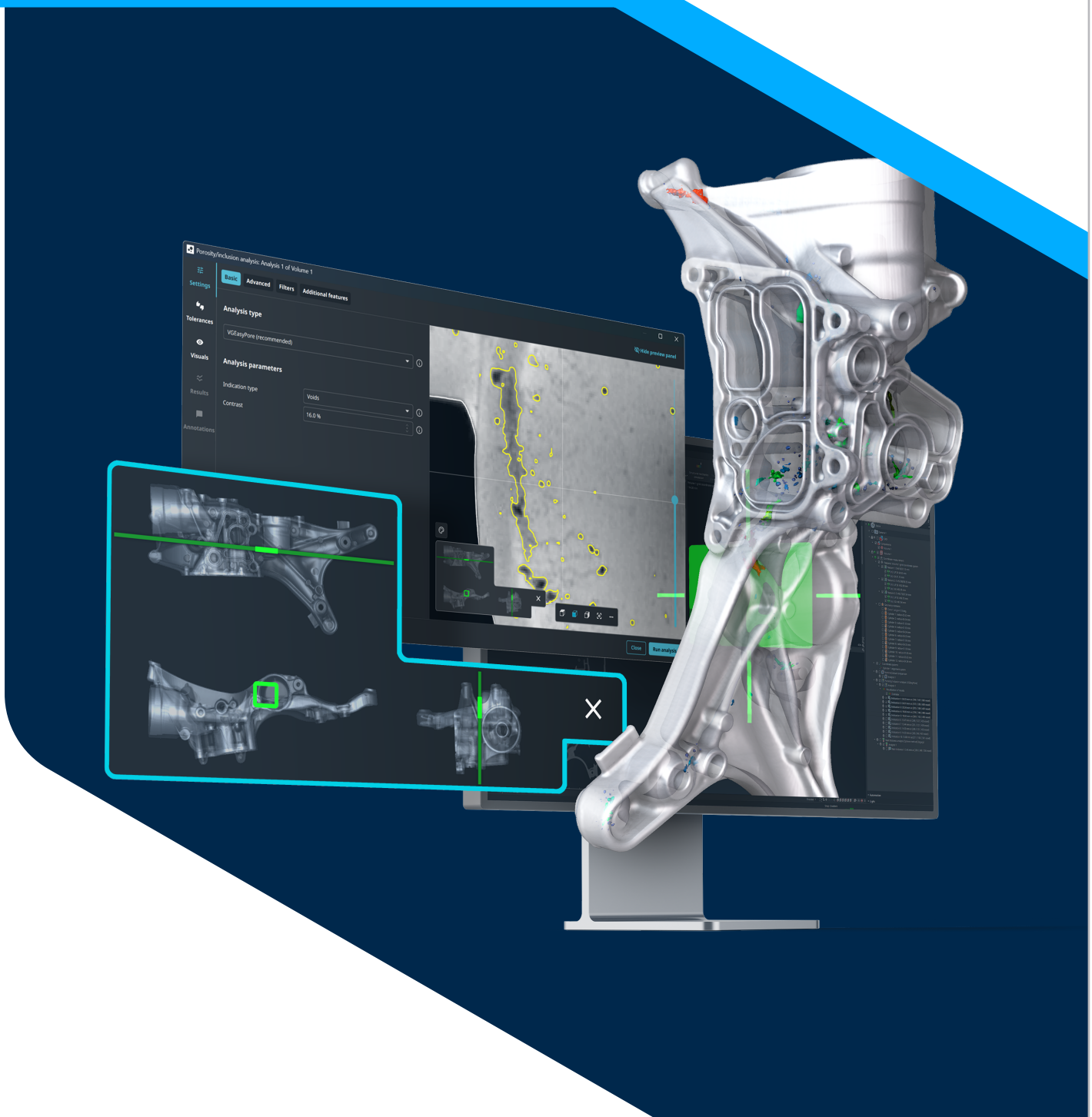
HEXAGON

VG software

Analysis and visualisation software for industrial CT scanning and other 3D data sources



Introduction

VG software for unmatched clarity into non-destructive testing (NDT) data

From real-world digital twin to actionable insights

When quality defines your success, you need absolute confidence in your data. Hidden defects, material inconsistencies, and out-of-tolerance parts can lead to costly recalls, safety risks, and production delays; challenges no manufacturer can afford. Powered by industrial CT, VG software provides pioneering technology that delivers truly holistic insights, creating an authentic 3D digital representation of your part for complete, non-destructive analysis.

In a world of grey values, you want your software selection to be black and white. As the de facto industry standard for non-destructive evaluation (NDE) and CT data analysis, Hexagon's VG software is your obvious choice for gaining actionable insights from NDT data sources.

VGSTUDIO MAX

Versatile, industry-leading software for the holistic analysis and visualisation of industrial CT and other NDT data.

VGMETROLOGY

Innovative software for comprehensive, precise metrology on CT data, CAD data, meshes, and point clouds.

VGinLINE

Robust software for executing automated inspection of CT data on the shop floor.

VGTRAINER

Intuitive software to self-train deep learning models for AI-assisted segmentation.

myVGL

Your free viewer app exclusively for VG project files.

84%

Reach 84% reduction in inspection times

An Austrian automotive supplier cut first article inspection time from 75 to 12 man-hours while improving measurement accuracy and efficiency with VG software.

50%

Reduce inspection costs by up to 50%

This same automotive supplier reduced costs by 50% with VGSTUDIO MAX, cutting initial acceptance time from 450 to 100 man-hours – all while preserving the part.

VG software at a glance

Your clear choice for precision and insight

The industry's longest-trusted CT analysis software

Access powerful tools for every challenge

From visualisation to complex analyses, VG software covers it all with a full suite of capabilities:

- CT reconstruction and data quality analysis
- AI-supported data segmentation
- Visualisation and animation
- Dimensional metrology and reverse engineering
- Material analysis
- Reporting and documentation
- Automation and inline inspection
- Fixture simulation

See beyond the surface with eye-opening precision

VG software transforms industrial CT data into full 3D models, creating a high-precision digital representation of your manufactured part. At its core is the voxel, capturing internal structures down to the finest details.

This level of insight lets you:

- Detect hidden defects before they become failures
- Analyse material properties for durability and performance
- Conduct precise metrology for reliable pass/fail decisions
- Automate inspections to bring these insights to the shop floor

Benefit from expertise earned side by side with industry leaders

With over a quarter century of continuous development, VG software has been co-created with manufacturers who demand the highest standards. It has been tested and refined where precision is non-negotiable. That's why it remains the go-to solution for quality assurance in the most demanding industries.



End-to-end versatility
Adapts to any workflow, any industry, and any quality inspection challenge.



Precise and insightful
Proven accuracy that delivers clear, actionable quality insights.



Built for the long run
Robust software that grows with your needs and changing industry demands.

Rely on 30+ years experience

VG software is hardware-independent and sets the benchmark for 3D data analysis—so strong that others now follow its lead. That's why we remain the go-to choice for manufacturers who demand absolute precision, reliability, and confidence in their quality process.

