

Rotor technology

Our aim is simple: to bring an economic surplus to your daily manufacturing life

Discover our grinding machines especially developed for rotors.  
One universal solution adapted to your specific application – now for workpieces up to 500 mm in diameter

Samputensili's extensive experience in grinding machines for rotor manufacturing derives from our long experience as manufacturers of prototypes and rotor job shopping.

Know-how developed in such a way has flowed directly into the final product, and this is what distinguishes our solutions.

Our modular and extremely versatile grinding machines represent the ideal solution both for prototyping/small batch production and for high-volume rotor manufacturing.

Although Samputensili grinding machines are based on a modular design concept, we craft each and every machine with a wide range of options to suit customers' individual needs, guaranteeing the most efficient manufacturing of top quality parts. All machines are then supported by a specific HMI, translating our know-how into your manufacturing success.



## G 375 H



The SAMPUTENSILI G 375 H is a 4-axis horizontal grinding machine based on a modular design concept, with a wide range of options and it is engineered to suit your individual needs, guaranteeing you efficient, top quality manufacture.

This universal machine is ideally suited to grind external spur and helical gears, crown gears, worms, rotors for air compressors and screws for hydraulic pumps with form-grinding wheel and single index profile grinding.

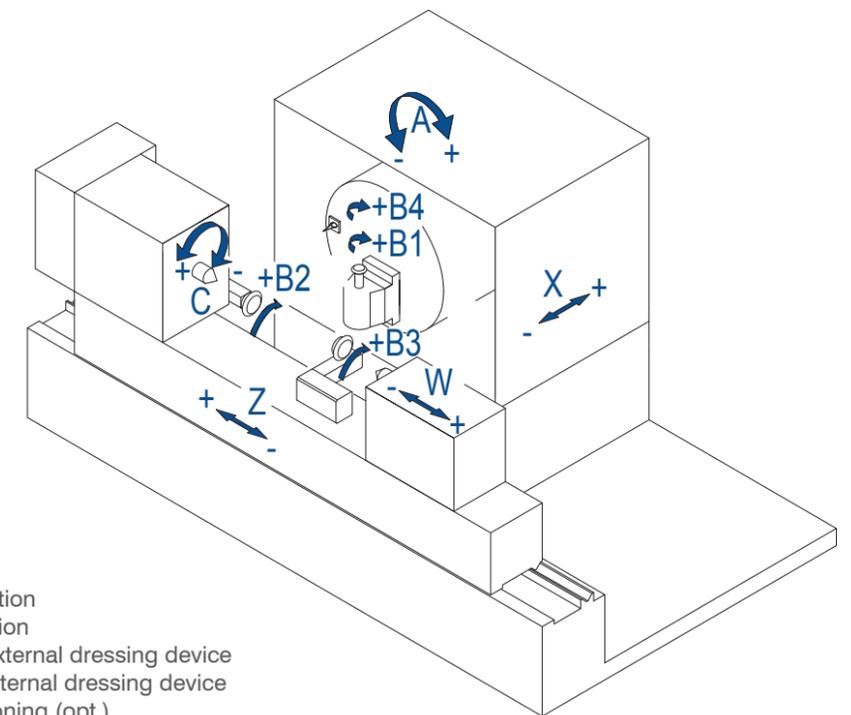
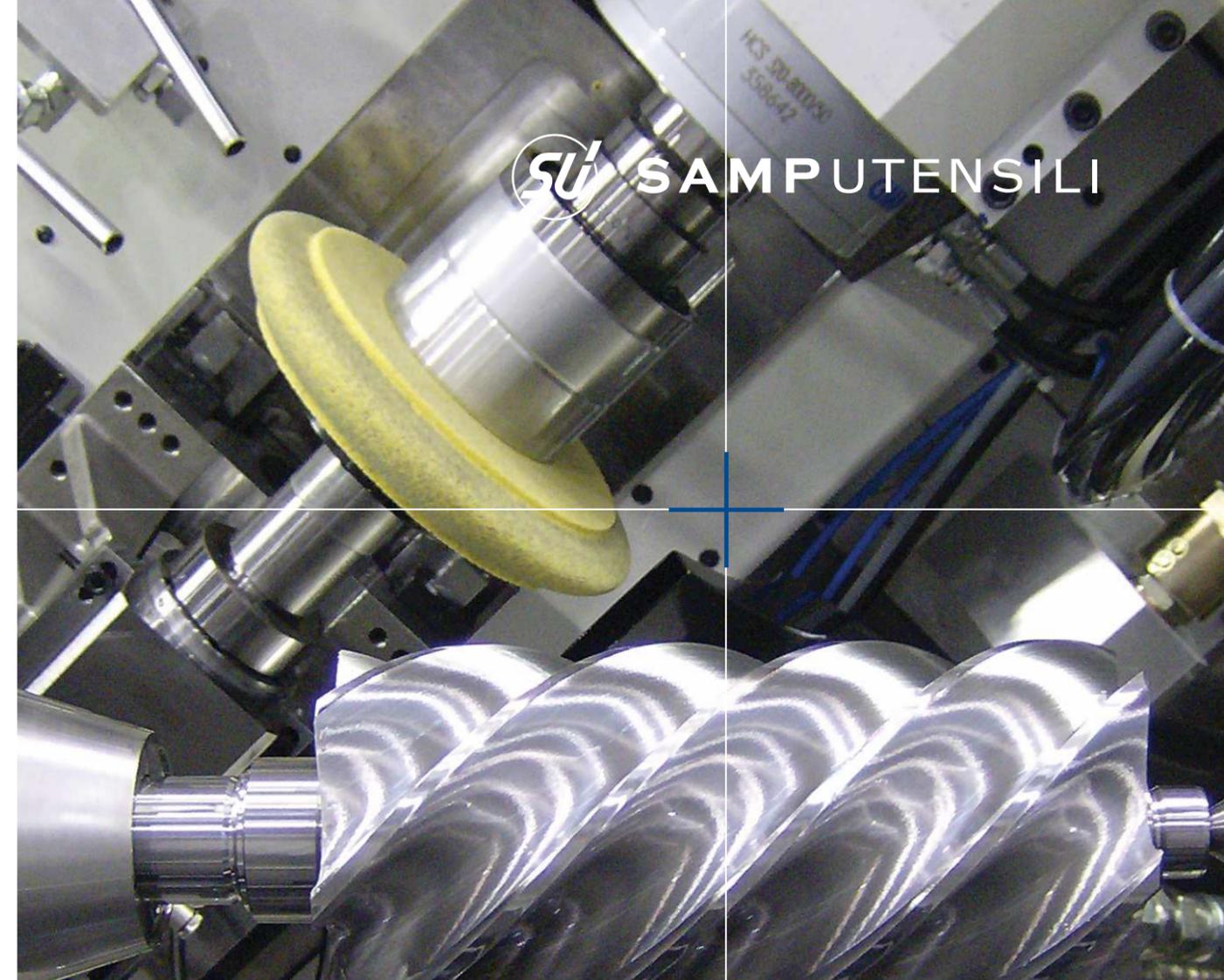
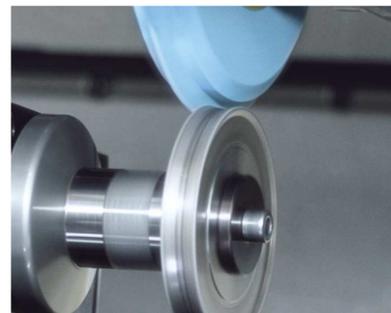
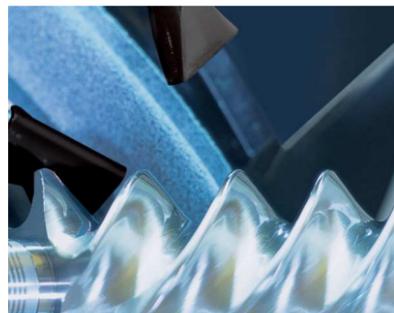
Optionally it is also possible to grind spur or helical internal gears.

