

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).



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.





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