



Hemofarm is Serbia's largest pharmaceutical company and part of the STADA Group (Image: Hemofarm)

Hemofarm reduces tablet press cleaning downtime with Romaco technology

Serbia's largest pharmaceutical company, Hemofarm has dramatically reduced the cleaning-related downtime of two KTP 420X and KTP 590X high-speed presses at its headquarters in Vršac. **By Jan Clement, sales director, Romaco Kilian**

Hemofarm has an extensive product portfolio, resulting in frequent product changes coupled with diverse production requirements within the manufacturing facility. This makes quick and easy cleaning of its tablet presses a necessity for the Serbian pharmaceutical manufacturer.

The generics producer relies on Romaco Kilian's simple-to-clean machine design. By using quick-change parts and additional identical die tables, Hemofarm has heavily reduced the cleaning-related downtime of its KTP 420X and KTP 590X high-speed presses.

Hemofarm is a market leader in the Serbian pharmaceutical industry and the country's largest exporter of drugs. It manufactures both proprietary drugs and pharma products for the STADA Group, many of them on its two KTP 420X and 590X tablet presses from Romaco Kilian. The KTP 420X achieves a maximum output of 360 000 mono-layer tablets per hour. With a maximum hourly output of 511 200 tablets, the KTP 590X was developed for fast changeover between mono- and bi-layer production, and for the high-speed production of effervescent tablets.

The demands placed on the tablet presses are exceptionally diverse – more than 200 pharmaceutical



Hemofarm currently has eight Romaco Kilian tablet presses in total (Image: Hemofarm)

products with very different formulations are manufactured in batch sizes from 100kg to 2 200kg. Compression forces between 5kN to 80kN are possible, and the ingredients can be either processed in the form of wet or dry granules or directly compressed. One or two product changes per week take place on the KTP 590X and about three or four on the KTP 420X, making intensive cleaning of the tablet processing areas and the product-contacted press parts a must. On top of this, partial cleaning is carried out between batches of the same product.

Did you know

Hemofarm produces more than 6.6 billion tablets and capsules annually. Since 2006, the manufacturer has been a part of the German STADA Group, which is one of the world's biggest generic pharmaceutical firms.





A single machine operator requires just 10 to 15 minutes to install the interchangeable parts and the die table (Image: Hemofarm)

Less components than other presses

Romaco Kilian's modern tablet presses have far fewer components than conventional models in compaction. Less components is decisive for cleaning and a major advantage in everyday production.

"The small number of product-contacted parts, optimised hygiene concept and various special features like the patented closed punch bellows turn

“ THE KILIAN PRESSES HAVE PROVEN TO BE VERY VERSATILE, ROBUST AND RELIABLE IN OUR DAY-TO-DAY WORK

cleaning a KTP series press into child's play," explains Ivan Djokic, production manager at the Hemofarm site in Vršac. "The interchangeable parts are lightweight and can be dismantled without tools; resinserting them is also straightforward. Our machine operators say 'it's a pleasure working with the Kilian presses'."

Even the fill shoe can be removed by a single person without any problem because the gearbox is located outside the compaction area. Apart from the die table, all the interchangeable parts of the Kilian presses weigh less than 15kg.

Hermetically sealed compaction area

The compaction and service areas on the Kilian KTP 420X and 590X presses are strictly separated, so that tablet dust is prevented from penetrating the machine cabinet. The compaction area is very small and reminiscent of a hermetically sealed, stainless-steel cage. The surface area for cleaning has been



The use of identical die tables helps optimise the OEE and TCO of the tablet press (Image: Romaco)

reduced by about a third, resulting in significantly shorter cleaning times.

All presses in Kilian's KTP series have a very small footprint owing

to their compact design and small window areas, for example 1 080mm x 1 115mm for the KTP 420X or no more than 1 230mm x 1 325mm for the KTP

Romaco Processing Equipment from Powder to coated Tablet

- Granulation / Drying: Innojet IGL 1200
- Capsule Filling: Macofar CD 40
- Material Handling: Lifting Column
- Tableting: Kilian KTP 720X
- Coating: Tecpharm TPR Coater Optima



590X. If the windows are opened, the KTP 420X measures a mere 2 303mm x 2 268mm while the KTP 590X measures 2 567mm x 2 472mm. Thanks to the economical use of space, energy consumption in the cleanroom is proportionally less, leading to sustainably lower running costs.

Cleaning in batch mode

The two sets of interchangeable parts used by Hemofarm for both tablet presses include the fill shoe, tablet scraper, upper punch cover, suction nozzles and cover between the pressure roller blocks. These parts are kept ready in a closed transfer trolley and are installed in the processing area of the tablet presses in the event of

a product change. The parts removed following the previous batch are cleaned while manufacturing the next batch.

Extra die table increases availability

To further reduce downtime during product changes, Hemofarm uses a second identical die table for each of the two tablet presses in addition to the quick-change parts.

“People often underestimate the impact of an identical die table when it comes to optimising the OEE and TCO of a tablet press,” comments Gerd Heinen, Romaco Kilian’s area sales manager responsible for Hemofarm. “By investing in identical die tables, Hemofarm is demonstrating a pioneering approach.”

