KORSCH

RANGE OF PRODUCTS

A SOLUTION FOR EVERY TABLET COMPRESSION APPLICATION

Global After Sales

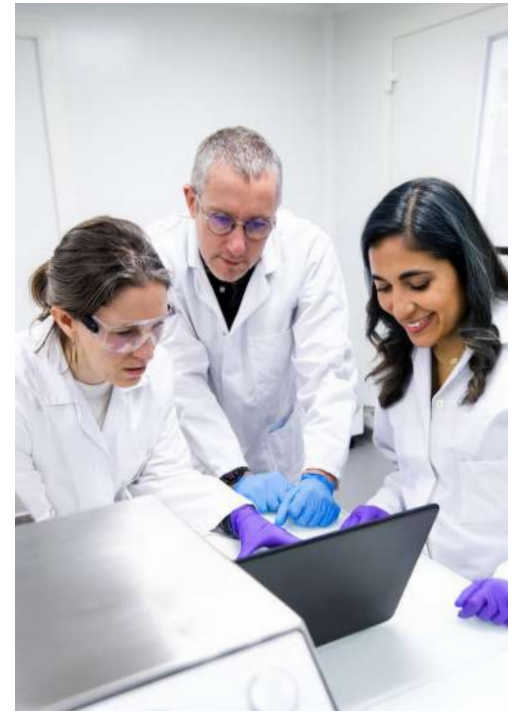
KORSCH offers a global after sales capability that addresses all facets of tablet production support and optimization.

Our team of experts is available to assist you with a full spectrum of after-sales services including:

- The highest quality OEM parts
- Modernization and upgrade solutions
- Professional technical service

These measures ensure optimal machine availability and longevity, contributing to both climate sustainability and cost efficiency.

www.korsch.com



Focused on Tablets Driven by Innovation

Specialization makes the difference: For over 100 years, we have focused on what we love and do best: tableting!

Experience is key: Thousands of successfully completed projects form the foundation of the largest and most innovative product portfolio in the industry.

We offer the perfect solution and expertise for a wide range of requirements: from special presses for R&D, to rotary presses for scale-up operations and medium batch production, all the way to high-performance presses for 24/7 operation.

Our tablet presses are successfully in use worldwide every day, supported by a global team of specialists in service, process optimization, and sales.

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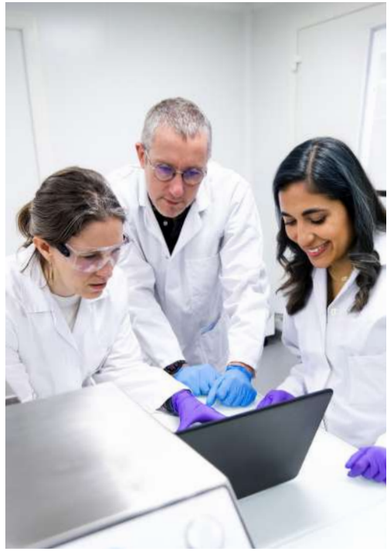

STYL'ONE Nano

BENCHTOP
COMPACTION SIMULATOR

STYL'ONE Nano

Benchtop Compaction Simulator

The compact and portable STYL'ONE Nano is a revolutionary benchtop compaction simulator, which is ideal for small material quantities. An integrated data acquisition and analysis system offers a simple and powerful tool for material characterization.

A unique drive system permits a range of standard compression profiles, including the ability to replicate precompression and main compression on a small rotary tablet press.

Technical Data:

Tool Type:	EU / TSM B+D and non-standard
Die Type:	BBS, BB, B, D and non-standard
Compression Force:	50 kN
Tablet Ø max.:	25 or 40 mm (non-standard)
Tablet Output max.:	1,750 tablets/h

STYL’ONE Evo

VERSATILE
COMPACTION SIMULATOR

STYL’ONE Evo

Versatile Compaction Simulator

The STYL’ONE Evo is the most advanced compaction simulator in the world. With the capability to replicate any high-speed production press, the STYL’ONE Evo offers unlimited flexibility, including single-layer, multi-layer, and tablet-in-tablet formats.

