



# CMM retrofit solutions

Refresh and reignite your quality capabilities



# Retrofit your entire inspection process

The dynamic nature of manufacturing demands constant evolution in tasks and challenges, which often outpaces the capabilities of even the best performing coordinate measuring machines (CMMs). More and more manufacturers require their inspection solutions to solve a wider variety of measurement and reporting problems. The ongoing advancement of electronics, PC systems, measurement software, controllers and sensors presents opportunities to rise to these challenges, but the upfront cost of an entirely new system can sometimes fall short of ROI goals.

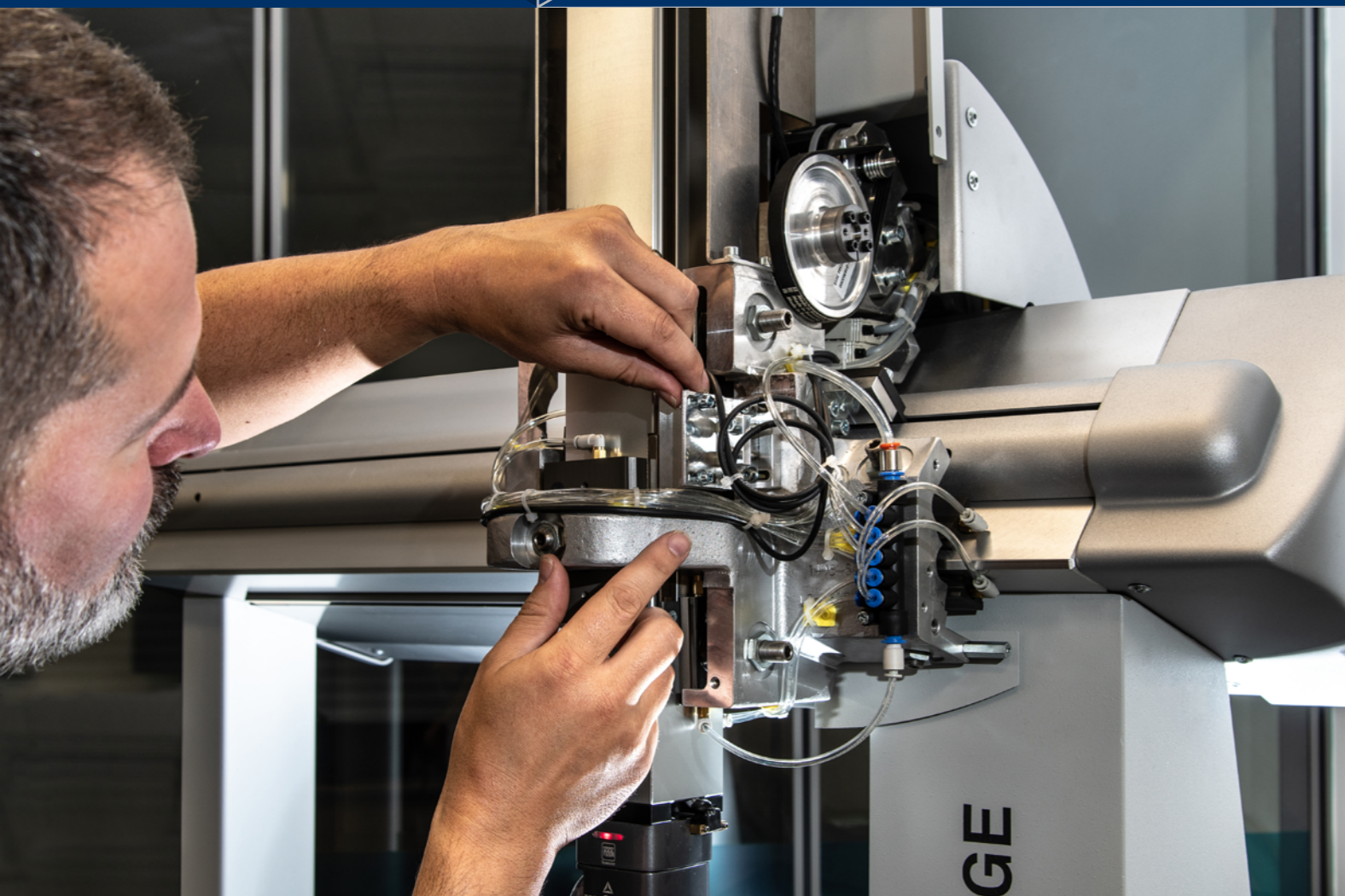
In the era of Smart Manufacturing, capitalising on these opportunities by way of a comprehensive CMM retrofit process is a smart alternative to a complete technology overhaul. From controllers and sensors to software and accessories, there are extensive possibilities to upgrade existing CMMs in a cost-effective way that extends their useful service life without compromising on quality, reliability or productivity.

