



# Precision Cylindrical Grinding Machine



CYLINDRICAL  
GRINDING  
MACHINE



# Precision Cylindrical Grinding Machine



## CONTROL

The control is based on the well-proven SINUMERIK 840 D SL. The proprietary developed, highly intuitive user interface allows easy dialogue-based input of all geometrical- and process data. Geometrical data can be entered as absolute values or using the Teach-In process.

For single production or matching all axes can be controlled with the electric hand wheel.



## Virtual file cabinets

The data of any number of workpieces, up to 100 grinding wheels and 40 dressers are stored in virtual file cabinets.

**Kartekasten Abrichter**

Karte: 1/2 **DOPPELABR**

Radius: 1,000  
 Radius(hk): 1,000  
 X-Abstand: 90,000  
 Z-Abstand: 6,000

Karte angelegt am: 6.12.18  
 Typ: 3

AK	Nr	Angelegt	Name	Typ	Radius	Radius(hk)
03	6.12.18		DOPPELABR	03	1,000	1,000
01	03	24.3.15	FLIESSER MIT RECHTS	01	0,001	

**Kartekasten Schleifscheiben**

Karte: 7/13 **TESTSCHEIBE**

Spezifikation: 400,000 angelegt am: 6.9.17  
 Durchm (nom): 400,000 akt. Durchmesser: 400,000  
 Breite (nom): 50,000 akt. Breite: 18,81328  
 Durchm (inn): 200,000 Abzähler Nr.: 777  
 Vorschub: 34 Wästel: -20° Kompensierung: Schräg

Typ: Aussen schleifscheibe Konturkennlinie: 3 einstell. Nein

AK	Nr	Angelegt	Name	Spezifikation	Durchm.	Breite	Typ
01	27.1.17		TESTA	300,000	50,000	A	
02	27.1.17		WALDFORMEN	400,000	50,000	A	
03	27.1.17		TESTA	400,000	50,000	A	
04	7/7/16		SKALDE ROSA	503,980	50,000	Z	
05	10.2.17		DESSOP	300,000	50,000	A	
06	7.3.17		TESTSCHEIBE 220	490,000	50,000	A	
08	28/9/16		ANZEITEN	300,000	50,000	B	
09	20/9/16		HEV ASL	600,000	90,000	A	
10	21.1.18		0000000	500,000	60,000	Z	
11	20.3.18		0000000	500,000	50,000	A	
12	20.3.18		ZESEPV	600,000	50,913	A	

**Kartekasten Werkstücke**

Karte: 5/6 **Werkstück aktiv 1**

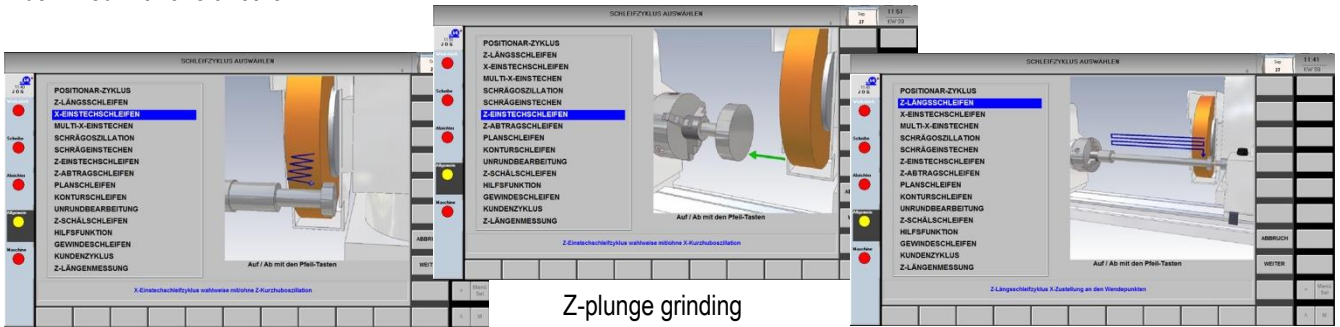
Material: 6061 Karte angelegt am: 7.3.17  
 Programme DP's: 16  
 Ladler Zugriff: 05.12.2017

Operationen:  
 1 Hoffkanten  
 1 Konturhohl-Op  
 1 Langloch-Op  
 1 Abfrähen X-Ein-Op  
 1 Planloch-Op  
 1 Schrägloch-Op

AK	Nr	Angelegt	Name	M
002	6.3.18		REBER	LABOR
003	23/11/18		09518013	030
004	7.3.17		U-SCHNITT 1512	
007	7.3.17		VON PRELLE 2240	
008	7.3.17		VON UNELLE 2240	000-40

