

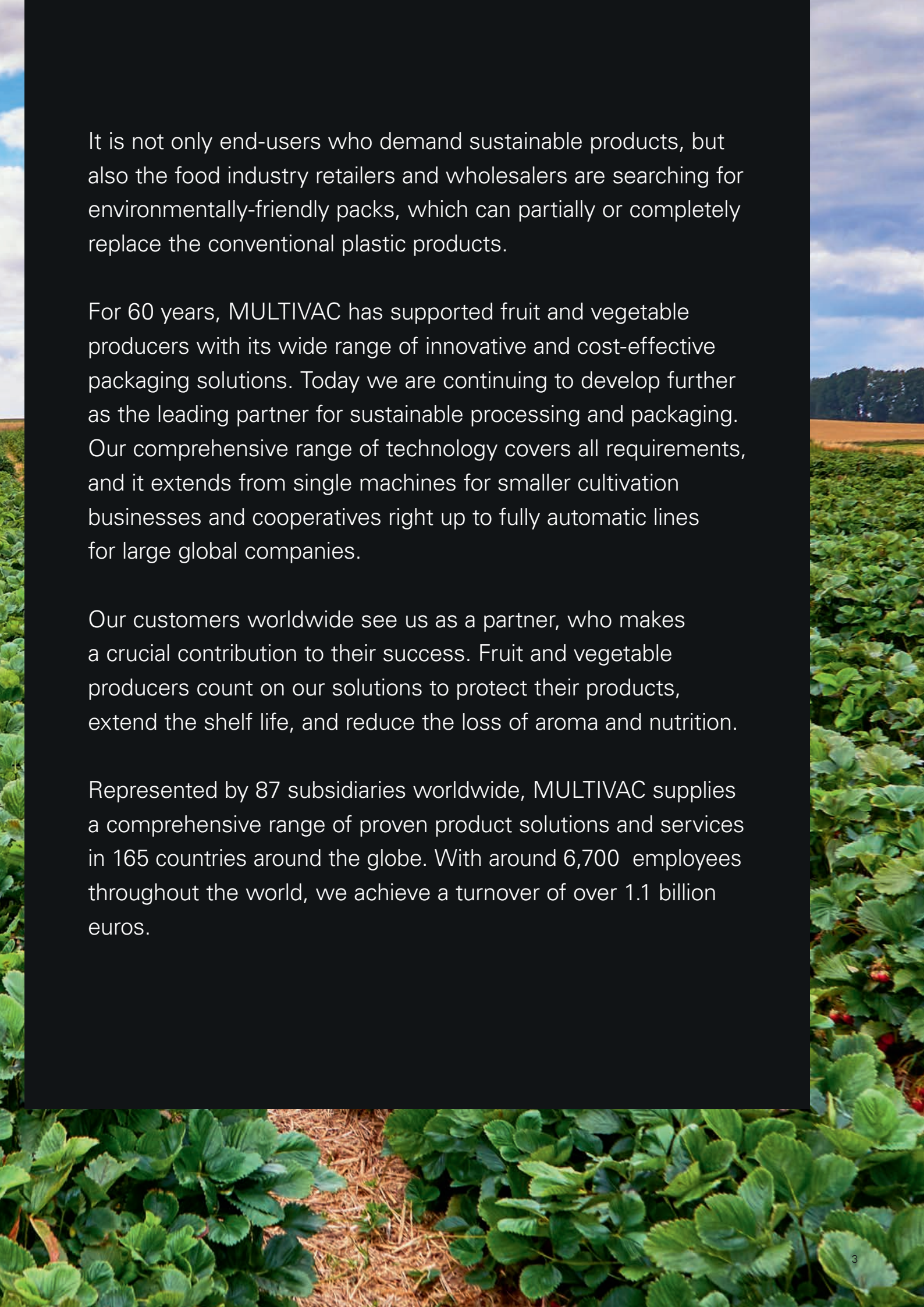


You supply freshness.
We provide the solutions.

First-class packaging concepts for
your products. From MULTIVAC.

MULTIVAC





It is not only end-users who demand sustainable products, but also the food industry retailers and wholesalers are searching for environmentally-friendly packs, which can partially or completely replace the conventional plastic products.

For 60 years, MULTIVAC has supported fruit and vegetable producers with its wide range of innovative and cost-effective packaging solutions. Today we are continuing to develop further as the leading partner for sustainable processing and packaging. Our comprehensive range of technology covers all requirements, and it extends from single machines for smaller cultivation businesses and cooperatives right up to fully automatic lines for large global companies.

Our customers worldwide see us as a partner, who makes a crucial contribution to their success. Fruit and vegetable producers count on our solutions to protect their products, extend the shelf life, and reduce the loss of aroma and nutrition.

Represented by 87 subsidiaries worldwide, MULTIVAC supplies a comprehensive range of proven product solutions and services in 165 countries around the globe. With around 6,700 employees throughout the world, we achieve a turnover of over 1.1 billion euros.

Best-in-class with innovative packaging solutions

MULTIVAC offers a wide range of solutions for professionally packing fruit and vegetable products of all types - from bulk vacuum packs in the catering sector through to the classic retail packs, and right up to ready-to-eat portion packs or creative packaging concepts for snacks.



●
Paper



Perfectly tailored to your products and customers

Our packaging concepts are perfectly designed for the individual requirements of the particular product and target market. At the forefront is the aim of protecting the freshness and quality of your product, as well as employing the most sustainable packaging materials possible.



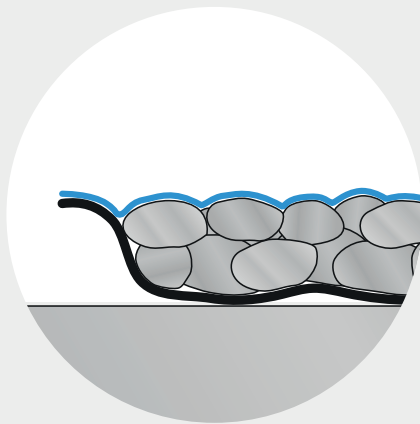
Film



Focus on perfect protection and long-term freshness

Our experienced packaging engineers, packaging material experts and food technologists develop customised packaging solutions that are perfectly tailored to your needs. Secure. Innovative. Sustainable. They take the special requirements of your products into account as regards product protection and shelf life, as well as sustainability criteria and current consumer trends.

