

Introduction of
Nakashima Propeller
And
Our Energy Saving Devices

Nakashima Propeller Co.,Ltd.

Company Overview



Location	Okayama, Japan
Established	1926
President	Motoyoshi Nakashima
Capital	1 Million USD
# of Employees	400
Sales	240 Million USD

Marine Products Lineup

Leading company in total propulsion system

- Fixed Pitch Propeller
- Controllable Pitch Propeller
- Side Thrusters
- Shaft equipment
- Rudders
- Azimuth thruster

High quality and reliable products made in Japan

Tailor made with long experience

Optimum propeller design by technology

- Cavitation estimation — CFD
- Strength analysis — FEM
- Research and Development leading design



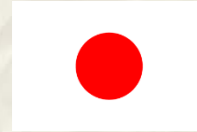
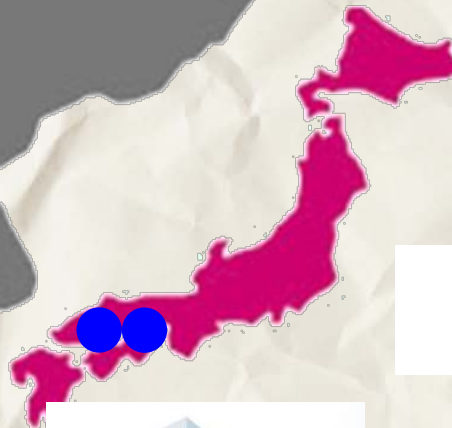
- Repair work for damage
- Straightening of bend damage, overlay welding for cavitation erosion and damaged parts, build-up welding, etc.
- Service engineers dispatched for periodic inspections
- Maintenance inspection
- Fuel saving measures
- Blade polishing and edge modification
- Speedy parts replacement service
- Emergency services

Service and Support





Vietnam (Hai Phong)



Tamashima Factory



Okayama Head Office



Singapore



Philippine (Cavite)





- Stone Manganese Marine Shipcare



- Daito Engineering
- Shunjie Marine
- Shanghai Metalock



- Simplex America



- Persan



- KTE



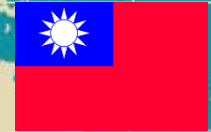
- Napro Service



- Stone Marine Service (Namibia)



- Daito Engineering
- Taknas Engineering
- Ricon

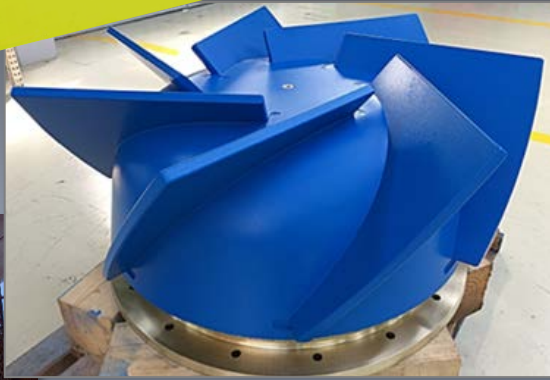


- Azuma Engineering
- Marine Tec IC

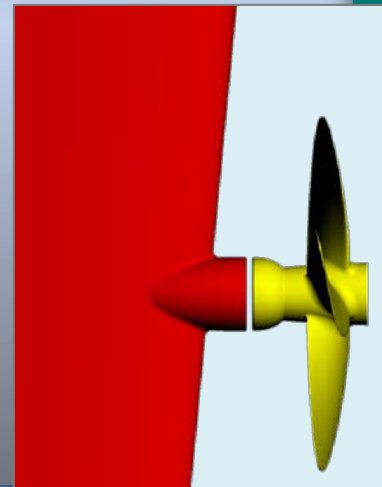
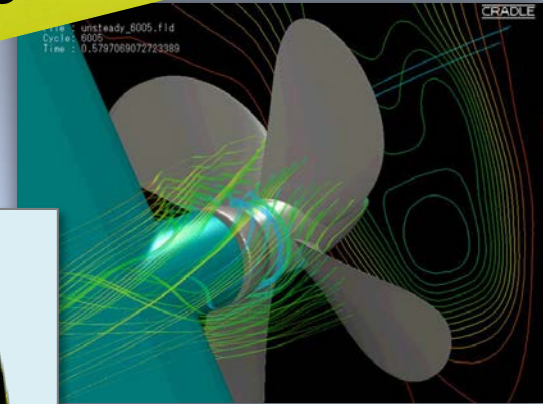
Global Network

