

Thermoforming packaging machines

Food



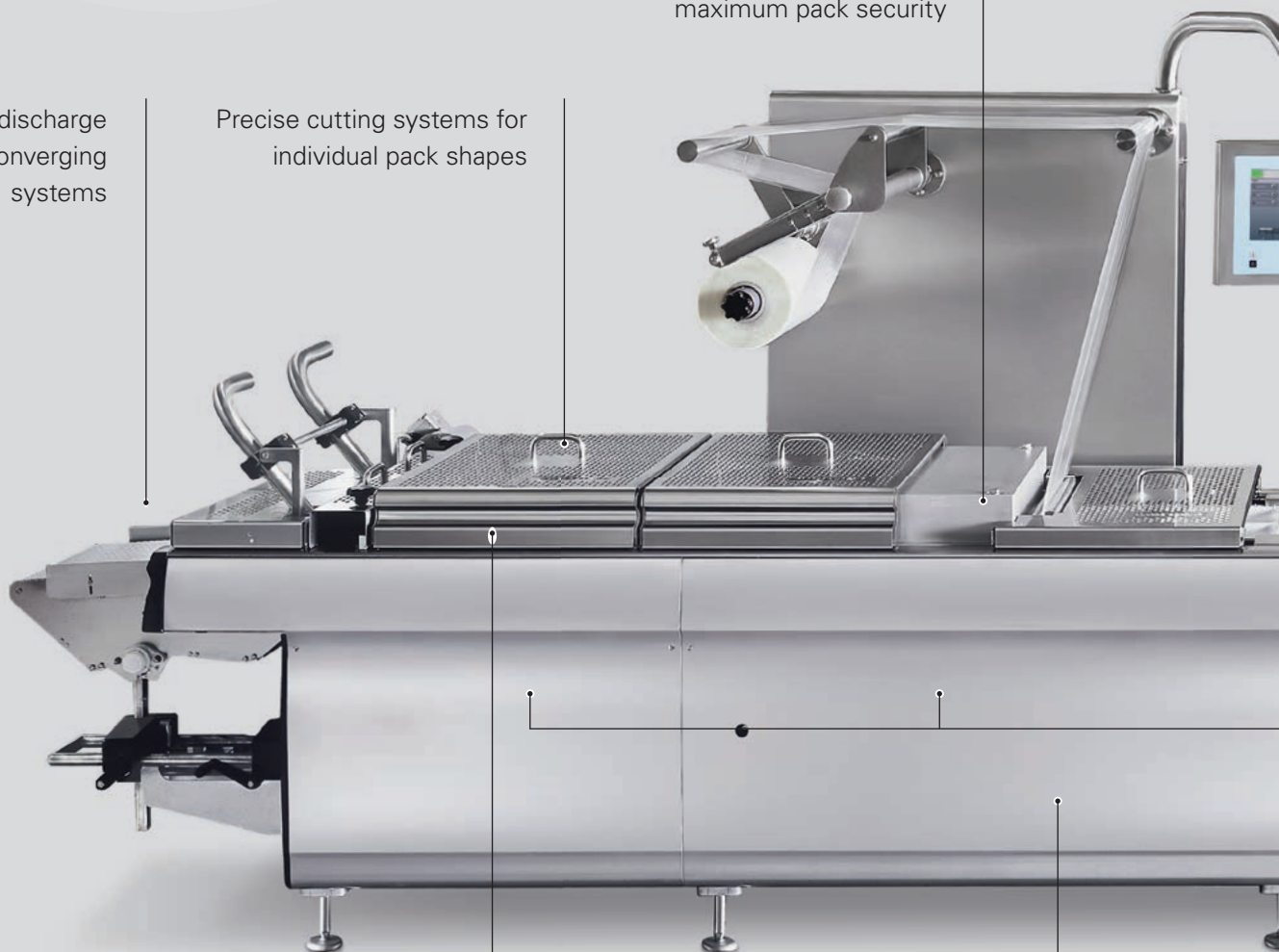
MULTIVAC is the leading manufacturer worldwide of thermoforming packaging machines for food. We deliver over 1,000 thermoforming packaging machines every year throughout the world. Each of these machines is individually designed to the customer's requirements in terms of pack design, output and efficient use of resources. Reliability, durability and a comprehensive service make MULTIVAC a resilient link in your production chain.

Better packaging with MULTIVAC thermoforming packaging machines

Reliable discharge
and converging
systems

Precise cutting systems for
individual pack shapes

High seal seam quality for
maximum pack security



Maximum operator safety due to
comprehensive protective devices

Easily removable
panelling

MULTIVAC benefits

- High production output and pack quality
- Individually tailored solutions
- Maximum output with the minimum footprint
- Process reliability
- Long service life
- MULTIVAC Hygienic Design™
- Innovative technologies to reduce the consumption of packaging materials and energy
- Wide range of configurations and upgrades
- Complete supply for packaging lines

Simple operation and
production data acquisition

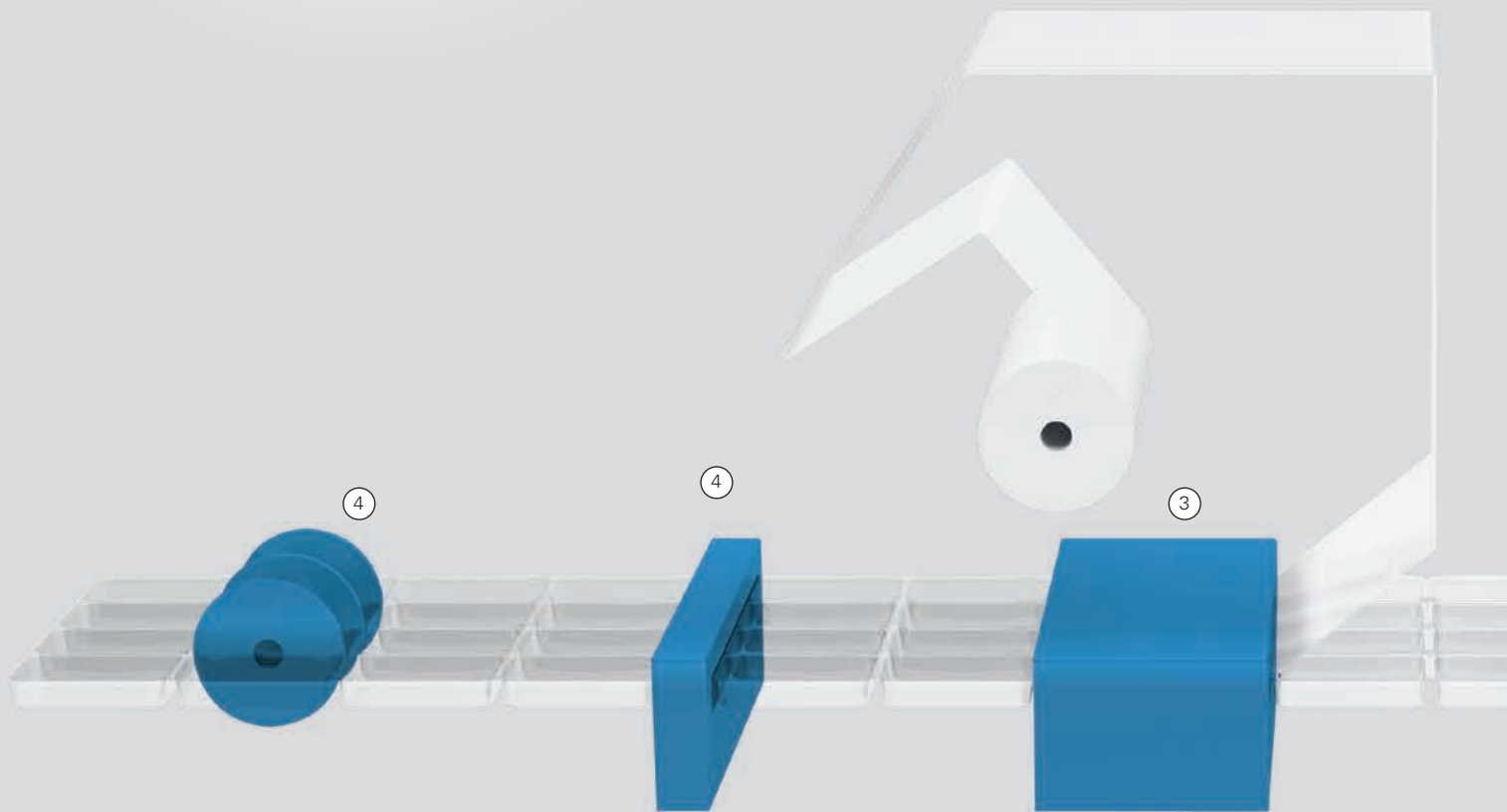
Variable loading area

Options for
optimised film change



Thermoforming packaging is a recipe for success

In 1966 MULTIVAC built the first thermoforming packaging machine for food packs. Today, machines of this type can produce multiple variations of the production output of that first machine, and they can be cleaned particularly reliably thanks to their stainless steel construction, as well as being able to produce very individual pack shapes. But the basic principle of its function remains the same now as before.



