



P-series

K-series

T-series

F-series

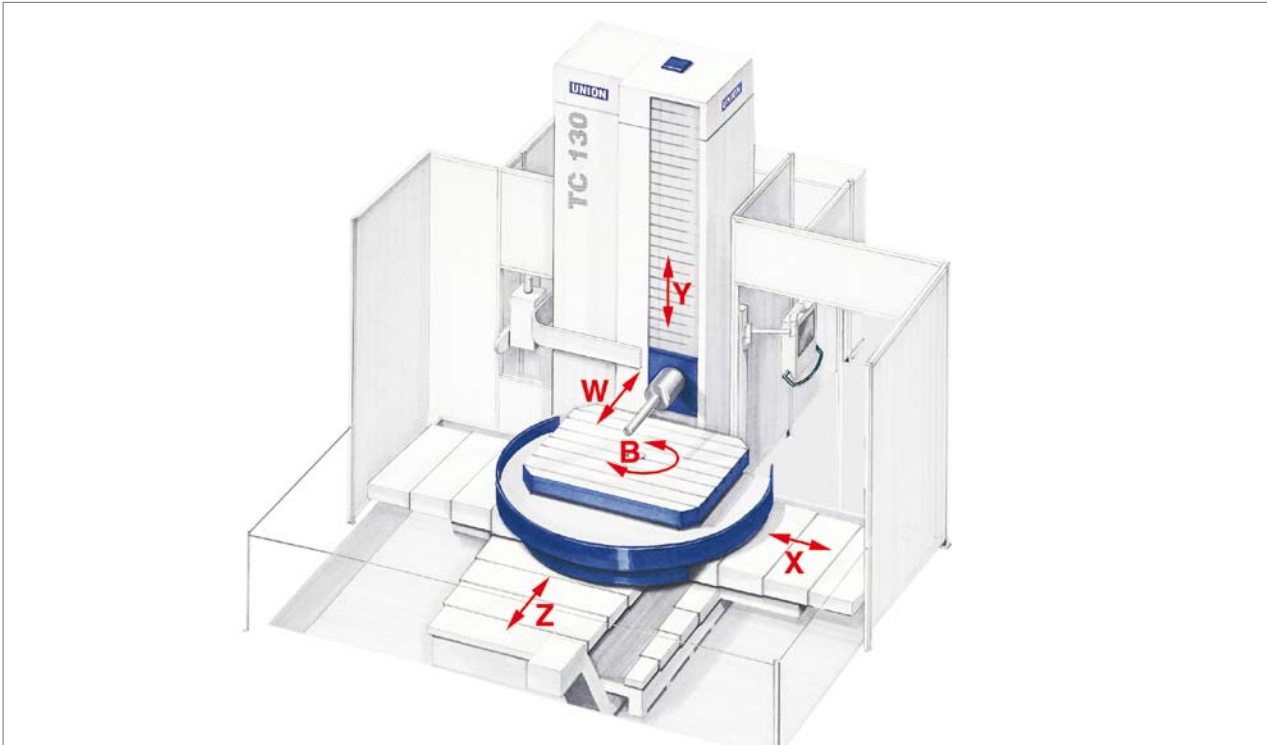
**UNION T 110**  
**UNION T 130**  
**UNION T 150**

Horizontal Boring and Milling Machine  
Table Type

**UNION**  
boring & milling

# UNION CNC table type boring mill T 110, T 130 and T 150

Compact boring mill for economic multiple side machining of medium sized workpieces  
up to 2500 x 2500 x 1500 mm.



