PerMix
Perfect Mixing Technologies

WE OFFER

PERFECT MIXING TECHNOLOGIES



PERMIX RIBBON MIXERS:
PRECISION MIXING FOR EVERY INDUSTRY

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PerMix Ribbon Mixer

PerMix Ribbon Mixers are engineered for excellence—offering a versatile and efficient solution for blending
powders, granules, and pastes. Whether your needs are industrial-scale food processing, pharmaceutical
production, or specialty chemical mixing, PerMix delivers unmatched mixing performance and value.



How a Ribbon Mixer Works

A ribbon mixer uses a helical ribbon agitator that moves material in two directions simultaneously: the outer ribbon moves product in one direction, while the inner ribbon moves it in the opposite direction. This counter-current motion achieves uniform blending quickly and effectively. The mixing occurs within a U-shaped or cylindrical trough, ensuring complete radial and axial movement of materials throughout the vessel.

Ribbon mixers can be customized with different ribbon styles, orientations, and configurations depending on the product characteristics and process requirements, making them an ideal choice for both dry and wet
blending applications.



Horizontal Ribbon Mixers: The Industry Standard







Overview

Horizontal ribbon mixers are the most commonly used design in bulk mixing applications. They feature a U-shaped horizontal trough with a ribbon agitator consisting of inner and outer helical ribbons. This dual-ribbon design ensures thorough radial and axial mixing for uniformity across the batch.

Advantages

- Fast and consistent mixing
- Gentle Mixes
- Ideal for large batch processing
- Easy to load and discharge
- Lower profile makes integration easier in existing production lines
- Well-suited for powders, granules, and

Disadvantages

- Requires more floor space
- Can be harder to fully clean compared to vertical models without CIP options

Vertical Ribbon Mixers: Space-Saving and Gentle



Overview

Vertical ribbon mixers feature a cylindrical tank with a vertical ribbon agitator. Material flows upward in the center and downward along the wall, enabling a gentle but thorough mixing action.

Advantages

- Compact footprint
- ideal for limited floor space
- Gravity-assisted discharge
- Gentle mixing
- ideal for fragile or segregative materials
- Excellent for small to mid-size batches

Disadvantages

- Mixing time may be longer than horizontal models
- Not optimal for very high-viscosity pastes
- Higher distance between feeding and discharge

Vacuum Ribbon Mixers & Dryers: Mixing & Drying in One



Overview

PerMix Vacuum Ribbon Mixers/Dryers are designed for simultaneous mixing and drying under vacuum. The integrated heating jacket allows controlled heating, while the vacuum system reduces drying temperature—ideal for heat-sensitive products.

Key Features

- Vacuum system for rapid, low-temperature drying
- Heating & cooling jacket for precise
- Thermal control
- Integrated condensing system for vapor recovery
- Available in both horizontal and
- Vertical configurations

Applications

- Pharmaceutical powders & APIs
- Nutraceutical ingredients
- Protein powders & functional
- food additives
- Chemical intermediates





Tilting Ribbon Mixers: Cleanout Made Simple

Overview

PerMix Tilting Ribbon Mixers combine the performance of a horizontal ribbon mixer with the added benefit of tilt-based discharge. The entire mixing chamber can be electrically tilted for:

- Short run, multi-batch production
- Washdown/CIP environments
- Cook & chill processes (with jacketed options)

Ideal For

- Short run, multi-batch production
- Washdown/CIP environments
- Cook & chill processes (with jacketed options)

Optional Features:

Heating & Cooling Jackets: Precision Thermal Control

PerMix Ribbon Mixers can be equipped with ASME-certified heating & cooling jackets for precise temperature regulation. These jackets allow:

- Indirect heating or cooling via steam, thermal oil, glycol, or chilled water
- Cook & chill capabilities for ready-to-eat meals, soups, sauces, and pet foods
- Drying and moisture control in powders and granules

Jacket Ratings:

- Rated up to 6 bar (90 PSI)
- Uniform heat distribution
- Optional thermal insulation and cladding

Stub-Shaft Design: Simplified Maintenance and Sanitation

PerMix Ribbon Mixers can be built with a stub-shaft agitator design. This design eliminates the need of flanges and bolts inside the mixing zone, minimizing potential contamination points and easing maintenance. It enables front or back-end drive configurations, improves access to internal components, and allows for quicker and more sanitary cleanouts—especially beneficial in food, dairy, and pharmaceutical applications.

