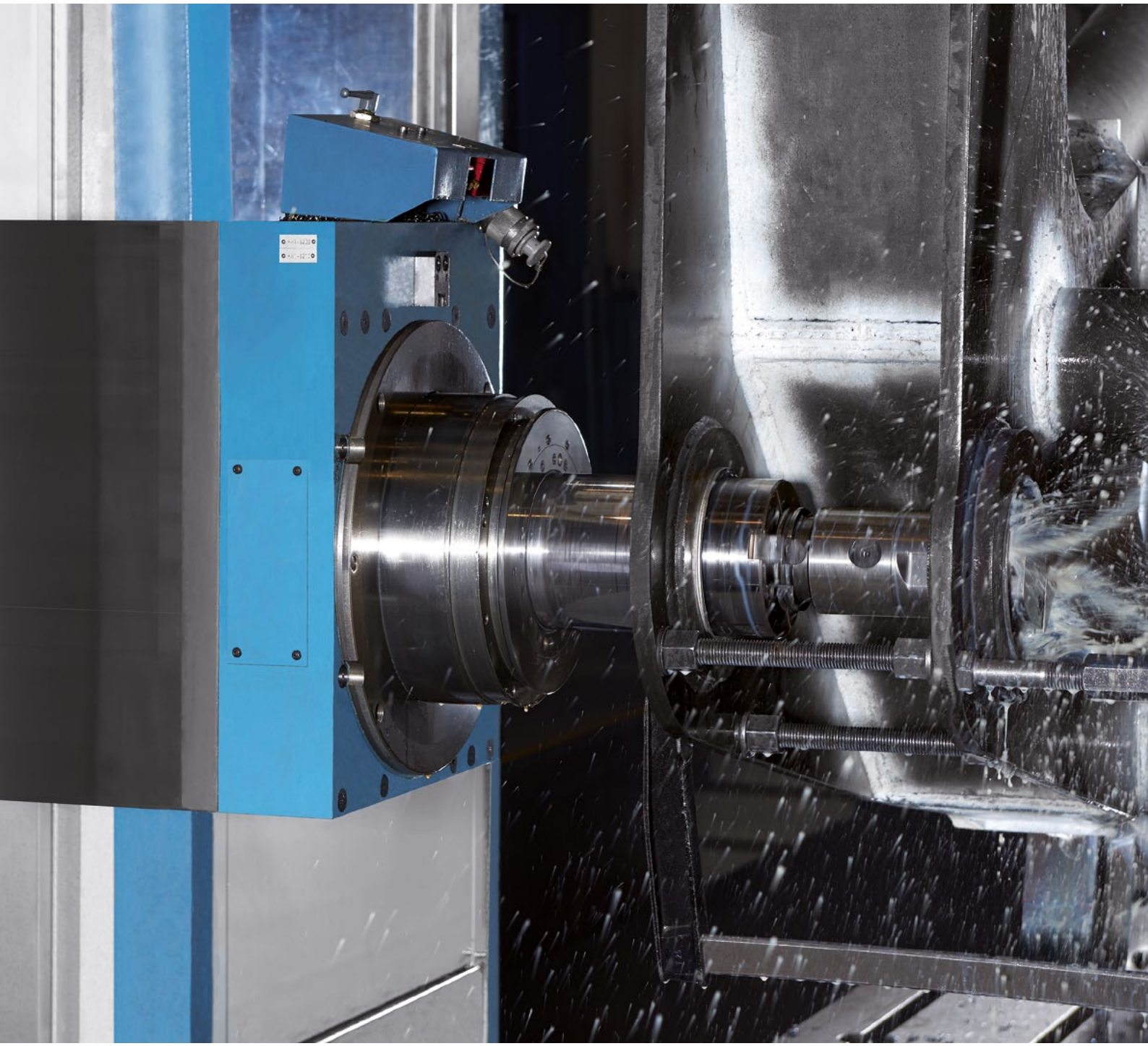
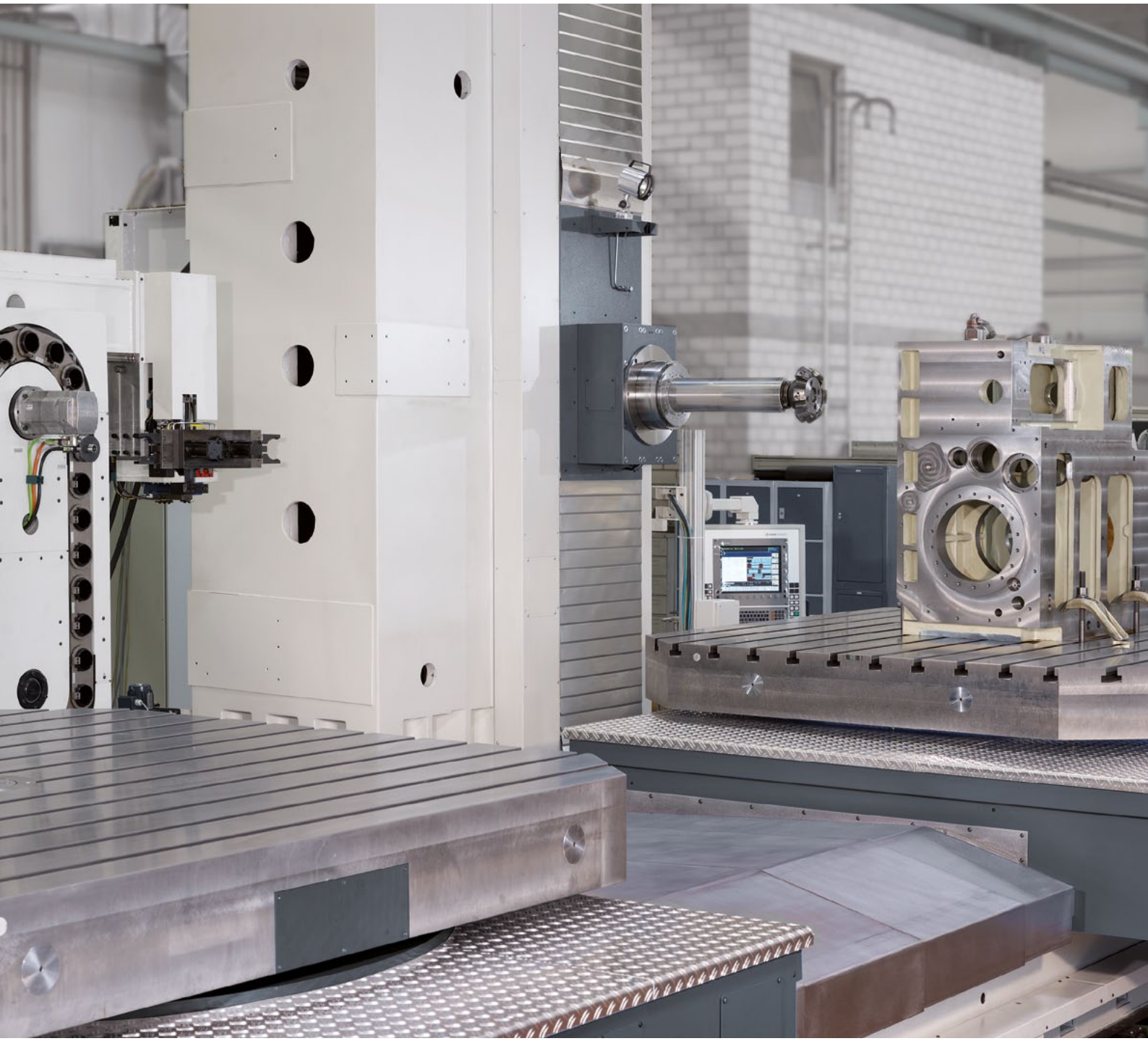
K 110 / KG 110 / K 130 / K 150 / KR 150

