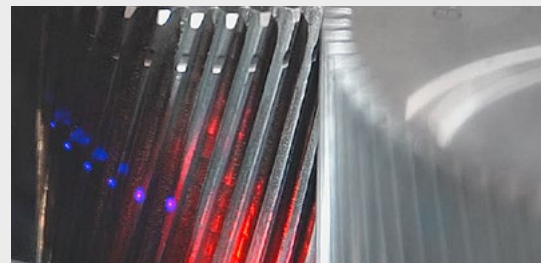
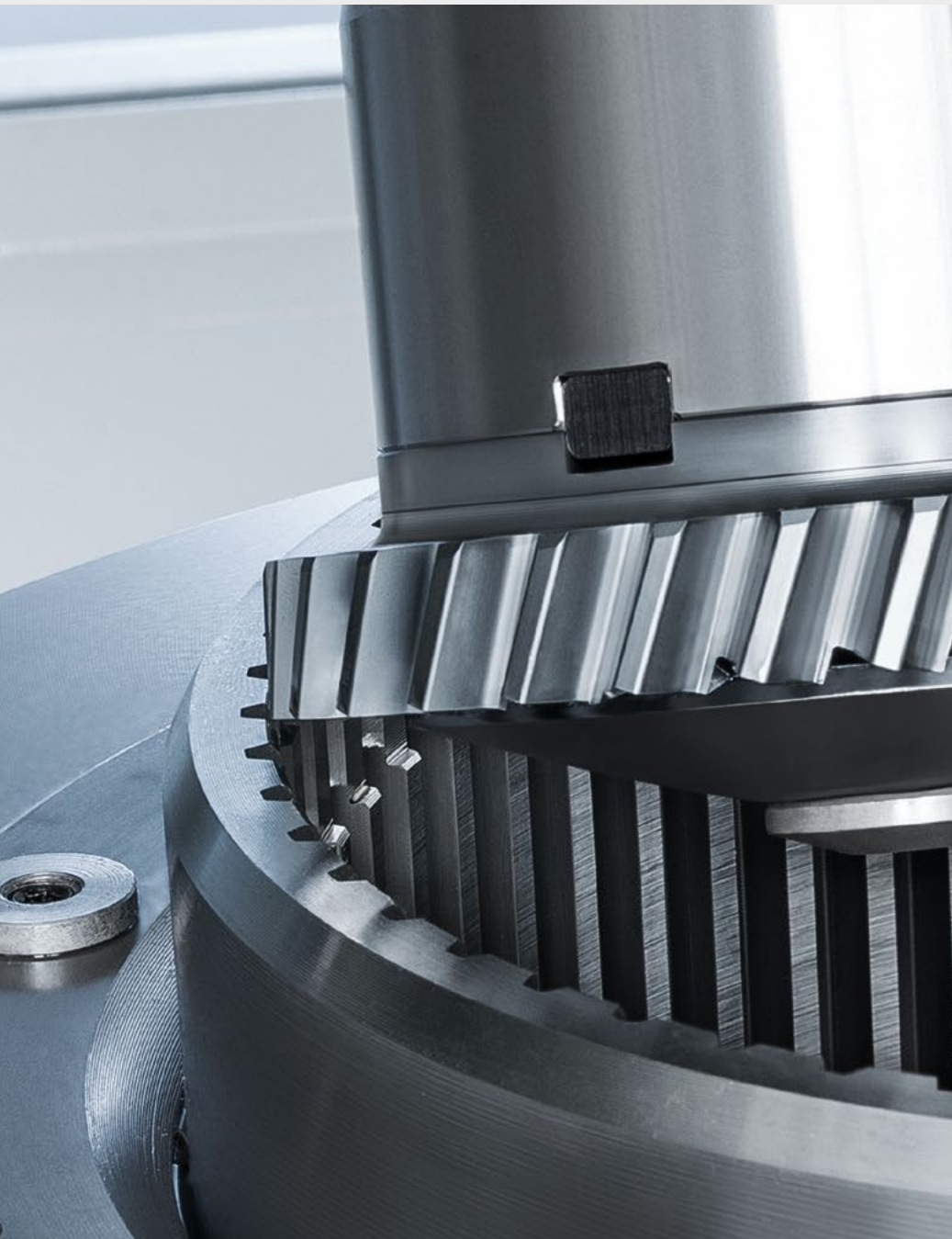
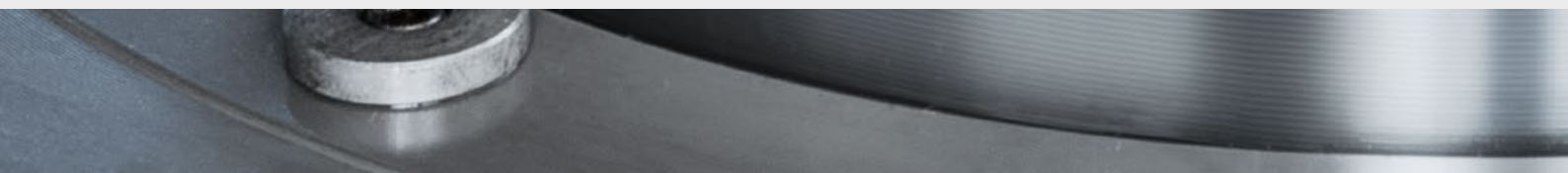


