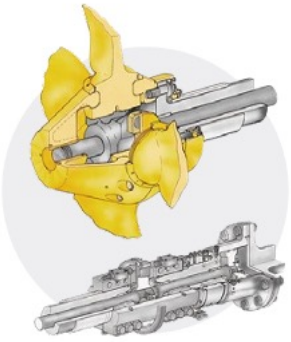
Controllable-pitch propeller

CONTROLLABLE PITCH PROPELLER

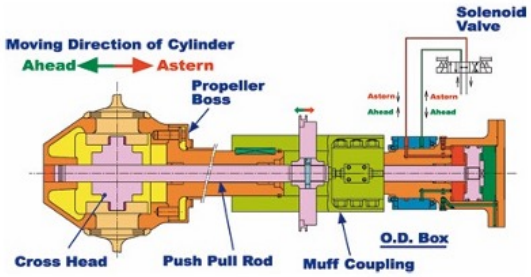
MODEL XS

Medium and small vessels



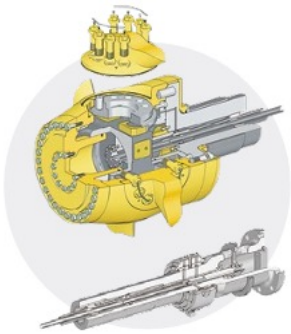
This type is mainly used in small and medium vessels. The hydraulic cylinder controlling the blade angle is in the intermediate shaft on the inboard side of the vessel. The oil from the pump of the hydraulic unit enters the oil distribution (OD) box of the cylinder shaft through a solenoid valve. When the pitch control handle is moved, a signal is produced and pressure oil enters the cylinder from the OD box via a pilot check valve, pushing the piston. Movement of piston is transmitted to the crosshead via the push-pull rod, which modulates the blade. This simple construction reduces maintenance costs. The inside of the hub is lubricated using grease, eliminating the possibility of oil leakage from the inside of the hub and thus any risk of environmental pollution.

[Schematic diagram]



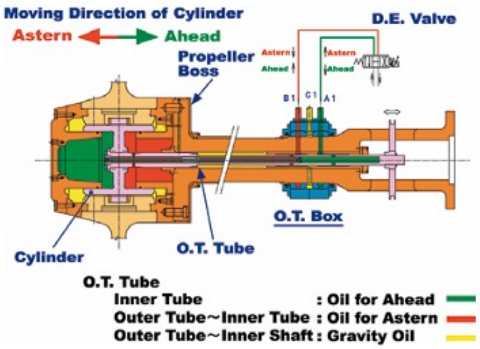
MODEL XL

Large vessels



This type is mainly used in large vessels. The hydraulic cylinder controlling the angle of rotation is installed inside the propeller hub on the outside of the vessel. The hydraulic cylinder moves the propeller blades directly to change their angle. As no spindle torque acts on the OT Tube, OT Tube will not be deformed and the accuracy of blade angle control is superior to that of rod systems. Furthermore, the use of proportional control valves ensures smooth, accurate blade angle control, even minute blade angle control, such as Auto Load Control. The machine is equipped with a double hydraulic system consisting of normal and emergency control valves and pumps for main and auxiliary use..

[Schematic diagram]



What is a controllable-pitch propeller?

This propeller facilitates forward, stop, and backward movements by finely controlling the blade angle. In combination with side thrusters, this propeller facilitates smooth entry/exit and berthing/unberthing operations, which require frequent changes in vessel speed. It can also instantly respond to emergency stops, from ahead max to astern max. Blade angle adjustment allows the vessel speed to be adjusted flexibly while keeping the engine running at the most efficient load, thus reducing fuel consumption and nitrogen oxide emissions. Because of these advantages, controllable-pitch propellers are widely used in a wide variety of vessels, including fishing vessels, tankers, ferries, and tugboats. A unique design method derived from our know-how on fixed-pitch propellers is used to determine the optimal pitch and camber distributions, resulting in a highly efficient propeller. The blade cross section is shaped to facilitate a flat pressure distribution on the propeller surface, thereby improving cavitation performance.

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