

AGATHON

SWITZERLAND

255 CL

Highly precise



Flexible 4-axis Centerless cylindrical grinding machine
delivering high productivity

Machine design

Swiss quality is our tradition. Since 1965, AGATHON manufactures Centerless grinding machines.

As a Swiss company, we understand what our customers expect from us: quality, accuracy, on-time delivery and innovation.

Range of application

The AGATHON 255 CL is a full-CNC Centerless grinding machine, highly accurate, and covers a wide range of applications. With the modern machine design and specially developed grinding processes, the 255 CL is best suited for demanding grinding tasks of special materials such as tungsten carbide, HSS, ceramics, glass as well as all kinds of steel and all other materials that require grinding.

The machine can be used for workpiece diameters that range from 0.5 to 30mm and a length of up to 125 mm with the plunge grinding method. Depending on the workpiece geometry and dimensions, multiple workpieces can be processed simultaneously. The workpieces can also be machined with through-feed grinding as well as peel- and concentric grinding methods.

Innovative 4-axis concept

The machine's innovation lies in the 4-axis concept. The axes are independent and are decoupled from each other. The traverse axes are built above the grinding axes as a bridge and mounted directly to the machine base. This prevents the possible sum of errors typically seen with conventional cross-slide technique.

Modern and user-friendly control

The 255 CL is equipped with the well-proven standard CNC control SINUMERIK 840D. AGATHON has developed a user interface (HMI) which guides operators easily through menu options using text and graphics to facilitate the operation and the retooling of the machine. A "DXF-File-Importer" option is available for complex dressing contours. For a contemporary and professional customer support, AGATHON makes the possibility of remote diagnostics via "Teleservice" available.

Modern security concept

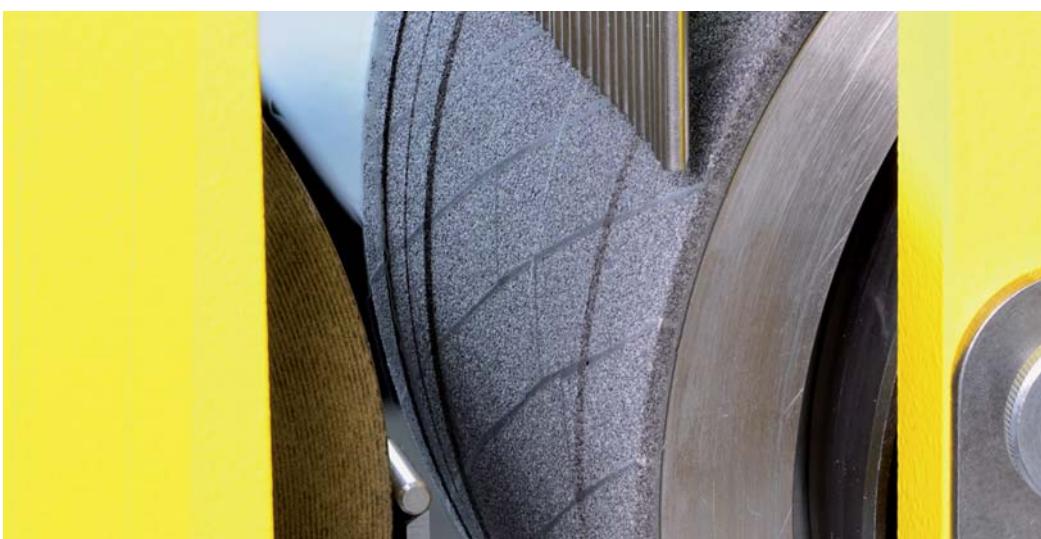
Equipped with a full enclosure, and together with the modern Safety-Integrated concept of the control, the machine meets all relevant safety standards and CE standards.

Main application areas

- Drive engineering
- Precision engineering
- Medical / Dental technology
- Automotive engineering
- Hydraulic / Pneumatic systems
- Tools



Siemens 840 D control

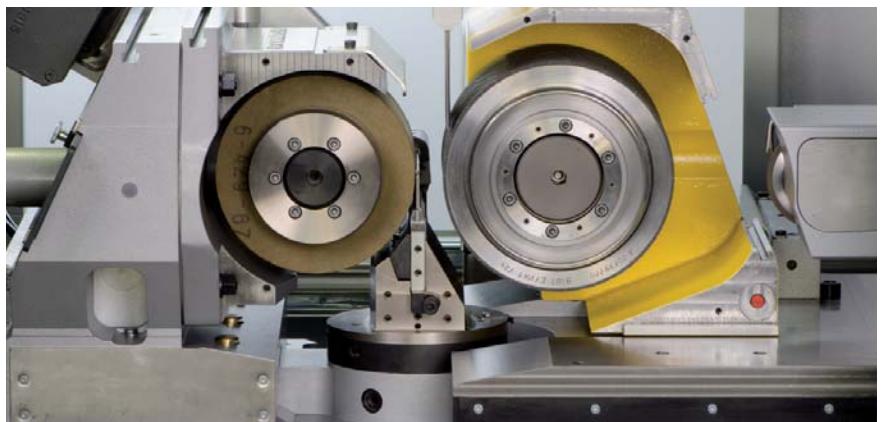


CBN grinding

Simple changeovers

The 255 CL is characterized by high flexibility and simple, time efficient changeovers. The grinding and control wheels can easily and quickly be changed manually without the use of any lifting equipment and stopping devices.

