PerMix
Perfect Mixing Technologies

WE OFFER

PERFECT MIXING TECHNOLOGIES

COMMERCIAL AND INDUSTRIAL MIXERS MANUFACTURER

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POWDER MIXERS

Our powder mixers are engineered for high efficiency and consistent blending of powders and granules.

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PADDLE MIXERS (HORIZONTAL)

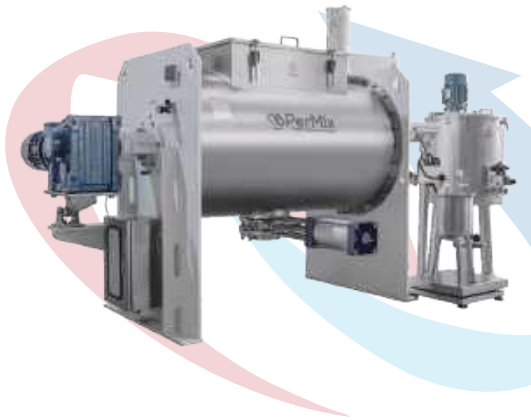
PerMix PTP series Paddle Mixers are an innovative design derived from the well-known Plow Mixers. The Paddle, in many cases, provides the same mixing performance as a Plow but requires much less power consumption. Due to lower rotation speed, the wearing of the mixing element for the Paddle is also less than the Plow. Paddle Mixers also have a better performance dealing with fragile and/or heat sensitive materials.

Compared with the conventional Ribbon Blenders, Paddle Mixers are superior because they mix the material in a more aggressive way while keeping the similar power consumption.

PerMix Paddle Mixers are 'aggressive mixers' that are well qualified for high mixture ratio processes up to 1:1,000,000, which means the single sample of 1 ppm of a batch volume can still have the right mixture of ingredients.

PerMix supplies our **PTP-C continuous paddle mixers** for continuous work when large output per hour is required.

- **Mixing Action:** Paddle mixers utilize wide blades that create a gentle, lifting action ideal for bulk powders and fragile materials.
- **Advantages:** They provide uniform mixing without damaging the product, making them suitable for a variety of applications.
- **Disadvantages:** Mixing times can be longer compared to more aggressive mixers, potentially affecting cycle times.
- **Efficiency:** Highly efficient for bulk powders and fragile materials, ensuring consistent results.
- **Materials of Construction:** Available in stainless steel, carbon steel, and other materials as needed.

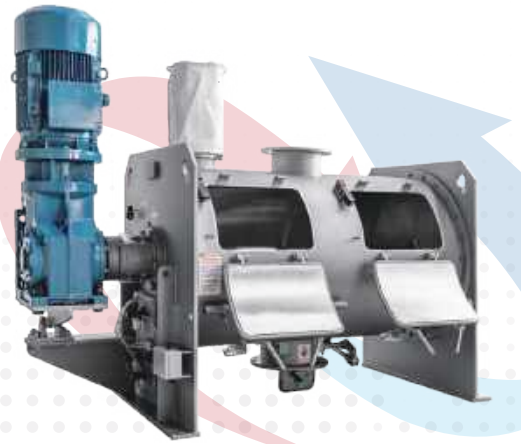


PLOW MIXERS

PerMix PTS series Plow Mixer is a very versatile mixer that can handle nearly all types of materials including dry powders, granules, short fibered substances, moist solids, pasty materials and highly viscous masses. They are widely used in numerous processing, including compounding, fine mixing, dispersing, tempering, accelerating chemical or physical reactions, granulating, etc. It is particularly suited for such difficult processes to mix trace elements in proportions up to 1 in 1,000,000 parts.

PerMix supplies our **PTS-C continuous plow mixers** for continuous work when a large capacity per hour is needed for the same material. Continuous mixers differ from batch ones in that the mass flow of the product is from the inlet of the container to the discharge at the opposite end.

- **Mixing Action:** Featuring plow-shaped blades, these mixers sweep through the material, promoting aeration and effective agitation for uniformity.
- **Advantages:** Particularly effective for high viscosity materials, plow mixers minimize product degradation and ensure homogeneity.
- **Disadvantages:** The more complex design may require higher maintenance and operational oversight.
- **Efficiency:** Offers excellent mixing efficiency for challenging materials, especially those that are thick or sticky.
- **Materials of Construction:** Available in stainless steel, Hastelloy, and mild steel to cater to various industrial requirements.



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RIBBON MIXERS (HORIZONTAL & VERTICAL)

PerMix PRB Horizontal Ribbon Mixer & PVR Vertical Ribbon Mixer are efficient and versatile blending machines for mixing of dry powders, granules and viscous pastes homogeneously. They are able to give a satisfying "homogeneity grade" for mixing jobs due to the design of a mixing agitator with dual ribbons inside of a U-shaped working trough (for PRB), or a combination of helical and screw inside of a conical vessel (for PVR).

