



# PRIMARY INDUSTRIES WE SERVE

There are many factors that go into selecting the right machine for your application – everything from what material you’re processing to whether you need it to be pharmaceutical-grade. But Marion’s expert application engineers work with you every step of the way, making sure you get a machine that’s a perfect fit for your specifications and production needs.



Food & Beverage



Pharmaceutical



Nutraceutical



Chemical Processing



Agricultural



Minerals



Biomass



Plastics

## TRUSTED BY TOP MANUFACTURERS



Have Questions? Call 800.397.6731 or visit [marionsolutions.com](http://marionsolutions.com)



# MARION

## Horizontal Mixers



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*Keep things moving with Marion mixers.*

Marion Horizontal Mixers offer the perfect blend between speed and blend quality. Because the machine is built specifically for your application, you achieve faster production while maintaining high blend quality.



Fast Mixing Rates  
with High Blend Quality



Superior Sanitation  
and Cleanability



Available for Both  
Continuous and Batch Mixing

### Ideal Machine For

- Mixing
- Blending
- Slurries & Viscous Materials
- Continuous Mixing
- Batch Mixing

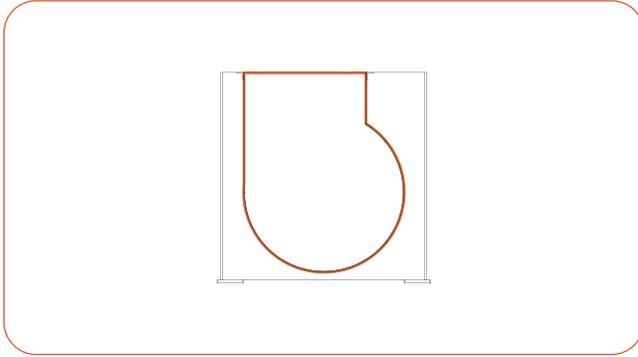


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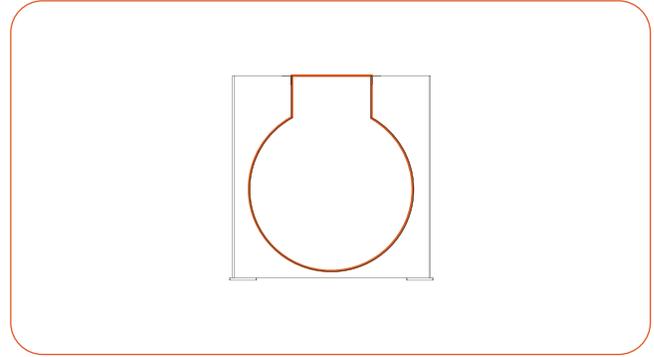
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## MIXER TROUGH DESIGN OPTIONS



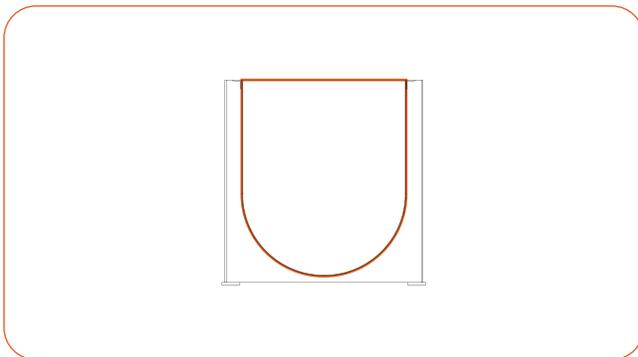
### Semi-Cylindrical Trough

- Best for pastes or slurries
- Reduces degradation of fragile ingredients
- Allows mixing of oversized materials
- Good choice for mixing sticky or tacky material



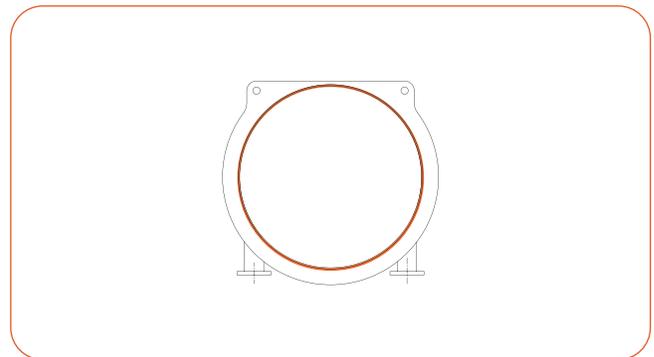
### Semi-Semi-Cylindrical Trough

- Best for liquids and slurries
- Ideal for applications that require vacuum to be pulled
- Rated for up to 29 inHg at 14 psig.
- Maximizes product contact for jacketed mixers that need heating or cooling.



