NEL PRETECH CORP.

REVERSE ENGINEERING: CREATING PARAMETRIC MODELS

2022

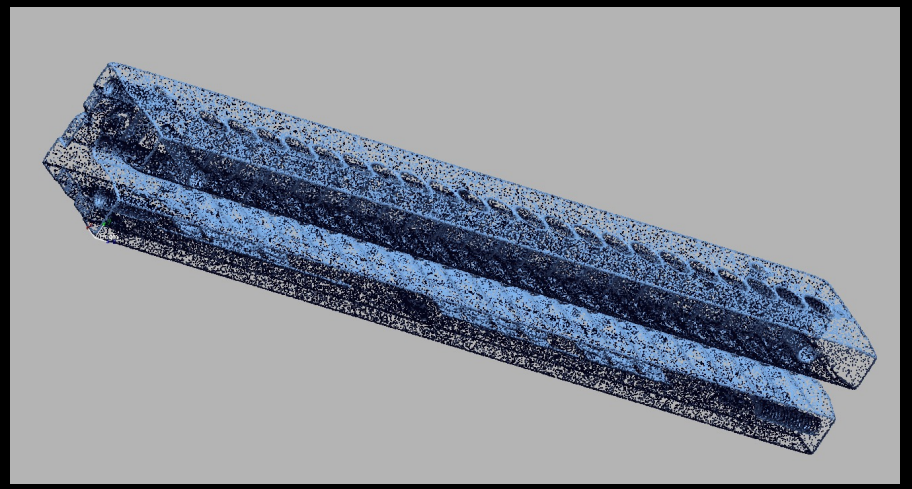
CREATING A PARAMETRIC MODEL USING SCANNED DATA

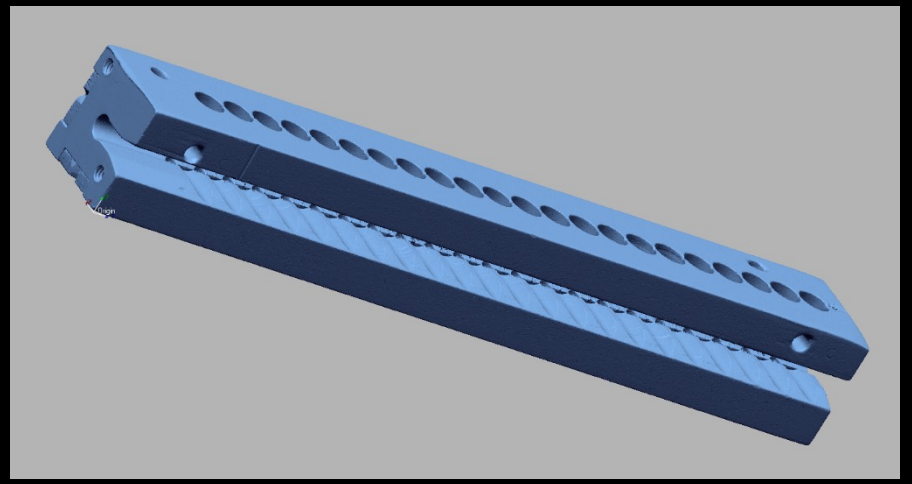
- This part was scanned in our Metrotom 800 industrial CT scanner. A CT scan was the preferred measurement method to access the interior geometry of the part.

- An .stl file was generated from the CT point cloud data.