Total Gear Solutions **Gleason**



Cylindrical Gear Manufacturing Solutions



Cylindrical Gear Manufacturing



Horizontal Gear Hobbing Machines

	Workpiece dia. max., mm	Module max., mm	Axial travel max., mm
P60	80 / 120*	2.5 / 3*	320 / 400*
P90	100 / 120*	3 / 4*	400
P90EL	100 / 120*	3 / 4*	800
P90CD*	60 / 120*	3	400
100H(iC)*	100 / 120*	3 / 4*	400
P210L(iC)*	180	4	300 / 400*

* option * worm milling / profile milling * with integrated chamfering & deburring unit



Worm Milling Machine

P90WM	90 / 100*	8	280 / 330*
-------	-----------	---	------------

* on request



Vertical Gear Hobbing Machines

	Workpiece dia. max., mm	Module max., mm	Axial travel max., mm
Genesis® 130H(iC)*	130	3	350
Genesis® 160HCD*	160	4	350
Genesis® 210H(iC)*	210	4	350
Genesis® 280H(CD)*	280	5	390
Genesis® 400H(CD)*	400	8	650
GP200	200	4 / 6*	250 / 440*
GP300	300	4 / 6*	250 / 440*
P400	400 / 500*	8	600
P600	600 / 800*	16	400 / 600* / 1.000*
P800	800 / 1,200*	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600*
P1200	1,200 / 1,600*	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600*
P1600	1,600 / 2,000*	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600* / 2,200*
P2000	2,000	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600* / 2,200*
P2400	2,400 / 2,800*	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600* / 2,200
P2800	2,800	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600* / 2,200
P3200	3,200	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600* / 2,200*
P4000	4,000	20 / 30* (25 / 35*)	700 / 1,000* / 1,300* / 1,600* / 2,200*
P5000	5,000	25 / 35*	1,600 / 2,200*
P6000	6,000	25 / 35*	1,600 / 2,200*
P8000/10000	8,000 / 10,000*	45 / 60*	1,200 / 1,800*
Titan® 1200H	1,200	20 / 30* (30 / 40*)	1,000 / 1,600*
Titan® 1600H	1,600	20 / 30* (30 / 40*)	1,000 / 1,600*

Larger machines are available on request.
* option * profile milling ♦ with integrated chamfering & deburring unit



Power Skiving Machines

	Workpiece dia. max., mm	Module max., mm	Axial travel max., mm
100PS	100 / 150*	2	320
300PS*	300	4	440
400PS*	400	5	650
600PS*	600	6	650
600/800PS	800	8 / 10*	650

Larger diameters and modules on request.
* for internal gears * option * optionally with integrated resharpening unit



Gear Shaping Machines

	Workpiece dia. max., mm	Module max., mm	Stroke length max., mm
100S	100	3	30
GP200S	200	6	55 / 110*
GP300S	300 / 400*	6	55 / 110*
P500S	500	12	250
P600S	600 / 800*	8 / 12*	110 / 250*
P800S	800 / 1,200*	12 / 16▲ / 24▲	250 / 380▲ / 650▲
P1200S	1,200 / 1,600*	12 / 16▲ / 24▲	250 / 380▲ / 650▲
P1600S	1,600 / 2,000*	12 / 16▲ / 24▲	250 / 380▲ / 650▲
P2000S	2,000	12 / 16▲ / 24▲	250 / 380▲ / 650▲
P2400S	2,400 / 2,800*	12 / 16▲ / 24▲	250 / 380▲ / 650▲
P2800S	2,800	16▲ / 24▲	380▲ / 650▲
P3200S	3,200	16▲ / 24▲	380▲ / 650▲