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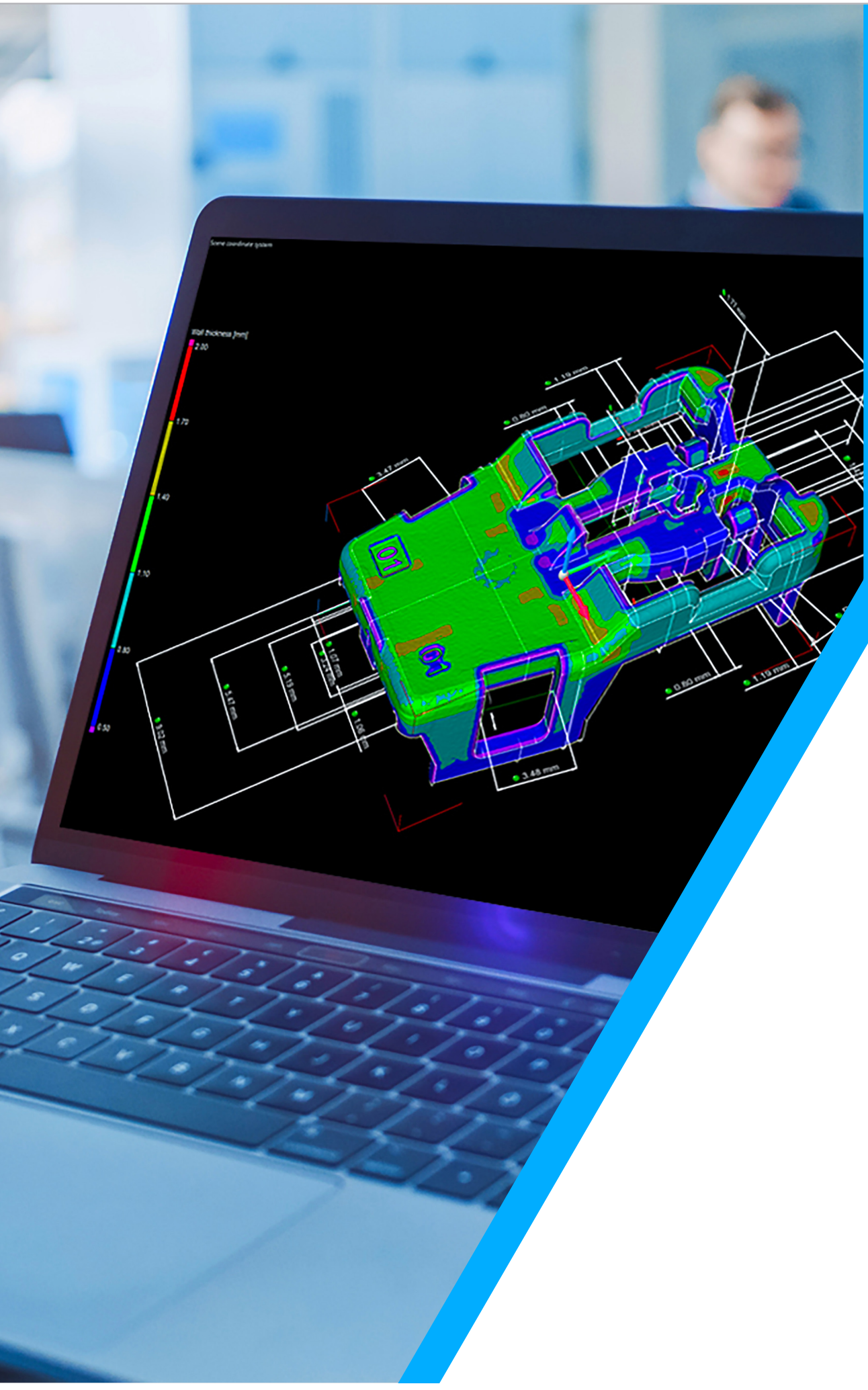
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The VG software range

The best tools for your CT and 3D data analysis tasks

Powerful solutions for your quality assurance challenges

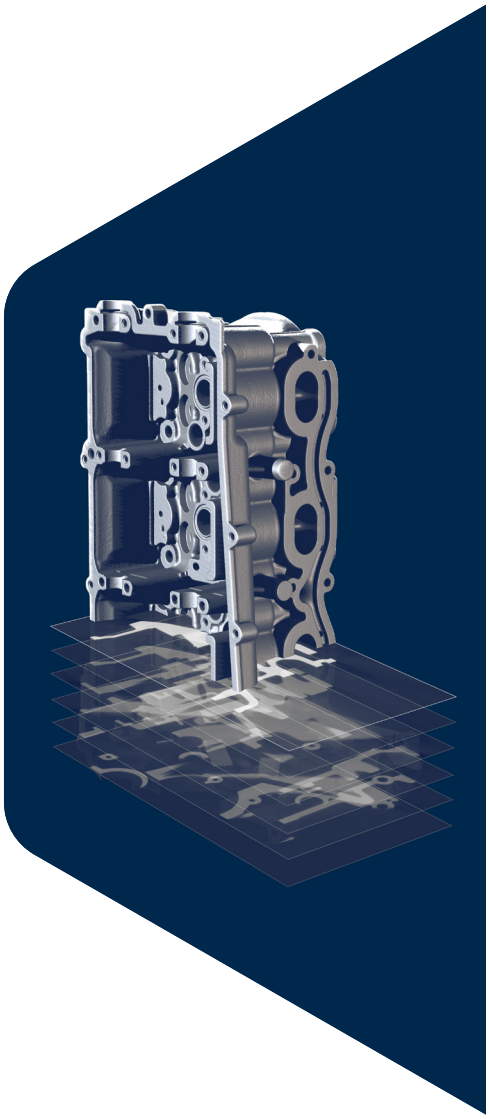
VG software applications

A powerful suite of software, built to tackle a wide range of data analysis challenges. Each product ensures you have the right tools and capabilities to keep your inspection workflow efficient and precise.

VGSTUDIO MAX

Swiss Army Knife of quality inspection.

With our editions we offer a flexible VGSTUDIO MAX portfolio that matches different workflows and expertise levels, ensuring every team — from quick inspection users to advanced material testing and battery-research specialists — gets exactly the capabilities they need without paying for features they don't.



VGSTUDIO MAX Essential
Core volume analysis

VGSTUDIO MAX Battery
Specialised tools for battery research and production

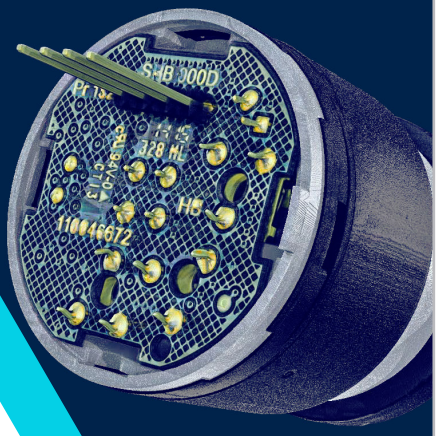
VGSTUDIO MAX Dimensions
Complete GD&T and high-end metrology

VGSTUDIO MAX Pro
Full-spectrum functionality for experts

VGSTUDIO MAX Analyse
Advanced material and casting analysis

VGMETROLOGY

Full GD&T functionality.



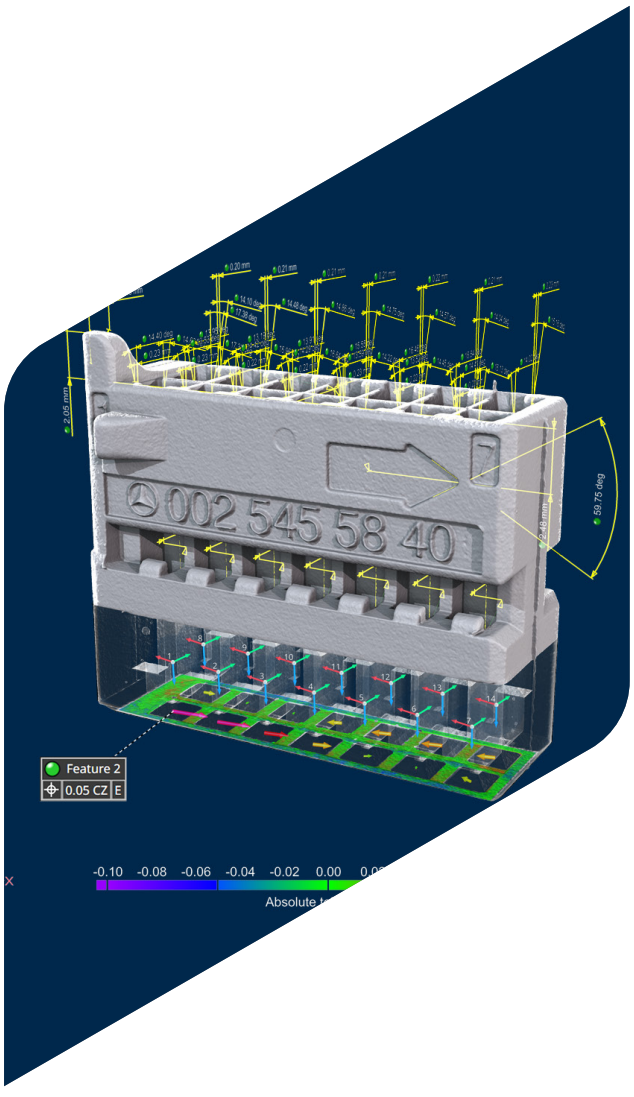
With our two editions of VGMETROLOGY we offer a scalable setup that lets every user choose exactly the metrology depth they need — from an efficient Essential edition for reliable GD&T measurements to the full Pro edition for advanced, automated, and high-precision inspection workflows.

