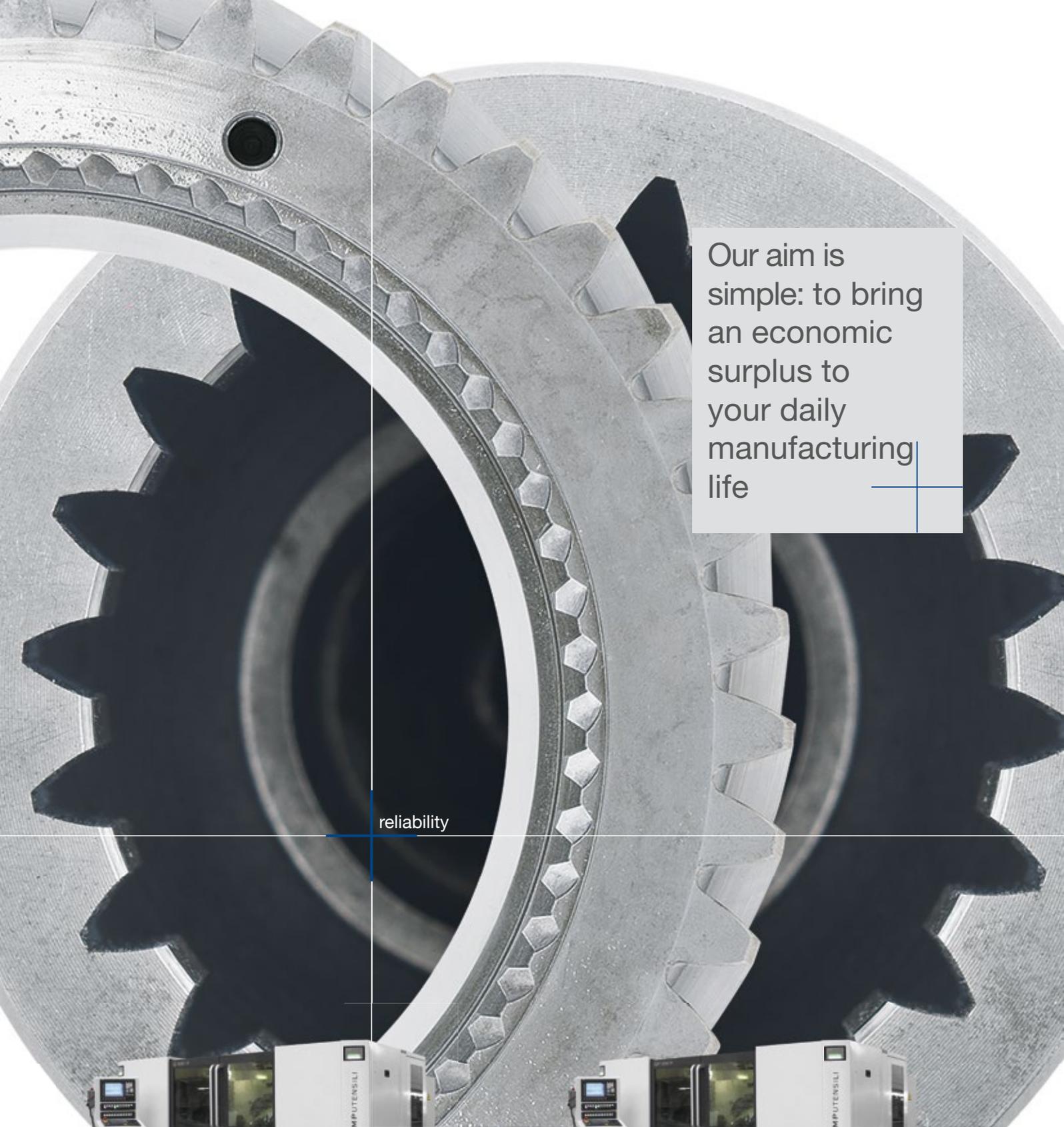




G-H series  
horizontal grinding machines for gears and shafts



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

reliability



G 500 H for external and internal gears



GP 500 H for roughing and finishing in a single setup with automatic Y axis

The new G-H series of grinding machines for gears, shafts and worms.  
 One universal solution adapted to your specific application – now for workpieces up to 500 mm in diameter

Based on the widely acclaimed S 375 G, the new G-H series presents numerous enhanced features and extends the traditional series to include new model versions.

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 your individual needs, guaranteeing you the efficient manufacturing of top quality parts.