Larger machines are available on request. * option ▲ with hydraulic shaping head



Gear Shaping Machines

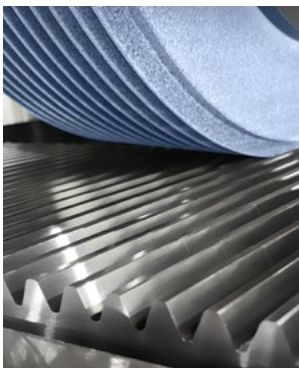
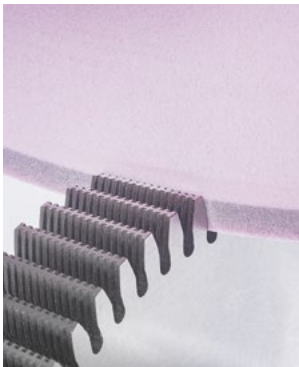
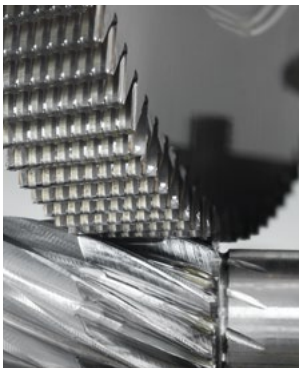
with „Electronic Helical Guide“

	Workpiece dia. max., mm	Module max., mm	Stroke length max., mm
GP200ES	200	6	110
GP300ES	300 / 400*	6	110
P500ES	500	12	250
P600ES	600 / 800*	8 / 12*	110 / 250*
P800ES	800 / 1,200*	12	250
P1200ES	1,200 / 1,600*	12	250
P1600ES	1,600	12	250

Larger machines are available on request. * option



Cylindrical Gear Manufacturing



Gear Shaving Machines

	Workpiece dia. max., mm	Module max., mm	Face width max., mm
for vertical workpiece mounting			
Genesis® 130SV	150	5 (3)	60 (40)
Genesis® 130SViC*	150	3	60 (40)
200SVP	200	3	40
for horizontal workpiece mounting			
ZS(E)150(T)	200	5 (4)	100 (45)

* with integrated chamfering & deburring unit
(C), (E) Chamfering; (T), (P) Plunge shaving

Shaving Cutter Grinding Machine

	Workpiece diameter max., mm	Module range, mm	Face width max., mm
410SCG	400	0.6 - 14	75

Rack Milling/Grinding Machines

Milling of racks, steering racks, broaches, band saw blades and special profiles

	Module max., mm	Width spur/ helical max., mm	Helix angle max., degree	Length max., mm
640RM	5	230	-	640
1500RM(H)	8	300 / 200	+/- 30	1,500
2000RM(H)	18	350	+/- 30	2,000
2500RM(H)	18	350	+/- 30	2,500
2000RMP(H)	12	300 / 200	+/- 30	2,000
850RMS	3	100	+/- 30	850
2000RGP	12	300 / 200	+/- 30	2,000

(H) option for Helical Racks

Profile Grinding Machines

for external and/or internal gears

	Workpiece dia. max., mm	Profile depth max., mm	Axial travel max., mm
P90G	100 / 125*	8	220
P400G	400	35 / 45°	400 / 600*
P600G	600	35 / 45° / 55° / 80°	400 / 600* / 1,000*
P600/800G	800 / 1,000*	35 / 45° / 55° / 80°	400 / 600* / 1,000*
1200G	1,250	35 / 45° / 55° / 80°	1,300
Titan® 1200G	1,200	100	1,000 / 1,600*
Titan® 1600G	1,600	100	1,000 / 1,600*
P1600G	1,600	80 / 120°	1,000 / 1,300* / 1,600*
P2000G	2,000	80 / 120°	1,000 / 1,300* / 1,600*
P2400G	2,400	80 / 120°	1,000 / 1,300* / 1,600* / 2,200*
P2800G	2,800	80 / 120°	1,000 / 1,300* / 1,600* / 2,200*
P3200G	3,200	80 / 120°	1,000 / 1,300* / 1,600* / 2,200*
P4000G	4,000	80 / 120°	1,000 / 1,300* / 1,600* / 2,200*
P5000G	5,000	80 / 120°	1,000 / 1,300* / 1,600* / 2,200*
P6000G	6,000	80 / 120°	1,000 / 1,300* / 1,600* / 2,200*

Larger machines are available on request.

