

LEADING IN  
PRODUCTION  
EFFICIENCY

A close-up photograph of a robotic paint application nozzle. The nozzle is a complex, metallic structure with a fine mesh at the tip, positioned just above a surface. The background is a blurred industrial setting with various mechanical parts and a blue square graphic element on the right side.

## Overspray-free paint application: Full automation of two-tone painting

October 23, 2019  
Bietigheim-Bissingen

Wheel painting conference

# Overspray-free application: General issues

## Market requirements for series production of 2-tone bodies

### What happens on the automotive market

- Increased demand for individualization options
  - multicolor partial areas, e.g. black roof
  - dynamic elements, e.g. stripes
  - complex elements, e.g. logo
- Differentiation between product lines, e.g. EVs
- Eco-friendly production getting sales-relevant



### Painting 2 colors with usual atomizer

requires **manual masking** and de-masking of contrast surfaces.

For the paintshop process this means

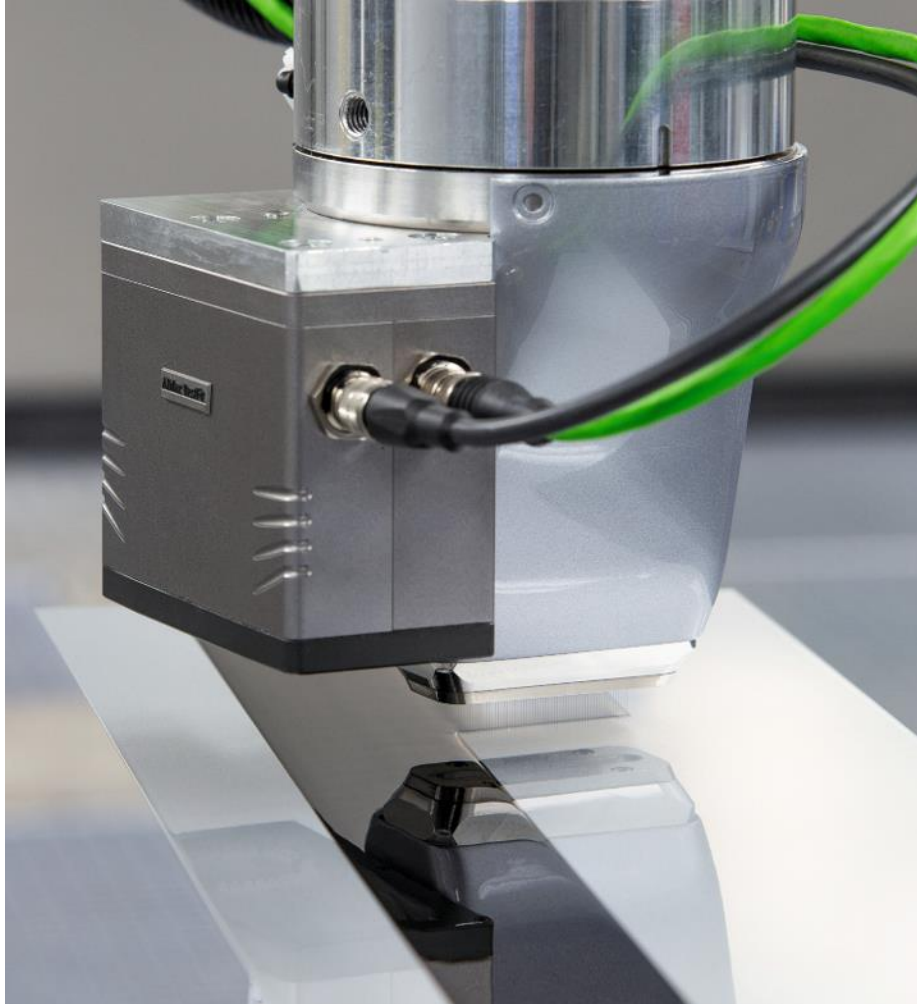
- 1 complete additional topcoat line
    - or
  - Each two-tone body must pass 2x the existing line
- ➔ additional cost for 2-tone bodies and reduced output



# Overspray-free application: General issues



New product: EcoPaintJet - Ready for market



EcoPaintJet with high-precision optical 3D sensor

## Properties

- 100% transfer efficiency – no overspray  
→ Masking is **not** needed
- All nozzles open and close at the same time
- Suitable for color change
- Suitable only for solid colors (no metallic paints)

## Technical data

- Width approx. 50 mm
- Speed > 600 mm/s

## Requirements for good application results

- Stable foundation/structural steelwork (de-coupled)
- Highly accurate, two-stage measuring system for the compensation of body and positioning tolerances
- Adjustment of the decorative paint, in cooperation with paint manufacturers.

