



# The Role Of Pre-Conditioning & Mixing In Pharmaceutical Blending & Formulation



Pre-condition & mixing is a crucial part of pharmaceutical manufacturing, as this processing step is decisive to the batch quality and passing QA. In order to create safe and hygienic medications that contain precise amounts of active ingredients, pharmaceutical mixing equipment must be easy to sanitize and diverse in flexibility in order to create batches with uniform homogeneity, purity, particle size distribution, and stability.

**PerMix understands the needs of the pharmaceutical industry and as such, here are some of our key features we engineer into our mixers**

## STEP 02

Mixers can be gentle yet aggressive in mixing, offering a low/no shear, high output. Mixers can also offer a high shear, high output if needed, as well as in between. PerMix offers a model for all applications and needs.

## STEP 01

Batch mixers are diverse in capacity range from 1 liter to 30,000 liters, and offer the flexibility to operate from 5% of total capacity to 100%.

## STEP 03

Mixers can offer a dust-free environment, specially designed for clean room applications, included hazardous area if needed.

## STEP 05

Equipped with innovative technologies for optimal performance & efficiency, discharge/aseptic filling, and cleaning.

## STEP 04

PerMix pharmaceutical mixers are built to comply with the strictest hygiene regulations.



## Mixer compliance in the pharmaceutical manufacturing process

Pharmaceutical manufacturers are subject to incredibly stringent regulatory oversight. Not only must the entire pharmaceutical production process be validated, verified, and inspected, but processing & packaging equipment must be flexible enough to meet the needs & regulations of today while keeping the demands of tomorrow in mind.

**PerMix Mixers and Pre-Conditioners meet the most stringent guidelines, including FDA/USDA, GMP, 3A, HACCP, SQF, & more...all while maintaining a budget. Come see the PerMix difference**



## PerMix Pharmaceutical & Nutraceutical Solutions

Since 1954 PerMix has been leading the Food Industry in mixing solutions. Whether you are an artisan style bakery or a food manufacturer that has special requirements such as cook / chill, PerMix has the solution for your needs, no matter how large or small. Below are some areas where PerMix can offer solutions to fit your needs.

### Pharmaceutical & Nutraceutical Manufacturing & Production

Whether you are a Central Commissary that ships meals to remote locations, or a manufacturer of ready meals or other types of prepared foods, PerMix has the solutions to your needs. With the ability to mix as well as cook & chill if needed, we know the industry, and have the solutions to create the perfect mix, whether it is a 1 liter batch or 20,000 liter batch, or even continuous. Production needs of any size can be improved with PerMix mixers.



#### Ingredient Mixing & Pre-Conditioning

Ingredient mixing & pre-conditioning is important prior to production. Whether you are mixing ingredients to speed production needs, or simply keeping stored inventory fresh, preventing settling, our mixers will do the task



#### Conical Mixers

Conical Mixers are ideal for pre-conditioning ingredients of any type, including that of grains, granules, and powders.



#### Drum Mixers

Drum Mixers are perfect for keeping ingredients, flavors, and additives rotated in inventory which prevents settling and ensures better batch consistency.



## Mixing & Blending

As the trends of the Pharmaceutical / Nutraceutical Industry change often, even according to season, the need to have a diversified solution to your mixing needs is important. Having a diversified mixer allows for your production line to stay flexible, answering today's needs and tomorrow's demands. As a result of this, PerMix has a large variety of mixers that are used in the Pharmaceutical / Nutraceutical Industry.



