TECHNICAL DATA SHEET

HORIZONTAL - BORING AND MILLING MACHINE

Manufacturer	**UNION**
Type	**TC 130**
Built | Retrofit	**2004 | 2022**
Control	**HEIDENHAIN iTNC 530**

Working Area

X-axis, table cross adjustment	2.500	mm
Y-axis, vertical adjustment headstock	2.000	mm
Z-axis, longitudinal adjustment table	1.500	mm
W-axis, quill adjustment	750	mm
B-axis, table rotary adjustment	360	°
B-axis, positioning	360.000 x 0,001°	

Headstock with main spindle			
Spindle diameter	130	mm	
Fixed spindle throat, length	370	mm	
Fixed spindle throat, diameter	280	mm	
Smallest distance, leading edge spindle to table center	605	mm	
Lowest position above table surface	0	mm	
Tool holder (short taper according to DIN 69871)	ISO 50		
Drive power S1 (100%) / S2 (30min)	37/51	kW	
Max. torque at spindle	2.415	Nm	
Spindle speed range	5 – 3.000	Min-1	
1st gear stage	5 – 782	Min-1	
2nd gear stage	783 – 3.000	Min-1	

NC – rotary table			
Clamping surface	1.600 x 2.000	mm	
centering hole in table	100	mm	H6
max. load (max.150mm except table m.)	10.000	kg	
T-slot width	28	mm	
T-slot distance	160	mm	
Holding torque B-axis	30.000	Nm	
Positionability	360.000 x 0,001°		

Feeds and rapid traverse		
Max. Feed range for X, Y, Z and W axis	6.000	mm/min
Max. Feed force	25.000	N
Rapid traverse for all linear axes	15.000	mm/min
Max. B axis working torque	10.000	Nm
Rapid traverse B axis	3	min-1

Tool magazine		
Type	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	700	kg
Tilting moment	50	Nm

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-lane bed

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

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 speed series 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

Cross-sliding and rotating clamping table in cast iron design with preloaded compact roller linear guides with high rigidity for longitudinal and transverse adjustment, together with headstock vertical adjustment guarantee stick-slip-free circular interpolation.

Rotary table with low-friction, hydrodynamic sliding guide with plastic coating. Backlash-free rotary table adjustment (B axis) with optimized double pinion drive. Table bearing with a radial and axial precision roller bearing.

Table underside with plastic-coated sliding guide.

Hydraulic segment clamping

Installation data		
Operating voltage	3~ 400/230 V	
Frequency	50	Hz
Connected load	90	kVA
Connected current	146	A
Backup fuse	160	A
Cross section of the supply line	4x70	mm²

Machine dimensions		
L x W x H ca.	8.160 x 6.960 x 3.700	mm
Total weight ca.	30.000	kg

Scope of retrofit

- New ball screws in X, Y, Z and W axis
- New guide rails and roller shoes in X, Y, Z and W axis
- Tool changer and magazine overhauled
- New spindle and quill bearings
- Tool clamping unit overhauled at the factory
- Measuring systems cleaned, checked and partially replaced by new components
- Machine completely checked mechanically and electrically
- Largely new cables
- New energy guiding chains
- Telescopic covers overhauled
- Bellows in the vertical axis new
- New machine coating in two-layer structure with oil-resistant and abrasion-resistant two-component paints

Additional scope of supply

- CNC drilling and milling machine with spindle Ø 130mm in horizontal execution
- tool magazine with 40 places and automatic tool changer
- 3 pcs. chip conveyor
- sump pump
- Belt filter system for coolant with two cooling circuits