europac
3Dimensional

3D Scanning
3D Printing
3D Inspection
3D Sales
3D Services

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3Dimensional

Welcome to Europac3D. With over 20 years experience in the field of 3D scanning and 3D printing and an install base of over 500 systems throughout the UK, we are recognised as one of the leading names in the 3D world.

As trusted resellers for the world's leading suppliers of 3D equipment, we offer a full range of cutting-edge scanners, printers and accessories which we can install, maintain, and train staff in the usage of hardware and software.

But we don't just supply equipment. We also provide a full 3D scanning, 3D printing and 3D inspection service either on site or at the Europac3D offices. We have scannned everything from tiny jewellery items to trains and from film stars to museum pieces.

Europac3D is an engineering-based company which is why our experienced applications engineers fully understand the technical constraints of modern technologies and can produce the highly accurate data files needed for inspection, reverse engineering, 3D printing, rotating web technology, animation rigging and much more.

Most of the equipment in this brochure can be seen in action on the **europac3d** channel on **You Tube**

CONTENTS

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Web: www.europac3d.com

3DSystems ProJet® 3D Printers

3DSystems 3D Printers
We are resellers of the class-leading 3DSystems series of plastic, ceramic, wax and multi-material printers. Call for a brochure or download the full PDF from **www.europac3d.com**

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3D Scanning Sales
3D Software Sales

Artec™ Eva

Hand-held 3D scanner

CAPTURE OBJECTS IN SECONDS
Artec™ Eva 3D Scanner is similar to a video camera which captures in 3D. Simply turn it on and walk around the object recording.
The scanner captures up to 16 frames per second and each frame is a 3D image. These frames are aligned automatically in real-time. This means that during scanning, you see what you have already captured and which areas of the object need more attention.
This real-time feedback makes scanning easy and fast.

EXTREMELY LIGHT AND TRULY PORTABLE
Artec™ Eva 3D Scanner weighs 850 grams (1.9lbs), making it truly portable. This hand-held device will be useful in situations where you need to scan outside (like a scene of a car accident) or travel to objects that cannot be transported (like a museum).

HIGH SPEED AND ACCURACY
Capturing and simultaneously processing up to 288,000 points per second, Eva scans a dozen times faster than a laser scanner, while providing high resolution (up to 0.5mm) and high accuracy (up to 0.1mm).

NO MARKERS, NO EM TRACKING, NO CALIBRATION
Others have tried to create an easy-to-use scanner, but Artec succeeded. Eva does not require cumbersome calibration procedures at the beginning of each scanning session. Eva does not need markers to be placed on the object before scanning. Eva does not use electromagnetic tracking, so metal objects in the room do not interfere with performance or accuracy.

LUMINOUS COLOUR
Artec™ Eva 3D Scanner captures colour information at 24 bits per pixel (bpp) with a resolution of 1.3 megapixels (mp). Because of that high quality, Eva's textured models can be used in such industries as CG/Animation, forensics and medicine.

CAPTURING MOTION
Since Artec™ Eva 3D Scanner is in essence a 3D video camera, you can scan a moving object at up to 16 frames per second. This is especially important for the creation of special effects, medical and biomechanical research.
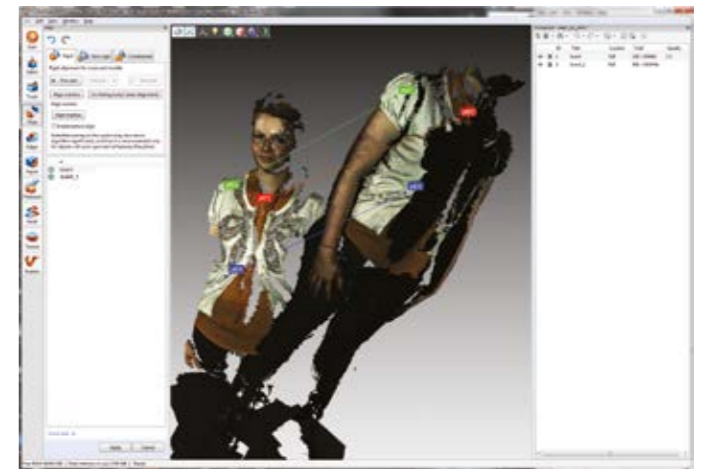
SOFTWARE IS INCLUDED
Artec Studio, a powerful and constantly evolving software program, is included in the price of the scanner. Among other features, you can scan an object, fill holes, simplify the mesh, apply texture, smooth and measure the surface.

ALMOST UNLIMITED POSSIBILITIES
Artec scanners are used in countless industries for various purposes. Automotive, medicine, heritage preservation, computer graphics, design, forensics, education, reverse engineering, architecture, and quality control are just a few industries where Artec technology is becoming indispensable.

SEE THE EVA IN ACTION ON [YouTube]

Holly is scanned in 3D with an Eva and printed out on a 3DSystems ceramic printer. Type **europac3d** into YouTube.

Priceless objects at The Sir John Soane's Museum scanned with the Eva and Spider. Type **europac3d** into YouTube.
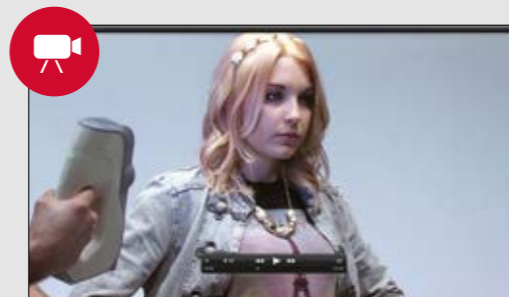
Scanning with the Artec Eva is as simple as walking around the subject whilst recording. The scanner captures all 3D geometry and full colour detail. The included Artec Studio software (right) recognises overlap in data capture and can fusion together batches of data. The resulting mesh file can be saved as an .stl file for 3D printing, or exported as an .obj file into modelling or retouching software.

	Artec Eva Lite	Artec Eva
Ability to capture texture	No	Yes
3D Resolution up to	0.5mm	0.5mm
3D point accuracy up to	0.1mm	0.1mm
3D accuracy over distance up to	0.03% over 100cm	0.03% over 100cm
Texture resolution	-	1.3mp
Colours	-	24bpp
Light source	Flash Bulb (no laser)	Flash Bulb (no laser)
Linear field of view HxW@closest range	214x148mm	214x148mm
Linear field of view HxW@furthest range	536x371mm	536x371mm
Angular field of view	30x21°	30x21°
Working distance	0.4m-1m	0.4m-1m
Video Frame Rate up to	16fps	16fps
Exposure time	0.0002s	0.0002s
Data Acquisition speed	2,000,000 pts/sec	2,000,000 pts/sec
Calibration	no special equipment reqd.	no special equipment reqd.
Output formats	OBJ, PTX, STL, WRML, ASCII, AOP, CSV, PLY, E57	OBJ, PTX, STL, WRML, ASCII, AOP, CSV, PLY, E57
Processing capacity	40,000,000 triangles/ 1GB RAM	40,000,000 triangles/ 1GB RAM
Multi Core Processing	Yes	Yes
Dimensions HxDxW	261.5x158.2x63.7	261.5x158.2x63.7
Weight	0.85kg /1.9lb	0.85kg /1.9lb
Power consumption	12v, 48w	12v, 48w
Interface	1xUSB2	1xUSB2
Supported OS/ Compatibility	Windows 7 64bit Windows 8 64bit	Windows 7 64bit Windows 8 64bit
Minimum computer requirements	Intel Core Quad 8GB RAM, NVIDEA/ATI Recommended: GeForce 400 series or better, at least 1GB memory. 300MB free disk space for installation	Intel Core Quad 8GB RAM, NVIDEA/ATI Recommended: GeForce 400 series or better, at least 1GB memory. 300MB free disk space for installation

A 3D solid model file (above) and finished full-colour file (left) show the amazing detail capture of the Artec Eva.

SEE THE EVA IN ACTION ON [YouTube]

The Eva is also used in conjunction with the Europac3D photogrammetry kit, ScanAlign – a package used to flawlessly scan large industrial components which contain very little geometry over large surface areas. Type **europac3d** into YouTube to see the ScanAlign video or see the ScanAlign specification on **Page 6.**

ScanAlign®

The complete photogrammetry system from **europac** **3D**imensional
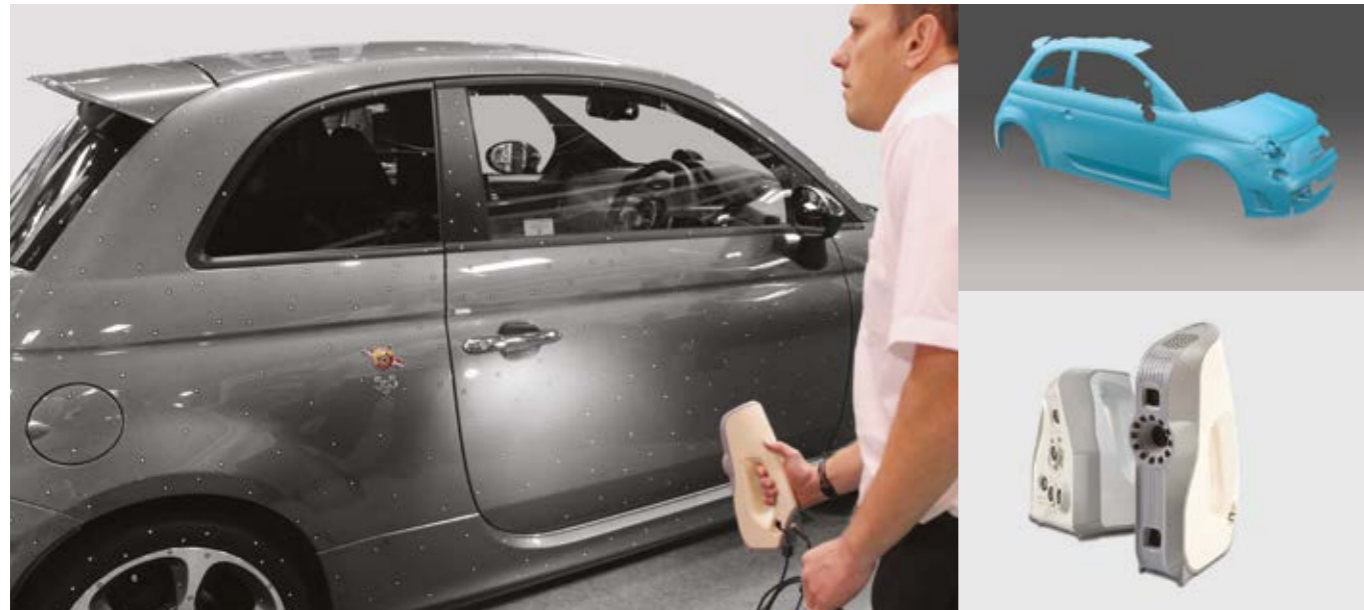
The ScanAlign® photogrammetry system from Europac3D is used to obtain flawless scanning with no incremental errors on large parts or components. The ScanAlign® system is designed to work with Artec Eva and Artec Spider scanner systems.

EUROPAC SCANALIGN® BUNDLE

Large and complex objects can now be scanned accurately and with no incremental errors by combining the real-time scanning of the Artec Eva or Artec Spider with a calibrated network of markers placed upon the object to be scanned.

By taking pictures with the pre-calibrated Nikon D3100, xyz coordinates of the coded markers can be fed into the Artec Eva or Spider to supply an accurate reference system around the component.

The workflow is simple – pictures are taken with the high-resolution Nikon camera from different viewpoints. The ScanAlign software calculates the coordinates of all reference points in a single step without any further interaction. No expert knowledge is necessary, everyone can do it.

