



# Mixing & Agitating

# PRs TECHNOLOGY

**Process, Research, Solutions**  
We initiating Applied science with the Technology

PRs Technology is a team of successful technocrats who provides world class process equipment solutions for wide range of chemical process industries. PRs Technology distinguishes itself from its competitors with pioneer approach as designer, manufacturer and after sale service provider. Our approach to solve the customer mixing problems using fundamental approach have placed us as preferred choice in agitators & mixers within a very short span of time.

### **AT PRs TECHNOLOGY, WE PROVIDE ALL INTERNATIONALLY AVAILABLE IMPELLER TECHNOLOGY AND APPLICATION GUIDELINES UNDER ONE ROOF**

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Key to success of any Chemical Process Industry is reaction vessel and key to an efficient mixing system is its impeller. Impellers are flow generating devices by mechanical means. There are various types of impellers and each impeller was developed to get desired process result. All impellers produce flow and generate shear for the given power input to the impellers. Given chart depicts different type of impellers with varying amount of Head/Shear Vs Flow which is just indicative. Please contact us for further information.



#### **VARIOUS MATERIAL OF CONSTRUCTION**

SS 304 | SS 316 | SS 410 | SS 904 | HASTELLOY | INCONEL | TITANIUM  
MS | MSRL | MSRL+HDPE | FRP LINED | HALAR/ANTI STATIC HALAR  
TEFZEL | RUBY RED (PFA)

## STATOR ROTOR

Stator rotor is used when shear requirement is very high and desired particle size are in micron or submicron rang Colloid mill or other types of mills are used for still higher shear rates and sub micron level particle size.



## DISK IMPELLERS

Mostly used for gas dispersion application. Curve blade (Concave, parabolic etc.) disc can handle 2 to 6 times more gas than flat blade disk turbine. Power drop between gassed and un-gassed condition is very less than conventional flat blade disk impellers. Hence it is preferred choice for gas dispersion applications viz. Fermentation, Hydrogenation, Oxidation, Carbonisation, Ethylation etc. Mostly used for gas dispersion application. Curve blade (Concave, parabolic etc.) disc can handle 2 to 6 times more gas than flat blade disk turbine. Power drop between gassed and un-gassed condition is very less than conventional flat blade disk impellers. Hence it is preferred choice for gas dispersion applications viz. Fermentation, Hydrogenation, Oxidation, Carbonisation, Ethylation etc.



## HELICAL RIBBON

Helical ribbon Impellers are designed for axial and overall mixing in laminar flow. Such an impeller can be designed with an additional inner helix or auger used to pumping in the opposite direction. This is needed for the mixing of high viscosity materials. These impellers can also have one or two start helix. The quality of the final mixed product in these applications are very critical, Wall scrapers can be mounted on the impeller blades to improve heat transfer and homogeneity in sticky products.



## HIGHSPEED DISPERSER

Disperser disk provides large amount of shear and mostly used for liquid-liquid dispersion, powder dissolution or despolmeration etc



## COUNTER-FLOW IMPELLERS

Flow generated by impellers tip is opposite to the bulk flow produced by the central part. In many case where the slurry fluidity reduces due to high solid concentration. Tip of the impeller provides momentum to the fluid near vessel wall. These are mainly used for slurry with high solid concentration. It efficiently operates at much higher impeller to tank diameter ratio and have higher flow capacity than conventional impellers.



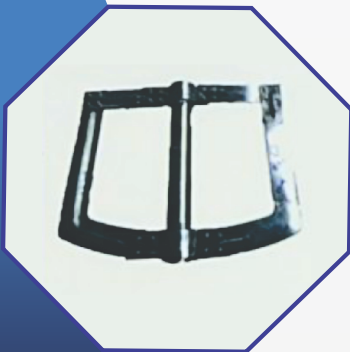
## PITCHED BLADE TURBINES

These are axial mixing impeller with considerable amount of radial flow. It produces suction when placed near the liquid surface. Hence used for blending of immiscible liquids, solid incorporation etc. It is also a preferred choice for applications where the viscosity change during the process is large. These are mostly available in four blade @45 degree. But different no of blade with various angles are also used depending on application.



## HYDROFOIL IMPELLERS

These are most efficient axial flow impeller. It is recommended for blending, solid suspension, heat transfer etc. It provides maximum flow at minimum power. Mostly available in three blade version. But different number & width of blade are also common in special applications. This is also called as fabricated propeller.



## ANCHOR/GATE TYPE IMPELLER

Anchor/Gate type impellers are close-clearance impellers that fit the contour of the vessel. These impeller provide adequate mixing under the laminar flow conditions encountered in high viscosity applications for heat transfer. There are many applications that other type of impellers are integrated with the anchor. These impellers sweep the whole wall surface of the vessel and agitate most of the fluid batch through physical contact. Anchor impellers are used for liquid viscosities between 5,000 and 50,000 cP. When reaction/mixing homogeneity is required, other type of impellers are recommended.

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