

PTS - Ploughshare Mixer

Introduction:



PerMix PTS series Ploughshare Mixer is one of our two types of Turbulent Mixer, which are originally designed by our Israeli engineers. The other one is PTP series Paddle Mixer.

PTS ploughshare mixer is so versatile that it can handle nearly all types of materials including drying material, powdery granular, short fibered substance, moist solids with liquids, pasty material and highly viscous masses.

The PerMix PTS series Ploughshare Mixer can be used for numerous processing, including compounding, fine mixing, dispersing, suspending, emulsifying, deaerating, tempering, accelerating chemical or physical reactions, granulating, breaking down agglomerates, etc. It is particularly suited for such difficult processes as mixing trace elements in proportions of 1 in 100,000 to 1 in 1,000,000 parts.

Basic Construction:



PerMix PTS series Ploughshare Mixer consists of a centrally mounted horizontal shaft that rotates within a cylindrical container, ploughs or other shaped mixing elements are attached to the centrally mounted shaft, special openings at the top for feeding materials, flush fitting access doors at the front of the mixer, a flush fitting discharge valve at the bottom of the mixer which is pneumatically or manually operated, and a complete drive unit.

Operaton Process:

The mixing container is filled from 30% to 70% capacity, allowing space for individual particles to be dispersed within the main area of the mixer. The plough-shaped mixing elements create intense axial and radial movement causing the product to move throughout the mixing space. The shape and angle, together with the adjustment and rotation of the mixing elements and drum wall, cause the product to be lifted off the surface of the drum wall. The product is automatically discharged while the machine is still running so that any separation is prevented.

Lab & Pilot Models:



PerMix is able to offer lab & pilot size ploughshare mixers for Research & Development purpose. The small size machine is very helpful for customers when the ingredients for R&D are expensive, and to meet the budget limit at the first stage.

With the good performance of the lab & pilot mixer, it is easy to scale up for a medium size or even bigger one.

Special Design with Choppers:



The installation of PerMix Multi-chopper in the basic PTS mixer enables the breaking down of agglomerates during the mixing process. Together with the mixing element, the PerMix Multi-chopper removes lumps in the initial product, chops pasty adhesives and hinders the formation of

agglomeration during the moisturizing of powdered substances. The PerMix Multi-chopper is operated independently by its own motor.

Optional Features:



- Various types of mixing element

PerMix provides mainly two types of mixing elements – plough (for PTS Mixer) and paddle (for PTP Mixer). Both have their advantages: the plough shaped element can easily penetrate through the dense and thick powder or paste materials, while the paddle element can cover an even wider range of viscosity.



- Continuous operation

We can supply machines for continuous work when a large capacity per hour is needed for the same material. Continuous paddle mixers differ from batch paddle mixers in that the mass flow of the product is from the inlet of the container to the discharge at the opposite end.

- Heating/Cooling jacket

Jacketed trough for heating/cooling operation by steam, thermal oil, or water.

- Drive system

Drive system by geared motor, cycloidal reducer, worm reducer, belt or chain transmission, etc.

- Feeding & Discharging

A variety of feeding & discharging methods can be selected by the customers. Discharging port can be by manual or pneumatic operation.

- Access door

Access doors can be designed for easy inspection & maintenance.

- Spray nozzle

Liquid can be added into the powder by spray nozzles on a pipe which is installed on the top of the mixing trough. The necessary pump and tank can also be provided by us.

- Extended height bases

Height of our mixers can be defined according to customer' s condition.

- Construction material

We are able to offer mixers with contact part to be built by Carbon steel, SS304, SS316/316L, Titanium, Duplex stainless steel, Hastelloy, etc. For abrasive materials we offer hardened steel as the contact part. Also we produce mixers all by stainless steel in order to meet the high hygienic requirement.

- Vacuum drying & deaerating

The mixer can be designed for vacuum drying & deaerating for special applications.

