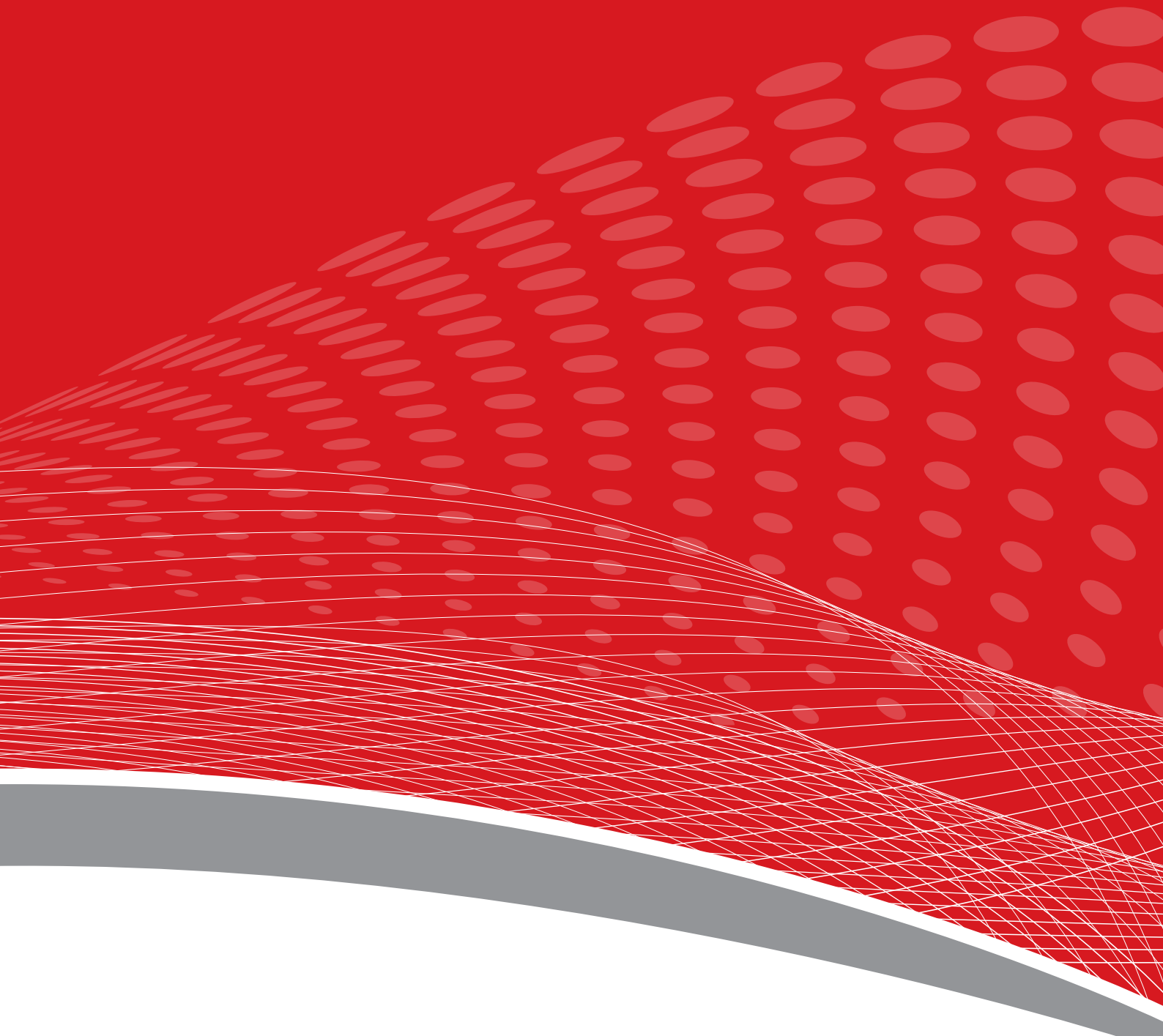


Precision in Everything



Mission Statement

To provide world-class metrology solutions and services that enables our customers to achieve enhanced business outcomes in terms of productivity, quality and innovation...

Hi-Tech Metrology Today

Hi-Tech Metrology was founded in 1992 by managing director Ian Martin to facilitate the uptake and diffusion of the latest measurement technologies throughout Australia and New Zealand. From that point on by combining an ever growing range of technologies with an impressive range of after-sales services the company has grown to become a leading supplier of metrology solutions throughout the region.

Today our extensive range of metrology and scanning equipment combined with a complete

array of support services and offices throughout Australasia enable us to tailor complete solutions incorporating hardware, software and engineering for virtually any measurement or reverse engineering task.

Above all else Hi-Tech Metrology today is an organisation of proud, dedicated and experienced personnel; all charged with the responsibility and the energy to help our customers achieve their quality, measurement and 3D modelling objectives



Company Structure

Hi-Tech Metrology today consists of three integrated business units - **Products, Services and Projects.**

Our business units have been developed to help and support clients with all of their measurement needs; whether it is a capital equipment purchase, support of existing equipment, or provision of contract measurement services from our projects group.

All these business units form part of a unique Australian business, one that strives to provide the best possible products and service to our existing and future customers.

