

## Precision 3D Micro-EDM Machining for Miniature Parts

SX-series micro-EDM machines manufactured by Sarix S.A. have an innovative multi-axis-motion CNC controller. This feature, combined with the SX-MFPS microfine-pulse shape generator and a proprietary micro-EDM technology, enables the SX-200 and new SX-100 machine to open up new opportunities for smaller, deeper, and more precisely round holes and 3D micromachining. The machine series finds application in the automotive, aerospace, microelectronic, medical, and watchmaking industries.

The continuing miniaturization trend makes micromachining more and more important. Sarix is dedicated to bringing electrical discharge machining to this increasingly technically demanding field. SX-series equipment is ca-

pable of performing 3D multi-axis micro-EDMing, high-precision micro-EDM sinking, high-quality surface finishing down to 0.05 mm Ra on micromouldings, and microdrilling accurate to  $\pm 1 \mu\text{m}$ .

Featuring a user-friendly handheld CNC control, the SX series supports high productivity with integrated indexing and a c-axis. In addition, a built-in micro-wire EDM device allows automatic, hands-free shaping of electrodes.



**Sarix S.A.**

Losone, Switzerland  
 • For more information, circle #4

## High-Speed Machining of Large Workpieces

High-speed machining (HSM) was until recently restricted to 3 axes. Then Mikron introduced the HSM 400U, the world's first 5-axis HSM centre. Now, so that even larger workpieces can be machined, Mikron has developed the HSM



600U 5-axis machining centre. As with the HSM 400U, the rotating and swivelling axes of the HSM 600U are equipped with optimized direct-drive motors for high-dynamic simultaneous 5-axis machining of large, heavy tools and moulds.

To achieve high dynamics, innovative torque motor technology was employed in the 4th and 5th axes. Speeds to 360 rpm on the rotational axis and 90 rpm on the swivelling axis can be achieved. The swivel angle is  $+110^\circ/-30^\circ$ . The rotational axis is fast enough for milling. Rapid bearing control with a linear measuring scale on all axes ensures the highest precision, and dynamics are further enhanced by the Heidenhain iTNC530 control. High-precision surface quality on workpieces up to 120 kg is attributable to a patent-pending construction principle and the machine's rigidity.

Linear travel is 800 mm in the x-axis, 600 mm in y, and 500 mm in the z-dimension. A clamping area of 320 x 320 mm accommodates workpieces up to about 630 x 510 mm for machining. The ergonomically designed HSM 600U with pallet changer is ready for automation.

**Mikron AG**

Nidau, Switzerland  
 • For more information, circle #5

## Dielectric Fluids for Modern Processes

The young specialty company Steelfluid S.r.l. serves the Italian and European electroerosive machining markets by developing hydrocarbon-based synthetic dielectric fluids designed to optimize operative conditions for electrical discharge machining and to improve health and safety conditions for machine operators.



The company provides end users with skilled technical assistance. In researching and formulating its state-of-the-art machining fluids, Steelfluid S.r.l. collaborates with tooling machine manufacturers in different countries to determine what product characteristics will best serve the latest processing technologies, such as low evaporation rate.

Steelfluid is introducing a new generation of fluids at EMO 2003, which are specially designed to work with recent innovations in the wire EDM process targeted at achieving very low surface roughness. The traditional wire EDM method of employing demineralized water does not meet the operative demands now placed on it by the process. In response to the changing requirements of EDM processing, Steelfluid has developed new dielectric fluids more suitable for sinking wire EDM. These are EDMfluid W60, W85, and, officially introduced at EMO, W100.

**Steelfluid S.r.l.**

Genoa, Italy  
 • For more information, circle #6