### U-Shaped Trough

- Largest production capacity
- Easiest to clean
- Most commonly used



### Full Cylindrical Trough

- Agitator sweeps 360 degrees of rotation
- Largest contact surface area for heating or cooling
- Good fit for vacuum or low pressure applications

## Horizontal Mixer Specifications

Continuous Mixers	8 standard models	1-205 ft <sup>3</sup> (.03-5.8 m <sup>3</sup> ) working capacity per minute.
Batch Mixers	23 standard models	1.5-600 ft <sup>3</sup> (.04-17 m <sup>3</sup> ) working capacity per minute.

## Speed. Quality. Durability.

For more than 85 years, Marion has set the standard for mixing. With a wide range of specs available – including customizing for any of your facility's restraints or requirements – Marion Horizontal Mixers are built to give you consistent results for decades.

Don't let production timelines and throughput goals compromise your product quality. Because of their high-quality construction, Marion's Horizontal Mixers are built for the long haul.

### Other Features:

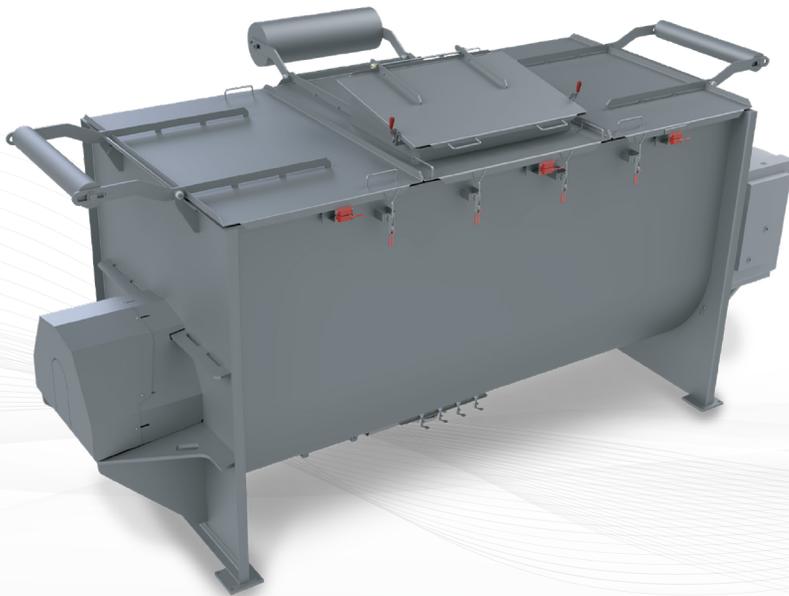
- Agitator options available for specific applications
- On-site installation support available
- Material and finishes available to meet all sanitary or other requirements

# MARION

## Custom Design Options



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### *Slash mixing times in half with Marion.*

Customizing mixing equipment for your specific application may cost a bit more up front, but in the long term the efficiencies add up to lower operational costs and a better quality product.

### How to **Customize** Your Industrial Mixer

#### Chopper

- Intense cutting action to assist in blending
- 3,600 rpm
- Tulip, knife blade or hybrid tulip/knife choices

#### Discharge

- Hinged contour
- Knife
- Roller gate
- Flush hinged
- Drop-bottom
- Butterfly valve

#### Mainshaft Seals

- Stuffing box
- Split design
- Mechanical

#### Additional Features

- Drives specifically selected
- Elevated work platforms
- Smart Air (mainshaft seals)
- 3-A compliant design
- Hoppers (stationary or agitated)
- Integral dimpled jackets
- Controls
- Load cells
- Sifting

#### Counterweighted Doors

- Ergonomic assist for easy access
- Solid weight (no hollow tubes)

#### Spray

- Spray or inject designs
- Sanitary and removable for cleaning available



Four Agitator Design Options Available



Easy-to-Clean Features Save Time and Money



Reduce Power Costs on a Per Ton Basis



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## MIXER AGITATOR DESIGN OPTIONS



### Paddle Agitator

- Designed for gentle mixing of solids of dissimilar size, shape, density, and viscosity.
- Materials travel in an end-to-middle, 3D figure-eight pattern for consistent mixing.
- Available welded, bolted, or a combination of both depending on the application.



