



SEIDENADER
KÖRBER SOLUTIONS

MS-SERIES

High-performance inspection for
ampules, vials and cartridges



HIGH-PERFORMANCE INSPECTION: FOR PURITY AND STERILITY OF PARENTERAL PRODUCTS

In the pharmaceutical industry, quality standards are becoming more and more stringent. Increasing manufacturing capacities are continuously leading to higher production speeds. As a result, highly sophisticated technologies are required to inspect product at all levels. Efficiency and detailed documented information about the inspection process are key attributes that foster improved performance. Compared to other pharmaceuticals, the production of parenteral products is much more complex and bears the risk of many

contaminations. Since parenterals are typically injected and directly enter the bloodstream, particulates might cause adverse reactions. Another challenging aspect of container quality control is the assurance of container/closure integrity.

Whatever your requirements: inspection for particles in the product or cosmetic defects of the container, as well as verification of container integrity – we offer the appropriate inspection technology for your needs.



PARTICLE AND COSMETIC INSPECTION

Liquid

Moving particles such as glass, fibers, metal and coating fragments, as well as heavy particles on the bottom are detected by cameras. Containers such as vials and cartridges are mostly also checked for closure defects, cracks and scratches. Ampules can additionally be inspected for seal quality and ampule tip geometry.

Lyo

The process of freeze drying puts enormous stress on the glass container, especially on the heel, often causing cracks. For lyo inspection a separate camera station is integrated into the inspection carousel to detect especially these cracks at the heel. Lyo inspection typically detects: missing product, over-/underfill, particles, cracked glass, scratches and dirt.

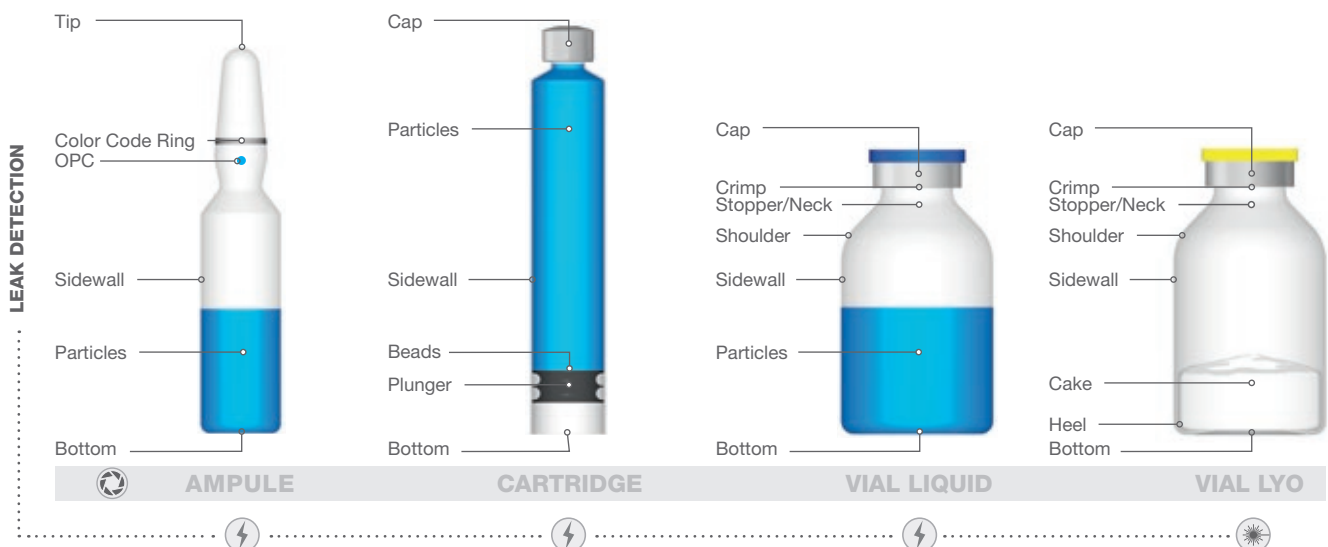
LEAK DETECTION

Liquid

Leakages such as micro-cracks or pinholes in the container may not be detected by cameras. To complement vision inspection for critical zones of containers filled with liquid product, high voltage inspection, such as the HVLD-PRO, -SLIM and -UpsideDown modules, can be integrated into Seidenader MS machines.

