**Prioritizing continuity**
by data integration

Automated solutions for
row crop sampling & DNA analysis preparation

In our solutions efficiency, functionality, and environmental considerations are all carefully balanced to provide optimal value using minimal resources, within a minimal footprint.

- ✔ **Dedicated crop coverage**, primarily targetting row crops such as corn, wheat, barley, and rapeseed, offering tailored solutions for specific crops.
- ✔ **Streamlined process**; includes a complete seed processing workflow from threshing to cleaning, analysis, and crushing, with full traceability maintained throughout.
- ✔ **Specialised automation** in genotyping automation and quality control, ensuring efficient deepwel preparation for DNA analysis of individual seeds and reliable quality checks of seed batches.

Delivering maximum value within given space and resource limitations
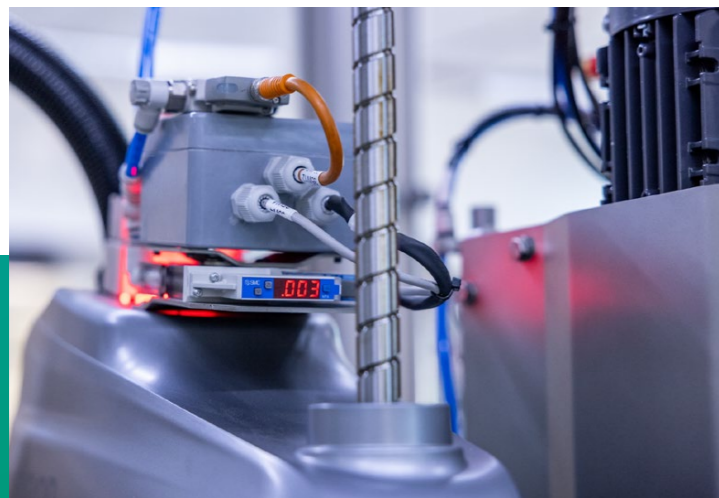
Increased efficiency
Speeds up processing and analysis, reducing sample time.

Consistency & accuracy
Ensures reliable handling and minimizes human error.

Continuous Traceability
Improves tracking and documentation for compliance.

Improved data management
Streamlines analysis with integrated data systems.

Seed processing
solutions

Optimizing production through efficient lab automation
for a thriving tomorrow.

Viscon's automated seed processing solutions simplify crop sampling and quality inspection for row crops. Ensuring precise genotyping preparation by automating the handling of individual seeds, while quality control is maintained. The process includes threshing, cleaning, optional crushing, picking seeds for DNA analysis, and storage in the breeeding bank with full traceability throughout. Reducing manual labor and ensuring consistent, high-quality results.

Streamlining genotyping & automated quality control

The fully automated system streamlines DNA analysis by efficiently preparing individual seeds for precise genotyping, offering a faster and more reliable process. Additionally, the system enhances quality control by automatically analyzing a representative 5-10% sample from batches of 200-300 seeds, ensuring optimal seed quality and consistency, while saving time and reducing manual effort.

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Automated crop sampling with integrated data management
enabling efficient & accurate DNA analysis

Seed processing solutions
with enhanced process control

The system streamlines seed processing from start to finish. The cleaner ensures thorough cleaning without the need for special equipment, while the picker efficiently counts, assesses, and packages seeds. Additionally, an optional crusher can pulverize seeds into deep well plates.

