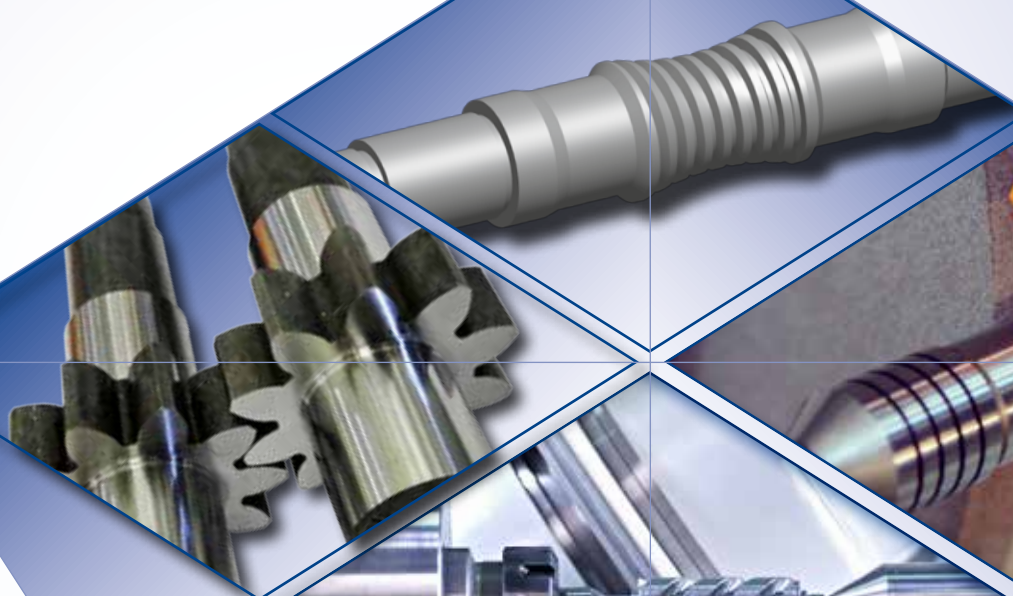


MIKROMAT

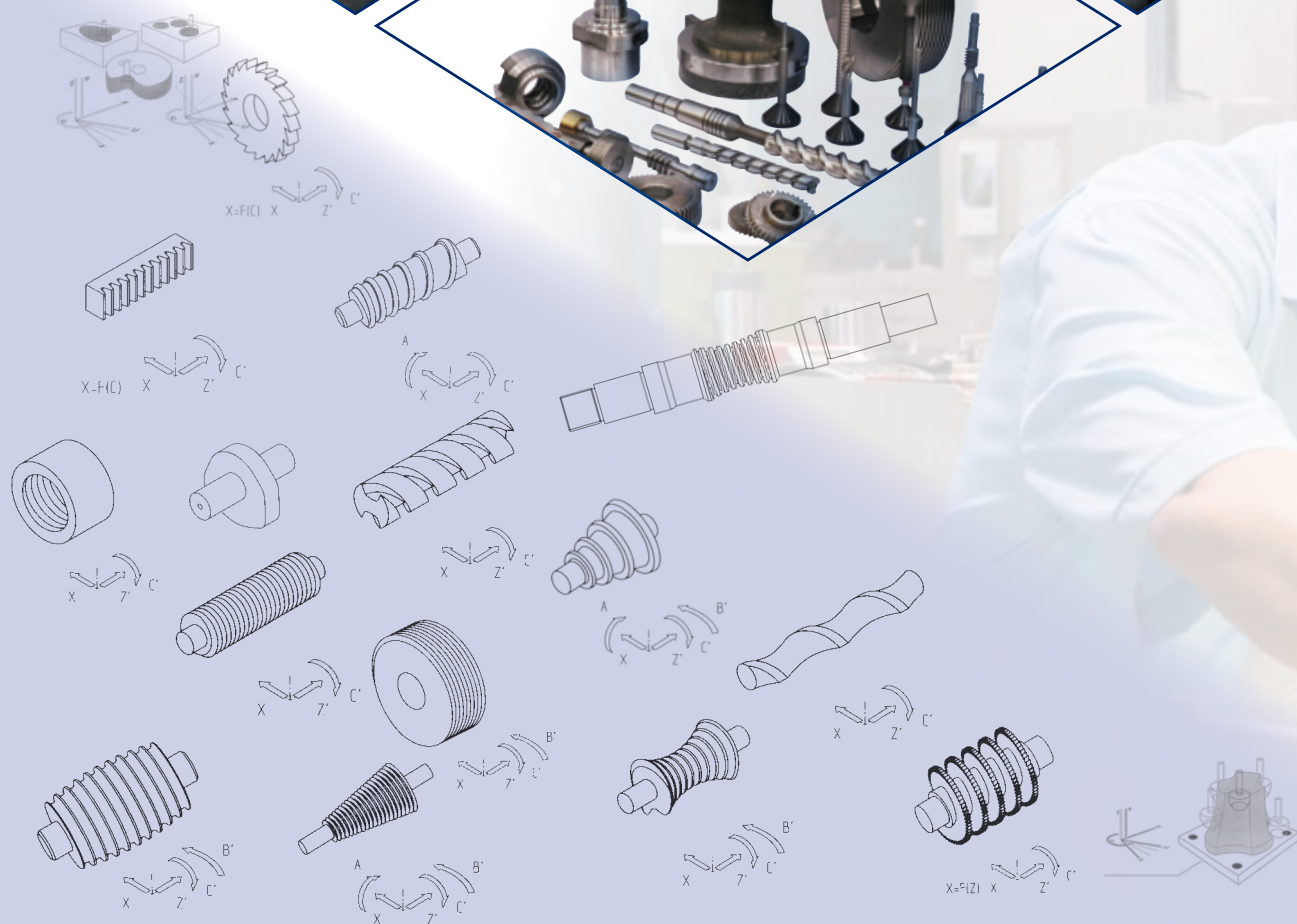
GRINDING MACHINES



MIKROMAT G-SERIES

MIKROMAT thread grinders have been designed for precision machining of workpieces, featuring most different symmetrically as well intricate profiles. Internal and external shapes can be grind.

The CNC-Controller developed by MIKROMAT provides for precise interpolation of all the axes as well as reliable and comfortable programming. The easy operating oriented and operator-interface based programs can be drawn up directly or via interface to the machine. Any movement required for grinding as well as dressing of the grinding wheels is a controlled one and equipped with digital drive assemblies.



Machining Technologies

- Right- and left-hand profiles
- Single- and multi-start profiles
- Relief grinding
- Progressive-lead grinding
- Progressive-diameter grinding
- Concave and convex contours
- External cylindrical as well as plunge-grinding operations
- Groove profiles
- Thread shafts (metric, inch, trapezoidal, cylindrical and others more)
- Pump profiles, pump rotors,
- Screws spindle
- Special profiles, optionally with or without lead
- Worm shafts (ZA, ZK, ZI, ZN)
- Ball screws
- Thread rollers
- Spline shafts
- Racks
- Profile shafts
- Rotor shafts, screw pumps
- Fine-finishing rollers, bead rollers, cam-profile rollers
