

Precision is not a matter of perspective

The gear measuring machine WGT 280





WENZEL[®]

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WGT 280 - Highlights



Precision is not a matter of perspective

- Ergonomics and usability
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- Robustness and durability
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The right solution for your measuring task

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The intelligent software for your application

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WGT 280 – HIGHLIGHTS

Precision is not a matter of perspective

The WGT 280 was especially developed for the measurement and analysis of small gears, tools and rotational symmetrical parts.

The focus is always on precision, ergonomics and usability, robustness and durability and serviceability.



Ergonomics and usability

- Latest industrial design
- The open construction allows an easy and uncomplicated loading of the WGT.
- The simple operator interface and graphical input of the parameterized software make the creation of complex measuring programs and significant measurement reports quick and easy.
- The optimized ergonomics make the comfortable and secure operation of the gear measuring machine possible.
- Because of its compact construction and small footprint the WGT can be easily integrated.

Precision

- For highest precision air bearings are used in all axes.
- Baseplate and guides of the linear axes are made of granite; this ensures an identical thermal behavior of the complete measuring system.
- WENZEL Geco Controller was designed especially for the requirements of gear measurements and guarantees an excellent 4-axes-measuring performance.
- For high accuracy a pneumatic rotary table is used.
- High-resolution scales provide accurate positioning and precise results.



Robustness and durability

- The massive base of the WGT is made of granite and provides the highest level of stability.
- The air bearing technology in combination with the impala granite is absolutely wear-free and stands for long-life cycle concerning material and accuracy.
- The modular system concept of the WGT allows the adaption to changing requirements and offers security of investment for the future.
- The exclusive use of high-quality components guarantees long machine operating times.



Serviceability

- Maintenance times can be reduced as all replacement parts are easy to access.
- Subsidiaries and agents worldwide ensure high and fast replacement part availability.
- Hotline-support allows quick diagnosis for help.
- For technical support via remote maintenance access to the system can be permitted.

TECHNICAL DATA

WGT 280 in detail

No other gear measuring machine presents itself like the WGT 280. Innovative technology, established machine building and latest industrial design make this measuring system unique. Every detail of the WGT 280 speaks for itself.

Technical specifications

Axes	4	
Compressed air supply [bar]	min. 6	
Air consumption [l/min]	approx. 80	
Operating voltage	110/230 V, 60/50 Hz, 1 Ph	
Power consumption [VA]	typ. 1600	
Machine weight [kg]	approx. 1600	
Environmental conditions (for VDI/VDE 2612/13 Group 1)	17-30 °C, ΔT: 2 K/h, 2 K/m	
Dimensions [mm]	L	1350
	W	1015
	H	2050
Probe system	Scanning Probe system SP600M	
Controller	WENZEL GECO Controller	

Machine data

Workpiece diameter [mm]	5-280	
Modul range	from (0,3*) 0,5	
Measurable face width [mm]	500	
Distance between centers [mm]	50 - 500	
Rotary table loading [daN]	50	
Helix angle [°]	< 90	
Travel range [mm]	X	340
	Y	200
	Z	500
Measurement accuracy	Gear inspection according to VDI/VDE 2612/2613, Group I (with a maximum variation of the reference temperature ± 2K)	

* Need special styli



APPLICATION

The right solution for your measuring task



Measurement and evaluation of bevel gears according to different standards



Analysis of hobs for gear manufacturing



Measurement of worms and worm gears, also using the master gear method



Measurement and evaluation of car components such as synchronizer hubs



Quality assessment of transmission components for the aerospace industry



Complete analysis of drive shafts

WENZEL GEAR SOFTWARE

The intelligent software for your application

The WGT gear measuring machines are equipped with extensive modular measuring software. It provides broad functionality for the measurement and analysis of different types of gearing, tools and shafts. This by the German metrology institute PTB certified software is divided into the main menu TMain and in

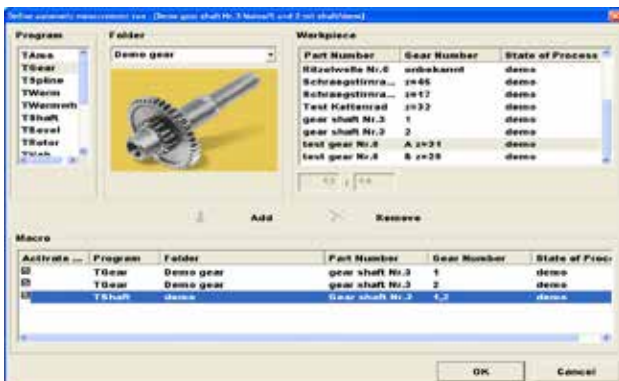
separate application oriented modules. TMain allows a comfortable management of part parameters and measurement results.