① **Forming station**

The lower web is made formable in the forming station by the effect of heat, and it is then thermoformed by means of compressed air and vacuum. If required, this process can be aided by the use of forming plugs.

② **Loading area**

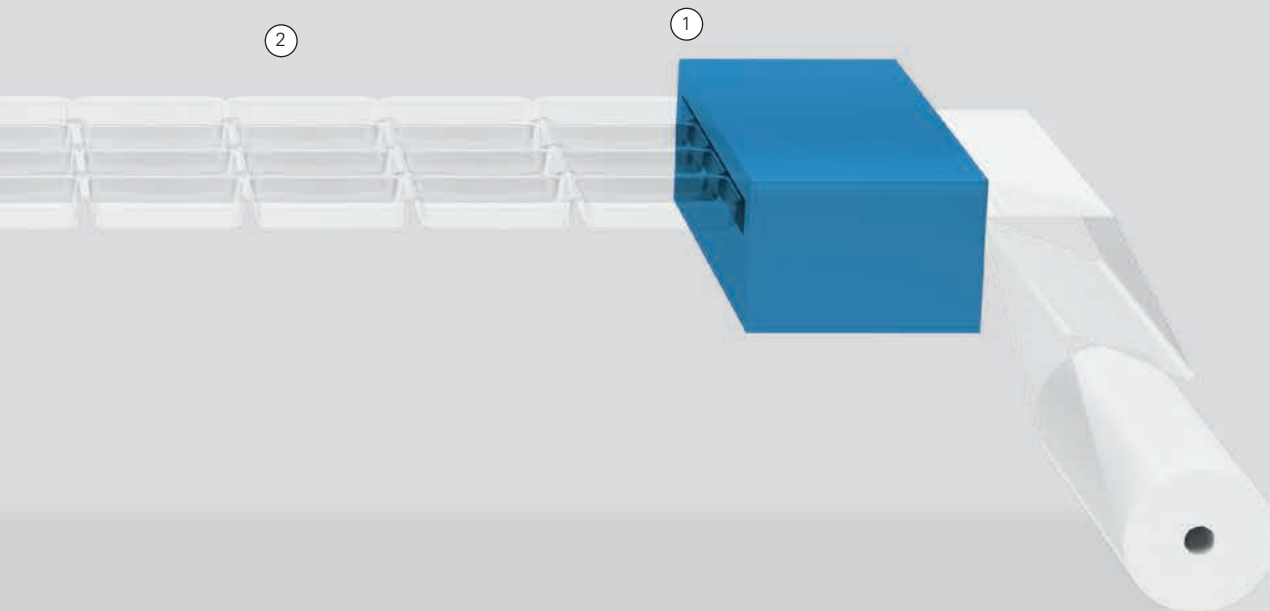
The thermoformed pack cavities can be filled manually or automatically in the loading area.

③ **Sealing station**

The upper web is applied to the filled pack cavities in the sealing die. The upper and lower webs are sealed hermetically to each other by means of a seal seam.

④ **Cross cutting and longitudinal cutting units**

The cross cutting and longitudinal cutting units sever the individual packs from the strip of packs in the web.



Machine classes

What are your requirements of a thermoforming packaging machine? A small footprint? Quick format change? Special pack shapes? Maximum cycle output? Highest level of efficiency? MULTIVAC offers a uniquely wide range of machines to meet your ideal requirements.



	R 0XX	R 1XX
	Thermoform packaging in limited spaces	Compact machines for standard packs
Output	★ ★ ★ ★ ★ Small batches	★ ★ ★ ★ ★ Small to medium-sized batches
Equipment options	★ ★ ★ ★ ★	★ ★ ★ ★ ★
Pack types	Rectangular, 12 basic formats 	Rectangular, Basic formats and freely definable formats  
Film types	flexible film, rigid film	Flexible film, rigid film
Skin packaging	–	MultiFresh™, FormShrink, Isopak
Film widths	220, 285, 320 mm	250, 285, 320, 355, 420, 459 mm
Special widths	–	–
Maximum forming depth	80 mm	130 mm
Cut-off lengths (without preheating)	200, 240, 270, 300 mm	< 500 mm
Die changing system	With slide-in tooling	Manual, with changing system
Forming systems	Standard	Standard Plug



R 2XX

Largest range of packs
and high output

★★★★★

Larges batches.
fast product change

★★★★★

Rectangular and round,
Basic formats and
freely definable formats



Flexible film, rigid film, aluminium
multi-layer film, foam materials

MultiFresh™, FormShrink, Isopak

320, 355, 420, 459, 560 mm

220 – 560 mm (in 5 mm steps)

150 mm

< 700 mm

Drawer system, automated

Standard
Plug
Posiform
Upper web

R 5XX

Highest output in
automated packaging lines

★★★★★

Very larges batches.
fast product change

★★★★★

Rectangular and round,
Basic formats and
freely definable formats



Flexible film, rigid film, aluminium
multi-layer film, foam materials

MultiFresh™, FormShrink, Isopak

320, 355, 420, 459, 560 mm

220 – 830 mm (in 5 mm steps)

230 mm

< 1,300 mm

Drawer system, automated

Standard
Plug
Posiform
Upper web

Special machines

Thermoforming packaging
machines for special applications

- Fresh meat (R 515)
- Stacked sliced products (R 685)
- Bacon (R 595)
- New development of
customised thermoforming
packaging machines



Large range of packs

The diversity of food and its forms of presentation are continually increasing on the supermarket shelves. Running parallel with this is the range of pack types and materials. This wide range of packs can be produced reliably and efficiently on MULTIVAC thermoforming packaging machines. We design your machine individually to your requirements.



Packaging materials

All conventional films made of plastics or other materials can be run on MULTIVAC thermoforming packaging machines. We cultivate an intensive exchange of experience with all the leading film manufacturers. We also make our Innovation Center available to them for carrying out tests on materials.

- Mono and composite films
- Flexible films and rigid films
- Unprinted and printed films
- Skin films
- Aluminium composite film
- Films made of fibre composite materials
- Films made of renewable raw materials
- Temperature-resistant films



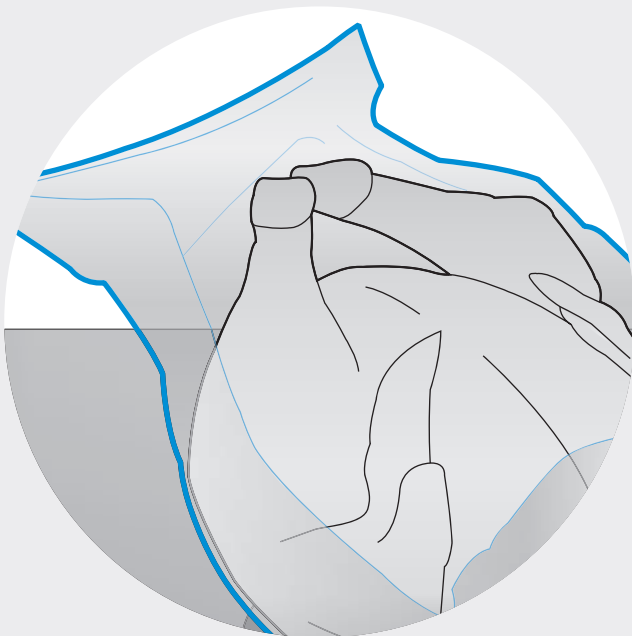
Cooking and baking packs

Mylar® COOK and Mylar® BAKE

Thermoformed packs made from Mylar® COOK or Mylar® BAKE films can be used within a temperature range of -60 to +218 °C. This means that the packed food can be stored chilled or frozen, and it can be cooked in the oven or in the microwave.

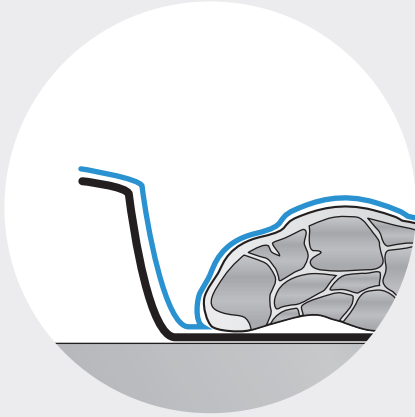
The moisture and aromas in the food are retained during the cooking in the sealed pack. After the pack has opened automatically in the oven when a defined pressure is reached, the browning process then starts.

Mylar® COOK films are optimised for protein-containing food, Mylar® BAKE films for the cooking of bakery products. These films are available exclusively from MULTIVAC.



