![Optimum Sorting logo] **OPTIMUM** SORTING

VEGE TABLES

MAXIMUM YIELD
CONSISTENT QUALITY

Innovative optical sorting solutions
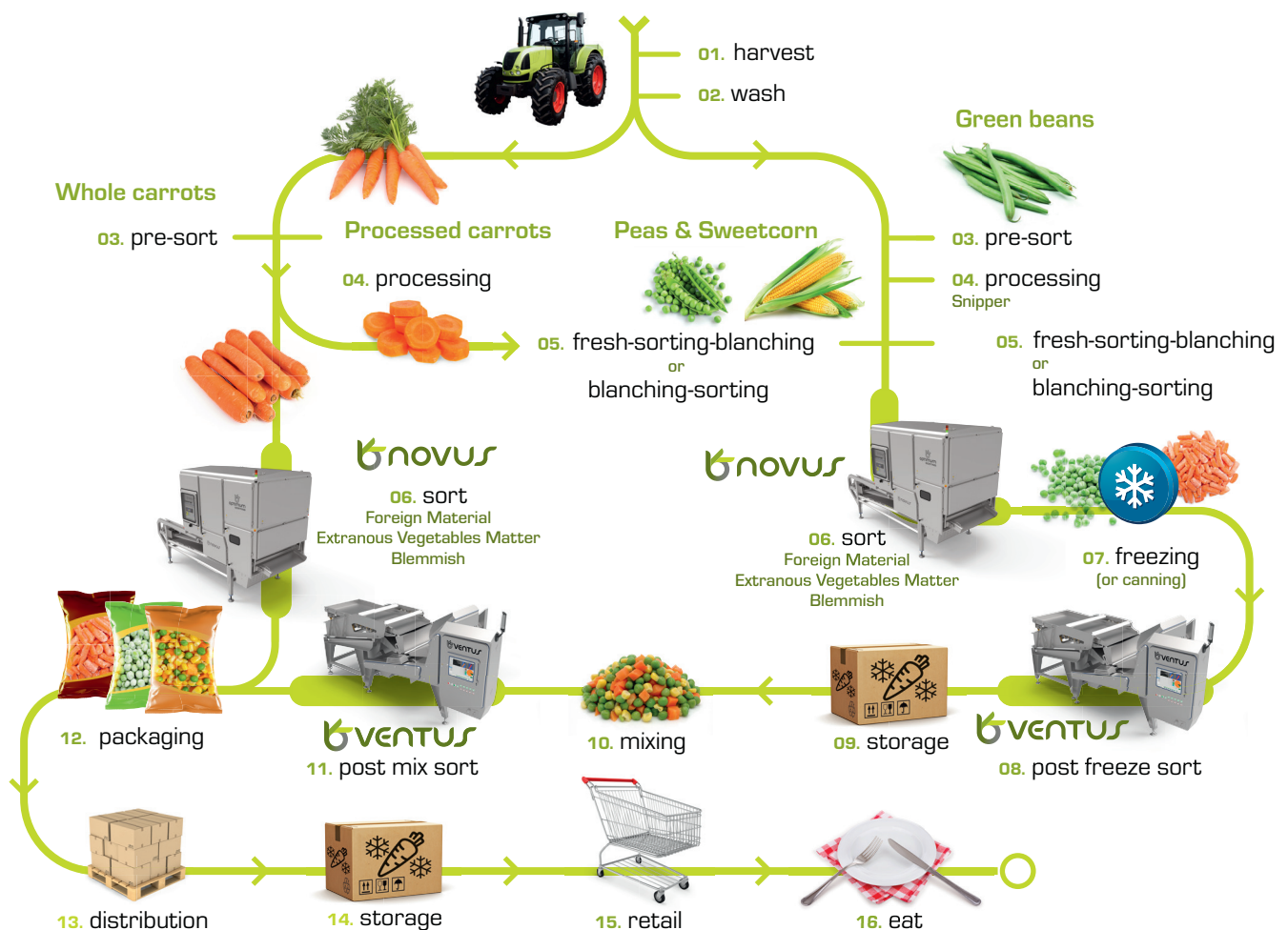for vegetable processors.

YOUR CHALLENGE

All types of bulb vegetables, green beans, peas, leek, cauliflower, broccoli, spinach, salad, shoots, etc. Whole or shredded, fresh or frozen. You want to offer an assortment that is as wide as possible, using as little machines as possible. Stray sprigs and leaves? A rotten onion? Food safety regulations are being tightened worldwide and consumers have also become more demanding. The presence of foreign materials or inferior products is not only a matter of food safety - in times of growing competition, quality problems can be downright harmful to your reputation. Unfortunately, you cannot control the condition of the vegetables, as no two seasons are the same. However, you do want to offer consistent quality to your customers.

