

CAPABILITIES



CUSTOMER SERVICE

Gear Design & Optimization

Machining

Gear Manufacturing

Gearbox Rebuild

Quality

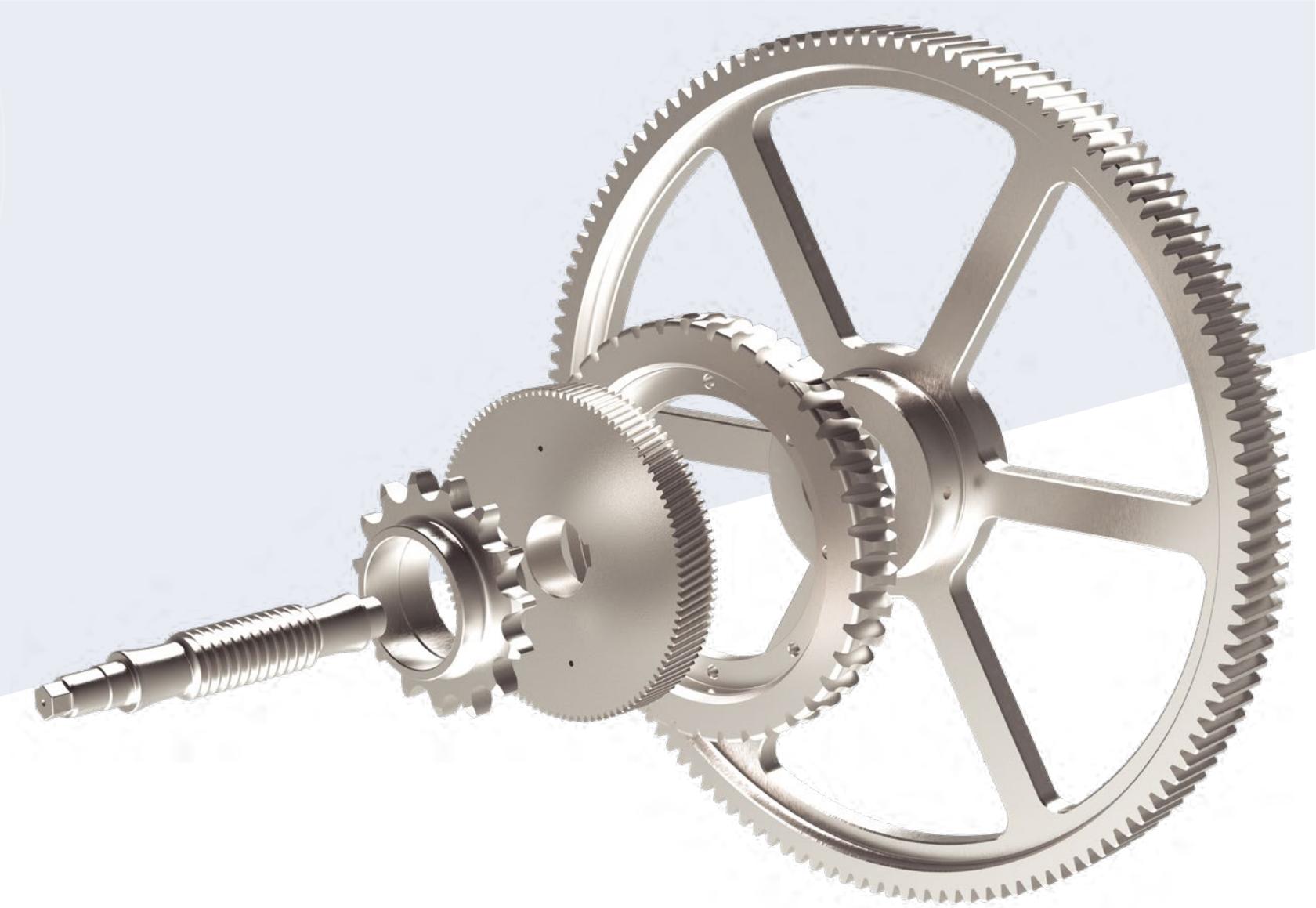




PRECISION GEAR MANUFACTURING

For over 100 years, Ideal Gear has been manufacturing the highest precision gears. Our experienced team, state of the art facility and quality system enable us to constantly exceed quality standards. Our dedication to gearing goes beyond manufacturing to reverse engineering, gear optimization and gearbox refurbishment.





Experience precision gear solutions, tailored to your specific needs with Ideal Gear.

As a full-service provider, we offer a wide range of gear manufacturing options, from spur to helical, racks to sprockets, and more – all manufactured up to 120 inches in diameter.

We specialize in custom-designed gears, reverse engineering, refurbishment, assembly, and emergency repair, providing comprehensive technical support every step of the way.

ISO 9001/29001 CERTIFIED

Our team of experienced engineers and machinists ensure the highest level of quality control and assurance. With state-of-the-art technology and rigorous quality control processes, we ensure that our gears are created precisely to your specifications and will work seamlessly in your equipment. Our commitment to quality is reflected in our (ISO 9001-2015 and ISO 29001-2020) certifications, which demonstrate our adherence to the highest standards of quality control and assurance.