Efficient complete machining



P-SERIES
K-SERIES
T-SERIES
MILLFORCE-SERIES

UNIONCHEMNITZ



A high degree of automation allows for the efficient machining of heavy, complex components of all types used in the power, mining, railroad, shipbuilding, aerospace or machine tool industries, to name a few.

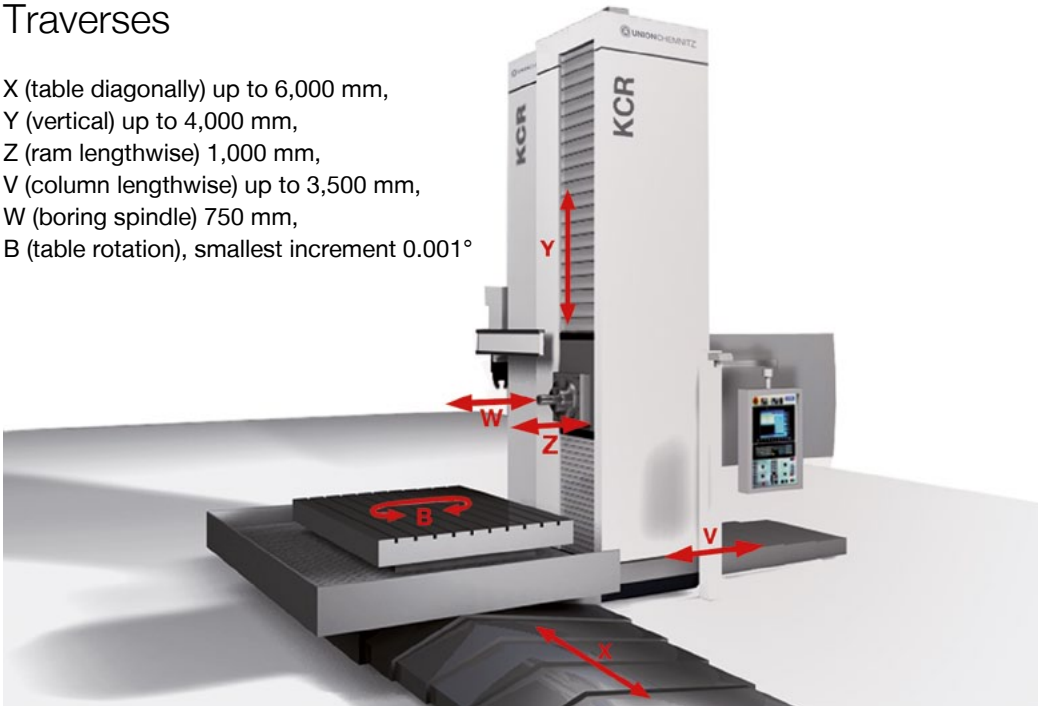
K-Series – CNC planer type horizontal boring and milling machines

A series of precision machine tools for the efficient complete machining of heavy, prismatic workpieces. Advanced process automation and an automatic tool changer further enhance the machines' efficiency and reduce non-productive time.

Your advantages at a glance:
- Speed range of up to 6,000 rpm
- Nitrided, axially traversing boring spindle
- Compact precision roller guideways in all linear axes
- Hydrostatic guideways available for machines with ram
- Workpiece changing: pallet changing or twin-table version
- Permanently installed NC facing head available
- Available as high-precision boring mill KG 110

Traverses

X (table diagonally) up to 6,000 mm,
Y (vertical) up to 4,000 mm,
Z (ram lengthwise) 1,000 mm,
V (column lengthwise) up to 3,500 mm,
W (boring spindle) 750 mm,
B (table rotation), smallest increment 0.001°



Classification

Planer type	K
with automatic tool changer	C
with permanently integrated facing head	U
with ram	R
High-precision boring mill	G
Boring spindle diameters available:	110, 130 and 150 mm

