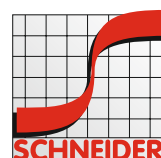
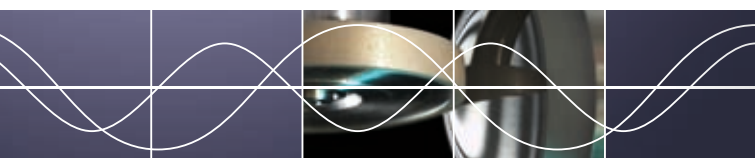


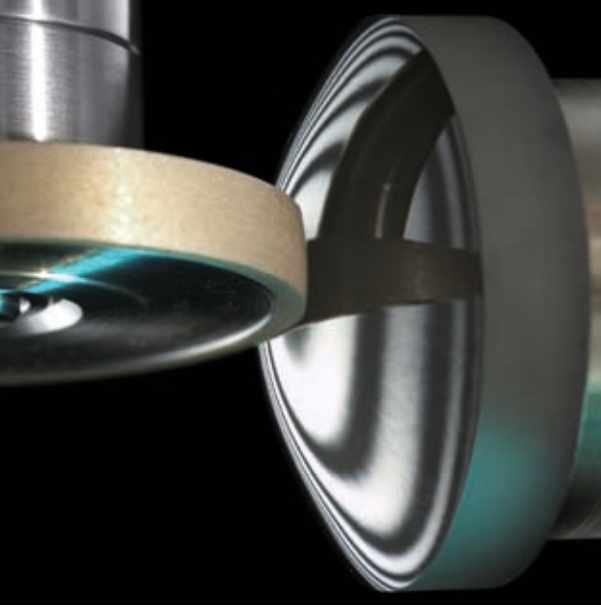


# Spheroline<sup>®</sup> SLG 50

Spherical grinding – fast and precise



Fascination for Innovation



## Introducing the Spheroline® SLG 50

The Spheroline SLG 50 is a modern CNC controlled grinding machine for the efficient production of high-quality custom and stock optics. The machine offers an optimal combination of high lens surface quality, process flexibility and economical operation.

A choice of three different basic versions enables optimal processing in virtual every production environment. The optimized combination of multiple tool spindles together with a comprehensive package of in-process diagnostic tools result in exceptional benefits for the customer.



### Proven design.

The basis of the SLG 50 is a vibration-optimized cast-iron machine bed specifically designed for high stiffness and stability. On top of the bed rests the patented kinematics with the workpiece and tool axes which are centrally and continuously lubricated. The inherently stable design of the machine bed assures consistent high quality and form accuracy.

The modern SINUMERIK 840 Digital controller system in conjunction with the quality-defining AC servo drives enable high precision and excellent dynamics of the lens processing.

A digital spherometer linked to the CNC controller allows the precise control of the sagittal height in all three axes. This 3D process optimization guarantees an optimal grinding despite different radii of blank and finished lens.

A graphical user interface assists the operator for easy and fast completion of the setup and communication needs of the SLG 50. During setup the tools can easily be changed using the hydro expansion technology.

### Fine. Finer. Finest.

Up to three tool spindles and two workpiece spindles give you the freedom to arrange your process to your individual needs.

The basic version **S2/1** enables you to rough- and fine-grind your lenses with two tool spindles in one process cycle. The tool spindles allow for automated multi-step processing. One spindle does the rough grinding, including centering and beveling, the second spindle takes care of the fine grinding. The high reproducibility and quality of the processing allows the fabricating of lenses even if no test glass is available – perfect for the flexible production of small batch sizes.

With the version **S3/1** the grinding is brought to the finest level – ready for a first interferometric check. The additional third tool spindle is an air-bearing spindle to meet the highest quality requirements. You can also use your choice of three different tool spindles to increase your flexibility in small-batch processing without a disruptive tool change.

The version **2/2** has its strength in the fully automated two-side grinding. The complete grinding of a lens in one uninterrupted workflow enables the economical production of medium and large batches. The two-side grinding becomes possible by the implementation of a second workpiece spindle and an integrated alignment and flip-over station.

All three versions come with an optional integrated automation which includes automatic lens detection, automatic setup cycles and multi-purpose workpiece magazines. Your hands and mind are free to focus on the next step in your work schedule.

### On-board metrology

One of the prominent features of the SLG 50 is the integrated measurement package which eliminates the need for frequent operator adjustments and allows for tighter process control. From the start, the diagnostic system assists the manual or automated operations.

The automated **Tool Control** guarantees fast, precise and reliable tool setup. Moreover, the wear behavior is monitored and the risk of a crash is reduced by using this CNC-controlled gauge.

Using the **Feed Control** and its first-touch technology, the air cutting time during the tool approach is reduced to a minimum – saving valuable process time. The Feed Control also optimizes the process during grinding by adjusting the feed rate of the tool with respect to the cutting conditions.

The **CT Control** measures the center thickness of the workpiece automatically. This reduces the setup time and guarantees a consistent lens-to-lens quality. The fully automated CT Control feature also guarantees that a given setup of the various process steps is permanently maintained and that tool wear is compensated.

### Networking

Get your SLG 50 grinding machine connected to your network and you will further enhance the process performance.

With an online connection to the **SCHNEIDER Optical Technology (SOT)** software you enjoy an easy and fast data exchange for setup and operation. Service can also be considerably accelerated by use of the remote-diagnostic tool.

