Press release

New spray booth design from Dürr brings sustainability to the shop floor  
  
EcoProBooth: Flexibility and energy efficiency go hand in hand

Bietigheim-Bissingen, 14 December 2021 – The EcoProBooth opens up new perspectives in spray booth technology for car manufacturers. With its modular box concept, independent lines and the combination of interior and exterior painting in a single box, it provides a degree of scalability and flexibility previously only possible for small-scale series. However, this is not the only way it meets essential requirements for future production. With its new booth concept, Dürr also addresses the critical topic of energy efficiency. Compared to current line concepts with dry separation, the EcoProBooth promises to reduce energy consumption by around 40% and carbon emissions. For the many existing systems that will continue to operate with wet scrubbing, the saving will increase to 75%.

**Eco**ProBooth boxes can transform individual painting lines into an efficient and flexible painting environment. The example of a primerless process clearly illustrates this. In this case, an integrated paint process (IPP) for 60 jobs per hour (eight zones for base coat and six zones for clear coat, traditionally split between two rigid lines with 30 jobs per hour each) become five parallel **Eco**ProBooth lines. Each features one position for all base coat applications and one for all clear coat applications. Fourteen zones become ten boxes. Each line can be individually controlled and brought online or offline as needed.

**Scalability for system efficiency**

Greater efficiency is also ensured by the optimal distribution of the bodies to the **Eco**ProBooth boxes. Cycle time losses due to different painting scopes, such as metallic and solid, or different body types are a thing of the past. The greatest painting scope no longer determines the cycle, since the booth size paints all standard passenger car types – from compact cars to SUVs. The size and design of the box are standard. This means straightforward conversions and extensions are possible without a knock-on effect on production in other box segments.

**All-in-one for greater availability**

The painting robots look after the interior and exterior painting in one box using the application technology optimally coordinated to the body in question. The new **Eco**Bell4 Pro Ux universal atomizer meets the highest standards for painting quality and ensures that only four painting robots are needed per box. Integrating all the painting tasks into one box eliminates the time required to convey bodies, when the robots are inactive, between the process steps for interior and exterior painting.

A further factor in the uninterrupted operation of the system is the service cubicles located in the corners of the booth, which have a continuous flow of fresh air through them. Employees can safely access them without breathing apparatus to clean or do minor servicing tasks on atomizers and tools while painting continues. At the same time, the amount of cleaning required can be adapted to the degree of contamination of the respective component using the DXQ software from Dürr.

Low energy consumption thanks to maximum air recirculation percentage

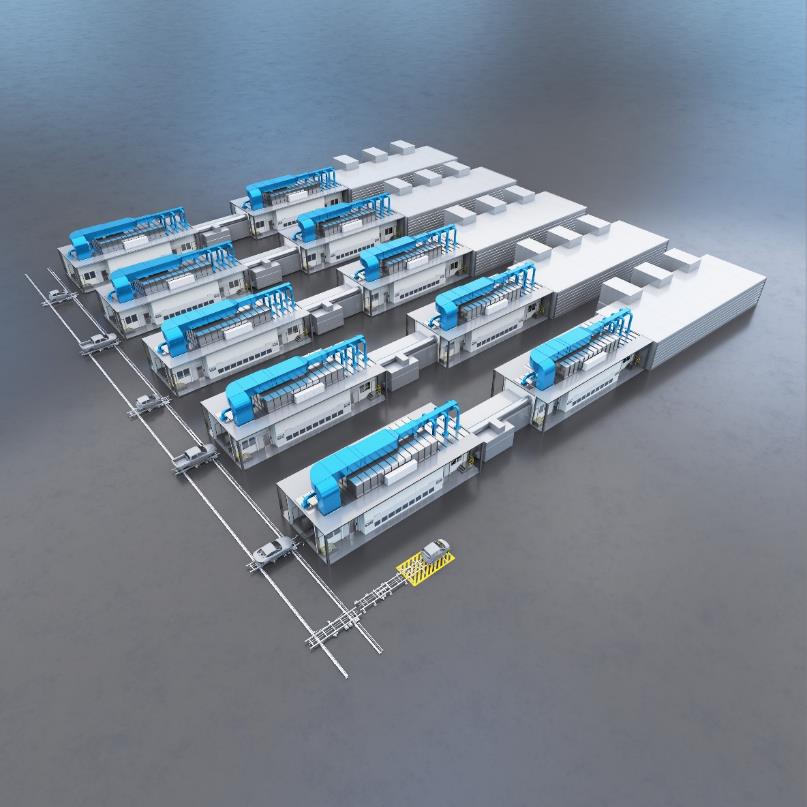
The highly efficient modular concept has enabled Dürr to reduce the booth area. In the example mentioned, the volumetric flow rate of the process air is around 20% lower. The modular concept minimizes energy consumption and reduces carbon emissions and operating costs.

The **Eco**ProBooth has a highly recirculated air rate thanks to its low energy needs with a ratio of recirculated air to fresh air of 95:5. This means the process air is supplemented with 5% fresh air, taken directly from the clean room without any further air supply system. The box also features overspray separation with the latest generation of the **Eco**DryScrubber. Once the paint particles have been removed from the air, they are reconditioned in a recirculating air unit assigned directly to the painting booth, reducing energy consumption and costs. The new **Eco**DryScrubber can purify almost twice as much air as the predecessor models with just one filter stage per module. The highly compact design of the filter stage integrates perfectly into the box concept. Compared to a traditional wet separation system, Dürr reduces the energy needed by 40%. For a painting line with wet scrubbing, this increases to 75%.

Sustainable investment for all eventualities

In addition to efficiency and flexibility, sustainability is an increasingly important competitive factor for the manufacturing sector. With its new system layout, Dürr has created the ideal conditions for needs-based manufacturing and efficient use of resources. Significant reductions in the volumetric flow rate of the process air and the high recirculation rate keep energy consumption and carbon emissions as low as possible. At the same time, the intelligent box layout reduces material consumption by cutting losses when changing color. Subdividing the line into shorter segments additionally allows for the intelligent distribution of painting orders to minimize color changes, saving paint and flushing agent consumption and reducing costs and VOC emissions.

Whether a major volume manufacturer or an e-mobility newcomer and, whether building a new system or retrofitting an existing one, EcoProBooth is an investment in the future of painting.



Picture 1: In the layout of the paint shop of the future, two rigid lines become five parallel **Eco**ProBooth lines

**Picture 2:** Dürr Open House 2021 – Product Manager Daniel Ackermann in the test setup for the **Eco**ProBooth in the technical center in Bietigheim-Bissingen

**About Dürr**

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 € 3.32 billion in 2020. The company has around 17,500 employees and 120 business locations in 33 countries. Since February 2021, the majority-owned automation specialist Teamtechnik has also been part of the Group. 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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