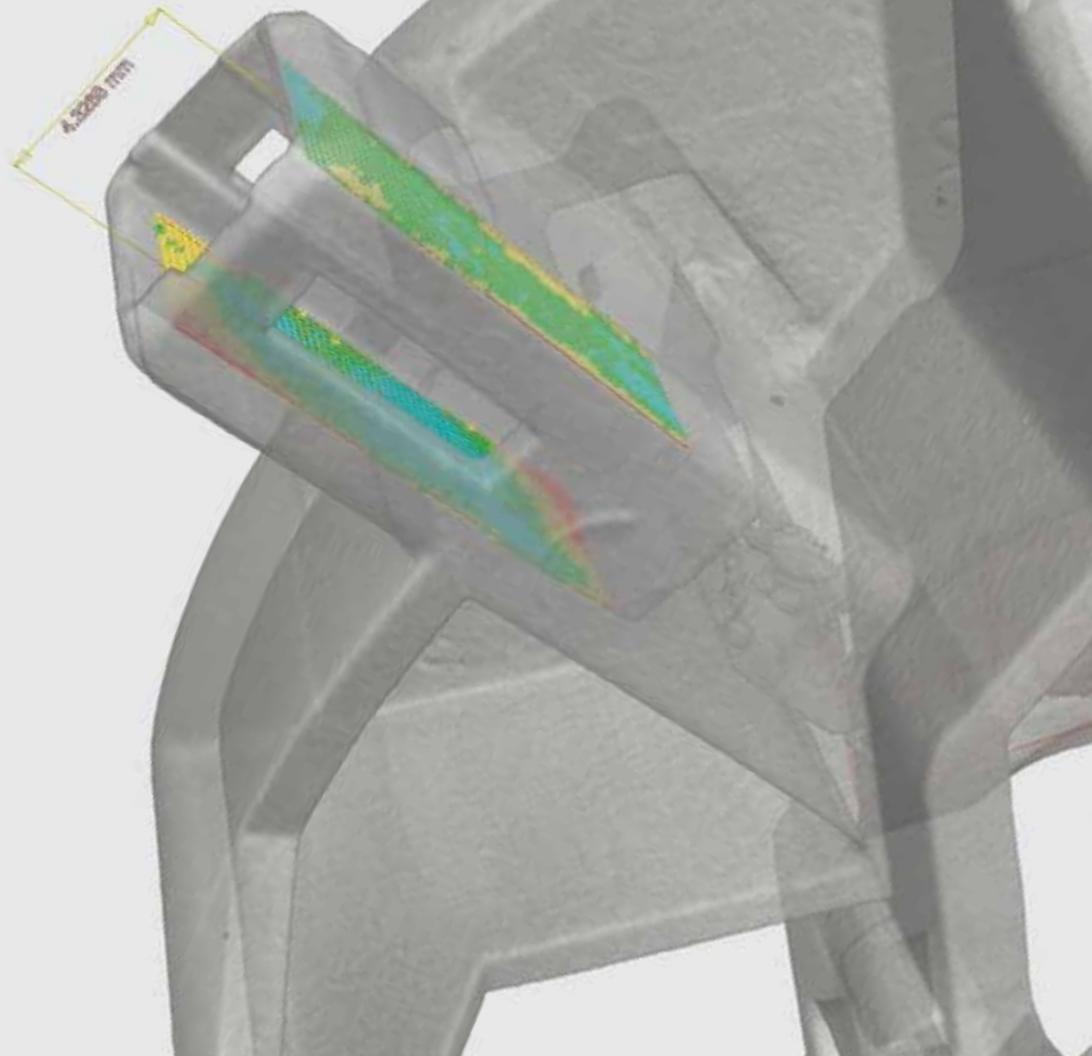


YXLON CT Metrology

High-resolution computed tomography systems
for dimensional measurement

A step ahead in CT Metrology



What's so special about CT Metrology?

