

Gauge

Plug-In



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Version 6.2.3
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Introduction

About NeuroCheck plug-in DLLs in general

A plug-in DLL is a .NET assembly that serves to enhance NeuroCheck with user-defined image processing functionality. The NeuroCheck Plug-In Interface offers the opportunity to integrate user-defined check functions for image processing and data handling. A Plug-In can contain an arbitrary number of self-developed check functions.

These check functions have full access to the NeuroCheck runtime data objects such as Images, ROI Lists and Measurement Lists. The Plug-In check function can be added to a check as well as the built-in standard check functions of NeuroCheck.

Please note that for integration of a plug-in check function into your check routine, a Premium license is required. The completed check routine then can be run with any NeuroCheck license (except the Demo Version).

Installation

Installation

Copy the following files from the zip archive to the plug-in directory within the desired NeuroCheck project (e.g. 'C:\Users\Public\Documents\NeuroCheck\6.2\Default\Software Extensions\PlugIns').

- All files inside the `Binaries` directory
- All *.chm files inside the `Documentation` directory

Loading a Plug-In

In order to use a Plug-In the Plug-In assembly must be loaded in NeuroCheck. The management of Plug-Ins takes place within the Software Settings dialog. The Software Settings dialog can be found in the System menu of NeuroCheck.

Please note that it is impossible to load or unload a Plug-In as long as a check routine is opened that contains the Plug-In check functions. If the currently opened check routine contains Plug-In check functions then close the check routine first.

Within the Software Settings dialog please select the node Plug-Ins and the sub-node Plug-In DLLs in the tree to the left. The loaded Plug-In assemblies are shown in the List of Plug-Ins. Press the Add button to open a file selection dialog in order to select a further Plug-In assembly.

Inserting a Plug-In check function to a check routine

A Plug-In check function is inserted using the Check Function Select dialog. All check functions of loaded Plug-Ins are listed in the Plug-In category of the Check Function Select dialog. Within the Plug-In category the check functions are ordered in sub-categories where each sub-category represents the check functions of one Plug-In DLL.

Besides the category the user will hardly notice any difference between the usage of Plug-In check functions and built-in check functions.

System Requirements

The NeuroCheck software system requirements and guidelines apply.

CalliperRule: Introduction

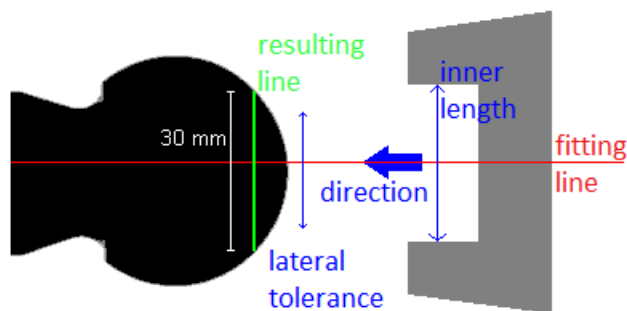
Function

This check function determines the position where a calliper rule touches an object contour in different ways. It allows you to use a Calliper rule (**Classic calliper**), V-shaped gauge tool (**V calliper**) and a circle-shaped gauge tool (**Circle calliper**). Each calliper has its own parameter. It is possible to configure the position and the direction of the touching.

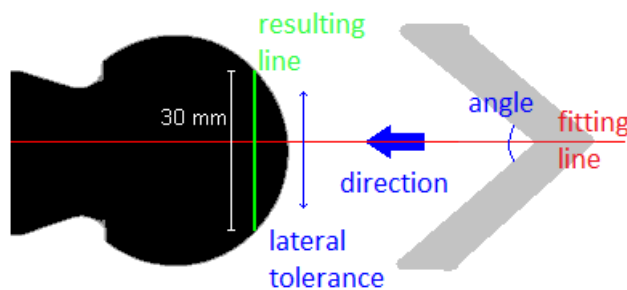
The resulting secant in the object together with the used tool and the fitting line is shown on screen as well as the measurement list.

Available Callipers

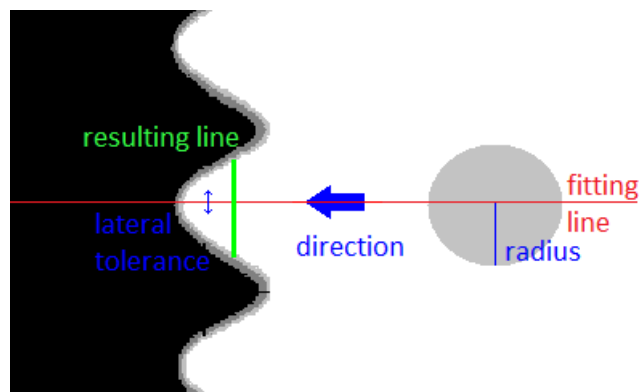
The **Classic calliper** can be used to determine at which position the object has a definite width. The length of the calliper rule can be configured. The function works very similarly to a mechanical calliper rule touching an object surface.



The **V calliper** can be used to determine the position of the vertex point if the V-calliper touches the object contour along a given line. But instead of a normal calliper rule a V-geometry is used to touch the object contour. The opening angle of the V-calliper can be configured.



The **Circle calliper** can be used to determine the two points where a round calliper rule touches the object contour along a given line. The radius of the circle can be configured.



Input data


This check function requires an image and two lists of ROIs as input data objects. The image is used to visualize the results. From the first list of ROIs, the first ROI with an object contour is used to compute the points where the calliper rule touches the object. To define the fitting line for the calliper rule facing the object, the second list of ROIs is used. It needs to contain either one ROI with a model geometry of type line or a ROI of type line.


