

How aroma-seal valves for packaging are manufactured

# Inconspicuous helpers in packaging

Though they are only two centimeters in diameter, they have a great effect. Aroma-seal valves are the answer to this riddle. Two Swiss companies together dominate the international market of this product, which is so important for outgassing foodstuffs. The technological basis for their manufacture is injection molding machines from Krauss Maffei.



Base body and membrane holder: All that is needed to complete the aroma-seal valve is the sealing medium and the membrane.

*Photo: Krauss Maffei*

**W**hen coffee beans, leavened dough or other outgassing foodstuffs are transported, this is an ideal application for aroma-seal valves, which allow gas to leave the packaging, but do not let any oxygen in. The latter would result in oxidation and spoilage of the product. Just two centimeters in diameter, the valves have an unassuming appearance that betrays little of the painstaking process required to produce them. However, this requires the famous Swiss precision and two closely connected companies. Together, Michel Werkzeugbau and Wipf supply aroma-seal valves to the international market.

Michel Werkzeugbau is part of the Wipf group, where a total of 22 injection molding machines are in operation. When Reto Michel sold the business to Wipf in 2019, he did so to both ensure the company's future and enable

further growth. Both companies have the distinct character of their family ownership. Likewise, the relationship between Timo Brugger, CEO of Michel, Alexander Furrer, COO of Michel Werkzeugbau, and their contact at Krauss Maffei, Michael Furlan (responsible for Switzerland Sales) is almost like family. The great relationship of trust is also evident in the machine pool. Since 2019, Michel has invested in twelve all-electric injection molding machines of the PX series and one CX series hydraulic injection molding machine from Krauss Maffei.

## What quantities of aroma-seal valves leave the production

For the aroma-seal valves, Michel makes the mold base body and the membrane holder from PE or PP with tol-

The aroma-seal valves are used in packaging from major coffee companies, for example.

Photo: Wipf

erances of 6/100 millimeters and Wipf takes over the assembly of the blanks. First, the sealing medium is introduced, then the membrane is inserted and finally fastened to the membrane holder. Wipf supplies several hundred million aroma-seal valves per year to international customers and thus is number two on the world market.

Proof of the particularly high quality is the three-year tightness guarantee that applies to the valves. They even work when the air pressure changes – in situations such as transporting goods in the cargo space of a plane. The pandemic had a thoroughly positive effect on sales, perhaps because people working from home tended to consume smaller packages of coffee than those commonly used in food service. Demand for premixed dough also grew considerably.

#### Competence center for aroma-seal valves

The strong growth in Michel's machine pool has taken place primarily since the move in 2020. The company had first looked for a new location that, unlike the old site, would offer space for expansion. With seven new Krauss Maffei injection molding machines, production started in Nänikon (near Zurich). The ten previous injection molding machines also moved into the new building, with the moldmaking shop following in 2021. In addition, Wipf relocated the aroma-seal valve department to Nänikon, and thus a full-fledged expertise center is now located there. This is also how Timo Brugger switched from Wipf to Michel.



Together, the companies are responsible for the 20 or so different valve types, which consist of four basic body families subdivided into four or five versions each. Some 95 % of the articles go to end customers, i.e. coffee roasters or food manufacturers, who then seal them in their foil packaging. Though the smallest order quantity is 10,000 units, for niche products, Wipf also offers shorter runs of the complete package consisting of a foil bag and an integrated valve.

Michel Werkzeugbau manufactures all injection molded parts needed by Wipf, thus covering approximately 60 % of its own sales volume. This is supplemented by high-precision technical articles, for example for the building systems and plumbing industry. For small gears, tolerances of 3/100 millimeters must be complied with. For this and other purposes, four additional PX machines have gone online since the move, with two more following in 2023. The present

clamping forces now range from 300 to

1,200 kN. All PX machines feature extended distances between tiebars and larger clamping platens that can hold molds with up to 36 cavities.

#### What it takes to manufacture in Switzerland

For a manufacturing operation in a high-wage country like Switzerland, it is indispensable for the machines to run 24 hours a day, 365 days a year. The day shift is present from 7 a.m. to 5 p.m., after which the „ghosts“ take

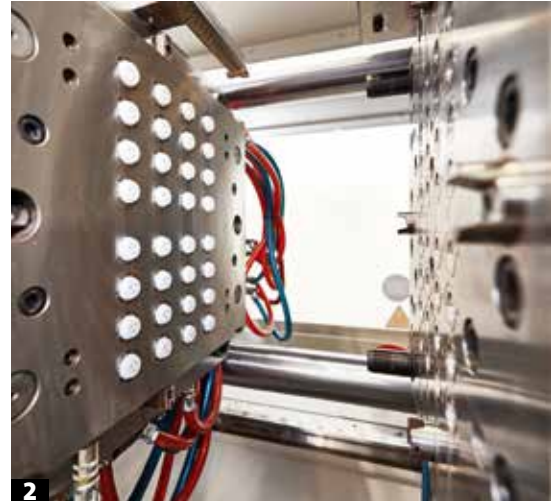


[1] Repeatability, output and reliability: the all-electric PX series from Krauss Maffei.

*Photo: Krauss Maffei*

[2] Multicavity molds make high yields possible.

*Photo: Krauss Maffei*



over and production is unsupervised. It is well known that the price-sensitive packaging industry needs fast cycle times – and efficient use of the staff on the shop floor. Michel employs a total of 20 employees and runs 21 (soon to be 23) injection molding machines. Explains COO Furrer: „We based our decision on the high repeatability, output and reliability of the PX because it makes us and our product competitive. Other suppliers have tried to manufacture more cheaply, but then the quality was never up to par.“

The collaboration between Michel and Krauss Maffei extends back to the turn of the millennium, and many of the hydraulic machines from that era are still working reliably. However, Michel is now making a consistent choice for all-electric machines, particularly while applications for the food industry are involved. Moreover, the PXs generate less noise and use less energy and oil. This is especially important given that Brugger is currently expecting surcharges of up to 40 % for these. Michel purchases its electricity on the free market and currently has a contract that is in effect, but at some

point will have to negotiate for the next two-year-contract. It will then be good for the machines to run in as energy-saving a manner as possible. ●

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From left to right: Timo Brugger, CEO, Michel Werkzeugbau, Michael Furlan, Sales, Krauss Maffei (Schweiz), Alexander Furrer, COO, Michel Werkzeugbau, Thomas Staffelbach, Head of Customer Service, Krauss Maffei (Schweiz).

*Photo: Krauss Maffei*