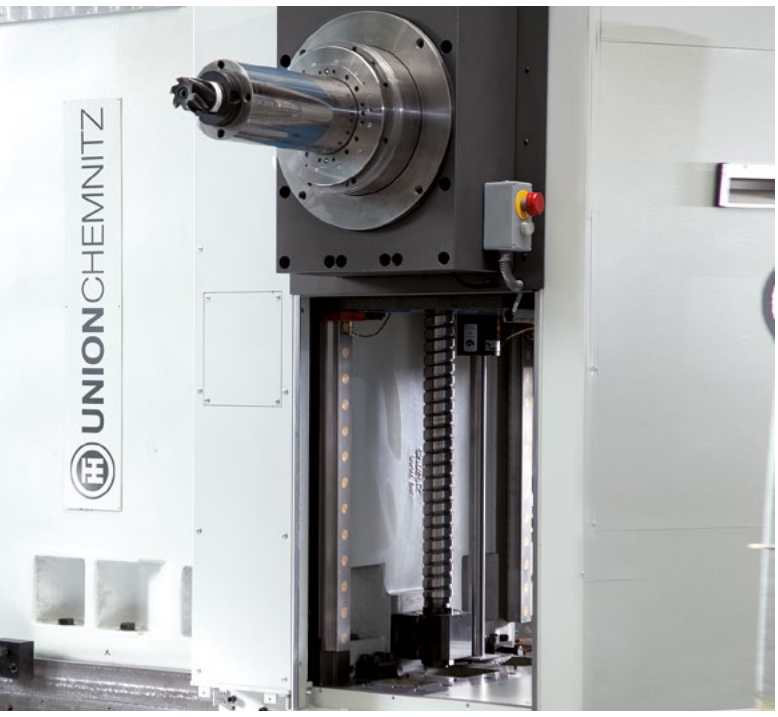
Robust, modular machine technology

K-Series design
Solid and robust – column and table: The solid, ribbed box-type cast column guarantees a significantly higher bending stiffness when compared with a classic frame construction. The design of the T-shaped machine beds is wide and robust. Highly precise machining results, especially during circular interpolation, are achieved through the use of preloaded high-precision ball screws and preloaded linear compact roller guideways. A hydraulic segment clamping table allows for high cutting performances. A chip conveyor positioned between the machine and the table effectively removes the chips.

Highest quality made in Chemnitz: all core components are completely manufactured by UnionChemnitz. A labyrinth seal filled with pressure air protects the front bearing of the headstock against the ingress of particles. The low-wear precision spindle bearing is equipped with long-life grease lubrication and thermal monitoring. An integrated oil cooler stabilizes the temperature of the gear lubrication.

KR / KCR 150 design
The KR / KCR 150 can be equipped with a hydrostatically controlled ram that utilizes another infeed axis (Z). The column and ram movements overlap. This results in stable cutting conditions beyond the middle of the table.

High-precision boring mill KG 110
The UnionChemnitz high-precision boring mill KG 110 meets all the demands of high-precision machining. Based on the well-proven K-Series design and with an excellent thermal management, it has been modified and optimized to allow for the highest machining accuracy.



Flexible, modular machine concept


Compact guideways, ball screws and a direct measuring system

Optionally available

Automatic tool changing

- Column-mounted tool magazine with max. 60 tools
- Magazine with max. 120 tools and linear tool gripper
- Arena magazine with max. 176 pockets
- Tool gripper: SK 50 or HSK 100, others on request

