

May 5, 2022

HydroComp PropElements® 2022 Released

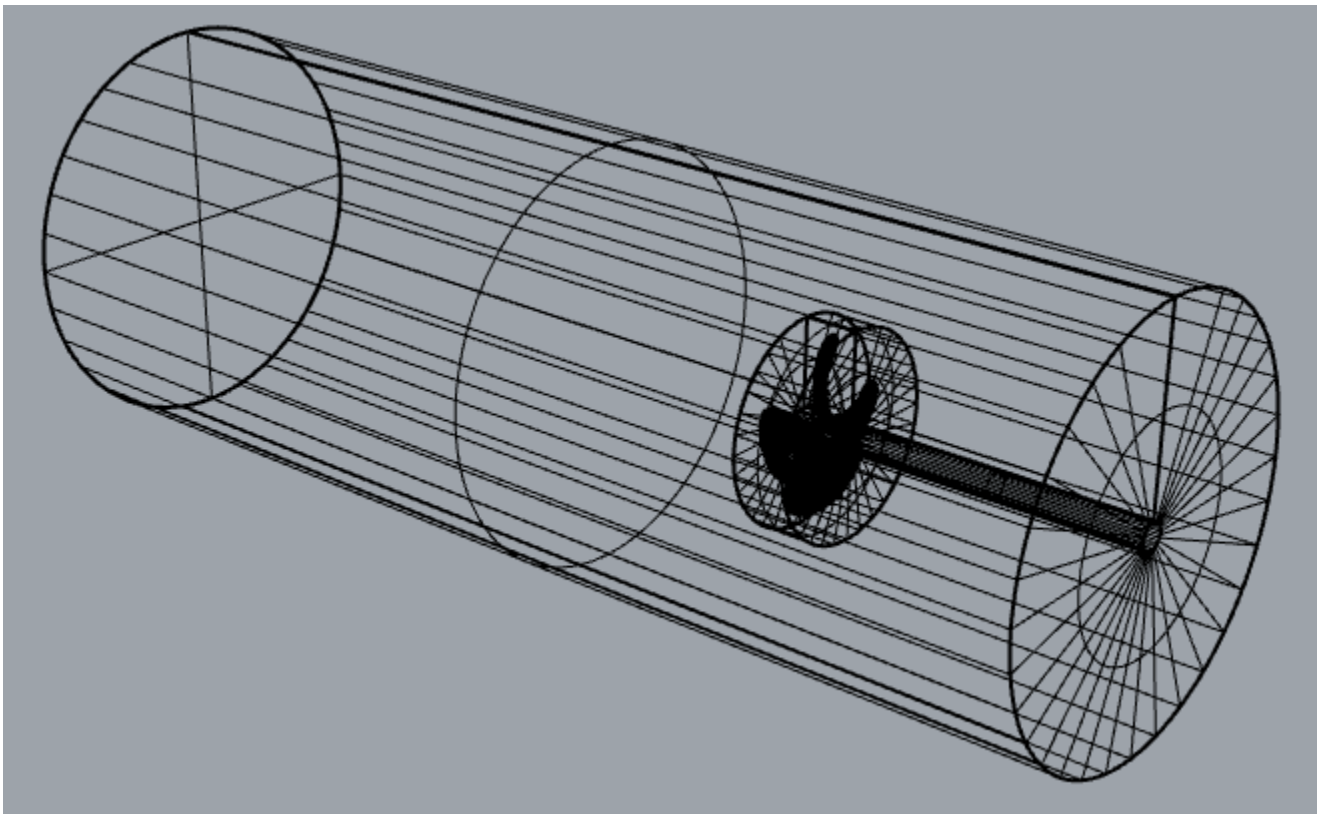
New features for improved wake-adapted propeller design and analysis

PropElements was developed not only for propeller specialists and manufacturers, but for naval architects and vehicle designers as well. It provides a key optimizing design stage between parametric specification and full 3D design for manufacture. The initial release of HydroComp PropElements 2022 offers new features across this range of applications and workflow.