A GMP production module permits the production of small clinical batches, complete with force monitoring, tablet rejection, and audit trails. The system can work in a punch displacement mode like any rotary press, or with preset compression force targets to accelerate the execution of compression profiles.

Technical Data:

Tool Type:	EU / TSM B+D, EU-1-441 and non-standard
Die Type:	BBS, BB, B, D and non-standard
Compression Force:	50 kN (80 optional)
Tablet Ø max.:	25 or 40 mm (non-standard)
Tablet Output max.:	1,800 tablets/h

XL 100

RESEARCH
TABLET PRESS

XL 100

The XL 100 research tablet press is a portable, robust, small-scale rotary press and is widely considered to be the standard for product development.

It offers an exchangeable turret, a mixed tool turret, a gravity and forced feeder, and an integrated electrical cabinet. A superior GMP design ensures efficient cleaning and fast product setup.

The press may be fully instrumented to permit comprehensive data collection analysis with the KORSCH R&D software PharmaResearch. An optional production control module permits the manufacture of clinical batches with press force control, single-tablet rejection, and full array of electronic audit trails.

Technical Data:

Punch Stations:	13 / 12 / 10 / 8
Compression Force:	10 / 60 kN
Tablet Ø max.:	11 / 13 / 16 / 25 mm
Tablet Output max.:	up to 93,600 tablets/h*

* With single tool, 13 punch stations, 11 mm tablet Ø

X 3

MID-RANGE PRODUCTION

The X 3 is a single-sided rotary press suitable for product development, scale-up, clinical production, mid-range production, and continuous manufacturing.

X 3 SFP

The X 3 SFP is a single-layer only execution. The X 3 single-layer compression cycle ensures excellent weight uniformity at high speeds with one of the longest feeder lengths in the mid-range segment.

X 3 MFP

The X 3 MFP sets new standards in flexibility and productivity in the mid-range production segment. It offers a single- and bi-layer capability in one machine with a simple conversion process.

Technical Data:

Punch Stations:	Turret* 48_S / 37_D / 36_S / 34_D 28_D / 27_S / 23_D / 16_D
Compression Force SFP:	40 / 80 kN
Compression Force MFP:	5 / 20 / 40 / 80 kN
Tablet Ø max.:	11 / 13 / 16 / 25 mm
Output max. 1-L: Output max. 2-L:	345,600 tablets/h** 172,800 tablets/h**

*D: Dies and S: Segments
** With single tool, 48 punch stations, 11 mm tablet Ø

XL 400

THE FOURTH GENERATION

The XL 400 offers a new level of innovation and advancement, while maintaining the flexibility that is the hallmark of the design.

XL 400 SFP

The XL 400 SFP is a single-sided high-speed rotary tablet press dedicated to single-layer tablet production. A compression dwell bar between pre and main compression dramatically extends dwell time for the most difficult products.

XL 400 MFP

The XL 400 MFP has the capability to produce single-layer, bi-layer, tri-layer, tablet-in-tablets, and microchip-in-tablets on the same machine platform. The modular platform design features a preconfigured carrier plate and head piece that permits the installation of a wide range of compression roller modules, feeder modules, and cam track modules.

Technical Data:

Punch Stations:	Turret* 63_S / 47_D / 45_S / 44_D 36_S / 35_D / 29_D
Compression Force SFP:	100 / 100 kN
Compression Force MFP:	5 / 20 / 100 kN
Tablet Ø max.:	11 / 13 / 16 / 25 mm
Output max. 1-L: Output max. 2-L: Output max. 3-L:	453,600 tablets/h** 226,800 tablets/h** 189,000 tablets/h**

*D: Dies and S: Segments
** With single tool, 63 punch stations, 11 mm tablet Ø

X 5

SINGLE-SIDED MAXIMIZED

The X 5 dramatically boosts single-sided tablet output: with a turret with segments, the X 5 increases tablet output per square meter by over 40 % compared with most single-sided tablet presses on the market.

X 5 SFP

The X 5 SFP is a single-sided high-speed rotary tablet press dedicated to single-layer tablet production. With a powerful torque drive, a long feeder design in relation to the pitch circle and a precision tablet weight control, the X 5 is geared for high-output manufacturing.

