

2019 State of the Gear Industry

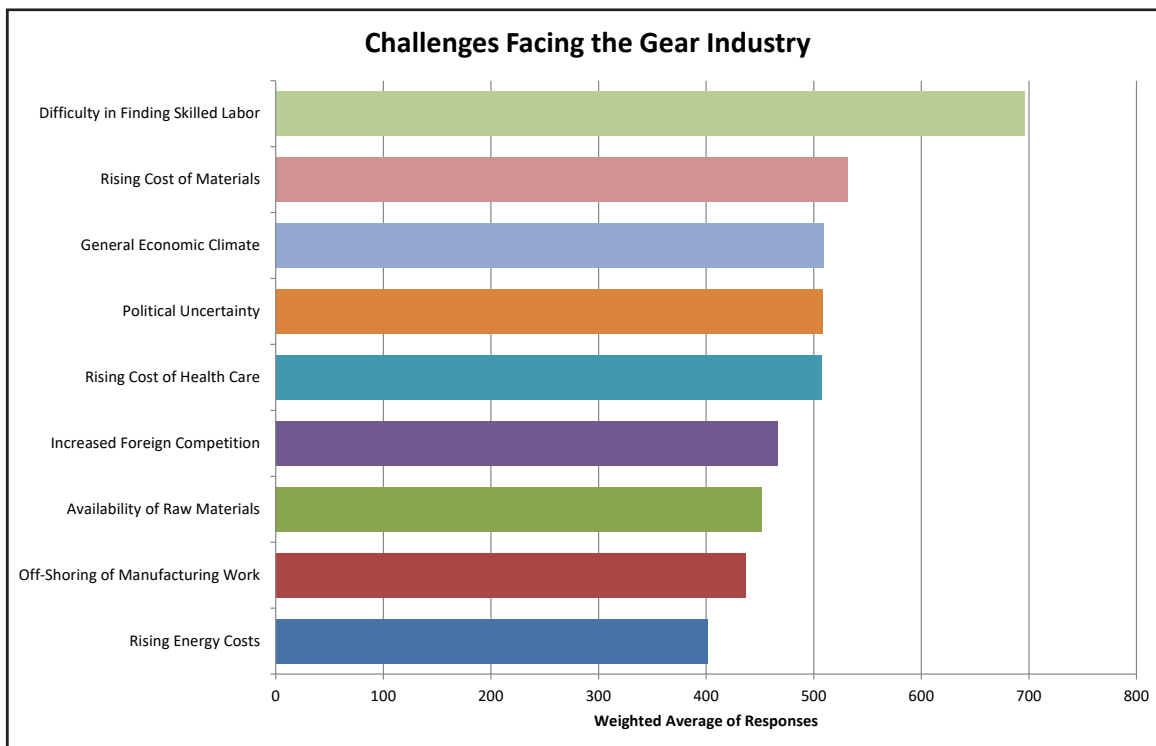
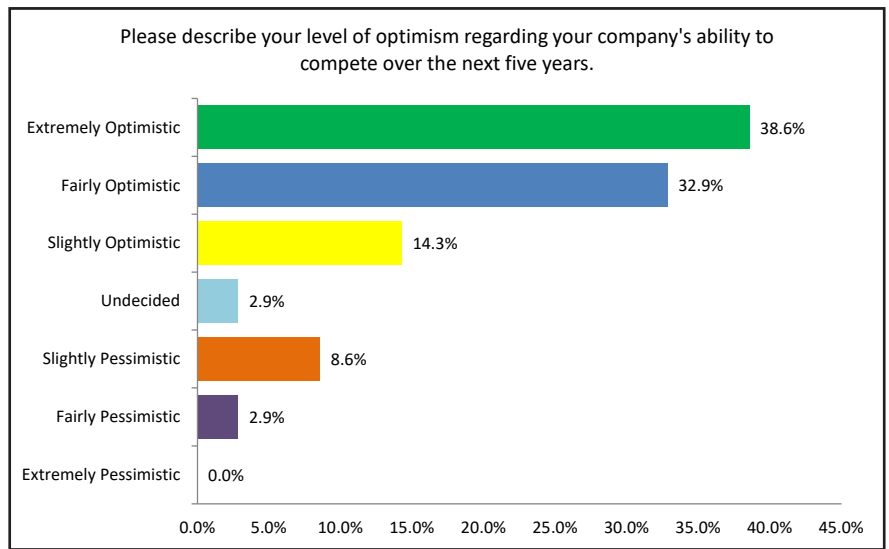
Reader Survey Results

Gear Technology's annual State-of-the-Gear-Industry survey polls gear manufacturers about the latest trends and opinions relating to the overall health of the gear industry. As in years past, the survey was conducted anonymously, with invitations sent by e-mail to gear manufacturing companies – primarily in North America, but also including some gear manufacturers around the world.

