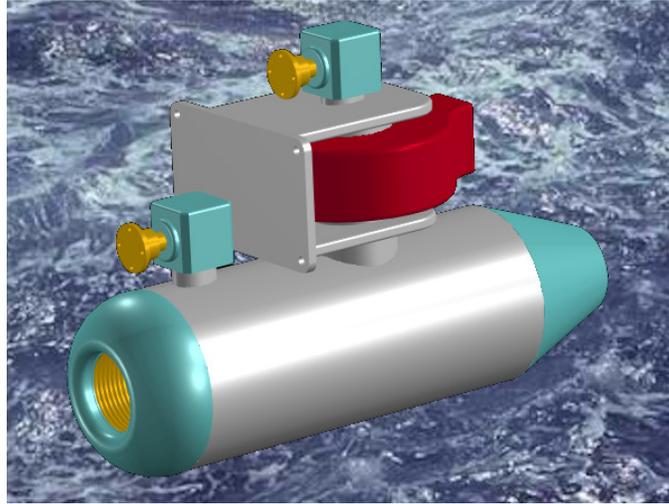




Phoenix Ram Induction TrueJet Drive



The Phoenix TrueJet Drive is a revolutionary concept in marine propulsion systems. It is the first TRUE jet drive, and will set the pace for all future designs - similar to the jet aircraft engine surpassing older prop designs.

In order to better understand this new concept, let's take a brief look into traditional open and closed prop designs & their speed limitations.

Overcoming Design Limitations

Both open and closed ("jet") prop designs employ a common weak link - the propeller. All propellers, from traditional open props to "jet" mixed-flow designs, rely on the lift characteristics of the prop blade to produce forward thrust.

Increasing prop RPM and pitch generally increases available thrust - to a point.

Moving fluid induces a vacuum effect, which increases with fluid speed over the surface of the prop. As the fluid flow reaches a critical speed, the water on the prop literally boils into gas - which then collapses on the prop trailing edge - pitting the surface of the prop.

This cavitation point is a key limiting factor to open prop and so-called jet drives (which are simply improved Kort nozzles).

Other serious cavitation effects occur in the inlet nozzles of jet drives - resulting in speed barriers at even lower vehicle speeds.

The Phoenix TrueJet Drive design eliminates the speed barrier in three key design areas:

- Inlet nozzle
- Impeller
- Outlet nozzle

Jet drive Weak Links

- Propellers
- Inlet nozzles

Inlet Nozzle

The inlet nozzle is designed to induce a positive fluid pressure at all speeds, eliminating vacuum cavitation at the “high end”.

By designing the boat hull for efficient planing and fluid ram-induction, drag losses are kept to a minimum.

Impeller

This is the major factor in breaking through the speed barrier. First of all, we throw out the propeller design completely - replacing it with a high efficiency centrifugal design.

Next we use a two-stage approach to eliminate the disparity between low-end acceleration and high-end efficiency. The first stage impeller does double duty - as an inducer for the second stage, and as an accelerator pump - like kicking it down into low gear.*

