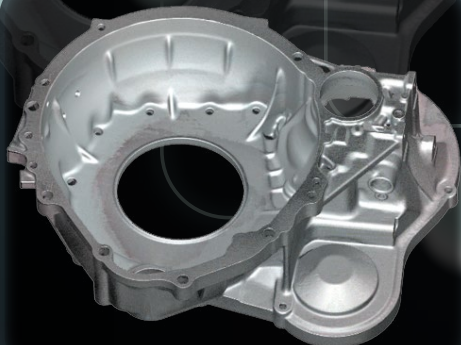
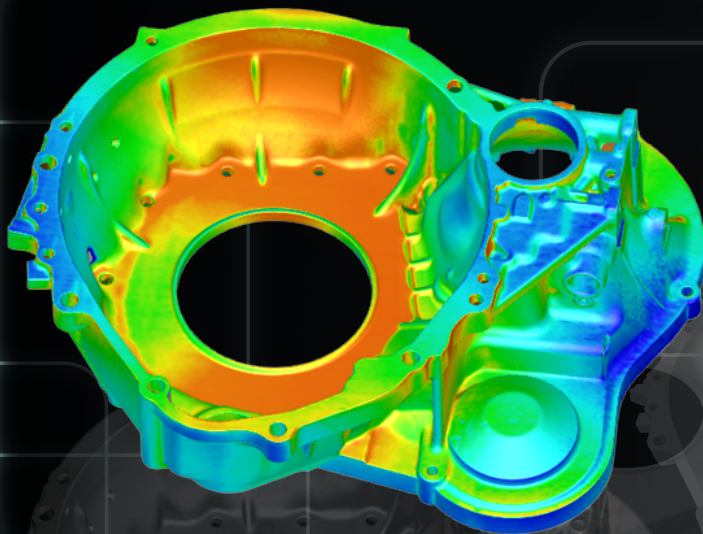


