HydroComp, Inc.

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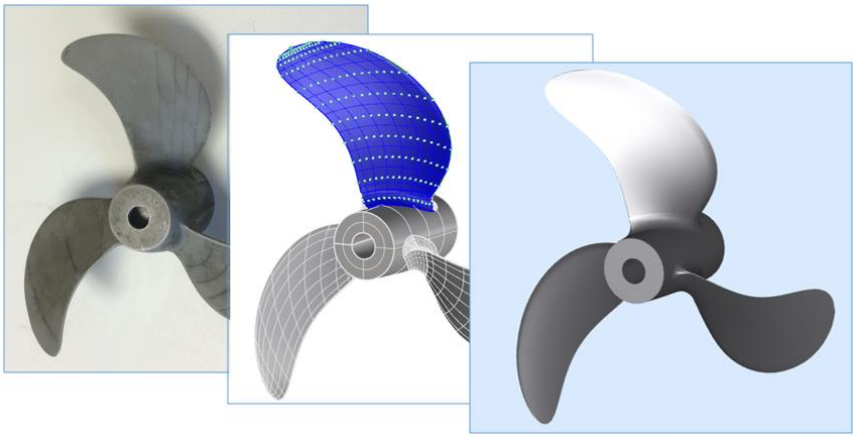
Reconstruct Existing Designs with Scan Converter

Convert 3D inspection data into a PropCad design, 2D drawing, and reports!

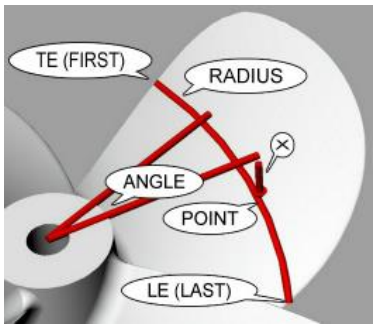
PropCad is being used to interpret existing propellers, patterns, and scan reports in order to recreate legacy designs. The **Scan Converter** utility, which is now a part of **PropCad Premium**, is used to extract propeller parameters such as pitch, chord, skew, rake, and thickness using 3D data points collected from a physical propeller.

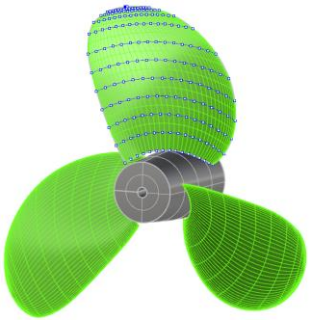


Scan Converter processes the data and recreates the propeller blade by extracting individual sections from the geometry and deriving the geometric distributions. Once the design is in PropCad, additional documentation such as 2D drawings, pitch inspection reports, and 3D offsets can be easily generated for customers, clients, and record keeping.

3D Data Sources

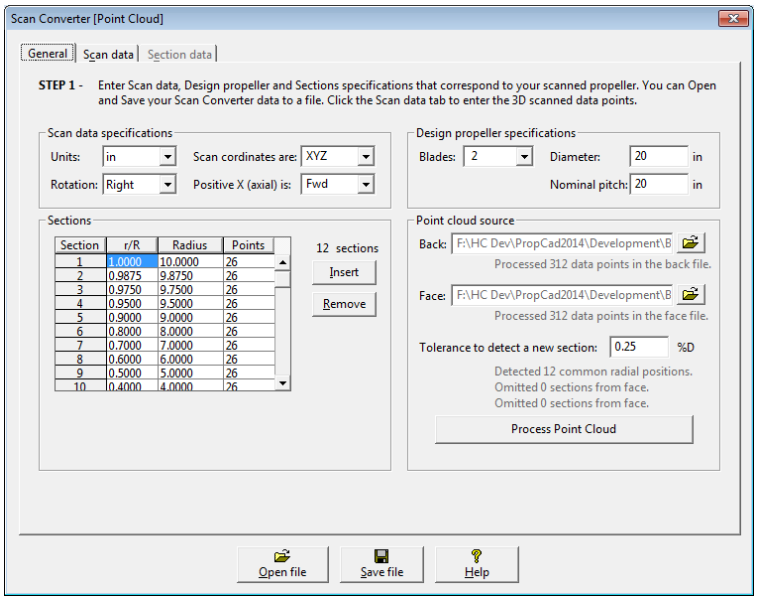
The data used by Scan Converter has a variety of sources, including: *traditional pitch-o-meter and inspection probe readings, organized 3D point clouds, and CAD models generated through full-3D digitization scans*. These 3D data points can be in Cartesian (X-Y-Z) or Polar (X-R-θ) formats. The data can be sampled on both the face and back of the blade, or just the face with a corresponding thickness measurement.



