*norma*NGC

the workhorse !

SCHNEEBERGER

norma NGC

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THE SPACE REVOLUTION

norma NGC, innovative kinematics for a very compact and high-precision grinding machine. The result in terms of maximum tool dimensions is amazing: it is possible to grind e.g. hobs with a diameter of 260 mm / 10 1/4" up to Module 22 or tapered ball nose cutters with a flute length of 420 mm / 16 1/2". Thermal stability is guaranteed by the monoblock machine cast. The machine's design is both ergonomic and rock-solid. Every detail has been perfected, from the coolant supply to the workpiece clamping. The famous longevity of Schneeberger grinding machines quit possibly have been once again surpassed.

PRODUCTION OUTPUT

Plenty of grinding power is available, even at a low RPM. The internally cooled direct drive grinding spindle achieves an output of 13 kW / 17 Hp and a motor speed of 12,000 RPM. The compact unit can also handle heavy machining! Double ended spindle with HSK 50 interface or automatic clamping of the grinding wheels with the wheel loader are available.

APPLICATIONS

norma NGC performs almost any grinding task for tools, and can also process other workpieces. The machine may incorporates dressing and profiling of the grinding wheel along with in-process measuring technology. Materials of any type can be processed: steels, stellite, carbide, ceramics and PCD as well. The optional A axis with high torque motor uses high-precision circular positioning and interpolation for cylindrical grinding. It also offers automatic probing and thus corrected finishing grinding to tightest tolerances. Before grinding, rigid tool clamping comes into effect: *norma* NGC has specific clamping systems for round tools, between centers, internal clamping, automatic clamping of square parts; custom solutions can be developed wherever needed or requested.

Standard Tools

Manufacture and regrinding with our default tool database, programming of: End mills, radius cutters, ball nose end mills, crest cutters, roughing cutters, profile cutters, band saw hobs, staggered milling cutters, T-slot cutters, prism milling cutters, high performance drills, gun drills, reamers and many more. Loading is done manually or from a pallet with the integrated loader.

Profile Inserts

Grinding of a profile and rake face in one clamping. Any profiles, clearance types and chip breakers. 3D simulation of the grinding path. Programming with DXF or standardized parameters for tapping, drilling, turning, cutting and grooving.

Punches

Efficient production of cylindrical and profiled punches for cold forming and punching. Hex and torx punches for screws and bolts. Agile software, user-friendly with 3D simulation. Clamping with dual steady rest for maximum precision even in automatic loading.

Gear Tools

Grinding of hobs, and high helix hobs. Integrated calculation of convex wheel profiles and automated dressing cycles. Probe programs with measuring report. Regrinding of straight and helical shaper cutters. Profiling of bevel gear blades, using automated robot loader.

COMPLETE OPTIONS

Accessories to expand the application range or increasing production output, all designed for optimal handling, best suited to the compactness and stability of the **norma** NGC:

- Manual or automatic tailstock
- Manual or automatic steady rests, also for micro-tools
- 3D probe for measuring the grinding wheels
- Coolant filtration systems
- Mist collectors
- CO2 extinguishing systems

Integrated Tool Loader

Pallet with an area of 300 x 300 mm (12"x12") for round tools or inserts. Software: Loader programs can be saved for an almost unlimited number of pallets, job list organization offers flexible production of multiple tool types per pallet. Loader programming for re-sharpening realized with a spreadsheet.

AWL-7 Grinding Wheel Loader

Grinding wheel loader with 7 positions for HSK50 wheel holders and coolant nozzle manifolds, up to 21 wheels can be stored. Data management for grinding wheel geometries, grinding data and processes.
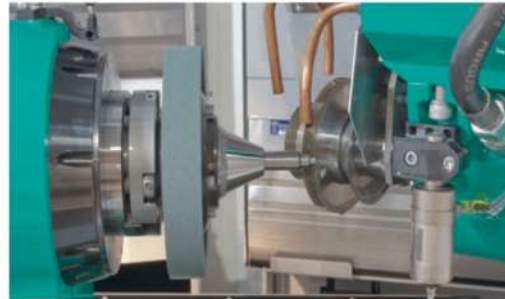

Tool Axis A Rapid:

Dividing head with direct drive motor, infinite rotation, up to 600 RPM, 123 Nm max. torque, direct scale feedback system with a resolution of 0.001 °, clamping taper ISO50. Absolute precision combined with rotation and interpolation. Optional, a collet systems with a holder prepared for a dressing wheels is available.


