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UPG 500 CNC

4-Axis Ultra-Precision Processing Center for Optics up to Ø 500 mm

The Ultra-Precision Grinding Machine UPG 500 CNC was especially designed for processing of high-end optics up to diameter 500 mm. Whether spheres, aspheres, or freeform surfaces, the UPG 500 CNC offers highest precision grinding (all axes mounted hydrostatically).

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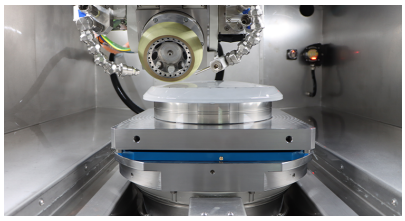
Technical Data



	UPG 500 CNC
Application	OptoTech 4-Axis Ultra-Precision Processing Centre
Working Range Diameter	0 mm - 500 mm
Working Range Workpiece Height	0 mm - 252 mm
Travel C	0 ° - 360 °
Travel X	-250 mm - 250 mm
Travel Y	-270 mm - 240 mm
Travel Z	0 mm - 300 mm
Amount of Axes	4 (X, Y, Z, C)
Control	Siemens Sinumerik 840 Digital Solution Line
Free Periphery Diameter	max. 500 mm
Tool Diameter	60 - 150 mm
Tool Spindle	Speed: 3500 – 13000 rpm; Drive: Build-in Synchromotor
Workpiece Spindle	Speed: 0 - 350 rpm; Drive: Torque Drive; Interface: Flange (Different Chucks / Clamping Systems available as an option)
Vacuum	-0.7 bar
Air Pressure Requirement	8 bar
Power Requirement (others on request)	40 kVA
Dimensions	Width: 3325 mm, Height: 2960 mm, Depth: 3550 mm
Weight (approx.)	15500 kg
Disclaimer	All data are subject to change without notice. Please verify details with OptoTech.

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Highlights

- The Ultra-Precision Grinding Machine UPG 500 CNC was especially designed for processing of high-end optics up to diameter 500 mm
- Whether spheres, aspheres, or freeform surfaces, the UPG 500 CNC offers highest precision grinding (all axes mounted hydrostatically) combined with integrated high precision measuring technology (as an option)
- This compact and high efficient design allows an optimal production of all important future parts in area of ASTRO-Optics, high-end optics for the semiconductor industry, and space technology
- Machine base made of granite for highest rigidity
- 4 CNC-Axes for maximum flexibility
- Hydrostatic guide ways
- High dynamic digital servo drives with two primary parts in all axes
- Ultra precise laserscales in all axes
- Grinding spindle for reception of the periphery wheel (form tool) pre-grinding at contour draw. Arrangement of the grinding spindle 30° to the horizontal direction
- Siemens Sinumerik One controller with OptoTech user interface

Performance Characteristics

Grinding Cycles: Periphery grinding in spiral- or- raster mode of spherical, aspherical and free form surfaces
Dressing Cycles: Dressing cycle for form tools for fine grinding

Options

- Integrated measuring technology
- Grinding tools
- Different clamping systems
- Coolant tanks
- Precision chilling system for cooling the axe- and spindle drives and the hydraulic aggregate
- Hydraulic aggregate to supply the hydrostatic guide ways

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