

Digital Process Innovation

# spGauge

## 2021.1 New Features

( January 2021 )

Armonicos Co., Ltd.



## – New Features –

### 1. 3D Local Coordinate system

- ① Hole
- ② Point
- ③ GD&T

### 2. Display Threshold Range

- ① Hole
- ② Point
- ③ Welding Point

### 3. Macro-Auto Icon

### 4. Display gaps in real time

### 5. Point inspection: Display max/min annotation

### 6. Point inspection: Mirror

### 7. Improved Global fit

## – Others –

- ◇ Guide Dialog
  
- ◇ Improved items  
Operation response, etc...
  
- ◇ Addressed issues
  
- ◇ Command log

# 1. 3D Local Coordinate **system** Hole Inspection

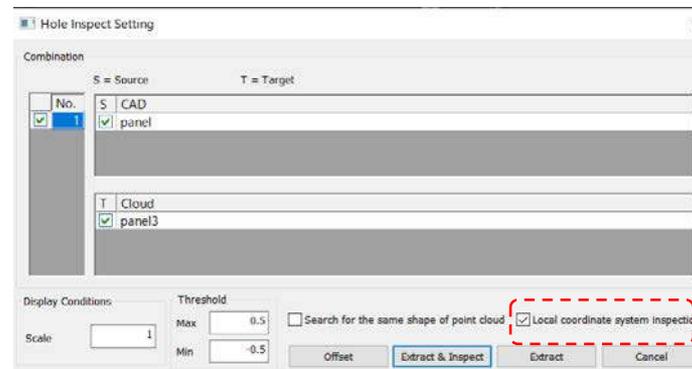
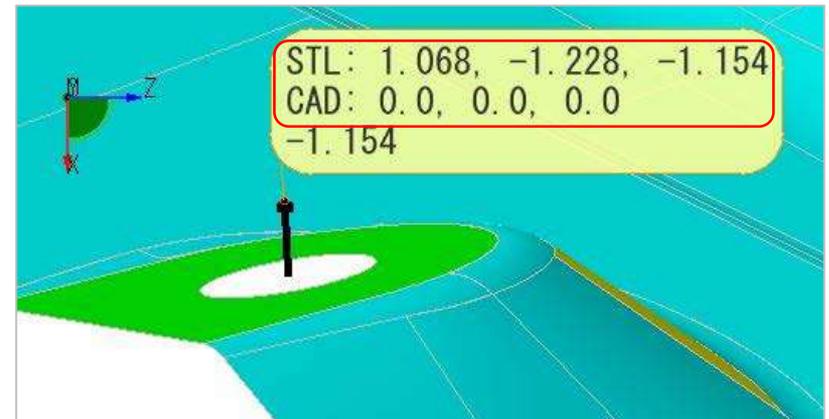
During holes inspection, you can set the normal of each hole's center axis to the Z axis, and each hole's horizontal direction to the XY axis direction.

Related Menu **[Inspection]-[Hole]-[Set Condition & Inspect]**

Global coordinate system inspection



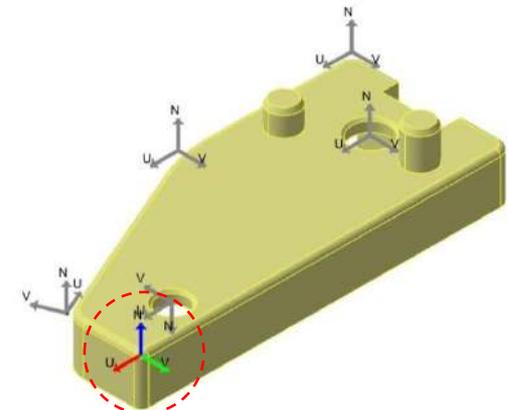
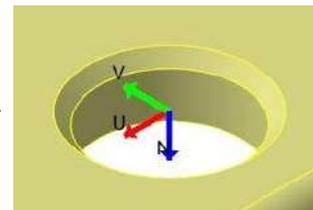
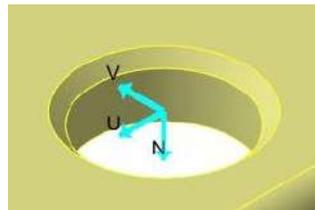
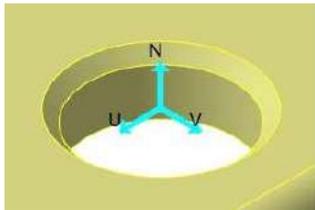
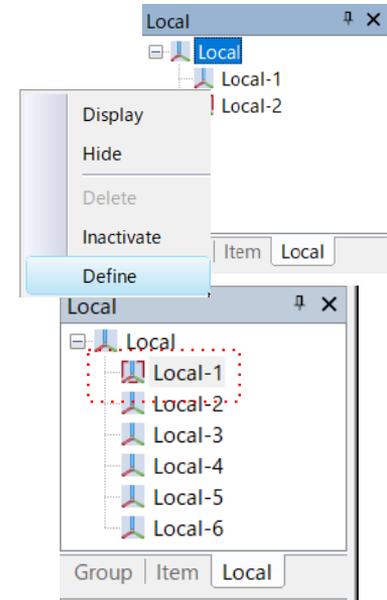
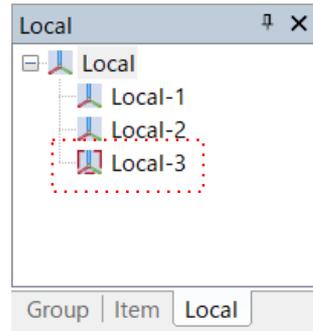
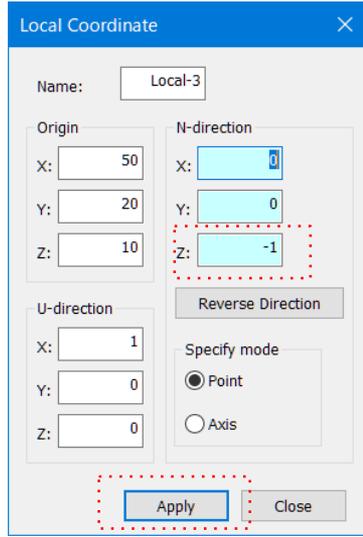
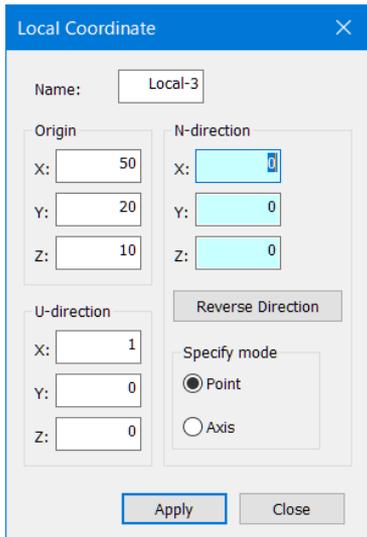
Local coordinate system inspection