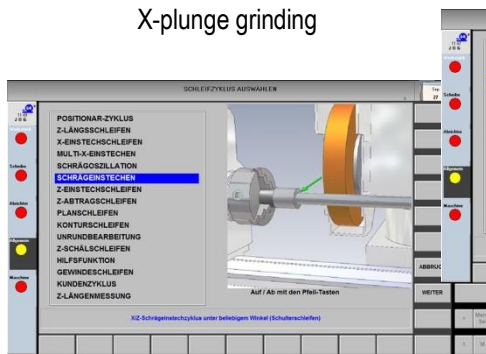
# Grinding processes

A multitude of grinding processes is available. For the machining of a certain workpiece, up to 26 processes can be linked with one another.

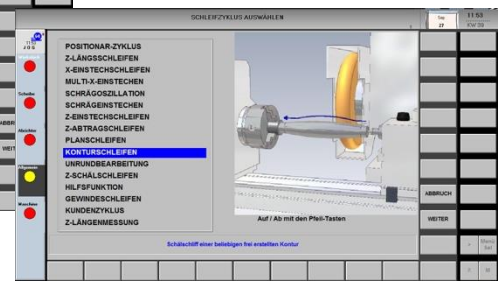
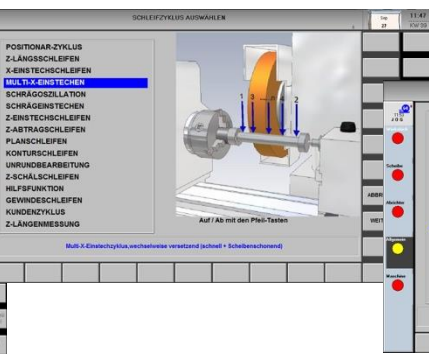


Z-plunge grinding

X-plunge grinding



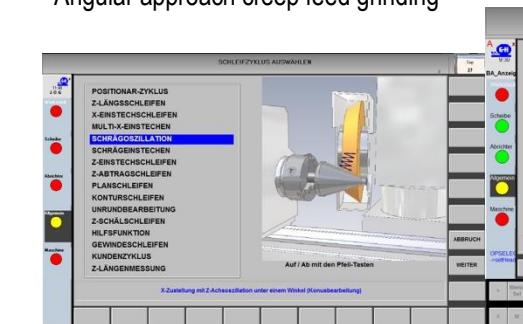
Z-longitudinal grinding



Contour grinding

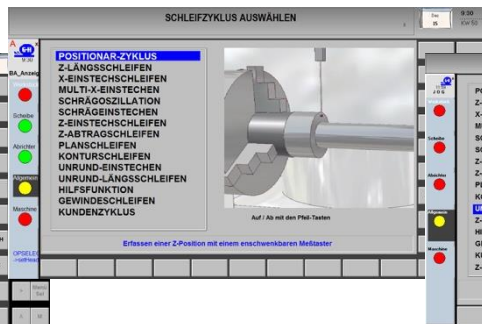
Angular approach creep feed grinding

Multi-X-plunge

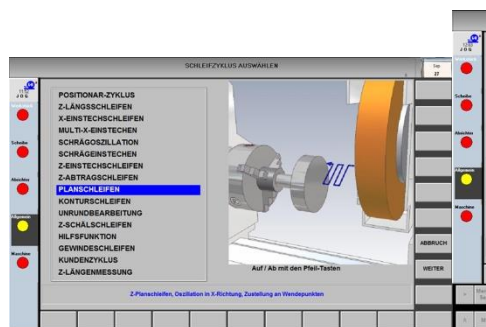
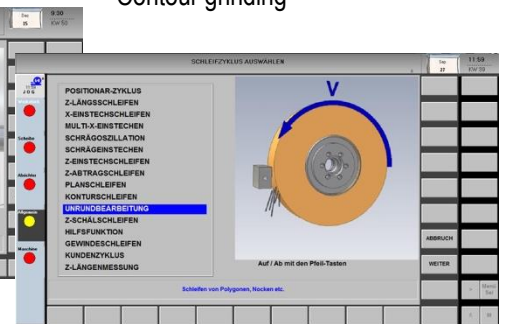


