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Hi-Q for you

Product information

QM eco

Disc erosion machine
for the machining of PCD tools

QM eco

High-precision machining of PCD tools

The VOLLMER QM eco is for the machining of tools with PCD cutting edges that need high precision and premium surface quality. The machine was designed for diamond tipped tools that require the highest levels of cutting edge geometry, configurations of cutting edges and accuracy.

Concept for precision and reliability

To achieve extremely high structural rigidity the machine concept incorporates a particularly robust sub-structure of polymer concrete. Measuring and eroding are achieved with just one clamping operation. Five simultaneous path CNC axis and the powerful VOLLMER generator ensure top performance and optimum results.

Machining of tools with disc electrode

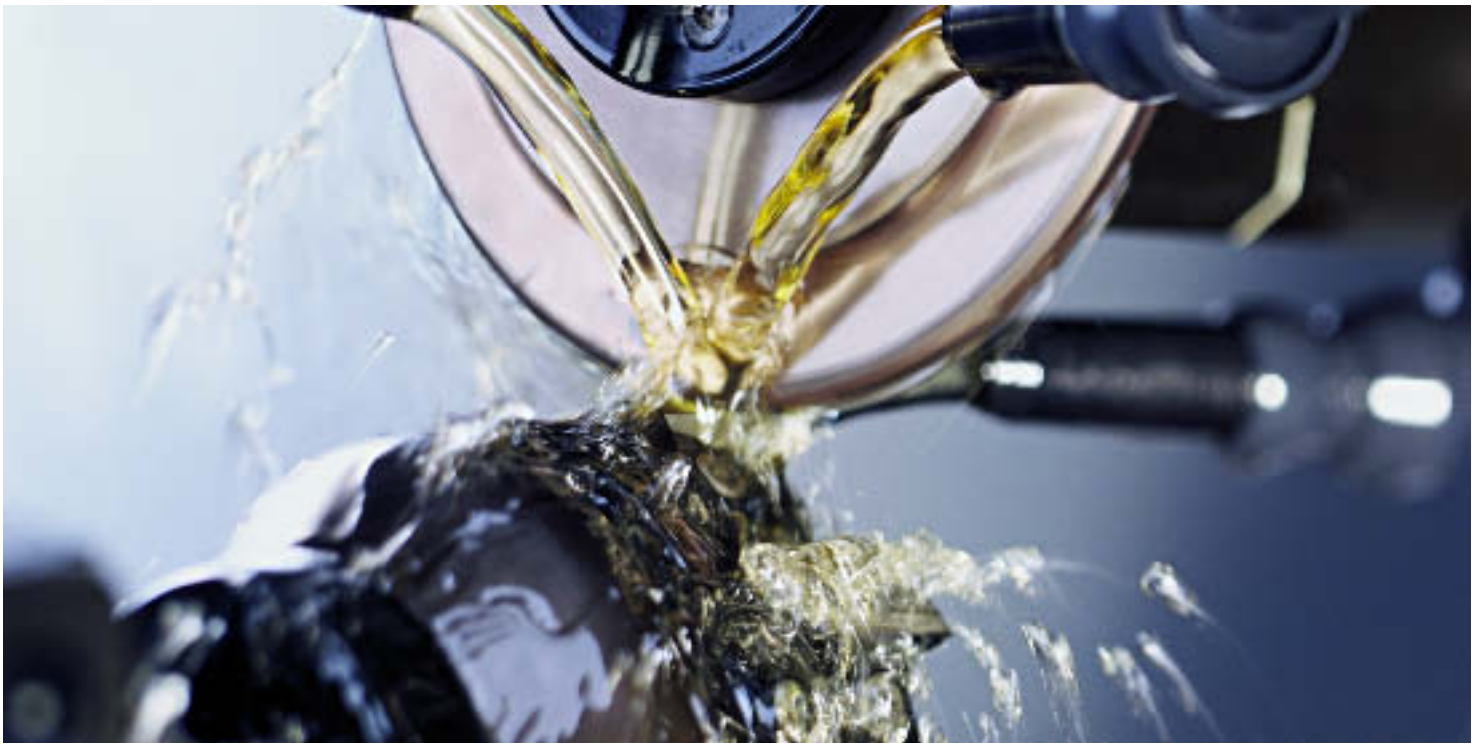
Eroding results of the highest quality are attained on tools used for the machining of wood, metals and plastics.