All of the responses included in these results come from individuals who work at locations where gears, splines, sprockets, worms and similar components are manufactured. They work at gear manufacturing job shops as well as captive shops at OEMs. A full breakdown of the respondent demographics can be found at the end of this article.

Summary

Overall, the gear industry enjoyed a very strong 2018, and the optimism expressed by survey respondents is the highest in recent years. When asked about their optimism regarding their companies' ability to compete over the next five years, 85.8% of respondents indicated some level of optimism. This number was around 83% the past two years. More importantly, the optimistic have gotten more optimistic, with more than twice as many in the "Extremely Optimistic" category compared with last year's results.



Significant Business Challenges

Here's a sampling of what some of our respondents had to say about the challenges they're facing today:

"Re-shoring."

"Pending recession."

"Lead time, raw material costs."

"Grinding from solid."

"Electric vehicles as well as weight savings which force several material types... aluminum, plastic..."

"3D printing, 5-axis milling. Lack of machine operators and tradespeople. Lack of engineers."

"The gas powered cars and trucks going away by 2022. Electric car and trucks will not need transmissions or transfer cases."

"New highly-advanced lubricant technology for a major step-change in performance and efficiency of gears and rolling element bearings."

"Gear cutting is not just about gear machines any longer. Many lathes have the capability to incorporate gear cutting and deburring into the machining process with a high level of accuracy."

"Dealing with demand > capacity and material issues. Aging equipment and upgrading to modern technology in effort to aid lean manufacturing processes."

"Threaded-wheel hard gear finishing, spiral gash helical broaching, multi-thread cobalt steel PVD coated hobbing (wet), gear set transmission error vs NVH designs."

"Market demand."

"Advances in heat treating, hard finishing, and deburring. Increasing domestic capacity of large helical broaches."

"Increasing material prices, lack of available labor, lack of capacity."

"Conversion to electric drives reducing gear quantity requirements, adoption of improved surface finishing on gears, metal additive manufacturing."

"Lack of capacity."

"Condition monitoring is being pushed to be smarter."

"Competitiveness."

"Price."

"IOT sensors and communications."

"Sanitary demands for the food and beverage industry."

"Automation: Due to the lack of qualified employees we need to turn to better, cheaper, and more user friendly automation."

"Material selection and heat treatment."

"Newly created aerospace designs."

"Electrification instead of mechanical systems. Finding qualified operators. Economic instability. Energy production trends."

"Faster delivery times requested."

"New electrification designs and impact on industry."

"Tariff costs and misconceptions surrounding Buy America(n) acts."