Lyo

In containers filled with lyophilized product, leaks are detected indirectly, by analyzing the gas in the container. The oxygen-based headspace analyzer HSA O₂ is a compact station that can be integrated into a vacant position of the inspection carousel for 100 % testing, inline and at high speeds.



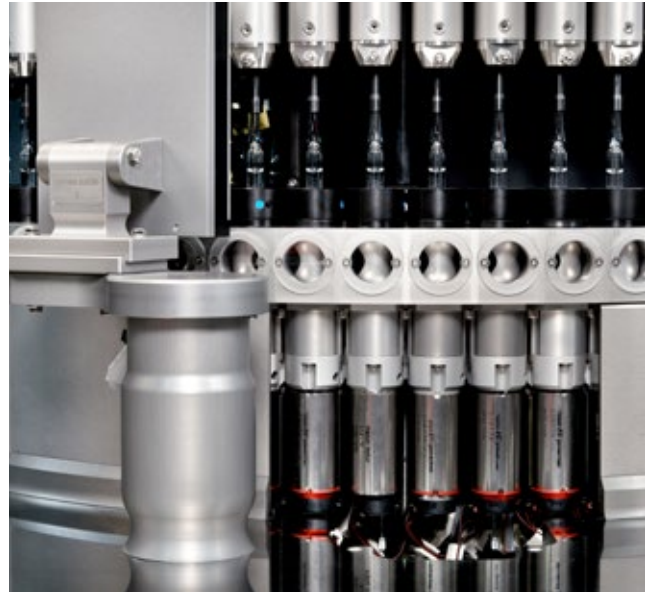
OPTIMIZED CONFIGURATIONS: FOR BEST INSPECTION RESULTS

