

P 130 / P 150

PR 130 / PR 150 / PR 160 / PR 180 / PR 200 / PR 260

# Precise heavy-duty cutting



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

 **UNIONCHEMNITZ**

02 / Fields of application  
03 / Machine concept  
09 / Options and equipment variants  
10 / Technical data



Efficient machining of various complex, heavy components used in the power, mining, railroad, shipbuilding, aerospace and machine tool industries to name a few. Here: machining of a crane boom.

## The P- and PR-Series – Precise horizontal boring and milling machines

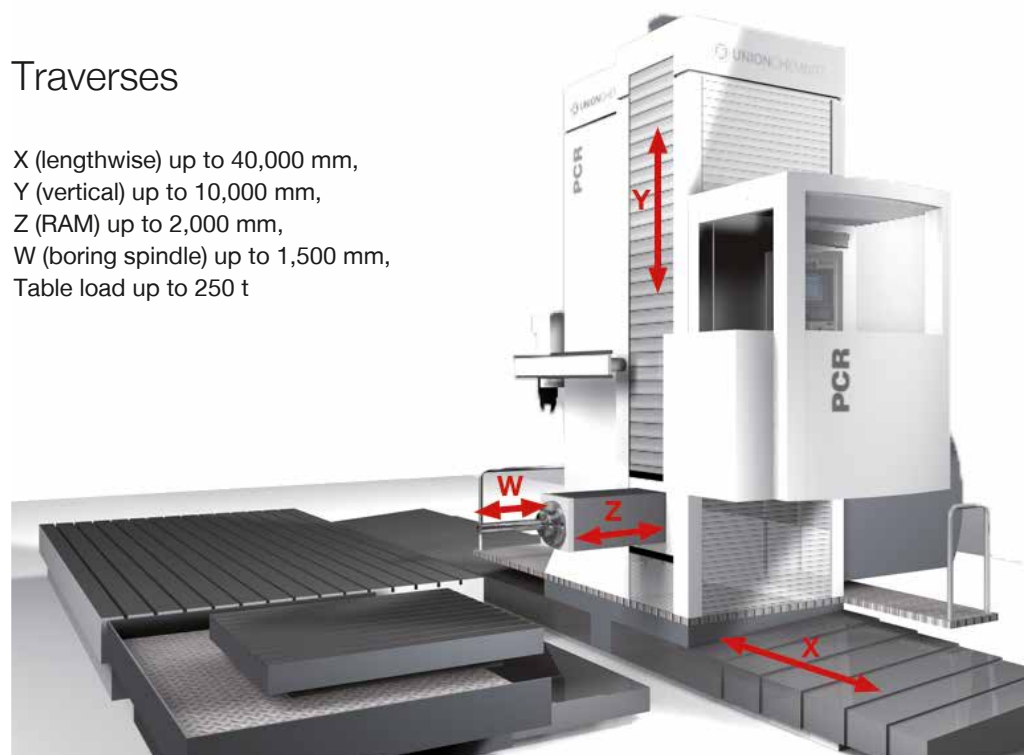
Perfect machine tools for precise and robust heavy-duty cutting, precise finish machining and effective 5 side machining of large, complex and heavy work pieces. Floor plates, rotary, traversing and tilting tables, reversible clamps, automatic changing of spindle units or heavy tools via pick-up stations can be integrated. These options guarantee efficient machining of all work pieces.

Your advantages at one glance:

- Promotes both rough machining and high precision super finishing consecutively
- Double hydrostatic guideways completely enclosing the RAM
- Dynamically controlled hydrostatic systems
- Extremely rigid and heavily ribbed column
- Compensation of spindle and RAM droop as well as of column tilt
- Length compensation of boring spindle and RAM (option)
- Temperature-controlled hydrostatic oil for thermal stability of the machine

### Traverses

X (lengthwise) up to 40,000 mm,  
Y (vertical) up to 10,000 mm,  
Z (RAM) up to 2,000 mm,  
W (boring spindle) up to 1,500 mm,  
Table load up to 250 t



### Classification

Floor type	P
with automatic tool changer	C
with RAM	R
Type range	I, II, III
Boring spindle diameters available:	130, 150, 160, 180, 200 and 262 mm



## Classic and Cost-effective – P

P 130 / P 150

The P-series is a cost-effective version of the PR-series. The machining options for large workpieces – mainly in the X/Y plane – are appropriately expanded by the adjustable boring spindle. Combining this with rotary and traversing tables also permits four-side machining.

