



Axial Flow Impeller Types

Marine Propeller Turbine (MPT)



The Marine Propeller is an axial flow impeller generally pitched for downward pumping action, however, upward pumping is also available. This impeller provides a high, uniform discharge and therefore is best suited for low viscosity liquid blending applications.

A revolving propeller traces out a helix in the fluid. One full revolution moves the liquid a fixed distance. The ratio of this distance to the propeller diameter is known as the pitch. Marine type is often used as a side-entering mixer in large tanks and as a top-entering mixer in small tanks. It can be designed with a different pitch to change the combination of pumping rate and thrust.

Advantages

- The marine propeller was probably the first axial flow impeller and used for low to medium viscosity media.
- Most marine propellers used for mixing have three blades and pitch to diameter ratio 1.0 or 1.5.
- The flow stream can generate upward or downward.
- Propellers draw less power than most other impellers of the same diameter and run in the same speed.
- This impeller type is especially suitable for blending and suspension duties.

Technical features

- Standard propellers have three blades, but can be two-bladed, four-bladed, or encased by a circular guard.

Applications

- Used for blending, solids suspension, solids incorporation or draw down, gas inducement, and heat transfer.
- They are used at relatively high speeds (up to 2,900rpm) with low viscosity fluids, up to about 4,000 cp.