CNC Dresser

Automatic linear or profile dressing for diamond grinding wheels, CBN and vitrified. 0.55 kW motor, 200-4000 RPM. Software for generating and receiving of the wheel profile, used as stand-alone or integrated in the auto production cycle.

norma NGC
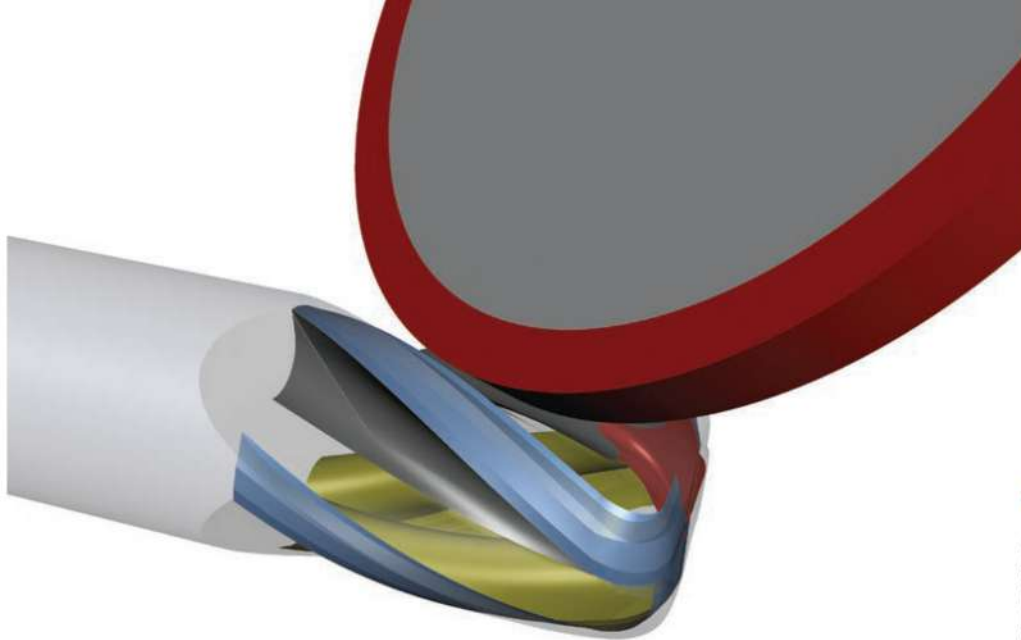
Qg1, the CAD-CAM Grinding Software.

Quinto Qg1 offers you interactive graphics right from the first entry. Tool parameters are instantly converted into a solid 3D model that is simultaneously visible in the programmers graphics window. For the purpose of control, a dimensioned drawing of the tool is generated at the very same time. It shows, for instance, the profile of a step drill: all step lengths, diameters and angles. Using it couldn't be any easier!

Grinding path calculations are based on the 3D digital model. If necessary, the grinding paths can be checked in the simulation, or the specific tool requirements can be edited by the operator in pathQreator.
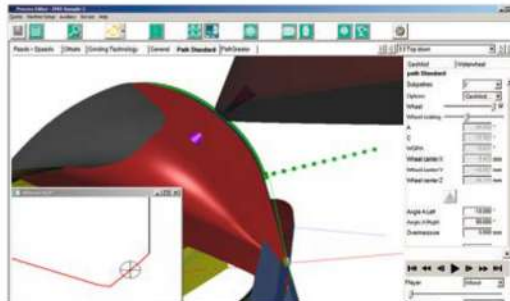
Software PERFORMANCE

The definition of the tool geometry in a digital CAD format enables any grinding process to be used for any surface to be ground. Qg1 offers a choice of grinding processes whose usage depends on the desired surface quality, specific material or of the existing wheels.