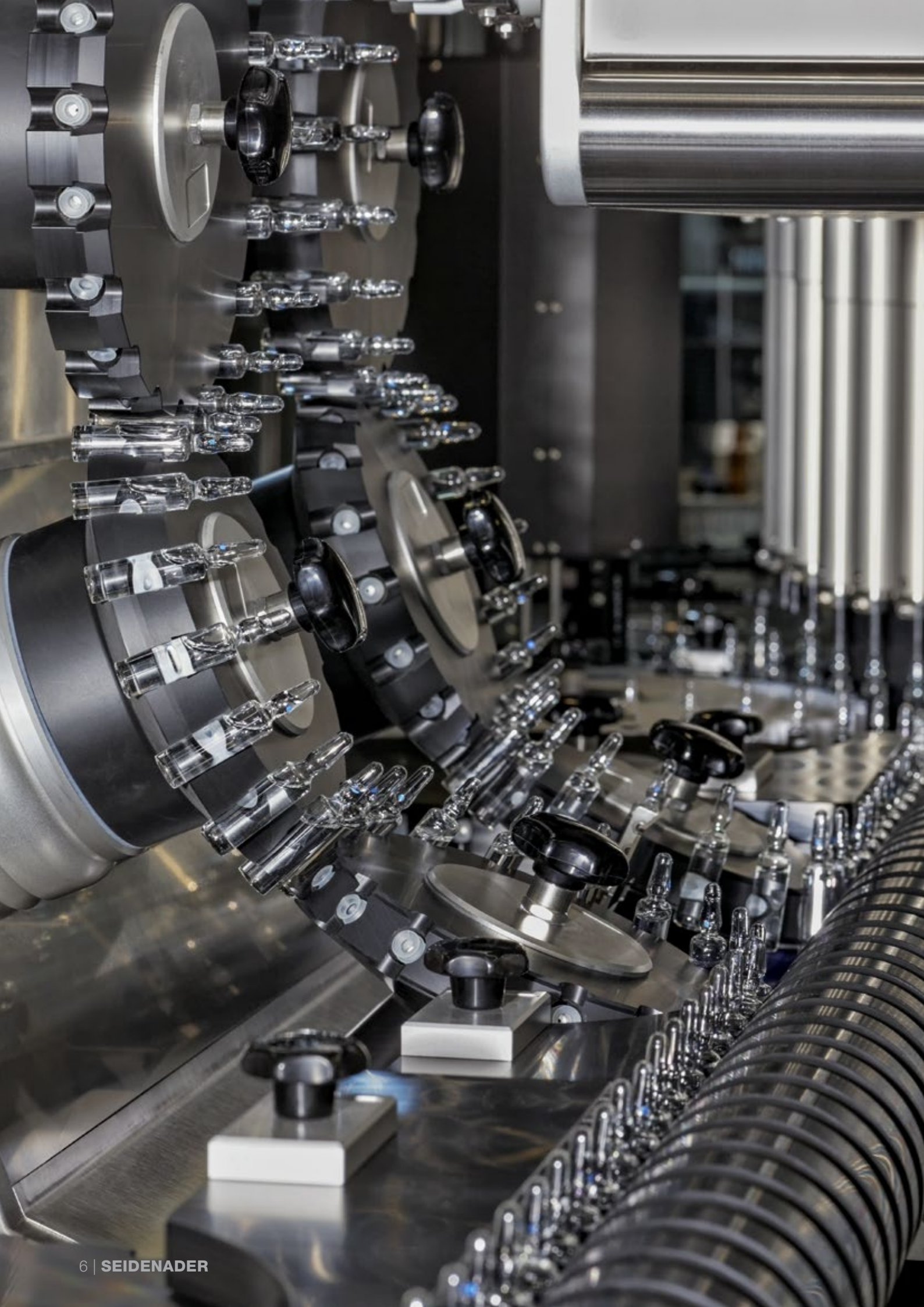
YOUR BENEFITS



The modular design of major machine functions, such as in-feed, inspection and outfeed, enables us to build customized machines from standardized modules. The MS platform is equipped as standard with vision systems that can generally be configured for the inspection of solutions, suspensions, emulsions as well as oil-based or lyophilized products in ampules, cartridges and vials up to 100 ml. To complement camera inspection, additional technologies, such as high voltage or headspace analysis, can be included to reliably verify container integrity and product sterility.

For enhanced inspection performance and reduced false reject rates, the configurations of cameras, lighting systems, rotation profiles and speed will exactly be adapted to each container and product, and to special requirements of our customer.





PERFECT DESIGN: TO SATISFY HIGHEST EXPECTATIONS



1 ADVANCED PLC

- Modular, standardized and configurable machine control software application (PLC)
- Smart trigger technology to reduce qualification time

1 EXCELLENT MACHINE DESIGN

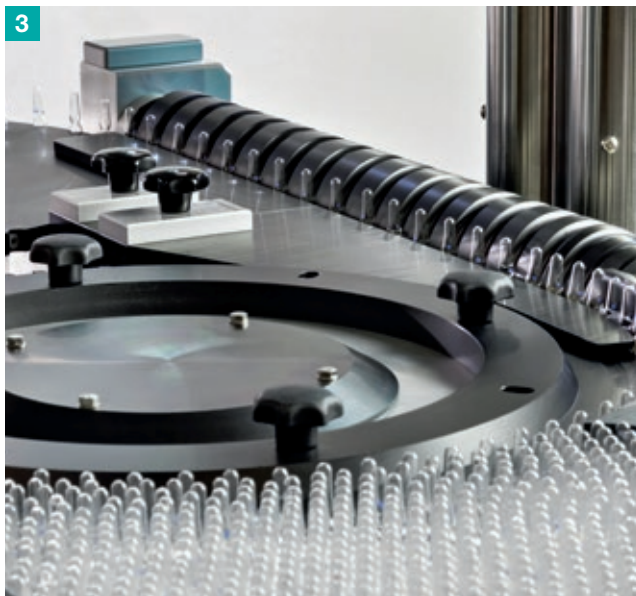
- Sealed and covered optical elements
- Column concept for good access and easy cleaning
- Trimmed edges, hidden cables
- Strict separation of product handling and machine engineering areas
- Special split cabinet design for accessibility of machine from all sides
- Safety switch with opener for safe and secure handling
- GMP-compliant



