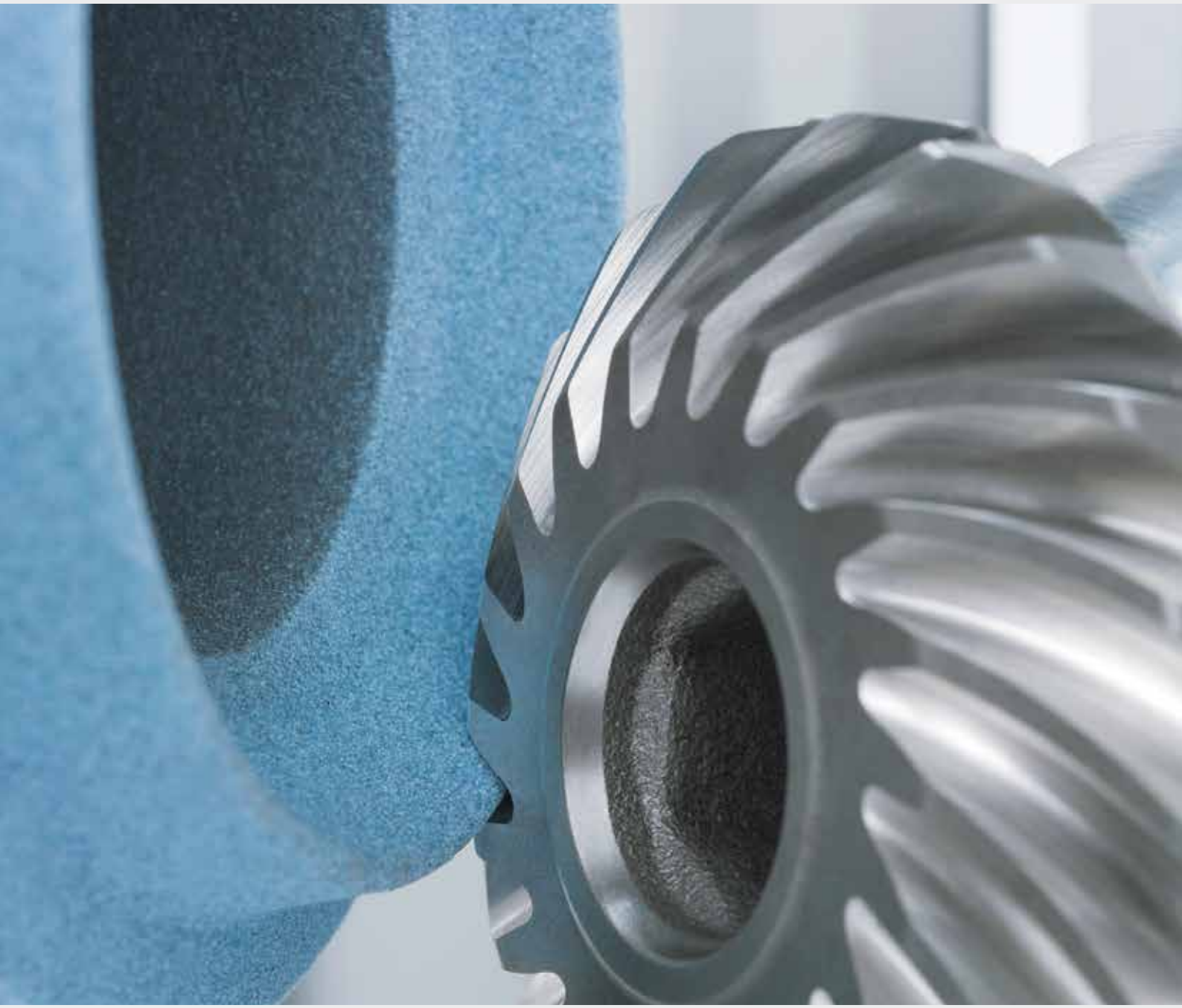
Total Gear Solutions Gleason



Phoenix® 280G Bevel Gear Grinding Machine

Phoenix® 280G
Bevel Gear Grinding Machine

Phoenix® 280G Bevel Gear Grinding Machine: Fast, accurate and highly reliable

Phoenix® 280G meets the need for improved bevel gear grinding of bevel gears up to 280 mm in diameter with a design that's simpler, more reliable and easier to operate and maintain.