### Ribbon Agitator

- Ideal for low-density, free-flowing materials that are similar size, shape, and density.
- Shearing action is a good fit for mixes with small agglomerates.
- Double ribbon: No gaps between flightings eliminates potential for pockets of unmixed or undermixed material.



### Fluidizing Agitator

- Uses large paddles with dual-directional sweeping movements to create a fluidizing bed.
- Minimizes direct contact with paddles because air is continually pushed both outwards and inwards.
- Fast processing, low maintenance and easy cleaning.
- Food-grade finishes available for sanitary design requirements.



### Hybrid Agitator

- Combines tumbling action of paddle agitators with rolling pattern of ribbon mixers to create a double-reversing effect.
- Ideal for materials that tend to mound in the center of the mixer.
- Creates more even mixing and product levels inside the trough during mixing.
- Can be customized with paddle mixers or ribbon agitators on the inside or outside.

## Horizontal Mixer Specifications

Continuous Mixers	8 standard models	1-205 ft <sup>3</sup> (.03-5.8 m <sup>3</sup> ) working capacity per minute.
Batch Mixers	23 standard models	1.5-600 ft <sup>3</sup> (.04-17 m <sup>3</sup> ) working capacity per minute.

## Customize Your Equipment with Our Expert Application Engineers

Our application engineers have an average 25 years of experience in the field and can work with you from start to finish to customize your equipment for your specific application.



# MARION

## V Cone Blender



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### *Simple design for quick blends, easy discharge and cleaning.*

Embrace the simple yet durable construction of the Marion V-Cone Blender to efficiently blend your products with uniform and gentle mixing. The distinctive V shape not only facilitates cleanliness, but it also minimizes the need for frequent maintenance.



Offers Precision Tooling and Finish for Maximum Cleanability



V Shape Promotes Drainage and Discharge for Improved Cleanliness



Cost-efficient, High-Quality Construction, Fit and Finish

### Ideal Machine For

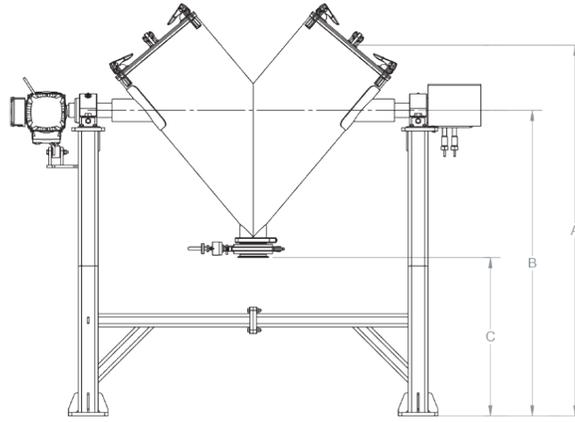
- Mixing
- Blending
- Delicate Materials
- Abrasive Solids



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## V Cone Blender Specifications

