

LIQUID INJECTION MOLDING DOSING SYSTEM TOP 5000 P





ELMET DOSING SYSTEM TOP 5000 P

REDEFINING STANDARDS in Liquid Injection Molding

HIGHEST PRECISION, FIRST-CLASS QUALITY

Precision regarding all elements in the production cell is of the utmost importance in order to achieve the maximum quality of parts and process stability in liquid silicone injection molding. Precise mixing ratios between the two silicone components and the admixed additive flows are of the essence. The TOP 5000 P dosing system achieves the best values here.

PERFECT EFFICIENCY, OUTSTANDINGLY ECONOMIC

Successful production of silicone parts requires economic use of material, space, working time and energy. ELMET therefore has always developed its dosing systems with an eye to fully using all possibilities in terms of efficiency and economic aspects. The new generation adds another clear improvement.

GREATEST SAFETY, SIMPLEST USER MANAGEMENT

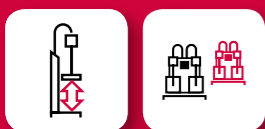
Due to the high costs and lack of plannability, production downtimes as a result of operating mistakes are a great risk in every production plant. The TOP 5000 P therefore had many ideas implemented to make it easy for the operating staff to properly operate the system and exclude potential error sources.

▶ REVOLUTIONARY DESIGN

TECHNICAL PERFECTION REDUCED TO WHAT IS ESSENTIAL

In many products, designs become established due to technical conditions or historical developments, which is true for smartphones, airplanes or washing machines. In other cases, however, no one can explain why something looks just the way it is common on the market. All design principles were cast overboard for the development of the new TOP 5000 P. Throughout the elaboration process the designers re-thought everything based on the question of how to build a dosing system that can make the customers even more successful.

From the beginning, it was clear that all functions and the quality customers are used to from ELMET dosing systems must be maintained. All components were revised and redeveloped with a focus on process safety, efficiency and operability. The result is visually surprising and technically convincing.



DECENTRALIZED OPERATION CENTER

The touch panel that can be used to access all functions of the dosing system is an achievement of the TOP 5000 P. Depending on the local situation at the customer's site, the display can be installed on the side or centered. Integration into the customer's process control system as well as remote control by tablet or smartphone are possible.



GENTLE HANDLING OF THE VALUABLE RESOURCE

The difficulty in the LIM-process (Liquid Injection Molding) is in the difficult-to-control process properties of liquid silicone. Therefore, the preservation and economic handling of this compressible liquid subject to viscosity fluctuations are the central demand of every professional LSR-processor.



PERFECT MIXING RATIO

The material flows of the liquid silicone components are volumetrically recorded and continually adjusted in a closed control loop. This permits safe mixing of materials subject to very high viscosity differences between the A- and B-components within the specified tolerances.



99% MATERIAL UTILIZATION

After the proper mixing process, a second control loop ensures that quantity differences caused by filling differences in the drums or by manual purging are compensated in the best manner when emptying the container.



PULSATION-FREE SUPPLY

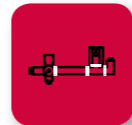
Exact and accurately repeatable filling of the injection unit is essential for precise and even production of silicone injection molded parts. In order to keep absolute control of the filling procedure at highly critical processes, the direction of the piston pump drives is always switched before the dead center is reached.

PROCESSING UNIT MAINTENANCE-OPTIMIZED

From the time of component mixing, liquid silicone is reactive even at room temperature, which means that the parts in contact with the material require regular maintenance. The new processing unit by ELMET is made of anodized aluminum and has been developed with the target of performing maintenance as securely and quickly as possible.



MODULAR MEANS FLEXIBLE



The parts of the processing unit can be combined in any sequence due to their standardized connection flanges. Only a socket wrench is needed to adjust the setup to the spatial situation of the injection molding machine.

ACCESSIBLE AND SPACE-SAVING

Space is an essential resource in many production plants. If the spatial situation cannot be adjusted to growth, it is particularly important to optimally use the available space. The new machine concept of the TOP 5000 P permits using less easily accessible areas or setting up multiple machines in bulk without having to move the dosing system for every drum change. The high pump output also permits horizontal and vertical transport of liquid silicone across up to 10 meters or 30 ft.

FRONTAL, LATERAL OR MIXED



The open design permits flexible change of packages forward or sideways. It is also possible to equip the two components differently, simply by shifting the sliding rails on the base plate.

WORKING WITH STANDARD EQUIPMENT



Drums of 200-kg/440-lbs can be exchanged using common drum lifters, forklifts or lift trucks. The dosing system can be moved within the building with lifting gear suitable for manipulating pallets.

RETROFITABLE ALL-ROUNDER



The TOP 5000 P can be switched from 200-kg/440-lbs drums to 20-kg/44-lbs pails in just a few steps. You will not have to purchase a second dosing system for smaller containers. The compact dimensions (1320x895mm/52" x 35,4") are barely above those of conventional dosing system for pails.



ADDITIVE CONTROL COST-EFFICIENT SAFETY

ELMET offers controlled additive addition as an option for the TOP 5000 P dosing system as well. The ratio of material flows of liquid silicone components on the one hand and dye or other additives on the other is recorded continually here with high-resolution volume counters. Deviations are compensated by adjustments at once. Of course, the data for additive control are documented as well and provided for archiving.

If an operating mistake or technical problem prevents the set additive volume from being added, the dosing system will trigger an alarm and stop production before faulty parts can be produced. An hour-long production of bad parts because an employee forgot topping up the dye is now a thing of the past.



GUIDED DRUM CHANGE: SAFE, QUICK, ECONOMIC

Qualification of own staff for proper and safe operation of machines is a great challenge for nearly every production plant in the world. This is why the TOP 5000 P has step-by-step drum change instructions in its display that will guide employees through the process with simple and comprehensible instructions. Accidental mistakes are almost eliminated.

Instructing the employee once is usually enough, since it is no longer necessary to remember the proper sequence. The pre-set rinsing volumes and the automatic drum venting allow that process steps where too much material was wasted too often in the past can be strongly simplified or removed from the operating staff's responsibility.

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