



# Keeping Your Wheels Turning

How to avoid grinding wheel supply problems

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*It's important to look for a wheel manufacturer that has a wheel designed to resist burn and chatter to provide better grind results and longer life.*





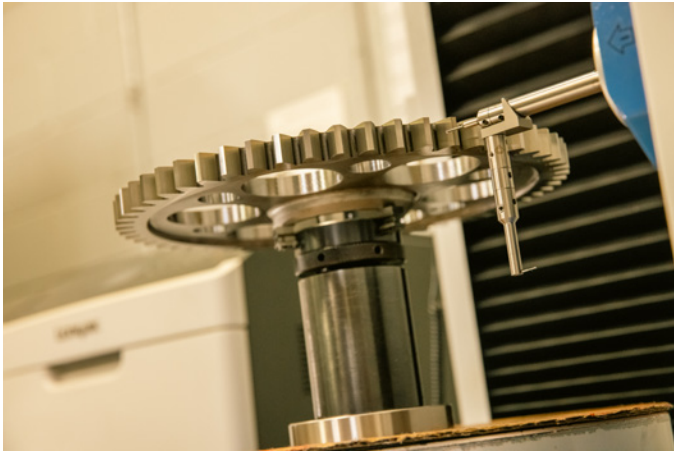
Gears are fundamental components in countless applications across diverse industries. From the heavy machinery used in construction and agriculture to the precision engineering required by automotive companies and even the specialized needs of small gear shops, the production of high-quality gears is paramount to operational success.

Gear grinding is a particularly vital part of gear manufacturing, often serving as the final step in the process before a product is shipped to the customer. This makes the quality and consistency of the grinding process not just important, but absolutely critical for gear manufacturers. However, the gear manufacturing landscape is not without some challenges that can affect production efficiency and final product quality and potentially delay customer orders.

### Common Gear Grinding Challenges

Several industry trends and challenges can negatively impact gear grinding productivity and efficiency for many manufacturers. These include:

- **Long lead times:** In today's economic landscape, supply chain issues related to gear grinding wheels can be especially problematic for gear manufacturers. Long wait times for grinding wheels may stem from raw material shortages, shipping delays caused by overseas production or sourcing, or supplier backlogs. Often, lead times can run months or even a year or more. Delays in acquiring the right grinding wheels for a specific job can trigger a detrimental domino effect, potentially bringing entire production lines to a halt and delaying customer orders.
- **Inconsistent wheel quality:** Raw material shortages can result in inconsistencies in grinding wheel quality. Some wheel manufacturers may also consolidate wheel product lines or make unannounced raw material changes, which can lead to production problems and affect the final product's quality for end users. The precision required in gear manufacturing means that any compromise in the grinding wheel's quality directly impacts the gear's geometry, surface finish, and overall performance, ultimately affecting the end user's ability to compete in the market.
- **Lack of technical support for end users:** Another key challenge can be a lack of technical support from wheel manufacturers. Whether the issue is production delays on the supplier end or a change to the raw materials used in wheel production, consistent communication is key for end users to best plan and prepare in their gear grinding operation.



*This image shows a gear being measured to ensure it meets specifications. Manufacturers should prioritize grinding wheel suppliers that offer advanced wheel technologies designed to optimize performance, extend wheel life, and resist common issues like burn and chatter.*

## Practical Strategies to Address the Challenges

The consequences of an unreliable grinding wheel supply extend beyond mere inconvenience; they can lead to costly machine downtime, increased maintenance expenses, and a complete standstill in product shipment if wheels are unavailable. Therefore, understanding and mitigating these common challenges for grinding wheels is not just a logistical concern, but a strategic imperative for gear manufacturers.

