



**SEIDENADER**  
KÖRBER SOLUTIONS

# MS-S/VI-S-SERIES

High-performance inspection  
for pre-filled syringes



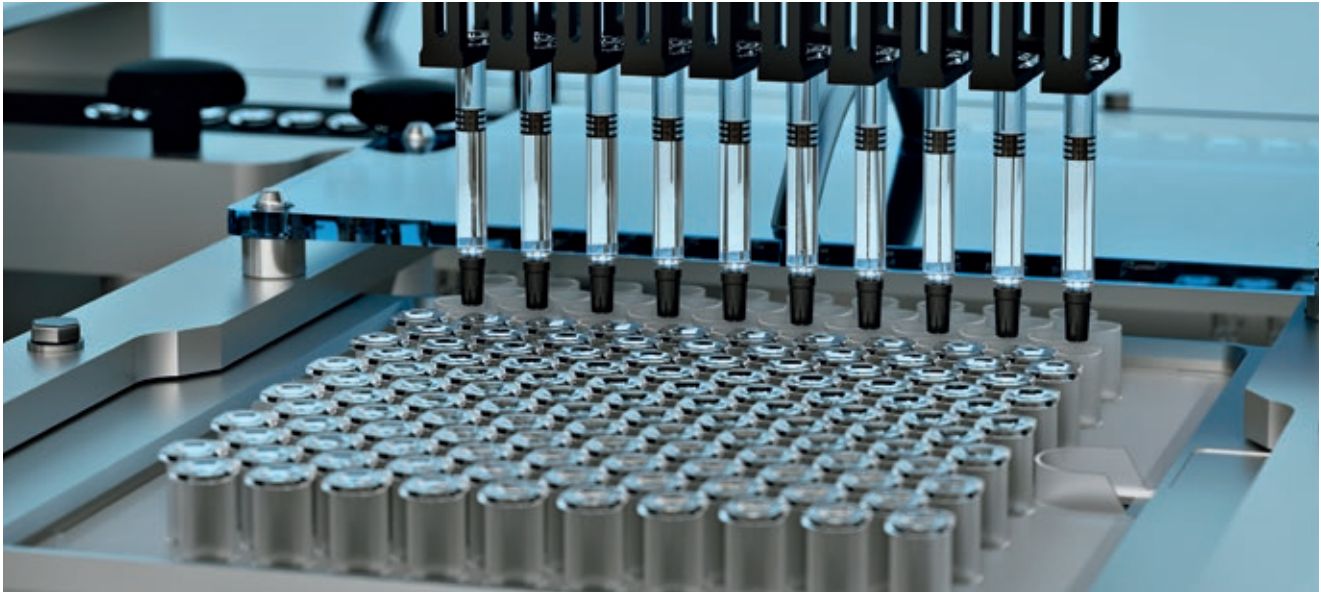
## HIGH-PERFORMANCE SYRINGE INSPECTION: FOR PURITY AND STERILITY OF PARENTERAL PRODUCTS

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

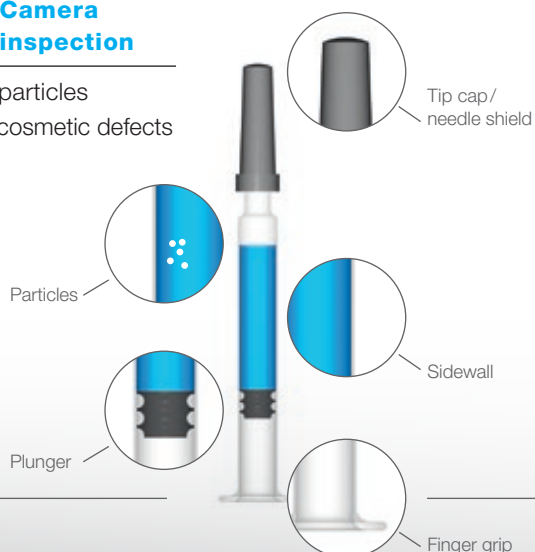
Moving particles such as glass, fibers, metal and coating fragments, as well as heavy particles on the bottom are detected by cameras. Syringes are usually also checked for cracks and scratches as well as for intact tip cap and needle shield. 