3D Shape Comparison with CAD Models

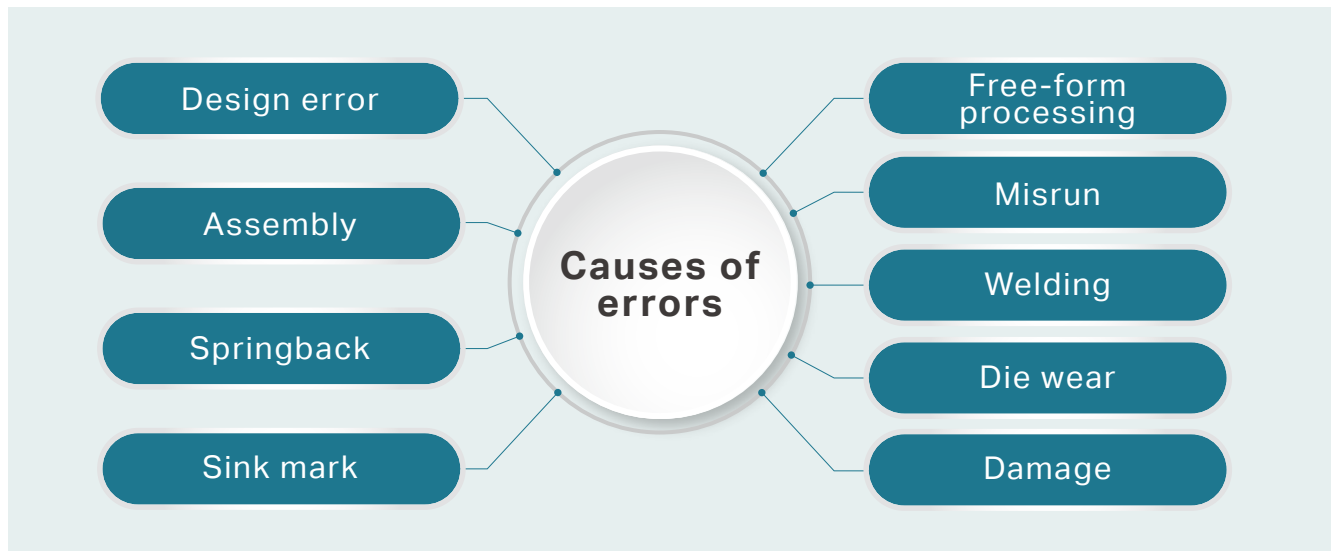
Immediately visualize
differences



VL Series
3D Scanner
CMM

Demand for Shape Measurement

Even though a product may have an ideal profile designed by a technician, it may still be manufactured with profile errors. To identify the cause of the error, the product shape changes must be captured correctly.



Current instruments can perform measurements and compare them to drawings, but:



Hand tools



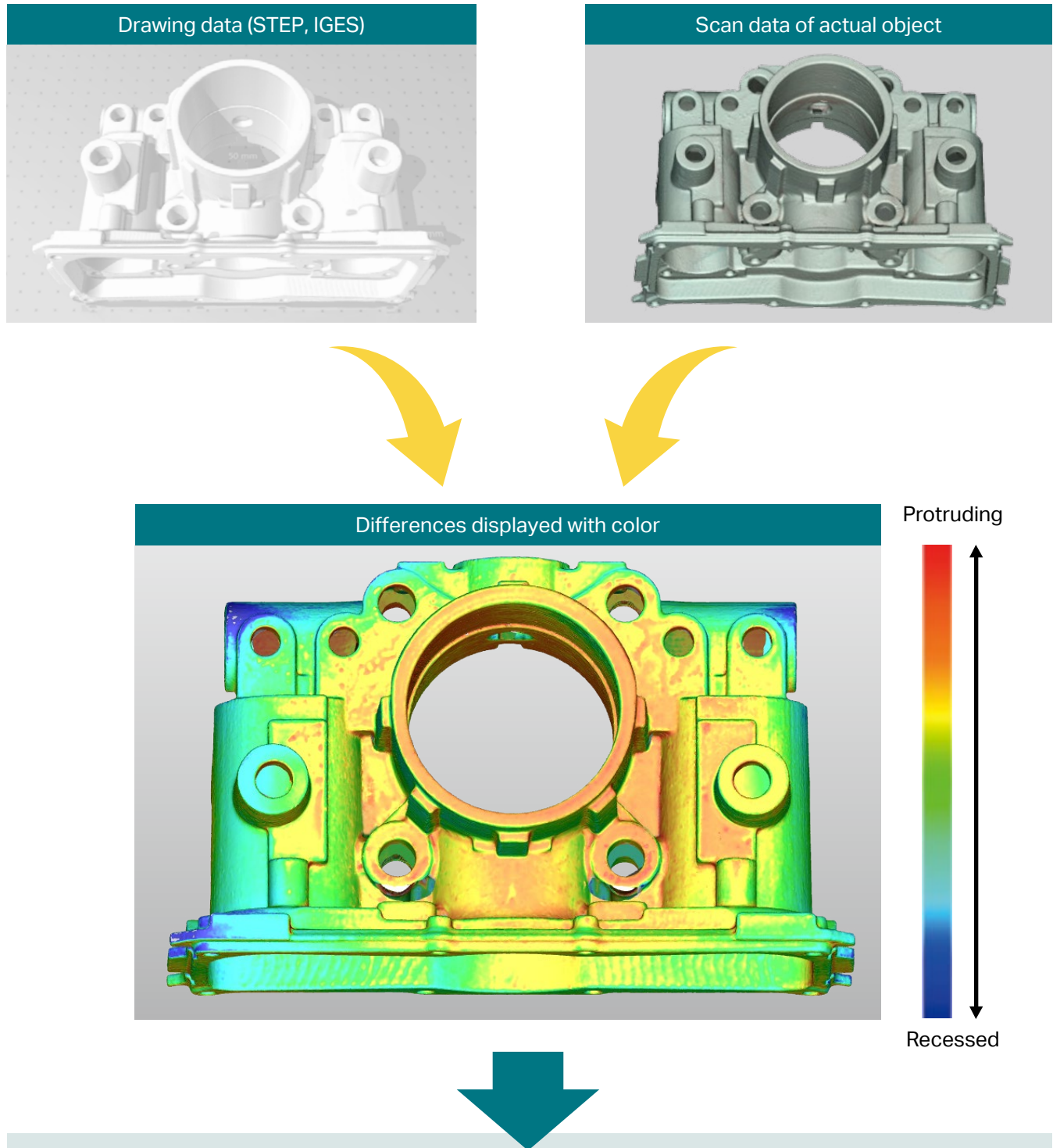
Contact coordinate measuring machine

- This process is very time-consuming because each profile dimension must be compared.
- Free form geometries as well as profile