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UPG 80 CNC-2C

4-Axis Ultra-Precision Processing Center



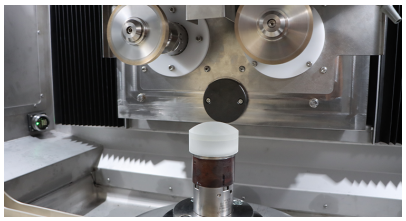
The UPG 80 CNC-2C is ideal for fine and ultra-precision grinding of optical surfaces and brittle-hard materials. With minimal subsurface damage, it significantly reduces polishing effort and time while ensuring excellent form accuracy. Precise axis guidance, a vibration-dampened design, and high-quality spindle bearings guarantee outstanding surface form and quality. Typical applications include semiconductor, SiC processing, aerospace, laser optics, and precision optics.

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Datos técnicos

	UPG 80 CNC-2C
Working Range	Extension possible after individual workspace inspection
Working Range Diameter	10 mm - 80 mm
Working Range Diameter (Aspheres)	10 mm - 80 mm
Travel C	0 ° - 360 °
Travel X	0 mm - 320 mm
Travel Y	0 mm - 120 mm
Travel Z	0 mm - 160 mm
Hydrostatic Tool Spindle	Velocidad de giro: max. 13,000 rpm; Interfaz: Different options available
Tool Spindle with Roller Bearings	Velocidad de giro: max. 20,000 rpm; Interfaz: Different options available
Workpiece Spindle	Velocidad de giro: max. 1500 rpm; Interfaz: Different options available
Dimensiones	Ancho: 1800 mm, Altura: 2400 mm, Profundidad: 2500 mm
Peso (aprox.)	5000 kg





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Características destacadas

- 4-axis ultra-precision grinding machine for fine and ultra-fine grinding of optical surfaces and workpieces made of brittle-hard materials
- Two grinding spindles and one workpiece spindle for flexible machining strategies and the use of various grinding processes
- Machine base made of granite for maximum rigidity, excellent vibration damping and thermal stability
- Rolling bearing mounted fine grinding spindle and hydrostatically mounted ultra-fine grinding spindle for superior surface quality and process reliability
- Hydrostatic guidance in all linear and rotary axes ensures excellent and smooth running, free from wear and maximum positioning accuracy
- Outstanding surface form accuracy and extremely low surface roughness
- Capability for pre-grinding, fine grinding, and ultra-fine grinding with peripheral grinding wheels in a single machine
- Integrated dressing cycle for consistent machining quality and minimized downtime
- Depending on the process, ultra-precision grinding can already deliver surfaces suitable for interferometric measurement
- Geometries and workpieces: Spheres, aspheres, freeform surfaces, cylindrical surfaces (A-toric, aspheric) and other components made of hard and brittle materials
- Typical applications: Semiconductor technology, silicon carbide machining, aerospace and astrotechnology, laser optics manufacturing, and precision optics production

Ventajas del sistema

- Precise axis guidance, vibration-dampened machine design and high-quality spindle bearings
- Excellent surface form accuracy and low surface roughness
- Extremely low subsurface damage (<6 µm), resulting in significantly reduced polishing times while maintaining high shape retention
- Minimal polishing removal rates due to low subsurface damage
- Optimized process times with maximum dimensional and form accuracy

Características de rendimiento

- **Spherical Optics:**
  Diameter 10–80 mm, maximum workpiece height 65 mm. Form grinding with peripheral grinding wheels. (depending on tool diameter)
- **Aspherical Optics:**
  Diameter 10–80 mm, maximum workpiece height 30–60 mm. Form grinding in single-point mode with peripheral grinding wheels. (depending on tool diameter)
- **Machining Modes:** Raster or spiral grinding with peripheral grinding wheels. (4D Spiral Mode as an option)

Opciones

- Required Accessories: Hydraulic unit for spindles, 4-circuit heat exchanger, chiller unit, coolant tank
- Available workpiece holders and clamping systems options: HD25 precision cementing pieces, HD25 vacuum holders, HD25 collets
- Spindle configuration: 2 hydrostatic tool spindles
- Measuring probe for workpiece (for center thickness and position)
- Measuring probe for tool
- SR 80 automatic loading system

Valid: {10.11.2025}, subject to change without notice

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