# 1. 3D Local Coordinate system Point Inspection, GD&T

You can define multiple 3D local coordinate systems.

## Tree [Local]-[Define]



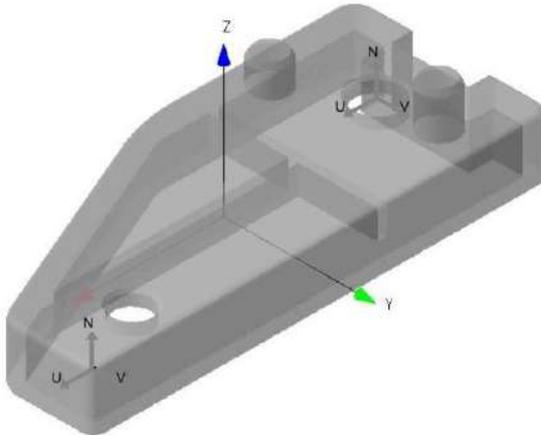
Activate local coordinates

# 1. 3D Local Coordinate system Point Inspection

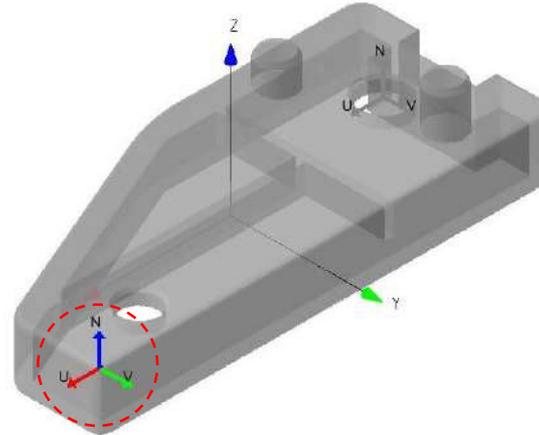
You can define multiple 3D local coordinate systems, and inspect a point using the local coordinate system.

Related Menu **[Inspection]-[Point]-[Set Condition & Inspect]**

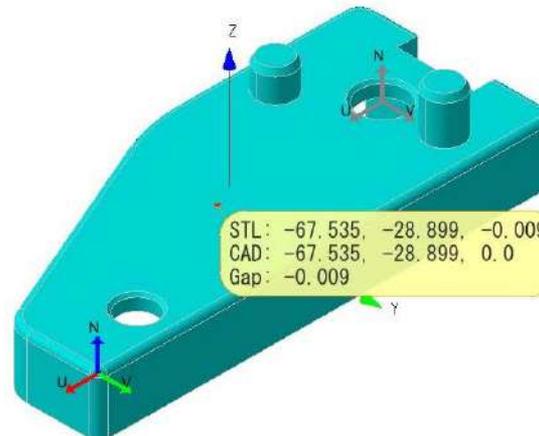
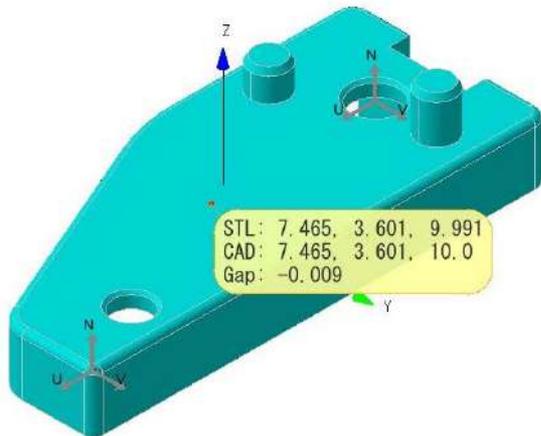
Global coordinate system inspection



