

# MIKROMAT

## GRINDING MACHINES



**MIKROMAT G-SERIES**

3G

5G

10G

15G



## MIKROMAT- universal grinders

are used for the highly precise machining of threads, worms and rotary forms. These machines are universally usable and suitable for single and small batch production. With modification you can also be adapted a single-purpose machine for high volume series.

## MIKROMAT- thread grinders

are configurable at grindable lengths of 300 to 3000mm in particular components and parameters.

- Axis configuration
- Drive and C axis spindle speed
- Drive and spindle speed for external and internal grinding
- Tilting angle ( pitch angle) of grinding wheel between  $\pm 40^\circ$  and  $\pm 90^\circ$
- Dressing systems for grinding wheels
- Balancing system
- Workpiece measurement
- Cooling lubricant systems
- Grinding wheel adapters
- Workpiece clamping
- Grinding technologies
- Profiles
- Handling and Storage systems

## MIKROMAT TOPGRIND

is the entirety of the grinding technologies developed by MIKROMAT as separate system software based on a standard Industrial PC (IPC). This means that the entire future is achieved, since IPCs are inexpensive and are available everywhere indefinitely.

A link to life cycles of the controls of individual manufacturers is thus overcome. In combination with digital drives, this guarantees the precise interaction of the axes as well as comfortable and workshop-oriented programming with logical and visually supported operator guidance. The data for standardized profiles are already stored. MIKROMAT offers special calculation software for your individual profiles.

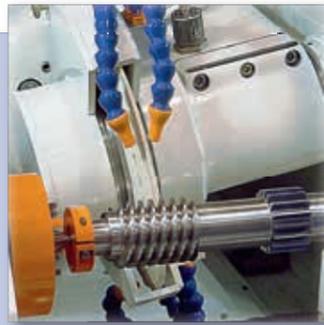


MIKROMAT thread grinding machines have been designed for use in the automotive industry, component manufacturing, aerospace, precision mechanics, optics and medical technology. The choice of tilting axes and selectable accessories allows the optimum machine configuration for

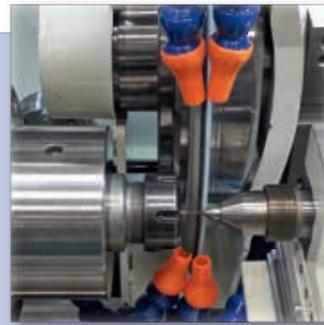
your efficient production. MIKROMAT engineers, together with your specialists, are responsible for the planing and execution of investments for a smooth production. Our service team is at your disposal for MIKROMAT machines at any time.



Thread Grinding



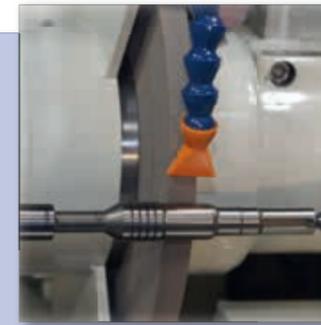
Rillenprofil-Schleifen



Relief grinding



Cylindrical and angular infeed grinding



Axis-parallel grinding



internal and external

- Right- and left-hand profiles
- Pitch progressive
- Diameter progressive
- Concave and convex
- Thread shafts (metric, inch, trapezoidal, cylindrical, and other)
- Pump profiles, pump rotors, screw spindles
- Special profiles, optionally with or without lead
- Worm shafts (ZA, ZK, ZI, ZN)
- Ball screws
- Thread rollers
- Spline shafts
- Racks
- Rotor shafts, screw pumps
- Fine finishing rollers, bead rollers, cam-profile rollers
- Thread plug gauge and rings

internal and external

- Segmented Forms
- Groove
- Undercut

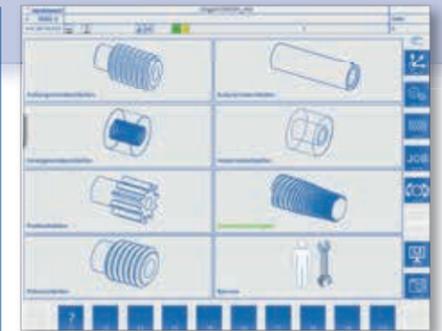
- Gear hob cutters
- Hobbing cutters
- Taps