### Highly viscous product

Particles in gel-like products, such as hyaluronic acid, are reliably detected with the Seidenader 3D method. 


### Camera inspection

- for particles
- for cosmetic defects



## 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 a space-saving HV inspection station, can be integrated into Seidenader syringe inspection machines. 

### High voltage inspection

- for perforated needle shields
- for micro-cracks and pinholes



## OPTIMIZED CONFIGURATIONS: FOR BEST INSPECTION RESULTS

### YOUR BENEFITS

**ADVANCED INSPECTION**

**SMOOTH HANDLING**

**HIGH EFFICIENCY**

**MAXIMUM FLEXIBILITY**

**EXCELLENT DESIGN**

The modular design of major machine functions, such as in-feed, inspection and outfeed, enables us to build customized machines from standardized modules. The VI-S and MS-S platforms are equipped as standard with vision systems that can generally be configured for the inspection of solutions, suspensions, emulsions as well as oil-based or highly viscous products in syringes up to 20 ml. To complement camera inspection, additional technologies, such as high voltage 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





### INFEED

Infeed system with split timing screw and synchronized star-wheel to feed the syringes smoothly at the fastest possible rate and separate them to inspect product by product at an optimal pitch.

### 3 PRODUCT HANDLING

- Smooth product handling thanks to special vacuum transport system and minimized number of side guides to avoid friction
- De-/re-nester solution (DE.SY.RE) to connect inspection with up- and downstream machines for non-glass-to-glass-contact handling throughout the entire process.



### 4 GROSS DEFECT

- Gross defect rejection (finger grip inspection) before inspection carousel to increase machine availability

### 5 CAMERA INSPECTION

- Each position in the inspection carousel is equipped with a programmable servo drive for fast and synchronized rotation
- Individual rotation profiles for each product
- Large inspection turret to optimize rotation and inspection time, even for viscous products and suspensions
- Area and line scan cameras, according to inspection requirements
- Inspection for particles in the product and for cosmetic defects in the container



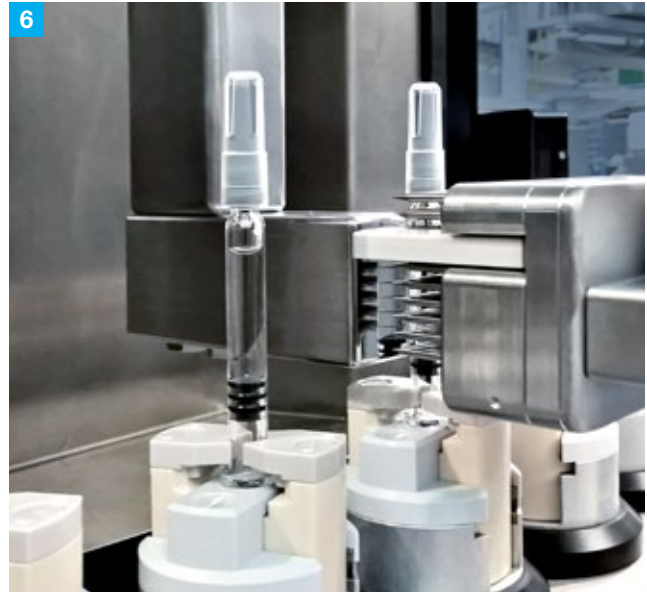




- 3D inspection for highly viscous products
- Special lighting options to reduce false rejections due to airbubbles

### 6 HIGH VOLTAGE INSPECTION

- High voltage inspection can be integrated into MS-S and VI-S machines, with one operator interface for camera and HV inspection
- For the detection of perforated needle shields another HV station can be integrated into the base machine platform



