# XL 400

## Flexible Technology


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**

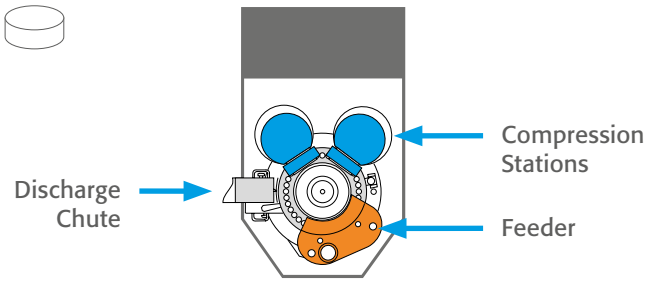
# Two Machine Models …

The XL 400 design offers a single-layer only, and a flexible single and multi-layer capability in two machine models that share a common platform, and fully interchangeable components. Depending on your product portfolio, you can select the SFP or MFP or combine both models and benefit from their common advantages and maximized compatibility.

XL 400 SFP


## SFP

Dedicated High-Speed Single-Layer Production




XL 400 MFP


## MFP

Flexible Single & Multi-Layer Production

# … One Common XL 400 Platform

The XL 400 platform permits complete turret and spare parts compatibility between the SFP and the MFP models. The SFP and MFP share an identical control system and HMI environment, and a process equivalent design to permit the transfer of single-layer products between machines. The SFP and MFP share common procedures for setup, changeover, and turret exchange.

## XL 400 SFP, Maximum Efficiency for Single-Layer Production

Offering a 100 kN pre and main compression capability, 120 RPM press speed capability, and an extended feeder length, the SFP is geared for high-speed production, offering a maximum output of 338,400 tablets per hour. An ergonomic and accessible design permits the fastest changeover of any machine in its class.

- Heavy tonnage capability 100 kN / 100 kN
- Compression dwell bar for increased tablet hardness at high speeds
- Streamlined turret exchange and product changeover
- Extended feeder length for perfect weight uniformity at high speeds
- Interchangeable parts with the XL 400 MFP

## XL 400 MFP, Maximum Flexibility for Multi-Layer Formats

Offering single-layer, bi-layer, tri-layer, and core-placement capability in a single machine, and an exchangeable turret design, the XL 400 MFP can produce a tablet of any size, shape, and format The modular feeders, compression stations, and cam tracks permit the press to be reconfigured for every application using an innovative, patented design.

- Modified carrier plate and head piece for plug and play configuration
- Single-layer, bi-layer, tri-layer, and core placement modes
- Single layer is fully process equivalent to the XL 400 SFP model
- Flexible control system with seamless transition between operating modes
- Interchangeable parts with the XL 400 SFP

# The benefits at a glance:


- **Common Platform for Enhanced Compatibility**
- **Functional Design Maximizes Productivity**
- **Optimal Control, User Friendly HMI, Fully 21 CFR Part 11 Compliant**

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# Functional Design Maximizes Productivity

The KORSCH design makes optimal use of the pitch circle – from die filling to tablet ejection. The strategic placement of all major components in the rear cabinet, and the open compression zone design, offers superior access for operation, cleaning, changeover, and maintenance.

The isolation of the carrier plate virtually eliminates vibration and noise generation, and minimal parts are required for disassembly and setup. The result is a streamlined design and an extremely efficient changeover process.

## Superior Accessibility to Compression Zone

The innovative carrier plate design of the XL 400 eliminates the traditional corner columns and offers extreme access to the compression zone for cleaning and maintenance. The feeder can be quickly dismounted without tools, and the dust extraction is fully integrated in the lower turret shrouding, which is also removed with quick disconnects.

- Lightweight feeder (< 12 kg)
- Superior access to compression zone (no corner columns)
- Superior access to the machine base and major components in the multi-function column

## Remote Placement of Major Components

The placement of all major components (including the main motor) in the rear cabinet offers significant process and productivity advantages. This patented architecture permits the press to be mounted in a through-the-wall execution for a complete separation of the white and grey zones. The press may also be installed in the center of the compression suite to accommodate existing facilities.

- No heat transfer to compression zone (heat sensitive products)
- Superior access to major components for simplified maintenance
- True separation of white and grey zone with through-the-wall capability

## Streamlined Turret Exchange

The XL 400 turret may be exchanged – quickly, easily, and safely – including the cams, and press tools. A lightweight turret lift device is installed in the carrier plate to facilitate turret removal and installation. The turret locking is automatic – no tools are required, and the innovative mechanical design of the compression zone, permits extremely fast disassembly , also without tools. The control system has a turret recognition capability to permit the parameters to be setup automatically.

