

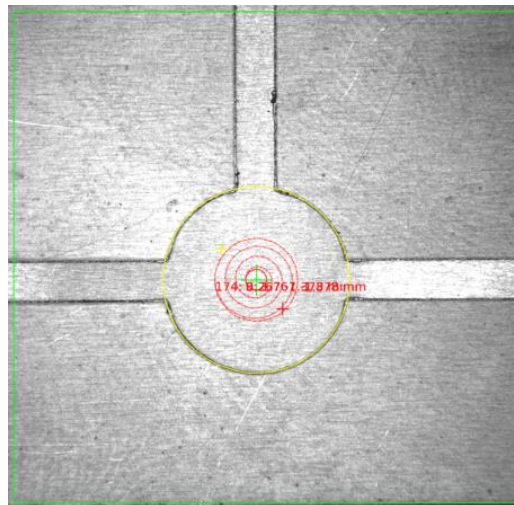
## Precitec Graph Documentation

### Detection: Metrology

#### ■ Changelog

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

#### ■ Description



Detects a geometry using a Metrology matching algorithm which uses a WeldFigure as an Input. 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

<b><u>G00 ROI from Seam Details</u></b>			
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
<b><u>G01 AdjustContrast</u></b>			
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. <b>Must be set to BinarizeIN or BinarizeOUT !!</b>	Admin
<b><u>G02 Metrology Matching</u></b>			
NAME	DEFAULT VALUE	Description	UserLevel
00 Contour → Verbosity	Low	Visibility of Contour (no preview)	Admin
00 Contour → WeldingFigure Name	0	Number of Welding Figure used as shape	Admin

<b>01 Metrology → Number of Sampling Points</b>	<b>32</b>	Number of Sampling points used to create the shape from the contour	Admin
<b>01 Metrology → Angle Start</b>	<b>0</b>	Start Angle in degree, by which the contour will be rotated	Admin
<b>01 Metrology → Angle Extent</b>	<b>0</b>	Amount of angle in degree the contour will be rotated	Admin
<b>02 Offset x (mm) → Number</b>	<b>0</b>	Offset in X direction in mm	Operator
<b>03 Offset y (mm) → Number</b>	<b>0</b>	Offset in Y direction in mm	Operator
<b><u>G03 Offsets</u></b>			
<b>NAME</b>	<b>DEFAULT VALUE</b>	<b>Description</b>	<b>UserLevel</b>
<b>01 Offset X [mm]</b>	<b>0</b>	Offsets the detected position by the amount of the input in mm in X-direction.	Operator
<b>02 Offset Y [mm]</b>	<b>0</b>	Offsets the detected position by the amount of the input in mm in Y-direction.	Operator
<b>03 Offset Angle</b>	<b>0</b>	Contour will be automatically rotated depending on the detected angle. This rotation angle can be offset here.	Operator
<b>04 Stretch factor X</b>	<b>1</b>	Stretches the welding figure by the factor in X-direction.	Operator
<b>05 Stretch factor Y</b>	<b>1</b>	Stretches the welding figure by the factor in Y-direction.	Operator
<b><u>G04 Plausibility</u></b>			
<b>NAME</b>	<b>DEFAULT VALUE</b>	<b>Description</b>	<b>UserLevel</b>
<b>00 minimal Matching Score</b>	<b>0.5</b>	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
<b><u>G05 Load Figure from File dynamic</u></b>			

NAME	DEFAULT VALUE	Description	UserLevel
<b>00 ContourFromFile → WeldingFigure name</b>	<b>0</b>	Number of Welding figure to weld.	Operator
<b>04 SeamWeldingResult → Verbosity</b>	<b>Maximal</b>	Visibility of the Preview	Operator
<b><u>G06 Buffer</u></b>			
NAME	DEFAULT VALUE	Description	UserLevel
<b>01 X Buffer → Slot number</b>	<b>1</b>	Writes the detected X-Pos [mm] into the Buffer.	GroupLeader
<b>02 Y Buffer → Slot number</b>	<b>2</b>	Writes the detected Y-Pos [mm] into the Buffer.	GroupLeader
<b>04 Contour Buffer → Slot number</b>	<b>4</b>	Writes the Contour into the Buffer.	GroupLeader
<b>09 Plausibility → Slot number</b>	<b>9</b>	Writes the Plausibility into the Buffer.	GroupLeader
<b><u>G08 Send end of seam marker after xx images</u></b>			
NAME	DEFAULT VALUE	Description	UserLevel
<b>00 Image number xx → Number</b>	<b>0</b>	Image number on which the seam shall end (first image number = 0)	Operator

#### ■ Output Buffers

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

## ■ Results

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