# EVs are Driving Technology in the Gear Industry



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A significant amount of work is being done to advance the technology of gears specifically for use in electric vehicles. No longer hidden by the noise of the internal combustion engine, the transmission has taken center stage as the noisiest component in most electric-driven cars.

And it's not just that these transmissions are too loud. It's that they often produce a high-pitched whine that's irritating to many drivers. Solving that noise problem has become one of the major tasks of those who develop technology for making gears. All the major machine tool manufacturers and research institutions are working on solutions specifically for EV gear trains.

So it's no wonder that this issue, with its focus on grinding and abrasives, also turned into an issue with a focus on electric drives. Gear grinding has long been one of solutions to gear noise. Make your gears more accurate, and they'll have less transmission error and run quieter. But today, grinding is also being used in creative ways to tailor the gear shape in an effort to eliminate the whine created by EV gearsets running at 20,000 rpm.

In the article "Technology Advances for Continuous Generating Gear Grinding in EV and More" (p. 18), the experts at Norton|Saint-Gobain Abrasives explain how electric vehicle transmissions require not just grinding, but also polishing to achieve the necessary surface finish. The article also explains how this can be accomplished in a single setup with a dual-purpose grinding and polishing tool.

In Gleason's article, "Noise Analysis for e-Drive Gears and In-Process Gear Inspection" (p.26), the authors take a deep dive into how inspection processes like roll-testing and laser inspection can be incorporated directly into the production flow to fine-tune the manufacturing in a closed-loop system.

DVS Technology Group presents the article "Internal Gearing, Deburring, Honing and the Advancement of Robotic Cells," which describes the latest technology from Präwema to improve production efficiency and quality for stepped planetary gears and planetary ring gears, some of the most critical components in EV transmissions. This technology combines gear skiving with chamfering and deburring in a single machine and setup.

Of course, there is much more to the gear industry than just electric drives or even vehicle transmissions, so there's plenty of additional content as well, including articles on grinding burn detection (p. 36), crowned spline joints (p. 43) and force modeling in generating gear grinding (p. 51).

***Gear Technology*** **strives to bring you the latest, most relevant technical information for the gear industry, and we hope this issue demonstrates that commitment. As always, we thank you for reading and encourage your feedback. Feel free to contact me via e-mail at *stott@agma.org*.**

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