We can offer you ad hoc solutions for any of the above applications so that your machine is manufactured with the right options for you. The G 375 H is supported by special software packages, which translate our know-how into your manufacturing success.

Particular attention has been paid to the state-of-the-art solutions that allow a fast and cheap tool change.

### at a glance

- + High stability of the process thanks to the high stable structure
- + High reliability thanks to direct motors
- + Excellent quality of the end products thanks to the high precision of the machine
- + Versatile and Flexible production
- + Short setup time to switch from a type of production to another



AXIS X: Radial movement  
 AXIS Z: Axial movement  
 AXIS A: Helix adjustment angle  
 AXIS C: Workpiece rotation

MOVEMENT B1: External spindle rotation  
 MOVEMENT B4: Internal spindle rotation  
 MOVEMENT B2: Spindle rotation of external dressing device  
 MOVEMENT B3: Spindle rotation of internal dressing device  
 MOVEMENT W: Tailstock axial positioning (opt.)

## GR 500 HL



The GR 500 HL has been specifically designed for efficient high precision grinding of a wide range of screw-type profiles including worms, ball screws, rotors, hydraulic pump screw.

The high performance grinding spindle is generously motorised and the machine is designed with an appropriately sized coolant filtration system meaning you can grind workpieces from solid as well as hardened steel. With a dressing unit for ceramic bonded grinding wheels and an integrated checking unit, the