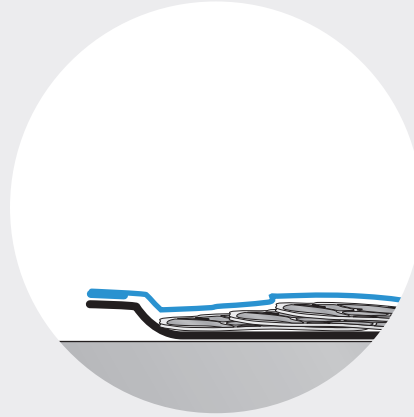
Chicken in a cooking pouch: Thanks to Mylar® COOK film, the product is successfully cooked with minimum effort and maximum aroma.

Skin packs, shrink packs



MultiFresh™

In the case of MultiFresh™ vacuum skin packing, a special skin film is used, which envelops the product without tension like a second skin, and which seals all over to the lower web. The upper web passes through a heating station to activate the film properties, and it is then pre-stretched in the sealing die.



Isopak

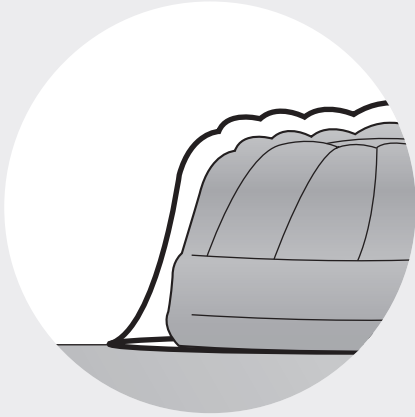
With the Isopak process the upper web envelops the product tightly like a skin, and it is sealed to the lower web with a peripheral seal.



FormShrink

The FormShrink process uses special, extremely shrinkable thermoforming films. The finished packs pass through a shrinking unit. The shrink properties of the film are activated by the heat effect of the hot water, and the film then lies tightly around the product.

Modified atmosphere packaging



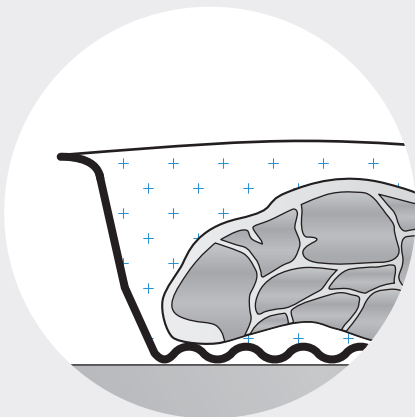
Natural atmosphere

The technically simplest solution is packing without modified atmosphere. These packs protect the product, but do not have any properties which extend shelf life.



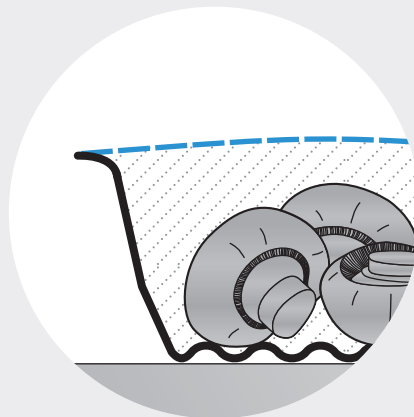
Vacuum

Packing under vacuum extends the shelf life of products, since the biochemical degradation of the product is slowed down by the removal of the atmosphere. Since the products are compromised during the procedure, vacuum packs are only suitable for foods, which are not sensitive to pressure.



Modified atmosphere (MAP)

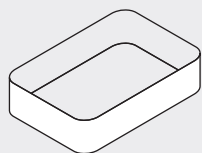
In the case of packs with modified atmosphere, the atmosphere in the pack is replaced with a gas mixture, which is matched to the product. This usually consists of carbon dioxide, nitrogen and oxygen.



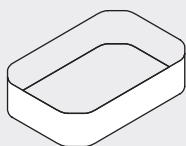
Equilibrium atmosphere (EMAP)

The permeability of the upper web is matched to the respiration rate of the product by means of micro-perforation. This enables an equilibrium atmosphere to be established, which extends the shelf life of sensitive, respiring products such as fruit, vegetables, salads and herbs.

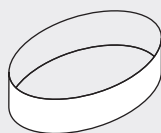
Pack types



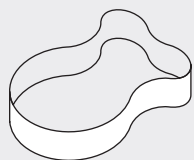
Rectangular



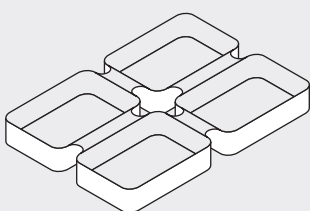
Multi-sided



Round, oval



Freely selectable
shape

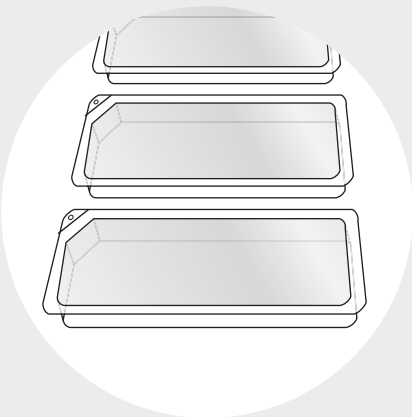


Multi-pack

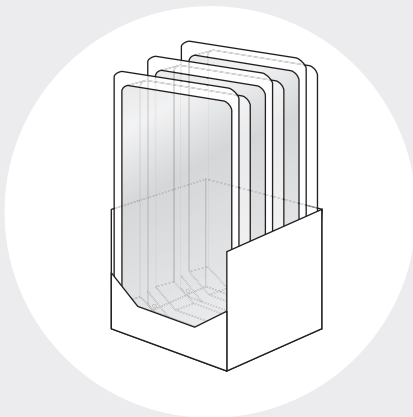


Pack presentation

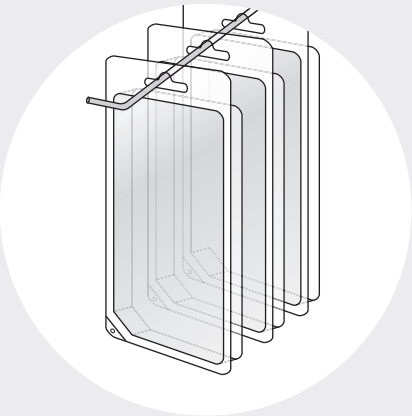
We can offer you different types of product presentation: the standard type is the horizontal pack. But you also receive tailor-made solutions, if you require packs which are to be presented in a stand-up or hanging format.



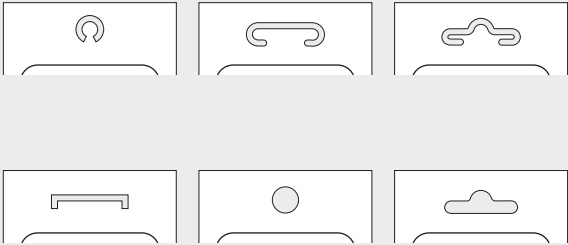
Horizontal



Stand-up



Hanging



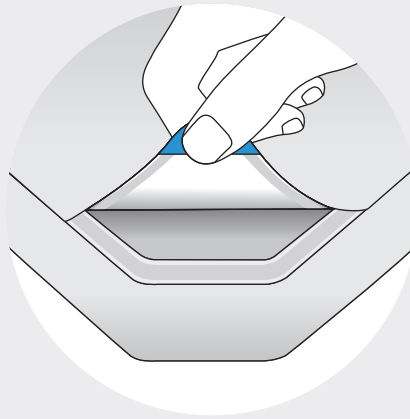
Hanger slots and hanger holes as required

Opening aids



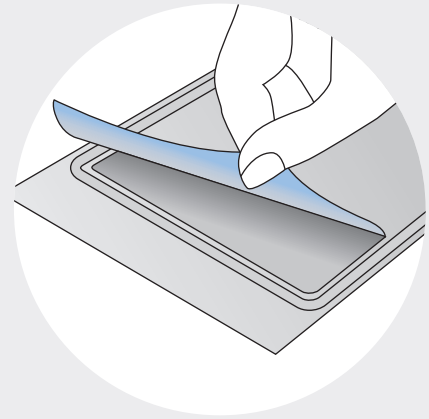
Peel corner

The seal seam at the peel corner is set back slightly with a larger radius. The loose upper web tab, which is created in this way, is lifted up by a raised bump in the lower web. This enables the tab to be gripped easily and the pack to be opened.



