



EDG3
EDG5

OPTIMISED CYCLE TIME AND SURFACE FINISH

The EDG3 and EDG5 are ANCA's new highly efficient solutions for PCD, carbide (HM) and HSS tool manufacture and resharpening. Optimised for micro to large solid-tipped PCD drills and endmills along with shear profile tools, the ANCA EDG Range is a highly versatile platform with an integrated direct-driven dual erosion and grinding spindle, allowing supreme flexibility with hybrid machining in a single tool clamping.

EDG3 enables you to be competitive in the growing PCD markets, including: Electronics, Aerospace, CFRP composites, aluminium alloys, woodworking and other wide-ranging industries.

EDG5 is also optimised for grinding with full automation.

ANCA's flexible user-friendly ToolRoom and CIM3D software allows the creation of even the most complex tools with ease. The integrated CAD/CAM system with the latest generation erosion technologies allows you to meet the exacting requirements needed for the manufacture of all PCD tools.

ANCA
CNC MACHINES

EDG3 EDG5

The highly efficient solution for PCD, carbide (HM) and HSS tool manufacture and resharping.

ADVANTAGES

- New 12kW spindle option
- Superior surface quality
- Perfect cutting geometry
- Optimised for solid-tipped PCD helical endmills and drills
- Highly capable for brazed insert cutters
- Best-In-Class ANCA Motion SparX generator
- Dedicated ToolRoom EDG erosion application software
- Hybrid-machining Erosion and Grinding spindle
- 2 Wheel Pack Changer

SPARX GENERATOR



The all new ANCA Motion SparX generator enables two new power modes:

- **Extra-Rough** - for high efficiency roughing operations
- **Ultra-fine finish** - for polished surfaces < 0.1Ra
- Decreased cycle times for heavy roughing operations, including fluting operations for solid-tipped PCD helical endmills and drills, as well as roughing operations on brazed PCD inserts.
- Ability to erode all PCD types.
- Decreased surface roughness with Ultra-Fine optimised for tools requiring a very highly polished surface.
- Ability to erode small PCD drills 0.4mm in diameter.
- Ability to erode small PCD endmills < 1mm in diameter.

ELECTRODE SPARK DIGITISING

Electrode Spark Digitising utilises the generator and the EtherCAT servo system to accurately digitise electrode wheels inside the machine. This feature coupled to internal dressing allows for very accurate automated electrode dressing and wheel qualification < 0.002mm.

POWER ELECTRONICS

The new ANCA Motion SparX Erosion Generator uses the latest best-in-class semiconductor power electronics for Wide-bandgap switching speeds.

When compared to equivalent technologies, the Mega-Amp Per Pulse technology enables ANCA customers to broaden the power range they can access and utilize.

The ANCA Motion SparX Erosion Generator exhibits superior performance over the range of Extra-Heavy Roughing to Ultra-Fine Finishing operations, utilizing Pico-pulse technology for high energy-density ablation.

This "pulse precision" enables vastly superior controllability, providing our customers with optimised feedrates, superior surface quality and drastically reduced cycle times.

ADAPTIVE SPARK CONTROL (ASC)

Adaptive Spark Control (ASC) automatically monitors and adapts the energy level of every spark based on the material it is eroding (PCD, carbide or HSS).

ASC optimises the erosion process in real time leading to superior surface finish and stronger cutting edges. This produces a finished tools that are less prone to chipping, achieve longer tool life, less tool wear and lower overall tooling costs.

INTELLIGENT ADAPTIVE CONTROL (IAC)

Intelligent Adaptive Control (IAC) automatically monitors and actively controls the erosion gap distance and feedrate, in-process.

IAC adjusts and maintains the optimum spark gap distance and machine feedrate to increase the erosion speed and maintain the surface finish for all helical and shear tools.

This results in increased feedrates, minimum thermal damage, superior surface finish, increased MRR and decreased cycle time.

APPLICATIONS

The EDG3 is supplied with predefined generator settings and ToolRoom erosion software that make set-up and production quick and easy. Using the familiar layout of the ANCA ToolRoom interface, users can define an infinite variety of tooling and create their own custom generator settings, enabling supreme flexibility for any tool creation.

PCD TOOL TYPES

The new dedicated ANCA EDG ToolRoom Erosion software enables the creation of solid-tipped PCD helical endmills and drills, shear endmills and drills, profile tools, compression routers, saw blades, veined spiral tools and multi-step insert cutters - Tools to suit every market and application.

CONVENTIONAL PCD TOOLS

The application for PCD tooling is wide: Aerospace, Electronics, Automotive and Woodworking.

