

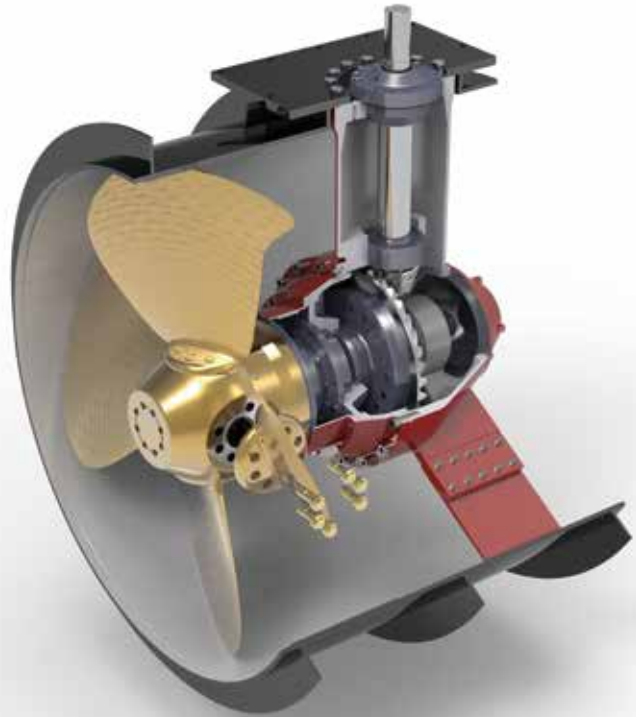
MODEL NT-C

Controllable pitch propeller

Propeller Dia. 700mm ~ 3,150mm
 Input Power 60kW ~ 3,800kW

Thruster Model	Input Power (kW)
TC-70N	115
NT-C010	285
NT-C020	385
NT-C030	520
NT-C040	670
NT-C050	830
NT-C060	1,005
NT-C070	1,250
NT-C080	1,500
NT-C090	1,800
NT-C100	2,150
NT-C110	2,500
NT-C120	3,000
NT-C130	3,800

14 sizes



TRANSVERSE THRUSTER

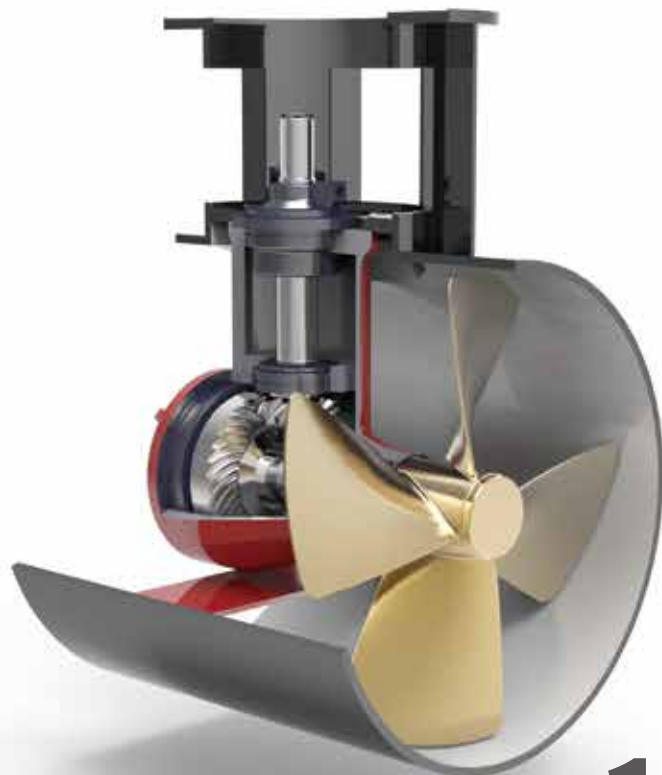
NT

MODEL NT-F

Fixed pitch propeller

Propeller Dia. 295mm ~ 3,150mm
 Input Power 10kW ~ 3,800kW

Thruster Model	Input Power (kW)
TFN-15S	27
TFN-25S	45
TFN-50S	57
TFN-75S	83
NT-F005	140
NT-F007	215
NT-F010	285
NT-F020	365
NT-F030	520
NT-F040	670
NT-F050	830
NT-F060	1,005
NT-F070	1,250
NT-F080	1,500
NT-F090	1,800
NT-F100	2,150
NT-F110	2,500
NT-F120	3,000
NT-F130	3,800



