



ETG series

Tool grinding machines

ETG series tool grinding machines

Choose your weapon. Whatever your application, the ETG series provides you with the version that really fits your needs:

Five axis CNC tool grinding machines for the ultimate in flexibility for end mills, step drills, reamers, form cutters, gundrills, burrs and shaper cutters.

The ETG is available as standard version with its flexible and easy-to-use NUMROTOplus software package including the Vericut simulation software which is optionally available as 3D version.

The ETGplus features a moveable headstock to sharpen extended length tools as well as a automatic probing system.

The ETGR is additionally equipped with a Motoman robot for flexible and fast autoloading.



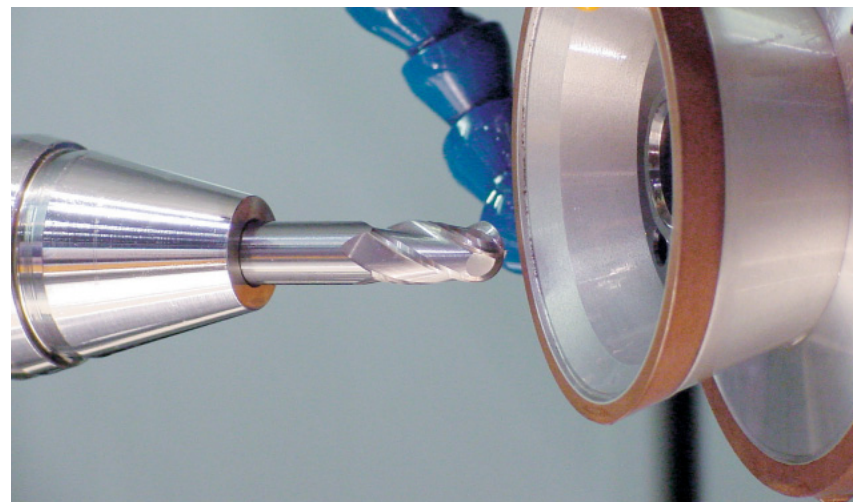
The ETG series allows you to grind a wide variety of tools



ETG base model with NUMROTOplus software



ETGR with standard robotic automation



ETGplus grinding drills

All ETG series feature:

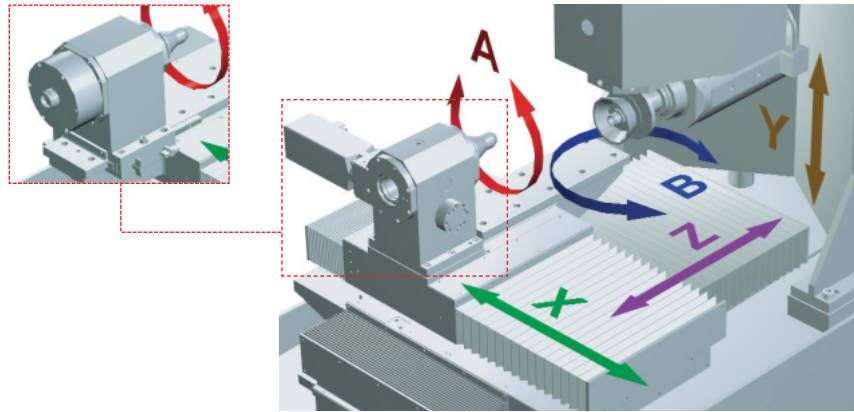
- Five-axis, NUM CNC control.
- NUMROTOplus operator interface running on Windows 2000 operating system with flat screen monitor
- NUMROTOplus 2D or 3D grinding simulation VERICUT.
- Dynamically stiff machine with digital servo motors, direct-drive headstock for spin grinding, high-resolution encoder and Heidenhain glass scales on linear axes.
- CNC high-speed servo positioning, and linear rail system for high speed axis positioning on precision ground ball screws.
- Reliable, coolant delivery and filtration system with mist collector.
- Automatic part probing system.
- Automatic lubrication system
- HSK quick release grinding wheel pack allows wheel pack changes in under one minute while providing the necessary locating repeatability for off-line wheel dressing and wheel measuring.
- HSK quick-release precision hydraulic chucks with sleeve available for precision chucking of tools from 1/8 to 1-1/4 diameter range.
- Cat 50 collet chuck and collet set available for chucking tools from 1/8 to 1" diameter range.