Angular oscillation

Positionar-cycle

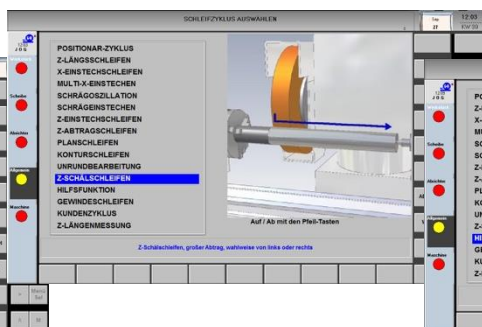


Non-cylindrical grinding

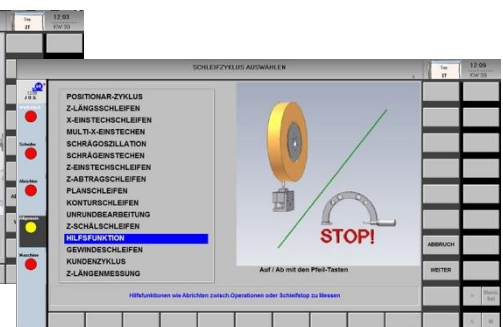


Surface grinding

Z-peel grinding



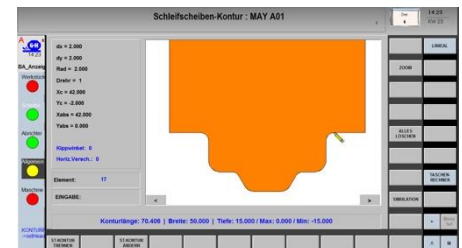
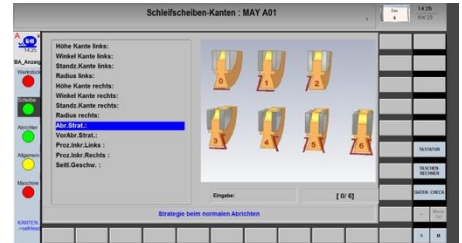
„Help“-cycle





## Cylindricity-error-correction

The cylindricity-error-correction for all dressable grinding wheels is effected program-controlled.