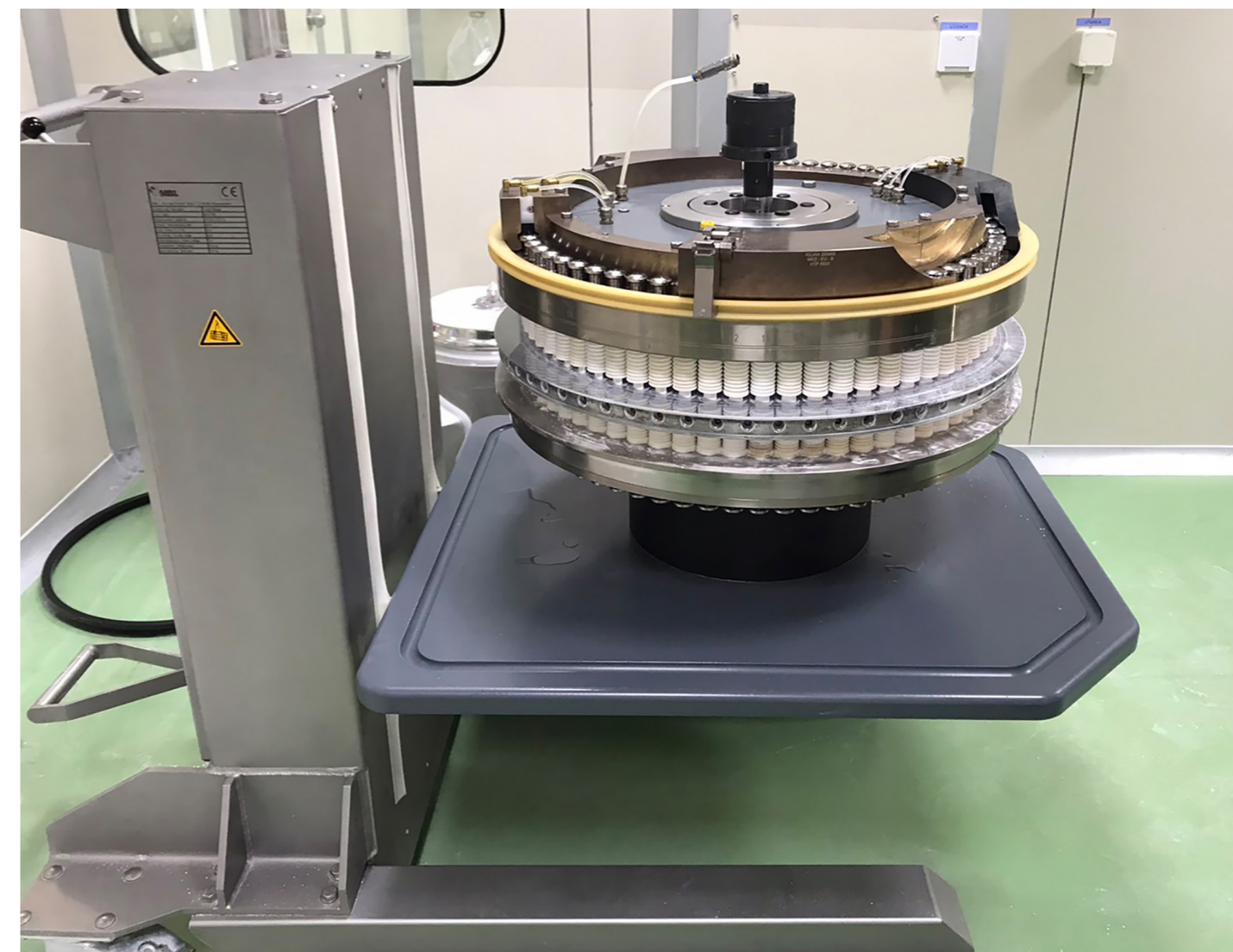
The die tables are cleaned by removing the upper cam track together with the upper and lower punches, while the lower cam track remains in the compaction area. To prevent

dust from getting into the machine’s ‘grey’ area during cleaning, a blind cover is fitted after removing the die table. The punches, dies and other interchangeable parts are cleaned in an industrial washing machine. The die table itself is manually cleaned at Hemofarm.

Only one Hemofarm employee is responsible for the complete product change cycle, including cleaning the interchangeable parts and the die table. Approximately six hours are needed for this change cycle.



The KTP 590X high-speed press is in use at Hemofarm 24/7 and is completely retooled and cleaned once or twice a week (Image: Romaco)



Hemofarm reduces cleaning time by using identical die tables, which are simply exchanged at the end of a batch (Image: Hemofarm)

Only 10 to 15 minutes are required to install the exchanged parts along with the die table. Between two batches of the same product, the tablet presses are partially cleaned using a vacuum cleaner as per the cleaning validation. The die table, dies, and punches as well as all other product-contacted parts remain in the compaction area, and only the fill shoe and inlet funnel are dismantled. This partial cleaning process can be completed in approximately one hour.

Versatile, robust and reliable

Hemofarm has been using Romaco Kilian technologies since 2002, and currently has a

total of eight Kilian tablet presses operating at its five production sites. The KTP series single-sided rotary presses in Vršac run in three shifts, either five (KTP 420X) or seven (KTP 590X) days a week.

“The Kilian presses have proven to be very versatile, robust and reliable in our day-to-day work,” Djokic reports. “And if any service issues arise, we also benefit from the Kilian team’s short response times and competent support – with Romaco, the customer really is king, and that’s something we very much appreciate.”

Romaco Kilian – www.romaco.com/products/tableting

