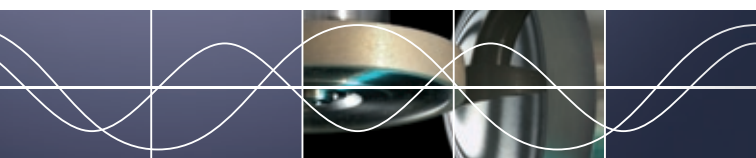


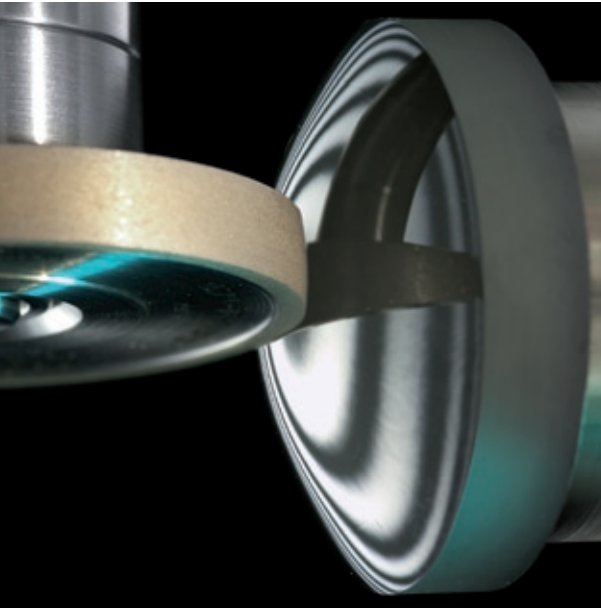


# Spheroline<sup>®</sup> SLG 120

Advanced grinding of spheres



Fascination for Innovation



## Introducing the Spheroline® SLG 120

The new Spheroline® processing center SLG 120 addresses the high requirements for precision manufacturing of spherical lenses. With a large number of installations of the predecessor world wide, we are building on a very successful and customer-accepted concept. Our focus for the new SLG 120 has been to further improve the lens quality as well as to reduce the cost of ownership.

The combination of double-spindle technology, automated tool changing and a comprehensive package of in-process diagnostics have resulted in a unique composite of benefits for the customer. The SLG 120 offers the choice of two different configurations which are based on the same state-of-the-art machine concept:



For production environments with a wide product portfolio, but small batch sizes, the machine version S2/1 with two tool spindles, automated tool detection and tool changer is optimal. Using these features, numerous process steps can be individually combined into one coherent production flow with ease.

For a fully-automated production of large batches, the machine version S2/2 is the perfect choice. In addition to the S2/1 version, this machine configuration comes with a second workpiece spindle allowing an automated two-sided lens processing.

Both versions of the SLG 120 have an automated lens-handling system including multi-purpose work piece magazines and automated lens detection.

#### **Solid base**

The basis of the SLG 120 is a polymer-concrete machine bed that keeps vibrations at the absolute minimum. On top of the bed rests the kinematics with the four axes which are centrally and continuously lubricated. The inherently stable design of the machine bed assures consistent high quality and form accuracy.

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

A CNC-integrated digital spherometer enables the automated control of the sagittal height in all three axes. The 3D process optimization allows an optimal grinding despite different radii of blank and finished lens.

#### **Automated double-spindle technology**

The two tool spindles in combination with the integrated tool changer allow an automated multi-step processing. One spindle does the rough grinding, including centering and beveling, the second spindle takes care of the fine grinding. Working with the automated version S2/2, the two tool spindles can be used for a complete 2-sided processing of a lens

The always included automated tool changer does not require any operator intervention during multi-step processing tasks. The tool changer handles up to eight tools, making virtually any processing job hands-free.

The multi-step grinding process enables a very fine quality – ready for first interferometric checks. 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.

#### **Complete on-board metrology**

One of the striking features of the SLG 120 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.

#### **Data communication**

Interfacing to an Ethernet network connection and to the SCHNEIDER Technology Software, enables the transfer of fast and effective data exchange for setup and operation. Service is considerably accelerated by use of the remote-diagnostic tool.

At the machine base, a graphical user interface assists the operator for easy and fast completion of communication needs with the SLG 120.