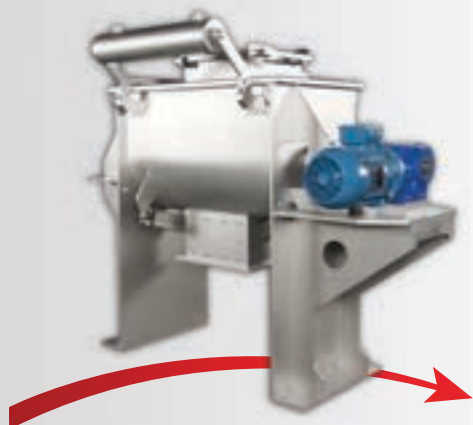
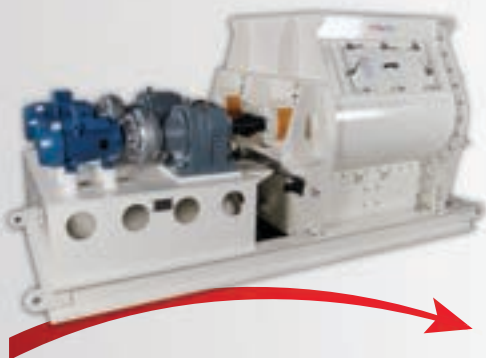
### Fluidized Bed, Paddle & Plow Mixers

For a quick response in mixing needs our Paddle Mixers & Plow Mixers answer the need. The ability to rapidly mix ingredients together of different particle sizes or density is where these mixers are most useful. The mixing action provided in these mixers makes a quick task out of blending & mixing ingredients together to make a homogenous blend. By adding a jacket you can easily create the ultimate in cook / chill applications. Adding vacuum will allow for certain advantages to be capitalized on, increasing QA, HACCP, and minimizing the need for additives or preservatives, while extending shelf life.



### Ribbon Mixers

When the need to mix & blend without ingredient or product shearing, tearing, degradation, or harm, the most gentle type of mixer is our PerMix Ribbon Mixers. **PerMix manufactures our ribbon mixers in a horizontal version as well as a vertical version. Vertical Mixers allow for greater batch flexibility as well as easier cleaning and less loss of product during discharge.**







### **Sigma Mixers & Double Planetary Mixers**

When the ability to knead as well as mix, blend, and flip & fold, our Sigma Mixers as well as our Double Planetary Mixers fit this need perfectly. Whether you are mixing a paste or creating a thick viscous concentrate, these mixers make ease of mixing ingredients to create a homogenous blend of viscous products. Add in the ability to heat & chill, as well as the option to mix under vacuum make these units superstars of the production line.



### **V-Mixers & Double Cone Mixers**

The ability to mix, blend, and even shear with the addition of an optional intensifier bar, our V-Mixers & Double Cone Mixers are cost effective mixing tools that require little maintenance. Add the ability to heat & chill with our optional jackets, our V-Mixers & Double Cone Mixers are perfect for mixing products that need precise temperature control. Add the optional vacuum on top of that, and the mixers prove to be versatile across many applications.



### **Universal Vacuum Processors & High Speed Dispersers**

The ability to produce soups, sauces, dressings, & condiments in one unit offers the ultimate in versatility. The ability to manufacture products in one universal machines creates not only an increase in production and a decrease in labor, but it also creates an increase in batch QA as well as saves money in regards to equipment purchasing & line footprint. Our Universal Vacuum Processors, along with our high speed dispersers, create a universal tool that will allow production needs to be met with ease while remaining flexible, creating the ability to expand offerings when needed. Imagine making 1,000kgs of mayonnaise per hour in one machine. That is the PerMix advantage.





### High Speed Granulator



In a PerMix PDI series Rapid Mixer Granulator, the powders are set in a multidimensional shear flow state and it needs only short mixing time until they are thoroughly mixed. In case that granulation is required, the spraying system sprays the binder solution into the bowl to agglutinate with the materials and under the combined action of the impeller and chopper, uniform and porous granules are produced. After finishing the mixing or granulation process, powders/granules are discharged through the side discharge with no "dead zone" valve.



# THANK YOU!

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Besides, PerMix have been building a network of agents located in Europe (Germany, Denmark, UK, Belgium, France, Spain, Poland, etc), South America (Argentina, Chile, Guatemala, etc), Asia (South Korea, Indonesia, India), and several other countries.

