



UBB 50

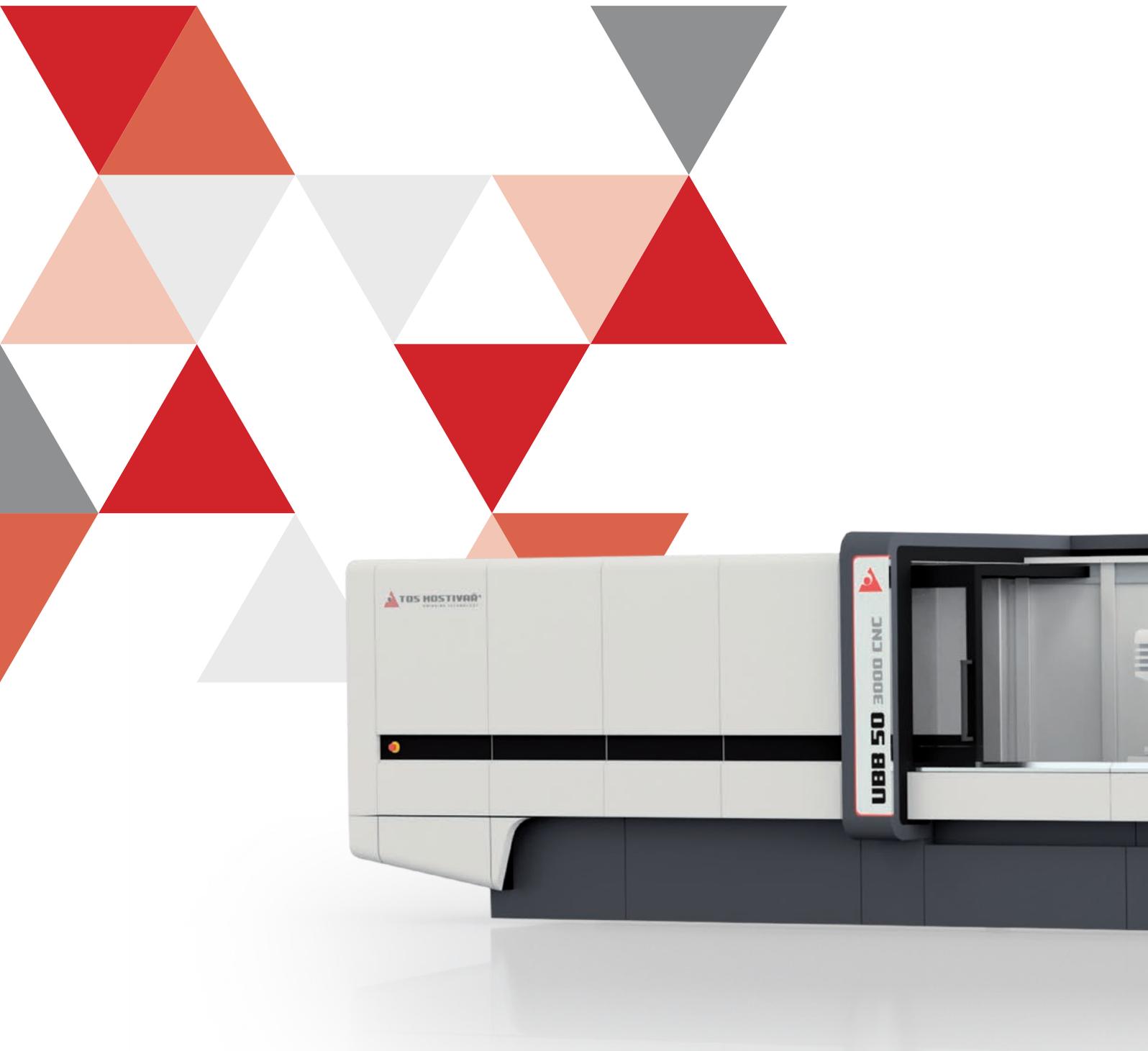
Specification of UBB 50 CNC range of machines

The UBB 50 CNC is based on the all-purpose cylindrical grinder UB 50 CNC. It is a cylindrical grinder for workpieces of maximum diameter of 500 mm and maximum length of 3,000 mm, with an additional B-axis.

The B-axis enables the use of up to three grinding wheels making it possible to grind a workpiece completely while clamping it only once, with minimum additional time and maximum precision using internal grinding.

During grinding the machines can be controlled manually or they can work in a fully automatic grinding cycle (grinding multiple diameters, plunge grinding or longitudinal grinding, grinding convex or concave diameters of a cone surface with automatic dressing of the grinding wheel). The workpieces are mounted between the centres, or clamped on one side in the chuck or permanent magnetic plate. The machines are designed for accurate and efficient grinding of individual pieces as well as for grinding in serial production.

The grinder can be modified for using controlled gauges which, in connection with an automatic working cycle, enable the control of multiple machines.