Features of the P-series machines:

- Highly precise and low-maintenance compact guides in all axes
- Machine design proven over the course of many years
- Good feed and metal-cutting performance
- Universally applicable
- Cost-effective solution for users of travelling column mills who appreciate the advantage of a boring spindle



Proven technology for many different applications

# Compact and Dynamic – PR I

PR I 130 / PR I 150

The PR I with a RAM and boring spindle diameters of 130 - 150 mm has been designed for economical machining of small to medium-sized workpieces. It is the ideal solution for customers with demanding and varying machining requirements who can forego the highest performance data.

Features of the PR I:

- Highly precise and low-maintenance compact guides in all axes
- New machine design while maintaining proven details
  - High stability thanks to two ball screw drives in the Y-axis; no counterweight
  - No column slide for a reduced set-up height and therefore minimized foundation works
- Good feed and metal-cutting performance
- Cost-efficient and dynamic machine



PR I with compact-guided RAM and boring spindle for highest flexibility

## Robust and Universally Applicable – PR II

PR II 130 / PR II 150 / PR II 160 / PR II 180 / PR II 200

With boring spindle diameters between 130 mm and 200 mm, the PR II covers the largest part of the requirement range of boring mills in this size. In combination with the speed variance, the performance spectrum of the main drive allows for a high cutting range. Expandable traverse and comprehensive equipment options predestine the PR II for universal application.

Features of the PR II:

- Highest stiffness:
  - Robustly designed machine bed
  - No counterweight, thus the column ribbing reaches far within
- Low-wear and precise guidance system:
  - Either controlled hydrostatics or preloaded linear roller compact guides
  - Backlash-free, preloaded drives in all axes
- Precise machining results thanks to:
  - Two entirely closed, hydrostatic brackets for the RAM
  - Double precision spindle bearing with maintenance-free permanent grease lubrication
  - Thermal monitoring of the spindle bearings in the RAM
- Multi-compensation of the components relevant to the machine's precision:
  - Compensation of the column tilt
  - Droop and length compensation of the RAM and the boring spindle
  - Y-slide tilting compensation



PR II 150 – fully hydrostatic guidance



RAM with an automatic adapter plate

# Powerful and Flexible – PR II S

PR II 160 S / PR II 180 S / PR II 200 S

The PR II S is based on the proven PR II-series. The „S“ in the type name stands for “strong” – it covers a higher performance and traverse range of RAM and boring spindle. This makes the machine the ideal solution for all customers who would like to machine large workpieces precisely and efficiently from five sides, including bores deep within.

The PR II S combines all the advantages of the entire PR II series and in addition features:

- Extreme traverse of the RAM (Z = 2,000 mm) and boring spindle (W = 1,400 mm)
- Cross section optimized RAM for consistent, high static and dynamic stiffness



Far extendable RAM and boring spindle



## Stable and Precise – PR III

PR III 180 / PR III 200 / PR III 260

The PR III has been developed specifically for high cutting performances and precise machining of XXL workpieces and rounds off the portfolio in the highest ranges. Concerning the extremely long traverses in particular, the machine guarantees high precision in terms of geometry and positioning thanks to the comprehensive compensation features.

The PR III features:

- Stability and precision:
  - Strongly ribbed cast-iron components that damp vibrations
  - Cast-iron machine column with reinforced exterior wall
  - Generously dimensioned guidance rails with a large distance
- Power:
  - Water-cooled AC motors for a high boring spindle power and high feed force in all axes
  - Y-drive with two exterior, preloaded ball screw drives without counterweight or other elaborate weight compensation
- Low-wear and precise guidance system: controlled hydrostatics in all axes



Hydrostatic guides of the robust machine bed



Robust, strongly ribbed machine column



## Optionally available

### Automatic change of tools

- Chain, rack and arena magazines with up to 300 tools
- Horizontal/vertical change of tools
- Tool gripper SK 50, SK 60, HSK and Capto, among others