VGMETROLOGY Essential

Essential precision for everyday GD&T measurements

VGMETROLOGY Pro

Advanced metrology power for high-demand inspection



VGinLINE

Robust software for executing automated inspection of CT data on the shop floor.

VGTRAINER

Intuitive software that enables fast, self-guided training of deep learning models for AI-assisted segmentation.

myVGL

Your free viewer app exclusively for VG project files.

Pick the VG application that fits your needs

Learn more about VGSTUDIO MAX

The right tools for your challenges, ready when you are

Every inspection requirement is different, and the VG applications ensure that you have the right tools to master yours. Whether metrology, defect analysis, or material evaluation – each application is designed to integrate seamlessly into your workflow and deliver precise, reliable results.

With the Essential edition, we provide a comprehensive entry-level package offering extensive options for visual inspection, simple measurement tools, and entry-level versions of our powerful pore analysis and surface determination.

For targeted use in metrology, VGSTUDIO MAX Dimensions is the right choice. Here you receive all tools in a single edition, such as full GD&T capabilities including pattern creation. With the multipart group concept, we give you a tool that enables the fast and straightforward creation of robust measurement plans across many parts.

In the Analyse edition, we have combined all functions for casting and material evaluation, such as porosity and inclusion analysis, fibre orientation analysis, and many more. With our volume meshing, you have the perfect tool to convert your data into a simulation-ready format.

VGSTUDIO MAX Battery is an edition specifically tailored to the battery industry. It includes the full functionality of the Analyse edition together with dedicated battery analysis tools.

VGSTUDIO MAX

The complete solution for CT data analysis

VGSTUDIO MAX delivers non-destructive insights at every stage of the product lifecycle, helping manufacturers improve quality, reduce costs, and accelerate production. With a full spectrum of inspection tools, from CT reconstruction and GD&T to material analysis and simulation, it's the go-to software for precision-driven industries.

Designed for holistic analysis and high-resolution visualisation, VGSTUDIO MAX ensures you see more, understand more, and optimise faster — so you can move your products forward with confidence.

VGSTUDIO MAX Essential

Provides a powerful entry point into volume analysis with key tools like subvoxel-precise surface determination and fast, automated pore analysis. Ideal for users who need accurate results without complex setup.

VGSTUDIO MAX Dimensions

Designed for demanding dimensional metrology. Includes full GD&T functionality, pattern creation, and the multipart group concept for building fast, repeatable measurement plans across many parts.

VGSTUDIO MAX Analyse

Combines all tools for analysing castings, materials, and structures — including porosity, inclusions, fiber orientation, and other specialised evaluations. Volume meshing enables fast conversion of CT data into simulation-ready meshes.

VGSTUDIO MAX Battery

Tailored for the battery industry. Includes all Analyse edition features plus extended tools for studying electrodes, separators, pore networks, and full cell architectures.

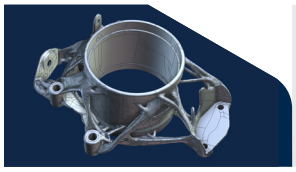
VGSTUDIO MAX Pro

The complete VG software edition for advanced users in all industries and research. Includes everything from Essential plus all additional features and high-end capabilities.

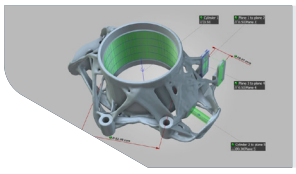
	VGSTUDIO MAX Essential	VGSTUDIO MAX Dimensions	VGSTUDIO MAX Analyse	VGSTUDIO MAX Battery	VGSTUDIO MAX Pro
Visualisation	✓	✓	✓	✓	✓
Data import (voxel data, meshes, point clouds, CAD (IGES, STEP))	✓	✓	✓	✓	✓
Simple alignments	✓	✓	✓	✓	✓
Subvoxel-precise surface determination	✓	✓	✓	✓	✓
Porosity analysis (entry-level)	✓	✓	✓	✓	✓
Automation	✓	✓	✓	✓	✓
Reporting	✓	✓	✓	✓	✓
CT reconstruction	✓	✓	✓	✓	✓
Segmentation	✓	✓	✓	✓	✓
Deep segmentation	✓	✓	✓	✓	✓
Animation	✓	✓	✓	✓	✓
Multipart functionality	✓	✓	✓	✓	✓
Coordinate measurement		✓	✓	✓	✓
Complex alignments		✓	✓	✓	✓
Nominal/actual comparison		✓	✓	✓	✓
Wall thickness analysis		✓	✓	✓	✓
CAD import with PMI		✓			✓
Fixture simulation		✓			✓
Reverse engineering		✓			✓
Manufacturing geometry correction		✓			✓
Porosity/inclusion analysis			✓	✓	✓
Fiber composite material analysis			✓	✓	✓
Foam/powder analysis			✓	✓	✓
Digital volume correlation			✓	✓	✓
Volume meshing			✓	✓	✓
Battery analysis				✓	✓
GelSight AS1 Arm, GelSight patch import and analyses	✓	✓	✓	✓	✓

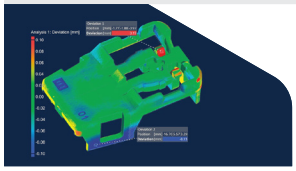
** Features vary by edition*

Features

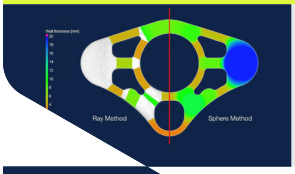
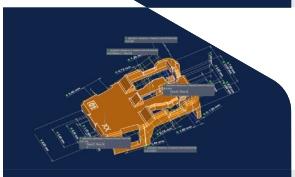
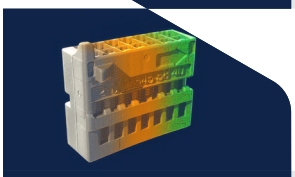
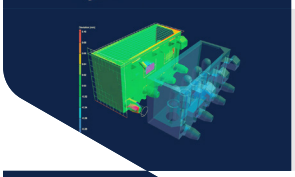
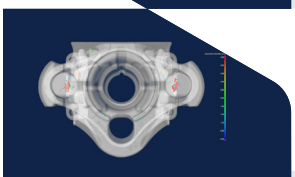
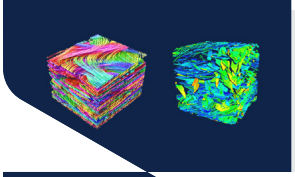
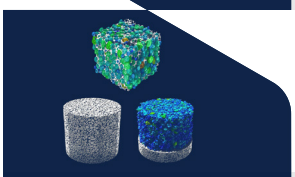
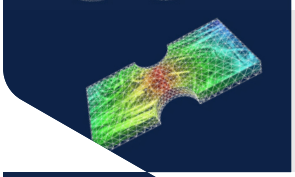
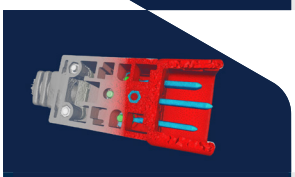
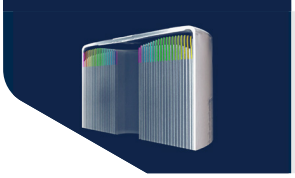








