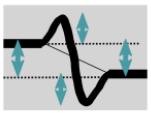
5 - S34 CALC Geometry Ablation

Description

Calculate the seam geometry measurements width and roundness. Concav, convex and mismatch is calculated with the "Reference" outside the ablation area.

Icon



5 S34 CALC Geometry Ablation

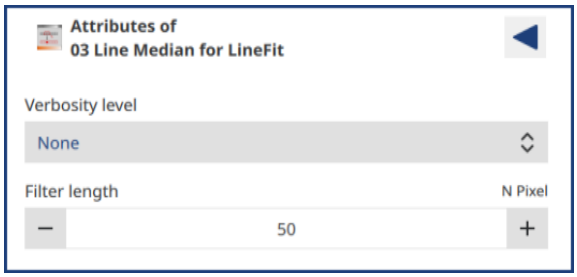
Calculate the seam geometry measurements width and roundness. Concav, convex and mismatch is calculated outside the ablation borders.

Parameters

Filters of
5 S34 CALC Geometry Ablation

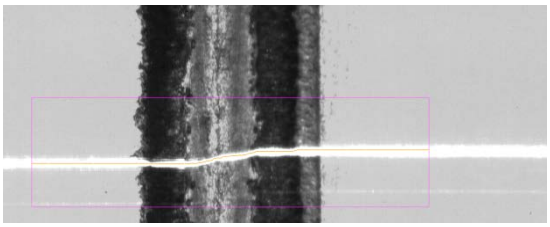
- 01 Geometry Angle
- 03 Line Median for LineFit
- 04 Line fit left
- 05 Line fit right
- 06 CavvexSimple
- 06.1 Offset Seam pos
- 06.2 Offset Ablation pos
- 11 Averaging Seam width
- 21 Averaging Mismatch
- 31 Averaging Convexity
- 41 Averaging Concavity
- 51 Averaging Roundness pos.
- 52 Averaging Roundness neg.
- 91 Plausibility min line intensity

Parameter	Comment
Number	Min. angle of the laser line shape to set a "seam border". [Degree]



Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Filter length	To define a reference position the vertical positions of the found laser line shape are averaged over "Filter length" pixel. [Pixel]

Verbosity example:
The magenta rectangle shows the centered laser line ROI. The red line on the laser line shows the shape from the laser line tracking.



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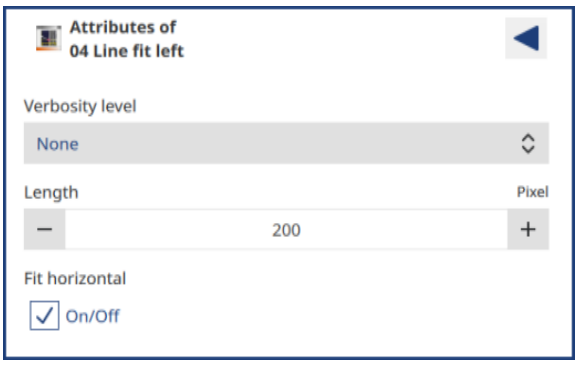
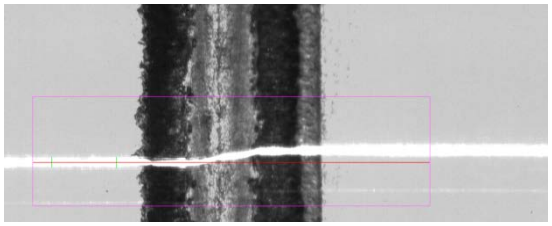
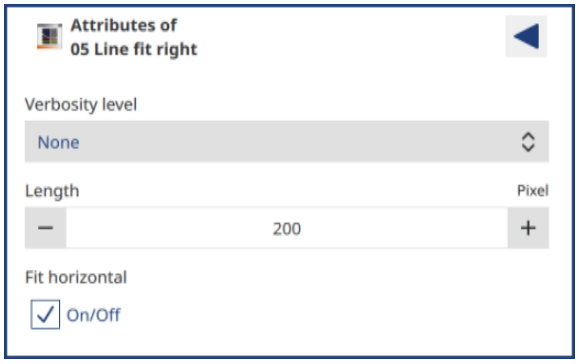


Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Length	Number of points on the laser line shape, starting at the "shifted" left ablation border leftwards, to fit a straight line for the "laser line part on left blank". [Pixel]
Fit horizontal	If active, the left side "Reference" line is expected/searched to be horizontal.

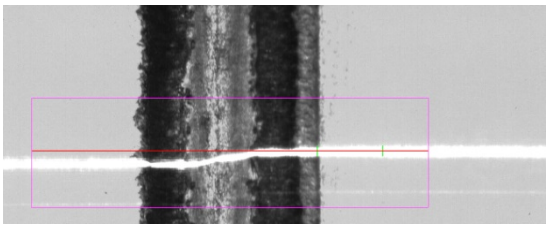
Verbosity example:
The magenta rectangle shows the centered laser line ROI. The red line shows the fitted straight line on the left side. The two green crosses mark the (horizontal) range where the line fit was made.