Gear Design & Optimization

As a leading expert in gear design and optimization, Ideal Gear's comprehensive solutions are customized to meet the unique needs of each project. Our team of expert engineers combines the latest technology with decades of experience to design and optimize gears that are efficient, reliable, and tailored to meet your unique needs. We understand that every application is different, and that's why we take a collaborative approach to gear design, working closely with our clients to ensure that their requirements are fully understood and met. Whether you need a new gear designed from scratch, or an existing design optimized for maximum performance, our team has the expertise and experience to deliver the results you need.

**WE MANUFACTURE
GEARS UP TO
10 FEET IN DIAMETER**



Machining

Advanced CNC machining capabilities include CNC mill-turn, 5-axis and 7-axis milling, and precision grinding. Equipment is configured to handle very large and heavy components with high precision. Flexible fixturing and modular work holding systems enable efficient changeovers for low-volume, high-mix production without compromising accuracy. Programming is driven by advanced CAM software using solid models, with full machining simulation for toolpath verification. Combined with in-process and post-process inspection, this setup ensures precision, repeatability, and adaptability across a wide range of complex machining tasks.

Gear Manufacturing

Equipped with state-of-the-art CNC gear grinding, turning, milling, hobbing, shaping, and manual machining technologies, we deliver reliable, customized solutions that optimize gear performance and reduce downtime. With a steadfast commitment to quality and efficiency, our capabilities ensure cost-effective operations and enhanced productivity for your gears. Discover how our advanced capabilities can fulfill your gear manufacturing needs with precision and expertise, driving your success to new heights.

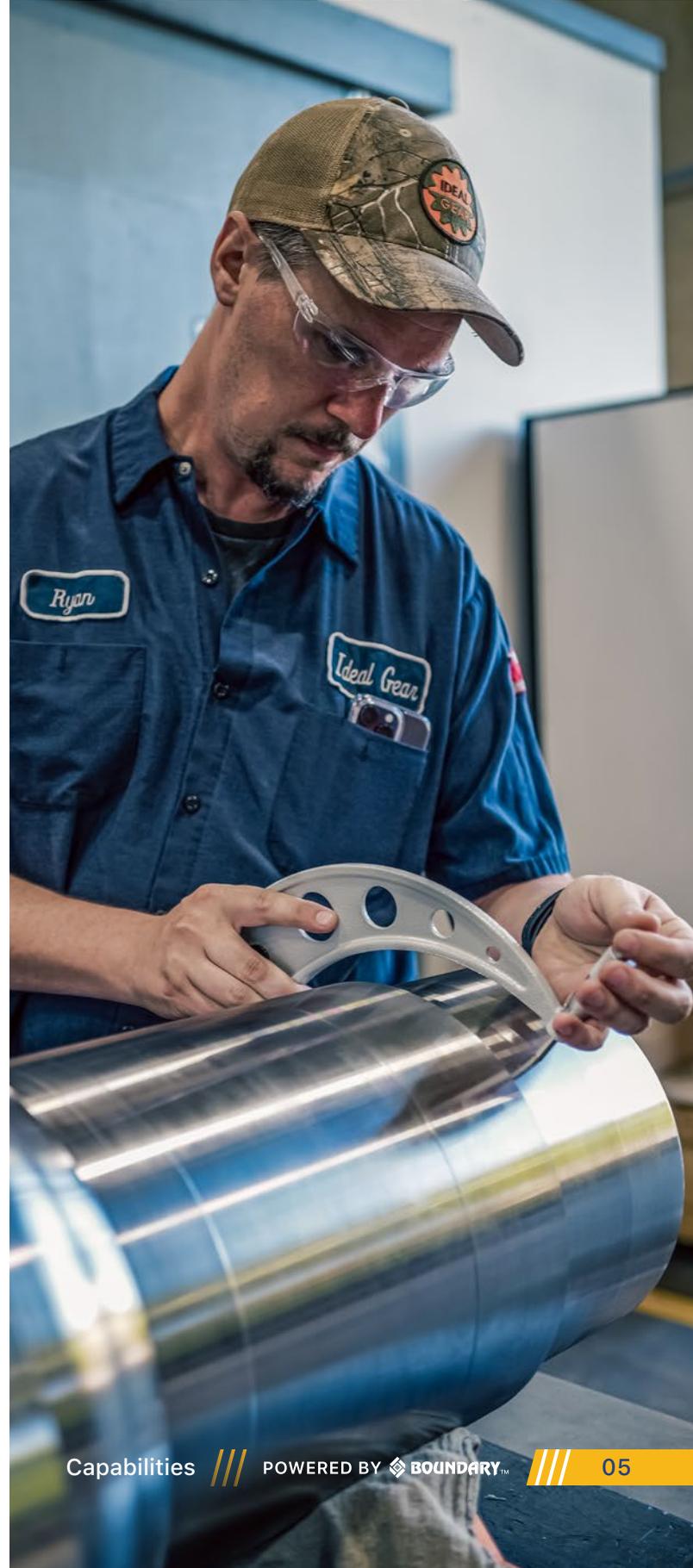


Gearbox Rebuild

Ideal Gear offers comprehensive gearbox rebuild services, supporting a wide range of heavy industrial applications. Our team carefully inspects, disassembles, and reverse engineers components as needed to restore gearboxes to reliable working condition. Whether we're replacing worn parts or remachining critical elements, our goal is longterm performance and dependable operation.