Visualisation	Visualisation of CT data, geometric tolerances and analysis results.
Data import (voxel data, meshes, point clouds, CAD (IGES, STEP))	Loading data from various general and proprietary formats.
Simple alignments	For manually aligning scans within the scene, for example, as preparation for visual inspection.
Subvoxel-precise surface determination	The accurate surface determination (an entry-level variant exists for Essential).
Multipart functionality	Functions for efficient inspection of multiple similar parts within one project.
Automation	Recording and playing back macros, creating and running VGinLINE jobs, batch mode.
Reporting	Built-in editor for creating report documents that can be exported as PDF or HTML.
CT reconstruction	Transformation of 2D X-ray images into detailed 3D CT models.
Segmentation	Various functions for creating ROIs, for example, from grey values (thresholding) or by manual “painting” (such as rectangular selection in the viewport).
Deep segmentation	Deep segmentation delivers reliable segmentations even with low scan quality.
Animation	Allows the creation of movies of the project, showing the component, analyses, measurements, and more.
Coordinate measurement	For measurements on hard-to-reach surfaces of a component.
Complex alignments	Alignments for metrology.
CM overview table with SPC	Support in creating robust templates in measuring parts.
Nominal/actual comparison	For comparing manufactured components with CAD data, meshes, or other voxel data.

	**Wall thickness analysis**	For locating insufficient or excessive wall thickness or gap width.
	**CAD import with PMI**	For importing proprietary CAD files such as CATIA and Creo/Pro/ENGINEER including PMI (Product Manufacturing Information).
	**Fixture simulation**	Allows for measurement of deformed components in their installed state.
	**Reverse engineering**	Conversion of CT data into highly accurate CAD models.
	**Manufacturing geometry correction**	Enables both the optimisation of injection-moulding tools and the creation of compensated meshes for additive workflows.
	**Porosity/inclusion analysis**	Makes internal defects visible and analyses their dimensions and distribution (an entry level variant exists for Essential).
	**Fiber composite material analysis**	Fibre orientation analysis provides insights into the spatial orientation of fibres.
	**Foam/powder analysis**	Delivers precise parameters for complex cellular structures, from dimensions and shape factors to directional variability. Open foams can be separated into individual cells using a watershed algorithm.
	**Digital volume correlation**	Provides precise displacement and deformation data and enables tracking of crack formation that is barely visible to the naked eye.
	**Volume meshing**	Generates accurate, high-quality tetrahedral meshes directly from CT data.
	**Battery analysis**	Detection of defects in electrodes, separators, and anode overhang.

VGMETROLOGY

Precision metrology without compromise

Learn more about VGMETROLOGY

VGMETROLOGY delivers comprehensive, high-precision measurement tools for CT data, CAD models, meshes, and point clouds. Designed for fast, reliable results, it ensures full GD&T compliance, helping you adapt to changing demands with confidence.

Seamlessly integrating with CT, tactile, and optical scanners, VGMETROLOGY enables non-destructive dimensional analysis, including nominal/actual comparisons, wall thickness evaluation, and advanced GD&T tasks — so you can measure with certainty and trust every result.

With our special editions we offer tailored VGMETROLOGY solutions that match different inspection needs, ensuring users can choose between a straightforward Essential setup for dependable GD&T measurements or the fully equipped Pro edition for complex, high-precision and automated metrology tasks.

VGMETROLOGY Essential

Provides a streamlined, entry-level metrology toolset that delivers accurate GD&T-based measurements for users who need reliable results without the complexity of advanced features.

VGMETROLOGY Pro

Offers the full high-end metrology suite with complete GD&T functionality, automation options, and advanced tools for demanding inspection workflows and large-scale measurement tasks.

	VGMETROLOGY Essential	VGMETROLOGY Pro
Visualisation	✓	✓
Data import (MVGL files from VGSTUDIO MAX, meshes, point clouds, CAD (IGES, STEP))	✓	✓
Coordinate measurement	✓	✓
Multipart functionality	✓	✓
Nominal/actual comparison	✓	✓
Wall thickness analysis	✓	✓
CAD import with PMI		✓
Reverse engineering		✓
Manufacturing geometry correction		✓
GelSight patch import and analyses	✓	✓

Major field of application: processing .mvgl measurement projects from VGSTUDIO MAX

VGinLINE

Automated CT inspection that's fast, reliable, and scalable

Learn more about VGinLINE

VGinLINE is the fully automated execution environment for inspections set up in VGSTUDIO MAX or VGMETROLOGY.

VGinLINE brings the powerful analysis, metrology, and AI-assisted segmentation capabilities of VGSTUDIO MAX and VGMETROLOGY into production, ensuring high-throughput, non-destructive quality control with minimal manual input. Designed to reduce human error and streamline inspection processes, it enables real-time defect detection and fully autonomous quality monitoring.

Configure your inspection tasks with ease, set priorities, and integrate the results into existing systems for seamless inline process optimisation. A live dashboard keeps you informed at all times, displaying the inspection status and results of each component as it arrives.

Included capabilities:

- Create jobs to define what VGinLINE does* with CT or surface data sets as they come in at or near the production line.
- Include if-then statements in your jobs and assign priorities to define which jobs will be calculated first.
- A dashboard keeps you informed about the status of your inspections and the results for every part in real time.

	VGinLINE METROLOGY	VGinLINE Dimensions	VGinLINE Analyse	VGinLINE Battery	VGinLINE Pro
Data import (voxel data)		✓	✓	✓	✓
Data import surface data (point clouds, meshes)	✓	✓	✓	✓	✓
CT reconstruction		✓	✓	✓	✓
Deep segmentation		✓	✓	✓	✓
Coordinate measurement	✓	✓	✓	✓	✓
Nominal/actual comparison	✓	✓	✓	✓	✓
Wall thickness analysis	✓	✓	✓	✓	✓
Manufacturing geometry correction		✓			✓
Fixture simulation		✓			✓
Reverse engineering		✓			✓
Porosity/inclusion analysis			✓	✓	✓
Fiber composite material analysis			✓	✓	✓
Foam/powder analysis			✓	✓	✓
Digital volume correlation			✓	✓	✓
Volume meshing			✓	✓	✓
Battery analysis				✓	✓
GelSight patch import and analyses	✓	✓	✓	✓	✓

** VGSTUDIO MAX is needed to create the macros and templates for data set analysis.*

Learn more about VGTRAINER

VGTRAINER

Train AI-powered models for segmentation with ease

VGTRAINER puts the power, accuracy, and speed of AI-driven segmentation in your hands — without the need for AI expertise. Designed for inline and high-throughput environments, it enables fast, stable segmentation of hundreds of datasets, ensuring precise, repeatable results at scale.

When outsourcing isn't an option—or when you're the provider manufacturers outsource to—VGTRAINER enables you to build and refine segmentation models on your own data, in your own secure environment. Whether you're working with batteries, medical scans, or composite materials, VGTRAINER builds the model you need to segment relevant data with confidence every time.

Once you have the model, use the Deep Segmentation feature to seamlessly import and automate the application of your segmentation model in VGSTUDIO MAX and VGinLINE, putting AI to work where you need it, from R&D to fully automated production lines.

Basic license features:

- No-code AI model generation: Train segmentation models without programming or AI expertise.
- Automated dataset processing: Simply upload your labeled training datasets into the interface and let the software take it from there. You can have your first working model in a single day, and can iterate as many times as you like with additional data to improve the model's accuracy.
- Full VG software compatibility: Use AI models inside VGSTUDIO MAX and VGinLINE in connection with the Deep Segmentation feature.
- Secure on-premise solution: No cloud dependencies, keeping your data in-house.

