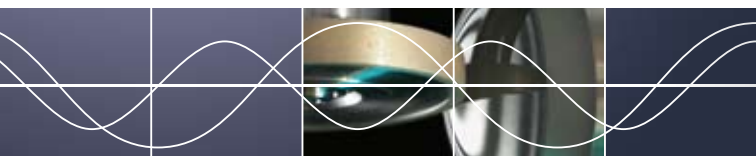


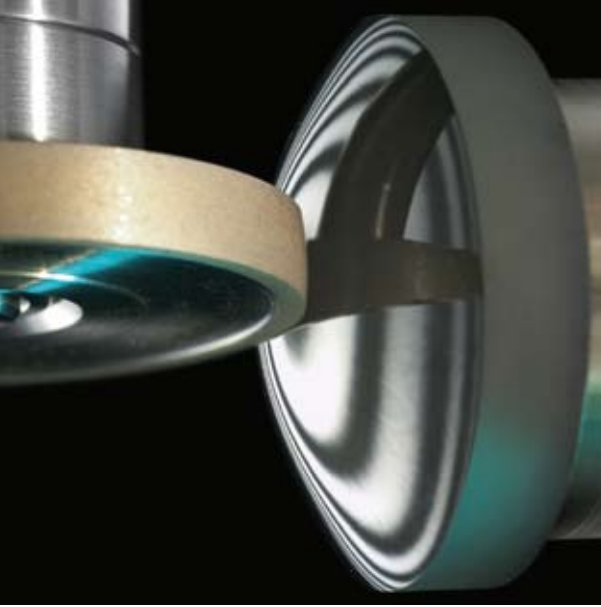


Surfacings Center SCG 600

Grinding of large flats, spheres and aspheres



Fascination for Innovation



Introducing the Surfacing Center SCG 600

For large optics in industrial, scientific, and space applications precision grinding is the undisputed manufacturing technology of choice.

The Schneider Surfacing Center SCG 600 delivers a new level of quality and accuracy when grinding such large flats and long-radius spheres. The fabricated lenses can have impressive diameters up to 950 mm and even aspheres can be generated with diameters up to 520 mm.

The highly integrated SCG 600 platform combines the three key product features: double-spindle technology, automated tooling, and on-board measuring technique. The precision grinding technology can be augmented by edge processing and drilling options. The unique combination of these features ensures safe and very efficient processing even of complex parts.



Solid foundation

A very stiff cast-iron base forms the rock-solid foundation for this impressive machine. No less than six axes and three direct drive spindles create the freedom and precision of motion to accomplish the challenging processing tasks. The kinematics has been specifically optimized to process large flats and spheres to very tight tolerances.

The modern SINUMERIK 840 Digital controller system enables high precision and excellent dynamics. This state-of-the-art controller drives the quality-defining AC servo drives.

Double-spindle technology

A special advantage of the SCG 600 is the double-spindle system. Two independent tool spindles with direct drives facilitate a rare combination of flexibility and precision in one unit. While one tool spindle is supplied with various tools from the automated tool changer, the second tool spindle works with a stationary mounted tool which guarantees perfect surface quality, form accuracy, and process stability.

Automated tooling

To run complex multi-step processing jobs with ease, the automated tool changer handles up to three tools. Without operator intervention, the complex grinding tasks consisting of several surface and edge processing steps are performed consistently. Auxiliary times are reduced, too. The result: excellent geometrical accuracy with very competitive cycle times. In addition to processing flat and spherical surfaces, aspheres can be generated in the cup wheel mode, broadening the product range that can be fabricated on this machine.

In-process metrology

The consistent high performance and tight process control is accomplished with a comprehensive integrated metrology package.

The process control compensates for tool wear and process drift. The tooling is monitored by no less than three control systems:

- The **Tool Control** recognizes the grinding tools.
- The **Feed Control** optimizes the first touch of the tool spindles and the load-dependent grinding process.
- The **Balance Control** allows the operator to control and optimize the smooth run of the tools resulting in significantly reduced subsurface damage of the valuable work pieces.

The graphical user interface of the machine helps the operator to complete the computer-assisted setup with ease and to run the machine smoothly.

Service is supported by an intelligent analysis system with remote diagnostic and corrections are networked into the machine.

Working with the Surfacing Center SCG 600, no customer order will be too big for you.