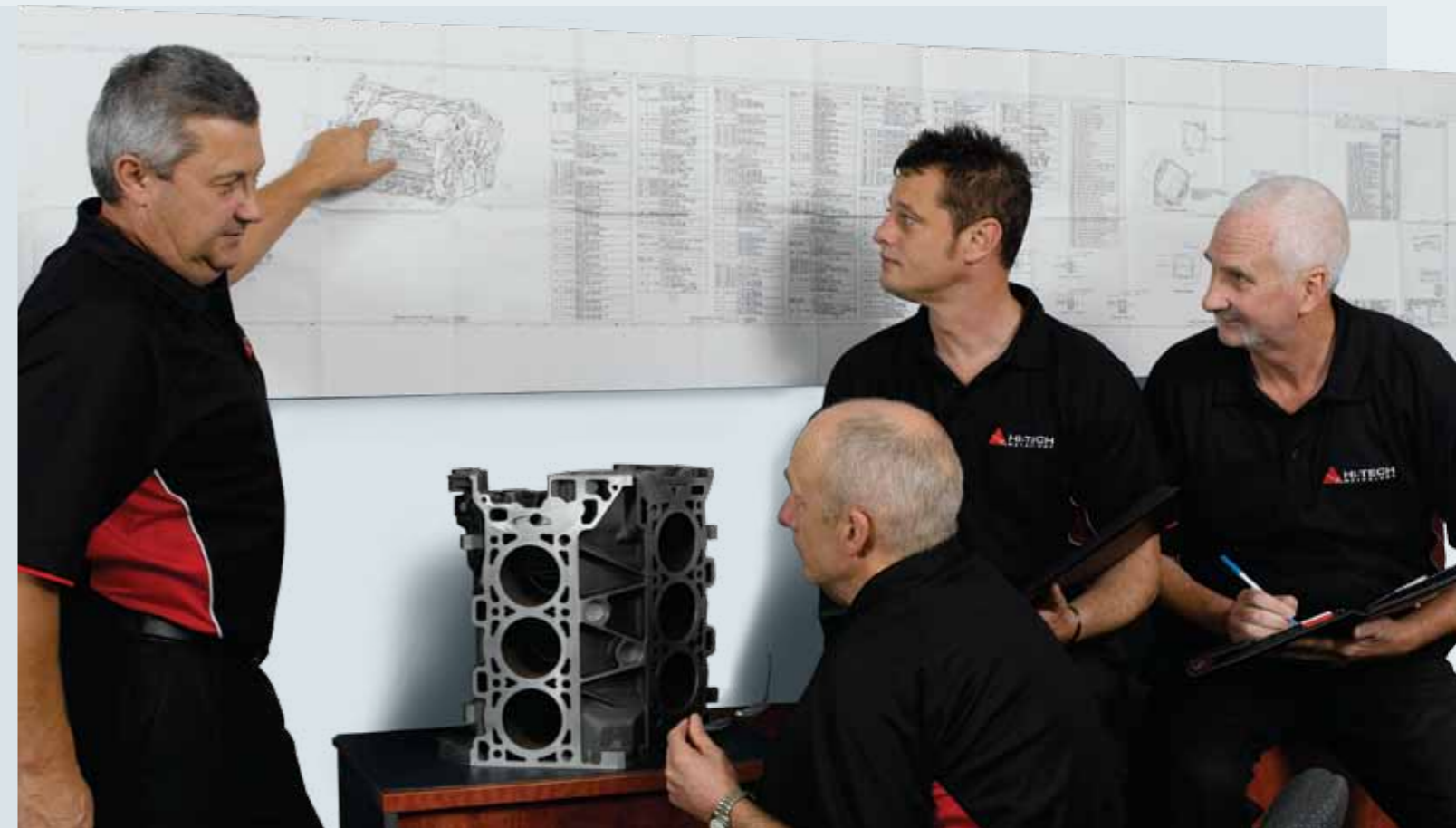
Products

Hi-Tech Metrology's extensive range of products, technologies and software solutions come from leading manufacturers around the world and can be found in use in almost any metrology, inspection, reverse engineering, 3-D modelling or industrial design application today.

Our clients are in the automotive, aerospace, mining, rail, medical, defence, research and development, precision engineering as well as many other industries and use our technologies in their daily operations to achieve improvements in key areas such as quality, product development and innovation.

Equipment offered by this business unit encompasses the following measurement technologies:

- **CMM**
- **Scanning**
- **Surface**
- **Vision**
- **Optical**
- **Software**
- **Portable**



Services

The services provided by Hi-Tech Metrology are focused on helping our customers to achieve productivity improvements and maximum equipment up-time.

Services offered by this business unit include the following key items:

- **Equipment Calibration**
- **Repair and Maintenance**
- **Training Courses**
- **Part Programming**
- **Software Support**
- **Retrofits and Upgrades**

These services are provided by our own skilled and experienced technicians all of whom are factory trained and have had hundreds of years of combined experience working with metrology technologies.

This wealth of knowledge and experience is accessible to all our customers for advice and support.