## Classification

T = table type

C = with automatic tool changer

U = with integrated NC facing head

110, 130 or 150 = diameter of the boring spindle in mm

/1 latest version of design

example: **TCU 150/1** = table type machine with automatic tool changer and with integrated NC facing head;  
diameter of the boring spindle 150 mm; latest version of design



## Main features

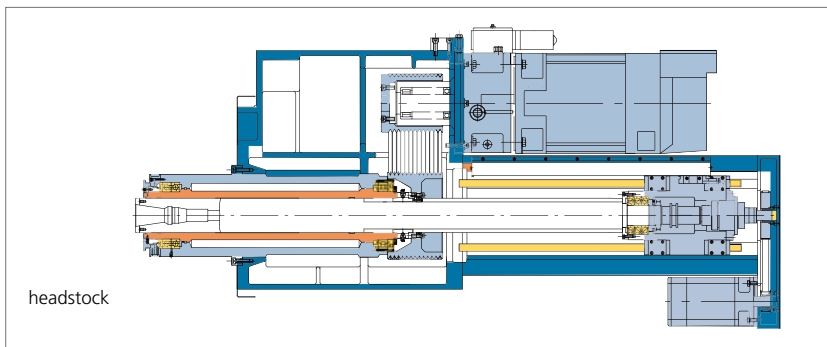
- wide 4-way bed for table cross traverse
- vibration dampened and strongly braced box-type cast column
- compact preloaded precision roller guides ensure highest machining accuracy
- nitrated axially traversing boring spindle with hardened spindle taper
- speed ranges up to 6000 rpm; max. power 61 kW
- maximum production flexibility by use of different accessories

## Technical features

### Machine bed / column

- wide, welded 4-way bed with high static stiffness
- strongly braced box-type cast column, vibration dampened and rigid
- preloaded roller guides
- preloaded ball screws

4-way bed with cast column and table saddle

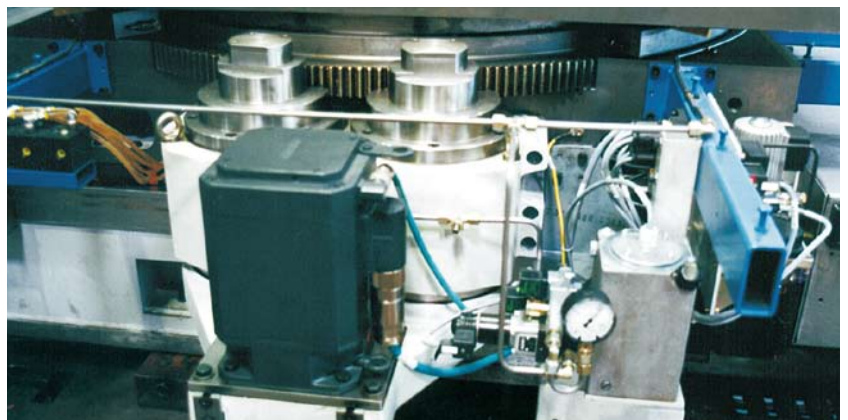


### Spindle / headstock

- completely manufactured by UNION
- precision spindle bearings with life time lubrication
- two range gearbox with circulating lubrication and oil cooler for temperature stabilization

### Table unit

- precise table centering by means of axial-radial cylindrical roller bearings
- table rotation by scraped bearing
- highly effective, hydraulic clamping system
- accessible table pan



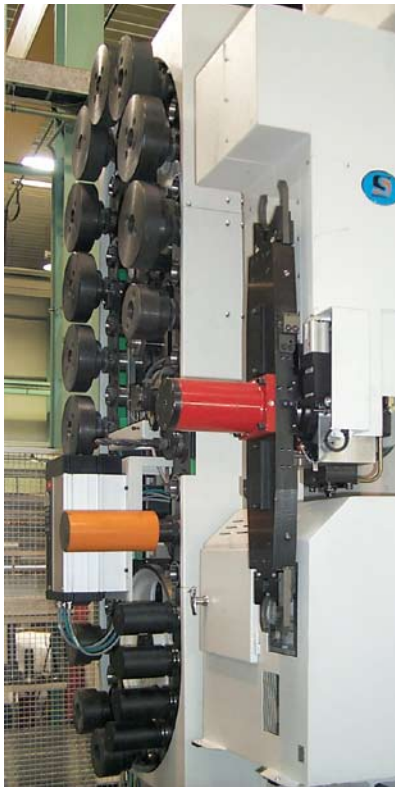
backlash-free, double pinion drive for table; hydraulic clamping unit