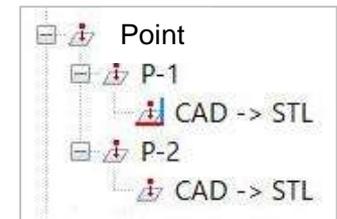
Local coordinate system inspection



Local-1: Active



P-1: Local inspection  
P-2: Global inspection

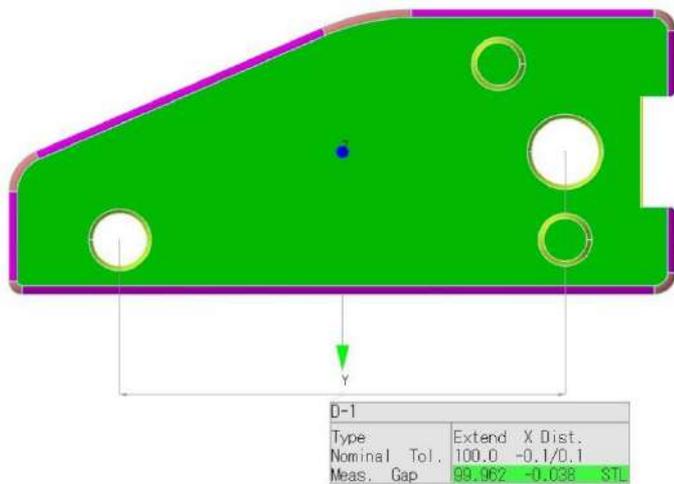


# 1. 3D Local Coordinate system GD&T

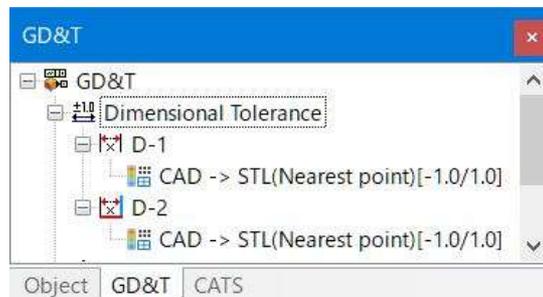
You can define multiple 3D local coordinate, and inspect GD&T dimension using the local coordinate system.

Related Menu **[Inspection]-[GD&T]-[Dimensional Tolerance]-[Define]**

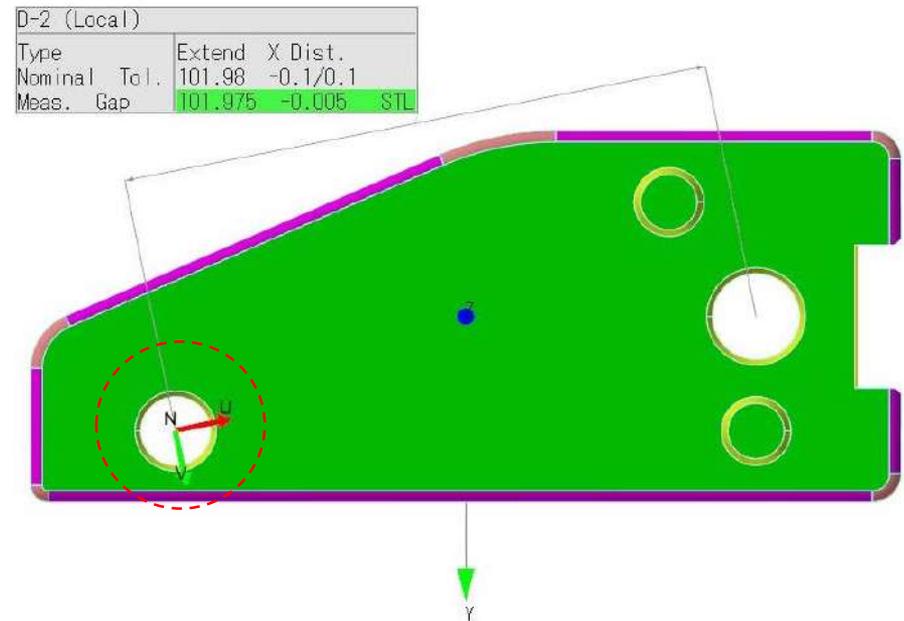
Global coordinate system inspection



D-1: Global inspection  
D-2: Local inspection



Local coordinate system inspection

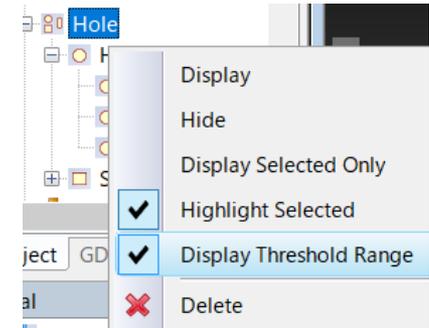


Inspection direction of GD&T dimensional tolerance is defined to be active local coordinate direction.

