

PS - High Shear Mixer

Introduction:



When you want to produce stable emulsions and creams, wet and dissolve sticky powder (gums, thickeners, stabilizers), deagglomerate and disperse micro-phase solid ingredient (silicon dioxide, bentonite, titanium dioxide) into liquid without fish-eyes, or other similar tricky tasks, a traditional agitator is usually not able to achieve the expectation. However, the high shear mixer is what you should choose to do the job.

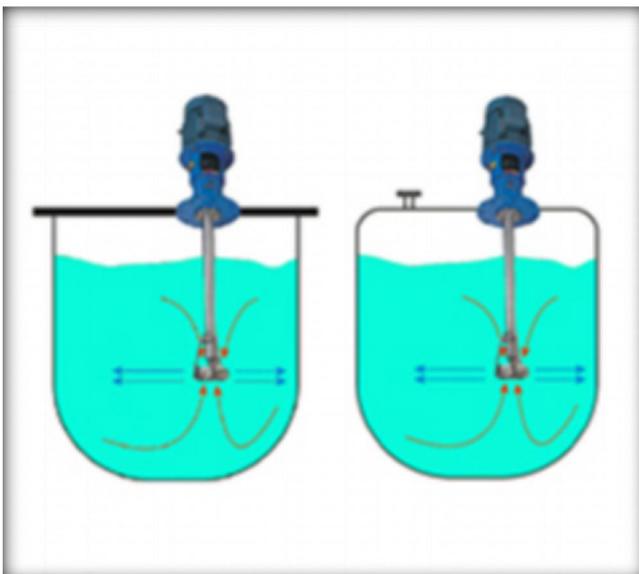
Working Principles:



High Shear Mixers work with a special designed stator/rotor working head. When it works, this stator/rotor head is able to draw the solids and liquids around it into its center, and then push them radially through the stator openings back to the tank. During this period, the solids and liquids are subject to an action of milling and shearing which is so intensive that they are deagglomerated, homogenized and dispersed into each other even though they are immiscible by traditional agitation.

Installation and Set-up:

In the Batch process, the mixer is immersed into the liquid. There are many installation methods for the batch mixer. It can be lifted up by a lifting stand (hydraulic or electric), or it can be installed with flange on the top of a tank, or from its side, or at its bottom. For the vacuum or pressurized tank, the mixer must be equipped with a mechanical shaft sealing.

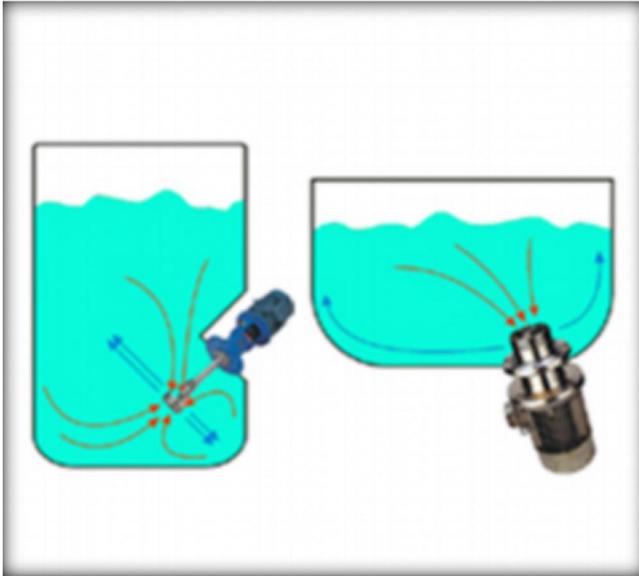


- Top entry, open vessel

These mixers are used in an open vessel, that is, a vessel with normal pressure. They are top entry mixers, can be installed onto a lifting stand, or directly onto the vessel by a flange or traverse. A coupling between the motor and shaft is optional for low noise and stable running.

- Top entry, closed vessel

These top entry high shear mixers are with a mechanical seal, which enables them to be working in a pressurized or vacuum vessel. Single seal or double seals are available.



- Side entry

The side entry mixers are very useful when the tank is deep but narrow, or when the top space of the vessel is limited for the top entry ones.

- Bottom entry

The bottom mixers are outstanding when the liquid level in the tank can get very low during operation, or there is very limited space above or around the tank for either top or side mounted ones. What is more, strong vortex as well as aeration is greatly reduced with the PERMIX bottom mounted mixers.

Applications:

High Shear Mixers are widely used by a variety of industries in different stages of the processing. They are highly efficient to save a lot of energy and time compared with traditional mixing methods.

- Food & Beverage

Reconstituted milk, Salad dressing, Mayonnaise, Ice cream, Cheese, Yogurt, Fruit juice

- Pharmaceuticals & Biology

Drug synthesis, Vaccine, Fat emulsion, Injectable suspension, Veterinary medicine, Cell extraction

- Cosmetics & Daily Care

Detergent, Body gel, Shampoo, Cream, Lotion, Tooth paste, Soap

Specifications:

Top Entry Mixer:

Model	Watts, kW	RPM, @50Hz	Max. Capacity, L		Shaft Length, mm
			@1 cPs	@3,000 cPs	
PS-X/090	1.5	3000	50	20	350
PS-X/100	2.2		100	50	600
PS-X/120	4		300	150	700
PS-X/140	7.5		800	500	800
PS-X/160	11		1500	750	820
PS-X/180	18.5		2000	1000	1100
PS-X/200	22	1500	4000	2000	1150
PS-X/220	30		5000	2500	1200
PS-X/240	37		6500	3200	1300
PS-X/270	55		10000	5000	1500
PS-X/290	75		12000	6000	1550
PS-X/300	90		15000	7500	1600

- 1) PS-C, PS-D, PS-M share the same specifications.
- 2) Actual liquid capacity will vary depending on the liquid type and different stator rotor system.
- 3) PerMix offers bigger capacity according to customer requests.
- 4) PerMix reserves the right to modify the design without notice.

Bottom Entry Mixer:

Model	Watts, kW	RPM, @50Hz	Max. Capacity, L		Shaft Length, mm
			@1 cPs	@3,000 cPs	
PS-B/100	2.2	3000	100	50	100
PS-B/120	4		300	150	150
PS-B/140	7.5		1000	500	150
PS-B/160	11		1500	750	150
PS-B/180	18.5		2000	1000	180
PS-B/200	22		4000	2000	180
PS-B/220	30	5000	2500	190	
PS-B/240	37	1500	6500	3200	200
PS-B/270	55		10000	5000	210
PS-B/290	75		12000	6000	210

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Gallery:



www.permix-mixing.com

PS Mixer with Stator of Round Opening



www.permix-mixing.com

PS Mixer with Stator of Slot Opening



www.permix-mixing.com

K-type Stator Rotor of PS Mixer



www.permix-mixing.com

Bottom Entry PS-B High Shear Mixer