In short, it's important to optimize your sorting process: to detect as many foreign materials and defects as possible and without unnecessarily removing good products.

01. harvest

02. wash

Green beans

Whole carrots

03. pre-sort

Processed carrots

Peas & Sweetcorn

03. pre-sort

04. processing

04. processing
Snipper

05. fresh-sorting-blanching
or
blanching-sorting

05. fresh-sorting-blanching
or
blanching-sorting

novus

06. sort
Foreign Material
Extranous Vegetables Matter
Blemmish

novus

06. sort
Foreign Material
Extranous Vegetables Matter
Blemmish

07. freezing
(or canning)

12. packaging

VENTUS

11. post mix sort

10. mixing

09. storage

VENTUS

08. post freeze sort

13. distribution

14. storage

15. retail

16. eat

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TOP QUALITY
STARTS WITH
OPTIMAL SORTING

YOUR OPERATIONAL RELIABILITY = OUR SERVICE

Integration
To integrate your solution, we rely on our network of specialized partners. After all, every production line is different and requires a tailor-made approach.

Training
We train your operators at your place, at the installation site or in our offices, so that they can optimally use your sorting systems.

Remote access
Our service engineers can be reached 24/7, by phone or E-mail. Thanks to secure remote access, they can quickly make a diagnosis and if necessary, immediately decide to arrange an on-site intervention.

Customized SLA
No maintenance contracts are needed to make sure you get the best available service for your installed sorters.

OUR SOLUTION

A chain is only as strong as its weakest link. You can be sure of one thing: Optimum Sorting systems will never be the bottleneck in your production line.

The NOVUS and VENTUS offer solutions for different steps in the production process, whether it's for bulb vegetables, green beans, peas, leek, cauliflower, broccoli, spinach, salad, shoots, etc. Whole or shredded, fresh or frozen.

These optical sorting machines are the result of extensive research and development. They use a sophisticated combination of advanced cameras and lasers, with multidimensional image processing for superior quality, size and length sorting. High-resolution cameras detect discoloration and size and shape deviations, while laser sensors detect foreign objects and 'sugar ends' extremely accurately. Special lasers sort by biological characteristics, such as the presence of solanine (fluorescence lasers), acrylamides and water (SWIR or Short Wave InfraRed lasers). InGaAs camera technology offers an alternative to SWIR lasers.

Our sorting systems easily adapt to the required quality specifications and you can choose between two-way or three-way sorting. Using a unique, 2400 mm maximum scan width, they not only offer greater capacity than other systems, the extra width ensures that the products to be sorted are more distributed across the inspection zone, allowing defective ones to be removed more accurately and reducing the risk of false rejections.

If you want accurate sorting, according to the quality specifications of your customers, but not at the expense of your yield, then choose Optimum Sorting. Guaranteed ROI!

INTERESTED IN A FREE DEMO?

Contact our sales team to explore the possibilities for your application or visit one of our demo centers for a comprehensive test on your own product. This way, you'll see exactly what our machines can do for you.

OPTIMUM SORTING

MULTIDIMENSIONAL IMAGE PROCESSING

Most image processing algorithms reduce the RGBi signal of a colour camera from four to two dimensions. This may result in the loss of valuable information. All signals, both from the cameras and from the different lasers, are interpreted simultaneously by means of our algorithms, resulting in a more accurate detection of foreign objects and defects, plus a lower risk of false detections.

PRECISION EJECTION SYSTEM

Accurate defect detection is pointless without an equally accurate ejection system. The distance between our air ducts, centre-to-centre is 7.5 mm instead of the usual 10 mm. Thus there are more ducts that are able to blow more effectively and that improves the ejection accuracy. There is also a high-resolution valve system with a centre-to-centre distance of 5 mm for specific applications. Optionally, also a double reject system is available resulting into a 3-way sort.

DATA VIEW

Why not use the data recorded by the cameras to adjust your sorting process where necessary? An optional module that filters data to parameters of your choice - length, shape, colour, defect level, etc. - and makes them available to your operators in a clear numerical or graphical way, so that they can intervene if desired. This module lays the basis for 'sort to spec'.

EXCEPTIONAL USER-FRIEND-LINESS

VISUAL CALIBRATION

Setting acceptance thresholds is often time-consuming and complex. This is not the case with Optimum Sorting systems. Your operators no longer have to work with graphs or formulae themselves. Our machines are able to calibrate themselves by using images of acceptable and unacceptable products.

INTUITIVE GUI

Operating our sorting machines is child's play, thanks to an intuitive GUI. Your operators see all relevant information at a glance.