The final coordinates can be transformed into any coordinate system, such as car/ aircraft alignment, before being loaded into your scanning software.

SEE THE SCANALIGN SYSTEM IN ACTION ON — You Tube

Type **europac3d** into YouTube to watch the video.

The ScanAlign Bundle features a full photogrammetry kit (see opposite page for contents) plus either the Artec Eva or Artec Spider hand held 3D scanners. All software and hardware is included to start scanning immediately with no expert knowledge required.

PHOTOGRAMMETRY KIT **+** ARTEC EVA **OR** ARTEC SPIDER

Robust metal case with interior foam casing and compartments keeps all components in one safe place and is easily transportable

Nikon camera charger, strap, card reader and pen drive are all included in the kit

Nikon, ScanAlign and Artec software plus instruction sheet

Assorted coded reference markers with magnetic backing are supplied

Smaller reference markers aid scanner tracking

Coded reference markers with magnetic backing are placed at intervals on the car or object to be scanned.

The pre-calibrated Nikon D3100 camera takes high-resolution pictures of the coded reference markers placed on the object.

A supplied calibration T-bar with coded targets is used for image matching

Specifications	
Camera resolution	14.2 Megapixel
Accuracy	± 0.05mm + 0.05mm/m
Computer compatibility	Windows XP, Vista, Windows 7
Scanner compatibility	Various output formats compatible with all major scanner brands
Updates	Free of charge

System Configuration
Nikon D3100 Digital Camera, Nikor 24mm Precision Lens
Rechargeable battery with charger
8GB SD Card storage device
Reference scale-cross (size: 800mm x 400mm)
Targets: 500 pieces, 5mm; 149 pieces re-useable coded targets
Coded target templates for self-print
Software with hardlock
Flight case for all system components

Artec™ Spider

Hand-held 3D scanner, perfect for CAD

Artec Spider is a 3D scanner with high resolution, high accuracy and ability to see sharp edges. Such features make Artec Spider the perfect solution for mass production and industrial design where higher-precision scanning of objects with sharp edges and intricate details is required.

NO MARKERS OR ANY MANUAL ALIGNMENT DURING POST-PROCESSING
Artec Spider doesn't require cumbersome calibration procedures at the beginning of each scanning session. Spider doesn't need markers to be placed on the object before scanning. Spider does not use electromagnetic tracking, so metal objects in the room do not interfere with performance or accuracy.

HIGH SPEED AND ACCURACY
Capturing and simultaneously processing up to 1 000 000 points per second, Spider scans a dozen times faster than a laser scanner, while providing high resolution (up to 0.15mm) and superior accuracy (0.03 - 0.05mm).

CAPTURING TEXTURE
The scanner captures brilliant color, as well as a high resolution, accurate 3D image itself.

EASE OF USE
Artec Spider weighs 850 grams (1.9 lbs), making it truly portable. This hand-held solution will be useful when you need to scan outside or digitize objects that can't be moved. The Spider can also be used with a battery which provides for hours of scanning without the need for electricity.

REAL TIME SCANNING AND FUSION
The scanner captures up to 7.5 frames per second and each frame is a 3D image. These frames are fused in real time, meaning that no complicated post-processing is required.
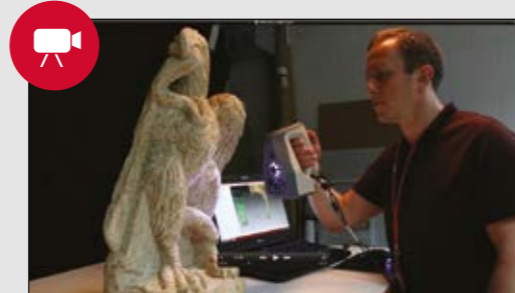
ALMOST UNLIMITED POSSIBILITIES
Artec Spider is the perfect solution for rapid prototyping and manufacturing, as well as industries such as medicine, automotive, aerospace, quality control, heritage preservation and graphic design.
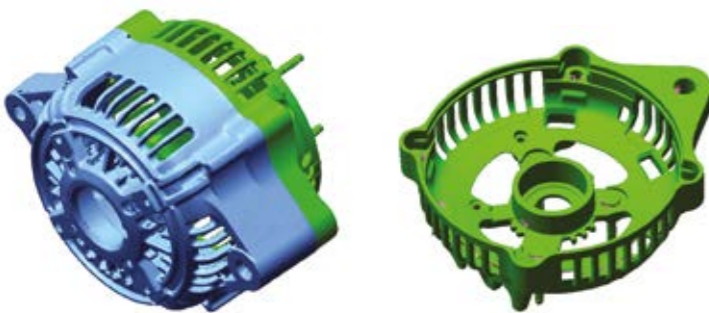
Two halves of an alternator were scanned with the Spider to recreate a finished part

SEE THE SPIDER IN ACTION ON [You Tube]

*A First Century AD Roman eagle is scanned with the Spider at a London museum. Type **europac3d** into YouTube.*

*Priceless objects at The Sir John Soane's Museum scanned with the Eva and Spider. Type **europac3d** into YouTube.*

CASE STUDY

The full colour 3D render has an almost photographic quality

	Artec Spider
Ability to capture texture	Yes
3D Resolution up to	0.1mm
3D point accuracy up to	0.03mm
3D accuracy over distance up to	0.03% over 1000mm
Texture resolution	1.3mp
Colours	24bpp
Light source	Blue diode
Linear field of view HxW@closest range	90x70mm
Linear field of view HxW@furthest range	180x140mm
Angular field of view	30x21°
Working distance	0.17m-0.35m
Video Frame Rate up to	up to 7.5fps
Exposure time	0.0005s
Data Acquisition speed	1,000,000 pts/sec
Calibration	no special equipment reqd.
Output formats	OBJ, PTX, STL, WRML, ASCII, AOP, CSV, PLY, E57
Processing capacity	40,000,000 triangles/ 1GB RAM
Multi Core Processing	Yes
Dimensions HxDxW	190x130x140
Weight	0.85kg/1.9lb
Power consumption	12v, 24w
Interface	1xUSB2
Supported OS/ Compatibility	Windows 7 64bit Windows 8 64bit
Minimum computer requirements	Intel Core Quad 12GB RAM, NVIDEA/ATI Recommended: GeForce 400 series or better, at least 1GB memory. 300MB free disk space for installation

CASE STUDY

When we were asked to scan a sports shoe and capture as much detail as possible, the Spider was undoubtedly the best option.

With a 0.03mm point accuracy and full-colour capture, the shoe was scanned in little over five minutes and the results show a high detail level.

From the stitching on the toe area to the sponge innersole, crossed laces and chunky tread, the Artec Spider has faithfully captured all key aspects of the shoe.

The file can be used to create a 360-degree web image where the viewer can interact with the model and zoom to various levels, or it can be printed in 3D in a variety of materials as a mock-up for internal or client presentations. The data can also be used to create a CAD file for amending the shoe styling.

CASE STUDY

Europac3D scanned the bust of Sir John Soane at the Sir John Soane's Museum in London in a joint collaboration with the Royal College of Art. The Spider was used for detail work, including a barely visible caption engraved on the underside of the bust.

CASE STUDY

*A Roman eagle grasping a serpent was described by archaeologists as 'the most important Romano-British sculpture yet discovered' from the first century AD. Uncovered during building work in the City of London, the eagle was scanned by Europac3D at the request of the Museum of London Archaeology (MOLA). Type **europac3d** into YouTube to see a video of the scanning process, exclusively using the Artec Spider.*

Mantis Vision F5
and F5 Short Range

Bringing 3D scanning versatility to a whole new dimension

MANTIS VISION F5 FEATURES

- Full capture of complex scenes and large objects in seconds to minutes.

- Flexibility and mobility to capture cluttered scenes, in the field and on the move.

- A true scan and go solution – no advance planning, scene tampering or targeting markers.

- A true standalone solution designed for field mobility– a single user is all it takes.

- The fastest scanning speed available today. Full capture of complex scenes and large objects in seconds to minutes.

  - Exceptional results in any working environment: outdoors, indoors, direct sunlight or complete darkness.

- Effortless accuracy - No positioning targets, advanced scene preparation or contamination needed.

- Widest depth of field and working range available for 3D capture today.

- Battery operated, cable-free, and hassle-free – no gear, laptop or accessories needed.

- Rugged shell and components withstand the toughest of environments.

- Easy to use – a short training session is all that is needed to achieve great results.

Mantis Vision F5 – Hardware	
3D resolution	Up to 0.5mm
3D point accuracy	Up to 0.5mm @ 0.5 distance
XY point density	3mm in a single frame @ 1mm Unlimited in stitched mode
3D distance accuracy	Up to 0.5mm over 100cm
Continuous acquisition time	1 hour
Eye safety	Class 1M laser (no protection reqd)
Ambient lighting	From complete darkness to daylight. Low sensitivity to environment lighting conditions
Depth of field	0.5 - 4.5m / 1' 6" - 14' 7"
Linear field of view	HxW 344 x 410mm, closest range
Linear field of view	HxW 3100 x 3630mm, furthest range
Angular field of view	HxW 38 x 44˚
Video Frame Rate	10fps
Exposure time	0.005 - 0.025s
Data Acquisition speed	500,000 pts/sec
Dimensions HxDxW	160 x 60 x 330mm / 6.3 x 2.4 x 13"
Weight	1.7kg / 3.7lb
Power consumption	Internal 12v battery, 60W
Interface	USB 2.0
Calibration	No special equipment required
Environmental vibrations	Unaffected due to dynamic referencing system
Working temperature	-10 to 50˚C / 14 - 122˚F

Mantis Vision F5 – Software	
Multi core processing	Yes
Output formats	OBJ, PTX, STL, ASCII, PLY
Supported OS	Windows 7 x 64 bit (preferred), Windows 7 x 32 bit, Windows XP x 32 bit
Minimum computer requirements	Intel Core Quad (I5 or I7 recommended), 8GB RAM, NVIDIA GeForce 9000+
Stereo support requirements	NVIDIA Quadro or better

SEE THE MANTIS VISION F5 ON **You Tube**

*Mantis Vision's F5 and F5-SC technologies are used in a wide range of industries, including forensic and law enforcement, oil and gas, architecture, construction, engineering, defence and military, research, education, maritime and many more. Their rugged reliability and ability to operate in the field make them unique in the 3D scanning world. Type **Europac3D** into **YouTube** to see the F5 and F5-SC in action.*

Mantis Vision's patented technology is based on a single coded-light pattern which contains all the indexing information required by the triangulation algorithm. 'Epipolar-Coding' allows a smaller footprint code to uniquely identify more points than in standard methods making the Mantis Vision 3D scanners accurate and precise in both F5 and F5-SC models.

MANTIS VISION F5 SHORT RANGE FEATURES

The F5 Short Range 3D imager brings together compact, ergonomic design with speed and ease-of-use to effortlessly capture small, intricately detailed objects, in the field and on the move.

Mantis Vision's F5-SR is the smallest, lightest handheld 3D imager in the market. The F5-SR spares no detail, with a compact design that allows access to cramped spaces and hard to reach objects.

Whether digitizing the human form, capturing intricate manufacturing components, or documenting a cluttered, detailed crime scene out in the field, the F5-SR will expand your scanning range and capabilities.

A truly mobile 3D scanning solution that offers proven results in any working environment or lighting conditions, the F5-SR can work alone or as a complimentary tool to Mantis Vision's F5 imager to complete the picture in large-scale, complex scenes or objects.

There is no need for positioning targets or scene preparation to obtain optimal results.