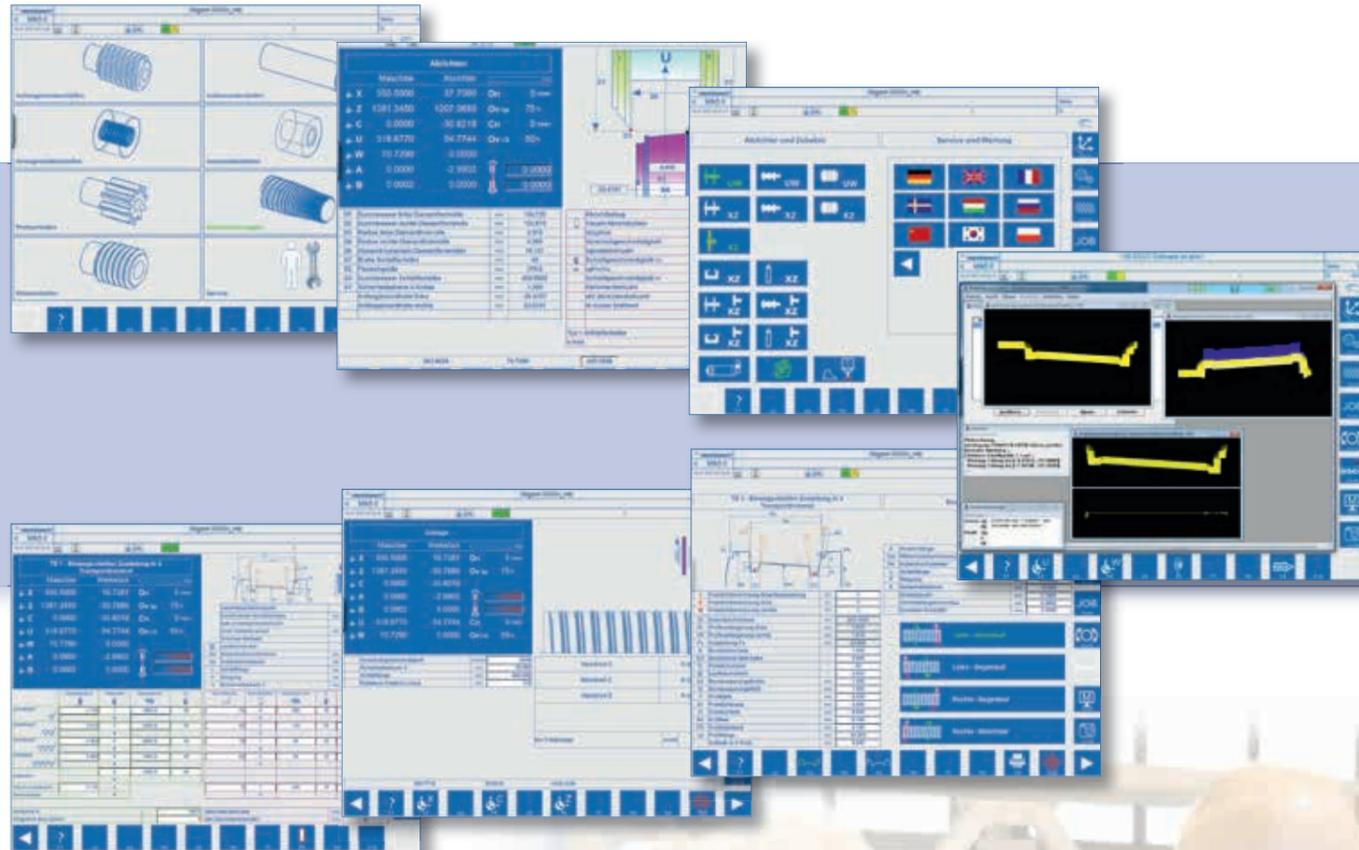
internal and external

- Cylindrical
- Diameter progressive
- Concave and convex

- Cylinder
- Cone
- Special profiles without pitch
- Plane surfaces

- Profile spline shaft
- Gear teeth profiles





Dressing Unit



Steady rest



Internal grinding spindle



Options

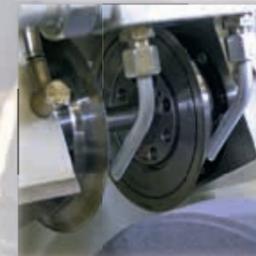
- Applicable to the machine for dressing
- Special dressing with machine axes X – Z
- For two dressing disks or form rollers
- Separate drive
- Following, open and closed
- Various diameters
- Handling and Storage systems
- Cooling lubricant systems
- Fire extinguishing facility
- Automatic adjustment of rough-profiled work piece
- And other useful accessories

Machine G-Series are used primarily in machine and tool making and similar industries. Worm shafts and screw spindles of various types, thread tools, plug gauges and many other tools are effective to produce.