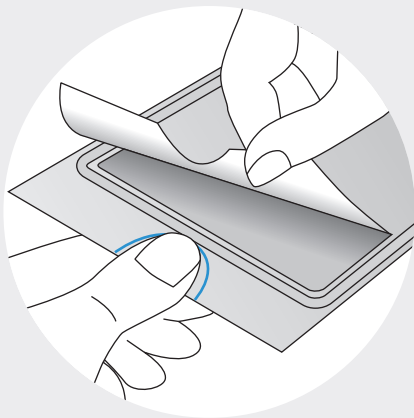
Lower web corner cut

When the pack is opened, the corner piece of the lower web is pulled off with the upper web. This means the corner is easy to grasp. This opening aid is produced technically by making a cut in the lower web.



Tear tab

A tear tab is an unsealed area, which extends across the whole width of the pack, and this enables the tear tab to be conveniently gripped.



Thumbhole

The thumbhole is a version of the tear tab, in which a thumb-sized semi-circle is punched out of the upper web.



Tear slit

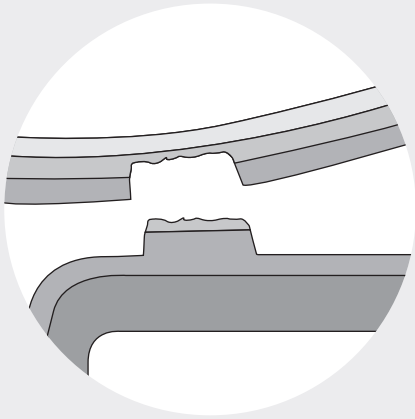
A small cut in the edge of the pack, which extends up to the seal seam. To open the pack, one tears it open at the slit.



Serrated cut

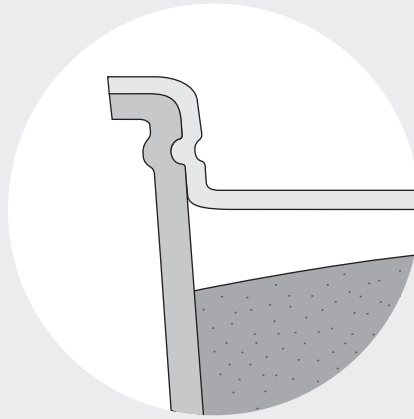
The notched serrations work as predetermined breaking points, where one can tear open the pack.

Reclosure systems



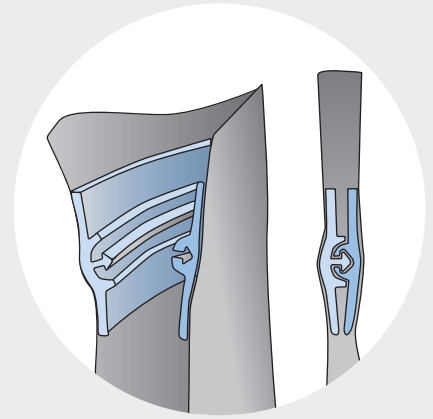
Peel-Reseal film

The peel layer, which is embedded in the upper web, enables the pack to be peeled open easily. After the product has been removed, the pack is sealed again by stroking the upper web over the seal seam. An adhesive layer in the upper web provides this reseal feature.



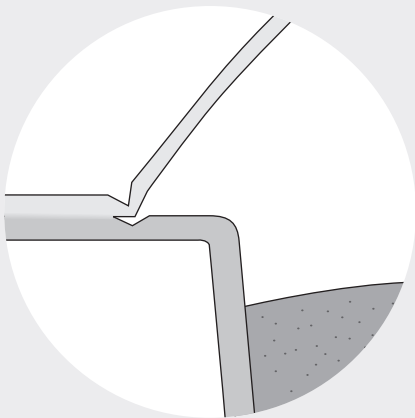
Reclosure lid which is formed in-line

A longitudinal groove is formed in the lower section of the pack, and an identical but raised version is made in the lid, which is formed downwards to sit inside the pack. This ensures that both profiles fit into each other perfectly and hold together after the pack has been reclosed.



Zip seal

The zip seal is either closed by pressing and locking it in, or pulled closed by means of an integrated zipper slider. A perforation and an additional seal seam create the tamper evident feature to the package. The zip seal is applied to the pack in-line on the machine.



Hinged reclosure lid

The lid can be peeled open, but it remains adhered to the trailing edge of the pack by means of a permanent seal. A groove in the lower web – to give a hinge effect – enables the lid to be easily opened for unrestricted and repeated removal of the product. To ensure reclosure of the pack, a longitudinal groove is formed in the pack bottom section and a matching raised version in the lid.



Higher output, less consumption

MULTIVAC machines are designed for an efficient packaging procedure. In addition to this however, we offer options for further increasing efficiency and for maximum packaging performance, as well as for minimum consumption of film, energy and water.

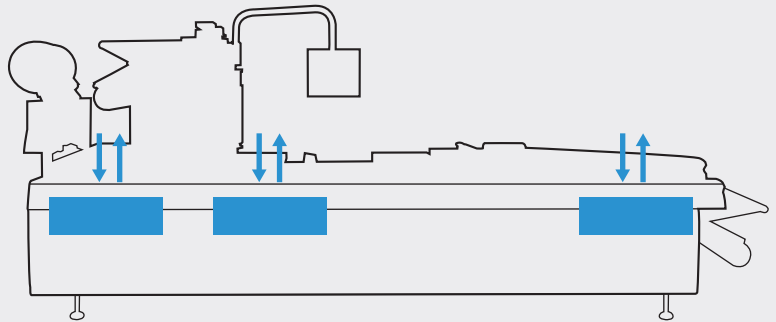
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Options for a reduction in the film thickness	28
Options for reduced energy consumption	30
Options for reduced water consumption	31

Options for quicker format change

The greater the number of different pack formats which are produced on one machine, the more critical quick format changes become. We would be very pleased to give you expert advice, so that you can find the ideal solution.

Standard format change

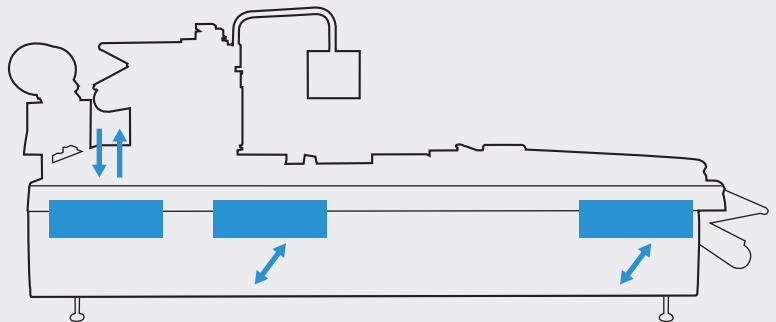
Manual change of the forming and sealing dies as well as cutting tools. Access from above.



Format change with drawer system

The forming and sealing stations are equipped with a drawer for a faster format change.

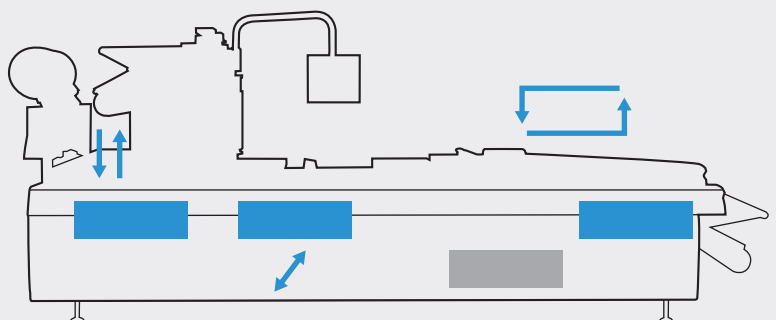
Time saving:
75 percent



Automatic forming plate change

A second forming plate can be put in at the press of a button.

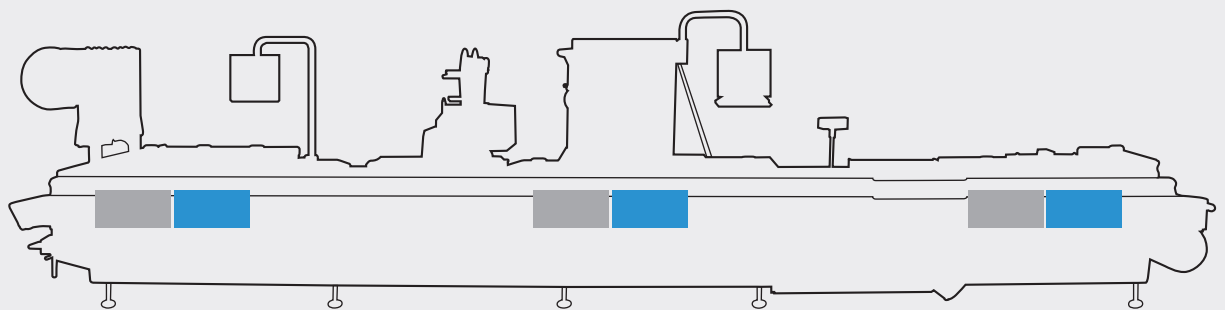
Time saving:
80 percent



Multi-format layout

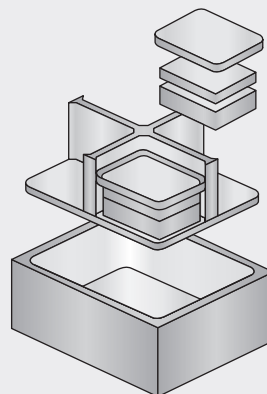
Forming and sealing dies, as well as cutting tools, are designed in tandem format and can be activated as required.