Pick-up station

- Automatic changing of milling heads via shuttle beneath the tool changer

CNC controls

Siemens 840 D sl, Heidenhain TNC 640, Heidenhain iTNC 530, Fanuc 31i

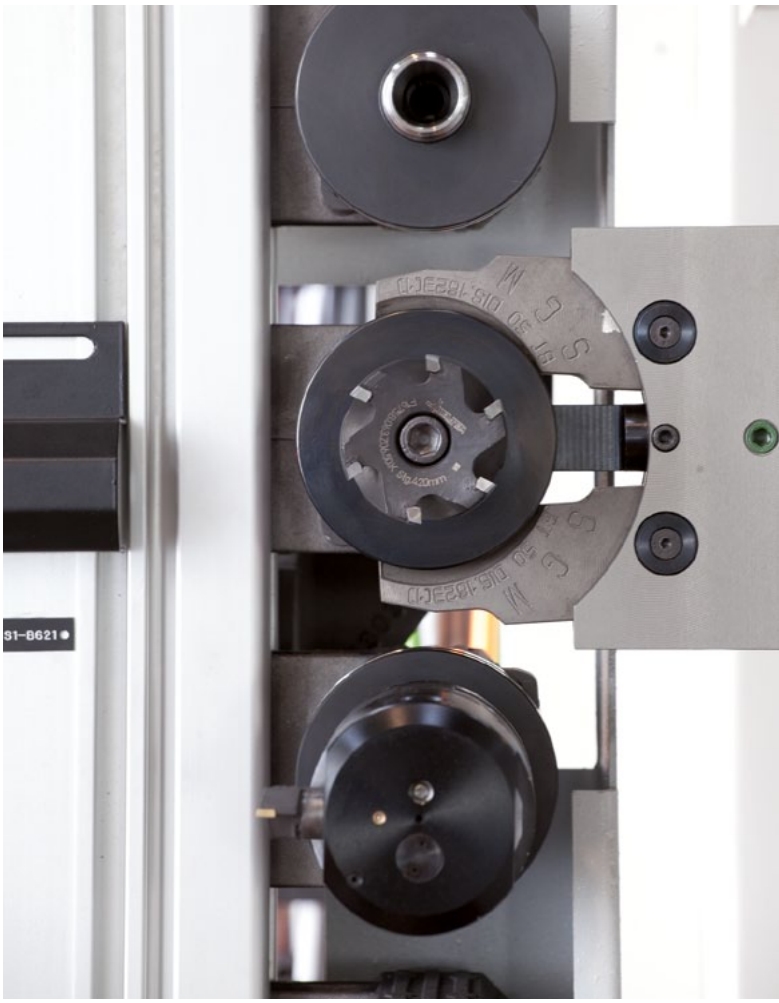
Twin-table version

- Robust solution for changing of workpieces weighing up to 60 t
- Interference diameters within the working area of up to 4,000 mm possible

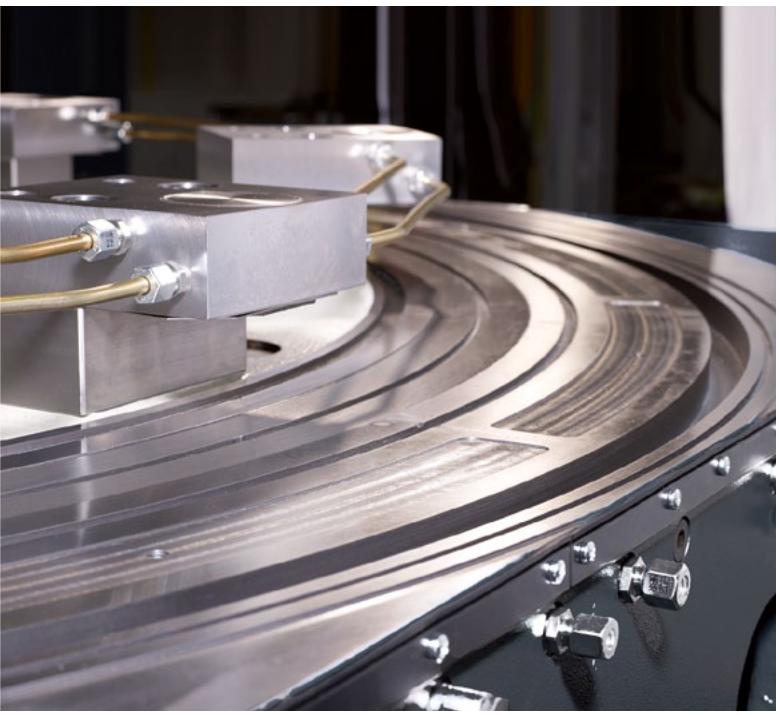
NC-controlled facing head

- Permanent integration in the headstock
- Use of boring spindle without removing the facing head
- Unbalance compensation with counter slide
- Automatic tool change and inner coolant supply in the facing head tool

// Further options are available on request.