The instantly available grinding result is much more accurate compared to conventional programming which directly converts geometric parameters into machine movements, making the production of small batches a lot more efficient.
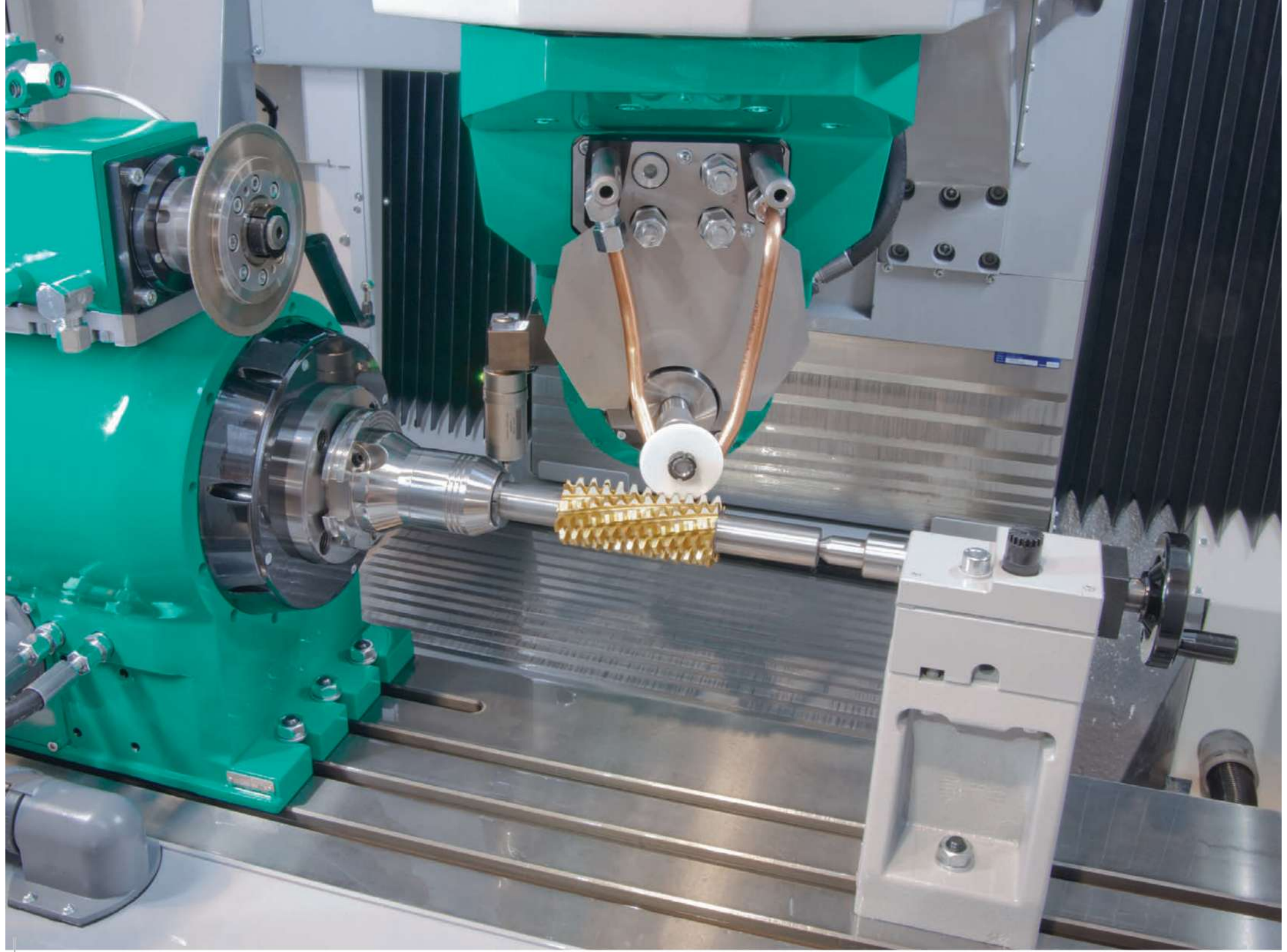
NTTE