Model Number	Working Capacity (ft <sup>3</sup> )	Working Capacity (L)	Inlet Height (A)	Centerline Height (B)	Discharge Height (C)	Discharge Diameter (in)	HP
VC-25	.25 ft <sup>3</sup> (.007 m <sup>3</sup> )	1.8 gal. (7 L)	29 in. (73.7 cm)	20 in. (50.8 cm)	24 in. (61 cm)	4 in. (10.2 cm)	0.75
VC-50	.5 ft <sup>3</sup> (.014 m <sup>3</sup> )	3.7 gal. (14 L)	30 in. (76.2 cm)	20 in. (50.8 cm)	24 in. (61 cm)	4 in. (10.2 cm)	1
VC-1.5	1.5 ft <sup>3</sup> (.042 m <sup>3</sup> )	10.6 gal. (40 L)	52 in. (132.1 cm)	39 in. (99.1 cm)	24 in. (61 cm)	4 in. (10.2 cm)	1.5
VC-2.5	2.5 ft <sup>3</sup> (.071 m <sup>3</sup> )	18.5 gal. (70 L)	56 in. (142.3 cm)	41 in. (104.1 cm)	24 in. (61 cm)	4 in. (10.2 cm)	2
VC-5	5 ft <sup>3</sup> (.14 m <sup>3</sup> )	37 gal. (140 L)	64 in. (162.6 cm)	46 in. (116.8 cm)	24 in. (61 cm)	4 in. (10.2 cm)	3
VC-10	10 ft <sup>3</sup> (.28 m <sup>3</sup> )	72.6 gal. (275 L)	86 in. (218.4 cm)	64 in. (162.6 cm)	36 in. (91.4 cm)	6 in. (15.3 cm)	5
VC-20	20 ft <sup>3</sup> (.57 m <sup>3</sup> )	145.3 gal. (550 L)	97 in. (246.4 cm)	69 in. (175.3 cm)	36 in. (91.4 cm)	6 in. (15.3 cm)	10
VC-30	30 ft <sup>3</sup> (.85 m <sup>3</sup> )	224.5 gal. (850 L)	106 in. (269.24 cm)	74 in. (188 cm)	36 in. (91.4 cm)	8 in. (20.3 cm)	10
VC-40	40 ft <sup>3</sup> (1.13 m <sup>3</sup> )	297.2 gal. (1,125 L)	113 in. (287.02 cm)	77 in. (195.6 cm)	36 in. (91.4 cm)	8 in. (20.3 cm)	15
VC-50	50 ft <sup>3</sup> (1.41 m <sup>3</sup> )	369.8 gal. (1,400 L)	117 in. (297.2 cm)	79 in. (201 cm)	36 in. (91.4 cm)	8 in. (20.3 cm)	15
VC-60	60 ft <sup>3</sup> (1.70 m <sup>3</sup> )	449.1 gal. (1,700 L)	123 in. (312.4 cm)	83 in. (210.8 cm)	36 in. (91.4 cm)	10 in. (25.4 cm)	20
VC-75	75 ft <sup>3</sup> (2.12 m <sup>3</sup> )	561.4 gal. (2,125 L)	128 in. (325.1 cm)	85 in. (215.9 cm)	36 in. (91.4 cm)	10 in. (25.4 cm)	25

### Simple. Effective. Clean.

The V Cone Blender is a simple tumble mixer designed to quickly blend materials. The V shape design allows the blender to rotate on its axis to achieve even and consistent mixtures without the use of internal moving parts. This design prevents the accumulation of product over time, which can be a costly and time-consuming issue to address.

### Other Features:

- Sanitary design featuring food-grade materials
- Optional extended cone for thorough blending
- Optional intensifiers to break things up quickly
- Guards and barriers for operator safety
- Minimized vibration using sand ports in stand
- Comparable price point for higher quality
- Customizable design to meet application-specific requirements
- Chopper options to blend and disperse in same machine



# MARION

## Double-Cone Blender



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*Rapid, low-impact mixing at its best for abrasive solids and semi-dry materials.*

Marion Double-Cone Blenders use revolution and a simple design to promote highly uniform mixes - especially with abrasive solids and semi-dry materials.



Rapid, Low-Impact Blending



No Moving Parts Means Less Maintenance and Cleaning



Easy Discharge and Drainage

### Ideal Machine For

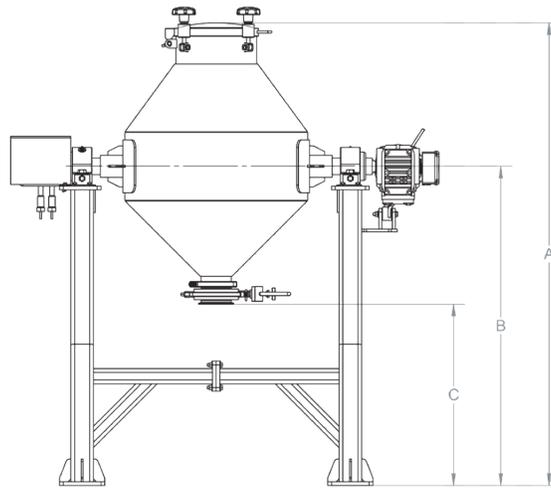
- Blending product with other trace materials, abrasive solids and semi-dry materials
- Batch Mixing
- Delumping