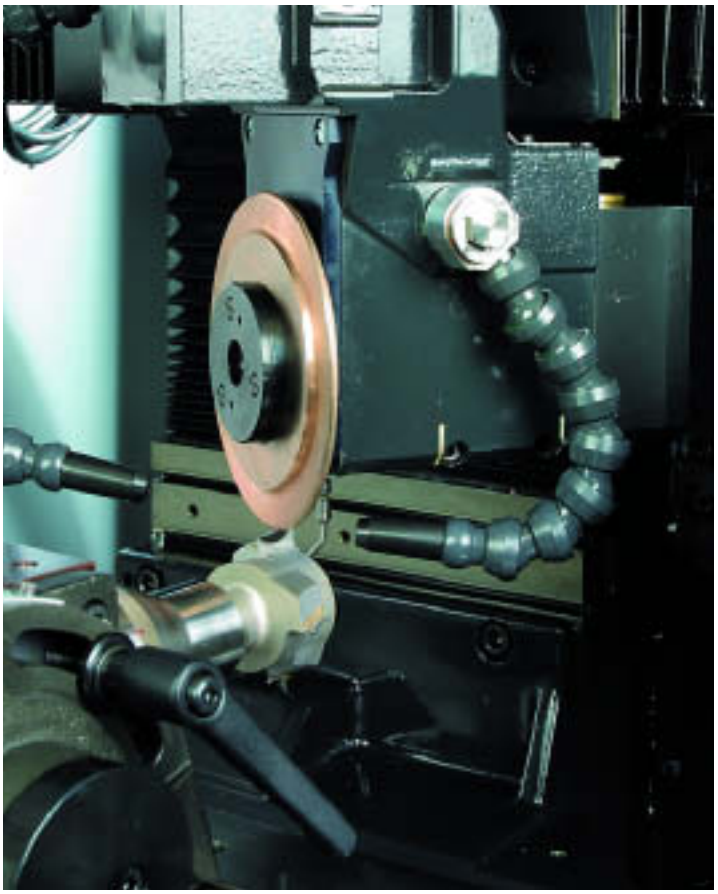
Eroding of PCD tools with the wheel periphery

- Eroding of profiles
- Round erosion

Eroding of PCD tools with the disc face

- Face cutting
- Peripheral cutting
- Chamfer





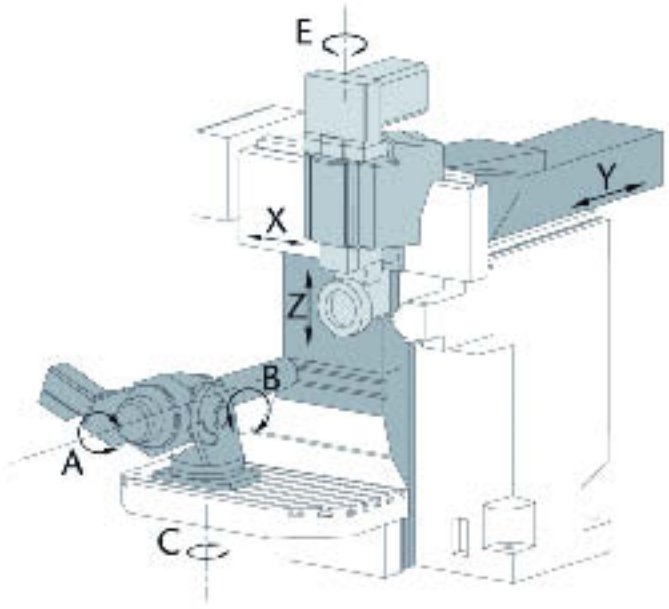
CNC-controlled E axis

The quality is evident in the detail

- Optimum results and top eroding performance for the roughing processes
- Fine surfaces resulted from the finishing operation featuring values of R_a < 0.2 µm
- Flexibility in the arrangement of individual tool geometries
- Modular PMC-multi-processor system with integrated software for workshop-orientated programming (WOP)
- Diagnostic system for continuous monitoring of machine functions
- VOLLMER developed generator