Use AI to analyse hundreds of parts per day

The VGTRAINER workflow



1. Prepare your training data
Curate accurate, consistent training data in VGSTUDIO MAX.



2. Train the AI model in VGTRAINER
Use VGTRAINER to develop a segmentation model tailored to your needs.



3. Apply the model
Use the Deep Segmentation feature to import the trained model into VGSTUDIO MAX for precise, automated analysis.



4. Prepare automation
Set up your workflows in VGSTUDIO MAX to streamline your inspections.



5. Automate your quality control
Use your AI-driven inspection in VGinLINE for high-speed, inline analysis.

Download now

myVGL

Access, analyse, and share VG data for free

This free viewing tool makes collaboration effortless. myVGL allows a user to open, review, and share CT data and VG project data, while also supporting interactive metrology insights and report creation. It ensures that critical information can be accessed and evaluated without requiring a full software licence.

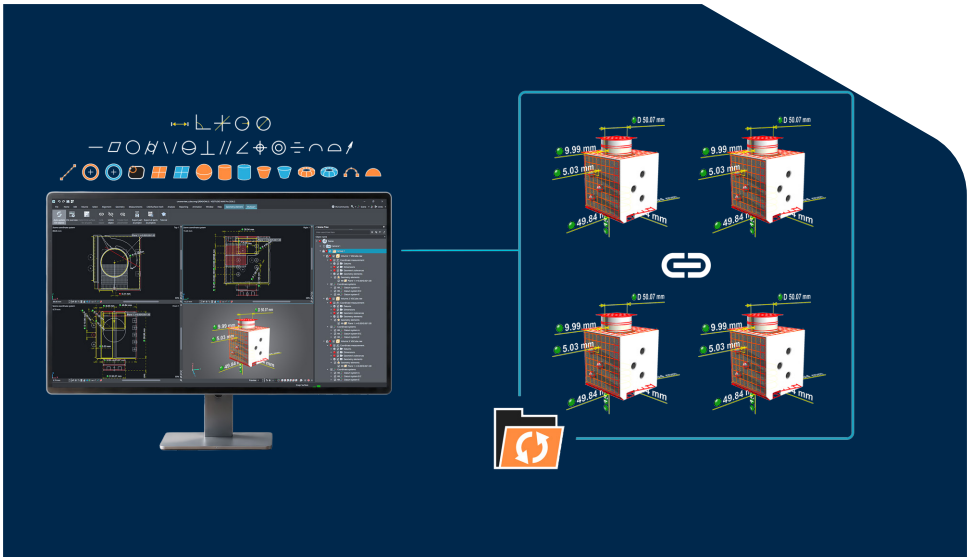
- Completely free to use
- Seamless data sharing and inspection
- Interactive reporting for better collaboration

Multipart workflow

The new multipart workflow in all VGSTUDIO MAX editions lets you measure many components at once — automatically, consistently, and without repeating the same steps for each part. Instead of loading, measuring, and saving scans one by one, the software can import an entire batch of CT datasets, apply a single measurement plan to all of them, and deliver the results in one automated run. It's like copy-and-paste for measurements, but far smarter: CM objects stay perfectly synced without manual updates, cutting handling time by up to 50% and eliminating errors. Even complex projects become easier, with multiple scans and parts managed together in one scene through an intuitive, interactive interface that supports flexible workflows—whether you're working with multiple groups, removed objects, or detached elements.

The CM Overview is now seamlessly integrated, keeping the process smooth and uninterrupted, while dedicated multipart handling and reporting ensure clean structure and professional documentation.

- **Automated batch measurement**
  Measure many parts at once with one plan applied to all CT scans.
- **Up to 50% time savings**
  No manual syncing; the system keeps everything aligned automatically.
- **Simpler complex projects**
  Multiple scans handled together in one scene for easier management.
- **Intuitive operation**
  A user-friendly interface that makes multipart work accessible to everyone.
- **Clear, professional reporting**
  Dedicated multipart groups ensure clean structure and consistent documentation.



See your licensing options

Access VG in the ways you need

Every workflow is different, which is why Hexagon offers flexible licensing options to fit your inspection environment, team structure, and scalability needs. Our options ensure you have the right access at the right time.

	Global floating	Area floating	Node-locked	Dongle
Summary	For global companies	For companies with multiple users at one location	For use on a specific computer	The easiest way to use software alternately on multiple computers without a network connection
Available for	VGSTUDIO MAX, VGMETROLOGY, VGTRAINER	VGSTUDIO MAX, VGMETROLOGY, VGTRAINER	VGSTUDIO MAX, VGMETROLOGY, VGTRAINER	VGSTUDIO MAX, VGMETROLOGY, VGinLINE, VGTRAINER
Use on multiple computers	✓	✓		✓
Floating within a network that extends across...	... the world	... one location (50 miles / 80 km)		
Multiple instances on one computer for one user	✓	✓	✓	✓
Usable without network connection	✓ (temporarily)	✓ (temporarily)	✓	✓
Supports virtual license servers	✓	✓		
Hardware-independent	✓	✓	No (computer-bound)	No (dongle-bound)
Platform-independent	✓	✓		✓

Aftercare

Services beyond software

Your long-term success begins with long-term support

World-class products to rely on

Drawing on decades of research and development experience, VG technology from Hexagon's Manufacturing Intelligence division is built on a long history of outperforming technological innovation.

To ensure you also benefit from future innovations, VG applications are offered with an update/service agreement. It allows you to download new versions at no additional cost and receiving priority customer assistance whenever needed.

World-class support, delivered locally

Our support teams combine extensive application expertise with local presence to provide fast, reliable assistance wherever you are. From technical questions to workflow optimisation, our highly competent experts help you get the most out of your VG applications.

Maximise performance with an update/service agreement

Ensure your software remains current and fully supported

- **Regular updates at no extra cost**
  Access new features and bug fixes regularly without additional expenses, keeping your software aligned with the latest advancements in industrial CT data analysis.
- **Exclusive in-person support**
  Benefit from direct access to the VG Support team, providing expert assistance to address challenges and optimise your software usage.
- **Cost efficiency and convenience**
  Maintain up-to-date software cost-effectively, with contract renewals eliminating the need for manual annual renewals.
- **Dongle license protection**
  For dongle license users, optional protection minimises replacement costs in case of loss or theft, ensuring continuous operation.
- **Exclusive tutorials**
  Access a wide range of complimentary tutorials that help users quickly build confidence, deepen their knowledge, and make the most of their software.

By securing an Update/Service Agreement, you ensure your VG software remains cutting-edge, fully supported, and cost-effective, empowering you to focus on achieving optimal results in your industrial CT data analysis endeavours.

Aftercare

VG Academy

Increase your efficiency and master analysis techniques

Whether you are new to the software or an experienced user, VG Academy helps you maximise efficiency and precision in your inspections. With a hands-on learning approach and flexible formats, our training courses are tailored to your needs.

Scan the QR code to learn more about your training options

Our training portfolio

- **Classroom trainings**
  Join us at one of our global training centres
- **E-learning and virtual courses**
  Learn anytime, anywhere and join interactive sessions
- **Onsite training**
  Our VG experts train your team at your location
- **Customised workshops**
  Focused on your specific topics and based on your own data sets





“The course is extremely interesting and well structured. Lectures are straightforward and very enlightening.”

Training participant

Industries and use cases

Built for your toughest standards

See where VG is trusted when precision cannot fail

When quality is non-negotiable, you choose VG software.

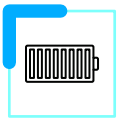
Transform industrial NDT data into clear, actionable insights, ensuring precision, reliability, and efficiency at every stage. For manufacturers, engineers, and researchers across industries, VG delivers the tools to detect defects, validate dimensions, and optimise production and part design. VG software has been co-developed with industry leaders where the stakes are highest, ensuring unmatched accuracy and total quality improvement.

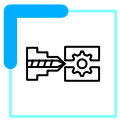
If quality defines your success, VG is the software you trust.