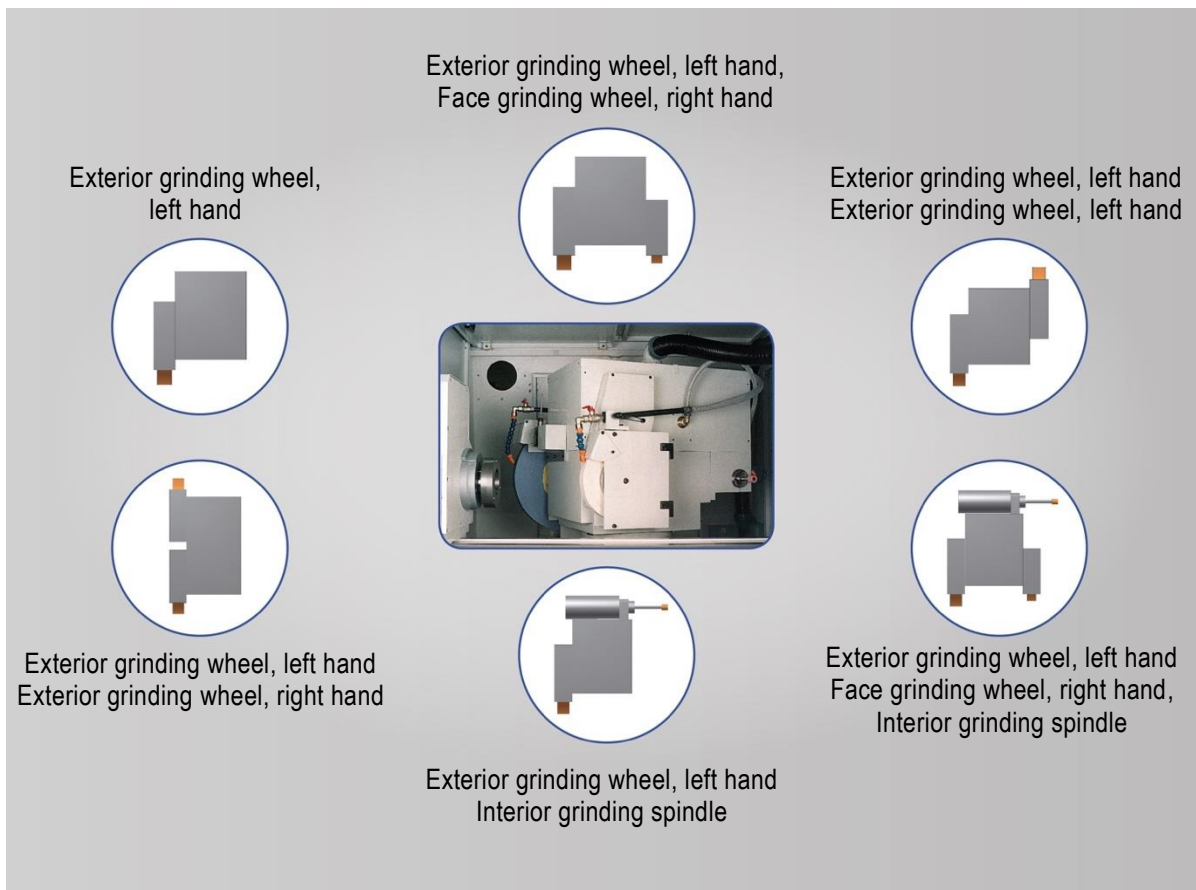
## Dressing

The dressing is effected from the workpiece spindle head or from the tailstock. All dressing amounts are compensated.

Other dressing devices like diamond rolls can be integrated into the machine on demand. Several dressing strategies are available in the control. Using the integrated CAD program (option), virtually every grinding wheel profile can be created conveniently and fast. The transfer of existing CAD-data is also possible (option).

## B-axis and grinding spindle arrangements

The slewing of the B-Axis is realised infinitely - fast and accurately. A multitude of grinding spindle arrangements is available.



# THE MODULAR DESIGN



## Choose your basic machine:

- Distance between centres
- Centre height
- Component weight

## Choose your individual options:

- Swivable B-axis
- Number and arrangement of grinding spindles (exterior and interior grinding spindles)
- Positioner (Z-length-caliper)
- Gap-control
- In-process-dimensional control
- Controlled C-axis (non-cylindrical grinding)
- Hydrostatic guideway in X-axis (infeed axis)
- Diamond form roll, Diamond roller dressing unit
- Servo-controlled tailstock with pressing force programming
- Network connection
- Data back-up
- Remote maintenance

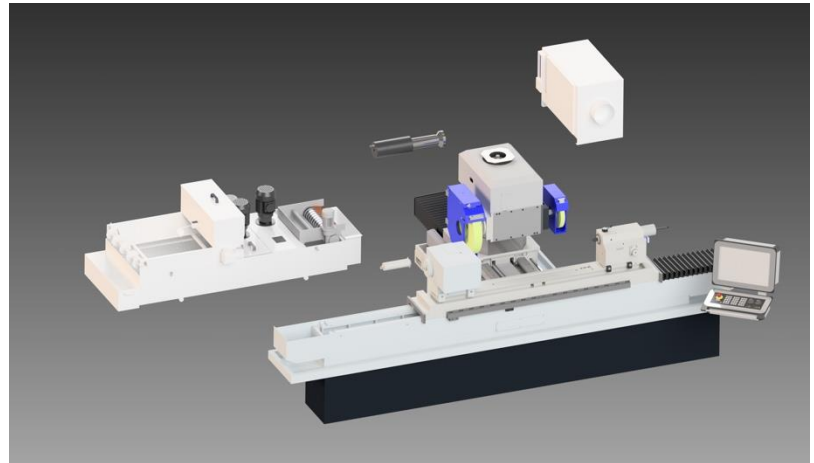
## Combine your machine with appropriate aggregates like:

- Universal paper filter system
- Compact air cleaning set ...

Please note: Options and aggregates are not exhaustive.

Some combinations can be mutually exclusive!!

**We assemble your machine following to your desires!**



## Length caliper

With the length caliper, it is possible to determine the position of the workpiece in the machine.



## Production machine



Machines that are conceived for serial production can be equipped with a loading portal and an in-process dimension control.

