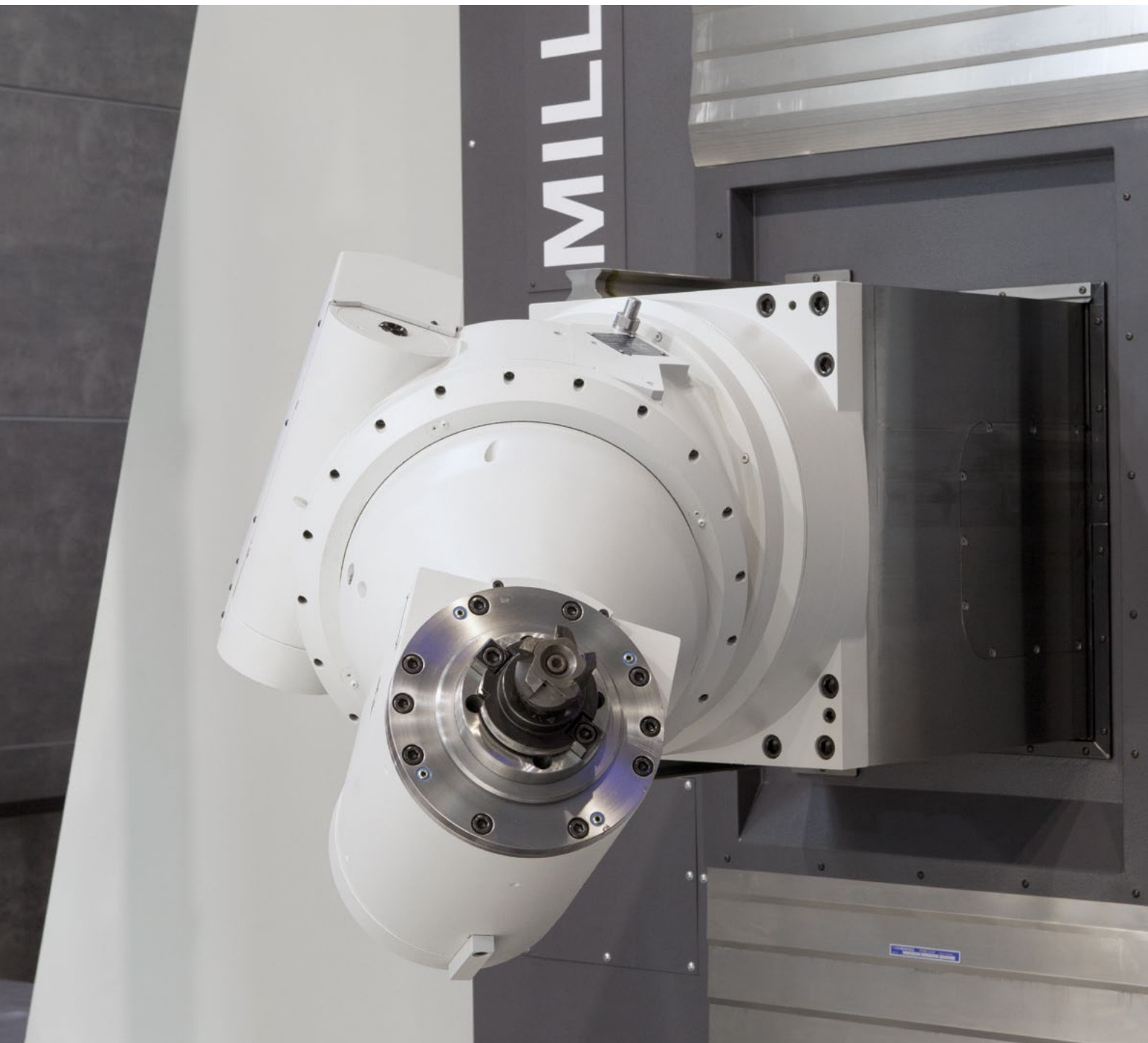


MILLFORCE 1 / MILLFORCE 2 / MILLFORCE 3

Dynamic workpiece machining



P-SERIES
K-SERIES
T-SERIES
MILLFORCE

 **UNIONCHEMNITZ**

- 02 / Fields of application
- 03 / Machine concept
- 04 / Machine technology
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Universal travelling column mill for producing single pieces as well as small and medium batches.

