Press release

EcoBell PurgeBox flushing system for two-component paint application

**Environmentally friendly flushing system reduces VOC emissions during color changes by up to 60 percent**

**Bietigheim-Bissingen, 09 October 2019 – Dürr has developed a new, environmentally friendly flushing system for two-component paint application: the EcoBell PurgeBox makes it possible for the first time to collect almost all solvent-based two-component paints and flushing media when changing color. The system is used for two-component clear coats and base coats. It makes it possible to reduce the VOC load in the booth caused by changing color by up to 60 percent. The new system does not require the flushing funnel commonly used in the past. This reduces the power consumption as well as the maintenance involved, and also offers maximum protection against high-voltage flashovers.**

Around the world, statutory regulations are requiring plant operators to adhere to increasingly stringent limit values for volatile organic compounds (VOCs). In industrial painting, VOCs escape when changing color and during the associated flushing of the atomizers. To change paint, the channels inside the atomizer must be flushed before the new paint is pressed on. Regular exterior cleaning of the atomizer housing is also necessary so that no overspray can fall from the atomizer onto the body. The development of the **Eco**Bell Cleaner D2 with integrated droplet separator has enabled VOC emissions to be reduced by 94 percent compared with the previous model, on the one hand through the reduction in flushing agent consumption achieved through the elimination of a cleaning pass and on the other hand through the collection of the spent media.

**Flushing funnels have many disadvantages**

In the case of materials with just one component, such as are typically used for primer and base coats, the paint in the atomizer channels can be fed into the manifold via a return and collected. This means that only very little media has to be flushed forwards out of the atomizer. In the **Eco**Bell Cleaner D2, this flushing takes place in parallel with the cleaning of the atomizer in cycle time. “For two-component paints, this kind of clean solution was not available on the market up to now because these materials pose special challenges for the flushing process,” reports Sandra Schlichenmaier, R&D engineer at Dürr. Since two-component paints have a short curing time, they must be fully drained forwards out of the atomizer. Up to now, the paint has either been fed directly into the booth or into a funnel that is flushed at regular intervals. The flushing on the funnel produces a dynamic spray cloud, from which a lot of VOCs escape. In addition, the funnel must be regularly flushed with sludge thinners so that the two-component material does not clog the funnel – this also introduces VOCs into the booth.

**Easy disposal**

The newly developed **Eco**Bell PurgeBox is a system that replaces the funnel solution entirely and significantly reduces the VOC load in the booth. Instead, the atomizer moves into the box. The special filter mats in the box collect the majority of the paint, the air escapes to the side, the almost pure flushing medium flows downwards and can be disposed of with ease via a manifold line that requires no additional flushing. The filters are simply discarded as residual waste after their lifetime. “In two-component zones, it will be possible to significantly reduce VOC emissions by means of flushing and cleaning processes if an **Eco**Bell Cleaner D2 is combined with an **Eco**Bell PurgeBox instead of a funnel,” says Sandra Schlichenmaier.

**Protection zone against high-voltage flashovers**

Another unique feature is the high level of protection offered by the **Eco**Bell PurgeBox and also the **Eco**Bell Cleaner D2 in combination with Dürr’s **Eco**RPC control technology. A virtual protection zone ensures that the atomizer cannot come into contact with any grounded components while it is under high voltage. The software switches off the system if the protection zone is violated to prevent flashover on combustible paints.

The Dürr Group is one of the world's leading mechanical and plant engineering firms with extensive expertise in automation and digitization/Industry 4.0. Its products, systems and services enable highly efficient manufacturing processes in different industries. The Dürr Group supplies sectors like the automotive industry, mechanical engineering, chemical, pharmaceutical and woodworking industries. It generated sales of € 3.87 billion in 2018. In October 2018, the Dürr Group acquired the industrial environmental technology business of US-based company Babcock & Wilcox, comprising the Megtec and Universal brands. Since then, it has over 16,400 employees and 108 business locations in 32 countries. The Group operates in the market with five divisions:

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

**Photos:**

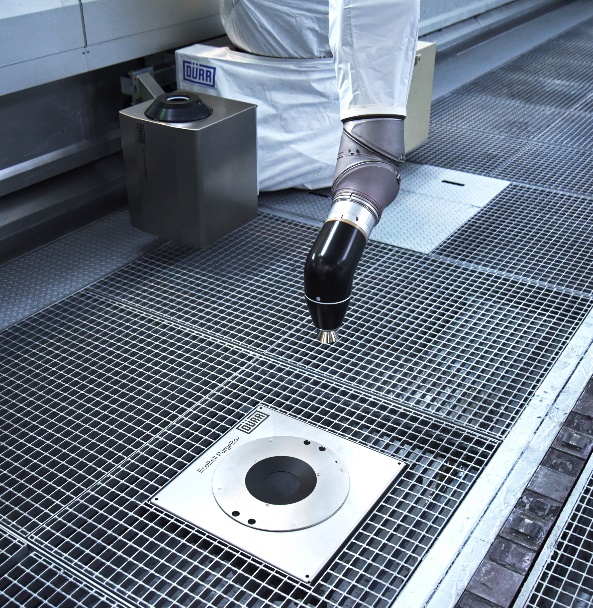


Photo 1: The **Eco**Bell PurgeBox flushing system reduces VOC emissions produced during two-component paint color changes.

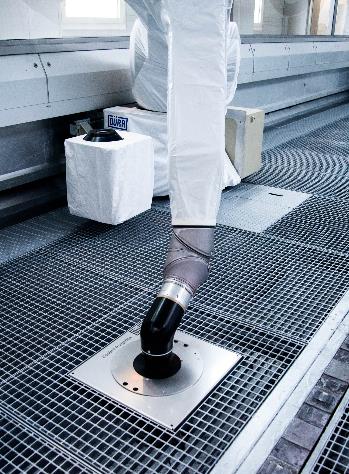


Photo 2: **Eco**Bell PurgeBox flushes two-component paints from the atomizer without paint mist escaping into the booth.

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