As seeds are prepared and samples analyzed, relevant data remains accessible, allowing users to quickly trace any quality concerns. This integration empowers breeders and researchers to maintain optimal seed quality and strengthen confidence in their testing workflows.
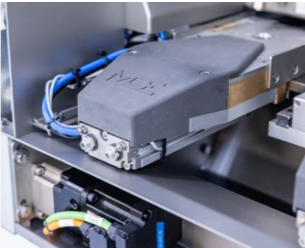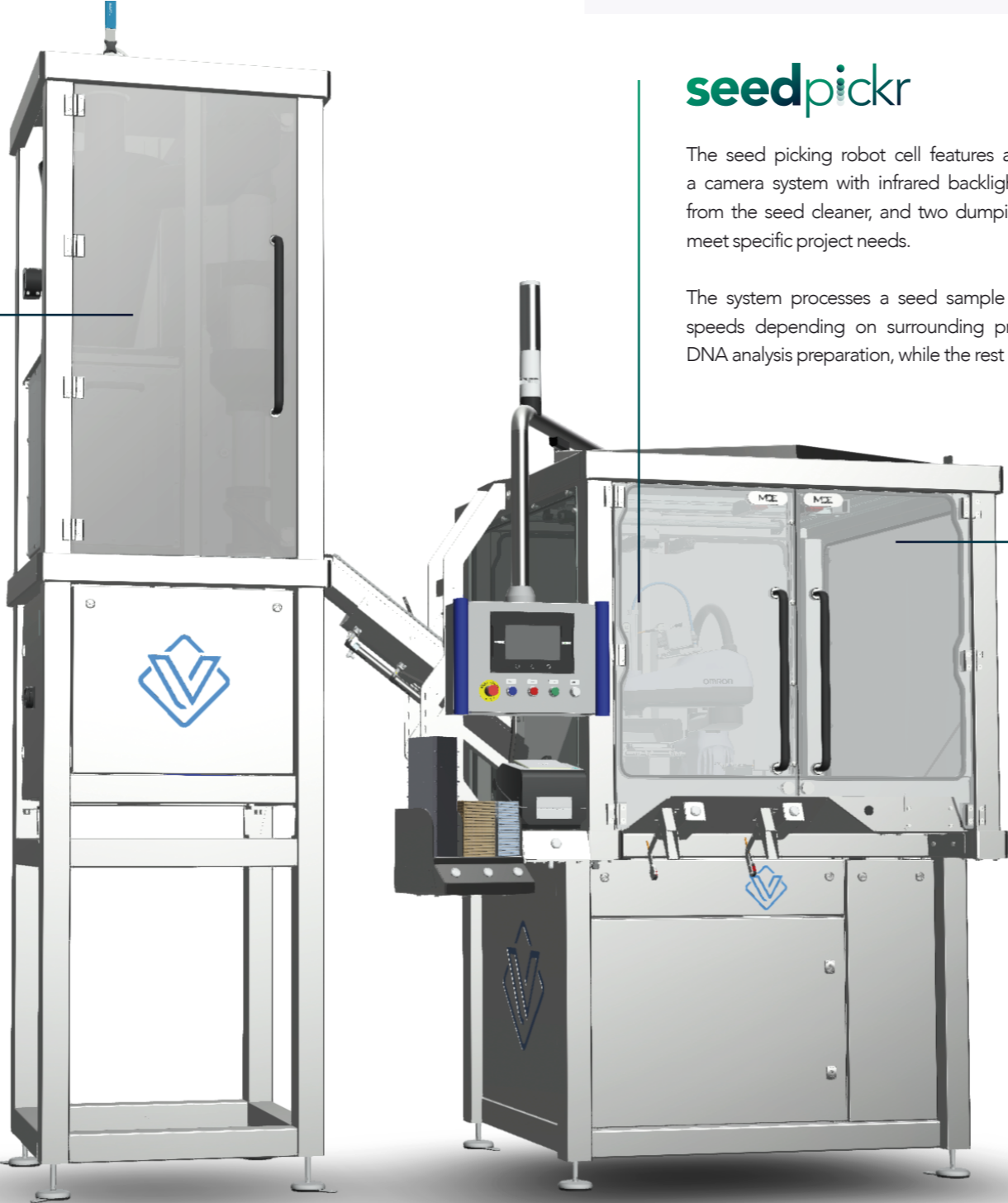
The seeds are cleaned with air streams to remove dust and debris, then transferred to a vibrating plate for alignment. When on the plate, each seed is photographed, enabling advanced imaging software to count and analyze their quality and characteristics.

seedcleanr

seedpickr

The seed picking robot cell features a gripper for selecting corn seeds and includes a camera system with infrared backlight for detection and counting, an infeed funnel from the seed cleaner, and two dumping valves with funnels. It is fully customizable to meet specific project needs.

The system processes a seed sample in about 10 seconds, with potential for higher speeds depending on surrounding processes. One seed is sent to the crusher for DNA analysis preparation, while the rest are stored in the seed bank.

Full crop traceability
advanced data management & software integration

Our genotyping system ensures comprehensive crop traceability throughout the DNA analysis process by using advanced software to track each seed from origin to final analysis. It logs key data points, enhancing quality control and ensuring compliance with industry standards.

This line is equipped with a data management table featuring a built-in SQL server, ensuring seamless integration for efficient data flow and process coordination. It includes a line control cabinet equipped with an Omron IPC, SCADA system, UPS, and a barcode scanner for precise tracking of batch or crop data, enabling streamlined operations and improved traceability through-out the seed processing workflow.

seedcrushr

The selected seed is crushed and placed in a deep well plate for DNA analysis, with automated crushing tests showing results comparable to manual crushing. The crushing cycle is synchronized with the picking cycle, processing a sampled seed every 10-15 seconds.

The crusher is also available as a standalone solution, offering a more efficient and automated option for DNA analysis preparation.

AI Vision technology

The AI camera combined with advanced software enables precise seed selection based on specific parameters, such as size and quality, while ensuring highly reliable counting even in large seed batches.