



KORSCH
PRODUCT RANGE

XM 12

1-1/2-Layer Tablet Press



Pharmaceutical
Rotary Tablet Press

KORSCH
The Specialist.

Innovations Made in Berlin Since 1919

Focus Drives Perfection

Specialization is the key. Since 1919, KORSCH has focused on its core competency of tablet compression technology.

This focus and resulting experience base is the foundation for the broadest and most innovative product line for tablet compression technology.

KORSCH offers an optimal solution for virtually every tablet compression application – through initial feasibility, research, scale-up, clinical production, and full scale 24/7 production.

KORSCH presses are used successfully all over the world and are supported by a global network of sales and technical service specialists.

www.korsch.de

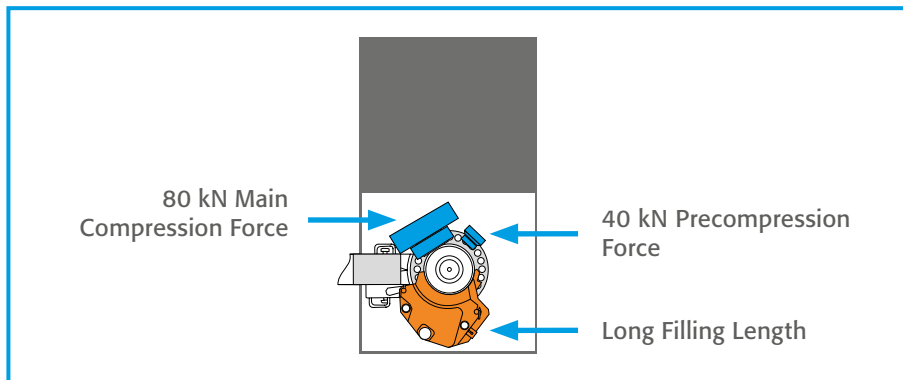
The logo consists of three vertical bars of equal height, colored black, red, and gold from left to right, followed by the text "MADE IN GERMANY" in a bold, sans-serif font. The text is arranged in two lines: "MADE IN" on the top line and "GERMANY" on the bottom line.

MADE IN
GERMANY

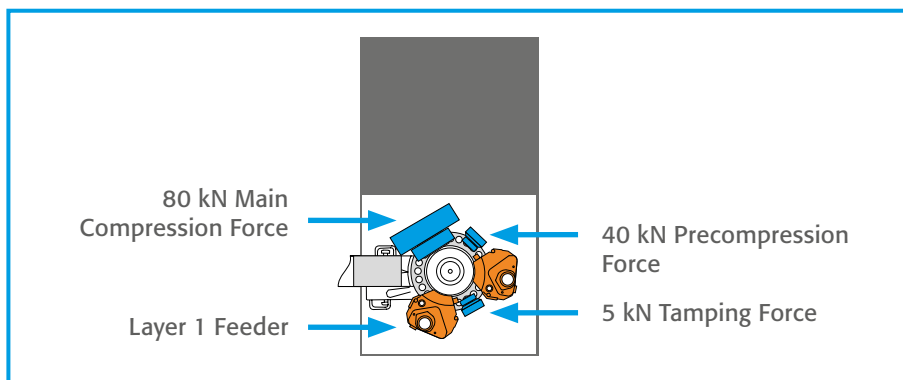
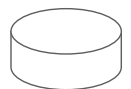
Maximum Flexibility

The KORSCH XM 12 is a small-scale press which is ideal for product development, scale-up, clinical trials, and mid-range production. The bi-layer execution, single-layer