ETGplus

- Capability of sharpening extended-length tools such as gundrills and gun reamers by moveable direct-drive headstock for tools up to 21" OAL.
- Probing system to precisely measure the grinding wheels sizes and locations, eliminating the need for time-consuming measurements each time the wheels are changed.

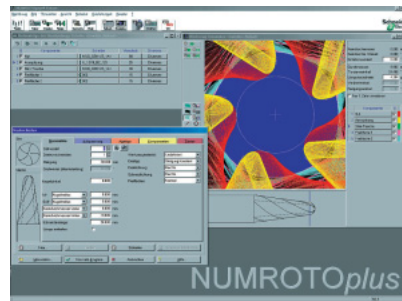
ETGR

- Additionally the ETG-R is equipped with a Motoman robot system for fast and flexible autoloading of a wide range of workpieces.

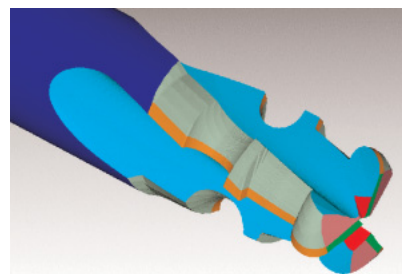


- A: Workhead spindle
- B: Grinding spindle
- X: Radial movement workpart
- Z: Axial movement tool spindle
- Y: Tool holder vertical movement

A powerful personal computer with flat panel monitor is used as operator interface and provides the necessary speed for running 3D simulations at the machine. Naturally it allows for quick and inexpensive upgrades as new technology becomes available.



Standard NUMROTOplus 2D Software



Optional NUMROTOplus VERICUT 3D visualization Software

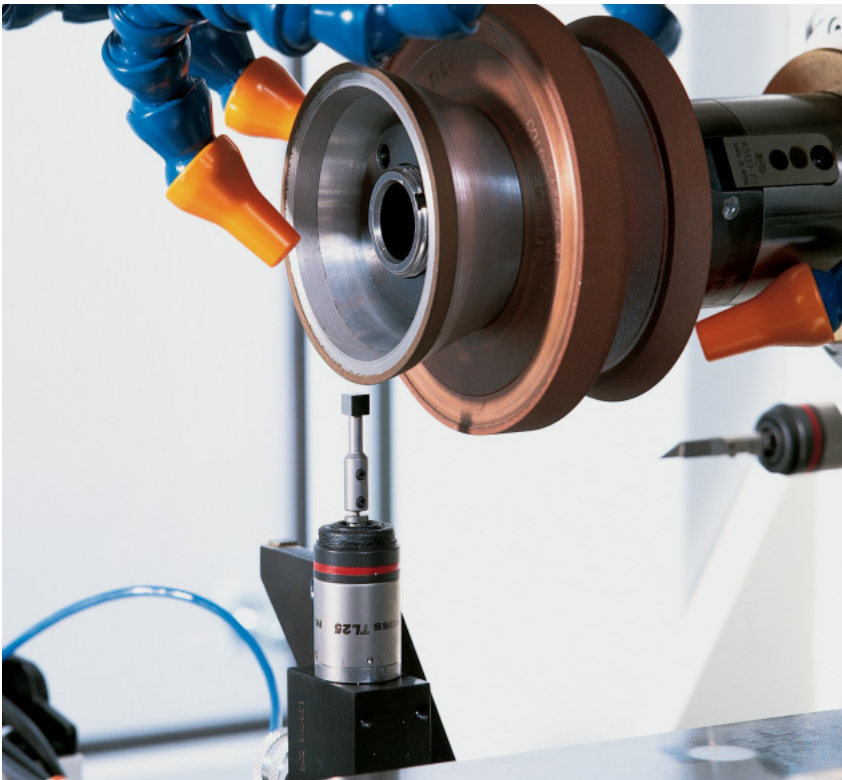
NUMROTORplus Software

This software makes it easy for operators to grind parts in the following ways:

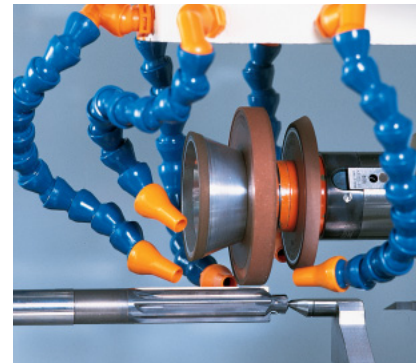
- Sequentially walks the operator through the graphical interface during the tool description process.
- Generates a custom grind program for each tool.
- Shows tool geometry using a 2D, scale representation of the tool.
- Provides immediate feedback as the operator enters each dimension.
- Simulates grinding to show cross-sectional details.
- Minimizes wheel changes and boosts productivity by letting the operator use wheels for multiple operations.