Do you want a non-destructive way to geometrically measure internal and hard-to-access areas of industrial items? Do you want to use industrial CT to its full effect? Premium dimensional measurement with the YXLON FF CT series for quality assurance (QA) saves time and money.

YXLON CT systems produce volume data which contains comprehensive geometrical information on the inspected item. This enables you to perform a wide variety of tests. An almost unlimited number of reference points can be used to measure the complete part and you can add internal measurements for cavities and material interfaces in hybrids and assemblies.

Regarding wall thickness you can conveniently perform color-coded CAD comparisons. With archived CT data you are able to continue taking measurements without the original part, which also allows you to execute reverse engineering. The software is backward and

forward compatible and therefore future-proof. Plus, you can trace measurement data for safety regulations. The general equation is simple: The combined strengths lead to leaner processes which can in turn initiate cost savings.

When it comes to metrology the FF CT series with premium tubes and detectors is the perfect fit. These systems cover a broad inspection range, whereby the FF20 CT focuses on smaller parts and the FF35 CT with its two X-ray tube sources enables you to measure numerous components and different materials. The excellent, high-resolution image quality allows you to accurately detect defects and discriminate between blowholes and material. Sharp contrast makes exact measurements possible.

The intuitive Gemini user interface facilitates smooth workflow thanks to its easy touchscreen operation. Granite-based manipulation and angular encoders from market leader Heidenhain contribute to the high precision of the systems.

Strengths of YXLON FF CT series metrology

- Precise, non-destructive measuring, also of interior structures
- Measurements of minute structures
- Non-sequential fast data acquisition with almost unlimited measurement points
- Substantial time savings via seamless defect analysis and nominal/actual comparison
- Reduced correction loops
- Fewer correction costs
- Conformity to the VDE/VDI 2630 standard set by the Association of German Engineers



YXLON FF35 CT



CT inspection items
in accordance with VDE/VDI 2630



Experience CT Metrology for automotive injection molding

Injection molding in the automotive industry is a production technique where the YXLON FF CT series' ability to non-destructively measure interior structures truly pays off. CT measurement for molded parts helps establish rapid workflow and all the data you need. In contrast, specimen inspections based on drawings using conventional tactile and optical measuring technology require several set-ups and alignments as well as many work steps and many hours of work by several professionals.

Unlike tactile measuring, CT scans of molded parts offer a comprehensive solution because they provide a highly accurate surface approximation when subsequently performing reverse engineering for tool corrections.

The FF CT series also excels at dedicated reporting for injection molding. You can document the results according to your quality assurance requirements. The FF CT software features an open interface that allows you to continue using your pre-existing metrology software packages. On top of that, our global YXLON Life Cycle Service provides support that allows you to achieve accurate measurement results and years of peak system performance.

Global YXLON Life Cycle Service Comprehensive service and support for your system

