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PNA CONICAL SCREW MIXER

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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.

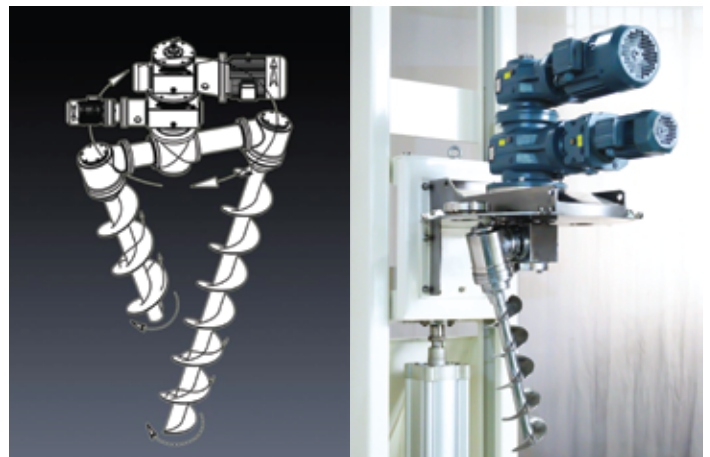
FEATURES & ADVANTAGES

- 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.



PerMix Tec Co., Ltd.

Adi 17940, Israel

Contact: Mr. Arie Srugo

Tel: +972-54-908-0144

Email: srugoa@permixtec.com

www.permixtec.com

www.permix-mixing.com

PerMix in China

Shanghai, 201821, China

Contact: Mr. Aaron Huang

Tel: +86 133 911 68218

Email: aaron.h@permixtec.com

PerMix North America

Chicago, Illinois,

60601, USA

Contact: Mr. John Paul

Tel: +1 630-649-1357

Email: John.paul@permixtec.com

South America office

Buenos Aires, Argentina

Contact: Mr. Gonzalo Villagra

Tel: +54-9-11-35374801

Email: gonzalo.villagra@permixtec.com

UK office

Scotland, UK

Contact: Mr. James Ryder

Tel: +44 (0) 7554139667

Email: james.ryder@permixtec.com

South Africa office

South Africa

Contact: Mr. Martin Whelan

Email: saf@permixtec.com

Russia office

Contact: Mr. Vladislav Dyuzhev

Tel: + 7 910 443 9924

Email: ru@permixtec.com

Ukraine office

Contact: Mr. Viacheslav Pishyi

Tel: +38 067 45 44 694

Email: ua@permixtec.com

India office

501, KL Accolade, Santacruz East,

Mumbai – 400 055,

Maharashtra, India

Contact: Mr. Kevin Pinto

Tel: +91 7715005495

Email: india@permixtec.com

