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BUA, BUB, BUC,  
C 250, C 500



# GRINDING MACHINES

SLOVÁCKÉ STROJÍRNY, a.s.



# GRINDING MACHINES FOR YOUR PROFIT

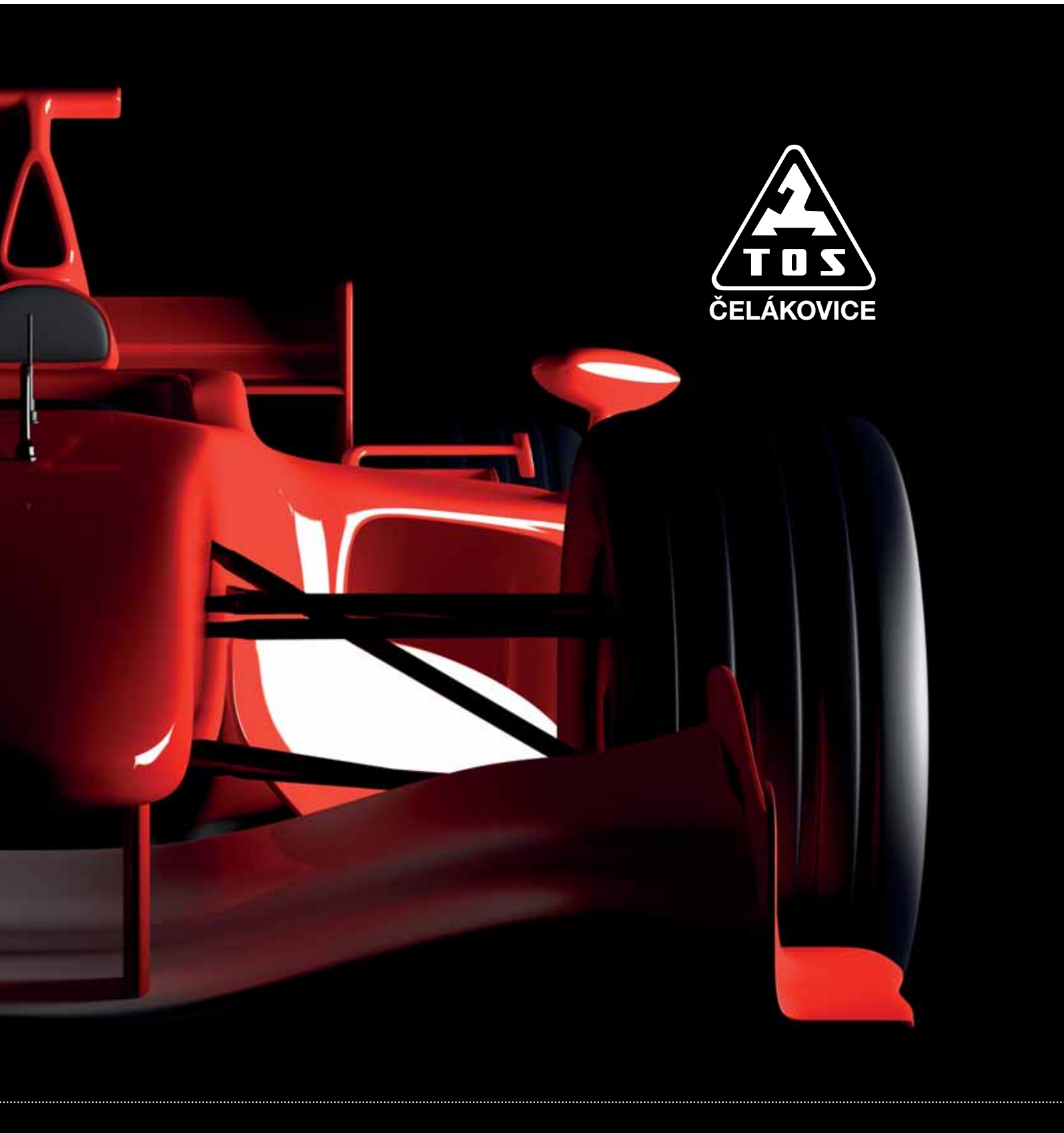
Precision grinding machines for cylindrical grinding of outside  
and internal diameters