This modular, extremely versatile and universal series is ideally suited to single pass creep feed profile grinding of external spur and helical gears, crown gears, shafts and worms. Optionally it is also possible to grind spur or helical internal gears. Owners of a GT version also add generating grinding to their process capabilities.

Either ceramic or electroplated CBN grinding tools are available from Samputensili including roughing and finishing tools which are backed up by our extensive application know how.

We offer you an ad hoc solution for any of the above applications so that your machine is constructed with the right options for you. All machines are then supported by special software packages, translating our know how into your manufacturing success.



know-how



GT 500 H for profile and generating grinding, with NC controlled Y axis



GT 500 HL for long workpieces

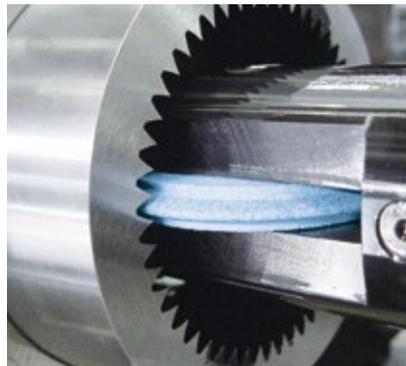
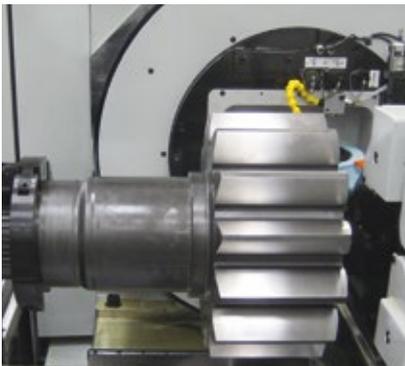


The G 500 H / HL is the universal and extremely flexible base machine of the G series and it is ideal for single pass creep feed grinding of external spur and helical gears, crown gears and shafts, worms, rotors and screw-type workpieces up to 500 mm in diameter. Optionally it is possible to grind spur or helical internal gears.

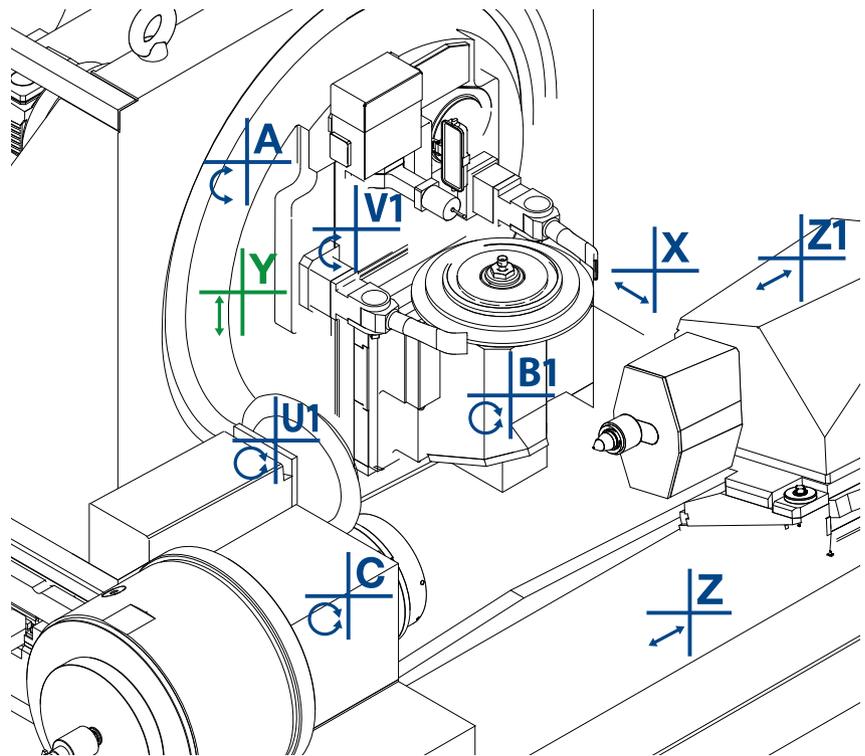
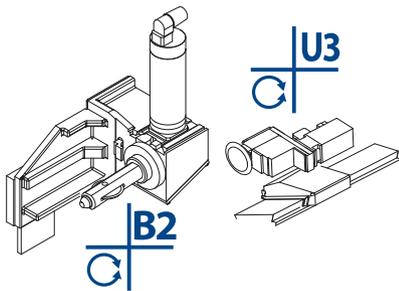
Quick-change spindles and ceramic tool technology, combined with a flexible dressing unit and modular software packages guarantee rapid format change and unmatched process versatility.