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## Double-Cone Blender Specifications

Model Number	Working Capacity (ft <sup>3</sup> )	Working Capacity (L)	Inlet Height (A)	Centerline Height (B)	Discharge Height (C)	Inlet Diameter	Discharge Diameter	HP
DC-.25	.25 ft <sup>3</sup> (.007 m <sup>3</sup> )	1.8 gal. (7 L)	24 in. (61 cm)	34 in. (86.4 cm)	24 in. (61 cm)	6	4	0.75
DC-.50	.5 ft <sup>3</sup> (.014 m <sup>3</sup> )	3.7 gal. (14 L)	45 in. (114.3 cm)	36 in. (91.4 cm)	24 in. (61 cm)	6	4	1
DC-1.5	1.5 ft <sup>3</sup> (.042 m <sup>3</sup> )	10.6 gal. (40 L)	53 in. (134.6 cm)	40 in. (101.6 cm)	24 in. (61 cm)	8	4	1.5
DC-2.5	2.5 ft <sup>3</sup> (.071 m <sup>3</sup> )	18.5 gal. (70 L)	62 in. (157.5 cm)	43 in. (109.2 cm)	24 in. (61 cm)	10	4	2
DC-5	5 ft <sup>3</sup> (.14 m <sup>3</sup> )	37 gal. (140 L)	69 in. (175.3 cm)	47 in. (119.4 cm)	24 in. (61 cm)	10	4	3
DC-10	10 ft <sup>3</sup> (.28 m <sup>3</sup> )	72.6 gal. (275 L)	91 in. (231.1 cm)	63 in. (160 cm)	36 in. (91.4 cm)	18	6	5
DC-20	20 ft <sup>3</sup> (.57 m <sup>3</sup> )	145.3 gal. (550 L)	104 in. (264.2 cm)	70 in. (177.8 cm)	36 in. (91.4 cm)	18	8	10
DC-30	30 ft <sup>3</sup> (.85 m <sup>3</sup> )	224.5 gal. (850 L)	112 in. (284.5 cm)	75 in. (190.5 cm)	36 in. (91.4 cm)	18	8	10
DC-40	40 ft <sup>3</sup> (1.13 m <sup>3</sup> )	297.2 gal. (1,125 L)	117 in. (297.2 cm)	79 in. (200.7 cm)	36 in. (91.4 cm)	18	8	15
DC-50	50 ft <sup>3</sup> (1.41 m <sup>3</sup> )	369.8 gal. (1,400 L)	123 in. (312.4 cm)	82 in. (208.3 cm)	36 in. (91.4 cm)	18	8	15
DC-60	60 ft <sup>3</sup> (1.70 m <sup>3</sup> )	449.1 gal. (1,700 L)	129 in. (327.7 cm)	84 in. (213.4 cm)	36 in. (91.4 cm)	18	10	20
DC-75	75 ft <sup>3</sup> (2.12 m <sup>3</sup> )	561.4 gal. (2,125 L)	136 in. (345.44 cm)	88 in. (223.5 cm)	36 in. (91.4 cm)	18	10	25

### Efficient. Sanitary. Simple.

Blend efficiently and cleanly with a Marion Double-Cone Blender, which uses a straightforward double cone design that employs rotation and gravity to blend materials. No moving parts means less time and money needed on maintenance. The configuration can include load cells to weigh incoming materials for high precision blends.

#### Other Features:

- Sanitary design featuring food-grade materials
- Optional intensifiers to break things up quickly
- Guards and barriers for operator safety
- Minimized vibration using sand ports in stand
- Comparable price point for higher quality
- Chopper options to blend and disperse in same machine

# MARION

## WaveMix™



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### Shorten processing time from hours to minutes.

