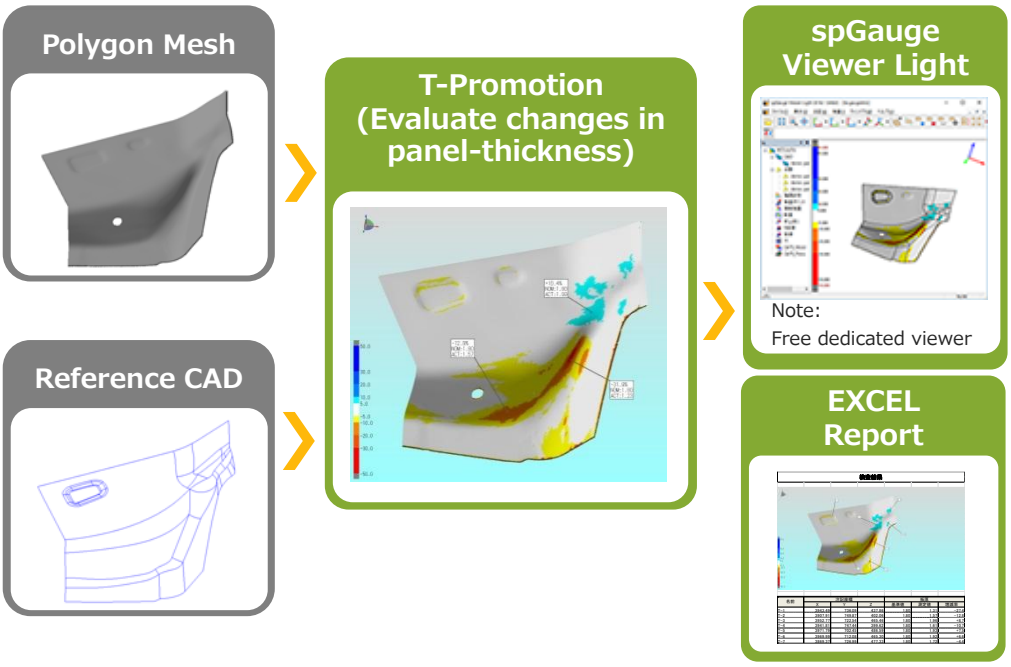
T-Promotion

Panel-Thickness Evaluation System

OVERVIEW

T-Promotion is a system that can evaluate the rate of change in the panel-thickness against the nominal thickness dimension by using polygon mesh data (non-contact measurement data) of the front side and the back side of a pressed panel. The basic operation flow is shown below.



FEATURES

The system was developed due to the pressed panel industry's need to "effectively evaluate a created panel's actual thickness."

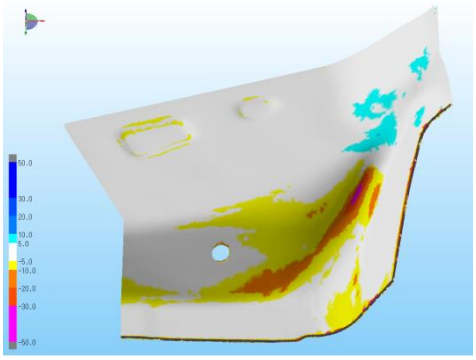
T-Promotion is a system that can evaluate the rate of change in panel-thickness against the nominal thickness dimension by using polygon mesh data (non-contact measurement data) of the front side and the backside of a pressed panel.

It checks for the inclination of the rate of change of the panel-thickness for an entire panel to make sure there is no omission in measurement of the panel-thickness.

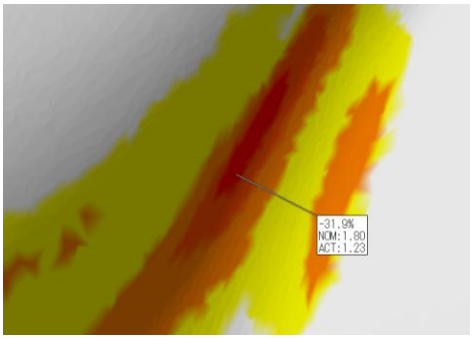
Evaluation of the panel-thickness is useful for the following tasks:

- Utilization of the panel-thickness evaluation during the production preparation phase.
  - Reviewing the state of plastic deformation neck and crack occurrence
  - Identification of the decrease in the panel-thickness generation process: Evaluating the panel-thickness between processing panels to find out at which process the decrease in the panel-thickness is happening.
  - Stamping evaluation: What condition will cause the least decrease in panel-thickness when changing the stamping condition.
- Detect changes by evaluating the panel-thickness regularly after starting a mass production, in order to utilize the evaluation result for maintenance.