PerMix designs our Ribbon Blenders which are able to achieve a maximum "mixing ratio" of 1:500,000, which means you can get the desired mixture proportion of components in as small as 1 gram with a batch of 500kg.

- **Mixing Action:** Ribbon mixers utilize a helical ribbon that rotates around the interior, effectively lifting and folding the material to achieve thorough blending.
- **Advantages:** Fast mixing times and uniform blending make these mixers suitable for a wide range of powders, ensuring consistent results.
- **Disadvantages:** They may not be as effective for very fine powders or materials with high bulk density, as the mixing action can be less efficient in these cases.
- **Efficiency:** Capable of achieving batch mixing in short cycles, these mixers maximize throughput in production environments.
- **Materials of Construction:** Options include mild steel, stainless steel, Hardox, and titanium, ensuring durability and resistance to wear.

CONICAL SCREW MIXERS

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 gen-eration, and very accurate mixing homogeneity. Since it was first developed, it has been rec-ognized 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 mixers are also featured with no contamination to the product due to the fact that the shaft sealing & bear-ing is above the working area, thus no contact with the product.

- **Mixing Action:** These mixers utilize a conical shape to gently mix materials as they slide down the sides, promoting a gentle blending action.
- **Advantages:** Ideal for preventing product degradation, making them perfect for heat-sensitive powders.
- **Disadvantages:** Longer mixing times may be required for certain materials, potentially slowing production.
- **Efficiency:** Highly efficient for powders that require gentle handling, ensuring even distribution.
- **Materials of Construction:** Constructed from stainless steel, titanium, and Hastelloy for enhanced durability.

VERTICAL PADDLE MIXERS

PerMix PAM series Vertical Paddle Mixer is a super innovation that combines all the advantages of precise mixing homogeneity, highly hygienic design, complete discharge with minimum residue, wide range of loading volume, robust design with long duty life and many others.

PAM Vertical Paddle Mixers are designed with a single shaft with only one ribbon, but is able to provide a multi-dimensional movement of the materials. The ribbon inside the mixing vessel moves the materials upward from the bottom to the top, where the materials then drop by gravity into the center. This generates a good counter flow of the product particles.

PerMix Vertical Paddle Mixers are efficient and versatile blending machines for batch mixing of free-flowing powders, granules and pellets. They have been used widely in food, enzyme, cosmetics, fine chemicals, pharma, etc. Besides, the material particles are mixed with minimal mechanical and thermal stress, which makes this type of mixer a good solution for fragile and heat sensitive product.

- **Mixing Action:** Paddle mixers utilize special blades that create a complex lifting action with enhanced mixing and heat transfer efficiency.
- **Advantages:** Designed for the highest hygienic requirement, improving flow characteristics and reducing the risk of segregation.
- **Disadvantages:** The vertical design may require more overall height, and higher initial investment.
- **Efficiency:** Offers high mixing efficiency, especially in processes involving difficult-to-handle powders.
- **Materials of Construction:** Options include stainless steel, Hardox, and carbon steel for enhanced performance.

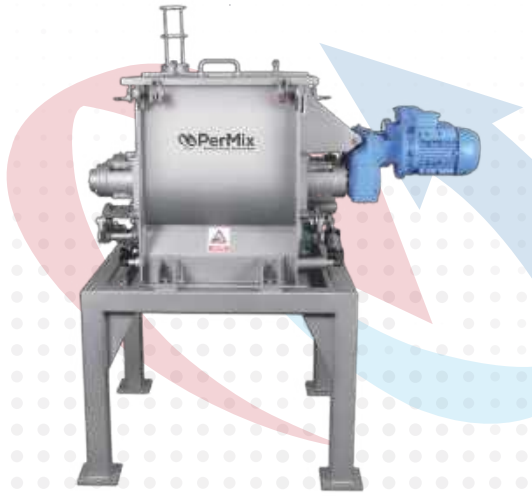
FLUIDIZED ZONE MIXERS
(SINGLE AND DOUBLE SHAFT):

PerMix PFB & PFBS series Single or Twin-shaft Paddle Mixer is a fast mixer with high efficiency, which is also known as Fluidizing Mixer, Fluidized Zone Mixer, or Zero-gravity Mixer.

These mixers are 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 & PFBS Mixers are able to achieve fast and precision mixing with high capacity.

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

- **Mixing Action:** By utilizing air or fluid to create a fluidized bed, these mixers enhance mixing and heat transfer efficiency.
- **Advantages:** Particularly effective for cohesive powders, improving flow characteristics and reducing the risk of segregation.
- **Disadvantages:** The operation can be complex and may require additional equipment for optimal function.
- **Efficiency:** Offers high mixing efficiency, especially in processes involving difficult-to-handle powders.
- **Materials of Construction:** Options include stainless steel, Hardox, and carbon steel for enhanced performance.



