



Product information

QX D400

Disc erosion machine for the machining
of PCD-tipped tools

QX D400

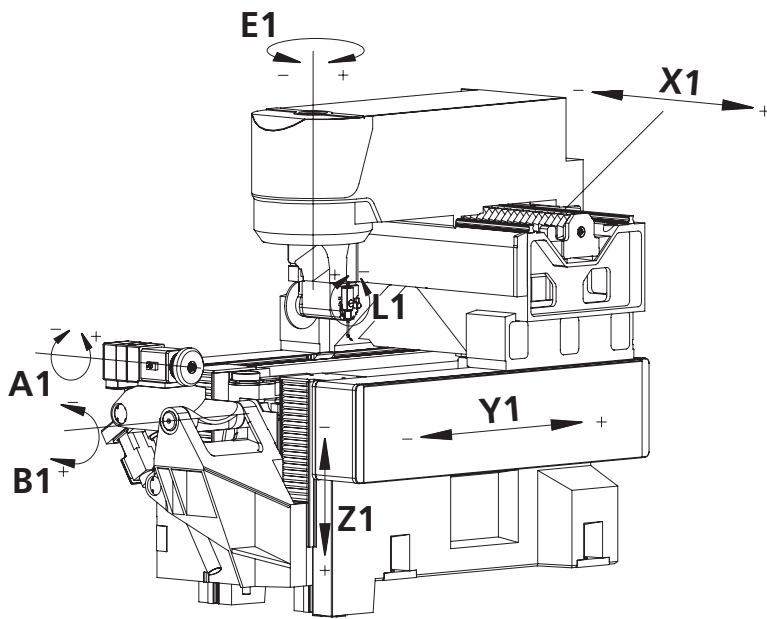
The new generation of high-tech machines for eroding and grinding PCD tools

The universal QX D400 machine for flexible processing of different PCD tools up to diameters of 400 mm and lengths of 400 mm. With six simultaneously controlled CNC-axes for all-in-one machining of even the most complex tools. Flexible use of different eroding and grinding wheels for machining PCD cutting edges as well as the tool body. This novel technology and extensive automation sets new standards of productivity and economy in production and service.

The new concept for increased productivity

State-of-the-art CNC and drive technologies form the basis of an economical and technically advanced machine concept. Manual intervention is no longer required due to the six CNC axes, and set-up times are reduced considerably. The new concept and arrangement of the axes guarantees optimum utilisation of the work area, as well as allowing the machining of left-hand and right-hand cutting tools with a single setting, even with the most complex of geometries.

The workpieces are measured fully-automatically in the machine. A significant reduction of non-productive times is attained as a result of the direct drive technology with optimised, speedy and overlapping movements.



B1-axis (swivel range +/-30 degrees): eroding of a cutter with a cup disc



E1-axis (swivel range 330 degrees): gauging of a shank-type tool, right-hand as well as left-hand cutting, in a single setting



E1-axis in a swivelled position: eroding of a left-hand hogger

High eroding output and precision

To achieve extremely high machining precision and surface quality the basic principle behind the QX D400 is the exceptionally rigid machine structure featuring a monolithic, mineral cast central block. Utmost accuracy is attained via automatic measuring of the workpiece geometry and subsequent compensation in the machining cycle.

Flexibility thanks to different eroding and grinding wheels

The use of different eroding and grinding wheels makes for highly effective work processes with the shortest possible piece times and the best possible surface quality. Eroding can be performed with cup wheels, peripheral or profile electrodes in order to optimise the geometry of the PCD cutting edge. Diamond or CBN grinding wheels can be used for machining the tool body, e.g. the second clearance angle of the tool cutting edge.



Trueing an eroding disc



Eroding of a router with a peripheral rotary electrode



Eroding of a profile cutter with the peripheral rotary electrode



Eroding of a reamer



Eroding of a finishing tool

Easy-to-handle control, menu-guided operation

The internationally successful VOLLMER menu technology guarantees comfortable and easy operation of the QX D400. Additional features: unrestricted programming in DIN format, human-machine-interface designed around Windows CE and future integration of Windows applications possible, also a 15-inch LCD-flat screen.

Automation

High eroding output with high flexibility, including fully-automatic changing of workpieces: a decisive advantage for productivity and cost-effectiveness.