Feasibility to be confirmed by paint test.

# Overspray-free application: General issues

High process reliability based on automated procedures



## VIDEO

[https://www.durr.com/fileadmin/durr.com/01\\_Products/02\\_Paint\\_Shop\\_Applications/Technology/06\\_Paint\\_Application/02\\_EcoPaintJet/duerr-ecopaintjet-video.mp4](https://www.durr.com/fileadmin/durr.com/01_Products/02_Paint_Shop_Applications/Technology/06_Paint_Application/02_EcoPaintJet/duerr-ecopaintjet-video.mp4)

Complete cycle with **EcoPaintJet** for sedan roof

## Status as of Q2/2019:

- 100% transfer efficiency = no overspray
- Painting horizontal areas (roof, motor hood)
- One robot paint the complete contrast surface
- Auxiliary equipment for full automation:
  - Applicator cleaning
  - Jet inspection
- Software for path generation available
- Water based decor paint is available
- Integration into topcoat process possible (alternatively: application on baked CC)
- First installation at customer AUDI

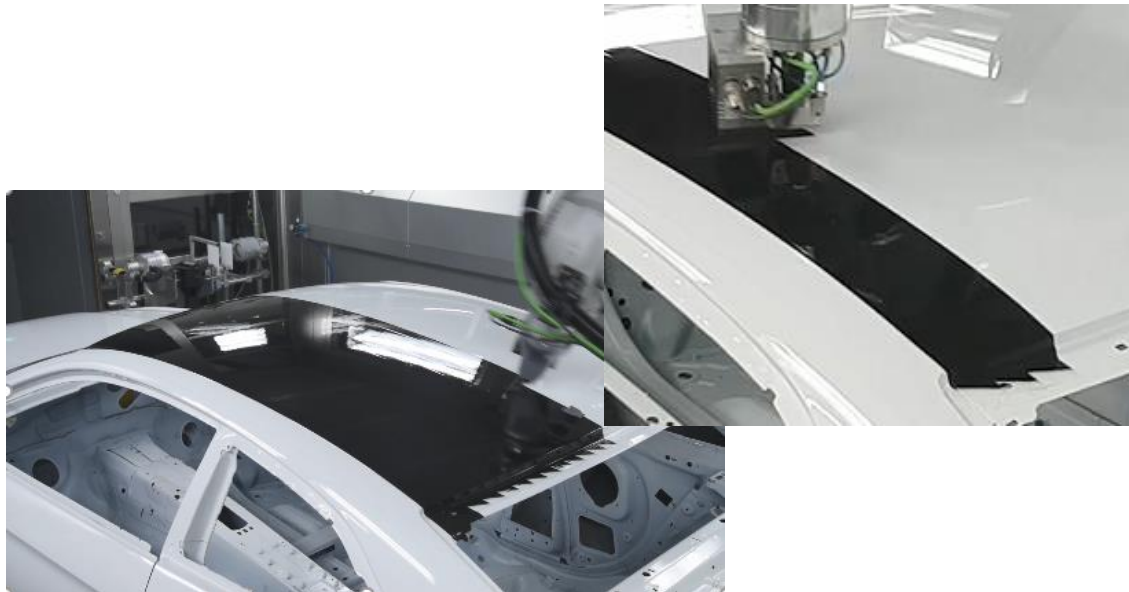


# Overspray-free application

## Status

### EcoPaintJet

- **Market-ready**
- Opening and closing of all nozzles simultaneously
- ➔ Trigger points beyond the roof edges
- High edge definition in painting direction
- Suitable for 1K and 2K waterborne or solvent borne paint (BC/DC, CC, monocoat)



### EcoPaintJet Pro

- **Under development**
- Separate control of any single nozzle
- ➔ Trigger points on the roof or flange
- Over all high edge definition
- ➔ Digital printing
- Suitable for 1K waterborne paint