But also special parts, such as rollers for thread rolling, regulating disks and transport drums for centerless grinding, spindles for screw pumps or pinion for gear pumps can be generated and machined. There are also suitable solutions for parts with cylindrical sections and plane surfaces as well as for large series.

For the shaping of the grinding wheels dressers with single-diamond diamonds, form rollers or profile rollers are used. For serial production, we offer loading and unloading systems with suitable magazines as well as measuring technology for quality control.

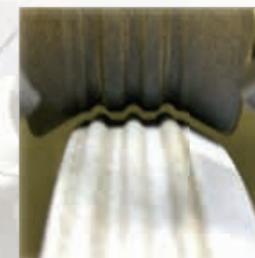
Dressing disks



Single-grain diamonds

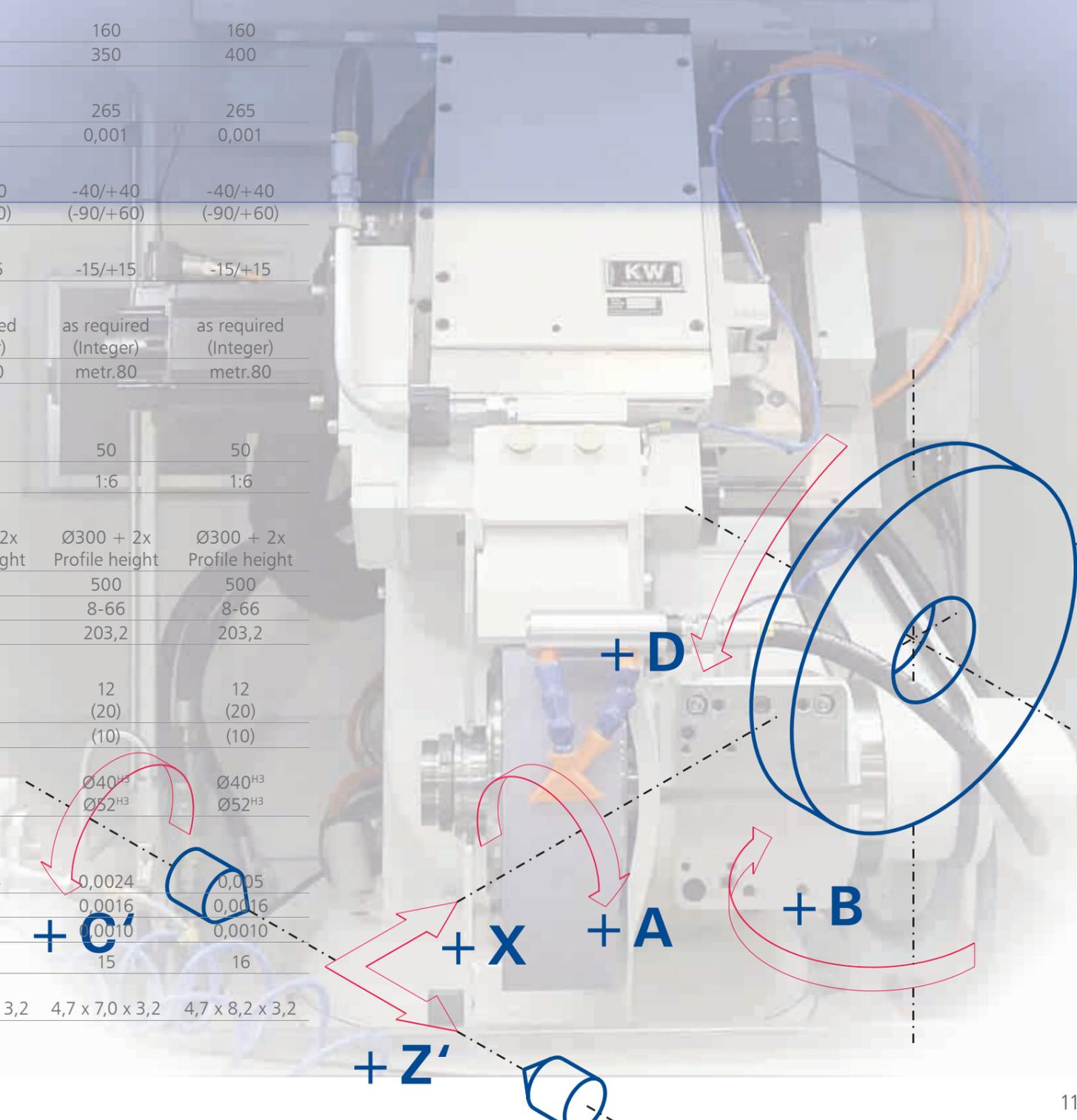


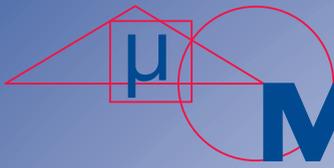
Diamond profile rollers



Technical specifications		3G	GI	5G	10G	15 G	20G	30G
<b>Work table Z-Achse</b>								
Workpiece diameter max.	mm	320	300	320	320	320	320	320
Grinding lenght, single profile	mm	300	-	500	1000	1500	2000	3000
Distance between center max.	mm	450	-	750	1250	1750	2250	3250
<b>Workpiece weight</b>								
between center	kg			160	160	160	160	160
center+ lunettes	kg	50		160	200	300	350	400
<b>Grinding saddle X-Achse</b>								
Infeed stroke max.	mm	310		265	265	265	265	265
Min. infeed value	mm	0,001	0,001	0,001	0,001	0,001	0,001	0,001
<b>Tilting axis A</b>								
Helix angle max.		-90/+60	-15/15	-40/+40	-40/+40	-40/+40	-40/+40	-40/+40
(Option)	Grad	(-200/+20)		(-90/+60)	(-90/+60)	(-90/+60)	(-90/+60)	(-90/+60)
<b>Tilting axis B (option)</b>								
Tilting angle max.	Grad	-15/+15		-15/+15	-15/+15	-15/+15	-15/+15	-15/+15
<b>Headstock C-axis</b>								