HIGH SPEED MIXERS

The PerMix PDI series High Speed Mixer, also called Mixer Granulator, Wet Granulator, or High Shear Mixer Granulator, is an efficient and versatile blending machine for mixing of dry powders, or granulating with the addition of liquid binder, within a very short time and with excellent cleaning abilities. It is able to give perfect result for mixing due to the innovative design of a central impeller type mixer with a side high speed Chopper.

The proven mixing action of the PerMix PDI series High Speed Mixer ensures effective mixing in many applications. Optimal performance is assured with dedicated designs of optional feeding, discharging and installation.

- **Mixing Action:** Combining granulating and mixing actions, these mixers utilize high-speed blades to process materials.
- **Advantages:** Effective for producing granules while maintaining product quality; versatile for various applications.
- **Disadvantages:** Potential for heat generation during operation, requiring careful monitoring.
- **Efficiency:** High efficiency in granulating and mixing in a single process step, maximizing throughput.
- **Materials of Construction:** Typically made from stainless steel and mild steel, designed for durability.

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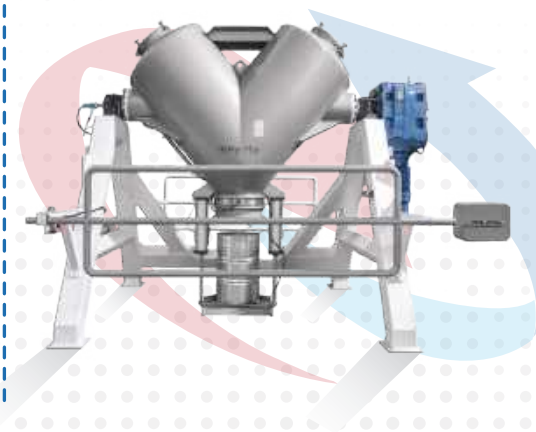
V-BLENDERS & DOUBLE CONE MIXERS

PerMix PVM series V shaped Mixer (or V Cone Mixer, Y shaped Mixer) and PDC series Double Cone Mixers are the two types of well-known Tumbler Mixers, which perform the mixing by turning the vessel around the shaft. They are unique mixers suitable for rapid and uniform mixing of free flowing dry powders, granules and crystals.

With the simplest structure among all mixers, the Tumbler Mixers are featured for highest hygienic design, low investment, easy operation, discharging without residual, quick cleaning, and easy maintenance. They are widely used in pharmaceuticals, colors, plastics resins, food products, ceramic glazes, metal powders, cosmetics, detergents, insecticides, explosives materials, and a lot of others.

- **Mixing Action:** The unique shape of these mixers facilitates gentle mixing without causing damage to the materials.
- **Advantages:** Excellent for blending powders with different particle sizes, resulting in minimal segregation and uniform distribution.
- **Disadvantages:** Longer mixing times may be required to achieve complete blending, impacting production rates.
- **Efficiency:** Highly efficient for dry powder blending applications.
- **Materials of Construction:** Available in stainless steel, Hastelloy, and mild steel.



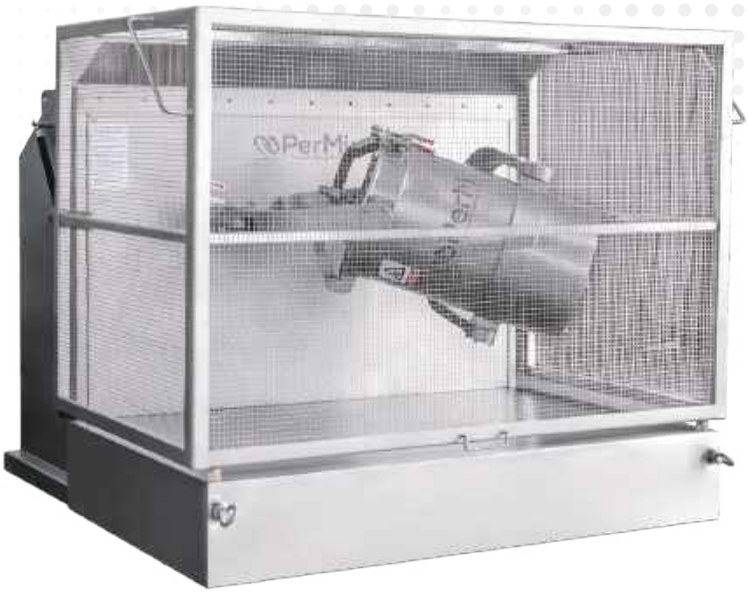
3D MIXERS

The PerMix PTU series 3D Mixer or Multi Direction Powder Mixer is used for homo-geneous mixing of powdery substances with different specific weights and particle sizes. Producing dry-to-wet and wet-to-wet mixtures is also possible. The production process is hygienic and dust-free because the product is mixed in independent con-tainers of variable sizes.