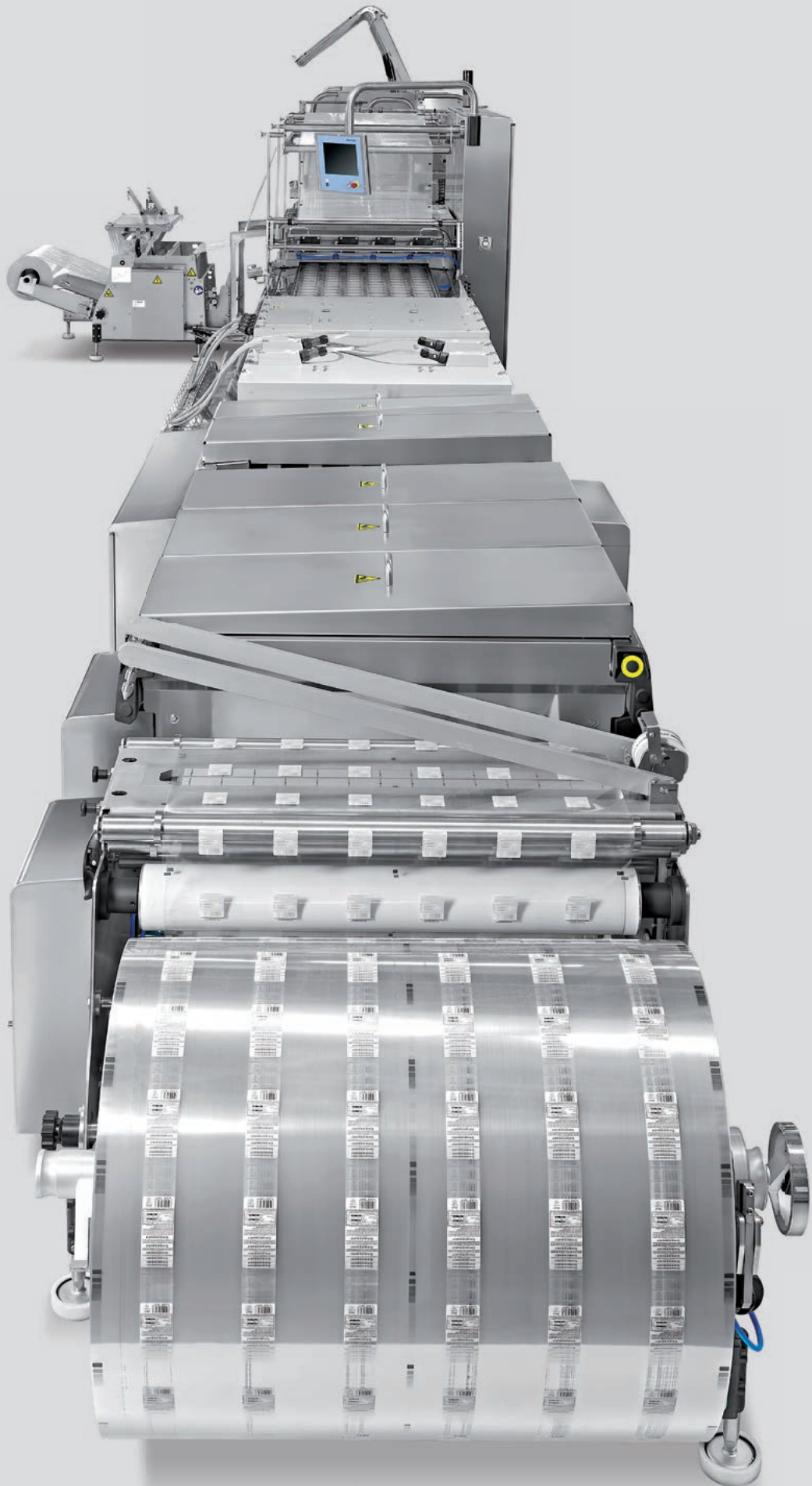
Changeover at the press of a button.



Vario dies

The proven MULTIVAC vario dies with variable format divisions make it very simple to convert to other pack sizes and forming depths.





Options for quicker film change

Tandem film unwind for film change without stopping the machine

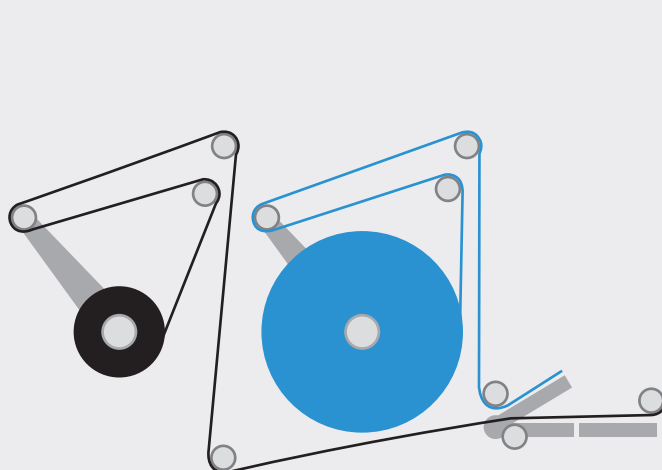
Downtime is avoided with a tandem film unwind. The system holds two web rolls. When the active web roll is used up, there is a short period of buffering at the very end of the web roll, so that the film on the second roll can be spliced. The packaging procedure can continue to run in this way without any downtime. The roll, which has been used up, can then be exchanged at your leisure with a new film roll.

The use of a splicing table simplifies this procedure, particularly in the case of thin films and register-printed films.

Jumbo film unwind

Jumbo film unwinds for upper and lower webs can take web rolls with a larger diameter, so that the running time of the web roll is up to four times longer. The result: less downtime, higher productivity.

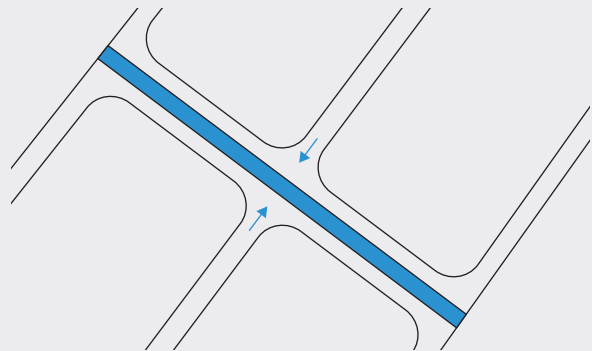
< Runs approximately four times longer: Thermoforming packaging machine with jumbo film unwind
✓ Tandem film unwind for film change without stopping the machine



Options for a reduction in the film surface

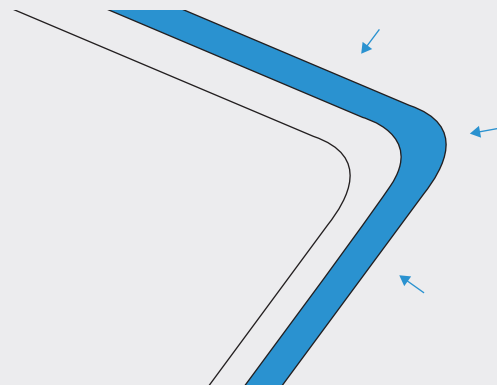
Reduction of the partitions between the packs

The new design geometry of the strip punch with its segmented cutting tool enables the partitions between the individual packs in the running direction to be narrower. The use of a servomotor-operated positioning device at the sealing station also contributes to the reduction of these partitions between the packs.



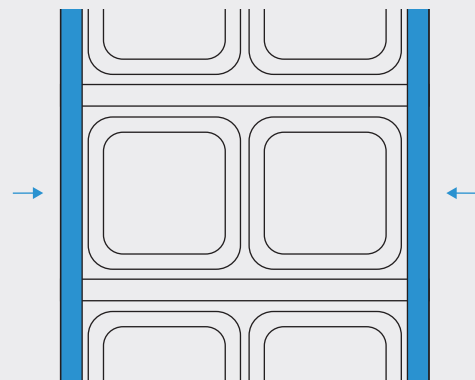
Reduction of the sealing flange

The use of innovative die geometry enables the sealing flange to be reduced.



