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**PNA CONICAL SCREW MIXER**

# PNA CONICAL SCREW MIXER



PerMix PNA series Conical Screw Mixer is a batch mixing equipment used widely in mixing applications that require gentle mixing with minimal product distortion, minimal heat generation, and very accurate mixing homogeneity. Since it was first developed more than 60 years ago, it has been recognized as a good solution for the products which is delicate, heat sensitive or tending to segregate.

Due to the reason that PerMix Conical Screw Mixer uses the gravity to generate the significant downward massflow, it saves energy compared with a horizontal mixer.

These Conical Screw Mixers are also featured with no contamination to the product during the mixing, due to the fact that the shaft sealing & bearing is above the working area, thus no contact with the product.

## FEATURES & ADVANTAGES

- Low minimum volume required
- Complete discharge of materials
- Easy cleaning of the machine
- Gentle mixing for fragile and friction sensitive materials
- Free of cross contamination with shaft sealing above the product

## HOW IT WORKS

Inside of the PerMix Conical Screw Mixer, there is a cantilevered rotating screw (or two, three screws according to specified application) rotating by its own axle which is in parallel to / near the wall of the cone vessel.

During the operation, the mixing screw lifts the product around it from bottom to the top, and then the powder falls down due to the gravity, causing a convective mixing. At the same time, the screw is supported by an orbital arm and is rotating around the center of the cone like a planetary, so that the powders in every corner of the cone can be mixed by the screw, and a 3-dimensional mixing performance occurs within the whole cone.



## APPLICATIONS

PerMix PNA Conical Screw Mixers are suitable for a wide variety of processing applications in industries of food, pharmaceuticals, chemical, plastics, pigments and coatings, metals & minerals:

- Gentle mixing of free-flowing powders, pastes and slurry
- Coating of solid mass, powdery product
- Moistening of powders
- Granulating of fine powders
- Drying of wet powders, pastes and slurry with vacuum and liquid recovery



## SPECIFICATIONS

Model	Total volume (liter)	Working volume (liter)	Power (*) (kW)	RPM	Dia (mm)	H, total height (**)(mm)	Inlet (***)(mm)	Outlet (***)(mm)	Weight (kg)
PNA-50	50	30	1.5+0.18	117/2	660	1400	90	150	150
PNA-100	100	60	1.5+0.18	117/2	720	1500	100	200	300
PNA-200	200	120	2.2+0.37	117/2	888	1557	140	230	500
PNA-300	300	180	2.2+0.37	90/2	990	1722	180	230	550
PNA-500	500	300	3+0.37	90/2	1156	1991	200	230	600
PNA-800	800	480	4+0.55	90/2	1492	2256	250	300	950
PNA-1000	1000	600	4+0.55	90/2	1600	2432	300	300	1200
PNA-1500	1500	900	5.5+0.55	90/2	1780	2725	300	300	1350
PNA-2000	2000	1200	5.5+0.55	90/2	1948	3001	350	350	1500
PNA-2500	2500	1500	7.5+1.1	90/2	2062	3024	350	350	1800
PNA-3000	3000	1800	7.5+1.1	90/2	2175	3207	350	350	2100
PNA-4000	4000	2400	11+1.5	57/2	2435	4010	400	400	2500
PNA-5000	5000	3000	15+2.2	57/2	2578	4260	400	400	3000
PNA-6000	6000	3600	15+2.2	57/2	2715	4470	400	400	3500
PNA-8000	8000	4800	18.5+2.2	57/2	2792	5000	400	450	3800
PNA-10000	10000	6000	22+4	57/1	3000	5240	500	450	4300

- 1. (\*) (\*\*) (\*\*\*) (\*\*\*\*): Changes are available according to the customer's request.
- Customized sizes available as per 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.

## OPTIONS

### Feeding & Discharging

A variety of feeding & discharging methods available.

### Screw Type

We offer single screw, double screw and triple screw to give different mixing intensity.

### Drive system

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

### Construction Material and Finish

We are able to offer our PNA Mixers with contact part to be built in Carbon steel, SS304, SS316/316L, Titanium, Duplex stainless steel, Hastelloy, etc. Finish of internal and external finish can be dull polished, 180 grit polished (food grade), or mirror polished. For abrasive materials we offer hardened steel as the contact part.

### Spray nozzle

Liquid can be added into the powder by spray nozzles on the top.

### Heating/Cooling jacket

Jacketed trough for heating/cooling operation

### Vacuum drying & deaerating

PNA Conical Screw Mixers can be designed to a vacuum mixer dryer for vacuum drying & deaerating or for inner pressure working for special applications.



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