Number of starts radial, automatically indexable	Grad	as required (Integer)	as required (Integer)	as required (Integer)	as required (Integer)	as required (Integer)	as required (Integer)	as required (Integer)
Headstock spindle		MK4		metr.80	metr.80	metr.80	metr.80	metr.80
<b>Grinding wheel drive</b>								
Cutting speed max., rpm-regulated infinitely adjustable	m/s	50	50	50	50	50	50	50
Cone		1 : 7,5	M14	1:6	1:6	1:6	1:6	1:6
<b>Grinding Wheel dimensions</b>								
Diameter min.	mm	Ø200 + 2x Profile height		Ø300 + 2x Profile height				
Diameter max.	mm	400		500	500	500	500	500
Grinding wheel width	mm	8 - 30		8-66	8-66	8-66	8-66	8-66
Grinding wheel mounting bore hole	mm	127		203,2	203,2	203,2	203,2	203,2
<b>Dresser</b>								
with 2 diamond form rollers (U/W) (Option)		8		12 (20)	12 (20)	12 (20)	12 (20)	12 (20)
with 2 diamond form rollers (X/Z)	Modul	10		(10)	(10)	(10)	(10)	(10)
Bore diameter for diamond form and profile rollers (Option)	mm	Ø40 <sup>H3</sup>		Ø40 <sup>H3</sup> Ø52 <sup>H3</sup>				
<b>Accuracy of the machine and dresser axes according to VDI / DGQ 3441</b>								
Positional uncertainty P	mm	0,0024	0,0024	0,0024	0,0024	0,0024	0,0024	0,005
Max. positional scatter P <sub>smax</sub>	mm	0,0016	0,0016	0,0016	0,0016	0,0016	0,0016	0,0016
Max. reversal error U <sub>max</sub>	mm	0,0010	0,0010	0,0010	0,0010	0,0010	0,0010	0,0010
<b>Weight</b> without cooling systeme	t	7,5	7,5	9	10	12	15	16
<b>Dimension</b> incl. cooling systeme	LxBxH m	3,8 x 2,8 x 1,7		4,7 x 5,5 x 3,2	4,7 x 5,6 x 3,2	4,7 x 6,0 x 3,2	4,7 x 7,0 x 3,2	4,7 x 8,2 x 3,2

## Axes-Configuration





# MIKROMAT



VALUE ENGINEERING  
COST ENGINEERING



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