Tableting solutions for the pharmaceutical industry
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

Romaco Kilian finds reliable solutions even for complex challenges and various types of tablets which ensures great flexibility and excellent OEE values for us. «

Dr. Hans-Jörg Kilian, member of the board for manufacture and technology centre, Berlin-Chemie, Germany

Various Types of Tablets

As well as single-layer tablets, multi-layer tablets are also increasingly used for therapeutic treatments. Romaco Kilian has already integrated the multi-layer technology into its portfolio decades ago and has developed it continuously ever since.

Romaco Kilian also provides reliable solutions with a high degree of reproducibility for the compression of core-tablets (Tab-in-Tab) in which various factors influence the release rate of the different agents.
<table>
<thead>
<tr>
<th>Single-layer tablets</th>
<th>Multi-layer tablets</th>
<th>Core-tablets (Tab-in-Tab)</th>
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</thead>
<tbody>
<tr>
<td>Single-layer tableting with a maximum output of 1,020,000 tablets per hour</td>
<td>Multi-layer tableting with a maximum output of 510,000 tablets per hour (rotary press) or 450 tablets per hour (single stroke press STYL'ONE)</td>
<td>Precise core feeding system with high capacity for different formats (up to 120,000 tablets per hour)</td>
</tr>
<tr>
<td>Optimised filling systems for products with various flow properties</td>
<td>Special filling shoe system: pressing of up to five layers with five different products</td>
<td>Automatic core positioning system with very high precision (+/- 0.2 mm)</td>
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<tr>
<td>Special coatings for particularly abrasive products</td>
<td>Vacuum system to avoid cross-contamination between the tablet layers</td>
<td>High-performance camera ensures a continuous core localisation</td>
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<tr>
<td>Pressing of any tablet form possible</td>
<td></td>
<td>Automatic correction of the core position</td>
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<tr>
<td>Self-learning control system</td>
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</table>
Romaco Kilian provides innovative standard and special tableting solutions. Decreasing batch sizes, frequent product changes and increasing cost pressure – the pharmaceutical industry is facing major challenges. Romaco Kilian provides an adequate response with its innovative standard or special tableting solutions; ensuring that companies are well prepared for the international competition and benefit from the excellent productivity, great flexibility and high equipment availability.

**Pharmaceutical tablet presses for any demands**

• Single- and double-sided rotary press
• Available in four configurations: for single-layer and multi-layer tablets, core-tablets (Tab-in-Tab) as well as for tamper-resistant formulation (TRF)
• Hygienic design for easy, fast and effective cleaning
• Different PAT systems available as an option
• For applications that require a maximum level of efficiency at a minimum level of wear
• Compression of more than 1 million tablets per hour

**High-end high speed tablet presses**

• Suitable for a wide variety of pharmaceutical applications
• Pressing of all types of granulates including bad-flowing products
• Output of up to 300,000 tablets per hour

**Standard tablet presses with exchangeable die table**

• Suitable for a wide variety of pharmaceutical applications
• Pressing of all types of granulates including bad-flowing products
• Output of up to 300,000 tablets per hour
Laboratory and pilot plant presses

- Versatile single stroke presses for R&D applications, small batch sizes and clinical batches
- As rotary machines also usable for pilot productions
- Suitable for all types of tablets
- Pressing of up to five layers with five different products
- Core-tableting (Tab-in-Tab) function available
- Highly automated analysis software for R&D operation or in-process troubleshooting
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 radii > 50 m within the cleaning area
- Can be equipped with patented CWC in-line tablet weighing system
Many pharmaceutical manufacturers search for a robust, reliable and compact tabletting machine. Romaco Kilian meets these requirements with its rotary tablet press S250 SMART. This machine is characterised by high production stability and outstanding quality results. The latest model series of the S250 replaces tried-and-tested technologies with a state-of-the-art control unit and an exchangeable die table. The S250 SMART is particularly suited for the compression of any powder mixture and reaches an output of up to 300,000 tablets per hour.

The S250 SMART is available in three configurations:
- SMART Tradition
- SMART Classic
- SMART Prime

Robust and compact design
- All electronic components are integrated into the machine body.
- There is no need for an external electrical control cabinet: saving of space in the production area
- Flexible application in the production: the machine can be easily repositioned

Technical highlights
- GAMP compliant automation, qualification and validation
- Fast die table exchange by means of an integrated die table lifting system
- Patented wear-free brake magnets
- Simplified exchange of all components and wear parts
- User-friendly touch panel (HMI)

SMART
- S = Simple handling
- M = Modular packages
- A = Automated operation
- R = Robust and compact design
- T = Turret change
Compact model for various requirements

The KTP 180 is a compact rotary tablet press for the pharmaceutical industry which meets a wide variety of different requirements. The machine offers unique scale-up possibilities and is the ideal solution for R&D applications, clinical batches and small-scale production.

