Case Study

M-Sport Design

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3D SCANNING

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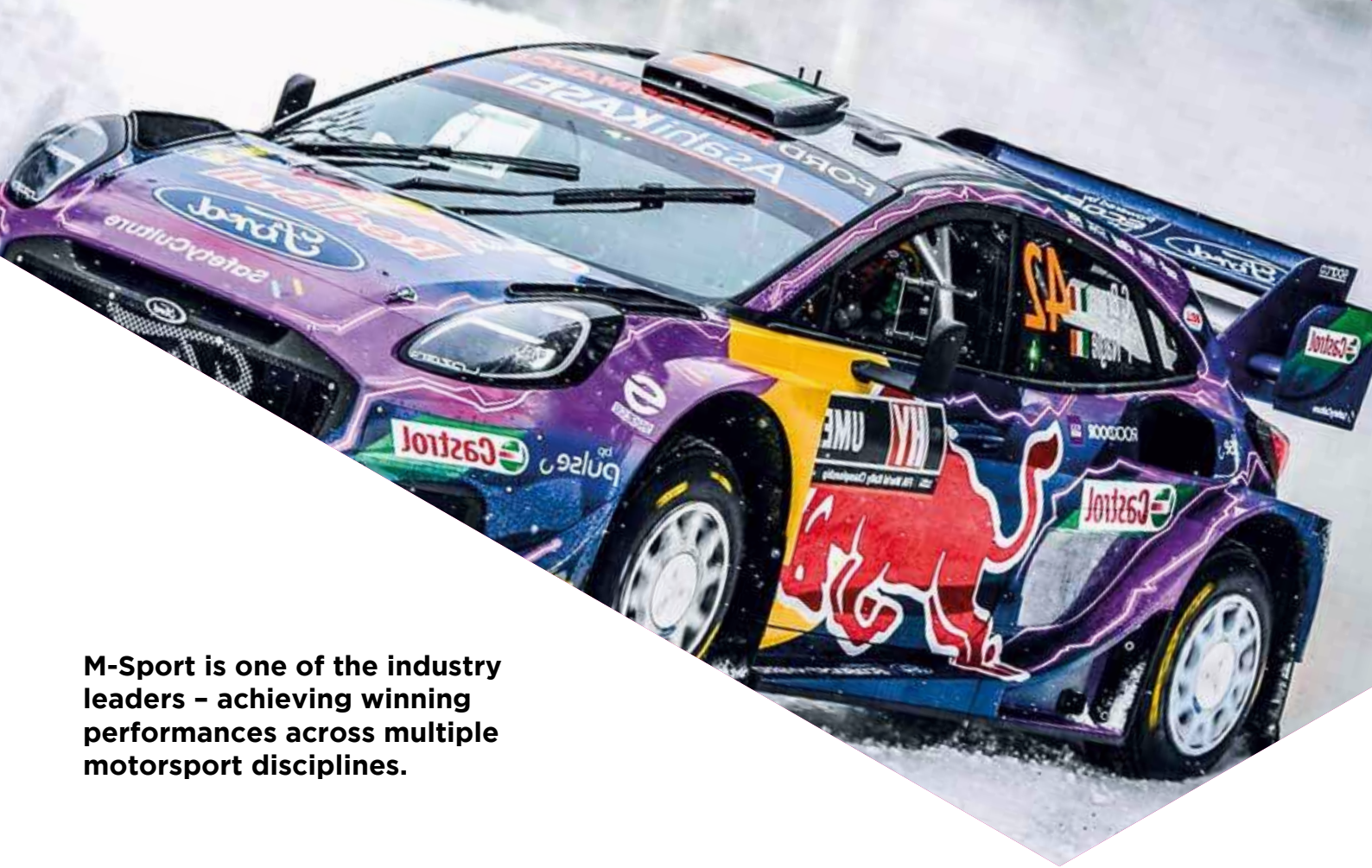
Introduction

M-Sport design, engineer, and manufacture motorsport vehicles at the highest level of the industry.

In addition to competing in the World Rally Championship, M-Sport also operate race programs for tier 1 automotive manufacturers. Their partnership with Ford allowed the company to provide invaluable engineering expertise to a group of award-winning Ford rally cars.



M-Sport is one of the industry leaders – achieving winning performances across multiple motorsport disciplines.

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The primary case for using 3D scanning technology is confirmation of bodyshell accuracy and verifying compliance with FIA regulations.

Application

The FIA impose various technical regulations for example, a space envelope that the rear wing must be contained in relative the bodyshell of the car.

It is our requirement to ensure that we comply with these regulations, but we also want to push as close to the limit as practical, to be as competitive as possible.

> Using 3D scanning equipment allows us to verify our compliance and reduce build tolerances to a minimum.

View all of our 3D scanning solutions, and how they can be applied within the motorsport industry

View our range of scanners

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The FIA has recently introduced 3D scanning technology to verify compliance of regulations and at the introduction of a new car design, the car is fully inspected, and 3D scanned by the FIA.

Challenge

We could either increase tolerances in our design approach to ensure compliance when using more conventional measurement methods or adopt 3D scanning technology.

The accuracy gained with the 3D scanning technology gives us a much greater confidence that we are compliant prior to FIA inspections and allows us to reduce design tolerances where this will give us any advantage.

MSL have been a great partner in selecting the most suitable scanning equipment and providing a training program and support to suit our bespoke requirements.

- M-Sport team member

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The Solution

We have selected and use a Go!SCAN 3D scanner along with VX Elements - VXscan and VXinspect modules. We chose the Creaform range of scanners because of their portability and ease of use in scanning over a large project such as a car body shell.

We felt that the speed in which you could scan a body shell using a Creaform scanner outperformed the competitors that use either photo-based technology or any connection to a mechanical arm. We can scan either the inside or underneath of a bodyshell without any difficulty.

We specifically chose the Go!SCAN 3D because it is not entirely reliant on targets for tracking position and can use surface geometry to track position as well. It achieves the accuracy we require.

Discover more information about our scanning solutions

View our range of scanners

Accuracy Of 0.50mm

Resolution Of 0.200mm

99 Scan Lines

STL 0.1mm

Colour Acquisition

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“Adopting 3D scanning technology into M-Sport has enabled the company to continue to produce cars that are compliant with FIA regulations...

The final outcome

We chose to adopt 3D scanning technology to meet technical requirements and ensure our vehicles are compliant in competition. There are significant costs in going through the FIA inspection process and the costs of competition itself, so ensuring we are compliant is essential.

> Adopting 3D scanning technology into M-Sport has enabled the company to continue to produce cars that are compliant with FIA regulations whilst maintaining the maximum technical advantage by minimising design and manufacturing tolerances where it is advantageous. MSL have been a great partner in selecting the most suitable scanning equipment and providing a training program and support to suit our bespoke requirements.

Discover how our 3D Scanners & Software can impact your industry.

Book a product demo

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3D Scanning, Inspection, and Metrology

With over 23 years' experience, MSL brings a wealth of engineering experience to metrology, combining tools and software from leading manufacturers to create integrated systems for your workflows.

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