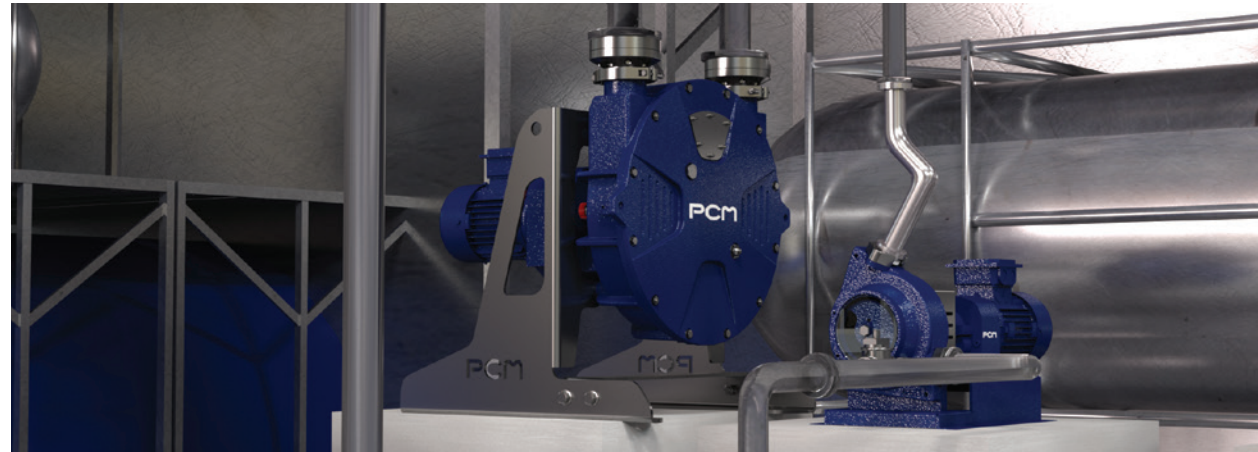


PERFORMANCE

- Flowrate : 315 l/h per dosing unit
- Pressure : 12 bar
- Maximal temperature : 90°C
- Particles size : no particle
- Dosing precision : +/- 1%

CONSTRUCTION

- Body : cast iron
- Dosing unit in polypropylen, PVC, stainless steel or food contact stainless steel, PVDF



PCM DELASCO™ DX & Z : PERISTALTIC PUMPS FOR FRAGILE, ABRASIVE AND CORROSIVE PRODUCTS

Delasco™ PCM peristaltic pumps offer unrivalled versatility and flexibility, thanks to their various constructions and the variety of elastomers available.

They are simple to operate and maintain, making them suitable for a wide range of applications. Their low-speed operation and the fact that the fluid passes through the tube without agitation make them ideal pumping solutions for fragile and/or abrasive liquids.

They are also the perfect solution for corrosive liquids, as only the inside of the tube is in contact with the pumped product.

- Suitable for pumping abrasive fluids with high solids content (up to 80%), high-density, corrosive, shear-sensitive/fragile, viscous, multiphase/gaseous, crystallising fluids.
- Low-energy costs, thanks to low-operating speeds.
- High-suction power, self-priming and dry running possible without damaging the pump.
- Anti-pollution design: the 100% sealed body contains the fluid in the case of a tube rupture.
- Ergonomic integration of accessories, accessible from the rear of the pump.
- On-site maintenance and downtime reduced, thanks to quick tube change system.

PCM DELASCO™ DX

PERFORMANCE
<ul style="list-style-type: none"> • Flowrate : from 20 to 100 000 l/h • Pressure : 15 bar • Maximal temperature : 80°C • Particles size : 33 mm
CONSTRUCTION
<ul style="list-style-type: none"> • Cast iron body • NR, EPDM or NBR hose • Stainless steel or polypropylene connections • Hose compression thanks to skates