CNC-controlled E-axis

The VOLLMER QM eco incorporates a rotary E-axis to pivot the disc-shaped erosion electrode for radial clearance angles. Lateral clearance angles can also be achieved for profiles via the 5 axis simultaneous path CNC execution.



The X, Y, Z, A and E-axis are CNC-controlled and the B and C-axis can be adjusted manually.

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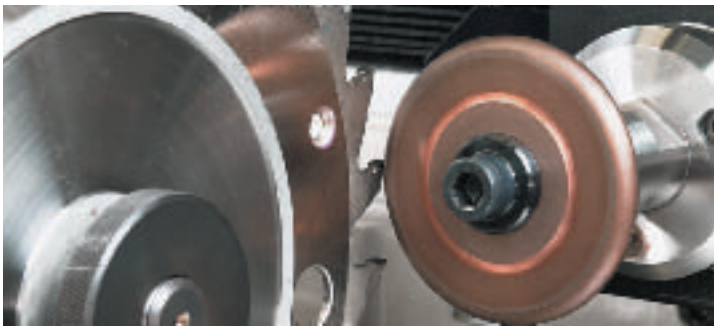
Versatility during application

A CNC-controlled E-axis has been integrated for pivoting of the eroding disc.
Versatile: creation of lateral clearance angles in the profile, high removal rates, even for profile tools, CAD/CAM-system for complex profiles via path execution.
Reduced machining time via especially low traverse paths.

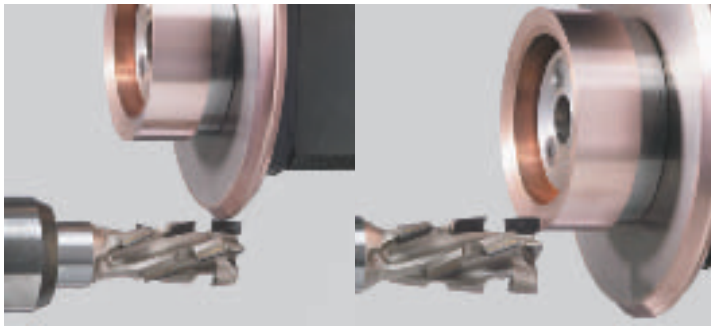


Saw blades with convex sides, both sides in one clamped position

Hoggers with freely programmable tooth profiles

End milling cutter with several cutting edges and small clearances (speedy milling cutter)

Milling cutter with toothing on left and right-hand side



Face machining and peripheral machining in one clamped position using two electrodes

Panel raising cutter

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Measuring of the tool

Measuring program

Eroding program

Automatic measuring and eroding of the tools in one clamping operation

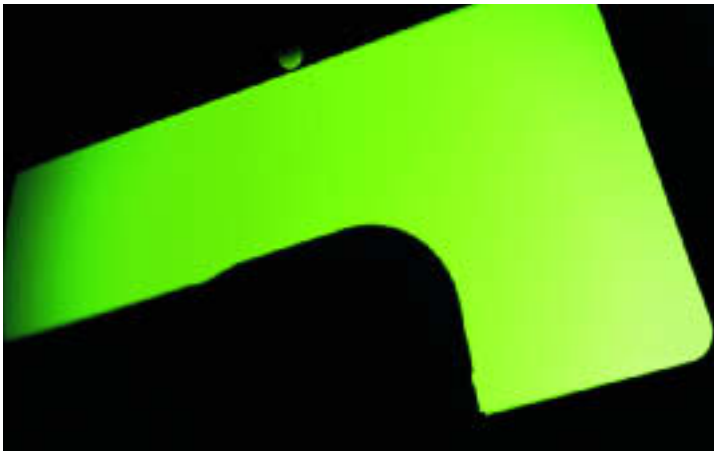
A multitude of programs have already been stored for the measuring and eroding production stages. Each standard program is supplemented with customer-specific parameters and tool dimensions.

