

# XT 600

High Speed  
Double Rotary Press



Superior Performance  
and Reliability for  
the Production of  
High Volume Products

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

# Cost-Efficient, Space-Efficient ...

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 offers a simplified and streamlined platform for both semi-attended and fully automated production. Leveraging the unique and patented carrier plate concept from the XL-Series, the XT 600 features

the same market leading noise reduction technology. 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.



**Simple Design**

- A smaller footprint
- Optimized accessibility for operation, cleaning, and maintenance
- Service accessible base with connection block for peripheral equipment


for a Superior GMP-Standard



**Superior Output**

- Over 1.000.000 single-layer tablets per hour (BBS)
- Bi-Layer Conversion Kit
- Exchangeable turret to maximize output by tablet size capability

for the Most Efficient Production of Single- and Bi-Layer Tablets



**Smart-Touch HMI**

- 19-inch touch screen
- Comprehensive on-line help and technical assistance
- Graphic display of process to simplify setup and operation

for an Intuitive Control Experience

# ... and Production-Efficient

The XT 600 has been designed to provide maximum efficiency in a 24/7 production environment. A flexible compression station design permits 60 kN or 100 kN for both precompression and main compression. The compression dwell bar extends consolidation time and improves output with difficult products. The exchangeable turret is designed for fast removal and installation and permits maximum output to be obtained for all tablet shapes and sizes. The pro-

ven punch lubrication system insures that the XT 600 can run batch after batch in an extended campaign production, and then move from product to product with the fast turret exchange, and fast changeover design. The result is extremely high productivity and efficiency, even in the most demanding production environments. The robust and versatile XT 600 can additionally be used for a wide range of applications including food, nutraceutical, and confectionary products.

## Simple and Robust Design

The XT 600 offers a simple and robust design, with a GMP compression zone that is both accessible and ergonomic. Four large windows maximize visibility and access for cleaning and changeover. Large access panels in the base of the machine simplify access for maintenance. The new Multi-Function Channels (corner columns) provide full access to wiring and dust extraction hoses, which are isolated from the compression zone.

- Large windows for optimal accessibility
- 4 Multi-Function Channels with full access to electric, connection block for peripherals and dust extraction
- Large lower panels for maintenance access

## Superior Output

The XT 600 is a workhorse for high volume, 24/7 operation. The machine is designed to run at high speed. It offers a 100 kN pre and main compression capability, 100 RPM press speed capability, and a maximum output of 1,000,000 single-layer tablets per hour. The new turret design permits the streamlined removal of the entire turret, including upper and lower cam track as well as press tools.

- Turrets with 53, 65, 77, and 85 stations
- Easy turret exchange using an ergonomic lifting arm (option)
- Long feeder length to maximize feeder dwell time for precise weight control at high speeds

## Intuitive Operating Environment

The new machine features a modern "SIMOTION" control system based on a standard Windows platform. The machine is operated on a 19-inch Multi-Touch-Screen that permits to move/push, zoom and scroll in the operating environment. The HMI is a complete new design that uses WinCC V13 and features a user friendly structure and extensive online help capability, including procedures, troubleshooting, and direct access to support documents.

- Smart-touch HMI
- Multi-media support and help files – documents, videos, pictures
- 21 CFR Part 11 and GAMP 5 compliant

# The Benefits at a Glance



- **Cost-Efficient, Space-Efficient and Production-Efficient**
- **Elegant Simplicity for Easy Handling**
- **Intuitive Controls with Smart-Touch HMI**

# Elegant Simplicity for Easy Handling

The XT 600 delivers proven technical advantages with elegant simplicity to provide the most robust and reliable production workhorse. Full accessibility to the compression

zone, simple assembly and quick-disconnect components, full visibility to the compression process, and an intuitive controls interface – that is what makes the XT 600 unique.

## Robust Compression Column Design

The XT 600 offers both 60 kN and 100 kN compression columns which are suitable for all compression requirements and retrofittable at any time. The compression columns can be easily re-positioned to permit turret exchange or machine cleaning. There is full accessibility for maintenance, since the back panel of the column can be opened. The compression dwell bar extends consolidation time and increases tablet hardness at high speeds.



