



# PolyWorks® 2022

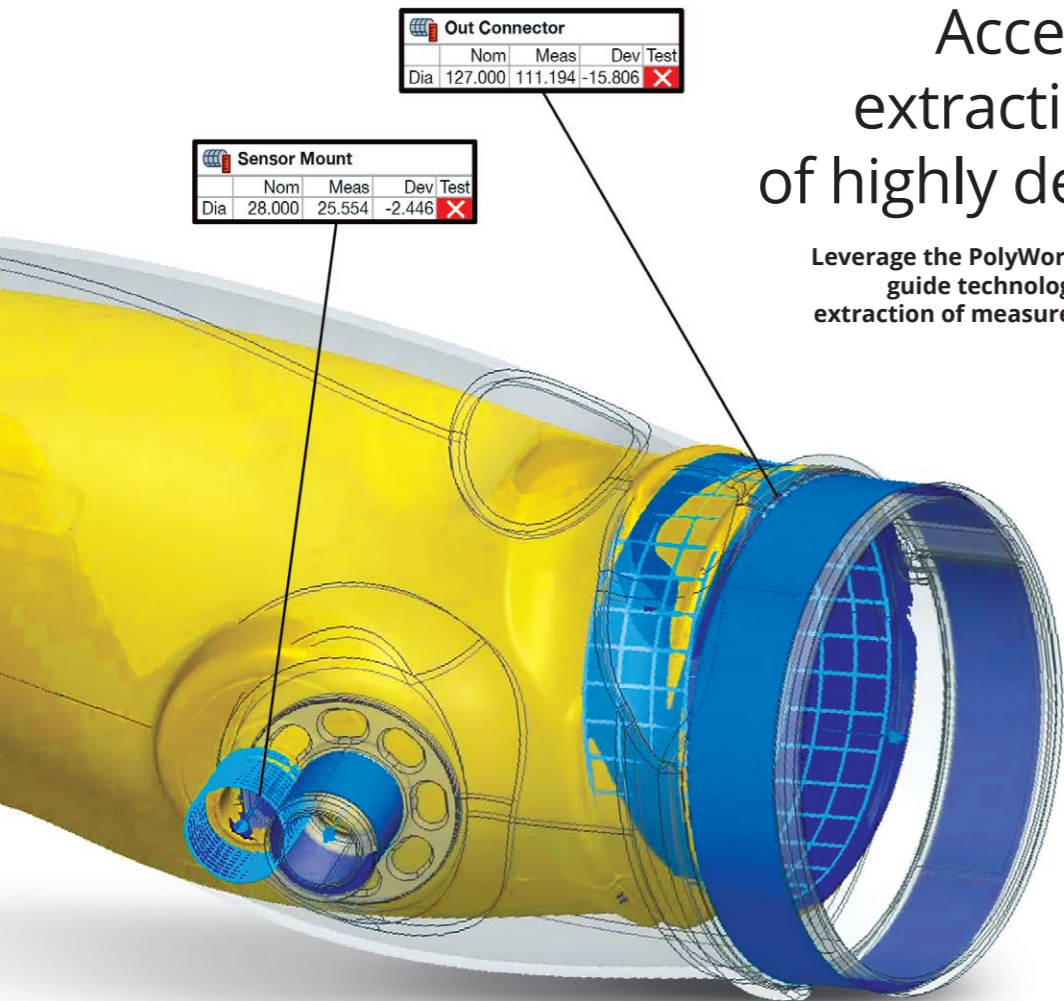
Dimensional Analysis &  
Quality Control Solutions



## Inspect multiple pieces efficiently without CAD data

**Guide feature measurement and automate feature extraction in the absence of nominal feature components**

- Probe features on a first piece, then be automatically guided by the measured feature components of the first piece when probing subsequent pieces
- Scan a first piece, use any interactive tool to create measured primitives from point cloud data, then convert all the measured feature components into measurement guides to guide feature scanning and automate the extraction of measured feature components on subsequent pieces
- Inject a CAD model later in the process if desired, create nominal feature components and GD&T controls, and let PolyWorks|Inspector™ automatically propagate these changes to all inspected pieces



## Accelerate feature extraction on a batch of highly deviated pieces

Leverage the PolyWorks|Inspector 2022 measurement guide technology to automate and speed up the extraction of measured feature components on highly and similarly deviated pieces:

- Use feature extraction groups or manual selections to reliably extract measured feature components on a first highly deviated piece, then convert these measured feature components into measurement guides
- Quickly extract the measured feature components of subsequent highly deviated pieces using measurement guides as reference geometries

