

Safe and reliable packaging: **medplus**



KOCH technology
brand for the
packaging of
medical products



Meet exacting needs with one hundred percent reliability: KOCHmedplus

The most susceptible products packaged in rigid blister packs in compliance with validation requirements

Syringes in a blister pack



Daily disposable contact lenses in perforated multipart blister for separate removal



Multipart sterile filter housing with tube and cable set

- **Safely packaged to medical standards**
- **Eye Care:** contact lenses, surgical instruments for eye operations
- **Sterile medical items:** filters, catheters, needles, intravenous drips, multipart infusion sets, surgical instruments, suture material
- **Liquids:** inhalers, syringes, ampoules and bottles single or in sets, sprays, paste-like products
- **Solids:** tablets in wallets or individual weekly blister packs
- **Implants:** artificial joints, stents
- **Dental products:** single or multipart dental instruments, dental drills
- **Diagnostic devices:** dosimeters, matching and calibrating material, reagent test strips, quick tests, diagnosis sets

Furthermore, seamless traceability of the products in compliance with respective national tracking and tracing legislation is required; packaging in validated processes and on validated systems is necessary. Documentation is essential as proof of implementation of all defined specifications and full functionality.

Safety and quality redefined: KOCHmedplus

We respond to the special, broader safety and quality requirements governing the packaging of medical and pharmaceutical products with the appropriate expertise – with the brand KOCHmedplus. Based on our years of experience gained from many customized packaging machine projects, we have stepped up our skills to a new standard under this name. In the version medplus all machines from our portfolio are systematically geared to validation-conform packaging in accordance with GMP and GAMP. With added technology, added features, and added customer support.

Stable, cost-efficient and reproducible: these requirements apply to all packaging processes. However, when it comes to the packaging of medical and pharmaceutical products another factor is imperative: safety.

Safety in a number of senses. The pack must ensure hygienic conditions and optimum protection of the products prior to opening – for instance, in accordance with the EU Medical Device Directive, the regulations of the FDA in the USA, or the DIN EN ISO 13485:2003 Quality Management Systems for Medical Devices. Surgical products must remain one hundred percent sterile for use in the operating room, fragile receptacles such as ampoules and bottles must be intact when they reach the chemist or clinic, and diagnostic devices must retain their measuring reliability. Solid dose products such as tablets, coated tablets and capsules as well as healthcare products should be packaged to enhance correct compliance or use.



Artificial knee joint sterile packaged in two blisters placed one inside the other

The brand for the optimized packaging of medical products: KOCHmedplus

Special skills in machine construction and consultation

Machine technology in medically conform stainless steel version: KOCH Blister Machine KBS-KFmedplus with high cycle output



KOCHmedplus – the trademark for top quality, maximum productivity and 100-percent safety



Safety, flexibility, qualification and validation: these are the core issues to be answered when it comes to the planning of a blister machine or line for the packaging of medical products. Particularly important here is full insight into the susceptible products, the exacting marketplace, and the particular specifications governing the packaging process.

This is the reason why we combined our know-how in this area in a separate field of application. A team of specialists from Development, Design, Production, Sales, Programming and Final Assembly solely concerns itself with transforming your individual needs into best respective packaging process. We offer our expertise from the outset, provide advice at all stages, take over full implementation, and manage the project from start to finish.

Packaging technology with added value

As equally important as additional advice and assistance are the diverse features and associated support services which characterize each machine solution with the name medplus. Whether a standard machine, a special complex machine or a fully automated, highly flexible KOCHpackagingLine: GMP-compliant design and construction according to GEP standards, suitability for cleanroom applications, and qualification and validation documentation are a matter of course. Simply everything that is required for the optimized packaging of medical products.

- **Added value of the brand medplus**
- GMP machine design
- Machine construction according to GEP standards: no hollow areas, special lubricants, superior surface quality
- Calibration of relevant process parameters for reproducible packaging quality
- Hygienic design: easy cleaning, use of medically acceptable materials
- Suitable for cleanroom applications
- Qualification and validation documentation in accordance with GMP, GAMP5, ISO and FDA
- Individual project management by a team of specialists from all professional fields