During the mixing process the powder moves in a random direction from center to the end of the trough and at the same time from top to the bottom. In such a multi-dimensional way, the PerMix PTU series 3D Mixer needs only short mixing time and relatively low power consumption.

The mixer's "Gentle" mixing action is good for final products that are sensitive to high shear of the mixer and tend to break or to reduce their particles size, or are highly abrasives.

- **Mixing Action:** These mixers provide a three-dimensional motion that enhances mixing uniformity and reduces segregation.
- **Advantages:** The complex movement ensures thorough blending of powders, making them suitable for a variety of applications.
- **Disadvantages:** The more intricate design may require higher maintenance.
- **Efficiency:** Very effective for achieving consistent blends, particularly for powders with different characteristics.
- **Materials of Construction:** Typically constructed from stainless steel and titanium for enhanced durability.



DRUM MIXERS

PerMix PDR & PDRS series Drum Mixer have been developed to meet increasing demands for a low batch mixer for mixing, blending, homogenizing, dyeing of dry powders and granules particularly in smaller industries or when frequent product changes as required. They are used widely in plastics, chemicals, drug and dye works, food as well as textile and leather industry.

Our PDR Drum Hoop Mixers comprise a drive unit with roll-on / roll-off ramp. Usually the drum is available as standard product in the market; however customized drums are also accepted, and the hoop then needs to be adapted to the drum size.

Our PDRS Drum Mixers are designed to have a drum holder with clamps to work with drum sizes from 50L up to 600L, and its drive system is to rotate the drum holder together the drum to generate a fast and effective blending.

- **Mixing Action:** Designed to mix materials directly in drums, these mixers rotate to achieve homogeneity and uniformity.
- **Advantages:** Simple, cost-effective, and easy to operate, making them suitable for various applications.
- **Disadvantages:** Limited to smaller batch sizes and may not achieve complete mixing uniformity in all cases.
- **Efficiency:** Efficient for small-scale mixing tasks, ensuring effective blending.
- **Materials of Construction:** Made from stainless steel and mild steel to provide durability.

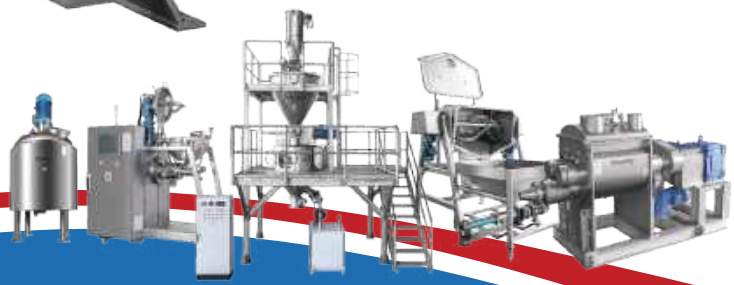
CONTINUOUS MIXERS

PerMix **PTPC & PTSC series Continuous Mixers** share the similar appearance of PerMix PTP series Paddle Mixers and PTS series Plow Mixers (for batch operation), with the major difference that the inlet for feeding located at one end of the vessel, and the outlet port for product discharge at the other end. With this special design, PerMix Continuous Mixers are able to be loaded and discharged simultaneously, thus dramatically increasing the capacity of the mixer while still providing a good mixing quality. It is very easy to set up the Continuous Mixing Line with automatic control, thus saving a lot of labor costs and reducing the chances of faults with manual operation.

PerMix **PTPC-W-2 series Twin-shaft Continuous Paddle Mixers** are derived from the PerMix PTPC Continuous Paddle Mixers, but with two agitating shafts. These two agitating shafts are located in a way that the two rows of paddles are overlapping. While they are rotating, it enhances the folding and shearing to materials.

With the ability of large throughput and satisfactory mixing homogeneity, PerMix Continuous Mixers are widely used in the industries of Food, Animal Feed, Organic Materials, Building Materials, Minerals, Plastics, Metallurgy and many more.

- **Mixing Action:** Paddle or plow blades sweep the cylindrical vessel and lift the materials, creating a multi-directional mixing and leading to proven uniformity.
- **Advantages:** They provide aggressive mixing, minimize product degradation and ensure homogeneity.
- **Disadvantages:** Limited mixing time of them may cause less mixing performance than batch mixers.
- **Efficiency:** Provides the highest output thus capacity; easily to be set up as automatic loading/unloading.
- **Materials of Construction:** Typically made from stainless steel, mild steel, or special steel such as Hastelloy, duplex steel, etc.