* option
▪ manual loading

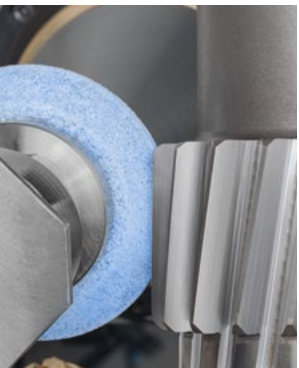
Threaded Wheel Grinding Machines

	Workpiece dia. max., mm	Module range, mm	Axial travel max., mm
P90G	100 / 125*	3	220
Genesis® 200GX	10 - 200	0.5 - 4	350
Genesis® 260GX	30 - 260	1 - 4	350
300TWG	300	0.5 - 5	440

▪ manual loading

Gear Honing Machines

	Workpiece dia. max., mm	Module max, mm	Workpiece length max., mm
260HMX	270	6	650
260HMS	270	6	450



Complete Gear Machining



Complete Gear Manufacturing

Turning, Hobbing, Drilling, Chamfering and Deburring in one single setup

	Workpiece dia. max., mm	Module max., mm	Axial travel max., mm
Agilus® 180TH	180	3	500 / 600*

* turning



Gleason-Heller 5-Axis Machining Centers for Large Cylindrical and Bevel Gears

	Workpiece dia. max., mm	Pinion shaft length max., mm	Table / pallet size, mm
--	----------------------------	---------------------------------	----------------------------

FP Series 5-Axis Machining Centers with Pallet Changer

FP6000	1,000	-	630 x 630
FP8000	1,250	-	800 x 800
FP10000	1,400	1,350	1,000 x 1,000
FP14000	1,400	1,550	1,000 x 1,000
FP16000	2,000	-	1,250 x 1,600

FT Series 5-Axis Machining Centers with Table Loading

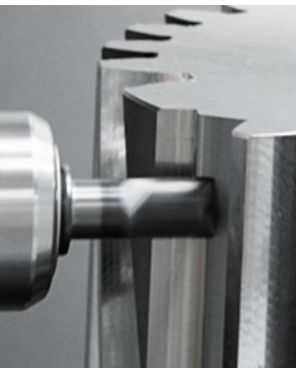
FT6000	1,580	1,200	Ø 1,000
FT8000	1,810	1,500	Ø 1,200
FT16000	2,500	2,000	Ø 1,300

CP Series 5-Axis Machining Centers with High-Speed Table for Turning with Pallet Changer

CP6000	1,000	-	630 x 630
CP8000	1,250	-	800 x 800
CP10000	1,400	1,350	1,000 x 1,000

CT Series 5-Axis Machining Centers with High-Speed Table for Turning with Table Loading

CT6000	1,580	1,200	Ø 1,000
CT8000	1,810	1,500	Ø 1,200

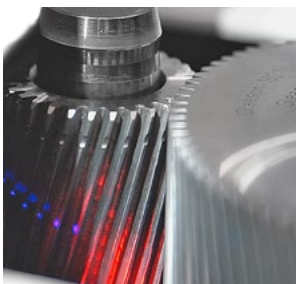
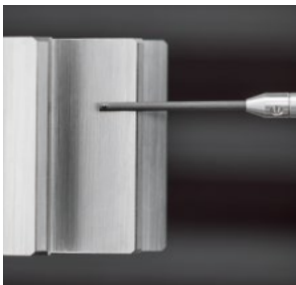
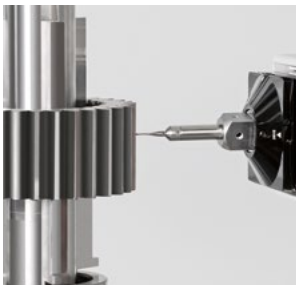


Gear Inspection Systems

Analytical Gear Inspection Systems

	Workpiece dia. max., mm	Module range, mm	Center distance, mm	Z-axis travel, mm
175GMS®	175	0.2* / 0.4 - 6.35	380	305
300GMS® nano	300	0.2* / 0.4 - 18	500*	450*
300GMSP® nano [■]	300	0.2* / 0.4 - 18	500*	450*
350GMS®	350	0.3 - 18	650*	450*
475GMS®	475	0.4 - 18	650*	450*
475GMSP® [■]	475	0.4 - 18	650*	450*
650GMS®	650	0.5 - 22	1,000*	600*
850GMS®	850	0.5 - 22	1,300*	1,000*
1000GMS®	1,000	0.5 - 22	1,300*	1,000*
1300GMS®	1,300	0.5 - 22	1,300*	1,300*
1500GMS®	1,500	0.5 - 32	1,300*	1,000*
2000GMS®	2,000	0.8 - 32	2,000*	1,200*
3000GMS®	3,000	0.8 - 32	2,000*	1,200*

- P-version for the production environment
- * other dimensions on request
- option



Analytical Gear Inspection Systems (Laser)

	Workpiece dia. max., mm	Module range, mm	Center distance*, mm	Z-axis travel*, mm
300GMSL	300	0.2* / 0.4 - 18	500	450
500GMSL	500	0.2* / 0.4 - 12	1,000	600

* other dimensions on request • option
For laser measurement capability on larger size machines consult factory.