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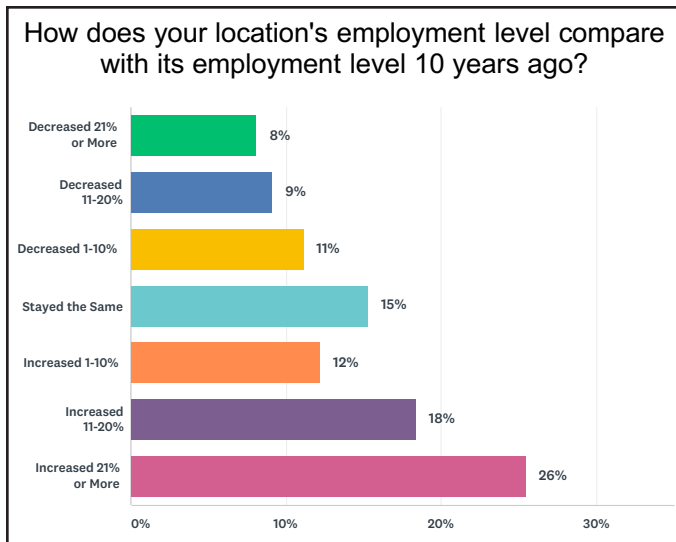
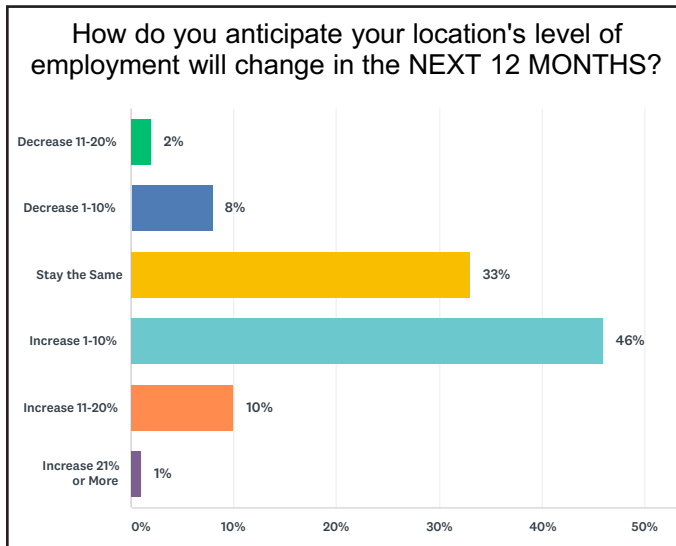
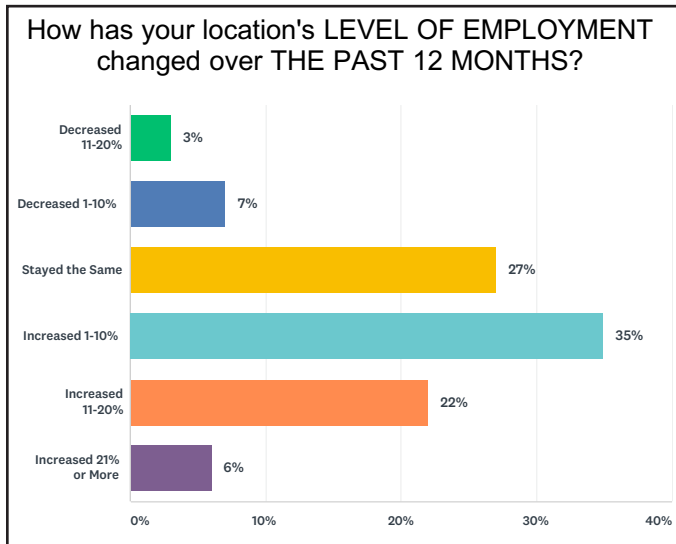


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Employment



"The ability to find experienced employees to run machines."

"Low cost at low volume."

"CNC machining and measurement, AI, cash flow."

"The need to continually invest in best practices equipment."

"I think the relaxing of the regulations allowed our customers to be more competitive and thus giving us more work."

"Offshore threats."

"Materials."

"Precision machining."

"Lead time on equipment and tooling."

"Increase of imported product."

"Tariffs."

"Advancements in CNC gear making technology and hopefully price reductions in equipment. Also, CNC retrofit technology improvements."

"Lack of manufacturing talent will remain a challenge. On the gear development side, electric vehicles driving significant change. On the market side, large gear market will remain slow for some time."

"Tariff impacts and potential changes to procurement of components and finished products."

"The economy is due for a slow-down, though not necessarily a recession."

"Trade War."

"Cost cutting only costs the end user."

"Light materials."

"Lack of skilled workers."

"Raw material pricing will have a direct effect on the gear purchasing posture."

"Longer lead times – materials and services."

"Higher tolerances and quality needs."

"Lack of capital funding on automation that is necessary to counteract the shortage and growing costs of labor."

"Gears with improved efficiency, new transmission solutions for electric vehicles, more hard finishing, increased manufacturing by power skiving, more additive manufacturing of steel gears."

"Aerospace market is strong."

"Labor force is reduced, driving up the labor rates."

"Global commodity pricing and performance of global economies."

"Workers and new equipment."

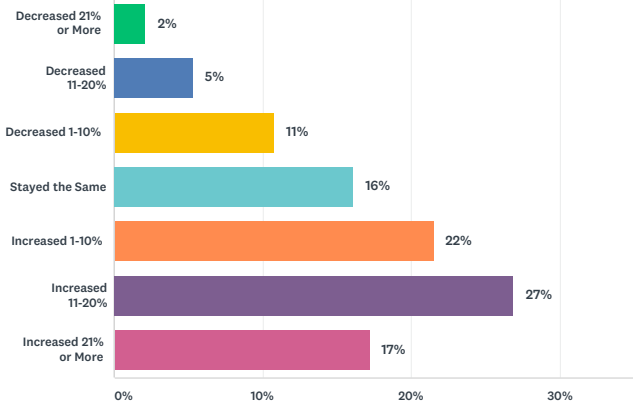
"Personnel."

"Vehicle electrification."

