

Hot runners for the plastic industry

“We are providing solutions based on application”

Mold-Masters is a well known global player in the plastics industry. The company designs, manufactures, distributes, sells and services highly engineered and customised plastic processing equipment and systems. Hot runners, temperature controllers, auxiliary injection and co-injection systems are utilised by customers of all sizes in plastics industry, from small local manufacturers to large worldwide OEM manufacturers. PETplanet talked with Mr Igor Kim, Global Sales Director for PET & Co-injection about the PET industry and future plans of Mold-Masters how they will serve the market.



PETplanet: Igor, what is the vision of Mold-Masters to serve the PET industry?

Igor: Mold-Masters' core business is to manufacture different types of hot runners: monolayer, co-injection and multi-component injection. With this kind of technology we are focussing on providing the right solutions to the plastic industry including the packaging segment. Packaging customers are looking for solutions based on application – and we at Mold-Masters have the best expertise: We can design the whole system. And of course, to serve the PET industry, we are focusing on how to make monolayer PET hot runners for preforms or co-injection hot runners - for PET preforms or preforms made of any other material.

PETplanet: At this point Kortec comes in, another company under the umbrella of Milacron and Mold-Masters.

Igor: Yes, it was a logical step that Kortec, that became part of Milacron in 2014, is now fully integrated within Mold-Masters. Combining co-injection

know-how and R&D expertise from both companies under one leadership makes the engineering team the strongest team in terms of co-injection solutions.

PETplanet: What are special services solutions Mold-Masters offers its customers?

Igor: We know what the PET industry requires. As a company our strength is flexibility, I would like to mention just two products here: The new PET hot runner and the Co-injection Connect. Within the last 18 months we made a lot of investment and dedicated resources to advance our PET hot runner. Our foundation here is “iflow” technology, where melt channels are optimised to provide natural balance and the shortest path. This allows a faster injection time and reduces injection pressure. Also, the machine needs less energy. The next step was to increase robustness, reliability and maintenance interval, especially when running in an aggressive moulding environment. As a result, our PET hot runner delivers superior processing performance and lowest running costs, independent from the machine generation. Moreover, we can make PET hot runners with any pitch and for any cavitation.

Co-injection Connect is another unique offering, allowing to convert a standard single-shot machine into co-injection system. We can size the system based on the customer's needs, making it as low as with 2 cavities or up to 144 cavities. And of course, we can offer complete turnkey systems, both in monolayer and co-injection.



PETplanet: As we know co-injection is not only for PET applications. In which packaging market is demand as high?

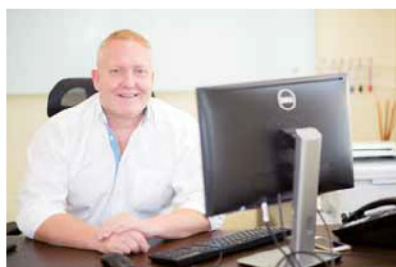
Igor: For example, in the medical industry we have a significant increase, in particular blood culture bottles and vaccine vials. The coffee capsules segment, where usage of biodegradable and compostable resins is in high demand. Thin-wall packaging is a growing segment, where co-injection technology offers better return than thermoforming or extrusion, plus it's more sustainable. In fact, specifically related to co-injection (multilayer) product, both extrusion and thermoforming require 5-7 layers, including tie-layers (adhesive) and some regrind. The smaller the part, the higher the skeletal waste, which can be as high as 50%. In case of 5/7 layer it's difficult to return everything to the process, plus it requires additional energy. Co-injection, whether it's injection moulding or injection blow moulding, doesn't generate such scrap, no additional energy waste, produce better dimensionally stable parts and normally it's 3 layers (no adhesive) – thus easy to recycle.

Overall, co-injection is the better solution to achieve sustainability goals, plus it brings savings in costs and flexibility to run small scale production.

PETplanet: While observing the market where do you see market trends?