After-sales Service & Repair of Propeller
Our network expands over the world

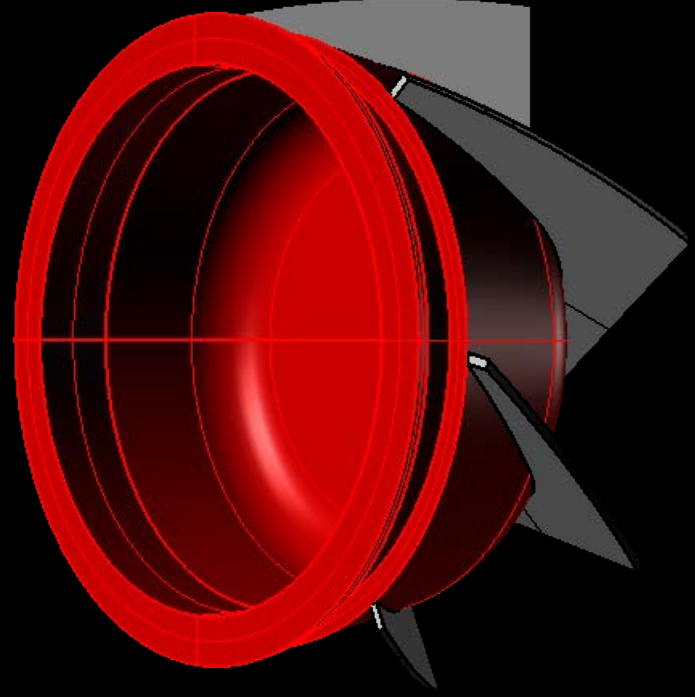
Eco-Cap



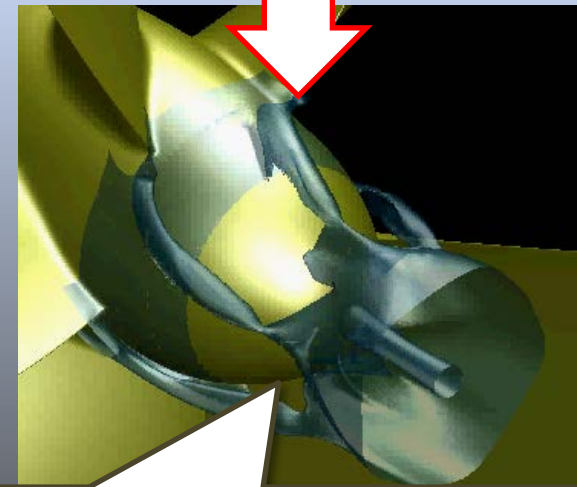
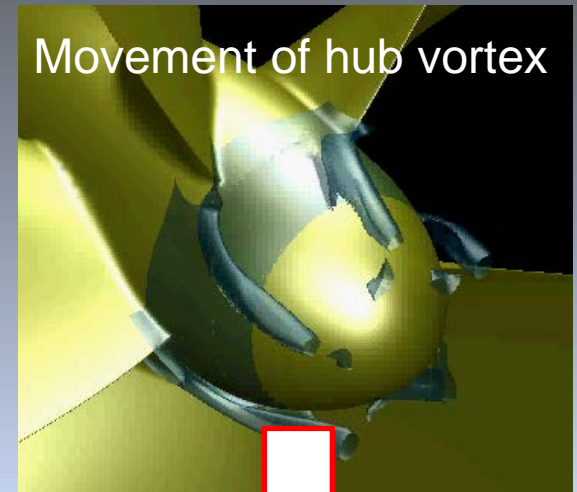
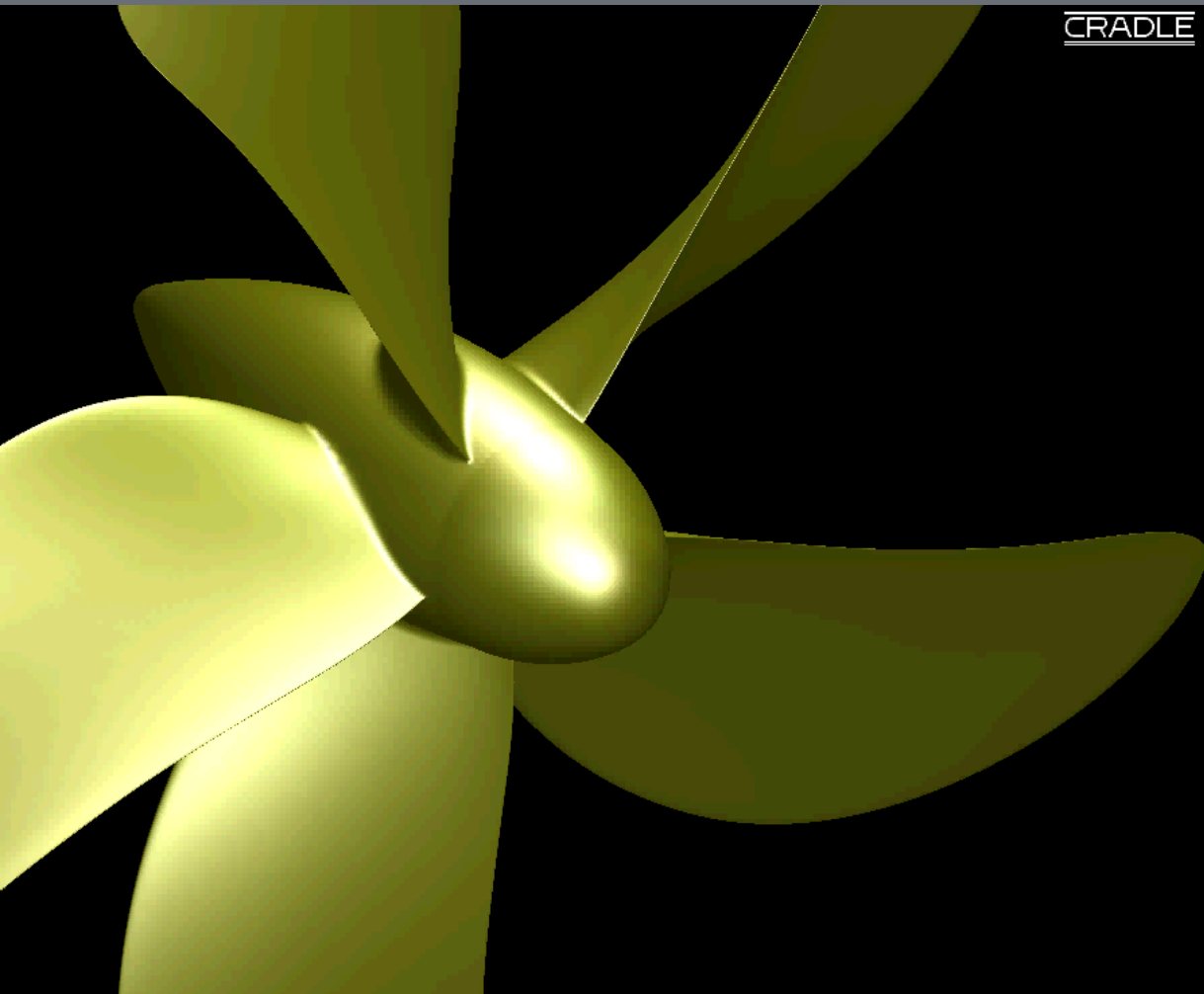
Ultimate Rudder