** Centrifugal pumps are more efficient than axial pumps as suction-lift impellers.*

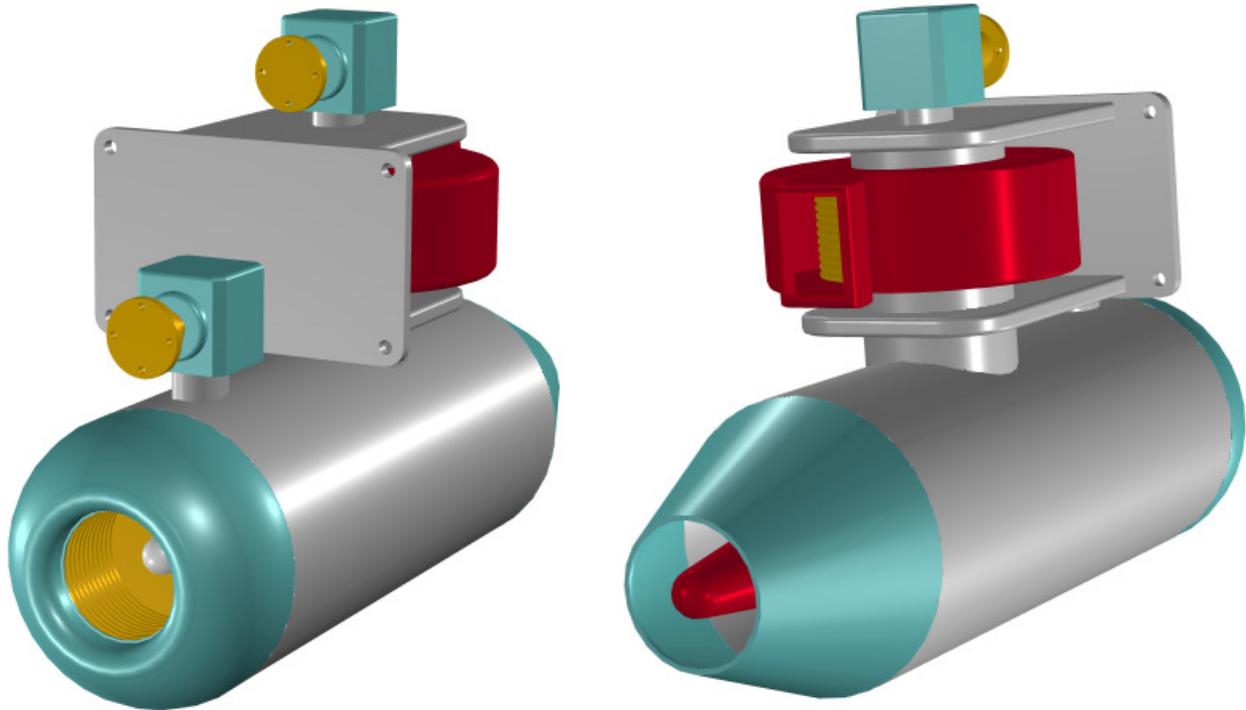
Outlet Nozzle

Here we use a proprietary geometry-morphing device to tune the water jet characteristics to the vehicle speed/acceleration demands.

By combining next-generation designs in these 3 key areas with improved jet stream vectoring, the Phoenix TrueJet Drive delivers the best power, speed, acceleration, maneuvering and fuel economy in any class.

These benefits, along with the TrueJet™ impeller and advanced computer control, make this the pace-setting automatic marine transmission for all future designs!

Phoenix TrueJet™ Drive



- *Higher overall efficiency*
- *Superior directional control*
- *Better for environment—does not disturb sea bottom like conventional jet drives*

Advanced Hull Design

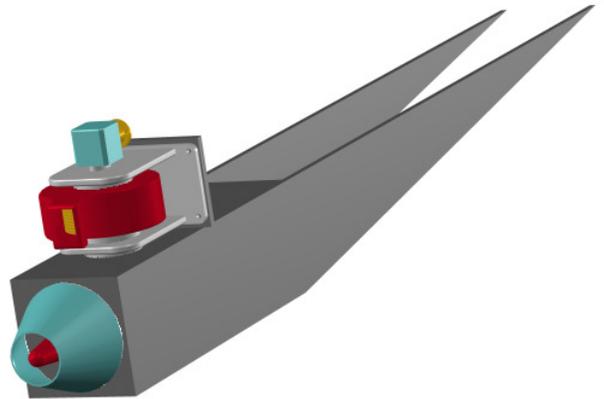
Open propellers will soon be replaced by *true jet drives* for ultra-high performance boating.

Due to the “speed ceiling” inherent in all conventional bladed designs, open props (fully submerged or surfacing) and all other “jet drives” reach a critical speed point where cavitation takes over & creates an insurmountable barrier to higher speeds.

PNGinc designs are not constrained by these traditional limitations. We treat all key components - inlet, impeller, outlet - as interacting parts of a total system, which includes the hull.

Since the inlet nozzle shape is a critical component of efficient high speed operations, the inlet/hull interface is also a critical design consideration.

Unlike all other marine manufacturers, we do not simply cut a hole in the bottom of a conventional design and bolt-down a jet drive. Instead, we analyze how water interacts with the hull bottom at increasing speeds and then design the best ram-induction inlet to feed our drives enough water pressure to avoid cavitation.



WORLDKAR CORPORATION

WorldKar Corporation
E10074 Co. Rd. H58
Munising, MI 49862
USA

Email: prieli@worldkar.com

21st Century Engines, Vehicles & Power

Based on decades of advanced technology innovation, WorldKar Corporation is ready to introduce new industries to the planet—and in the process create millions of high tech jobs.

Our company designs, develops & licenses 21st century power and transportation products for worldwide use. We have specifically developed solutions for developing world markets, to fit their manufacturing & economic structures.

We invite forward-looking manufacturers to work with us to bring space-age products to a waiting world.

Ken Rieli, CEO