Projects

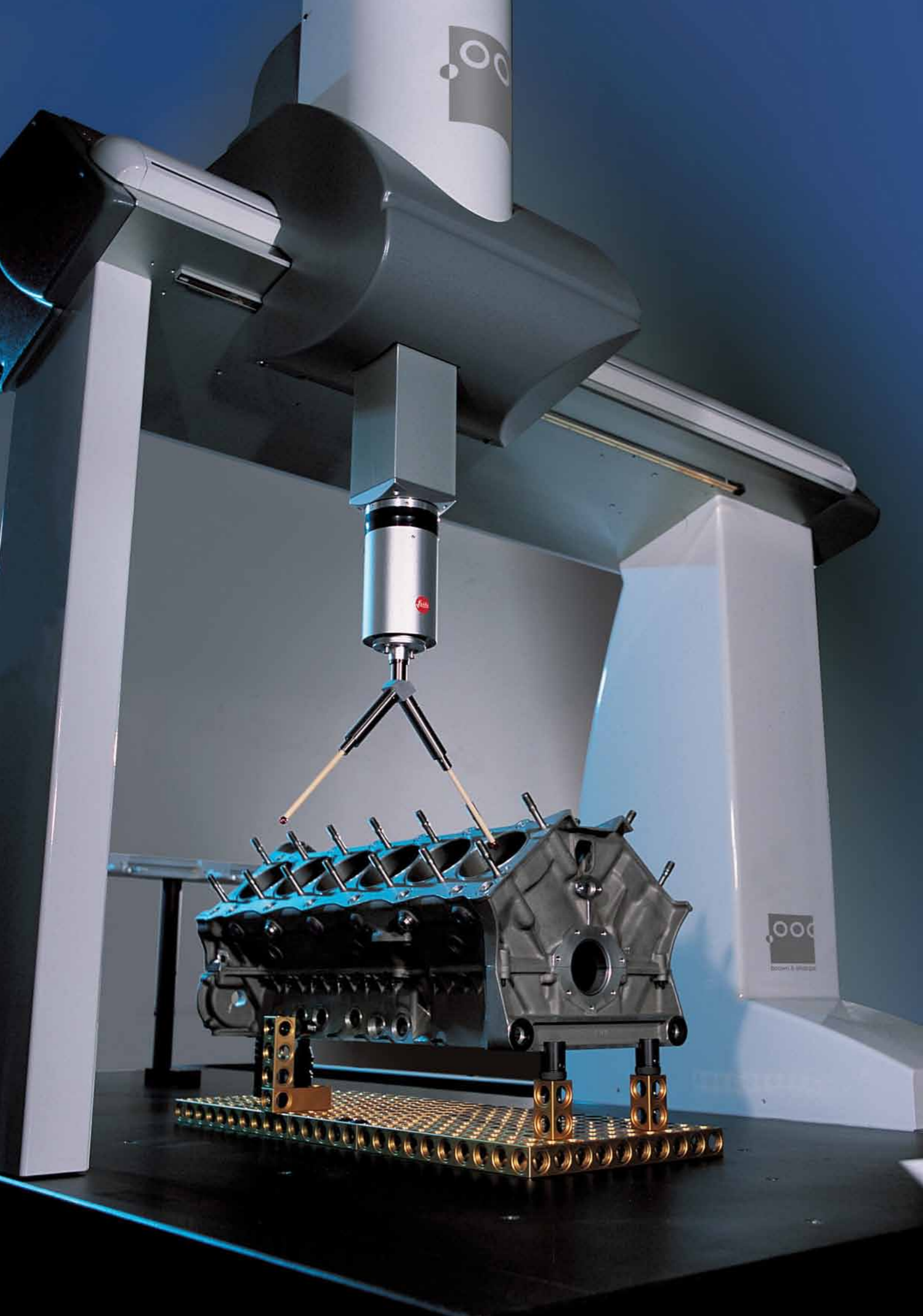
The Hi-Tech Metrology projects business unit offers clients a range of contract measurement services as well as project management and value-added engineering services.

At the core of this business is a range of contract measurement services, both on-site or in our own fully equipped facilities, using the latest portable and fixed measurement and digitising technologies.

The services provided include dimensional measurement with CMM and vision-system technologies as well as on-site inspection and reverse engineering using portable measurement equipment such as portable arms, laser trackers and laser scanning systems.

Key deliverables include full inspection and measurement reports, graphical reporting to 3D CAD models, as well as other outputs such as point cloud or surface information ready for importing into the latest generation of 3D CAD packages.





PRODUCTS

CMM – From Workshop to Ultra High Accuracy...