warpage and curvature cannot be compared.

The non-conforming area cannot be identified even with unlimited time, money, and effort.

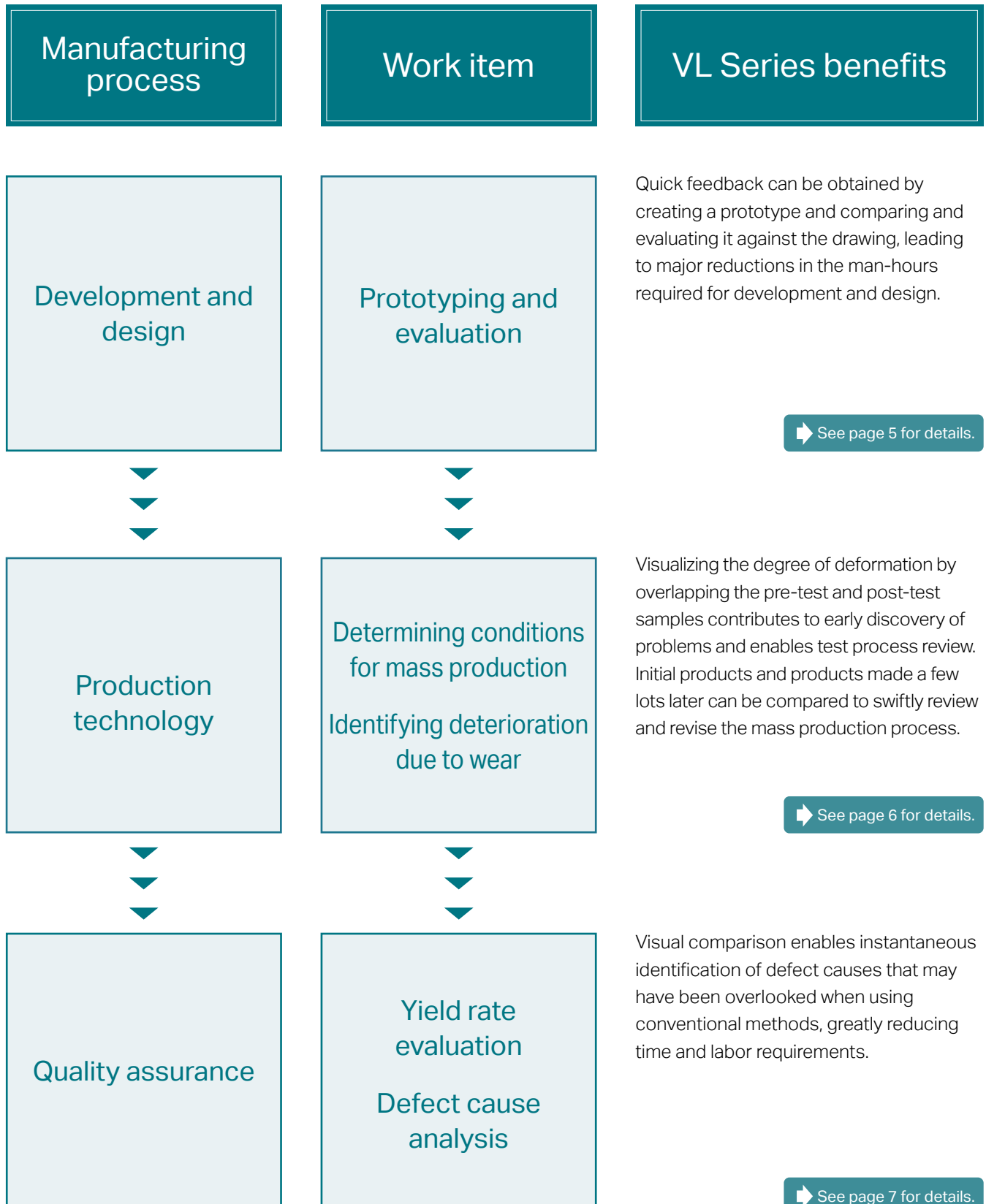
Comparative Measurement with the VL Series

