



*Strip Packaging Solutions*



## Beyond Technology

The new business model from Romaco sets valuable incentives for meeting customer requirements. For the design of innovative solutions, Romaco relies on its unique knowledge portfolio.

With its diverse brands, Romaco focuses on important technological fields of competence. The single product lines offer the optimum

prerequisite for the development of comprehensive solutions.

Romaco promises its customers professional project handling, fast delivery times and a reliable service. Through this, Romaco provides its customers with a considerable boost to their earning and financial power.



### **Creating Value – best price/performance ratio**

Romaco wins over its customers by offering an outstanding price/performance ratio over the entire life cycle of its products. In this way, customers can systematically optimise their cash flow. With efficient production and service management, Romaco prepares its customers for future long-term commercial success.

### **Delivering Solutions – high application expertise**

Romaco offers integrated solutions for the growing markets of pharmaceuticals, cosmetics, food and industrial applications. Here, the customer benefits from the synergetic effects that result from the close collaboration of all the Romaco brands. This internal technology transfer imparts a considerable development potential and is the basis for comprehensive solutions.

### **Exploiting Technologies – strong brands**

Romaco is synonymous with European engineering on the highest level. With its seven brands, the company is widely recognised around the world. Continuity and progress are the keys to a strong positioning on the market. Romaco relies on the profound knowledge and the long-time experience of its employees.



» *The Strip Packaging Solution from Romaco Siebler has allowed us to extend our production capacities significantly. Its robot plant concept offers decisive benefits.*«

*Helmut Jakolat, Production Technology Manager, HERMES ARZNEIMITTEL GmbH, Germany*



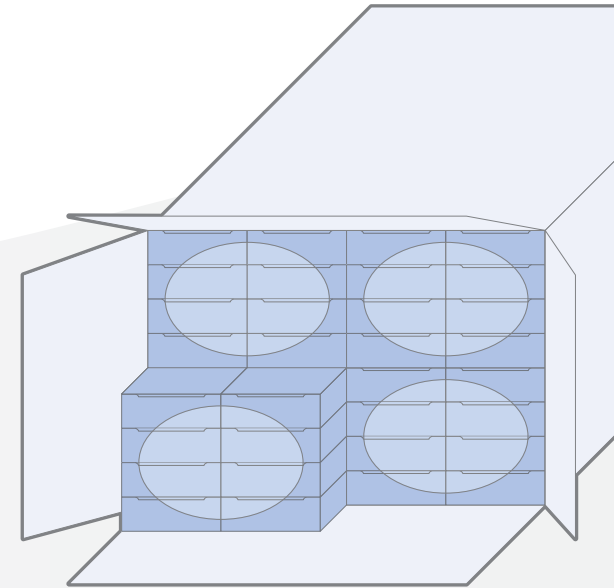
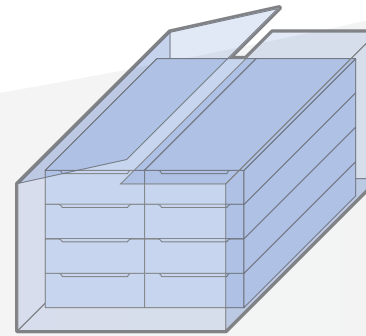
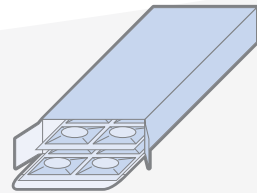
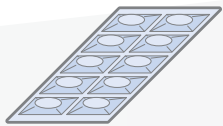
### **Delivering Solutions**

#### **All-in-One Solutions for Sealed Strips**

Romaco is the first manufacturer worldwide to offer integrated solutions for manufacturing and packing tablets and effervescent products. Romaco Siebler strip packaging lines are configured according to each customer's individual product properties and batch sizes. The aim is to optimise the overall effectiveness of the equipment. A detailed analysis of the production requirements is vital – a step to which Romaco attaches great importance.

