

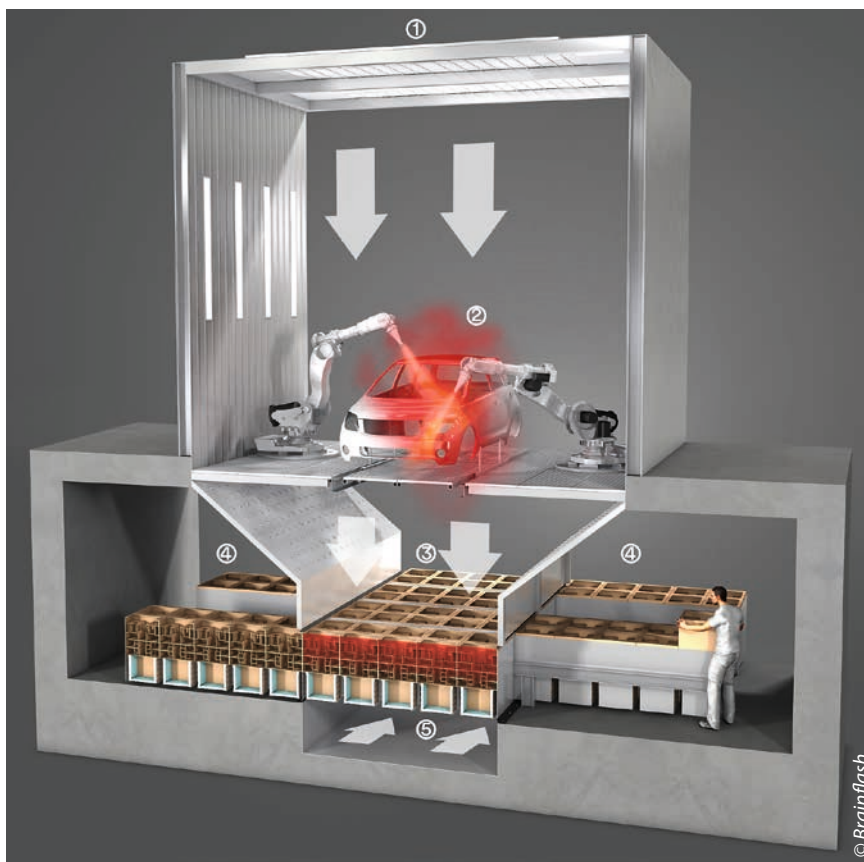
## New System for Overspray Separation

# Filter Changes without Plant Shutdowns

Until now, the need to shut down automated paint shops in order to change the filters has been seen as a necessary evil. A newly developed system will put an end to this problem and ensure the non-stop operation of paint shops.

The Edrizzi system, which was first developed in 2003, offers companies with paint shops a cost-effective, environmentally friendly and ergonomic solution for removing overspray. It is based on paint mist separators made from corrugated cardboard (Edrizzi Vario) with a high absorption capacity of up to 100 kg/m<sup>2</sup>. In most situations, the saturated filters can be disposed of cost-effectively in incinerators. Depending on the application, seven different after-filters complete the edrizzi-system.

For many years, Edrizzi's technical centre in the Austrian town of Lienz has been working on solutions for an automatic replacement of the system, in particular in automated paint shops, for example in the automotive indus-



An overview of the new filter system showing the air inlet (1), painting zone (2), separation area with the new overspray separation system (3), changeover zone (4) and air outlet (5).



Comparison between saturated and new overspray separators.

try, in order to avoid downtime for filter change.

The new system "Non-Stop" has been finally developed to meet this requirement. The system is installed underfloor below the gratings. It has two changeover areas which run alongside the separation zone on each side of the paint shop. A tapered air duct increases the settling speed of the overspray from between 0.25 and 0.5 m/s in the painting area to between 0.5 and 1 m/s in the separation zone. This ensures that the filter system absorbs as much paint as possible. The Vario overspray separators and Cube01 after-filters are installed in trolleys. Any kind of filter medium can be used in the Cube01 depending on the surface material. A

third filter is installed in the air circulation duct. Two trolleys run in parallel along the entire length of the paint shop.

### Sensor-controlled monitoring for automatic changes

As soon as the low-pressure sensor detects the saturation of the system, the trolleys are automatically replaced using a zipper-system. The trolleys with the saturated filters move into the changeover area and those with the new filters that are ready for use travel into the separation zone. The saturated separators and after-filters are disposed of and replaced with new ones. The second trolley is now ready and waiting in the changeover area for the signal from

the low-pressure sensor to go into operation.

In paint shops of this kind, the changeover intervals for the edrizzi-system are generally between seven and ten days. The automatic changeover process ensures that the paint shop remains in non-stop operation throughout every shift. The long cleaning periods required by wet separation systems become a thing of the past and the costly and harmful coagulation agents, and

chemicals, the sludge removal systems and pumps are no longer required. The new system operates with recirculated air, so it saves not only energy but also space. Conventional wet extractions are installed on two floors, but the new space-saving Non Stop system operates efficiently on only one storey below floor level. It also reduces the noise in the paint shop of 15 to 20 dB. In addition, the unpleasant odours caused by wet extraction no longer presents a

problem. The first paint shops using the Edrizzi Non-Stop system are already being planned in China. ■

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