

# KORSCH Global Service Network



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## A Specialist's Range of Products

An Innovative Solution for Every  
Tablet Compression Application



## 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](http://www.korsch.de)

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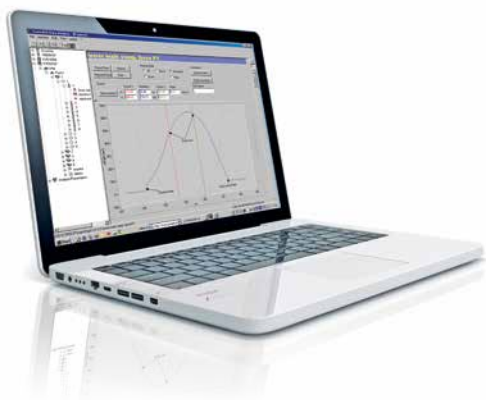
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## PharmaResearch®

The PharmaResearch® is a Windows based data acquisition and analysis system which complements the full line of KORSCH presses. The PharmaResearch® captures high speed data and automatically analyzes the waveform profiles to provide statistical reporting and correlation of compression parameters. The system can export press force data to a standard Excel format.

### PharmaResearch® Executions:

PharmaResearch® LE	Laptop Execution
PharmaResearch® IE	Integrated Execution



## XP 1

The XP 1 Research Tablet Press is a single punch machine which is specifically designed to permit initial feasibility, screening, and solid product characterization. The XP 1 permits very small material quantities to be utilized and characterized very quickly with minimal set-up and cleaning time. The XP 1 offers a proven, rugged, and portable design, which insures precision operation over the long term. A full instrumentation package allows precision measurement of press force and punch displacement. Together with the KORSCH PharmaResearch®, the XP 1 offers a comprehensive data acquisition and analysis capability.

### Technical Data:

Tools:	TSM/EU/B/D/EK 0
Compression Force:	50 kN
Tablet-Ø max.:	25 mm
Tablet Output max.:	up to 3,600 tablets/h



## XL 100



The XL 100 Research Tablet Press offers production scale performance in a development scale machine. Versatility is provided with an exchangeable turret, mixed tool turret, reduced volume feeder and an integrated control cabinet. A superior GMP design insures efficient cleaning and fast product set up. The XL 100 offers a comprehensive instrumentation package to permit collection of critical process parameters, including precompression force, main compression force, and tablet ejection force.

### 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



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## XM 12



The **XM 12 Small-Scale Bi-Layer Tablet Press** is ideal for product development, scale-up, clinical trials, and mid-range production for single-layer and bi-layer tablets. The XM 12 offers an exchangeable turret design to permit the production of any tablet size. The conversion between single-layer and bi-layer operation can be completed very easily. The XM 12 control system offers a unique first layer sampling capability and the option for integrated press force control, single-tablet rejection, and integrated data acquisition and analysis.

### Technical Data:

Punch Stations:	28/26/22/18/16/12
Compression Force:	5/40/80 kN
Tablet Ø max.:	11/13/16/25 mm
Tablet Output max.:	up to 201,600 single-layer tablets/h* or 100,800 bi-layer tablets/h**

\* With single tool, 28 punch stations, 11 mm tablet Ø

\*\* 28 punch stations, 11 mm tablet Ø



## XL 200



The **XL 200 Tablet Press** is a robust, high-speed rotary press with an exchangeable turret capability. The XL 200 offers a new standard in GMP, with extreme accessibility to the compression zone and a combination of quick-disconnects and smooth surfaces that permit streamlined cleaning and changeover. The XL 200 offers a 40 kN precompression and 80 kN main compression capability and is geared to operate at high speeds.

### Technical Data:

Punch Stations:	32/30/25/20
Compression Force:	40/80 kN
Tablet Ø max.:	11/13/16/25 mm
Tablet Output max.:	up to 230,400 tablets/h*

\* With single tool, 32 punch stations, 11 mm tablet Ø



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## XL 400<sup>4</sup>

**The Fourth Generation** – The XL 400<sup>4</sup> offers a new level of innovation and advancement, while maintaining the flexibility that is the hallmark of the XL 400 design. New features include:

- Integrated Electrical Cabinet
- Advanced Torque Drive
- Contamination free machine base and Multi-Function Column
- Clean and transparent design concept for streamlined product changeover
- Smart touch HMI with comprehensive on-board help
- Isolated dust collection housing with optimal access for cleaning
- Technological breakthrough with the use of intelligent components, ready for Industry 4.0

The XL 400 design offers a single-layer only (SFP), and a flexible single and multi-layer (MFP) capability in two machine models that share a common platform, and fully interchangeable components.



THE 4<sup>TH</sup> GENERATION  
XL 400 TABLET PRESS

## XL 400 SFP



**Maximum Efficiency in Single-Layer** – The XL 400 SFP is a single-sided high-speed rotary tablet press dedicated to single-layer tablet production. The XL 400 SFP offers streamlined product changeover, unique accessibility to the compression zone and extremely quiet operation. All major technical components are placed in the rear cabinet (including the main motor) avoiding heat transfer to the compression zone. A compression dwell bar between pre and main compression dramatically extends dwell time for the most difficult products.

