

A frugally designed mould generation

Focus on core functions – reduce components

MHT AG introduces a new frugal mould generation. The simplifications are in the first injection moulding cycle: instead of the usual transfer to a removal unit that guides the preforms out of the mould after injection, a free fall is used. The frugal mould does without a complex post-cooling unit. Although this increases the cycle time, this fact is less important to users in niche areas, newcomers or producers in emerging regions.



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Some changes have been made inside the mould. The designers reduced the mould cavity to a small number of components by replacing the support ring with a much smaller retaining ring and dispensing with the conical ring. The simplification approach also offers room for change in the neck ring. This has now been designed without cooling. Test series confirm good cooling of the preform thread during production. If necessary, though, the cooling can still be upgraded at any time. That is the basic idea of the frugal principle: the tool grows with the increasing requirements of the user.

The frugal principle is applicable to a fixed mould cavity distance in small moulds with 24 or 32 mould cavities. The hot runner components come from the Legacy series, which is known for its space-saving use and robust design.

Reduction without compromise

To ensure the highest preform quality, frugally designed mould components are subject to the same requirements as components of a high-performance mould. MHT AG manufactures all components on the same equipment and subjects externally sourced components to equally extensive quality monitoring. There are no differences, even in the choice of materials. This ensures the dimensional accuracy of the end product. By maintaining fine tolerances in the production of the shaping components, the strip line appears just as precise and fine in frugal tools from MHT as in high-performance tools. This strip line is often unclear and coarse in preform production using cheap tools from alternative suppliers. When demoulding preforms, users of a frugal

mould also expect the slides to run smoothly. The solution is to guide the slide frame over roller bearings. This reduces maintenance intervals and the wear on the mould components.

Powerpack quality

Two frugal moulds are already in the possession of one of MHT's long-standing partners and customers. Powerpack Quality approached MHT looking for a cost-effective offer comprising an injection mould that still manages to produce high-quality preforms. Powerpack Quality has been active in the PET bottle business since 2009. Two years later, the company started its preform production, primarily to supply customers in Thailand. Within just eleven years, the company succeeded in expanding its machine pool to 16 systems. Various 16- and 24-cavity moulds from MHT are used in these systems. In total, Powerpack processes 200-240 t of plastic per month, from a granulate to the bottle preform. When inquiring about new moulds, General Manager Amnart Wanasoontornkul focuses on three factors in particular: High mould accuracy, durability and preform quality. These are the absolute requirements that a cost-effective small mould is expected to meet. It was immediately clear that a "frugal engineering" project was needed. The shared motto was: "High quality at affordable prices."

After the first frugal mould was a complete success, Powerpack 2020 put another 24-cavity mould into operation. "The production of the preforms is distinguished by excellent quality. The concept was also

shown to be reliable when changing moulds within the 200t KraussMaffei CX series machine. The optimised fastening system makes it possible to change a mould in just 30 minutes," Mr Wanasoontornkul is happy to report. Operating the system is simple and user-oriented. "We benefit from the frugal principle when teaching the machine: You only need to enter a few tool data to start production," the Powerpack managing director continues.

Operating conditions are kept simply

MHT says that the demands that the frugal mould places on the customer's injection moulding system are reduced. All that's needed is a standard injection moulding machine. The set-up of the peripherals includes machines and components that are common for PET-processing operations. From the chiller to the dryer to the dehumidifier, users can draw on existing components from their own inventory. For the best preform quality, the injection moulders at Power-



Frugal mould

pack make use of an HPS auger. This ensures gentle processing of the PET, contributes to uniform melting and protects the machine from excessive wear. The reduced demands regarding the customer's peripherals enable the frugal mould to be used anywhere in the world. In configuring the overall system, the customer was able to rely on the expert support of Mr Prawit

Yodprechavigit / KraussMaffei Group SEA. The improved offer made possible by a frugal design also offers cost-conscious customers a possibility to take advantage of the benefits of MHT's moulds, states the company. This new mould has been designed to offer reliability and an optimal preform quality.

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