## Machine options



### Automatic tool changer

- column mounted tool magazine with capacity up to 120 tools
- for SK50 or HSK100 tools, others available on request
- automatic tool change also possible into the NC- facing head
- changing cycles for heavy tools
- tool taper cleaning
- tool identification system



### Compact coolant units

- external coolant 40 l / 3 bar
- internal coolant up to 70 bar
- paper band filter
- coolant circulation with weekend cycle



### NC controlled facing head

- integrated within the headstock
- use of the boring spindle without disassembly of the facing head
- unbalance compensation by synchronously extending counter slide
- automatic tool change into the facing head toolholder and internal coolant supply



- external coolant supply via adjustable nozzles
- internal coolant supply through the working spindle, optional through the spindle of milling head



### CNC – control

- Heidenhain iTNC 530
- Siemens 840D



### Options for process optimization

- touch probe
- tool breakage monitoring
- automatic tool identification
- torque monitoring
- tool life monitoring
- data printout

## Machine options

### Work area / CE-approved operation

- operator panel swivelling into work area, optional in angled desk design
- spacious access into the work area
- in case of total enclosure, windows for observation of work area
- total enclosure optional with roof and exhausting device
- protection against unauthorized access
- wireless handwheel with multifunctional display
- table enclosure



### Automatic pallet changer

- DIN pallets are exchanged automatically from standard pallet changer up to 4 loading stations to machine in X- or Z- direction



# Optional accessories, milling heads, machine accuracies

## Adaptable milling heads (examples)

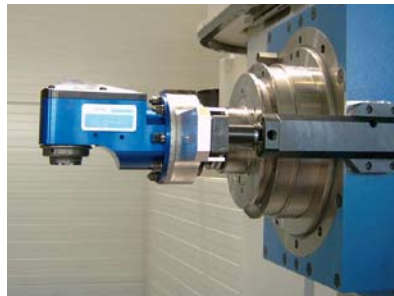
### Vertical and universal milling heads

- with automatic or manual positioning
- internal / external coolant
- up to 3500 rpm, power 37 kW



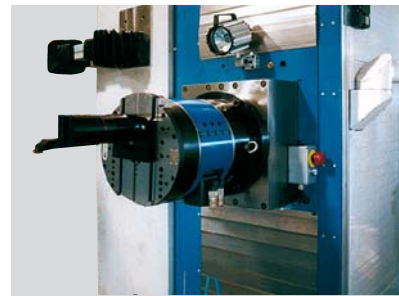
### Angle milling heads

- manual positioning
- automatically adaptable via tool changer
- special problem solutions



### NC-facing head

- automatic head attachment is optional



## Accessories



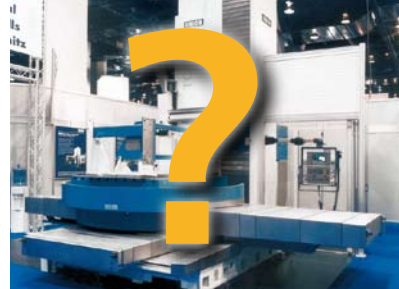
### 3D-measuring probe

- including measurement cycles for automatic measurement of workpieces



### Tool measuring

- length, radius or separate cutting edges
- tool breakage control



### And your requirements ?

....please contact us !!