Mantis Vision F5-SR – Hardware	
3D resolution	Up to 0.25mm
3D point accuracy	Up to 0.05mm
XY point density	1.6mm in a single frame @ 0.5mm Unlimited in stitched mode
3D distance accuracy	Up to 0.5mm over 100cm
Continuous acquisition time	1 hour
Eye safety	Class 1M laser (no protection required)
Ambient lighting	From complete darkness to daylight. Low sensitivity to environment lighting conditions
Depth of field	0.3 - 0.8m / 11.8 - 31.7"
Linear field of view	HxW 206 x 242mm, closest range
Linear field of view	HxW 550 x 646mm, furthest range
Angular field of view	HxW 38 x 44˚
Video Frame Rate	10fps
Exposure time	Up to 0.003s (3ms)
Data Acquisition speed	500,000 pts/sec
Dimensions HxDxW	116 x 46 x 167mm / 4.6 x 1.8 x 6.6"
Imager weight	0.6kg
Power consumption	Internal 12v battery, 60W
Interface	USB 2.0
Calibration	No special equipment required
Environmental vibrations	Unaffected due to dynamic ref system
Working temperature	-10 to 50˚C / 14 - 122˚F

Mantis Vision F5-SR – Software	
Multi core processing	Yes
Output formats	OBJ, PTX, STL, ASCII, PLY
Supported OS	Windows 7 x 64 bit, Windows 8 x 64 bit
Minimum computer requirements	Intel Core i7/i5, 8GB RAM, NVIDIA GeForce 560 and above
Stereo support requirements	NVIDIA Quadro

Rexcan CS+

Crossover 3D scanner

AUTOMATIC SCANNING & ACTIVE SYNC
3D scanning does not always take lots of work. With just a single click of a button, users can get their whole object scanning done very easily and quickly. A mouse click away for actively synchronizing the model and camera views, enabling users to recognize any scanning position and to add more scans where it may be needed.

NO TARGETS OR MANUAL ALIGNMENT NEEDED
Targets are no longer in need for your scanning job with Rexcan CS+. Using the pre-calculated information of the axis calibration, accurate alignment is carried out without the need for targets or manual registration.

EASE OF SCANNING PATH GENERATION
Depending upon the complexity of the scan object, it may require a different scanning path. Flexibility of the scanning path generation makes it easy for users to make their own scanning path, allowing repeat data collection on various object sizes and shapes.

AUTOMATIC CALIBRATION
Once the calibration panel is installed, clicking the calibration wizard will guide you through an automated calibration process. The whole calibration process may have been essential, but difficult for you to do before. Now you'll experience a genuinely user-friendly system that allows the automated calibration for every user.

DETACHABLE REXCAN CS
In most cases, Rexcan CS+ will do all the scanning jobs automatically. What if you're in need of scanning objects that are bigger or heavier than what you've been normally scanning on? Don't worry. You can easily detach the scanner sensor from Rexcan CS+, and can still proceed with all the scanning needs by having it installed on either a tripod or stand.

CAN BE INSTALLED ON YOUR DESK
For your regular tasks and scanning jobs, you wouldn't need to move to and from your workplace and workroom. Rexcan CS+ is compactly designed to be installed on your desk. From now on, focus more on your everyday job. The smart solution, Rexcan CS+, will take care of your 3D-scans automatically

See the CS+ in action by typing **europac3d** into
You Tube

KEY FEATURES
- ■ Blue LED
- ■ Integration of Controller & sensor in one body
- ■ 2.0 Mega pixels, twin camera
- ■ Portable size: 400 x 110 x 210mm

Rexcan CS+	Description	Note
Camera Resolution	2.0 Mega pixels	Twin camera
Light Source	Blue LED	30,000 hrs
3D Scanning Principle	Phase shifting optical triangulation	
3D Scanning Area (FOV)	100mm, 200mm, 400mm	Diagonal Select One
Portable Size (W x H x D)	400 x 110 x 210mm	
Weight	4Kg	
Interface	IEEE 1394B	
Power	AC 85 ~ 265V / 50/60 Hz	
Output Data Format	STL	
O/S	Windows XP(32bit), Windows 7(32/64bit)	
Moving Stage	2 axis movement	
	Pay load 10Kg	
	Diameter: 300 mm	Swing & Rotation
	AC 85 ~ 265V / 50/60 Hz	
Interface	USB 2.0 High-Speed	
Size (W x H x D)	300 x 800 x 900 mm	

Rexcan DS2

High speed, quality 3D measurement for small, detail-rich objects and jewellery

AUTOMATED SYSTEM FOR 3D SCANNING SMALL OBJECTS
Equipped with high-resolution twin cameras, Rexcan DS2 is an automated white light scanner that is capable of providing users with detailed and precise data, obtained from scanning small and detail-rich objects like jewellery.

With an automated scanning function, the Rexcan DS2 has a built-in two axis platform (swing and rotation) which not only enables users to get the measurement job done quickly and conveniently, but also captures consistent data regardless of how inexperienced users may be.

QUALITY AND SPEED 3D MEASUREMENT FOR JEWELLERY
Quickly and precisely turn any jewellery items into CAD/CAM data for modification, mold & tool making and 3D-printing in a cost-efficient way.
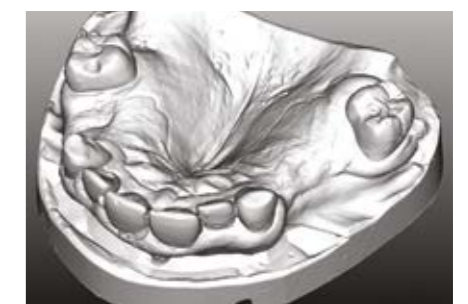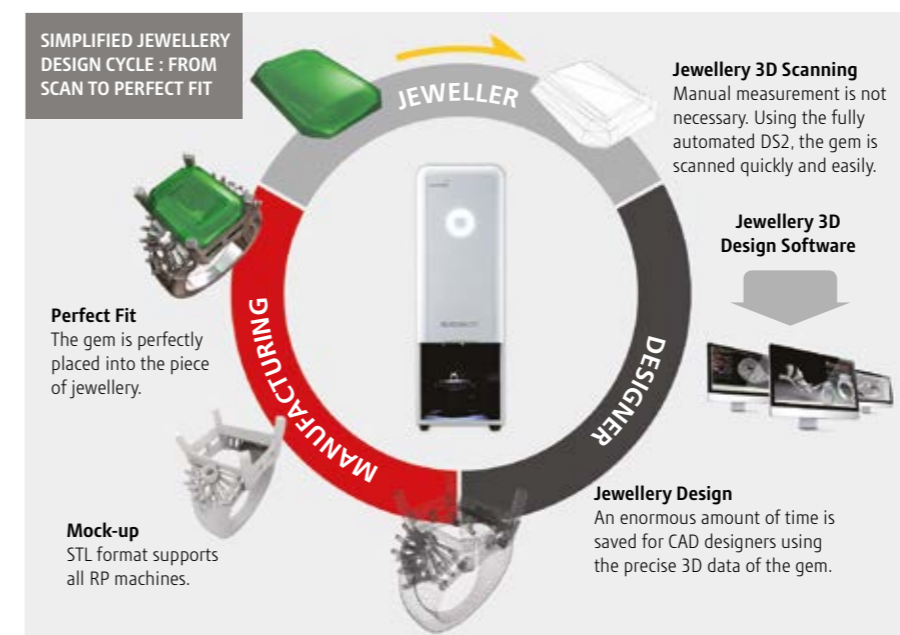
The Rexcan DS2 will save jewellery CAD designers and manufacturers at least 50% of their time for designing and producing very complex shaped jewellery pieces.

See the DS2 in action by typing **europac3d** into
You Tube

DS2 5.0 Megapixel	
Size (W x H x D)	212 x 370 x 449mm
Weight	12.5Kg
Scanning Area	FOV 40mm, 70mm, 100mm (select one)
Camera Resolution	5.0 megapixels
Output data format	STL
Rotary Stage	2-axis movement (swing & rotation)
Light Source	LED
Interface	IEEE 1394B
Interface	Windows 7 (32/64 bit)

DS2 1.3 Megapixel	
Size (W x H x D)	212 x 370 x 449mm
Weight	12.5Kg
Scanning Area (Diagonal)	FOV 70mm, 100mm (select one)
Camera Resolution	1.3 megapixels
Output data format	STL
Rotary Stage	2 axis movement (swing and rotation)
Light Source	LED
Interface	USB 2.0

SIMPLIFIED JEWELLERY DESIGN CYCLE : FROM SCAN TO PERFECT FIT

JEWELLER
MANUFACTURING
DESIGNER

Jewellery 3D Scanning
Manual measurement is not necessary. Using the fully automated DS2, the gem is scanned quickly and easily.

Jewellery 3D Design Software

Jewellery Design
An enormous amount of time is saved for CAD designers using the precise 3D data of the gem.

Mock-up
STL format supports all RP machines.

Perfect Fit
The gem is perfectly placed into the piece of jewellery.

Kreon Ace

The Kreon Ace is a temperature regulated measuring arm and can be used either in metrological departments or in a workshop environment.

For probing applications, the arm can be used in the field without power supply thanks to its integrated battery and wireless connection. Current Kreon 3D laser scanners, including the new Kreon Zephyr II and Zephyr II Blue, are easily integrated with the Kreon Ace arm. Scanners and probes (right) are plug-and-play and can be used in conjunction with most major application software.

Ace 6 Series	Axes	Working volume	Point repeatability (Probing)	Accuracy in volume (Probing)	Scan accuracy: Ace + Zephyr II (250,000 pts/s)
Ace-6-20	6	2.0 m	0.018mm	0.026mm	0.034mm
Ace-6-25	6	2.5 m	0.023 mm	0.034 mm	0.042 mm
Ace-6-30	6	3.0 m	0.030 mm	0.043 mm	0.051 mm
Ace-6-35	6	3.5 m	0.039 mm	0.056 mm	0.064 mm
Ace-6-40	6	4.0 m	0.054 mm	0.067 mm	0.075 mm
Ace-6-45	6	4.5 m	0.075 mm	0.090 mm	0.098 mm

Ace 7 Series	Axes	Working volume	Point repeatability (Probing)	Accuracy in volume (Probing)	Scan accuracy: Ace + Zephyr II (250,000 pts/s)
Ace-7-20	7	2.0 m	0.022mm	0.032mm	0.042mm
Ace-7-25	7	2.5 m	0.027 mm	0.038 mm	0.048 mm
Ace-7-30	7	3.0 m	0.042 mm	0.057 mm	0.067 mm
Ace-7-35	7	3.5 m	0.054 mm	0.080 mm	0.090 mm
Ace-7-40	7	4.0 m	0.069 mm	0.099 mm	0.109 mm
Ace-7-45	7	4.5 m	0.092 mm	0.125 mm	0.134 mm

Kreon Baces

The Kreon Baces is a 3-Dimensional measuring arm and easy to use whether for touch probing or non-contact Kreon laser scanners.

This arm has an internal calibration secured by a mechanical architecture based on aluminum and carbon fibre materials, which make its structure extremely light and stable. Points are collected via an interchangeable two-button probe with a 7th axis and a handle that enables the interface of a Kreon laser scanner. It is interfaced with many measuring, CAO/CFAO and reverse engineering software.

Baces Series 100 Carbon	Working volume	Point repeatability	Accuracy in volume
M100-6 axes	2.60 m	0.028 mm	0.044 mm
M100-7 axes	2.60 m	0.035 mm	0.052 mm
G100-6 axes	3.20 m	0.045 mm	0.064 mm
G100-7 axes	3.20 m	0.058 mm	0.077 mm

Baces Series 200 Aluminium	Working volume	Point repeatability	Accuracy in volume
M200-6 axes	2.60 m	0.040 mm	0.065 mm
M200-7 axes	2.60 m	0.050 mm	0.080 mm
G200-6 axes	3.20 m	0.068 mm	0.095 mm
G200-7 axes	3.20 m	0.076 mm	0.115 mm
XG200-6 axes	4.20 m	0.098 mm	0.210 mm
XL200-6 axes	4.60 m	0.120 mm	0.350 mm

Kreon Solano

High technology, high performance laser scanners at a competitive price

The Solano range of high quality laser scanners.

