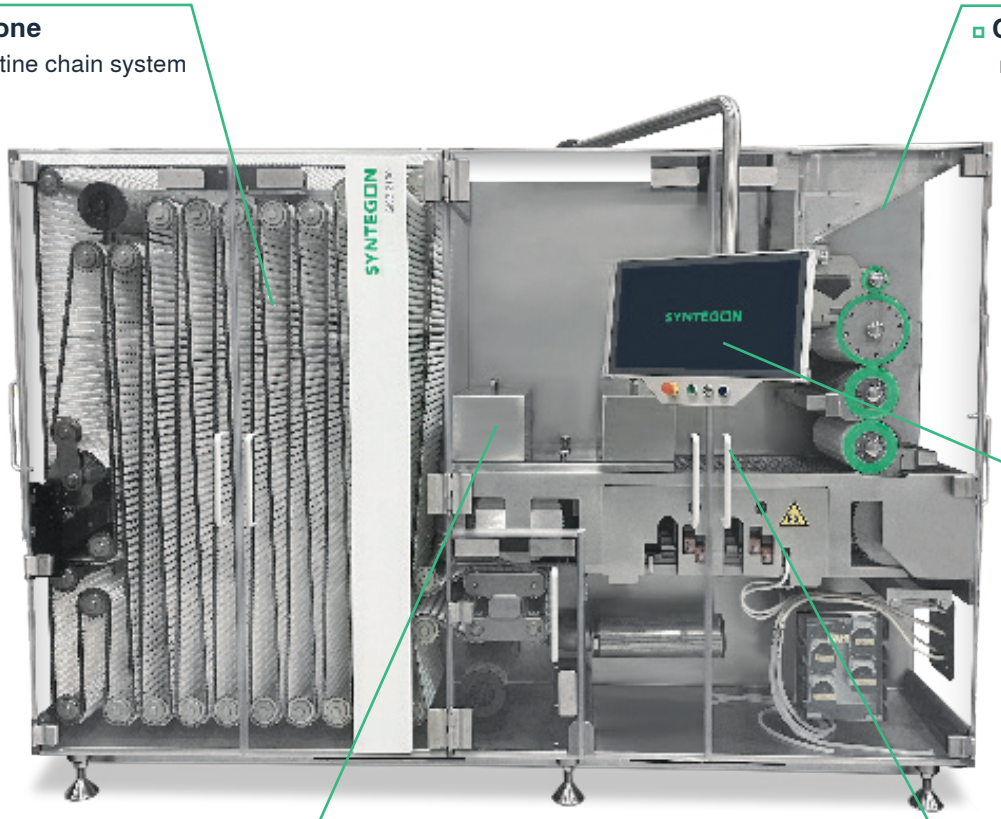
GKB 2100.

HARD CAPSULE SEALING MACHINE VIA BANDING TECHNOLOGY

The GKB 2100 hard capsule sealing machine is suitable for both hard gelatin and HPMC (plant-based) capsules and achieves an output of up to 125,000 capsules per hour. The use of banding technology to seal the capsules ensures the highest product quality and prevents leakage of capsules filled with liquid. Banding also provides an additional measure for tamper evidence of capsules filled with powder or other components and is generally an improved safety measure to meet regulatory requirements.

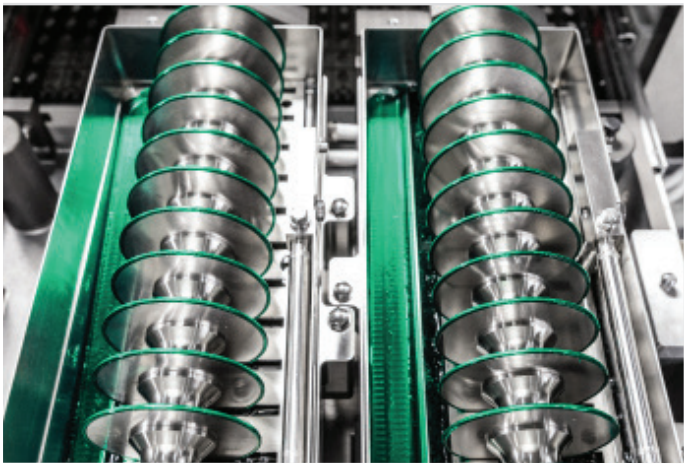
Besides a particularly robust and flexible process, the new machine features the highest yield and maximum process stability. The focus is on user-friendliness, as well as very good accessibility for cleaning and easy format part changeover. The combination of a central 21-inch touch HMI with a clearly structured dashboard, large glass surfaces, and optimized machine accessibility gives machine operators a good overview of all critical processes and supports them in carrying out maintenance and cleaning work.