Medical salve in a face seal blister



Multipart infusion set

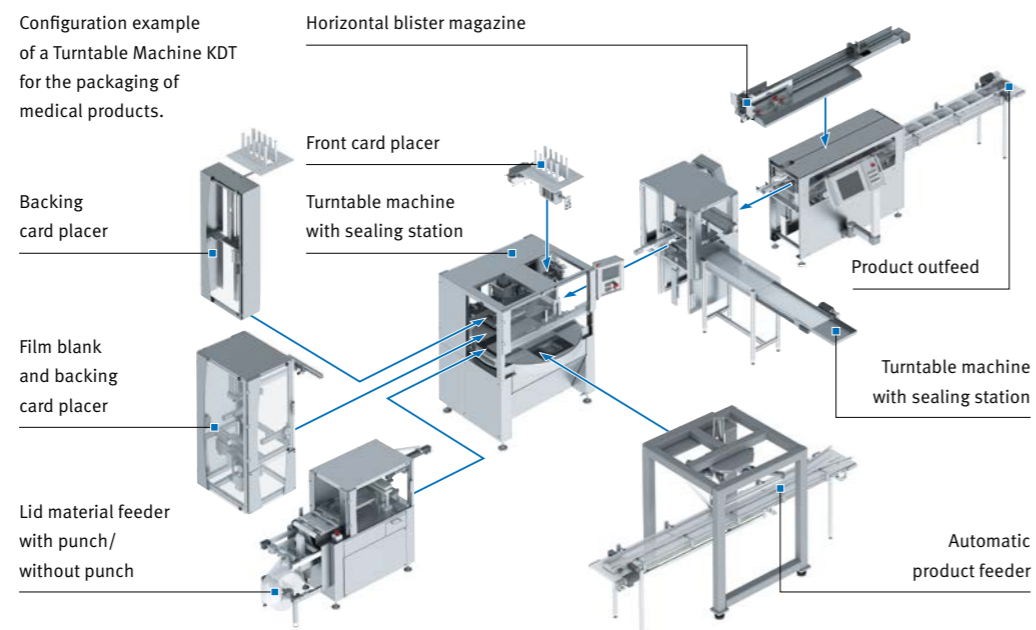
Reliable basis for customized applications: modular machine technology **medplus**

Forming, filling, sealing – and more

Whether small, medium-sized or large batches, single products or multipart sets, fine hypodermic needles or large-volume titanium joints: machine technology made by KOCH is as individual as your products and specifications. Basis for this flexibility is the modular design of our blister machines. Every machine comprises a basic module as well as additional components with which we configure the ideal packaging machine. Incorporating film and card feeding, robot handling systems as well as inspection and marking systems, we integrate precisely those modules required by you for a highly efficient packaging process. The principle of flexibility applies from the smallest machine in our portfolio – the Sliding Table Machine KST medplus for the sealing of small batches – to the largest option: the KOCHpackagingLine with the four basic components blister machine, product feeder, blister grouping module and end-of-line packaging.

Forward-looking technology, tailored combinations

A classic example of the modular concept of all KOCH blister machines is the Turntable Machine KDTmedplus used, for instance, for the packaging of plasters in boxes. The technical design allows the sealing of different small to large products. The basic module incorporates a turntable with four stations, a backing card placer, a sealing unit for thermal sealing, and a product outfeed. An alternative model with ultrasonic sealing is also available. Depending on the respective needs, the KDT medplus can be fitted with additional components such as a product outfeed with integrated marking and inspection systems as illustrated below.



Simply scan the QR code with a smartphone to see the KDTmedplus video



GMP-compliant Turntable Machine KDT medplus fitted with four stations for fast and cost-efficient sealing



Turntable with 90° cycle



Automatic blister placing



Plaster box sealed in rigid Tyvek® blister pack

- **Technical data KDT medplus**
 - **Forming depth:** 70 mm
 - **Sealing format:** 250 x 360 mm
 - **Sealing force:** 16 kN
 - **Output [cycles/min.]:** up to 12
- **Point by point – an investment with added value**
 - Semi or fully automated blister machines in all output categories for forming, filling, sealing
 - Significantly extended format area and large forming depth for the handling of large-volume products
 - Fast and easy format changeover for high overall uptime
 - State-of-the-art IPC control technology
 - Product handling concept according to individual needs – with seamless integration into the production process
 - Integration of additional components for feeding, inspection and marking

Exactly what is needed: for an optimized packaging process

Automated feeding, inspection, marking

In addition to our machines that form, fill and seal as well as for grouping and end-of-line packaging, our portfolio includes additional components which help to make your packaging process more efficient and reliable. These include the automated, hygienic pick-and-place robot, inspection systems for product control and verification of information relevant to validation, and highly flexible marking machines. The latter are fitted with the appropriate printing system depending on the specifications and the materials to be marked.



Highly productive and variable: KOCH robot handling system
The Delta Robot KRH-D picks up pre-packaged or loose products without any manual assistance and places them safely and accurately at high speed in the preformed blisters. Use can be made of a single, lightweight carbon-fiber reinforced plastic robot, or several KRH-D robots can be operated and integrated into the KOCH machine control system. Tool-free format change-overs are quick and easy, and operation is via the standard, intuitive KOCH user interface.