Energy Saving Device

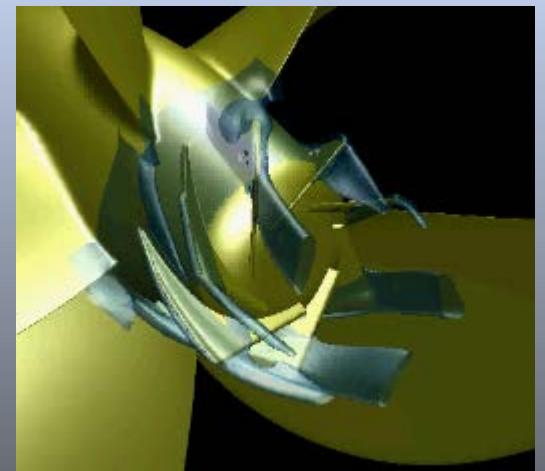
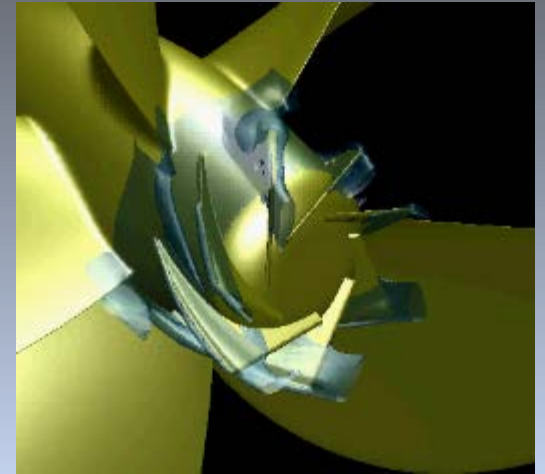
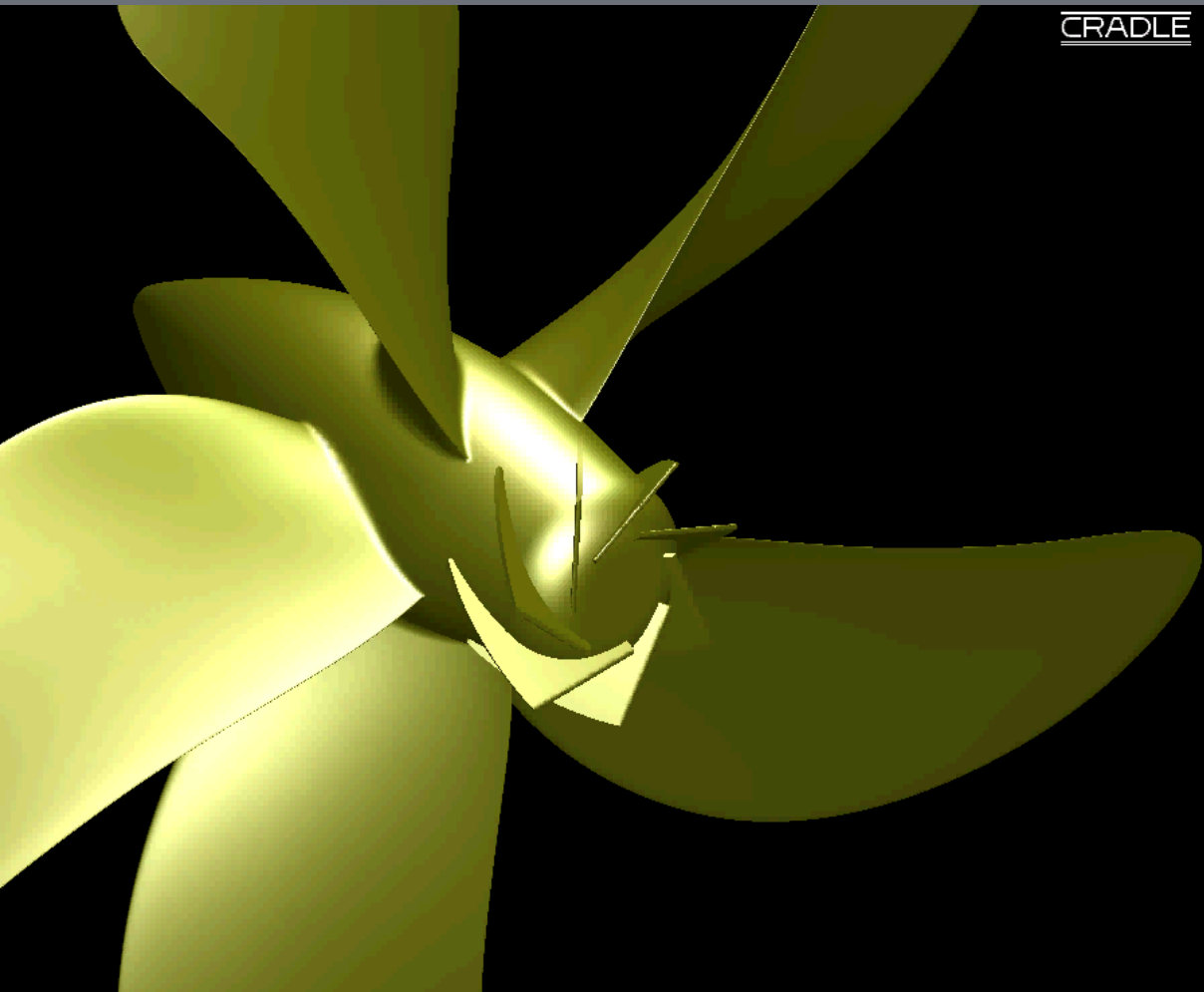