#### **Tablet Production**

- Tableting solutions for the pharmaceutical, food and chemical markets
- Compression of up to five tablet layers with five different components for pharmaceutical applications
- Production of food supplements such as vitamin preparations
- Manufacture of chemical products, e.g. cleaning tablets



#### Packing in Sealed Strips

- Air, light and moisture-tight individual packs
- Primary packaging for tablets (including effervescent) and capsules
- Suitable for cutting and packing diagnostics
- Ability to process flat, stable containers such as BFS or pre-filled syringes

#### Sealed Strips in Cartons

- Wide choice of carton designs and materials
- Leaflets, booklets or medical devices can be inserted
- Glued or tuck-in closures together with a variety of tamper-evident features
- Inkjet, colour embossed, laser engraved, vignette or hot foil coding

#### Carton Bundles

- Final packaging solution for all folding carton types
- Stretch or shrink-wrapping as an alternative

#### Cartons in Shipping Cases

- Suitable for feeding and packing single or bundled folding cartons
- Solutions for both vertical and horizontal cartons
- Adhesive tape or hot melt closure







### *Delivering Solutions*

#### **Integrated Strip Packaging Solutions**

##### **Tableting and Packing from a Single Source**

Romaco unites the expertise of Kilian, Siebler and Promatic to provide integrated strip packaging lines. As a single-source supplier, we develop end-to-end concepts from tableting through primary and secondary packaging to final packaging. We help you manufacture strip packs more efficiently than ever before.

You can connect the tablet press to the heat-sealing machine either directly or off-line. What's more, the servo-driven transfer system assures the highest possible flexibility when the four-side sealed foil strips are transferred into the cartoner. Up to six FlexPicker robots enable the system to process as many as 900 strip packs a minute. Romaco's strip packaging solutions are very impressive, offering a combination of high speeds and premium technology.



#### Tableting Included

- Continuous production rather than offline operation ensures consistently high tablet quality
- Fewer start-up processes reduce tablet waste to a minimum
- Direct line integration effectively protects effervescent tablets from contaminants in the ambient air
- No need to store fragile effervescent tablets in a buffer container

#### Flexible-Format Solution

- FlexPicker robots work almost completely independently of specific formats: different pack sizes, layouts and stack heights are easy to set up and run
- FlexTrans FT servo-driven transfer station permits the most rapid format changes
- Contract packers and manufacturers of generics achieve significant performance improvements with this new flexibility

#### High Level of Automation

- Servo motors guarantee maximum precision and efficiency
- Bundled intelligence of up to six FlexPicker robots
- Central communication control at the interfaces between the various line components
- Camera systems monitor the entire production process from end to end

#### Quick and Easy Changes

- Highly reliable processes even when both the product and the format parts are changed
- Easy access reduces retooling and cleaning times to a minimum
- Complete format changes on the packaging machines in under thirty minutes
- Excellent OEE values thanks to high availability, strip pack quality and packaging output





### **Siebler – Synonymous with Performance and Precision**

The strip packaging machines in the Romaco Siebler HM 1 series produce four-side sealed foil packs at very high speed. This extremely air, light and moisture-tight form of unit dose packaging is particularly ideal for packing pharmaceutical solids. Siebler machines manufacture strip packs in different sizes and layouts. The tablets are fed to the sealing station in up to sixteen lanes. After heat-sealing, the strips are perforated and cut to the required size.

### **QuickSeal**

- Specimen seals are individually adapted to ensure premium sealing quality
- Reproducible sealing parameters
- Multiple heaters per sealing tool
- Seal temperature detected by integrated temperature sensors

### **Efficient Product Feeding**

- Feeding system connected to the upstream tablet press either directly or via buffer bin
- Servo-controlled separation for high feed rates and precise product positioning
- Dust and breakage elimination system

### **Proven Design**

- cGMP design with surface finish according to pharmaceutical regulations
- Balcony structure throughout for optimal accessibility
- Strict separation of drive and function modules, e.g. format parts
- Compact machine with an exceptionally small footprint
- Suitable for foils with random printing or print marks
- Print mark registration possible on both sides

### **Ergonomic Format Sets**

- Heat-seal system with thin-walled, detachable format sets
- Modular sealing station mounted on quick-change bars
- Quick-release foil reel holders
- Only a very small number of format sets required per product