The comparative measurement function overlays the data of the target scanned using the VL Series on 3D drawing data, such as STEP and IGES, and displays the differences with color.

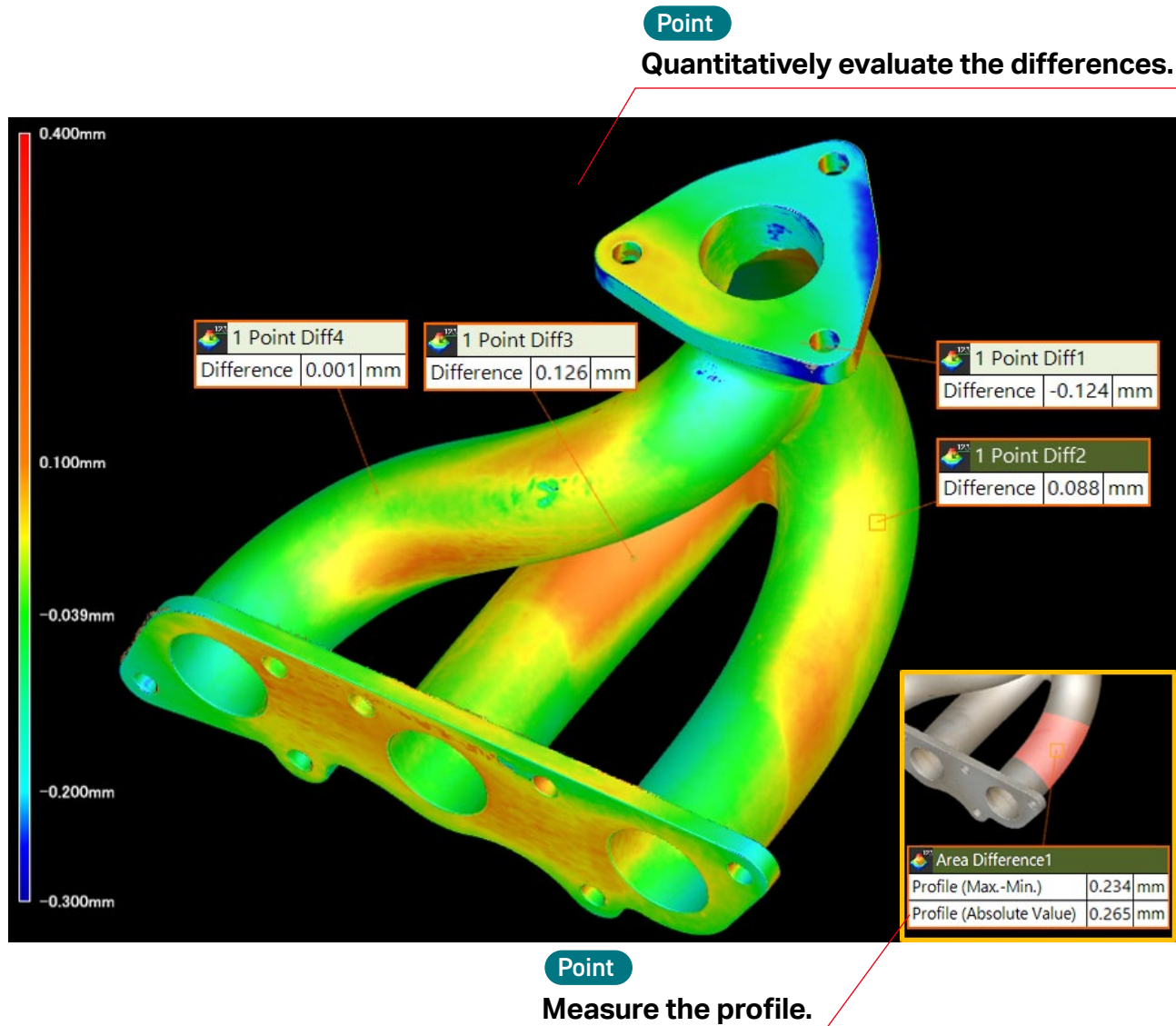


The entire shape is visualized, making any deviations identifiable at a glance.

Comparative Measurement in Manufacturing Processes



Profile shape evaluation of an intake manifold prototype



Standard measurement

When the developer or designer has an inspector measure a product, the intended requirements may not be understood or implemented correctly, not to mention that the measurement itself takes time. Furthermore, deep recesses and free forms are difficult to evaluate, and review and corrections are often insufficient before proceeding to the production process. Corrections may later be deemed necessary, resulting in increased costs, time, and effort.