Flexible and dynamic travelling column mills

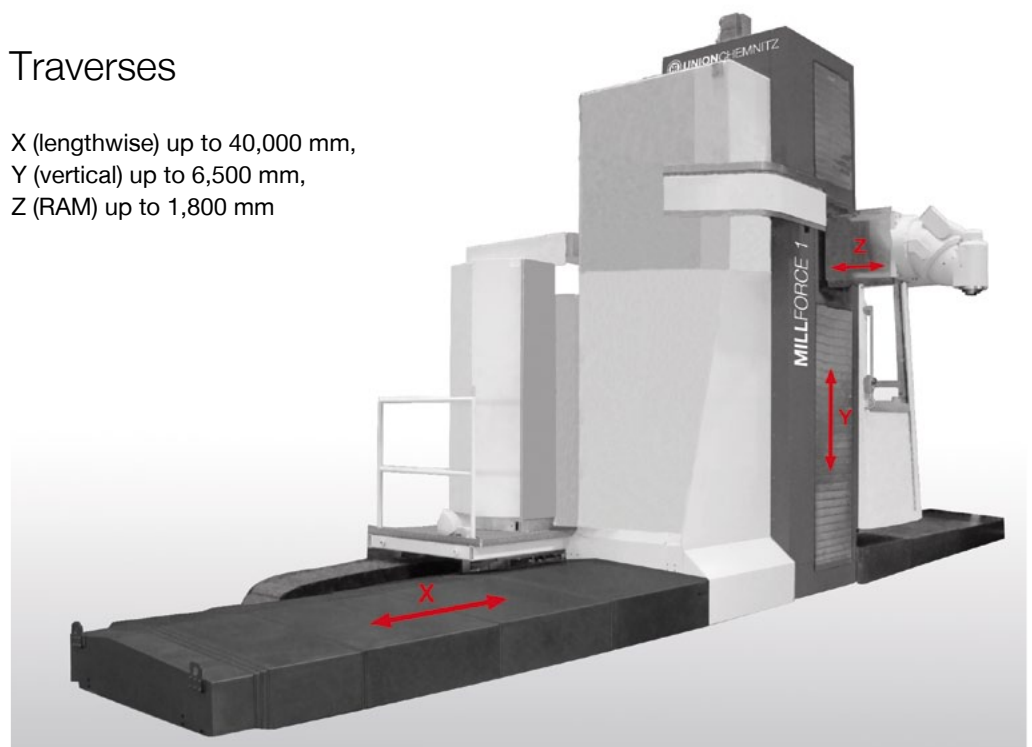
The MILLFORCE-series combines the fast and exact positioning of the milling heads with the distinct stability for machining medium-sized workpieces. In its basic version the machine and its universal milling head implement all common production tasks. An optional pick-up station with various exchangeable aggregates increases significantly the fields of application.

Your advantages at one glance

- robust and dynamic machines for both rough machining and superfinishing
- compact precision roller guides in all axes of MILLFORCE 1 and 2 machines to achieve utmost machining accuracies
- compact or hydrostatic guideways for MILLFORCE 3
- high speeds, feed rates and axis acceleration rates
- attractive cost-benefit ratio
- various equipment variants individually adaptable to the customers' requirements

Traverses

X (lengthwise) up to 40,000 mm,
Y (vertical) up to 6,500 mm,
Z (RAM) up to 1,800 mm



Robust machine technology – for precise workpiece machining

The MILLFORCE design

The wide and solidly ribbed machine bed in welded steel construction absorbs vibrations and forms the basis for precise machining results. It can be extended with a rack and pinion drive. As from 6 m, the X axis is designed with a rack and master-slave drive. Zero backlash compact roller guides in all linear axes guarantee the machine's high positioning accuracy and excellent stability.

Both the torsionally stiff box-type column, optimized by FEM and modal analysis, and the travel-dependent compensation for sagging and tipping (integrated into the RAM) ensure the exact positioning of milling heads and tools.

The MILLFORCE 3 is based on the proven UnionChemnitz PR-series technology. Customers can choose between compact or hydrostatic guideways.



Automatic tool changer



Operating platform

Optionally available

Automatic tool change

- tool magazine with (40-100 tools)
- tool change in horizontal position of the milling head

