

AT WIEGERS PROCESS INNOVATIONS, JJ GORREDIJK (NL)



Precisely-dosed chocolate for sandwich cookies

Wherever cookies, waffles, and cakes have to be filled or coated with sweet delicacies, Wiegiers systems are in great demand. To convey and dose these viscous media, in most cases the Dutch system supplier uses KNOLL progressing cavity pumps that are activated with servo gear motors.

For many years, well-known companies in the baked goods, confectionery, and dairy products industries have been customers of Wiegiers Process Innovation (WPI) of Gorredijk, the Netherlands. Whether large multinational companies or small specialized suppliers, all of them appreciate WPI systems due to their long-term quality and reliability.

WPI offers systems for all essential process steps, whether pre-mixers – even for dry ingredients, color and aroma dosing systems, continuous ventilation systems or screened surface heat exchangers. WPI supplies each machine as an individual part or as a combination of two or three machines. In every case, the systems are produced entirely at customer request.

The scope of delivery also includes preparation systems for jam, jelly, and caramel, as well as processing devices for various crèmes that are used to fill sandwich-type cookies, waffles, and cakes.

In order to be able to dose crèmes and fillings precisely to the gram, WPI uses progressing cavity pumps that are activated with servo gear motors. The pumps' precise con-

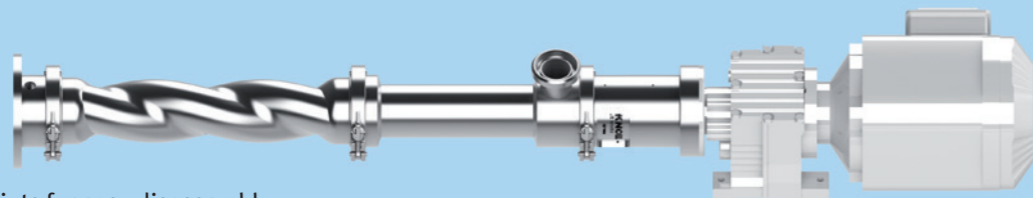
trol presents numerous advantages: among others, the exact dosing of the filling and coating mass for the cookies. Furthermore, the shaping of the mass during application to the cookies can be controlled. This is done with specially-controlled nozzle technology. Last but not least, such systems are constructed so that with a single movement, it is possible to dose two different products exactly and to the gram on one cookie, for example chocolate and caramel. In addition to the exact dosing, customers appreciate the systems' high repetition rate, which rounds out the high quality standard.

KNOLL offers numerous standard and special solutions

In order to be able to guarantee quality, reliability, and efficiency for its systems designed specifically for customers, this owner-operated company relies on proven suppliers such as the pump specialist KNOLL Maschinenbau, Bad Saulgau. KNOLL's MX progressing cavity pumps possess ideal properties for conveying and dosing jams, crèmes, and chocolate.

Progressing cavity pumps are a kind of rotating displacement pump. They work gently and with low pulsation, which means that they are well-suited for the required tasks. This is how Managing Director Joukje Wiegiers explains why KNOLL MX pumps are used in WPI systems: "We appreciate

Properties of the MX



- Intelligent separation points for easy disassembly
- Maximum chamber utilization
- Vertical or horizontal position possible
- Can be used regardless of direction of rotation
- Self-priming pump up to 0.2 bar absolute
- Available as mobile or stationary pump
- CIP and SIP cleaning

both the expert advising and short reaction and delivery times, as well as the various technical features that accommodate our tasks very well."

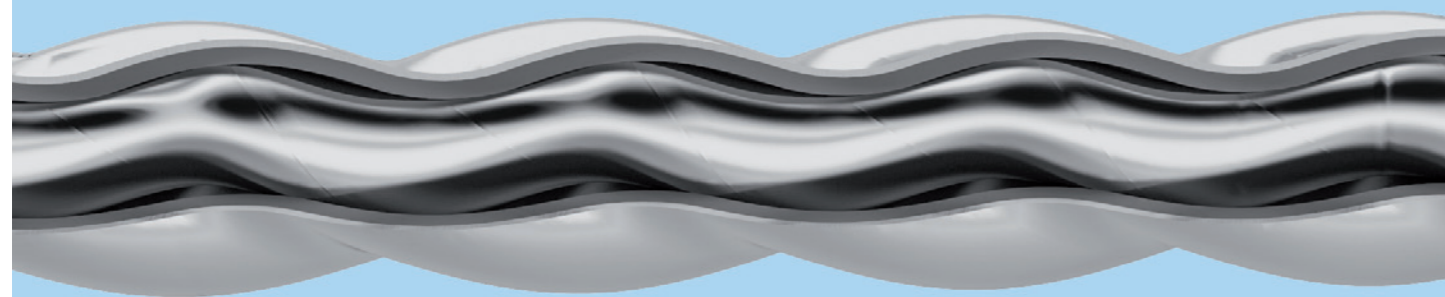
The KNOLL MX progressing cavity pumps are constructed so that they are completely modular, and their design allows them to fulfill nearly all the requirements of customers such as Wiegiers Process Innovations. Thanks to their construction with EvenWall® technology (see text box), they demonstrate great pressure stability, low backflow, and good intake behavior.