Built for Reliability

- A work area that is exceptionally well-designed for swarf containment and evacuation.
- Ensures fast, accurate bevel gear grinding, and minimizes the time-consuming and expensive maintenance challenges of swarf accumulation and contamination.
- Swarf is easily contained and falls free for collection by the coolant chute positioned directly below the work.
- Equipped with an integrated dressing unit with a unique telescoping design that enables it to extend into the work area for dressing, and then fully retract flush with guarding during the grinding cycle.

Greatly Reduced Setup Time

- Tool-less quick-change coolant header helps the operator achieve fast, repeatable setup and positioning of pipe-to-part.
- Equipped with a quick-change grinding wheel spindle design so an operator can quickly and easily replace a grinding wheel with minimal time and effort and without tools.
- Changing arbors has been greatly improved, with a new tool-less work spindle that allows conventional arbors to be installed to, and removed from, the front of the machine with no tools or fasteners.

The 280G eliminates pipes, wiring and clutter from the work area so that swarf containment and evacuation is extremely efficient.

Benefits

- Greatly reduced setup time increases your productivity.
- Far less maintenance required with simplified work chamber.
- Improves your quality with optimum coolant delivery.
- Optional gear grinding from solid blanks.
- Ready for advanced tool designs and the latest abrasive materials.

Phoenix® 280G
Features and Benefits

High Quality, Greater Accuracy and Repeatability

- The Phoenix monolithic column features extreme rigidity and is cast from an advanced polymer composite material for very high thermal stability and damping.
- Laser guidance device helps the operator to accurately align the coolant header for optimum coolant flow each time the header is changed.
- Automatic Stock Divider, mounted in close proximity to the work spindle, helps ensure consistently high gear quality by automatically determining the tooth slot position of the pre-finished gear for accurate and reliable stock division.
- Stock dividing is done simultaneously with wheel dressing, to further reduce non-productive time.
- First part check right on the machine, for ensuring the accuracy of the first parts produced after wheel dressing.

The dressing unit has been designed so that it telescopes forward into the work area for dressing, but then completely retracts flush with the guarding during the grinding operation.

With the help of precise laser alignment, the operator can more accurately position the coolant header for optimum coolant flow.

The Automatic Stock Divider features a very stiff design for greater reliability, and operates simultaneously with wheel dressing to reduce non-productive time.

The new quick-change coolant header enables the operator to quickly and efficiently change and re-position the headers for each new job.

Phoenix® 280G
Features and Benefits

Powerful Controls, User-Friendly Operation

- Available with the latest Fanuc 30i or Siemens 840D CNC controls.
- New operating software and network capabilities allow easy integration into any modern production environment. The Gleason software makes setup and operation easy and intuitive.
- Network-ready to support remote diagnostics and quick, on-line access to Gleason engineers, or the customer's own off-site personnel for software upgrades and technical support.
- Network connectivity allows the user to upload or download data to or from other gear processing or inspection equipment.

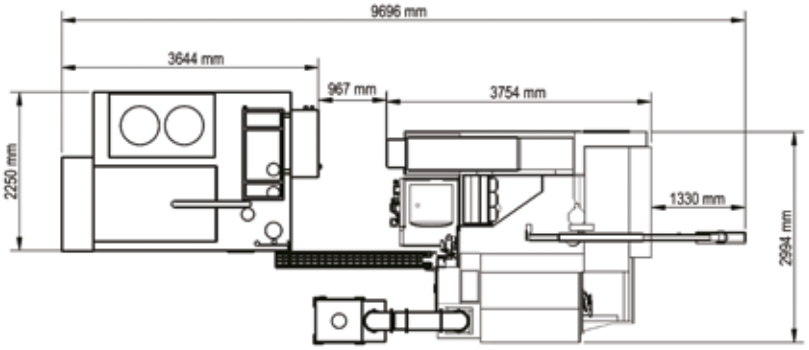
Highly Versatile

- Available with Gleason stackable-tray automation solutions; accepts all types of available automation. Allows for maximum flexibility when integrating with customer automation systems.
- Produce spiral, bevel, hypoid and SRH gears, as well as Coniflex® straight bevel and face gears.