CASE STUDY 1

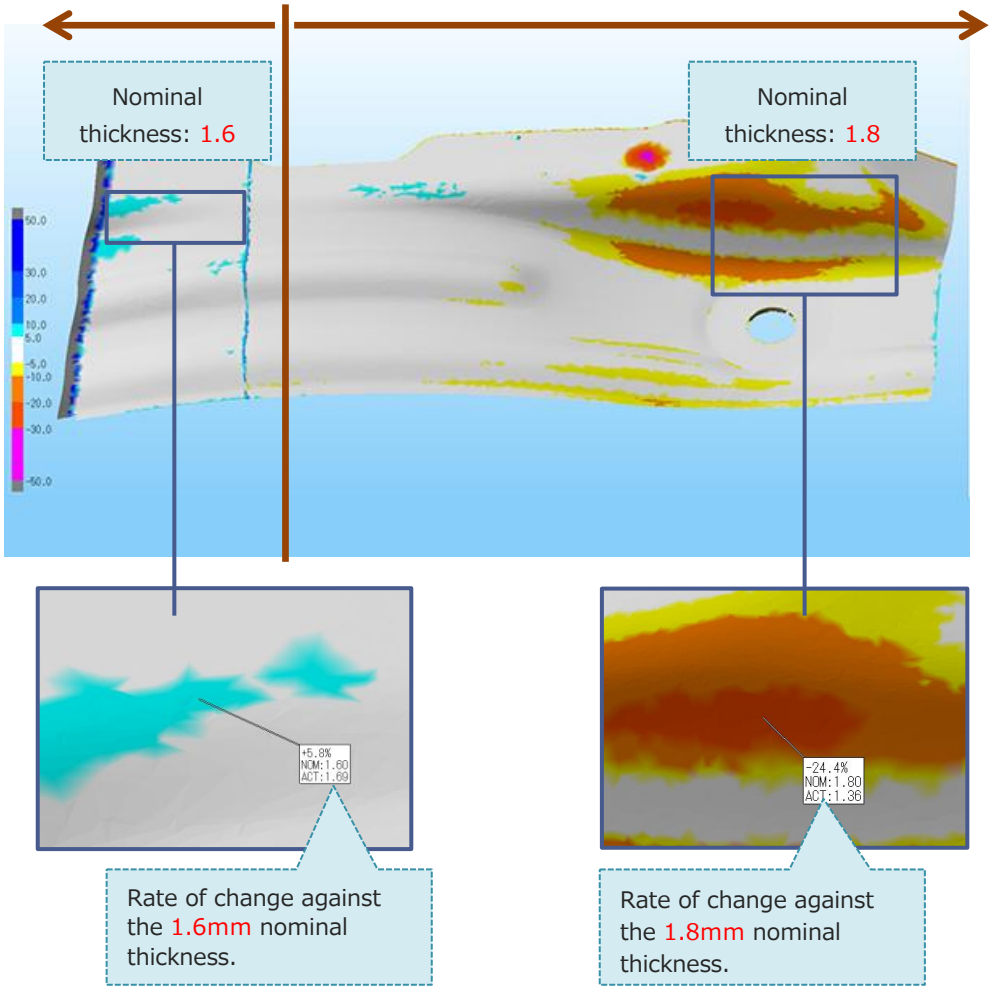


The color map shows the rate of change against the nominal thickness.



The annotation showing the rate of change ('actual measurement'/'nominal thickness') can be placed on an indicated location.

■ An evaluation example of a tailored blanks steel

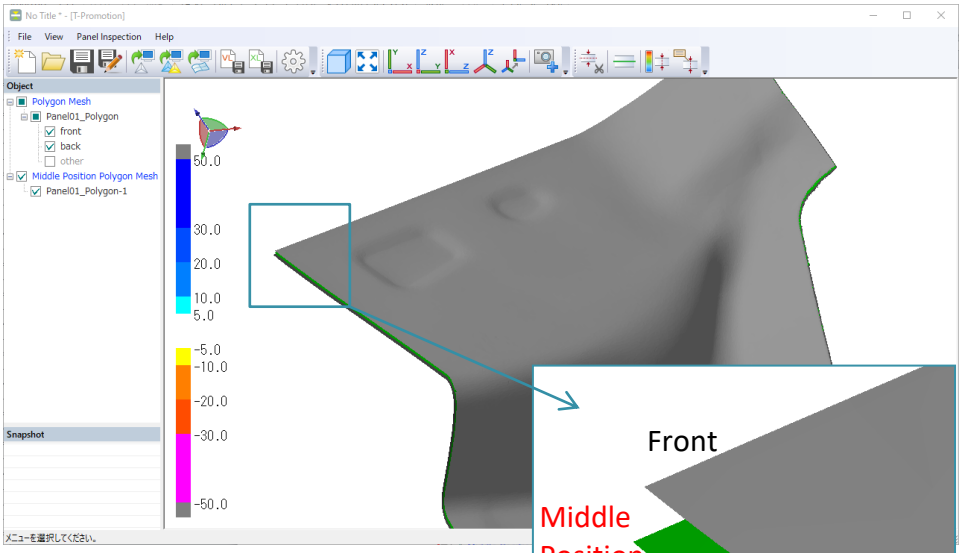


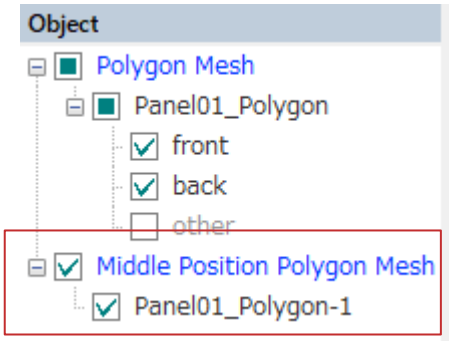
CASE STUDY 2

Example of creating a middle position polygon mesh (New feature in T-Promotion 3.0)

There have been requests for "polygon mesh in the middle location of a pressed panel" for the purpose such as a strength analysis.