Quality

For us at Ideal Gear, quality is not just a buzzword; it's a way of life. Our commitment goes beyond just meeting expectations; it's about setting new benchmarks. With cutting-edge technology, dedicated professionals, and a keen sense of dedication, we craft gears that define industry standards. It's more than just machinery; it's our unwavering pledge to deliver excellence in every rotation.





GEAR DESIGN & OPTIMIZATION

Every gear application is unique. That's why we offer custom gear design and optimization services to meet the specific needs of our customers. With years of experience designing gears for a wide range of industries, we have the expertise to tackle even the most complex gear challenges.

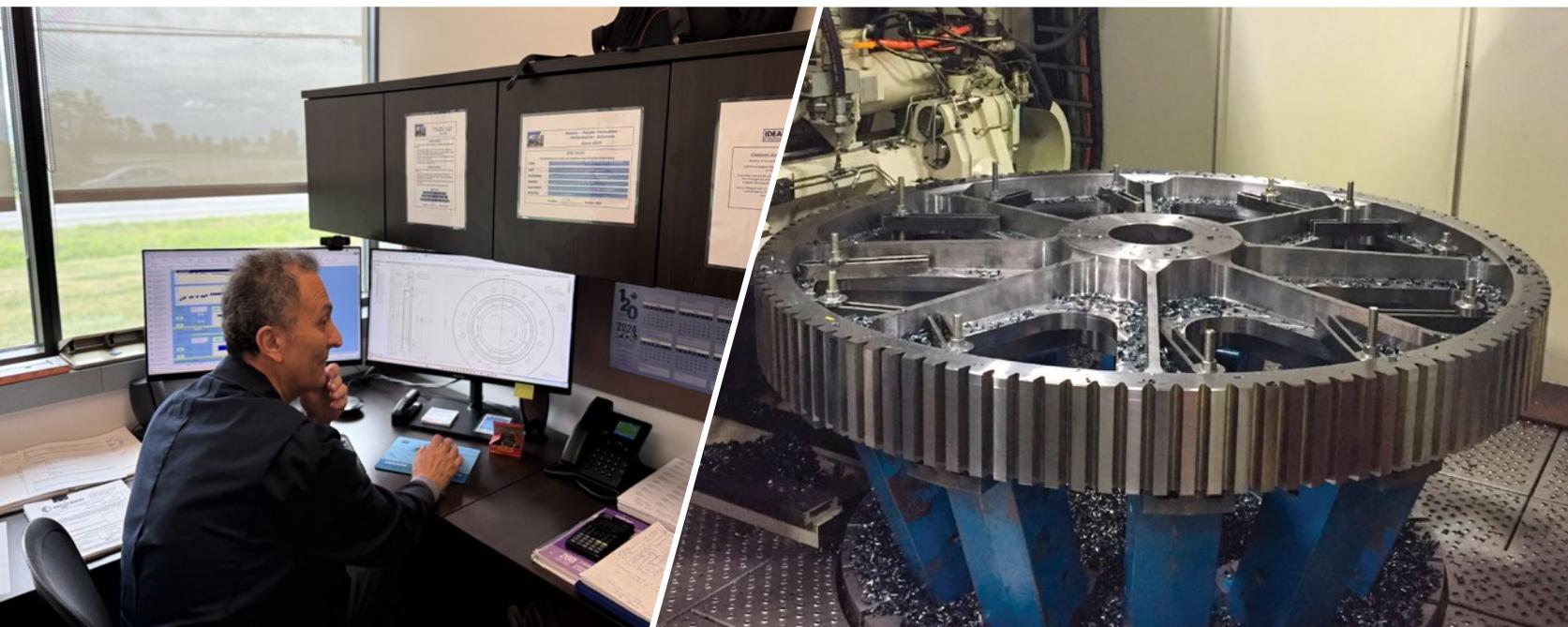
DECADES OF EXPERIENCE IN GEAR DESIGN.

Our team of engineers work closely with customers to understand the purpose and application of your gear, allowing us to design the highest quality gear possible. We utilize the latest software and engineering tools to ensure our designs meet or exceed industry standards, including AGMA and ISO.

With years of experience designing custom gears for a wide range of industries, the team at Ideal Gear works closely with customers to understand the purpose and application of the gears, allowing for the highest quality gear possible to be designed. From there, we use the latest software and AGMA design standards to create a customized gear or gearbox that is tailored to your specific needs.

We use advanced simulation and testing methods to ensure that the gear's performance and durability exceed your expectations. With Ideal Gear's custom design and optimization services, you can be confident that your equipment will operate at maximum efficiency and reliability, reducing downtime and maximizing productivity.

At Ideal Gear, we are committed to delivering tailored solutions and personalized service to meet the specific requirements of each of our customers. Please reach out to us today to discuss your gear design and optimization needs.