*Delivering Solutions  
Romaco Siebler HM 1 Series*

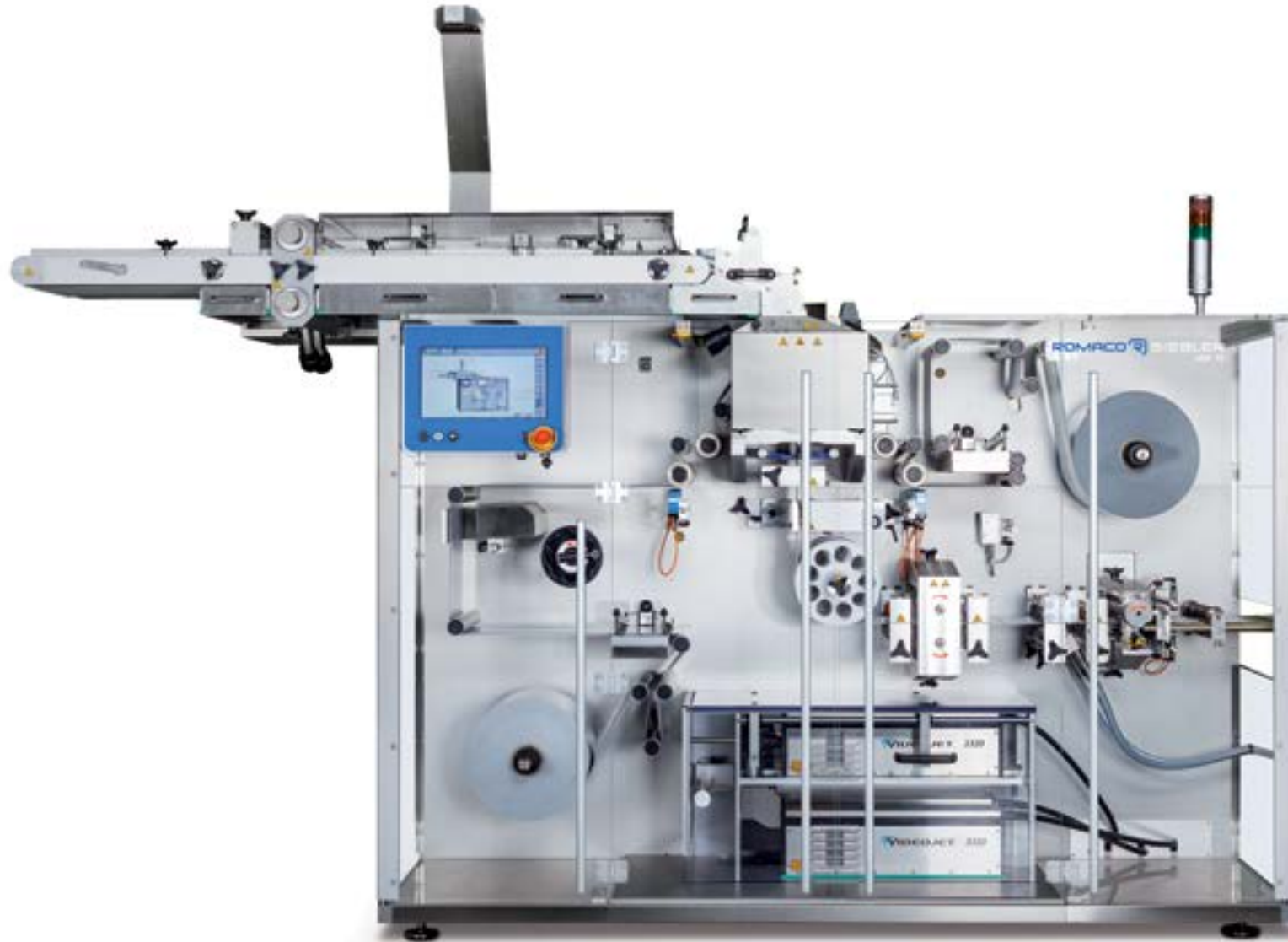


Sealing



Perforation





### **Gentle Handling of Effervescent Tablets**

The strip packaging machines in the Romaco Siebler HM 1E series meet all the most stringent requirements for processing effervescent tablets. Extreme care is necessary when handling fragile products. Water-soluble dosage forms are common with particular types of pharmaceuticals, food supplements and healthcare products. The HM 1E series combines all the benefits of Romaco Siebler's proven strip packaging machines.