Expanded workflow support for propeller CFD computations

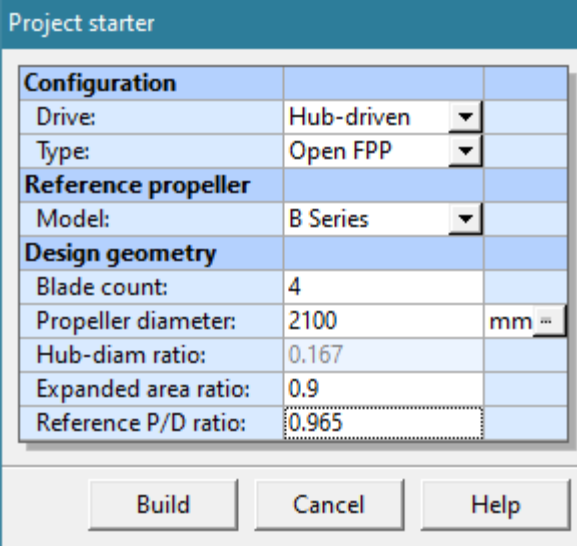
PropElements is a valuable companion for CFD computation of propeller performance, such as for direct open-water prediction or full-ship self-propulsion simulations. The extent of supporting calculations and exports with PropElements 2022 now includes:

- Employ PropElements as a preparatory stage for design space investigations and optimization of a wake-adapted propeller.
- Use output from PropElements as benchmark thrust and torque/power figures for quality assurance review of CFD computations.
- Prepare T/Q/N or KTKQ data for definition of actuator disk performance.
- Quickly generate a propeller (see below) and export 3D CAD of a propeller.
- Extend the CAD export to include the fixed and rotating domain surfaces for a typical open-water computation in CFD.
- Export 3D CAD of standard nozzles suitable for CFD models (see below).
- Couple CFD with PropElements as a higher-fidelity alternative to an actuator disk.



Project starter

Starting a new project with PropElements has never been easier. In this newly updated utility, users can take system-level propeller data – such as parameters developed with HydroComp NavCad®, for example – and generate a full initial model of the propeller suitable for wake-adapted analysis or design. Full blade distributions and shapes can be derived from standard series (S Series, Ka Series), application-specific forms (UV thin, Ducted wide), or well-known benchmark propellers (VP1304, N4990, KP505). Each new project is then built to user-defined diameter, blade area ratio, and reference P/D values.



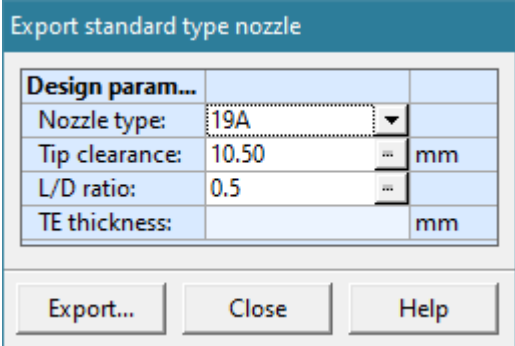
The 'Project starter' dialog box contains the following configuration options:

| Configuration | |
|----------------------|------------|
| Drive: | Hub-driven |
| Type: | Open FPP |
| Reference propeller | |
| Model: | B Series |
| Design geometry | |
| Blade count: | 4 |
| Propeller diameter: | 2100 mm |
| Hub-diam ratio: | 0.167 |
| Expanded area ratio: | 0.9 |
| Reference P/D ratio: | 0.965 |

Buttons: Build, Cancel, Help

New nozzle CAD export utility

CAD files of nozzle geometries can be useful for a variety of purposes, from manufacture (small nozzles for UVs, for example) to CFD analysis. PropElements 2022 provides a new utility to export 3D CAD from a collection of standard nozzle styles (19A, 37, 33, 34). User-defined parameters allow for the nozzles to be scalable to any propeller diameter, as well as customized for tip clearance and nozzle L/D ratio.



The 'Export standard type nozzle' dialog box contains the following design parameters:

| Design param... | |
|-----------------|----------|
| Nozzle type: | 19A |
| Tip clearance: | 10.50 mm |
| L/D ratio: | 0.5 |
| TE thickness: | mm |

Buttons: Export..., Close, Help



About HydroComp PropElements

For additional information, click to: www.hydrocompinc.com/solutions/prop-elements

About HydroComp

Since 1984, HydroComp has been a leader in providing hydrodynamic software and services for resistance and propulsion prediction, propeller sizing and design, and forensic performance analysis. Through its unique array of software packages and services, HydroComp now serves over 1200 naval architectural design firms, shipyards, yacht owners, ship operators, propeller designers, universities and militaries around the globe.

For more information, please contact:

Danielle Doonan, Marketing Coordinator
danielle.doonan@hydrocompinc.com
HydroComp, Inc.
15 Newmarket Road, Suite 2
Durham, NH 03824 USA
+1 603-868-3344
www.hydrocompinc.com