The SOLANO and SOLANO BLUE offer high technical specification for a competitive price. They are controllerless and can be mounted easily on any measuring arm and used in many software applications. The SOLANO LITE is low-cost variation of the SOLANO which may be better suited to certain scanning situations. Main features of the Solano range are:

- **Plug and Play technology**
- **Easy integration in the operator's working process**
- **Easy installation and user-friendliness**
- **Fast and accurate**
- **Portable technology**
- **Fast learning**
- **Open technology**

Top: The Kreon Solano Blue SB-100 can be attached to any measuring arm, including the Kreon Ace and Baces series.

Far left: All Kreon laser scanners have the facility to accept probes which are integrated into the scanner head through a compatible connection port.

Left: The Solano SL-100

	Blue SB-100	SL-100	SLL-100 Lite
Accuracy (µm)	25	30	40
Laser line length (mm)	100	100	100
Scanning speed (points/s)	50,000	40,000	24,000
Measuring field (mm)	100	100	100
Stand-off distance (mm)	100	100	100
Laser class	2M	2	2
Dimensions (mm)	141 x 59 x 107	145 x 65 x 85	145 x 65 x 85
Weight (g)	<400	<400	<400

Kreon Zephyr II

The most competitive laser scanning solution for the most demanding applications

New from Kreon are the highly accurate Zephyr II red light laser scanner and the Zephyr II Blue, blue light laser scanner.

The Zephyr II is particularly well adapted to applications that require both speed and accuracy. Thanks to the revolutionary AQC feature (Auto Quality Check), the measurement quality is completely under the control of the user. Automatic compensation of the material's different optical characteristics is performed during scanning to guarantee superior data quality. In the case of the Zephyr II Blue, this provides maximum surface flexibility to capture shiny and highly reflective surfaces in their natural state without prior surface preparation.

The Z2-100 (red laser) has an emphasis on scanning speed while the Z2-70 (blue laser) is particularly suitable for accuracy and the scanning of difficult object or component parts.

Both scanners are compatible with the Kreon Ace and all major portable measuring arms and can connect with Kreon probes for inspection. They have maximum acquisition rates of up to 250,000 pts/s.

Left: The Kreon Zephyr range of scanners have the facility to accept probes which are integrated into the scanner head through a compatible connection port.

	Zephyr II - 100	Zephyr II Blue - 70
Laser line length	100mm (3.94")	70mm (2.76")
Max acquisition rate	250,000 pts/s	250,000 pts/s
Line resolution	80µm (0.0031")	50µm (0.002")
Standoff distance	95mm (3.74")	75mm (2.95")
Field of View	130mm (5.12")	75mm (2.95")
Accuracy: Reproducibility According to OSIS/WG3-09/2003	15µm (0.0006")	10µm (0.0004")
Typical probing error According to EN/ISO 10360-2	15µm (0.0006")	10µm (0.0004")
Multi stylus test accuracy (MPE AL) According to EN/ISO 10360-5 or VDI 2617 part 6.2*	20µm (0.0008")	15µm (0.0006")
AQC	Yes	Yes
Temperature compensation	Yes	Yes
Laser	Red, class 2M	Blue, class 2M
PC Communication	USB	length
Machine interface	Articulated arms, CNC machine tools, manual and driven CMMs	Articulated arms, CNC machine tools, manual and driven CMMs
Renishaw compatibility	MIH, PH10T, PH10 M/MQ Multiwire and ISI-2	MIH, PH10T, PH10 M/MQ Multiwire and ISI-2
Probe compatibility under the scanner **	Hard probe, Renishaw TP 2/20/200	Hard probe, Renishaw TP 2/20/200

Mephisto Bodyscanner

Mephisto EX-Pro/ST Bodyscanner
Mephisto CX-Pro/ST Bodyscanner

Mephisto EX-Pro BodyScanner

Based on the High End 4DD 3d scan engine, the Mephisto EX-Pro BodyScanner has an unrivalled position as the world leader in the market for the capture of full 360 degree body scans in a matter of seconds. The use of a quad camera setup allows for full colour scans to be captured with ease.

Data can be saved in a fully watertight wireframe mesh or point cloud with or without colour.

The scanner provides high-end solutions for companies in the biometrics/security, film and medical industries. This Full Option Kit has the SteadyScan (motion compensation) enabled.

This is a full option system set-up ready to start scanning and post processing the day after your training. The set-up is built inside a purpose built 4m x 4m scanning tent which provides a diffuse illuminated high resolution texture when studio flashes are being used (optional).

The Mephisto EX-Pro ST BodyScanner is a short-throw wide angle option which enables the scanning area footprint to be reduced.

Mephisto CX-Pro BodyScanner

Based on the Mephisto 3d scan engine, the Mephisto CX-Pro BodyScanner provides the capture of full 360 degree body scans in a matter of seconds. The use of a quad camera setup allows for full colour scans to be captured with ease.

Data can be saved in a fully watertight wireframe mesh or point cloud with or without colour.

The scanner provides solutions for companies in the biometrics/security, film and medical industries.

This is a full option system set-up ready to start scanning and post processing the day after your training. The set-up is built inside a purpose built 4m x 4m scanning tent which provides a diffuse illuminated high resolution texture when studio flashes are being used (optional).

The Mephisto CX-Pro ST BodyScanner Set is a short-throw wide angle option which enables the scanning area footprint to be reduced.

	Mephisto CX-Pro	Mephisto CX-Pro ST	Mephisto EX-Pro	Mephisto EX-Pro ST
Geometry Camera	Sony XCD-SX90	Sony XCD-SX90	Sony XCD H280E	Sony XCD H280E
Geometry Resolution	1280 x 960 (8bits)	1280 x 960 (8bits)	1920 x 1080	1920 x 1080
Camera Interface	FireWire	FireWire	Gig E	Gig E
Standard Lens	Kowa LMVZ655	Kowa LMVZ655	Pentax C1614-M	Pentax C61232KP
Focal Length	6,5 - 52 mm	6,5 - 52 mm	16mm	12 mm
Iris Range	1,8 - close	1,8 - close	1,4 - 16	1,4 - 16
Focussing Range	0,2m- infinity	0,2m- infinity	0,25m - infinity	0,3m - infinity
Framerate	30 Fps	30 Fps	30-60 Fps	30-60 Fps
Projector	Optoma EW536	Optoma EW610 ST	Optoma EW536	Optoma EW610 ST
Resolution	1280x800	1280 x 800	1280x800	1280 x 800
Brightness	2800 ANSI Lumens	3100 ANSI Lumens	2800 ANSI Lumens	3100 ANSI Lumens
Range Near	1 m	1 m	1,5 m	0,8 m
Range Far	2,5 m	2,5 m	3 m	2,5 m
Pixel Size	3,75 µm	3,75 µm	4,54 µm	4,54 µm
Point Accuracy (mm)	0,5 (Average)	0,5 (Average)	0,4 (Average)	0,4 (Average)
Point to Point distance	0,118 - 1,2 mm	0,118 - 1,2 mm	0.43 - 2.8 mm	0.43 - 2.8 mm
Acquisition Time	0,2 - 0,5 (dep settings)	0,2 - 0,5 (dep settings)	0,1 - 0,5 (dep settings)	0,1 - 0,5 (dep settings)
Texture Camera	Optional	Optional	Optional	Optional
Max texture Resolution	12,4 Mp	12,4 Mp	12,4 Mp	12,4 Mp
Supported Texture Camera's	Canon 1000D/ 1100D /500D/ 550D /40D/50D/5D Mark II /7D Mark II/ 1Ds	Canon 1000D/ 1100D /500D/ 550D /40D/50D/5D Mark II /7D Mark II/ 1Ds	Canon 1000D/ 1100D /500D/ 550D /40D/50D/5D Mark II /7D Mark II/ 1Ds	Canon 1000D/ 1100D /500D/ 550D /40D/50D/5D Mark II /7D Mark II/ 1Ds
Micro Add-on				
SteadyScan	Included	Included	Included	Included
Object Scanning	Yes	Yes	Yes	Yes
Human Scanning	Yes	Yes	Yes	Yes
Turntable Software Mode	Optional	Optional	Optional	Optional
Deepscan Software Mode	Optional	Optional	Optional	Optional
External Flashes	Optional for HQ texture	Optional for HQ texture	Optional for HQ texture	Optional for HQ texture
Calibration board incl tripod	Optional 1,20x0,80 m Double Sided	Optional 1,20x0,80 m Double Sided	Optional 1,20x0,80 m Double Sided	Optional 1,20x0,80 m Double Sided
Studio Gear	Included	Included	Included	Included
Min Floor space	5x5 m	3x3 m	5x5 m	3x3 m
Pref. Floor Space		4x4 m		4x4 m
Laptop	Included	Included	Included	Included
Min Spec's	Windows 7, 32-64 bit Intel Core i5, 3.1 Ghz or comparible, 4Gb RAM, Express slot, Dedicated Video card	Windows 7, 32-64 bit Intel Core i5, 3.1 Ghz or comparible, 4Gb RAM, Express slot, Dedicated Video card	Windows 7, 32-64 bit Intel Core i5, 3.1 Ghz or comparible, 4Gb RAM, GigE Network, Dedicated Video card	Windows 7, 32-64 bit Intel Core i5, 3.1 Ghz or comparible, 4Gb RAM, GigE Network, Dedicated Video card

Mephisto Facescanner

Mephisto EX-Pro Facescanner
Mephisto CX-Pro Facescanner

MEPHISTO EX-PRO FACE SCAN
Based on the Mephisto 3d scan engine, the Mephisto Face Scanner is the industry leading 3d scanning system for the rapid capture of people's faces and torsos.

The dual camera system allows a full capture in less than one second and combined with Cannon SLR Cameras capture of full colour up to 12.4 Meagpixels is possible.

Data can be saved as a mesh surface or point cloud with or without colour information.

The Travel Kit for the EX-Pro Face Scan comes fully equipped in an in-flight travel case with compact light weight optical mounting components.

The Studio version comes fully equipped with an inflatable tent and optical mounting components. Optional are built-in studio flashes for high quality uniform colour capture and optional Canon texture cameras.

MEPHISTO CX-PRO FACE SCAN
Based on the Mephisto 4DD 3d scan engine, the Mephisto Face Scanner is the industry leading 3d scanning system for the rapid capture of people's faces and torsos.

The dual camera system allows a full capture in less than one second and combined with Cannon SLR Cameras capture of full colour up to 12.4 Meagpixels is possible.

Data can be saved as a mesh surface or point cloud with or without colour information.

The Travel Kit for the CX-Pro Face Scan comes fully equipped in an in-flight travel case with compact light weight optical mounting components.

The Studio version comes fully equipped with an inflatable tent and optical mounting components. Optional are built-in studio flashes for high quality uniform colour capture and optional Canon texture cameras.

The EX-Pro Face Scan and CX-Pro Face Scan are available as a static studio unit (top picture) or as a mobile package (below right). An inflatable tent is supplied with the studio version.