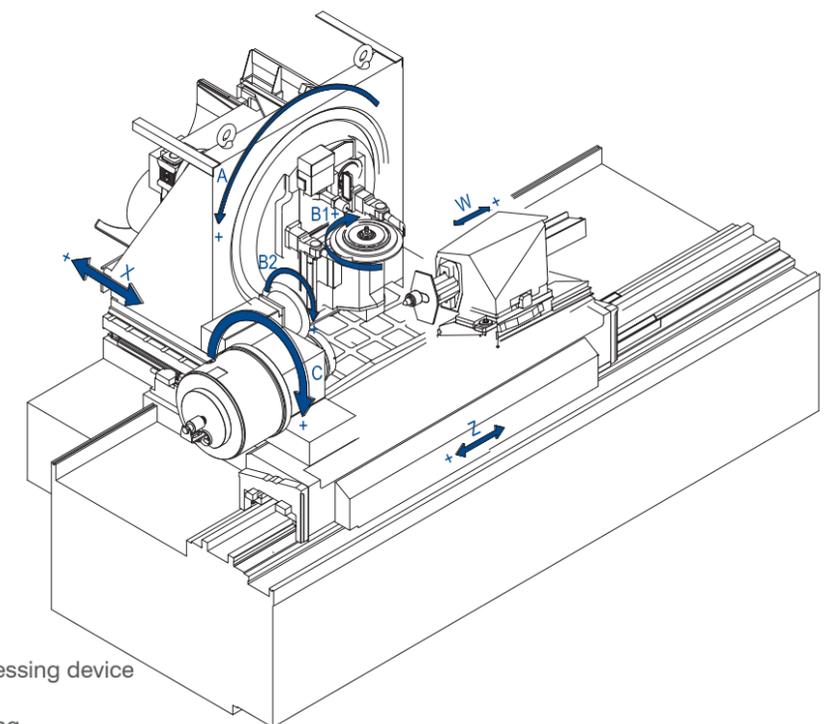
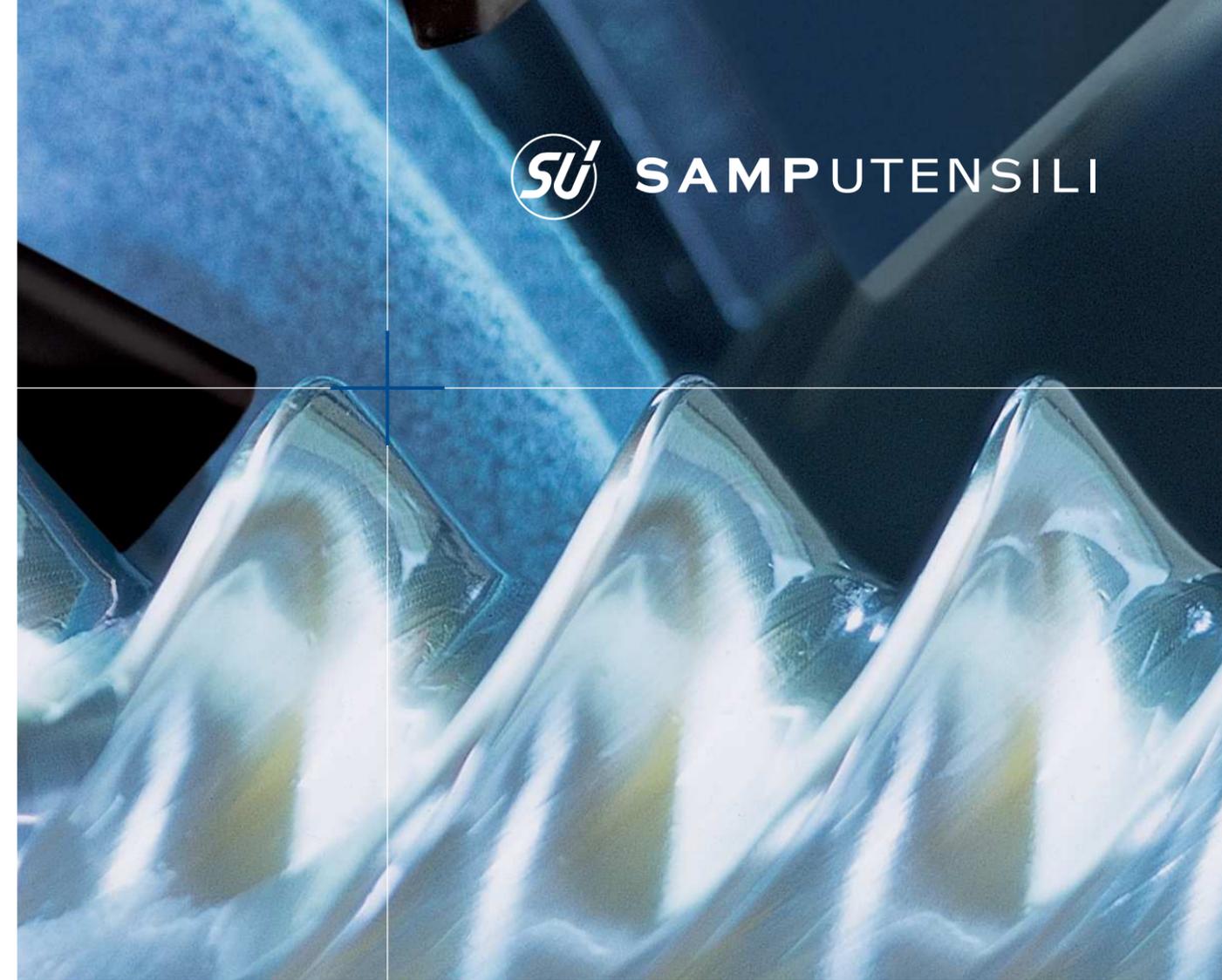
GR is perfect for the prototyping and for the production of the smallest lots or mass production applications alike, making it a very flexible asset.

Connection to a portal loader and direct communication with an external measuring unit enhance the efficiency of your production process.

The GR 500 H comes with a specific software package for screw-type workpieces, developed and tested under real manufacturing conditions.

### at a glance

- + Dedicated version for the manufacture of rotors and screw-type workpieces
- + Powerful main spindle for high stock removal rates
- + Specific software packages for rotor and screw production are also available
- + Specific dressing unit
- + Standard and special work-piece support solutions
- + Automation by portal loader or robotic device



- AXIS X: Radial movement
- AXIS Z: Axial movement
- AXIS A: Helix adjustment angle
- AXIS C: Workpiece rotation
- AXIS B1: External spindle rotation
- AXIS B2: Spindle rotation of external dressing device

MOVEMENT W: Tailstock axial positioning

## GRX 500 H



The GRX 500 H is a larger version of the GR, thanks to the presence of the on-board dressing wheel. The machine is suitable for the manufacture of very large screws and rotors. In addition, the machine mounts an additional NC axis, allowing you to work with two grinding wheels.