X 5 MFP

The X 5 MFP offers maximum efficiency and flexibility in high-speed, high-volume production environments. It has the capability to produce single- bi- and tri-layer tablets on the same machine platform. The modular platform design features a preconfigured carrier plate and head piece that permits the installation of compression roller modules, feeder modules, and cam track modules.

Technical Data:

Punch Stations:	Turret* 72_S / 58_D / 54_S / 52_D 43_D / 42_S / 35_D
Compression Force SFP:	100 / 100 kN
Compression Force MFP:	5 / 20 / 100 kN
Tablet Ø max.:	11 / 13 / 16 / 25 mm
Output max. 1-L: Output max. 2-L: Output max. 3-L:	518,400 tablets/h** 259,200 tablets/h** 216,000 tablets/h**

*D: Dies and S: Segments
** With single tool, 72 punch stations, 11 mm tablet Ø

XT 600

HIGH-SPEED
DOUBLE ROTARY

XT 600

The XT 600 is a high-speed, double rotary tablet press designed for maximum output, featuring advanced turret segment technology, rugged compression columns, and an innovative carrier plate that minimizes noise and vibration.

Engineered as a true workhorse for high-volume, 24/7 production, it delivers 100 kN pre and main compression capability, operates at up to 100 rpm, and achieves a maximum output of 1,380,000 single-layer tablets per hour.

A streamlined turret exchange, optional bi-layer conversion kit, and a simple and intuitive touch-screen interface ensures maximum flexibility and peak operating efficiency.

Technical Data:

Punch Stations:	Turret* 115_S / 85_{D-S} / 77_D 65_{D-S} / 53_D
Compression Force Standard:	60 / 60 up to 100 / 100 kN
Compression Force Special Solutions:	5 / 20 / 100 kN
Tablet Ø max.:	11 / 13 / 16 / 25 mm
Output max. 1-L: Output max. 2-L:	1,380,000 tablets/h** 414,000 tablets/h**

*D: Dies and S: Segments
** With single tool, 115 punch stations, 11 mm tablet Ø

XT 600 HD

HEAVY-DUTY
DOUBLE-SIDED

XT 600 HD

Heavy-Duty Double-Sided Rotary Press

The robust XT 600 HD for large formats and high compression forces, permits the production of single-layer or bi-layer tablets. With versatile turret configurations for up to 35 mm punch shafts, it offers an automated tablet weight control system and therefore meets all requirements of a modern rotary press.

The XT 600 HD is best suited for the production of salt tablets, catalysts, dish washer tabs, fertilizers, as well as industrial and home-care cleansers.

Technical Data:

Punch Stations:	65 / 53 / 39
Compression Force:	120 / 120 kN
Tablet Ø max.:	18 / 27 / 34 mm
Filling Depth max.:	40 mm
Tablet Output max.:	546,000 tablets/h*

* With single tool, 65 punch stations, 18 mm tablet Ø

XT 1200 HD

HIGH-OUTPUT PRODUCTION

XT 1200 HD

KORSCH heavy-duty presses are built to operate in the most demanding production environments and are especially suitable for the high-output production of large formats with maximum press forces and large deep filling depths.

The robust design and meticulous selection of materials and surface treatments, ensure extended run durations in any 24/7 production setting. Roller guided or standard mushroom head press tools are available.

Technical Data:

Punch Stations:	up to 84*
Compression Force:	up to 200 kN*
Tablet Ø max.:	up to 64 mm*
Filling Depth max.:	up to 60 mm*
Tablet Output max.:	up to 378,000 single-layer tablets/h**

* Depending on HD model
** With single tool, 84 punch stations, 27 mm tablet Ø

DryCon®

CONTAINMENT
LEVEL OEB 3/4

DryCon®

Dry containment kit (DryCon®) permits a containment level of OEB 3/4 and includes:

- Pressure monitoring in the compression zone
- Reinforced compression zone inner casing
- Pneumatic window lock, controlled via the HMI
- Split discharge chute design
- Tri-clamp connections on discharge chute channels
- Tri-clamp connection on machine feed pipes

Additional features allow contained intervention in compression zone during operation:

- Glove ports
- Rapid Transfer Port (RTP)
- Vacuum hand wand

The system can be enhanced with contained make/break connections:

- Contained air handling system
- Contained material feed
- Contained tablet discharge

WipCon®

CONTAINMENT
LEVEL OEB 4/5

WipCon®

WipCon® containment execution permits a containment level of OEB 4/5 and is designed based on two main technical requirements in addition to the DryCon® features:

- Dust tightness suitable for OEB 4/5: compression zone as an isolator
- Washing in Place functionality with inherent watertightness

The features listed for DryCon® are included in the WipCon® execution.