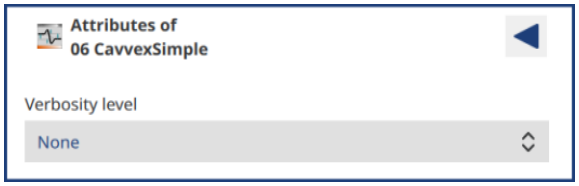




Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Length	Number of points on the laser line shape, starting at the "shifted" right ablation border rightwards, to fit a straight line for the "laser line part on right blank". [Pixel]
Fit horizontal	If active, the right side "Reference" line is expected/searched to be horizontal.

Verbosity example:
The magenta rectangle shows the centered laser line ROI. The red line shows the fitted straight line on the right side. The two green crosses mark the (horizontal) range where the line fit was made.





Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.

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Parameter	Comment
Number	Number of pixels to shift the found left seam border leftwards, and the found right seam border rightwards to set the start/end point of the range where to check for 'concavity/convexity/mismatch'. [Pixel]

Parameter	Comment
Number	Number of pixels to shift the found left ablation border leftwards, and the found right ablation border rightwards to set the start point for the "laser line part on blank". [Pixel]

Parameter	Comment
Filter length	Number of camera images to average the measured seam width values. [Images].

Parameter	Comment
Filter length	Number of camera images to average the measured blank mismatch values. [Images].

Parameter	Comment
Filter length	Number of camera images to average the measured convexity values. [Images].

Parameter	Comment
Filter length	Number of camera images to average the measured concavity values. [Images].

Parameter	Comment
Filter length	Number of camera images to average the measured *positive* seam roundness values. [Images].

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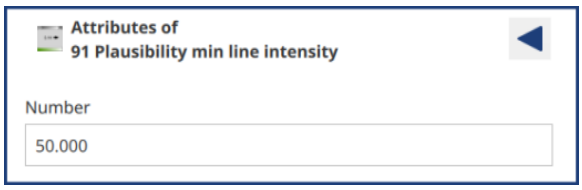
Parameter	Comment
Filter length	Number of camera images to average the measured *negative* seam roundness values. [Images].



Parameter	Comment
Number	Only tracked laser line points with this min. intensity are real laser line points. [Greylevel].

- **Measured values for plotter**

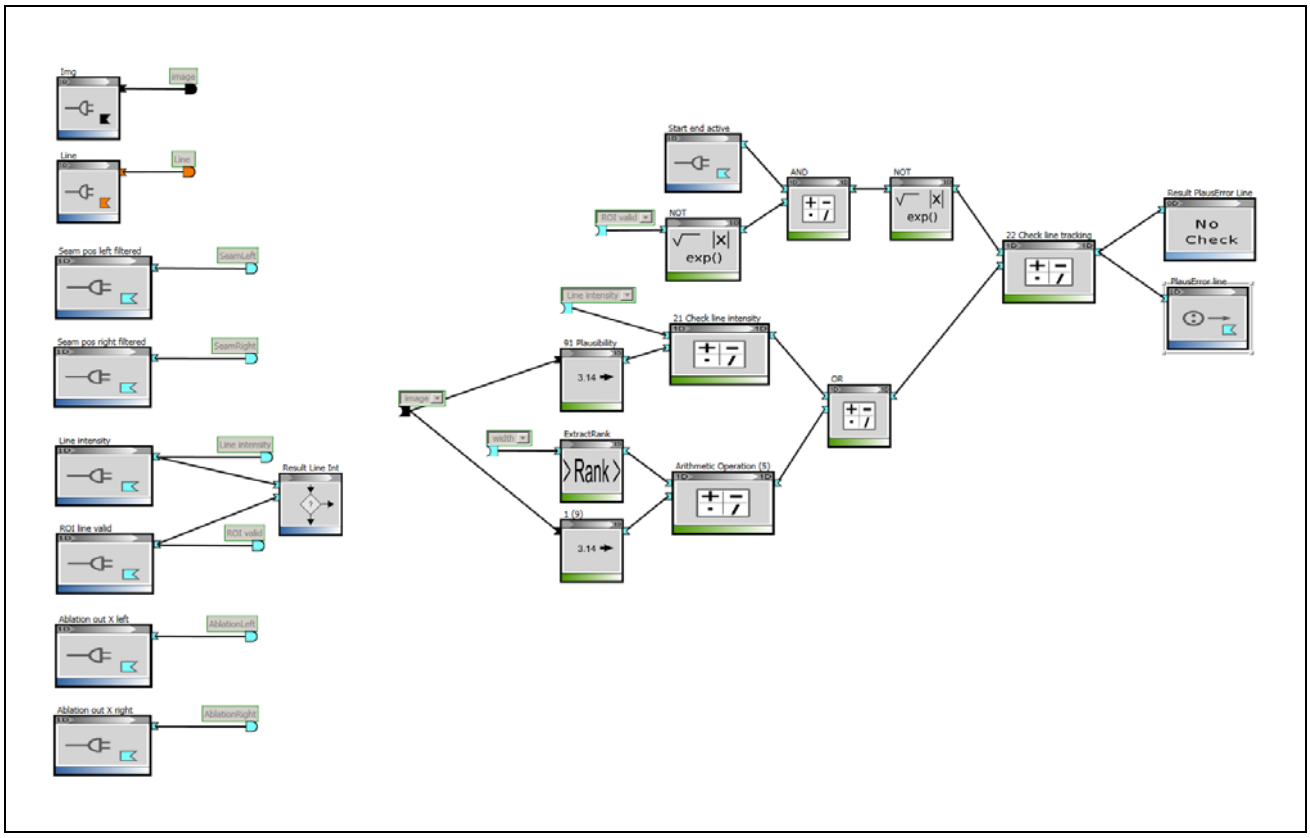
556	0 / 1	Plausibility GEO error
572	0 … 255	Intensity Line
703	0 … xxx	Seam width
709	-xxx … +xxx	Height difference
711	0 … xxx	Concavity
712	0 … xxx	Convexity
713	0 … xxx	Roundness pos.
714	0 … xxx	Roundness neg.