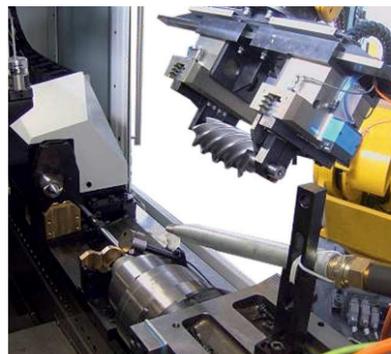
Especially adapted to grind with CBN, the GRX 500 H also makes working with dressable ceramic wheels or even combinations of the two easy.



An integrated measuring unit also makes the correction on board.

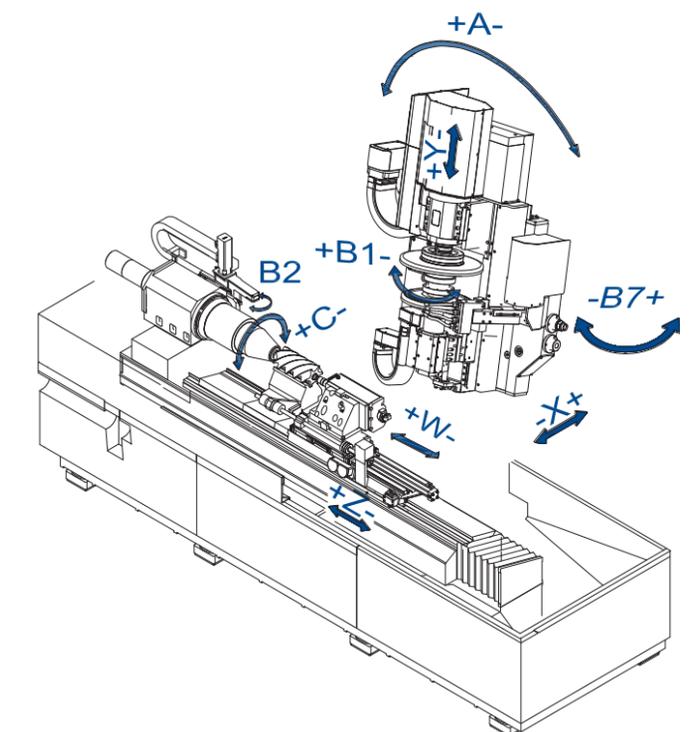
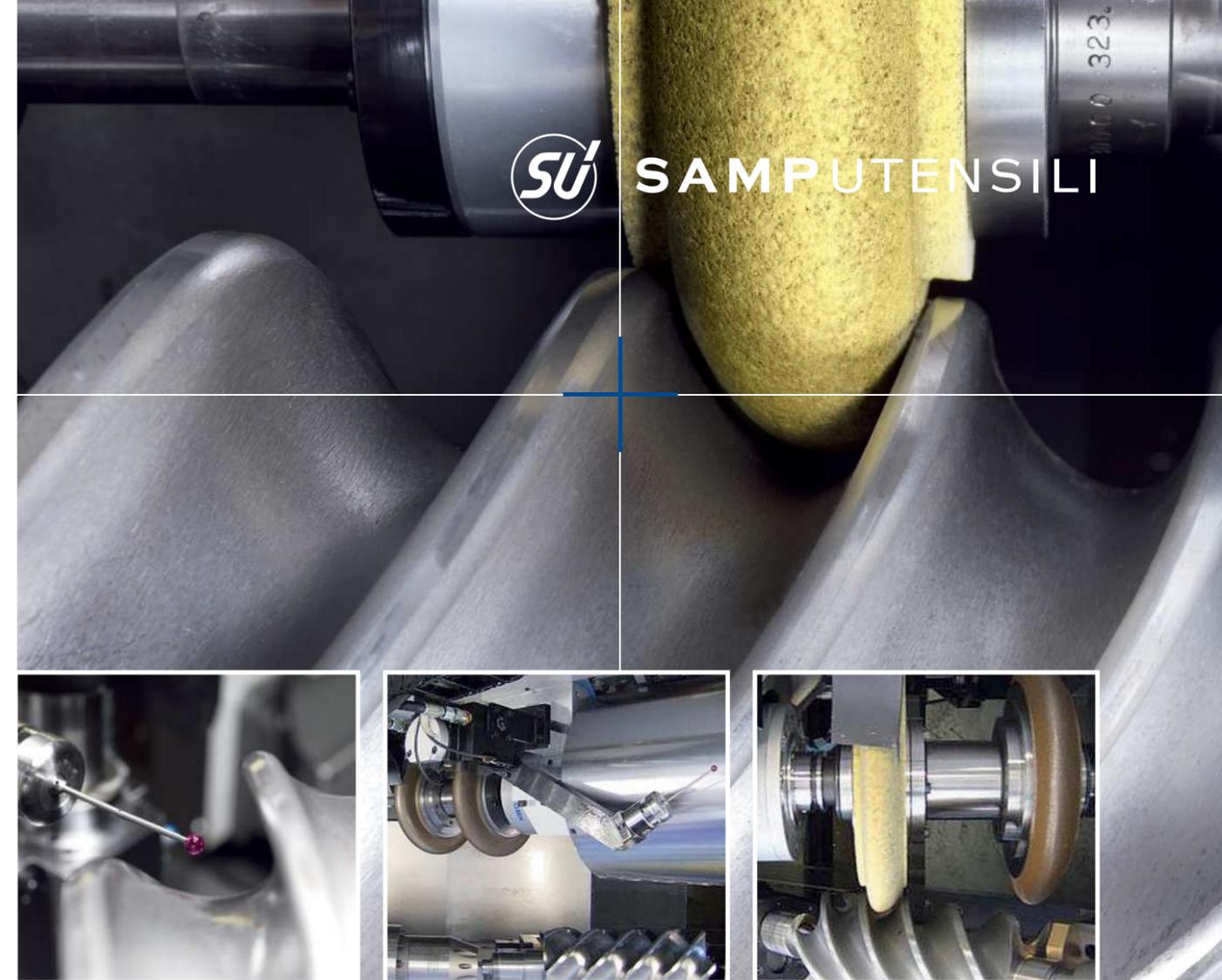
For more efficient handling, you can link the GRX 500 H to an external robot device and connect it directly with an external measuring unit.