Maximum Performance with Gleason Bevel Gear Grinding Wheels

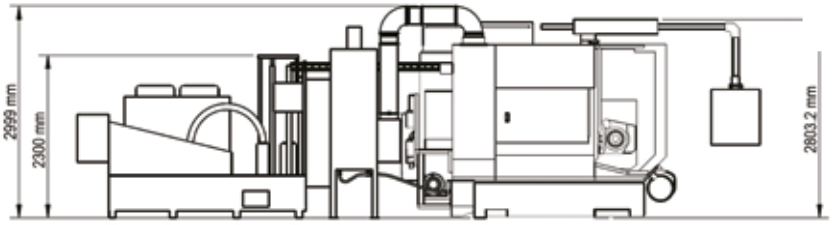
- Four different models covering the widest range of application types: gear sizes from small to very large module; coarse to 'aircraft' classifications; low to very aggressive metal removal rates; and all types of steels and hard metals.
- Grind gears from a solid blank, greatly reducing setup and cycle times.
- Customized solutions avilable, with wheels pre-profiled to meet the customer's specific gear profiling requirements.

Phoenix® 280G
Technical Data



Top View

Front View



Workpiece Capacity*	**Metric**	**English**	
Maximum Full Depth	20 mm	.775 in.	
Maximum Face Width	58 mm	2.3 in.	
Maximum Gear Pitch Diameter	280 mm	11 in.	
Min./Max Wheel Size	51 / 230 mm	2.0 / 9 in.	
Maximum Module	10 mm	2.54 DP	
Minimum Number of Teeth	1	1	
Machine Specifications	**Travel (mm)**	**Travel (in.)**	**Speed**
X-Horizontal (work slide)	25 – 334 mm	1 – 13.1 in.	13 m/min.
Y-Vertical Travel	± 175 mm	± 7 in.	13 m/min.
Z-Wheel Slide Travel	125 – 600 mm	5 – 23 in.	13 m/min.
B-Root Angle	-5° to + 90°	-5° to + 90°	50°/sec
Electrical Equipment (motors)	**Type**	**Speed****	**Continuous Torque Power**
X-Horizontal (work slide)	Digital Servo Drive	2,000 rpm	12 Nm
Y-Vertical Travel	Digital Servo Drive	2,000 rpm	22 Nm
Z-Wheel Slide Travel	Digital Servo Drive	2,000 rpm	12 Nm
B-Root Angle	Digital Servo Drive	2,000 rpm	12 Nm
A-Work Spindle	Digital Servo Drive	900 rpm	
C-Wheel Spindle	Digital Servo Drive	8,000 rpm	
D-Dresser Spindle	Digital Servo Drive	10,000 rpm	
W-Eccentric Spindle	Digital Servo Drive	2,600 rpm	
Coolant - Scavenger pump	AC induction		3.0 kW
Hydraulic	AC induction		2.2 kW
Floor Space	**Metric**	**English**	
Length x Width (without filter)	3,750 x 3,000 mm	148 x 118 in.	
Height (without crane)	2,800 mm	110 in.	
Weight	15,870 kg	35,000 lbs.	

*Actual machine limitations are subject to gear parameters, machinability of material and metal removal rates. For requirements beyond specified values, consult Gleason Application Engineering.

** Higher spindle speeds on request.

Complete Solutions from One Source

Bevel Gear Solutions

- For Gears up to 2,500 mm in Diameter
- Cutting (Spiral and Straight)
- Blade Grinding, Cutter Build
- Grinding
- Quenching
- Lapping
- Roll Testing
- Automation
- Design Software
- Cutting Tools, All Processes
- Workholding

Cylindrical Gear Solutions

- For Gears up to 10,000 mm in Diameter
- Hobbing, Form Milling/Gashing
- Chamfering/Deburring
- Power Skiving
- Shaping
- Shaving
- Honing
- Grinding
- Combined Processes
- Cutting Tools, All Processes
- Automation
- Workholding

Metrology Solutions

- For all types of gears and gear tools
- Analytical Inspection
- Surface Roughness Measurement
- Barkhausen Noise Testing
- 3D Measurement
- Shop-Hardened Machine Models
- Functional Gages
- A2LA Gear Calibration Lab
- Master Gears
- Workholding

Plastic Gear Solutions

- Bevel and Cylindrical Gears up to 125 mm
- Proprietary 'No Weld-Line' Technology
- Complex Assembly
- Design Services

Global Services

- Service and Support Programs
- Original Accessories
- OEM Spare Parts
- Training Solutions
- Performance Upgrades
- Modernization Programs
- Tooling Services

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