Our users work in industries like these:


Automotive manufacturing


Aerospace engineering


Battery development


Injection moulding


Additive manufacturing


Casting


Science and research


Defense


And more

To solve challenges like these:

Application	Software	Key features
Material quality analysis	VGSTUDIO MAX	Evaluate imperfections: porosity/inclusion analysis, fibre orientation analysis, foam/powder analysis, smart and AI-assisted segmentation.
Dimensional metrology	VGMETROLOGY	Full GD&T functionality: nominal/actual comparison, wall thickness analysis, advanced surface determination.
In-line and at-line automation	VGinLINE	Fully and semi-automated inspections and workflows, adaptable inspection plans, task distribution for reliable speed, smart and AI-assisted segmentation.
R&D and prototyping	VGSTUDIO MAX	Material property analysis, digital volume correlation, simulation, volume meshing.
Data sharing and collaboration	myVGL	Free viewing tools for .vgl and .mvgl files to share insights across teams effortlessly.

Industries

Aerospace engineering

When even the smallest flaw isn't an option

Learn more about our solutions for aerospace

From composite fuselage panels to turbine blades, every aerospace component must be lightweight, durable, and entirely defect-free, but traditional inspection methods often leave critical gaps. With VG, you don't have to compromise.

Struggling to detect sub-millimetre cracks in composite materials? VG software sees what the human eye, and even many inspection tools, can't. Rely on VG software to gain insights that keep aerospace safe, efficient, and ahead of the competition.

Together, we'll tackle your critical industry challenges

Safety

Meet "zero defect" standards
Safety-critical requirements leave no room for error. VG software delivers precise, reliable inspection data with automation features that minimise risk and reduce human error.

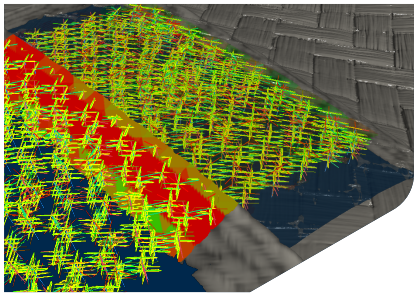
Speed

Achieve precision metrology
Gain a holistic view of part quality, reduce iterations, and get it right the first time with VG's inspection insights and automation, maximising output while cutting costs.

Sustainability

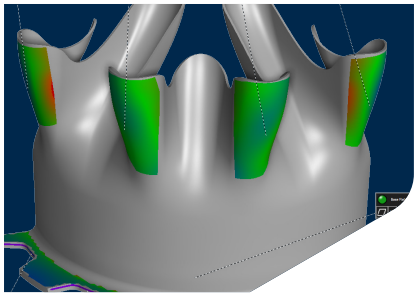
Validate performance
Merge reliable insights into real-world parts with powerful simulation capabilities to drive innovation in aircraft design and production, resulting in weight savings, reduced noise pollution, and decreased fuel consumption.

Key analysis capabilities



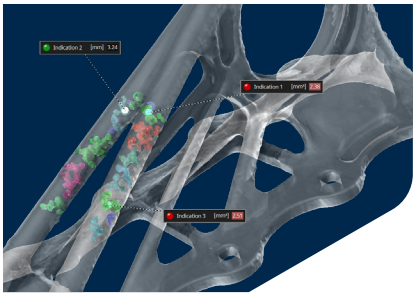
Fibre composite material analysis

Visualisation of fibre orientation and properties in woven composites.



Coordinate measurement

Visualisation of profile and flatness tolerances on a turbine, with colour-coding for easy identification of critical zones.



Porosity/inclusion analysis

Easily detect, characterise, and visualise porosity and inclusions with volume-toleranced indications.

Industries

Automotive manufacturing

Driving the mobility revolution

Learn more about our automotive solutions

In your industry, every component—from engine blocks to battery enclosures—must not only meet strict tolerances but also endure stress and perform flawlessly over time. Traditional inspection methods can lead to slow processes, missed defects, and costly rework. With VG software, you eliminate that risk.

Facing porosity issues in cast aluminium parts? Detect even the most minor inclusions before they become structural failures. Looking to automate quality inspection? Our AI-driven solutions accelerate inline inspection, making it faster and more reliable than ever. VG software empowers the automotive industry to lead confidently, ensuring quality, minimising waste, and accelerating production.

Together, we'll tackle your critical industry challenges

Safety

Achieve comprehensive quality assurance
Utilise advanced inspection and analysis tools to detect potential safety issues early in the design and manufacturing process.

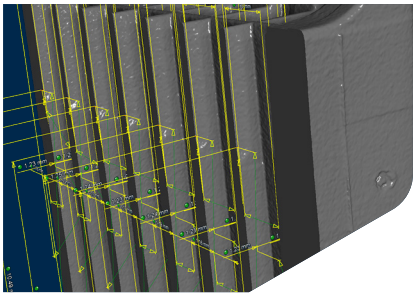
Sustainability

Optimise part design
Implement simulation and testing technologies to develop lightweight, efficient components that reduce emissions and fuel consumption.

Time-to-market

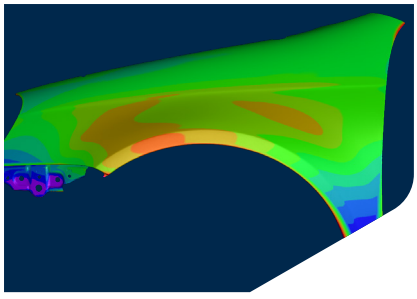
Streamline production processes
Leverage digital twins and virtual prototyping to speed up product development cycles and reduce time-to-market.

Key analysis capabilities



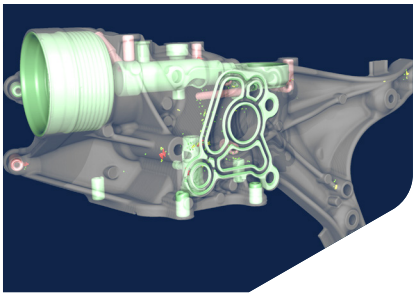
Coordinate measurement

3D clipped view of a measurement on a plastic injection-moulded connector.



Automation

Nominal/actual comparison of an optical scan of a fender against the nominal part.



Porosity/inclusion analysis

The P 203 analysis is used to define regions with corresponding tolerances.

Industries

Battery inspection

Longer life, safer cells, better performance

Learn more about our battery inspection

Battery technology is evolving fast, and quality control must keep up. Defects in battery cells can lead to shortened lifespan, reduced performance, and even safety risks. Regardless of end use, costs caused by poor quality in a battery can be astronomical, resulting in global recalls and double-digit losses in production.

VG software provides the answer. Need to detect microscopic defects in electrodes? We see what traditional inspection methods can't. Struggling with anode overhang? VG's specialised analysis tools ensure maximum efficiency and longevity. Concerned about battery degradation over time? Our Digital Volume Correlation (DVC) feature tracks internal changes across charge cycles, giving you a deeper understanding of material behaviour. Let us help you push the limits of performance, reliability, and safety.

Together, we'll tackle your critical industry challenges

Safety

Ensure unmatched quality
Implement rigorous testing protocols to identify and mitigate potential battery design and manufacturing failure points. Detect anode overhang and electrode misalignment affecting battery performance.

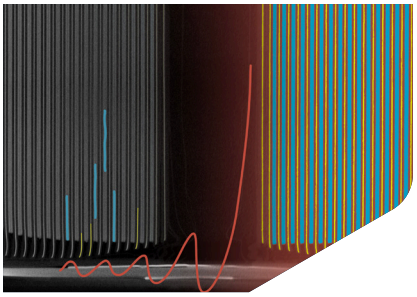
Innovation

Accelerate development and efficiency
Employ cutting-edge segmentation techniques to explore new materials and designs that improve energy density and longevity. Make progress in battery design and component microstructure characterisation.