## Innovative Feeder Concept

An innovative feeder design permits precise and simplified adjustment of the feeder gap. Available with a 2-chamber or 3-chamber variable speed feeder, or a gravity feeder, the XT 600 offers an extended feeder length to maximize feeder dwell time. The closed feeder design and unique sandwich seal insure a clean die table and superior production yields. A flexible coupling at the feeder inlet eliminates vibration and product segregation.

- Innovative adjustment of feeder gap
- 2-chamber / 3-chamber power feeder or gravity feeder designs
- Closed feeder design for maximum production yields



## Bi-Layer Conversion Capability

The XT 600 has the flexibility to produce both single and bi-layer tablets. A bi-layer conversion kit can be adapted to the machine at any time, which includes the components to insure individual layer weight control, first-layer sampling, and absolute separation of layers.



## Minimal Noise and Vibration

The unique and patented design of the carrier plate fully isolates noise and vibration from the base frame and head piece of the XT 600. 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 or overhead feed system
- No segregation of material in the overhead feeding

# Intuitive Controls with Smart-Touch HMI

The completely re-designed control system interface provides an intuitive operating environment, with a Smart-Touch HMI which permits move, zoom, and scroll gestures. At the heart of the control system is a Siemens SIMOTION controller, which merges PLC and motion controls in a single, integrated system. The user friendly graphics, and comprehensive on-line help offers a simplistic yet comprehensive view of the

process, supported by a vast array of multi-media help files to present procedures, drawings, schematics, pictures, and videos – all designed to support the operation and maintenance of the XT 600.

The XT 600 control system fully complies with all requirements of 21 CFR Part 11 and GAMP 5.

## Online Help Capability

The Smart-Touch HMI sets a new standard for on-line help, and offers an extensive library of support documents to simplify, streamline, and supplement the operation of the machine:

- Direct link to support documents, including manuals, drawings, and schematics
- Multi-media support files (videos, pictures) to support equipment procedures (turret change, machine change-over, calibration, etc.)
- Access to an electronic spare parts catalog
- Troubleshooting and diagnostic support







## Network and SCADA Integration

The XT 600 control system may be fully integrated to a central client network or SCADA system to permit real-time monitoring and acquisition of critical process parameters, centralized login, centralized product recipe management, and centralized batch data storage using a standard OPC server.

- Transfer of process parameters via OPC server
- Central login, recipe, and batch data administration
- Remote monitoring from a central control room



## PharmaControl® Press Force Control System

The XT 600 uses the proven PharmaControl® press force control system to monitor individual compression forces and to provide closed loop feedback to the dosing cam for precise tablet weight control. The Smart-Touch HMI displays average force and the single force on each punch station in real time. The optional single-tablet rejection system will reliably reject an individual tablet from a known punch station across the full speed range, and build a reject log which may be viewed in real time, and included in the electronic batch report.