Examples of faces scanned with the CX-Pro and EX-Pro Face Scan

	Mephisto CX-Pro Face Scan	Mephisto EX-Pro Face Scan
Geometry Camera	Sony XCD-SX90	Sony XCD H280E
Geometry Resolution	1280 x 960 (8bits)	1920 x 1080
Camera Interface	FireWire	Gig E
Standard Lens	Kowa LMVZ655	Pentax C1614-M
Focal Length	6,5 - 52 mm	16mm
Iris Range	1,8 - close	1,4 - 16
Focussing Range	0,2m - infinity	0,25m - infinity
Framerate	30 Fps	30-60 Fps
Projector	Optoma EW 330e	Optoma EW 330e
Resolution	1280 x 800	1280 x 800
Brightness	2200 ANSI Lumens	2200 ANSI Lumens
Range Near	0,4 m	0,4 m
Range Far	1,5 m	2 m
Pixel Size	3,75 µm	4,54 µm
Point Accuracy (mm)	0,15 (Average)	0,05 (Average)
Point to Point distance	0,118 - 1,2 mm	0.43 - 2.8 mm
Acquisition Time	0,2 - 0,5 (dep settings)	0,1 - 0,5 (dep settings)
Texture Camera	Optional	Optional
Max texture Resolution	12,4 Mp	12,4 Mp
Supported Texture Camera's	Canon 1000D/ 1100D /500D/ 550D /40D/50D/5D Mark II /7D Mark II/ 1Ds	Canon 1000D/ 1100D /500D/ 550D /40D/50D/5D Mark II /7D Mark II/ 1Ds
Micro Add-on		
SteadyScan	Included	Included
Object Scanning	Yes	Yes
Human Scanning	Yes	Yes
Turntable Software Mode	Optional	Optional
Deepscan Software Mode	Optional	Optional
External Flashes	Optional for HQ texture	Optional for HQ texture
Calibration board incl tripod	Incl A3 Size incl Tripod	Incl A3 Size incl Tripod
Studio Gear	Optional	Optional
Min Floor space		
Pref. Floor Space		
Laptop	Included	Included
Min Spec's	Windows 7, 32-64 bit Intel Core i5, 3.1 Ghz or comparible, 4Gb RAM, Express slot, Dedicated Video card	Windows 7, 32-64 bit Intel Core i5, 3.1 Ghz or comparible, 4Gb RAM, GigE Network, Dedicated Video card

Geomagic Design X™

The fastest path from 3D scans to your CAD software

Geomagic Design X (formerly Rapidform XOR), the industry's most comprehensive reverse engineering software, combines history-based CAD with 3D scan data processing so you can create feature-based, editable solid models compatible with your existing CAD software.

BROADEN YOUR DESIGN CAPABILITIES
Instead of starting from a blank screen, start from the real world. Geomagic Design X is the easiest way to create editable, feature-based CAD models from a 3D scanner and integrate them into your existing engineering design workflow.

ACCELERATE TIME TO MARKET
Shave days or weeks out of the product development process by compressing the time needed from idea to finished design. Scan prototypes, existing parts, tooling parts or related objects and create designs in a fraction of the time it would take to manually measure and create CAD models.

ENHANCE YOUR CAD ENVIRONMENT
Seamlessly add 3D scanning into your regular design process so you can do more and work faster. Geomagic Design X complements your entire design ecosystem, with native output to SolidWorks®, Siemens NX®, Autodesk Inventor®, PTC Creo® and Pro/Engineer®.

LEVERAGE EXISTING ASSETS
Every design is inspired by another. Make use of the intellectual property that's locked up in every physical object; learn from it, reuse it, improve on it.

DO THE IMPOSSIBLE
Create products that cannot be designed without reverse engineering. Customize parts that require a perfect fit with the human body. Create components that integrate with existing products, accurate down to a few microns. Recreate complex geometry that cannot be measured any other way.

REDUCE COSTS
Reuse existing designs, without having to manually update old drawings or painstakingly measure and rebuild a model in CAD. Reduce costly errors related to poor fit with other components.
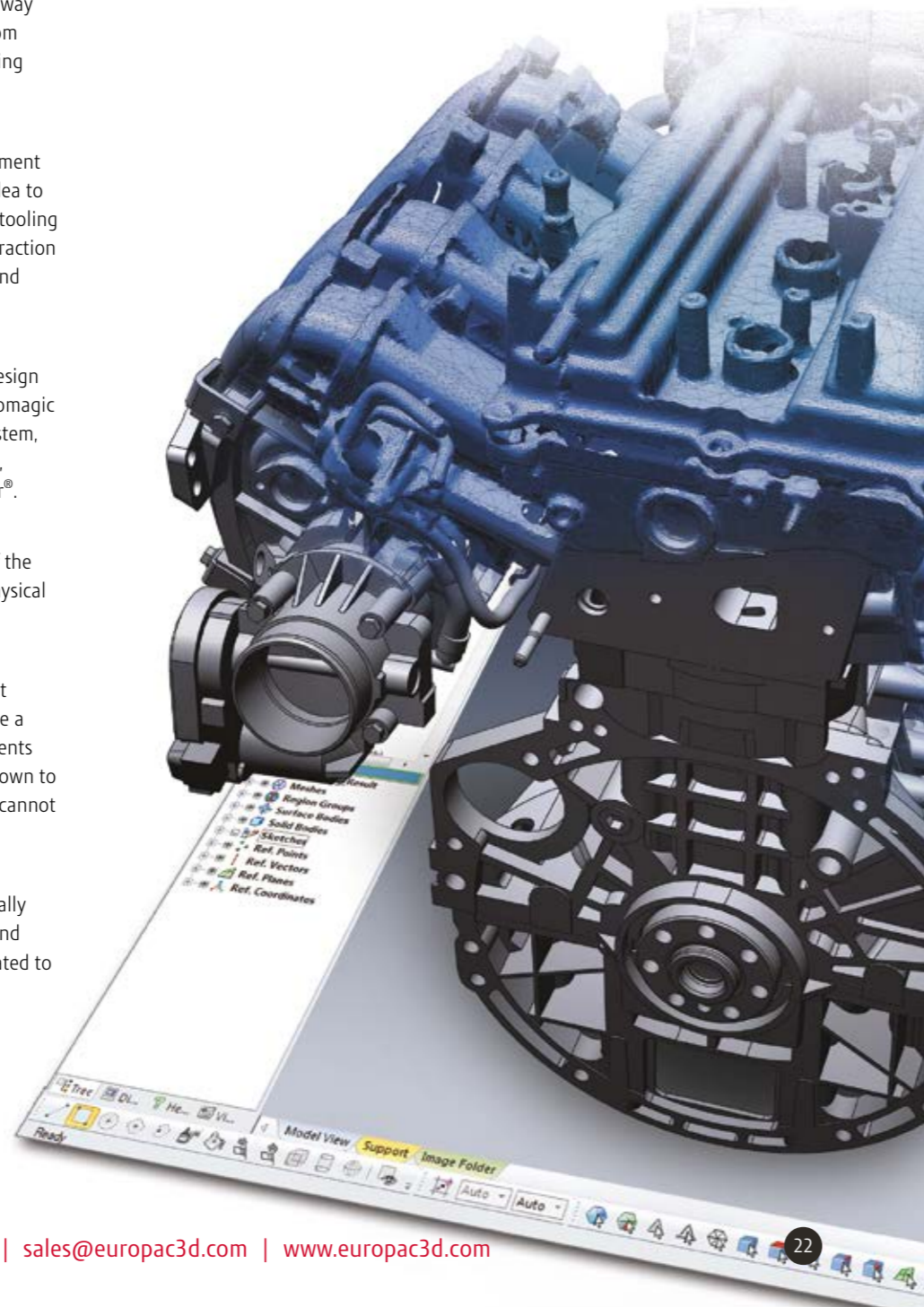
Geomagic Design X
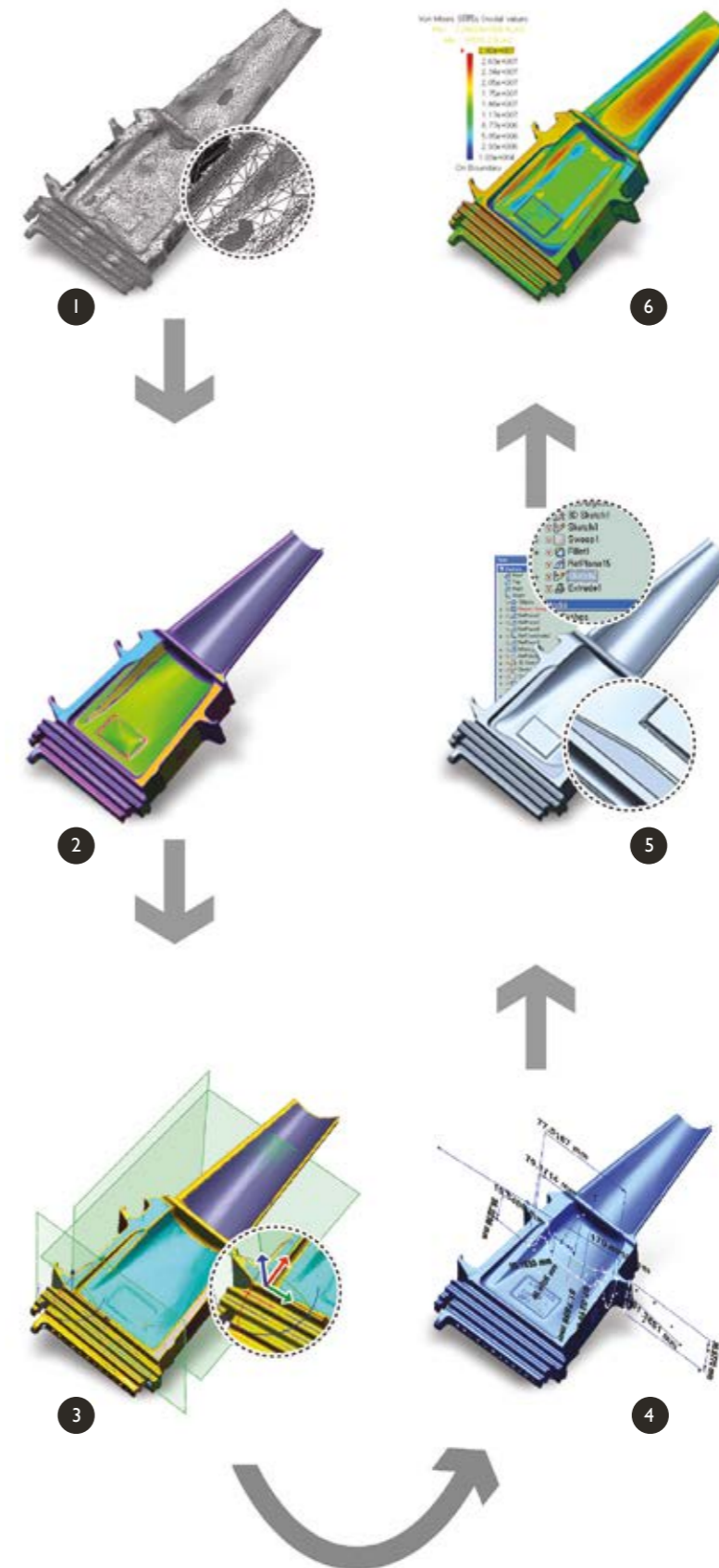
REDESIGN WORKFLOW

1 3D Scan Data/STL
Import triangulated 3D scan data or a polygon mesh model.

2 Segmentation
Automatically or interactively segment the mesh model based on feature regions.

3 Alignment
Align Wizard™
Find out main coordinate system.

4 Exploring design intent
Redesign Assistant™
Identify and design a variety of feature modelling parameters.

5 Feature modelling
Design a CAD model by building feature parameters from the mesh model.

6 Checking accuracy
Accuracy Analyser™
The accuracy analyser provides real time deviation analysis throughout the design process to ensure that the CAD model is built within user-defined tolerances.

