MARPOSS *Case Study*

INTERMEDIATE STATUS: REDUCTION OF 86% TRANSMISSION REJECTS BASED ON A QUANTITY OF 180,000 MACHINED PARTS

PROBLEM

Customer wanted to improve quality and avoid much scrap and therefore detect the following process anomalies:

✔ Previously run parts
✔ Oversized parts
✔ Compromised parts
✔ Mingled (wrong) parts in machine
✔ Grinding wheel breakouts during processing
✔ Grinding wheel breakouts after wheel dressing

APPLICATION

Automotive supplier with gear grinding of planetary gears made of tempered steel on Reishauer RZ60 gear grinders with SINUMERIK 840D SL PCU50.
Processes: roughing and finishing operations - monitored with Artis monitoring system, CTM**V6** and digital torque sensor DTA-DP.
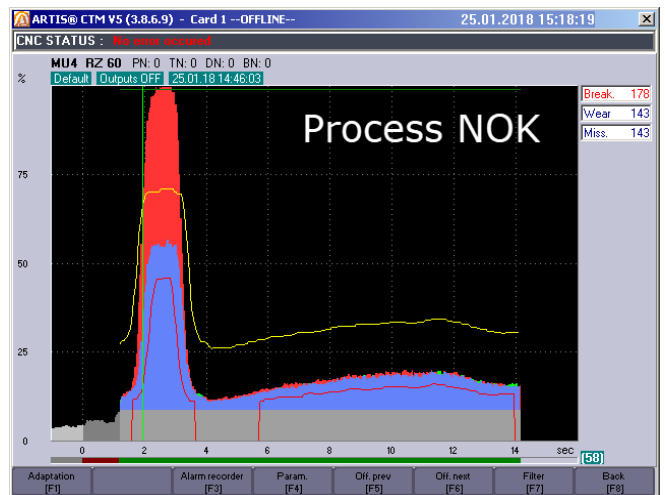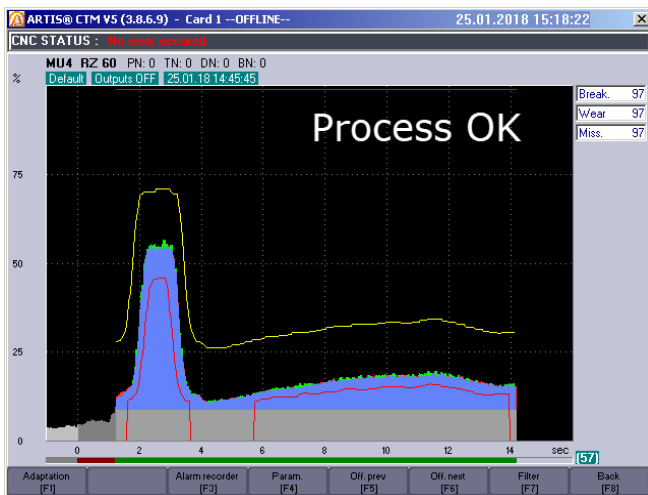
SOLUTION

CTM**V6** cards are integrated by PCI connector in the existing PCU50 machine control systems. Via the PROFIBUS connection the digital torque load data of spindle and axis are used for the process monitoring. The CTM system is very well suited to monitor the very sensitive signal differences via manually adjustable strategies.

If set individual signal limits are over- or under-run, an alarm is set and the workpiece is sorted out. In case of repeated events, the machine is stopped so that the problem can be solved immediately based on the stored Artis monitoring data.
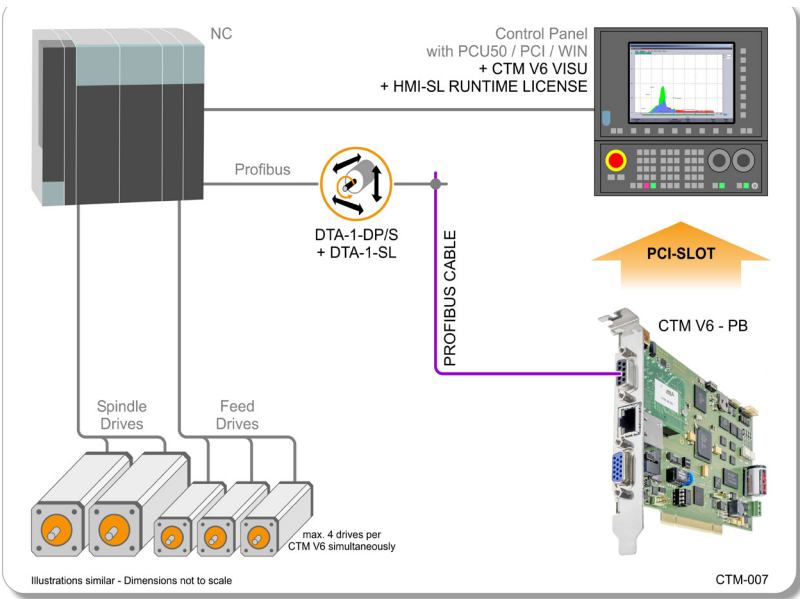
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BENEFITS

High cost savings due to reduced rejections from the gearbox assembly department. Before, the parts with small visible defects often ended up in the assembly department, where they caused significant additional effort and expenses.

Meanwhile customer has installed more than 20 sets of Artis monitoring systems for similar gear grinding machines.

MARKET

Manufacturers of gear wheels in different sizes and for different applications. For gear grinding and gear hobbing processes.

NC

Control Panel
with PCU50 / PCI / WIN
+ CTM V6 VISU
+ HMI-SL RUNTIME LICENSE

Profibus

DTA-1-DP/S
+ DTA-1-SL

PROFIBUS CABLE

PCI-SLOT

CTM V6 - PB

Spindle
Drives

Feed
Drives

max. 4 drives per
CTM V6 simultaneously

Illustrations similar - Dimensions not to scale

CTM-007

To find out more about our CTM**V6** system please visit the website:
https://www.marposs.com/eng/product/tool-and-process-monitoring-system