Here are five practical strategies to proactively mitigate the risks of grinding wheel shortages and delays and keep gear production on schedule:

1. **Dual sourcing:** One of the main ways to avoid long lead times, production delays and other supply chain problems is to use a dual sourcing strategy. Having a second source for grinding wheels provides manufacturers with a back-up option and can keep production lines moving.
2. **Forecast sharing and communication:** Proper communication with a wheel supplier is important to help ensure a continued supply of the right grinding wheels. The more information that can be shared with the wheel supplier, the more prepared that supplier will be to fulfill specific orders in a timely manner. If an influx or production demand is expected, informing the supplier helps ensure everyone is on the same page.
3. **Maintain safety stock for critical wheels:** Keep back-up stock of critical wheels that are already qualified and ready to go on the shelf for emergency situations. This is especially important for high production environments such as aerospace or automotive manufacturing.
4. **Implement modular wheel design:** Working with a wheel manufacturer to implement a modular wheel design that can be flexible across an array of geometries can help operations avoid shortages and delays.
5. **Track key KPIs:** Monitoring important key performance indicators in the gear grinding operation provides data that helps for planning ahead regarding orders and inventory.

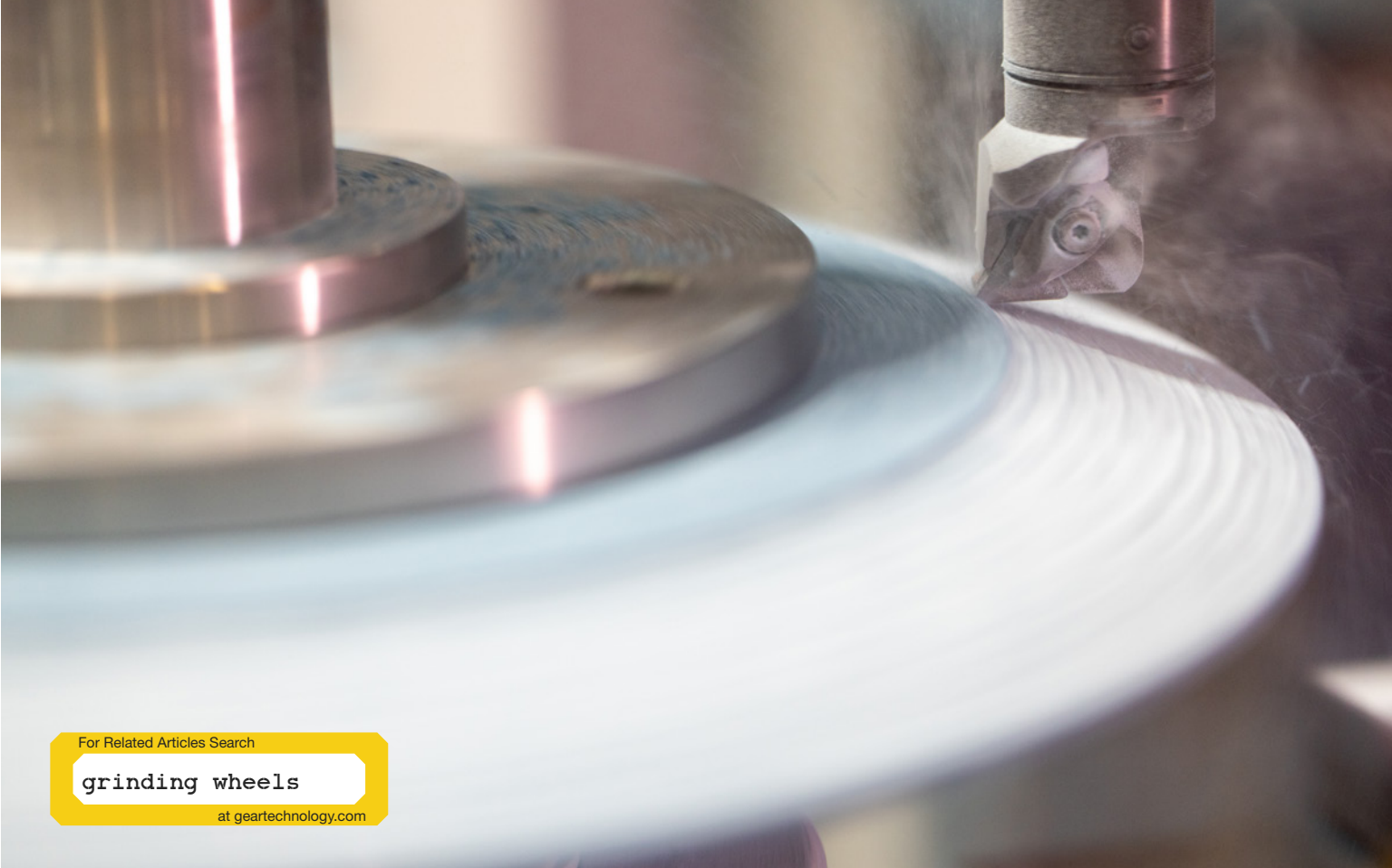
## Choosing the Right Wheels and Wheel Suppliers