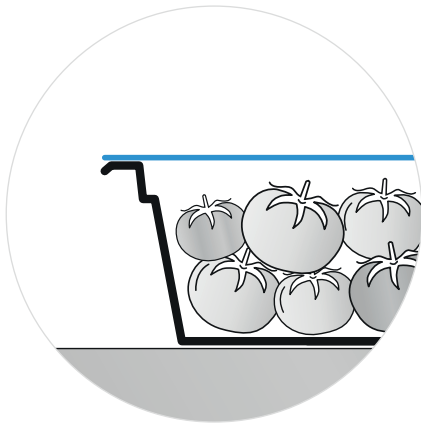
Vacuum



Vacuum packs

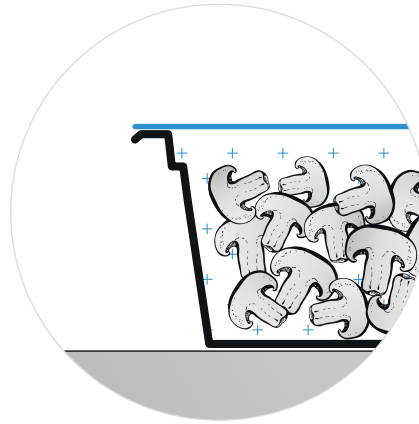
Packing under vacuum extends the shelf life of products, since their biochemical decay can be slowed down by extraction of the atmosphere. Since fruit and vegetables are compressed in the process, vacuum packs are only suitable for food that is not sensitive to pressure, such as potatoes, corn cobs and cooked beetroot.

Packs with atmosphere



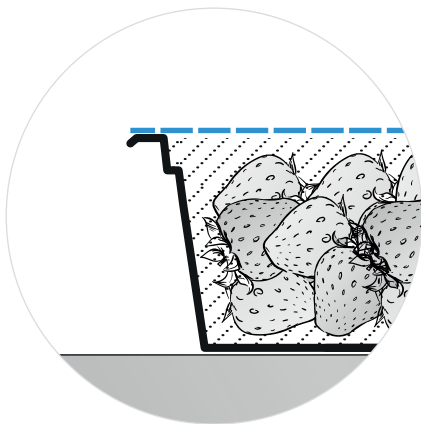
Natural atmosphere

The technically simplest solution is sealing of the packs without modified atmosphere. Such packs protect the product from contact and mechanical influences, but do not have any properties that extend shelf life.



Modified atmosphere (MAP)

In packs with modified atmosphere, the air in the pack is replaced with a gas mixture, which is matched to the product to maintain its form, colour, and freshness. This modified atmosphere usually consists of a mixture of carbon dioxide and nitrogen.



Equilibrium atmosphere (EMAP)

The packs are sealed with a microperforated upper web to produce EMAP packs. The number and size of the perforations enable the permeability to be tailored to the respiration rate of the product. The equilibrium atmosphere that is produced extends the

shelf life of delicate, respiring products such as fruit, vegetables, salads and herbs.

The upper web for EMAP packs can be perforated on the packaging machine using the MULTIVAC FreshSAFE process, and the film is then perfectly matched to the particular ripening degree of your products.

Standard MAP

EMAP with FreshSAFE

6 days after being packed



10 days after being harvested



Your product can look very impressive

- 6 days after being packed
- 10 days after being harvested
- Storage temperature 12 °C

MULTIVAC FreshSAFE:

Fresh for longer for certain!

Fruit and vegetables continue to live after harvesting. Regulating the natural metabolic processes plays a central role, so that the product does not dry out or perish. MULTIVAC FreshSAFE is a further development of the EMAP process, and it optimises the oxygen content in the packs in the most natural way possible. Its objective is to maintain the most beneficial concentration of oxygen and carbon dioxide for the particular product. This equilibrium atmosphere is achieved through the interaction between the respiration of the product and the required permeability of the film.

Pre-perforated films - or films perforated mechanically on the MULTIVAC line itself - ensure that a controlled oxygen permeability is achieved, which is matched exactly to the specific respiration characteristics of the particular fresh product. These films provide a consistently ideal atmosphere within the pack. Naturally and sustainably. Inline microperforation is used to tailor the film to the particular respiration rate, and this perforation on the machine is specified individually for each product. As quickly and flexibly as you would expect from us.

Active FreshSAFE

The packaging of basil requires special knowledge of the product and its storage conditions. Whereas basil in a MAP pack discolours adversely after a few days, it remains fresh and crisp for longer in an active FreshSAFE pack. Thanks to the microperforation and gas atmosphere being tailored to the particular product, the inside of the pack creates an ideal atmospheric equilibrium, which ensures a longer shelf life is achieved. In the case of the active FreshSAFE process, the optimum gas atmosphere is created immediately after sealing, and it is maintained constantly during storage.

Passive FreshSAFE

Passive FreshSAFE functions solely by means of suitable microperforation, in other words without active gas exchange. The passive gas exchange takes place during storage. During this process, the product breathes in oxygen and produces carbon dioxide. This enables the inside of the pack to create an equilibrium by itself after a certain time.

Our experts will be very pleased to help you in specifying the correct machine and packaging concept based on your product requirements, storage temperature and respiration rate.

Pack more sustainably out of responsibility for the future

MULTIVAC has a wide range of solutions, which actively support you and your customers in operating sustainably:

Packs based on paper fibre

MULTIVAC PaperBoard reduces the consumption of plastic and increases recyclability.

Compostable packs

Bio-based and biologically degradable materials help to solve waste problems naturally.

Recyclable plastics

Mono materials can be fed directly to the particular recycling loop and then simply reused.



RENEW

**SUSTAINABLE
PACKAGING
CONCEPTS**

RECYCLE

REDUCE

Paper-based packaging solutions

With MULTIVAC PaperBoard we can support you in increasing the recyclability of your packs, as well as reducing the consumption of plastic in your packaging by up to 85 %.

The use of functional layers makes it possible to produce packs based on paper fibre, which can meet all the requirements of the specific barrier properties needed for the particular product.

Packaging solutions with MULTIVAC PaperBoard can be produced on thermoforming packaging machines and traysealers. Their paper and plastic components can be separated quickly and easily after use, so that they can be directed to separate recycling loops.

Hot off the press: MULTIVAC has developed, with its full wrap labelling, a sustainable and high-quality solution for plastic-free packaging concepts.