Output data

The check function has a list of ROIs and a Measurement list output data object. The list of ROIs contains the resulting secant as a line and the Measurement list the coordinates of the touching points and in case of a V-Calliper the vertex point.

Properties

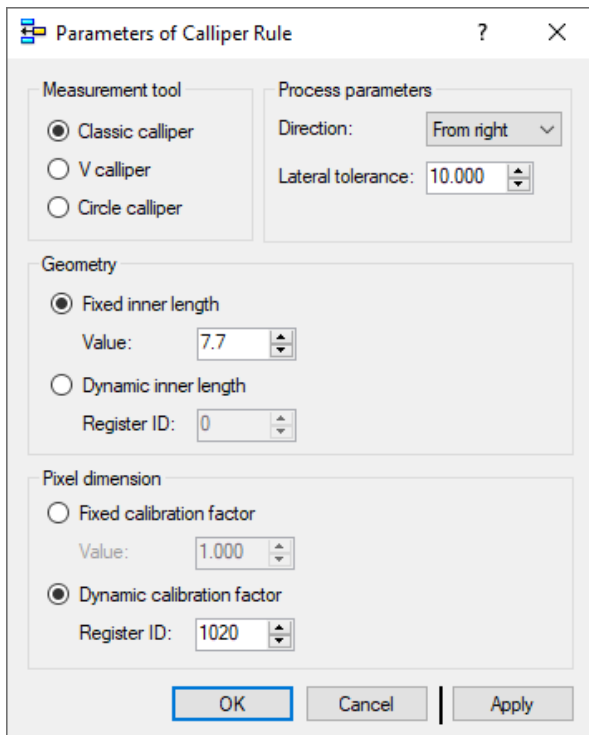
 Check function group Plug-In

 The check function has a [Parameter Dialog](#).

 The check function has own result [Visualizations](#).

CalliperRule: Parameter Dialog

☑ Screenshot of Parameter Dialog



This plug-in check function has a **Parameter** dialog. The **Parameter** dialog contains the following elements:

Element	Description
Measurement tool	Define the calliper geometry type used by the check function.
Classic calliper	Use the classic calliper to find where an object has a definite width.
V calliper	Use the V calliper to determine the two points where the V-shaped calliper touches the object contour.
Circle calliper	Use the circle calliper to determine the two points where the circle shaped calliper touches the object contour.
Process parameter	Set additional parameters to control the check function.
Direction	Specify here from which direction the calliper rule should approach the object. This rough instruction is needed since the fitting line alone is not sufficient.
Lateral tolerance	This is the tolerance of the given fitting line, perpendicular to the touching direction, in object units (e.g. mm). Don't adjust this value too small, as the results could be not correct then. The check function will return false if the distance between the center point of the resulting line and the given fitting line is greater than this value.
Geometry	Define the geometric parameters of the callipers.
Fixed inner length	Define a fixed inner length that never changes. This is the inner length of the calliper rule, in object units (e.g. mm). The resulting line will have this length.
Dynamic inner length	Provide a data register of type Floating point number that the inner length is read from.
Pixel dimension	Set here the dimension of a pixel in object units (e.g. mm). This is needed to convert the pixel measurements into object units.
Fixed calibration factor	Define a fixed calibration factor that never changes.
Dynamic calibration factor	Provide a data register of type Floating point number that the calibration factor is read from.

CalliperRule: Visualization

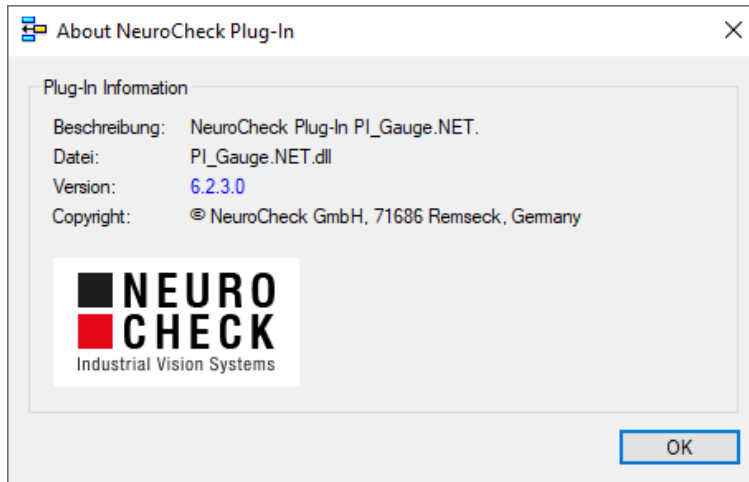
This section describes the result visualizations the check function [Calliper Rule](#) provides.

Element	Description
Image	Shows the input image with the following additions: the drawn ROI of the object in blue, the measurement tool in green, the result secant in orange and the fitting line in olive.
Measurement List	Shows the coordinates of the two touching points on the object contour and in case of a V-Calliper the vertex point as an image.

About Dialog

This dialog displays version information about the NeuroCheck Plug-In **PI_Gauge.NET.dll**.

[Screenshot of About Dialog](#)



Support Services

For technical support, please contact your local NeuroCheck partner or NeuroCheck GmbH:

Phone: +49 (0) 7146 - 89 56-40

E-Mail: support@neurocheck.com

Web: www.neurocheck.com

Before contacting us, please provide some important information about your system:

Information about your NeuroCheck installation and your PC setup:

- Use the NeuroCheck Diagnostics tool to check your installation and computer configuration.
- The NeuroCheck Diagnostics is installed in the "Tools" folder within your NeuroCheck installation.

Log file information:

- Logging for NeuroCheck can be activated in **System > Software Settings > Diagnosis > Logging**.