#### at a glance

- + Universal solution for a wide range of gears, shafts and screw-type workpieces
- + Flexible manufacturing of small or large lots
- + Creep feed grinding
- + Integrated checking



universality



- A Tool head swivel
- B1 Tool spindle rotation (externals)
- B2 Tool spindle rotation for internals (option)
- C Work spindle rotation
- U1 Dressing spindle rotation (ext.)
- U3 Dressing spindle rotation for internals (option)
- V1 Measuring unit swivel (option)
- X Radial travel
- Z Axial travel
- Z1 Tailstock travel
- Tangential travel manually adjustable
- Dressing process by interpolation



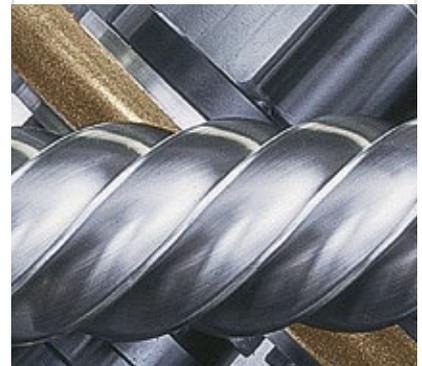
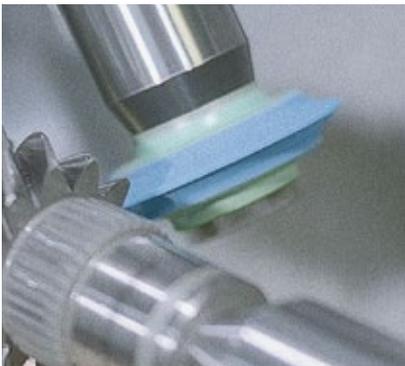
### at a glance

- + Roughing and finishing in a single setup without the need for tool change
- + Profile grinding of gears, shafts with separate gearings, rotors, worms and screwtype workpieces
- + Internal grinding with the twin spindle principle
- + Fast format changes via quick-change adaptors
- + Modular Softwares

The GP 500 H / HL mounts an additional NC axis, allowing you to work with two separate spindles instead of just one. Both spindles can accommodate one grinding wheel or even two-wheel sets.

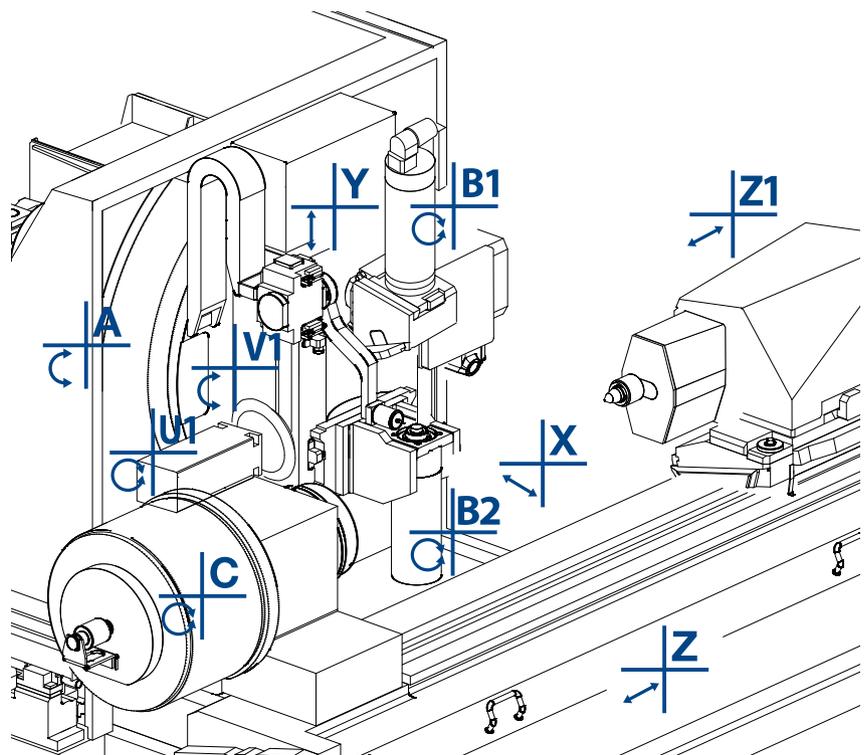
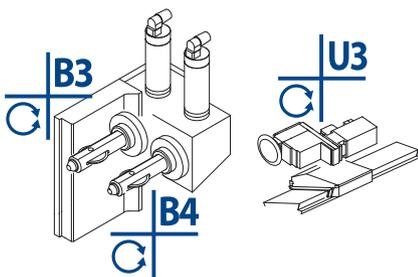
Single gearings are roughed on the first spindle and finish ground on the second, with one grinding wheel mounted on each spindle. Two gearings on one shaft can be roughed and finished with wheel sets on each spin-

dle without the need for tool changes. Spindle variants are available with different power outputs and speeds for different grinding wheel sizes. Even internal gear manufacture no longer requires tool change thanks to this new twin drive principle.