## Centre grinding machines

BUA 25B NC Practic  
BUA 25B CNC Profi  
BUB 40B, 50B NC Practic  
BUB 40B, 50B CNC Profi  
BUB 50B CNC Multi  
BUC 63C, 85C NC Practic  
BUC 63C, 85C CNC Profi  
BUC 63C, 85C CNC Multi

## Centreless grinding machines

C 250 CNC  
C 500 CNC



## Machine Applications

### Centre Grinding Machines

The high-performance grinding machines of BUA series (Practic and Profi versions), BUB series (Practic, Profi and Multi versions) and BUC series (Practic, Profi and Multi versions) are designed for precise grinding of several external cylindrical surfaces of different diameters, their adjacent faces and transition radii on work pieces. In another version, they are suitable for grinding of internal cylindrical and tapered surfaces, and surface grinding of their adjacent faces. In its basic version, the grinder can be used for plunge-cut grinding or longitudinal grinding, with a fixed or oscillating table, successive plunge cutting with subsequent traverse regrinding.

Face-surface grinding can be performed with the side of a grinding wheel, with the oscillation of a wheel head possible. Longitudinal grinding of tapers can be accomplished within the range of table swiveling, or by the application of linear interpolation; sharp tapers can be ground on the work pieces that are clamped in a chuck. Radii can be ground using a circular interpolation, and oblique plunge cuts using interpolation. A variety of methods is available for grinding wheel dressing. Work pieces can be ground being positioned between centres, in rests, overhung in a chuck or in collet, or on a magnetic clamping plate.

The machines are suitable for grinding in single-part or small-series production as well as in large-series production. A grinding cycle can be controlled manually with the support of a control system, or automatically.

Thanks to the machine modular design, we can offer a wide variety of configurations in other versions.

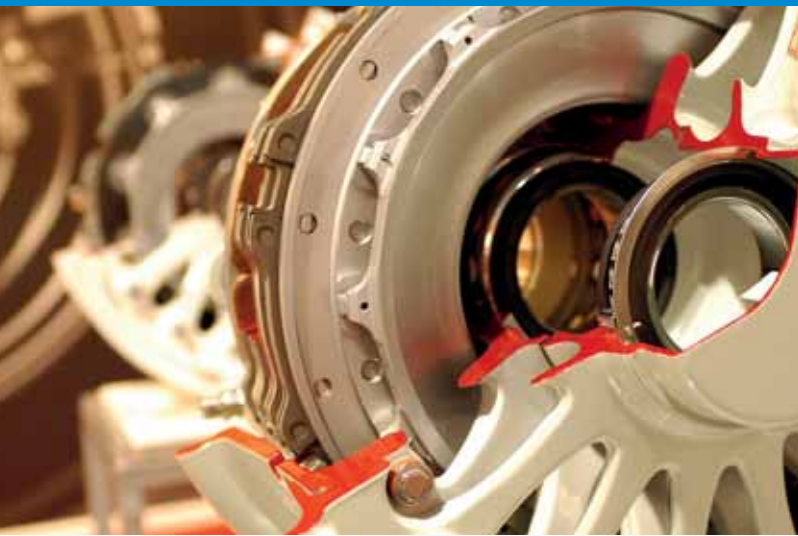




## Basic machine design

- control system SIEMENS Sinumerik 840D sl
- compact operator panel with membrane keyboard
- PLC SIEMENS Simatic S7 – 300
- user's software for the machine in the basic version
- remote diagnostics
- software-controlled swivelling of grinding unit (axis B - Multi version only)
- digital AC servomotors with digital drive converters (axes X, Z and C9)
- brushless ring torque motor with direct measuring in B-axis (Multi version only)
- wheel head in-feed (axis X) and table traverse (axis Z) by means of ball screws
- cast-iron bed (front and rear) connected with pins and bolts
- upper swivelling table (except BUC-C/6000)
- wheel head in-feed with closed-rolling guide way (VM bars)
- wheel head with roller-bearing spindle
- safety guard of grinding wheel
- work head manually swivelling and moveable with step-less speed variation of work piece
- tailstock manually moveable with hydraulically operating of tailstock barrel and cylindricity correction
- partial protection of working space with sliding doors and rear coolant splash guard
- switch electrical cabinet with cooling unit RITTAL
- automatic lubrication of guide ways and ball screws of wheel head and table
- tailstock-mounted wheel dresser with blade-type diamond tool
- standard equipment
- machine outfit