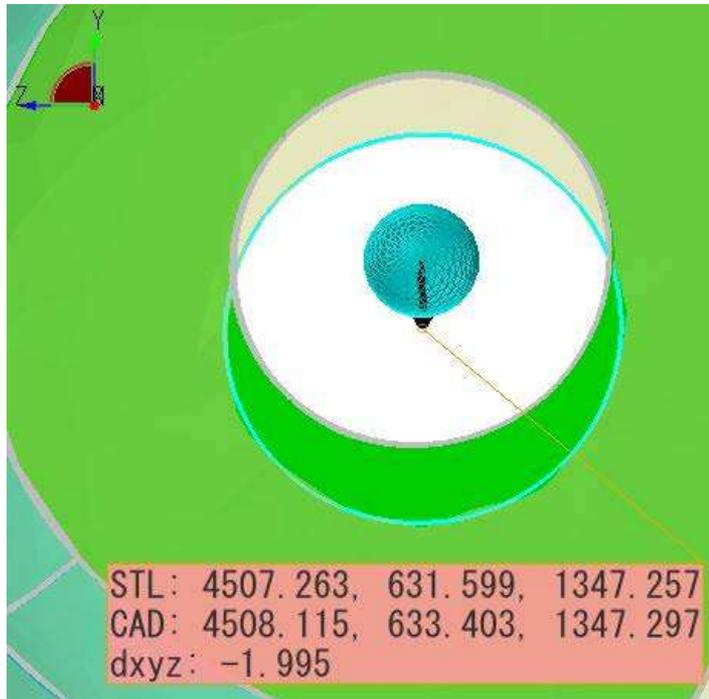
## 2. Display Threshold Range Hole Inspection

You can display the threshold range of a hole center.

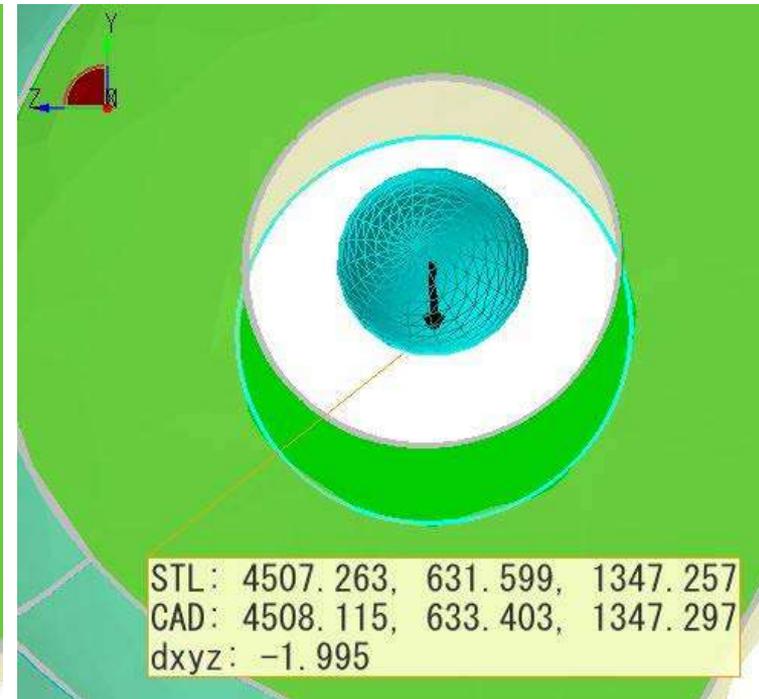
Tree [Inspection]-[Hole]-[Display Threshold Range]



Threshold value : 1.5mm



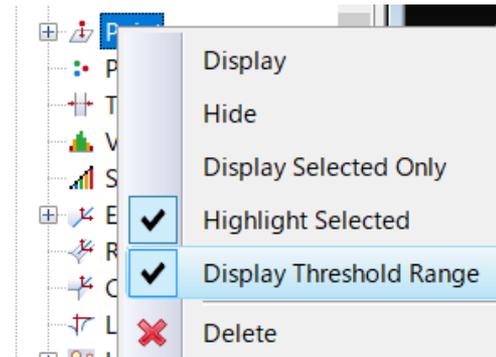
Threshold value : 2.5mm



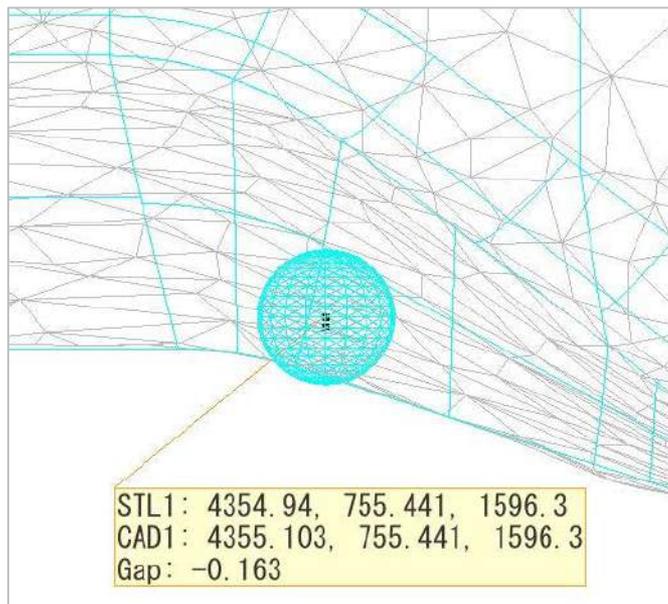
## 2. Display Threshold Range Point Inspection

