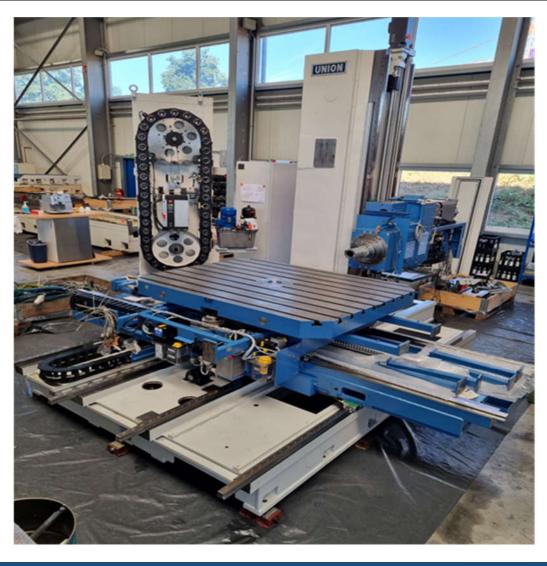


Technical Datasheet No. 1/1612/2022, UNION TC 110-1, boring mill in cross table design

### TECHNICAL DATA SHEET HORIZONTAL - BORING AND MILLING MACHINE

Manufacturer UNION
Type TC 110-1
Built | Retrofit 2002 | 2022

Control HEIDENHAIN iTNC 530



### **Working Area**

X-axis, table cross adjustment	2.000	mm
Y-axis, vertical adjustment headstock	1.600	mm
Z-axis, longitudinal adjustment table	1.500	mm
W-axis, quill adjustment	550	mm
B-axis, positioning	360.000 x 0,001	0



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Headstock with main spindle		
Spindle diameter	110	mm
Fixed spindle throat, length	300	mm
Fixed spindle throat, diameter	260	mm
Smallest distance, Spindle edge to table center	50	mm
Lowest position above table surface	0	mm
Tool holder (short taper according to DIN 69871)	ISO 50	
Drive power S1 (100%) / S6 (60%)	22/27	kW
Max. torque at spindle	2.012	Nm
Spindle speed range, stepless adjustable	5 - 3.000	Min-1

NC – rotary table			
Clamping surface	1.600 x 1.250	mm	
centering hole in table	100	mm	H6
max. load (max.150mm except table m.)	6.000	kg	
T-slot width	22	mm	
T-slot distance	125	mm	
Holding torque B-axis	30.000	Nm	
Positionability	360.000 x 0,00	)1°	

Feeds and rapid traverse		
Max. Feed range for X, Y, Z and W axis	1-6.000	mm/min
Rapid traverse for all linear axes	15.000	mm/min
B axis	3	min-1

Installation data		
Operating voltage	3~ 400/230 V	
Frequency	50 Hz	
Connected load	63 kVA	
Backup fuse	125 A	

Tool magazine		
Туре	Chain magazine	
Number of magazine spaces	40	
max. Ø without free auxiliary spaces	125	mm
max. Ø with free auxiliary places	250	mm
max. tool length	500	mm
max. tool weight	30	kg
Max. permissible weight of all tools	800	kg

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### **Design features**

#### Machine

Backlash-free ball screws in all linear axes

Direct, absolute measuring systems in all axes, make HEIDENHAIN

Machine bed

Wide, heavily ribbed steel construction, 4 - guides bed

Preloaded compact roller linear guides for backlash-free guiding of the table-slide

Bed and column are rigidly connected

#### Machine column

Solid ribbed cast iron column in box construction

Preloaded compact roller linear guides for backlash-free guiding of the headstock

Complete enclosure on the column for headstock vertical adjustment

### Headstock / Drilling spindle

Rigid cast iron construction

Bearing of the spindle system with preloaded precision angular contact ball bearings with

lifetime lubrication mounted in preloaded fixed spindle projection

Automatic switching of the two gear steps via primary gearing with hardened

gears and oil cooling

Power transmission to the boring spindle through low-noise precision V-ribbed belts

Nitride-hardened, precision-balanced drilling spindle, axially adjustable, positionable at any angle and protected against chips and coolant by a spindle labyrinth

#### Table group

Clamping table (1,600 x 1,250 mm) and table slides in cast iron

Precisely scraped sliding surface to accommodate the table. Rotary table adjustment (B axis) with pinion drive

Table underside with plastic-coated sliding guide.

Hydraulic segment clamping, table bearing by precision bearings

### **Machine dimensions**

L x W x H ca. 7.200 x 5.000 x 3.700 mm Total weight ca. 22.000 kg

#### **Accessories**

3 pcs. chip conveyors (position left and right as well as front crosswise in front of the machine bed) - NEW

Tool magazine 40 places, automatic change



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### Scope of retrofit

- Ball screws in X, Y, Z and W axis, incl. new bearings NEW
- Linear guides and roller shoes in X, Y, Z and W axis NEW
- · Tool changer and magazine overhauled
- · Bearings for spindle and quill NEW
- CNC control HEIDENHAIN iTNC 530 -NEW from our stock-
- Tool clamping unit make OTT overhauled by manufacturer
- · Measuring systems cleaned, checked and partially replaced by new components
- Machine completely checked mechanically and electrically
- · Largely new cables, especially in the energy chains
- Energy chains NEW
- Telescopic covers overhauled
- Bellows in the vertical axis NEW
- Machine painting with oil-resistant and abrasion-resistant two-component paint NEW
- 2 pcs. lubrication units NEW
- 2 pcs. High pressure units make HAWE NEW
- Oil-cooling device make HYDAC for main-gearbox NEW
- All mechanical and electrical components have been checked and renewed if necessary

#### Options for extra charge

- Machine enclosure, custom made NEW -
- Coolant system for internal & external cooling 20 / 8 bar -NEW-
- 3D touch probe measuring system