Like the GR, the GRX 500 H comes with a specific HMI for rotors, developed under real manufacturing conditions.



### at a glance

- + Special machine version for the manufacture of large rotors
- + Extra powerful main spindle for high stock removal
- + Double tool setup for roughing and finishing on one spindle
- + Tried and tested rotor manufacturing software
- + Integrated measuring
- + Connection with measuring unit by means of external PC software for the closed-loop manufacturing checking



- AXIS X: Radial movement
- AXIS Z: Axial movement
- AXIS Y: Tangential movement
- AXIS A: Helix adjustment angle
- AXIS C: Workpiece rotation
- AXIS B1: External spindle rotation
- AXIS B2: Spindle rotation of external dressing device
- AXIS B7: Cooling nozzle rotation axis

MOVEMENT W: Tailstock axial positioning

## GW 3600 HD



The GW 3600 HD is our biggest machine for rotor grinding, specific for rotors up to 500 mm length or 1200 Kg.

This special machine has two possible configurations: a 4 axis layout for one ceramic grinding wheel and a 5 axis setup for grinding both with ceramic

or two CBN electroplated grinding wheels. These two possible set-up make the GW3600HD the perfect solution both for the prototyping and for the mass production.

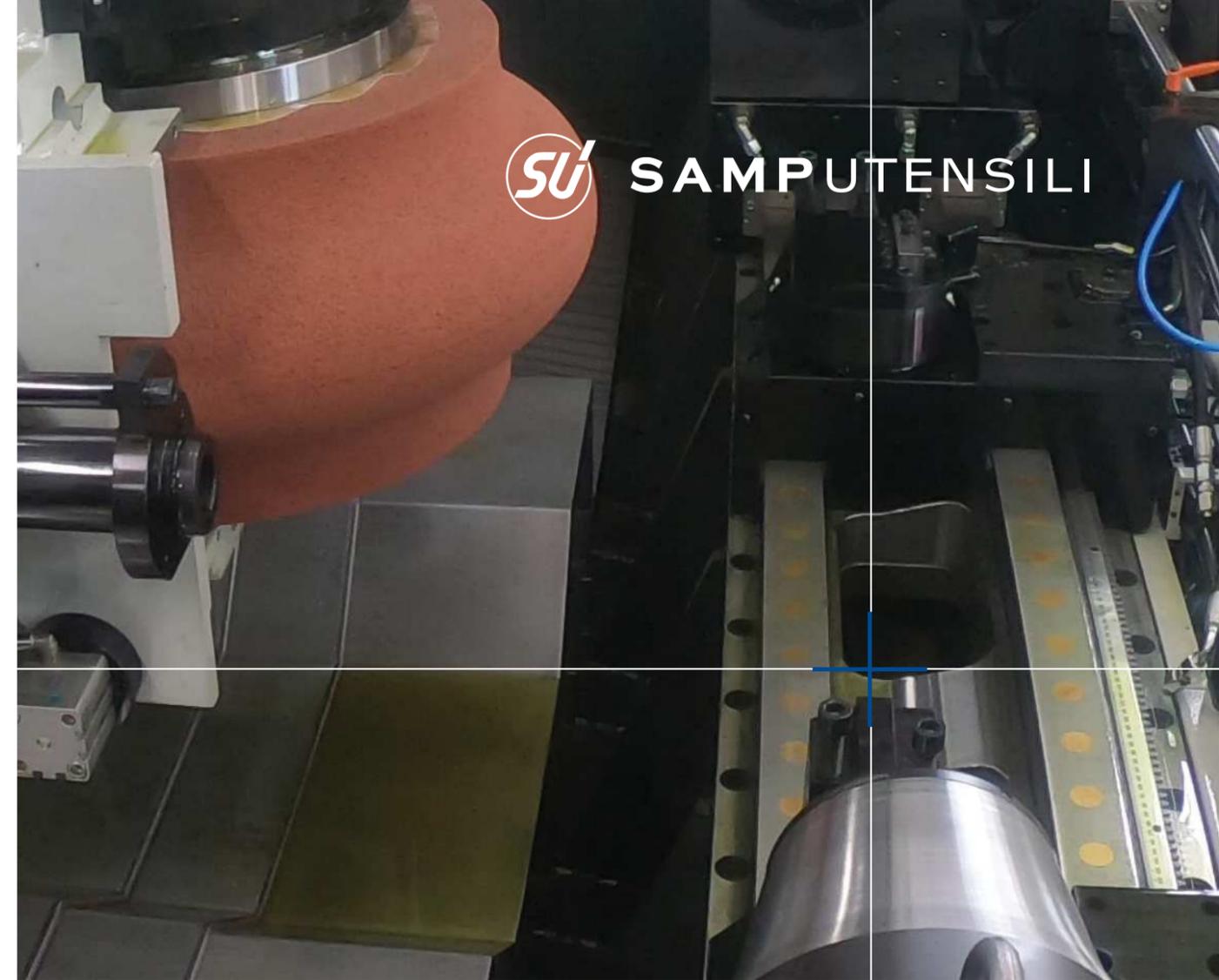
The machine is equipped with a dressing unit mounted on a linear axis to ensure a very high dressing accuracy. High powerful grinding spindle that allows the use of the grinding wheel width up to 260 mm.

