

High-speed assembly of dropper caps in Thuringia (Germany)

The specialised machine constructor LAS Lean Assembly Systems GmbH has produced a machine for assembling screw-on caps with droppers. The machine produces 350 droppers per minute and is capable of handling nearly 180 types of part.

Based in Thuringia, the German company Remy & Geiser is a specialist manufacturer of packaging, dosage systems and plastic, glass and elastomer caps for the pharmaceutical industry. For its production of screw-on caps with droppers it recently invested in a new assembly machine, the technical specifications of which represented a real challenge. The objective was to assemble screw-cap droppers – and at a rate of 350 per minute. As for the geometry of the parts, the machine had to be able to handle 24 variants and up to 178 sub-categories, all different in terms of material, colour, hole diameter of the dropper, etc. This is not to mention the numerous controls to be integrated into the machine, including a system for inspecting 100% of the dropper orifices and capable of distinguishing between the different diameters according to increments of 0.05mm. The machine also had to comply with all requirements for use in a clean room, both in terms of design, qualifications and material certificates.

A complex machine delivered on time

The Swabian company LAS Lean Assembly Systems GmbH won the contract thanks to its speedCELL solution – a continuous-motion cam-driven machine with 24 fixtures. The feeder and output modules are arranged around a central rotary table. The first feeder station takes the threaded caps to an LAS-made vibratory bowl feeder via a belt hopper. They are then sorted and placed in the correct position on a feed rail, which takes them into the machine. The same type of system feeds the droppers into a synchronised satellite, the speed in the transfer zone being synchronised with that of the main rotary table. The parts are moved without mechanical stress and with virtually no emission of particulates up to the main rotary table, where they are assembled with adjustable force. The height is then inspected, after which the assembled droppers are taken to another synchronised satellite and sorted into compliant, non-compliant and sample parts. The non-compliant and sample parts are grouped in bins, while the compliant parts are counted and packed in sachets. After each cycle of feeding and assembly, the dimensional stability, position and proper assembly of the components is inspected by means of a visual control system and rejected parts removed if necessary. A warning light visible from all sides of the machine and combined with a segment display informs the operators

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Once assembled, the dropper caps are subjected to a height check prior to sorting to remove non-compliant parts

of the current rate and/or, in the case of malfunction, the cause and the respective station. The line is controlled by an intuitive interface with a touch-screen on an articulated arm for ergonomic use. The machine was installed on site at Remy & Geiser on time and operates 24 hours a day. The company's CEO Steffen Schrickel praised the punctuality of their new supplier – a quality he says is rare in a manufacturer of special machinery. It is worth noting that Remy & Geiser has already ordered a second machine from LAS. *eg*
www.las-automation.de

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INFO

Founded in 2010, LAS now employs a workforce of over 70 people and works for numerous companies in the medical and pharmaceutical sectors.

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