Turning

TURNING

Ideal Gear’s mastery extends into CNC turning, where our state-of-the-art lathes translate precise digital commands into tangible perfection. From complex geometries to fine finishes, our CNC turning equipment guarantees parts that embody accuracy and longevity. Our dedication to precision, nurtured over the decades, is evident in every rotation and curve we produce.

MACHINES	MAX Ø	LENGTH	SWING Ø
TOSHIBA TSS-C	216"	70"	216"
SHIBAURA TUE-150	59"	49"	67"
YOU JI VTL	55"	47"	63"
PBR T-700	44"	472"	56"
OKUMA MULTUS B750	41"	118"	41"
WFL M80 4500	39"	177"	39"
OKUMA LB45-III	26"	78"	35"
OKUMA L400E	16"	43"	20"



WFL M80 4500 TURNING MILLING CENTER

As an end-user manufacturer, we depend on the WFL M80 4500 Turning-Milling Center for its superior capability to perform high-precision turning, milling, drilling, and grinding in a single setup. Designed for large and complex workpieces in industries such as aerospace, energy, mining, construction, and heavy machinery, this multi-functional machine ensures maximum efficiency, accuracy, and productivity with its advanced CNC automation.

TECHNICAL SPECIFICATIONS

Max. Turning Length: 177"
Max. Workpiece Diameter: 39"
Main Spindle Power: 80 HP
Milling Spindle Speed: Up to 12,000 rpm
Tool Magazine Capacity: 80+ tools
Machine Weight: Approx. 154,000 lbs
Control System: Siemens SINUMERIK 840D sl

WHY THE WFL M80 4500?

- ✓ **Multi-Process Machining**
Combines turning, milling, drilling, and grinding in one setup, reducing cycle times and improving accuracy.
- ✓ **Heavy-Duty Machining Capacity**
Handles workpieces up to 177" in length and 39" in diameter with high cutting forces.
- ✓ **Advanced CNC Control**
Equipped with Siemens SINUMERIK 840D, allowing full 5-axis simultaneous machining.
- ✓ **Powerful Spindle Performance**
High-torque turning and milling spindles for demanding materials and complex geometries.
- ✓ **Automatic Tool Changer (ATC)**
Ensures fast and efficient tool changes for uninterrupted production.
- ✓ **Integrated Measurement Systems**
Enables in-process measuring, automatic corrections, and high-precision machining.



SHIBAURA TUE-150(S)

As an end-user manufacturer, we depend on the Shibauro TUE-150(S) Vertical Turning Lathe for its unmatched precision, rigidity, and efficiency in machining large-diameter components. Designed to handle heavy-duty applications in industries such as wind energy, mining, aerospace, construction, and heavy machinery, this VTL offers superior performance with advanced CNC automation, delivering high accuracy and efficiency in every machining cycle.

TECHNICAL SPECIFICATIONS

- Max. Workpiece Diameter: 59"
- Length: 49"
- Max. Swing Diameter: 67"
- Max. Table Load Capacity: 17,600 lbs.
- Spindle Speed Range: 2 - 400 rpm
- Max. Cutting Height: 1,250 mm
- Tool Turret Capacity: 12 stations

WHY THE SHIBAURA TUE-150(S)

- ✓ **Industry-Leading Precision**
Ensures tight tolerances and consistent surface finishes on large workpieces.
- ✓ **Heavy-Duty Machining Capacity**
Supports workpieces up to 59" in diameter with a max load of 17,600 lbs.
- ✓ **Advanced CNC Control**
Features Fanuc 0i-TF Plus for superior motion control and seamless operation.
- ✓ **High-Torque Spindle**
Delivers powerful cutting performance for turning, facing, and drilling operations.
- ✓ **Rigid & Stable Structure**
Designed for vibration dampening and long-term precision stability.
- ✓ **Versatile Machining Capabilities**
Supports turning, boring, drilling, and threading with various tool configurations.
- ✓ **Efficient Chip Management**
Integrated coolant and chip evacuation system for smooth operations.



PBR T-700-C

As an end-user manufacturer, we rely on the PBR T-700-C Engine Lathe for its exceptional precision, rigidity, and ability to handle large workpieces up to 56" in swing and 472" between centers. Engineered for heavy-duty applications in industries such as energy, mining, aerospace, construction, and marine, this lathe provides superior performance, stability, and reliability for demanding turning operations.

TECHNICAL SPECIFICATIONS

Swing Over Bed: 56"
Distance Between Centers: 472"
Swing Over Cross Slide: 44"
Spindle Speed Range: 5 - 500 rpm
Main Motor Power: 50 HP
Tailstock Quill Diameter: 10"
Max Workpiece Weight: 25,000 lbs.
Bed Width: 40"

WHY THE PBR T-700-C ENGINE LATHE

- ✓ **Industry-Leading Precision**
Delivers smooth and accurate cuts for large-diameter workpieces.
- ✓ **Heavy-Duty Machining Capacity**
Handles 56" swing over the bed and 472" between centers, ideal for long and heavy components.
- ✓ **Powerful Spindle Drive**
Ensures high torque for turning, facing, threading, and boring.
- ✓ **High-Rigidity Bed & Carriage**
Designed to minimize deflection and vibration for long workpieces.
- ✓ **Versatile Machining Capabilities**
Supports various cutting operations, including taper turning, threading, and grooving.
- ✓ **Large Spindle Bore**
Enables machining of oversized shafts and pipe components.