- **Delta Robot KRH-D**
- Full integration into KOCH packaging machines
- High-speed pick-and-place function
- Multi-axis systems
- Different sizes and scopes of work



Pick-and-place with maximum servo-regulated precision

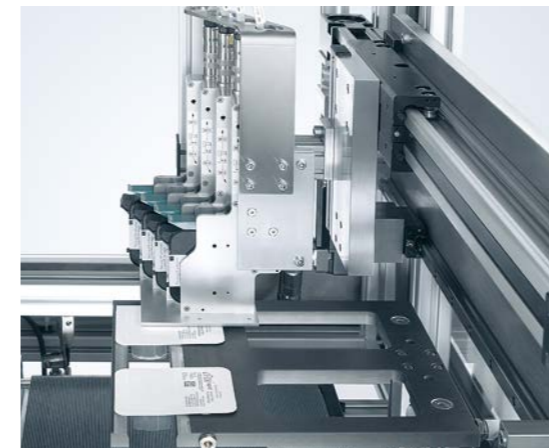
Example of a camera system for the verification of variable product data



Checked and verified: inspection modules

One hundred percent quality control during the ongoing process with maximum precision at high speeds: we provide a selection of contact-free camera inspection systems at relevant stages of the packaging process. These include the monitoring of product presence or position during robot feeding, the verification of product data and print images during marking, or final inspection of the finished packs at the outfeed. The acquired data is transferred to the machine control system or to the next station of the process – for seamless reliability in the packaging of medical products.

- **Reliable monitoring**
- Quality and integrity of the pack contents
- Positioning and printing of the label
- Presence and readability of variable product data (OCV, OCR) such as bar code, data matrix code, batch number, etc.
- Optical packaging quality
- Individual packaging specifications



Thermal inkjet printing system with four print heads for the printing of blister cards

- **Integrated as required**
- Thermal inkjet printing system
- Continuous inkjet printing system
- Thermal transfer systems
- Laser marking systems
- Labeler with/without marking system
- Drop-on-demand marking systems
- Braille marking systems

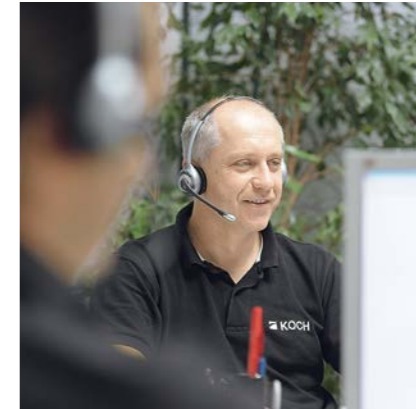
Offline or inline: perfect quality marking

For the unique, clearly recognizable and seamless identification of cartons, card or film blanks, or blister cards in compliance with prevailing tracking and tracing legislation, we select the appropriate printing system and integrate it into the blister machine. Information relevant to validation in the form of a batch number and a bar code or data matrix code incorporating manufacturing data of the packaging process as well as details of the product are applied in the appropriate quality. Alternatively, the KOCH Print Machine KPM-200 offers an efficient offline solution which, if required, can be extended by a product positioning and grouping system at the product outfeed conveyor.

Different experts, one promise: professional support at any time, anywhere

Comprehensive support services for smooth operation

Fast and
competent assistance:
the service hotline



The optimum machine concept is worked out in joint discussions with the customer

Coherent planning, perfect installation and punctual start of operation of your customized packaging machine or line are one side of the coin. The other side offers assistance from the KOCH Customer Support & Services division for smooth, efficient operation far into the future.

An essential element in the process is personal support through a service team well aware of what is important for you: high machine availability for maximum productivity. Your contact person has competent answers to your questions at all times and organizes the prompt supply of tools and format or spare parts in original quality. Our online service is available for the quick diagnosis of problems and can provide active support via a machine modem or secure internet connection to correct the matter.

Customer Support & Services

- Prompt assistance via online support or service hotline +49 7445 181-181
- Tools, format and spare parts in original quality
- Individual service agreements for inspection and maintenance
- Basic and customized training programs for all employees involved in the packaging process
- Improved machine availability through process analysis, output optimization, machine upgrades and production support
- Validation and qualification in compliance with current guidelines



Great importance is attached to close customer contact during all stages of a project – in the interest of the best possible packaging solution.

Qualified assistance in all areas

Measures offered by KOCH Customer Support & Services also include regular inspection and maintenance of your packaging machines and lines as well as personnel training for reliable, productive operation. Furthermore, our experts test your machines and supplied components and issue the respectively required qualification and validation documentation. With reference to machine availability, we analyze your processes, identify improvement potential and tap into this through output optimization measures. We also offer experienced packaging technicians to overcome any temporary personnel shortages you may have. In other words, we do everything in our capacity to ensure that you achieve maximum productivity and maintain this in the long term.

The key to success today and tomorrow: the KOCH team

Pacesetter of the packaging industry has been the declared corporate objective of the company KOCH since it was established in 1969. Principal factor in the process is the wholehearted dedication of the people who work for us. Over 260 well qualified members of staff, in many cases with extensive in-house training skills, form the KOCH team at the headquarters in Pfalzgrafeweiler and our offices in Europe, China and the USA, and play their part in promoting maximum packaging quality and efficiency.



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