Applications:

PerMix PTS series Ploughshare Mixer has a wide range of applications:

- Dry powder mixing: Food flavoring/additives, Sponge/cake mixes, Cosmetics, Pharmaceuticals, Cement, Powdered rubber
- Paste mixing: Biscuit creams, dough, PVC pastes, Car body fillers/putties, Sugar/marzipan paste, Toiletry pastes, Tile adhesives and grouts
- Mixing of wet slurries: Filter cake re-slurrying, dough, Fiber glass resin dough putty
- Wet granulation
- Liquid coating of powders and granules
- Fat and oil incorporation
- Vacuum drying
- Hot air drying

Specifications:

Model	Total capacity (liter)	Working capacity (liter)	Power (*) (kW)	Speed (rpm)	L1 (mm)	L (mm)	W (mm)	H1 (**)(mm)	H (***)(mm)
PTS-5L	5	3	1.1	0-600	180	800	500	-	-
PTS-10L	20	15	1.1	0-600	200	900	500	-	-
PTS-45L	45	30	1.5	200	480	900	550	450	950
PTS-70	70	45	2.2	170	580	1,050	600	450	970
PTS-100	100	70	3	160	660	1,100	610	450	1,020
PTS-200	200	140	5.5	155	890	1,400	730	500	1,180
PTS-300	300	210	7.5	150	970	1,550	850	500	1,300
PTS-500	500	350	11	130	1,250	2,000	950	500	1,400
PTS-750	750	500	15	110	1,500	2,250	1,100	600	1,600
PTS-1000	1,000	700	22	100	1,900	2,600	1,150	600	1,800
PTS-1500	1,500	1,000	30	95	2,110	3,200	1,200	600	2,000
PTS-2000	2,000	1,400	45	93	2,110	3,500	1,350	600	2,200
PTS-3000	3,000	2,100	55	90	3,000	4,100	1,500	800	2,400
PTS-4000	4,000	2,800	55	80	3,000	4,200	1,550	800	2,600
PTS-5000	5,000	3,500	75	70	3,000	4,300	1,620	800	2,800

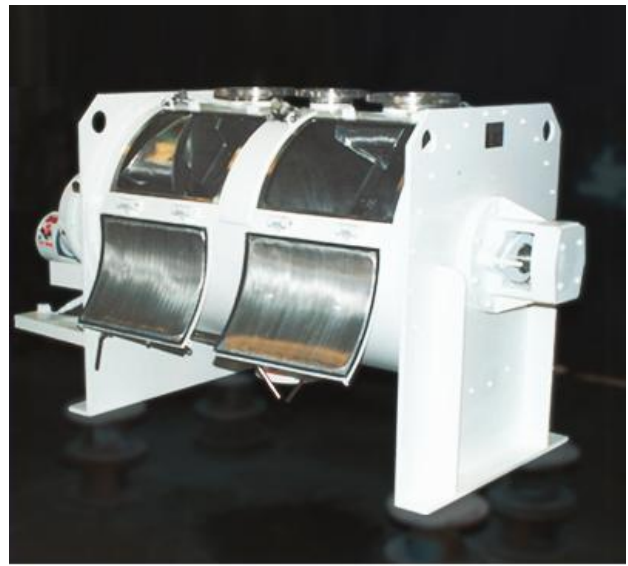
1. PTS-L: laboratory size
2. (*) (**) (***): Changes are available according to the customer's request.
3. All specifications and illustrations are as accurate as is reasonably possible, but they are not binding.
4. PerMix reserves the right to modify the design without notice.

Gallery:



www.permix-mixing.com

PTS-2000 Mixer with Pneumatic Discharge



www.permix-mixing.com

PTP-1500 Mixer with Access Doors Open



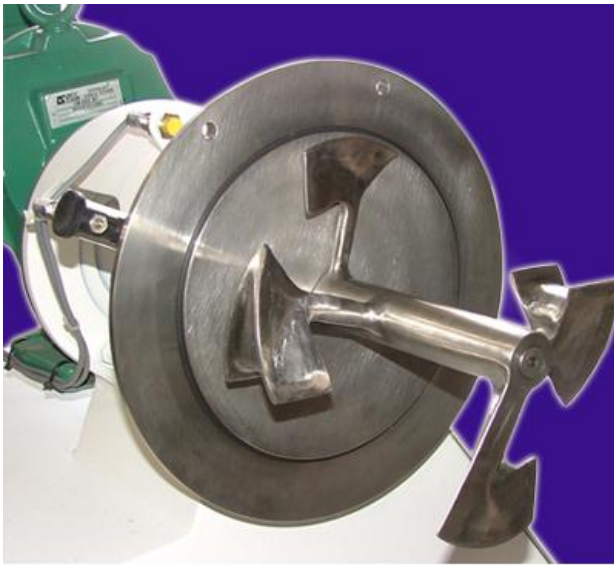
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PTS-200 Ploughshare Mixer with Jacket



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PTS Plow Mixer with Choppers



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Plough of PTS-5 Lab-size Mixer



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PTS Mixer with Loading Port & Grid



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Internal View of PTS Mixer



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PTS Mixer with Liquid Adding Pipes