VACUUM MIXERS DRYERS

All PerMix Powder Mixers come with an available Vacuum Mixer & Dryer option. PerMix Vacuum Mixer Dryer is used as a high-speed mixer dryer, chemical reactor or, if both processes are combined, as a dryer-reactor. They are used with particular success in agglomeration-free rapid drying, heterogeneous reactions with systems of different substances, extraction, sterilization and in general for vacuum, positive-pressure, thermal energy and comminuting aids.

PerMix Vacuum Mixer Dryers are widely used in the chemical, met-allurgic and pharmaceutical industries among others. Standard sizes range from 3 liters up to 20,000 liters and pressure up to 50 bar.

With vacuum mixer dryer, drying time is dramatically reduced with products free from agglomerates!

- **Mixing Action:** These mixers combine vacuum operation with mixing capabilities, enhancing drying while preventing oxidation.
- **Advantages:** Ideal for sensitive materials, allowing for simultaneous mixing and drying without product degradation.
- **Disadvantages:** Higher initial investment compared to standard mixers; may require specialized maintenance.
- **Efficiency:** Very efficient for moisture-sensitive powders, ensuring consistent results.
- **Materials of Construction:** Available in stainless steel, Hastelloy, and more, providing excellent durability.

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PASTE MIXERS

Our paste mixers are specifically designed for handling thick and viscous materials.

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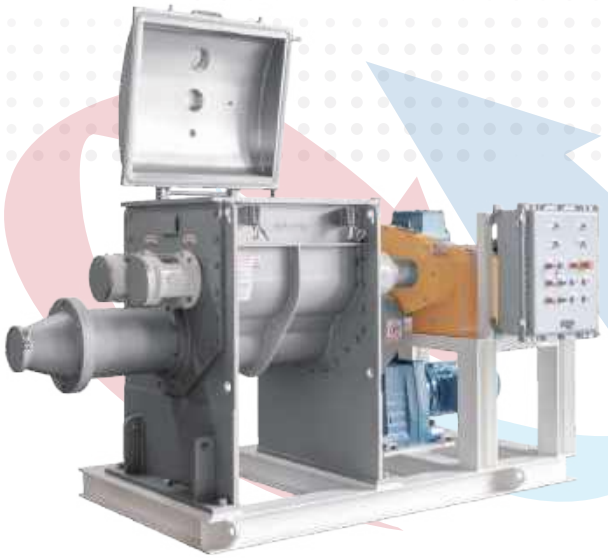
SIGMA MIXERS AND SIGMA MIXTRUDERS

The PerMix PSG series Sigma Mixer, which is also known as the Double Sigma Mixer, or Double Z Blade Mixer, is used for the mixing-kneading of materials with very high viscosity (over 500,000 cps).

With its unique design of Z-shaped mixing tools installed in two semi-cylinders, the PerMix PSG series Sigma Mixer is able to provide a combined functions of compressing, stretching, folding, kneading & mixing, which makes it widely used in the chemical, food, sealing compound and paint industries, among others. If a screw extruder is applied for discharging, the mixer is also called Sigma Mixer Extruder, or Mixtruder.

PerMix PSG-X Sigma Mixer Extruder (or Mixtruder) is designed with an extrusion screw located in a cylindrical barrel in the middle and below the two mixing arms. The extrusion screw is used to discharge the product, but can also run in reversed direction during mixing cycle, lifting materials up to the reach of mixing arms, thus assuring a thorough kneading and accelerating the mixing process. The screw has its own separate drive.

- **Mixing Action:** Employs two sigma blades that rotate in opposite directions to effectively mix and knead thick pastes and doughs.
- **Advantages:** Provides excellent homogeneity and can incorporate additional materials through the extruder option, enhancing processing versatility.
- **Disadvantages:** Limited to processing more viscous materials; higher power consumption can lead to increased operational costs.
- **Efficiency:** Highly efficient for producing consistent blends in dense pastes.
- **Materials of Construction:** Typically made from stainless steel and Hastelloy, ensuring durability in harsh environments.



DOUBLE PLANETARY MIXERS

The PerMix PDP series Double Planetary Mixer is also called double planetary kneader, because it can be used to handle very viscous materials up to 1,500,000 cPs. Usually the PerMix PDP series Double Planetary Mixer has two vertically mounted mixing tools which are driven by one gear to move around the central axe of the tank as well as their own axis.

The PerMix PDP series Double Planetary Mixer is also called double planetary kneader, because it can be used to handle very viscous materials up to 1,500,000 cPs. Usually the PerMix PDP series Double Planetary Mixer has two vertically mounted mixing tools which are driven by one gear to move around the central axis of the tank as well as their own axis.