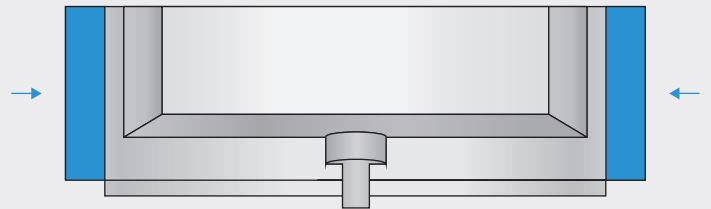
Reduction of the edge trim width

The edge trim width can be minimized due to a new solution for evacuation and gas flushing in conjunction with new die geometry.



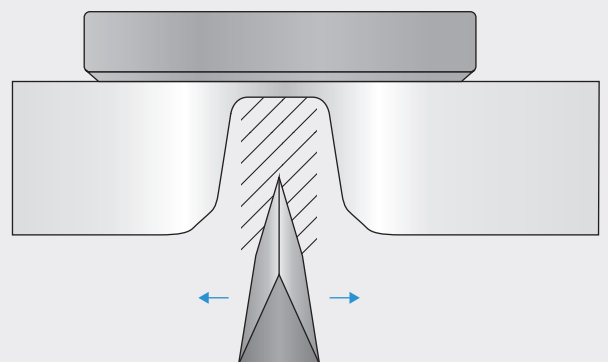
New die geometry

Dies are always larger than the actual pack shape. The larger this excess surface, the more film trim arises. Thanks to new die geometry with a minimized surface, it is possible to reduce the film consumption.



Sealing dies and cutting tools, which move on a cycle basis

The thermoforming process is based on thermoplastic forming, and it is by its nature subjected to minimal variations. To ensure that reliable results are achieved during sealing and cutting, it is necessary to take tolerances into account. These tolerances mean more film consumption. Our moving sealing dies and cutting tools (strip punch) position themselves on a cycle basis to correspond to minimal variations in pack length. This enables the width of the partitions between the packs to be reduced by almost a half.



Options for a reduction in the film thickness

Reduced film thickness by means of explosive forming or plug forming

The volume of packaging material can be significantly reduced by the use of thinner films. The challenge lies in maintaining the integrity of the pack. By using alternative forming processes such as explosive forming and plug forming, thinner films can be run while preserving the same pack result.

In the case of explosive forming, a faster pressure build-up and larger airflow volumes are used. The film is distributed evenly in the thermoforming die and achieves a better formed shape. Films, which are up to 15 % thinner, can be run in this way without any reduction in quality.

In the case of plug forming, a mechanical plug aids the thermoforming process. This enables film to be used, which is up to 25 % thinner than that used with standard forming.

Small film thickness thanks to a stabilising pack design

A modified pack design with stabilising ribs increases the rigidity and robustness of the pack, and this enables thinner films to be used, which means savings in film.

✓ The ribbed structure gives the pack more stability



Options for reduced energy consumption

80 % energy saving through efficient servo drives

The lifting units in a thermoforming packaging machine for the forming, sealing and cutting stations are significant energy consumers. With the use of energy-efficient servo motors here instead of pneumatic drives, the energy consumption in this area can be reduced by up to 80%.

Forming process with reduced compressed air consumption

Measures such as preheating without compressed air, the use of a servo-motorised plug, and a reduced compressed air usage during forming enable compressed air consumption to be reduced by up to 25 %.

MULTIVAC MVP vacuum pump

The MULTIVAC MVP vacuum pump offers up to 40 % lower energy consumption. It is also characterised by its high suction performance, compact construction and MULTIVAC Hygienic Design™.

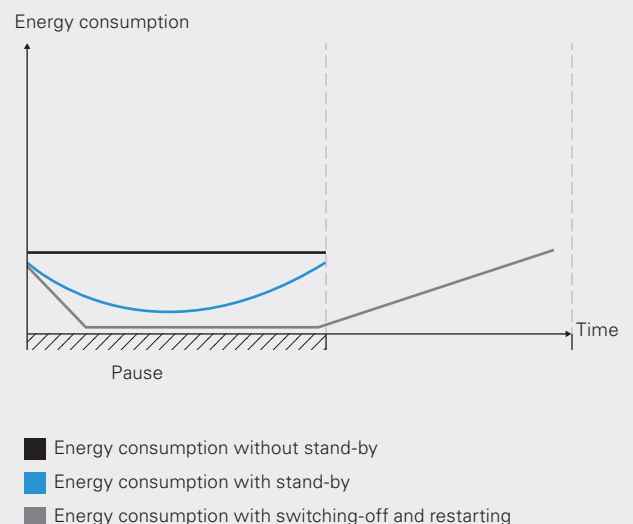
Stand-by mode

The stand-by function enables the energy consumption of the packaging machine to be significantly reduced during pauses in production.

▼ The powerful energy saver: MULTIVAC MVP vacuum pump



▼ The stand-by mode saves energy during pauses in production



Options for reduced water consumption

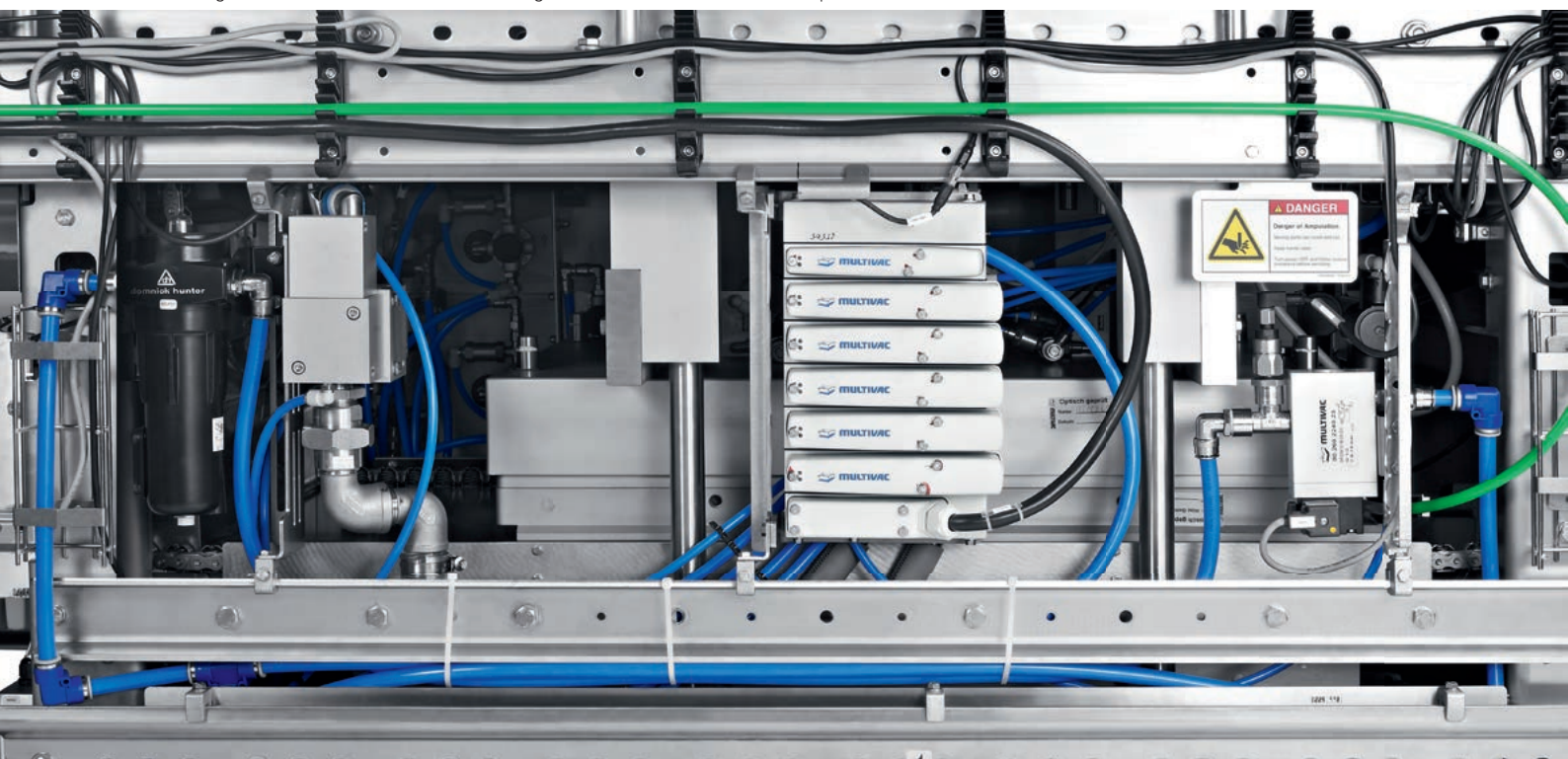
Cooling water flow control

A sensor measures the water temperature in the cooling water circuit. A valve for the cooling water flow is opened or closed depending on the cooling requirement. This reduces the water consumption by up to 50 %.