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- A Tool head swivel
  - B1 Tool spindle rotation (ext. top)
  - B2 Tool spindle rotation (ext. bottom)
  - B3 Tool spindle rotation (int. left)
  - B4 Tool spindle rotation (int. right)
  - C Work spindle rotation
  - U1 Dressing spindle rotation for externals
  - U3 Dressing spindle rotation for internals (option)
  - V1 Measuring unit swivel (option)
  - X Radial travel
  - Y Tangential travel (automatically)
  - Z Axial travel
  - Z1 Tailstock travel
- Dressing process by interpolation

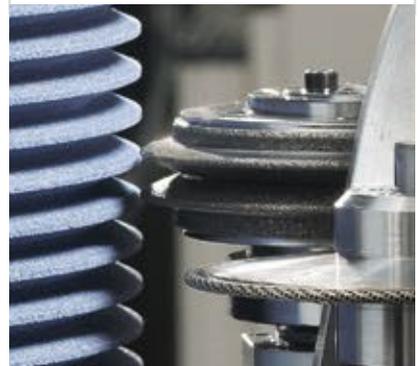
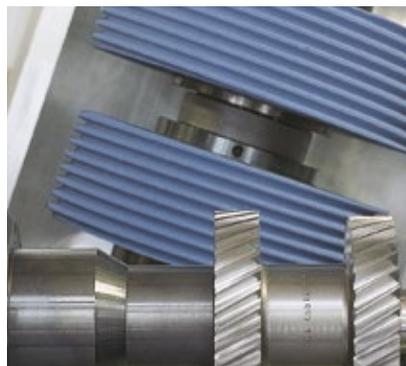
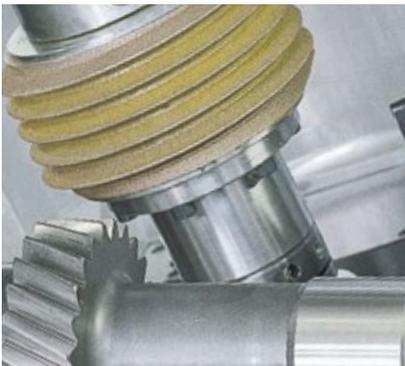


The GT 500 H / HL gear grinding machine is ideal for both prototyping tasks and efficient grinding of medium and large gear batches. With an additional tool shifting axis, it caters for both profile and continuous generating grinding processes. All standard lead and profile corrections can be generated by a dressing device of your choice, and, thanks to this machine's superior flexibility,

you can also apply the most appropriate technology for the given task and even combine different kinds of roughing and finishing processes to maximise efficiency. Plus, with its absolute speed values, the GT 500 H will realise the lowest possible cycle times and has vast potential to accommodate future generations of grinding tool abrasives.