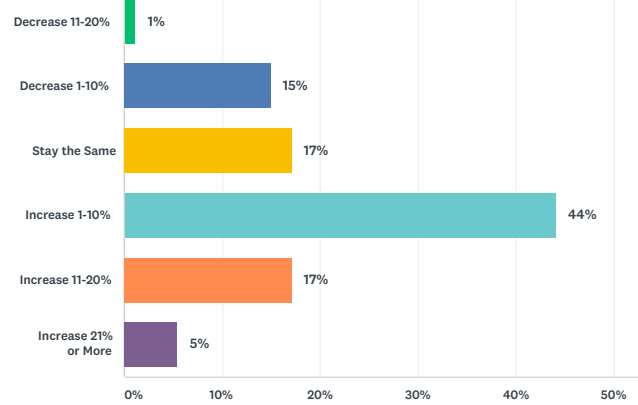
"The current slowdown in North American manufacturing, as well as potential tightening of credit."

Production

How has total PRODUCTION OUTPUT (unit volume) changed over the LAST 12 MONTHS?



How much do you expect production output (unit volume) to change over the NEXT 12 MONTHS?



“There are many major transformations occurring in the design and manufacturing of gearing; to reach the next level of performance requires intelligent systems.”

John J. Perrotti, CEO/President, Gleason Corp.



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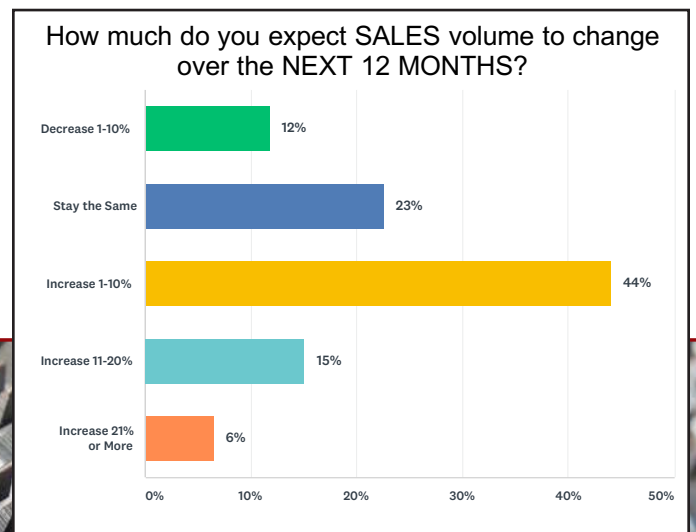
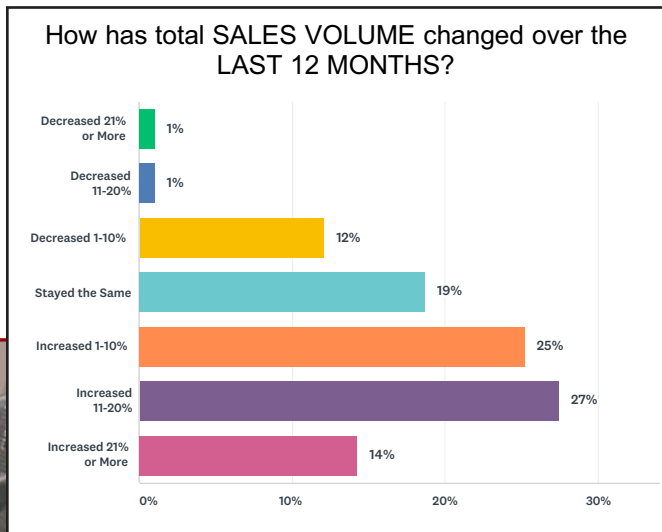
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We all must focus on the concept of Industry 4.0 and utilizing big data to drive inefficiencies and waste from our gear manufacturing. Developing a strategy to gather and analyze data for continued incremental improvement is critical to remaining competitive.