PaperBoard pack with film upper web

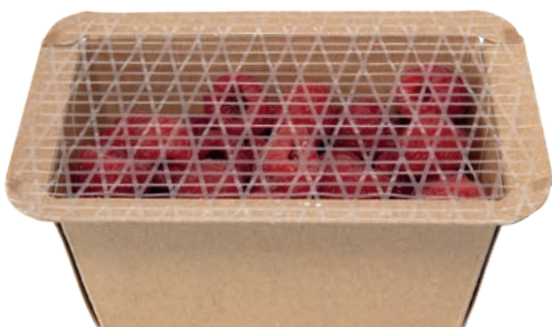
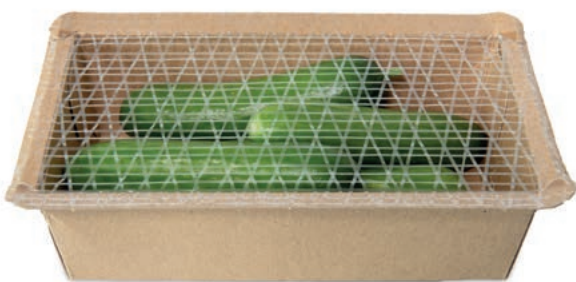
The paper and plastic components of the pack can be separated quickly and easily after allowing it to be directed to separate recycling loops.

PaperBoard pack with mesh material

The plastic component of the pack can be further reduced by using an upper web made of mesh material.

Board tray with full wrap label

By using wraparound labels, it is possible to securely seal cardboard and paper-based trays without the use of plastic, while also branding them with the same label.



Compostable packaging solutions

In order to be suitable for industrial composting, products and materials must meet the strict criteria of the European standard EN 13432 or the US standard ASTM D6400. The objective is the most efficient and rapid biological decay of the organic materials as possible. Industrial composting takes place in commercial composting facilities. Thanks to precisely controlled and ideal conditions, the equipment in these facilities provides a perfect equilibrium between microbes, moisture content and temperature. This means compostable packs can be included in the recycling of food waste.

Packs for composting at home are typically based on agricultural by-products or cellulose. They can be collected at home in a compost container or on a compost heap, where they decompose within a certain period of time and create a nutrient-rich soil. The use of renewable materials makes these packaging solutions as natural and sustainable as the products they protect.



Recyclable plastics

Packs consisting of only a single sort of material can be fed directly to the particular recycling loop after use. In addition to the established recycling processes for glass, metal and paper, it is increasingly the case that packs made of mono plastics such as APET are also being recycled in this way.

Thanks to the MULTIVAC APET+ films, you can benefit from packaging solutions, where both the upper and lower webs consist of a mono material, which can be completely recycled. Since there is no requirement with APET+ for an additional sealing layer, which compromises the recyclability of materials, it is possible to reduce the consumption of plastic by up to 15 %, when compared with the standard coated APET.

APET+ can also be manufactured from up to 90 % recycled PET (rPET), which significantly reduces the CO footprint still further.



Better packaging and processing with MULTIVAC

MULTIVAC is a leading manufacturer of highly efficient systems for processing and packaging food. Each of our solutions is designed individually for you in terms of the product infeed, packaging process, discharge of packs, labelling or marking, quality inspection and end-of-line packing. So that you can have innovative packs, which meet your requirements perfectly.

MULTIVAC solutions dovetail seamlessly into new or existing production environments, either as a stand-alone machine or as an automated and integrated line with central control.

Our equipment range in the Fresh Produce sector includes:

- Thermoforming packaging machines
- Traysealers
- Labelling and marking systems
- Inspection systems
- Complete lines from one source





Thermoforming packaging with an impressive variety of packs

Our supermarket shelves are filled with a constantly growing variety of food products presented in ever new ways. And running in parallel with this, the choice of pack types and packaging materials is also increasing. A broad spectrum of packs can be produced reliably and efficiently on MULTIVAC thermoforming packaging machines. MULTIVAC will design your machine to meet your particular requirements with regard to pack design, output and efficient use of resources. As the leading manufacturer worldwide, we supply over 1,000 thermoforming packaging machines for food every year based on this principle.

With its X-line thermoforming packaging machine, the RX 4.0, MULTIVAC is supporting the digitalisation of packaging processes and driving forward Industry 4.0 concepts. Thanks to its comprehensive sensor system and MULTIVAC Smart Services, the X-line opens up new dimensions for its users in terms of pack security, quality and output, as well as efficient and transparent processes.