You can display the threshold range of point inspection

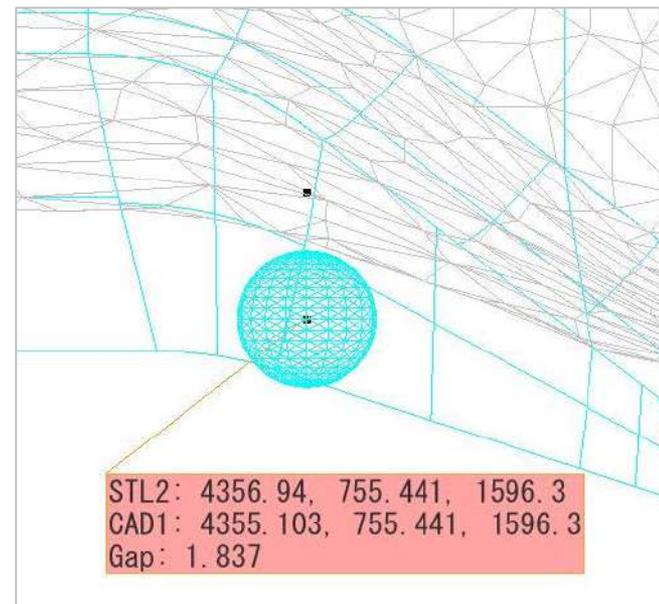
Tree **[Inspection]-[Point]-[Display Threshold Range]**



Under the threshold range (OK)



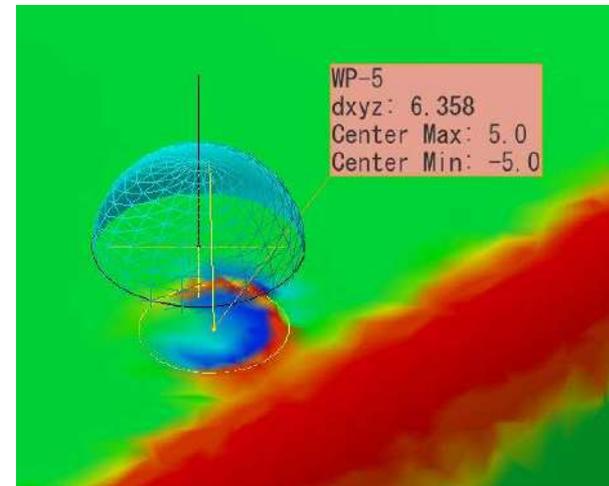
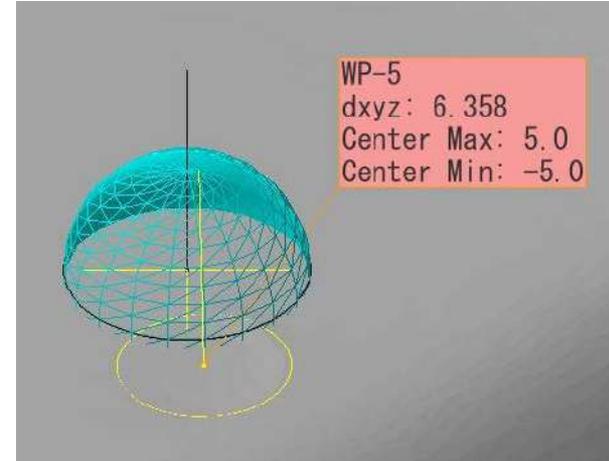
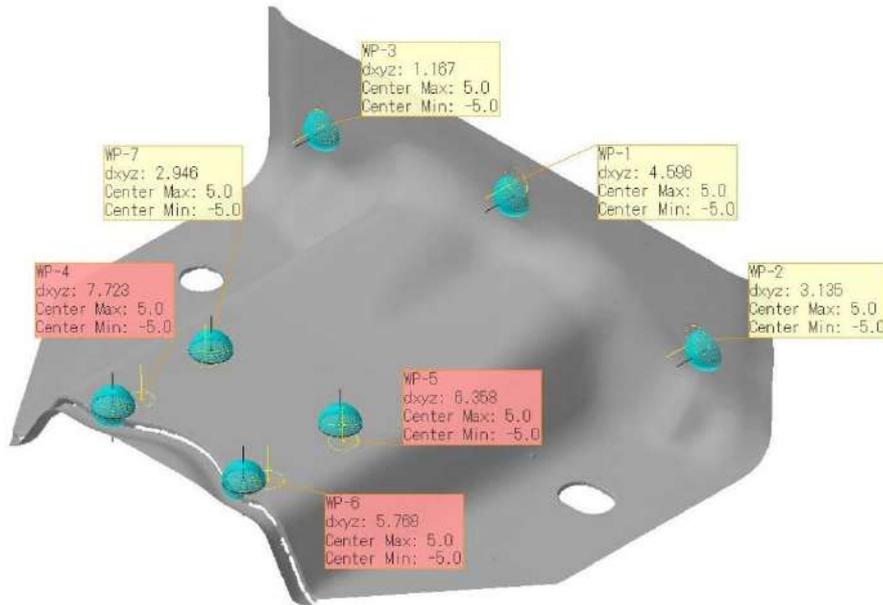
Out of the threshold range (NG)



## 2. Display Threshold Range **Welding Point**

You can display the threshold range of the welding point inspection.

Tree **[Inspection]-[Welding Point]-[Display Threshold Range]**



# 3. Macro-Auto Icon

You can execute the command “Macro-Auto” simply by clicking the icon on toolbar.