- **Subgraphs interface**

IN bridges **OUT bridges**

image	Img	**value**	PlausError line Seam width Seam roundness pos Seam roundness neg Seam concav Seam convex Seam height diff
Line	Line		
value	Seam pos left filtered Seam pos right filtered Start end active Line intensity ROI line valid Ablation out X left Ablation out X right		

- **Graph block diagram**



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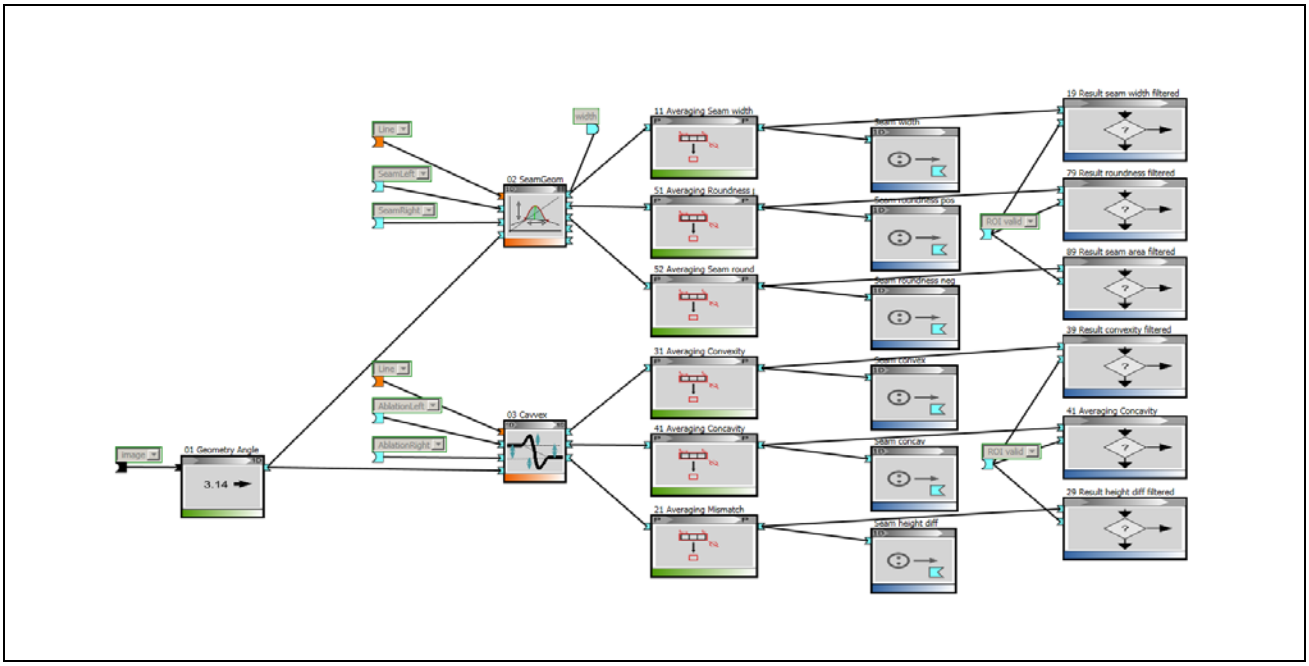
Line
SeamLeft
SeamRight
02 SeamGeom
width
11 Averaging Seam width
51 Averaging Roundness
52 Averaging Seam round
Seam width
Seam roundness pos
Seam roundness neg
19 Result seam width filtered
79 Result roundness filtered
89 Result seam area filtered
ROI valid
Line
AblationLeft
AblationRight
03 Convex
31 Averaging Convexity
41 Averaging Concavity
21 Averaging Mismatch
Seam convex
Seam concav
Seam height diff
39 Result convexity filtered
41 Averaging Concavity
29 Result height diff filtered
ROI valid
Image
01 Geometry Angle
3.14