CAPSULE INFEED

The gentle handling of the capsules poses a challenge. To avoid crushing during feeding into the sealing area, Syntegon relies on an automatic and extremely gentle roller feed system.
First, the capsules are transferred to the infeed roller by means of a hopper with integrated level sensor. They are then fed into the segment via rectifier and the transfer rollers. Blocked capsules within rectifier roll will be force ejected and cavity cleared. A light barrier on the conveyor belt detects improperly rectified capsules, whereupon a function stops the machine and triggers an alarm.





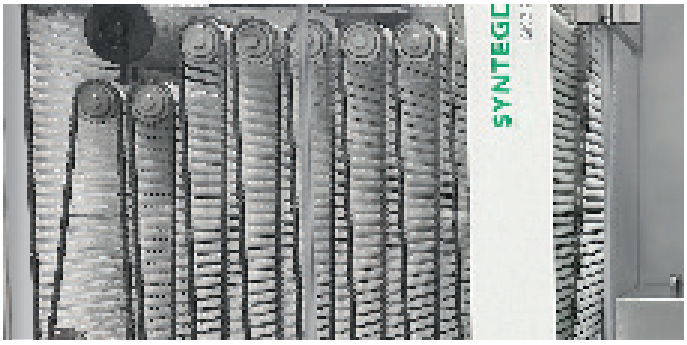
Sealing rollers in drawer.

SEALING ZONE

Here sealing rollers in a drawer apply two layers of sealing fluid, made of gelatin or cellulose derivative (HPMC), to prevent bubbles and thus creating a stronger sealing band. Both the thickness and the positioning of the band are adjustable. An external refill tank with optional viscometer for automatic solvent/water refill during the process can be connected to the machine, to compensate for possible evaporation losses. An external water heating system heats the fluid reservoir.

DRYING ZONE

The drying zone is divided into a pre- and main drying zone.
At the end of the sealing zone the sealed capsules are then transferred into the drying module via up to twelve tracks. There the applied band is dried in segmented zones using conditioned air, to remove moisture and/or alcohol. Drying parameters can be freely selected within certain limits to ensure the best drying process for a specific product.



Serpentin chain system in drying zone.

HMI

The GKB 2100 provides highest usability thanks to an intuitive HMI and a state-of-the-art control system. The control system is based on an industrial PC with a Windows 10 operating system. Its multitouch display has a 21.5“ wide Full HD screen and is designed for operators under consideration of UX aspects. The mGuard system allows an online diagnose. The HMI is compatible to SCADA systems via OPC-server.

LINE COMPETENCE

Together with our capsule filling machines from the GKF series, the GKB 2100 can form a complete production unit. This line integration enables a smooth product transfer and software integration. However, we support customers throughout the entire product life cycle of their machines. Thanks to our full-service approach, we not only supply our customers with the right machine, including detailed process advice. In our laboratory in Waiblingen, we also precisely adjust the banding liquid to the machine and product.

Benefits

- By choosing the right materials and process parameters, a maximum capacity of 125 000 capsules/hour can be achieved for both gelatin and HPMC hard capsules
- State-of-the-art control panel (HMI) and software (same as GKF series)
- Additional pre-drying concept
- cGMP design for improved cleaning and safe product changeovers
- Gentle infeed of sensitive liquid capsules
- ATEX execution in case of using alcohol (certificate from German Association for Technical Inspection / TÜV)
- Sealing and drying zone can easily be separated for trans port into another room
- Re-hydration function of sealing fluid is automated and controlled by applying external viscometer

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