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.
**Delivering Solutions**

**Tablet and Capsule Counting – Needs-Driven Solutions Based on Several Decades of Experience**

Romaco Bosspak tablet and capsule counters cover a vast range of applications. The technologies can be used to fill pharmaceutical solids and nutraceutical products with highly diverse properties into bottles. The machines are suitable for handling tablets, caplets and gelatine capsules of almost any shape and size. Due to the full compatibility of Romaco Bosspak and Promatic equipment, the counters can be combined very efficiently with Romaco’s comprehensive portfolio of secondary and tertiary packaging solutions.

**Product Counting, Filling into Bottles and Closing**

- Maximum counting speed: 200 bottles a minute
- Suitable for tablets, caplets, gelatine capsules, soft gels, dragées and suppositories
- Filling into glass or plastic bottles
- Designed to handle containers 20 to 150 mm in diameter and 30 to 220 mm in height
- Closure with a wide variety of caps including CRC (child resistant closures)

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» Romaco Bosspak offers extremely accurate tablet counting solutions for all product and manufacturing requirements – from trial batches to high speed production.«

Silvia Nazario, Product Manager Bosspak, Romaco Pharmatechnik GmbH
<table>
<thead>
<tr>
<th>Bottles into Cartons</th>
<th>Carton Bundles</th>
<th>Cartons in Shipping Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wide choice of carton designs and materials</td>
<td>• Complete packaging solution for all folding carton types</td>
<td>• Suitable for feeding and packing single or bundled folding cartons</td>
</tr>
<tr>
<td>• Leaflets, booklets or medical devices can be inserted</td>
<td>• Stretch or shrink-wrapping as an alternative</td>
<td>• Adhesive tape or hot melt closure</td>
</tr>
<tr>
<td>• Glued or tuck-in closures together with a variety of tamper-evident features</td>
<td>• Inkjet, colour embossed, laser engraved or vignette coding</td>
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</table>
Romaco Bosspak manufactures the most accurate electronic tablet and capsule counters in the market for customers processing particularly high quality and potency pharmaceuticals. Romaco-built solutions are also ideal where the highest possible OEE values are a key priority when filling pharmaceutical solids; featuring machines with intelligent electronic counting systems that are completely independent of specific formats. The fully automatic models in the RTC and VTC series can be supplied in several different versions depending on the product and the application. The full compatibility of the various Romaco brands is a significant advantage to providing complete solutions: in combination with other Romaco line components such as Romaco Promatic secondary and tertiary packaging solutions, which can be optionally integrated downstream, your Romaco Bosspak tablet and capsule counter can be expanded into a complete production line.
Flexible Machine Configurations

- Several different models for different requirements
- Flexible handling of numerous container sizes and shapes
- Compact, cGMP compliant design saves space and money on the production floor
- Only minimal downtime: convenient access, short cleaning times and tool-free format changes

Powerful Line Concept

- Easy to combine with many other Romaco line components
- Bottle unscramblers allow the containers to be fed automatically
- Bottle blowers clean the containers prior to filling, optionally with ionised air
- Desiccant inserted after filling, containers closed with screw caps or tuck-in closures, labelled and packed in cartons
Highest Accuracy in the Market
The electronic tablet and capsule counters in the Romaco Bosspak RTC series feature the special Quad Count system; a unique optical matrix counter which is more accurate than any other currently available in the market. The machines are therefore ideal for customers processing particularly high quality and potency pharmaceuticals. They count at a rate of up to 200 bottles a minute and are designed to handle containers up to 150 mm in diameter and 30 to 220 mm in height.

Product Separation
- Products separated cleanly prior to counting by means of rotating sorting discs
- Vibration-free single-stream filling of the tablets means higher filling rates, gentler product handling and less dust
- Total control over each individual product from the sorting disc via the counter to the bottle

Quad Count Optical Matrix Counter
- Unique counting system: products scanned from all four sides
- Significantly larger count zone compared to conventional counters
- Very high counting accuracy with reliable detection and removal of broken products

Technical Highlights
- Dust control feature ensures thorough dedusting prior to counting
- Positive tablet/capsule separation before counting
- Even very small quantities can be counted (one product per bottle)
- cGMP compliant design
- Convenient access and short cleaning times
- Extremely fast, tool-free format changes
- Fully or semi-automatic operation
- Low noise level reduces operator fatigue
Complete Independence of Specific Formats Permits Outstanding OEE Values

The electronic tablet and capsule counters in the Romaco Bosspak VTC series are our newest technology for filling pharmaceutical solids and nutraceuticals into bottles at high speed. Equipped with up to four filling stations, the machines in this series have the ability to count up to 200 bottles a minute. They were designed with the emphasis on maximum OEE (overall equipment effectiveness).

