

TECHNICAL DATASHEET

CNC Generating Gear Grinder automated by ring loading system with pallet magazine

Manufacturer	DMG Gildemeister
Type	GMX500 linear
Control	Siemens Sinumerik 840D
built	2003



The GLEASON 300TWG gear grinding center is suitable for the generating grinding of gears and pinions. Workpieces up to a diameter of $\varnothing$ 300 mm and a maximum length of 450 mm can be machined on the machine. The chain magazine offers space for approx. 16 raw and finished parts

Working range

Max. Workpiece diameter	300 mm
Module range	0,5 - 5 mm
Max. Workpiece length	450 mm
Radial path (X-axis)	85 – 240 mm
Tangential path (Y-axis)	-210 – (+) 30 mm
Axial path (Z-axis)	100 – 500 mm
Center distance grinding spindle - table axis	80 – 275 mm
Distance table - counterholder	500 – 1.050 mm

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CNC-Turning-Milling Center,

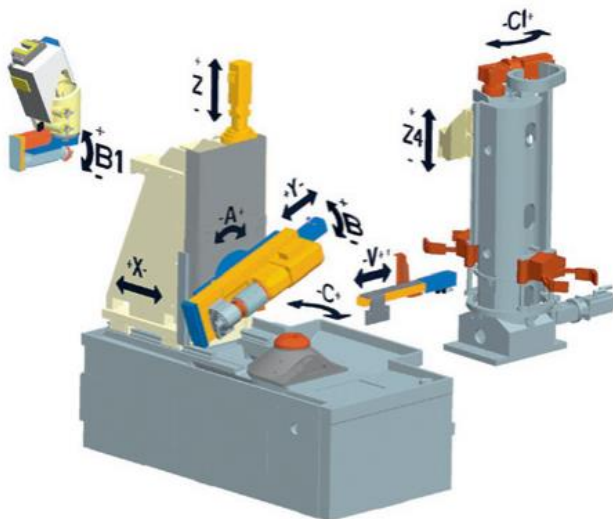
DMG GMX500 linear

Tool data

Outer diameter of grinding worm	Ø160 – 220	mm
Grinding worm width	180	mm
Flange mount	Ø90	mm
Max. Number of grinding worm threads	11	
Max. grinding spindle speed	6.600	1/min
Grinding spindle swivel angle (A-axis)	+/- 45	°

Workpiece table

Table diameter	Ø160	mm
Centering hole	Ø65,54	Mm +/- 0.01mm
Bolt circle	Ø130	mm +/- 0.2mm
Max. Workpiece spindle speed	1.500	1/min
Center distance between grinding spindle and table axis	80 – 275	mm
Distance table - counterholder	500 – 1.050	mm
Module range	0,5 - 5	mm
Grinding spindle swivelling angle (A-axis)	+/- 45	Grad



Axis overview

A-Achse	Grinding head swiveling
B-Achse	Grinding spindle
B1-Achse	Dressing spindle
C-Achse	Workpiece spindle
C1-Achse	Two-station ring loader
V-Achse:	indexing device
X-Achse:	Radial slide
Y-Achse:	Tangential slide
Z-Achse:	Axial slide

Axis scheme GLEASON 300TWG

Dimension and weight

Required space approx. L x W x H	5,3 x 4,5 x 3,0	m
Machine weight ca.	11.000	kg

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Gleason NC-Dressing Unit

Compact dressing unit above the grinding spindle with Siemens standard servodrive for flexible, automatic dressing of single and multi-start grinding worms, with high-precision dressing spindle and expanding mount for dressing discs

Spindle mount	Ø52H2	mm
Max. Dressing wheel diameter	Ø123	mm
Max. Spindle speed dresser	8.000	1/min
Dresser in single roller design		

Prepared for line dressing software option

Connection data

Total connected load approx.	95	kVA
Operating voltage	400	V
Operating frequency	50	Hz
Control voltage	24	V DC

Equipment and Accessories

- Basic machine GLEASON 300TWG with Siemens Sinumerik 840D control, 19" flat control panel and 12" color display; part program memory for up to 200 workpieces
- Gleason HMI - graphically supported user interface for easy input of gear cutting values and corrections
- VRM grinding = Variable Rate Method, grinding of noise-optimized surfaces
- Gleason NC dresser
- Counter stand with counter holder slide and 2-station ring loader
- 2-station automatic ring loader for workpieces up to a max. diameter of 300 mm with 2 gripper heads, axial stroke 100 mm, max. load weight per gripper head approx. 10 kg, various gripper jaws can be mounted; ring loader rotation via spur gear and AC servo drive
- Pallet magazine can be set up intuitively, designed as a chain conveyor for workpiece transport with vertical workpiece axis on pallets, manual loading and unloading, transport height above floor approx. 1,000mm, storage capacity approx. 16 workpieces, 2 stoppers Raw and finished parts are separated via empty pallet
- Pallet ejector at the transfer position, mechanically adjustable
- All axes and spindles with SIMODRIVE 611 D digital drive technology
- Central lubrication
- Pneumatic equipment make FESTO
- Hydraulic unit with 44 l reservoir, pressure 50-70 bar, make PARKER
- Electronic indexing device for precise rotary positioning of the workpiece, single-center sensor module 1-5mm, pneumatically movable
- Cooling lubricant system with HOFFMANN suction belt filter, cooling capacity 26kW, refrigerant R407c, oil tank approx. 2,500l
- Oil mist separator

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- Automatic balancing device
- CO2 extinguishing system from Kraft&Bauer
- Coolant nozzle electronically controlled and adjustable (U-axis)
- Full enclosure of the work area
- Machine light
- Set-up aid for changing grinding wheels
- 1 grinding wheel flange with grinding worm
- Automatically opening and closing work area door
- Documentation