

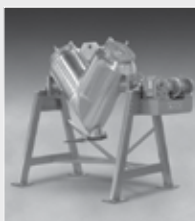
RIBBON/PADDLE/PLOW BLENDERS HANDLE POWDERS TO PASTES

MUNSON® Ribbon, Paddle and Plow Blenders force agitators through stationary materials, imparting shear needed to reduce agglomerates and blend pastes and slurries. Choose from basic, low cost industrial units to state-of-the-art designs of 304/316 stainless and exotic alloys with heating/cooling jackets, liquid spray additions, high-speed choppers/intensifiers, and finishes to USDA Dairy and other standards. Extreme vessel rigidity allows tight agitator-to-vessel wall tolerances, resulting in a minimum "heel" of residual following discharge. Heavy- and extra-heavy-duty batch and continuous models in capacities from 1 to 1000 cu ft (.03 to 28 cu m).



VEE-CONE BLENDERS SANITIZE ULTRA-FAST, THOROUGHLY

MUNSON® Vee-Cone Blenders feature smooth internal surfaces free of baffles, shafts and bearings, allowing unobstructed material flow, plus complete discharge through a gate valve for rapid cleaning or sanitizing of the easy-access interior. Uniform blends are typically achieved in 5 to 15 minutes with equal efficiency at fill volumes from 100% to 25% of capacity. Ideal for dry and granular materials, these blenders provide a tumbling action that is gentler than machines that force agitators through stationary material. Options include spray bars for liquid additions, Clean-In-Place (CIP) systems, abrasion-resistant steel construction, ASME-coded jackets and weigh batching accessories.



FLUIDIZED BED MIXERS BLEND ULTRA-FAST, GENTLY

Unlike Ribbon and Paddle Blenders with a single agitator shaft, MUNSON® Fluidized Bed Mixers feature two shafts with paddles that counter-rotate at higher speeds to fluidize material, achieving homogeneous blends in 10 seconds to 2 minutes. Low shear forces minimize friction with little or no degradation and insignificant heat generation of <math><0.6^{\circ}\text{F}</math> (1°C). Drop bottom gates provide rapid discharge with no segregation and minimal residual. Ideal for short cycles and gentle handling of low- to medium-density powders and fragile flakes $\leq 50 \text{ lbs/ft}^3$ ($\leq 800 \text{ kg/m}^3$) with or without liquid additions. Capacities from 265 to 28,660 lb (120 to 13,000 kg).



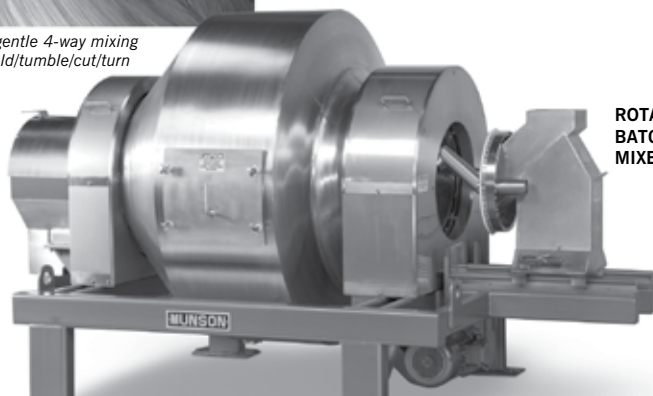
WORLD'S FASTEST BLENDING AND CLEAN UP

No other bulk solids mixer delivers this unique combination of benefits:

- 100% Uniform blending and/or liquid additions to 1 ppm in 2-1/2 minutes
- Total discharge with no segregation
- Ultra-gentle tumbling action (versus blades forced through batch)
- Ultra-low energy usage
- Equal efficiency from 100% to 5% of capacity
- Unlike other rotary mixers:
 - No internal shaft or seals contacting material
 - Every internal surface accessible
 - Significantly faster washdown
 - Seal changes 10x to 20x faster



Fast yet gentle 4-way mixing action: fold/tumble/cut/turn



ROTARY BATCH MIXER

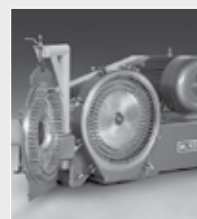
ROTARY LUMP BREAKERS REDUCE AGGLOMERATES, FRIABLE MATERIALS

Remove lumps and agglomerates from bulk foods, pharmaceuticals and chemicals, or break down glass and other friable materials. Dual rotors with three-point, single-piece breaking heads rotate with minimum clearance inside a curved, perforated bedscreen. On-size material exits through bedscreen apertures from 1/32 to 2-1/2 in. (0.8 to 63.5 mm) in diameter. The low profile design fits tight spaces between upstream and downstream process equipment, while side-removal bedscreens allow fast, in-place sanitizing. Square or rectangular inlets range from 15 to 48 in. (38 to 122 cm) in width—classifying screen apertures from 1/32 to 2-1/2 in. (0.8 to 63.5 mm) in diameter.



PIN MILLS REDUCE FRIABLE SOLIDS IN CONTROLLED SIZE RANGES

Also known as Centrifugal Impact Mills, these MUNSON® machines deliver coarse to fine grinding of friable powders, flakes and granules into controlled particle sizes at high rates per hp/kw. High-speed rotation of the inner disc creates centrifugal force that accelerates bulk material entering the central inlet of the opposing stationary disc. As material travels from the center to the periphery of the discs at high speed, it passes through a path of five intermeshing rows of rotating and stationary pins, with the desired tight particle size distribution obtained by controlling the rotor speed.



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