In-Process Gear Inspection (Laser)

	Workpiece dia. max., mm	Module range, mm	Maximal workpiece weight, kg
GRSL	250	0.4 - 7.2	6.8

Available as stand-alone or fully integrated solution (HFC Hard Finishing System)

Closed Loop

Gleason's Closed-Loop functionality has been available in bevel gear production for many years and was adapted for cylindrical gears in 2015. Closed Loop provides for direct data exchange of measured data between metrology and production machines and is part of the standard repertoire of Gleason's gear metrology systems.



Gear Inspection Systems



Double Flank Gear Rolling System

	Workpiece dia. range, mm	Module range, mm internal	Maximal workpiece weight, kg
GRS2	254	0.4 - 2.5	6.8
GRS2 Heavy-duty	304.8	1-10	22.7

Dimensions Over Pins Gauges

	Measuring range external, mm	Measuring range internal, mm	Module diametral pitch range, mm
DOP160	0 - 160	38 - 160	0.4 - 2.5
DOP320	0 - 320	38 - 320	0.4 - 2.5

LeCount® Expanding Mandrels

LeCount® mandrels expand on the inside diameter of components and are ideal for inspection between centers.

- Expansion range 0.38 - 25.4 mm.
- Accuracy over entire range of expansion 0.0025 mm or better.
- Standard sizes available from 6.35 mm to 177.8 mm.
- Easy to load and unload.

Automation Solutions

AR Series - Adaptable and Flexible Robotic Material Handling

	Payload, max., kg	Weight of parts handled, max., kg
70AR	7	4.9
120AR	12	8.4
250AR	25	18
700AR	70	49
2700AR	270	150

ARC Series - Highly Versatile Cart Loaded Automation with Greater Capacity

	Tray/basket size, max., mm	Payload, max., kg	Weight of parts handled, max., kg
70ARC	500 x 700	7	4.9
120ARC	500 x 700	12	8.4
250ARC	500 x 700	25	18

ARD Series - Compact, Fast and Efficient Drawer Loaded Automation

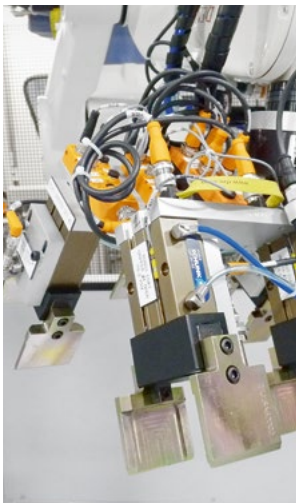
	Drawer size, max., mm	Payload, max., kg	Weight of parts handled, max., kg
70ARD	600 x 600	7	4.9
120ARD	600 x 600	12	8.4

ARP Series - Pallet Loading and Unloading Automation

	Tray size, max., mm	Payload, max., kg	Weight of parts handled, max., kg	Weight of trays handled, max., kg
70ARP	500 x 700	7	4.9	49
120ARP	500 x 700	12	8.4	49

Available options on all models include integration of pre- and post-processes including finishing, assembly, cleaning, inspection and marking.

Larger part handling systems are available on request.
Customized solutions available on request.



Gear Manufacturing Tools



- Hobs**
- Bore or shank-type hobs, made of high-speed steel and solid carbide.
 - Coated with PVD coatings.
 - Starting at module size 0.3 mm (DP 85) up to module 40 mm (DP 0.635).



- Chamfer Hobs**
- Module range on request.
 - Gear chamfer cutting.
 - For one or more gears.



- Chamfer Rolling and Deburring Tools**
- Module range 0.8 - 5.0 mm.
 - For wet and dry machining.
 - Chamfer shapes and sizes selectable.
 - Integrated burnishing feature.
 - Patented adjustable burnishing gear to adapt helix angle to workpiece.



- Power Skiving Cutters**
- For gears and shafts, internal and external.
 - PM and solid carbide.
 - Cutters with inserted carbide inserts.
 - High performance coatings for power cutting.