19 sizes

This table shows the input power at the case for auxiliary use (limited, intermittent driving). For applications requiring classification, continuous driving, DP system, or other special specifications, please contact us for more information.

※1 NT thruster not available in all sizes. Conventional model available in those cases.
 ※2 Specifications are subject to change without notice.

Excellent performance

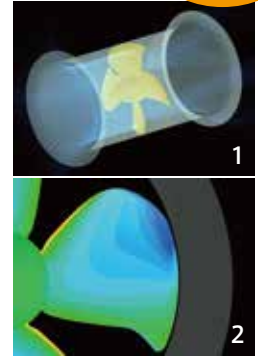
Realizing the full power of a thruster through improved performance

NAKASHIMA has investigated the cavitation performance of transverse thrusters by CFD (Computational Fluid Dynamics). Drawing from our extensive knowledge of propeller design and hydrodynamics, we developed superior blade shapes for both our CPP and fixed pitch thrusters.

As a result of this effort, we have created a compact and powerful thruster with nominal thrust about 20% greater than our previous products.

Thruster compactness has several benefits. It allows a ship designer to place the thruster further forward, increasing turning moment and therefore ship maneuverability. Furthermore, its smaller opening reduces hull resistance.

Nominal Thrust
Approx. **20%**
up



Reliability & Robustness

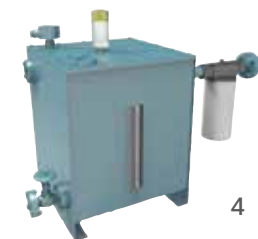
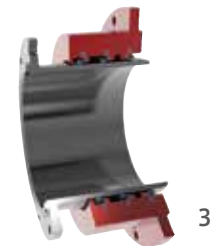
Contributing to safe navigation with reliable equipment

NAKASHIMA started manufacturing thrusters in 1976. Since then, we have delivered over 6,000 units. Utilizing the knowledge gained from our delivery record, we have developed highly reliable thrusters.

The owner/operator of our new thrusters can be assured that the thruster system, including controls, provides reliable long term service with proper maintenance.

- Both our fixed and controllable pitch thrusters consist of simple and robust structure. The thruster unit can be removed from hull easily, for on-shore inspection and maintenance.
- The thruster propeller shaft seal utilizes the same shaft sealing device as our main propulsion systems. The sealing ring can be replaced in the afloat condition by bonding. (Fig. 3) (with the exception of our small unit)
- Environmentally acceptable lubricants (EAL) requested by the United States Environmental Protection Agency's (EPA) Vessel General Permit (VGP) can be used in our thrusters. They use same oil for lubrication and blade pitch control, allowing for easier oil management.
- For the controllable pitch type, the high performance filter and air dryer are installed in the header tank as standard. The combined use oil for lubrication and blade pitch control maintains oil cleanliness. (Fig. 4)
- For the controllable pitch type, we use a liquid crystal touch panel for the remote control device, which helps to efficiently manage large amounts of information. The operator can assess the whole thruster system condition from the console in the bridge, contributing to safe navigation. (Fig. 5)
- We have service agencies in Asia, the Middle East, Europe, Africa, North America, and South America. Our worldwide service network can provide all necessary maintenance work.

Over
6000
units



Optimal solution

"Optimal" solution for every request

At NAKASHIMA, we take the time to evaluate each individual application. For research ships, minimizing noise and vibration is extremely important and reducing propeller cavitation in the thruster is critical.

For this case, we utilized our hydrodynamics technology and experts to develop a special blade profile designed to reduce underwater noise. (Fig. 6)