Investigation of mechanism of hub vortex

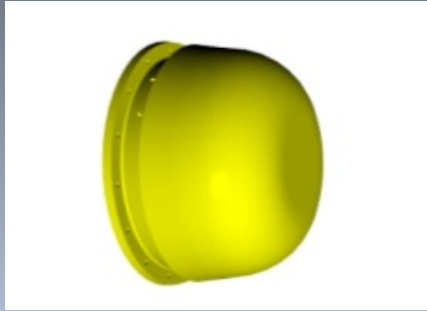


Hub vortex is consist of several tangential flows

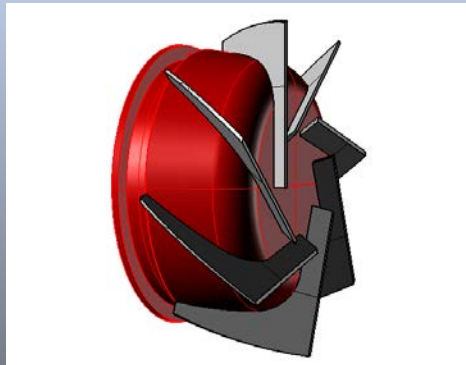
Tangential flow of ECO-Cap



Observation of hub vortex by air injection method



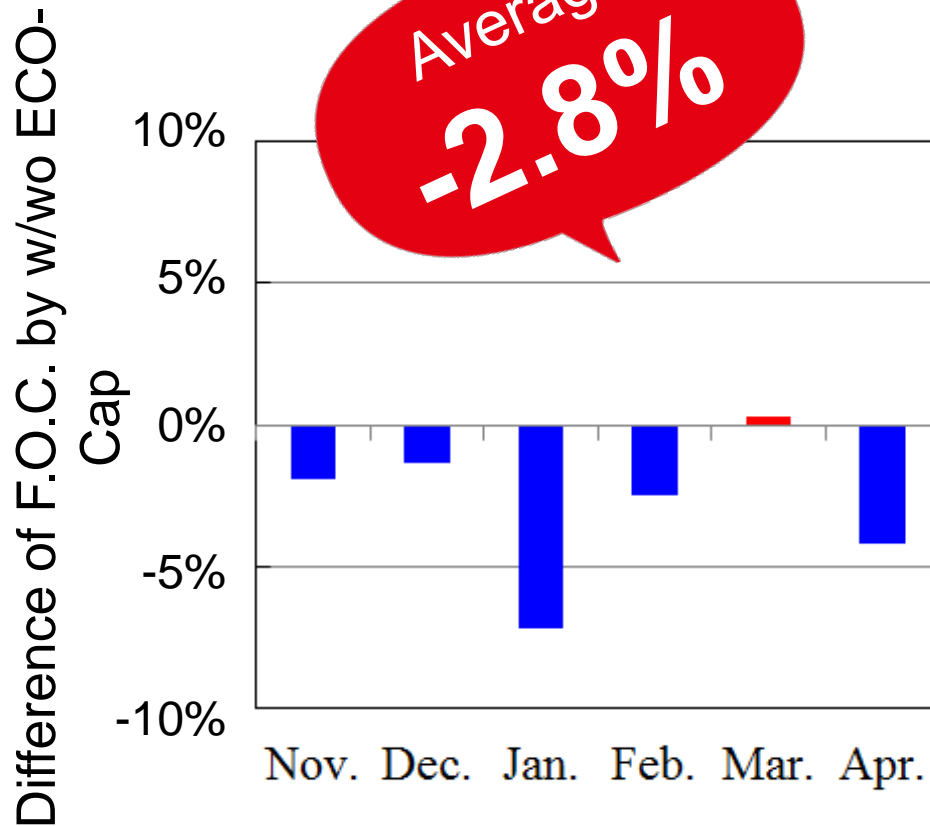
Contraction type



ECO-Cap



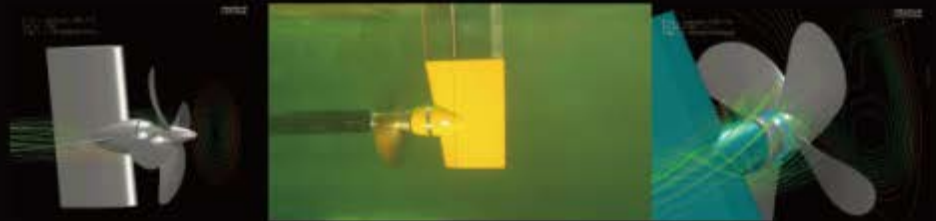
Confirmation of F.O.C. in Actual operating condition



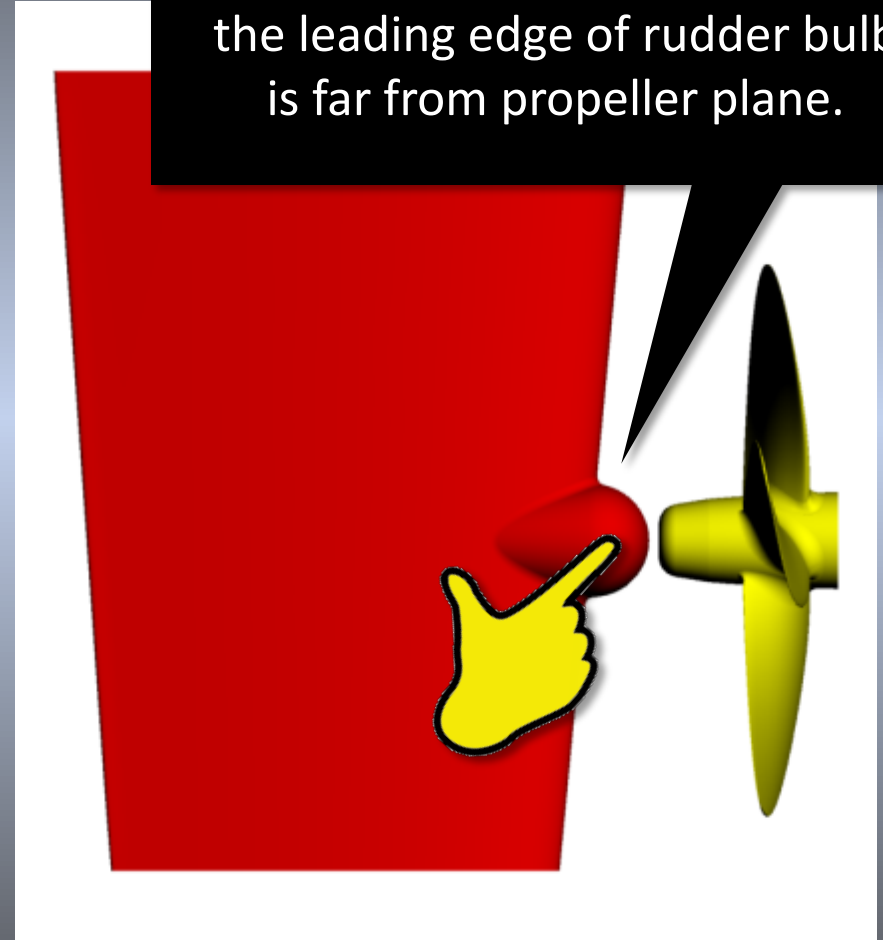
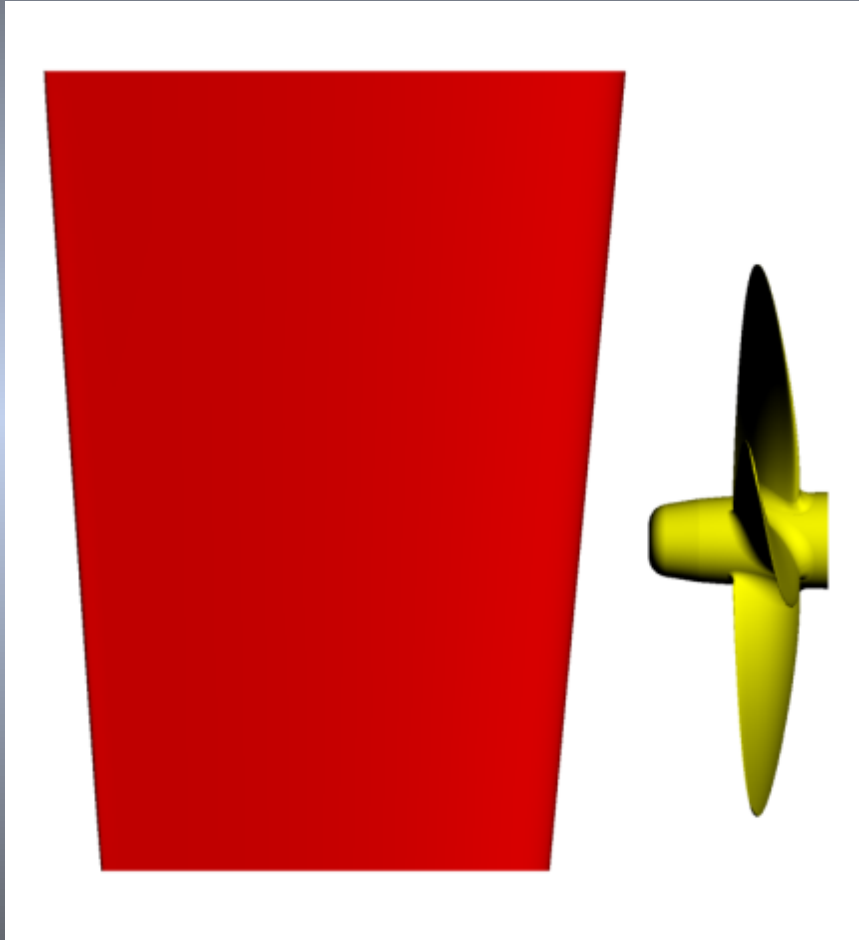