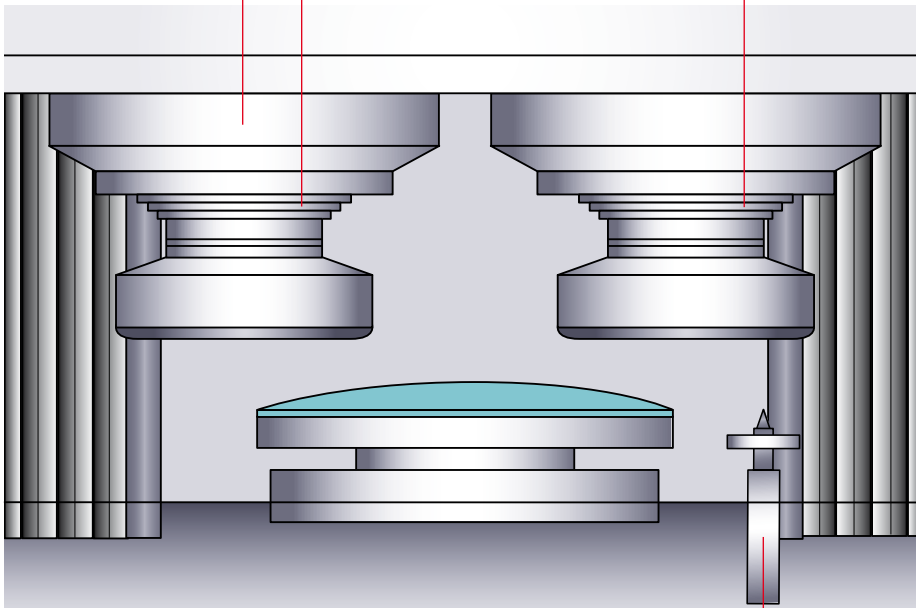
Work space features of the SCG 600

Feed Control

- First-touch technology ensures minimal air cutting passes.
- Load-dependent feed rate control

Balance Control

- Control and optimization of the grinding tools ensures smooth runs.



Tools Control

- CNC-controlled recognition of the grinding tools
- Significant reduction of the setup time
- Ensures flawless tool handling

Benefits

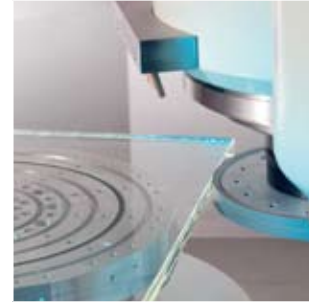
- Manufacturing of large flats, spheres, and aspheres
- High quality and form accuracy
- Extended capabilities for processing of special geometries
- Automated multi-step processing
- Integrated process control for high process stability
- Automated tool balancing for minimal subsurface damage
- Computer-assisted setup
- Graphical user interface
- Intelligent remote diagnostics
- Automated central lubrication



The two tool spindles enable rough and fine grinding in one process cycle including edge processing.



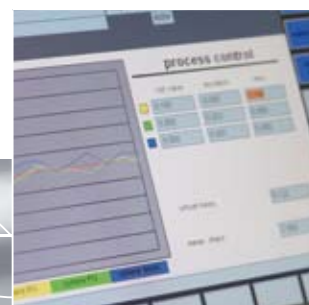
The automated tool changer allows combinations of standard and form tools in one processing cycle.



The list of processing options includes edging, centering, drilling, truncating as well as fabrication of flats and special geometries.



The cup wheel mode is used for processing flat, spherical, and aspherical surfaces.



The process control allows the monitoring of the tool wear and its fully automated compensation.





technical data		
working range	max. \emptyset	640 mm with edge processing 950 mm without edge processing 520 mm for aspheres
working range	radius	1500 mm – flat
number of axes		5+1 (X, Y1, Y2, Z, B, Q)
feed rate		
X-axis		0.01 – 15000 mm/min
Y-axis		0.01 – 10000 mm/min
Z-axis		0.01 – 15000 mm/min
positioning and repeat accuracy		
X-, Y-, Z-axis		+/- 0.001 mm
feed rate B-axis		0.01 – 360 °/min
positioning and repeat accuracy		
B-axis		+/- 4"
tool spindle connection		customized HSK 80 A
tool spindle speed range		5 – 3000 min ⁻¹
workpiece spindle connection flange	\emptyset	308 mm
workpiece spindle speed range		0 – 100 min ⁻¹
power requirement		62 kW
air requirement	min.	6 bar (90 psi)
vacuum requirement		0.6 bar (9 psi)
weight machine		11000 kg (24250 lb.)
dimensions (w x h x d)		2930 (3080 w/tool changer) x 2450 x 2460 mm (116 [122 w/tool changer] x 97 x 97 inches)

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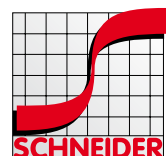
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