Press release

Electrification of natural gas-fired ovens reduces paint shop CO2 emissions by up to 40%

Independent and environmentally friendly: Electric ovens from Dürr significantly reduce CO2 emissions

Bietigheim-Bissingen, 02 September 2022 – Climate neutrality, increased CO2 prices, and uncertainties with the natural gas supply are prompting car manufacturers to intensify their search for alternatives to gas-powered production plants. In response, Dürr became the first supplier to electrify all the body ovens in its portfolio. The first reference project with green electricity – in use since 2018 in a paint shop in Scandinavia – proves that there is no change in the drying process quality, which remains at the highest level.

The biggest energy consumer in the painting process is body drying. And its share of the CO2 footprint is accordingly high. By switching from natural gas to regenerative energy like green electricity, it is possible to reduce a conventional paint 'shop's CO2 emissions by about 40 percent, which is an enormous step towards climate-neutral production and greater supply security.

All Dürr ovens – from the traditional oven to the EcoSmartCure compact to the innovative EcoInCure with body drying from the inside – can operate with the energy sources of the future. In addition to favored green electricity, conversion to hydrogen and biogas is also possible. As a pioneer in electric ovens, Dürr demonstrates its expertise not only in the electrification of new ovens but also in brownfield retrofits. The machinery and plant engineering company offers individual assessments for existing plants to develop an optimal conversion concept so manufacturers can achieve short conversion times, and outstanding cost efficiency.

Reducing costs through energy efficiency

Further increases in fossil fuel prices are expected in the medium term, while the costs for regenerative plants are falling as the number of installed plants grows.

"We have developed a complete concept with several energy efficiency modules so that car manufacturers can already leverage environmentally friendly green electricity for cost-effective production," explains Heiko Dieter, Product Manager at Dürr Systems AG. "With a state-of-the-art insulation concept, skidless conveyor technology, and our EcoSmart VEC oven control system, we are coming at this from many directions".

Lowest exhaust air temperatures

The Oxi.X.RV air pollution control system works electrically according to the principle of regenerative thermal oxidation (RTO). Dürr is the only supplier able to offer a complete concept consisting of electrically heated ovens and electric exhaust air after treatment. Electric heating uses the RTO method, which decouples heating and air pollution control. Decentralized, compact individual units provide heat. The units have the additional benefit of streamlining the layout since large duct systems for supplying heat are no longer required. Highly efficient heat recovery means that manufacturers can use the energy in the exhaust airflow almost completely for heating fresh air. This reduces energy losses via the exhaust air to an unprecedentedly low level.

Needs-based control of the electrical supply

Another energy-efficient tool is the predictive **Eco**Smart VEC fresh and exhaust air control system. The intelligent software regulates the oven's electricity consumption by tailoring the energy demand to the exact number of bodies in the oven and reducing consumption during operation at partial load. Switching to skidless conveyor technology like Dürr's traverse technology also saves energy since the oven heats less material which needs to cool down later.

**No change to the painting process with electric body drying**

Dürr notes a sharp increase in the demand for electric ovens. “Currently, we have several projects in the pipeline. As the only paint shop supplier, we can offer a complete package for the electrification of dryers and air pollution control, combined with energy efficiency technologies for reducing operating costs”, says Heiko Dieter. “We are putting all this into practice with products from our portfolio. For our customers, switching to electric body drying is completely risk-free. With no change in the usual Dürr quality and no change in the drying conditions, the only change is in the energy source".

Pictures



Picture 1: Green for go: the electrically heated **Eco**InCure is ideal for drying EV bodies.

The Dürr Group is one of the world's leading mechanical and plant engineering firms with extensive expertise in automation and digitalization/Industry 4.0. Its products, systems and services enable highly efficient and resource-saving manufacturing processes in different industries. The Dürr Group supplies sectors like the automotive industry, mechanical engineering, chemical, pharmaceutical, medical technology and woodworking industries. It generated sales of €3.54 billion in 2021. The company has almost 18,100 employees and 120 business locations in 33 countries. The Dürr Group operates in the market with the brands Dürr, Schenck and HOMAG and with five divisions:

* **Paint and Final Assembly Systems:** paint shops as well as final assembly, testing and filling technology for the automotive industry, assembly and test systems for medical devices
* **Application Technology:** robot technologies for the automated application of paint, sealants and adhesives
* **Clean Technology Systems:** air pollution control, noise abatement systems and coating systems for battery electrodes
* **Measuring and Process Systems:** balancing equipment and diagnostic technology
* **Woodworking Machinery and Systems:** machinery and equipment for the woodworking industry

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