

## Optimization of Dryers and Calcining Ovens for Catalytic Converters and Diesel Particulate Filters

As part of an internal research project, Münstermann/DE has developed a new generation of dryers and calcining ovens for catalytic converters and Diesel particulate filters.

The aim of the project was to optimize ovens and dryers for the production of car exhaust catalysts and Diesel particulate filters by constructive changes to the plants so that shorter heating and cooling times are achieved.



**Fig. Ceramic honeycombs on oven belt**

### Starting point for the optimizations

The length of the production process is largely determined by the heat exchange between the process air and the ceramic honeycomb bodies. The more warm or cold air passes through the vertical channels of the components, the faster the drying, heat-

ing or cooling process. The challenge is that the ceramic body with the thin channels is a high air resistance and therefore the air preferably flows around the components.

### Everything is much faster

As a result of the study, the heating and cooling rates can be speeded up by factors

through targeted mechanical changes in the plants. The parts are still placed freely on the belt.

In addition, a design program was developed. With a few measurements on a reference part, temperature curves within the parts can be simulated.

This dryer and ovens for the honeycomb body or similar parts can be designed and optimized based on fewer measurements. With the help of the new development, the process times are shortened many times over. The achievable customer benefit (smaller plants, shorter processes, energy savings and higher production flexibility) quickly recovers development costs.

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