- Inserted Blade Hobs and Milling Cutters**
- Solid and carbide inserted tools for highest accuracy and efficiency in internal and external gearing applications.



- Shaper Cutters**
- High-speed steel shaper cutters in disk, bore and shank-type designs.
 - Standard module range: 0.5-16.0 mm.



- Shaving Cutters**
- For external and internal gears.
 - For all shaving methods.
 - Module range 0.5 -17 mm.
 - Cutter width up to 50 mm.
 - Shaving cutter serration with Opti-Edge® for higher tool life.



- Honing Tools**
- Internally toothed ceramic honing rings in high quality Opti-Form®.
 - High-precision diamond master dressing gears and rolls.
 - Multiple replating of diamond dressing tools.



- Grinding Tools**
- Profile and threaded grinding wheels.
 - Polish grinding worms.
 - Replatable CBN grinding wheels.
 - Dressing tools.
 - Replating services.



- Master Gears**
- High quality master gears for double- and single-flank testing.
 - Module range from 0.3-16 mm.
 - DIN 3970 or customer request.
 - Application-specific coatings for life improvement.



- Tool Services**
- Gleason offers the most comprehensive range of reconditioning services for hobs, shaper cutters, shaving cutters hard finishing tools and measuring equipment. Scan the e-Ticket code for online tooling requests.

Workholding Solutions



- Single Angle Contracting Collets**
- Contracting collet system designed to center and clamp on one pinion or gear shank bearing diameter.



- Vers-Grip® Arbor**
- Contracting collet system designed to simultaneously center and clamp two pinion or gear shank bearing diameter.



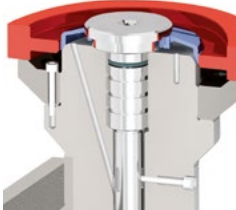
- Single Angle Expanding Collets**
- Expanding collet system designed to center and clamp on one pinion or gear bore bearing diameter.



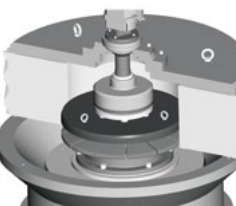
- Floating Lug Pinion Solutions**
- Contracting clamp lug system designed to center and clamp on one pinion or gear shank bearing diameter.



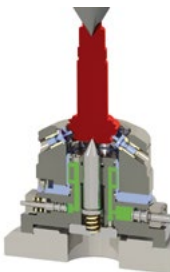
- Segmented Collets**
- Standard collet configurations cover bores ranging from 20 mm (0.781") up to 100 mm (3.937").



- Uni-Spand® Arbor**
- Small- to Mid-Sized Gears
- Expanding spring clamping system used for small to mid sized cylindrical gear applications.



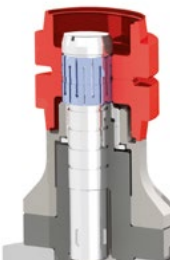
- X-Pandisk®**
- Large Gear Clamping
- Expanding spring clamping system used for large cylindrical gear applications.



- Pitch Line Fixtures**
- A fixture designed to locate a gear or pinion on its gear tooth pitch diameter, utilized to re-qualify axial and radial bearing surfaces.



- Iso-Spand®**
- Expanding collet system designed to center and clamp solely on the gear bore. Commonly used for planet pinion applications.



- Double Angle Expanding Collets**
- Expanding collet system designed to center and clamp on one pinion or gear bore bearing diameter.

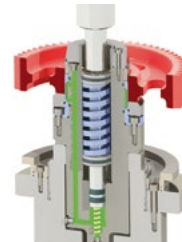
Workholding Solutions



Friction Drivers

Knife/Juicer Drivers

Face clamping/driving system utilizing tailstock downward pressure for applications where traditional clamping isn't possible.



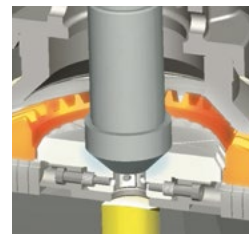
Hydraulic Workholding

Hydraulically actuated expanding and contracting workholding systems can be used as an alternative to traditional mechanical clamping devices.



Zero Point Clamping Systems for Large Gears

Palletized centering and part clamping system.



Quench Fixtures

A fixture designed to locate and contain a heated gear or pinion during a rapid cooling process, utilizing temperature controlled oil to control blank distortion.

Gear Development and Closed Loop Manufacture

KISSsoft® Design Software for Gears and Transmission Elements

KISSsoft® performs strength calculations quickly and accurately, and provides detailed documentation, including safety factors and service life values. KISSsoft is completed by interfaces to all standard CAD programs and links to FE calculations.