### **Reliable Product Feeding**

- Direct connection to the upstream tablet press
- Either vertical or horizontal feeding
- Horizontal vibrator efficiently eliminates breakage before the feed conveyor
- Laminar waterfall feeder prevents broken tablets from becoming dislodged in the feeding channels

### **Stress-Free Product Handling Reducing Waste to a Minimum**

- Infeed conveyor with anti-jam belts permits a continuous, stress-free product flow to the feed station
- Servo-driven rotary indexing unit ensures reliable feed processes
- Controlled movement of the tablets ensures that individual effervescent products are only dropped from a very small height

*Delivering Solutions  
Romaco Siebler HM 1E Series*



*Feeding*



*Cutting*



*Perforation*





## Customised Feeding, Cutting and Packaging Solutions

Strip packaging machines in the Romaco Siebler HM 2 series were specifically designed for handling diagnostics and flat, stable products. The series is available in several different configurations and suitable for a wide range of customer applications. Special feeding solutions and bespoke cutting systems are the hallmarks of this technology. Complex products such as test strips, BFS containers or pre-filled syringes can be processed fully automatically using the Siebler HM 2. Romaco Siebler's heat-sealing concepts result in tailor-made solutions for numerous pharmaceutical and medical devices.

The HM 2 series combines all the benefits of Romaco Siebler's proven strip packaging machines.

### Cutting Diagnostic Strips

- Suitable for sheet or reel materials
- Laser, rotary or guillotine cutter
- Special cutting solutions prevent sharp edges and minimise the risk of injuries
- Any test strip down to 4 mm wide can be handled
- Maximum cutting speed: 1500 strips a minute

### Packing Diagnostic Strips

- Strips transferred by a vacuum-assisted overhead conveyor
- Deionisation reduces static
- Individual packing in moisture-resistant, four-side sealed foil strips
- Bulk filling into plastic containers as an alternative
- Optional insertion of desiccant sachets

## Cutting and Packing Flat, Stable Products

- Bulk feeding with vibrating bowl and selective separation
- In-line processing with an integrated cutting system as an alternative
- Individual packing in four-side sealed soft aluminium foil strips
- Moisture-tight sealed strips ideal for packing into plastic containers that are permeable to water
- Ideal packaging form for high-quality pharmaceutical liquids such as injections or ophthalmics
- Four-side sealing extends the minimum shelf life of the products

*Delivering Solutions  
Romaco Siebler HM 2 Series*



*Feeding*



*Product detection*



*Positioning*







### **Flexible-Format, Servo-Driven Transfer Solutions**

The new servo-driven transfer units in the Romaco Siebler FlexTrans series can now facilitate flexible-format primary and secondary packaging processing of four-side sealed foil strips. Up to six FlexPicker robots are responsible for transferring the strip packs directly to the cartoner. Thanks to the integrated, servo-driven transfer solution, all Romaco Siebler strip packaging lines can be retooled quickly and easily. The FlexTrans systems guarantee maximum flexibility whenever different pack sizes, strip layouts and stack heights are involved.

Romaco Siebler develops single-size transfer solutions for various applications under the FixTrans label. The individually configurable stations stack the sealed strips and pass them to the cartoner. FixTrans is particularly suited for large batches with identical strip widths and variable strip lengths and stack heights. These impressive systems offer high transfer speeds and reliable, cost-efficient operation.

### **Unique Features of FlexTrans**

#### **Synchronised Processes**

- FlexTrans synchronises the processes of upstream and downstream systems
- Servo-driven transfer of the sealed strips from the conveyor to the cartoner
- Buffer station – enables temporary storage of sealed strips and regulation of the packaging process
- No overflow of good packs – all quality-approved strips are processed

### **Intelligent FlexPickers**

- Vacuum grippers achieve up to 200 picks a minute
- Pick & Place system for guaranteed format flexibility
- Selective removal of scrap – no need to separate complete cutting cycles
- Virtually no costs for maintenance

### **Flexible Stacking**

- Direct transfer permits a variety of products and strip layouts to be processed
- Stack heights can be adjusted as required

*Delivering Solutions  
Romaco Siebler FlexTrans Series  
FixTrans Solutions from Romaco Siebler*