Igor: The main market trend in the packaging and of course in the PET industry can be summarised in one word: sustainability. Everybody wants to have a sustainable solution, but without any cost increase, nor capital investment. Another trend is e-commerce, demanding that the packaging has to be lighter but also stronger because of handling. The shelf life is also a very important topic, even now during the pandemic where products need to be shipped worldwide. This means that the packaging has to increase barrier properties. A third trend I would like to mention is the time of product changes. Brand owner and packaging companies are bringing many different shapes in the market, this means a new kind of equipment is required. Small scales are produced to test, this means additional capital investment. The return of this has to come as fast as possible. This is where Mold-Masters has the right solution to the industry: Co-injection Connect delivers a wide process window to mould bio-resins, challenging engineering resins and high content of PCR. On the cost side, we are offering dedicated solutions based on two criteria: How to reduce investment and to ensure that the running costs are as low as possible.

www.moldmasters.com
www.milacron.com



PETplanet Insider talked with **Russell Gray, Chief Operations Officer at NGOC Nghia Industry, Vietnam**, about his Mold-Masters equipment:

PETplanet: How long has Mold-Masters been a customer of NNI? And why do NNI decide to work with them?

Russell: After I joined NNI in May of 2018, we started discussions on this project with Mold-Masters in Q4 of 2018. NNI had made a strategic decision to invest in new technologies to meet the demanding and evolving requirements of the rigid packaging industry and provide advantaged technical and cost effective solutions to our customers. I was aware of the Mold-Masters Connect solution, knew that this could be applied and developed for preforms and would be a perfect entry level solution to adapt to our existing preform systems for multi-layer preforms.

PETplanet: What technologies do you use at NNI and for what kind of application are they used? What are the advantages of using Mold-Masters technologies?

Russell: NNI has a significant number of Husky and Niigon preform systems, Sacmi systems for closures, Sidel, Blomax, Sipa and Techlong blowers as well as ASB single stage machines for bottles. We have moulds and hot runners from Husky, Stackteck/ Yudo and GDXL for our preform business; Mold-Masters offered a solution that was not available from our existing partners including a well established hot runner solution for co-injection preforms. The E-Multi unit had a similarly proven track record in the market so we felt comfortable choosing Mold-Masters as a partner.

PETplanet: Are you satisfied with the machines and the service from Mold-Masters (MM)?

Russell: The overall project from concept to the system integration and acceptance in Canada and final start-up and acceptance in Vietnam has been a great experience. MM drew on people from across their company to ensure the project was a success. The real



Niigon 150NPET with a 32 cavity co-injection hot runner and E-Multi from Mold-Masters.

challenge came with the installation and start-up in Vietnam in a year with Covid. MM worked with our technical team to provide remote start-up support including detailed instructions on installation and start-up as well as on-line support. Our team was able to successfully install and operate the Mold-Masters Connect having never seen the equipment and without training. Installation to preform acceptance was completed in less than 2 weeks and our team was very impressed with how user friendly the interface and controls were to use and the robust construction of the hardware. Their team also worked closely with our QA team on the detailed inspection process for co-injection preforms including validation of our results with samples sent to their own QA Lab in NA.

PETplanet: Are there plans for future cooperation?

Russell: We continue to work with MM on a number of applications for our co-injection preforms and they are always more than willing to engage and provide support on this. As the demand for co-injection preforms increases we are confident that MM can provide scalable higher cavitation systems for our existing machines.

www.nnc.vn

Ngoc Nghia Industry - Service - Trading Joint Stock Company (NN) is a leading PET converter in Vietnam, specialising in bottle blow-moulding, injection moulding, and cap compression moulding. Founded in 1993, NN is a leading company in PET manufacturing with modern PET packaging production lines in Vietnam. NN have achieved a commanding position within the Vietnam market, one out of every three PET bottles in the market is produced by NN. The success harvested from their core business which has allowed NN to diversify to the manufacturing of plastic closures, with a specific focus on compression cap moulding. NN's standards are backed by the certification of FSSC 22000 Certification, HACCP Certified, BRC Food Certified inclusive of Cosmetics and Packaging, Halal Certified; therefore, more than 1,000 companies from various industries have trusted and chosen NN as their strategic packaging partner.