CIP Systems & Spray Nozzles: Automated Sanitation

PerMix offers Clean-In-Place (CIP) systems to simplify washdown and improve sanitation. Integrated CIP spray balls or rotary spray nozzles can be installed throughout the mixer to deliver high-pressure water, cleaning solutions, or sanitizers to all internal surfaces.
Options Include: Static or rotary spray balls - Programmable rinse, wash, and sanitize cycles - Stainless steel plumbing and quick-disconnect ports - Drainage and slope design to minimize pooling

Liquid Additive Ports & Steam Injection

For processes requiring liquid incorporation, PerMix ribbon mixers can include dedicated liquid additive ports. These ports can be connected to precision dosing pumps or tanks for injecting oils, binders, flavors, or other liquids directly into the mix.
Options Features:

- Spray nozzles for uniform distribution of liquids
- Chopper attachments for emulsifying liquids into powders
- Steam injection ports for cook & chill or sterilization processes



Ribbon Types: Custom Agitation for Every Product

PerMix designs multiple ribbon configurations to match your product characteristics:

- Standard Double Ribbon: For general-purpose blending
- Single Ribbon with Rods: For lower shear, fragile ingredients
- Intermeshing Ribbon: For high-precision mixing of fine powders - Paddle-Ribbon Combo: For pastes or viscous materials requiring folding action

Ribbon agitators can be customized in pitch, diameter, and orientation depending on material flow, mixing intensity, and batch size.

Air Purge Seals & Cinch-Seal® Options

For mixing applications involving **abrasive, corrosive, or ultra-fine powders**, our sealing systems are engineered to maintain product integrity and extend the lifespan of critical components.

Air Purge Seals

This option uses a continuous flow of compressed air to create a positive pressure barrier around the shaft seals. It prevents fine particles, corrosive vapors, and abrasive materials from entering the seal housing, significantly reducing wear anvd contamination risk.

Cinch-Seal® Technology

This option uses a continuous flow of compressed air to create a positive pressure barrier around the shaft seals. It prevents fine particles, corrosive vapors, and abrasive materials from entering the seal housing, significantly reducing wear and contamination risk.

Benefits of Advanced Sealing Systems

- Extends mixer life by protecting bearings and drive systems
- Prevents product leakage and contamination
- Reduces maintenance and downtime
- Increases sealing performance for demanding applications

Whether you're processing food, chemicals, pharmaceuticals, or abrasive building materials, PerMix's sealing solutions ensure **maximum performance and minimal risk**—so your process runs smooth from start to finish.



Engineered to Endure: Materials of Construction for Harsh Environments

When it comes to mixing **abrasive or corrosive materials,** the choice of construction material is critical. **PerMix Ribbon Mixers** are available in a wide range of robust, chemical-resistant, and wear-resistant materials to ensure long service life, reliable performance, and low maintenance—no matter how challenging the application.

Material Options for Abrasive & Corrosive Mixing Applications

304 Stainless Steel

Ideal for general-purpose mixing and non-corrosive materials. Economical, food-safe, and resistant to mild chemicals. Often used when corrosion is not a primary concern but sanitary design is required.

316 / 316L Stainless Steel

Offers superior corrosion resistance, particularly in chloride-rich or acidic environments. Perfect for chemical, food, and pharmaceutical products where cleanliness and corrosion protection are essential.

Hastelloy

Designed for extreme chemical resistance, Hastelloy is the go-to material for highly corrosive or reactive environments, including strong acids, solvents, and oxidizers. A premium option for chemical processing.

Hardox® Abrasion-Resistant

The ideal choice for abrasive powders and minerals, Hardox® resists wear, friction, and surface degradation, making it perfect for industries like cement, ceramics, and building materials.

Titanium

Combines lightweight properties with outstanding resistance to both corrosion and high temperatures. Ideal for highly corrosive environments where stainless steel is insufficient, such as in marine or aggressive

Carbon Steel (Mild Steel)

A budget-friendly option suited for non-corrosive, non-sanitary applications. Often used in building materials, agriculture, and industrial powders where corrosion is not a primary concern.