Vibratory Feeding Independent of Specific Formats
- Products fed to the counting stations by means of vibratory feed trays
- Vibration intensity adjustable on the HMI panel thanks to three vibratory plates with individually controllable frequency and amplitude
- Optimised product control and speed
- Extremely fast product and packaging changes

New Sensor Generation
- Products pass under the twelve counting stations at high speeds
- Very high counting accuracy: infrared sensors scan the products at a rate of 34,000 per second
- New sensor generation with built-in microprocessors that adjust the count trigger point automatically during production
- Effective compensation of disruptive factors such as dust, humidity and heat: no need to calibrate the counting stations

Intelligent Counting Systems
- Smart control of product filling into glass or plastic bottles
- Unique pre-dosing system improves counting accuracy and filling speed
- Uninterrupted counting process: while one bulk is being filled into bottles, the next products in line are collected on special ledges (trap box)

Technical Highlights
- Compact, cGMP compliant design
- Convenient access and short cleaning times
- Tool-free changeover of all product-contacted parts
- Compliance with FDA 21 CFR Part 11 as an option
The New Generation of Automatic Capping Machines

The capping machines in the Romaco Macofar CSP series feature the most advanced technology for sealing bottles filled with pharmaceutical solids or nutraceutical products. A variety of closure systems, such as aluminium, press on or screw caps are available. Up to 24,000 bottles per hour are precisely processed by the machine.

Sealing with Stationary Guide
- Each container fed to the machine is instantly clamped from below
- Lifting and turning plate presses the container against a rigid plate
- Laterally mounted blade bends the cap bottom to seal the container

Sealing with Rotating Head
- Each container entering the machine is clamped between a stationary base plate and a rotating head
- Cap is positioned on the container, then tightly and securely fastened as the head rotates

Automation and Simple Operation
- Intuitive touch panel operation (HMI)
- Formulation management function
- Recording and management of production data
- Compliance with FDA 21 CFR Part 11 as an option

Ergonomic Design – Compact and Optimally Accessible
- Very small footprint
- Capping system design reduces contamination to a minimum
- Particle extraction system available as an option

“White” and “grey” areas optimally accessible
- Machine cleaning time shortened
- All parts in contact with the cap can be changed quickly and easily
- Format changes completed in a few simple steps

Machine configurations
- Cap feeding container
- Cap feeding channel
- Conveyor belt permits use in a packaging line
- Collection in trays at the outlet
- Free-standing or through-wall installation
- Compliance with recent PAT directives of US FDA: optionally equipped with several online inspection systems, for instance capping pressure control

Exploiting Technologies
Romaco Macofar CSP Series

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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 motion. 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
- 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

Bottle feeding into bucket chain
Product feed into the open cartons
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
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 describes our constant willingness to secure our customers’ – and our own – financial success.
### Customer Service

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

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<tr>
<th>Commissioning</th>
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<tr>
<td>- Installation: project planning and execution</td>
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<td>- Commissioning and initial briefing of operators</td>
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<td>- Process validation support</td>
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<td>- Ramp-up support with shortened start-up phase</td>
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<th>Maintenance</th>
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<tr>
<td>- Telephone advice available from Romaco experts</td>
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<tr>
<td>- Expert system guarantees coherent and efficient assistance</td>
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<tr>
<td>- Remote online support: prompt and reliable diagnostics using digital access</td>
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<td>- On-site service: local emergency support provided where necessary</td>
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<td>- Maintenance contracts: preventive maintenance reducing breakdowns to a minimum</td>
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<tr>
<td>- Qualified training and seminars for machine operators and maintenance personnel</td>
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<tr>
<td>- FDA compliant training concepts with continuous performance reviews</td>
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<tr>
<td>- Provided on the customer’s site or at the Romaco training centre</td>
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<th>Production Optimisation</th>
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<tbody>
<tr>
<td>- Support for customers regarding the systematic optimisation of OEE values</td>
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<td>- OEE audits on the customer’s premises</td>
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<tr>
<td>- Detailed analyses of internal processes and downtime</td>
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<tr>
<td>- Combination of lean expertise and technical plant know-how</td>
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<thead>
<tr>
<th>Retrofit, Expansion and Relocation</th>
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<tr>
<td>- Standard packages and customised solutions for machines in all series</td>
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<tr>
<td>- Special feed systems for complex products and specific layouts</td>
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<tr>
<td>- Plant relocation planning and execution</td>
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<th>Original Parts</th>
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<tr>
<td>- Format sets compatible with all machines in the same series</td>
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<tr>
<td>- High-precision parts that fit exactly</td>
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<tr>
<td>- Format centre: each part is rigorously tested by Romaco before it leaves the factory</td>
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<tr>
<td>- Machine parameters and qualification documentation included in the scope of supply</td>
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