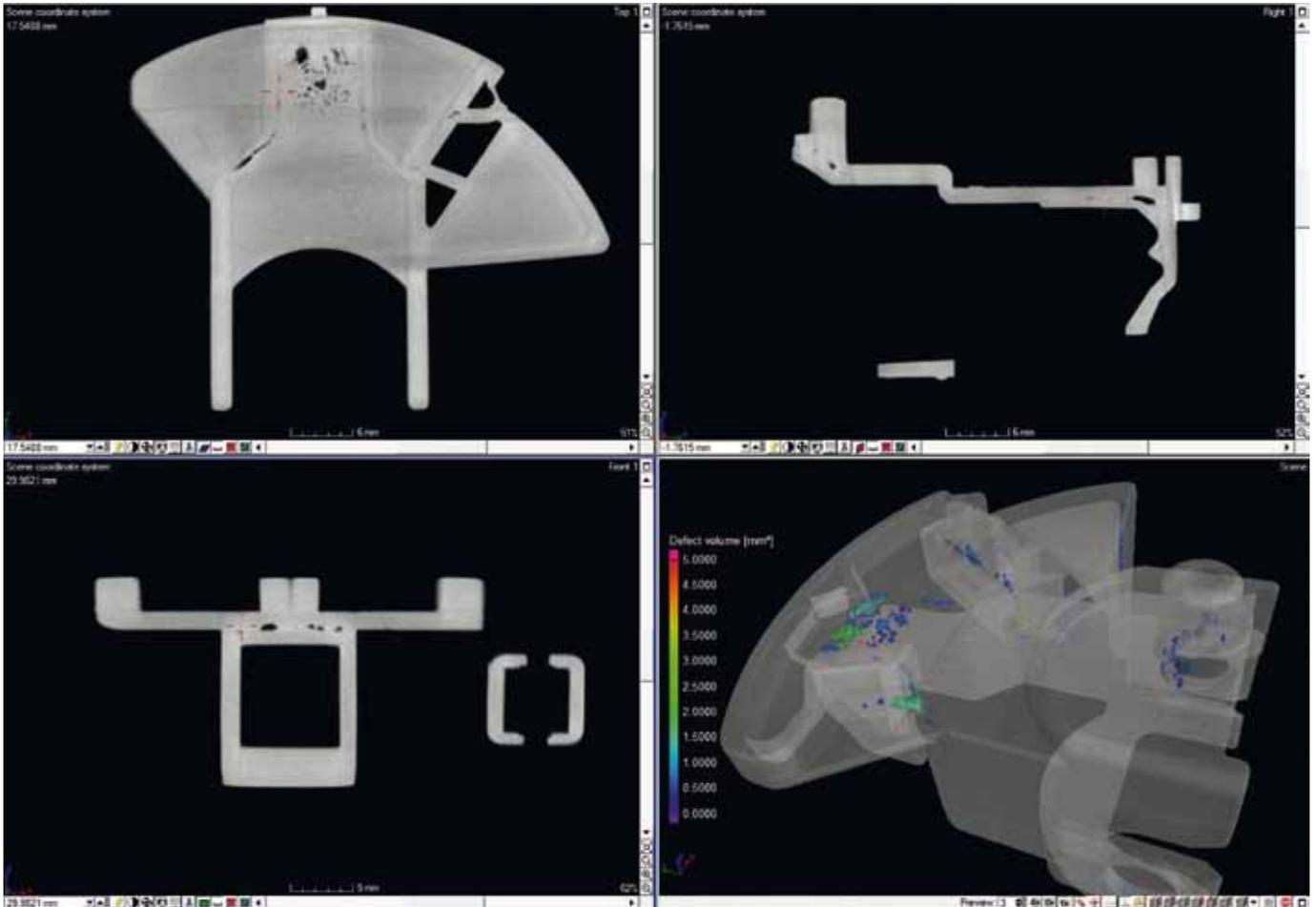
- A wide range of service modules and packages prolong the lifetime of your system
- Highly specialized international service teams support and maintain your system
- Calibration expertise ensures excellent inspection quality and accurate measurement results



Test sample courtesy of **Valeo**

Save time and money with every CT Metrology step

You can conveniently apply the FF20 CT and FF35 CT testing and measurement capacities for all steps involved in injection molding quality assurance for automotive parts. YXLON CT systems enhance this process chain and can help you save a considerable amount of time and money.



