



**Product information**

## **QM eco select**

Disc erosion machine for the machining of PCD tools

# QM eco select

## The Idea.

High-precision machining of PCD tools.

The VOLLMER QM eco select 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.

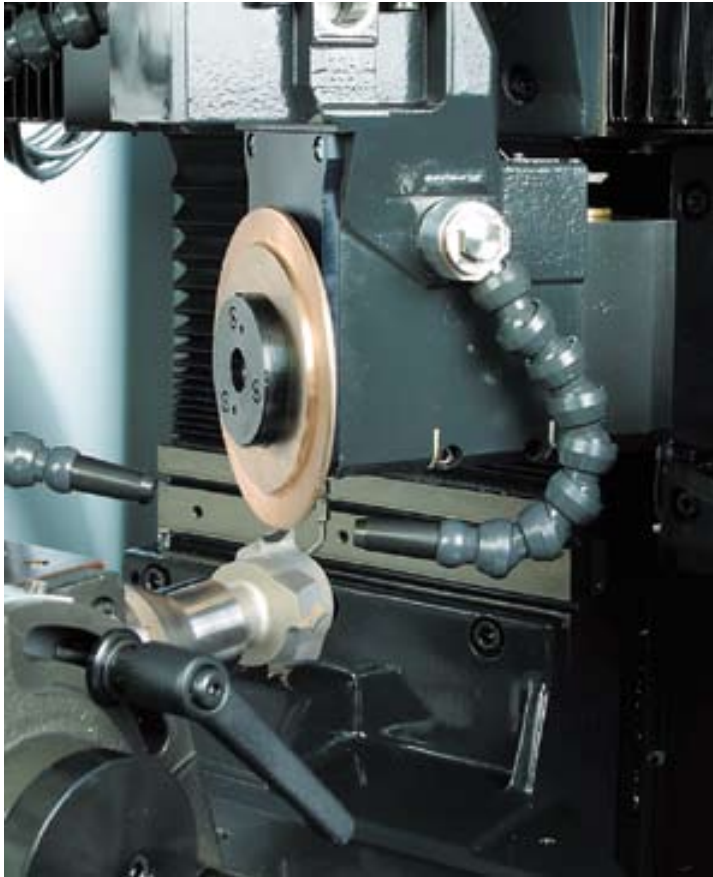
## The Concept.

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 axes and the powerful VOLLMER generator ensure top performance and optimum results.





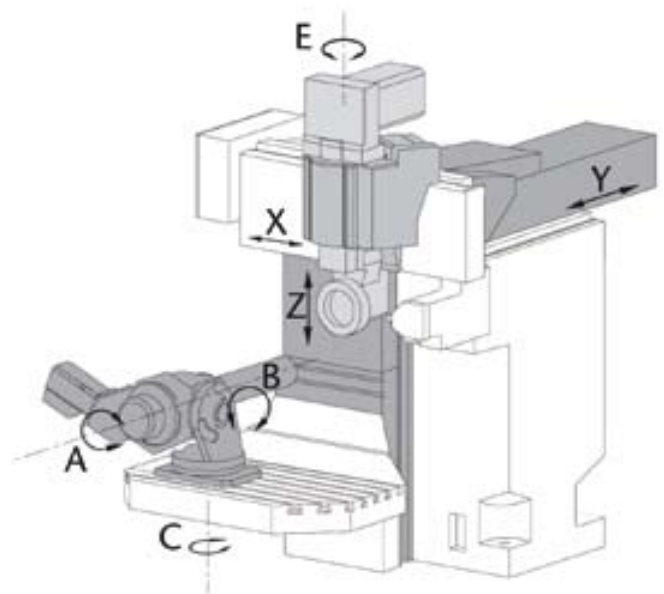
CNC-controlled E axis.

## CNC-controlled E-axis.

The VOLLMER QM eco select 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 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  $Ra < 0.2 \mu m$ .
- Flexibility in designing 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.



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



## The software packages. Individual flexibility.

Different software packages offer the possibility to adapt the QM eco select individually to each task. The standard version includes a basic package, and can be equipped with up to three additional software packages (hogger, profile tools, saw blades). This makes the QM eco select especially profitable and flexible, as the additional software packages can always be installed later on.



### BASIC PACKAGE



### HOGGER PACKAGE



### PROFILE PACKAGE



### SAW PACKAGE



#### Standard equipment

- Peripheral machining of milling tools (end mills / joint cutter)
- Simple program (linear machining in all common axial directions)
- Cylindrical erosion
- Laminate tool (plunging in / path operation)
- Full machining of milling tools (peripheral and face machining in one clamping)

#### Add-ons (optional)

- Compact hogger
- Radius hogger
- Profile hogger with plunging in method
- Profile hogger in path operation

- 4 path program peripheral electrode

- Full top machining of all common geometries
- Full side machining of all common geometries

## The technology.

Automatic measuring and eroding in one clamping operation.

A multitude of programs are available for the measuring and eroding production stages. Each standard program is supplemented with customer specific parameters and tool dimensions.



Eroding of a profile cutter with the peripheral rotary electrode.

## The Software.

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.



Measuring program.

## Functionality.

Simple, safe, and efficient with globally successful VOLLMER menu technology.

VOLLMER operational philosophy: Quick and simple up to maximum efficiency. That is why the globally successful VOLLMER menu technology provides short programming times and short training times, and therefore enables the fast and flexible use of operators. The whole system is managed by one control mechanism only and provides safety for data input through the greatest possible graphic support.



Eroding program.

## QM eco select

### 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
  - Bore diameter 10, 15, 60 mm
- Speed 80 to 1500 min<sup>-1</sup>
- 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-axis pivot range +/- 30°
  - C- axis pivot range 210°
  - E- axis pivot range +/- 70°
- 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

### Highlights:

- Optimum cost-performance ratio.
- Individual flexible software packages, therefore ideal for new entrants.
- Add-ons any time retrofittable.
- 5 simultaneously controlled CNC axes.
- Special VOLLMER eroding generator for the machining of PCD tools.
- Expansive complementary service and after-sales packages for this product.
- Well-known and proven VOLLMER operational philosophy.
- Reliable technology based on more than 20 years of experience in PCD Erosion industry.

### Dimensions