- Globoidal worms
- Hobbing cutters



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



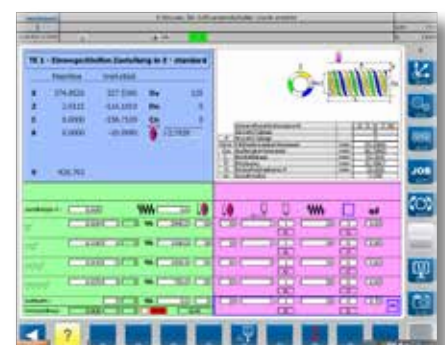
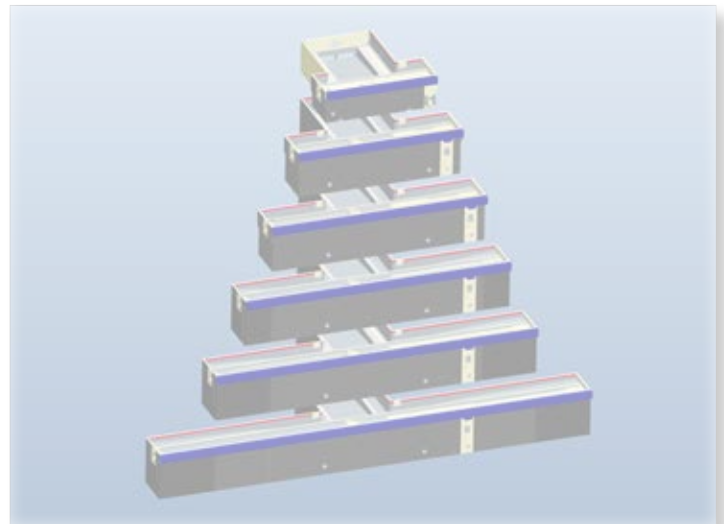
20G	30G
320	320
2000	3000
2250	3250
160	160
350	400
265	265
0,001	0,001
-40/+40 (-90/+60)	-40/+40 (-90/+60)
-15/+15	-15/+15
beliebig metr.80	beliebig metr.80
50	50
1:6	1:6
Ø300 + 2x Profilhöhe	Ø300 + 2x Profilhöhe
500	500
8-66	8-66
203,2	203,2
12 (20) (10)	12 (20) (10)
Ø40 ^{H3} Ø52 ^{H3}	Ø40 ^{H3} Ø52 ^{H3}
0,0024	0,005
0,0016	0,0016
0,0010	0,0010
15	16

4,7 x 7,0 x 3,2 4,7 x 8,2 x 3,2

Fields of application of the G-series: Machine building and tool manufacture, medical technology as well as precision and optical engineering industries including similar sectors. Standard profiles are stored as program modules. Moreover, driving screws and adjusting screws of different design, threading tools and limit plug gauges as well as a large variety of other workpieces can be effectively produced. But special workpieces such as thread rollers, regulating wheels as well as transport drums for centreless grinding, screws for screw pumps or pinions for gear pumps can be generated and machined, too. Appropriate solutions are also on offer for workpieces characterised by cylindrical sections and faces, also for single and large batch runs.