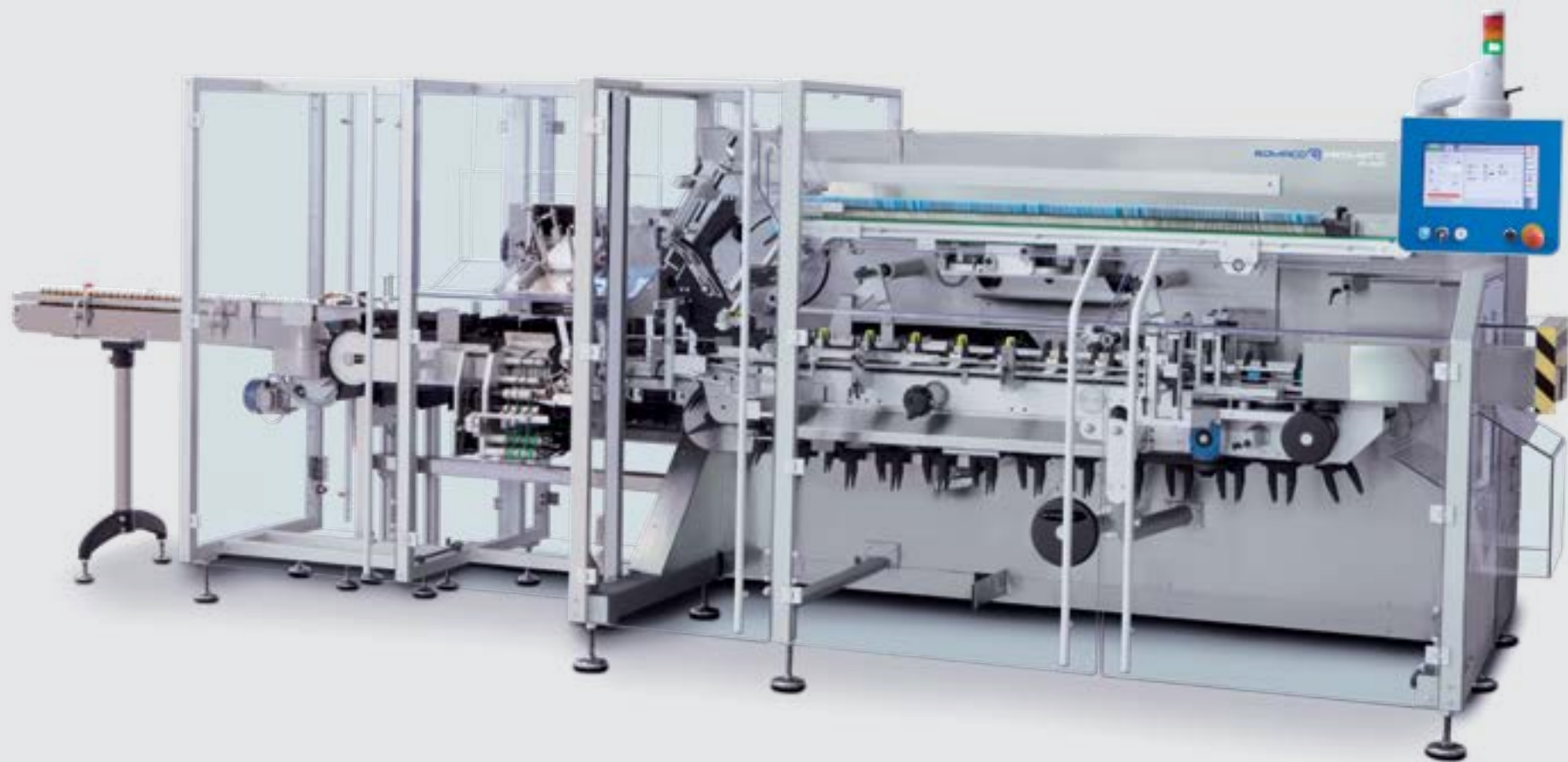


*Pick & Place*



*Stacking*





## The Perfect Solution to any Challenge

The continuous motion cartoners in the Romaco Promatic PC 4000 series are ideally suited for a wide range of applications. They are designed for both high-speed operation and also for medium packaging speeds. These cartoners can be switched flexibly between continuous and intermittent – the recommended mode for processing high stacks, for instance. The PC 4000 cartoner series packs up to 420 folding cartons a minute in continuous mode.

The intermittent motion cartoners in the Romaco Promatic P 91 series are available in a standard or a high-speed version (P 91S). These compact machines boast a maximum output of 140 folding cartons a minute.