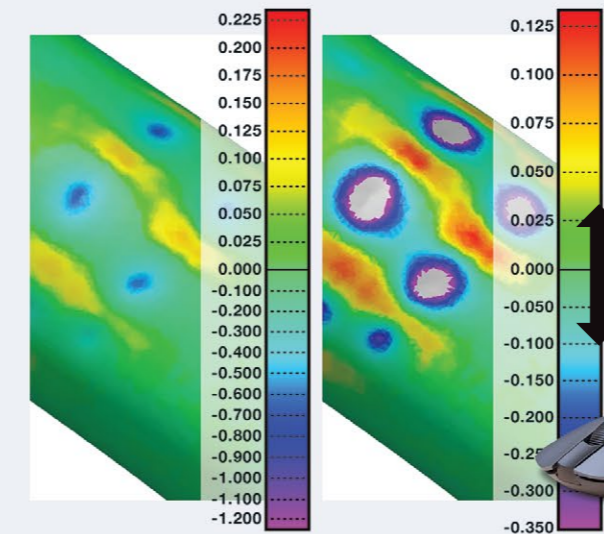
## Leverage new universal data hub for your digital processes

Ensure the digital interoperability of your CAD modeling, model-based definition, and 3D measurement solutions:

- Import all GD&T control types from native CAD and QIF MBD files to guarantee digital interoperability with the product definition processes
- Measure a dimensional control of a scanned or probed object with a more accurate device, such as a digital gauge, and inject the measured value in the object for reporting purposes



Control	Nominal	Measured	Tolerance	Deviation	Test
Diameter	11.000	11.080	0.000/-0.015	0.080	Fail
Length	10.000	11.030	±0.050	0.030	Pass
	0.100 A B	0.010	0.015	0.010	Pass



## Enjoy usability enhancements

Benefit from improvements that increase user efficiency and simplify software learning:



- Type a search query within the Options dialog box to quickly find the option you are looking for
- Adjust the color scale limits dynamically in the 3D Scene to accelerate the analysis of your data color maps

## Create smart first-article inspection reports within Excel

Quickly publish an AS9102 and PPAP-compliant First Article Inspection Report by measuring a piece from the first production run in PolyWorks|Inspector 2022 and automatically transferring the results to the provided FAIR template in Microsoft Excel.

AS9102B First Article Inspection  
Form 3:  
Characteristic Accountability,  
Verification, and Compatibility Evaluation

1. Part Number		2. Part Name		3. Serial Number		4. FAIR Number	
Pump Cover		PC651-1		PC651-001		1124	
Char. No.	Reference Location	Characteristic Designator	Ins. Control	Min. Nominal	Min. Lower Tol.	Max. Upper Tol.	9. Results
1	SH1/AS	CRITICAL	Flatness	0.000	0.000	0.015	0.011
2	SH1/BS	CRITICAL	Perpendicularity A	0.000	0.000	0.025	0.031
3	SH1/DF	CRITICAL	Diameter	4.252	0.050	0.050	4.284
4	SH1/CI	NON-CRITICAL	Diameter	1.217	-0.039	0.039	1.220
5	SH1/CI	NON-CRITICAL	Midpoint X	2.205	-0.039	0.039	2.205
6	SH1/CI	NON-CRITICAL	Midpoint Y	-1.028	-0.039	0.039	-1.027
7	SH1/CI	NON-CRITICAL	Midpoint Z	-1.563	-0.039	0.039	-1.578
8	SH1/AS	NON-CRITICAL	Position A B C	0.000	0.000	15.000	0.011
9	SH1/AS	NON-CRITICAL	Diameter	1.371	-0.050	0.050	1.375
11	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.005
12	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.004
13	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.005
14	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.004
15	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.003
16	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.003
17	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.003
18	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.003
19	SH1/DS	CRITICAL	R Distance	0.864	-0.010	0.010	0.864
20	SH1/DS	CRITICAL	R Distance	0.079	-0.050	0.050	0.079

cylinder 1			
Nom	Meas	Dev	Test
∅ 15.0000 A B C	0.0113	0.0113	✓
Dia	1.3715	1.3749	0.0034

## Optimize CNC CMM probing sequences for the Renishaw PH20 probe head

Transform collision-free 3-axis CNC CMM sequences into optimal 5-axis sequences by efficiently integrating 5-axis moves and head touch probing.