Related Menu **[Tool]-[Macro Files Management]** ( [Tool]-[Macro-Auto] )

**2020.1**

Tools - Alignment -

- Delete
- Point Cloud Tool
- CAD Tool
- Drawing Tool
- Macro-Manual
- Macro-Auto**
- Macro-Auto for N Items

**2021.1**

(Toolbar)

Report -

**Select/Execute**

macro\_1

macro\_1

macro\_2

macro\_3

macro\_4

macro\_5

**Execute on the dialog**

Macro-Auto

Menu:

- File
- Alignment
- Inspection
- Error Map
- Section
- Contour Line
- Point
- Edge
- Hole
- Welding Point
- GD&T
- Report

Commands to execute:

- File New
- File Open File
- File Import Point Cloud STL
- Alignment-Coordinate Systems-GlobalFit
- Alignment-BestFit-BestFit CAD-Cloud
- Alignment-UnificationFit
- Inspection-Error Map-CAD - Cloud
- Inspection-Section-Set Condition & Inspect
- Inspection-Point-Set Condition & Inspect
- Inspection-Hole-Set Condition & Inspect
- Inspection-Edge-Set Condition & Inspect
- Report-Inspection Result-CSV
- Report-Capture-Register and Output

Settings

Macro files

Register in macro file management when saving

Execute

**Register macro files**

Macro Files Management

Files:

File Name
C:\User\...esktop\YSTKVspGaugeVspGaug...
C:\User\...esktop\YSTKVspGaugeVspGaug...
C:\User\...esktop\YSTKVspGaugeVspGaug...
C:\User\...esktop\YSTKVspGaugeVspGaug...

OK

On [Tool]-[Macro-Auto], you can set the option to automatically register in macro files when saving

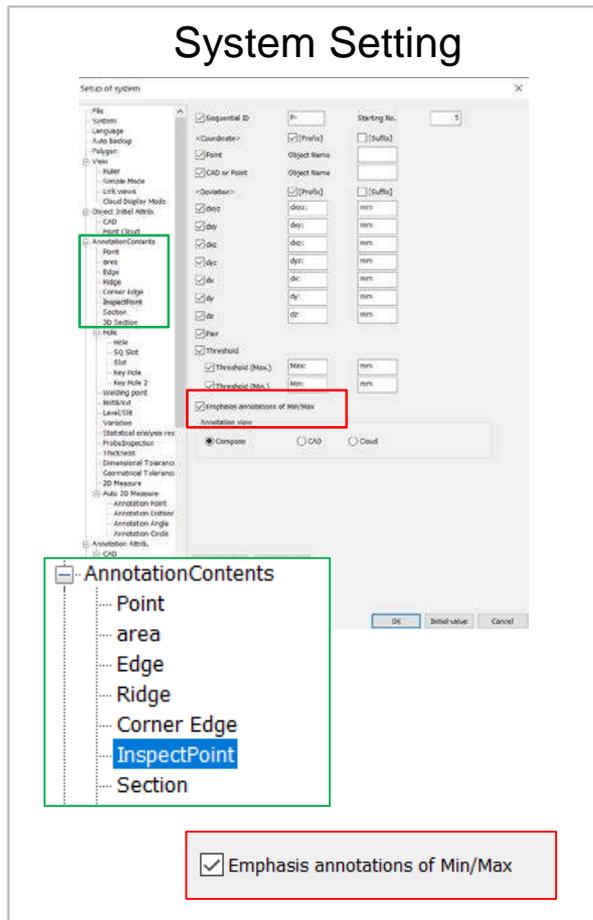
Register in macro file management when saving



# 5. Point Inspection Display Max/Min Annotation

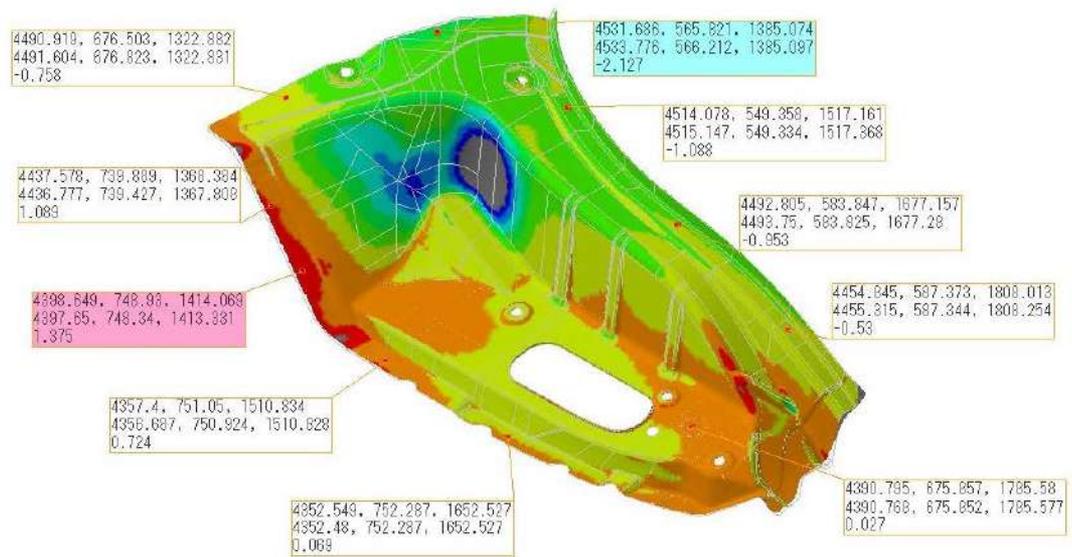
During point inspection, you can use emphasis annotations in order to check the maximum and minimum gaps.