Main menu for data management



Easy data input

- Intuitive usable masks are used for data input.
- Every input mask covers a logical associated set of parameters.
- Graphics support the user during the exact definition of measurement parameters.



Macro-Programming

- Macro-Programming realizes easy linking of single defined measurement procedures, e.g. straight and helical gears.
- With a linkage complete measurements can be created as they are used e.g. for measurements of shafts with gearing and geometrical elements.



Integrated Database

- All parts are managed within the integrated database.
- Measurement results are stored and can be viewed anytime.

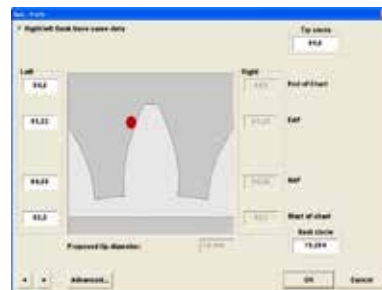
Software modules

Module for the measurement of spur gears

The module TGear is used for the measurement of spur gears. The user is intuitively guided by the software through different masks to enter all parameters which describe the gear definitely. In a further step the user chooses the needed evaluation. The following standard evaluations are possible:

- Profile and lead
- Pitch and runout
- Evaluation of crowned gears
- K-charts
- Tip and root relief, end relief
- Tooth thickness, tooth width, dimensions over one and two balls and over wires
- Topographical representation of flank form

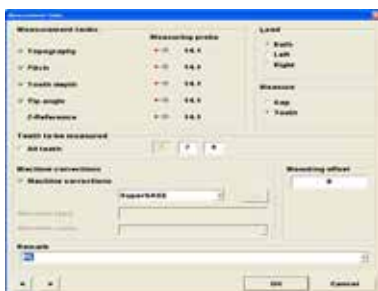
Based on this information an automatic measurement procedure and analysis is generated. Afterwards a complete and significant measuring report is created.



Module for the measurement of bevel gears

Bevel gears can metrological be captured and evaluated with the module TBevel. The determination of flank form, pitch and runout as well as tooth thickness, tooth depth and tip cone are part of this software module.

The results of bevel gear measurements can be transferred to manufactures specific analysing programs. This makes a direct correction of the machine tool according to the closed-loop procedure possible.





Modules for the measurement of gear cutting tools

THob, TShaver and TCut represent the module group for gear cutting tools. Through the input of relevant parameters a complete measurement and analyzing program can easily be created. Pitch, runout and topographical evaluations are just a few of the possible evaluations. This makes a secure and reliable use of gear cutting tools possible.



Module for the measurement of cylindrical worms and worm gears

TWorm is the software module for the measurement of cylindrical worms and worm gears. The measurement of cylindrical gears is according to DIN 3974. Based on nominal data (master gear method) worm gears can be analyzed concerning pitch and runout as well as flank form topography.



Module for the measurement of shafts

For the measurement of shafts and their evaluation concerning form, position and size the module TShaft is used. A complete measurement and evaluation program can be automatically be generated by the input of parameters describing the part geometry.

Module for the measurement of splines

TSpline is used for the analysis of spline shafts and spline bore hubs with straight flanks as well as serrated toothing. The following inspections can be carried out on these kind of parts: Profile, lead, pitch and runout. Tip and root circle diameter are further possible evaluations. Within this software module the measurement and evaluation program is automatically created based on the entered part parameters and the selected analyses.



Option for the measurement of camshafts

The option TCam is especially for the detailed analysis of camshafts. Based on a nominal-actual comparison the calculation of displacement speed progression and acceleration, highest point of the curve as well as rotation error are just a selection of evaluations that can be executed. The results of the measurement can be numerical and graphical be represented.



Module for the measurement of rotors

The measurement and analysis of profile, lead and pitch on male and female rotors is done with the module TRotor. An option of this module contains the calculation and inspection of cycloid profiles.



Other modules and options on request.

Innovation for success

WENZEL Group GmbH & Co. kG is one of the leading manufacturers of industrial metrology solutions. The wide range of WENZEL products includes solutions in the fields of coordinate measuring machines, gear metrology, computed tomography and optical high speed scanning. Founded in 1968 as a family business, WENZEL Group combines tradition with innovation,

and relies on values such as reliability, trust and respect for the environment. Subsidiaries as well as sales and service partners worldwide represent the company in more than 50 countries. The WENZEL Group employs more than 630 people worldwide.

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