The processing capability and the widely automated operation of the SLG 120 make this machine a perfect mate for one of the SCHNEIDER polishers of the Spheroline® SLP 120 series.



*For best use of the SLG 120, we offer a wide range of high-quality tools and consumables.*

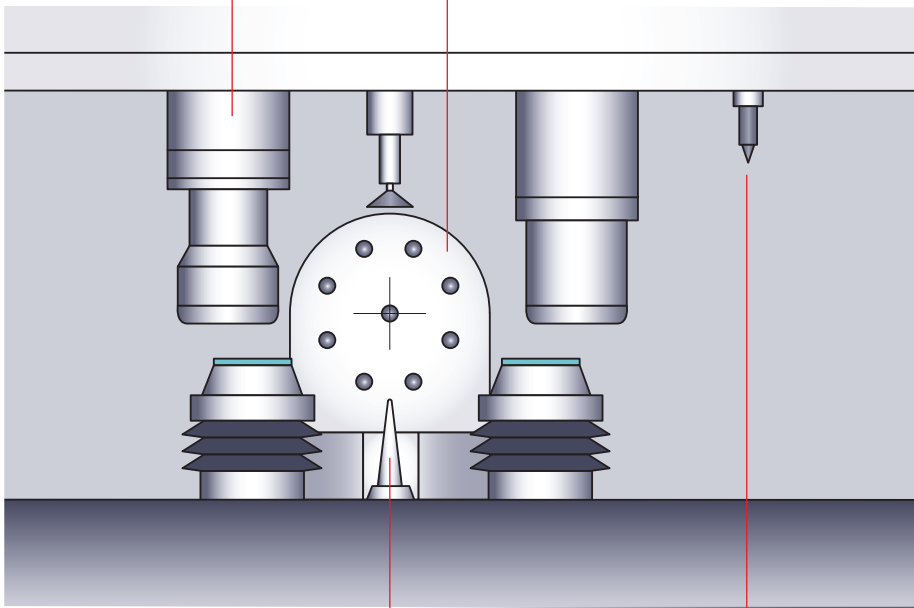
## Work space features of the SLG 120

### **Feed Control**

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

### **Best kinematics**

- Manufactured on a polymer concrete bed, the double-spindle technology enables highest surface quality.



### **Tool Control**

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

### **CT Control**

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

### Benefits

- Grinding of spheres with high quality and form accuracy
- Flexible production of small batches (version S2/1)
- 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 remote diagnostics
- Low cost of ownership
- Automated central lubrication



*The CNC controlled tool changer allows multiple step processing.*



*Two tool spindles enable rough and fine grinding in one process cycle including centering and beveling.*



*An optional second workpiece spindle allows a complete two-sided processing.*



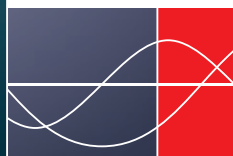
*The CT Control guarantees fast and precise setup as a prerequisite for the integrated process control.*



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



*The machine rests on a very stiff and vibration-damped polymer concrete bed.*







technical data			
working range (max. diameter)	S2/1	spherical	125 mm (140 mm with restrictions)
	S2/2 with automation	spherical	125 mm (140 mm with restrictions) 100 mm
working range		radius	10 mm – flat
number of axes	4+1 (X, Z, B, Y, Q)		
feed rate X-, Z-axis	0.01 – 15000 mm/min (optional 30000 mm/min)		
positioning and repeat accuracy X-, Z-axis	+/- 0.001 mm		
feed rate B-axis	0.01 – 4300 °/min		
positioning and repeat accuracy B-axis	+/- 4"		
tool spindle connection	25 x 42 HD and HSK-A40		
tool spindle speed range	5000 – 15000 min <sup>-1</sup> 2600 – 8600 min <sup>-1</sup>		
workpiece spindle connection flange	∅	80 mm	
workpiece spindle speed range	25 – 1500 min <sup>-1</sup>		
power requirement	14 kW		
air requirement	min.	5 bar (75 psi)	
vacuum requirement	0.6 bar (9 psi)		
weight machine	2100 kg (4620 lb.)		
dimensions (w x d x h)	2015 x 1975 x 1545 mm (80 x 78 x 61 inches)		

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