Ultimate Rudder

NAKASHIMA ENEGY SAVING DEVICE SERIES

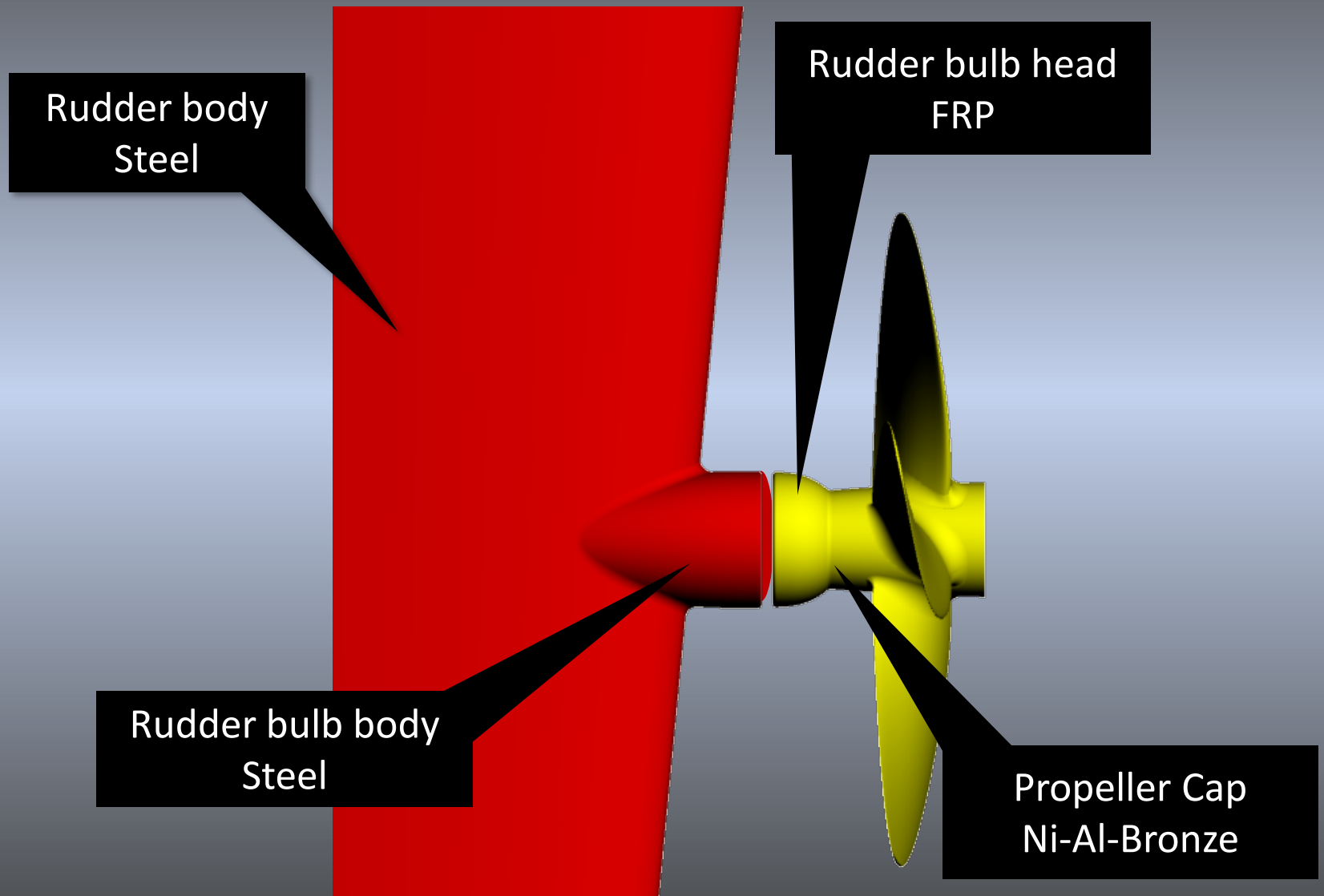