With the ability to operate under vacuum, pressure and nitrogen blanket, the versatility of the WaveMix™ industrial drying system is unmatched by any other thermal processing equipment.



Preserves Color, Nutritional and Chemical Value of Materials



Quick, Efficient Drying  
Eliminates Material Loss



Sanitary, Easy-Clean Design

### Ideal Machine For

- Drying
- Processing
- Low Temperature Drying
- Change of State
- Mixing
- Powder-Drying
- Solvent Removal
- Extracting
- Heating
- Microbial Reductions
- Dehydrating
- Roasting

## WaveMix™ Specifications

Capacity	60 ft <sup>3</sup> (18.3 m <sup>3</sup> )	100 ft <sup>3</sup> (30.5 m <sup>3</sup> )	200 ft <sup>3</sup> (61 m <sup>3</sup> )	400 ft <sup>3</sup> (121.9 m <sup>3</sup> )
Material Temperature Degree	145-165 °F 62.78-73.89 °C	145-165 °F 62.78-73.89 °C	145-165 °F 62.78-73.89 °C	145-165 °F 62.78-73.89 °C
Maximum Machine Temperature Degree	350 °F 176.67 °C	350 °F 176.67 °C	350 °F 176.67 °C	350 °F 176.67 °C
Temperature Sensor	Infrared & RTD Measurement	Infrared & RTD Measurement	Infrared & RTD Measurement	Infrared & RTD Measurement
Machine Materials	T304 Stainless Steel	T304 Stainless Steel	T304 Stainless Steel	T304 Stainless Steel
Electrical Requirements	3PH 480V 50/60Hz	3PH 480V 50/60Hz	3PH 480V 50/60Hz	3PH 480V 50/60Hz
Initial Wet Material Weight (75% moisture)	600 lbs. (272.2 kg)	1,000 lbs. (453.6 kg)	2,000 lbs. (907.2 kg)	3,000 lbs. (1,360.7 kg)
Rate of Water Removal	188 lbs. (85.3 kg)/hr	187.5 lbs. (85.0 kg)/hr	375 lbs. (170.1 kg)/hr	749.7 lbs. (340.1 kg)/hr
Final Dry Material Weight (10% moisture)	167 lbs. (75.7 kg)/hr	298 lbs. (135.2 kg)/hr	556 lbs. (252.2 kg)/hr	883 lbs. (400.5 kg)/hr
Total Dry Time (hrs)	2.3	3.85	3.85	2.89
Average Applied Power (kW)	80	80	160	320
Dried Material Rate	72.5 lbs. (32.9 kg)/hr	72.2 lbs. (32.7 kg)/hr	144.3 lbs. (65.5 kg)/hr	288.3 lbs. (130.6 kg)/hr
Power Density (W/lb)	133.3 W/lbs. (293.2 W/kg)	80 W/lbs. (176.4 W/kg)	80 W/lbs. (176.4 W/kg)	106.7 W/lbs. (233.7 W/kg)

### Cost-Effective. Fast. Precise.

The WaveMix™ enables the safe drying of sensitive materials, while maintaining their color, nutritional value, and chemical integrity. This advanced system incorporates microwave, vacuum, and mixing technologies, along with precise temperature controls, to prevent any loss of product due to case hardening, burning, overprocessing, or underprocessing.

#### Other Features:

- Doesn't heat to dangerous temperatures
- Nitrogen purging eliminates fire and explosion risk
- Tight control over temperature
- Improved batch consistency

# MARION

## Lump Breaker



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### *Reduce particle size without causing dust and fines.*

The Marion Lump Breaker helps break down products prone to agglomeration and clumping by grinding solids down for further processing. Its compact, low-power and easy-to-clean design ensures inexpensive operation and little downtime between product changes.