Pick-up station

- automatic change of aggregates

CNC controls

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

Process monitoring

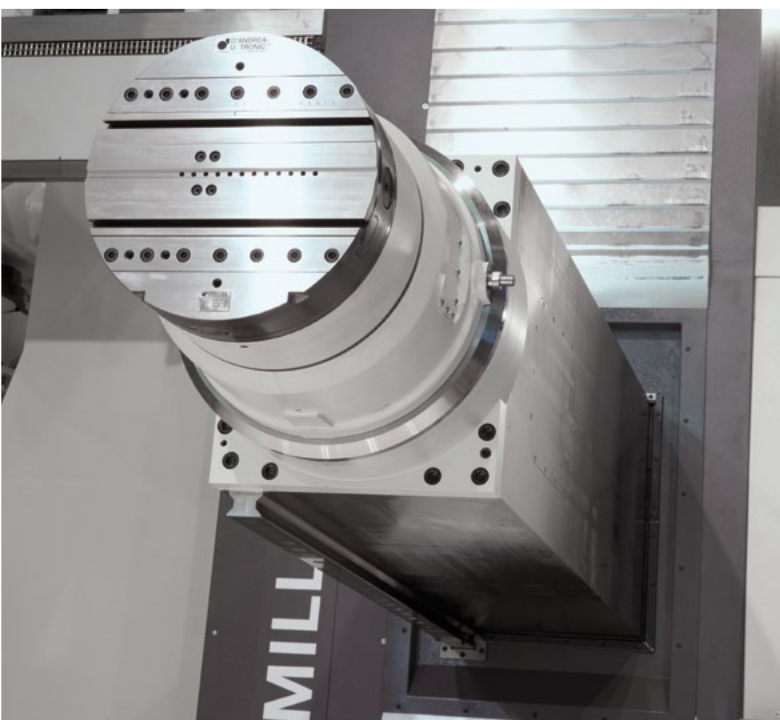
- tool-break monitoring, automatic tool detection
- workpiece probing (radio measuring probe)
- torque and collision monitoring, laser measuring bridge
- process-data collection and telephone support

Complete solutions:

- rotary and traversing tables with a load up to 250 t
- tilting tables with controlled tilting axis 0... 90°
- sinustables and fast turning tables
- trunnion devices, floor plates, clamping devices, equipment
- tool packages



Automatic change of a milling head



NC facing head

Equipment variants

In addition to the universal milling heads you can choose spindle units for machining operations within the workpiece with a higher speed and torque and a NC facing head for NC contouring, facing and turning. A pick-up station for docking this equipment can be integrated in the working area of the machine.