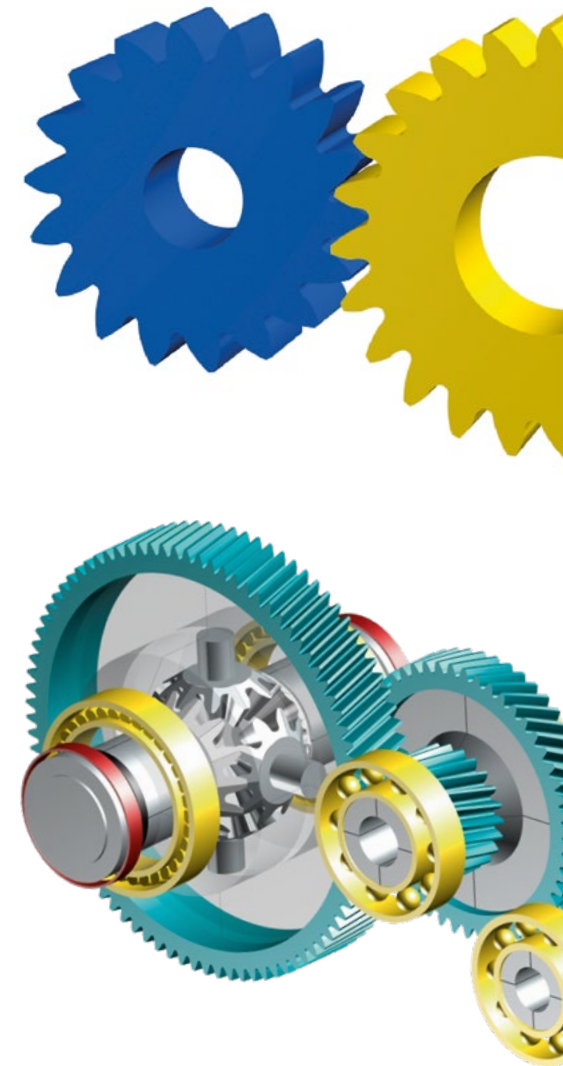
KISSsoft® AG develops design software for engineers and designers in a wide variety of fields: whether they

manufacture cable car systems, gears for construction equipment, Formula 1 race car transmissions or the tiny gears used in Mars rovers. When used in keeping with valid standards (DIN, ISO, AGMA), KISSsoft® serves as a quick, high-quality tool for sizing transmission elements, reviewing calculations, determining component strength, and documenting safety factors and service life values.

KISSsys® Transmission Design and Simulation

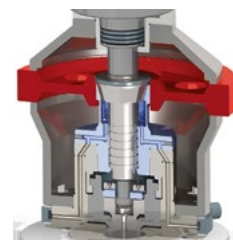
KISSsys® enables users to model complete gear units and drive trains. KISSsys® brings together kinematic analysis, 3D graphics, and user-defined tables and dialogs, allowing users to perform system level evaluations in one run while

considering the interdependent effects of every single component of the gearbox. System reliability, load spectrum calculation, efficiency and thermal balance evaluation, modal analysis are now available, and more.



Quik-Flex Plus Modular Quick-Change Workholding System

Modular, tool-less and extremely accurate workholding solution. Quik-Flex® Plus cuts cylindrical gear and pinion changeover time to just 30 seconds or less.



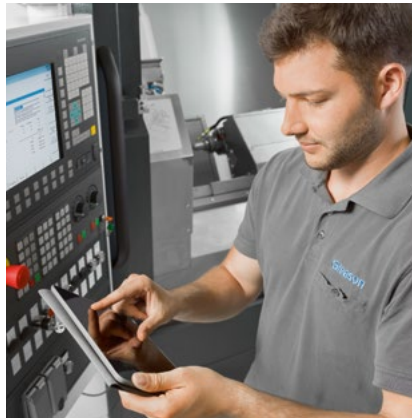
Modular Bore Clamping for External Gears

Workholding designed to be installed and removed quickly and adapted to different gear processing applications utilizing advanced modular tool-less technology.



Quick-Change Modular Bore Clamping for Internal Gears

Contracting collet system designed to center and clamp on one gear outer bearing diameter. Module design in a range of sizes and part locating collet safety built into the design.



Service Programs

Our objective is to keep your machine in optimum performance, avoiding unplanned downtimes before they occur. Gleason Service Teams know Gleason machines best and are able to provide comprehensive and certified services.