### 7 AUTOMATIC RE-INSPECTION

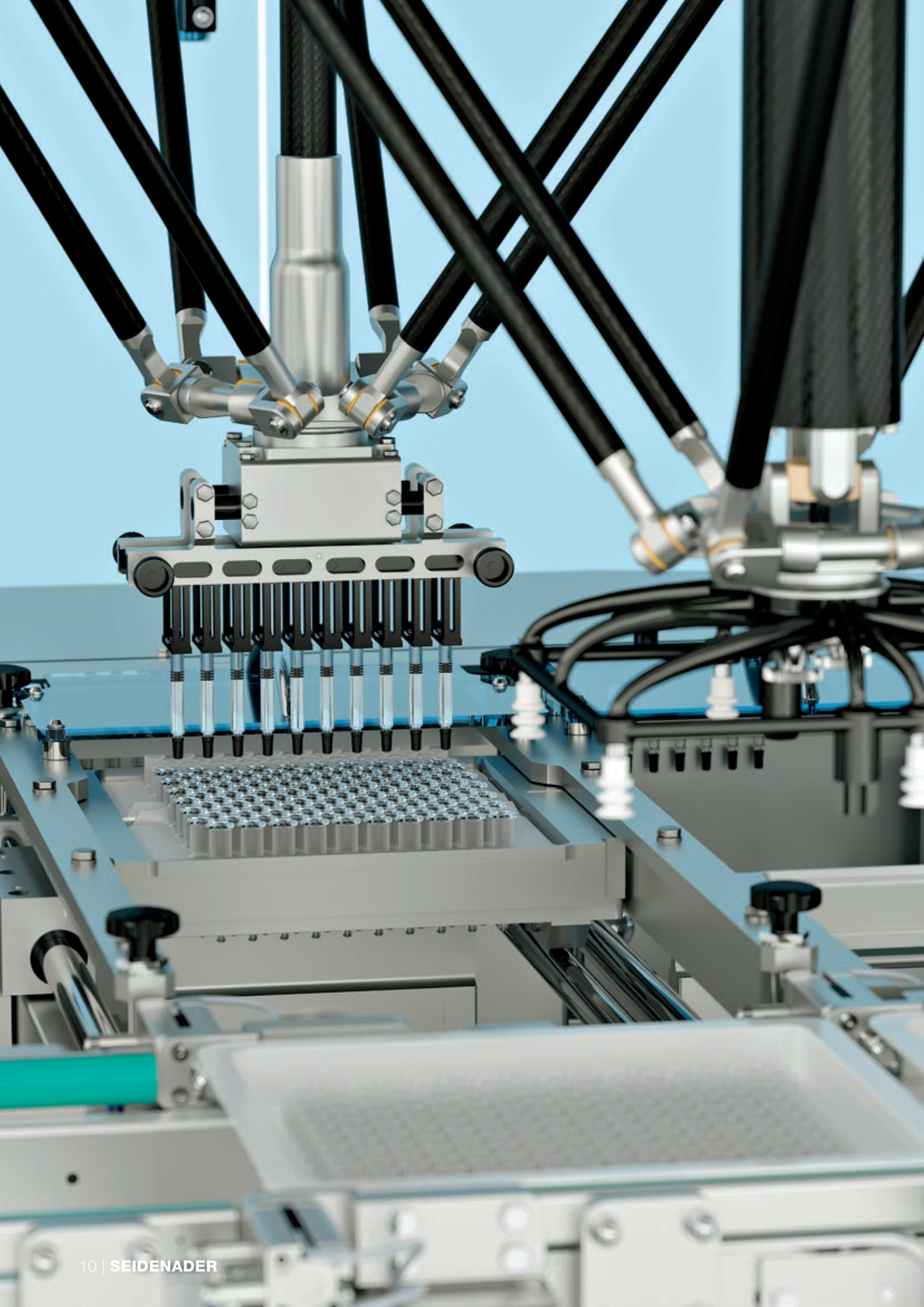
Integrated re-inspection for defined defect categories

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

### 8 OUTFEED

- Up to 4 outfeed channels integrated into base machine (MS-S) for small footprint
- Up to 8 outfeed channels on outfeed module (MS-S and VI-S)
- Reject verification system (fail safe principle) to make sure that syringes detected as “defective” will not reach the channel for good products
- Re-nester available for filling good products into nests without the syringes touching each other.