Closed cooling water circuit with water chilling unit

A water chilling unit enables a closed cooling water circuit to be used.
The machine does not require any fresh water for cooling.

✓ Cooling water flow control or a closed cooling water circuit reduce the consumption of fresh water – down to zero.





Upgrades and options

Labelling and marking systems, as well as inspection systems and the majority of the accessories for your packaging machine, are developed and manufactured by MULTIVAC itself. In this way we can guarantee first-class quality for each component, and also ensure that these modules fit organically into the overall system. We have illustrated our comprehensive retrofitting range in a separate brochure.

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Marking systems

MULTIVAC Marking & Inspection, our Center of Excellence for labelling, marking and inspection, offers a large selection of labelling and printing systems for in-line and stand-alone applications. Our specialists work together with you to develop the ideal solution for your requirements.

- Cross web labellers
- Direct web printer
- Conveyor belt labellers
- Link chain labellers
- Semi-automatic labellers

Inspection systems

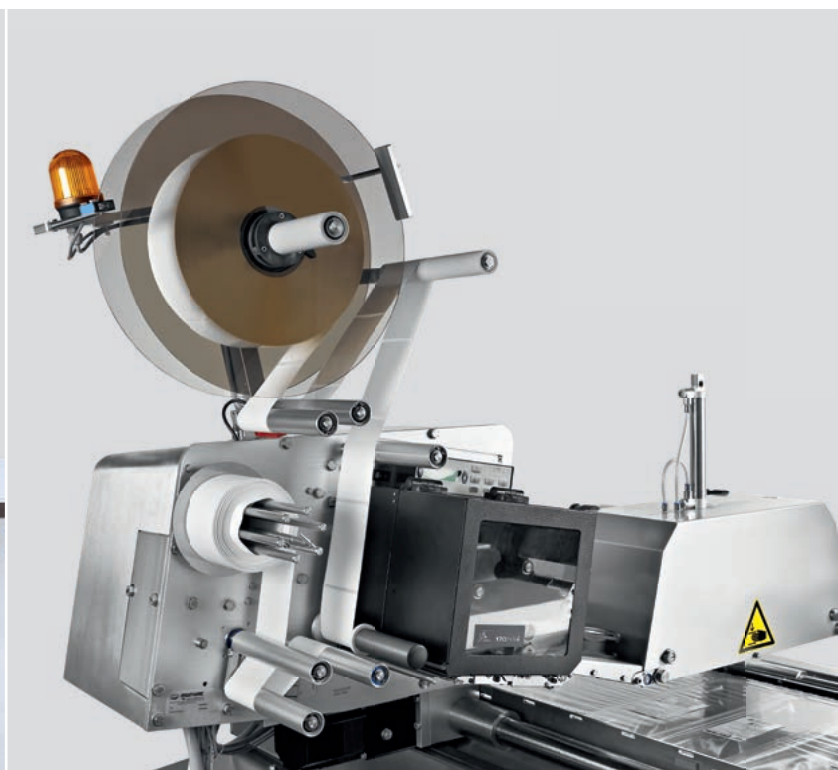
MULTIVAC Marking & Inspection also offers a comprehensive range of systems for the quality inspection of products and packs. These ensure that your products meet the highest quality and safety standards.

- Metal detectors
- Checkweighers
- X-ray inspection systems
- Seal seam scanners
- Visual inspection systems

▼ MULTIVAC metal detector



▼ MULTIVAC cross web labeller



MULTIVAC Track & Trace™

In order to provide seamless traceability of products, MULTIVAC Track & Trace™ ensures that there is batch-specific or individual marking of packs within the packaging procedure.

The data on product origin and processing is loaded via a scanner, and this data is fed to a labeller during the packaging procedure for each specific machine cycle. The labeller marks every single pack with an individually printed label, containing the desired information in the form of clear text, barcode or data matrix code.

✓ Scanning of product data



✓ Marking of individual cycles





Accessories for more ergonomics

So that your packaging procedures can be designed even more ergonomically, we offer a comprehensive range of accessories for your thermoforming packaging machines.

Suction unit for film trim

Automatic film suction significantly reduces the manual effort during disposal of film trim. The suction unit reliably removes film trim such as edge trim and centre trim, punch trim and granulated edge trim. As an optional version, the film container can be emptied without interrupting production.

Granulator for edge trim

The granulator for edge trim is placed between the thermoforming packaging machine and the suction unit. The holding capacity of the suction unit can be used to its optimum through a reduction in the mass of the edge trim.

Transport trolleys for rolls (Rollboy)

With its Rollboy and Jumbo Roll Trolley, MULTIVAC offers transport units for the simple and secure transportation of standard and jumbo web rolls. The Rollboy not only makes the transportation of web rolls easier, it also helps in changing the lower web.

Die changing trolley

The die changing trolley facilitates very simple and ergonomic die changes. It is mobile, lockable and can be used as a storage space.

Lifting trolleys for the transportation of film or dies

MULTIVAC offers lifting trolleys in various versions for the easy and convenient transportation of web rolls and dies, as well as for the simple positioning of these on the machine.



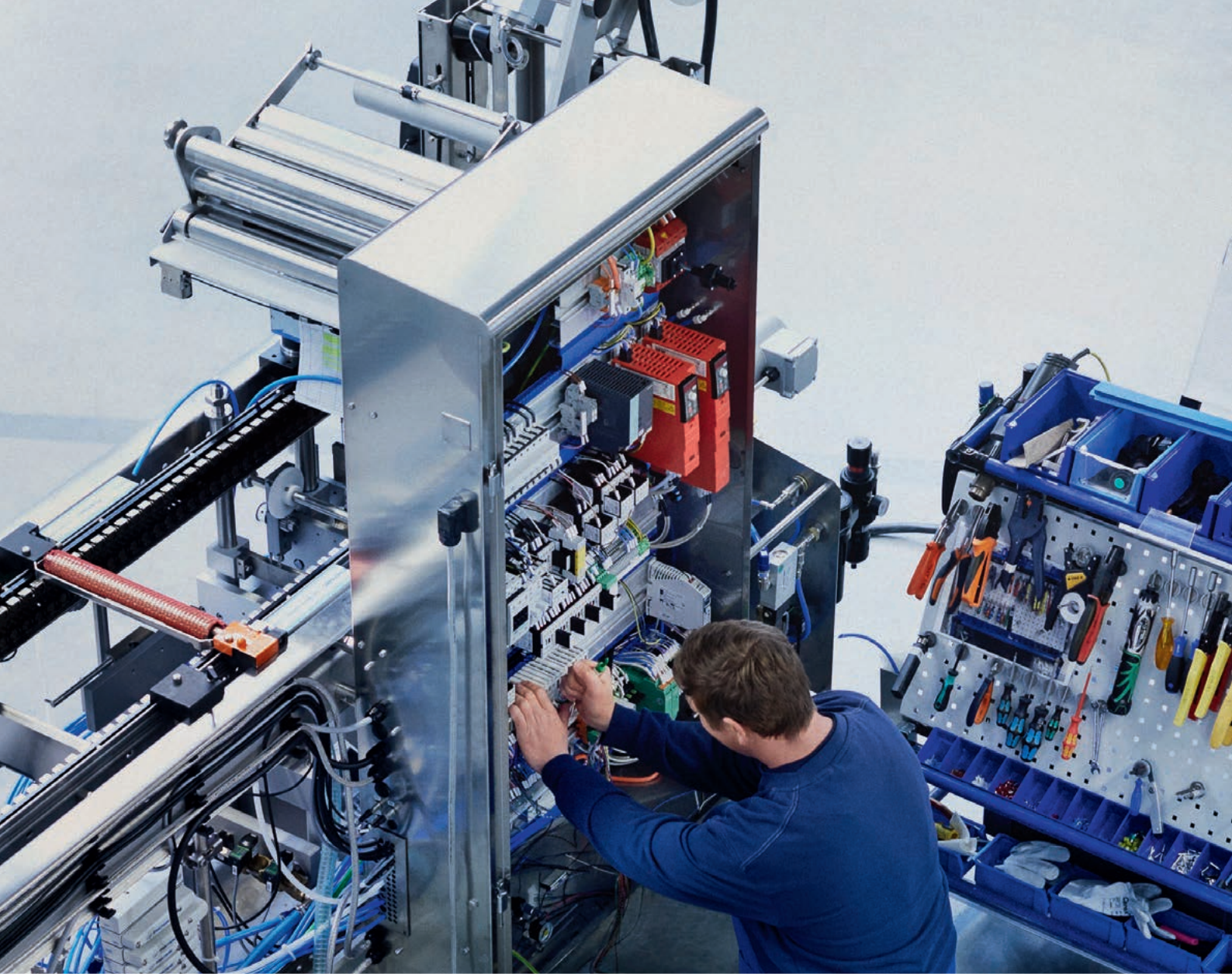
Better Packaging with MULTIVAC

More than half of all the thermoforming packaging machines sold worldwide, are manufactured and delivered by MULTIVAC. When you decide on MULTIVAC, you get individually tailored packaging solutions, reliability in your packaging procedure, the groundbreaking MULTIVAC Hygienic Design™, excellent service and, if required, a complete packaging line from one source.

