Packaging solutions
Life Science and Healthcare products
MULTIVAC is an innovative manufacturer of packaging solutions for medical and pharmaceutical products. Each of our machines and lines is designed individually to your requirements, such as process reliability, reproducibility and automation. Reliability, durability and a comprehensive service make MULTIVAC a resilient link in your production chain.
Individual packaging solutions for sensitive products

**Process reliability. Reproducibility. Traceability.**
MULTIVAC packaging solutions support the flexible and efficient packaging of sterile medical products and pharmaceuticals.

**Integrated packaging solutions**
As a global company with many years of extensive experience, MULTIVAC offers packaging solutions that are far more than just a reliably functioning machine. Your needs and our know-how come together to produce a packaging solution that is specially tailored to your requirements.

**Global sales and service network**
We work closely with you during the entire life cycle of a packaging solution - from the first consultation to the implementation of your requirements and the commissioning of the machine, all the way through to our comprehensive after-sales service, which accompanies you throughout the entire life of the machine.

**Sustainable packaging concepts**
Sustainability has been an everyday practice at MULTIVAC for a long time. In our packaging concepts, we always have the complete material cycle in mind. This applies not only to the application of the machines but also to their entire life cycle. This means that our packaging machines are not only extremely resource-saving but they also have a particularly long life.
From the specific requirement of the sector to the tailored solution

Customers benefit from many years of experience in the sector, as well as from professional support by a specialised sales adviser locally and by a project manager at the company headquarters in Wolfertschwenden.

Definition of requirements

Every project begins with a clarification meeting, where the customer describes his particular requirements, states the challenges that are specific to the sector and product, and then defines his expectations - usually in the form of a User Requirement Specification. The experts at MULTIVAC also put existing packaging solutions under the microscope.

Planning and project management

Based on all the information collected, MULTIVAC then issues a proposal and quotation in close collaboration with the customer, as well as producing the necessary machine and format drawings. In many cases a number of possible solutions will be developed, and these will then be discussed in depth with the customer as part of a presentation.

Conducting tests

Customers can test the feasibility of the proposed solution at MULTIVAC’s Training & Innovation Center in Wolfertschwenden, where they can also take many other aspects into consideration. As part of this process, they can bring their own products and produce a wide variety of packs. If required, MULTIVAC will also produce packaging designs to the customer’s particular specification.

Design

As soon as the purchase order has been received, the internal production procedure begins and the project manager, as the central person within the procedure, clarifies the final interface configurations. He undertakes the communication with the customer and determines the machine design in so-called “Design review meetings”.

Validation, Calibration, Factory Acceptance Test (FAT)

When final assembly and calibration have been completed, and the agreed Qualification Documents have been produced in Wolfertschwenden, the project is ready for the Factory Acceptance Test (FAT), where the machine is accepted by the customer.

Installation

As soon as the machine has been delivered to the customer, the team begins the process of installation and putting the machine into service, as well as conducting a Site Acceptance Test (SAT) if required and performing additional validation services. Instruction and training on the machine take place at the same time.

After-sales service

In the course of subsequent discussions, the customer can conclude an agreement with MULTIVAC for the servicing of the machine, or for regular recalibration and revalidation if necessary. MULTIVAC’s worldwide after-sales service is always available locally in the event of problems, and it can supply genuine spare parts within a very short period of time.
Sterile medical products

MULTIVAC packaging solutions for sterile medical products ensure reliable, reproducible and traceable procedures. Our machines are designed for low-bacteria and low-particle packaging of products in cleanroom environments.

MULTIVAC packaging machines run rigid and flexible films, aluminium multi-layer films, as well as materials based on paper and Tyvek®. This means that a wide range of sterilisation methods is possible.

Our customers package sterile medical products such as

- Catheters
- Single use products
- Needles
- Suture material
- Implants
- Combination packs
- Operating theatre supplies
Pharmaceuticals, diagnostic and bio-tech products

**Sensibility and flexibility**
MULTIVAC packaging systems with their GMP-compliant machine design enable sensitive products to be packed flexibly and efficiently in a wide range of formats - irrespective of whether you are producing a pack for an individual product or a combination pack. Our packaging solutions offer:

- Product protection (environmental influences, contact with product, locating of product)
- Tailored functions (opening aids, inner and outer packs, ...)
- Traceability (serialisation, track & trace)
- Security against products being lost (avoidance of cross contamination)

Our customers pack among other things

- Syringes
- Vials
- Ampoules
- Auto injectors
- Active stents
- Combination packs
- Semi-finished goods
Comprehensive portfolio

We offer individual packaging solutions as stand-alone systems or automated lines for medical and pharmaceutical products, and these solutions can cover all the functions of packaging, handling, labelling and marking, quality inspection, box packing and palletising. We also integrate existing systems and third-party products into our solutions.
Thermoforming packaging machines

MULTIVAC thermoforming packaging machines form, fill and seal all types of packaging materials, and if required they can pack under vacuum or with modified atmosphere. The range of available equipment is matched to the special requirements of sterile medical products and pharmaceuticals. We offer machines in all output categories to suit your production volume.