Speed

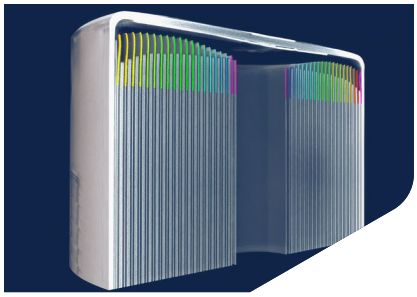
Transform production operations
Identify production defects early to reduce waste and improve yield. Train deep-learning-based segmentation models in-house, keeping your data safe and enabling quality inspection that keeps up with production without sacrificing accuracy.

Key analysis capabilities



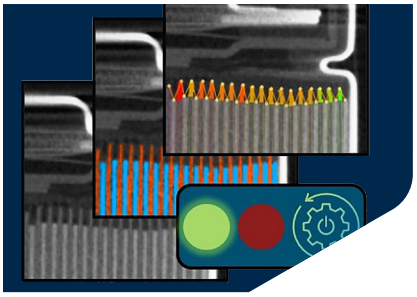
Advanced segmentation

Our Paint & Segment tool segments structures within your dataset effortlessly. Simply paint some example voxels and we'll handle the rest.



Battery anode overhang analysis

Analyse internal battery structures with the Battery Anode Overhang Analysis using precise 3D segmentation.



Automation

VG software enables a fully automated inspection of your entire production.

Industries

Additive manufacturing

Your work without the guesswork — see inside every layer

Learn more about VG in additive manufacturing

Complex geometries, lightweight structures, and rapid iteration make additive manufacturing (AM) revolutionary, but only if quality can keep up. Traditional inspection methods struggle with internal defects, residual stress, and inconsistencies in powder-based manufacturing. With VG software, you don't have to rely on trial and error.

Printed parts not matching CAD models? Our nominal/actual comparison tools highlight even the slightest deviations. Need to ensure internal strength without excess material? VG's volume meshing and simulation features predict real-world performance. Struggling with powder consistency? We provide detailed powder analysis to optimise AM processes from the ground up.

Move from prototype to production with confidence—with VG software.

Together, we'll tackle your critical industry challenges

Accuracy

Verify complex geometries
Compare printed parts against CAD models to detect deviations. Iteratively optimise your additively manufactured part's shape to make sure even complex, thin-walled parts fit together perfectly.

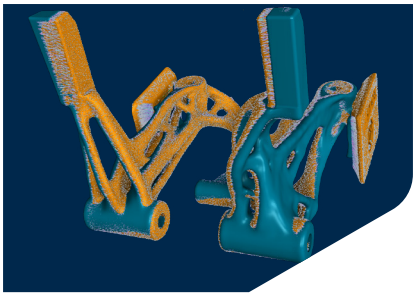
Integrity

Ensure your parts perform
Identify porosity, inclusions, and internal inconsistencies affecting mechanical integrity to ensure your AM parts meet performance criteria. Use these insights to refine printing techniques and improve part consistency.

Innovation

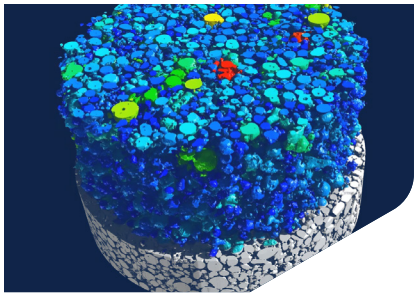
Optimise process parameters
Leverage our specialised powder analysis to identify potential quality issues before the first print. With our range of material analysis options, easily explore new materials and their properties for AM applications.

Key analysis capabilities



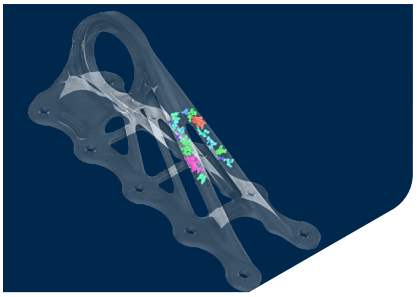
Compensation mesh

Utilise deformation fields to correct discrepancies between actual and reference objects.



Foam and powder analysis

Measure particle size distributions in powder for additive manufacturing.



Porosity/inclusion analysis

Easily detect, characterise, and visualise porosity and inclusions with volume-toleranced indications.

Industries

Casting

Flawless quality — from first pour to final part

Learn more about VG in casting

In casting, flaws hide beneath the surface. Porosity, shrinkage, and tool wear can mean costly rework, rejected parts, and production slowdowns. Catching defects before they lead to failures is critical, but traditional methods often fall short.

With VG software, you can see what's happening inside, non-destructively. Struggling with porosity in aluminium castings? Our software detects and quantifies it with precision. Need to optimise your mould? VG provides geometry correction tools that help extend mould life and improve consistency. Concerned about maintaining tolerances? Our advanced metrology tools ensure every part meets exact specifications.

VG software helps foundries produce higher-quality parts with less waste and greater efficiency.

Together, we'll tackle your critical industry challenges

Reliability

Detect hidden flaws
Detect hidden defects such as porosity, shrinkage cavities, and inclusions before they lead to production issues.

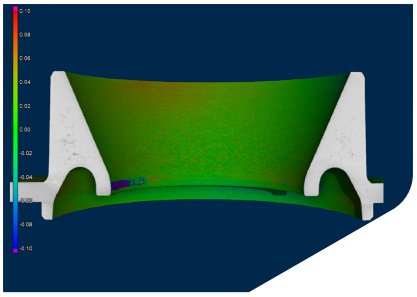
Precision

Ensure dimensional accuracy
Achieve superior accuracy in fewer iterations by validating tooling and accounting for material shrinkage and deformation. Analyse part defects to enhance and optimise the entire production process.

Consistency

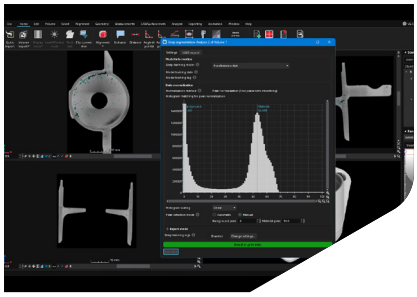
Meet customer demands
Extend the lifespan of moulds and tools by optimising designs to minimise wear and ensure uniformity across production batches. Deliver consistent product quality to meet industry standards and fulfill customer expectations.

Key analysis capabilities



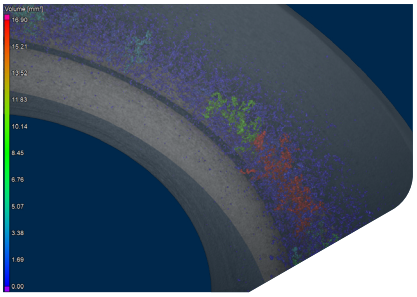
Nominal/actual comparison

Nominal/actual comparison of a cast part, with colour overlay to directly identify areas of increased deviation.



Deep segmentation

Detect indications in challenging CT scans using AI and our Deep Segmentation feature.



Porosity/inclusion analysis

Visualisation of a 3D defect analysis on a casting with increased transparency to reveal internal pores.

Industries

Injection moulding

Stronger, more consistent parts

Learn more about VG in injection moulding

In injection moulding, unseen defects can compromise performance and durability. Porosity, fibre orientation, and warpage lead to rework, scrap, and production inefficiencies. Detecting and correcting these issues early is essential, but traditional inspection methods only see the surface. VG software reveals what's inside—without cutting parts open. Are you struggling with fibre misalignment in reinforced plastics? VG maps fibre orientations for optimised strength and performance. Are you concerned about porosity affecting durability? Our software quantifies voids and inclusions with precision. Do you need to improve mould accuracy? VG's geometry correction tools refine moulds to reduce warpage and ensure perfect fits.

When complexity increases, tolerances get tighter, and the goal is zero defect production, VG is your software of choice.

Together, we'll tackle your critical industry challenges

Stability

Ensure quality in every production run
Utilise advanced analyses to maintain high precision and quality. Identify porosity, fibre misalignment, sink marks, and warpage before production failures occur.