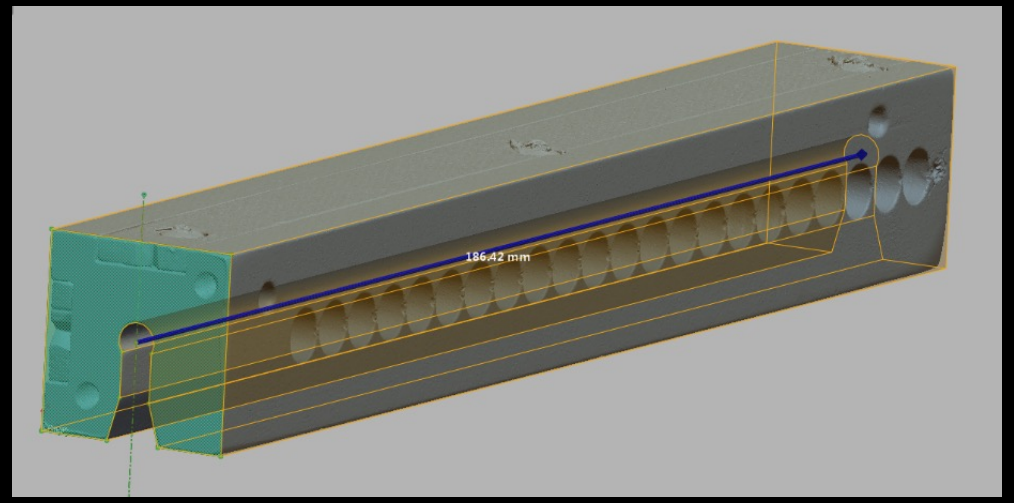
- The next step in the process is mesh editing. Mesh editing is not as crucial to the parametric modeling process as it is for a surface wrap.

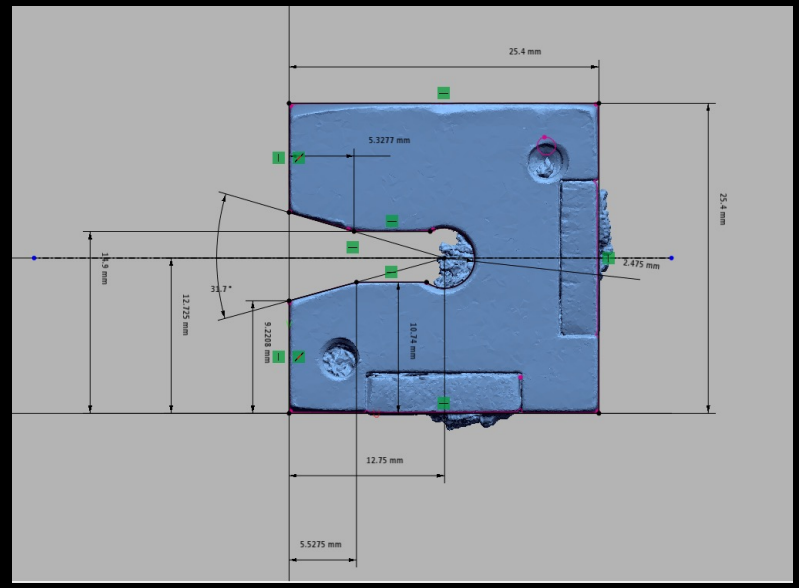
- The mesh just needs to be clean enough to extract dimensional data for feature modeling.