**Type of pack atmosphere**
- Vacuum packs
- Modified atmosphere packs

**Sealing**
- Secure and reproducible seal seams
- Quantifiable process parameters (sealing temperature, pressure and time)

**Cutting**
- Low-particle cutting
- Cutting systems tailored to specific materials
- Options for perforation

**Transfer to downstream processes**
- Converging, orientation, transfer, ejection, quality control, buffering

**Labelling and marking**
- Integration of a wide range of printing systems
- Labelling systems that can be installed as modular units
MULTIVAC benefits
- Individually tailored solutions
- High production output and pack quality
- Maximum output with the minimum footprint
- Process reliability, reproducibility, traceability
- Efficient use of packaging materials and energy
- Wide range of configurations and upgrades

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<th>Loading</th>
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<td>Manual</td>
<td>Wide spectrum of materials</td>
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<td>Automated</td>
<td>Variety of well proven forming and heating systems</td>
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<td>Highest level of packaging quality, even with large cut-off lengths and maximum forming depth</td>
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Monitoring equipment
Pack content: product identification, presence, completeness, protrusion etc
Packaging material: splices, pinhole detection etc.
Process: monitoring of parameters
Equipment options for thermoforming packaging machines

In order to ensure that sterile medical products are packed reliably in cleanroom environments, we offer a wide range of equipment options for our thermoforming packaging machines.
Optimum cleanability and process reliability
This equipment option comprises different design features, which contribute to easy cleanability and to process reliability:
- See-through safety guards
- Avoidance of hidden corners and voids
- Cable and pipe work routing in enclosed ducts
- Particularly small clearances

Cleanroom compatibility
MULTIVAC packaging solutions can be individually equipped for use in cleanroom environments, for example:
- Low-particle modules
- Activated carbon filters
- Exhaust air collection unit
- Closed cooling water circuit

Data communication
Thanks to various equipment options, our thermoforming packaging machines can be integrated into a company’s organisational and data-processing infrastructure, such as MES and ERP systems or production data acquisition:
- OPC interface
- VPN client
- Object 2 - System for production data acquisition
Thermoforming packaging machines in the MULTIVAC Clean Design™

Flexible packing of sensitive and complex products
Thermoforming packaging machines in the MULTIVAC Clean Design™ incorporate significant developments for the packaging of sensitive pharmaceutical and biotech products. They achieve a high level of efficiency, even with small batch sizes, and they offer the greatest possible degree of process reliability, since they ensure that, among other features included, complete line clearance can be achieved.

Machine design to meet the requirements of the pharmaceutical industry
The innovative machine concept enables a strict separation to be achieved between the product processing area and the machine technology area. Transparent enclosures with large-area doors guard against direct access and environmental influences. The enclosures also offer perfect visibility and cleanability.
Modular construction
The systematic modular construction gives a high level of flexibility regarding the design and extension capability of the machine. It also enables automation, identification and inspection solutions to be integrated flexibly into the machine.

High level of versatility
Thermoforming packaging machines in the MULTIVAC Clean Design™ also offer great versatility with regard to packaging materials, format sizes and forming depths. A quick and simple format change facilitates conversion of the machine, even for small batch sizes. The packaging system is also designed for the production of modified atmosphere packs (MAP).

Sustainability
Energy-efficient servo drives provide great precision in the transporting of the film and in the lifting units. A chain guide on one side (option) ensures that there is the best possible usage of packaging materials.
Traysealers

MULTIVAC traysealers are the ideal packaging solution for producing smaller batch sizes, or if you wish to load highly sensitive products manually into the packs. Our traysealers enable packs to be produced with a vacuum or modified atmosphere.

The MULTIVAC T 260 traysealer is a packaging machine developed for the special demands of the life science and healthcare industries. It supports the packaging of your products in accordance with GMP guidelines, particularly in packaging quality, process reliability and cleanroom compatibility.

The T 260 offers in particular
- Process reliability
- Seamlessly programmable process parameters
- Measurability and reproducibility
- Cleanroom compatibility
- Flexibility in the use of very diverse packaging materials
- Consistently high and measurable packaging quality
- Multiple possibilities for data collection, recording and documentation
- Operating security through comprehensive control systems such as RFID user login, etc.
- User-friendliness

The compact T 260 C is a variant, which is typically used for sealing gas-permeable, pre-cut upper web sheets to trays.

In the case of packaging solutions where there are less stringent requirements, the entire MULTIVAC traysealer portfolio can be configured for use accordingly.
Chamber Machines

MULTIVAC chamber machines pack products of all types in pre-made pouches from a wide range of materials. The products can be packed under vacuum or with modified atmosphere (MAP) with controlled oxygen content, even in small batch sizes.

The chamber machines of the TC series (thermo-controlled) were developed for the special demands of the life science and healthcare industries. They help to ensure that products are packed in accordance with GMP guidelines in packaging quality, process reliability and cleanroom compatibility.