H I G H O U T P U T



HIGH PRECISION

**BUA 25 B Practic, Profi**

BUA





BUA 25B		PRACTIC, PROFI
Swing diameter	mm	250, 315 *)
Distance between centres	mm	500, 750, 1 250
Maximum weight of work piece	kg	250
Live spindle grinding, including fixture	kg	50
Between dead centres	kg	X
Grinding wheel dimension	mm	400 x 40 x 127
Max. peripheral speed of grinding wheel	m/s	50
Work head spindle revolutions	1/min	20 - 800
Wheel head swiveling range (manual)	°	+45 ÷ -15
(Practic, Profi)	°	
Work head swiveling range (manual)	°	0 ÷ +90
Table swiveling with a centre distance of (mm):		
500	°	+10°30' ÷ -6°
750	°	+9 ÷ -5°
1 250	°	+6°30' ÷ 3°30'
Electrical network - standard		3 x 400 v, 50Hz, TN-C-S
Wheel head motor power	kW	5,5 S6 - 60%
Total peak power demand of machine	kVA	18
Tolerance of work piece diameter	IT 4	
Weight of machine with standard accessories with centre distance of (mm)		
500	kg	3 650
750	kg	3 950
1 250	kg	4 250

\*\*) other machine execution





**FAST AND PRECIOUS GRINDING**

LONG LIFETIME

**BUB 40, 50B Practic, Profi, Multi**

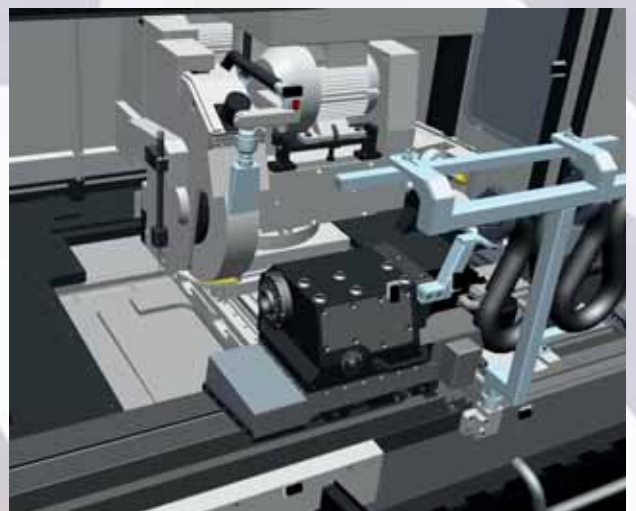
BUB





BUB 40(50)B		PRACTIC, PROFI		MULTI
Swing diameter	mm	400, 500		500
Max. distance between centres	mm	1 000, 1 500, 2 000, 3 000		1 000, 1 500, 2 000, 3 000
Max. work piece weight between dead centres	kg	500		500
Live spindle grinding including fixture	kg	100(250)*		100
Between dead centres and supported by steady rests	kg	700		700
Grinding wheel dimensions- standard	mm	500 x 80 x 203		500 x 80 x 203
Max. peripheral speed of grinding wheel	m/s	50		50
Work piece revolutions	1/min	6-170, 30-900		6-170, 30-900
Wheel head swiveling range (manual) (Practic, Profi)	°	-15 ÷ +45		
Programming wheel head swiveling range (Multi)	°			-195 ÷ +30
Work head swiveling range (manual)	°	0 ÷ +90		0 ÷ +90
Table swiveling with a centre distance of (mm):				
1 000	°	+ 8°30' ÷ -4°30'		+ 8°30' ÷ -4°30'
1 500	°	+7 ÷ -4°		+7 ÷ -4°
2 000	°	+6°-3'		+6°-3'
3 000	°	+4°30' ÷ -2°		+4°30' ÷ -2°
Power supply - standard		3 x 400 v, 50Hz, TN-C-S		3 x 400 v, 50Hz, TN-C-S
Wheel head motor power	kW	11		11
Total peak power demand of machine	kVA	51		51
Tolerance of work piece diameter		IT 4		IT 4
Machine weights with standard equipment (mm)				
BUB		BUB 40B	BUB 50B	MULTI
1 000	kg	6 750	7 000	8 000
1 500	kg	7 250	7 500	8 500
2 000	kg	7 750	8 000	9 000
3 000	kg	8 650	8 900	10 400