Milling 

MILLING

MACHINES

- DOOSAN DBC-110
- HAAS EC-1600
- HAAS VF6
- HAAS VF1

X TRAVEL

- 98"
- 64"
- 50"
- 20"

Y TRAVEL

- 78"
- 50"
- 20"
- 16"

Z TRAVEL

- 59" / 21"
- 32"
- 25"
- 20"

ADVANCED CNC MILLING SERVICES

Precision. Efficiency. Innovation.

Our state-of-the-art CNC milling capabilities deliver exceptional accuracy and repeatability for complex and high-tolerance components. Utilizing multi-axis machining centers and advanced CAD/CAM integration, we produce parts with intricate geometries in a wide range of materials. Whether it's custom, low-volume runs, or full-scale production, our experienced machinists and engineers ensure optimal quality and performance. With real-time monitoring and automated tool calibration, we maximize productivity while maintaining tight tolerances.

Key Capabilities

- ✓ 3, 4, and 5-axis milling
- ✓ Tight-tolerance machining
- ✓ Complex surface contouring
- ✓ Multi-material expertise
- ✓ Custom prototyping & production runs
- ✓ ISO-certified quality control

Partner with us to bring your most demanding designs to life—efficiently, precisely, and on time.





Gear Grinding

GEAR GRINDING

Ideal Gear has a complete range of gear grinding equipment to achieve any gear profile required up to 58" diameter. Machine capabilities include spur, helical, double helical and crowned gears up to AGMA Quality Class 15.

MACHINES

- GLEASON PFAUTER P1200G
- GLEASON PFAUTER 1200G
- KAPP NILES ZE-1200
- KAPP NILES ZE-800
- GLEASON PFAUTER P600/800G

MAX Ø

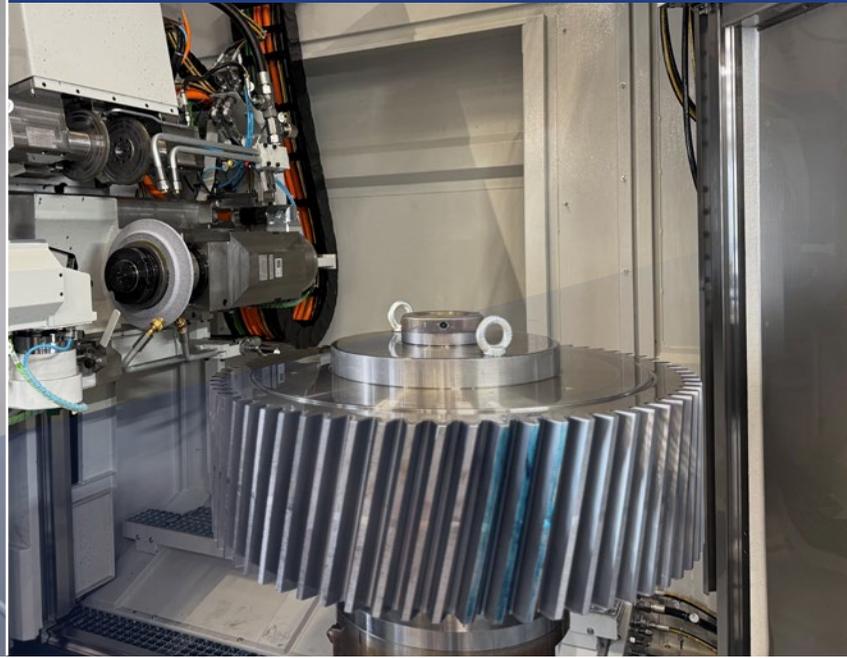
- 58"
- 48"
- 47"
- 31"
- 31"

MAX FACE

- 40"
- 48"
- 31"
- 23"
- 23"

MAX PITCH

- 0.5 DP
- 0.75 DP
- 1 DP
- 1 DP
- 2 DP



GLEASON PFAUTER 1200G

As an end-user manufacturer, we rely on the Gleason PFAUTER 1200G for its exceptional precision, efficiency, and reliability in producing high-accuracy gear profiles. Designed to serve industries such as wind energy, mining, aerospace, construction, and heavy machinery, this machine ensures superior gear quality with optimized cycle times and advanced CNC automation for consistent performance.

TECHNICAL SPECIFICATIONS

- Max. Workpiece Diameter: 58"
- Max. Module Size: 0.75 DP
- Max. Axial Travel: 48"
- Max. Between Centers: 71"
- Grinding Wheel Speed: Up to 8,000 rpm
- Table Load Capacity: 13,200 lbs

WHY THE 1200G GRINDING MACHINE

-  **Industry-Leading Precision**
Achieves ultra-fine surface finishes and exacting tolerances for high performance gears.
-  **Optimized for Heavy-Duty Applications**
Capable of handling workpieces up to 48" in diameter with a maximum pitch of 0.75 DP.
-  **Advanced CNC Control**
Features latest Siemens SINUMERIK ONE, ensuring intuitive programming and process stability.
-  **High Productivity & Automation**
Equipped with automatic dressing, and in-process measuring for optimal efficiency.
-  **Rigid Machine Design**
A robust structure designed for precision grinding with minimized vibration.
-  **Special Options**
Worm grinding capability and extended tailstock height.