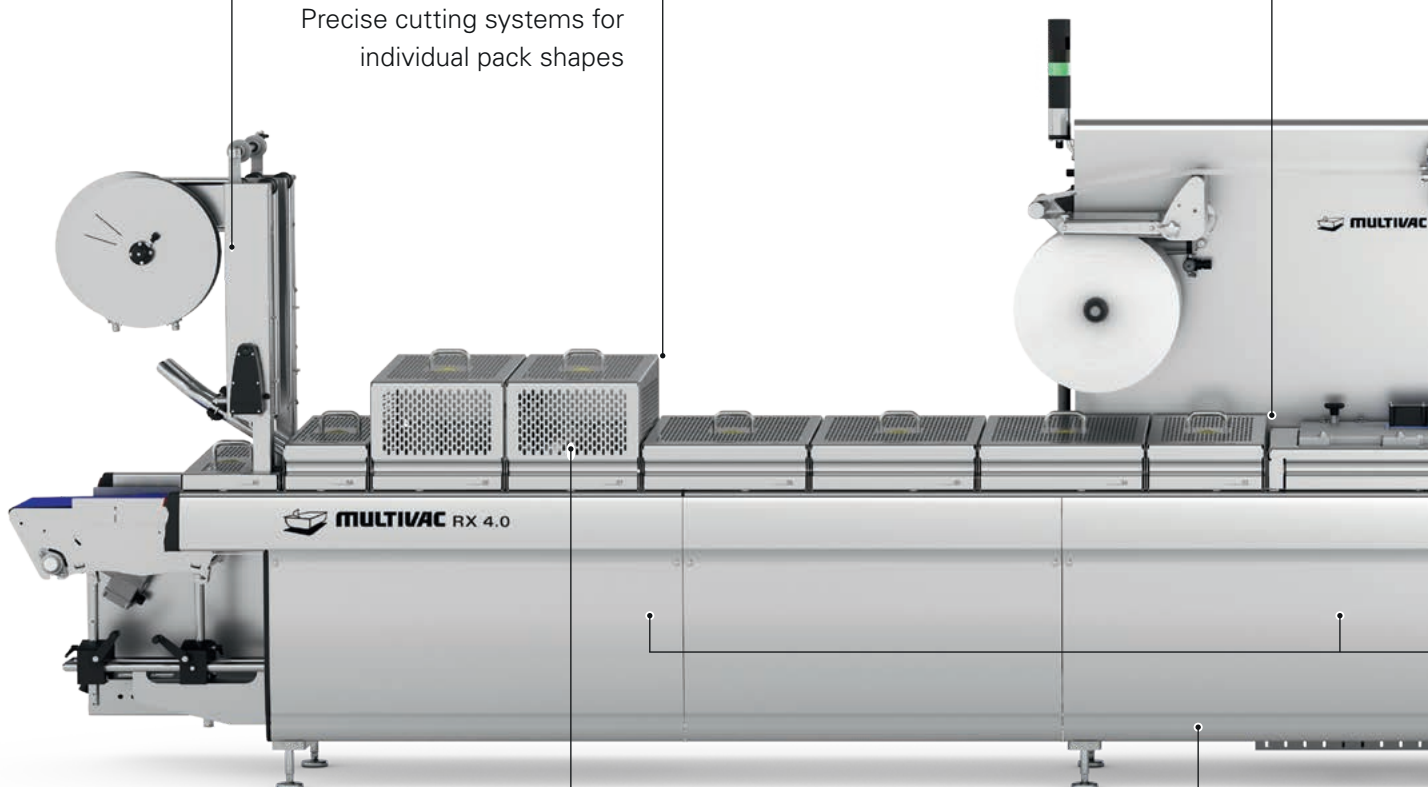


Better packaging with MULTIVAC thermoforming packaging machines

Reliable discharge
and converging
systems

Precise cutting systems for
individual pack shapes

High level of seal seam quality
for maximum pack security

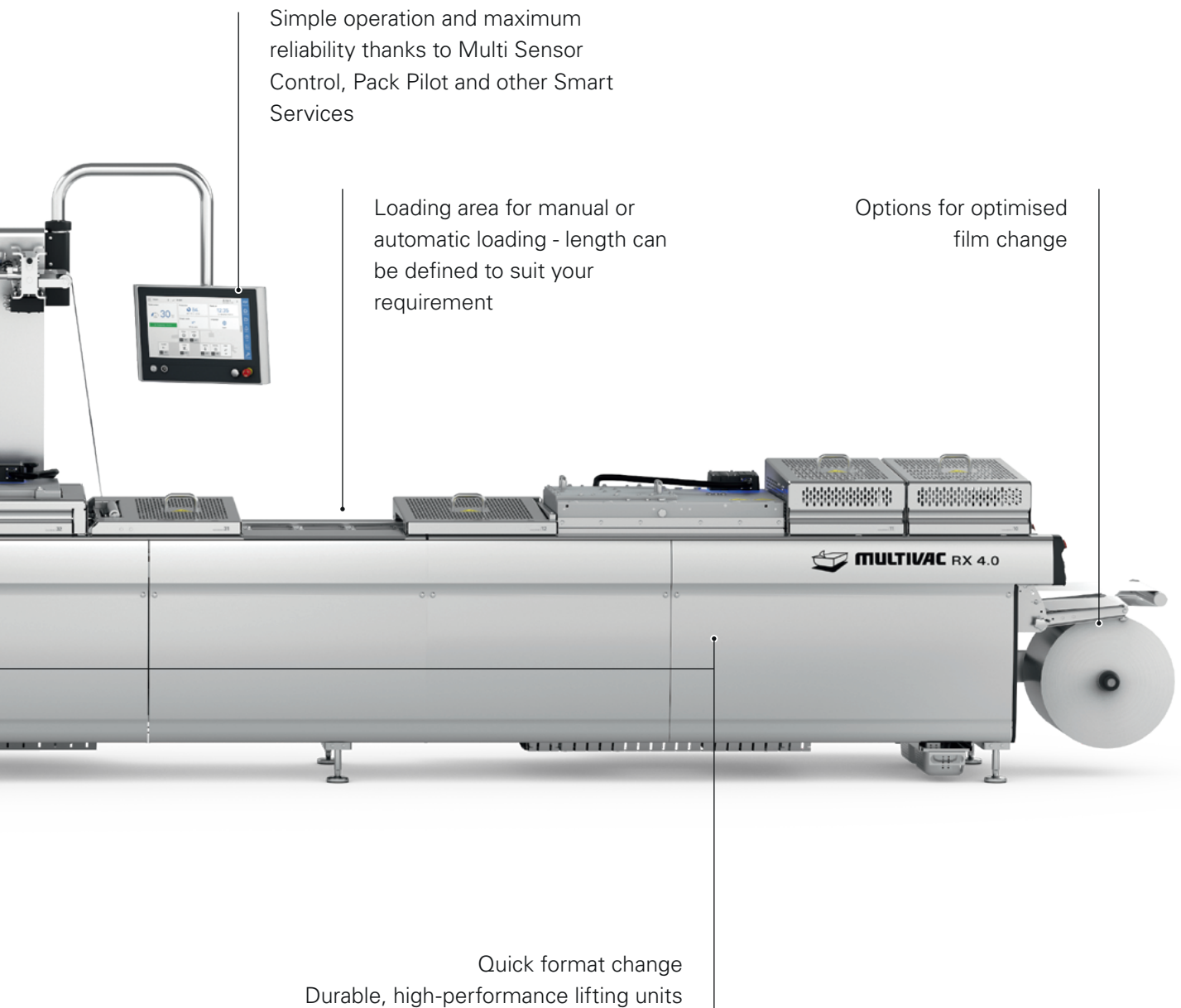


Maximum operator safety thanks
to far-reaching protective devices

Easily removable side cladding

You too can benefit from the advantages of MULTIVAC thermoforming packaging solutions:

- High production output and pack quality
- Individually tailored solutions as regards pack shape, opening aids, reclosure and other features.
- MULTIVAC Hygienic Design™ for fast and reliable wet cleaning
- Process reliability and machine durability
- Reduced consumption of plastic films and energy
- Wide range of configurations and enhancements