\*other machine execution, special accessories



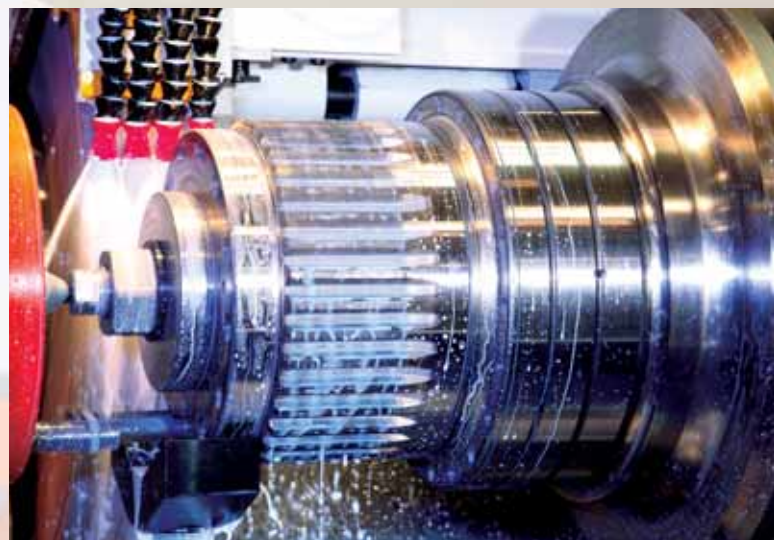
**WORK-PIECE EXCELLENCE**

EASY OPERATION

**BUC 63C, 85C Practic**

BUC





**NUMBER ONE IN ITS CLASS**

ISO PROGRAMMING

**BUC 63C, 85C Profi**

BUC

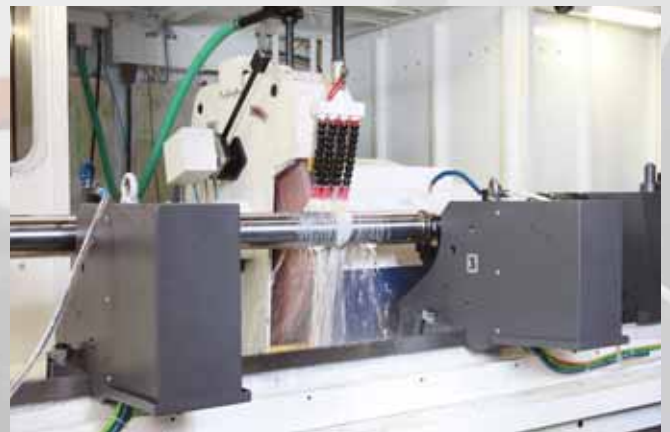






BUC 63(85)C PRACTIC, PROFI, MULTI		PRACTIC, PROFI		MULTI	
Swing diameter	mm	630, 850		630, 850	
Max. distance between centres	mm	2 000, 3 000, 4 000 5 000, 6 000		2 000, 3 000, 4 000 5 000, 6 000	
Max. work piece weight between dead centers	kg	3 000		3 000	
live spindle grinding including fixture	kg	300		300	
between dead centres and supported by steady rests	kg	4 000		4 000	
Grinding wheel dimensions- standard	mm	750 x 100 x 305		750 x 100 x 305	
Max. peripheral speed of grinding wheel	m/s	50		50	
Work piece revolutions	1/min	4 - 38, 24 - 230		4 - 38, 24 - 230	
Wheel head swiveling range (manual) (Practic, Profi)	°	+30 ÷ -10			
Programming wheel head swiveling range (Multi)	°			-225 ÷ +45	
Work head swiveling range (manual)	°	0 ÷ +90		0 ÷ +90	
Table swiveling with a centre distance of (mm):					
2 000	°	+ 6°30' ÷ -5°		+ 6°30' ÷ -5°	
3 000	°	± 5°		± 5°	
4 000	°	± 4°		± 4°	
5 000	°	± 3°		± 3°	
6 000	°	0°		0°	
Electrical network - standard		3 x 400 V, 50Hz, TN-C-S		3 x 400 V, 50Hz, TN-C-S	
Wheel head motor power	kW	19 S6 - 60%		19 S6 - 60%	
Total peak power demand of machine	kVA	65(85)*		65(85)*	
Tolerance of work piece diameter		IT 4		IT 4	
Machine weights with standard equipment (mm) BUC		BUC 63	BUC 85	BUC 63	BUC 85
2 000	kg	12 540	12 840	15 350	15 650
3 000	kg	14 250	14 530	17 600	17 900
4 000	kg	15 960	16 260	19 600	19 900
5 000	kg	17 670	17 930	21 950	22 250
6 000	kg	19 380	19 690	24 200	24 500