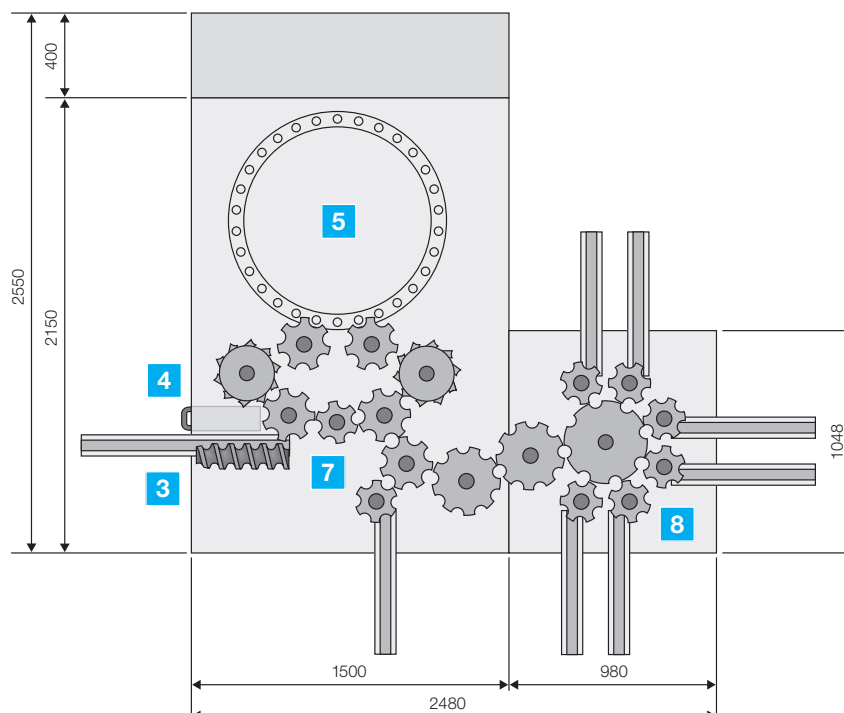


## TECHNICAL DETAILS

	Seidenader MS-S	Seidenader VI-S
max. throughput syringes/h	24,000	36,000
max. number of camera stations (in carousel)	8 (6)	10 (8)
servo-driven positions in carousel	40	60
range of container diameter	6.85 to 17.0 mm max. finger grip Ø 27 mm	6.85 to 22.50 max. finger grip Ø 32 mm
range of containers	pre-filled syringes, glass and plastic	pre-filled syringes, glass and plastic
gross defect (finger grip) camera station with direct reject	●	●
range of products	liquids, highly viscous products	liquids, highly viscous products
automatic re-inspection	○	○
central oscillating mirror	●	●
vacuum technology/external vacuum pump	●	●