Consistent Particle Size for Product Uniformity



Sanitary, Easy-Clean Design with Easily Removable Replaceable Parts



Easy Integration into Existing Production Lines

### Ideal Machine For

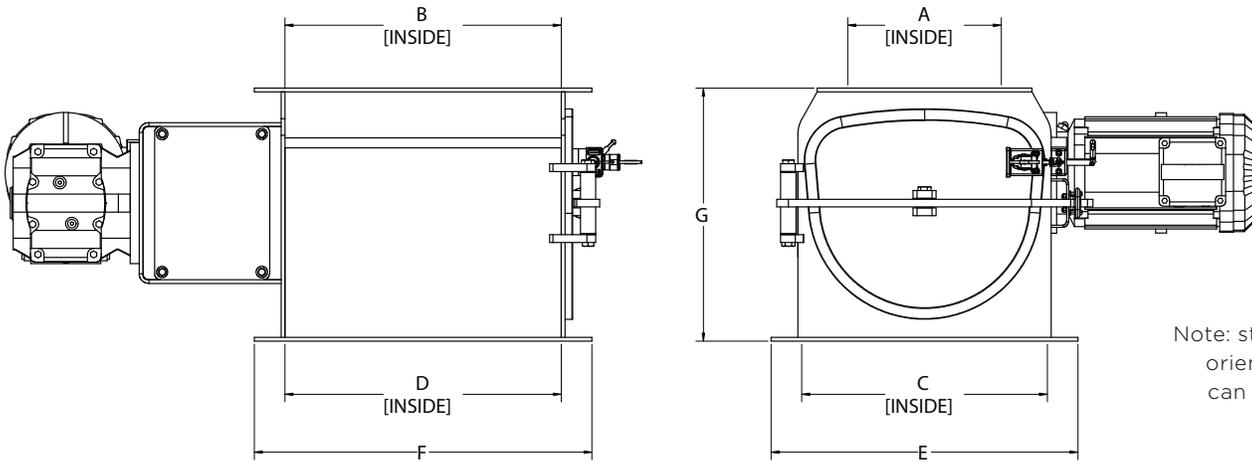
- Breaking
- De-Agglomeration
- Reducing
- Grinding
- De-Clumping
- Sizing



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Note: standard motor orientation shown, can vary based on application

## Lump Breaker Specifications

Model Number	Screen Diameter	Inlet Width (A)	Inlet Width (B)	Outlet Width (C)	Outlet Width (D)	Largest Flange Width (E)	Largest Flange Width (F)	Overall Height (G)	HP	*Maximum Throughput (ft <sup>3</sup> /min)
LB-250	10 in. (25.4 cm)	10 in. (25.4 cm)	18 in. (45.7 cm)	16 in. (40.6 cm)	18 in. (45.7 cm)	20 in. (50.8 cm)	22 in. (55.9 cm)	16.5 in. (41.9 cm)	5	4 ft <sup>3</sup> (.11 m <sup>3</sup> )/minute
LB-350	14 in. (35.6 cm)	14 in. (35.6 cm)	18 in. (45.7 cm)	20 in. (50.8 cm)	18 in. (45.7 cm)	24 in. (61.0 cm)	22 in. (55.9 cm)	20.5 in. (52.1 cm)	10	6 ft <sup>3</sup> (.17 m <sup>3</sup> )/minute
LB-450	18 in. (45.7 cm)	18 in. (45.7 cm)	22 in. (55.9 cm)	26 in. (66.0 cm)	22 in. (55.9 cm)	30 in. (76.2 cm)	26 in. (66.0 cm)	24.5 in. (62.2 cm)	15	10 ft <sup>3</sup> (.28 m <sup>3</sup> )/minute
LB-550	22 in. (55.9 cm)	22 in. (55.9 cm)	22 in. (55.9 cm)	30 in. (76.2 cm)	22 in. (55.9 cm)	34 in. (86.4 cm)	26 in. (66.0 cm)	28.5 in. (72.4 cm)	20	12 ft <sup>3</sup> (.34 m <sup>3</sup> )/minute

\*Actual throughput will depend on material properties and screen mesh size

## Efficient. Consistent. Dependable.

Prepare your products for the next processing step with Marion's Lump Breaker. This versatile machine breaks down, grinds, and reduces clumping or agglomeration in a range of applications, both before and after mixing in any production system. With its customizable and sanitary design, the Lump Breaker saves on maintenance costs and time while ensuring an extended lifespan.