### at a glance

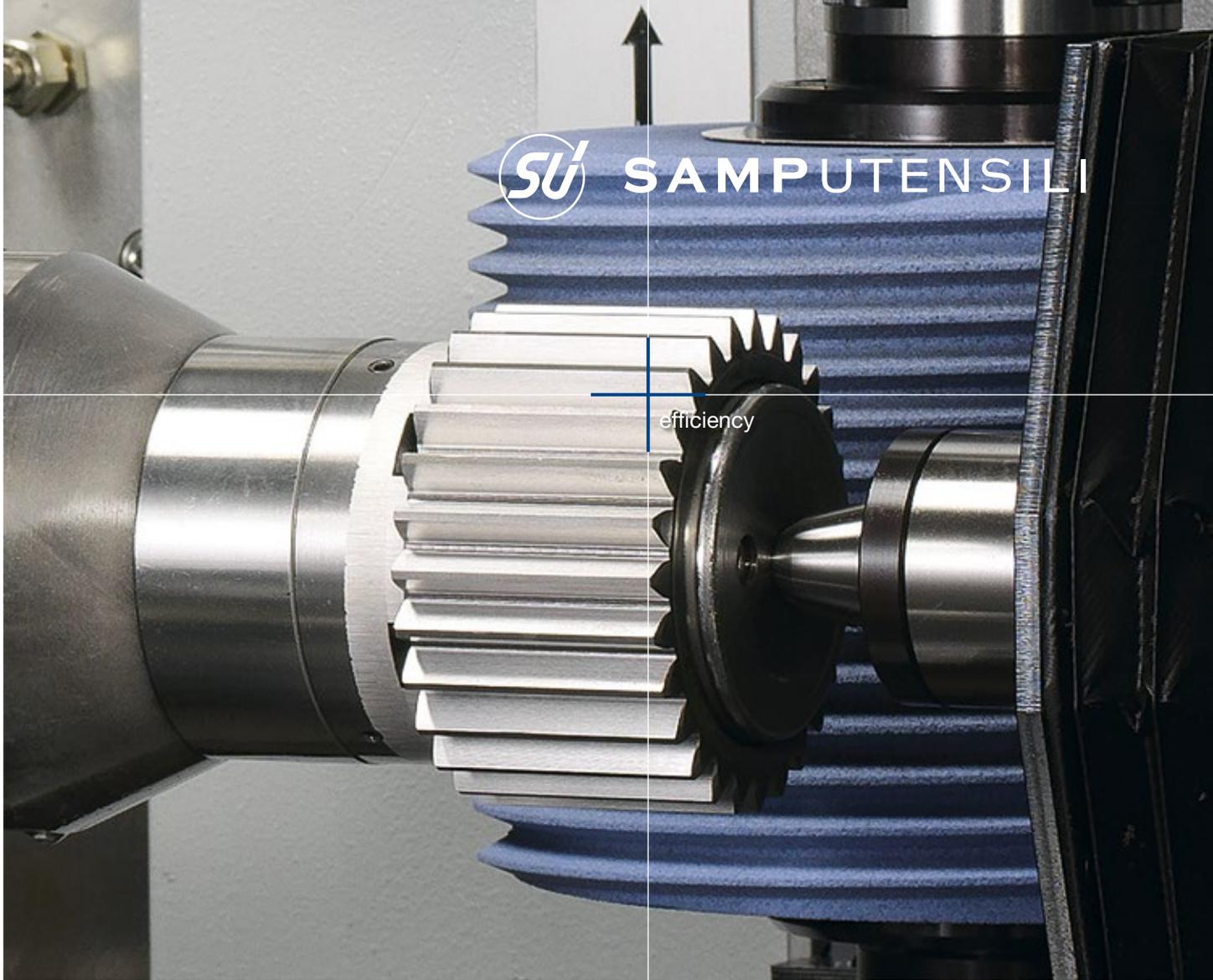
- + Highly efficient generating grinding with CBN or ceramic tools
- + Flexible manufacturing of small or large lots
- + Integrated checking
- + Loading and unloading automation solutions available