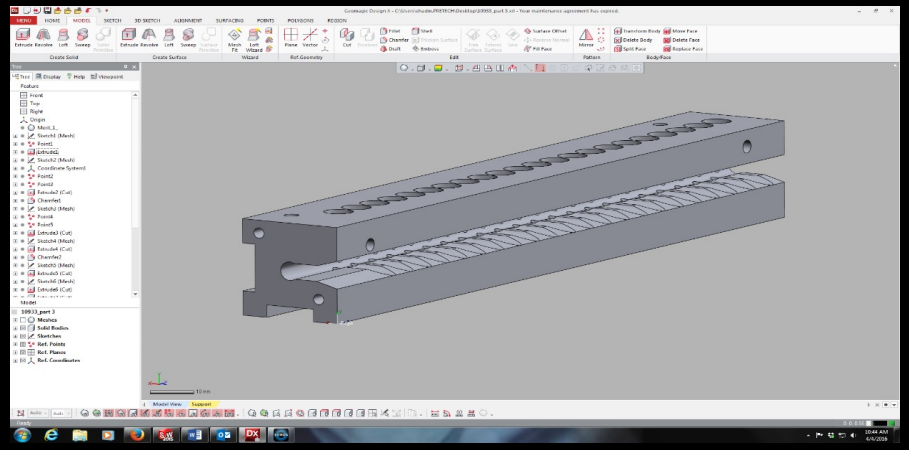


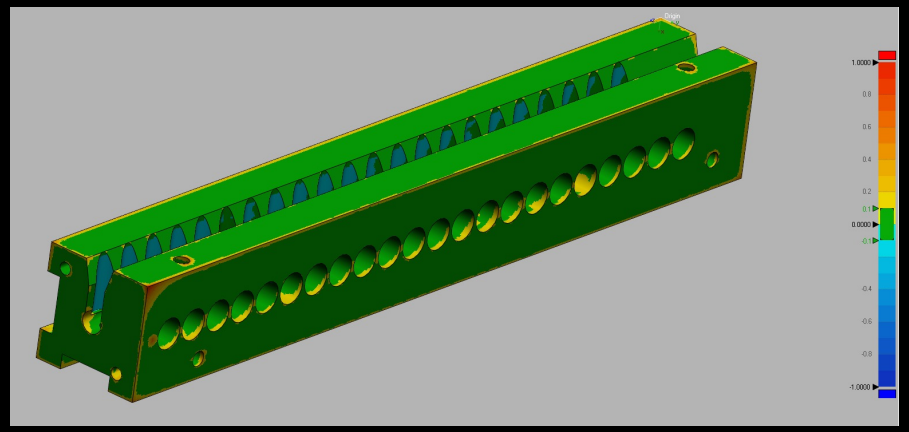


Dimensions are extracted from the scan and parametric features are created





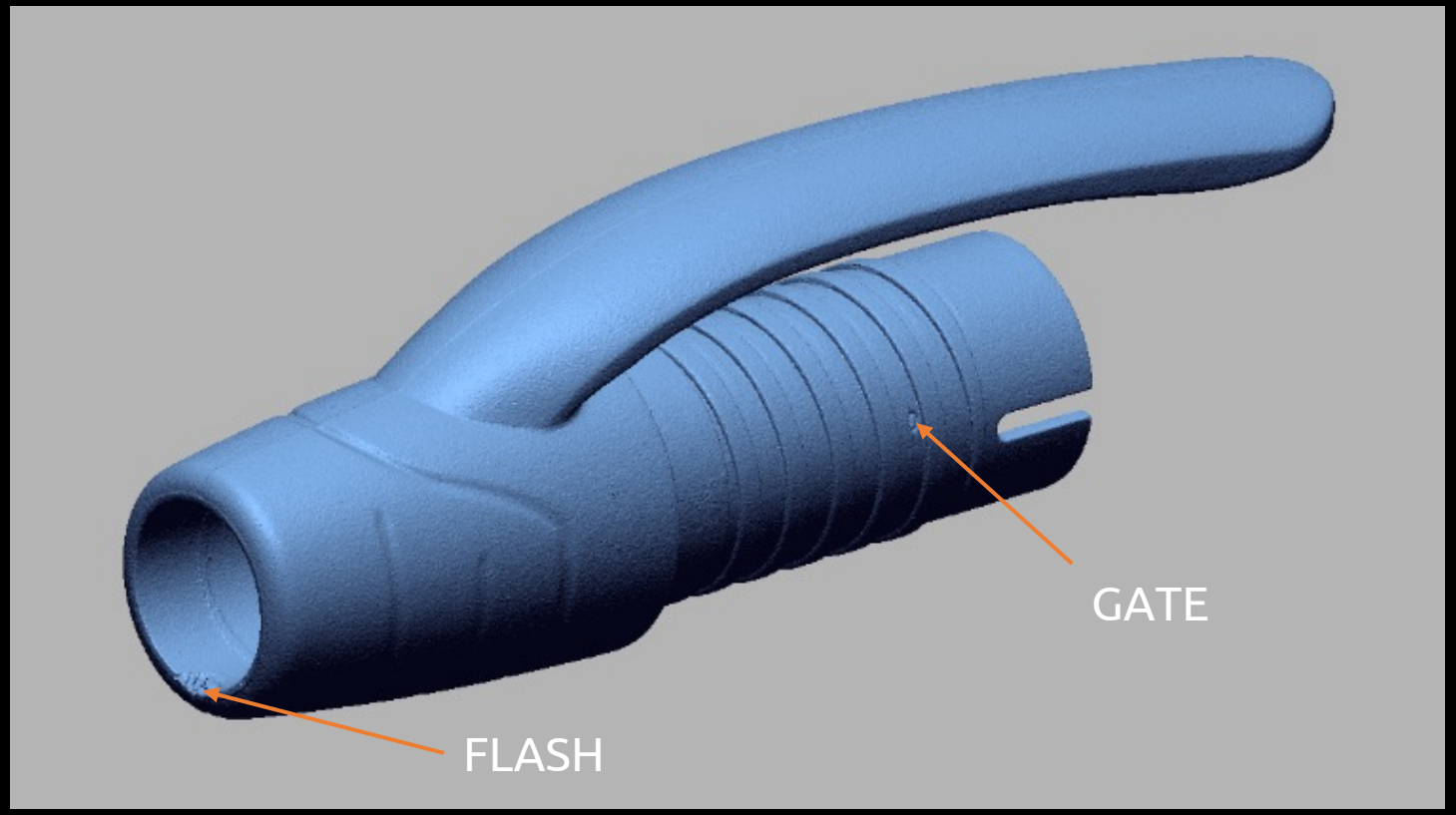




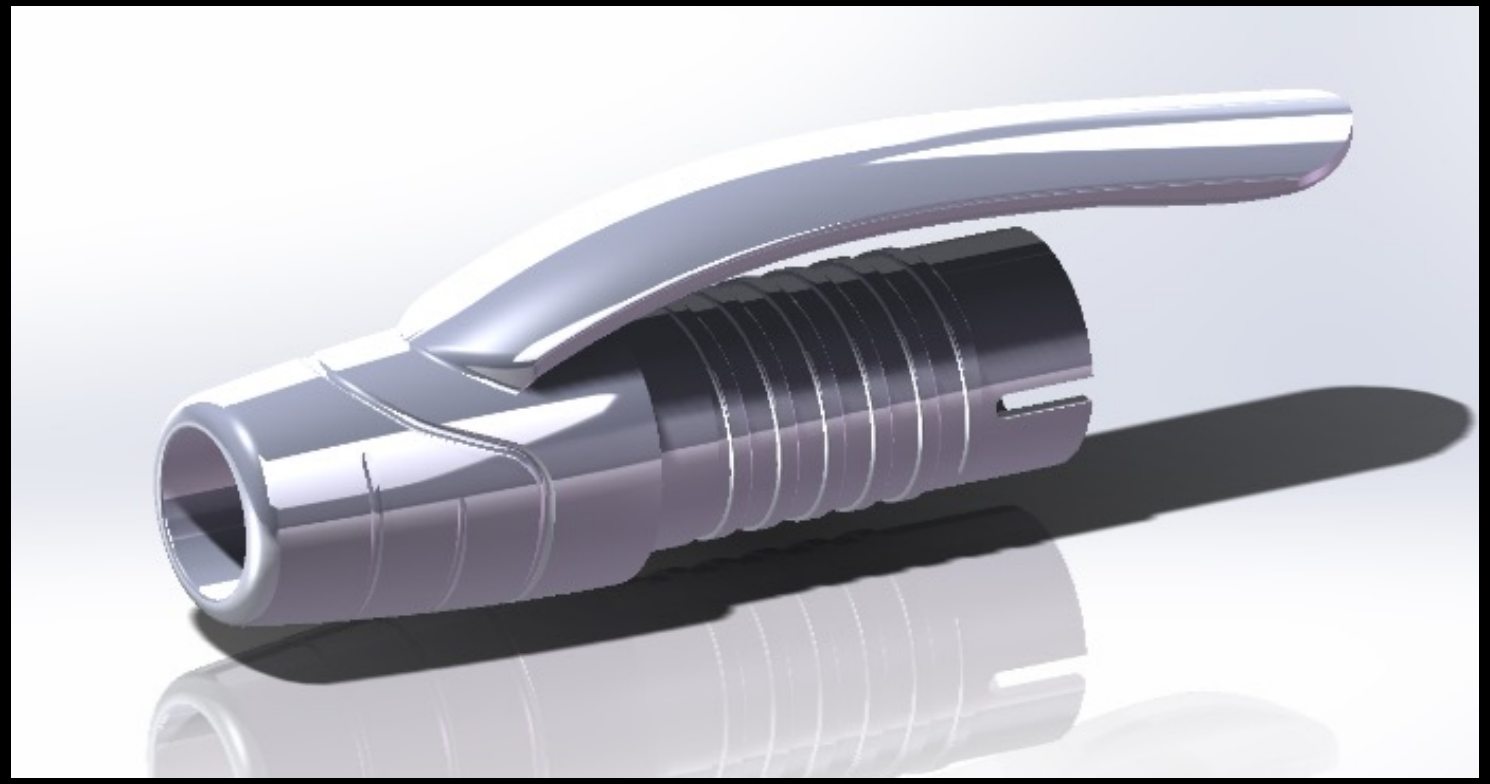
ACCURACY MATTERS

- The result is a fully parametric solid model with feature design history that can be transferred over to most major CAD packages for further design editing or incorporation into an assembly.
- This model can also be exported in a STEP or iges format.
- Using the accuracy analyzer allows the user to see areas of deviation. This is useful for finding areas that may need to be further processed or to expose areas where the original part may be worn.