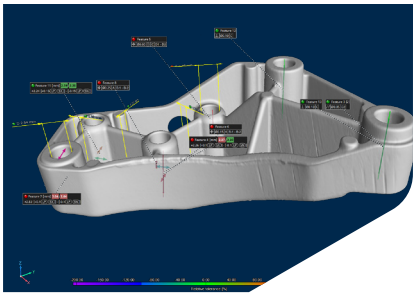
Efficiency

Invest in quality at the right stage
Lower your running costs on fixtures and their qualification by applying VG's Fixture Simulation feature in R&D and quality control.

Time-to-market

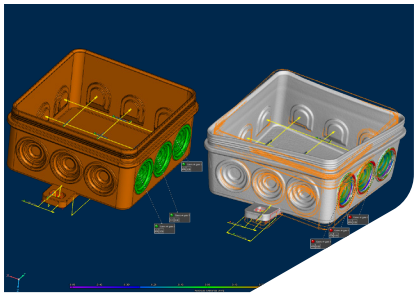
Make multiple iterations a thing of the past
Advanced software capabilities enable you to use scan data of manufactured parts to optimise your mould designs. Validate tooling and compensate for shrinkage, warpage, and material flow inconsistencies.

Key analysis capabilities



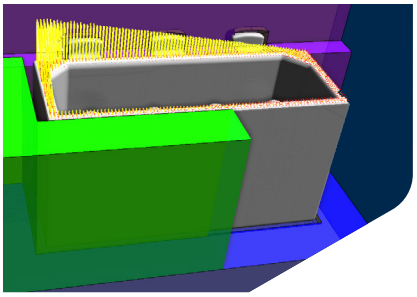
Coordinate measurement

Evaluate part geometries using a comprehensive set of tolerances and dimensions.



Adaptive measurement template

Automatically evaluate morphed parts without manual adjustments.



Manufacturing geometry correction

Adjust your part or mould CADs to compensate for deviations in produced parts.

Industries

Science and research

Learn more about VG in science and research

Reveal the unseen and unlock new discoveries

In science and research, understanding what lies beneath the surface is essential. Traditional methods often involve destructive testing, time-consuming sample preparation, or limited visibility into internal structures. VG software changes that. With high-precision visualisation and analysis, researchers in biology, archaeology, palaeontology, geology, and medical science can explore complex structures non-destructively, gaining deeper insights into materials, organisms, and artefacts than ever before.

Need to segment delicate fossils or biological tissues? VG makes it easy to separate structures with advanced, AI-driven segmentation. The only thing more exciting than your next great discovery? Sharing it with the world thanks to VG software's tools for stunning visualisations and animations.

Together, we'll tackle your critical industry challenges

Precision

Achieve subvoxel accuracy with standardised methods
Ensure precision and reproducibility with advanced segmentation tools, sub-voxel precise analysis, and standardised workflows, which provide reliable insights into biological and material structures.

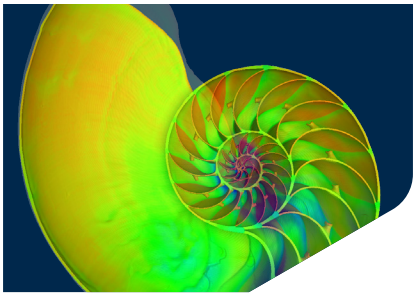
Versatility

Experience a comprehensive, all-in-one solution
With a complete toolbox and multiple features, perform everything from reconstruction to volume analysis and visualisation. It is compatible with CT, MRI, neutron tomography, and synchrotron scans for maximum flexibility.

Efficiency

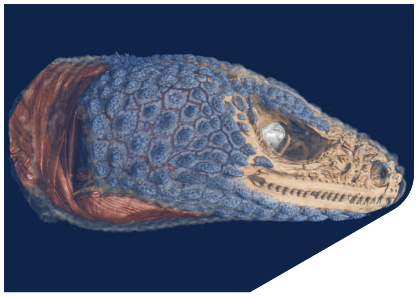
Automate workflows for time-saving analysis
Leverage AI-based segmentation tools and macro-capable automation for efficient analysis. Our software streamlines processes, freeing up valuable time for more critical tasks.

Key analysis capabilities



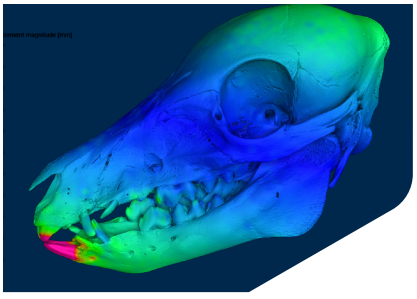
Wall thickness analysis

Wall thickness analysis on a nautilus (Allonautilus scrobiculatus) with a 3D clipping element to reveal inner structures for comparative anatomy. By analysing wall thickness, biologists can learn how the species adapts to different water depths.



Visualisation

Visualisation and segmentation of a Xenosaurus skull for comparative morphological analysis, courtesy of Edward L. Stanley, Florida Museum of Natural History.



Digital volume correlation

Digital volume correlation and annotations used for landmarking on a pig's skull (Sus scrofa) to compare specimens and quantify changes in anatomical structures.

Benefits to you

Built for the long run

Designed for longevity, scalability, and lasting impact

VG is a one-time investment that keeps delivering, no matter how your inspection needs evolve. Designed to grow with your workflow, VG remains compatible with NDE systems, expanding 3D data sources, and your latest industry demands. What's more, the interface remains consistent across all VG products, so once it's in place, it stays efficient, adaptable, and ready to meet your next challenge.

AI-driven insights

Limits are off when AI is on. With tools like VGTRAINER, leverage AI-assisted segmentation to ensure accurate, repeatable results with no expertise required.

Automation and templates

Work smarter, not harder. Customisable macros and batch processing streamline inspections and reduce manual effort.

Intuitive interface

One platform, limitless potential. A unified, intuitive interface keeps navigation smooth and efficiency high.

Collaboration made simple

Share insights instantly. Export data in .vgl and .mvgl formats or use free viewers like myVGL for seamless teamwork.

Reporting and integration

Share data your way. Export interactive HTML reports or send results directly to Metrology Reporting or Q-DAS, no specialist software needed.

Support and training

On-demand resources, expert guidance, and local VG Academy training courses ensure you can quickly maximise on software capabilities.



Benefits to you

End-to-end versatility. No, but really.

See how VG is adaptable to your industry and workflow

Manufacturers, engineers, and researchers face relentless pressure to ensure quality, optimise production, and stay ahead of evolving industry demands. Whether you're struggling with defect detection in high-volume manufacturing, trying to validate next-generation materials, or looking for a seamless way to automate quality control, the right tools make all the difference. VG software is designed to adapt to your workflow, no matter the challenge—helping you inspect with confidence, automate faster, and make better decisions.

R&D and prototyping

Refine designs with confidence. Get non-destructive insights to validate tools, analyse precision, and optimise early-stage development.

Warranty and reclaim

Turn failures into future improvements. Identify root causes with detailed defect analysis, reducing risk and enhancing product reliability.

Production and inline quality control

Catch defects before they cause problems. Automate inspections to detect flaws early and maintain zero-defect standards at speed.

Hardware independence

No limitations, no lock-in. Seamlessly integrates with most NDT hardware, ensuring flexibility in any workflow.

Customisable and scalable

Built to fit your needs. Editions let you adapt VG software to your industry's toughest challenges.







“The tool set and the power that VG software provides is second to none.”

Delphi Precision Imaging

Ready to talk?

Have questions? Need guidance?

Let's make this easy.
Talk to a VG expert and
get the answers you need

Scan the QR code to contact us

Hexagon is the global leader in measurement technologies. We provide the confidence that vital industries rely on to build, navigate, and innovate. From microns to Mars, our solutions ensure productivity, quality, safety, and sustainability in everything from manufacturing and construction to mining and autonomous systems.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 24,800 employees in 50 countries and net sales of approximately 5.4bn EUR.

Learn more at hexagon.com

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