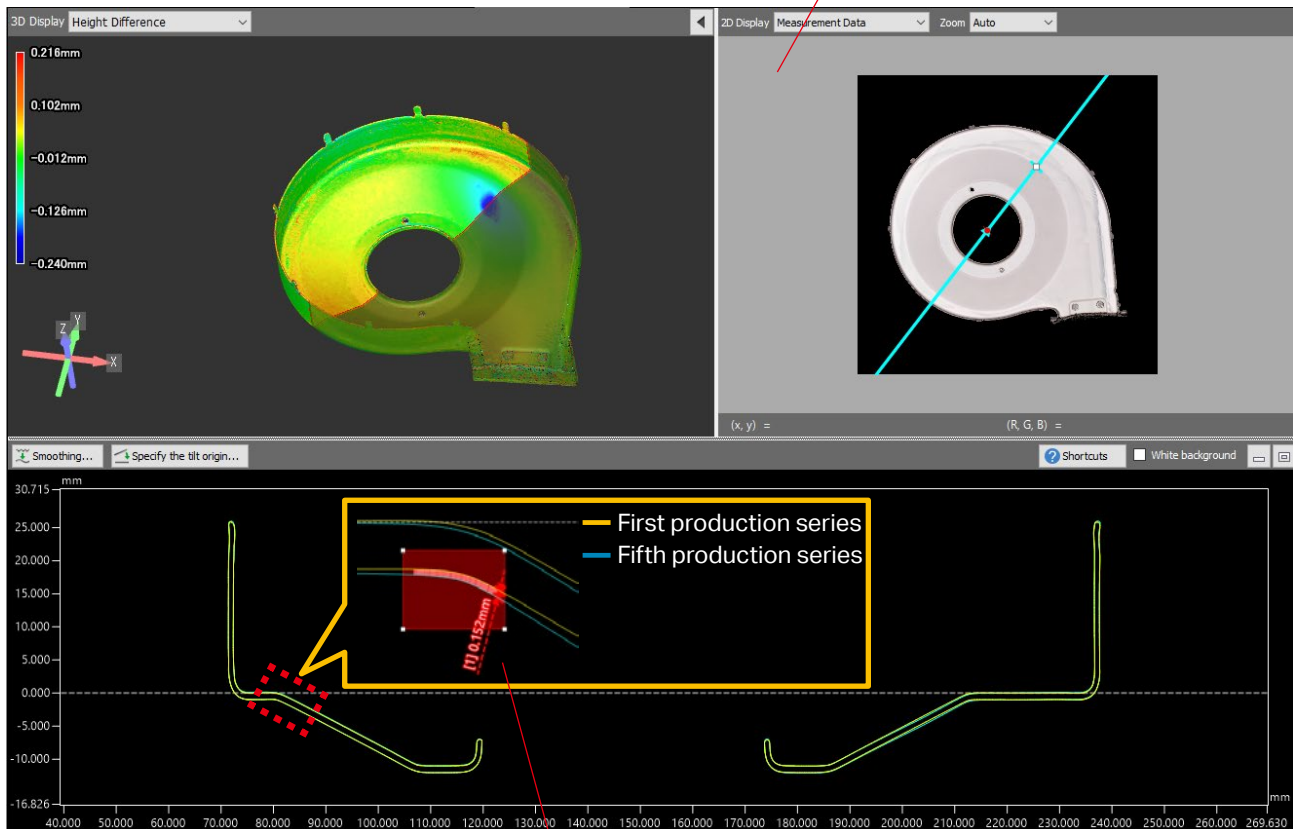
VL Series

The developer and designer can provide feedback on the spot. It is possible to visually identify the parts that need correction by comparing the prototype and drawing. The later in the production process that problems are detected, the more time, money, and effort is required for corrections. The VL Series can drastically reduce these unnecessary costs.

Determining conditions for mass production of a fan cover

Point

Compare two actual products.



Point

View the cross-section of the overlapped images.

Standard measurement

While the dimensions of a simple profile are measured before and after testing, deformation in parts that are difficult to measure, such as free-form shapes, may be overlooked. The review and revision of the test process may be insufficient, leading to defects and complaints.