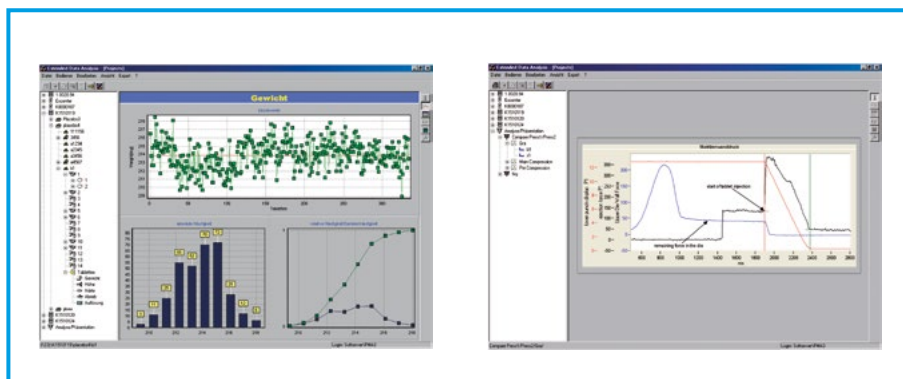
conversion kit, and exchangeable turret capability offer unprecedented flexibility.



Single-Layer



Bi-Layer



Data Acquisition and Analysis

Optimized Technology

The patented design of the XM 12 offers optimal ergonomics with a fully integrated electrical cabinet and 15-inch touch screen HMI. The patented structural design of the carrier plate minimizes vibration and noise during high-speed and heavy tonnage operation. An internal lift device

offers a simple and safe method for turret removal and installation. The superior access to the compression zone, and the use of quick disconnect components, insures a streamline cleaning and changeover process. The caster base permits full portability in the R&D environment.

Production of Single-Layer Tablets

The XM 12 Single-Layer Tablet Press offers a large feeder and long filling length for optimal die filling. The result is precision tablet weight control at high speeds. The press offers a maximum rated speed of 120 RPM, a precompression capability of 40 kN, and a main compression capability of 80 kN. A mixed turret, consisting of both B and D tools is available for maximum flexibility.

- Long Filling Length
- Zero Clearance Feeder Design
- 40 kN Precompression Force
- 80 kN Main Compression Force
- Ejection Force Instrumentation

Production of Bi-Layer Tablets

The XM 12 Bi-Layer Tablet Press offers the ideal machine for small-scale Bi-Layer development, and clinical batch production. The retractable second layer feeder permits automated first layer sampling at production speeds. Both feeders utilize zero clearance technology and are configured with an integrated dust extraction manifold, which cleans the die table and completely eliminates any potential for cross-contamination.

- Retractable Second Layer Feeder
- Automatic First-Layer Sampling
- Clean Layer Separation
- 5 kN Tamping Force
- 40 kN Precompression Force

Minimal Material Quantities

The XM 12 offers a range of special features to permit Single-Layer and Bi-Layer development with very small material quantities.

- Reduced Volume Feeder Paddles
- Reduced Volume Product Hopper
- Full Functionality with Reduced Press Tools
- Comprehensive Data Acquisition and Analysis

The benefits at a glance:



- **Optimized Technology**
- **Mobile and Compact**
- **Comprehensive Data Acquisition and Analysis**

Mobile and Compact

The KORSCH XM 12 is a small-scale press which is ideal for product development, scale-up, clinical trials and mid-range production. The unique design concept of the XM 12 provides a self-contained and fully portable platform, which can easily be transported from room to room in a product

development laboratory. The exchangeable turret permits the production of any size tablet, in a Single-Layer or Bi-Layer configuration. The conversion from Single-Layer to Bi-Layer is extremely straight forward and can be implemented in the course of a normal changeover.

Self-Contained Design

The dimensions of the machine and the caster base insure simple portability from room to room. The electrical cabinet and touch screen HMI are fully integrated into the machine.

- Fully Self-Contained Design
- Caster Base for Portability
- Optimal Access for Operation and Maintenance

Mixed Turret Design

A mixed turret, consisting of B and D tools, permits all tablet shapes and sizes to be produced on a single turret and eliminates the cost of a second complete turret.

- Uses Standard TSM or EU Press Tools
- Single-Turret, Mixed Tool Operation



Exchangeable Turret

An internal lift device permits the simple and streamlined removal and installation of the turret. The compression zone offers smooth surfaces and quick disconnects to permit fast cleaning and changeover.



Minimal Noise and Vibration

The unique and patented design of the carrier plate, with pneumatic dampers, fully isolates vibration from the head piece and machine base.

The result is an extreme reduction in operating noise level, even with high compression forces and high press speeds.

