



# Case Study

## Unipart Powertrain Applications

An Automated Measurement Strategy



[www.measurement-solutions.co.uk](http://www.measurement-solutions.co.uk)



## Objective

Coventry-based manufacturer Unipart Powertrain Applications (UPA) is part of the wider Unipart Manufacturing Group (UMG). UPA is a leading Tier 1 supplier of components to the global automotive industry and yellow goods and electrical components for the rail industry.

UPA have used Creaform Technology for a number of years, the original objective for using the 3D scanning technology was to improve speed, accuracy, and versatility in relation to conventional measurement strategies. This innovative technology achieves all three of these goals whilst providing UPA the ability to showcase and demonstrate cutting-edge technologies to their customers.

However, due to the complexity and level of detail of the product being inspected, combined with the frequency of inspections, meant that significant manual input was needed for the scanning and processing of the results over the course of two shifts. So on that basis, UPA engaged with MSL to find a solution to address the high level of manual input.

## Application

To address the high level of manual input a new automated application is now being used to meet the inspection demand of multiple scans per shift and a fully closed loop system has been created. The Creaform hardware IO Module has been seamlessly integrated to establish automated communication between a Collaborative Universal Robot (UR10), the existing Creaform MetraSCAN and Polyworks software, in order to support the increase of inspections in an efficient and effective

**“Working together with MSL to create an Automated Measurement Strategy allows us to demonstrate cutting edge technologies to our customers, whilst also enabling us to provide quality and repeatable parts”.**

Unipart Powertrain Applications

way. The existing MetraSCAN was automated using the UR10 and is now used alongside a linear track and part manipulator to ensure an accurate scan across the full product, within one program. This has removed the need for manual input and all inspections are now feeding directly into Polyworks to generate reports and SPC data.



**Increasing inspection output and efficiency with a reliable, repeatable and cost-effective solution.**

## The Challenge

Unipart's aim was to increase inspection output and efficiency, with a reliable, repeatable, and cost-effective solution. The complexity of the product in addition to the inspection frequency was a key driver for using the existing MetraSCAN, but measuring the component with traditional measurement strategies would prove challenging and time consuming.

Unipart Powertrain Applications have been implementing state-of-the-art automation solutions for many years and this experience combined with MSL's bespoke IO Module allowed the handshake between the Cobot and Scanner to exist. This allowed a fully automated solution to be implemented and almost entirely removes manual input from the process.



**Using the MetraSCAN 3D as part of our automated measurement strategy provides an innovative way of part inspection whilst maintaining accuracy, efficiency, and versatility.**

Nathan Smith, Manufacturing Engineer, Hyperbat (A joint venture between WAE and Unipart)

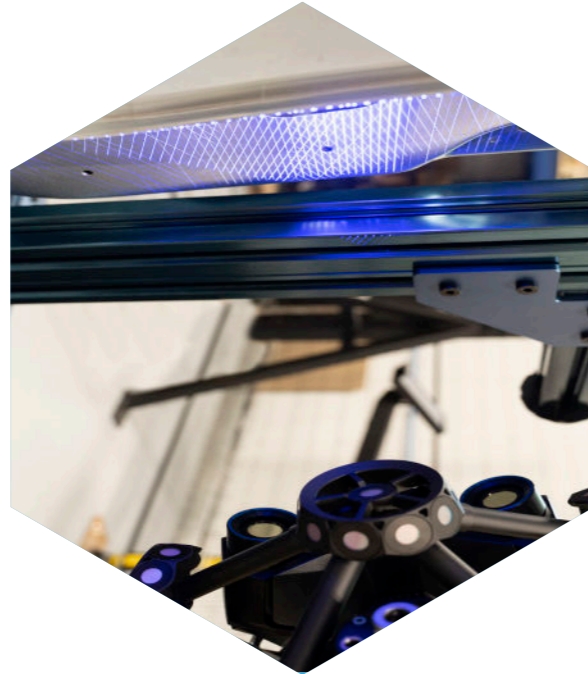




## The latest MetraSCAN Black

### Speed and accuracy combined with versatility

The MetraSCAN 3D optical CMM scanner line-up is specifically designed for manufacturing and metrology professionals who do not want to compromise on quality or efficiency. It can withstand any production environment, including shop floor vibrations, part movements and environmental instability—all while accelerating 3D measurement workflows. This optical CMM scanner has been engineered to perform highly accurate and repeatable metrology-grade measurements and 3D geometrical surface inspections.



Accurate from 0.025 to 0.04mm

Resolution of 0.025mm

16.6m<sup>3</sup> Volume

Auto Alignment







**UPA are innovating with existing products to create an automated measurement strategy for part inspection.**

## The final outcome

Unipart have been utilising Creaform scanning technology for many years, but by introducing automation to the same application, they have been able to improve their productivity and efficiency by measuring more dimensions on more parts without compromising on accuracy.

With an automated 3D scanning solution Unipart Powertrain Applications can now detect quality and manufacturing issues even quicker with live measurement data export and SPC. Compared to traditional CMMs, the application is much faster, providing a gain in productivity and improved efficiency.



**UPA are now increasing inspection output and efficiency, with a reliable, repeatable, and cost-effective automated solution based around the MetraSCAN 3D**

Majid Yaqub, Automation Account Manager, MSL





## **3D Scanning, Inspection, and Metrology**

With over 25 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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