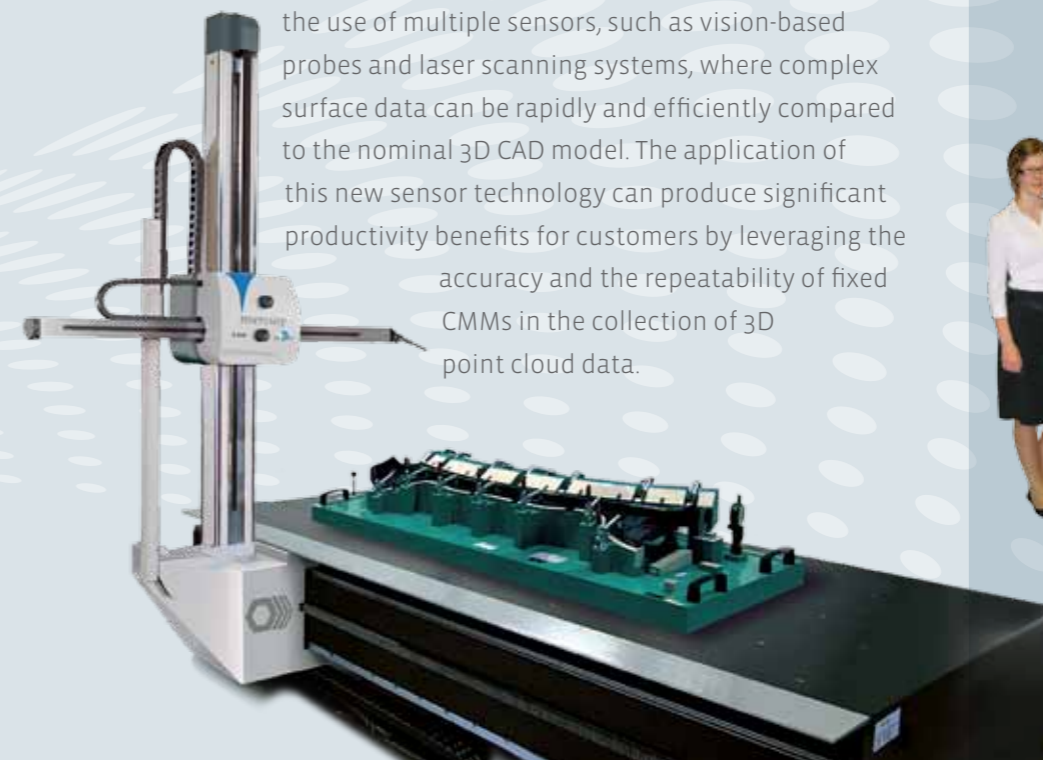
Over the past 50 years CMM technology has matured and evolved to the point where now they are an integral part of most manufacturing facilities. Hi-Tech Metrology is able to offer a complete range of the latest generation and class-leading CMM equipment from Hexagon Metrology – the world's largest metrology company, including renowned global brands such as Brown & Sharpe, Sheffield, DEA and Leitz.

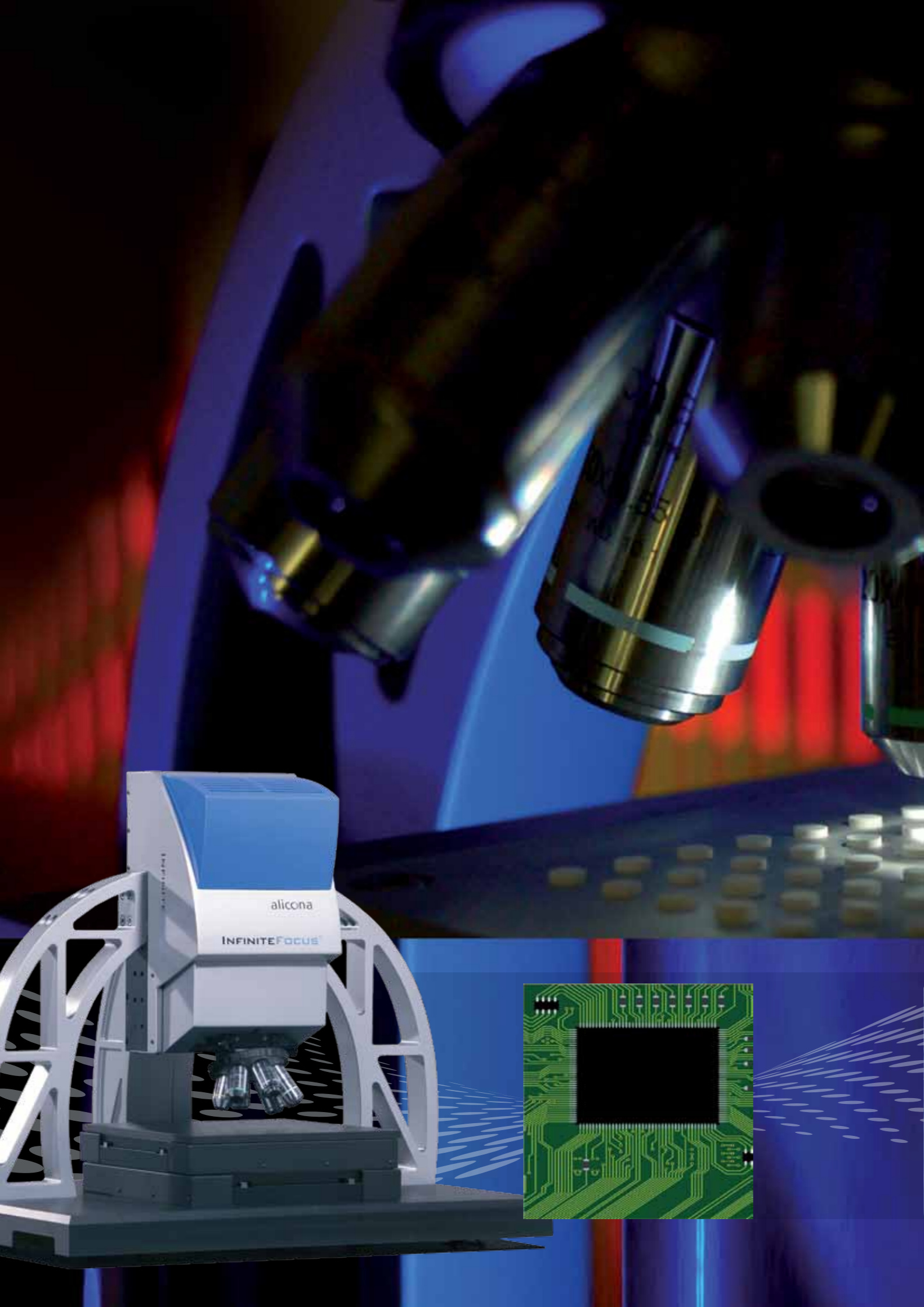
The CMM range includes bridge, gantry, and horizontal-arm models to suit any application from automotive, mining and aerospace to medical, precision engineering and shop-floor inspection systems for general manufacturing industry.