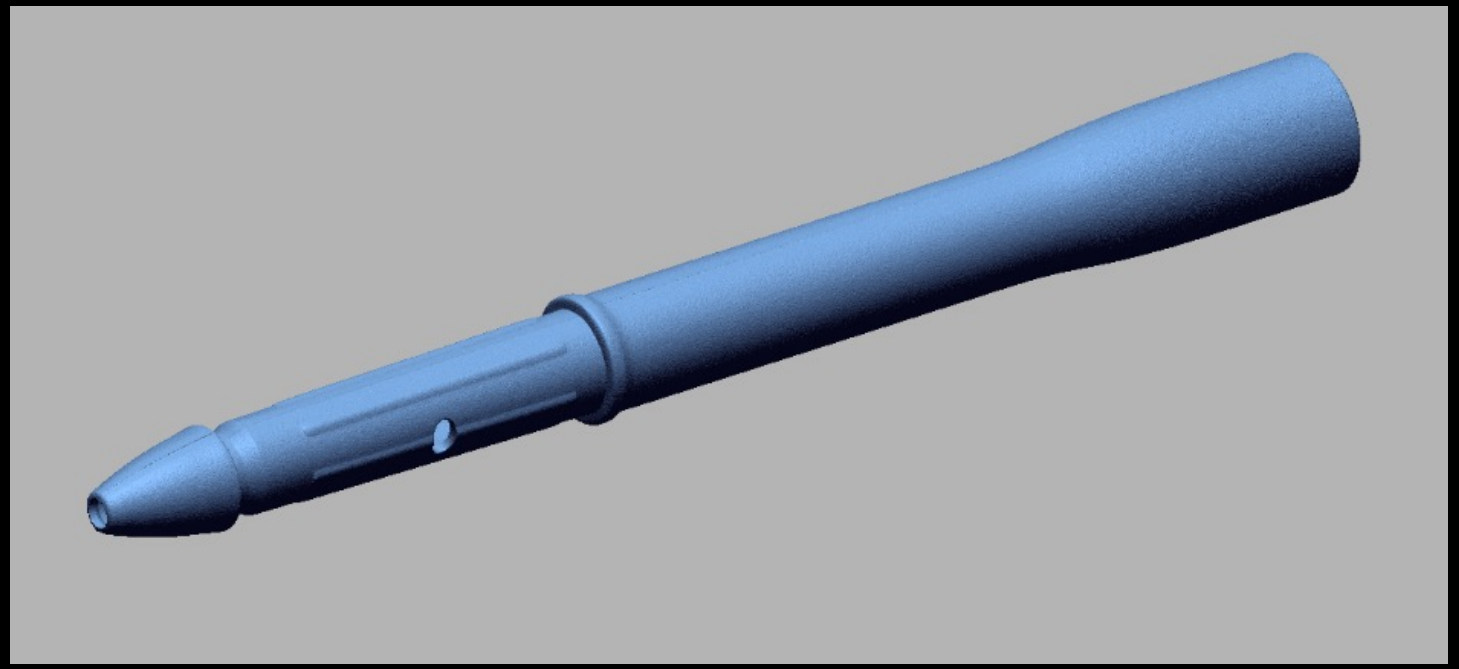
ORIGINAL SCAN OF PEN CAP



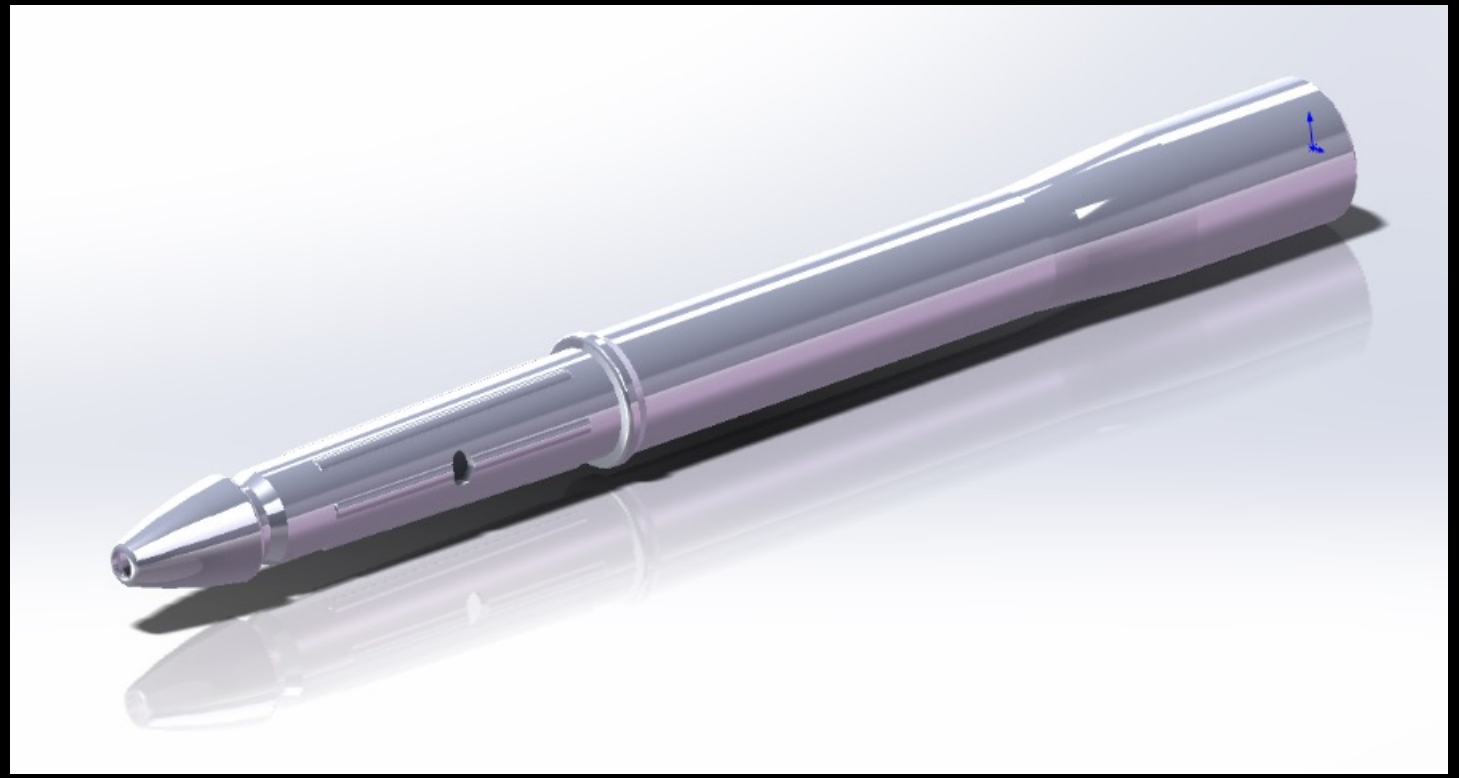
PARAMETRIC MODEL OF PEN CAP



ORIGINAL SCAN OF PEN HOUSING



PARAMETRIC MODEL OF PEN HOUSING



THANK YOU

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