



Product News

Coperion optimizes ZSK 18 MEGAlab Extruder Design for significantly greater Flexibility

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Stuttgart, Germany -

Coperion has equipped its ZSK 18 MEGAlab laboratory extruder with numerous new functions that provide significantly greater flexibility and safety in handling. Pluggable cartridge heaters instead of hard wired ones now allow for rapid barrel reconfiguration as well as straightforward cartridge heater exchange.

The ZSK 18 MEGAlab, with a screw diameter of 18 mm, has a specific torque of 11.3 Nm/cm³ and achieves a maximum rotation speed of 1,200 min⁻¹. It is ideally suited for use in research and development projects as well as for production of minimum quantities.



The latest generation of the Coperion ZSK 18 MEGAlab laboratory extruder combines proven ZSK series functions with new developments

that focus on flexible and intuitive handling. (Photo: Coperion, Stuttgart/Germany)

Optimized Feeding Platform

The new, patent-pending feeding platform makes adding ingredients noticeably easier. It is firmly attached to the ZSK 18 MEGAlab extruder, allowing for flexible positioning of up to four feeders on all barrels of the process section as well as on the ZS-B side feeders. Moreover, the new feeding platform, which can be moved laterally along the machine, allows the feeders to be rotated and raised or lowered as needed. This feature creates enormous advantages particularly in the areas of research or recipe development, since feeding can be located flexibly at various points, in accordance with the process requirements. Elaborate, costly reconfiguration tasks and cumbersome additional frames for feeders are a thing of the past. Moreover, cleaning is simplified since the feeder can simply be pivoted away from the process section, thanks to the new platform. Where the previous model required a separate frame for each feeder, now up to four feeders can be mounted on the new platform. Time-consuming solutions for mounting additional feeders, or reconfigurations, have likewise become a thing of the past. This improvement significantly increases flexibility as well as efficiency in the production process.

New Functions for safe, simple Handling

Along with optimizing feeder positioning, Coperion has also incorporated proven functions from the ZSK series into the ZSK 18 MEGAlab. Among these, for example, are pluggable cartridge heaters. They are individually connected using IP67 plugs and can be removed for maintenance and barrel reconfiguration in no time, no electrician needed. Another improvement involves the gearbox lantern with easy access that can be equipped with an electronically secured maintenance opening. As soon as the screw shafts come to a complete stop, the door can be opened without tools. The screw shaft coupling is immediately accessible for maintenance purposes; machine downtimes drop significantly and completely safe servicing is assured. The machine can only be restarted when the maintenance doors are closed.

As part of the ZSK 18 MEGAlab redesign, Coperion separated the mechanical and electrical machine components and recently mounted the control cabinet laterally onto the base frame. Thus, mechanical maintenance tasks on the base frame can likewise be performed without an electrician. The control cabinet is available in

various designs: standard, stainless steel, or as a junction box if, for example, an external control cabinet is necessitated due to ATEX requirements. Coperion engineers have even improved the design of the base frame itself. Along with height-adjustable leveling feet, combined with casters, the cable routing has also been optimized to keep the floor around the extruder free of clutter and easier to clean. All supply lines have been centrally connected to the rear of the machine and distributed inside the base frame so that any possible impediments to working on the machine are reduced to a minimum.

“This optimized ZSK 18 MEGAlab extruder combines proven ZSK series functions and new developments specifically for laboratory operation that make its handling especially flexible and intuitive. This allows us to offer our customers a versatile extruder solution that is characterized by maximum efficiency, especially for small production batches and numerous recipe changes”, opined Johannes Heyn, Development Engineer with Coperion Research & Development.