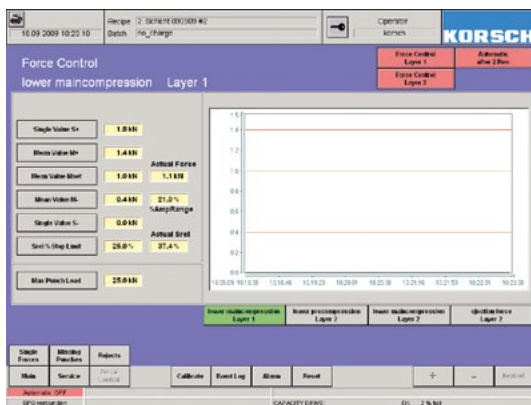
- Very low noise emission < 80 dB(A)
- No vibration transmission to the floor of the compression room
- No segregation of powder in the feeding system which can occur with machine vibration



Comprehensive Data Acquisition and Analysis

The KORSCH XM 12 Tablet Press offers the integrated PharmaResearch® which permits real-time display, collection, and analysis of high speed press force waveforms. The data is analyzed automatically and generates comprehensive

reports on force peaks, areas under the compression curve, rate of force application, rate of force decay, and contact time. Data can also be collected over the course of clinical batches to permit statistical analysis and scale-up.



The Pro Capability

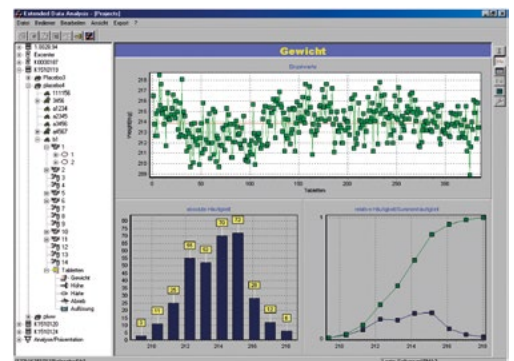
The standard control module of the XM 12 includes a secure login, display of press forces, event log electronic audit trail, alarm history electronic audit trail, as well as a product recipe module. The optional Pro configuration adds a full press force control system with single tablet rejection, and the corresponding tablet reject log.

Process Optimization: Instrumentation and Data Analysis

The KORSCH PharmaReserach® permits the characterization of material properties, including sticking, picking, capping, elastic recovery, and permits the generation of compression and ejection force profiles.

Available Instrumentation:

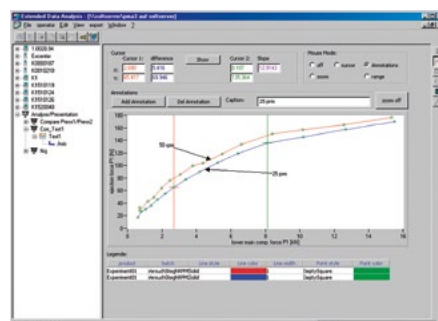
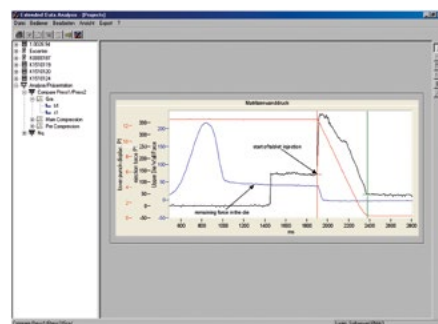
- Tamping Force, Precompression Force, Main Compression Force, Ejection Force, Scrape-Off Force