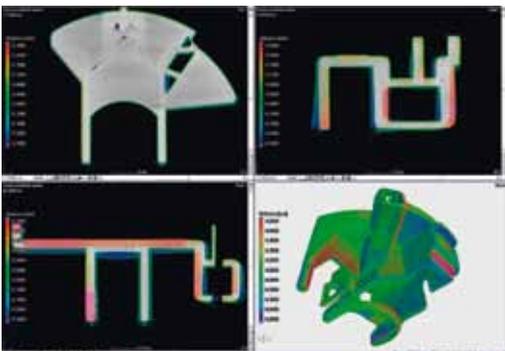
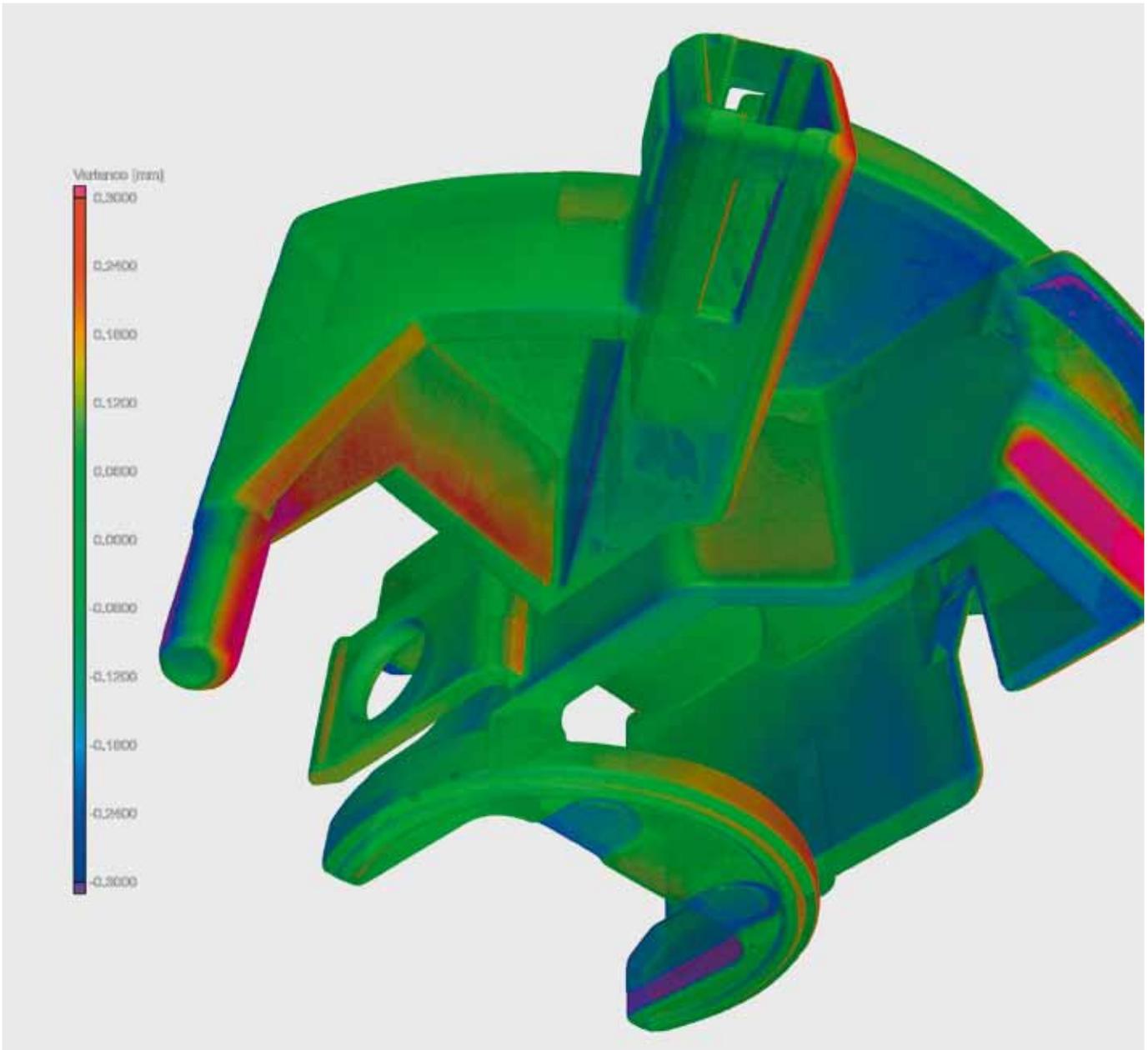
Step 1

Analyze defects and visualize CT section images

With the FF CT series you can easily detect pores and blowholes in the component and evaluate the size and location of the respective defect. As a result, you can:

- Draw conclusions regarding tool quality and functionality
- Evaluate the filling of the injection molding tool
- Use the image which shows the defect to change parameters such as pressure in the tool, injection temperature, and injection point location

Index	Class	Defect	Volume [mm³]	Area [mm²]	Length [mm]	Width [mm]	Height [mm]	Location [mm]	Orientation	Upper [mm]	Lower [mm]
1	Defect 1	Pore	0.171	0.0771	0.1404	0.010	0.010	0.010	0.010	0.010	0.010
2	Defect 2	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
3	Defect 3	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
4	Defect 4	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
5	Defect 5	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
6	Defect 6	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
7	Defect 7	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
8	Defect 8	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
9	Defect 9	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
10	Defect 10	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
11	Defect 11	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
12	Defect 12	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
13	Defect 13	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
14	Defect 14	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
15	Defect 15	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
16	Defect 16	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
17	Defect 17	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
18	Defect 18	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
19	Defect 19	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010
20	Defect 20	Pore	0.171	0.0771	0.0702	0.010	0.010	0.010	0.010	0.010	0.010

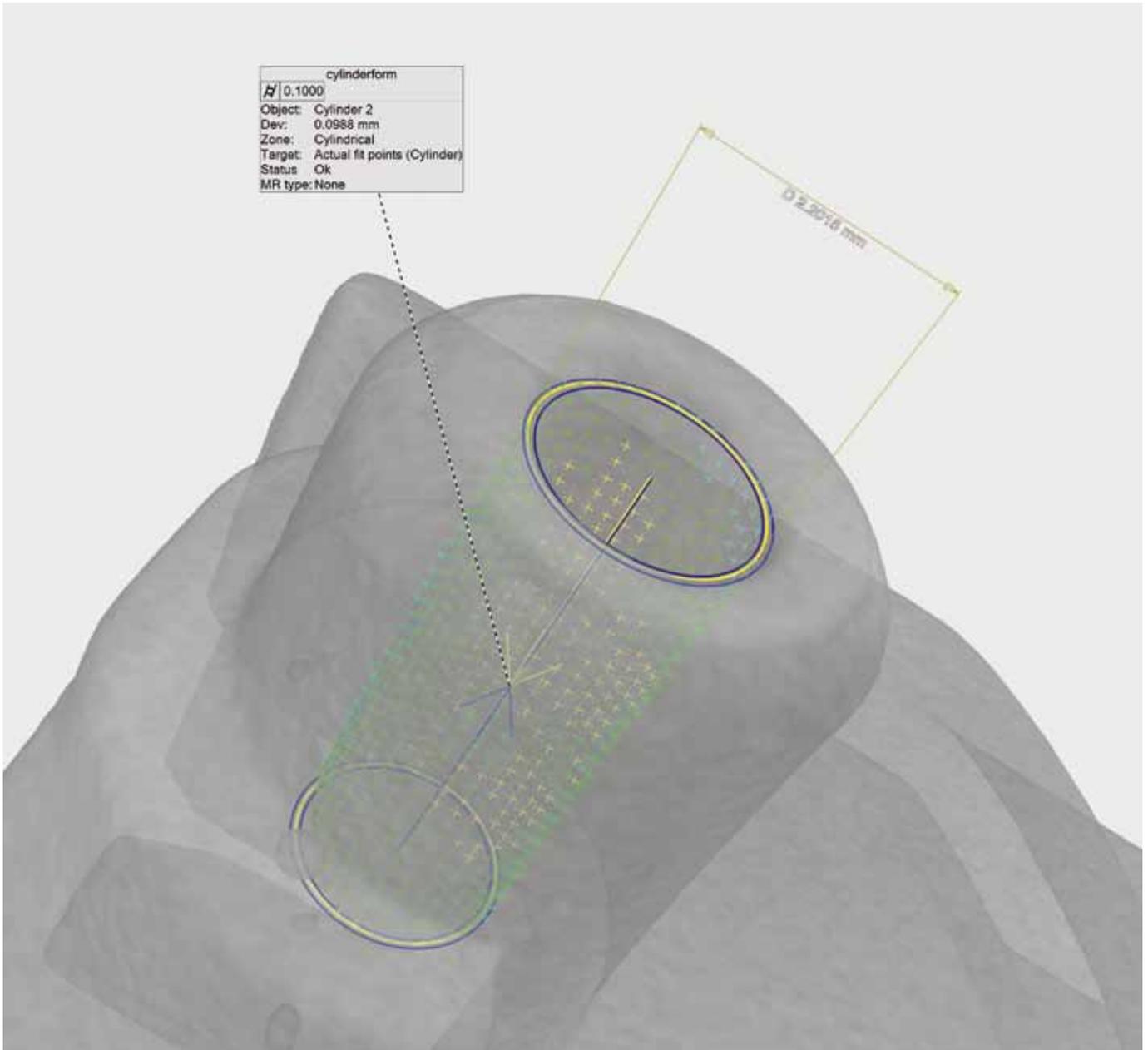


Step 2

Perform nominal/actual comparisons

You can detect large deviations from the CAD target specifications at a glance and evaluate the component. This way, you'll discover manufacturing problems or tool wear immediately. You'll streamline your processes because you:

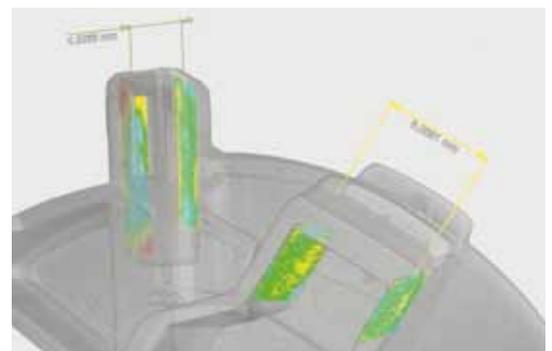
- Have a first-rate criterion for component requalification
- Can carry out dimensional measurements as per drawing in case substantial deviations from the target specifications are identified