Automatic tool changer



Hydraulic segment clamping table

Equipment options

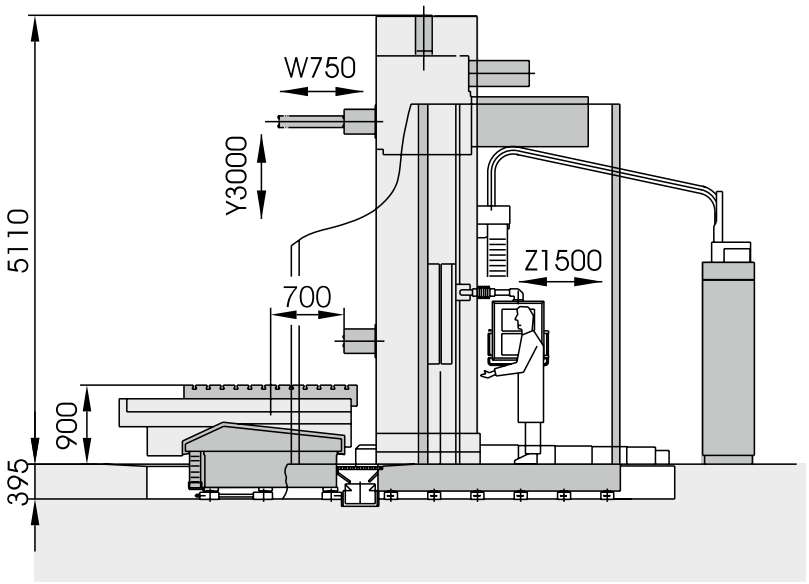
The machines can be equipped with a tool changer for up to 120 tools or an arena magazine with a robot. If tools weigh more than 50 kg, tool lengths and diameters can be adapted – optionally available with tool taper cleaning and breakage detection. An automatic milling head changer can also be integrated.

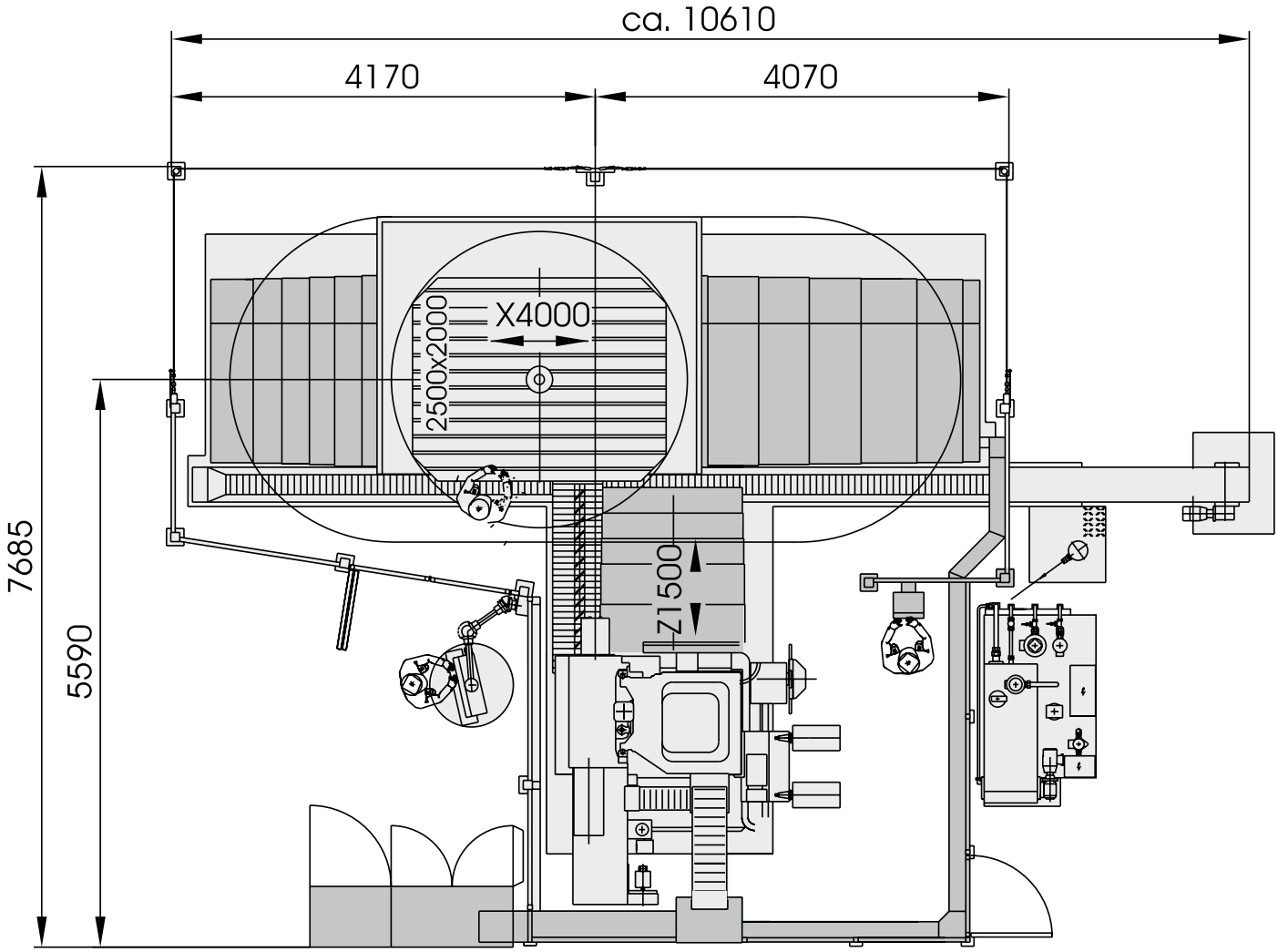
An additional support bearing can be installed in order to support the boring spindle. In addition to universal milling heads (automatic positioning and tool clamping, maximum 40 kW), vertical and universal milling heads are available, automatically positioned, with internal/external coolant, 4,000 rpm and maximum of 40 kW. A pallet changer and tool measuring systems are also available as options.