PCM DELASCO™ Z

PERFORMANCE
<ul style="list-style-type: none"> • Flowrate : from 50 to 20 000 l/h • Pressure : 2 bar • Maximal temperature : 80°C • Particles size : 20 mm
CONSTRUCTION
<ul style="list-style-type: none"> • Cast iron body • CSM, EPDM, NR, CR, Silicon hose • Stainless steel or polypropylene connections • Hose compression thanks to rollers

**STEP 03
TRANSFER PUMPS**



PCM ECOMOINEAU™ C : THE VERSATILE, CORROSION-RESISTANT TRANSFER PUMP

With its robust design, the PCM EcoMoineau™ C pump is built using materials that can withstand the challenges of corrosive chemical transfer applications. Additionally, it incorporates a variety of hydraulics developed by PCM, optimizing the pump's service life based on the pumped product.

The PCM EcoMoineau™ C progressing cavity pump offers a lighter design, requiring fewer raw materials, while consuming less energy than other pump technologies.

- Stainless steel pump casing and flanges to resist corrosion.
- Durable and robust E-CTFE-coated shaft line design: increased service life for corrosive and abrasive applications.
- Patented 3-screw connection system for quick and easy maintenance of wear parts.
- Wide choice of stator and rotor materials and a large range of flanges to suit all environments.
- Reduced energy consumption compared to other pump technologies.

PERFORMANCE	CONSTRUCTION
<ul style="list-style-type: none"> • Flowrate : 240 m3/h • Pressure : 24 bar • Maximal temperature : 110°C • Particles size : 40 mm 	<ul style="list-style-type: none"> • 316L stainless steel body • EPDM, NBR, NBR EU-FDA, FKM, NR, IR stator • Clamp, SMS, DIN 11851, MACON, Bride ISO PN40 CLASS 150 connections • E-CTFE coated shaftline



**PCM ECOMOINEAU™ LX :
RESPECT OF THE PUMPED PRODUCT'S CHARACTERISTICS**

The PCM EcoMoineau™ LX pump has been designed to respect the properties of the pumped product and to ensure its proper use in the rest of the process. Unlike the PCM EcoMoineau™ C, PCM EcoMoineau™ LX consists of a flexible connecting rod and does not use sheaths. As a result, this eliminates the risk of contamination of the pumped product by preventing grease, oil or metal particles from being released into the fluid.

Furthermore, the body design has no retention zone, preventing product loss and the potential expiry of any product present in these areas.

The PCM EcoMoineau™ LX design therefore offers several advantages:

- Superior corrosion resistance thanks to the flexible titanium shaft line.
- Absence of wear parts, which prevents any risk of metal particles being dropped into the product.
- No sheaths and therefore no grease or oil in the pump body, so no risk of product contamination.
- Use of the high-performance PCM range of elastomers to guarantee the pump's service life, depending on the characteristics of the product being pumped.

PERFORMANCE	CONSTRUCTION
<ul style="list-style-type: none"> • Flowrate : 240 m3/h • Pressure : 24 bar • Maximal temperature : 110°C • Particles size : 40 mm 	<ul style="list-style-type: none"> • 316L stainless steel body • EPDM, NBR, NBR EU-FDA, FKM, NR, IR stator • CLAMP, SMS, DIN 11851, MACON, Bride ISO PN40 CLASS 150 connections • Titanium flexible shaft



**HOPPER PUMPS PCM MSH :
TRANSFER AND DISPOSAL OF DRY AND VISCOUS PRODUCTS**

The PCM MSH hopper pumps range transfers dry and viscous materials. Applications that involve viscous, pasty, sticky, rich in dry matter or contain solid particles fluids are common and lead to several challenges. They require pumps specially designed to cope with these difficult conditions.

Its stainless steel or carbon steel design makes it resistant to chemical attack.

- Closed Archimedean screw for non-sticky viscous products.
- Open Archimedean screw to transfer products with a risk of compaction.
- Its robust stainless steel design meets the challenges of the chemical industry.