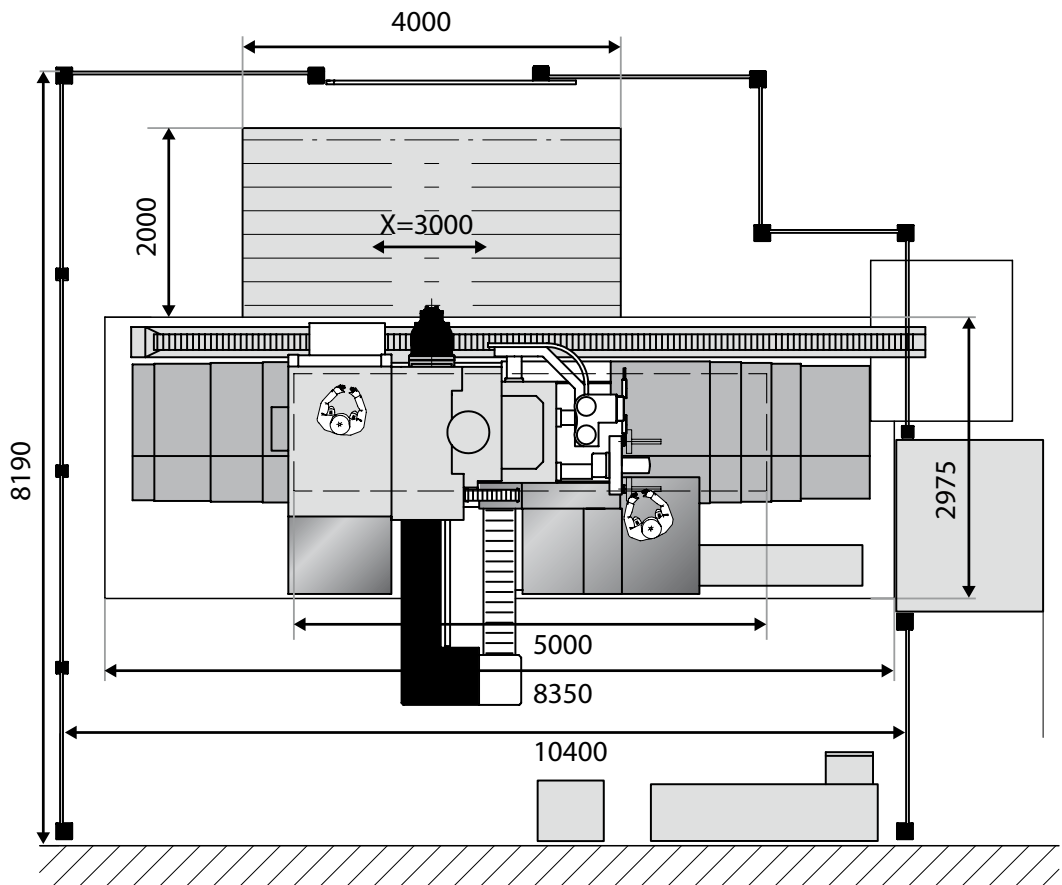
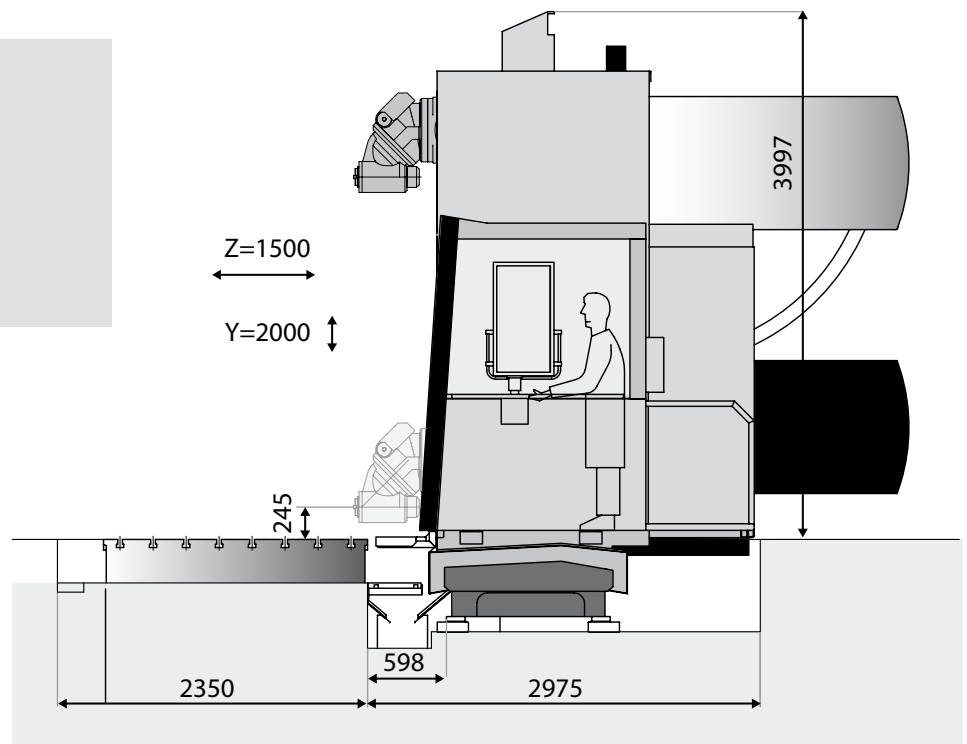
We offer you effective components to simplify your production process like a 3D touch probe including measurement cycles for automatic measurement of workpieces and a wireless handwheel for utmost flexibility when setting workpieces.

Individual solutions – we produce customer-specific solutions upon your request.

Exemplary layout of a MILLFORCE 1

Basic version with
X = 3,000 mm,
Y = 2,000 mm,
Z = 1,500 mm

Floor plate:
4,000 x 2,000 mm



Technical data

MILLFORCE 1

MILLFORCE 2

MILLFORCE 3

Power					
Speed, continuous	min ⁻¹		5...5,000/6,000	5...5,000/6,000	5...4,000/5,000
Drive power, max.	kW		30	30	52
Torque, max.	Nm		850	1,000	2,022
Traverses		Axes			
Column cross traverse	X	mm	3,000	4,000	4,000
Optional extensions in steps of	X	mm	1,000	1,000	1,000
Vertical traverse	Y	mm	2,000...3,000	2,000...4,500	2,500...6,500
Ram traverse	Z	mm	1,500	1,500	1,800
Feed range/rapid traverses					
Feed range in all axes	mm/min		1...6,000/10,000	1...6,000/10,000	1...6,000/10,000
Rapid traverse	m/min		20/40	15/32	15/28
Acceleration	m/s ²		1.25/1.5	1.25/1.5	1.25
Feed force, max.	N		10,000	20,000	25,000
Equipment variants					
Automatic tool changer (40 - 100 tools)					
Automatic milling head changer					
Pick-up station					
Milling heads in various designs					
- Vertical, universal oder orthogonal heads					
- Positioning: 1°, 25°, NC (0.001°)					
Spindle support					
NC facing head					
Floor plate					
Rotary and traversing tables					
Integrated installation with other machines					

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