## Ergonomic Design

- Strict balcony architecture with no supporting structure at the operator side
- cGMP compliant design meets even the most demanding standards in pharmaceutical production
- Easy access reduces retooling and cleaning times to a minimum
- Retractable carton magazine allows optimal access to all machine components and makes format changes easy
- Ergonomic working height for maximum operating convenience

## Technical Highlights

- Positive carton opening system: servo-controlled carton pick-up protects the materials
- Torque limiters for all drives
- Modular design allows bespoke feed systems and the integration of numerous additional functions
- Reproducible and tool-less format changes in under 15 minutes; stack heights can be modified in less than 10 minutes
- No vacuum pumps: Venturi nozzles produce the vacuum for opening the cartons and folding the booklets
- Low vibration and noise levels thanks to servo motors and belt drives
- Minimal costs for maintenance: toothed belts and pulleys instead of chains and mechanical gears

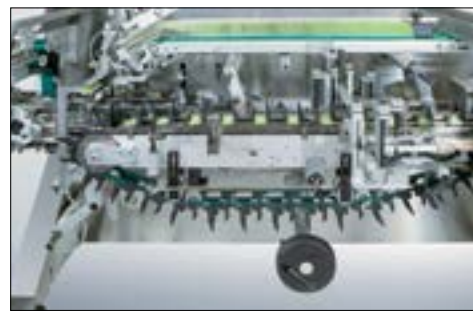
*Exploiting Technologies*  
*Romaco Promatic PC 4000 Series*  
*Romaco Promatic P 91 Series*



*Stacking into the bucket chain*



*Product feed into the open cartons*



*cGMP compliant balcony design*







### Carton Bundling Made Easy

The stretch banders in the Romaco Promatic SM 2000 series can be supplied with a mechanical (MV) or a servo (EV) drive. Depending on the model, these banders achieve a maximum output of 50 bundles a minute. They are also available with an optional shrink wrapper. The folding cartons can be stacked either lying down or standing up on edge. A carton feed system can be configured on the front of the machine if necessary.

### Quick Product Changes

- Tool-less adjustment to the required format in less than 5 minutes
- A complete set of format parts consists of just 3 pieces
- Automatic quick-release system speeds up film changes

### Balcony Structure

- Optimal access to all parts
- Short times for retooling, cleaning and maintenance

### cGMP Compliance

- Clear structure conforms to high cGMP standards
- Self-cleaning heat-sealing bar prevents accumulation of foil residues

### Technical Highlights

- Motorised film handling system at the top and bottom
- Dynamic stacking unit permits higher production speeds
- Sealing station cooled by an air gun

*Exploiting Technologies  
Romaco Promatic SM 2000 Series*



*Motorised film handling*



*Strain release during foil unwinding*



*Stacking unit and hot sealing bar*





## **Ideal Solution for a Wide Range of Final Packaging Applications**

The Romaco Promatic PAK 320 case packer is a fully automatic final packaging solution. This side-loading machine fills up to 8 shipping cases a minute at maximum speed. Either hot melt or adhesive tape closure is possible. The clear design of the case packer enables critical operations to be checked optimally, so that machine downtime is reduced to a minimum.

The Romaco Promatic PAK 100 is a semi-automatic case packer that is absolutely affordable. This machine can be used to group, stack and insert folding cartons. The only manual steps are case erection and feeding. Thanks to the simple, compact design, the machine is also extremely easy to operate.

## **Special Features of the Promatic PAK 320**

### **Ergonomic Design**

- Servo-controlled case handling with positive opening system
- Vacuum produced by Venturi nozzles
- Vibration-free and silent operation
- Format changes in under 20 minutes
- Modular design with cGMP compliant balcony structure

### **Quality Control**

- Easy integration of quality control systems
- Track & Trace: all systems required for seamless tracking implemented by Romaco
- Folding cartons identified layer by layer

*Exploiting Technologies*  
*Romaco Promatic PAK 320*  
*Romaco Promatic PAK 100*



*Carton feeding*



*Automatic case erection*



*Carton flap closure*





### Maximum Level of Efficiency, Minimum Level of Wear

The “iF design award”-winning tablet presses of the KTP 420X / 720X series from Romaco Kilian are versatile high speed tablet presses for the pharmaceutical industry. In the latest model series of the KTP 420X / 720X, Kilian has applied its extensive know-how regarding many different product features and behaviours together with current customer requirements for efficiency, product optimisation and in-line quality data acquisition.

