

TECHNICAL DATA
CNC-Profile Gear Grinding Machine

Manufacturer	GLEASON PFAUTER
Type	PE 1200 G
Control	SINUMERIK 840 D
Retrofit by PFAUTER	2012



Working Area

Nominal workpiece diameter	1.200 mm
Max. radial travel (X-axis)	770 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	800	mm	
Bore diameter x depth	Ø 180 x 875	mm	
T-slots	6 x 22H12		Pitch 30°
Max. permitted load	10.000	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	
Min./max. distance centre grinding spindle to table centre	100/870	mm	
Integrated automatic balancing device			

Counterholder

steady rest clamping diameter min./max.	110/250	mm
Carriage travel	900	mm
position above table min./max..	800/1.700	mm
hydraulically movable, tailstock point		

Dressing unit

Feed	2.400	mm/min
Speed	2.000 – 8.000	min-1
Dressing wheel diameter max.	130	mm
Dresser in two-roller design (Y/Z2)		

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	8 x 7 x 5	m
Machine weight approx.	29.000	kg

Electrical connections

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

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
- Grinding of tooth segments
- Gear measurements for involute external toothed workpieces DIN 3961
The following measurements can be performed: Profile measurement, flank line measurement, Pitch and concentricity test, tooth width measurement, head and tip diameter measurement
- Measurement evaluation by area
- Printing of input data
- Printing of measurement results

Machine description and equipment

- Basic machine PE1200 G with control SIEMENS SINUMERIK 840 D
- NC dressing device with two dressing spindles and additional feed axis
- Software for fault diagnosis
- Network connection (Ethernet)
- Centering device with touch probe (external)
- 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
- Grinding of tooth segments
- 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, 30kW, 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, hydraulic moveable counterholder
- Tailstock with steady rest and tailstock tip
- Electronical operating device
- Machine lamp
- In 2012, the machine was fully mechanically and geometrically overhauled by GLEASON PFAUTER (scope of work available).
The electrical system including cables and measuring systems was completely renewed.
New dressing unit in GPM version.
All axes and spindle in digital drive technology SIMODRIVE 611 D.
CNC control SINUMERIK 840 D.