CENTRUM BADAWCZO-KONSTRUKCYJNE OBRABIAREK Sp. z o.o

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Venus 200

Bank PEKAO SA w Warszawie, Oddział Pruszków, Nr konta 08 1240 6380 1111 0000 5109 1495NIP 534-00-00-585, Regon 141309531, KRS 0000298693 prowadzony przez Sąd rejonowy dla M. Stołecznego Warszawy-XIV Wydział Gospodarczy, Kapitał zakładowy: 3 000 000,00 zł

Description of the offered machine

The offered CNC lathe Venus 200 is a modern, accurate and at the same time very efficient machine, designed according to newest trends in the construction of machines this size. The essential elements having key impact on machine quality are:

The lathe bed

The lathe construction of Venus 200 is based on really slant, cast iron bed, which thanks to adequate ribbing provides very high rigidity. For machine installation no special foundation is needed, the standard industrial floor and levelling pads are enough.
Basing on many year experience CBKO worked out optimal degree of the bed slope. On one hand it is granting very good chip flow, on the other high rigidity by the relatively small outside dimensions.
Both versions of the lathe, the chuck type and the centre lathe are built on the same, unified bed. Due to this solution we are more flexible in adjusting machine execution to the actual needs of our customers.

Main units of the lathe:
In the standard version of the Venus200:
headstock is screwed directly on the bed. Spindle is supported with super precision ball bearings – three double purpose bearings in front and double row roller bearing at rear.
Tailstock moved with the means of hydraulic cylinder on roller blocks. In the upper part of the tailstock, so called tailstock head, there is a Morse cone seat for rotary centre. Such design of tailstock enables control of its movement at the full stroke of 320 mm either by foot pedal or automatic by CNC control.
The cross saddle is of very rigid construction and are guided on pretension roller blocks. The large with of the cross slide rail provides high stability and rigidity of the structure at the machining conditions.

Tooling system – in the standard version, lathe is equipped with 8 position tool turret with direct mounting slots for outer tools of 20x20mm cross section. Inner machining tools are mounted in the tool-holders screwed on tool turret disc ambit. On request tooling system may be equipped with the VDI20 tool turret. In case machine is with “C” axis and rotary tools, tool turret is always VDI system. In every case coolant is lead through tool disc and/or tool directly to the cutting area.

Main drive – Spindle of the lathe is driven by the motor with step less speed control.
The torque achieved on spindle provides standard machining of max turning diameters. For machines with “C” axis control and rotary tools the main drive enables precision angular positioning of the spindle. Additionally, spindle brake helps to avoid vibrations and creepy rotations by milling and cross drilling operations.

Control system – for CNC control of the Venus200 we apply modern CNC control systems together with numeric servo drives of high dynamics and reliability. According to customer's preferences we may apply one of below mentioned CNC control system:

- Low cost CNC system LNC made in Taiwan
- Fanuc OiT_ Made in Japan .
- Sinumerik 828 made in Germany.

The LNC system for low-cost solutions enables achieving competitive price of the machine keeping standard functionality of the CNC control up to 3 simultaneously controlled axis, including simple graphic simulation of technological programs.

The Fanuc CNC control we offer together with Manual Guide, option making technological programing much easier, so it can be done directly on control board, without deep knowledge of traditional programing with G-codes.
All offered control systems are equipped with graphic simulation showing technological program flow.
As a standard, every CNC control may be connected to internal Ethernet to enable remote administration of technological programs as well as remote diagnostics for service purposes.

Additionally manufacturers of Fanuc and Sinumerik control systems are offering training software to be installed on PC computer, simulating CNC control in Off-Line operating mode. Thanks to such software operator may prepare technological program and test it using graphics without engaging CNC control installed on the machine.

Technical parameters of the machine

Working area

Max turning diameter over bed covers		mm	240
Max turning diameter over cross slide		mm	190
Max turning length		mm	400
Diameter of standard self-centring chuck		mm	130
Max dia of bar stock feeded through spindle		mm	32

Headstock

Spindle nose cylindrical		mm	110
Spindle bore		mm	42
Spindle diameter in front bearing		mm	70
Step-less controlled spindle speed range		1/min	50-6000
Spindle drive motor power at:	- 100% working cycle	kW	5,5
	- 60% working cycle	kW	7,5
Max torque on spindle		Nm	71

Saddle

X axis traverse	mm	120
X axis traverse	mm	430
X axis rapid traverse speed	m/min	16
X axis rapid traverse speed	m/min	32
Cross sadle with	mm	170

Standard tool turret

Number of positions		8
Outer tool cross section	mm	20x20
Max dia of inner tool	mm	25
Diameter of quick-change toolholder (VDI tool disc)	mm	20

Tool turret with rotary tools

Number of positions		8
Tooling system type quick-change toolholders VDI	mm	20
Max speed of rotary tools	1/min	6000

Tailstock

Tailstock traverse	mm	320
Adjustable tailstock clamping force	kN	0-4,8

Gabaryty Maszyny

Length x width x height		mm	2000x1015x1645
Coolant tank capacity		l	80
Weight of the machine with tailstock	kg	1400	

1. Equipment configuration

1. *Standard equipment in price of the machine*

- Electric installation apropriated for electric supply 3x400V, 50 Hz
- Complete CNC control
- Step less controlled main motor.
- Digital controlled axis drives.
- Elektronic hand wheel
- 8-possition tool turret with direct mounting system for outer tools.
- Workpiece clamping system with hydraulic cylinder and two-jaw self centering chuck
- Tailstock with rotary center
- Foot pedal for chuck and tailstock control.
- Cooling system with coolant delivery through tool disc.
- Chip container
- Lighting installation
- Set of service spanners
- Instruction manual and programing instruction.
- Painting.

2. *Special equipment at extra charge*

- Enlarged spindle bore to dia 56 (for bar stock feeded through spindle up to 45mm)
- The VDI type tool turret
- Angular positioning of the „C” axis
- 8-position tool turret with rotary tools drive.
- Bar feeder with bar magazine for short bars.
- Bar feeder for long bars with oil vibration damper.
- Three jaw self-centring chuck dia 160 mm
- Collet chuck.
- Set of collets.
- Tool holders
- Chip conveyer instead of chip container.
- Workpiece catcher.
- Touch probe for tool setting and tool correction.