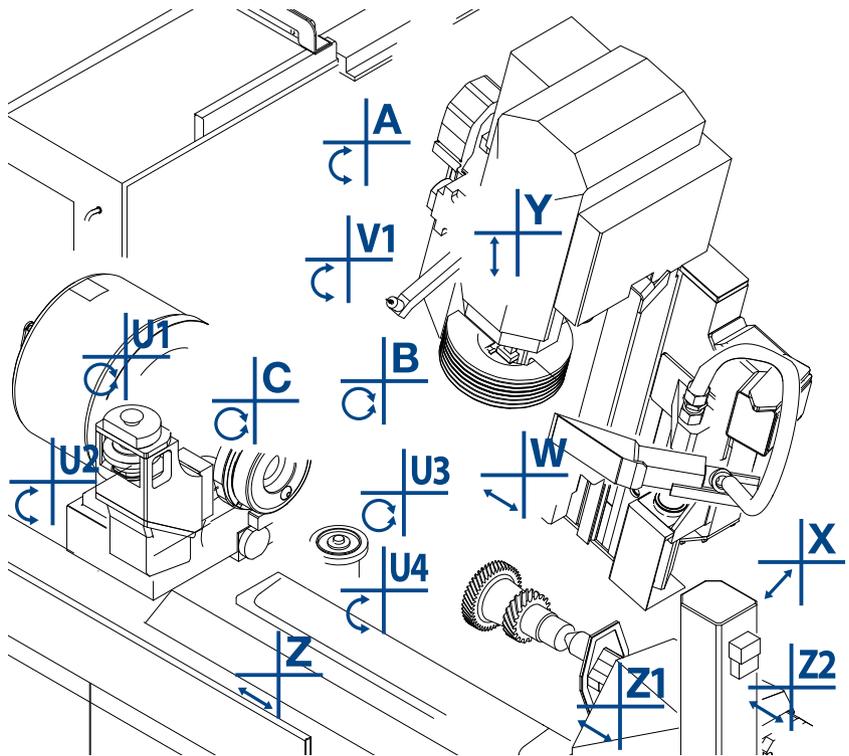


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efficiency



- A Tool head swivel
  - B Tool spindle rotation
  - C Work spindle rotation
  - U1 Dressing spindle rotation (main)
  - U2 Dressing spindle swivel (main)
  - U3 Dressing spindle rotation (secondary)
  - U4 Dressing spindle swivel (secondary)
  - V1 Measuring unit swivel (option)
  - W Coolant nozzle travel
  - X Radial travel tool head
  - Y Tangential travel tool head
  - Z Axial travel work spindle
  - Z1 Tailstock travel (option)
  - Z2 Tailstock slide travel (option)
- Dressing process by interpolation



# options

Depending on your application, the machines in the G-H series are equipped with various options.

Samputensili dressing units utilise universal dressing rolls and generate profiles calculated by the machine software. An integrated "touch" sensor checks the contact between the roll and the wheel, allowing the activation of the dressing passes and controlling the good quality of the dressing.

Using the right workpiece support is fundamental to prevent bending or vibration during the grinding process.

The correlation between stock removal and the ability of a machine to supply a consistent flow of pure coolant is essential for trouble-free production and constant top quality. We recommend and supply you with the right filtration unit for your application

## at a glance

- + Different dressing options depending on the application
- + Coolant filtration units for steel and cast iron machining
- + Workpiece support systems customised for perfect fit
- + Integrated on-machine inspection and closed loop manufacturing with automatic profile correction.
- + Various high-performance grinding spindles



From left to right:

Coolant filtration unit for steel machining.

Double flank dressing on GT

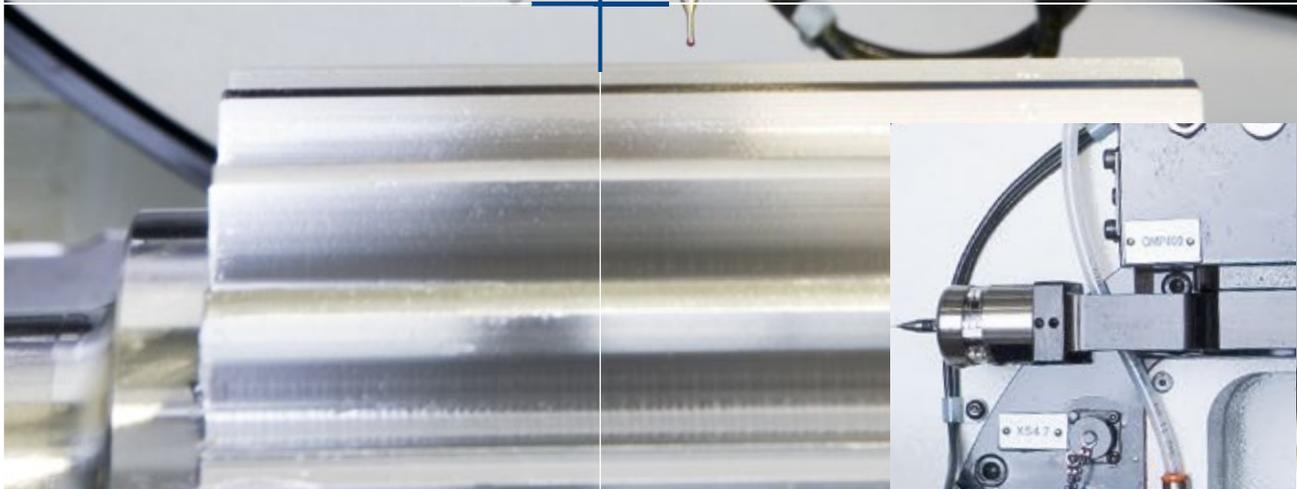
Dressing unit for internal profile grinding with ceramic wheels



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Wireless integrated measuring unit for gears and shafts. This unit automatically swivels into the work area for use and then retracts to a standby position once inspection is complete. With Samputensili software modules, it is possible to check profile, lead, pitch and concentricity.

integration



The ultimate in measuring control, the Samputensili closed loop system enables you to connect your machine to an external measuring unit to check and automatically correct workpiece profiles in a closed manufacturing cycle.