Intelligent software with particular advantages

Tool data for the measuring program and eroding program can easily be entered for a tool while another tool is being machined. The program for automatic operation is initiated when the tool has been clamped.
Up to four eroding stages with their own individual parameters can be selected in all machining programs: coarse roughing, roughing, finishing, fine finishing.

Maximum operating comfort

Easy to operate with user guide on the LCD-colour display screen Data exchange via DNC.
Optimum accessibility to the tools and into the interior of the machine.
Central arrangement of all supply units on the rear side of the machine.



Confirmation of precision of the profiles on separate measuring station

Dressing the eroding disc in the machine

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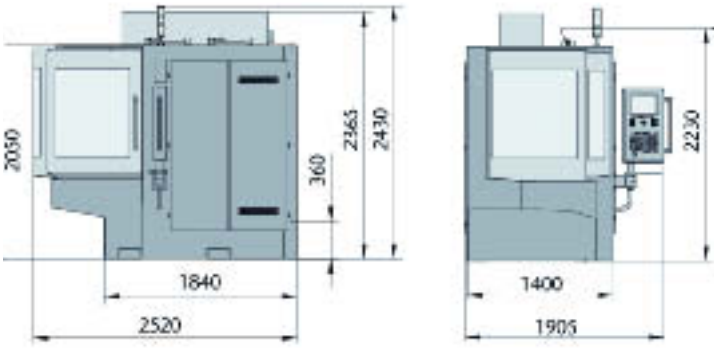
Technical data:

- Milling cutter
  - Outer diameter: up to 250 mm
  - Length of cutting edge: up to 100 mm
- Shank-type tools
  - Outer diameter: 10 to 100 mm
  - Length of cutting edge: up to 100 mm
- Discoid tools
  - Outer diameter: up to 380 mm
  - Outer diameter with support: up to 600 mm
  - Length of cutting edge: up to 20 mm
  - Tangential clearance angle: up to 6°
  - Radial clearance angle: -15° to 6°
  - Clearance angle: up to 30°
  - Automatic bevelling: up to 70°
  - Cutting edges axially parallel, tool cylindrical, tool tapered, tool profiled,
  - Cutting edges convoluted: up to 45°
  - Tool cutting on left and right-hand sides
  - Tool weight: max. 20 kg
- Rotary electrode
  - Face rotary electrode
  - Outer diameter: max. 125 mm
  - Peripheral rotary electrode
  - Outer diameter with peripheral machining
  - with tungsten-copper electrode: 28 to 150 mm
  - with graphite electrode: 200 mm
  - Bore diameter: 10, 15, 60 mm
- Speed: 80 to 1500 min^{-1}
- Drive output: approx. 2,6 kW
- Traversing ranges
  - X-axle: 280 mm
  - Y-axle: 280 mm
  - Z-axle: 330 mm
  - A-axle rotation range: 360°
  - Tapered holder: ISO 40
  - B-axle pivot range: +/- 30°
  - C- axle pivot range: 210°
  - E- axle pivot range: +/- 70°
- table surface area
  - Table load: max. 100 kg
- Automatic measuring device
- Delivery output cooling pump dielectric fluid: 60 l/min
  - Capacity for dielectric fluid: 118 l
- Connected load: 3.4 kW / 4.5 kVA
- Weight: approx. 3000 kg

Dimensions



Structural modifications which serve technical advancement remain reserved.

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