Type	RS 1000 C	RS 600 CU	RS 1000 CU	RS 1500 CU	RS 2000 CU
Distance between centres	mm 1.000	600	1.000	1.500	2.000
Centre height (Option)	mm 140	180 (230)	180 (230)	180 (230)	180 (230)
Grinding length	mm 1.000	600	1.000	1.500	2.000
Component weight between centres	kg 100	150	150	150	150
Component weight, cantilever	Nm 40	120	120	120	120
<b>X-Axis – infeed movement</b>					
Infeed speed	mm/min 0,01 – 8.000	0,01 – 8.000	0,01 – 8.000	0,01 – 8.000	0,01 – 8.000
Linear measurement system, int. resolution	mm 0,0001	0,0001	0,0001	0,0001	0,0001
<b>Z-Axis – table movement</b>					
Table speed	mm/min 0,01 – 12.000	0,01 – 12.000	0,01 – 12.000	0,01 – 12.000	0,01 – 10.000
<b>C-Axis – workpiece spindle head</b>					
Rotation speed	min <sup>-1</sup> 0 – 600	0 – 600	0 – 600	0 – 600	0 – 600
Power of the motor	kW 2,0	2,0	2,0	2,0	2,0
Chuck cone	MM 4 / KK 5	MM 5 / KK 5	MM 5 / KK 5	MM 5 / KK 5	MM 5 / KK 5
<b>Grinding spindles</b>					
Power of grinding spindle motor	kW 5,5	11	11	11	11
Peripheral speed of grinding wheel	m/s 35 (63)	35 (63)	35 (63)	35 (63)	35 (63)
Grinding wheel, standard	mm 400 x 50 x 127	500 x 80 x 203,2	500 x 80 x 203,2	500 x 80 x 203,2	500 x 80 x 203,2
Face grinding wheel, right hand (Option)	mm 250 x 30 x 127	300 x 40 x 127	300 x 40 x 127	300 x 40 x 127	300 x 40 x 127
Internal grinding spindle (Option)	on demand	on demand	on demand	on demand	on demand
<b>Tailstock</b>					
Chuck cone	MM 4	MM 4	MM 4	MM 4	MM 4
Workpiece fixture	spring tension manual withdrawal	spring tension manual (hydraulic) withdrawal	spring tension manual (hydraulic) withdrawal	spring tension manual (hydraulic) withdrawal	spring tension manual (hydraulic) withdrawal

Technical data are subject to change without notice





Type	RS 1000 CM	to	RS 4000 CM	to	RS 2000 CP	to	RS 6000 CP	to	RS 2000 CPA	to	RS 6000 CPA
Distance between centres	mm	1.000	4.000		2.000		6.000		2.000		6.000
Centre height (Option)	mm	300	300		400		400		400 (500)		400 (500)
Grinding length	mm	1.000	4.000		2.000		6.000		2.000		6.000
Component weight between centres	kg	800	800		2.000		2.000		4.000		4.000
Component weight, cantilever	Nm	200	200		600		600		1.600		1.600
<b>X-Axis – infeed movement</b>											
Infeed speed	mm/min	0,01 – 8.000	0,01 – 8.000		0,01 – 8.000		0,01 – 8.000		0,01 – 8.000		0,01 – 8.000
Linear measurement syst., int. resolution	mm	0,0001	0,0001		0,0001		0,0001		0,0001		0,0001
<b>Z-Axis – table movement</b>											
Table speed	mm/min	0,01 – 8.000	0,01 – 6.000		0,01 – 8.000		0,01 – 6.000		0,01 – 8.000		0,01 – 6.000
<b>C-Axis – workpiece spindle head</b>											
Rotation speed	min <sup>-1</sup>	0 – 300	0 – 300		0 – 200		0 – 200		0 – 200		0 – 200
Power of the motor	KW	5,0	5,0		8,2		8,2		8,2		8,2
Chuck cone		MK 5 / KK 6	MK 5 / KK 6		MK 6 / KK 8		MK 6 / KK 8		MK 80 / KK 11		MK 80 / KK 11
<b>Grinding spindles</b>											
Power of grinding spindle motor	KW	15	15		18		18		23		23
Peripheral speed of grinding wheel	m/s	35 (63)	35 (63)		35 (63)		35 (63)		35 (63)		35 (63)
Grinding wheel, standard	mm	600 x 80 x 203,2	600 x 80 x 203,2		750 x 80 x 304		750 x 80 x 304		750 x 80 x 304		750 x 80 x 304
Face grinding wheel, right hand (Option)	mm	300 x 40 x 127	300 x 40 x 127		400 x 40 x 127		400 x 40 x 127		400 x 40 x 127		400 x 40 x 127
Internal grinding spindle (Option)		on demand	on demand		on demand		on demand		on demand		on demand
<b>Tailstock</b>											
Chuck cone		MK 5	MK 5		MK 6		MK 6		MK 80		MK 80
Workpiece fixture		Spring tension hydraulic withdrawal	Spring tension Hydraulic withdrawal		Servomotor		Servomotor		Servomotor		Servomotor



[www.ghtech.cz](http://www.ghtech.cz)

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## Who we are:

On our site in Homberg (Ohm) in Hessen, precision grinding machines and their accessory equipment are being produced since 1956. Now, more than 10.000 manufactured machines are in action all over the world.

All machines that are supplied by Geibel & Hotz are assembled, put into service and subjected to an extensive quality control on our site in Homberg.

Thanks to the central situation of our company, every place in Germany can be reached by car within 8 hours. Service interventions can be arranged optimally for our customers from our location.