

# Axial Impellers

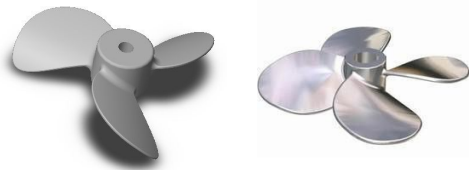
## Marine-Type Propellers



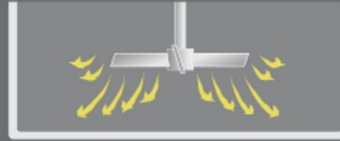
VARIABLE ANGLE OF ATTACK

$N_p$	0.3 - 0.9	SHEAR	Med
$N_q$	0.5 - 0.7	FLOW	Med
		VISCOSITY	Low - Med
		MIXING INTENSITY	Med - High

Viscosity: 0 - 5,000 cps



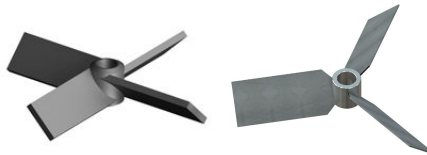
## Pitch Blade Turbines



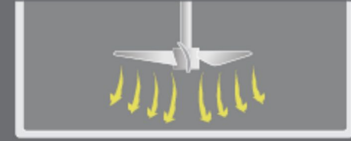
CONSTANT ANGLE OF ATTACK

$N_p$	0.9 - 1.6	SHEAR	Med
$N_q$	0.7 - 0.9	FLOW	Med
		VISCOSITY	Med
		MIXING INTENSITY	High

Viscosity: 0 - 50,000 cps



## Low / Mid Solidity Hydrofoils



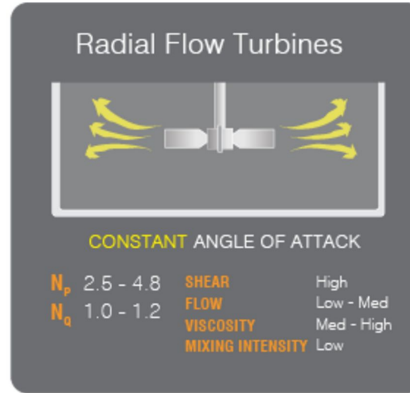
VARIABLE ANGLE OF ATTACK

$N_p$	0.3 - 0.6	SHEAR	Low
$N_q$	0.6 - 0.7	FLOW	High
		VISCOSITY	Low - Med
		MIXING INTENSITY	High
			Off-Bottom

Viscosity: 0 - 3,000 cps



# Radial Impellers



# Things to Consider

- Avoiding unwanted flow patterns with impeller design
  - Dead zones, short-circuited flow, vortexing
    - Location of outlet stream
- Viscosity of fluid
- Volume of fluid being mixed
- Diameter of blades relative to tank volume
- Number of blades
- Justify your impeller design based on the system!

# <http://www.dynamixinc.com/>

- On this website (<http://www.dynamixinc.com/>)
  - Typical uses of each impeller type
  - Important factors for ideal mixing
  - Baffles configurations
- Search google for more design considerations/examples