

# DESMA develops new production solutions for highly automated production processes and sustainable future design

DESMA is intensively engaged in the development of production solutions, automation concepts and applications that can actively contribute to a more sustainable future. The competent in-house project engineering department includes an integrated automation team and mold design/construction, as well as technical centers at four production sites globally. As a result DESMA is optimally positioned to offer and implement completely integrated production solutions from a single source. This significantly shortens development times and minimizes unnecessary logistics due to subcontracting. Holistic design of turnkey projects is one of many DESMA core competences. This is especially important today as many industrial sectors are undergoing enormous change due to the influences of sustainability initiatives and other geopolitical influences. Such change drives the need for completely new processes and associated machine developments in the rubber injection molding market.

For example, the newly developed DESMA 968.160/50/x ROTARY COMPACT with integrated rotation system for four molds is the perfect basis for highly efficient process automation of high volume products. By dividing the vulcanization time among four stations, the cycle time can be reduced to approximately 30% of a standard cycle, which ensures maximum utilization efficiency of the connected process automation. This process is particularly suitable when long vulcanization times and insert loading tasks are required. Furthermore, additional downstream processes can be integrated in the actual demolding station. The integrated electrically driven rotary system enables fast movement times and can also move to intermediate positions precisely. Mold changes are simple and quick with the integrated quick clamping system.

The FIFO-A injection unit is available in several sizes on this machine (including a high-pressure variant) and

can be equipped with FlowControl+ nozzle technology for further vulcanization time reduction and clean nozzle shut-off. Alternatively, our proven rotary shut-off nozzle is available. A total of five variable pumps provide multiple parallel movements to minimize cycle/machine time. This production technology allows the use of molds with a low number of cavities but still achieves maximum output thanks to four available molds. Another special feature is that the machine can be operated with only one, two or three molds if necessary. This means that it is also possible to continue operating the machine with reduced productivity if mold repair or mold cleaning is necessary.

The biggest advantage of this machine technology is that molds and automation systems can be designed with a relatively low cavity count, even for the high-volume production, and the greatly reduced cycle time enables highly efficient operation of the entire process automation system. Basically, it is a rotary machine arranged within the dimensions of a typical 400 ton machine.

## The newly developed 969.300 Z SEALMASTER+ horizontal machine offers decisive advantages:

The new 969.300 Z SEALMASTER+ offers maximum variability and productivity, thanks to its modular design including up to 50% more usable mold area. The newly developed clamping unit with decisively reduced friction values enables maximum dynamics and best positioning accuracy. The new mold carrier also offers 60% more opening stroke to cover a wide range of mold heights and with 30% more daylight, operation of double-deck molds for double productivity is easily achieved. In addition, 27% greater tie-rod spacing eases mold changes and enables maximum brush width utilization. The new brushing and demolding technology has been positioned directly on the tie bar for the shortest approach paths and perfect alignment. The newly





designed machine enclosure ensures best accessibility to all components. To allow best accessibility for maintenance, all temperature control units and the vacuum pump are positioned on a retractable service rack. In addition, the machine enclosure and frame has been configured such that conveyor belts can be installed on any of 3 machine sides for utmost flexibility and use of automation.

A newly developed ServoGear hydraulic unit was created for this machine with a number of advances. The system is ergonomically arranged for ease of access, 70% of the hydraulic lines are hard piped, the hydraulic tank is made entirely of stainless steel, and perhaps most significantly 50% less hydraulic oil is required for this new machine compared to the prior generation. Furthermore, lifetime oil filling is possible when the machine is equipped with the optional Hydrofit+ system including independent oil checking and cleaning capability. Adaptive hydraulic controllers have also been incorporated for the fastest and most dynamic cycles. As a result, up to 50% faster travel speeds are possible even when considering a wide range of mold weights.

A revised FIFO-B injection unit design includes a 60% reduction in nozzle length. This change results in significantly shorter injection times and higher available injection pressure. A completely new generation ActiveFeed device for feeding problematic compounds is available which incorporates a quick-release cassette for easy compound change and cleaning.

The revolutionary SEALMASTER+ is also available as a 4000kN version with the same dimensions as the 3000 kN machine.

Depending on the requirements of the respective injection molding process, DESMA offers specialized tooling to minimize waste and maximize efficiency thereby contributing to sustainability / resource saving objectives. The FlowControl cold runner, optionally with PressureSense technology, or the ZeroWaste ITM pot, combined with the latest mold technology, enable optimum, sprue/waste-free articles in high quality with low reject rates. The control of FlowControl valve gate or ZeroWaste ITM technology, as well as brush systems and / or other automation, is carried out centrally via the machine control system. The DRC 2030 TBM control generation and trend-based visualization, manages all processes simultaneously. The DESMA SmartConnect products including full networkability, article



traceability, and all remote service tools can be used to guarantee maximum equipment availability and traceability of the processes.

Another new development is the DESMA PCF Navigator Ecos, for determining the “Product Carbon Footprint“. With this system DESMA can outline the entire manufacturing process, from the manufacture of the actual injection molding machine (production plant) to the elastomer articles produced. This information can be used to present options for suitable production processes in light of sustainability goals. The DESMA CoolApp is fully integrated and provides valuable information for making informed decisions about making equipment or tooling investments in a sustainable way.

*Further information in our records at <https://records.desma.biz/07/> or at <https://DESMA.biz/>*