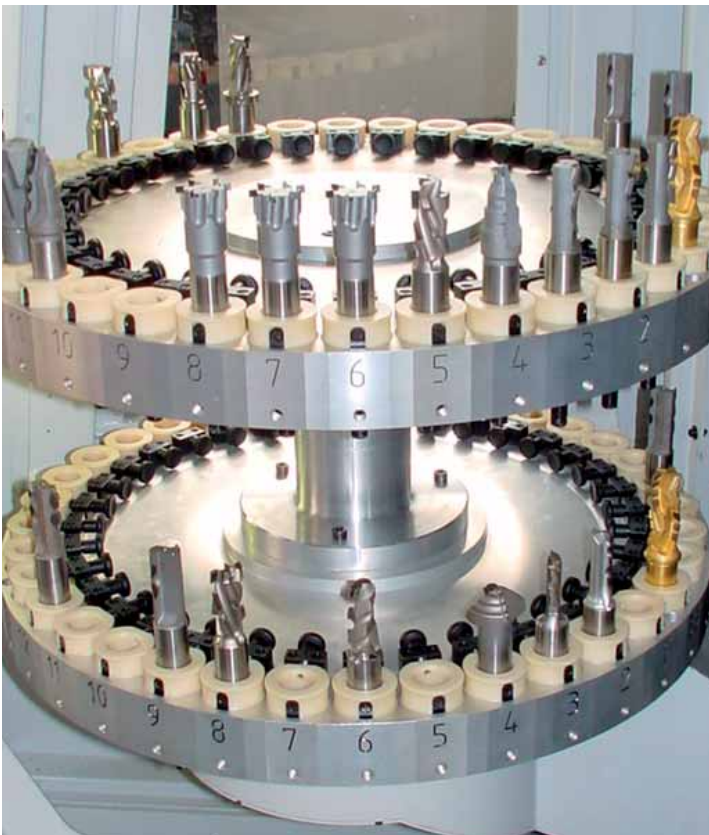
The workpiece magazine holds up to 72 tools, all of which can be subsequently machined automatically. Up to eight different rotary electrodes can be stored in the tool magazine, and from there can be exchanged automatically into the machining spindle. For fully-automatic 24-hour operation.



Control panel



Disc erosion machine with magazine



Double workpiece magazine with 72 (2 x 36) slots for shank-type tools



Magazine with 4 slots for large workpieces such as disc milling cutters (this magazine can also be designed as a double magazine with 8 slots)



Tool magazine with 6 slots for eroding and grinding wheels



Eroding wheel with clamping cone HSK 63F and feeder device for dielectric fluid



Eroding wheel with clamping cone HSK 63F and feeder device for dielectric fluid

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Technical data at a glance:

• Workpiece		
Outside diameter		up to 400 mm
Length		up to 400 mm
• Rotary electrode		
Face-rotary electrode		
Outside diameter		max. 125 mm
Bore diameter		60 mm
Height		40 mm
• Peripheral rotary electrode		
Outside diameter		max. 200 mm
Bore diameter		max. 50 mm
Width		10 mm
• Rotary electrode drive		
Speed		up to 2.500 min ⁻¹
Torque		6 Nm
• Traversing range		
X1-axis	730 mm	200 mm/sec
Y1-axis	840 mm	200 mm/sec
Z1-axis	500 mm	160 mm/sec
A1-axis	360°	90°/sec
B1-axis	+/- 30°	8°/sec
E1-axis	330°	180°/sec
• Cup grinding wheel		
Outer diameter		max. 125 mm
Bore diameter		max. 60 mm
• Peripheral grinding wheel		
Outer diameter		max. 200 mm
Bore diameter		max. 60 mm
Width		10 mm
• Coolant tank		240 l
• Electrical system		380/415/440 V 50 Hz 440 V 60 Hz or 200/220 V 60 Hz
• Connected load		approx. 8.4 kVA/6.7 kW
• Dimensions		2160 x 3435 x 2190 mm
• Weight (net)		7.800 kg

Trendsetting VOLLMER Technology

Universal machine for the eroding of various PCD tools up to 400 mm diameter and up to 400 mm length in production and service.

- Path interpolation simultaneously controlled in six CNC axes
- Direct drive technology
- Fully-automatic measuring in the machine and machining of left-hand and right-hand cutting tools in a single setting
- High machining and surface quality
- No manual resetting required
- Reduced non-productive times
- Fully-automatic change of up to 72 workpieces from the magazine
- Fully-automatic change of up to 8 machining tools from the magazine
- Magazine can also be subsequently retrofit
- Comfortable and particularly easy machine operation (VOLLMER menu technology and MMI in Windows CE technology)
- Unrestricted programming possibility in DIN format

Dimensions