\* other machine execution, special accessories

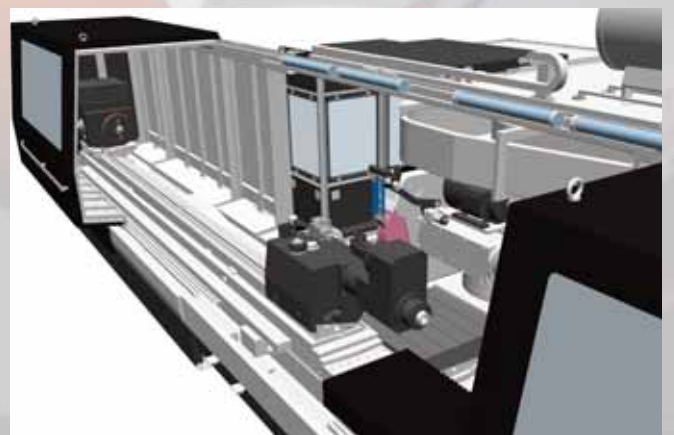
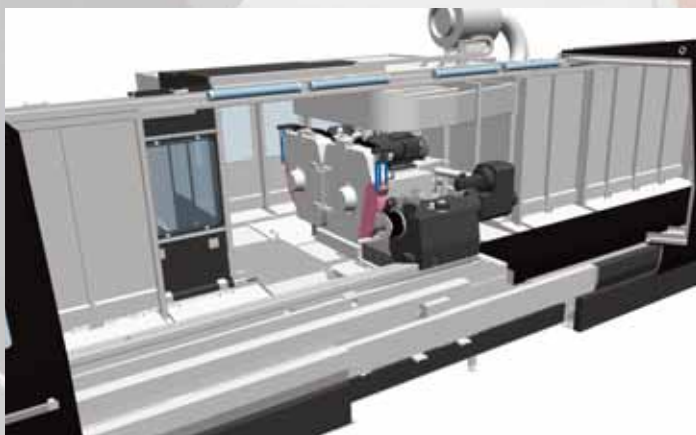




SPECIAL TECHNOLOGY

**BUC 63C, 85C Multi**

BUC





## Machine Applications

### Centreless Grinding Machines

C 250 and C 500 CNC models of grinding machines belong to product line C of fully numerically controlled centreless grinders. Their construction and high rigidity predetermine them for the accurate and high-performance grinding of external cylindrical surfaces in series and mass production, allowing for both plunge-cut (shape) and through-feed grinding. With the machine modular modifications, the number of controlled axes can be selected as needed for the particular type of work pieces to be ground, to the satisfaction of customer's requirements.

User software which comes with the machine as a standard is so designed to meet the needs of a machine's operator and technologist as much as possible. The software has a variety of support functions available (such as archiving of grinding processes, graphical diagnostics of the grinder or logical help), which, together with quick fault diagnostics and direct selection of spare parts and subcontractors' contacts from a control system screen facilitates the grinder operating and makes it easier.

The grinder connection to a customer's internal data network is of advantage, making possible the processing of grinding operation data and results, inclusive of statistical analyses of the machine operation accuracy. Complete backup of grinding operation setups and parameters considerably quickens the machine resetting to another type of work pieces.

For their operational flexibility, excellent performance, high accuracy and small space they require to be incorporated, the C 250 CNC and C 500 CNC centreless grinding machines become an indispensable part of production lines in bearings, automotive engines and components, aircraft and aircraft components, textile, and printing machines manufacturing.

Thanks to the machine modular design, we can offer a wide variety of configurations in other versions.