For even more flexibility, Vericut can be supplied optionally with 3D visualization. Vericut works hand in hand with NUMROTOplus to provide the operator with a virtual representation of the tool before the operator ever puts the workpiece in the machine. The operator can test the program, view, measure the virtual part and even tell whether or not there are collision problems with other wheels. When the operator is satisfied with the virtual part, it is a simple matter to upload the grind program to the machine and start the grinding cycle.

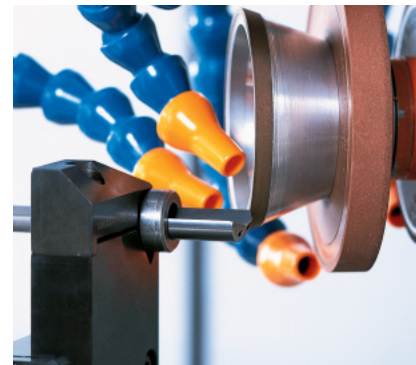
ETG series



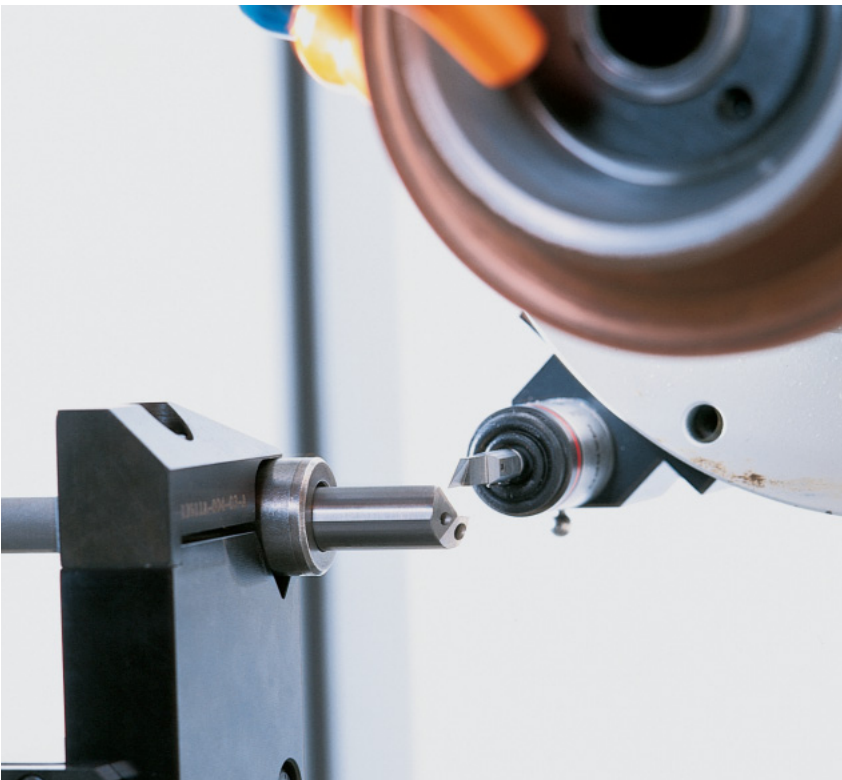
Grinding wheel probing system for ETGplus only



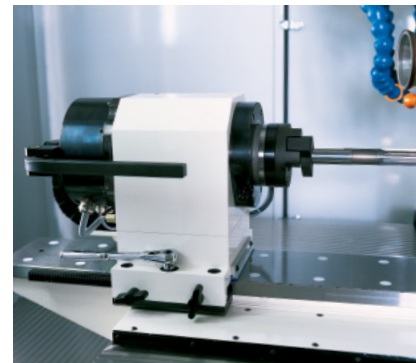
ETGplus between center tooling to grind longer tools.