MULTIVAC chamber machines of the TC series offer in particular
- Process reliability
- Seamlessly programmable process parameters
- Measurability and reproducibility
- Cleanroom compatibility
- Flexibility in the use of very diverse packaging materials
- Consistently high and measurable packaging quality
- Multiple possibilities for data collection, recording and documentation
- Operating security through comprehensive control systems such as RFID user login, etc.
- User-friendliness

In the case of packaging solutions where there are less stringent requirements, the entire MULTIVAC chamber machine portfolio can be configured for use accordingly.
Handling modules

MULTIVAC handling modules help to ensure manual tasks are automated reliably and efficiently. Thanks to their modular construction with exchangeable gripper systems, they can quickly be adapted to different products and packs.

Features:
- High speed and precision
- Fast and simple conversion
- Compact construction and small space requirement

MULTIVAC handling modules can be used for a wide spectrum of products and packs:
- Loading
- Unloading
- Buffering
- Orientating
- Rejecting and bypass functions
- Late stage customization
- In-process control
Inspection systems

We have developed the MULTIVAC Vision System (MVS) as an end-of-line pack inspection system. The MVS performs visual detection and inspection tasks with a high level of precision and reliability even at high speeds:

- Quality and completeness of the pack content
- Monitoring of label position and print image
- Presence and legibility of variable product data (OCV, OCR), such as barcodes, data matrix codes, batch numbers etc.
- Packaging quality in shape, colour and surface
- Specifications individual to each pack
Identification solutions

Our product portfolio offers reliable direct web printers and labellers, capable of being used flexibly for labelling and marking packs. We also integrate marking systems from third-party suppliers in our packaging solutions.
Direct web printing systems
Direct web printing systems can be used for inline printing of serial print (text and graphic elements) as well as for variable print.
- Product designation
- Batch numbers/series or lot numbers
- Information about the sterilisation process and shelf life
- Barcodes
- Logos

Almost all the common marking technologies on the market can be used in this process:
- Thermal transfer
- Flexo printing
- Inkjet
- Digital printing
- DOD (Drop-on-demand)
- Laser
- Hot foil coding etc.

Labelling systems
MULTIVAC labelling systems enable labels to be applied to primary and secondary packaging in many different positions. We offer inline systems that are directly integrated into the packaging machine as well as offline systems, which label the packs after they have left the packaging system.

MULTIVAC labelling systems are used for
- Product identification
- Traceability/serialisation
- Vignetting
- Tamper-evident solutions
Automation and integration – MULTIVAC line concepts

Our teams of specialists have many years of expertise in the development of automated and integrated packaging solutions, which are individually tailored to your requirements. Where required, we also integrate existing systems and components produced by other manufacturers.
Automated and integrated packaging solutions from MULTIVAC offer the following benefits:

- Synchronisation of all components
- Simple control of all line elements via one unified user interface.
- Increased efficiency of the entire procedure
- 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 services

Validation
Our goal is to fulfill your packaging solution demands and legal requirements as quickly, efficiently and economically as possible. To this end our team of experts offer a wide range of support services and technical assistance.

We have developed a qualification and validation package, which conforms to the GMP, GAMP 5 and ISO guidelines. This includes, among other features:
- Validation schedule
- Risk analysis
- Functional specification
- Installation and Operation Qualification
- Computer validation

We also support you in carrying out qualification and validation procedures locally on site, and we assist you in producing special validation and retrospective validation for packaging solutions that are already installed.

Calibration
The relevant process parameters in our packaging lines can be calibrated in order to ensure reproducible packaging quality and procedures. We record the results in a calibration protocol and make the corresponding documentation available to you for the correction of measurement deviations.

FDa CFR 21 Part 11
In order to comply with the requirements of the FDA CFR 21 part 11 guideline, our IPC machine control can be equipped with the following function capabilities for the monitoring and recording of the packaging procedure:
- Personalized user administration
- Password administration
- Audit trail
- Recipe change log
- Data backup
**Project management**
From the initial idea to the first test run - a competent and experienced project team will be at your side during the implementation of your packaging solution, a team that will accompany you from the first evaluation to the final completion of the packaging project.

Our range of services is rounded off by the training of your staff and the final machine acceptance, but that is not the end of our cooperation since we are always there for you.

**Training**
We offer comprehensive training courses for you to become familiar with the operation, servicing and care of your machine. Either at our worldwide training centres or with you on site. The coaching is practically based and is carried out right at the machine, and you also receive the written training material at the end. In this way you can fully realize the potential of your new MULTIVAC packaging solution.
MULTIVAC is there for you on site worldwide

More than 900 sales advisors and service technicians work worldwide in our more than 70 subsidiaries. We are present on all continents and in all important markets. At all times and in all places we offer you expert advice and a comprehensive range of services covering all areas of packaging, as well as support you in achieving the best possible and most effective overall solution. Our technical service, combined with a rapid availability of spare parts, ensures that all MULTIVAC machines installed worldwide are at maximum readiness. You can rely on us!