The series is characterised by a high equipment availability, hygienic design and a fast and easy format change. The KTP 420X / 720X is available in the following configurations:

- For mono-layer tablets
- For bi-layer tablets
- For core-tablets (Tab-in-Tab)
- TRF – tamper-resistant formulation
- For bad-flowing materials

### Designed for High Efficiency

- High manufacturing efficiency in the long run
- Minimum product loss
- Fast, easy and reliable cleaning when changing the product
- Ergonomically designed operating interface with swiping technology
- Low life-cycle costs

### Easy Exchange of Die Tables

- The integrated die table slide-out system provides for a fast and easy cleaning and changing of the format without any special tools
- No need to install any additional appliances: all necessary parts are fitted as standard
- Very good accessibility

### Technical Highlights

- Presses all types of granulates including bad-flowing products
- Patented punch bellows to protect the tablets against lubricants
- Hermetical separation of compression and servicing area: no product in the machine compartment of the press
- Patented wear and maintenance-free punch brakes (brake magnets)
- Particularly durable and low-friction pressure rollers
- All radiuses > 50 m within the cleaning area
- Can be equipped with patented CWC in-line tablet weighing system

*Exploiting Technologies*  
*Romaco Kilian KTP 420X / 720X Series*



*Die table slide-out system*



*HMI screen*



*Hygienic design*







**Creating Value – Romaco generates added value for the customer across the entire life cycle of its solutions**

- Romaco is interested in a long-term solution partnership with its customers
- Romaco is familiar with its customers' critical success factors throughout the different life cycle phases of our jointly developed solutions
- The range of services from Romaco is specifically designed for these phases and is delivered through the appropriate modular components
- Romaco optimises the internal processes so that the customer can benefit from more secure decisions within the time gained
- In April 2014 the new business unit Romaco Systems was founded within the Romaco Group: the aim of this unit is to integrate the offering of the Romaco Group into comprehensive solutions

**We understand the business model of our customers and with a diverse portfolio we offer the best price/performance ratio for generating additional cash flow.**

**Benefit for the customer**

**Across the entire life cycle**

- Minimal life cycle costs and low TCO guarantee fast amortisation of the financial investment
- The wide range of customer service products ensures sustainable value creation

**In the investment phase (designing value)**

- Professional consulting to increase decision-making security
- Short processing and delivery times give maximum scope for investment decision and thus optimum decision flexibility
- Customised solutions development for the optimum preparation of the implementation phases (ramp-up and production)
- Reliable and customer-orientated project management according to efficient milestone principles provides professional delivery

**In the ramp-up phase (leveraging value)**

- The production phase is reached more quickly due to shortening of ramp-up
- Transfer of expertise provides increased security to the customer in implementing production systems at the highest level
- Minimisation of ramp-up costs

**In the production phase (harvesting value)**

- Maintenance of the value stream due to quick customer service response times
- Best delivery times in service, format and spare parts
- Consulting on the optimisation of the OEE
- Continuous training of the customer team
- Extension of the life span

*Creating Value*

**Creating Value describes our constant willingness to secure our customers' – and our own – financial success.**



**Comprehensive Range of Services from Initial Installation and Throughout the Operating Lifespan**

**Commissioning**

- Installation: project planning and execution
- Commissioning and initial briefing of operators
- Process validation support
- Ramp-up support with shortened start-up phase

**Maintenance**

- Telephone advice available from Romaco experts
- Expert system guarantees coherent and efficient assistance
- Remote online support: prompt and reliable diagnostics using digital access
- On-site service: local emergency support provided where necessary
- Maintenance contracts: preventive maintenance reducing breakdowns to a minimum

**Training**

- Qualified training and seminars for machine operators and maintenance personnel
- FDA compliant training concepts with continuous performance reviews
- Provided on the customer's site or at the Romaco training centre