From the small MX 10 to the MX 50 version, they are available in many standard models. There are eleven different pump set sizes for the popular MX 20 progressing cavity

pumps, for example. This allows customers to adjust the delivery rate and pressure entirely according to their needs.

And not just the pump set can be changed from the toolbox. There are also various types of housings available: suction housings for thin liquid products or hopper housings for viscous liquids such as doughs. In addition to standard housings, KNOLL also makes available special models, for example with double jacket for heating or cooling the medium.

Advantages of the EvenWall® technology



A design particularity of the KNOLL MX progressing cavity pumps is their design with EvenWall® technology. This means that the stator sheathing is adapted to the inner contour of the stator and it has an elastomer layer with an even wall thickness. This provides numerous benefits as compared to conventional designs that feature a cylindrical exterior geometry of the stator sheathing and accordingly varied wall thicknesses of the elastomer. This includes

much greater pressure stability, less backflow, longer durability, better efficiency, less shearing of the product, and better suction behavior. In addition, with a single closed chamber, the MX pump provides pressure of up to 10 bar, while conventional progressing cavity pumps are limited to 4 to 6 bar. Thanks to its multi-stage construction, the MX progressing cavity pump achieves pressures of up to 80 bar.

Certified for food processing

The KNOLL MX progressing cavity pump also consistently fulfills all hygiene requirements of the food industry. CIP and SIP cleaning are optionally available. This means the pump is constructed with little dead space and so that it can be cleaned where it is used without dismounting. All metal parts that touch the product are made of stainless steel. This material and high-quality elastomer, which is certified across the boards for the hygiene sector, ensure resistance to corrosion, high temperatures, and chemicals. Both the pump housing and pressure connections are also essentially electropolished. This is how the KNOLL MX pump can fulfill the directives according to EHEDG and 3A on request.



Wiegiers Process Innovation (WPI) provides the baking, confectionery, and dairy products industries with a wide variety of process-relevant systems in which KNOLL progressing cavity pumps are used for conveying and dosing.

Paul Wiegiers, who is responsible for technical system planning, emphasizes: "The joint-free design of the KNOLL MX pumps allows easy and efficient cleaning of the pumps. Our customers appreciate the pumps' service-friendly nature, and we are pleased when our customers are satisfied."

Each MX pump can dose precisely to the gram

Since the WPI systems are fitted with up to 44 aggregates, the compact design and small space requirement of the MX pumps is another important criterion. In the two-stage design, the small sizes (MX 10 and MX 20) that WPI prefers can generate an overpressure of up to 20 bar.

Company boss Joukje Wiegiers explains further: "With our crème systems for sandwich cookies, we usually use a KNOLL MX 20S-30/10 in order to convey the crème from the pre-mixer to the buffer tank as quickly as possible." The delivery rate is approximately 3000 liters per hour. After that, a second MX 20 pump is used to transport the required amount of crème from the buffer tank to the TempAerator. "This is a very important process," emphasizes Joukje Wiegiers. "On the one hand, to achieve the optimal crystallization of the fats in our TempAerator, and on the other hand to keep the dosing weight on the cookies precise." The system's capacity is between 100 and 1500 kg per hour.



Joukje Wiegiers, Managing Director of WPI: "We appreciate both the expert advising and short reaction and delivery times of our supplier KNOLL Maschinenbau, as well as the various technical features that accommodate our tasks very well."



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KNOLL
.It works

The KNOLL progressing cavity pumps guarantee precise dosing results with great repeat accuracy across a very long operating cycle. "Therefore, they fulfill our most important requirement," confirms Joukje Wiegers. In the end, all pumps in a system must dose exact and identical quantities. Furthermore, there may be no dripping of the pump under any circumstances. "There is no room for play here since otherwise the system will not be accepted," continues the Managing Director. "However when it comes to this, we know we can rely on KNOLL. Our partnership across the years since 2007 has proven this."



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KNOLL Maschinenbau GmbH

KNOLL Maschinenbau ranks among the leading suppliers of systems for conveying and filtering chips and coolant in the metal machining industry. Its displacement pumps are also used in the chemicals and foodstuffs industries. Highly-flexible transport systems complete the KNOLL product portfolio. Thanks to its comprehensive product range, the company is able to implement complete systems and system solutions incorporating central or localised functions. Since 1970 the name KNOLL has been associated with innovation, progress and growth.

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