## Retrofit benefits

A retrofit can deliver rapid evolution for a CMM, enabling it to better support and speed-up production.

- Improve the productivity of existing measuring systems using state-of-the-art technologies and components
- Significantly improve ease of use and management of the whole system using the latest generation of measurement software
- Reduce maintenance costs and machine downtime that can occur when system components have reached end of life
- Increase machine versatility by enhancing the measuring system with tactile scanning, optical or laser sensors

A retrofit will make a CMM future-ready, putting businesses in a position to take advantage of the next-generation of technology and push productivity ever further. In the increasingly competitive era of Industry 4.0 production, a retrofit allows manufacturers to keep pace with the rate of digital transformation and achieve their goal of making manufacturing smarter.



## Key retrofit upgrades

### Sensors

Tactile measurement is at the heart of the CMM inspection process, but even well-established technologies evolve and modern touch probes have a range of benefits to offer.

#### Modern touch scanning



HP-S-X1

Offers the accuracy characteristics of fixed heads but can be fitted to automatic indexable heads allowing for measurement in both point-to-point and continuous scanning modes.

#### Improved touch trigger



HP-THDe

This highly-accurate touch trigger probe for styli builds of up to 100 millimetres. The probe's innovative optomechanical design delivers nanometre-scale resolution and the ability to survive hard knocks, making it more robust than competing products.

Non-contact measurement becomes ever more important in the world of manufacturing, and there are a range of modern options to upgrade existing CMMs with this type of technology



HP-L-10.10

Hexagon's most accurate laser scanner for CMMs – with a probing form error of 8 microns, accuracy is close to the results operators can achieve with tactile probing solutions.



HP-L-10.10 LITE

The cost-effective laser scanner that makes it easy to add the measurement speed and coverage of laser scanning to new and existing CMMs.



HP-OW

A Chromatic Confocal Sensor which takes highly accurate measurement on various surfaces. The sensor has a measuring range of several millimetres which also includes the ability to measure thickness of transparent layers.



HP-C-TS5.10

A vision camera measurement system for CMMs that can measure small features and sensitive or easily deformed components, as well as delivering improved throughput for applications where image capture is faster than probing.



### Augmentation systems

Augmenting a CMM system delivers enhancements in areas that directly support the inspection process, including valuable upgrade opportunities in part loading and environmental monitoring.

#### Automation

Achieve interruption-free measurement with Hexagon's automated part-loading solutions that enable a CMM to maintain output overnight or when operators are unavailable.

#### PULSE

The wireless PULSE application provides remote real-time CMM monitoring, improving maintenance efficiency, uptime and sustainability by visualising sensor driven performance data. It helps uncover root causes of issues—from drifting accuracy and faulty calibration to harmful external vibrations.

### Software

Innovative software solutions are the driving force behind CMM performance, making the difference between simple measurement devices and interconnected Smart Manufacturing solutions.

#### PC-DMIS

The cutting-edge features offered by the latest version of the world's most popular metrology software can transform CMM performance and productivity.

#### APOLLO

APOLLO delivers intelligent, real time monitoring that keeps your production stable, accurate and efficient. By detecting risks like collisions, temperature shifts and wear, it improves machine uptime and reduces the need for unplanned maintenance.

## Sustainable inspection

A retrofit can make valuable contributions to the sustainability initiatives that are increasingly important in today's business environment. Bringing a CMM back up to its specified performance lowers the risk of measurement problems, potentially reduces scrap and the need for reworking while ensuring the machine operates within energy consumption specifications.

By leveraging next-level technologies, a retrofit can enhance a CMM for even more profitable sustainability. Multiple inspection processes, such as part recognition, alignment and loading, can be automated to save time and energy consumption. Likewise, automated machine monitoring ensures that uptime and energy isn't wasted on unusable data impacted by environmental changes.

Upgrades that introduce new capabilities and efficiencies to the inspection function are particularly valuable as they extend the service life of the CMM. A retrofit enables a machine to both help drive and keep pace with organisational growth while increasing sustainability and profitability.

