

Mercedes-AMG Petronas Motorsport Masterclass: airbrushing – precision and process create perfection

Spies Hecker looks at the airbrush skills on the Mercedes-AMG F1 W09 EQ Power+ race cars

In the airbrush's relatively short life - the first patent was awarded in 1892 - it has established itself as an instrument that craftspeople and artists love to use. Initially developed to retouch photographs without leaving brushstrokes, airbrushes are used today to create impressive and intricate individual works of art on everything from crash helmets to finger nails. And during a Formula One™ season more than 1.4 billion viewers worldwide see impressive airbrush skills on display on Mercedes-AMG Petronas Motorsport's F1 W09 EQ Power+ race cars as the team works its way through the gruelling 21-race calendar.

Aerodynamically smooth

As the only team in the pit lane to have a livery with complex colour gradients and fades, Brackley-based Mercedes-AMG Petronas Motorsport relies on airbrushing as a fundamental part of its Paint Shop's processes. Spies Hecker, one of the three global refinish brands of Axalta, a leading global supplier of liquid and powder coatings, is an integral partner to the team, and has been for more than four years, providing the paint for the W09 EQ Power+ and the previous championship-winning Silver Arrows cars.

Andrew Moody, Head of Paint and Graphics for Mercedes-AMG Petronas Motorsport, explains, "We utilise airbrushing for our green and blue glow lines, for the fades and gradients from silver into black, and also for the iconic Mercedes-Benz star on the nose and on either side of the engine cover. So, our painters are skilled not only at operating a standard spray gun, but also at using airbrushes. They follow clearly set out processes in our Job Element Sheets, which detail the what, how and why, including, of course, all the Spies Hecker products."

The Paint Shop uses a variety of Spies Hecker products, including Priomat® Wash Primer 4075, then either Permasolid® HS Vario Primer Surfacer 5340, a high solids primer surfacer, or Permasolid® HS Performance Surfacer 5320, a fast drying 2K HS sanding surfacer. Permasolid® HS Speed Clear Coat 8800 is used on parts that need to dry quickly, and for everything else, they use Permasolid® HS Optimum Plus Clear Coat 8650.

Spray gun or airbrush

The airbrushes used in the Paint Shop are small, precise instruments powered by the same compressed air the standard spray guns use, but at a much lower PSI and using a much smaller bore air hose. Air passes through the chamber inside the airbrush while the paint, which sits in an interconnected reservoir, is gravity-fed into the internal mixing chamber. The paint is atomised thanks to the air's velocity, and it passes through the nozzle tip directly onto the race car component. The guns are double-action, which means the painter has to press down on the small trigger that sits on the top of the airbrush with their index finger to release the air, and then pull the trigger back to allow the paint to flow. The more they pull back, the more paint is atomised through the nozzle, and the more they depress the trigger, the more air flows. The paint effect can also be changed based on how far the airbrush is from the object being painted. All these variables present the painters with the power to create a highly precise line and a much softer, wider effect in a single stroke.

Andrew says, "Compared to using a spray gun, the painters have to demonstrate quite a lot of patience and restraint with an airbrush and work the trigger differently. They should always start and end with just air, as a rule, and operate at an extremely high level of confidence and skill because the point at which we airbrush is fairly far along in the overall process, so if something goes wrong, it can be problematic in our highly pressurised environment. Airbrushing needs to be all but second nature to them."

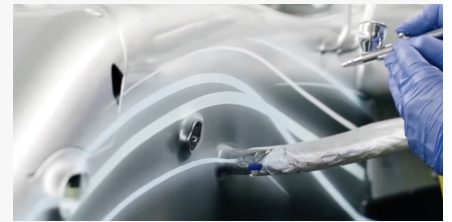
Star of the show

The iconic Mercedes-Benz star that adorns the nose is one of the most complex and process-driven areas on the car that is painted. The star has 16 process steps, each of which has up to five different stages. The airbrush is fixed with a 0.5 closed tip nozzle for greater precision and the painters have to use spray masks, which control and contain any overspray, ultimately creating a three-dimensional effect with sharp, crisp edges.

Andrew says, "Permahyd Hi-TEC really helps us because it is exceptional at multi-toning and designed paintwork. It allows us to mask directly after flash-off."

The two Mercedes-Benz stars on either side of the engine covers follow the same complex, multi-step process, only on a larger scale.

Glow with the flow



The vibrant green and blue flow lines, which are visual representations of the airflow across the car running from the front wing, the side of the chassis and continuing on the rear wing, are also airbrushed. Andrew explains, "We start with a spray mask to help outline the exact shape, but then the painters freehand airbrush using an 0.8 open nozzle tip. They have to be absolutely consistent, but with a highly creative medium like airbrushing, that is a real challenge. A painter can't add a little flick at the end of a line because everything has to be consistent and identical."

The airbrushes are cleaned just like spray guns, but in their own dedicated extraction system. At least twice a week, the painters break the airbrushes down completely to clean and to inspect the internal components, including the O-rings, to ensure everything is working perfectly.

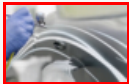
As Andrew concludes, "Airbrushing is essential for our livery, but it is a challenge. Some of the techniques are very different, but some aspects, particularly the prep, is exactly the same. For any refinisher who has an interest in airbrushing, I would say 'have a go', you might be surprised what you can do."

For more information about Spies Hecker and its relationship with Mercedes-AMG Petronas Motorsport, please follow the brand on www.facebook.com/spieshecker, visit www.spieshecker.com/F1speed or on [Twitter @spieshecker](https://twitter.com/spieshecker).

About Spies Hecker

Spies Hecker, one of the global refinish coating brands from Axalta, develops optimum and practical paint system solutions that can make bodyshop work easier and more efficient. With over 135 years of success behind it, Spies Hecker's high-quality product systems, customised service and targeted training demonstrate its partnership with the refinish industry. The Cologne paint brand is one of the world's leading vehicle refinish brands, and is available in over 76 countries worldwide.

Spies Hecker – simply closer!



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PR Photo - Mercedes Masterclass (2) (jpg | 2.30 MB)

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