PERFORMANCE	CONSTRUCTION
<ul style="list-style-type: none"> • Flowrate : 70 m3/h • Pressure: 24 bar • Maximal temperature : 110°C • Particles size : 40 mm • Maximum dryness : 18% • Maximum viscosity : 40 000 cPo 	<ul style="list-style-type: none"> • Stainless steel or carbon steel body • Open or closed Archimede screw regarding the pumped product • EPDM, NBR, FKM, NR, IR product

PCM ELASTOMERS EXPERTISE

René Moineau™ invented the progressing cavity pumps in 1932. **For over 90 years**, PCM has been dedicated to continuous research, development, and testing of new elastomer blends tailored to meet the diverse requirements of various industries. Throughout this time, **PCM has accumulated extensive knowledge and expertise**, investing in essential equipment and resources to enhance our ability to select, develop, and produce optimal elastomers for our customers' specific applications.

Elastomer selection demands specialized knowledge and experience, qualities that few companies possess worldwide. PCM stands out as the only progressing cavity pump **manufacturer managing its own elastomer production**. Leveraging our expertise, laboratory facilities, and dedicated production unit, we can meticulously develop and customize each elastomer blend to align with the unique characteristics of every type of fluid.

PCM's customers encounter a wide array of fluids requiring careful consideration and solutions to ensure that the elastomers used in **PCM equipment deliver optimal functional characteristics**. These include:

- Mechanical resistance to abrasion,
- Chemical resistance to the pumped fluid,
- Desired color,
- Regulations compliance and rules,
- Optimized lifetime,
- Product integrity (structure, turbidity...),
- Resistance to cleaning procedures.



ELASTOMERS TESTING

From laboratory testing equipment to large mixers, injection presses and vulcanization ovens, PCM has all the necessary equipment and knowledge within its premises to assure **perfect control of its elastomer selection and manufacturing**.

- Mechanical tests (static, dynamic, compression, bonding),
- Tribology (abrasion, friction),
- Chemical tests (swelling tests, volume and hardness variation, thermal analysis, infrared spectroscopy).



MAIN ELASTOMERS USED IN INDUSTRY APPLICATIONS

NBR	PCM 164	NITRILE Good general resistance in many applications especially with oil, grease products and resists abrasion. PCM NBR 164 has a good mechanical property.
	PCM 209	Certified EU, FDA US & 3A, PCM NBR 209 is a versatile elastomer, that can be used in a lot of different food applications.
	PCM 246	White elastomer, which has good mechanical properties. Mainly use in food application to transfer oil and fat product, due to his EU certification.
	PCM 159	NITRILE - "4-WHEEL DRIVE" Most versatile with its high ACN content, providing top performance across many applications.
	PCM 194 PCM 205	SOFT NITRILE High resistance to abrasion and top performer for handling solids with varying water cuts.
HNBR	PCM 198	HYDROGENATED NITRILE For higher temperature (150°C/300°F) applications and H2S&CO2 resistance.
	PCM 206	Extends the limits of 159.
EPDM	PCM 185	TERPOLYMER ETHYLENE PROPYLENE DIENE Used mainly for his resistance to acids and alcohols. Meet with chemical challenge.
FKM	PCM 186	FLUOROCARBON Excellent chemical resistance. Top-of-the-range elastomer capable of withstanding extreme conditions.
	PCM 189	Use to transfer chemical product in food application. PCM FKM 189 is certified FDA US & 3A.
	PCM 204	Best performer for higher aromatics, and a good choice when nitriles are no longer effective.
CR	PCM 174	POLYCHLOROPREN Mainly used for pumped fluids with particles. Has a good property to fight against abrasion and has good general properties to withstand chemical products.
IR, NR	PCM 156 PCM 201	NATURAL RUBBER Very good mechanical properties and resists abrasion.

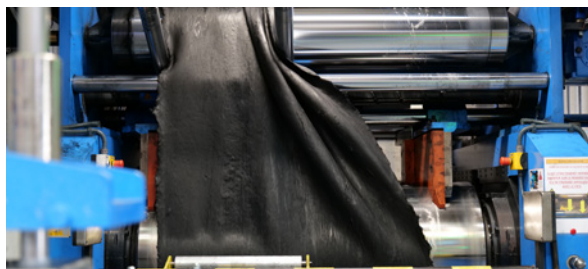
PCM ELASTOMER MANUFACTURING PROCESS



Numerical simulation: fine-tune our injection parameters to ensure the efficiency of production and guarantee the good properties of our parts.