Conventional rudder bulb

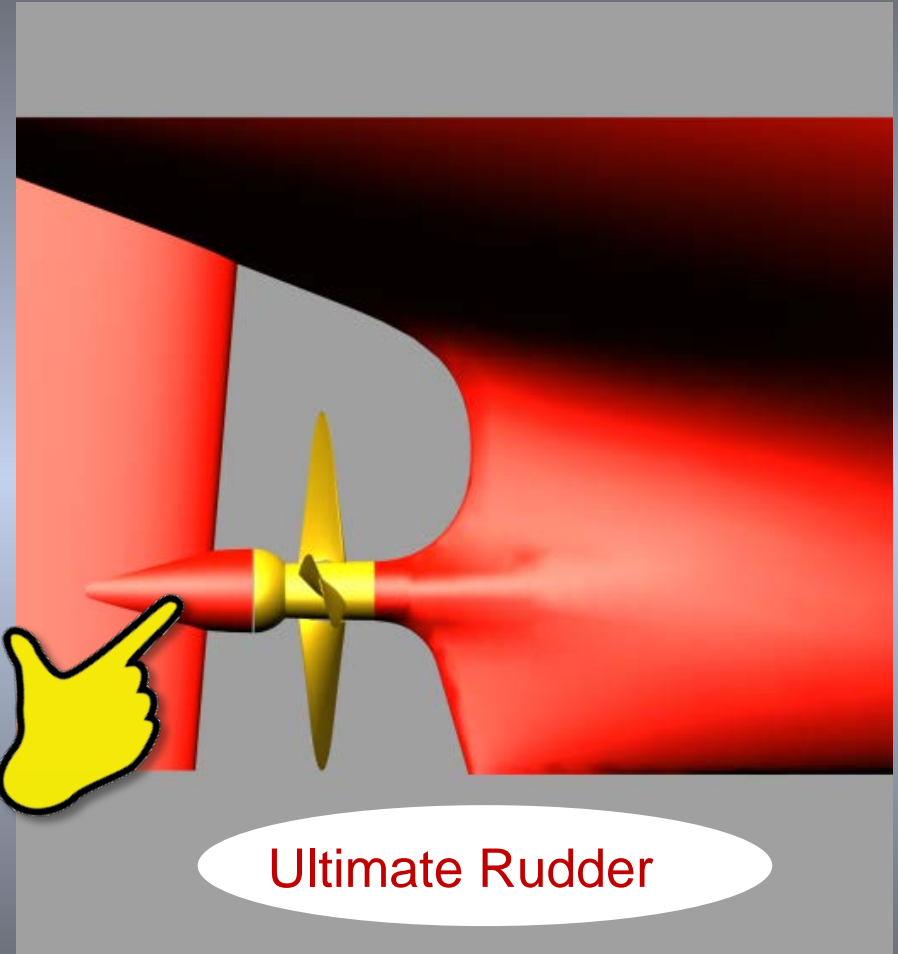
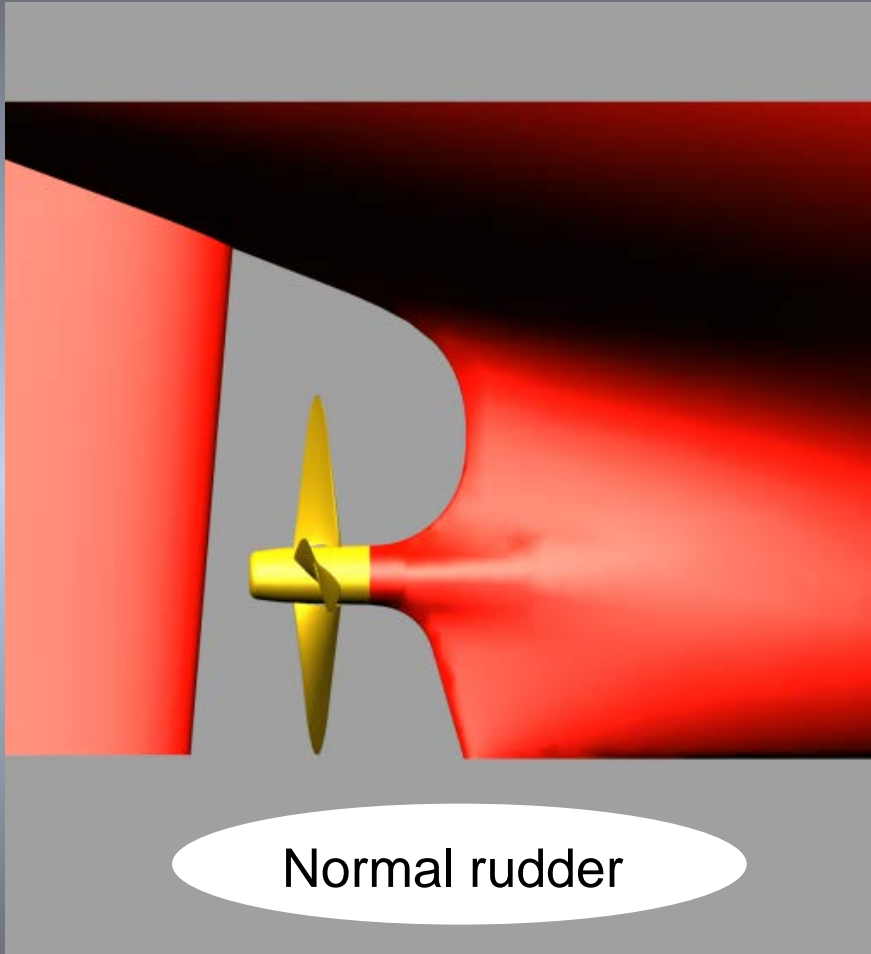


