



# What's new in 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

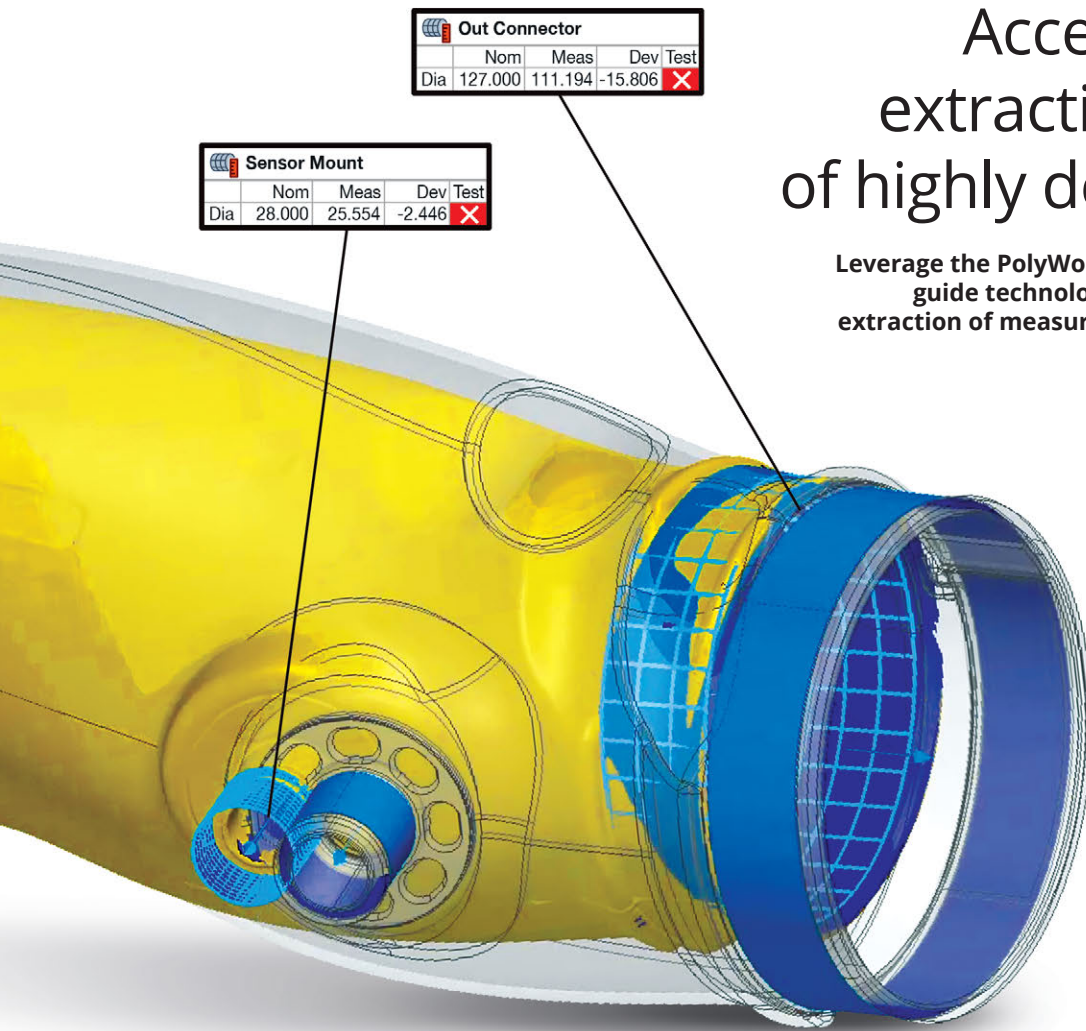
**innovmetric**



# 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

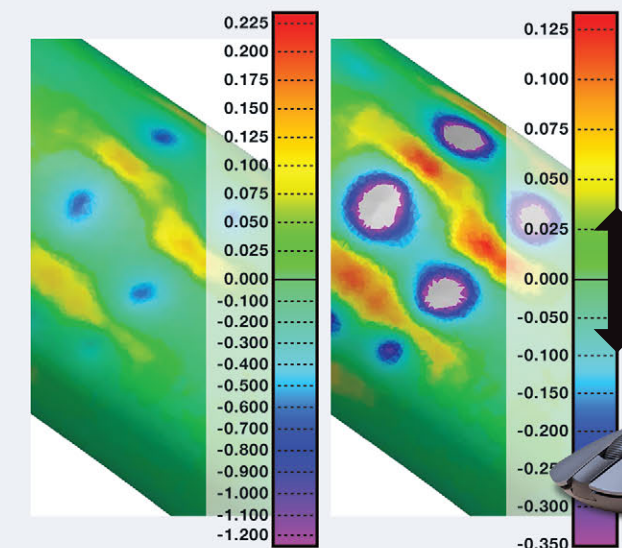
# Enjoy usability enhancements

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.

PolyWorks ReportLoop		AS9102B First Article Inspection Form 3: Characteristic Accountability, Verification, and Compatibility Evaluation		innovMetric	
1. Part Number	2. Part Name	3. Serial Number	4. FAIR Number		
Pump Cover	PC651-1	PC651-001	1124		

Characteristic Accountability						Inspection / Test Results						
S. Char No.	R. Reference	F. Characteristic Designator	A. Requirement	M. Nominal	M. Measured	R. Nominal Tol.	R. Upper Tol.	R. Lower Tol.	R. Results	Sb. Designed / Qualified Positioning	Nonconformance Number	Additional Data / Comments
1	SH1/A5	CRITICAL	Flatness	0.000	0.000	0.015	0.011	0.011	PCMM-ARM-QC001			
2	SH1/B5	CRITICAL	Perpendicularity A	0.000	0.000	0.025	0.031	0.031	PCMM-ARM-QC001		NC1113464	
3	SH1/D6	CRITICAL	Diameter	4.252	-0.050	0.050	4.184	4.184	PCMM-ARM-QC001			
4	SH1/C1	NON-CRITICAL	Diameter	1.217	-0.039	0.039	1.200	1.200	PCMM-ARM-QC001			
5	SH1/C1	NON-CRITICAL	Midpoint X	2.205	-0.039	0.039	2.205	2.205	PCMM-ARM-QC001			
6	SH1/C1	NON-CRITICAL	Midpoint Y	-1.028	-0.039	0.039	-1.027	-1.027	PCMM-ARM-QC001			
7	SH1/C1	NON-CRITICAL	Midpoint Z	-1.568	-0.039	0.039	-1.576	-1.576	PCMM-ARM-QC001			
8	SH1/A1	NON-CRITICAL	Position A B C	0.000	0.000	15.000	0.011	0.011	PCMM-ARM-QC001			
9	SH1/A1	NON-CRITICAL	Diameter	1.371	-0.050	0.050	1.375	1.375	PCMM-ARM-QC001			