All of our CMM systems are supplied with industry-standard PC-DMIS software and fully supported with a complete range of after-sales services from Hi-Tech Metrology's highly experienced team of support, service and applications engineers.

The Hexagon Metrology range of CMM equipment utilises the latest touch-trigger probing, indexing heads and analogue scanning systems, giving users the maximum measurement flexibility, accuracy and repeatability.

Growing trends in the market include moves towards the use of multiple sensors, such as vision-based probes and laser scanning systems, where complex surface data can be rapidly and efficiently compared to the nominal 3D CAD model. The application of this new sensor technology can produce significant productivity benefits for customers by leveraging the accuracy and the repeatability of fixed CMMs in the collection of 3D point cloud data.





PRODUCTS

Vision – Non Contact Measurement...

Hi-Tech Metrology supports a complete range of vision-based measuring systems from compact manual models through to large automated multi-sensor machines. These systems are ideal for small and intricate measurement tasks or where tactile measurement is not suitable (such as PCBs, plastic components, gaskets and other flexible items), and they find application in many fields from medical equipment and research, packaging, electrical components manufacture as well as precision engineering and machining installations.

We also have available a broad range of products providing total solutions for non contact measurement of surface finish, form, and profile – throughout all phases of the production process. These systems are suitable for use on the shop floor or in a metrology lab and are the product of choice for a number of automotive powertrain manufacturers in Australia.

Other products in our vision-based metrology range allows users to examine and measure components below 100 nanometres in size using the focus variation technique – one of the most innovative measurement technologies developed over recent times.

Applications for this focus variation technology are many and varied but include precision tools and cutting inserts in the machine tool industry, dental and medical applications, high quality printing examination and paper manufacture, tribology and corrosion, forensic examination and crime investigation.



Portable – Metrology on the Move...



Portable equipment is growing in popularity as more and more end-users now want to take the measuring machine to the job rather than the job to the measuring machine. Hi-Tech

Metrology has a significant range of the latest portable metrology equipment to meet almost any application in the field with products such as portable measuring arms, laser trackers, optical trackers, hand held laser scanners and photogrammetry systems.

From hand held scanners through to large volume laser trackers these portable measuring systems enable our clients to accurately measure components or projects in three-dimensional space – both efficiently and cost effectively, with more precision and repeatability than was ever achieved previously.



Extremely lightweight and compact laser trackers now weigh in at less than 9 kg and measure down to 10 microns over a full 160 m radial volume - all critical features when looking for the accuracy, flexibility and freedom to perform in the field particularly in remote and inaccessible areas.

In other developments portable arms have become one of the most versatile measuring tools available today. With measurement volumes available from 1.2 to 4.5 metres, six or seven axis configurations and the possibility of an integrated laser scanners these units provide solutions across a multitude of industries for both inspection and reverse engineering.

With their unprecedented flexibility our range of 3D handheld scanners are also ideal for many application environments, from education and the fine arts, to the most demanding design and manufacturing applications.



Scanning – Point Cloud Engineering....

Whilst our scanning systems today are being used primarily for reverse engineering and modelling projects there is a growing trend to use these new scanning technologies, both laser and structured light systems, for inspection tasks. Software packages such as PolyWorks Inspector now provide a seamless means of merging and processing data from a variety of scanners to produce detailed 'weather map' style inspection reports.

The hand-held laser scanners are available as stand alone systems or can be integrated with portable arms and trackers allowing users to scan 3D objects both quickly and accurately using a combination of CCD cameras, optics and laser line scanning systems.

Various laser scanning heads are now being integrated into multi-sensor coordinate measuring systems adding a new dimension to the flexibility

of a CMM by providing a rapid means to inspect complex shapes in the tool and die, plastics and sheet metal industries.

Terrestrial laser scanning completes our range of laser scanning technologies with phase-based scanning systems offering both long-range time-of-flight scanning capabilities and total station functionality.

All these technologies, particularly when combined with PolyWorks software, provide an ideal solution for a variety of reverse engineering and inspection applications.



Optical – A View of the Future...



As well as our traditional metrology and inspection-focused range of tactile and laser-based measurement products, Hi-Tech Metrology now offers a range of new technologies and products including photogrammetry, white light scanners, optical probing and tracking systems utilising either close-coupled device (CCD) or visible light camera systems.