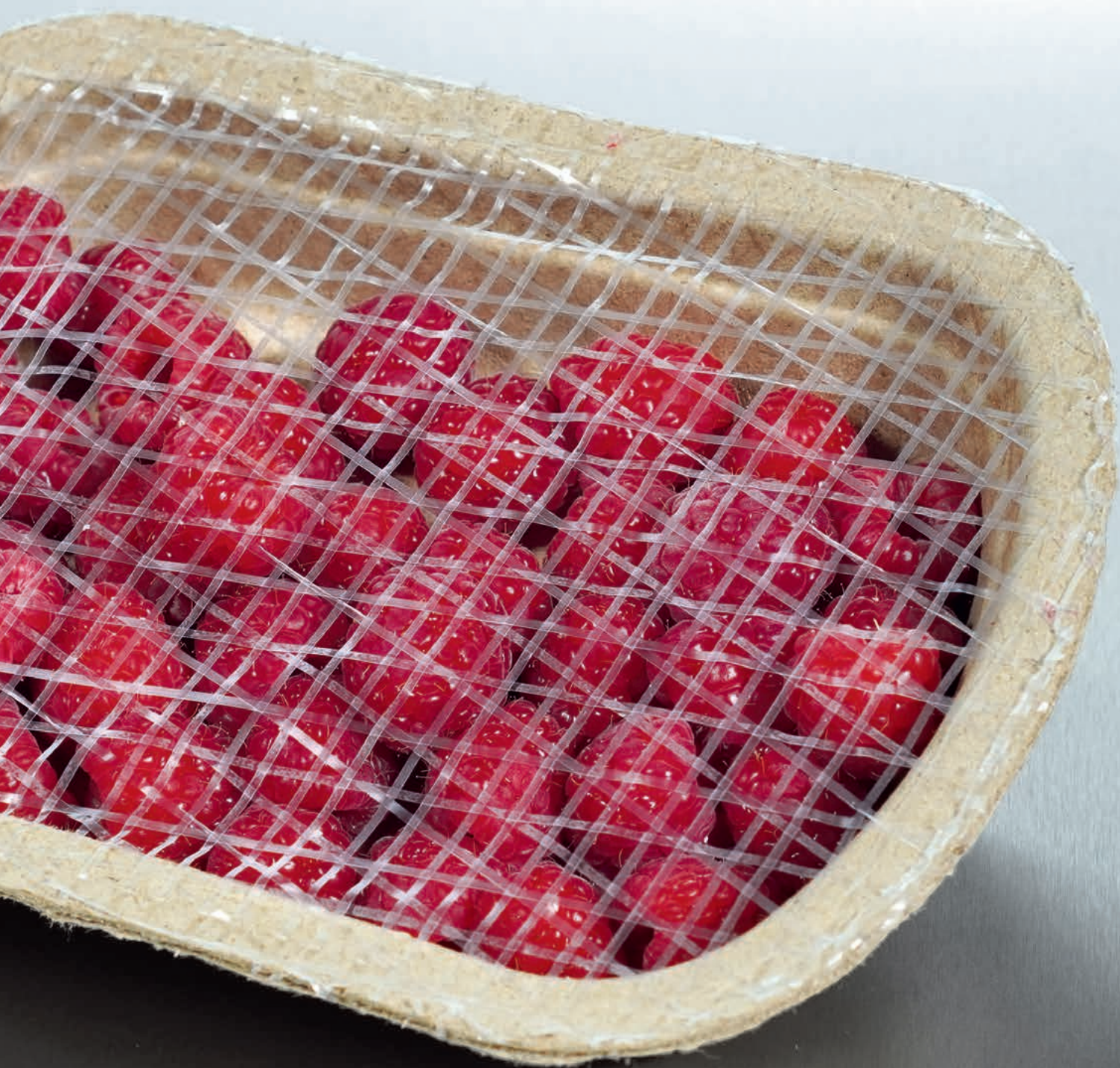


Traysealers for the highest level of flexibility and reliability

The MULTIVAC X-line traysealers cover a wide spectrum of packaging applications for food, and they are also particularly suitable for fresh products such as fruit, vegetables and salads.

Thanks to their robust mechanical construction, as well as an innovative machine control featuring Flow Manager and Multi Sensor Control, the TX traysealers are capable of packing with maximum flexibility and consistent reliability - even at very high output in non-stop mode. The frequent changes of product, film and die, which are typical for traysealers, can be performed on the TX models with the minimum of interruption to production. Operators require less than ten minutes to change an X-tool die.





Packaging flexibly with MULTIVAC traysealers



MULTIVAC benefits

- MULTIVAC Hygienic Design™
- High production output and pack quality
- Individually tailored solutions
- Maximum output with the minimum footprint
- Energy efficiency
- Pioneering ergonomics and user-friendliness
- Long service life
- Comprehensive range of solutions for tray infeed and discharge
- Customised solutions for tray loading
- Complete supply for packaging lines

Maximum reliability due to Multi Sensor Control, Flow Manager and Pack Pilot



Simple and intuitive operation via the Multitouch display with HMI 3 user interface

Very high output due to the innovative X-tool die system

Highly reliable tray transport thanks to compact belt systems with servo drives



Automatically labelled on a
L 310 Full Wrap Labeller

Full wrap labelling - particularly sustainable when it comes to tray closure

On trend for fruit and vegetable packaging: Single-origin recyclable packs made from paperboard or cardboard. They are gradually replacing the usual plastic trays, which usually have an additional pillow pack, or are wrapped in stretch film or netting. Full wrap labelling from MULTIVAC offers you a sustainable and high-quality solution for plastic-free packaging concepts. Thanks to our wraparound label, packs can be securely sealed and branded at the same time with the same label. The packs are not only impressive at the point of sale with their attractive presentation, they also guarantee a high level of acceptance. Consumers are increasingly reaching towards recyclable packs.

Wide range of label shapes

Virtually all shapes can be considered for full wrap labels, since they are "held" by the backing paper during the labelling process. Labels with curves or cut-outs, for example, are possible, which means they can be matched to the shape of the particular product or pack. Adhesive-free zones can also be designed into the labels, as well as printed areas on the back of the label, so that the usable surface can be increased still further. And perforations in the label can be used as an opening aid. As you can see, there are virtually no limits to the ways in which you can differentiate your products at the point of sale.

Wide range of materials

A wide range of materials is available for producing self-adhesive labels. This is much larger than the materials used for other labelling solutions, since the backing paper (liner) performs a stabilising function. Leading label manufacturers have already established comprehensive recycling programs for the disposal of label backing paper.



