

Get a grip on grinding burn

INNOGRIND has the specialized expertise you need to get a grip on your grinding burn problem, plus innovative products that can often permanently eliminate the problem.

INNOGRIND has already helped many high-volume production facilities reduce the rate of defects from grinding burn. Internationally, customers in the aerospace and automotive sectors, as well as specialized bearing and gear producers, are working with INNOGRIND to optimize production, reduce reject rates, and improve quality assurance. A list of customers is available on request.

INNOGRIND is represented in certain countries by a selected local distributor with specialized grinding expertise.

To find out more about INNOGRIND, INNOZL™ and other products, plus a list of local dealers/distributors, please visit

www.innogrind.com

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When failure is not an option...



...make sure *your* parts will perform.

”At KLM Engineering and Maintenance, INNOGRIND brought solutions to improve our grinding: they trained our employees, shared grinding best practices, and supported our implementation of Barkhausen Noise Analysis. As a result, our KLM facility now has the expertise in house to ensure optimal production throughput and detect grinding burn. The ability to offer such a total solution is what makes INNOGRIND a highly valued partner.”

Maarten Ottevanger, Engine Repair Design Engineer
Sander Hageman, Metallurgical Engineer
KLM Engineering & Maintenance

INNOGRIND - State-of-the-art solutions for:

Grinding burn detection
Coolant solutions to prevent grinding burn
Grinding burn training

Detection is the first step

Precision manufacturing companies are routinely confronted by stringent quality requirements that place high demands on production processes and personnel competences.

Grinding burn is a production defect that has a major impact on the fatigue life and dynamic load limits of precision components. **Detection is essential** - lives can depend on it!

In the aerospace, automotive, gear and bearing production sectors, the quality assurance of ground parts is typically supported by the use of high-end test and measurement tools. NDT Barkhausen noise analysis and X-ray diffraction are the benchmark techniques for detecting grinding burn. INNOGRIND offers an on-site grinding burn detection service based on these highly effective detection techniques.

INNOZL™ - coolant nozzles for grinding

Heat must be removed where it originates, before it has a chance to degrade the metallurgical properties of the part being ground. To achieve this, we have to jet sufficient coolant at high velocity directly onto the hot spot. Simply flooding the area is not good enough, especially when performing intricate grinding operations with difficult access and a high-speed tool. This problem can be solved by the use of coolant nozzles with optimum geometry and exceptional durability. INNOGRIND employs 3D printing for production of coolant nozzles - this technique gives us complete freedom to design the INNOZL™ to meet these requirements. Aided by advanced analytical software, we can customize the nozzle geometry to specific machines and machining processes.

INNOZL™
technologies



Benefits of INNOZL™ for precision grinding

- ▼ **INNOZL™ kills grinding burn by delivering coolant directly onto the contact zone at an equal flow rate and speed per nozzle outlet to maximize the lubricoolant effect.**
- ▼ **INNOZL™ is designed with internal flow channel geometry that optimizes the flow speed and direction for complex, high end grinding processes.**
- ▼ **INNOZL™ is a compact, one-piece accessory that can be easily mounted onto existing machines.**

A total solution for grinding burn

Grinding burn detection

Why

Detect (potential) grinding burn without interrupting production.

How

On-site detection with high end NDT measurement techniques*.

Result

A report recommending where and how to reduce or eliminate thermal damage.

* For the assessment and optimization of your grinding processes, INNOGRIND offers Barkhausen Noise Analysis, Prism® and X-ray diffraction.

Coolant solution

Why

Prevent grinding burn by deployment of highly effective coolant delivery technology.

How

Precision coolant delivery to the process hot spot with standard or custom INNOZL™ technology.

Result

Reduced defect rate, higher production output, and improved quality of final product.

Grinding burn training

Why

Create continuous awareness of grinding burn and its prevention.

How

On-site employee training on best practices in grinding burn detection and prevention.

Result

In-house expertise, optimal utilization of machines, and higher production output.



Practice-based grinding burn training.