John Winzeler, Winzeler Gear

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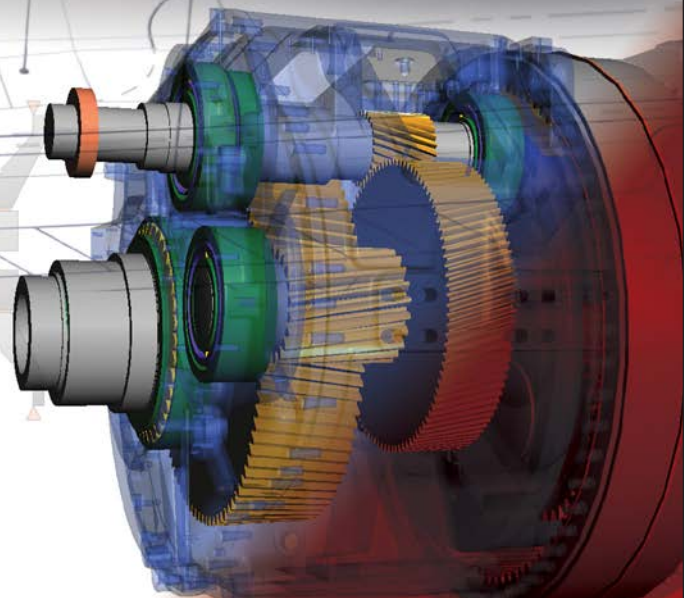
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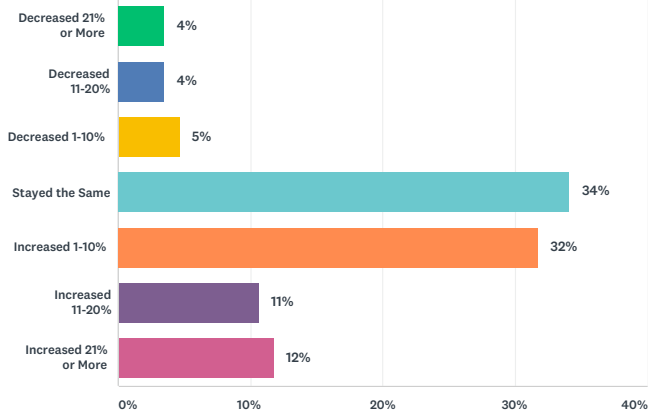
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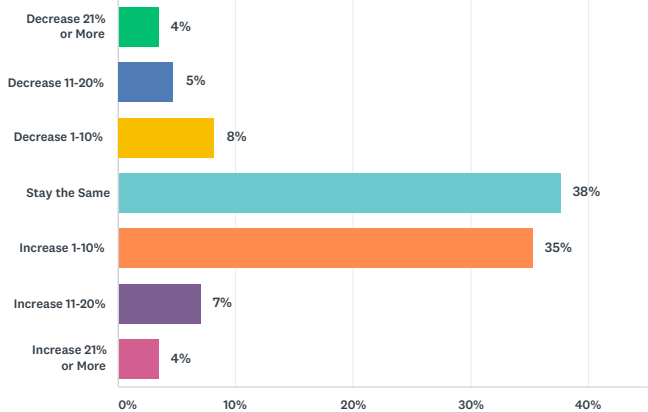
Capital Spending

- 83%** of respondents work at locations that spent more than \$100,000 on capital equipment in 2018.
- 52%** work at locations that spent more than \$1,000,000.
- 13%** of respondents' companies spent less than last year.
- 55%** of respondents' companies spent more
- 84%** of respondents expect to spend the same as 2018 or more in 2019.

How did your location's CAPITAL SPENDING in 2018 compare with the previous year?



How do you expect your location's 2019 capital spending to compare with 2018?