### Other Features:

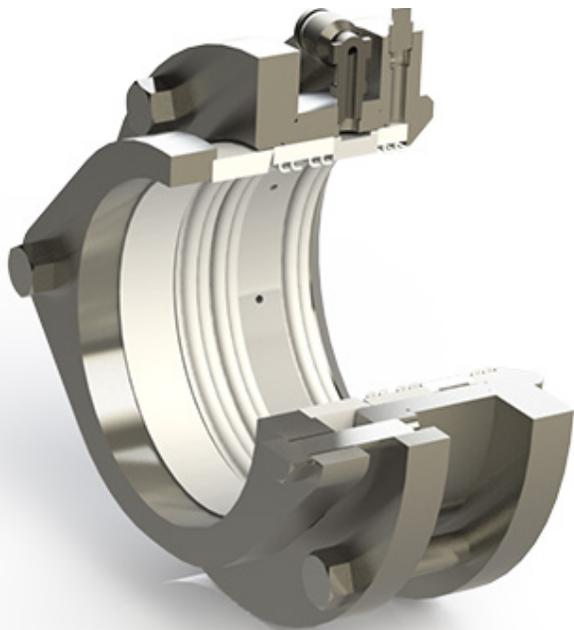
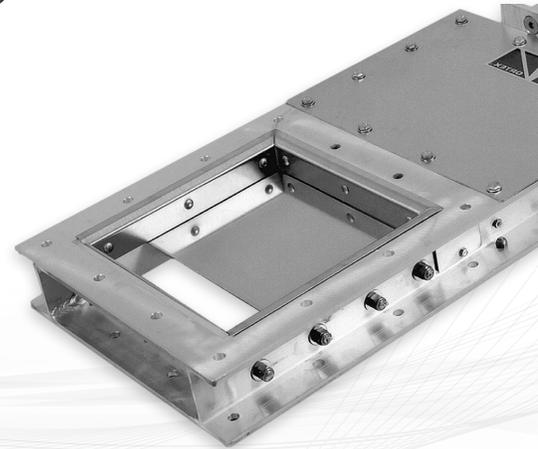
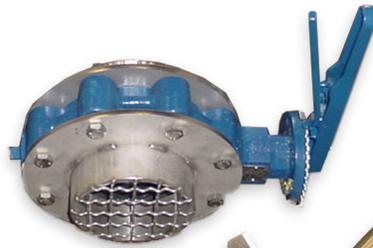
- Low power consumption
- Customizable hatches, loading hoppers and floor stands
- Available to meet food, pharmaceutical, and industrial safety and sanitary standards
- Long life with easily replaceable parts
- Multiple mesh sizes available
- No special tools required for maintenance

# MARION Aftermarket Parts & Service

## Get Parts to Run Your Equipment Better, Longer

Marion offers replacement parts for agitators, motors, and other components that undergo wear and tear over time. We offer parts and service to pre-existing Marion and non-Marion machines and mixers. Whether you need new doors, gaskets, seals, agitators or motors, Marion delivers the highest level of service to optimize your equipment.

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### Replacement Parts Include:

- Agitators
- Bag Dumps
- Bearings
- Blades
- Choppers
- Covers/Doors
- Controls
- Discharge Valves
- Drive Trains
- Fluidizing Agitators
- Gaskets
- Hoppers
- Hybrid Paddle/Ribbon Agitators
- Injection Manifolds
- Load Cells
- Motors
- Paddle Agitators
- Ribbon Agitators
- Seals
- Trough Liners



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# HOW MARION MAKES THINGS EASY FOR YOU



**Preventative Maintenance**  
Avoid Expensive Repairs  
and Downtime



**Equipment Optimization**  
Make Cost-Saving  
Efficiency Adjustments



**Installation Supervision**  
Eliminate Costly  
Pre-Production Errors



**Operator Training**  
Educate Staff on Running and  
Maintaining Equipment



**Commissioning Equipment**  
Certify Your Equipment Meets  
Specifications



**Refurbishment and Retrofits**  
Repair or Upgrade Your  
Equipment



## INTERESTED IN TESTING YOUR APPLICATION WITH MARION?

Ask about our Iowa, Germany or UK-based facilities, where you can test your application in our equipment before you buy. Our experienced application engineers help you get the most out of your process and provide quality analysis to show you're getting a dependable machine.



Scan the QR code to learn more about Marion's Testing Services.