

TECHNICAL DATA
CNC-Profile Gear Grinding Machine

Manufacturer	GLEASON PFAUTER
Type	P 2000 G
Control	SINUMERIK 840 C
Built	2000



Working Area

Nominal workpiece diameter	2.000 mm
Max. radial travel (X-axis)	1.220 mm
Max. tangential travel (Y-axis)	300 mm
Max. axial travel (Z-axis)	1.000 mm
Lowest grinding wheel position above table	470 mm
Max. profile depth	80 mm
Grinding spindle swivel angle (A axis)	+/- 45 degrees

Workpiece table

External diameter	1.460	mm
Bore diameter x depth	Ø 506 x 898	mm
Max. permitted load	20.000	kg
Max. table speed	5	1/min
hydrostatic radial bearing		
axial slide bearing		
automatic hydraulic table balance		

grinding spindle drive, grinding wheel

Drive power	24	kW	Medium frequency three-phase motor, liquid-cooled
Speed range	1.200 – 6.000	1/min	
Grinding arbor Ø	80	mm	
Profile grinding wheel max. dimension	400x80x127	mm	
Integrated automatic balancing device			

Counterholder

steady rest diameter min./max.	80/500	mm
Carriage travel	900	mm
Tip - Ø max.	115	mm
position above table min./max..	926/1.826	mm

Dressing unit

Feed	2.400	mm/min
Speed	2.000 – 8.000	min-1
Dressing wheel diameter max.	130	mm

Feeds and rapid traverse

Axis X	3	m/min
Axis Y	5	m/min
Axis Z	6	m/min

Dimensions, weight

Space required approx. l x w x h	12 x 6 x 5	m
Machine weight approx.	27.000	kg

Electrical connections

Total connected load approx.	80	kVA
Operating voltage	400	V
Operating frequency	50	Hz
Control voltage	24	V DC

CNC-Steuerung SINUMERIK 840 C

- Modular design in 1-channel configuration
- 5 axes + 1 spindle and gear interpolation
- 19" flat operating panel with 10" TFT display
- 40 Mbyte hard disk capacity
- Electrical clearance with emergency strategy
- Incremental measuring systems
- Network connection (Ethernet)
- Digital drive technology
- Mobile handwheel

Gear cutting software

- Dialog software for automatic generation of part programs for profile grinding of external gears
- Data protection (Backup/Restore)
- Data import/export
- Pitch jump compensation
- Warm up program
- Offline version
- Integrated grinding time calculation
- Automatic cut distribution
- Interlock-controlled grinding during single flank grinding
- Grinding of double helical gears
- Double helical centering
- Gear measurements for involute external toothed workpieces
The following measurements can be performed: Profile measurement, flank line measurement, Pitch and concentricity test, tooth width measurement
- Measurement evaluation by area
- Printing of input data
- Printing of measurement results

Machine description and equipment

- Basic machine P2000G
- NC dressing device with two dressing spindles and additional feed axis
- Software for fault diagnosis
- Network connection (Ethernet)
- Centering device with touch probe
- Inkjet printer (colored)
- Oil mist extraction system
- External grinding head with 24kW and 6,000 rpm
- Pitch jump compensation
- Warm-up program
- Integrated grinding time calculation
- Automatic cutting division
- Interlock-controlled grinding during single flank grinding
- Special software for double helical gears
- Special software double helical centering
- Gear measurement
- Workpiece table with separate servo drive and 1-speed double worm gear
- Hardened and ground ball screws with preloaded nuts
- Full coverage of the working area
- Coolant and filtration system make Hoffmann, 32kW, tank capacity 3,000 litres, 2 x 200 l/min pump capacity, Coolant cleaning with fine filter (without using filter consumables)
- Oil recooling system with cooling circuits for the lubricant and coolant system and for the grinding spindle drive
- Fixed tailstock column
- Tailstock with steady rest, movable hydraulically
- Adapter for steady rest with tailstock tip