Chemical formulation: define each ingredient and its quantity to achieve the desired characteristics.



Elastomer mixing: thanks to our mixer, we mix all our blends in our plant. This ensures the quality and performance of our elastomers.



Injection, moulding : Elastomer is then injected and moulded in metal frame to produce the stator.



Control : Then all stators are controlled to guarantee their performance. The tightening is very important and must be precise to have the right flowrate. Other parameters controlled are the dimensions, gluing, thickening ...



Failure analysis : Thanks to our expertise and knowledge we are able to analyze the different stators failures to bring personalized solutions to fix it.

PCM SERVICES

At PCM, we offer a comprehensive range of services to analyze, start up, perform maintenance, and upgrade your pumps and equipment, ensuring optimal performance and reliability.

Our team of experts is dedicated to ensuring that your pumps operate at peak efficiency, delivering the best possible outcomes for your applications. By leveraging our deep industry knowledge and cutting-edge technologies, we are able to provide tailored solutions, that address the unique challenges and requirements of your pumping solutions.

Our expertise spans from initial installation and auditing to ongoing maintenance and technical support, catering to all your needs to keep your systems running efficiently and effectively.

› AFTER SALES

Maintaining your equipment is paramount for safety. Our Field Service engineers are here to support you with frequent inspections, create a service plan and carry out regular servicing of your pumps such as replacing stators/ hoses, rotor within the pumps and all seals and rings.

PCM has a dedicated after sales support team for all maintenance steps. This can include yearly service agreements to maintain and extend the life of the pumps. We can also renew third party equipment where we can offer on-site refurbishments to ensure safe operation of existing pumps and minimizing downtime at site.



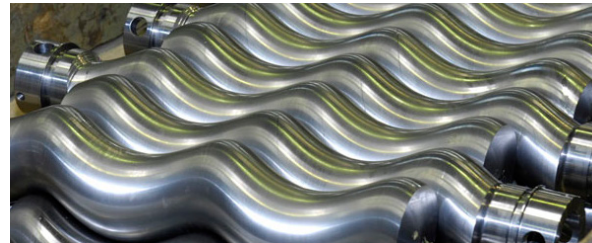
› MAINTENANCE

Maintenance is key to extend the life of your pumps and equipment. At PCM, we offer tailored maintenance solutions, including training, corrective maintenance, and preventive maintenance, to meet your specific requirements. Our goal is to help you maximize uptime and minimize the risk of unexpected failures.



› ROTORS AND MECHANICAL SEAL RENEWAL

Committed to reducing material waste, we also offer the possibility to renew rotors and mechanical seal. PCM can rechrome rotors to give them a second life. Similarly, we can reshape the faces of the mechanical seals so they can be reused on pumps.



› RENTAL

For those in need of temporary solutions, we provide pumps and equipment rental. We understand the importance of keeping a plant operating whilst conducting regular service or refurbishment of existing critical equipment. We can rent pumps to keep your plant operating, which also allows engineers to conduct their work in a safe way, if the pump can be taken completely offline.



› INSTALLATION AUDIT

Our installation audit service is designed to enhance the performance of your PCM pumps and equipment. Through detailed evaluations, we identify areas for improvement and provide actionable recommendations to optimize equipment operation and reduce maintenance costs. Our audits help you achieve higher efficiency and reliability in your installations, ensuring that your systems are always performing at their best.



› TRAINING & DIGITAL SUPPORT

Our experienced staff can provide on-site training for new or existing pumps to maintenance engineers or operators. This can help increase site safety, hazard awareness, and improve asset management. We can provide tailored training on operation, servicing, or hazard identification.

For easy access to information on installation and maintenance, our HELLO PCM digital application provides a fast and convenient way to access data and resources related to your pumps and equipment. This application ensures that you have all the information you need at your fingertips, helping you manage your systems more efficiently.