**Production Optimisation**

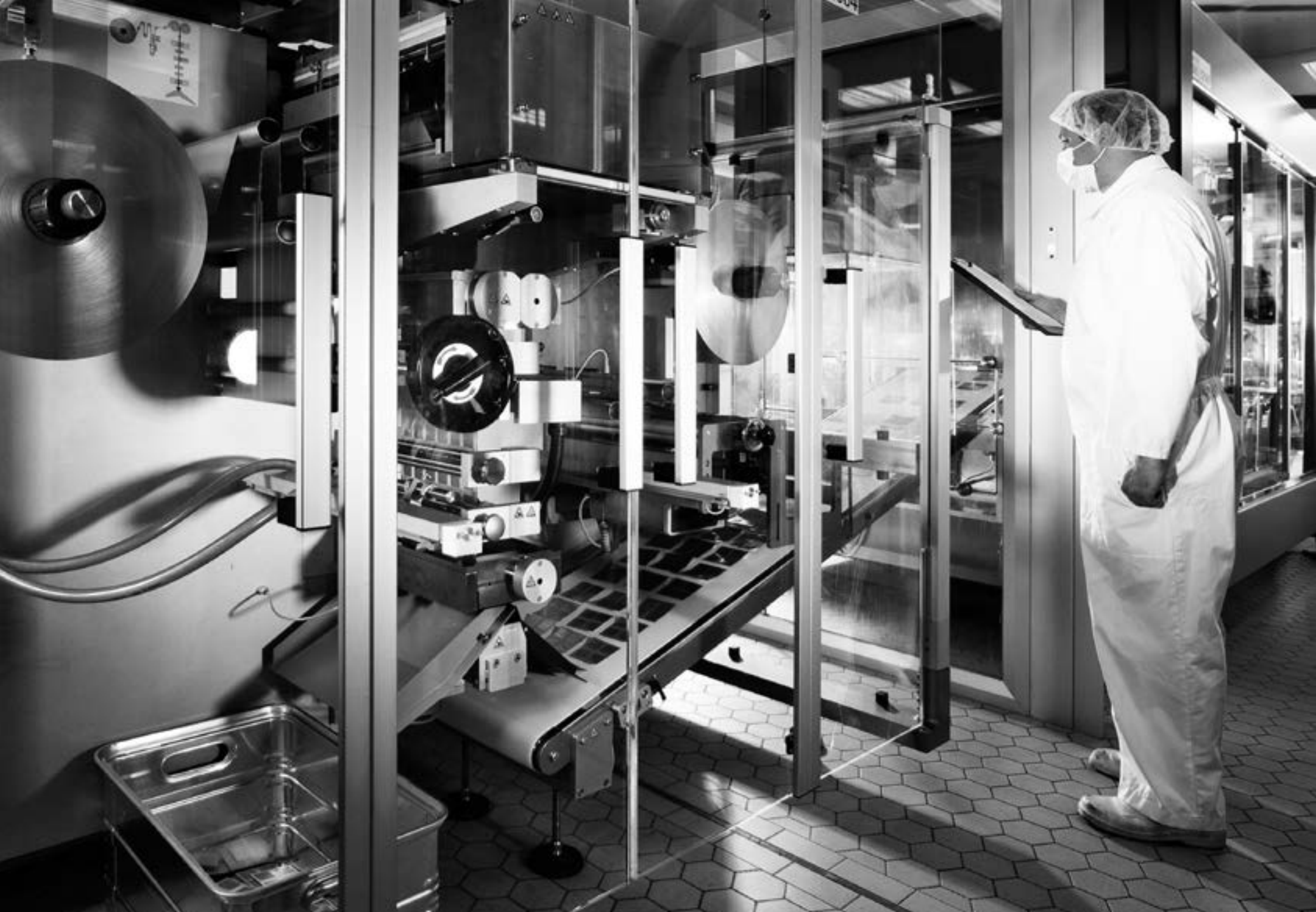
- Support for customers regarding the systematic optimisation of OEE values
- OEE audits on the customer's premises
- Detailed analyses of internal processes and downtime
- Combination of lean expertise and technical plant know-how

**Retrofit, Expansion and Relocation**

- Standard packages and customised solutions for machines in all series
- Special feed systems for complex products and specific layouts
- Plant relocation planning and execution

**Original Parts**

- Format sets compatible with all machines in the same series
- High-precision parts that fit exactly
- Format centre: each part is rigorously tested by Romaco before it leaves the factory
- Machine parameters and qualification documentation included in the scope of supply



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