Gear Hobbing

GEAR HOBGING

Our gear hobbing machinery encompasses an expansive range, tailored to craft the perfect gear profiles, including the option of an internal gear cutting head. Our meticulous process ensures gears that not only meet but exceed expectations, whether the design is simple or complex. With a legacy built over a century, our hobbing techniques remain unparalleled in delivering precision and durability.

MACHINES

GLEASON PFAUTER P2400/2800H
 LIEBHERR LC1600
 GLEASON PFAUTER P600/800H
 VARIOUS OTHER MACHINES

MAX Ø

118"
 63"
 32"

MAX FACE

39"
 55"
 24"

MAX PITCH

0.5 DP
 0.635 DP
 1.5 DP



LIEBHERR LC 1600

As an end-user manufacturer, we rely on the Liebherr LC 1600 for its unmatched precision, efficiency, and reliability in producing large-diameter gears. Designed for industries requiring high-performance gear manufacturing, including wind energy, mining, aerospace, construction, and heavy machinery, this machine is a cornerstone of our production capabilities. Its advanced CNC automation ensures reduced cycle times, superior gear quality, and enhanced operational efficiency.

TECHNICAL SPECIFICATIONS

- Max. Workpiece Diameter: 63"
- Max. Pitch: .635 DP.
- Max. Axial Travel: 55"
- Max. Height Under Tailstock: 71" (More with Steady Rest)
- Hob Speed Range: Up to 600 rpm
- Table Load Capacity: 17,600 lbs
- Machine Weight: Approx. 121,000 lbs

WHY THE LIEBHERR LC 1600 HOBGING MACHINE

- ✓ **Industry-Leading Precision**
Delivers exceptional accuracy and repeatability for large-scale gear production.
- ✓ **Optimized for Heavy-Duty Applications**
Capable of handling workpieces up to 63" in diameter with module sizes up to 0.635 DP.
- ✓ **Advanced CNC Control**
Features Siemens SINUMERIK 840D, allowing seamless integration into our manufacturing processes.
- ✓ **Flexible Machining Capabilities**
Supports dry and wet hobbing, and gear milling, enhancing production versatility.





Gear Shaping

GEAR SHAPING

Ideal Gear is equipped to shape both internal and external gear profiles with unmatched accuracy. Our state-of-the-art equipment and seasoned expertise guarantee gears that are a true testament to our commitment to quality, irrespective of their design intricacies. From the very first cut to the final contour, our shaping processes stand as a hallmark of excellence.

MACHINES

LIEBHERR LS2000H
BOURN & KOCH - HDS1600 300
BOURN & KOCH - HS650-200
HORIZONTAL FELLOWS Z
VARIOUS OTHER GEAR SHAPERS

MAX Ø

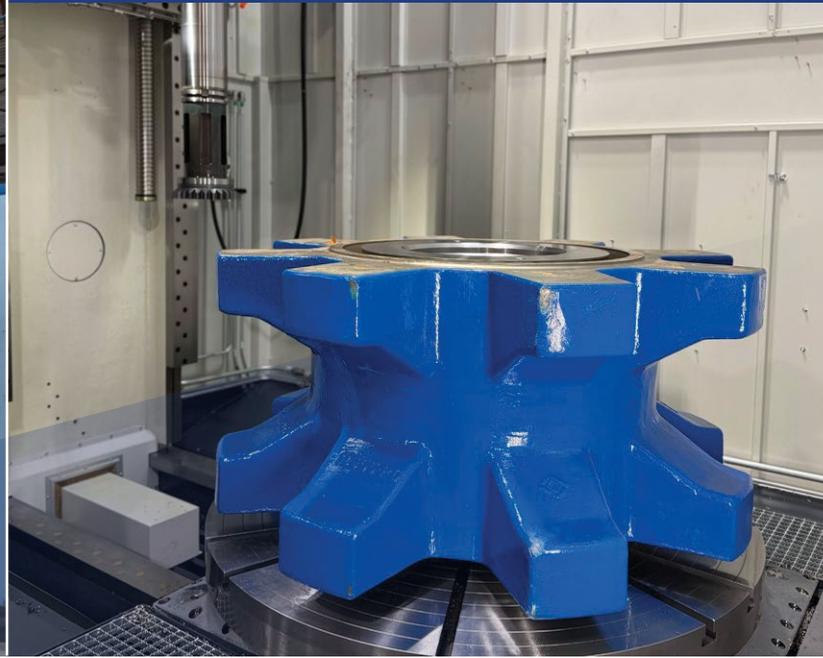
78"
63"
30"
18"

MAX FACE

31"
11.8"
9.8"
5"

MAX PITCH

1 DP
2 DP
2 DP
4 DP



LIEBHERR LS 2000 H

As an end-user manufacturer, we rely on the Liebherr LS 2000H for its superior precision, efficiency, and reliability in shaping large-diameter gears. Designed to serve industries such as wind energy, mining, aerospace, construction, and heavy machinery, this machine plays a critical role in our production process. Its advanced CNC technology ensures optimized cycle times, exceptional gear accuracy, and enhanced productivity.