- Minimise scrap and rework
- Meet energy specifications
- Consolidate processes
- Extend service life



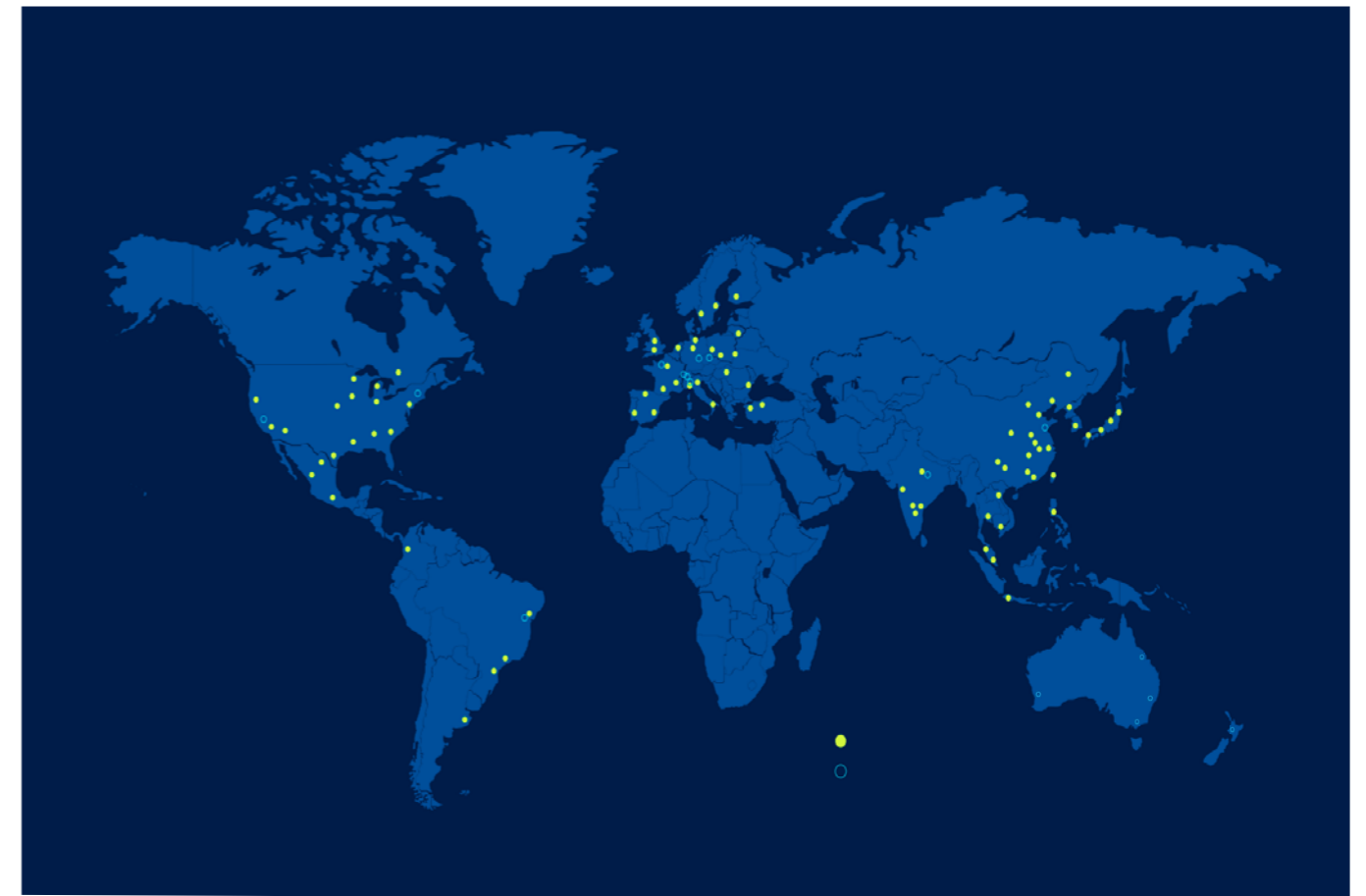
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## Complete support – before, during and after

The delivery of a measurement system is the start of a close partnership. The local Hexagon team will work to establish a deep understanding of a manufacturer's evolving needs and commit to the continuous improvement and support of their manufacturing processes.

Understanding and fulfilling requirements before, during and after delivering a world-class service is key to the success of Hexagon. Through an international sales and technical network, Hexagon offers local support and services to the highest quality standards.

Every user knows that minimising machine downtime is the key to making the most of an investment. This is why Hexagon's technical support network is strategically placed locally and continues to expand. Service technicians are trained to guarantee the maintenance of all Hexagon products and are constantly updated on the evolution of the systems.





Since 1992 Hi-Tech Metrology has been a leading provider of high-precision measurement and metrology services with a reputation for accuracy, reliability, and innovation. We offer a wide range of solutions designed to meet the needs of our clients across a broad range of industries including defence, automotive, aerospace, mining, medical, and general manufacturing to name just a few.

Hi-Tech Metrology's head office operations are certified ISO 9001:2015 compliant, underscoring our commitment to delivering high-quality services, continuous improvement, and customer satisfaction.

Today Hi-Tech Metrology consists of three integrated business units to help and support clients with all of their measurement needs - Products, Services and Projects. All these business units form part of a unique Australian company, one that strives to provide the best possible outcomes to our existing and future customers.

