

Sustainability that pays off.



New Krämer extraction system at Melitta reduces energy costs drastically



The Melitta factory in Minden, Westfalia, produces 50 Million coffee filters every day. With the new extraction system almost 100% of the paper waste can be reused. Air technology helps to collect and sort the scrap of paper, which is compacted in baling presses and forwarded to the manufacturing of new filter paper. Both energy consumption and noise emission could be reduced drastically by the system.

As a family-owned and well established company, Melitta aims at being economically successful while saving on resource and energy input. When planning the new dust extraction and waste disposal system, Krämer Luftechnik had one major challenge: the new system had to address actual needs of the production lines but at the same time be flexible enough to cater for future needs. Seen as a sustainable investment, the new extraction system aims at:

- improving the business performance of the Melitta company by increasing both productivity and process safety
- taking environmental standards as an incentive for innovation and cost savings
- foreseeing future changes both in production and in environmental

Ventilator station with analytic control system for energy usage

standards and creating a system that can react flexibly to these changes.

Cutting waste and dust are by-products in the manufacturing of various types of coffee filters. This waste needs to be extracted and sorted in order to be fed back into the production cycle. In the old system each type of paper had a separate, central extraction system that could only run at maximum power.

However, today the types of coffee paper are so many that the need for each type of paper can vary a lot. Adaption to lower capacities per type of paper as well as the sorted disposal of the paper waste had not been possible before. For Melitta, Krämer Luftechnik developed a completely

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Separation system for the various types of paper

“With our new extraction system by Krämer Lufttechnik, we are finally able to control our processes to our exact needs: we can now chose the individual workload per machine as well as the most efficient combination of machines. This makes good sense both for business and the environment.”

Michael Weber,
Production manager, Melitta

new combination of central extraction facility as well as stand alone units. This combination is highly flexible: the new system can now respond to current production capacities and the number of running machines. It also allows a simultaneous separation of all of the various types of paper. Furthermore, process safety could be increased because of the redundant layout of facility parts. The most innovative details of the new extraction system are:

- the extraction line that fits best may be selected depending on the current extraction need for the different paper types
- an automatic speed control of the 60 ventilators allows for a further energy optimization

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- a simulation device provides the controlling of energy efficiency at an early stage – already when planning production!

Facts:

The savings in concrete figures:

- Up to 3 Mio. kw/h of energy per year = power consumption of 750 4-people-households
- 60% less CO₂-emission = reduction of CO₂-emission of 1200t/year
- 10,000t of paper waste are fed back into paper production - which is almost 100%
- 28,8t paper dust is recovered from filtered air and pressed to briquettes