TECHNICAL SPECIFICATIONS

- Max. Workpiece Diameter: 78"
- Max. Pitch: 1 DP
- Max. Axial Travel: 55"
- Face Width: 17.5" (With Shuttle Stroke 31" Depending on Part Geometry)
- Stroke Rate: Up to 200 strokes per minute Table
- Load Capacity: 22,000 lbs
- Machine Weight: Approx. 121,000 lbs

WHY THE LIEBHERR LS 2000H

- ✓ **Industry-Leading Precision**
Delivers high-accuracy shaping for large-diameter gears.
- ✓ **Optimized for Heavy-Duty Applications**
Capable of handling workpieces up to 78" in diameter and up to 1 DP pitch.
- ✓ **Advanced CNC Control**
Features Siemens SINUMERIK 840D, allowing seamless integration into our manufacturing processes.
- ✓ **Rigid Machine Design**
A robust structure designed for high-torque shaping operations with minimized vibration.
- ✓ **Versatile Gear Cutting Capabilities**
Supports internal and external shaping.



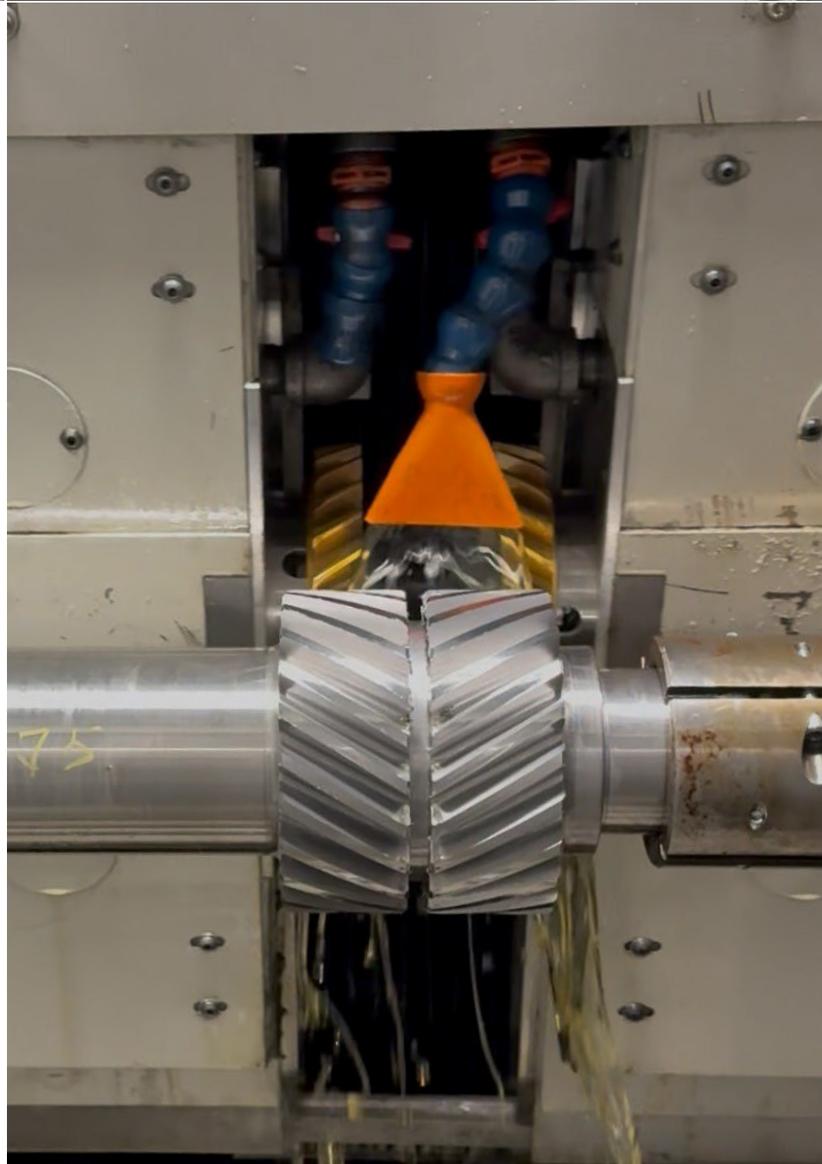
BOURN & KOCH HDS1600 300

WHY THE BOURN & KOCH HDS1600 300

- ✓ **High Precision Cutting**
Delivers exceptional gear quality with advanced CNC technology and robust structural design.
- ✓ **Flexible Gear Production**
Nine axis CNC control with electronic guides. Ideal for herringbone and double helical, and spur & spline profiles.
- ✓ **Enhanced Productivity**
Faster cycle times with programmable automation features, improving overall throughput.

TECHNICAL SPECIFICATIONS

Max. Diameter: 63"
Max. Pitch: 2 DP
Max. Face: 24"





GEARBOX REBUILD

REPAIR & RETURN

Your Gearbox has a unique history with wear and damage specific to your application. Our repairs go beyond standard, and optimize your machine for peak performance.