Depending on the concrete machining job, the grinding wheels are profiled by single-grain diamonds, form or profile rolls. As for series production, we offer robots to load and unload the machines from suitable magazines as well as measuring equipment for quality control.

The MIKROMAT G-series includes compact machines for the manufacture of very small as well as medium-sized workpieces and in addition, machines up to 3.000 mm grinding length.

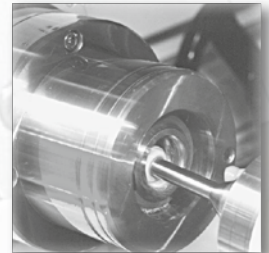


Application samples

External threads/
worms



Internal threads



Tools

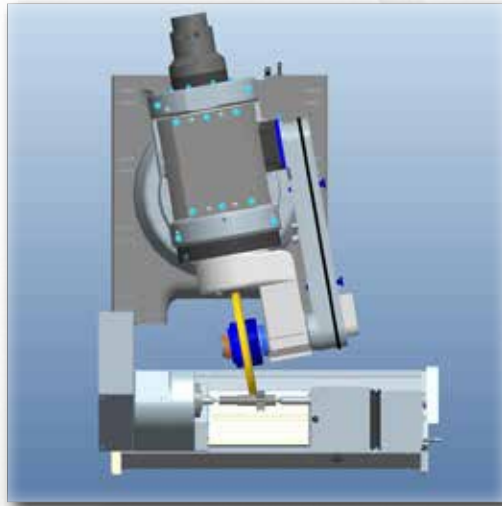
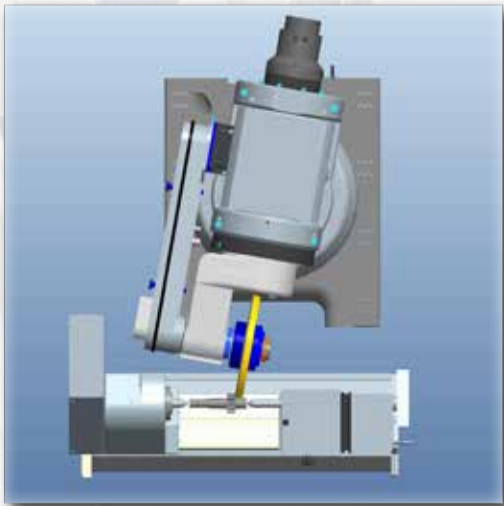
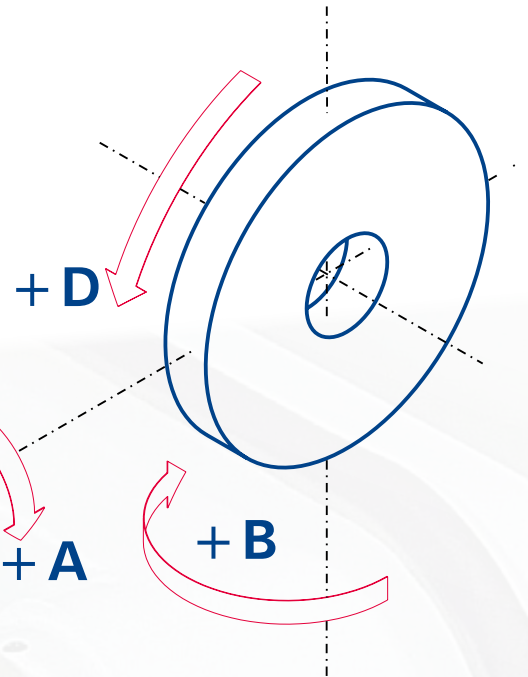
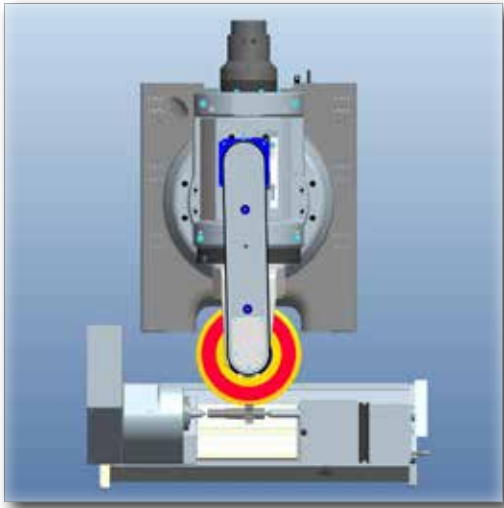


External cylindrical
grinding as well as
plunge-grinding



Gears/
axial parallel Profile







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