7 Export
Transfer to your CAD software as a native model with design history and parameters. Native file export for Solidworks, Autodesk Inventor, PTC Creo, Siemens NX, CATIA V4, V5 and AutoCAD

Geomagic Verify™

The fastest path from 3D scans to your CAD software

Geomagic Verify® is powerful, easy first article inspection software for both contact and non-contact 3D measurement devices. It lets you measure and compare parts to CAD models to find and fix manufacturing defects before they become major problems.

MINIMISE ERRORS AND SAVE TIME
Geomagic Verify lets you reduce the chance for human errors and speeds up the inspection process because it measures directly from your CAD data. Geomagic Verify recognizes features in CAD models and measures them on the fly, so you don't have to set up reference geometry.

ENSURE PRECISE RESULTS
Reproducibility is critical to every quality control process, and Geomagic Verify makes achieving reproducible results easy. In fact, Geomagic Verify automatically extracts features from measured data based on parameters you set, reducing variability between operators.

KEEP A DETAILED HISTORY OF EVERY INSPECTION
You don't have to guess why a part passed or failed, because every inspection is recorded by Geomagic Verify. Via a detailed history tree, you can see the date of measurement, reason for pass/fail, conditions of measurement and more.

VERIFY WITH CONFIDENCE
Top manufacturers around the world trust Geomagic Verify to measure thousands of parts daily, and you can too. Geomagic Verify's geometry calculation algorithms have been tested by America's NIST, Britain's NPL and independently certified by Germany's PTB metrology authority as Class 1 accuracy.
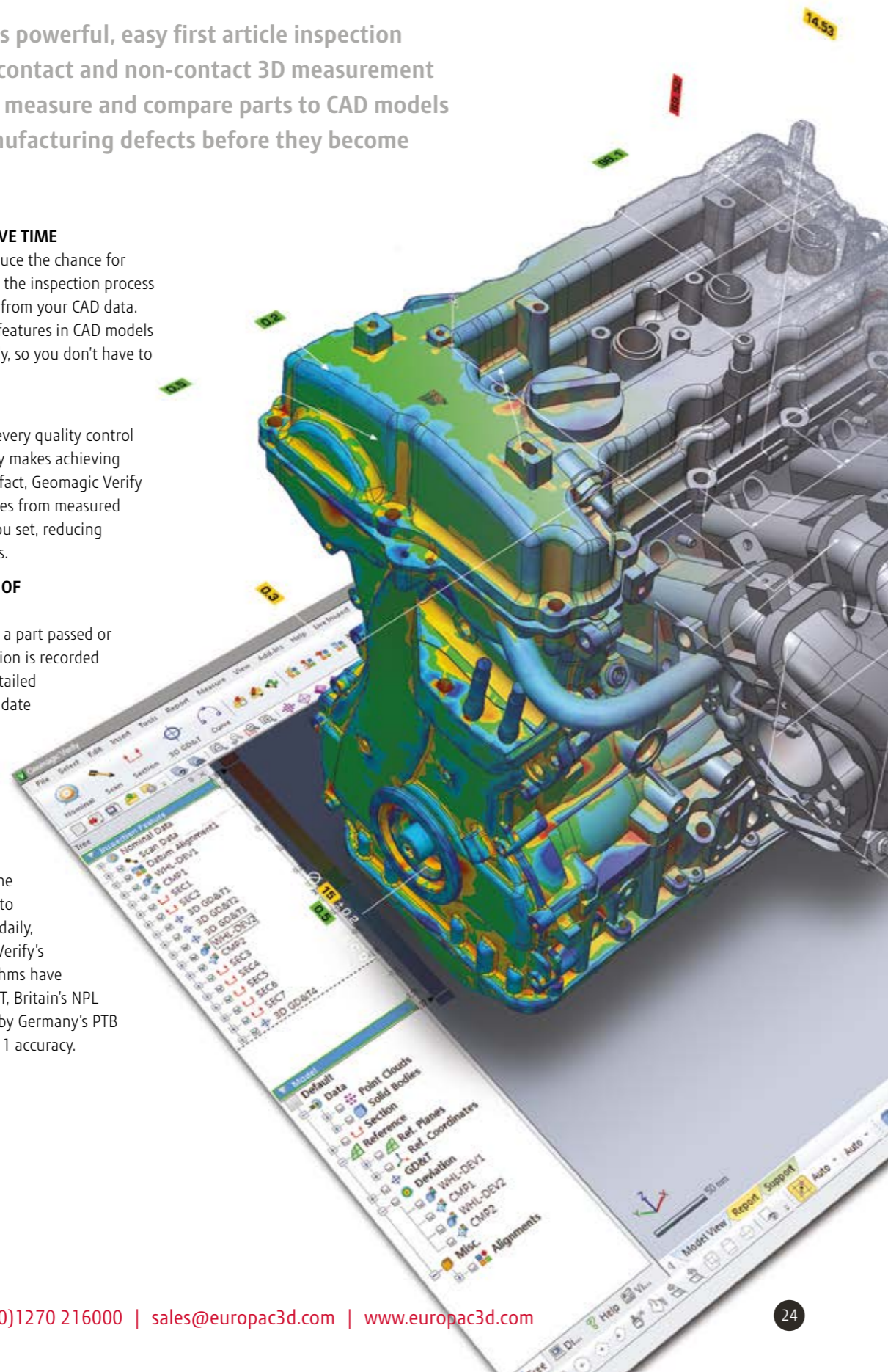
COMPLETE PART VERIFICATION IN ONLY 4 STEPS

- Import data from any measurement device and any CAD software, or measure directly within Verify
- Auto align 3D measurement data to a CAD model
- Create deviation color maps and measure dimensions & tolerances (GD&T)
- Auto report and share the 3D model to show inspection results
- Repeat for other parts with two clicks

PROBING-BASED INSPECTION

Contact based inspection for the most accurate measurement of features

- Compatible with every major probing device
- LiveInspect technology guides you through how to align and measure each part
- Compare to a CAD nominal or measure a part on the fly without CAD
- LiveDimension intelligently measures dimensions on features
- Use Verify's extensive GD&T toolset to verify parts
- Make reports automatically, based on templates that show exactly what you want

SCANNING-BASED INSPECTION

Non-contact based inspection for fast and comprehensive measurement of form

- Compatible with all 3D scanners
- Automatically align point clouds to CAD nominals
- Generate detailed deviation color maps showing where a part is in and out of tolerance
- Measure GD&T from a point cloud or mesh
- Repeat inspections completely automatically just by opening a scan file
- Make reports automatically, based on templates that show exactly what you want

Virtual Edge Deviation
Inspect hard-to-measure sharp edges

Thickness Plot
Check part thickness instantly

Trend Analysis
- Batch processing of scans to inspection reports
- Easy statistical process control (SPC) reporting

Curve Deviation
Verify parting lines and feature lines

Silhouette Deviation & Boundary Deviation
Validate stampings for fit & function

GD&T
Ensure operability and assembly of parts

Section Inspection
Inspect 3D scanned parts to your drawings easily

Comparison Points
Detailed point-by-point comparison to CAD

Curvature Plot
Analyse surface continuity & curvature flow

Whole Deviation
Compare an entire part to a CAD model in seconds

Section Inspection
Deviation vector plots and easy 2D GD&T setup

In-depth GD&T
- ASME Y14.5 compliant
- ISO compatible
- Material condition (MMC, LMC)
- Feature patterns
- Simultaneous requirements
- Projected tolerance zone modifiers

Geomagic Studio™

The fastest path from 3D scans to your CAD software

Geomagic Studio® is the complete toolbox for transforming 3D scanned data into highly accurate surface, polygon and native CAD models.

KEY FEATURES OF GEOMAGIC STUDIO

Geomagic Studio's expansive array of point cloud and polygon editing features plus powerful surfacing tools help you create high-quality 3D models faster. Additionally, because Geomagic Studio captures design intent from any shape, you can seamlessly transfer parametric models to a number of external CAD packages. The latest version of Geomagic Studio also includes new platform exposure to allow more customization options.

- Support for a wide range of non-contact and probe devices
- Automated point cloud data cleanup, mesh analysis and repair, remeshing tools, patch functionality and more
- Optimized for fast data processing and the ability to effectively handle large, dense point clouds
- Simplified 3D world coordinate system for easy alignment of data
- Python scripting environment allows you to customize point cloud processing workflows
- Included command line-driven version of the software eliminates the computing overhead of a graphical user interface, allowing you to save time and memory
- Export high-quality 3D data in all major neutral polygonal and NURBS formats
- Wide array of hardware plug-ins and supported file formats, i.e., STL, OBJ, VRML, DXF, PLY and 3DS, included at no additional charge
- Direct export of history-based models to major mechanical CAD packages, including Autodesk® Inventor®, CREO® Elements/Pro™, CATIA® and SolidWorks® (optional)
- Seamless export to SpaceClaim® Engineer direct-modeling CAD at the click of a button

Capture, modify and manufacture using 3D content

For manufacturers of every type, Geomagic Studio provides the industry's most powerful point cloud editing, mesh editing and advanced surfacing functions in an intelligent, easy-to-use application. Geomagic Studio's precise 3D data processing functions, in tandem with its automated tools, enable users to produce the highest quality models in significantly less time and reduce costly man-hours. For reverse engineering, product designs, rapid prototyping, analysis and CAD export, Geomagic Studio is the ultimate 3D creation tool.

SCAN
Capture real world data using scanners and probes

PROCESS
Make exact 3D models directly from the captured data

PRINT
Output to 3D print, CNC, and other downstream processes

SCAN
Capture real world data using scanners and probes

MESH
Automatically create mesh data for output

CAD
Transfer 3D model to history-based CAD platforms

SCAN
Capture real world data using scanners and probes

SURFACE
Create surface models for use in downstream applications

ANALYSIS
The data directly in FEA, CFD and simulation platforms

Functionality	Geomagic Studio
Scan directly into product via add-ins	●
Import points (.asc, .txt, .ac, etc.)	●
Import mesh (.stl, .obj, etc.)	●
Basic point editing (delete, sample, reduce noise)	●
Advanced point editing (add points, fill point holes, offset)	●
Basic mesh editing (delete, fill holes, trim, mesh doc)	●
Advanced polygon editing (sandpaper, patch, sculpt, shell)	●
Intelligent extraction of surfaces/solids/sketches from mesh	●
Complete sketching and solid modeling capability	●
Mesh-to-solid deviation analysis	●
Exact Surfacing (incl. AutoSurface)	●
Parametric Exchange with CAD	●
3D PDF generation	●
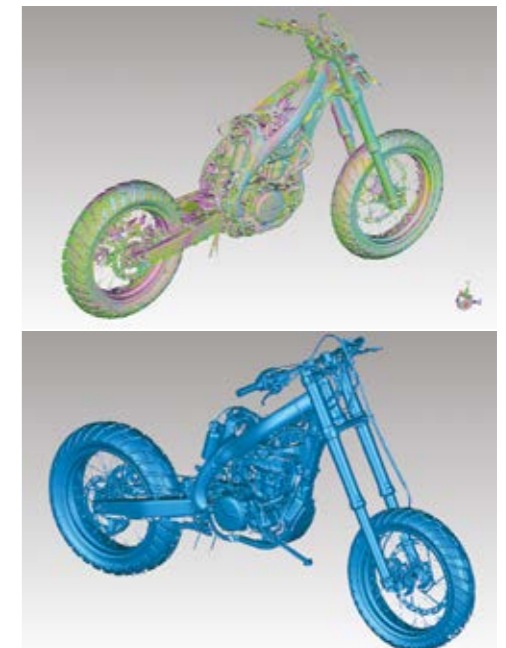
Geomagic Control™

Complete metrology automation platform

Geomagic Control (formerly Geomagic Qualify) is a comprehensive inspection automation platform for streamlining in-line and repetitive inspection processes that use 3D scanners and other portable metrology devices. With this feature-rich software platform, you can easily program CAD comparisons, GD&T and go/no-go operations to be performed automatically on any type of part.