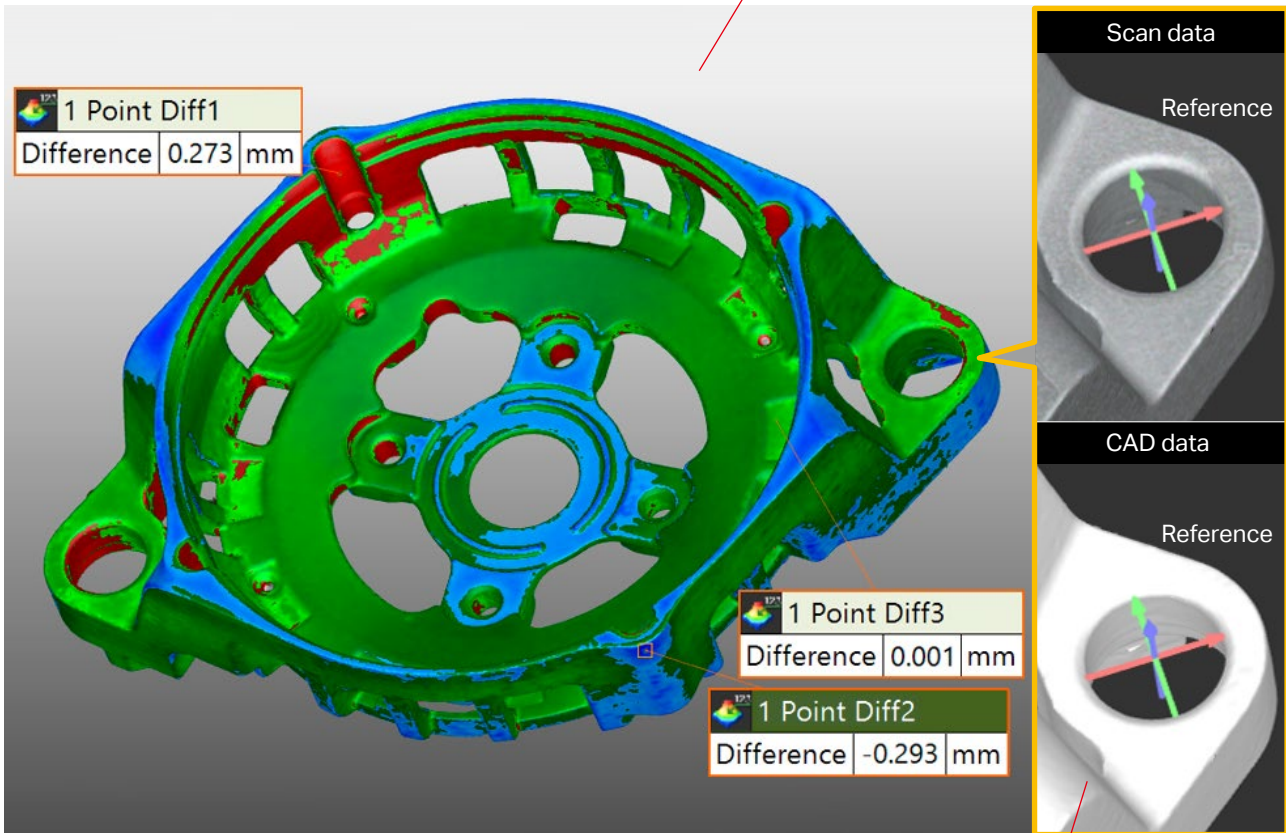
VL Series

Overlapping samples from the initial production and a few lots later can indicate significant deviations between the profiles. The inspected cross-section reveals a slight springback. This makes it possible to proactively make adjustments to the manufacturing process.

Defect cause analysis for an alternator case profile

Point

Display the differences with three colors and set the thresholds.



Point

Align the specified references for positioning.

Standard measurement

If the cause is not identified by measuring various parts of the product with hand tools, the inspector is asked to take additional measurements. The inspector may measure the product using a CMM, but no problem is found in the simple dimensions. There may even be cases where the cause cannot be determined after reviewing each step in the production process.

VL Series

Quality assurance staff measures the product on the spot and compares the measurements with the drawing data. The reference holes are aligned with the drawing for comparison, indicating a protrusion in the other hole. The cause can be traced to the die, enabling measures such as shortening the die replacement cycle to be made.

CONTACT YOUR NEAREST OFFICE FOR RELEASE STATUS

KEYENCE CORPORATION OF AMERICA

500 Park Boulevard, Suite 200, Itasca, IL 60143, U.S.A.

+1-201-930-0100 keyence@keyence.com

KEYENCE CANADA INC.

6775 Financial Drive, Suite 202, Mississauga, ON L5N 0A4, Canada

+1-905-366-7655 keyencecanada@keyence.com

KEYENCE MÉXICO S.A. DE C.V.

Av. Paseo de la Reforma 243, P11, Col. Cuauhtémoc, C.P. 06500, Del. Cuauhtémoc, Ciudad de México, México

+52-55-8850-0100 keyencemexico@keyence.com

CALL TOLL FREE

1-888-539-3623

1-888-KEYENCE

TO CONTACT YOUR LOCAL OFFICE

The information in this publication is based on KEYENCE's internal research/evaluation at the time of release and is subject to change without notice.
Company and product names mentioned in this catalog are either trademarks or registered trademarks of their respective companies.
The specifications are expressed in metric units. The English units have been converted from the original metric units. Unauthorized reproduction of this catalog is strictly prohibited.
Copyright © 2023 KEYENCE CORPORATION. All rights reserved.

03KA-2032-2

KA-US 2053-1 611V15