2 ENHANCED SOFTWARE DESIGN (SAMI)

Up-to-date human machine interface for user-friendly operation:

- Advanced recipe manager
- Easy adjustment of inspection speed
- Reduced qualification effort thanks to modular software design
- GAMP 5 compliant



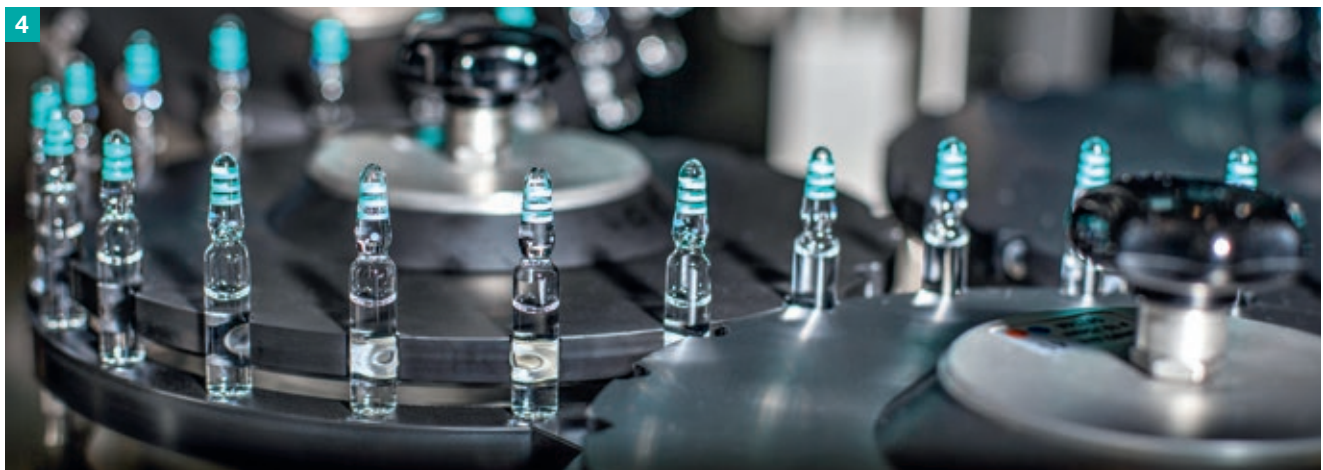
3 INFEED

Infeed via split timing screw which creates empty positions for the re-inspection process and stops infeed to empty machine without leaving uninspected products.

- Manual loading from trays with tight splitting at infeed starwheel to slow down its rotation speed at same throughput
- Inline interface with upstream machine to transport stable containers directly to the infeed timing screw
- Inline connection, with turntable for additional manual loading