Like the GR and GRX, the GW 3600 HD is equipped with a dedicated HMI for rotor grinding and checking.



### at a glance

- + Dedicated version for grinding rotor up to 500 mm external diameter
- + 4 axis for one ceramic grinding wheel
- + 5 axis for both ceramic and CBN grinding wheels
- + Special workpiece support for rotor up to 1200 Kg
- + Dressing unit for flexible profile geometries
- + Grinding wheel up to 260 mm width

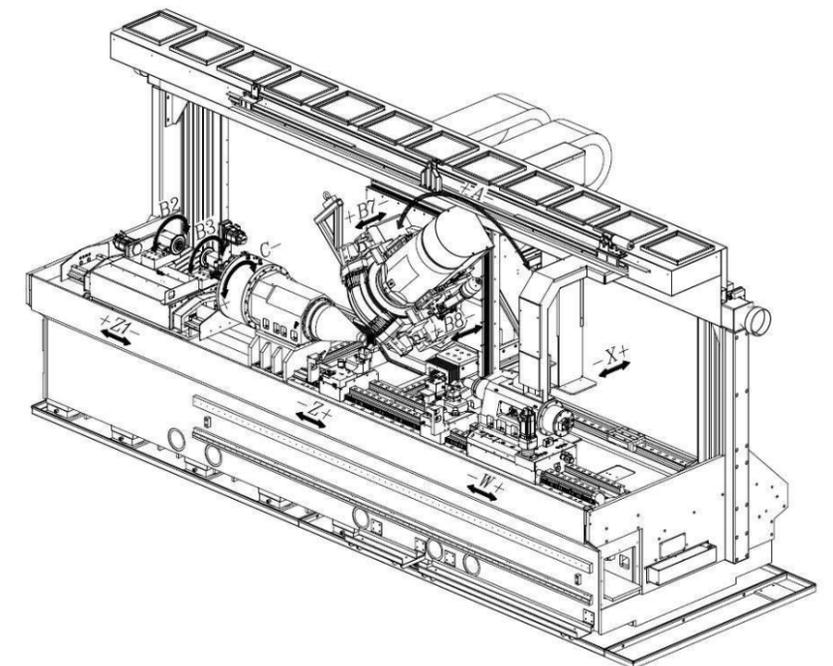


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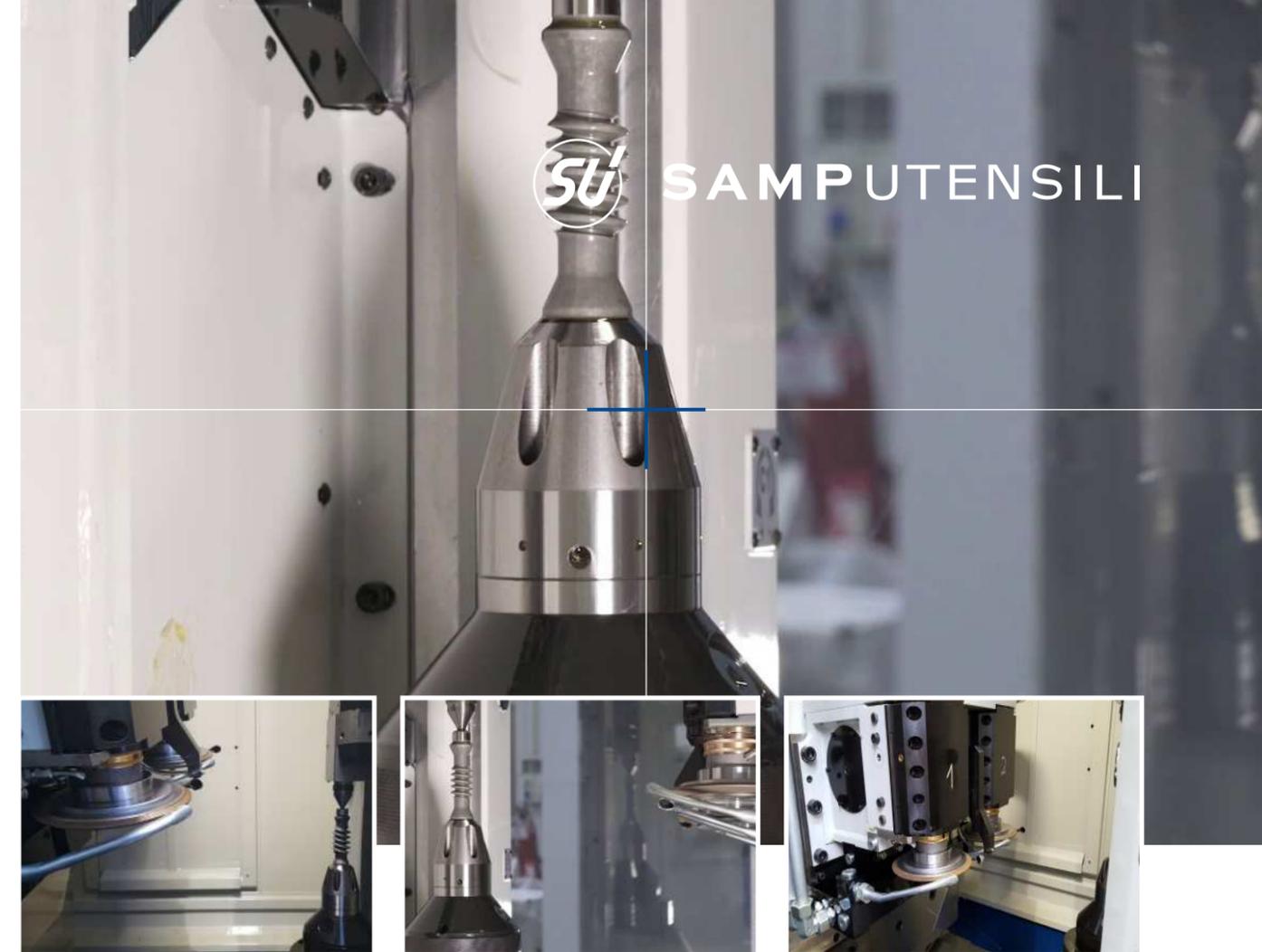
- AXIS X: Radial movement
- AXIS Z: Axial movement
- AXIS Y: Tangential movement (only on 5-axis version)
- AXIS Z1: Dressing axial movement
- AXIS A: Helix adjustment angle
- AXIS B1: Grinding spindle rotation
- AXIS B2: Dressing spindle 1 rotation
- AXIS B3: Dressing spindle 2 rotation
- AXIS C: Workpiece spindle rotation

