

# XL 400<sup>FT</sup>

MultiFunction Platform



Pharmaceutical  
Rotary Tablet Press

**KORSCH**  
The Specialist.

# Innovations Made in Berlin Since 1918

## Focus Drives Perfection

Specialization is the key. Since 1918, 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.

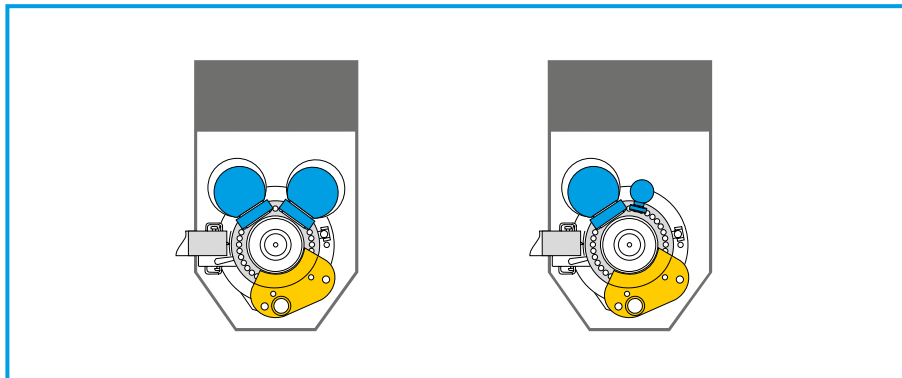
KORSCH presses are used successfully all over the world and are supported by a global network of sales and technical service specialists.

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

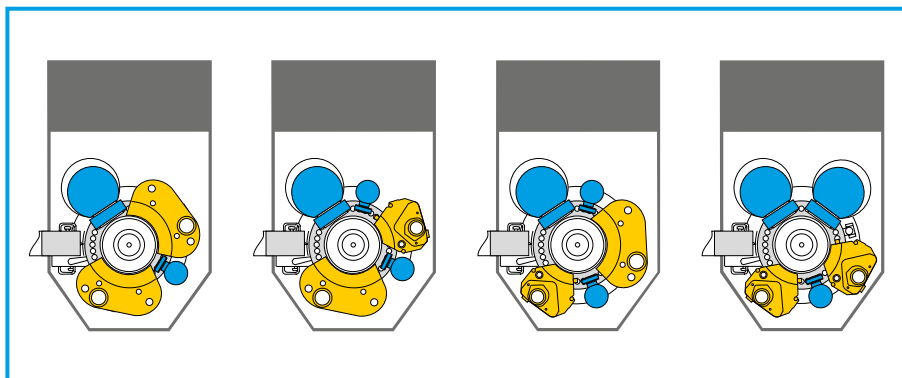
# Maximum Flexibility

The KORSCH XL 400<sup>FT</sup> design offers the first flexible platform that permits the production of all tablet formats on a single tablet press. The XL 400<sup>FT</sup> can produce Single-Layer, Bi-Layer, Tri-Layer, and Core-Coated Tablets on the same

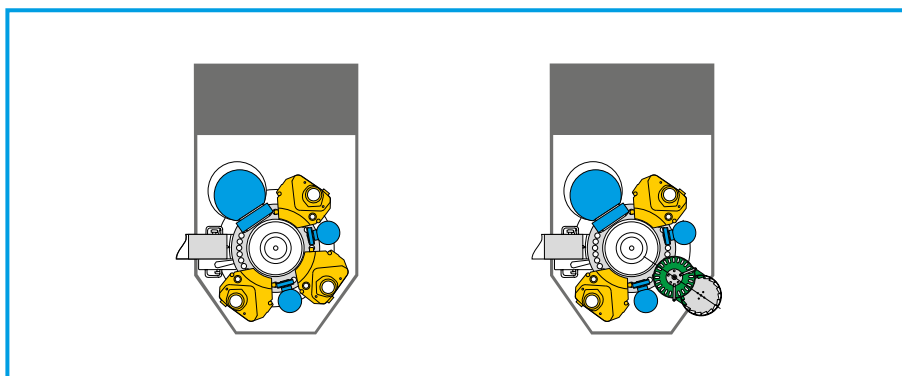
machine, using modular and flexible machine components. The result is unlimited flexibility, unprecedented utilization, and a single press for every application.



Single-Layer



Bi-Layer



Tri-Layer



Core-Coater



# KORSCH MultiFunction Platform

The KORSCH MultiFunction Platform is a flexible and modular patent pending concept for the XL 400<sup>FT</sup>.

Like building blocks, the different modules can easily be combined together, including compression roller stations, feeding units, and upper and lower cam tracks.

Through this **unique concept**, the machine can be configured to produce Single-Layer, Bi-Layer, Tri-Layer, and Core-Coated Tablets.