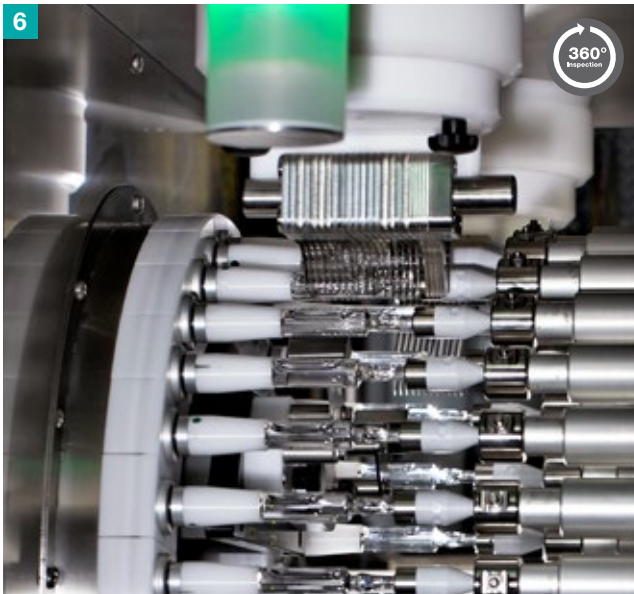
4 PRODUCT HANDLING

- Vacuum transport for smooth product handling
- Reduced number of side guides to minimize friction
- Vacuum pump for reduced air consumption



5 CAMERA INSPECTION

- Servo drives for each position in the inspection carousel allow individual rotation profiles according to product requirements, stored in the respective configuration (recipe)
- Continuous motion – no moving cameras, no moving lights – thanks to a central oscillating mirror moving in synchronization with the transport of the container
- Area and line scan cameras, according to inspection requirements
- Inspection for particles in the product and for cosmetic defects in the container
- Special lighting options to reduce false rejections due to airbubbles



6 LEAK DETECTION

- Integrated high voltage leak detection for liquid filled containers, with one operator interface for camera and HV inspection – 360° inspection of the container guaranteed
- Head space analyzer (HSA O₂), for 100 % testing of containers, inline and at high speeds, to verify container integrity of lyo-filled vials

7 AUTOMATIC RE-INSPECTION

Integrated re-inspection for defined defect categories

- To minimize false reject rate (e.g. due to air bubbles)
- To avoid uninspected products during a production run

8 OUTFEED

Each inspection result and each defect category can be allocated to a dedicated outfeed channel.

- Up to 8 channels for good products, rejects or undetermined
- Inline connection to downstream machine