- Turret change in less than 10 minutes
- Transport and service cart to permit turret preparation and cleaning off-line
- Simple, safe, and reliable turret locking design without hand tools

# 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 <75 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

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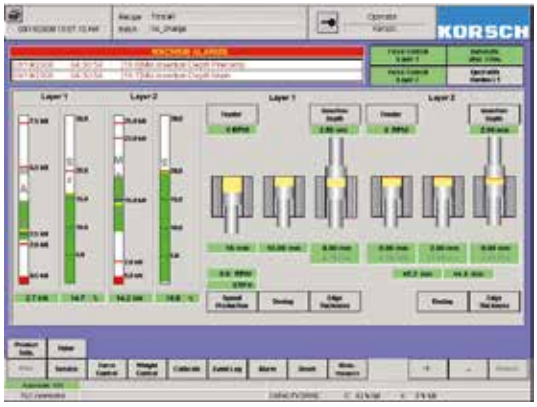
# Optimal Control, User Friendly HMI, Fully 21 CFR Part 11 Compliant

KORSCH controls are based on a standard Siemens or Allen-Bradley PLC. The touch screen HMI also uses industry standards, including WinCC and WonderWare, which are operating on an industrial PC platform.




## User friendly touch screen control

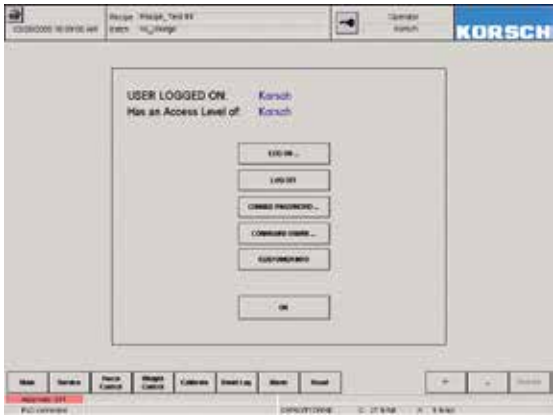
The main screen presents all important press parameters in a graphical format. The language may be changed at the push of a button.

- Press force control
- Single-tablet rejection
- Product recipe
- Batch reporting

## 21 CFR Part 11 Compliant

KORSCH controls permit full compliance with 21 CFR Part 11.

- Password login with four access levels
- Electronic audit trails (event log, alarm log, reject log)
- Product recipe version control
- Secure batch report file format for data integrity



## Special Features

The XL 400 offers a range of special features, including:

- High containment and wash-in-place execution (WipCon®) including peripheral equipment for OEB 5 containment applications (<0.1 µg/m³)
- Medium containment (OEB 3) execution for hormone production
- Deep fill (28 mm) for lollipop execution, tablet thickness to 14.5 mm
- Micro-chip-in-tablet capability