### Technical Data:

Punch Stations:	47/44/35/29
SFP Compression Force:	100/100 kN
MFP Compression Force:	5/20/100 kN
Tablet Ø max.:	11/13/16/25 mm
Tablet Output max.:	up to 338,400 single-layer tablets/h* or 169,200 bi-layer tablets/h** or 141,000 tri-layer tablets/h**

\* With single tool, 47 punch stations, 11 mm tablet Ø

\*\* 47 punch stations, 11 mm tablet Ø

## XL 400 MFP



**Most Flexible Tablet Press in the World** – With the capability to produce single-layer, bi-layer, tri-layer, and core-coated tablets on the same machine platform. The modular Multi-Function Platform design features a pre-configured carrier plate and head piece that permits the installation of a wide range of compression roller modules, feeder modules, and cam track modules that offer a “plug and play” approach for maximum versatility. The result is an unprecedented advancement in tablet press technology with maximum efficiency and utilization from a single tablet press.

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## XT 600



**High Speed Double Rotary Press** – The XT 600 combines key features from proven KORSCH technology with a simple, modular, and cost-efficient design to offer a new standard in high-volume production equipment. The robust and elegant design features a simplified and streamlined platform for both semi-attended and fully automated production. The completely redesigned control system interface combines an intuitive HMI environment with an unprecedented level of on-line help and assistance to advise the user in every aspect of the machine operation. A 19-inch touch screen display supports gestures to permit move, zoom, and scroll functions to simplify and enhance the user experience.

### Technical Data:

Punch Stations:	85/77/65/53
Compression Force:	60/60 kN up to 100/100 kN
Tablet Ø max.:	11/13/16/25 mm
Tablet Output max.:	up to 1,020,000 single-layer tablets/h* or 306,000 bi-layer tablets/h**

\* with single tool, 85 punch stations, 11 mm tablet Ø  
\*\* 85 punch stations, 11 mm tablet Ø



## XL 800



**The XL 800 Double-Sided Tablet Press** is the largest press of the XL-series and is designed for high speed, high volume, and fully automated production. The XL 800 enables the production of single, bi-layer tablets as well as tablets with special parameters, such as a large diameter or a deep fill. The XL 800 is the highest output tablet press in the world, offering an extremely robust and rugged design which permits precision tablet weight control at the highest production speeds.

### Technical Data:

Punch Stations:	95/87/71/59
Compression Force:	100/100 kN
Tablet Ø max.:	11/13/16/25 mm
Tablet Output max.:	up to 1,026,000 single-layer tablets/h* or 513,000 bi-layer tablets/h**

\* with single tool, 95 punch stations, 11 mm tablet Ø  
\*\* 95 punch stations, 11 mm tablet Ø



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## TRP 700/900



**Reliability, Power, and Performance** – The TRP 700/900 are heavy-duty double sided rotary presses designed for superior performance and reliability in a wide variety of technical and pharmaceutical applications. The TRP-Series features a proven and patented press tool design to facilitate deep fill depths, and high compression and ejection forces. The TRP 700/900 offer a heavy tonnage, robust design and can produce a maximum tablet diameter of 64 mm. The TRP 700/900 offer a bi-layer and tri-layer capability for large tablet formats, and an innovative tri-layer and five-layer capability for specialized drug delivery applications.

### Technical Data:

Punch Stations:	23 – 67
Compression Force:	60/200 kN
Tablet Ø max.:	5 – 64 mm
Tablet Output max.:	up to 321,600 single-layer tablets/h*

\* with single tool, 67 punch stations, 27 mm tablet Ø



## TRP 1200



**The New Flagship for Technical Applications** – The TRP 1200 is a completely new development, and is equipped with many unique and patented features, including an exchangeable segmented turret design which dramatically reduces changeover time. The TRP 1200 compliments and perpetuates the tradition of the TRP 700/900 series. The TRP 1200 is especially suitable for the production of large format with maximum press forces, large deep filling depths – with a high output capability, and may be adapted to a wide variety of applications in the pharmaceutical as well as in the technical industries.

### Technical Data:

Punch Stations:	54/72/84
Compression Force*:	10/150 kN
Tablet Ø max.:	44/34/27 mm
Tablet Output max.:	up to 378,000 single-layer tablets/h**

\* larger main compression force on request

\*\* with single tool, 84 punch stations, 27 mm tablet Ø



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## 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 system which incorporates NIR technology within the PAT tools.

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 mixing, tablet compression, and tablet coating.



## WipCon®

KORSCH offers a comprehensive Wash-in-Place (WipCon®) technology for the following containment levels:

- **OEB 3 – Medium Containment Level**  
( $100 \mu\text{g}/\text{m}^3 > \text{OEL} > 10 \mu\text{g}/\text{m}^3$ )  
Manual Decontamination through Glove Ports
- **OEB 4/5 WipCon® High Containment Level**  
( $10 \mu\text{g}/\text{m}^3 > \text{OEL} > 0,1 \mu\text{g}/\text{m}^3$ )  
Manual or Fully Automatic Wip Cycles

with every type of make/break connections to peripheral equipment with centralized system control and negative pressure regulation, KORSCH offers a fully integrated and contained system, to insure the highest level of operator safety and operational excellence.



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# Tablet Press as a System

KORSCH offers fully integrated tablet compression systems, consisting of the tablet press and related peripherals which are specified by KORSCH engineers 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. Building the right system is not simply a matter of placing the peripheral equipment around the press, but rather, in the specification and integration of these systems to provide a seamless design for any application.

**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.

**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 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.

**Dust Collection**

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

**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.

**Turrets and Fast Change Parts**

Additional turrets and fast change parts will insure 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 Tooling**

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