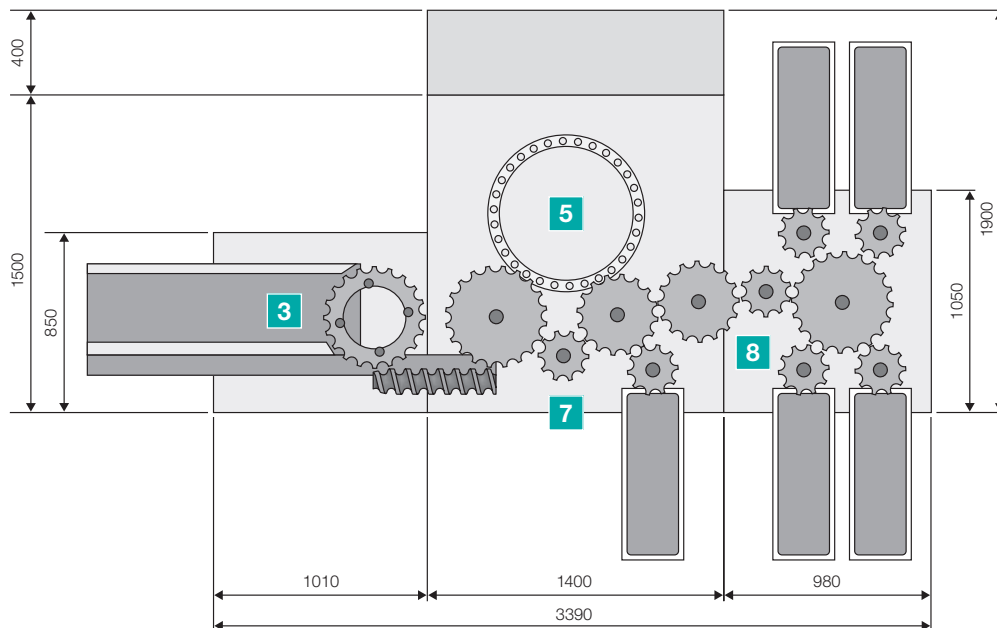


TECHNICAL DETAILS

	Seidenader MS-30	Seidenader MS-40	Seidenader MS-60
max. throughput of containers/h	18,000	24,000	36,000
max. number of camera stations (in carousel)	9 (6)	9 (6)	9 (6)
servo-driven positions in carousel	30	60	60
range of container diameter	up to 52 mm	up to 52 mm	up to 52 mm
range of containers	ampules, vials, cartridges	ampules, vials, cartridges	ampules, vials, cartridges
combo machine liquid and lyo	○	○	○
automatic re-inspection	○	○	○
central oscillating mirror	●	●	●
vacuum technology/external vacuum pump	●	●	●