## Execution of standard grinder

- control system SIEMENS Sinumerik 840D sl
- front operating panel with TFT graphic colour flat monitor
- rear operating panel with control elements for operator (for through feed grinding only)
- PLC Simatic S7 - 300
- long-distance diagnostic application over modem (HW + SW)
- digital AC servomotors of feeds with digital drive converters SIEMENS Sinamics S120
- machine bed incl. accessories
- grinding wheel head with double-sided spindle mounting in antifriction bearings
- grinding wheel head in-feed (axis X1) by means of ball screw
- semiautomatic balancing system of grinding wheel
- CNC dresser of grinding wheel with cross support (without tracer template)
- complete regulating wheel head with double-sided spindle mounting in antifriction bearings
- stepless speed variation of regulating wheel
- dresser of regulating wheel with cross support C 250 CNC with tracer template
- work rest support with manual vertical adjustment and manual stabilization
- full machine protection with two-piece hand sliding side doors and internal fluorescent lighting
- automatic central lubrication with independent lubricating circuit
- machine adaptation for connection to central or local coolant supply
- machine adaptation for connection of central or local mist exhaustion from working space

H I G H O U T P U T

**NUMBER ONE IN ITS CLASS**

# AUTOMATIC MANIPULATION **C 250**

**C 250**

## **C 250 CNC controlled axes – basic execution**

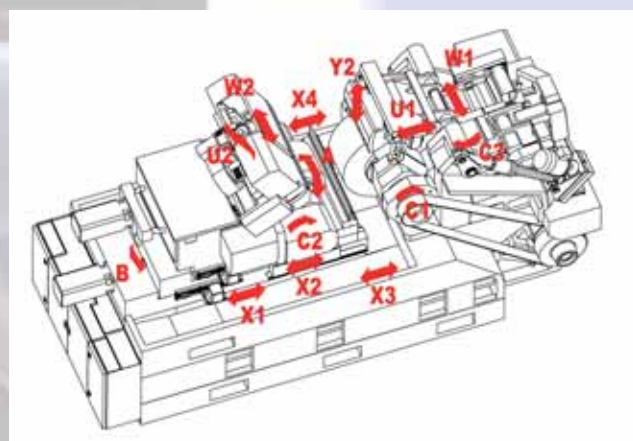
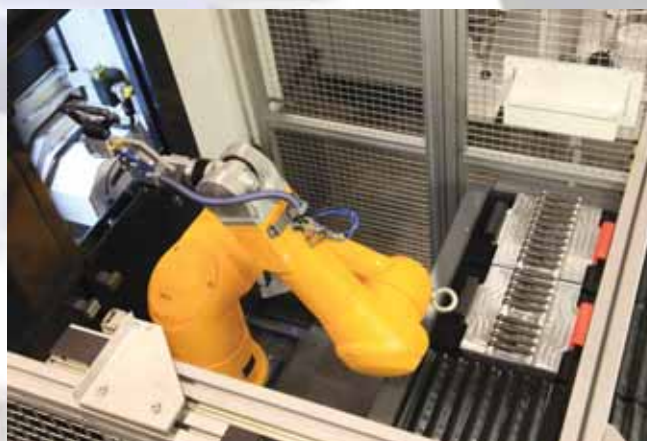
Axis	X1	In-feed of regulating wheel head with rest support
Axis	U1	Cross-feed of the grinding wheel dresser in position coupling
Axis	W1	Longitudinal feed of the grinding wheel dresser in position coupling
Axis	W2	Longitudinal feed of the regulating wheel dresser in position coupling
Axis	C2	Stepless controlled speed of the regulating wheel speed coupling





## C 250 controlled axes - other execution

Axis	A	Regulating wheel tilting
Axis	B	Regulating wheel swivelling
Axis	C1	Grinding wheel rotation
Axis	C3	Truing roller drive
Axis	C4	Inlet feeder drive
Axis	C5	Outlet conveyor drive
Axis	U2	Transverse feed of the regulating wheel dresser
Axis	W2	Longitudinal feed of the regulating wheel dresser
Axis	X2	In-feed of the upper regulating wheel plate
Axis	X3	Positioned unit of input conveyer
Axis	X4	Positioned unit of output conveyer
Axis	Y2	Height setting of protective cover of grinding wheel guard