Besides high-volume production, this machine is also suited for small and medium workpiece quantities.



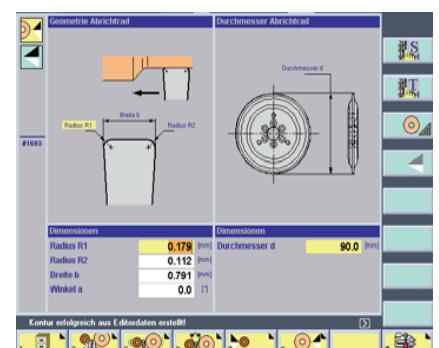
Grinding area open

Precise CNC dressing system

The CNC dressing system for grinding and control wheel provides a straightness of < 1 µm over 125 mm. The precision is achieved through a reference template. When using a special rotating diamond dressing disc ceramic bonded diamond grinding wheels and CBN grinding wheels can also be dressed accurately and efficiently.

Profil Schleifscheibe									
Nr.	FNC	MS	Q1	X1	CC_Q1	CC_X1	A/R	F	
005	L	ABS	1.1430	0.0000				F_01	
010	L	ABS	14.2000	-0.0025				F_02	
015	L	ABS	23.0000	-1.1625				F_01	
020	CCP3	ABS	26.0000	-0.1640	0.0000	5.0000		F_03	
025	L	ABS	72.0000	-0.1640				F_01	
030	CCP2	ABS	73.0000	-1.1635	0.0000	-1.0000		F_04	
035	L	ABS	78.0000	-1.1625				F_01	
040	CCP2	ABS	84.0000	-1.1625	3.0000	-4.0000		F_04	
045	L	ABS	100.0000	-1.1625				F_01	
End									

Contour editor



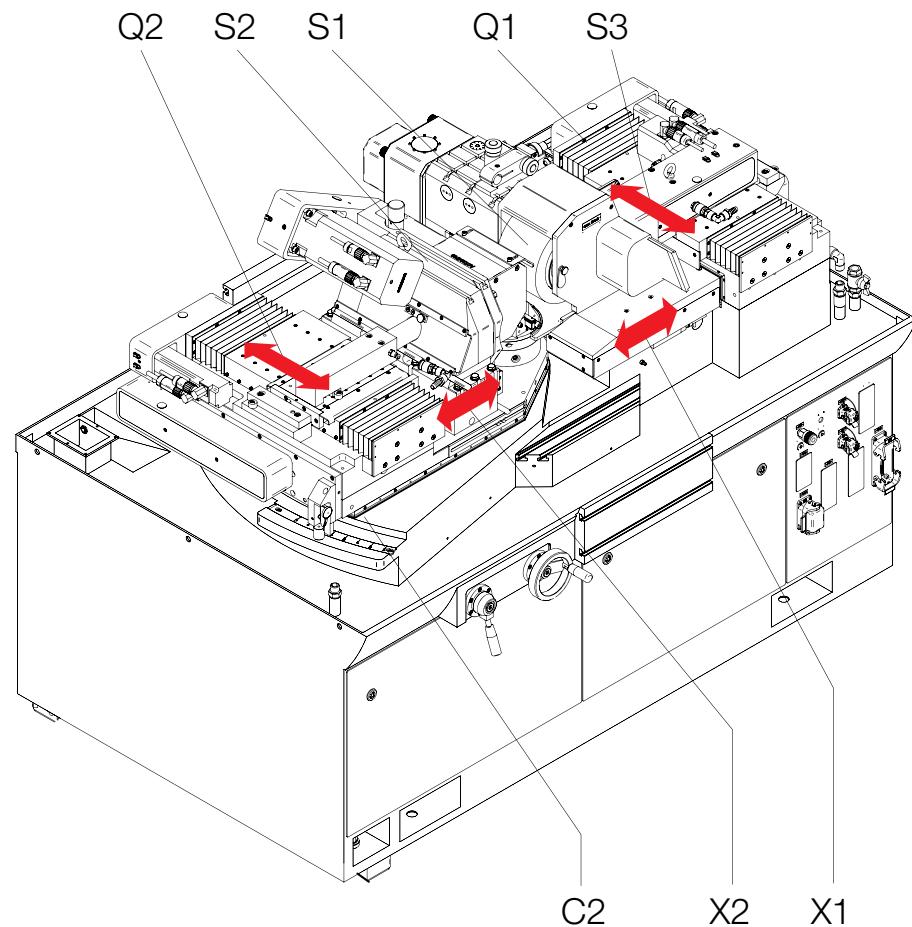
AGATHON User Interface

expanded

Axis overview and Workpiece range

highly precise

Axis overview



Axis concept

X1	Grinding wheel slide
X2	Control wheel slide
Q1	Dressing slide of grinding wheel
Q2	Dressing slide of control wheel
C2	Swiveling axis of control wheel ¹⁾
Axis resolution	0.0001 mm
¹⁾	manually adjustable