It is available in two configurations:
- KTP 180 (Production)
- KTP 180 (Laboratory)

Monitoring system and data acquisition
- Completely automated machine without hand wheels
- Operation via an integrated HMI with a 12” touchscreen
- Monitored machine parameters in the R&D version: upper and lower compression forces, ejection force, pre-pressure force, upper and lower punch displacement measurements
- Data acquisition system integrated into the operating software

Very good accessibility and easy operation
- Fast and easy cleaning of the production area with opened window flaps: minimisation of change-over and cleaning times
- Mechanical area easily accessible for maintenance work
- Easy access to all products contact parts for assembly and disassembly without tools

Technical highlights
- Exchangeable die table in a very compact design
- Unique scale-up possibilities due to a scientific approach
- Patented wear-free brake magnets
- Optional individual selection by means of compressed air
The R&D solution

The Romaco Kilian STYL’ONE is a single stroke tablet press for R&D applications and the production of clinical batches. The machine is particularly characterised by its versatility and is suitable for all types of tablets.

The STYL’ONE is particularly suited for the production of clinical trial batches. It is available in two configurations:

- STYL’ONE Classic – as single-layer (SL) or multi-layer press (ML)
- STYL’ONE Evolution (SL, ML, Tab-in-Tab pressing possible)

STYL’ONE ML: The world’s fastest single-punch multi-layer press

Multi-layer tablets are increasingly used for therapeutic treatments. They often consist of different agents, each with its proper release profile. Romaco Kilian integrated the multi-layer technology into its portfolio decades ago and has developed it continuously ever since. A result is the STYL’ONE ML which is the most powerful single stroke press for the production of multi-layer tablets worldwide.

- Multi-layer tableting with a maximum output of 450 tablets per hour
- Special fill shoe system: compression of up to five layers with five different products
- Vacuum system to avoid cross-contamination between the tablet layers

Technical highlights of the STYL’ONE series

- Easy access to all product contact parts
- Different feeding systems available
- Complete instrumentation for force and displacement measurement
- Core-tableting function (Tab-in-Tab) available
- Extensive, specially developed ANALIS software for detailed pressing process analysis

Innovative filling system

High tech core setting unit

Easy core positioning
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

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.

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.
Customer Service

Reliable – competent – global
From installation through the entire service life of the plant

Pharmaceutical manufacturers who choose Romaco Kilian get more than just a high-quality machine. Romaco Kilian customer service is based on more than 100 years of experience in tableting and goes well beyond maintenance work and spare parts supply. The specialists of Romaco Kilian will find solutions even for the most complex applications or products and can maximise their customers’ production speed and the product quality.

Additional services at a glance:

The Romaco Kilian academy: training on different levels on the following topics
• Machine operation
• Optimisation of the compression process
• Special training for customer-related tableting challenges
• Access to all fields of knowledge: pharmaceutics, mechanics, electronics

Spare parts, format parts and change parts
• Consistent quality monitoring
• Fast and reliable delivery thanks to short cycle times
• High percentage of internal production with durable special materials, manufactured according to lean principles
• Each part thoroughly inspected at Romaco Kilian before delivery
• An experienced repair team refurbishes the parts according to the original manufacturers specifications

Maintenance
• Telephone support: qualified and prompt processing of issues and questions
• Internet remote maintenance: digital access for fast and safe fault diagnosis
• On-site service: the technicians of Romaco Kilian will provide assistance on customer demand
• Maintenance contracts: preventive actions minimise the failure rate
• Machine calibrations

Set-up
• Set-up and training of the operating personnel
• Validation support
• Ramp-up service: immediate achievement of the highest degree of efficiency with the new equipment

Machine upgrades and retrofits
• “Retrofit project”: state-of-the-art electrical components for old machines
• Individual solutions: customised retrofits and upgrades for every machine type
• Extensive portfolio: options for the electronic retrofitting and control unit upgrades
• Flexibility in the design of the upgrades: on customers’ site or at Romaco Kilian in Cologne