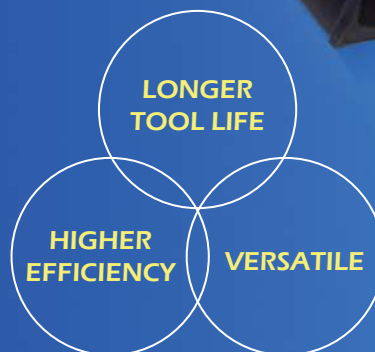


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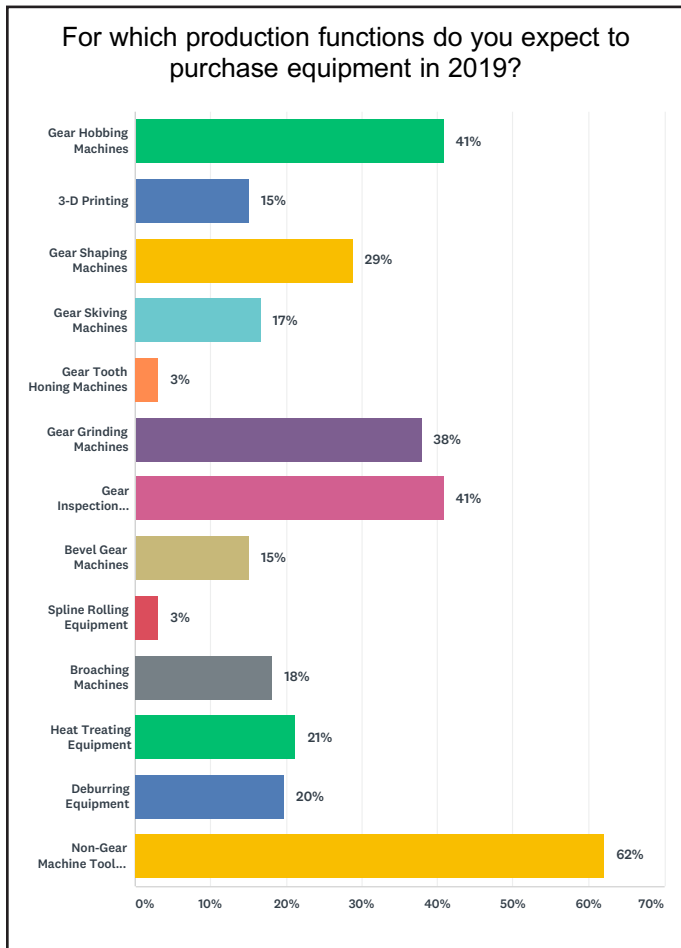
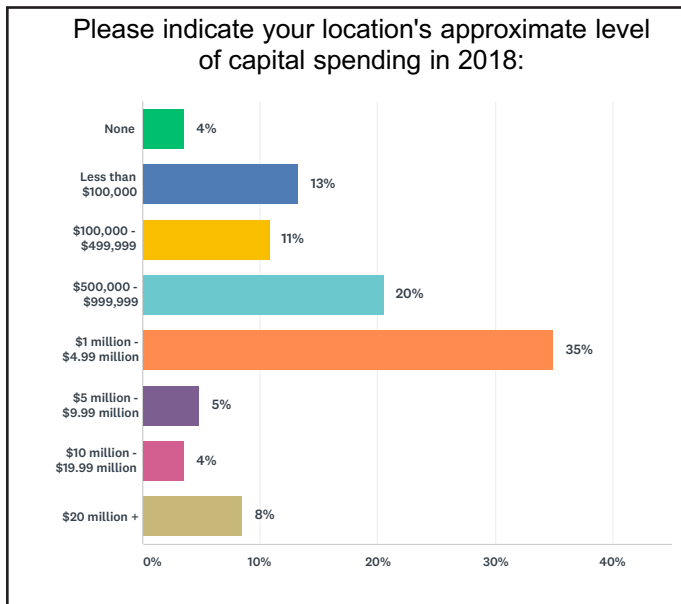


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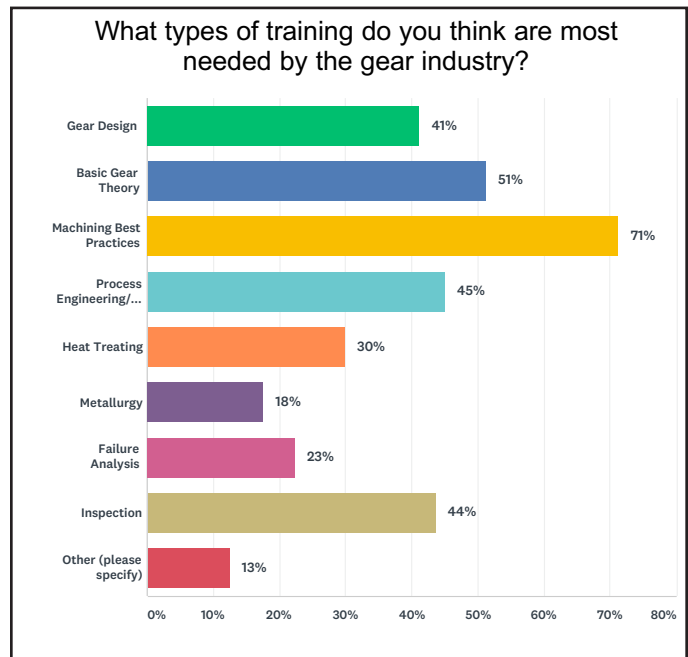
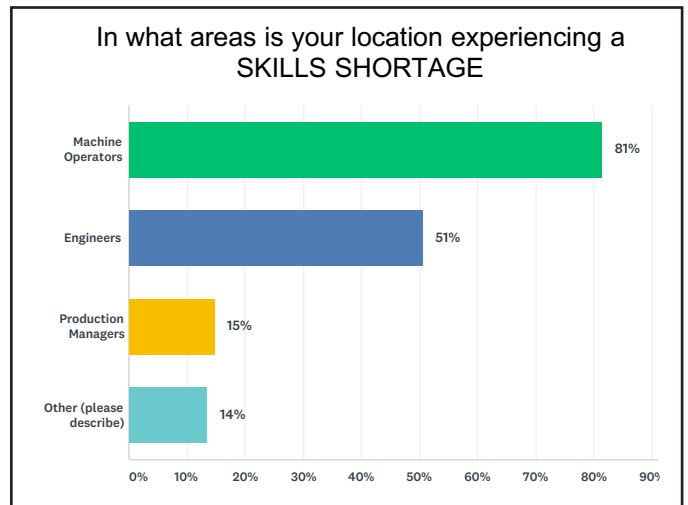
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Capital Spending