11	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.005	-0.005	PCMM-ARM-QC001			
12	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.002	-0.002	PCMM-ARM-QC001			
13	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.005	-0.005	PCMM-ARM-QC001			
14	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.001	-0.001	PCMM-ARM-QC001			
15	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	-0.001	-0.001	PCMM-ARM-QC001			
16	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	0.002	0.002	PCMM-ARM-QC001			
17	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	0.000	0.000	PCMM-ARM-QC001			
18	SH1/F1	NON-CRITICAL	Surface Distance	0.000	-0.020	0.020	0.000	0.000	PCMM-ARM-QC001			
19	SH1/D5	CRITICAL	X Distance	0.866	-0.039	0.039	0.866	0.866	PCMM-ARM-QC001			
20	SH1/D5	CRITICAL	Z Distance	0.079	-0.050	0.050	0.079	0.079	PCMM-ARM-QC001			

	Nom	Meas	Dev	Test
Ø 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 probing sequences into optimal 5-axis sequences by efficiently integrating 5-axis moves and head touch probing.





# Improve your probing operator performance by deploying mixed-reality display technology

Experience getting visual guidance and feedback in front of your eyes along with common probing tools:

- Measure correctly each time following the guidance geometry and measurement instructions overlaid on the inspected piece
- Evaluate the outcome by visualizing probed points, measurement results, and the digital readout in real time
- Invoke common probing functionalities by using our instinctual user interface



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