The processing capability and the widely automated operation of the SLG 50 make this machine a perfect mate for SCHNEIDER polishers of the Spheroline SLP 50 series.



*The CT Control guarantees fast and precise setup as a prerequisite for the integrated process control.*

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



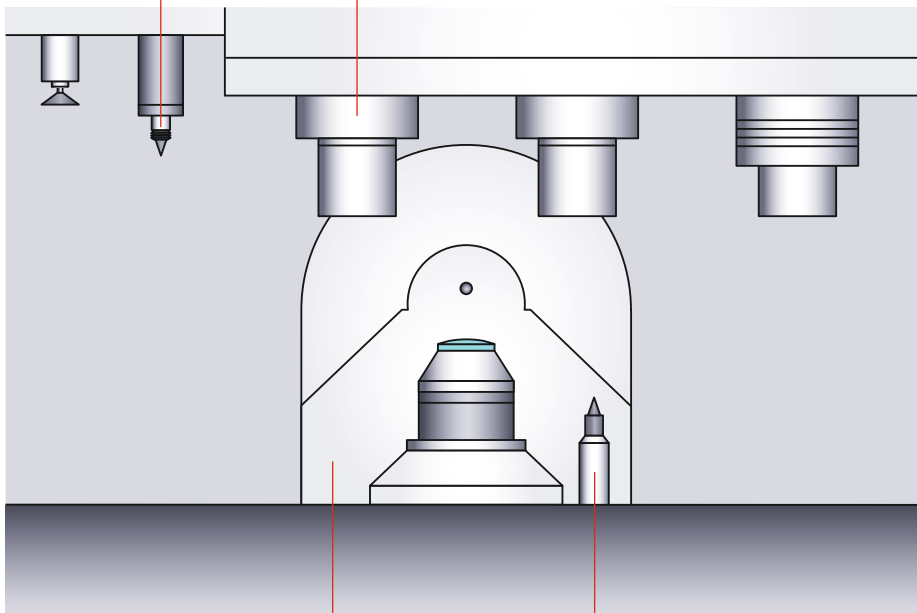
## Work space features of the SLG 50

### **CT Control**

- CNC-controlled measurements ensure precise center thickness control.
- Reduction of setup times
- Process control

### **Feed Control**

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



### **Tool Control**

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

### **Kinematics**

- Manufactured on a cast-iron bed, the Multi-spindle technology enables high surface quality.

### Benefits

- Grinding of spheres with high quality and form accuracy
- Flexible production of small batches (version S2/1 or S3/1)
- Automated two-sided processing (version S2/2)
- Automated multi-step processing including grinding, centering and beveling
- Integrated process control
- Computer-assisted setup
- Graphical user interface
- Intelligent analysis system
- Intelligent remote diagnostics
- Central lubrication
- Low cost of ownership



*Two tool spindles of the 2/1 version enable rough and fine grinding in one process cycle including centering and beveling.*



*The third tool spindle of the 3/1 version, a high frequency air bearing spindle, allows for high-quality finish grinding.*



*The S2/2 version with two tool and two workpiece spindles is the best choice for complete two-side processing of larger batches.*



*The CNC-controlled automation enables an efficient automated production even for small batches.*



*For best use of the SLG 50, we offer a wide range of high-quality tools and consumables.*





technical data		
working range (max. diameter)	spherical	60 mm (75 mm with restrictions)
	aspherical	60 mm (80 mm with restrictions)
	S2/1 S3/1 with automation	60 mm (version S3/1: 50 mm)
working range	radius	1 mm – flat
number of axes		4+1 (X, Z, B, Y, Q)
feed rate		
X-axis		0.01 – 10 000 mm/min
Z-axis		0.01 – 15 000 mm/min
positioning and repeat accuracy		
X-, Z-axis		+/- 0.001 mm
feed rate		
B-axis		0.01 – 3 000 °/min
positioning and repeat accuracy		
B-axis		+/- 4"
tool spindle connection		12 – 25 HD 6 x 20 collet (HF spindle)
speed range tool spindle		5 000 – 18 000 min <sup>-1</sup> 20 000 – 80 000 min <sup>-1</sup> (HF spindle)
workpiece spindle connection flange	∅	60 mm
speed range workpiece spindle		25 – 2 000 min <sup>-1</sup>
power requirement		5.5 kW
compressed air supply	min.	5 bar (75 psi)
vacuum	min.	0.6 bar (9 psi)
weight		1 400 kg (3 087 lb.)
dimensions (w x h x d)		2 220 x 1 900 x 1 360 mm (88 x 75 x 54 inches)

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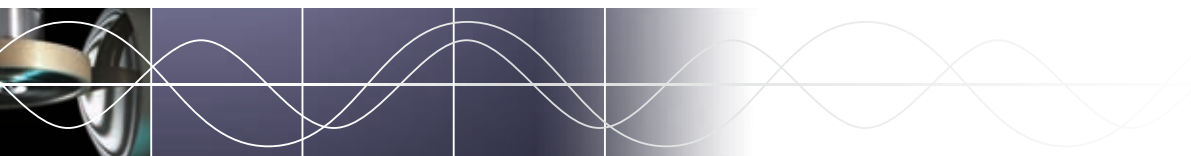
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