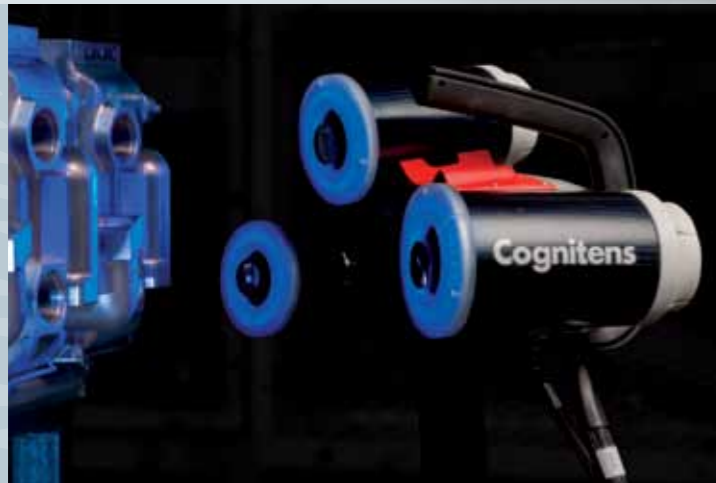
Some of these systems use long carbon-fibre wands with embedded LEDs as active targets and allow users to measure large objects both quickly and accurately – particularly where line of sight limitations are a key factor in the choice of a measurement solution.

Other products using the latest CCD camera technologies can be used for both static and dynamic measurement of structures, fixtures and even process equipment such

as stamping lines, extrusion presses and moulding machines. This technology is also used to dynamically measure wheel movement and engine vibration in vehicles travelling at full speed around test tracks.

White light measuring systems are a flexible solution for real-time shop floor metrology, acquiring rich dimensional information from measured objects regardless of size, complexity or geometric features. These turnkey systems overcome demanding environmental conditions such as vibration, temperature and illumination changes and can be integrated with most common industrial robots to provide an automated inspection cell.

Cast against this array of technology, some of our new optical probing products allow users to collect 3D spatial data of items such as building structures, formwork and frames, both efficiently and at a very affordable cost, providing a new world of measurement capabilities and improved accuracies to a range of new industry sectors and end-users.





PRODUCTS

Surface - Roughness, Contour and Form...

The intricate contact system of these measuring instruments and machines detect surface quality, contour, geometrical parameters and dimensions of the part to be measured with precision down to nanometers.

Our range of products in this area include individual measuring stations for roughness (incl. topography) and contour measurement as well as combined systems for roughness and contour measurement, all of which are available with either separate or integrated probing systems.

By using an opto-mechanical measuring system with high resolution and a broad measuring range these systems are capable of simultaneously measuring both roughness and contour

characteristics on curved or inclined surfaces as well as straight and of course we can provide measuring stations that are tailored to specific requirements.

We now have available a new generation of tactile scanning systems that combine form and position measurement with roughness measurement - without the probe arm needing to be changed. With this system the ruby ball or diamond tip is used, depending on the measuring task at hand, and the scanning system itself will automatically set the correct probe force.



PRODUCTS

Software - Inspection and 3D Modelling...

Hi-Tech Metrology distributes and supports a range of the latest metrology and 3D modelling software packages from some of the world's leading software developers including Hexagon Metrology, developers of PC-DMIS products, and InnovMetric the Canadian-developers of PolyWorks.