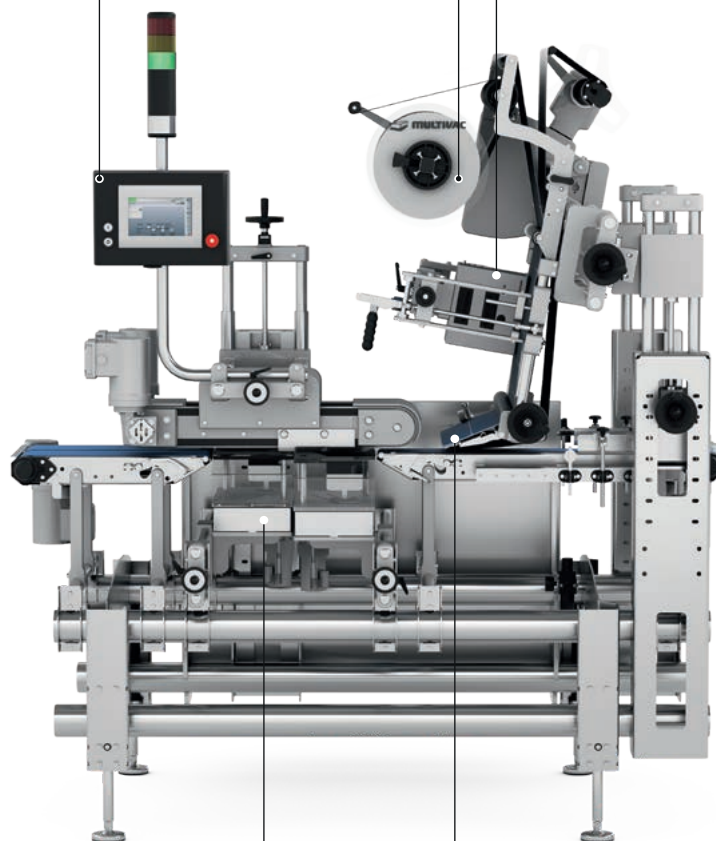
Labelling quickly and flexibly

MULTIVAC conveyor belt labellers apply labels very accurately to a wide range of packs. They prove to be highly flexible when it comes to label positioning, product handling, printing and inspection. They can be integrated seamlessly into existing filling or packaging lines, and they can also be used as a stand-alone solution with manual product infeed. Their modular design enables them to be ideally adapted, both technically and economically, to labelling tasks of every kind.

Control terminal with
HMI 2.0 user interface

High-capacity label roll

Printer for versatile
printing of labels



Label press-on unit with
servo drive

Label dispenser for
label strip width up to
500 mm

You too can benefit from the advantages of MULTIVAC conveyor belt labellers:

- Very versatile for fully automatic C and D labelling, as well as additional top and bottom labelling
- Very high labelling speed of up to 150 packs/min.
- Maximum labelling accuracy due to precise guidance of the packs
- Simple operation via the intuitive MULTIVAC user interface
- Convenient adjustment units for quick conversion to other pack formats and label sizes
- Large range of options for individual machine configuration
- Capable of being upgraded with additional label dispensers or modules for pack and print inspection



Thermoformed packs



Trays



Clamshells



Oval trays



Conical pots

Inspection systems for product and pack inspection

Brand protection and consumer safety are gaining ever more importance. Thanks to MULTIVAC's innovative inspection systems, you can provide efficient quality control, as well as ensuring your pack and its labelling or printing are faultless. From foreign object detection to weight checking and right up to final pack inspection, we can offer you a wide range of solutions for meeting statutory regulations and maintaining the highest quality standards.

You too can benefit from the advantages of MULTIVAC inspection systems:

- Efficient automatic quality control of all packs
- Reliable identification of incorrect-weight or otherwise faulty packs
- Various inspection processes can be combined in one unit
- High level of reliability and longevity
- Seamless integration into automated lines

Weight checking

MULTIVAC checkweighers are available in different weight ranges and versions:

- Checkweigher
- Checkweigher with metal detector
- Integrated ejection devices



Metal detection

MULTIVAC offers IFS-compatible, space-saving and highly efficient solutions for detecting contamination by magnetic and non-magnetic metals:

- Metal detectors
- Integrated ejection devices



X-ray inspection

X-ray inspection systems detect metallic and non-metallic foreign objects, such as stones, glass or bones. They can also be used for checking the completeness of the pack content. Packs containing metallic components, such as clips etc, can also be inspected using X-ray inspection systems.

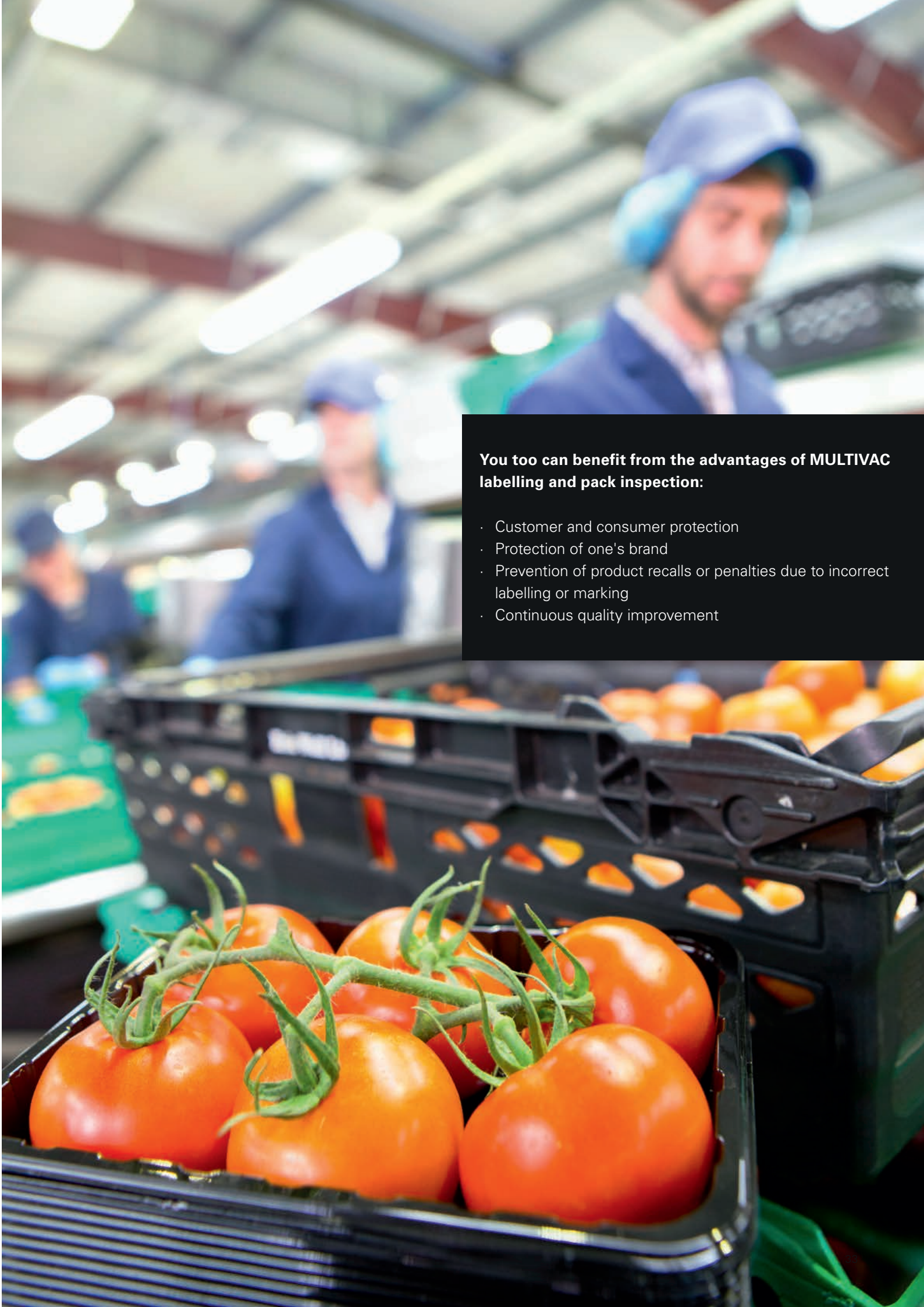
MULTIVAC X-ray inspection systems satisfy the stipulations of national and international standards on food safety, such as HACCP, IFS and BRC.