Individually built for you

With MULTIVAC you get individually designed packaging solutions. Our wide and flexible product range enables us to supply a machine to you with the output, functionality and flexibility, which meet your requirements. Make use of our consultancy service and benefit from our experience in packaging, allowing you to receive the ideal machine configuration. Simply ask us!





When it comes to security, it means everything!

When we develop and manufacture our packaging solutions, our main goal is to ensure a fault-free and smooth packaging procedure for our customers.

MULTIVAC therefore offers

- a reliable machine design,
- maximum hygiene,
- simple operation,
- the acquisition and processing of production data,
- and the quick availability of spare parts and service.

Simple machine control with HMI 2.0

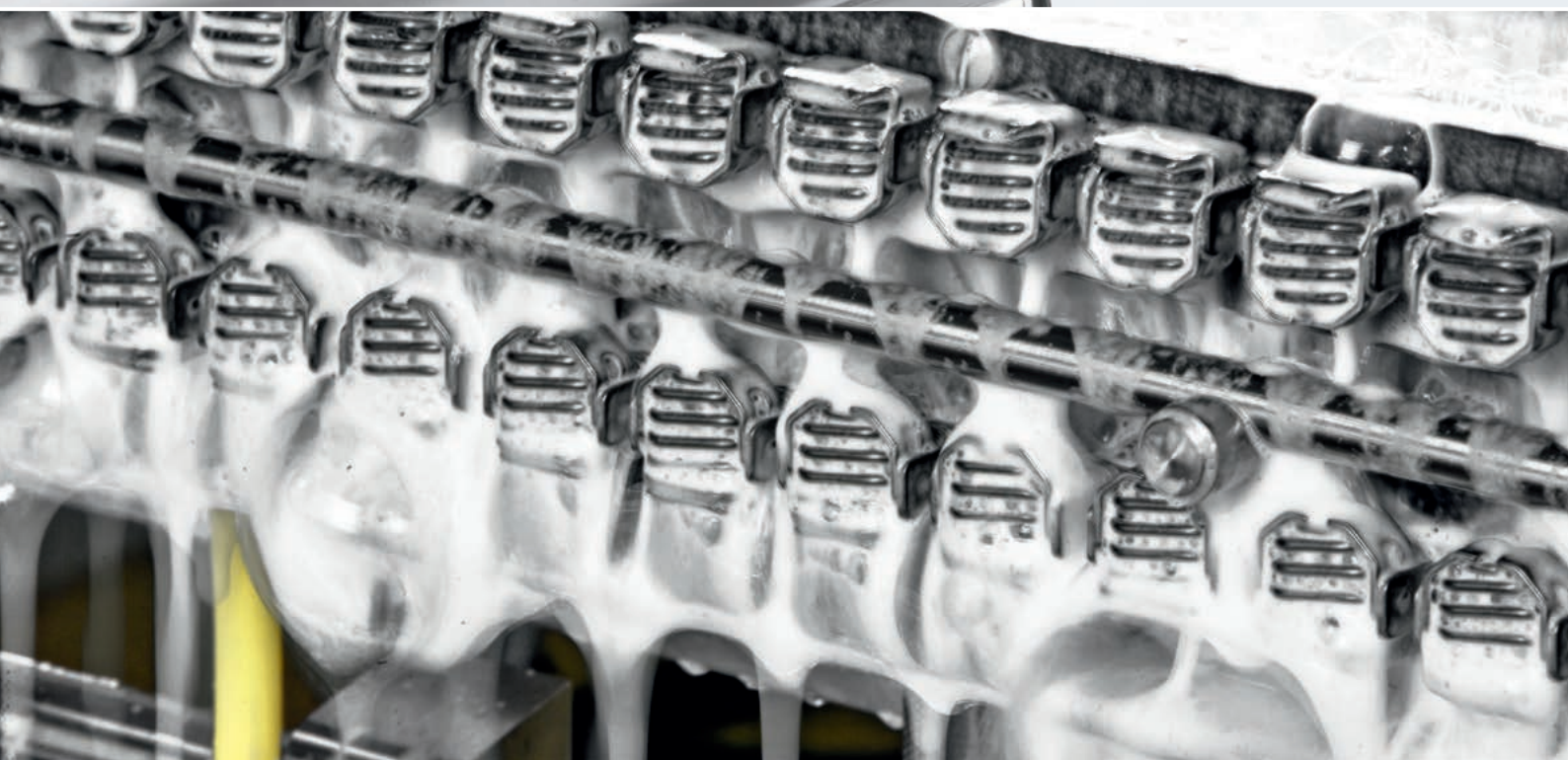
Simple operation is critical for process reliability. The HMI 2.0 user interface with touch-screen display can be operated intuitively thanks to its graphic user guidance. Calling up one recipe is sufficient to control all the modules of a line, which means that operating errors can be avoided. Thanks to the individual management of operating rights, an operator only has access to those parameters, which are relevant to him. All settings and important production data are automatically documented. Faults in the production procedure can therefore be traced back to their cause.

Logon with chip card

Individual operators and mechanics can logon and logoff quickly and simply with a RFID chip card.

Start/stop without contact

A sensor, which operates without contact, enables the machine to be started and stopped without the operator coming into contact with it.



MULTIVAC Hygienic Design™

MULTIVAC thermoforming packaging machines in the MULTIVAC Hygienic Design™ are designed for the hygiene requirements of the food industry. Hygienic design and high quality materials ensure reliable and fast cleaning. The smooth, angled external surfaces without recesses, corners or edges are easy to clean.

The modules in the interior of the machine are also optimised for hygiene, for example the transport chain, the chain guides and the motors. The interior of the machine is easily accessible due to completely removable side panels.

Our thermoforming packaging machines

- are certified in accordance with DIN EN 1672-2-2005,
- are manufactured on the basis of NSF/ANSI/3-A 14159-1-2002,
- can be equipped, as an option, in accordance with the USDA hygiene standard.

Advantages

- Tested by the German Social Accident Insurance (DGUV) and carrying the GS test seal
- Packaging of products with a high-quality appearance and long shelf life
- Shorter cleaning and servicing times, therefore less downtime
- Easy access to all important components
- Sparing use of water and cleansers
- Longer lifespan of the packaging machines

Clean-in-Place

The optional Clean-in-Place (CIP) cleaning system ensures that the machine is cleaned automatically and reliably. The modules within the machine are automatically cleaned and disinfected via nozzles. This means that the consumption of water and cleansers is minimal. The cleaning process can be documented and reproduced.

More service

Service from MULTIVAC covers the entire life cycle of a packaging solution. Over 800 specialists worldwide support you with consultancy, training and technical service.

Professional consultancy and machine installation

The packaging specialists from MULTIVAC analyze existing packaging concepts and highlight potential for improvement. They develop new packs and suitable machine concepts with you. They also ensure that your new packaging solution is put into service without a hitch and that it is integrated in your production process.

Tests of packaging solutions in the MULTIVAC Innovation Centers

In our Innovation Centers we provide you the ability to perform packaging tests. Here you have the opportunity of testing packaging concepts, as well as produce small quantities for conducting market acceptance studies. Shelf life tests and technical food analysis can also be performed.

Needs-based training courses

We offer user training courses worldwide for our customers' operators and service personnel. On site, at the premises of your local MULTIVAC company or at the MULTIVAC Training & Innovation Center. We are flexible in matching the content of our training courses to your requirements.

Machine maintenance

Thanks to the benefits of reliable machine technology, our technical service always ensures that the maximum availability of your equipment is maintained. The simple and quick supply of spare parts makes a significant contribution to this. The expertise of our specialists make this service perfect.



Complete turnkey packaging lines from one source



MULTIVAC develops and manufactures turnkey packaging lines, including infeed equipment, handling modules, convergers, inspection systems, labelling and marking equipment as well as outer packaging systems. All the modules of a line can be controlled centrally via the MULTIVAC HMI user interface. The MULTIVAC machine control enables process data to be processed seamlessly for later use, for example for product traceability.





BETTER PACKAGING

MULTIVAC offers integrated solutions for packaging. We serve customers worldwide with our wide range of machines and services. Our decentralized organisation is the basis for our individual customer care.



MULTIVAC supports the BLUECOMPETENCE Initiative
of the Association of German Machinery and Plant Manufacturers, VDMA

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