- **Mixing Action:** Features two blades that orbit around a stationary center while mixing, providing thorough mixing and kneading.
- **Advantages:** Suitable for highly viscous materials, minimizing air incorporation during processing for high-quality results.
- **Disadvantages:** Slower mixing speeds compared to other types; potential wear on blades may require regular maintenance.
- **Efficiency:** Highly effective for producing uniform mixtures of pastes and doughs.
- **Materials of Construction:** Constructed from stainless steel, titanium, and carbon steel for durability and performance.

VACUUM EMULSIFYING MIXERS

The PerMix PVC series Vacuum Emulsifying Mixers are especially designed and used extensively in production of Mayonnaise, Ketchup, Dressings, Chocolate Fill-ings, Chocolate Frostings, Sauces, etc; but can also be applied in the food, cosmetic, chemical and pharmaceutical industries.

PerMix Vacuum Emulsifying Mixers are more than a single emulsifying mixer, but a vacuum mixing, dispersing and emulsifying system that is used whenever a high quality and absolutely air-free product is required.

PerMix PVC Vacuum Emulsifying Mixers cater to various work processes which normally require more machinery in one system. In the PVC Vacuum Emulsifying Mixer, base materials can be mixed in liquids, dispersed and homogenized while at the same time all air is removed. This produces stable emulsions with a long shelf life in storage.

PerMix PVC Vacuum Emulsifying Mixer consists of a mixing tank (with or without jacket), an internal slow running anchor mixer & scrapers, an external inline high shear mixer, necessary pipelines & valves, and electric cabinet. Other options such as feeding hopper, vacuum pump, PLC & HMI control are available according to customer's request.

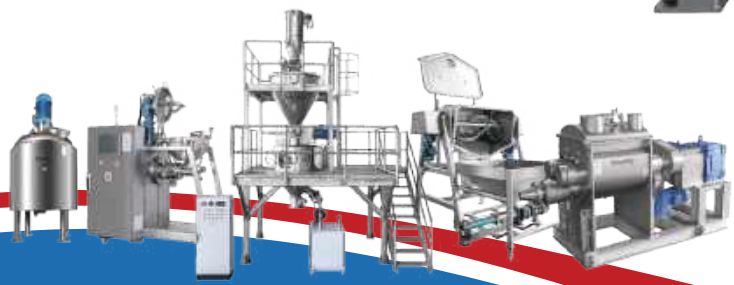
- **Mixing Action:** Creates stable emulsions through high shear mixing, suitable for both continuous and batch processes.
- **Advantages:** Excellent for blending immiscible liquids, ensuring high-quality emulsions for various applications.
- **Disadvantages:** Batch emulsifiers may require longer processing times. Inline models depend on pump efficiency for optimal results.
- **Efficiency:** High efficiency in producing stable emulsions, capable of handling varying viscosities.
- **Materials of Construction:** Typically constructed from stainless steel and Hastelloy, ensuring longevity and hygiene.

MULTI-SHAFT MIXERS

PerMix PD-2 and PD-3 series Multi-shaft Mixers are a revolutionary universal multi-processing mixer which is designed to serve a wide variety of industries in many different processes. It provides a unique three-way mixing action by combining slowly running elements with a rapidly running element.

PerMix Multi-shaft Mixer therefore is not limited to the simple production of emulsions, suspensions and other homogenous products, but covers the entire manufacturing process - from feeding the components, to the well-deaerated and ready-for-packaging product.

- **Mixing Action:** Utilizes multiple shafts equipped with various mixing tools, ensuring thorough blending and efficient processing.
- **Advantages:** Versatile for a wide range of viscosities and materials, ensuring consistent results across diverse applications.
- **Disadvantages:** More complex design requires careful operational management and maintenance.
- **Efficiency:** Excellent for achieving consistent blends in variable batch sizes, maximizing production efficiency.
- **Materials of Construction:** Typically available in stainless steel and Hastelloy to cater to various industrial requirements.



DISPERSION MIXERS

The PerMix PD series High Speed Disperser (or Dissolver) is ideally designed to meet the demands of a broad spectrum of industrial applications for the purpose of dispersing solid or liquid materials into liquid body.

PerMix PD High Speed Disperser works with the powerful high speed rotation of the saw disc impeller. Liquid or solid materials are subject to the high shear force at the periphery of the saw disc when the impeller is rotating at high speed, and they are dispersed quickly and efficiently into the liquid body, after short time, homogeneous dispersion is produced.

The ease of operation and high efficiency of PerMix High Speed Dispersers reduce cost and operation time, and have proven themselves by providing the most economical solutions to a variety of dispersing problems.

