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PERFECT
MIXING
TECHNOLOGIES



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PFB FLUIDIZED ZONE MIXER

PFB - FLUIDIZED ZONE MIXER

The PerMix PFB series Twin-shaft Paddle Mixer is a fast mixer with high efficiency, which can also be known as Fluidizing Mixer, Fluidized Zone Mixer, Non-gravity Mixer or Zero-gravity Mixer.

The PFB Twin-shaft Paddle Mixer is applied to prepare a homogeneous mixture despite of particle size, shape and density. When the small amount of powder additives or liquid is required to be added into the bulk material, PFB Twin-shaft Paddle Mixers are able to achieve fast and precision mixing with high capacity.

Due to its high efficiency and reliable performance, PerMix Twin-shaft Paddle Mixers are widely applied in many industries, including but not limited to: Building materials, Fly ash conditioning, Animal feeds, Mineral premixes, Instant drinks, Milk powders, Vitamin mixes, etc.



FEATURES & ADVANTAGES

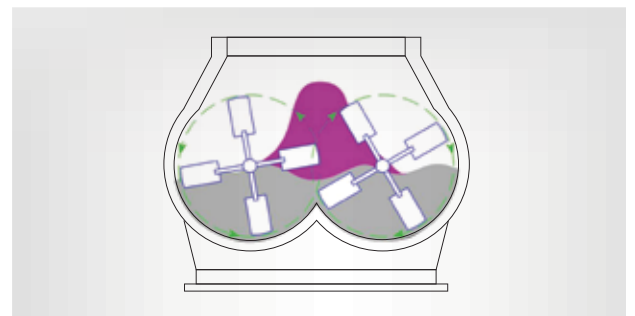
Compared with other powder mixers, PerMix PFB series Twin-shaft Paddle Mixers are featured in:

- Very fast mixing to supply a typical mixing time from 10 seconds to only 1 minute
- Free particle movement
- Minimal heat and low shear for shear and heat sensitive materials (Due to the fact that low friction without shear in this non-gravity zone is generated, this makes the PerMix PFB series Twin-shaft Paddle Mixer an ideal machine for fragile products that can't tolerate rough handling, even flakes or spray dried bodies remaining intact after mixing.)
- Easy cleaning and hygienic design with minimal blind corners
- Low maintenance
- Big bomb bay door for fast discharging & reduced segregation
- Liquid addition by spray balls, nozzles, or dripping pipes
- Leading edges of the ribbons can be coated by Tungsten Carbide for very abrasive materials.
- Intensive choppers to break lumps
- Various drive system (single motor/gearbox with chain; dual motor/gearbox, single motor with dual gearbox)

HOW IT WORKS

The PerMix PFB series Twin-shaft Paddle Mixer consists of paddles with special angles that are mounted on twin shafts in a "W" shaped trough. During operation, the two shafts are rotating in opposite direction.

The paddles sweep the entire bottom of both troughs, and materials are lifted floating between the two shafts (as zero-gravity zone) by the centrifugal force generated by the paddles.



At this weightless zone, mixing of materials of different density is easy and fast because material particle can move freely and randomly, regardless of particle size and density. This brings a rapid and highly homogeneous mixing.

PerMix Twin-shaft Paddle Mixers can be with either overlapping paddles (single drive with chain transmission), or tangential paddles (twin motor/gearbox drives).

OVERHEAD CHOPPER

Although the PerMix PFB series Twin-shaft Paddle Mixer is featured by its gentle mixing at the weightless zone, it can also achieve rough mixings with additional PerMix Pin Milling Bars to be installed on the top of the paddles.

The PerMix Pin Milling Bars are two rapidly rotating bars with pins and a stationary shroud, which introduce high shear force onto the materials during mixing to break soft lumps and agglomerates. In this case, a fill level of 140% of normal capacity is required.

DISCHARGE DOORS

PerMix offers pneumatic discharge valves for the PFB Twin-shaft Paddle Mixer for quick discharging when the paddles are running, eliminating any possible segregation. Each valve is located at the bottom of each basin of the W-shaped trough.

PerMix also supplies the large **Bomb Bay Door** for even faster and complete discharging (see the photo above); with the bomb bay doors, the discharging time can reduce to less than one minute (product and mixer size dependent).

DRIVE SYSTEM

PerMix can provide both Single Chain Drive system (with one gearbox, and the two shafts, which are overlapping, are synchronized by a heavy duty chain with chain tensioner), and Dual Direct Drive system, in which there are two gearboxes to be connected with the two shafts (tangential).

APPLICATIONS

Chemical Industry

Detergents, Color pigments, Fertilizers, Explosives, Boric acid, Carbon, Fly ash, Fungicides, Soda ash.

Building Industry

Dry mortar, Blended cements, Tile adhesives/grouting, Brick facings, Cement & Fibers, Flooring materials, Joint compounds, Road lining materials

Environmental Applications

Fly ash conditioning, Filter dust treatment, Sewage sludge, Food waste.

Feed Industry

Animal feed, Mineral premixes, Aqua / fish feed, Pet food, Dairy additives.

Food Industry

Instant drinks/soups, Infant milk powder, Flour/bread/bakery mixes, Frozen vegetables, Treatment of spices.

Pharmaceutical Industry

Vitamin mixes, Medical mixes.

SPECIFICATIONS OF PFB

(Single Drive with Chain Transmission)

Model	Total volume (liter)	Nominal working (L)	Min. working (L)	Max. working (L)	Power (*) (kW)	RPM (**)
PFB-60	60	20	12	28	1.5	105
PFB-200	200	60	36	84	4	70
PFB-300	300	120	72	168	5.5	60
PFB-500	500	200	120	280	7.5	50
PFB-1000	875	350	210	490	11	45
PFB-1250	1250	500	300	700	15	45
PFB-2000	1875	750	450	1050	18.5	45
PFB-2500	2500	1000	600	1400	22	30
PFB-4000	3750	1500	900	2100	30	30
PFB-5000	5000	2000	1200	2800	37	30
PFB-6000	6250	2500	1500	3500	45	30
PFB-10000	9000	3600	2160	5040	55	30

SPECIFICATIONS OF PFB-T

(Twin Motor/Gearbox Drives)

Model	Total volume (liter)	Nominal working (L)	Min. working (L)	Max. working (L)	Power (*) (kW)	RPM (**)
PFB-60	60	20	12	28	1.5	105
PFB-200	200	60	36	84	4	70
PFB-300	300	120	72	168	5.5	60
PFB-500	500	200	120	280	7.5	50
PFB-1000	875	350	210	490	11	45
PFB-1250	1250	500	300	700	15	45
PFB-2000	1875	750	450	1050	18.5	45
PFB-2500	2500	1000	600	1400	22	30
PFB-4000	3750	1500	900	2100	30	30
PFB-5000	5000	2000	1200	2800	37	30
PFB-6000	6250	2500	1500	3500	45	30
PFB-10000	9000	3600	2160	5040	55	30

- (*) (**): kW and rpm are product dependent.
- Bigger sizes and tailor-made sizes are available against request.
- All specifications and illustrations are as accurate as is reasonably possible, but they are not binding.
- PerMix reserves the right to modify the design without notice.

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