Specifications

PerMix Horizontal Ribbon Mixers

Model	Total, L	Working, L (40%)	Working, L (60%)	kW	RPM	L	W	H	KG
PRB-5L-CP	5	2	3	1.1	365	950	400	610	110
PRB-10L-CP	10	4	6	1.1	365	1,050	400	610	120
PRB-15L-CP	15	6	9	1.1	280	1,150	450	640	140
PRB-20L-CP	20	8	12	1.1	280	1,250	500	670	160
PRB-30	30	12	18	1.5	123	940	800	1,130	250
PRB-45	45	18	27	1.5	123	940	850	1,160	260
PRB-50	50	20	30	2.2	110	1,000	900	1,200	350
PRB-60	60	24	36	2.2	110	1,000	950	1,200	450
PRB-70	70	28	42	2.2	85	1,150	980	1,250	550
PRB-100	100	40	60	2.2	85	1,410	600	1,650	600
PRB-150	150	60	90	3	80	1,450	650	1,680	620
PRB-200	200	80	120	3	70	1,570	660	1,710	650
PRB-250	250	100	150	4	65	1,680	700	1,750	700
PRB-300	300	120	180	4	65	1,700	715	1,760	750
PRB-400	400	160	240	5.5	60	1,850	800	1,900	850
PRB-500	500	200	300	5.5	60	1,980	870	2,020	950
PRB-600	600	240	360	7.5	60	2,100	900	2,090	1,050
PRB-700	700	280	420	7.5	60	2,200	920	2,100	1,150
PRB-750	750	300	450	7.5	60	2,210	960	2,150	1,250
PRB-800	800	320	480	11	52	2,350	1,000	1,765	1,350
PRB-1000	1000	400	600	11	40	2,400	1,050	1,765	1,450
PRB-1200	1200	480	720	15	40	2,600	1,100	1,800	1,600
PRB-1500	1500	600	900	15	40	2,670	1,150	1,870	1,700
PRB-2000	2000	800	1200	15	35	2,920	1,250	1,980	2,250
PRB-2500	2500	1000	1500	18.5	35	3,200	1,350	2,100	2,600
PRB-3000	3000	1200	1800	18.5	35	3,320	1,400	2,150	2,800
PRB-4000	4000	1600	2400	22	30	3,660	1,520	2,290	3,900

- Mixers can be made to have a total volume of up to 30,000 L.

Specifications

PerMix Vertical Ribbon Mixers

Model	Total L	Working L, 30%	Working L, 70%	kW	RPM	Dia. (mm)	H (mm)	Kg
PVR-15	15	4	10	0.75	108	450	1600	150
PVR-20	20	6	14	0.75	90	550	1800	200
PVR-30	30	9	21	1.1	90	550	1800	280
PVR-45	45	14	32	1.1	80	655	1900	350
PVR-50	50	15	35	1.1	80	655	1900	400
PVR-60	60	18	42	1.1	78	720	1900	450
PVR-70	70	21	49	1.5	77	720	1900	550
PVR-100	100	30	70	1.5	69	720	1900	600
PVR-150	150	45	105	2.2	62	875	2200	700
PVR-200	200	60	140	2.2	57	875	2200	800
PVR-250	250	75	175	3	53	980	1900	420
PVR-300	300	90	210	3	51	980	1900	450
PVR-400	400	120	280	4	44	1160	2100	500
PVR-500	500	150	350	4	43	1160	2100	550
PVR-600	600	180	420	4	40	1500	2300	700
PVR-700	700	210	490	5.5	39	1500	2300	820
PVR-750	750	225	525	5.5	39	1500	2300	950
PVR-800	800	240	560	5.5	35	1500	2300	1100
PVR-1000	1000	300	700	7.5	33	1525	2600	1350
PVR-1200	1200	360	840	7.5	31	1680	2800	1600
PVR-1500	1500	450	1050	11	29	1680	2800	1800
PVR-2000	2000	600	1400	15	29	1860	3100	2000

- Mixers can be made to have a total volume of up to 30,000 L.