Auxiliary movements:

- AXIS W: Axial tailstock positioning
- AXIS B7: Tailstock movement 1
- AXIS B8: Tailstock movement 2



## GW 250



Samputensili has developed an innovative, high-productive grinding machine for rotors type workpieces: the GW 250.

Thanks to its solid experience and numerous automotive projects carried out, Samputensili has developed a double table solution also for rotor grinding, which ensures the loading and unloading operations in masked time.

The Samputensili GW 250 is the perfect solution for small-size components generally characterized by high productive batches.

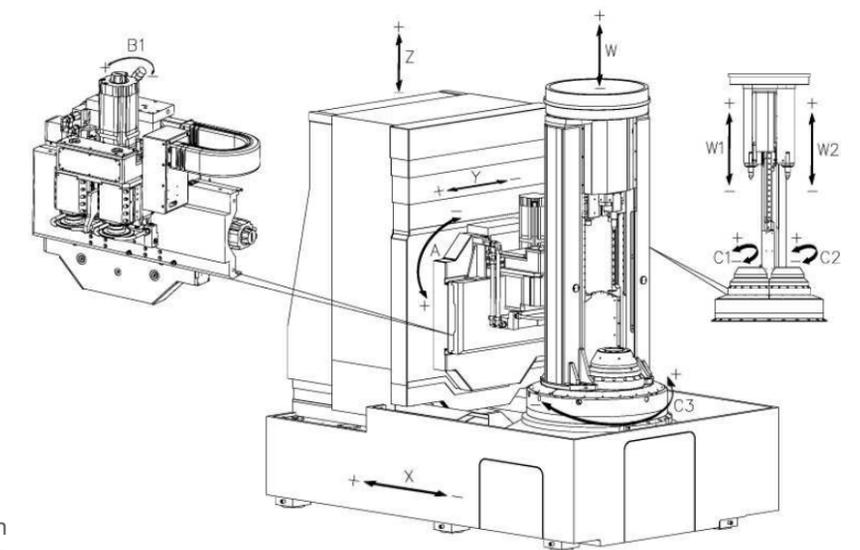
This profile grinding machine works with two electroplated CBN wheels, ensuring high-performance cutting parameters.

Samputensili can also provide its experience in rotor manufacturing, to design, produce and optimize the CBN grinding wheels for this process.

This innovative solution enables the development of simple and integrated automations with all needed auxiliary processes, such as brushing, washing, storage, etc.

### at a glance

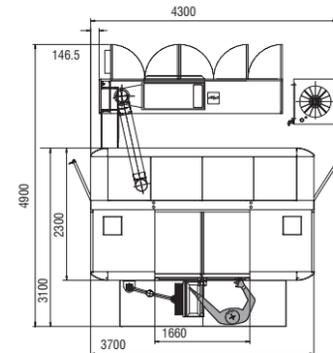
- + Dedicated vertical machine for grinding rotor and screws up to 250 mm external diameter
- + Two CBN EP grinding wheel
- + Double table configuration
- + Easy integration with external robot cell automation
- + Small print floor thanks to vertical architecture



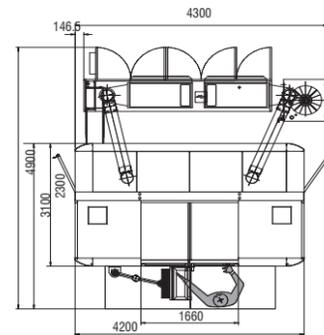
- AXIS X: Radial movement
- AXIS Y: Tangential movement
- AXIS Z: Axial movement
- AXIS A: Helix adjustment angle
- AXIS B1: Grinding spindle rotation
- AXIS C1: Workpiece spindle 1 rotation
- AXIS C2: Workpiece spindle 2 rotation
- AXIS C3: Worktable rotation

- Auxiliary movements:
- AXIS W: Axial tailstock positioning
- AXIS W1: Tailstock movement 1
- AXIS W2: Tailstock movement 2