MAKE INSPECTION WORK FOR YOU
Eliminate workarounds and don't miss a single detail. With Geomagic Control you can create and run purpose-built inspection processes that do exactly what you need.

INSPECT ANYTHING MORE EFFICIENTLY
If you're inspecting parts or components, Geomagic Control eliminates extraneous or wasteful processes. Reduce waste, avoid production errors down the line, free-up personnel, and have critical systems up and running faster with Geomagic Control's single, stable, fully customizable platform.

**SPEED UP MANUFACTURING AND ASSEMBLY**
Geomagic Control's powerful scripting and customization capabilities let you move faster than one-size-fits-all inspection solutions or manual processes. Geomagic Control can handle the heavy lifting of point cloud processing and analysis, as well as run 3D scanners, robots and other components.

HARNESS THE POWER OF 3D SCANNING
Geomagic Control was built from the ground up to maximize the capabilities of popular contact and non-contact metrology devices, handling millions of measured points along with the unique alignment and measurement methods that point clouds require. So you can reliably have more complete part views and better control of complex shapes.

INSPECT WITH CONFIDENCE
You rely on your inspection results. That is why Geomagic Control's geometry calculation algorithms have been tested by America's NIST, Britain's NPL and independently certified by Germany's PTB metrology authority as Class 1 accuracy. Top manufacturers around the world trust Geomagic Control to measure thousands of parts every day.
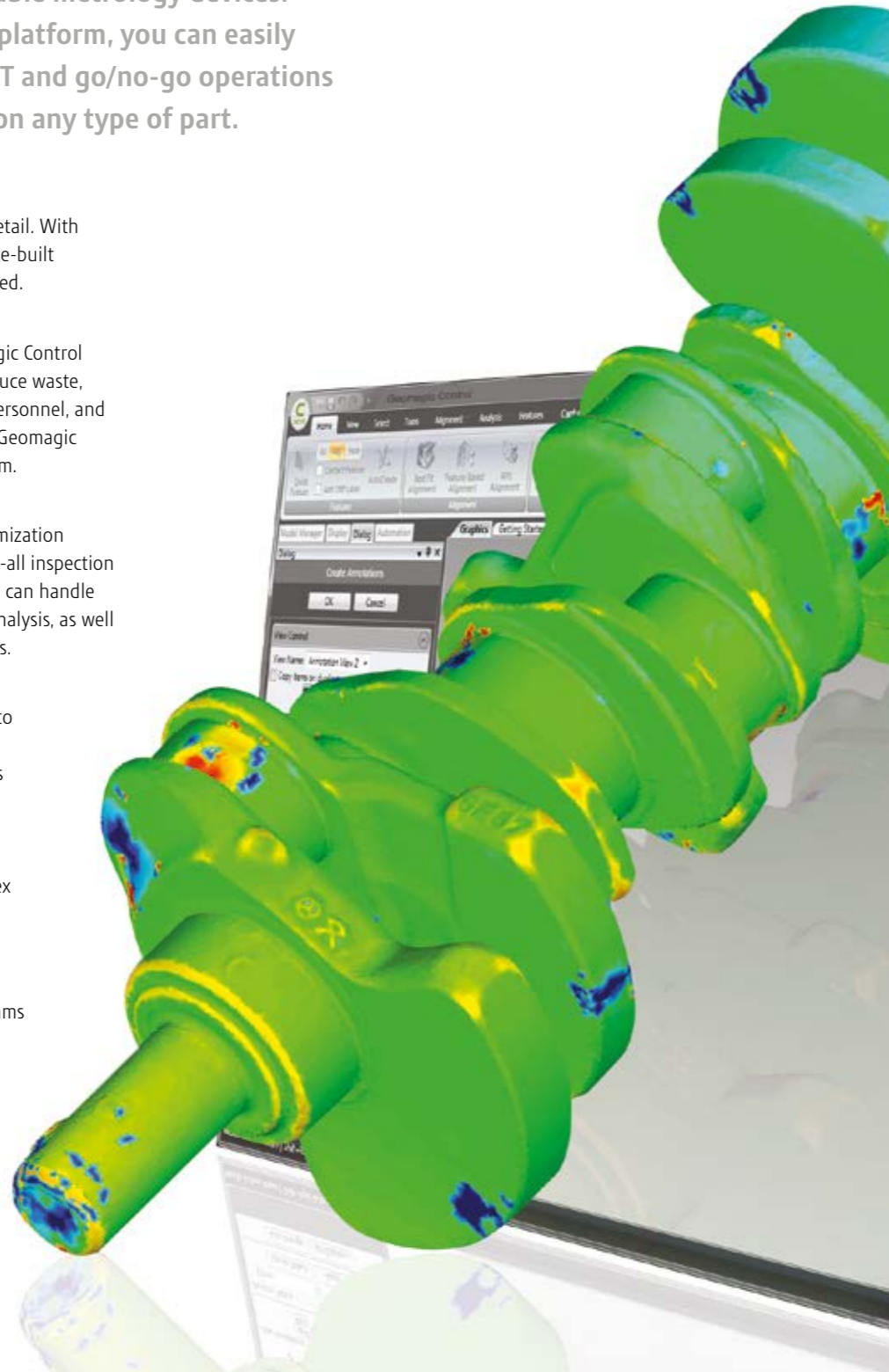
Customized, automated inspection with any 3D scanner and Geomagic Control

BUILT FOR POINT CLOUDS AND PROBING
Capable of handling millions of points from any 3D scanner, Geomagic Control takes advantage of that rich data to generate easy-to-read deviation color maps and perform detailed analysis of your parts automatically. It also supports many probe-based devices, so you can mix measurement techniques for optimal performance.

WORKS SEAMLESSLY WITH YOUR CAD FILES
Geomagic Control imports native files from popular CAD systems, including SolidWorks®, CATIA®, Siemens NX®, and Pro/ENGINEER®. With this native import capability, your GD&T callouts and reference geometry come in with the CAD geometry, making it easy to set up inspection routines. You can also seamlessly integrate and compare scan data from your production fl oor to the original design data in seconds, creating go/no-go reports to ensure the highest quality at every moment.
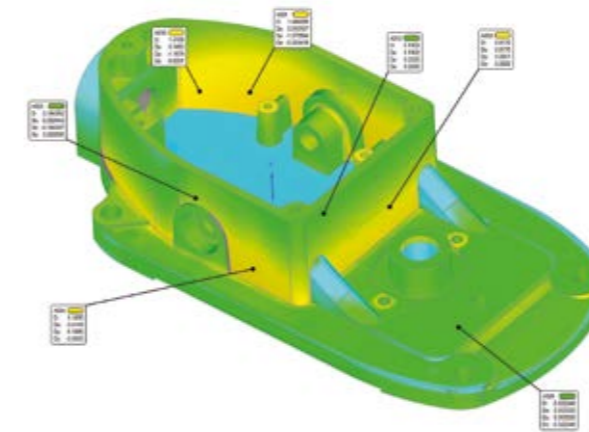
ROBUST GD&T FUNCTIONALITY
Geomagic Control comes with a full range of intuitive measurement, dimensioning, and tolerancing tools and settings. Whether you are looking for automatic detection of geometric features, real-time deviation tools, or iterative alignment, it can all be found in one comprehensive solution.

AUTOMATION FOR FASTER, MORE RELIABLE INSPECTION
Use Python Scripting plus drag-and-drop automation to customize the environment and processes to your company's needs. By creating an open source environment, you can access a wide range of commands including CAD model access, constrained alignments, reporting, point processing and polygon processing.

MAXIMIZE YOUR HARDWARE
Whether you are using a tactile device or a non-contact scanner, the power to work directly within the application is at your disposal. The Python Scripting feature can be used to fully automate scanning.

Part inspected with Geomagic Control

Geomagic quality inspection product comparison

Geomagic® Verify™ is powerful, easy first article inspection software for both contact and non-contact 3D measurement devices, whereas Geomagic® Control™ is a comprehensive inspection automation platform for streamlining in-line and repetitive inspection processes.

Functionality	Geomagic Control	Geomagic Verify
Direct interfaces for many popular metrology devices	●	●
Intelligent reference geometry recognition	●	●
Point cloud and polygon mesh analysis	●	●
Comprehensive probing support	–	●
Airfoil analysis	●	–
State-of-the-art GD&T functions	●	●
Platform automation and scripting	●	–
Convenient reporting tools	●	●
Automatic alignment based on feature recognition	●	●
Inspection without a CAD nominal	●	●
Interactive guided inspections	–	●
2D and 3D dimensioning	●	●

Alukeep

Modular CMM fixturing system

This grown up 'construction kit' is essential when a vibration free environment is required for securing parts to be accurately measured.

Alukeep is the fastest and easiest fixturing system on the market. It is a simple modular system that uses a unique SJS (Single Joint System), making it a fixturing class-leader.

Made from high-tensile aluminium, Alukeep provides an extremely accurate system and extended lifespan. The high-precision manufacture of modular components is perfect for co-ordinate measuring, machine part fixturing, checking gauges and welding/knitting masks.

Alukeep advantages

- Junction of two modules is made with one single joint
- Totally modular
- Tool usage is minimal
- SJS baseplates may be used on any side
- Basic components are manufactured with anodized aluminium alloy
- Support components are manufactured with hardened aluminium alloy for a superior lifescale
- Parts range continuously developed and expanded
- Maximum flexibility when setting up structures
- Full coverage of 3D space
- Drastic reduction of set up time
- Repeatability of positioning
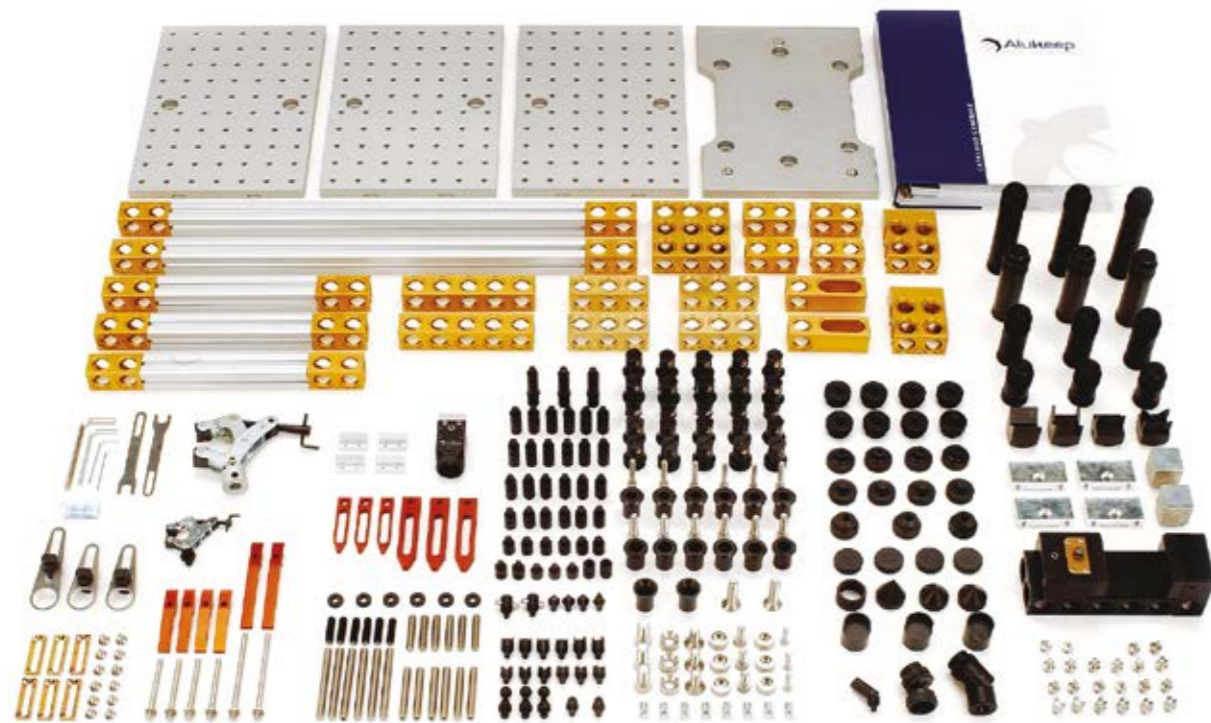
europac
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3D Scanning Services
3D Printing Services
3D Inspection Services

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3D SCANNING SERVICES

Europac3D operate a range of high-end professional scanners which are suitable for scanning almost any object in 3D.