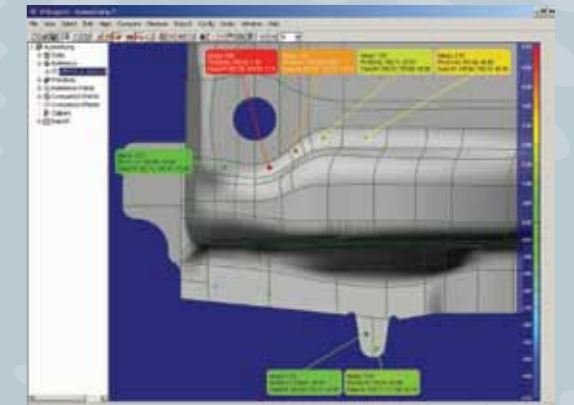
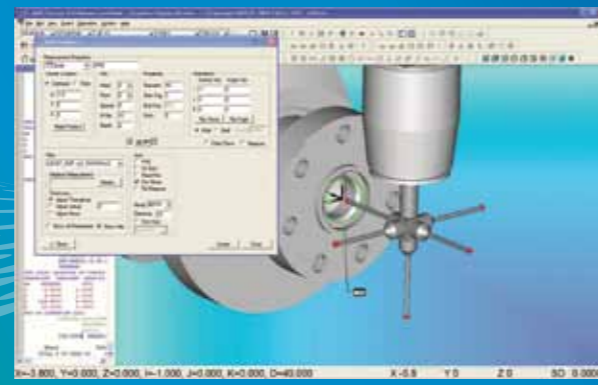
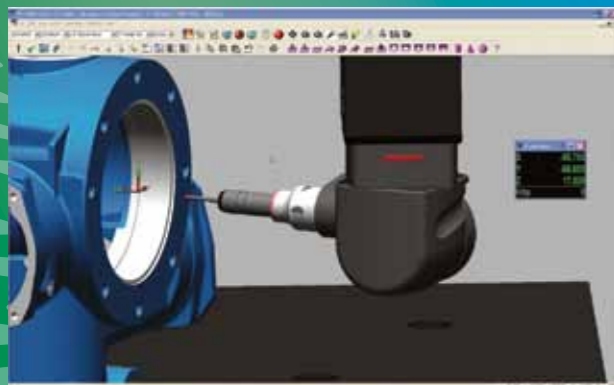
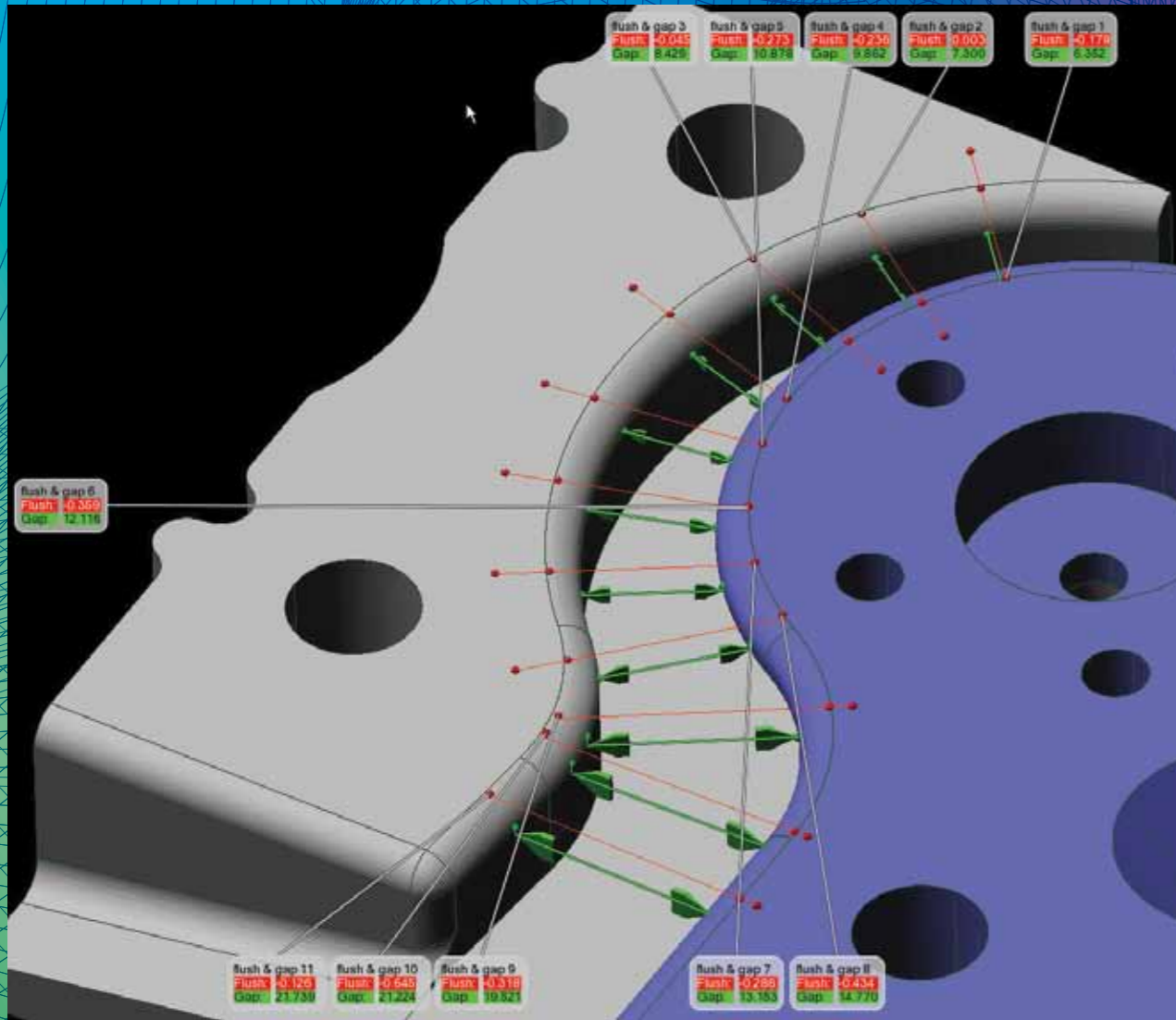
PC-DMIS is the world's leading CMM software and with over 30,000 seats in place is recognised as the world's most capable CMM software. An investment of hundreds of man-years and millions of dollars results in a software system that is at once powerful and yet easy to use. With it our customers measure everything from simple prismatic parts through to some of the most complex organic shapes.

PolyWorks/Inspector is a powerful software solution that uses high density point clouds

and contact-probe datasets to control the quality of parts and tools at every phase of your manufacturing process. Today major automotive and aeronautic OEMs and tier-one suppliers worldwide use PolyWorks/Inspector as their standard dimensional control and engineering analysis software for prototype, first-article, manufactured, and assembled parts inspection.

PolyWorks/Modeler is an excellent software tool for reverse engineering and modeling tasks. This software enables users to perform complex hole filling of scan data as well as the development of dense decimated mesh files from edited scan data. Modeler is also available with a high-level NURBS surfacing module enabling users to create NURBS patches for export to 3D CAD packages and the further development of full 3D models.

"If PolyWorks can't do it then no-one can do it". This conclusion is often heard in industrial metrology circles. Why? This is because InnovMetric invented point-cloud processing software.



Excellence in Technical Support...

Our experienced service and applications teams are ready and able to offer clients an extensive range of services to ensure that their investment in the latest metrology equipment keeps producing positive quality and productivity outcomes.