Spindle drives

S2	Control wheel spindle
S1	Grinding wheel spindle
S3	Drive of diamond dressing disc

Wheel dimensions

Grinding wheel diameter	max. Ø 255 / min. Ø 190 mm
Grinding wheel width	max. 127 mm
Control wheel diameter	max. Ø 175 / min. Ø 155 mm
Control wheel width	max. 127 mm

Operating range

Workpiece diameter	Ø 0.5 - 30 mm ²
Max. workpiece length when plunge grinding	125 mm
²⁾ Bigger diameters are possible on request (depending on material and stock removal).	

Examples of innovative machining:



Ground with:

- Diamond grinding wheel

Material:

- Tungsten carbide
- Glass
- Ceramics

Ground with:

- CBN grinding wheel

Material:

- HSS

Ground with:

- Conventional grinding wheel

Material:

- Steel
- Nonferrous metals
- Plastic

optimized

general

Handling systems

Technical data

simple to complex

actual

Obtaining maximum benefits from the innovative and flexible machine concept of the 255 CL require demanding and customized handling solutions for the efficient automatic loading and unloading of workpieces.

General dimensions and connection data. Specific data are available in the customer related quotations.



Customized handling



Peel-grinding unit with controlled push-rod and loader



Peel-grinding unit with prism and concentric grinding attachment



Manual loading device with workpiece discharge conveyor belt for manual operation during plunge grinding

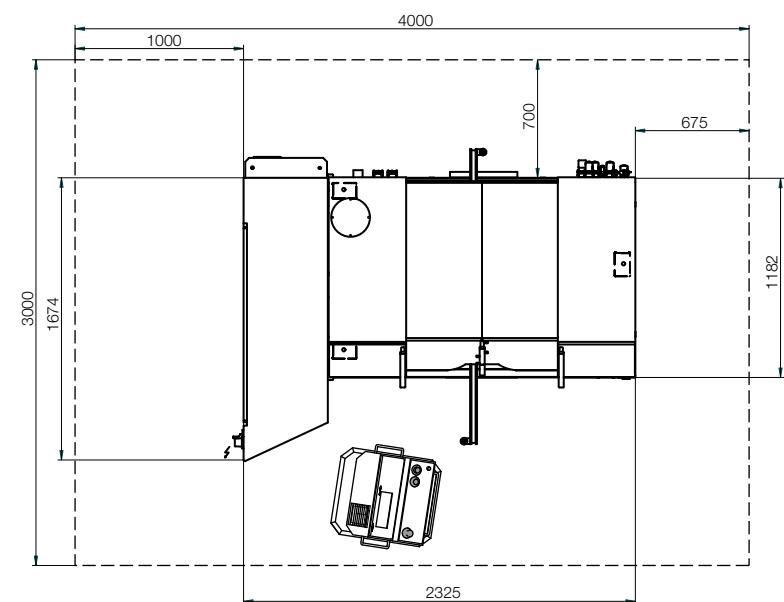
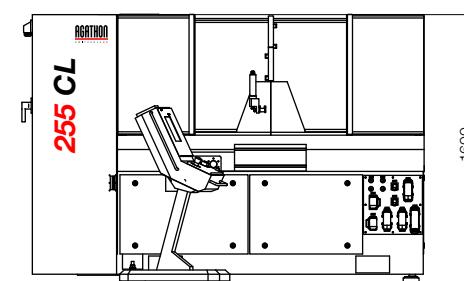


Supply and discharge belt for through-feed grinding



Vibratory bowl feeder as bulk loading storage

Dimensions of the machine



Connection data

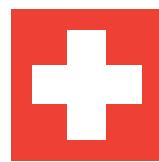
Electrical connection	3 x 400 V 50/60Hz
Fuse protection	25 A
other voltages	on request
Air pressure	5 - 6 bar constant
Air consumption	approx. 6 m ³ /h
Grinding wheel drive	9 kW
Max. peripheral speed	63 m/s

Weight

Machine

approx. 4200 kg

255 CL 7000.2 / Date: 22.10.2013 / Subject to technical modifications



Quality
Precision
Innovation.

Subsidiary:

Agathon Machine Tools Inc.
9 Parklawn Drive
Bethel, CT 06801, USA
mailamt@agathonusa.com
www.agathon.com



AGATHON AG, Maschinenfabrik
Postfach 332
CH-4512 Bellach
Tel +41 (0)32 617 4500
Fax +41 (0)32 617 4700
centerless@agathon.ch
www.agathon.ch