Speed and efficiency in production are of utmost importance in producing PCD tools. Utilising the new Extra-rough feature of the ANCA Motion Sparx Erosion Generator, conventional PCD tools can be manufactured quickly while maintaining ANCA's renowned quality and accuracy.

ANCA EDG3 and EDG5, with simultaneous path control in 5-axes and automated digitising allows for unrivalled tool performance and manufacture efficiency.

ANCA EDG Range has application software that can erode and grind all types of shear endmills, profile cutters, multi-insert tools and saw blades.

Benefits of conventional PCD tools:

- Wide variety of tool geometries
- Front, side and multi-insert cutters available
- Supreme wear resistance

HELICAL PCD ENDMILLS & DRILLS

- Solid-tipped
- Chevron
- Veined

Solid-tipped PCD tools allow complete freedom in tool geometry design: size, number of flutes, flute helix and hook angles, as well as end-face geometries can be completely customized to suit each application. Solid-tipped, veined and chevron PCD tools are superior where brazed tools become impractical or complex. Once reserved for solid carbide, many tool types can now be adapted to be manufactured with PCD.

EDG3 has application software that can erode and grind all types of PCD helical endmills (square, corner radius and ballnose) in addition to the already existing capability for helical drills and shear brazed inserts.

Benefits of solid-tipped PCD tools:

- Complete freedom of tool geometry
- Ease of manufacture
- Applications where brazing is impractical (< 6mm)
- Suitable for micro drills and endmills (0.4mm - 1mm)
- Supreme wear resistance all applications





TECHNICAL SPECIFICATIONS	EDG3	EDG5			
Machine structure	Single column ANCAcrete polymer concrete base	Single column ANCAcrete polymer concrete base			
Grinding Spindle	Direct Drive 10,000 RPM with HSK40F Taper 9kW (12HP) Peak 12kW (16 HP) Peak (option)	Direct Drive 10,000 RPM with HSK40F Taper 12kW (16 HP) Peak			
Spindle Type	Double Ended Induction	Double Ended Induction			
Wheel packs	2 (1 x Erode/Grind, 1 x Grind) 4 wheels per pack (Max)	2 (1 x Erode/Grind, 1 x Grind) 4 wheels per pack (Max)			
Grinding Wheels (Max)	203mm (8")	203mm (8")			
Workpiece Diameter (Max)	220 mm (8 ¾")	220 mm (8 ¾")			
Workpiece Length (Max)	275 mm (11")	275 mm (11")			
iView	Option	Option			
iBalance	Option	Option			
Dresser coolant	Option	Included			
Pneumatic Collet Actuator	Option	Included			
Loader	Option	Included			
Loader Type	ANCA FastLoad	ANCA FastLoad			
Tool Capacity with loader (Max)	156 x Ø6 mm (¼") 68 x Ø12 mm (½")	156 x Ø6 mm (¼") 68 x Ø12 mm (½")			
Drive system	Ballscrew Linear scales: X and Y axes	Ballscrew Linear scales: X and Y axes			
Dimensions	W 2160 mm (85") D 1530 mm (60") H 1990 mm (78")	W 2160 mm (85") D 1530 mm (60") H 1990 mm (78")			
Weight	4500 kg (9921 lb)	4500 kg (9921 lb)			
Electrical Power	13.2 KVA	13.2 KVA			
Machine Colours	RAL 7035 RAL 5008	RAL 7035 RAL 5008			
SERVO SYSTEM DATA					
CNC Details	ANCA Motion AMC5 CNC with Intel i7 processor, 64GB SSD, 8GB DDR3 RAM EtherCAT and USB connectivity				
Servo Control System	ANCA Motion AMD5x with EtherCAT Connectivity				
Erosion Generator Details	ANCA Motion AMD5x SparX Erosion Generator with EtherCAT Connectivity Pico-pulse Technology Adaptive Spark Control (ASC) Intelligent Adaptive Control (IAC) Automatic feedrate control Intelligent process optimisation				
MECHANICAL AXES	X-axis	Y-axis	Z-axis	C-axis	A-axis
Position Feedback Resolution	0.0001 mm 0.0000039"	0.0001 mm 0.0000039"	0.0001 mm 0.0000039"	0.0001°	0.0001°
Programming Resolution	0.001 mm 0.000039"	0.001 mm 0.000039"	0.001 mm 0.000039"	0.001°	0.001°
Travel	435 mm 17"	457 mm 18"	275 mm 10 ¾"	320°	360°

Note: ANCA reserve the right to alter or amend specifications without prior notice



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