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

PERFECT MIXING TECHNOLOGIES

PRODUCT. PROCESS. PERFORMANCE.

INDUSTRIAL DOUBLE CONE MIXING

DOUBLE CONE MIXERS

GENTLE ROTATION.
CONSISTENT BLENDING.



Tumble blending solutions for free-flowing powders, granules, crystals, and fragile particles.

GENTLE TUMBLING
Vessel movement selected for the material

CLEAN GEOMETRY
Simple product-contact surfaces in the standard design

CONNECTED PRODUCTION
From ingredient entry to the next process step

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ENGINEERED FOR YOUR PRODUCT

CONSISTENCY STARTS WITH THE WAY MATERIAL FLOWS.

PerMix Double Cone Mixers use vessel rotation and gravity to redistribute suitable ingredients. The gentle tumble action supports blending where particle integrity and low mechanical stress are priorities.



YOUR MATERIAL SETS THE MIXING REQUIREMENTS

CONFIRM FLOWABILITY



Check that the formulation cascades freely. Cohesive, sticky, or heavily wetted materials require a different mixing assessment.

PROTECT THE PARTICLES



Account for fragile granules, crystals, and shear-sensitive ingredients when defining the blending conditions and acceptable product change.

MANAGE SEGREGATION



Evaluate differences in particle size, shape, and density. Consider the blend during charging, tumbling, discharge, and downstream transfer.

FIT THE WORKFLOW



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

THE PROCESS COMES FIRST

A practical mixing solution begins with how your product behaves.

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HOW DOUBLE CONE MIXERS WORK

CONTROLLED TUMBLING. REPEATED EXCHANGE.

As the vessel turns, material rises with the wall and cascades through the available headspace. Repeated movement between the cone sections separates and recombines ingredients throughout the batch.



CONE GEOMETRY

Cone angle, vessel diameter, and smooth transitions influence the tumble path and product release. Evaluate the geometry around material behavior.

SPEED & WORKING FILL

Match rotational speed and batch level to the vessel and formulation. Preserve enough free space for material to lift and cascade.

CYCLE & UNIFORMITY

Use sampling and blend evaluation to establish the cycle. Longer tumbling does not automatically produce a better result.

BALANCE & SUPPORT

Vessel symmetry, support alignment, and rotating mass influence controlled operation. Include valves and optional internals in the balance review.

WHY THE DESIGN MATTERS

EVERY ROTATION SHOULD CONTRIBUTE TO PRODUCTIVE REDISTRIBUTION THROUGHOUT THE BATCH.

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LOADING, POSITIONING & DISCHARGE

PRESERVE THE BLEND. COMPLETE THE CYCLE.

- Charging method
- Working fill
- Stopping position
- Downstream transfer

LOAD WITH PURPOSE

ESTABLISH THE STARTING CONDITIONS

Define the charging method, ingredient sequence, and batch quantity together. Loading should support the working fill and the intended blending cycle.



- Access matched to ingredient handling
- Batch mass checked against bulk density
- Guarding matched to the rotating envelope

DISCHARGE WITH CONTROL

CARRY THE RESULT FORWARD

Position the vessel for emptying and match the outlet to the receiving equipment. Review product retention and the potential for separation during transfer.



- Controlled vessel stopping position
- Outlet selected for the product
- Transfer arranged to limit re-segregation

THE MIXING RESULT MUST SURVIVE THE TRANSFER

Evaluate the journey from ingredient entry through blending, emptying, and the next process step.

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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

The standard vessel has no conventional internal agitator. Plan access to the shell, transitions, ports, and valve for inspection and cleaning.

DESIGN THE DETAILS

Select surface finishes, seals, outlets, and any wear protection together. Account for component weight and its effect on the rotating assembly.

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 CYCLE. CONNECT THE PROCESS.



MORE THAN BLENDING TIME.

A productive cycle includes everything that happens before and after tumbling. Coordinate ingredient handling, vessel positioning, and discharge around the way your team operates.

PROCESS OPTIONS

SPEED & POSITIONING

Variable vessel speed, cycle timers, and position controls can support repeatable operation and access for charging or emptying.

INTENSIFIER BAR

An optional independently driven bar adds localized shear. Evaluate its need for soft agglomerates or minor-ingredient distribution against product fragility.

LIMITED LIQUID ADDITION

Small spray additions may suit selected formulations that remain free-flowing. Review distribution, wall buildup, and discharge before specifying the system.

LINE INTEGRATION

Coordinate weighing, charging connections, receiving containers, and downstream packaging with vessel movement and the required stopping positions.

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APPLICATIONS & DEVELOPMENT

DIFFERENT INGREDIENTS. CONSISTENT AMBITION.

For formulations with suitable flow and particle compatibility.

FOOD & BEVERAGE

Beverage powders, sweeteners, flavors, dry ingredients, fragile inclusions, and crystalline products.



PHARMACEUTICAL & NUTRACEUTICAL

Excipients, tablet blends, fragile granules, vitamins, minerals, botanical ingredients, and supplement blends.



CHEMICAL & SPECIALTY

Fine chemicals, catalysts, pigments, crystals, additives, and specialty dry formulations.



PLASTICS & POLYMERS

Resins, pellets, stabilizers, colorants, additives, and fragile polymer particles.



MINERALS & CERAMICS

Alumina, zirconia, electronic ceramics, high-purity minerals, and specialty ceramic powders.



DEVELOP WITH THE NEXT STEP IN MIND

Evaluate flowability, ingredient compatibility, loading sequence, and blend uniformity before finalizing production equipment. Include discharge and transfer in the assessment so the finished blend reaches the next step in the required condition.

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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 required blend uniformity
- Batch weight and bulk density
- Particle size, density differences, and fragility
- Flowability and segregation sensitivity
- Capacity range and cycle target
- Charging, cleaning, and downstream handling



From vessel 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