- **Mixing Action:** Employs high-shear forces to efficiently disperse solids into liquids, creating stable emulsions and suspensions.
- **Advantages:** Fast and effective, these mixers are ideal for difficult-to-mix materials, ensuring uniform dispersion.
- **Disadvantages:** Can introduce air into the mixture if not monitored carefully; requires careful operation for optimal results.
- **Efficiency:** Highly effective for achieving uniform dispersions in a range of applications.
- **Materials of Construction:** Typically made from stainless steel and carbon steel, designed for durability.

LIQUID MIXERS

Our liquid mixers cater to a wide array of applications, ensuring optimal mixing and processing.

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IN-LINE HOMOGENIZERS (SINGLE TO THREE STAGE)

PerMix PC series inline mixer is a high shear mixer for inline or continuous operation. In the Inline process, the mixer is installed outside the tank. This makes it easy to be built into an existing production line with normal inlet/outlet connections.

In the case to deal with liquid with a low viscosity, the inline mixer can pump the liquid without an additional pump. That is why it is also called High Shear Pump. The mixer can be used to deal with the product in a single pass or with several circulations to make the product better.

Different from a batch High Shear Mixer, the mixing occurs in the mixing chamber, thus energy is introduced onto materials in the most efficient way. This also cuts the process times by up to 90% compared with conventional blending methods.

PerMix PC-3 series 3-stage inline mixer has 3 sets of stator/rotor systems to enhance its shearing performance. This design dramatically reduce processing time, and in some cases only one pass through the mixer can lead to satisfied products. They are applied to deal with difficult-to-disperse materials too.

- **Mixing Action:** Forces liquids through narrow gaps to achieve high shear mixing, ensuring uniformity and particle size reduction.
- **Advantages:** Produces consistent particle sizes suitable for continuous processing; excellent for large-scale operations.
- **Disadvantages:** Initial setup costs can be high; requires careful calibration for optimal performance.
- **Efficiency:** Very efficient for large-scale production with high throughput.
- **Materials of Construction:** Available in stainless steel and Hastelloy for durability and resistance to corrosion.

POWDER LIQUID MIXERS

PerMix Powder Liquid Mixer is a family of equipment which are designed for mixing powder into liquid in an efficient way. By a selection of different rotating element, PerMix Powder Liquid Mixer is able to provide various functions of High volume powder induction; Dispersing of “difficult-to-wet” powders; Handling fine & dusty powders; Dispersing; Homogenizing; Emulsifying, etc.

PerMix offers four (4) types of Powder Liquid Mixer, covering the common product range in the market:
(1) PT-C/Q (Double Wall Design)
(2) PT-C/Y (Special Stator Rotor)
(3) PT-C/F (Two Pumps Design)
(4) PCH (Shear Pump)

- **Mixing Action:** Rapidly incorporates powders into liquids using an in-line mixing action, ensuring smooth blends without clumps.
- **Advantages:** Reduces dust and improves efficiency by minimizing manual handling; effective in continuous processes.
- **Disadvantages:** Limited to certain powder types; requires precise control for optimal powder incorporation.
- **Efficiency:** Highly efficient for powder incorporation, ensuring smooth, lump-free liquids.
- **Materials of Construction:** Constructed from stainless steel and carbon steel to provide robustness.

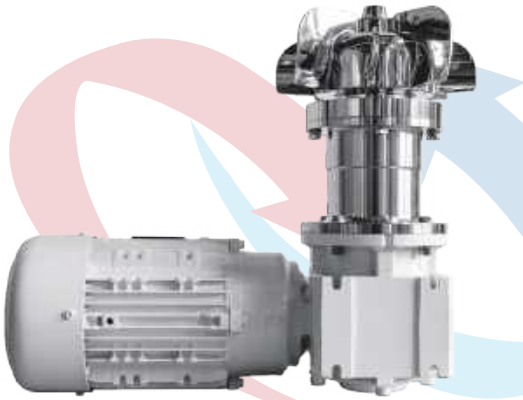
MAGNETIC MIXERS

The range of PerMix PM series Magnetic Mixer uses special magnetic driving and non-sealing technology, which is totally different from the common gear-drive agitators.

In a magnetic mixer, the magnetic couplings transmit the torque from the drive to the impeller by the magnet field. No direct touch of the impeller with the drive is necessary therefore no need for the conventional sealing, also they are working nearly without mechanical wear, which makes it possible that these magnetic mixers have much longer duty life with correct design and under proper working conditions. The mixing head can be equipped with several different mixing elements such as propellers or Rushton turbines.

Biotechnology and fermentation are the most advanced fields of application in process technology. For quite a long time magnetic stirrers take over a leading role in high-tech agitation. There are also demands from other industries for magnetic mixers.