Specifications

PerMix Vertical Vacuum Ribbon Mixers

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Model	Total L	Working L, 30%	Working L, 70%	kW	RPM	Dia. (mm)	H (mm)	Kg
PVRD-15	15	4	10	1.5	92	450	1800	180
PVRD-20	20	6	14	1.5	77	550	2100	240
PVRD-30	30	9	21	2.2	77	550	2100	340
PVRD-45	45	14	32	2.2	68	655	2200	420
PVRD-50	50	15	35	2.2	68	655	2200	480
PVRD-60	60	18	42	2.2	66	720	2200	540
PVRD-70	70	21	49	3	65	720	2200	660
PVRD-100	100	30	70	3	59	720	2200	720
PVRD-150	150	45	105	4	53	875	2500	840
PVRD-200	200	60	140	4	48	875	2500	960
PVRD-250	250	75	175	5.5	45	980	2200	550
PVRD-300	300	90	210	5.5	43	980	2200	590
PVRD-400	400	120	280	7.5	37	1160	2400	650
PVRD-500	500	150	350	7.5	37	1160	2400	720
PVRD-600	600	180	420	7.5	34	1500	2600	910
PVRD-700	700	210	490	11	33	1500	2600	1070
PVRD-750	750	225	525	11	33	1500	2600	1240
PVRD-800	800	240	560	11	30	1500	2600	1370
PVRD-1000	1000	300	700	15	28	1525	3000	1430
PVRD-1200	1200	360	840	15	26	1680	3200	1560
PVRD-1500	1500	450	1050	18.5	25	1680	3200	1690
PVRD-2000	2000	600	1400	22	25	1860	3600	1890
PVRD-2500	2500	750	1750	22	20	2000	3700	1950
PVRD-3000	3000	900	2100	30	20	2080	3900	2080
PVRD-4000	4000	1200	2800	37	20	2300	4100	3320

- Mixers can be made to have a total volume of up to 30,000 L.

Specifications

PerMix Horizontal Vaccum Ribbon Mixers

Model	Total, L	Working, L (40%)	Working, L (60%)	kW (*)	RPM (*)	L	W	H	KG
PRBD-5L-CP	5	2	3	1.1	256	950	900	610	140
PRBD-10L-CP	10	4	6	1.1	256	1,050	900	610	160
PRBD-15L-CP	15	6	9	2.2	196	1,150	1,000	640	180
PRBD-20L-CP	20	8	12	2.2	196	1,250	1,050	670	210
PRBD-30	30	12	18	3	86	940	950	1,130	330
PRBD-45	45	18	27	3	86	940	1,000	1,160	340
PRBD-50	50	20	30	4	77	1,000	1,050	1,200	460
PRBD-60	60	24	36	4	77	1,000	1,100	1,200	590
PRBD-70	70	28	42	4	60	1,150	1,130	1,250	720
PRBD-100	100	40	60	4	60	1,410	750	1,650	780
PRBD-150	150	60	90	5.5	56	1,450	800	1,680	810
PRBD-200	200	80	120	5.5	49	1,590	810	1,710	850
PRBD-250	250	100	150	7.5	46	1,750	850	1,750	910
PRBD-300	300	120	180	7.5	46	1,825	865	1,760	980
PRBD-400	400	160	240	11	42	1,900	950	1,900	1,110
PRBD-500	500	200	300	11	42	2,010	1,020	2,020	1,240
PRBD-600	600	240	360	15	42	2,200	1,050	2,090	1,370
PRBD-700	700	280	420	15	42	2,300	1,070	2,100	1,500
PRBD-750	750	300	450	15	42	2,355	1,110	2,150	1,630
PRBD-800	800	320	480	18.5	36	2,400	1,150	1,765	1,760
PRBD-1000	1000	400	600	18.5	28	2,500	1,200	1,765	1,890
PRBD-1200	1200	480	720	22	28	2,650	1,250	1,800	2,080
PRBD-1500	1500	600	900	22	28	2,850	1,300	1,870	2,210
PRBD-2000	2000	800	1200	22	25	3,020	1,400	1,980	2,930
PRBD-2500	2500	1000	1500	30	25	3,200	1,500	2,100	3,380
PRBD-3000	3000	1200	1800	30	25	3,400	1,550	2,150	3,640

- Mixers can be made to have a total volume of up to 30,000 L.

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