Therefore, a feature to create a middle position polygon mesh at the middle location of the front-back scanned polygon mesh of a pressed-panel has been added.





IMPORT

■ Import Polygon Mesh

Import polygon mesh data in an STL format (non-contact measurement data).

Supported format: STL only

If importing a CAD data, be sure to import polygon mesh data after aligning with CAD data.

■ Import CAD

Note: If the panel shape is difficult to tell using polygon mesh data alone, then import IGES CAD to use the edge as a reference.

Supported format: IGES only

Multiple files can be imported.

IGES entity types of 144, and 186 can be imported.

Note: 144 (Trimmed Surface), 186 (Manifold Solid B-Rep Object)

EXPORT

Polygon mesh for the front-back separation and the middle position polygon mesh of the middle location of the panel-thickness can be exported as STL.

Furthermore, the panel-thickness inspection information (color map and annotations) can be exported as spGauge Viewer Light file (.gaugedslx) or EXCEL file (.xlsx).

■ spGauge Viewer Light (Free Viewer)

spGauge Viewer Light is a dedicated, free viewer bundled with T-Promotion.

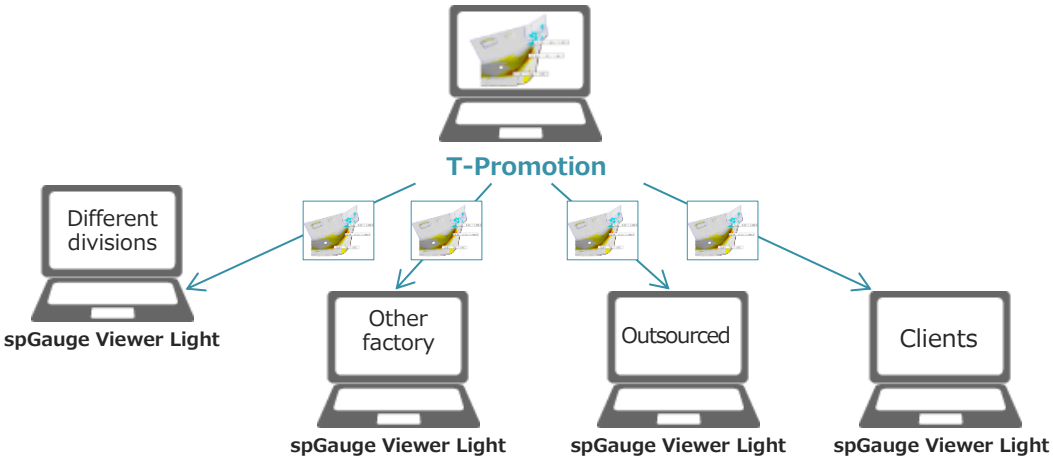
The viewer is free of charge and can be distributed freely and installed on multiple computers.

The panel-thickness inspection result can be exported as a lightweight viewer format and then reviewed (3D rotation/move/zoom) in 3D. The viewer can even be pasted onto a Microsoft Office application.

The data is compressed and downsized. The viewer can be operated on a low-end machine.

Install spGauge Viewer Light on your computer to share the viewer data and review the data in 3D on each computer.

Designers and administrators can review and check the data, clients can verify the data, and the usage is vast.



SYSTEM REQUIREMENTS	Supported Operating System:	Windows 11 Pro (64bit)
	CPU:	Intel Core i7 or later
	Memory:	32GB or more recommended
	Hard Disk:	Vacant 10GB or more recommended
	Display:	1280×1024 pixels or more
	Graphics Card:	OpenGL supported board
		NVIDIA Quadro, RTX series recommended

LICENSE	Node-locked type subscription (1 year) The license is controlled via the MAC address (PC specific address) of the computer where the software is installed.
PRODUCT PROVISION METHOD	Via download from our web page
PRICE	280,000 JPY/Year
NOTES	The accuracy of the panel-thickness inspection depends on the measurement accuracy of the non-contact measuring machine, accuracy of the alignment and the quality of polygon mesh data. A camera type non-contact measuring machine is recommended. (e.g. FLARE, a non-contact measurement machine, by Tokyo Boeki Techno-System Ltd.) An exclusive panel-thickness measurement machine should be used for checking the abnormal parts in panel-thickness.

Armonicos Shopping Mall
https://www.armonicos.co.jp/en/shop/

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