## Software for the most demanding applications made easy

With the user-friendly Samputensili menu-guided operator interface running in a true Windows® environment, users are guided through the manufacturing process via easy and intuitive entry and demonstration screens and are supported by data validation and error correction software.

Easy and intuitive data entry interfaces  
 Wheel profile calculation and visualisation  
 Simple and direct profile correction options

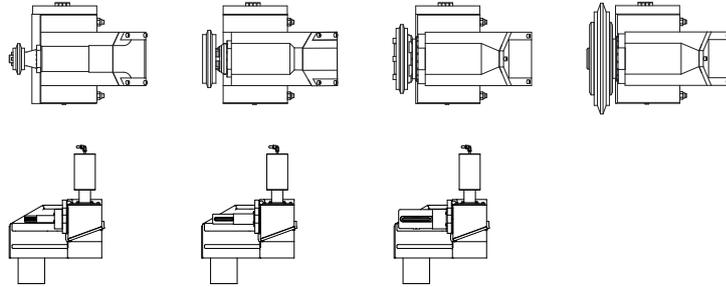
Point by point rotor grinding wheel profile calculation  
 Profile inspection with data view and profile visualisation, ZI-type profiles



## Basic spindle variants for internal and external profile grinding

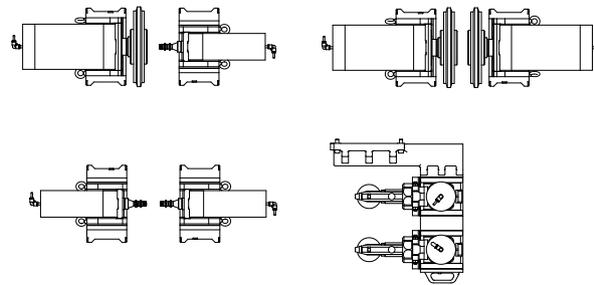
**G**

Profile grinding with ceramic and electroplated CBN wheels



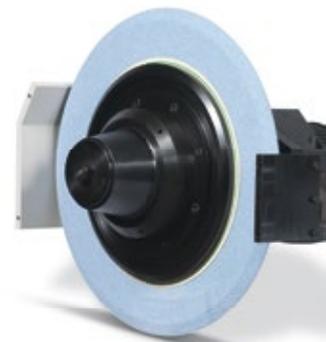
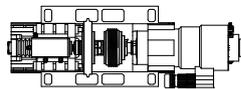
**GP**

Double spindle for profile grinding with ceramic and electroplated CBN wheels



**GT**

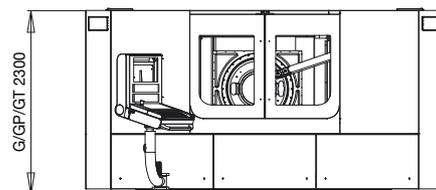
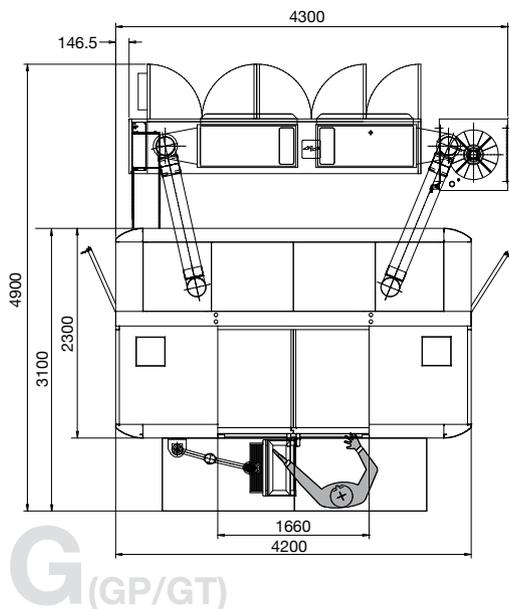
Twin spindle for profile and generating grinding with ceramic and electroplated CBN tools