Original Spare Parts Perform Better

Only original spare parts guarantee the optimum performance and longevity of your Gleason machine as they are tested for quality and high reliability. We provide more than 100,000 different spare parts from our spare parts stock supplies located all around the globe.

Gleason Academy Training

The Gleason Academy offers the industry's widest variety of training classes, covering the full spectrum of bevel, cylindrical, automation, metrology as well as gear and transmission design topics. Additionally, we offer seminars, webinars and online trainings. For details about training classes, check gleason.com/training

Modernization Programs

Gleason Services offers modular packages for machine modernization. Depending on your requirements, you can choose from a wide range of solutions at different levels: Remanufacturing of mechanical components, update of automation systems, control upgrades, or a complete machine remanufacture.

e-Ticket Machine Services

Use the e-Ticket Machine Services for online service requests regarding Gleason machines. You benefit from immediate and effective support, as all relevant data is available.

Original Accessories

Original accessories include Geometry Check Set, Mobile Setup Station, Gleason Connect® digital retrofit, and Gleason Connect+ augmented reality support to extended remote communication possibilities.

Gleason Fingerprint

Fingerprint automatically compares machines' status in time for continuous diagnostics, resulting in proactive service actions.

Production Support

We help design and evaluate all types of bevel and cylindrical gears to enhance their manufacturability and functionality.

Gleason's Specialized Gear Services group supports the development of prototypes which are evaluated for performance and further manufacturing process improvements. We assist with pre-production and small lot production runs.

gTools Software

gTools software enables seamless communication between tooling, machines and reconditioning facilities, adding intelligence to customers' tooling management. gTools reduces setup time while minimizing operator errors. It provides data and methods to track and optimize the complete tool life cycle, during use, crib storage and reconditioning.



Gleason Plastic Gears – Where Precision Gears Take Shape

Custom molded gear solutions leverage KISSsoft® Gear Design Software that delivers the smoothest and quietest gear mesh possible.

Designs for Specific Applications

Custom gear tooth forms are tailored to specific applications including high temperature, high torque, low noise, and minimal backlash.

Material Selection

Gear design services include material selection and moldability recommendations.

Metal to Plastic Gear Design Transformation

Many applications can be rendered more efficient and simple by switching from metal to plastic gears. We help you with the transformation

High Quality Gears

- State-of-the-art gear inspection capabilities ensure the highest gear quality levels possible.
- Gear Inspection with Tactile Probing and Laser Scanning.
- Double Flank Testing.
- Double flank testing capabilities include roll testing, testing with staging fixtures and product audits.
- Optical Metrology
Precise optical measurements complement contact measurements.
- Plastic Gears
Do Have a Quality Level
We can design and produce your plastic gears according to common gear quality standards.

Molding Solutions

Gleason Plastic Gears provides single and multi-cavity mold solutions including our proprietary no-weldline technology for stronger and more durable gears.

Stronger and More Durable Gears

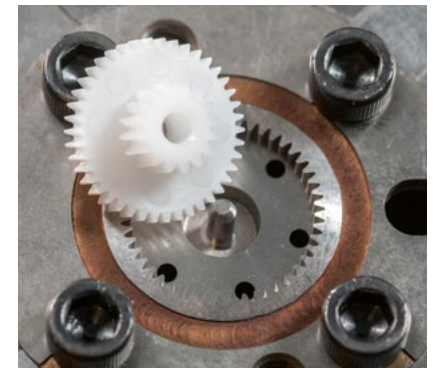
Gleason Plastic Gears proprietary no weld-line technology results in stronger and more durable gears, for applications that demand the best that plastic gears can offer.

Single Gears or Complete Gearbox Assemblies

We provide a single plastic gear or a complete gearbox assembly – as prototype suggestion or in serial production.

Solutions for Demanding Applications

Gleason Plastic Gears Solutions can be found in many different industries and applications including gears for e-drives and automotive actuators, gears for power tools, drones, robots and electronics, as well as geared medical applications.



Complete Solutions from One Source



Gleason

info@gleason.com
www.gleason.com



G 719 20220502 en
© Gleason Corporation.
1000 University Ave., Rochester, NY
All rights reserved.

Gleason, Genesis, Titan, Agilus, GMS, LeCount, Opti-Edge, Opti-Form, Vers-Grip, Uni-Spand, X-Pandisk, Iso-Spand, Quik-Flex and Gleason Connect are trademarks of Gleason registered in the U.S. and other countries. KISSsoft and KISSsys are trademarks of KISSsoft AG, registered in Switzerland and other countries. All other trademarks are the property of their respective owners.