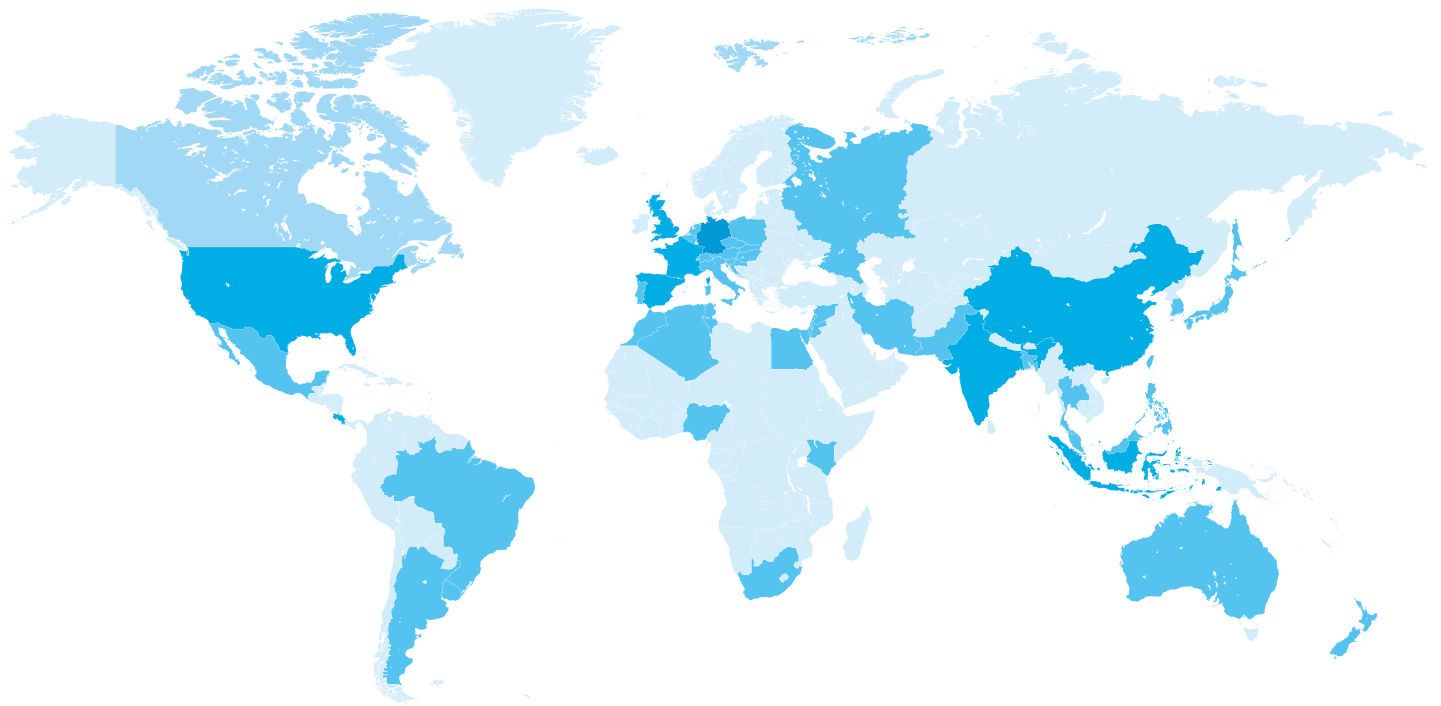
- Press force monitoring and regulation for precise tablet weight control
- Single tablet rejection across the full speed range
- Real-time reject log and reject log report at batch end



## **KORSCH 24/7 Service Helpline:**

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# Technical Data

## KORSCH XT 600

|  |                  |   |         |         |         |
|--|------------------|---|---------|---------|---------|
| <b>Number of Punch Stations</b>                |                  | 85  | 77      | 65      | 53      |
| <b>Number of Compression Stations Main/Pre</b> |                  | 2/2   | 2/2     | 2/2     | 2/2     |
| <b>Press Tools</b>                             | EU/TSM           | BBS   | BB      | B       | D       |
| <b>Main Compression Force</b>                  | kN               | 60/100  | 60/100  | 60/100  | 60/100  |
| <b>Precompression Force</b>                    | kN               | 60/100  | 60/100  | 60/100  | 60/100  |
| <b>Tamping Force</b>                           | kN               | 20  | 20      | 20      | 20      |
| <b>Tablet Diameter max.</b>                    | mm               | 11  | 13      | 16      | 25      |
| <b>Filling Depth max.</b>                      | mm               | 18  | 18      | 18      | 22      |
| <b>Turret Speed, Single-Layer</b>              | RPM              | 10-100  | 10-100  | 10-100  | 10-80   |
| <b>Turret Speed, Bi-Layer</b>                  | RPM              | 10-60   | 10-60   | 10-60   | 10-60   |
| <b>Tablet Output, Single-Layer max.</b>        | tabs/h           | 1,020,000   | 924,000 | 780,000 | 508,800 |
| <b>Tablet Output, Bi-Layer max.</b>            | tabs/h           | 306,000   | 277,200 | 234,000 | 190,800 |
| <b>Pitch Circle Diameter</b>                   | mm               | 740   | 740     | 740     | 740     |
| <b>Tablet Thickness max.</b>                   | mm               | 8,5   | 8,5     | 8,5     | 11      |
| <b>Machine Dimensions</b>                      | mm/<br>L x W x H | 1,720 x 1,420 x 2,000 – Dimensions are identical for all versions |         |         |         |
| <b>Net Weight of the Machine</b>               | kg               | 6,500   | 6,500   | 6,500   | 6,500   |
| <b>Total Electrical Load</b>                   | kVA              | 35  | 35      | 35      | 35      |

Technical modifications reserved.

The maximum compression force varies as a function of the tablet/punch size and output. The maximum output varies as a function of the material, tablet/punch size and compression force.

KORSCH XT 600 complies with the Machinery Directive 2006/42/EG.