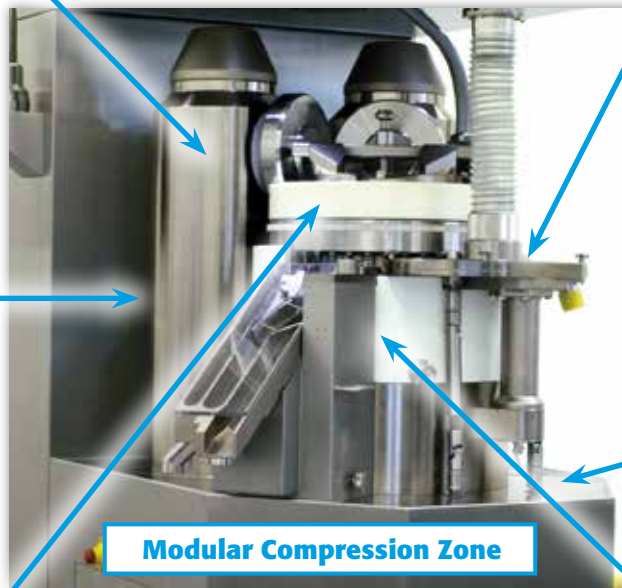
## Module: Compression Column

- Main compression station 100 kN for heavy tonnage precompression or main compression applications
- Precompression station 20 kN for conventional applications
- Multi-Layer tamping station 5 kN for intermediate layer tamping

## Module: Feeder

- **Standard Feeder:** 330 mm for Single- and Bi-Layer format
- **Multi-Layer Feeder:** 140 mm for Multi-Layer and Core-Coater format
- **Extended Feeder:** 455 mm for extended fill Single-Layer format

## Modular Compression Zone



## Modular Carrier Plate



Modular Compression Zone

## Module: Upper Cam Track

- **Single-Layer:** Precompression Force 20 kN, Main Compression Force 100 kN
- **Bi-Layer:** Tamping Force 5 kN, Main Compression Force 100 kN
- **Tri-Layer:** 2 x Tamping Force 5 kN, Main Compression Force 100 kN

## Module: Lower Cam Track

- **Single-Layer:** Precompression Force + Main Compression Force 100 kN
- **Bi-Layer:** Tamping Force 5 kN, Main Compression Force 100 kN
- **Tri-Layer:** 2 x Tamping Force 5 kN, Main Compression Force 100 kN

# The benefits at a glance:



- **Maximum Flexibility and Versatility**
- **High Efficiency, Utilization and Uptime**
- **Optimal Control, User Friendly HMI, Fully 21 CFR Part 11 Compliant**

# High Efficiency, Utilization and Uptime

The KORSCH expertise is the optimal utilization of the pitch circle of the tablet press, from die filling to tablet ejection. The design concept of the XL 400<sup>FT</sup>, including the rear multi-function cabinet with all major press components, and the open compression zone design, offers superior access for operation, cleaning, changeover, and maintenance.

The complete press interior of XL 400<sup>FT</sup> was fully redesigned to minimize and simplify parts removal. The result is a streamlined design and an extremely efficient changeover process.

## High Efficiency

The KORSCH feeder design offers a larger filling length which insures precision weight control at the highest press speeds.

The unique compression dwell bar maintains pressure on the tablet between the precompression and main compression station, and extends the compression dwell time. The result is improved tablet hardness and higher speed operation.

- Longer feeder dwell time for precision weight control at high speeds
- Independent speed control of each feeder paddle
- Extended compression dwell time with innovative dwell bar design

## Automatic Turret Change

The XL 400<sup>FT</sup> offers an exchangeable turret design that permits the removal of the entire turret, including upper cam track, lower cam track, and press tools.

A simple push of a button initiates an automatic turret removal sequence, which transfers the turret from the machine to a transport/service trolley. The turret exchange process requires the removal of only 13 parts from the compression zone – with no hand tools required.

- Turret change in less than 10 minutes with a lightweight, internal lifting arm
- Entire turret change including all cams and press tools without hand tools
- Automated sequence to streamline the turret removal process to insure safety and reliability

## Superior Accessibility to Compression Zone

The innovative carrier plate design of the XL 400<sup>FT</sup> eliminates the traditional corner columns and offers extreme access to the compression zone for cleaning and maintenance. The feeder can be quickly dismantled 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



## 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.

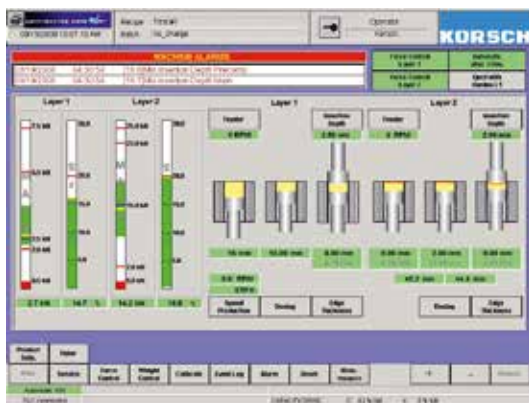
- Very low noise emission <75 dB(A)
- No vibration transmission to the floor of the compression room
- No segregation of powder in the feeding system which can occur with machine vibration



# 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<sup>FT</sup> offers a range of special features, including:

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

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# Technical Data

## KORSCH XL 400<sup>FT</sup> MFP 1-/2-/3-Layer

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

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 XL 400<sup>FT</sup> 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.