Related Menu **[Inspection]-[Point]-[Set Condition & Inspect]**



[Red] Max gap

[Blue] Min gap



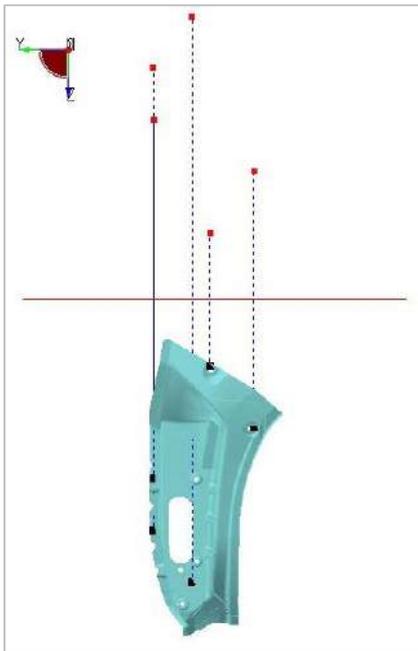
# 6. Point Inspection Mirror

You can mirror and copy an already defined inspection point.

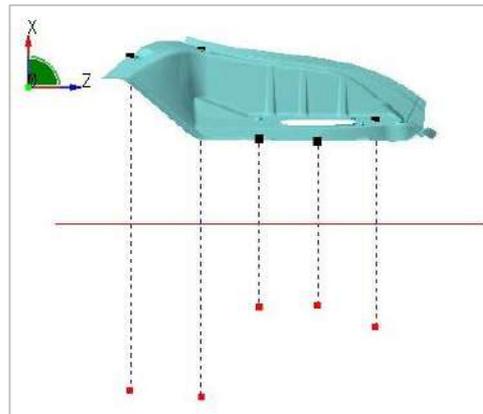
Related Menu **[Inspection]-[Point]-[Mirror]**

Tree **[Inspection]-[Point]-[Mirror]**, **[Inspection]-[Point]-[Object]-[Mirror]**

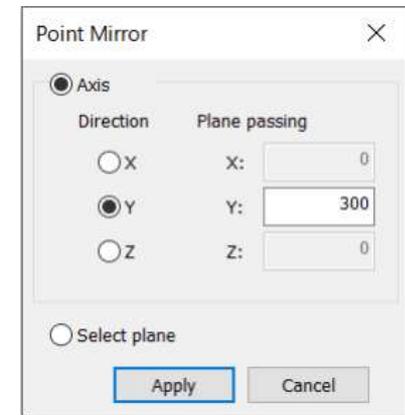
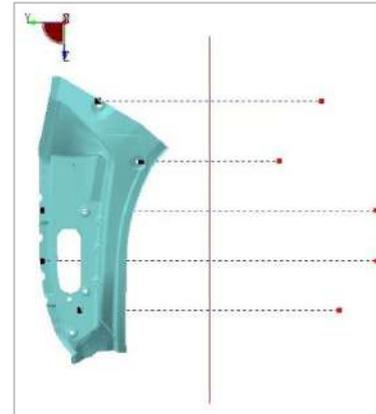
Z Direction



X Direction



Y Direction

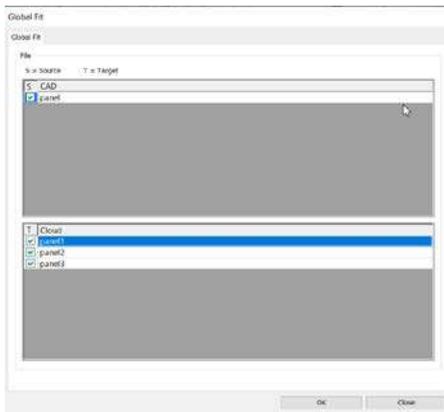


# 7. Improved Global fit

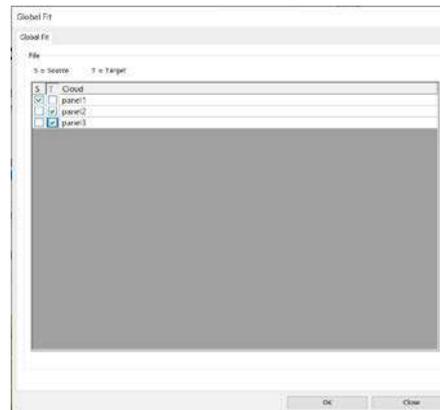
Global fit has improved to enable Global-fitting multiple point cloud objects, simultaneously.

Related Menu **[Alignment]-[Coordinate Systems]-[GlobalFit]**  
**[Alignment]-[Coordinate Systems]-[GlobalFit Cloud-Cloud]**  
[Tool]-[Macro-Auto], [Tool]-[Macro-Auto for N Items], Globalfit of [Inspection]-[Auto Inspection]

CAD – Point cloud

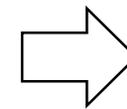
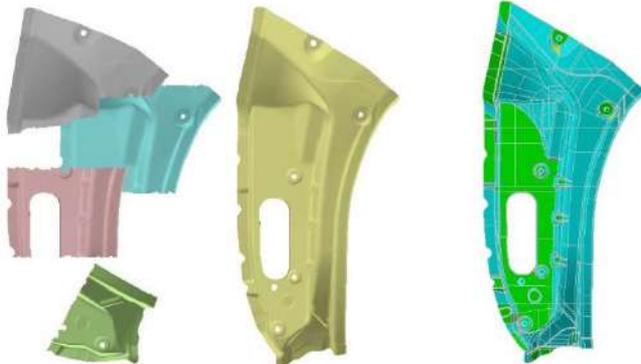