### C 250 CNC, C 500 CNC

		C 250 CNC	C 500 CNC
Min. grinding diameter of work piece	mm	0,8	3
Max. grinding diameter of work piece for through – feed grinding	mm	100	220
Max. grinding diameter of the work piece for plunge – cut grinding	mm	100	200
Max. length of the work piece without special feeding for through grinding	mm	300	500
Max. length of the work piece with special feeding for through-feed grinding	mm	4 000	6 000
Max. length of the work piece with special feeding for plunge-cut grinding	mm	245	480
Grinding wheel dimension (standard)	mm	650 x 250 x 304,8	650 x 500 x 304,8
Regulation wheel dimension (standard)	mm	355 x 250 x 152,4	380 x 600 x 203,2
Max. circumference velocity of the grinding wheel	m/s	63	63
Stepless regulated of regulating wheel speed	1/min	5 - 914	5 - 800
Grinding wheel drive power	kW	22	55
Total peak power demand of machine	kVA	50	95
Total machine weight	kg	13 650	19 200

# YOUR TECHNOLOGY ON OUR MACHINE TOOLS TOS

HIGH PERFORMANCE

**C 500**

# C 500

## C 500 CNC controlled axes – basic execution

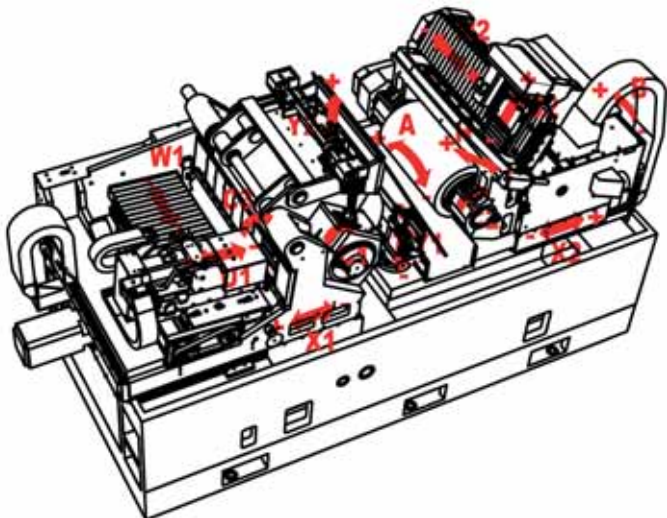
Axis	X1	In-feed of grinding wheel in position coupling
Axis	X2	In-feed of regulating wheel in position coupling
Axis	U1	Cross-feed of grinding wheel dresser in position coupling
Axis	U2	Cross-feed of the regulating wheel dresser in position coupling
Axis	W1	Longitudinal feed of the grinding wheel dresser in position coupling
Axis	W2	Longitudinal feed of the regulating wheel dresser in position coupling
Axis	C2	Stepless controlled speed of the regulating wheel speed coupling





### C 500 CNC controlled axes – other execution

Axis	A	Regulating wheel tilting
Axis	B	Regulating wheel swivelling
Axis	C1	Grinding wheel turning
Axis	C3	Dressing diamond roller drive
Axis	C4	Input conveyor drive
Axis	C5	Output conveyor drive
Axis	Y2	Height setting of protective cover of grinding wheel guard





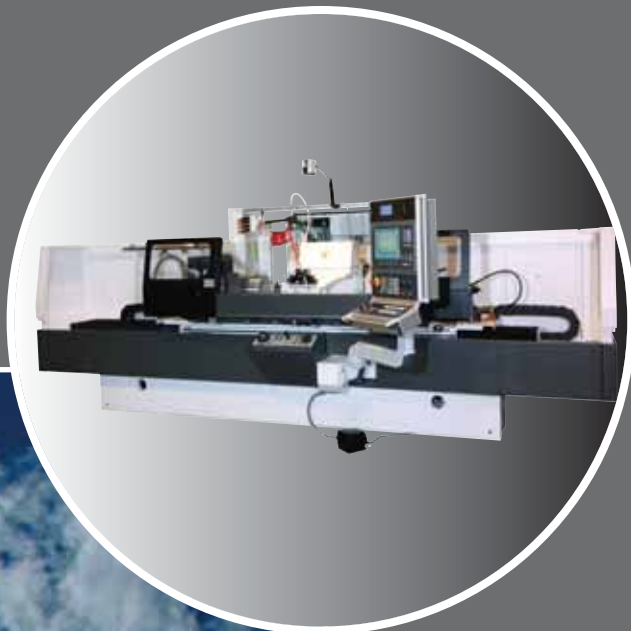
**P R E C I S I O N**

**O U T**



**B U A , B U B , B U**





**PUT RELIABILITY**

**C, C 250, C 500**