### Automatic change of aggregates via pick-up station for

- A wide range of milling heads
- NC facing heads
- Spindle support, spindle extensions and special tools

### Process monitoring

- Tool breakage monitoring, automatic tool measurement
- Torque monitoring, collision monitoring
- Capture of production data and remote diagnosis



RAM with integrated facing slide



Pick-up station for several milling heads and additional space for special-purpose tools

## Equipment variants

A wide range of heads – manufactured within our group of companies – is available. We offer the best milling head solution for every application:

- Vertical, universal and orthogonal milling heads with performances of up to 85 kW
- A NC facing head for NC contouring, facing and turning up to 1,250 mm

Other effective components for simplifying your machining processes are also available: a 3D touch probe including measurement cycles for automatic measurement of work pieces, pick-up stations for automatic accessory change and a wireless hand wheel for the utmost operator flexibility when setting the work pieces.

Individual solutions – we manufacture customer specific solutions upon your request.

# Technical data: P-Series

## Technical data

### P 130

### P 150

<b>Boring spindle</b>				
Diameter		mm	130	150
Drive power, max.		kW	67	73
Torque, max.		Nm	2,179	3,170
Speed range, infinitely variable, max.		min <sup>-1</sup>	5...5,000	5...3,500
<b>Traverses</b>		<b>Axes</b>		
Column cross traverse	X	mm	4,000	5,000
Optional extension in steps of	X	mm	1,000	1,000
Headstock vertical traverse	Y	mm	2,000	2,500
Opt. ext. in steps of 500 mm up to max.	Y	mm	3,500	3,500
Column traverse longitudinal	Z	mm	800	800
Boring spindle axial traverse	W	mm	750	750
<b>Feed range / Rapid traverses</b>				
Feed range of all axes, max.		mm/min	15,000	15,000
Rapid traverse of X-axis, max.		mm/min	15,000	15,000
Feed force, max.		N	25,000	25,000
<b>Automatic tool change</b>				
Number of tools in the magazine			40-80	40-80
Net weight of the machine		kg	28,500	29,500
<b>Equipment options</b>				
Automatic tool change				
Pick-up station				
Additional equipment: milling heads, spindle extention, NC facing head				
Floor plate, rotary and traversing tables				

## Technical data: PR-Series

Technical data			PR I	PR II	PR II S	PR III
Boring spindle						
Diameter	mm		130/150	130-200	162-200	180-262
Drive power, max.	kW		63	91	97	128
Torque, max.	Nm		3,100	7,094	7,534	19,847
Speed, max.	min <sup>-1</sup>		4,400	4,000	3,000	2,200
Traverses		Axes				
Column cross traverse	X	mm	4,000	4,000	4,000	4,000
Optional extension in steps of	X	mm	1,000	1,000	1,000	1,000
Headstock vertical traverse	Y	mm	2,000	2,500	2,500	3,000
Opt. ext. in steps of 500 mm up to max.	Y	mm	4,500	6,500	6,500	10,000
RAM travel, max.	Z	mm	1,100	1,500	2,000	2,000
Boring spindle axial traverse, max.	W	mm	750	1,000	1,400	1,500
Feed range / Rapid traverses						
Feed range of all axes, max.	mm/min		10,000	10,000	10,000	8,000
Rapid traverse of X-axis, max.	mm/min		32,000	28,000	25,000	20,000
Feed force, max.	N		20,000	40,000	40,000	60,000
Automatic tool change						
Number of tools in the magazine			max. 120	max. 160	max. 160	max. 200
Net weight of the machine		kg	33,800	38,500	45,000	81,500
Equipment options						
Automatic tool change						
Pick-up station						
Additional equipment: milling heads, spindle extension, NC facing head						
Floor plate, rotary and traversing tables						



UNION  
Werkzeugmaschinen GmbH Chemnitz  
Clemens-Winkler-Str. 5  
09116 Chemnitz · Germany

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

[info@unionchemnitz.com](mailto:info@unionchemnitz.com)

Contact worldwide:



[unionchemnitz.com/contact](https://unionchemnitz.com/contact)

Ident. No. PR-2017/08-EN | Subject to change