SwiftCraft™

HYDROCOMP Inc.

Speed & Power Software

Part of the *Swift*Works™ collection of marine performance software

SwiftCraft™ is a powerful designer's tool for the speed and power prediction of monohull vessels under 75 m (250 ft). *SwiftCraft* has been developed specifically for designers and builders of motor yachts, patrol craft, small ships, supply vessels, ferries and other transit craft.

Built upon nearly 20 years of technical development by the experts at HydroComp, *SwiftCraft* employs the most advanced parametric prediction capabilities to be found. Complementing the strength of its calculations is its easy-to-use interface. Modeled on web navigation, it is ideal for new users where a rapid learning curve is important and the time needed to complete a project must be minimized.

What will SwiftCraft do for me?

SwiftCraft provides a user with an extensive set of features and calculations for the following speed and power analyses (see the back of this sheet for details):

Bare-hull Drag || Appendage & Wind Drag || Drag Reduction Analysis

Hull-propulsor Coefficients || Propeller and Gear Ratio Sizing

Thrust, Torque, Power || Cavitation || Propeller Strength

What is special about SwiftCraft?

You will find a number of calculation features throughout SwiftCraft that are found only in HydroComp software. These include a "method expert" to evaluate and rank the prediction methods, optimum sizing of reduction gear ratio in conjunction with propeller sizing, analysis of the effect of propeller cupping, and a physics-based equilibrium trim planing analysis.

Is it easy to use?

SwiftCraft is easy to use. It was developed with a new interface architecture which takes advantage of a user's familiarity with navigation of the web. This interface promotes the proper completion of tasks, so new or infrequent users can quickly master the software.

How can I learn more?

Visit the SwiftCraft web site at:
www.hydrocompinc.com/swiftcraft/

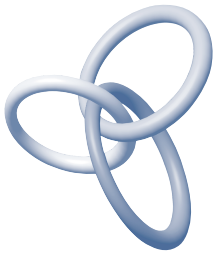
Here you can review product details and example screens, and even take *SwiftCraft* for a "test drive".

A comprehensive set of technical specifications are on the back of this sheet.

www.hydrocompinc.com

: technical specifications

Bare-hull Drag



Analyses for both displacement/semi-displacement (Ct-based) and planing craft are included. The displacement/semi-displacement analysis is based on the ITTC-78 protocol with 3D form factor, and an equilibrium-trim analysis incorporating all forces and moments is used for planing hulls.

Prediction methods for displacement & semi-displacement hulls include:

Simple displ/semi || UBC Trawler || Roach Tugboat || Oortmerssen
Delft Sailboat (5 variants) || USNA YP || CRTS || Holtrop 1984
HSTS || Jin 1980 || Jin 1988 || DeGroot RB || DeGroot HC
Mercier || NPL || VTT RB || VTT HC

Prediction methods for planing hulls include:

Simple Planing || Series 62 || Series 65B || Savitsky

An associated drag reduction analysis can be used to determine how changes in principal hull parameters affect drag.

Added Drag

A comprehensive appendage drag analysis can be employed, as well as a wind drag prediction. Prediction methods for appendage drag include:

% vessel drag || Radojcic (simple) || Blount/Fox (simple)
Holtrop (detailed) || Hoerner (detailed) || Sailboat (detailed)

Prediction methods for wind drag include:

% Vessel Drag || Taylor (detailed)

Hull-propulsor Interaction Coefficients

A number of methods are available for the prediction of hull-propulsor interaction (i.e., propulsive) coefficients. Prediction methods for wake fraction, thrust deduction and relative-rotative efficiency include:

Simple Displ/semi || Oortmerssen || Holtrop 1984 || Simple Sailboat
Simple Planing || Series 62 Planing || Blount/Fox Planing

Propulsion Sizing

SwiftCraft allows you to size your propulsion system based on a variety of design objectives to determine diameter, pitch, BAR (blade area ratio) and/or reduction gear ratio. You can size the system to match engine power or thrust loading (determined from the total drag), and include information about parasitic losses (e.g., PTO) and design points.

Propulsion Analysis

The propulsion analysis provides a comprehensive review of the entire propulsion system for a free-running vessel. The different open-wheel propeller types include:

B-series || Gawn AEW || Gawn KCA

The propulsion system analysis provides results for:

Engine RPM || Engine Torque || Engine Brake Power || Fuel Rate
Propeller Thrust || Propeller Efficiency || Overall Efficiency
Tip Speed || % Blade Cavitation || Blade Pressure || Recommended BAR

An associated blade strength analysis can be used to identify a proper propeller material.

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