Calibration

Our calibration engineers are able to offer full machine calibration and adjustment service for a range of CMM brands including Sheffield, Brown & Sharpe, Leitz, DEA and Micro-Vu.

We are also able to provide a full error mapping service for many CMMs using the latest version of the manufacturer's mapping software and tools.

Calibration of the latest generation portable arm equipment, including the Romer Absolute Arm, is also offered by Hi-Tech Metrology and we can facilitate the calibration and servicing of other portable equipment such as laser trackers and scanners utilising the manufacturers authorised service centres.



Preventative Maintenance

Whilst the latest generation of metrology equipment is very reliable there is still a need for a quality preventative maintenance program which Hi-Tech Metrology can readily provide for all your mission-critical metrology equipment.

Our preventative maintenance programs include both hardware and software elements with regular inspections, adjustments and assessments built into the process – to ensure that your valuable equipment is properly maintained and always producing both accurate and repeatable measurement results.

Training

Hi-Tech Metrology offers a wide range of training packages and programs for new equipment installations as well as courses designed for on-going skills development and new employee training.

The training courses offered include introductory, intermediate and advanced courses with the latest CMM measurement software – PC-DMIS PRO, PC-DMIS CAD and PC-DMIS CAD++ as well as training programs in PolyWorks software for inspection (hard probing and laser scanning), modelling and reverse engineering.

Along with training on all the latest and legacy software packages we also provide custom-tailored training packages on CMMs, vision systems, portable arms, laser trackers and scanners all of which are designed to meet specific needs.

Part Programming

Our experienced programmers are able to offer clients a range of part programming services to suit most needs, whether they be for an urgent project, for new products or first-off submissions.

These services are an affordable, cost effective and totally transferable way in which to generate new part programs and efficient measurement techniques; they offer clients the best way to launch into a new product, to prove out manufacturing processes and capabilities or to help secure a new contract.



Software Support

Our software support team is fully conversant with the software products sold by Hi-Tech Metrology, thus ensuring that our clients achieve the maximum benefit from using these products in their day-to-day business activities.

These services are supplemented with a full range of software maintenance support programs which, along with local support and assistance from Hi-Tech Metrology, allow the user to gain access to the latest software updates and patches along with the ability to access the technical support zones from the software developers.

Retrofits and Upgrades

Hi-Tech Metrology is able to offer clients with existing CMM equipment a full range of retrofit services and upgrades in order to enhance the performance and capabilities of existing equipment through implementation of PC-DMIS software.

These services are available for both Hexagon and non-Hexagon brands of CMM equipment and now include the added functionality of retrofitting laser scanning capabilities to existing CMMs that will enable clients to perform automated 3D laser inspection tasks.

Experience & Technology – Successful Outcomes...

The Hi-Tech Metrology projects business offers clients a range of contract measurement services as well as project management and value-added engineering services.

Contract Measurement Services

Our contract measurement service offers a range of individually-tailored contract measurement and reverse engineering solutions to clients in Australia and around the globe. Our services include both in-house and on-site measurement tasks, analysis, reporting and 3D modelling etc, using an array of the latest metrology equipment including tactile CMM, portable arms, laser trackers and laser scanners etc.

The range of deliverables provided by our projects team to customers include textual metrology reports, graphical reports to 3D CAD, PPAP reports, decimated and 3D surface data, fully reverse engineered 3D CAD models etc. More and more of these



projects that we are involved in include surface modelling to create full 3D CAD models, as-built documentation, bill of materials, clash detection and visualisation exercises.

Our clients are seeing the value of outsourcing the specialist task of dimensional measurement and collecting as built information in order to document their facilities and existing products. Ultimately with the skills, experience and expertise of the projects team at Hi-Tech Metrology we enable customers to ascertain quickly and efficiently the key data sets for their projects, allowing them the time and the resources to perform the ensuing analysis tasks and if required take corrective actions in order to improve their business performance.

Turnkey and Project Engineering

With the skills, experience and expertise of our project engineering team Hi-Tech Metrology is able to provide a full range of turnkey and project engineering solutions around the globe.

Projects such as the interfacing of CMM equipment with robotic loading and unloading systems, run-off trials coinciding with major new CNC equipment installations, and project managing the introduction of both new and advanced technologies into the Australasian market, are typical of the types of projects that we have successfully undertaken.

Hi-Tech Metrology prides itself on the depth of its engineering skills and experience, using these talents to ensure a successful outcome for our clients on critical turnkey projects and major engineering exercises.

Our Commitment

Hi-Tech Metrology is committed to excellence in every thing that we do and with our objective to provide value-for-money products and services we enable our clients to achieve their measurement goals.

We are continually striving to bring to the market the latest innovations, technology and methodologies in metrology from around the globe and in doing so help our customers to improve quality, competitiveness and reduce time-to-market for new products.

We stand by all of the products and services that we sell as being the best available – anywhere in the world, and we aim to maintain this position as Australasia’s pre-eminent metrology equipment and services supplier - a supplier that you can rely upon for on going quality support and advice.



Contact Hi-Tech Metrology

1800 283 095

Hi-Tech Metrology Pty. Ltd.

2 Carl Court, Hallam, VIC, 3803, Australia

Ph: +61 3 9702 3911 Fax: +61 3 9702 3933

www.hitechmetrology.com.au