Point cloud – Point cloud

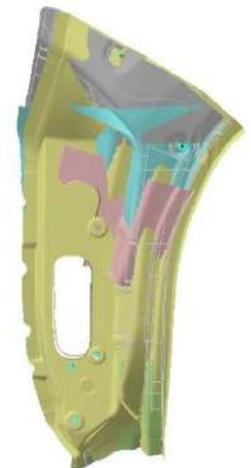


Point cloud

CAD

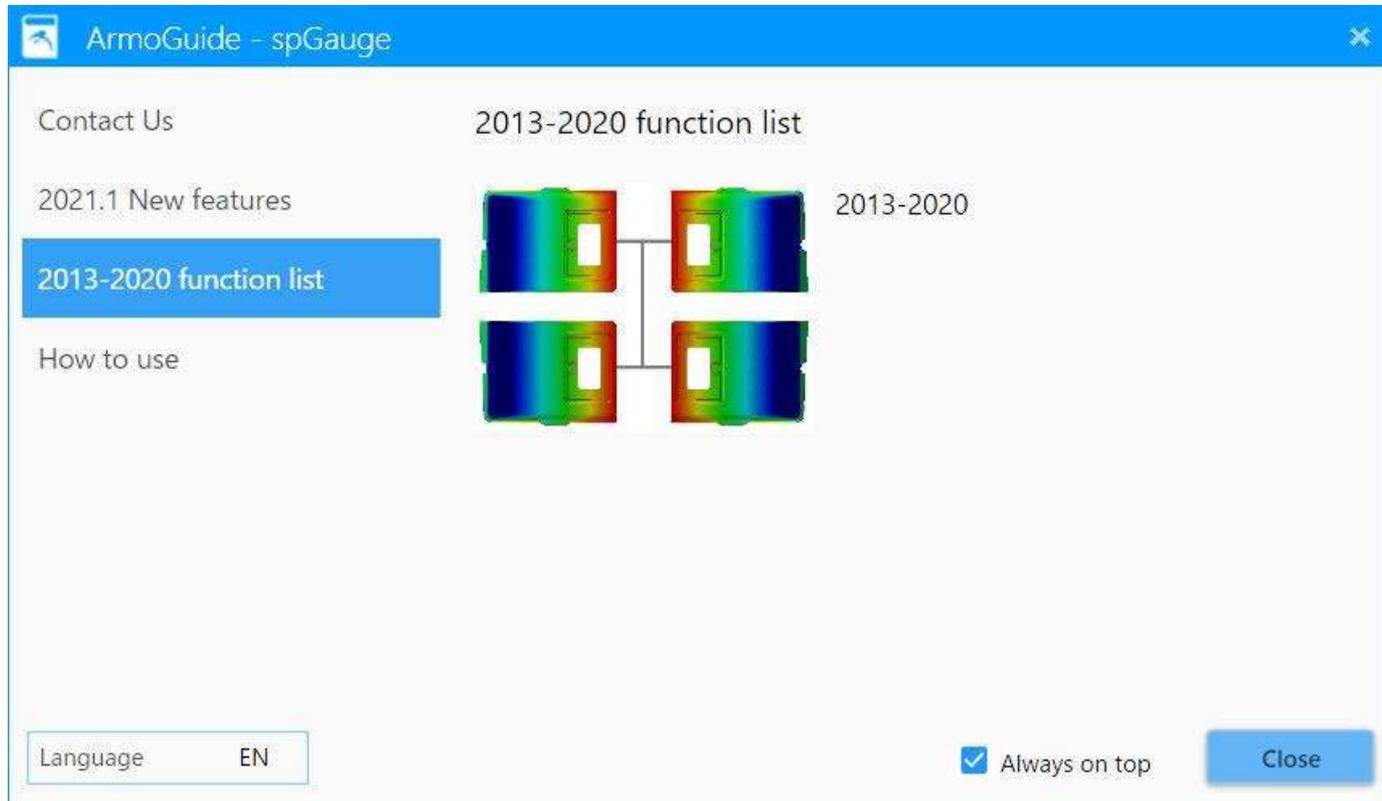


Executed Global fit



# Guide Dialog

A new guide dialog was introduced to enable you to browse spGauge latest features, features list per version, utilization tips and more.



## ✓ Unification fit

- When registering on the “Detail Fit”, the highlight response on CAD surface has improved.
- The response of registering/removing ”Plane”, ”Axis”, ”Point cloud”, etc., on the list has improved.

## ✓ [Edit]-[Delete]

- When executing [Edit]-[Remove] the highlight response on CAD surface has improved .

## ✓ Processing time of [Inspection]-[Deformation]

- The thin-out time has been reduced.
- The deformation evaluation time has been reduced.

## ✓ Windows10 (2004)

- The issue regarding the freezing of the system on Windows10 (2004) has been addressed.

## ✓ Exporting Viewer Light

- The issue regarding the inability of exporting a specific point cloud data has been addressed.

## ✓ Drawing Tool

- The issue regarding the inability of the creation of [Circle(2Points/Radius)].

## ✓ Importing CAD

- The issue regarding the slow processing time when importing specific IGES data has been addressed.

## ✓ Edge inspection

- When defining multiple edges using [Edge]-[Define], the <Start Point>-<A point on the 1<sup>st</sup> element> in the inspection section, used to be automatically checked. That issue has been addressed.

## ✓ Macro-Auto

- The ineffectiveness when setting the <Base Search Range> of point inspection on [Macro-Auto] has been addressed.

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  2. Using the Products yourself for the purpose of Developing WMD or for other military purposes, or providing the Products to a person who have such purposes outside of Japan.