Our skilled technicians are equipped to handle emergency repairs, diagnose problems quickly, and implement effective fixes to minimize any downtime. For more extensive damage, we provide comprehensive gearbox rebuilds, meticulously restoring your gearbox to its optimal condition. This includes replacing worn-out components, re-machining parts, and ensuring the entire system functions like new. What you get back is your gearbox, only better!

Our All-In Approach to Gearbox Repairs

GEARBOX INSPECTION

- ✓ Historical data analysis & performance history
- ✓ Hours of service
- ✓ Failure modes

GEARBOX IMPROVEMENT

- ✓ Geometry Optimization
- ✓ Material Enhancement
- ✓ Mechanical Improvements

GEARBOX REPAIR

- ✓ Rebuilding is more cost-effective than replacement
- ✓ Reusing good quality components
- ✓ Engineering new components when needed

EXTENSIVE TESTING

- ✓ Custom-made testing floor to simulate operating conditions
- ✓ Vibration analysis & thermal imaging
- ✓ Extensive testing report provided

IDEAL GEAR HAS SERVICED AND REBUILT VIRTUALLY ALL BRANDS AND MODELS OF GEARBOXES.

Our engineers and technicians bring a wealth of knowledge and experience to every gearbox repair. Their rigorous training and commitment to excellence is demonstrated through their ability to properly diagnose issues and implement precise solutions. At Ideal Gear we use the latest techniques and high-quality parts to service your gearbox and optimize its performance for your application.



QUALITY

We take pride in our dedication to quality, precision, and innovation, and our commitment to these values shines through in everything we do.



CENTURY OF COMMITMENT

TRACING BACK

In 1919, a passion for precision led Herb Elfstrom, Sr. and Francis Smith to found Ideal Gear & Machine Works. Initially powering fishing vessels and steam tugboats, our scope expanded, adapting to the demands of a world at war. Over decades, as leadership evolved and embraced innovative visions, so did our commitment to quality. Today, nestled by the Fraser River, our 25,000 sq ft facility stands as a testament to a legacy built on reliability, innovation, and unparalleled craftsmanship.



ENGINEERING BRILLIANCE

Behind every impeccable gear is a team of seasoned engineers whose passion and expertise set them apart. At Ideal Gear, our engineering maestros carry a collective experience spanning over a century. From understanding the nuances of various gear types to embracing the latest in gear manufacturing technologies, they're the driving force behind our relentless pursuit of perfection. Each gear, each component, is a testimony to their dedication and our unwavering commitment to quality.

MASTERS BEHIND THE MACHINE



THE CMM ROOM

Where measurements transform into an art. Our state-of-the-art CMM room, featuring the Mitutoyo CRYSTA APEX S 9168, exemplifies accuracy. Every inch of this machine, from its advanced capabilities to its vast range, is designed to ensure precision that leaves no room for error. With temperature control maintaining consistency and 2D reporting underscoring our commitment to transparency, we ensure that our clients witness quality in every dimension.

PRECISION PERSONIFIED



GLEASON 1300GMS GEAR ANALYZER

As an end-user manufacturer, we depend on the Gleason 1300GMS Gear Analyzer for its cutting-edge metrology capabilities in inspecting large-diameter gears with the highest precision. Designed for aerospace, energy, mining, construction, and automotive industries, this machine ensures accuracy in gear measurement, quality control, and process optimization with state-of-the-art CNC automation.

TECHNICAL SPECIFICATIONS

- Max. Gear Diameter: 51"
- Max. Face: 47"
- Max Between Centers: 51"
- Max. Workpiece Weight: 4,850 lbs
- Measuring Probe Accuracy: $\pm 0.5 \mu\text{m}$
- Rotary Table Resolution: 0.0001°
- Software: Gleason GAMA™ 3.2
- Multi-Sensor Integration: Optical, tactile, and laser scanning
- Control System: CNC-controlled 3D gear analysis

WHY THE GLEASON 1300GMS

- ✓ **Industry-Leading Precision**
Provides micron-level accuracy for gear inspection and analysis.
- ✓ **Large-Diameter Inspection Capability**
Measures gears up to 51" in diameter with high-speed scanning.
- ✓ **Advanced CNC Control**
Features Gleason GAMA™ 3.2 software for comprehensive gear evaluation and digital integration.
- ✓ **Multi-Sensor Technology**
Supports contact and non-contact measurement for complete gear surface analysis.
- ✓ **High-Speed Measurement**
Rapid inspection process for efficiency and real-time data feedback.
- ✓ **Versatile Metrology Applications**
Evaluates spur gears, helical gears, worm gears, bevel gears, and internal gears.
- ✓ **Automated Inspection & Reporting**
Generates detailed measurement reports with statistical analysis and SPC compatibility.



OUR NON NEGOTIABLE STANDARD

QUALITY DEFINED

For us at Ideal Gear, quality is not just a buzzword; it's a way of life. Our commitment goes beyond just meeting expectations; it's about setting new benchmarks. With cutting-edge technology, dedicated professionals, and a keen sense of dedication, we sculpt gears that define industry standards. It's more than just machinery; it's our unwavering pledge to deliver excellence in every rotation.



PRECISE GEAR PRODUCTION FOR RELIABLE PERFORMANCE

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