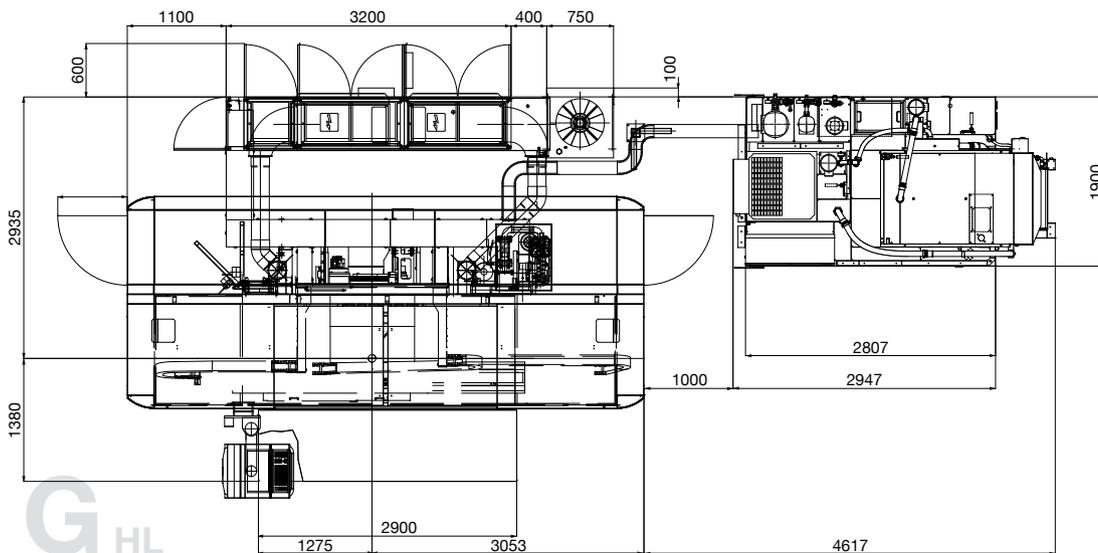
## Technical data

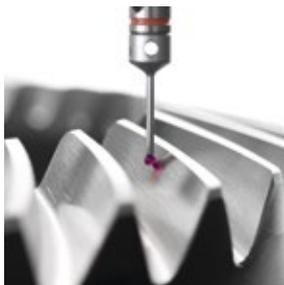
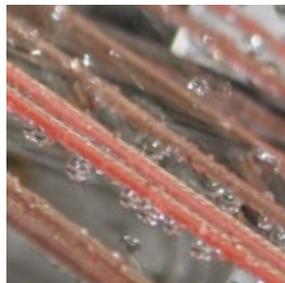
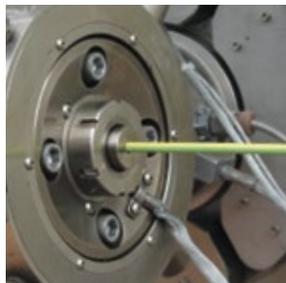
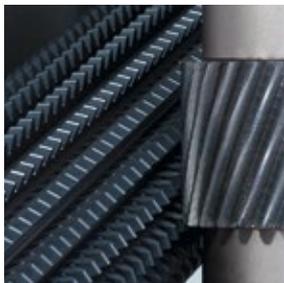
		<b>G 500 H (HL)</b>
Workpiece diameter, max.	mm	500
Module, max.		0.5 - 22.0
Profile depth, max.	mm	52
Tool head swivel range	degree	+/- 90
Centre dist. work spindle / tool spindle	mm	20 - 445
Workpiece length, max.	mm	1,250 (2,150 HL)
Axial travel, max.	mm	900 (1,500 HL)
Radial travel, max.	mm	330
Tangential travel, max.	mm	n/a
Tool spindle power (opt.)	kW	20 (35)
Ceramic wheel diameter	mm	40 - 300
Ceramic wheel thickness, max.	mm	80 / 105 with shoulders
CBN wheel diameter	mm	30 - 220
CBN wheel thickness, max.	mm	30 / 60
Dressing disc diameter, max.	mm	150
Tool spindle speed, max.	rpm	32,500*
Work spindle speed	rpm	0 - 600
Workpiece weight, max.	kg	350
Total connected load / with coolant filtration unit	kVA	150
Machine weight, including standard equipment	kg	15,500

\*) Depending on wheel dimensions. Technical data is subject to change without prior notification. Max. values depend on the application.



GP 500 H (HL)	GT 500 H (HL)
500	320
0.5 - 15.0	6.0 (generating grinding)
29	1 - 33
+/- 90	+/- 55
15 - 380	128 - 363
1,250 (2,150 HL)	1,250 (2,150 HL)
900 (1,500 HL)	900 (1,500 HL)
330	235
160	220
5.5 / 16	48
30 - 300	270 - 400
40	120
15 - 220	345
30	100
150	150
20,000 / 40,000	12,000
0 - 600	0 - 1,000
350	350
150	130
15,500	15,000 (18,000 HL)





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