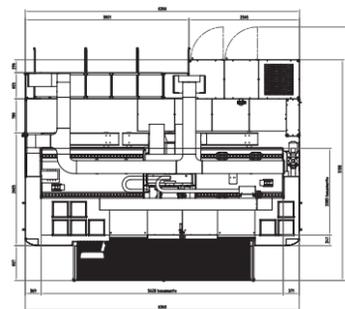
## Layout



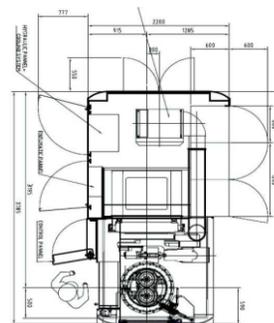
G 375 H



GR 500 HL  
GRX 500 H



GW 3600 HD



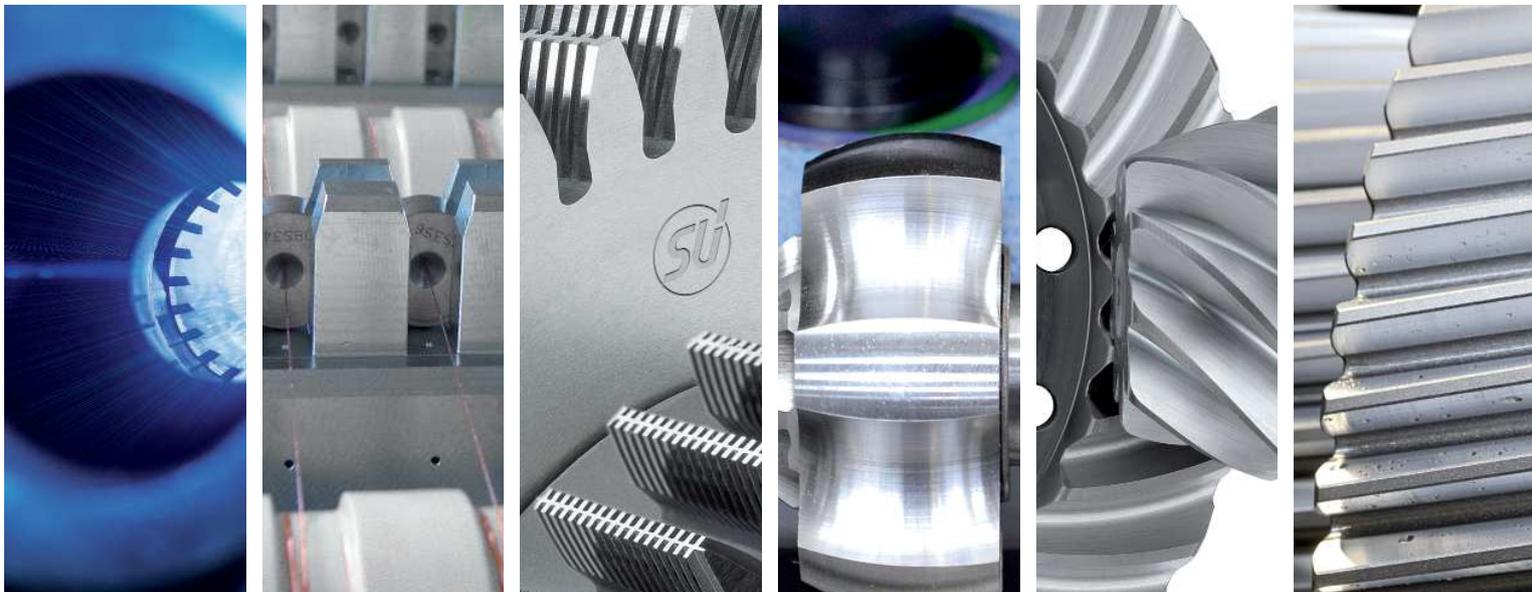
GW 250

## Technical data

	G 375 H	GR 500 H	GRX 500 H	GW 250	GW 3600 HD 4 axis / 5 axis
Workpiece diameter, max. (mm)	375	320	320	250	500
Profile depth, max. (mm)	35	53 / 80	100	30	100
Tool head swivel range (degree)	+/- 90	+/- 60	+/- 55	+/-50	+/- 60
Workpiece length, max. (mm)	900	1.850	1.650	550	2.000
Axial travel, max. (mm)	650	1.500	1.500	400	3.500
Radial travel, max. (mm)	210	330	385	370	440
Tangential travel, max. (mm)	n/a	n/a	220	240	n/a / 220
Tool spindle power (opt.) (kW)	23 / 28	23 / 35	48	20	75 / 55
Ceramic wheel diameter (mm)	40 - 300	330 - 500	270 - 400	n/a	600-400 / 450
Ceramic wheel thickness, max. (mm)	60	120	160	n/a	260 / 160
CBN wheel diameter (mm)	30 - 300	n/a	345	210	n/a / 350
CBN wheel thickness, max. (mm)	60	n/a	50 single / 110 double	50	n/a / 90
Dressing disc diameter, (mm)	80 / 100	100 / 150	100	n/a	150
Tool spindle speed, max. (rpm)	8.000 / 18.000*	6.500	8.500	8.000	4.000 / 8.500
Work spindle speed (rpm)	0 - 1000	0- 600	0 - 200	0-200	30 / 50
Workpiece weight, max. (Kg)	150	350	600	40	1.200
Total connected load (kVA)	83	120	140	110	150 / 120
Machine weight, including standard equipment (KG)	11.000	16.000	18.000	13.000	19.000

\*) Depending on grinding wheel spindle.

Technical data is subject to change without prior notification. Max. values depend on the application.



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