REMOTE CONTROL

If you want to operate your sorting machines centrally, then no problem! Our solutions are easily integrated into your network, so that your operators and supervisors can keep an eye on things from any network computer.

SUPERIOR HYGIENE AND EFFICIENCY

Optimum Sorting systems are made from stainless steel and all components to be cleaned are easily accessible. This way hygiene is guaranteed and cleaning costs you hardly any time and effort. Moreover our machines are designed in such a way that any contamination has no impact on the sorting.

Furthermore, they excel in stability, which means that your sorting process requires virtually no manual intervention. You can switch from one product to another or from one specification to another with just one press of a button. And finally, their sturdy construction offers you a maximum uptime with minimum maintenance.

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SORTING SMARTER
WASTING LESS
SHAPING TOMORROW

VENTUS

The VENTUS is your workhorse for optimal sorting of frozen vegetables. This doublesided free-fall laser sorter is available in various scanning widths, up to 1800 mm. The VENTUS can be equipped with up to 16 lasers (and 32 laser detectors). Thanks to the combination of different lasers with specific wavelengths, it sorts extremely accurately based on color, shape, structure and biological characteristics.

With an impressive laser scanning speed of more than 4000 scans per second, the VENTUS offers the highest resolution of any laser sorter on the market. It therefore effortlessly detects the smallest impurities. All the different laser signals are also processed simultaneously by our MDL system (Multi Dimensional Laser System), which results in more accurate detection of foreign objects and anomalies, and a lower risk of false rejects, giving VENTUS the edge over other systems. Unacceptable products can be categorized into several classes, such as foreign material, color or shape. The VENTUS can distinguish 8 classes of deviations and process them differently if necessary. With the Advanced Fluo Module, the VENTUS is able to optimize the fluorescence of the products to be sorted.

In order to obtain an excellent good to bad ratio even for the very smallest products and impurities such as stalks or wood splinters, the VENTUS can be equipped with ultra-fast and small discharge valves with a center-to-center distance of 4.6 mm.

- Widest double-sided free-fall laser sorter
- Robust, advanced lasers
- Grading based on color, shape, structure and biological properties
- Superior resolution
- Advanced sorting software with AI

NOVUS

The NOVUS is an optical belt sorter ideally suited for sorting fresh vegetables in wet state, cut or whole, such as carrots and other tuberous vegetables, beans, peas and spinach, as well as the whole range of frozen (IQF) vegetables. With a maximum scanning width of 2400 mm, it is the largest optical belt sorter on the market. Depending on the width and application, it is equipped as standard with 3, 6 or 9 advanced highresolution cameras for optimal defect detection and an excellent good-to-bad ratio. With the optional laser sensors for detection of foreign objects, among others, you can further increase its sorting accuracy. The optional M-tec module, for detection of metals, is made up of several coils, making its detection sensitivity greater than that of traditional metal detectors.

But that's not all: the NOVUS can be expanded with a unique camera configuration, specially developed for sorting diced carrots or other tuberous vegetables. The additional cameras are arranged so that five of the six sides of each cube are always viewed perpendicularly. And thanks to clever use of IR illumination along the underside, the measurements are not disturbed by any contamination on the conveyor belt. The result: a significant improvement in your sorting efficiency and accuracy.

- Widest optical belt sorter
- Excellent good-to-bad ratio
- Unique 3-1 combination of camera, laser and metal detection
- Advanced sorting software with AI
- Optimal flexibility and integration capabilities

MODULAR DESIGN

Customization is no problem! Their modular design means that our sorting systems may easily be adapted to your specific requirements. Moreover, they are field-upgradable so that they can grow with the needs and opportunities of your organization, together with our latest technology.

■ standard   ○ option   ✕ not available

		VENTUS	NOVUS
Type		Free-fall laser sorter	Belt sorter
Application		Deep-frozen (IQF) vegetables	Whole or cut fresh vegetables and frozen (IQF) vegetables
Width		600 mm, 900 mm, 1200 mm or 1800 mm	600 mm, 1200 mm, 1800 mm or 2400 mm
Camera	MC, RGB,	✕	■
	IRGB	✕	○
	InGaAs	✕	○
Laser	IR, SWIR, VIS, Fluorescence	■	○
Special camera configuration		✕	○
M-Tec	Metal detection	✕	○
Sorting mode		Two-way or three-way	Two-way or three-way
		DRS	DRS
Air valves	4,60 mm	○	✕
	5,25 mm	✕	○
	7,50 mm	■	■
	10,00 mm	○	○
Data view *		○	○

* This module is being continuously developed. Contact us for an up-to-date overview of the functionalities.

OPTIMUM SORTING

scan for more info!