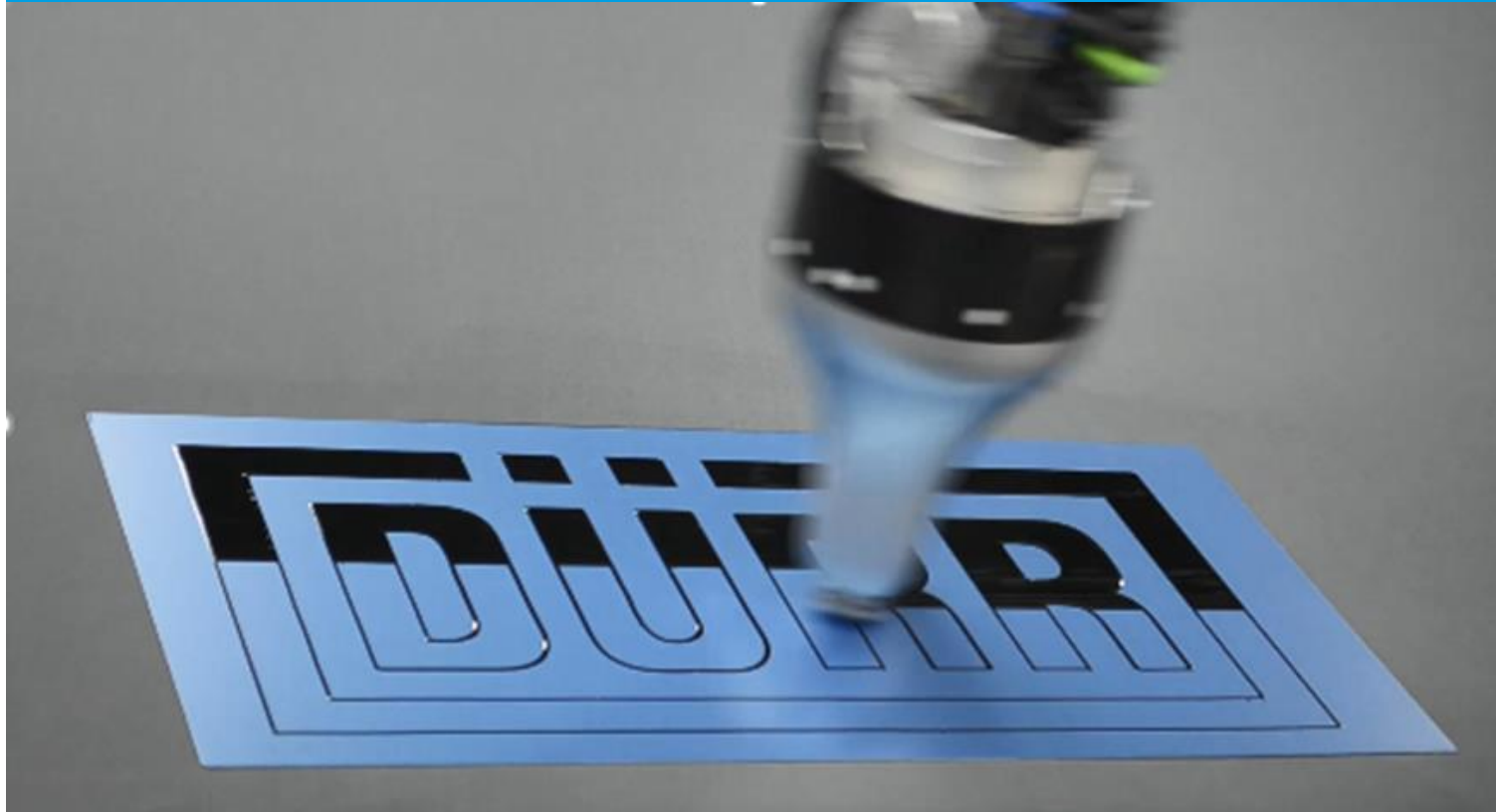


# Overspray-free painting: Outlook

## EcoPaintJet Pro - the next development step



DÜRR Logo - Application with EcoPaintJet Pro at Test center



### Application of straight or rounded surfaces

- Trigger points on the surface
- high-precision starting
- high-precision ending
- Foreseen applications
  - Production of sharp-edged contrast surfaces
  - Creation of logos, symbols
  - Writing of text

Oktober 23, 2019  
Bietigheim-Bissingen  
[www.durr.com](http://www.durr.com)

## Application Technology

# Overspray-free application for reduced TCO Full automation of two-tone painting

“Subject to change. The information in this presentation contains only general descriptions or performance characteristics, which may vary in different cases. The requested performance characteristics are only binding if they are expressly agreed in the contract.”

Dürr Systems AG  
34, Carl-Benz-Str.  
Bietigheim-Bissingen  
Germany, 74321

+49 7142 78-0  
[sales@durr.com](mailto:sales@durr.com)