In conventional rudder bulb, the leading edge of rudder bulb is far from propeller plane.

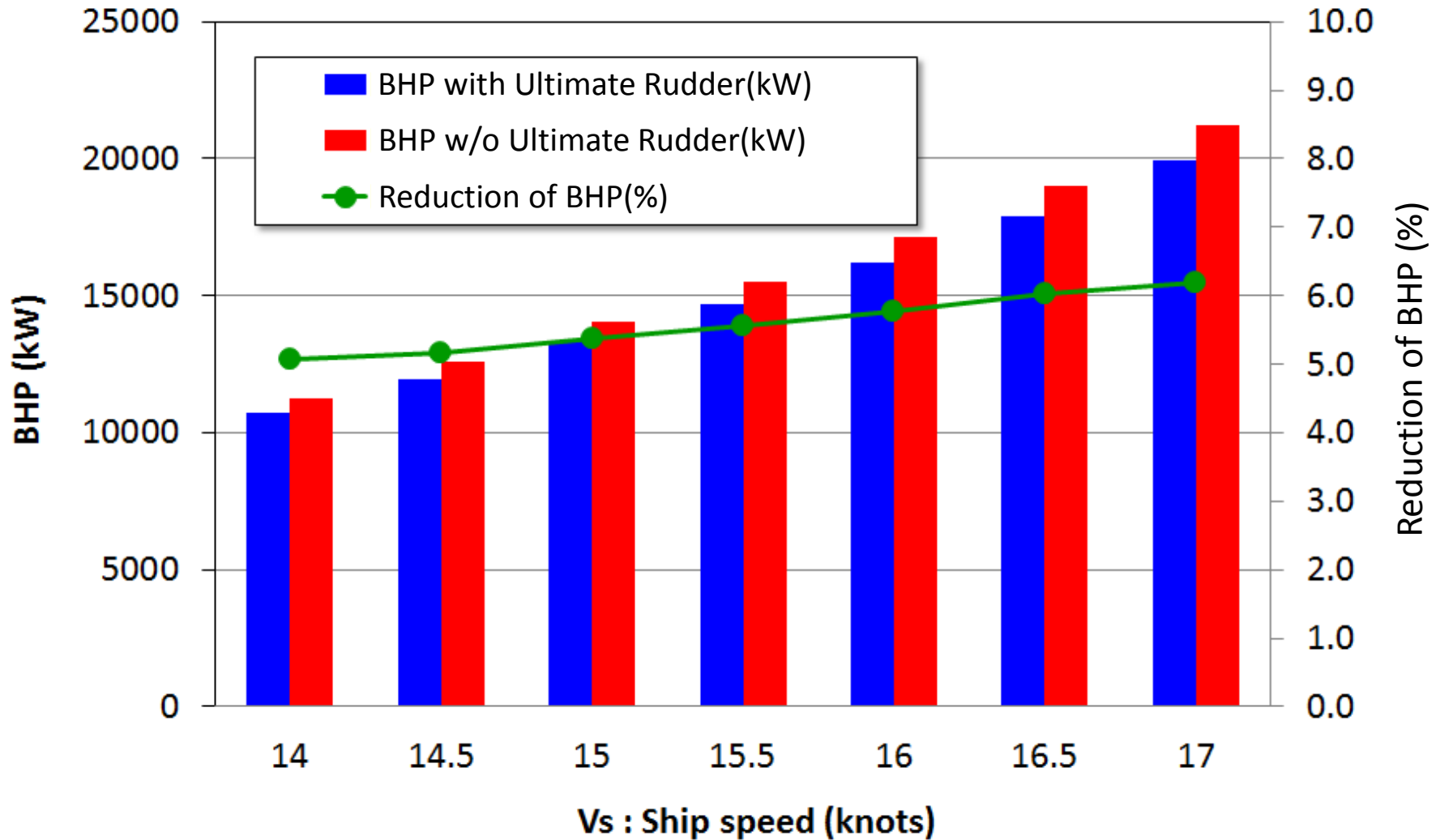
Structure of Ultimate Rudder



Rudder profile for model test



Comparison of BHP w/wo Ultimate Rudder





NAKASHIMA

We Go Beyond