SMEPAC testing confirmed containment capability of WipCon® design.

Continuous Manufacturing

Continuous process technology continues to gather momentum in the pharmaceutical industry. KORSCH has partnered with L.B. Bohle and a consortium of technical specialists on a fully integrated continuous process line which incorporates NIR technology and a fully integrated supervisory control system.

The KORSCH press is in itself a continuous processing machine and therefore it is ideally suited for this new manufacturing trend. Our machines incorporate automated tablet testing systems, proven PAT for tablet weight regulation, and an optional Wash-in-Place (WIP) capability for in-line cleaning. A centralized control and supervisory system maintains process control and collects production data, from initial blending, tablet compression, and tablet coating.

SOFTWARE SOLUTIONS

KORSCH Control System

The next-generation KORSCH control system and process visualization complies with "Industry 4.0" concept. A standard OPC UA Server permits press parameters to be passed to a SCADA or Historian system. Advanced capabilities further leverage data through edge computing or secure cloud solutions for OEE assessment, predictive maintenance and data sharing with external systems.

The control system interface provides an intuitive operating environment, with a Smart-Touch HMI. The comprehensive on-board help includes a vast array of multi-media files to present procedures and to support the operation and maintenance.

DIGITALIZATION

Edge Computing

KORSCH has developed an Edge Computing solution that permits full transparency across multiple machines from a central supervisory workstation. Applications include:

- Performance Insight – records and displays key process parameters in real-time
- Machine Monitor – monitors maintenance cycles and equipment calibration status
- Notifier – sends a real-time message to site personnel based on any fault that occurs across the installed base to speed remedial action and reduce downtimes

Our Edge Computing solutions are tailored to the customer's requirements and are developed collaboratively to maximize machine performance and OEE.

Tablet Press as a System

KORSCH offers fully integrated tablet compression systems, consisting of the tablet press and related peripherals. KORSCH engineers specify these devices for the complete process to maximize efficiency, from material feeding through automated tablet collection. KORSCH has extensive experience in all aspects of tablet compression technology and can leverage best practices to provide optimal solutions.

Magnesium Stearate Spraying System

KORSCH can integrate a variety of spray devices, and machine change parts that permit magnesium stearate to be applied to the punch faces and the die wall. This operation is fully integrated to the tablet press control system.

Tablet Tooling

KORSCH delivers the highest quality press tooling which is manufactured to exacting standards, specifications, and tolerances, for every turret size.

Material Feeding System

Our engineers can design the perfect feeding system and choose from a range of technologies to match the feeding system to the application. Overhead feeding systems, posts hoists, mezzanines, and Y-pipes may all be adapted to the compression room design.

PharmaCheck® Tablet Tester

The PharmaCheck® works together with the press to achieve optimal tablet quality without operator intervention. From sampling through transport of the tablets by Venturi system, to measurements with closed loop feedback to the press, KORSCH manages and integrates the complete operation and data exchange.

Dust Collection

The capacity of the dust collection system is critical to ensure long run durations and optimized production yields. Selecting the right dust collection design is especially critical for multi-layer applications to ensure precise layer separation.

Tablet Diverter

Our engineers will adapt an automated tablet collection system, based on tablet count, and container size, to permit the press to run without operator intervention in the compression room.

Turrets and Fast Change Parts

Additional turrets and fast change parts will ensure maximum machine utilization and efficiency in any production operation. The strategic use of turret sizes will permit outputs to be optimized for every tablet shape and size.

Tablet Deduster and Metal Detector

Our engineers will specify the proper technology based on the tablet size, output rate, and tablet collection system, and fully integrate these peripheral components in the tablet press control system.

KORSCH

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