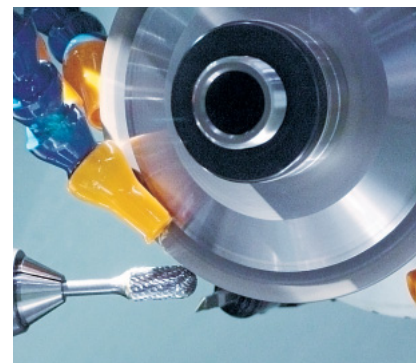
ETGplus bushing plate to grind tool sup tp 21.00 inches overall length



Part probing for all ETG series machines



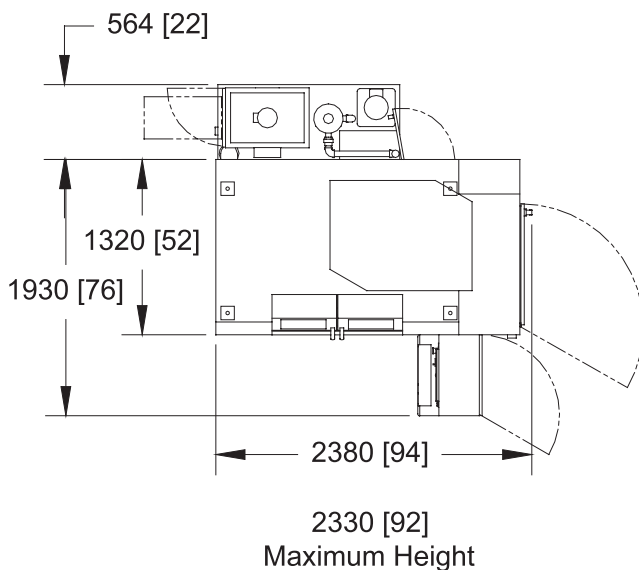
ETGplus movable direct drive headstock



ETG precision grinding of milling tool.

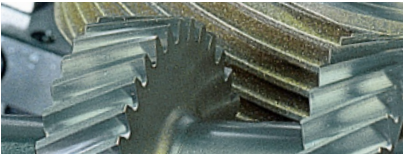
Technical Data

Machine capacity ETG series (ETGplus)		
Max. workpiece diameter	100	mm
Max. workpiece length	200 (530)	mm
A - axis (workhead spindle) travel	40 (1000)	rpm
B - axis (grinding spindle) travel	16	rpm
X - axis travel	300	mm
Y - Axis travel	220	mm
Z - Axis travel	350	mm
Grinding spindle	10	HP
Maximum grinding spindle speed	7,200	rpm
Maximum grinding wheel diameter	150	mm
Smallest programmable movement: linear	.0001	mm
Linear axis glass scale feedback resolution	.00001	mm
Smallest programmable movement: rotary	.0001	degrees
Rotary axis feedback resolution: A-axis	.0000001	degrees
Rotary axis feedback resolution: B-axis	.0000005	degrees
Main dimensions, base machine (l x w x h)	2,38 x 1,93 x 2,33	m
Total weight, base machine	3,600	kg

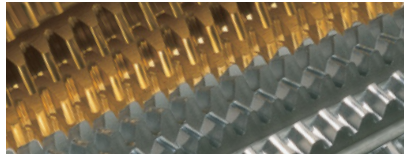


R-series
Robot data
or drawing

System technology from one source

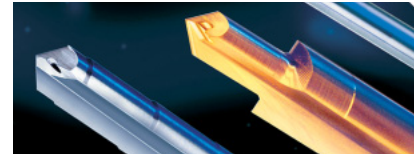


Cylindrical gear hobbing
 Bevel gear cutting
 Shaping
 Profile grinding
 Continuous generating grinding
 Honing/shave grinding
 Shaving cutter grinding
 Hob grinding
 Universal tool grinding
 Carbide tool grinding
 Chamfering and deburring



HSS and carbide hobs
 Shaper cutters
 Broaches
 Milling cutters
 Rack and saw cutters
 Shaving cutters
 Profile grinding wheels
 Master gears
 Chamfering and deburring tools

Regrinding of gear cutting tools
 Coating of gear cutting tools
 Decorative coatings
 Replating of grinding wheels
 Grinding of compressor rotors, gears of special design, worms and cams



Single and double flute gundrills
 Solid carbide gundrills
 Two-fluted milled style deep hole drills
 Solid carbide drills and reamers
 Pressure coolant drills and reamers
 "PCD" drills and reamers
 Integrated holder "PCD" tooling



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