State-of-the-art label and pack inspection

Visual inspection systems for label, marking and pack inspection can be integrated into MULTIVAC labelling and marking systems, or they are designed as stand-alone inspection solutions with a separate transport conveyor. Packs outside the tolerance range can be automatically ejected from the line. And there are even more possibilities: Camera-based systems can for example check, whether a product is positioned correctly in the pack, or whether a pack is completely filled.

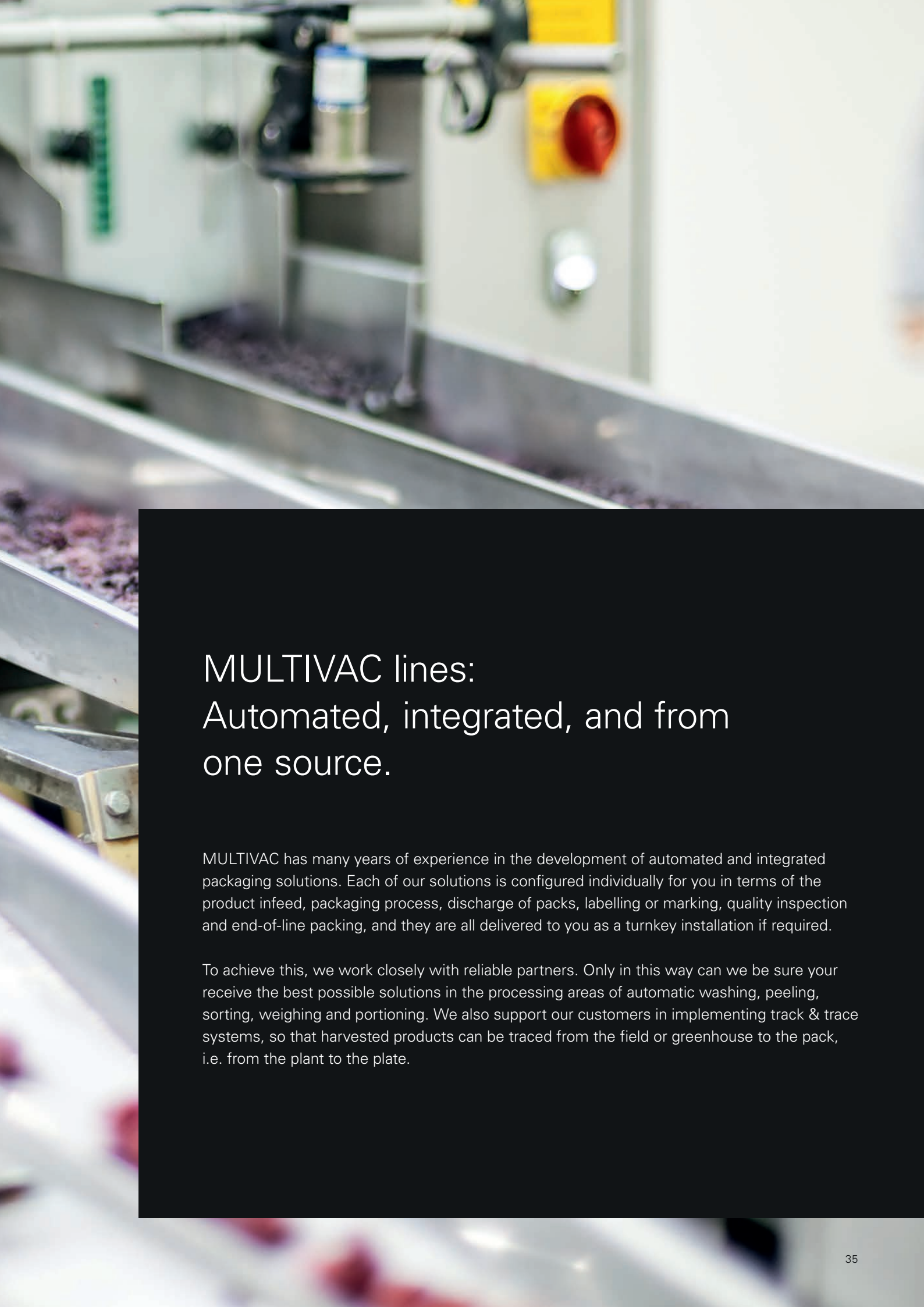


A blurred background image of a factory or processing plant. In the foreground, there are several black plastic crates filled with ripe, red tomatoes with green stems. In the background, a worker wearing a blue uniform and a blue cap is visible, looking towards the camera. The scene is brightly lit with overhead industrial lights.

You too can benefit from the advantages of MULTIVAC labelling and pack inspection:

- Customer and consumer protection
- Protection of one's brand
- Prevention of product recalls or penalties due to incorrect labelling or marking
- Continuous quality improvement





MULTIVAC lines: Automated, integrated, and from one source.

MULTIVAC has many years of experience in the development of automated and integrated packaging solutions. Each of our solutions is configured individually for you in terms of the product infeed, packaging process, discharge of packs, labelling or marking, quality inspection and end-of-line packing, and they are all delivered to you as a turnkey installation if required.

