

DOUBLY-PITCHED HIFLOW™ IMPELLER

Applications:

- Reactions with materials going from water-like conditions to over 150,000 cps.
- Formation of viscous slurries by the addition of a high concentration of solids (i.e. 50%)
- Shear sensitive solids incorporation in crystallizations, polymerizations, fermentations and other bio-processes.



The Doubly-Pitched HiFlow™ impeller (DP-HiFlow) was developed for use in applications where a significant change in viscosity occurs during the mixing operation.

The right impeller design when viscosity conditions change in mid-process

The Doubly-Pitched HiFlow impeller (DP-HiFlow) was developed for use in applications where a significant change in viscosity occurs during the mixing operation. Some examples are:

- A reaction that starts at water-like conditions but forms a viscous product (from 2,000 centipoise to in excess of 100,000 centipoise).
- The formulation of a viscous slurry by the addition of a large amount of solids (i.e. 50%) to a water-like liquid, even when the slurry is non-newtonian.

GUARANTEE

ProQuip, Inc. accepts full responsibility for furnishing suitable equipment which shall be fit for the purpose which it is required, and for its successful operation under the conditions for which it was specified

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Applicable for a wide range of viscosity

The DP-HiFlow pumps in both directions and induces a vigorous top-to-bottom turnover of a vessel without baffles. Water-like material circulates without excessive swirling. As viscosity increases, top-to-bottom circulation is still maintained because the large diameter DP-HiFlow impeller almost fills the vessel. Viscous material cannot bypass the mixing zone and the agitator cannot “cut a hole” in the material because the entire diameter of the vessel is swept by the impeller. It provides excellent agitation in the transition zone (Reynolds numbers in the range of 10-10,000) without requiring tank baffles.

DP-HiFlow lets you run a larger impeller with very low power demand

The DP-HiFlow is also designed to have a very low power demand. This makes it possible to use relatively large impellers without requiring excessive horsepower.

Ideal impeller for shear-sensitive solids incorporation

The smooth geometry of the DP-Hiflow produces the same low level of shear as our patented HiFlow™ impeller. Combining this low shear and the low power demand for the DP-Hiflow results in an ideal impeller for processes incorporating delicate or shear-sensitive components.

Examples include:

- Crystallizations
- Polymerizations
- Fermentations
- Other related bio-processes

Advanced design delivers high solids incorporation

Using the DP-HiFlow, surface movement and overall circulation in the vessel is much greater than could be obtained by another design at the same power level. This allows for a faster rate of addition of dry product to the batch. The very large diameter of the DP-HiFlow means that the surface available for pulling down solids is much greater.