We will integrate other equipment on request.

Layout of a KC 130

Model with
X = 4,000 mm,
Y = 3,000 mm,
Z = 1,500 mm,
Table 2,000 x 2,500 mm,
Table load 20,000 kg





Technical data

*for headstocks with integrated facing head only			K/KC 110	K/KC 130	K/KC/KCU 150	KR/KCR150
Boring spindle						
Diameter		mm	110 / 125	130	150	150/162
Drive power, max. (S6)		kW	37	46	73	84
Torque, max. (S6)		Nm	2,012	2,179	3,000	5,800
Speed range, continuous, max.		min^{-1}	5 ... 6,000	5 ... 4,000	5 ... 3,500	5 ... 3,500
Diameter of the facing head*		mm			700	
Speed range, facing head*		min^{-1}			2.5 ... 330	
Clamping table						
Size of clamping table		mm	1,000 x 1,250	1,250 x 1,600	1,600 x 2,000	1,800 x 2,000
Optional		mm	1,400 x 1,600	up to 2,000 x 3,000	up to 3,000 x 4,000	up to 4,000 x 4,000
Table load, max.		kg	8,000	25,000	45,000	75,000
Traverses	Axes					
Table cross traverse	X	mm	2,000	2,500	3,200	3,200
Optional up to	X	mm	2,500	6,000	6,000	6,000
Headstock vertical	Y	mm	1,600	2,000	2,000	2,500
Optional up to	Y	mm	2,000	3,500	3,500	4,000
Column longitudinal	Z	mm	1,000	1,000	1,500	1,500
Optional up to	Z	mm	2,000	2,100	3,000	3,500
Ram	V	mm				1,000
Facing slide*	U*	mm			200	
Boring spindle axial	W	mm	550	750	750	700/900
Feed range / rapid traverse						
Feed range of all axes		mm/ min	1... 20,000	1...15,000	1...15,000	1...15,000
Rapid traverse of all axes		mm/ min	20,000	22,500	22,500	25,000
Feed range of the facing slide*	U*	mm/ min			1...1,000	
Automatic tool changer						
Number of tools in the magazine			40 (up to 120)	40 (up to 160)	40 (up to 160)	40 (up to 176)
Tool diameter, max.		mm	250	250	250	250
Tool length, max.		mm	500	500	500	500
Tool weight, max.		kg	36	36	50	50

UNION
Werkzeugmaschinen GmbH Chemnitz
Clemens-Winkler-Straße 5
09116 Chemnitz · Germany

T: +49 (0) 371 8741-0
F: +49 (0) 371 8741-407

info@unionchemnitz.com

Contact worldwide:

unionchemnitz.com/contact

Ident. No. K-2016/06-E | Subject to change

UNIONCHEMNITZ