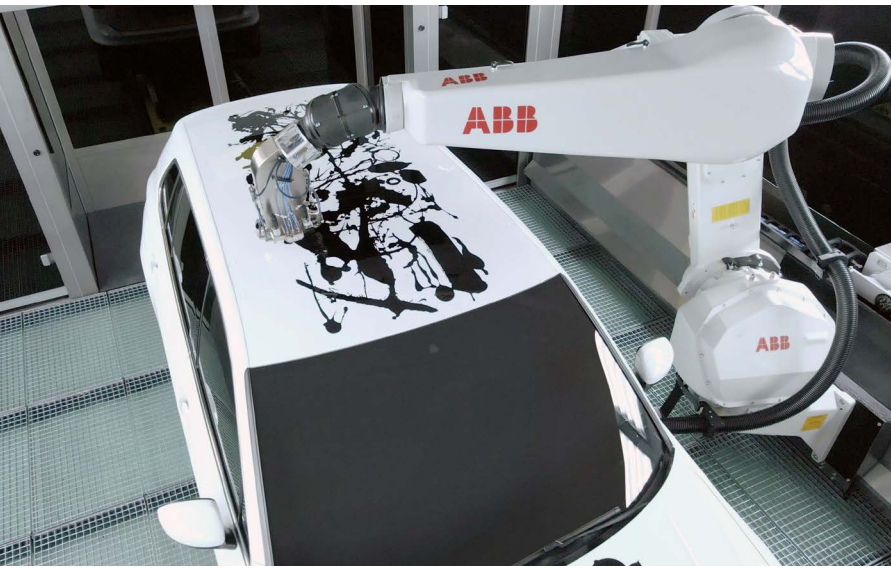# PixelPaint
Unmasks the future of customized automotive painting

ABB's PixelPaint non-overspray technology helps auto makers respond to the demands of car buyers. When creating popular two-tone or customized paint jobs, it eliminates the need for time-consuming masking and demasking. This significantly reduces time and cost, while also improving productivity and expanding the possibilities of customization.

Key benefits:
- Meets consumer demand for customization
- Eliminates the double cycle time required for two-tone applications
- Removes the need for costly and time-consumingmanual masking/demasking
- Major reductions in CAPEX and OPEX
- Perfect non-overspray application for two-tone and decorative painting
- Paint complicated images with high resolution
- Maintain a sharp edge with 100 percent transfer efficiency
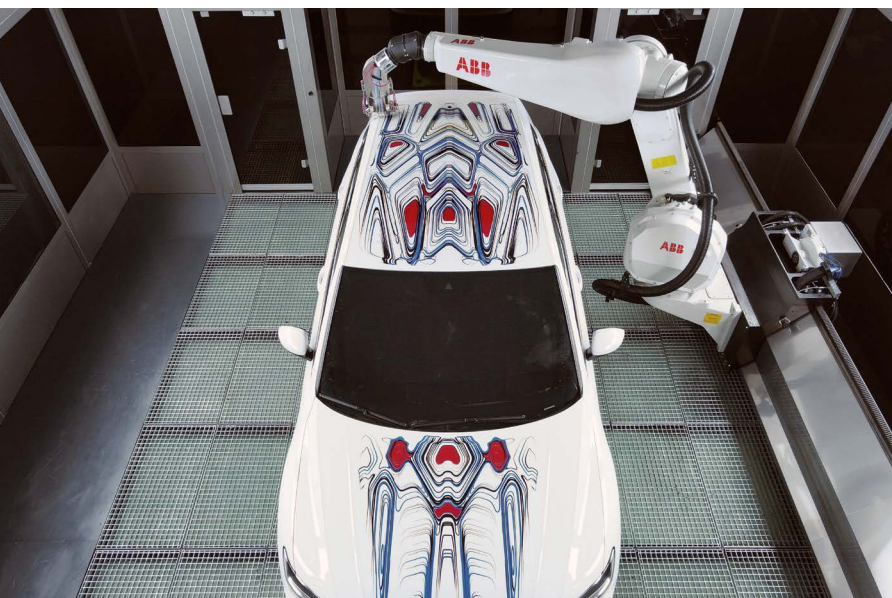
Meeting customer trends
The growing demand for vehicles featuring individualized paint schemes is calling for painting solutions that can provide the flexibility, precision and quality needed to ensure that customers get what they want.