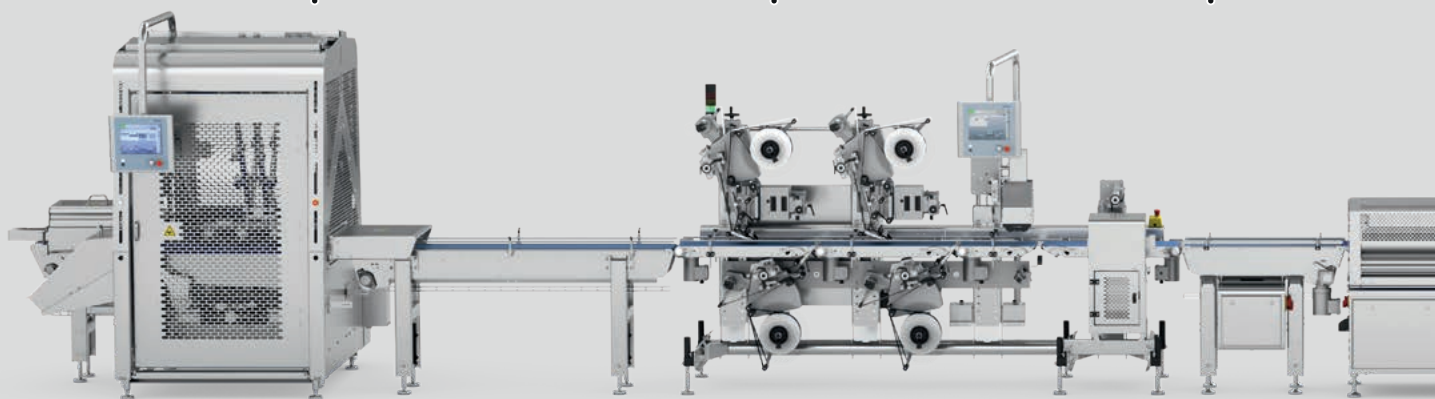
To achieve this, we work closely with reliable partners. Only in this way can we be sure you receive the best possible solutions in the processing areas of automatic washing, peeling, sorting, weighing and portioning. We also support our customers in implementing track & trace systems, so that harvested products can be traced from the field or greenhouse to the pack, i.e. from the plant to the plate.

MULTIVAC lines: Automated, integrated, and from one source.

Handling module
for loading into boxes

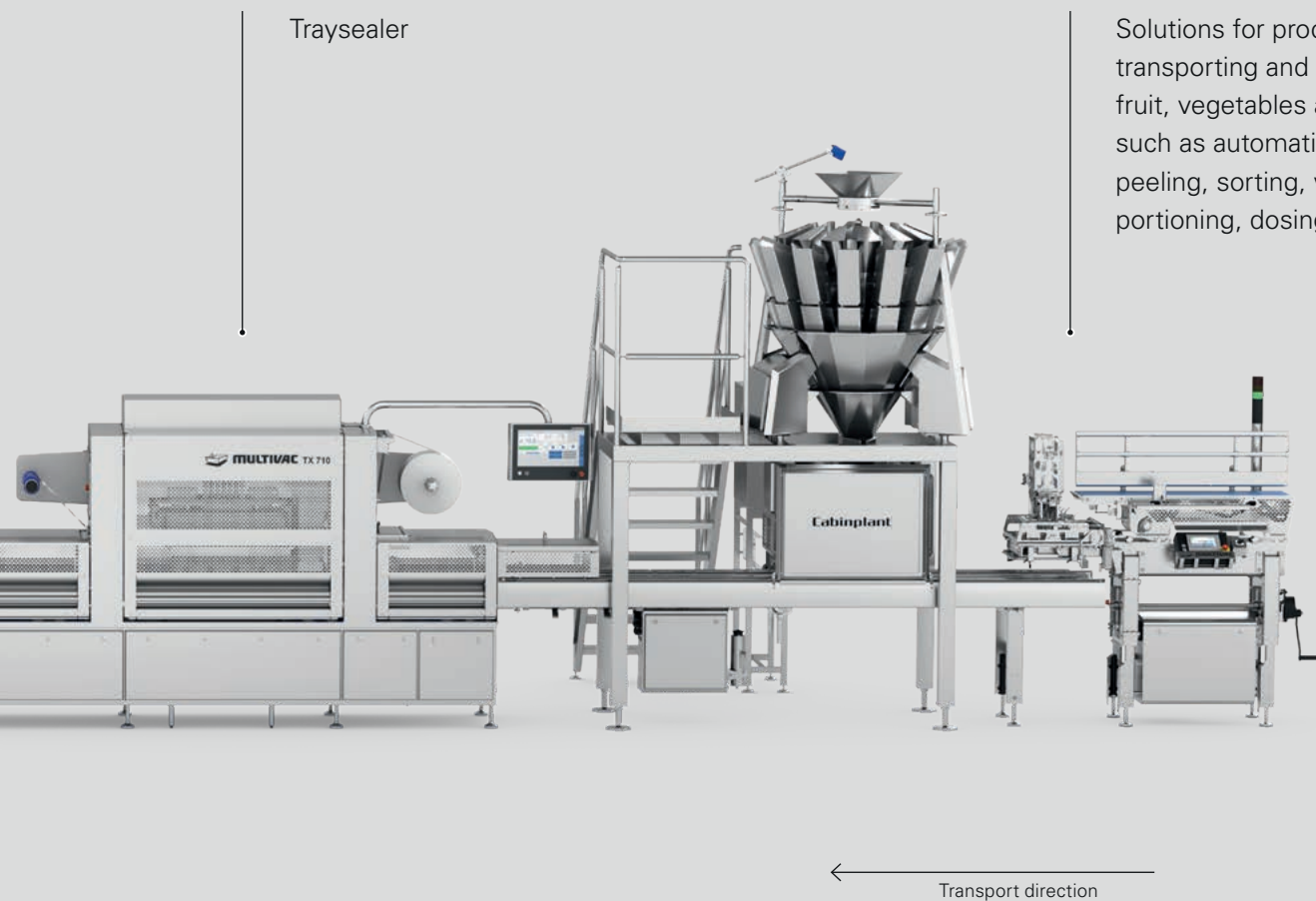
Conveyor belt labeller

Checkweigher with metal
detector



You too can benefit from the advantages of automated and integrated MULTIVAC solutions:

- Synchronisation of all line components
- Simple control of all line elements via one unified user interface
- Increased efficiency of the entire process
- Simplified product changeover
- Reliable product transfer
- Higher level of process reliability
- Seamless traceability at pack level
- Saving of recipe data at line level
- Uniform process qualification





MULTIVAC is there for you on-site, worldwide.

Our sales and service network comprises more than 85 subsidiaries. We are present on all continents and in all important markets. At all times and in all places, more than 1,000 consultants and service technicians will offer you expert advice and a comprehensive range of services covering all areas of packaging, as well as support you on your way to the best possible and most efficient overall solution. Our technical service, combined with rapid availability of spare parts, ensures all MULTIVAC machines installed worldwide are at maximum readiness.





www.multivac.com



MULTIVAC is part of the R-Cycle initiative across all companies.
The common objective is to drive forward the loop system for plastic
packs, based on an open and globally applicable tracing standard.



MULTIVAC supports the BLUE COMPETENCE Initiative of the Association
of German Machinery and Equipment Manufacturers (VDMA)

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