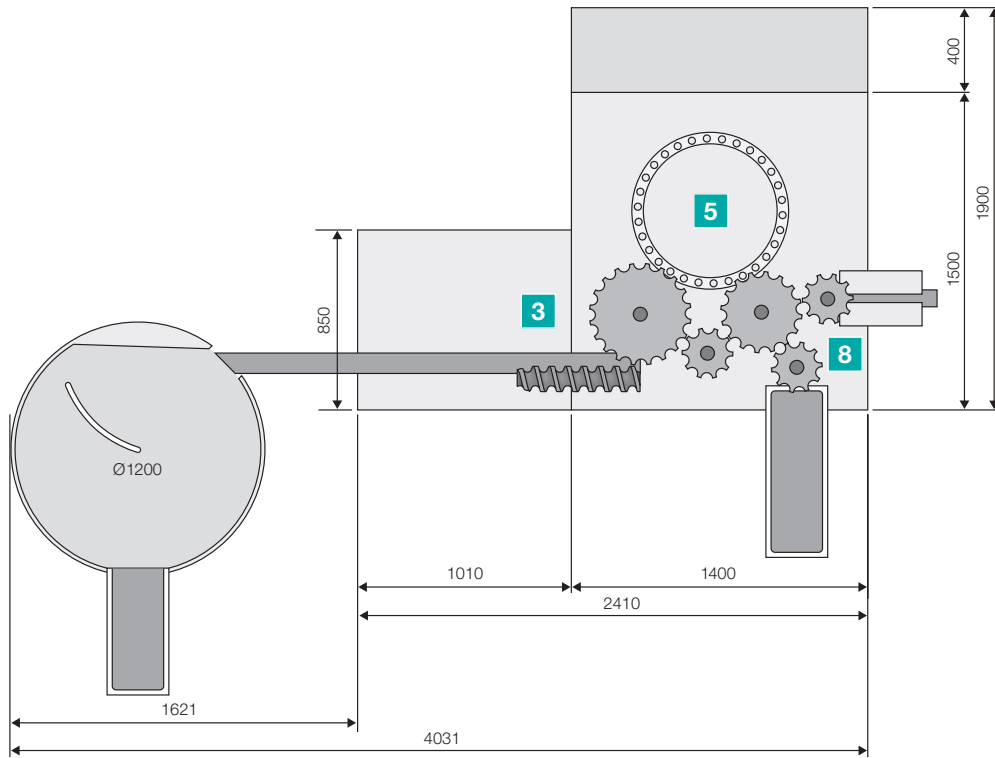
● Standard ○ Optional

MS with camera inspection + outfeed AVS

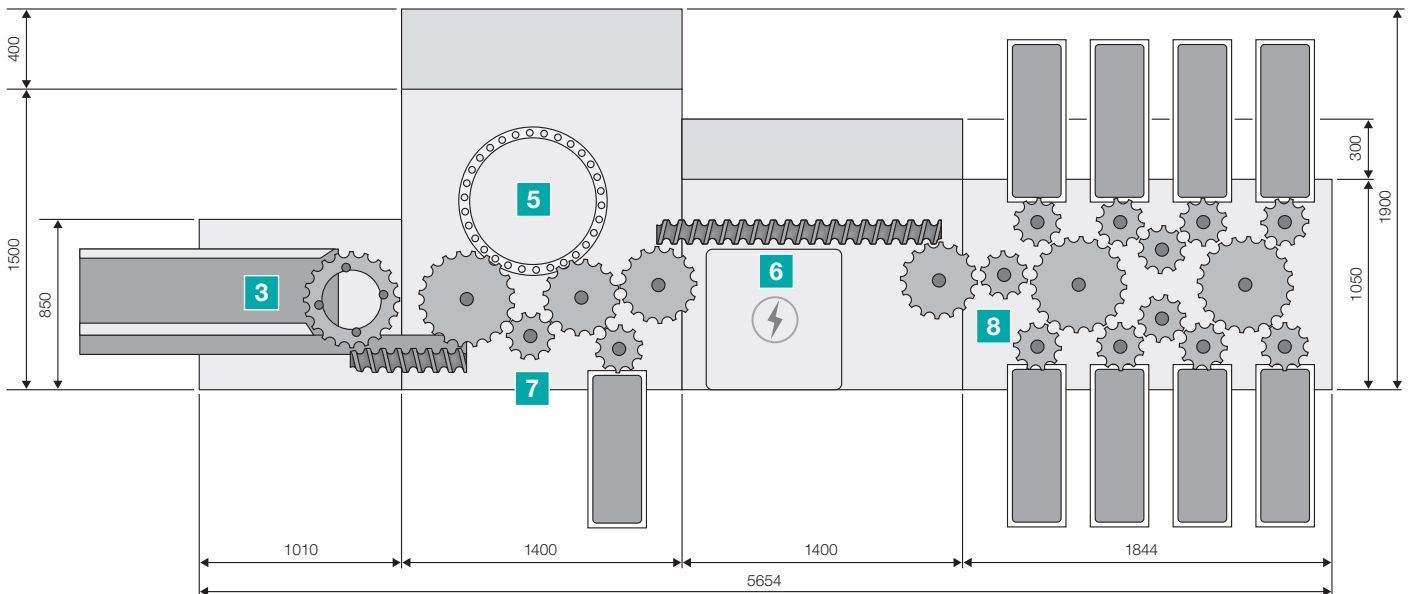


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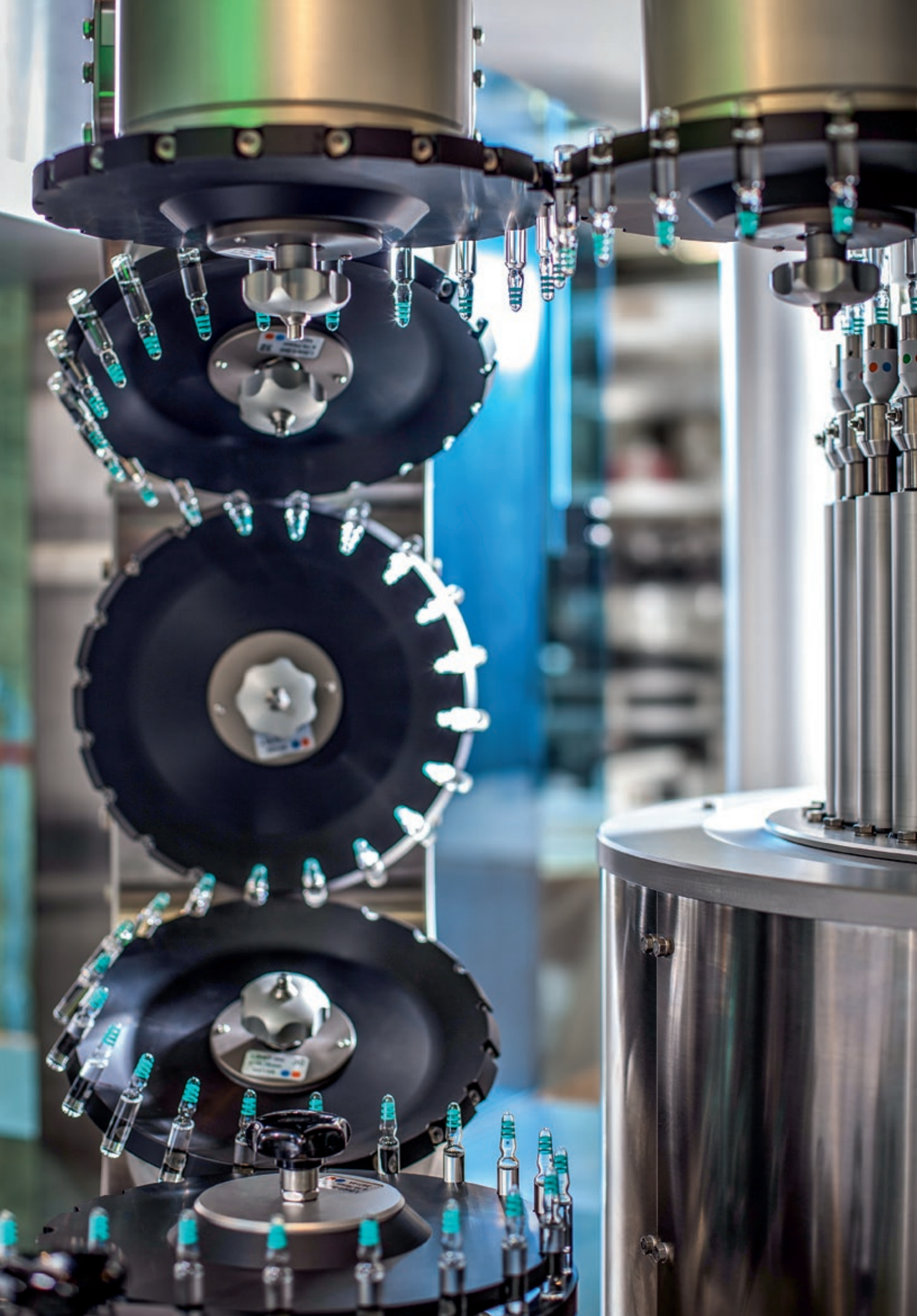
MS with camera inspection + infeed turntable + integrated outfeed, inline



MS with camera inspection + high voltage leak detection HVLD-SLIM + outfeed double AVS



All units are in millimetres. Footprints illustrated are examples only.



SEIDENADER LIFE CYCLE SERVICE



Seidenader Service Desk

The Service Desk is staffed by qualified experts. They can provide 24/7 service 360 days a year. The Service Desk combines maximum competence with short response and solution times.



Seidenader Academy

Our customized training and support programs impart theoretical and practical knowledge to enhance the productivity of your employees.



Seidenader Field Service

Our technicians have the expertise and understanding that comes from time, training, dedication to their craft and the determination to provide superior service to every customer.



Seidenader Original Spare Parts

We stock an extensive inventory of original spare parts at our locations worldwide to ensure speedy delivery. Machine-specific spare parts packages are also offered to give you in-house stock for immediate installation.



Seidenader Retrofit/Upgrades

Retrofit: For more flexibility and functionality take advantage of the modularity and expandability of your machines and profit from consistently modern equipment. Upgrades: Improve your installed equipment and software with upgrades.



Seidenader Process Optimization/OEE

Consulting and technical support to increase equipment performance, availability and reliability.