ReMaTecNews

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- How to clean with greater efficiency

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- Autoparts
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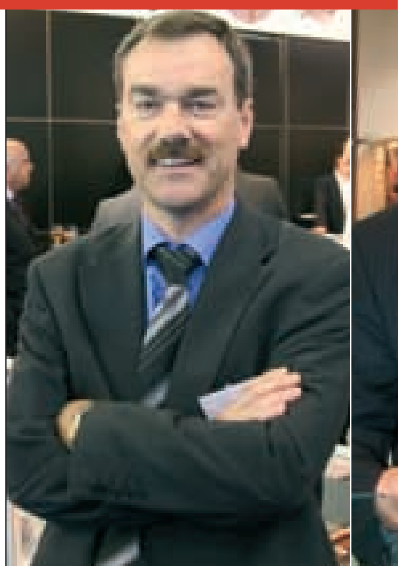
A new mood in remanufacturing



- Bigger and better at Paris motorshow

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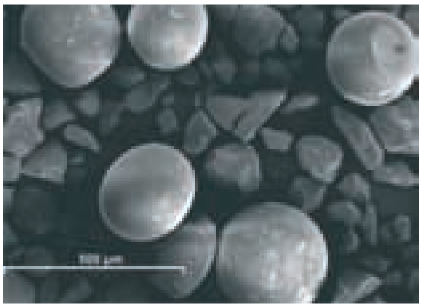


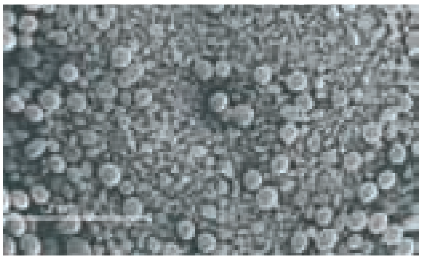
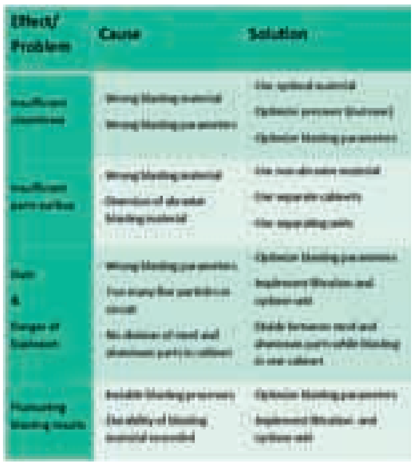


Figure 12 and 13: Microscopy pictures of broken glass balls after blasting with suboptimal parameters.

The following figure is a small guideline for optimized dry blasting processes:



Effect/ Problem	Cause	Solution
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Figure 14: Guideline for dry blasting processes.

In many applications, wet cleaning is the technology of choice and brings back parts to genuine cleanliness. While using optimized parameters for temperature and pressure, chemistry can be reduced or even avoided. Figure 15 shows an engine component before and after high pressure water cleaning (450 bars, 40°C) without using cleaning agents.

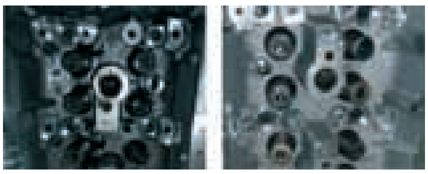


Figure 15: Part before and after water cleaning.

An innovative opportunity for a satisfying and soft cleaning process is to use frozen carbon dioxide (CO_2) in a blasting process. The CO_2, in this case, often substitutes abrasive materials like glass or corundum. During the blasting process,CO_2-pellets are accelerated to a speed of approx. 300 meters per second. The kinetic energy, the thermo shock and the sublimation effect are responsible for the embrittlement, which allows the removing of the present contamination.

The main benefits of using CO_2-cleaning technology in remanufacturing can be stated as:

- Applicable for a wide range of products including mechatronic components.
- Non abrasive and non electro conductive blasting technology.
- Precision cleaning technology for several functional surfaces, e.g. bearing shells.
- Gentle removal of tenacious contaminations, e.g. soot or oil.
- Paint stripping or removal of rubber sealings possible.

No costs for disposal

Environmentally friendly way to use CO_2 in a second life cycle ('CO_2 - do not produce it, just use it')

During the research work outlined in the earlier chapter, CO_2 cleaning technologies will be assessed regarding their application potential in remanufacturing – among technological options, in order to generate a roadmap and guidelines for successful cleaning within remanufacturing.

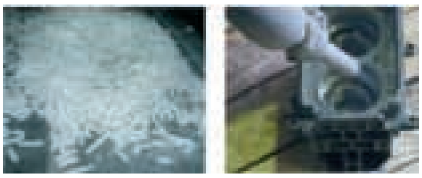


Figure 16 and 17: Frozen carbon dioxide (CO_2) pellets for blasting processes.

Figure 18 and 19: Frozen carbon dioxide (CO_2) pellets before and after cleaning.

Summing up, cleaning is not just a burden but also provides opportunities for a unique position in the remanufacturing community. If the arising challenges will be met in the future, the level of cleaning operations can achieve professionalism just as in new manufacturing companies.

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reCORE

Research for Efficient Configurations of Remanufacturing Enterprises

3 research institutions from Germany and Sweden; 9 remanufacturers from Germany, Sweden and Spain; 3 additional partners from The Netherlands and Germany; 4 full-time researchers; 2,5 years of hard work ahead and 1 topic to be addressed.

These are the key facts for a new European research project of Bayreuth University which is about to kick-of f. The project reCORE – research for ef ficient configurations of remanufacturing enterprises - will pave the way for handling high product variety in remanufacturing companies more efficiently.

A diversified spectrum of dif ferent brands, products, models, configurations and core quality levels requires each a specific set of operations resulting in high product as well as process variety . Unlike new production companies, remanufacturers, however, can merely passively handle such variety instead of avoid or reduce part numbers actively as they usually have no influence on the design of products.

All this makes daily operations a difficult and challenging task in which generic tools often fail. The project picks up on these burdens and supports remanufacturers in handling variety through novel concepts and pragmatic solutions within four target areas:

- Production organization (e.g. versatile work stations).
- Planning and control (e.g. efficient but flexible shop-floor-proof tools).
- Core management (e.g. warehouse strategies).
- Identification (e.g. part numbers/history/ quality).

Methodologies, technical solutions and indicators will be developed for the partner companies. The results will then be gathered into a configuration toolbox which allows for individual selection of modules and recombination according to specific requirements of any other remanufacturing company.

First outcomes will be available from early 2011 – the configuration toolbox will be presented mid 2012 followed by the implementation within the partner companies and a verification period until the end of tthe research project which is scheduled to finish in March 2013.