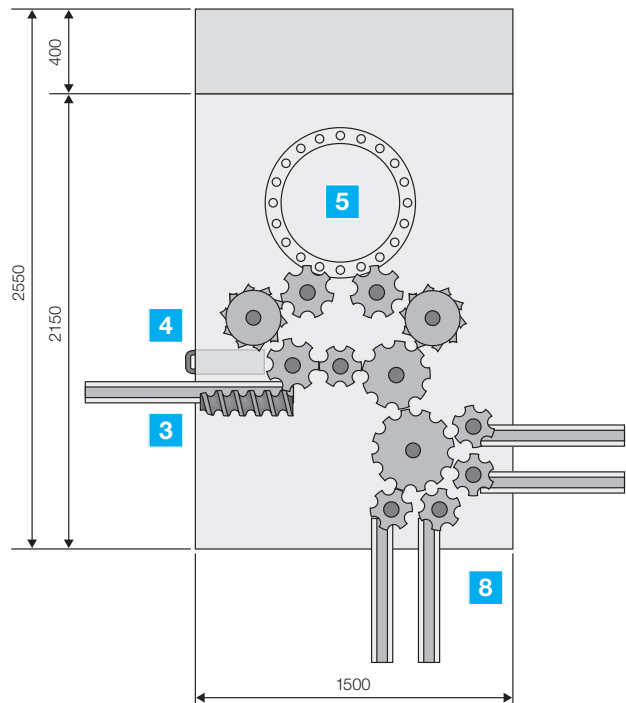
● Standard    ○ Optional

### VI-S WITH CAMERA INSPECTION + OUTFEED AVS

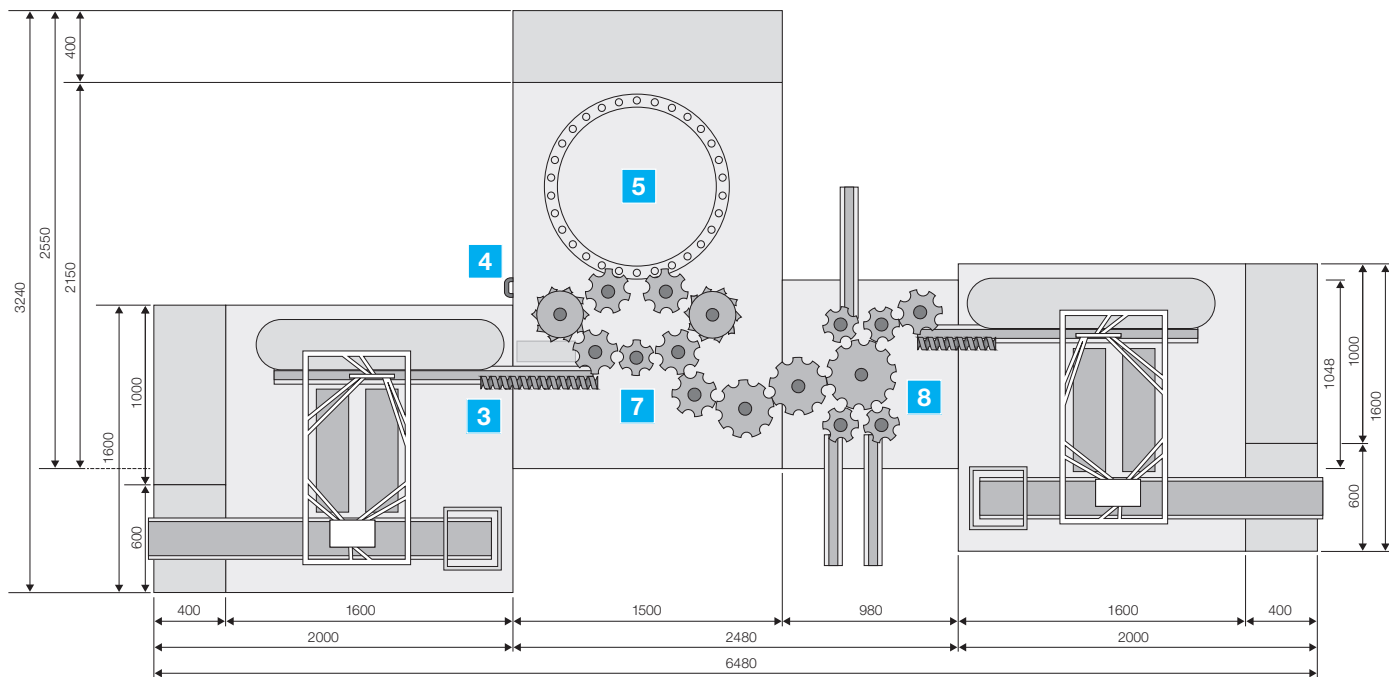




MS-S WITH CAMERA INSPECTION + BASIC OUTFEED



VI-S WITH CAMERA INSPECTION + INFEED DE-NESTER + OUTFEED AVS WITH RE-NESTER (DE.SY.RE)



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 365 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.

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