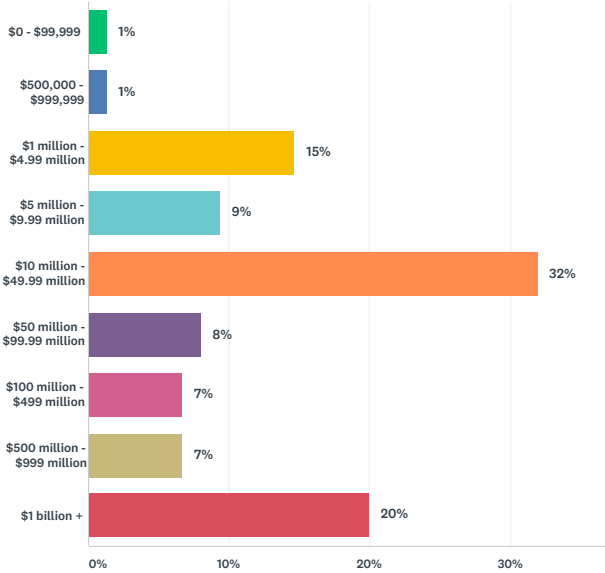
Skilled Labor



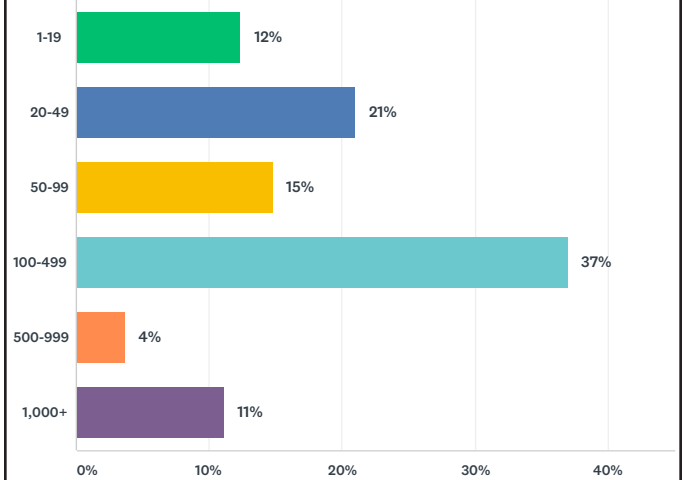
The single largest issue facing AGMA members – and the industry at large – is finding and retaining talent.
 Matthew Croson, President, AGMA

Demographics

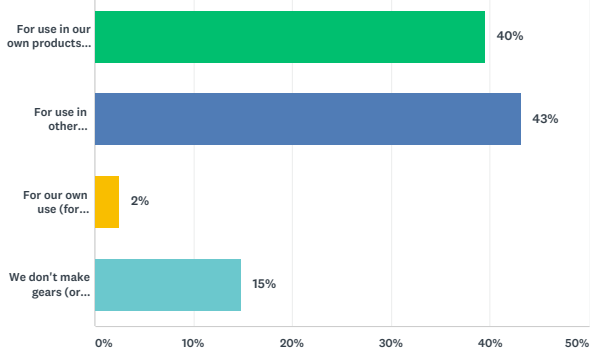
What is the approximate annual revenue for your company? (If this location is owned by another company, please use figures from the corporate parent)



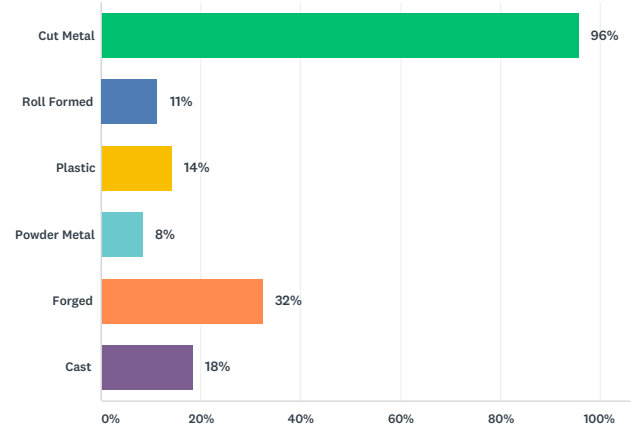
How many employees work at your location?