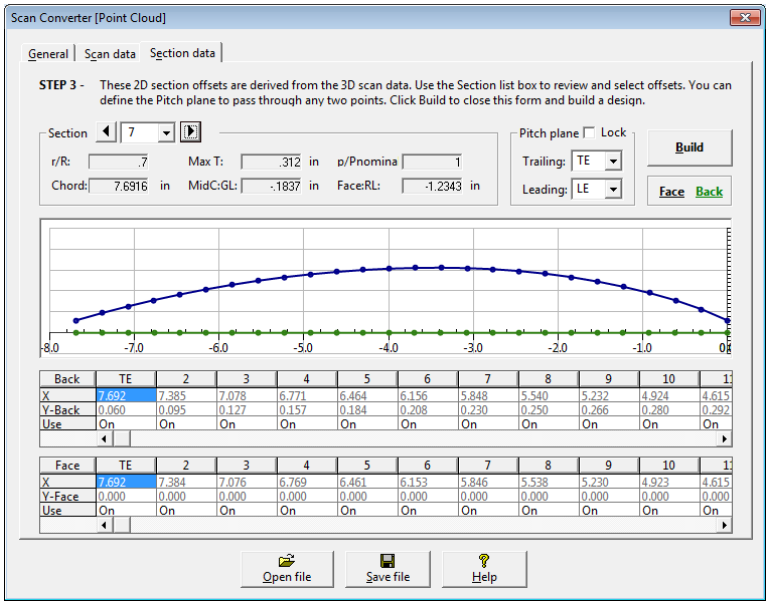


Enter 3D Data

First, the primary characteristics of the propeller are identified, such as units, rotation direction, coordinate format, number of blades, and diameter. Next, the sampled radial positions (r/R) and number of sampled points per section are entered. HydroComp recommends a minimum of six radial positions, and seven or more chordwise points per section.

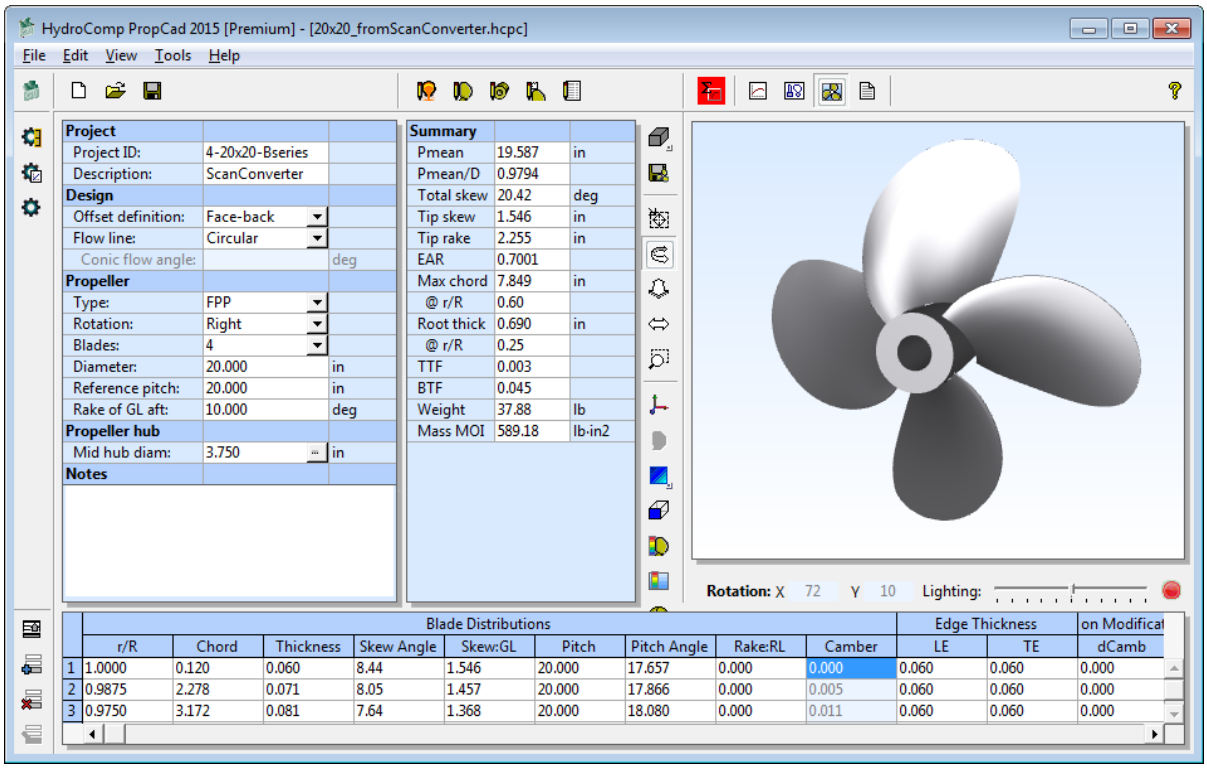


The 3D data for each section is entered and a preview of the derived 2D section data is shown. The derived data for each section is shown above the plot:



Build and Review

From here, we can Build the propeller to back-calculate the parameters and create 3D models 2D drawings, and reports:



About HydroComp

Celebrating its 30th year of operation in 2015, HydroComp provides software and services for resistance and propulsion prediction, propeller sizing and design, and forensic performance analysis. HydroComp is proud to have served over 700 industry, research, academic, and government clients from more than 60 countries.

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