Satisfying this demand is now made easier with ABB's PixelPaint solution, which incorporates an inkjet head, dosing control package, an IRB 5500 paint robot and off-line programming tool RobotStudio. Enabling designs to be printed onto the vehicle body, PixelPaint significantly cuts the time and cost of adding contrast color or a personalized paint finish or design.

No masking required
Previously, applying a contrast color on to bodywork has required masking between paint processes. This task can involve multiple operators per shift to handle both masking and de-masking tasks.

ABB's PixelPaint non-overspray two-tone painting application removes the need for manual masking/demasking, significantly cutting the time and material required for two-tone paint jobs.

Open the way to CAPEX and OPEX savings

PixelPaint presents scope for significant reductions in both capital and operating costs. By enabling the complete paint scheme to be applied in a single pass, the same paint facility can be used throughout, with no need to build or equip a separate area to add a second color or design. This can help achieve savings running into millions of dollars can be achieved by eliminating the need to build an extra paint shop to do the two-tone application as well as the consequent utilities savings resulting from reduced power, water and compressed air consumption.

With 100 percent of the paint being applied to the bodywork surface, there is also zero overspray, greatly reducing operational costs and improving environmental performance by ensuring that no paint is lost to the drain.

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PixelPaint non-overspray technology explained

Non overspray is a disruptive way of applying paint onto car bodies. With PixelPaint, it is possible to reach 100 percent paint transfer efficiency, compared to rates of 80 percent available with electrostatic painting.

The result of extensive research and development, PixelPaint utilizes a variable droplet control method combined with a pioneering inkjet nozzle design to enable fast and accurate high-resolution printing of two-tone and customized designs directly onto vehicle bodies.

PixelPaint enables droplets to be applied at sizes ranging from 20 to 50µm at a rate of over 1,000 droplets per second, allowing precise control of thickness and overlapping.
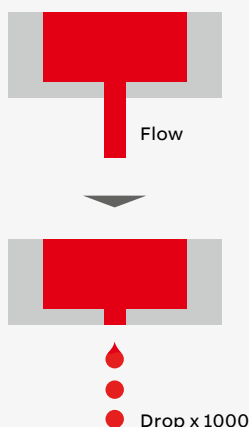
The inkjet printer head features over 1000 nozzles, each of which can be individually controlled. By enabling precise application of the amount of paint applied to a given area, PixelPaint ensures that images are printed to the highest quality whilst reducing paint wastage.
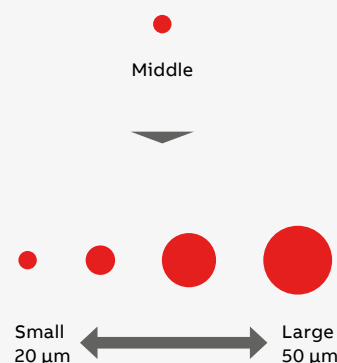
Improved performance, lower costs

100 percent paint transfer efficiency means lower operating costs

• Less air treatment needed
• Paint savings
• Reduce VOC
• Simple scrubber
• Less contamination
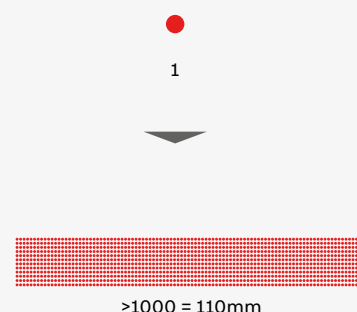• No electrostatic voltage needed

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1. Droplet jetting solution

Flow

Drop x 1000

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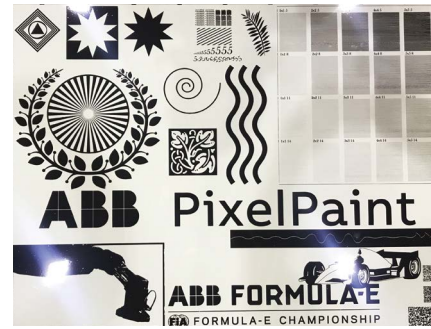**2. Control droplet size**

Middle

Small
20 µm

Large
50 µm

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3. More than 1000 nozzles

1

>1000 = 110mm

Key features at a glance

High resolution printing head	• Inkjet head incorporates over 1,000 independently controlled nozzles, offering sharp edge, invisible overlapping
High precision robot	• High precision IRB 5500 painting robot
Paint compatibility	• 1K, Waterborne, Solid paint
No masking required	• Deloyable in top coat
Offering standard function package	• Turn-key solution delivery

Examples