## Accuracies

maching accuracies		
deviation from a straight line (reference traverse 630 mm)		≤ 20 μm
diameter accuracy (internal boring)		IT 6
deviation from true circle (internal boring); diameter 160 mm		≤ 8 μm
deviation from true circle (external milling, circular); diameter 300 mm		≤ 20 μm
coaxiality of above mentioned circles		≤ 20 μm
positioning accuracy according to VDI/DGQ 3441 for machine type T / TC 110		
axes x, y, z		
positioning uncertainty	P	25 μm
positional scatter	Psmax	10 μm
reversal error	Umax	5 μm
positional deviation	Pa	8 μmt
table positioning	90° positions	± 2"
	remaining angles	± 6"

## Technical data Layout

### Technical data

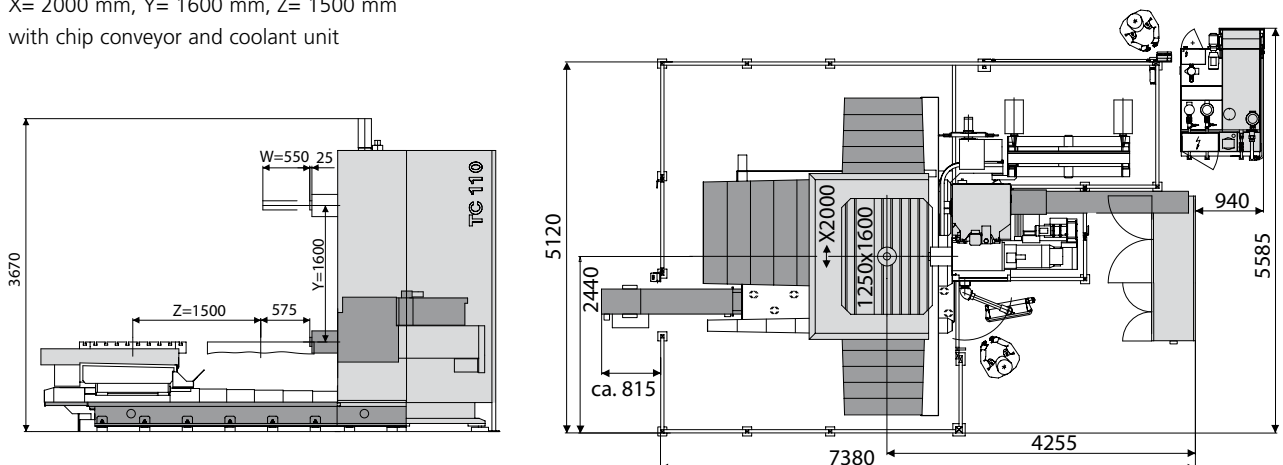
\* for headstocks with integrated facing head only

		T / TC 110	T / TC 130	T / TC 150	
<b>boring spindle</b>					
diameter	mm	110	130	150	
drive power	kW	27, optional 37	37, optional 46	46, optional 61	
torque, max.	Nm	2012	2179	2727	
speed range	min <sup>-1</sup>	5...5000	5...4000	5...3500	
facing head diameter*	mm			700	
facing head, speed range*	min <sup>-1</sup>		2,5...330	2,5...330	
<b>table unit</b>					
table size	mm	1000x1250	1250x1600	1250x1600	
optional	mm	1250x1600	to 1600x2000	to 1600x2000	
table load, max.	kg	7.000	10.000	10.000	
<b>traverses</b>					
table cross	X	mm	1500	2000	2000
optional	X	mm	2000	2500	2500
headstock vertical	Y	mm	1250	2000	2000
optional	Y	mm	1600	2500	2500
table longitudinal	Z	mm	1000	1500	1500
optional	Z	mm	1500		
facing slide radial*	U*	mm			200
boring spindle axial	W	mm	550	750	750
<b>feeds / rapid traverses</b>					
feed range of all axes		mm/min	1...6.000	1...6.000	1...6.000
rapid traverse		mm/min	18.000	15.000	15.000
feed range of the facing slide*	U*	mm/min			1...1000
<b>automatic tool changer</b>					
number of tool pockets in the magazine			40 (to 120)	40 (to 120)	40 (to 120)
max. tool diameter	mm		250	250	250
max. tool length	mm		500	500	500
max. tool weight	kg		30	30	30

subject to modification

### Layout of a TC 110

X= 2000 mm, Y= 1600 mm, Z= 1500 mm  
with chip conveyor and coolant unit





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