PerMix
Perfect Mixing Technologies
Part of the Proc-X Manufacturing Group
PrecXion DP AIS FuXion EmuXion QuantumX

PERFECT MIXING TECHNOLOGIES

PRODUCT. PROCESS. PERFORMANCE.

INDUSTRIAL PLOUGH MIXING

PLOUGH MIXERS

INTENSIVE MOVEMENT. CONTROLLED RESULTS.



Mixing solutions for cohesive powders, demanding formulations, liquid coating, and selected granulation processes.

PURPOSEFUL ENERGY
Plough geometry selected for the material

PROCESS FLEXIBILITY
From dry dispersion to controlled liquid addition

CONNECTED PRODUCTION
From ingredient entry to the next process step

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ENGINEERED FOR YOUR PRODUCT

CONSISTENCY STARTS WITH CONTROLLED ENERGY.

PerMix Plough Mixers lift and disperse material through an actively moving batch. Their intensive mixing action suits formulations that need stronger dispersion, liquid distribution, or particle development.



YOUR MATERIAL SETS THE MIXING REQUIREMENTS

DISPERSE THE POWDER



Evaluate how cohesive ingredients and minor components move through the batch. Define the uniformity the finished product needs to achieve.

DISTRIBUTE THE LIQUID



Match the spray arrangement and addition rate to the formulation. Bring wetted material back into circulation throughout the batch.

DEFINE PARTICLE CONDITION



Establish whether the objective is to break soft agglomerates, coat particles, or develop granules. Select the mixing action accordingly.

FIT THE WORKFLOW



Plan charging, discharge, inspection, and cleaning around the way production operates.

THE PROCESS COMES FIRST

A practical mixing solution begins with what your material needs to become.

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HOW PLOUGH MIXERS WORK

ACTIVE DISPERSION. CONTROLLED CIRCULATION.

Plough elements lift material away from the vessel wall into the open mixing space. This mechanical fluidization creates repeated exchange between active zones within the batch.



PLOUGH PROFILE & ANGLE

Blade shape and attack angle influence how material is captured, lifted, and redirected. Select the geometry around product behavior.

SPACING & OVERLAP

Coordinate adjacent mixing zones along the shaft so material transfers between them. Review the vessel ends and discharge region as part of the same flow pattern.

SPEED & WORKING FILL

Speed sets the intensity of product movement. Working fill must leave space for lifting and separation while maintaining effective engagement.

STRENGTH UNDER LOAD

Shaft, supports, and drive selection account for batch characteristics, running loads, and loaded starts.

WHY THE DESIGN MATTERS

EVERY PLOUGH SHOULD CONTRIBUTE TO PRODUCTIVE MOVEMENT THROUGHOUT THE BATCH.

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DRY BLENDING & LIQUID PROCESSING

THE RIGHT ACTION. THE RIGHT RESULT.

- Powder behavior
- Liquid addition
- Particle condition
- Batch cycle

DRY BLENDING

DISPERSE DIFFICULT POWDERS

Repeated lifting and redistribution bring ingredients through active mixing zones. Evaluate the formulation against its dispersion target and acceptable product condition.

- Cohesive powder dispersion
- Minor-ingredient distribution
- Uniformity defined around the finished product



LIQUID ADDITION & COATING

DEVELOP THE PARTICLE SURFACE

Introduce selected liquids into circulating material for coating or controlled wetting. Suitable binder addition can also support selected agglomeration and granulation processes.

- Spray placement matched to circulation
- Addition rate matched to the formulation
- Particle development evaluated through trials



MATCH THE ACTION TO THE OBJECTIVE

Define the desired dispersion, coating, or granule condition before selecting the operating approach.

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CONSTRUCTION & CLEANABILITY

BUILT FOR THE MATERIAL. READY FOR THE NEXT BATCH.

Product compatibility, routine access, and cleaning requirements belong in the original mixer design.



MATCH THE MATERIAL

Carbon steel and stainless steel address different industrial and sanitary duties. Review contact materials against the product and cleaning method.

SUPPORT CHANGEOVER

Plan access to the vessel, plough elements, and any chopper assemblies. Operators need to reach the surfaces that require inspection and cleaning.

DESIGN FOR WEAR

Evaluate abrasive service when selecting contact surfaces and components. Wear protection, liners, and clearances must work together within the mixer design.

PLAN THE CLEANING

Dry cleaning and wet washing place different demands on access and component selection. Establish the cleaning approach before finalizing the machine.

CLEANABILITY IS PART OF PRODUCTIVITY

Make cleaning, inspection, and maintenance part of the production plan.

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OPTIONS & PROCESS INTEGRATION

CONTROL THE BATCH. CONNECT THE PROCESS.

MORE THAN MIXING TIME.

A productive cycle includes everything that happens before and after the agitator runs. Coordinate ingredient handling, blending, and discharge around the way your team operates.

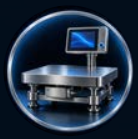


PROCESS OPTIONS



LIQUID ADDITION

Coordinate spray location, droplet characteristics, and dosing rate with batch circulation and the required coating or wetting result.



WEIGHING & CONTROL

Load cells, variable-speed drives, and operator controls help coordinate batch preparation and mixing.



CHOPPERS & INTENSIFIERS

Optional high-speed choppers provide localized shear for soft agglomerates and liquid dispersion. Match their use to the required particle condition.



LINE INTEGRATION

Coordinate ingredient feeding, conveying, screening, and packaging with the mixer and its discharge arrangement.

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APPLICATIONS & DEVELOPMENT

DIFFERENT INGREDIENTS. CONSISTENT AMBITION.

FOOD & BEVERAGE

Seasonings, bakery mixes, beverage powders, protein ingredients, snack coatings, and flavor application.



PHARMACEUTICAL & NUTRACEUTICAL

Excipients, ingredient premixes, vitamin and mineral blends, botanical powders, and selected granulation processes.



CHEMICAL & SPECIALTY

Pigments, detergents, catalysts, fertilizers, resin powders, and specialty additives.



PLASTICS & POLYMERS

Resins, fillers, stabilizers, pigments, masterbatch ingredients, and recycled materials.



MINERALS & CERAMICS

Dry mortar, cement additives, refractories, ceramic powders, foundry materials, and abrasive minerals.



DEVELOP WITH THE NEXT STEP IN MIND

Evaluate the formulation, ingredient sequence, product condition, and cleaning needs before finalizing production equipment. For coating or granulation, include liquid addition and particle condition in the trial objectives. Assess the complete cycle when planning production.

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WHY CHOOSE PERMIX?

A BETTER BLEND BEGINS WITH THE RIGHT PARTNER.

Your ingredients. Your batches. Your plant. PerMix considers the requirements together to develop a practical mixing solution.

LET'S DEFINE YOUR NEXT MIXING SOLUTION

- Formulation and mixing objective
- Batch weight and bulk density
- Cohesiveness and agglomerate characteristics
- Liquid addition and coating requirements
- Capacity range and cycle target
- Cleaning method, plant layout, and connected equipment



From plough geometry and product access to discharge and process connections, the details should serve the way you work. Bring PerMix the challenge you need to solve, and build the mixing specification around the result you want to achieve.

START YOUR PROJECT

Built around your product. Connected to your process.

www.permixmixers.com