Get the complete tool programed with just a few clicks. With the NTTE (New Tool Toogle Extractor), you can complete the finished grinding program from the default tool database with only 3 more clicks, all depending on your choice of tool type. Number of flutes, number of center cutting wings and tool diameter - no need for any additional entries. The grinding processes, grinding paths and required grinding wheel shape are automatically generated.
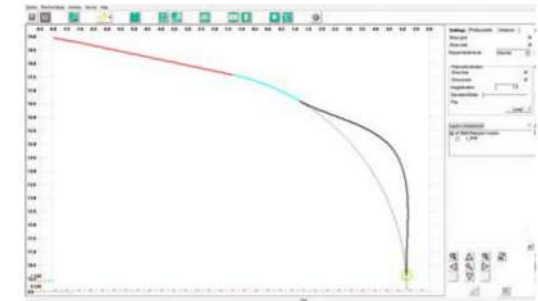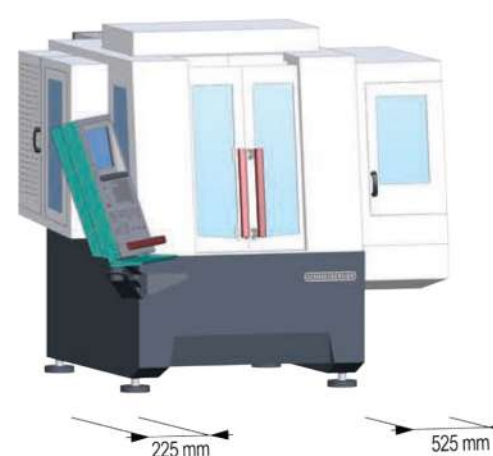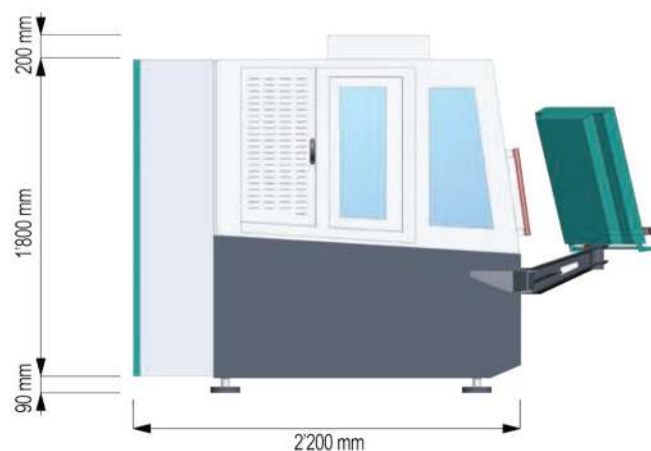
STEP, DXF, ISO

The CAD/CAM software Quinto Qg1 was designed as an open system to enable the exchange of data with external design programs. Popular data formats such as GDX, STEP and DXF, but also users' own ISO programs can be loaded or forwarded to a measuring machine or the end user.

TECHNICAL DATA

Axes:
  X: **470 mm / 18,5"**, longitudinal axis, anti-friction guideway, ball screw, resolution 50 nanometer
  Y: **390 mm / 15 1/4"**, cross slide, anti-friction guideway, ball screw, resolution 50 nanometer
  Z: **325 mm / 12 3/4"**, vertical axis, anti-friction guideway, ball screw, resolution 50 nanometer
  A: **ISO50** tool tray, resolution 0.0001°
  C: **345°**, rotation of the grinding head, resolution 0.000045°

Control:
FANUC 3x Series, 5 controlled axes,
15" TFT color monitor, touch-screen, USB 2.0

Grinding head:
Double grinding spindle, direct drive, HSK50,
or automatic clamping HSK50, for grinding wheel loader
10 kW (100%), 13 kW (60%), liquid-cooled

Loader Options:
Integrated parts loader, tool pallet 300 x 300 mm (12'x12")
automatic grinding wheel loader with 7 positions, 21 grinding wheels

Weight:
5,000 kg (11,000 lbs)

200 mm
1'800 mm
90 mm
1'350 mm
2'200 mm
225 mm
525 mm

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