There are technologies available that can help gear manufacturers optimize grinding wheel life, performance and end results. If grinding wheels are wearing out too fast and requiring too-frequent replacement, for example, it's important to look for a



*This image shows the cell where wheels are profiled as part of the Weiler Precision Express program, which cuts lead times for gear grinding wheels from months to weeks with on-demand wheel finishing.*





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*A gear grinding wheel is profiled at the Weiler Abrasive facility in Cresco. The Precision Express program from Weiler Abrasives cuts lead times for gear grinding wheels from months to weeks with on-demand wheel finishing. Precision Express matches an in-house profiling cell with a broad range of on-hand stock.*

wheel manufacturer that has a wheel designed to resist burn and chatter to provide better grind results and longer life. Using the latest grain and bond technologies that are specifically designed to reduce thermal damage can deliver the desired quality, wheel life and performance in many applications.

Some options are also available to help address challenges related to wheel inventory and procurement. The Precision Express program from Weiler Abrasives cuts lead times for gear grinding wheels from months to weeks with on-demand wheel finishing. Precision Express matches an in-house profiling cell with a broad range of on-hand stock. Even when gear manufacturers see a spike in demand or need a custom profile at a moment's notice, they can get consistent availability and delivery. With a sizable stock inventory at Weiler Abrasives' North American headquarters in Pennsylvania, custom wheels can be produced within two weeks.

### Real-World Example

A Georgia-based gear manufacturer known for rapid emergency repairs to paper mill equipment faced a major challenge: unreliable grinding wheel supply was threatening their ability to deliver under pressure. Their previous supplier offered poor support, long lead times and inconsistent performance. When they partnered with Weiler, everything changed. Through Weiler's Precision Express service, a custom test wheel was delivered in weeks—not months—backed by on-site engineering support and remote troubleshooting. Weiler's advanced porous wheel

technology cut cycle times by 30 percent, eliminated adjustment delays and significantly boosted efficiency. With five machines now running and plans for 24/7 operations, this partnership transformed a critical vulnerability into a competitive edge.

### Addressing Gear Grinding Wheel Supply Challenges

As many gear manufacturers deal with supply chain challenges and wheel delays and shortages, the importance of choosing the right wheels and wheel suppliers cannot be overstated. Manufacturers should prioritize suppliers that offer advanced wheel technologies designed to optimize performance, extend wheel life, and resist common issues like burn and chatter. Beyond product quality, the availability of robust technical support and on-site troubleshooting from suppliers is crucial for minimizing downtime and ensuring continuous operation.

By implementing practical strategies such as dual sourcing, sharing forecasts with suppliers, and maintaining safety stock for critical wheels, manufacturers can proactively mitigate the risks of gear grinding wheel shortages and delays. In addition, adopting innovative approaches like modular wheel designs and partnering with suppliers offering on-demand finishing services, can significantly reduce lead times and enhance operational agility.

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