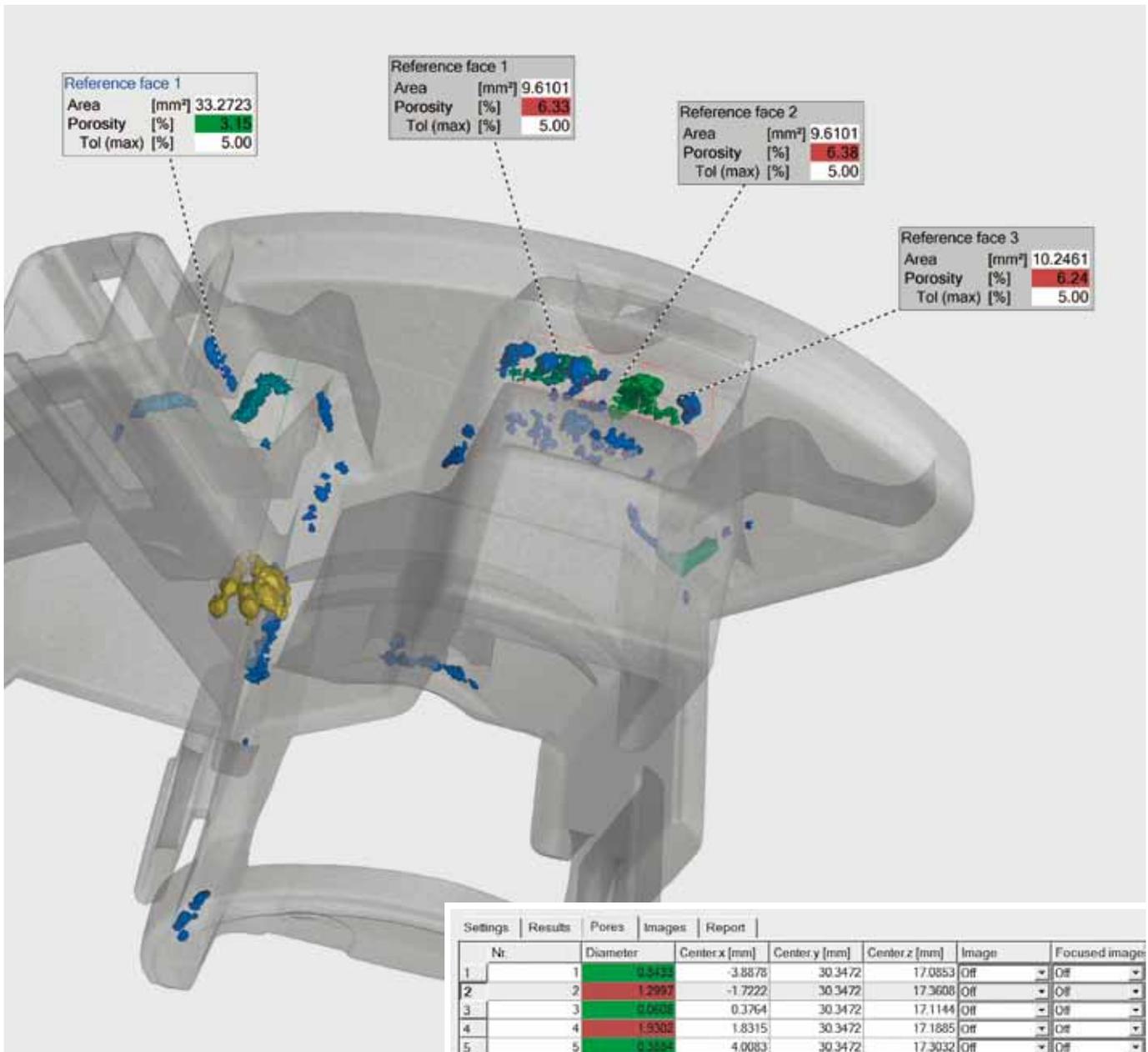


Step 3 Measure the dimensions

You can measure details that you can't identify by optical or tactile means via CT scans. A specimen inspection as per drawing is possible. This allows you to:

- Measure the entire component without changing the alignment
- Customize your processes by adapting your reporting to different users
- Evaluate selected inspection characteristics during testing
- Derivate surface data and deviations for subsequent reverse engineering





Step 4

Apply the P201 analysis to identify porosity percentage

The P201 analysis is the default directive of the authoritative German casting organization. It is another option to monitor processes and suppliers. With P201 you can test the porosity percentage in specific structural areas of an inspected item. Therefore, you can make sure that defined maximum percentages are not surpassed. In detail, these features enable you to:

- Evaluate voids in areas at risk of cracking
- Analyze voids in a variety of ways: the proximity between different voids, how far the void is to the exterior of the item, the total number of voids, and the volume of the biggest void
- Make use of the only non-destructive assessment criteria to date for defect size in relation to component cross-sections

Experience the strengths of non-destructive CT measuring



FF20 CT for fine parts



FF35 CT with dual-tube option for a broad application range

FF20 CT and FF35 CT are premium industrial CT systems especially designed for CT metrology. Even those new to CT scanning can use them right away thanks to the intuitive Gemini user interface. Discover the new future-proof approach to metrology that includes a broad application spectrum, software you can interface with your existing environment, and worldwide service.

Benefit from:

- The ability to measure numerous components and different materials
- Excellent image quality for high-precision defect detection and the exact distinction between blowholes and material
- Sharp contrast that provides great accuracy
- Conformity to the VDE/VDI 2630 standard
- Software with broad compatibility
- Traceable measurement data for secure documentation
- Exact surface extraction capacity through high detail resolution and measurement of fine structures

YXLON

Technology with Passion

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