For small items such as jewellery and dental products, the Rexcan DS2 and CS+ static scanners use white light and blue LED technology respectively and a two-axis rotating base to capture all surfaces.

In contrast, the Artec range of hand-held 3D scanners, which include the Eva and the new Spider, capture data in a similar way to a video camera with powerful software that aligns the captured frame data in real time.

Laser scanners such as the Kreon II Blue, when attached to portable measuring arms, are capable of highly accurate scanning of larger objects such as automotive, aerospace and power generation components. Europac3D also operate a Leica C10 laser scanner which is capable of scanning whole buildings. The portable arms are also used for precision inspection using probes.

With over 20 years experience in 3D scanning, Europac3D will advise which scanner is the most suitable for a certain project and will ensure clients receive realistic pricing guidelines and project timescales.

INDUSTRIES EUROPAC3D WORK WITH INCLUDE:

- Advertising
- Aerospace
- Agriculture
- Art / Crafts
- Automotive
- Film & TV
- Government
- Heritage / Museum
- Jewellery
- Medical / Dental

To speak to trained staff about your 3D scanning needs, please call Europac3D on **+44 (0)1270 216000**

EXAMPLES OF 3D SCANNING DEVICES AND THE DATA THEY CAPTURE

SMALL OBJECTS

The Rexcan CS+ (right) and the Rexcan DS2 are desktop small object scanners which operate by scanning surfaces on a 2-axis rotating base system. The DS2 is particularly suitable for dental applications as well as other items such as jewellery and coins, whilst the CS+ can accommodate mechanical components and similar items.

Typical 3D data

LARGER OBJECTS *(HAND HELD)*

The Mantis Vision F5 (right) and Artec Eva and Spider (far right) are hand held scanners which use video technology to capture full-colour textures and surfaces, including the human form. The Spider is a high-accuracy industrial-level scanner suitable for engineering quality whilst the Eva, with a bigger window, captures larger scanning areas.
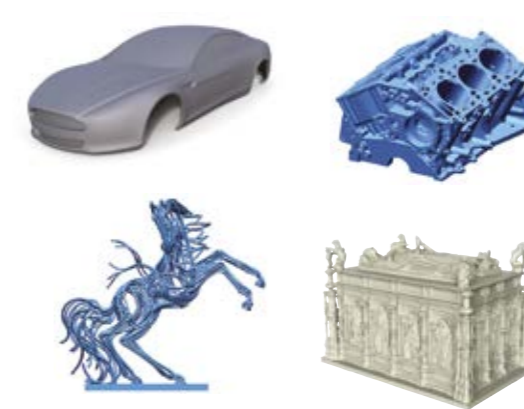
Typical 3D data

LARGER OBJECTS (ARM & LASER)

Measuring arms like the Kreon Ace (right) with laser scanners like the Kreon II Blue attached (far right top) and Kreon Solano (bottom) are used to scan larger surfaces such as vehicles, large mechanical components and heritage items to engineering-quality precision. Probes are added for inspection purposes.

Typical 3D data

BUILDINGS & ENVIRONMENTS

Where portable and handheld scanners are not viable for large scale scanning situations, Europac3D have the Leica C10 laser scanner (right) which can scan whole buildings, both interior or exterior, and external environments. The data capture can typically be used to create digital models of buildings and their interiors.

Typical 3D data

Scanning equipment shown here is for visual purposes only and not to scale

3D SCANNING: HOW IT WORKS AND WHAT YOU CAN DO WITH THE DATA

1 Scan an object in 3D using a suitable scanner for the purpose

2 Millions of cloud points of data are collected by the scanning process

3 The scanning software creates a triangulation mesh (.stl file)

An .stl file can be used in the following ways

The .stl file can be used for quality control inspection purposes. This gives a complete picture of where a part is in and out of tolerance.

The .stl file can be used to print out the scanned object on a range of professional 3D printers.

The file can be used to reverse engineer components to produce native CAD models (SolidWorks, Autodesk Inventor, PTC Creo, Siemens NX, Catia, AutoCAD).

See many of the Europac3D range of 3D scanners in action by typing **europac3d** into

You Tube
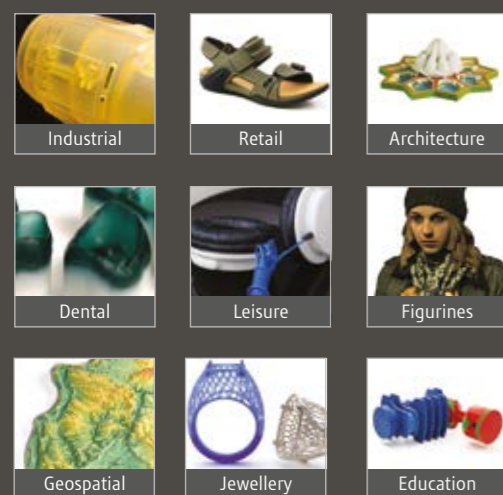
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3D PRINTING SERVICES

Europac3D operate a range of high-end industrial 3D printers from 3DSystems, the company that invented the technology.

Whether the printed model is a tiny jewellery item or a full size, full-colour concept model, the 3DSystems range of printers are capable of tackling most jobs and print in a variety of materials including high-impact, high temperature resistant durable plastic for functional testing, cast-friendly wax for rapid-foundry production, and specialized materials for the manufacturing of jewellery and personalised medical devices.

The x60 Series uses a high-performance composite material for the purposes of full-colour concept models and prototypes.

Print runs can range from a single item to multiple copies and Europac3D staff will advise clients on the most suitable printer for their needs.

THE INDUSTRIES EUROPAC3D WORK WITH IN THE FIELD OF 3D PRINTING INCLUDE:

Industrial	Retail	Architecture
Dental	Leisure	Figurines
Geospatial	Jewellery	Education

To speak to trained staff about your 3D printing needs, please call Europac3D on **+44 (0)1270 216000**

EXAMPLES OF 3DSYSTEMS PRINTERS AND THE TYPE OF OBJECTS THEY PRODUCE

SMALL BUILD VOLUME

Small objects such as jewellery and dental products can be 3D printed using the cost-efficient ProJet 1200 printer, which produces a castable VisiJet FTX Green material, or the ProJet 3510 DP and MP machines which produce precision wax-ups for dental labs.

For casting of small objects ProJet 3510 CP series produces industrial quality wax models, and the 1000 Series is a personal printer.

ProJet 1200

The 1200 is a small object 3D printer using a castable VisiJet Green FTX material

ProJet 3510 MP/DP

The MP & DP printers print large volume wax-ups for dental labs

ProJet 3510 CP

The CP Series prints in Realwax which is ideal for foundry casting

ProJet 1000/1500

These ProJet personal printers offer a cost-effective 3D solution

MEDIUM BUILD VOLUME

For larger objects than the jewellery, dental and hobby ranges shown above, 3DSystems provide a range of plastic and composite material printers which are capable of producing a greater build volume.

The plastic printing machines of the 3500 Series and the composite material x60 range are capable of producing highly accurate objects which are suitable to present as concept models or prototypes.

ProJet 3500 Series

This series prints high quality durable plastic parts for industry

ProJet 6000/7000

The 6000 & 7000 print high accuracy parts in a wide range of VisiJet SLA

ProJet x60 260C

The composite material 260C prints full colour high-resolution objects

ProJet x60 460C

Similar to the260C, the 460C prints larger volume objects and has additional functions

LARGER BUILD VOLUMES

The largest volume 3DSystems printers are industrial-grade, high resolution 3D printers such as the 5500X, capable of printing multi-material parts while the 4500 prints full colour plastics.

In the x60 range, larger composite material machines such as the 660Pro and the 860Pro can produce greater build volumes at higher resolutions and contain additional machine functions and features.

ProJet 5500X

The 5500X is a multi-material printer ideal for product realisation
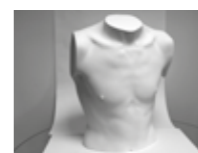
ProJet 4500

The 4500 is a full-colour plastic printer which colours pixel by pixel

ProJet 5000

The 5000 has the largest build volume and produces high volume prints

ProJet x60 860Pro

The 860Pro is a full colour composite material machine printing at 6 million colours

Printers shown here are for visual purposes only and not to scale

3D PRINTING: HOW IT WORKS AND WHERE YOU CAN FIND OUT MORE INFORMATION

3D printing is currently featured on a daily basis in the media and there are a bewildering array of machines, materials and equipment in the marketplace.

Working at the forefront of 3D printing and exclusively using industrial-level 3DSystems printers, Europac3D are often asked to explain the technologies behind the 3D printing phenomenon – how the process works, how the objects are coloured, how many objects can be printed at once, what is the quality like, and so on.

They have produced a number of short videos on the **Europac3D channel on YouTube** which show the build of objects on the x60 series of composite material printers, and these give an introduction to the 3D printing process.

Because Europac3D are traditionally from an engineering background, their trained staff fully understand not only the technical constraints of the equipment from an operational point of view, but also the internal machine processes involving materials and technology which ultimately produce the printed object, and this can all be explained on site at the Europac3D offices if necessary.

See the 3D printing process in action by typing **europac3d** into the search box in

You Tube

3D PROBING & INSPECTION SERVICES

Using high-end non-contact laser scanners and high-accuracy contact probing arms with data collection points often in excess of millions of points per second, Europac3D can rapidly capture component curvature and geometry for inspection purposes.

The captured data allows 100% inspection capabilities and colour mapping which give a complete picture of where a part has been manufactured out of tolerance, whilst other key characteristics and GD&T measurements can be extracted from the data.

Typical data analysis, like that featured in the diagram below, is extracted by experienced Europac3D staff using industry-standard inspection automation software.

Europac3D can scan and inspect onsite at a client facility or portable objects can be delivered to the Europac3D offices.

Trend Analysis
- Batch processing of scans to inspection reports
- Easy statistical process control (SPC) reporting

Curve Deviation
Verify parting lines and feature lines

Thickness Plot
Check part thickness instantly

Virtual Edge Deviation
Inspect hard-to-measure sharp edges

Silhouette Deviation & Boundary Deviation
Validate stampings for fit & function

Comparison Points
Detailed point-by-point comparison to CAD

Curvature Plot
Analyse surface continuity & curvature flow

Whole Deviation
Compare an entire part to a CAD model in seconds

Section Inspection
Inspect 3D scanned parts to your drawings easily

Section Inspection
Deviation vector plots and easy 2D GD&T setup

GD&T
Ensure operability and assembly of parts

In-depth GD&T
- ASME Y14.5 compliant
- ISO compatible
- Material condition (MMC, LMC)
- Feature patterns
- Simultaneous requirements
- Projected tolerance zone modifiers