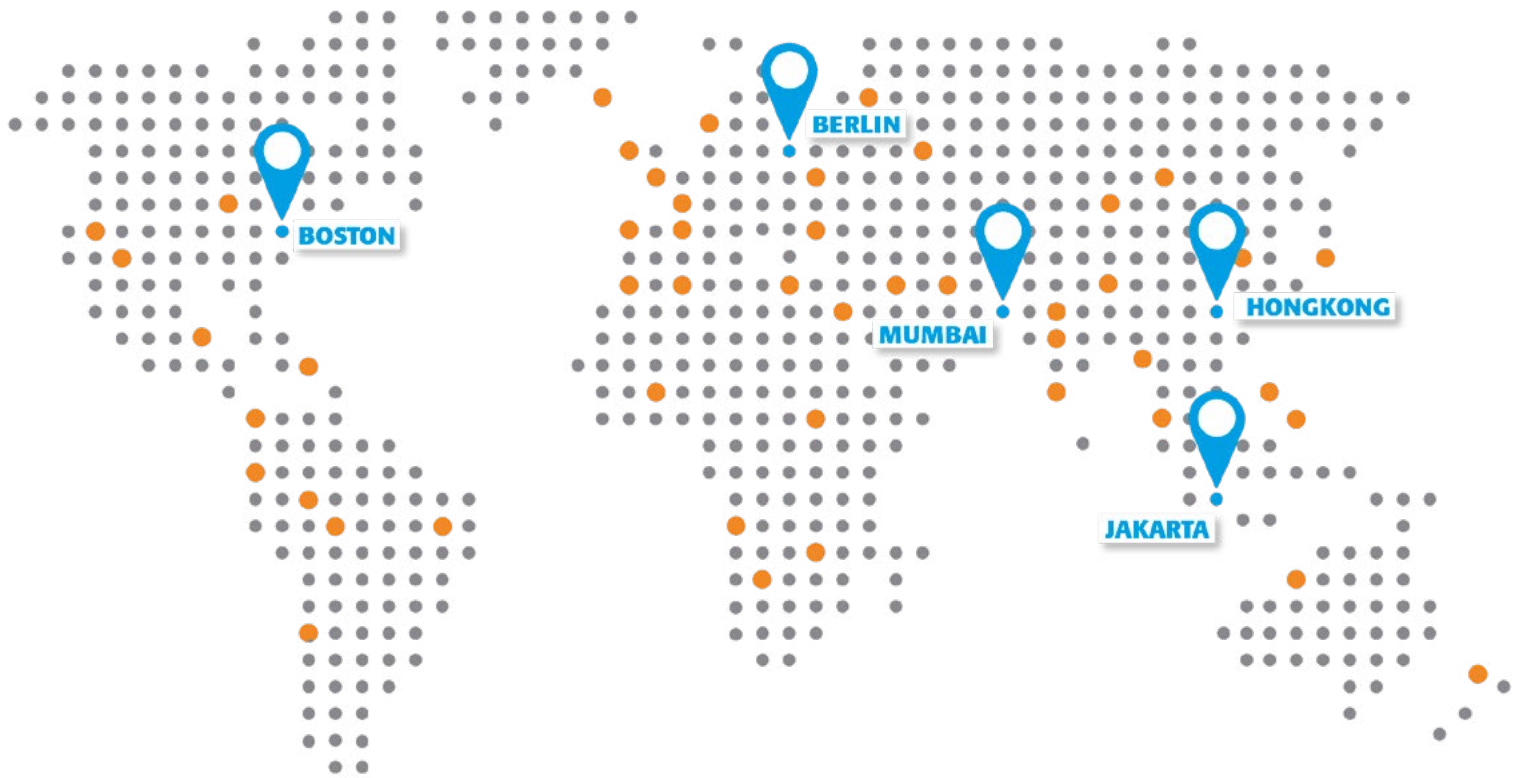
Data Analysis

- Free format graphic and statistical analysis to allow the export of many data formats.
- Reports can be automatically generated in a variety of data formats with and without an electronic signature.
- Charts can be dimensioned, comments added, formatted and exported before being processed in the MS Office world.
- Fingerprint recording during production. Overlay Technology allows safe and quick recognition of subsequent waveforms.
- Correlation Analysis to establish a "Knowledge Database" that serves to easily compare the properties of known and unknown ingredients.
- The database enables the user to correlate measuring values from the tableting process and derived and externally recorded quantities (e.g. tablet hardness, density, etc.).
- Compaction Analysis allows evaluations e.g. Heckel plot, energy, work of compression, contact time, compressibility.
- "Built-in" PAT function, i. e. the database is automatically filled with process data, thereby helping to define and complete PAT requirement for Knowledge Space and Design Space.
- Network capability.



The technical data included in this document are optimal parameters and are dependent on product quality and machine settings.

KORSCH Global Service Network



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