- **Mixing Action:** Utilizes magnetic fields to rotate an impeller without direct contact with the liquid, providing gentle mixing.
- **Advantages:** Ideal for sterile applications; minimal contamination risk due to no moving parts in contact with the product.
- **Disadvantages:** Limited to low viscosity materials; may require specialized setups for optimal performance.
- **Efficiency:** Efficient for small batch processing, providing consistent mixing results.
- **Materials of Construction:** Typically made from stainless steel and titanium for corrosion resistance.



OTHER EQUIPMENT

This category includes specialized equipment designed to enhance your mixing processes.

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LUMP BREAKERS

When bulk materials are stored for a long time in bags, drums or silos, they tend to become agglomerated or lumpy. PerMix PLB series Lump Breakers are designed for breaking bulk materials with lumps. Cutting blades are included in the equipment to delump and mill the lumpy materials fast and with large output. They are used a lot in a wide variety of industries, such as sugar, salt, starch, flour, talcum, carbon black, etc.

During the operation, the materials are fed from the top of Lump Breaker. A safety grate is usually located above the cutting blades to give safety function, and also to prevent lumps of too large size blocking the working zone. When the lumpy materials go through the cutting area, the lumps are hit and cut by the blades first, to coarsely get deagglomerated, and then the smaller lumps are pushed into the gaps between the blades and grills where they are subject to squeezing, milling, folding, stretching, etc, and become further delumped, and discharged from the bottom.

The drive unit of a Lump Breaker usually includes a side mounted motor & gearbox with chain transmission and gears. Safety guards are arranged to prevent rotating to be exposed to workers. PerMix Lump Breakers can be built in Carbon Steel, SS304, SS316L or other metal materials per application request.

- **Action:** Breaks down agglomerated material into uniform particles, ensuring smooth flow and consistent quality.
- **Advantages:** Essential for improving product quality and flow characteristics, preventing blockages in processing lines.
- **Disadvantages:** Depending on the model, it may require more power and maintenance.
- **Efficiency:** Efficiently handles a variety of materials, ensuring smooth processing.
- **Materials of Construction:** Typically made from stainless steel and carbon steel for durability.

CONTINUOUS DEAERATORS

Processing of liquid products often incorporates air and unwanted gases into the product. These gases normally cause problems such as oxidation, discoloration, inconsistency, bad smell and filling difficulties. The PerMix PDA series Vacuum Deaerator, or Degasser, is a totally compact sanitary device designed for the continuous automatic removal of air or other occluded gases from any type of liquid or paste, by means of vacuum.

PerMix PDA Vacuum Deaerators can handle numerous processes including manufacturing of food products, cosmetics and chemicals, which requires to avoid air oxidation to ensure a correct preservation or application. End products can be sauces, fruit pulp, cosmetic creams, syrups, PVC dispersions, lubricants, car polish, shower gels, paraffin emulsions, ice creams, adhesives, etc.

- **Action:** Removes air from liquids using a continuous flow system, improving product stability and quality.
- **Advantages:** Effective for maintaining product integrity; crucial in applications sensitive to oxidation.
- **Disadvantages:** Initial setup and operational costs may be higher compared to batch systems.
- **Efficiency:** Highly efficient for large-scale operations requiring consistent quality.
- **Materials of Construction:** Made from stainless steel to ensure durability and hygiene.

PerMix

Perfect Mixing Technologies

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Headquarter

PerMix Israel
Adi 17940, Israel
Contact: Mr. Arie Srugo
Tel: +972-54-908-0144
Email: srugoa@permixtec.com
www.permixtec.com

Global Factory & Office

PerMix North America (Factory)
Chicago, Illinois, 60601, USA
Contact: Mr. John Paul
Tel: +1 630-649-1357
Email: John.paul@permixtec.com
www.permixmixers.com

PerMix Europe (Factory)
9900 Eeklo - Belgium
Contact: Mr. Dimitri Baeten
Tel: +32/9 376 76 11
Email: dimitri.eu@permixtec.com
www.permixmixers-eu.com

PerMix China (Factory)
Shanghai, 201821, China
Contact: Mr. Aaron Huang
Tel: +86 133 911 68218
Email: aaron.h@permixtec.com
www.permix.cn

PerMix India
Navi Mumbai, 400 708, India
Contact: Mr. Anant Wagh
Tel: +91 99304 69228
Email: india@permixtec.com
www.permixmixers.in

PerMix UK
Scotland, Great Britain
Contact: Mr. James Ryder
Tel: +44 (0) 7554139667
Email: james.ryder@permixtec.com
www.permixmixers.co.uk

PerMix Ukraine
Kyiv, 02095, Ukraine
Contact: Mr. Viacheslav Pishyi
Tel: +38 067 45 44 694
Email: ua@permixtec.com
www.permixtec.com

Besides, PerMix has been building a network of agents located in Southeast Asia, Australia, Russia, Middle East, Africa, and other countries & regions.