B-AXIS

The most important part of the machine for complete workpiece grinding is the wheel-head with an integrated B-axis. This revolving B-axis enables the use of up to three grinding wheels making it possible to grind a workpiece completely while clamping it only once, with minimum additional time and maximum precision.

The B-axis is driven by cycloidal transmission, which, in combination with direct measuring, guarantees high positioning precision.

Combining three external or internal grinding spindles provides up to 8 possible alternatives of the wheel-head arrangements.

The basic arrangement of the revolving wheel-head is Alternative S1 – grinding wheel for external grinding on the left.

The wheel-head with the revolving B-axis consists of a basic revolving unit with individual grinding spindles attached to it in blocks along with spindle drives and other accessories.

The mounting of the external grinding spindles in the unit is done by high-precision rolling bearings with permanent grease medium. The drive of the external grinding spindles is ensured by asynchronous electric motors controlled by a frequency converter with adjustable peripheral speed of up to 16–50 m/s.

The grinding wheels for external grinding may be fitted with an automatic balancing device and acoustic detection of contact between the grinding wheel and the workpiece.

The drive of the internal grinding spindles is ensured by asynchronous electric motors with a frequency converter with adjustable peripheral speed of 25–80 m/s (12,500 min⁻¹).

Wheel-head		
Wheel-head tilt range	°	Positive counter-clockwise direction –30° až +210°
Minimum programmable wheel-head tilt inkrement	°	0.001
Maximum speed of wheel-head tilt	min ⁻¹	8
Maximum B-axis torque	Nm	1,500



X-axis		
Total X-axis stroke	mm	430
Cross feed per wheel revolution in relation to workpiece \varnothing	mm	0.05
Minimum programmable X-axis cross feed increment in relation to workpiece \varnothing	mm	0.001
Programmable cross feed speed	mm.min ⁻¹	0.001–4,000
Maximum rapid traverse of cross feed	mm.min ⁻¹	5,000

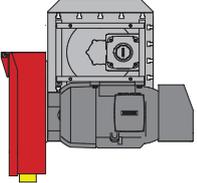
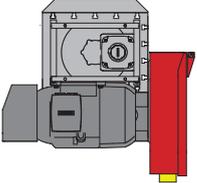
External grinding spindle			
Standard grinding wheel dimensions (diameter × width × hole)	mm	500 × 80 × 203.2	600 × 80 × 305
Minimum diameter of a worn-out grinding wheel	mm	380	480
Maximum grinding wheel width	mm	80	80
Constant peripheral speed range	m.s ⁻¹	16–50	
Grinding spindle motor output	kW	11	11
Minimum workpiece \varnothing ground with a grinding wheel worn out to the maximum	mm	65	0

Internal grinding spindle		
Type of belt spindles for internal grinding		IBC 100 275 T
Constant peripheral speed range	m.s ⁻¹	25–80
Grinding spindle motor output	kW	1.5
Range of diameters of workpiece holes ground	mm	40–400

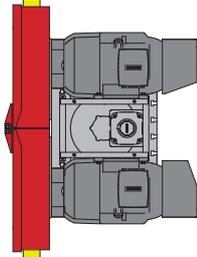
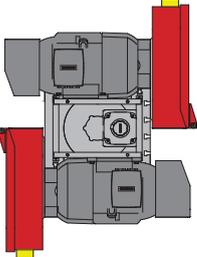


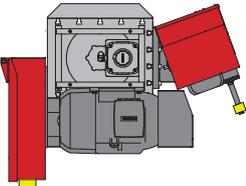
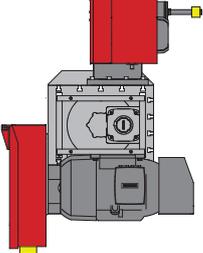
Arrangement alternatives for grinding spindles on the wheel-head

One grinding spindle

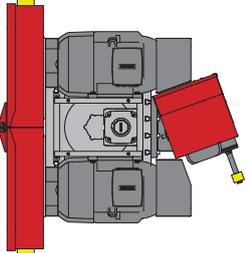
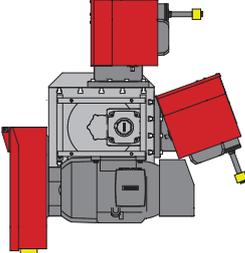
Alternative S1	Alternative S2
1× external grinding spindle	1× external grinding spindle
	

Two grinding spindles

Alternative S1-S4	Alternative S1-S3
2× external grinding spindle	2× external grinding spindle
	

Alternative S1-i2	Alternative S1-i3
1× external grinding spindle 1× internal grinding spindle	1× external grinding spindle 1× internal grinding spindle
	

Three grinding spindles

Alternative S1-i2-S4	Alternative S1-i2-i3
2× external grinding spindle 1× internal grinding spindle	1× external grinding spindle 2× internal grinding spindle
	



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