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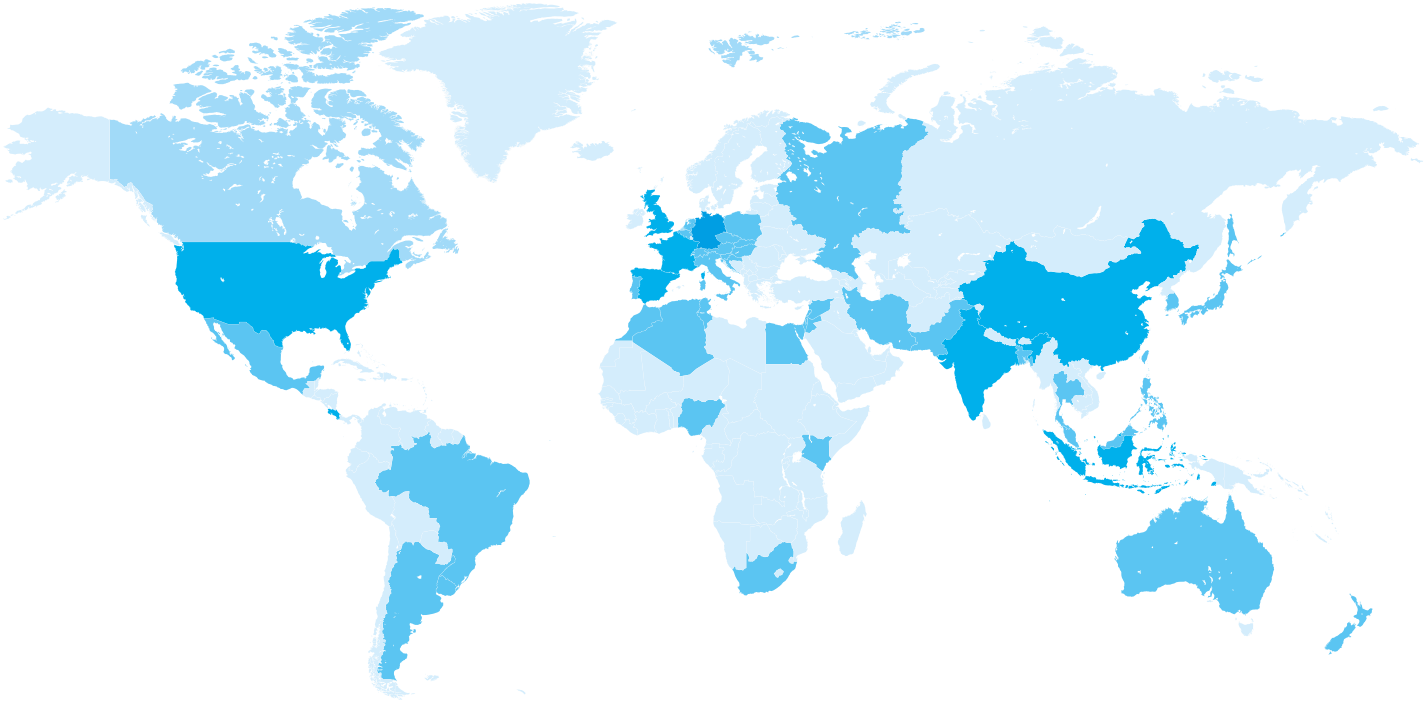
## KORSCH 24/7 Service Helpline:
Phone: +49 (0)30 43576-300
E-Mail: service@korsch.de

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# Technical Data

## KORSCH XL 400 1-/2-/3-Layer

| | | | | | |
|---|---|---|---|---|---|
| **Number of punch stations** | | 47 | 44 | 35 | 29 |
| **Press Tools** | EU/TSM | BBS | BB | B | D |
| **Main Compression Force** | kN | 100 | 100 | 100 | 100 |
| **Precompression Force** | kN | 20/100 | 20/100 | 20/100 | 20/100 |
| **Tamping Force** | kN | 5 | 5 | 5 | 5 |
| **Tablet Diameter max.** | mm | 11 | 13 | 16 | 25 |
| **Filling Depth max.** | mm | 18 | 18 | 18 | 22 |
| **Filling Depth, Second and Third Layer max.** | mm | 10 – identical for all Versions | | | |
| **Turret Speed, Single-Layer** | RPM | 5–120 | 5–120 | 5–120 | 5–100 |
| **Turret Speed, Bi-Layer** | RPM | 5–60 | 5–60 | 5–60 | 5–50 |
| **Turret Speed, Tri-Layer** | RPM | 5–50 | 5–50 | 5–50 | 5–40 |
| **Tablet Output, Single-Layer max.** | tabs/h | 338,400 | 316,800 | 252,000 | 174,000 |
| **Tablet Output, Bi-Layer max.** | tabs/h | 169,200 | 158,400 | 126,000 | 87,000 |
| **Tablet Output, Tri-Layer max.** | tabs/h | 141,000 | 132,000 | 105,000 | 69,600 |
| **Pitch Circle Diameter** | mm | 410 | 410 | 410 | 410 |
| **Tablet Thickness** | mm | 8.5 | 8.5 | 8.5 | 8.5 |
| **Machine Dimensions** | mm/ L x W x H | 1,605 x 950 x 2,200 – Dimensions are identical for all Versions | | | |
| **Net Weight of the Machine** | kg | 3,700 | 3,700 | 3,700 | 3,700 |
| **Electrical Load** | kVA | 18.5 | 18.5 | 18.5 | 18.5 |

Technichal 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 XL 400 presses comply with applicable safety regulations as well the guidelines applicable in the German chemical industry. They have been tested in accordance with EMC guidelines and are delivered with required EC certificate.

2C Core-coated tablets technical data on request.

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