

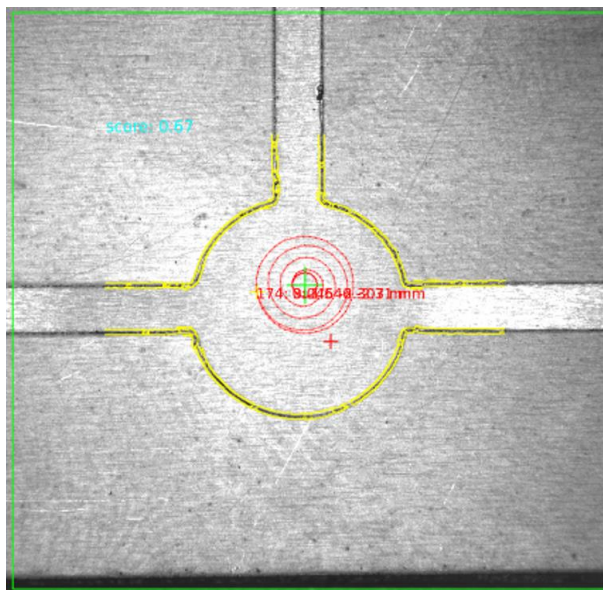
Precitec Graph Documentation

Detection: Shape

Changelog

Date	Version	Autor	Tested on	Description
2023-03-03	A	Wre	5.19.13	New documentation

Description



Detects a geometry using a Shape matching algorithm. Also outputs the Angle to receive information about the part orientation. Has a built-in plausibility check. Loads the welding figure and displays it on the center of the detected geometry.

■ Parameter

<u>G00 ROI from Seam Details</u>			
NAME	DEFAULT VALUE	Description	UserLevel
00 Dynamic ROI → Green channel	255	Green color of ROI Box	Operator
00 Dynamic ROI → Red channel	0	Red color of ROI Box	Operator
00 Dynamic ROI → Blue channel	0	Blue color of ROI Box	Operator
00 Dynamic ROI → Verbosity	Low	Visibility of ROI Box	Operator
00 Dynamic ROI → Alpha Channel	255	Transparency of ROI Box	Operator
<u>G01 AdjustContrast</u>			
NAME	DEFAULT VALUE	Description	UserLevel
01 AdjustContrast Min. → Number	1	Minimum contrast	Admin
02 AdjustContrast Max. → Number	255	Maximum contrast	Admin
03 AdjustContrast → Verbosity level	None	.bmp which will be used as Template	Admin
03 AdjustContrast → Operation	ApplyLUT	Operation performed by the Contrast adjuster.	Admin
<u>G02 Shape Matching</u>			
NAME	DEFAULT VALUE	Description	UserLevel
00 ShapeMatching → Verbosity	Low	Visibility of Position	Admin
00 ShapeMatching → Template File Name	.bmp File on System	.bmp which will be used to generate shape	Admin

00 ShapeMatching → Blur	3	Value to round edges of the template	Admin
00 ShapeMatching → Contrast	60	Brightness change value needed to extract an edge from the template image as a shape	Admin
00 ShapeMatching → Pyramid Levels	3	Downsampling to improve Algorithm process time	Admin
00 ShapeMatching → Angle Start	0	Start Angle in degree, by which the shape will be rotated	Admin
00 ShapeMatching → AngleExtent	1	Amount of degrees, by which the shape will be rotated starting at the Angle start value	Admin
00 ShapeMatching → Min Score	0.7	Minimal Score Value (0->1) needed for a shape to be accepted	Admin
00 ShapeMatching → Greediness	0.9	Greediness of the Algorithm to find a matching shape	Admin
00 ShapeMatching → MaxOverlap	0.5	Maximal overlap of 2 shapes	Admin
00 ShapeMatching → MaxMatches	0	Amount of shapes used which have a high enough Score value (0 → infinite shapes; 1 → only 1 shape with highest score ...)	Admin
01 Offset x (mm) → Number	0	Offset in X direction in mm	Operator
02 Offset y (mm) → Number	0	Offset in Y direction in mm	Operator
<u>G03 Offsets</u>			
NAME	DEFAULT VALUE	Description	UserLevel
01 Offset X [mm]	0	Offsets the detected position by the amount of the input in mm in X-direction.	Operator
02 Offset Y [mm]	0	Offsets the detected position by the amount of the input in mm in Y-direction.	Operator
03 Offset Angle	0	Contour will be automatically rotated depending on the detected angle.	Operator

		This rotation angle can be offset here.	
04 Stretch factor X	1	Stretches the welding figure by the factor in X-direction.	Operator
05 Stretch factor Y	1	Stretches the welding figure by the factor in Y-direction.	Operator
<u>G04 Plausibility</u>			
NAME	DEFAULT VALUE	Description	UserLevel
00 minimal Matching Score	0.5	If the Matching Score Output of the Template Matching (value between 0 and 1) is above this value, the detection is plausible. If it is below this value, the detection is not plausible.	GroupLeader
<u>G05 Load Figure from File dynamic</u>			
NAME	DEFAULT VALUE	Description	UserLevel
00 ContourFromFile → WeldingFigure name	0	Number of Welding figure to weld.	Operator
04 SeamWeldingResult → Verbosity	Maximal	Visibility of the Preview	Operator
<u>G06 Buffer</u>			
NAME	DEFAULT VALUE	Description	UserLevel
01 X Buffer → Slot number	1	Writes the detected X-Pos [mm] into the Buffer.	GroupLeader
02 Y Buffer → Slot number	2	Writes the detected Y-Pos [mm] into the Buffer.	GroupLeader
04 Contour Buffer → Slot number	4	Writes the Contour into the Buffer.	GroupLeader
09 Plausibility → Slot number	9	Writes the Plausibility into the Buffer.	GroupLeader
<u>G08 Send end of seam marker after xx images</u>			
NAME	DEFAULT VALUE	Description	UserLevel



00 Image number xx → Number	0	Image number on which the seam shall end (first image number = 0)	Operator
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■ Output Buffers

Value	Slot Number
X Pos [mm]	1
Y Pos [mm]	2
Contour	4
Plausibility 0 = good Plausibility 1 = bad Plausibility	9

■ Results

Value	Result Enum	Result Name
X Pos [mm]	28	CoordPositionX
Y Pos [mm]	29	CoordPositionY
Matching Score – Value between 0 and 1	1009	Surveillance 1
Plausibility 0 = good Plausibility 1 = bad Plausibility	555	Plausibility error