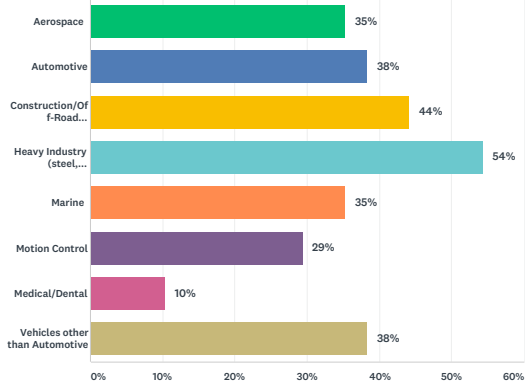
Gears (including splines, sprockets, worms and similar components) are manufactured at this location:



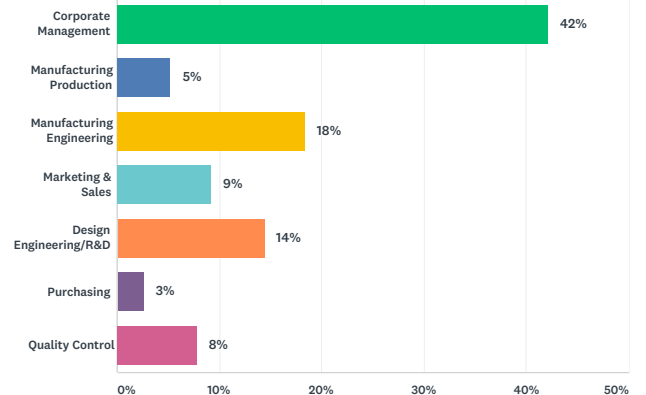
The gears manufactured at this location are:



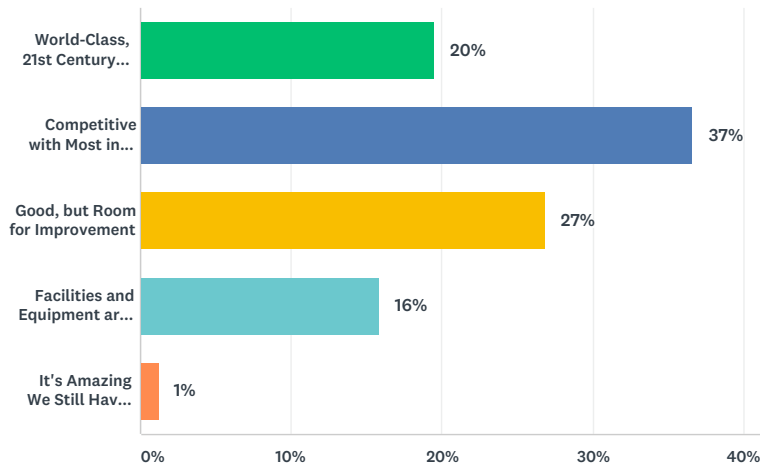
The gears (including sprockets, splines, worms and similar components) made at this facility are used for:



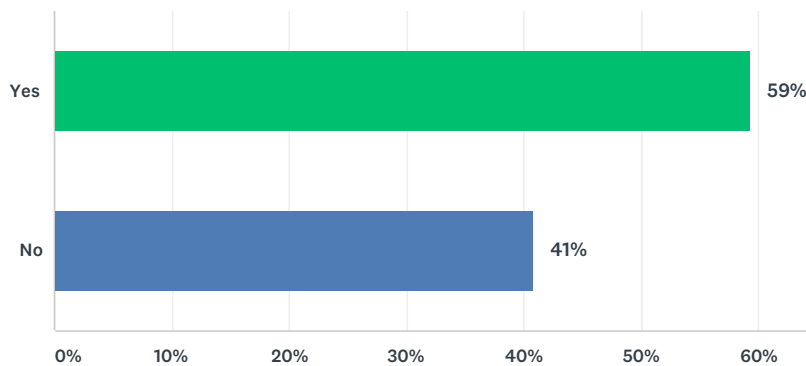
Which category best describes your job title/function?



Classify your company's manufacturing operations and technology.



Is your company currently a member of the American Gear Manufacturers Association (AGMA)?



The gear industry is facing its greatest challenge since the recession in 2008-2009. We've enjoyed ten years of overall market expansion – especially in the automotive industry – where we had programs every year for 6-, 8-, 9- and 10-speed transmission projects. There is also a significant process change from hob shave to hob grind. With these automotive projects maturing, we are now faced with a customer demand of increased quality requirements and ways to decrease the cost-per-piece of production – especially as it relates to tool cost-per-piece.

David Goodfellow,
President, Star SU

Thank you to all of our 2019 survey participants!

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state of the gear industry

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Keep reading! There's more on the state of the gear industry in our special edition of "Ask the Expert" beginning on page 32.

