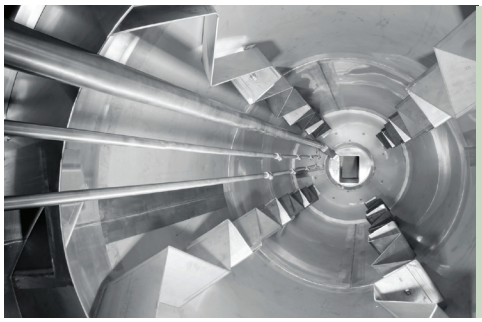
# ROTARY CONTINUOUS MIXERS

Slash capital and operational costs when blending long runs of dry bulk solids with or without liquid additions, quickly, uniformly and gently

- Low cost mixing of long product runs
- Low labor costs compared to batch mixers
- Gentle action prevents material degradation
- Accurate blend ratios to 99.9%
- Rapid mixing: 1 to 2 minutes residence time typical
- Lowest energy use per amount of material blended
- Stationary inlet and stationary outlet allow for hard piping
- Handles abrasive and corrosive products, and materials with high bulk densities
- Automatic material evacuation at the end of product runs using an optional reversing discharge weir
- Small footprint per amount of material processed
- Industrial and sanitary designs, construction and finishes
- Long life with minimal maintenance

***The MUNSON® Rotary Continuous Mixer cuts labor and operational costs dramatically when mixing dry bulk solids, with or without liquid additions, inline over long product runs. Delivers uniform blends—typically in one to two minutes residence time—gently and with low energy use.***


*Rotary Continuous Mixer model RCM48x12SS with rotating drum of 48 in. (1219 mm) diameter x 12 ft (3658 mm) in length, is constructed of stainless steel finished to sanitary standards. Stationary discharge shown above. Inset shows stationary inlet.*



*Proprietary mixing flights produce a gentle yet efficient back-flow mixing action free of dead spots or internal restrictions. Optional piping (shown) through discharge end feeds liquids through nozzles onto continuously moving material for rapid, thorough coating.*

A money-saving machine for mixing of bulk materials in large volumes, the MUNSON Rotary Continuous Mixer blends primary bulk ingredients, minor ingredients down to 0.1%, and/or liquid additions and coatings—uniformly, gently, rapidly and dust-free.

In an automated system, the MUNSON Rotary Continuous Mixer typically requires only a portion of a single operator's time to monitor the machine, unlike batch mixers that can require multiple operators to stage materials, feed the machine and unload it.

The first dry process mixer purpose-built for continuous operation, it features a stationary inlet, a stationary outlet, and a rotating drum with smooth interior surfaces and proprietary mixing flights that mix dynamically with every degree of drum rotation.

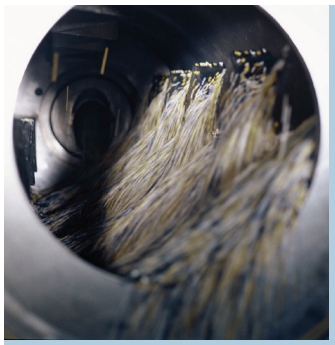
Only a small electric motor is required to rotate the drum at a constant 8 to 10 RPM, saving on initial cost and power consumption.

The low speed yet highly-efficient tumbling action—with no impeller or agitator—cuts residence time for most materials to only 1 to 2 minutes which, together with smooth interior surfaces, produces homogeneous blends more gently than any comparable machine.

To achieve homogeneous blends, an accurate metering system is required to feed ingredients into the stationary material inlet. Material depth is generally set at 25 to 30% by means of a "weir" (dam) at the discharge end of the drum, with residence time and the amount of blended material overflowing the weir determined by the residence volume of the rotating cylinder and the rate of material inflow.

Residence times generally range from one to two minutes. Longer residence times may be required for critical blends containing minor additives, or for materials that require increased dwell time for absorption or other conditioning.

For liquid additions and coatings, an optional spray line mounted above the material bed, sprays liquid onto the cascading material, assuring that every particle is exposed to the spray pattern, yielding uniform coatings.



*Back flow mixing action distributes ingredients rapidly, uniformly and gently.*

## APPLICATIONS

- High volume mixing of bulk materials with or without liquid additions or coatings
- Processes discharging directly into high volume packaging lines, silos or railcars
- Mixes an exceptionally broad range of bulk chemicals (such as detergents, catalysts, pesticides and fertilizers) and bulk foods (such as cereals, powdered drink mixes, snack foods and pet foods)
- Handles abrasive and corrosive products

## FEATURES

- Gentle mixing with no shear
- Small footprint and compact size per amount of material blended
- Efficient back-flow mixing action: proprietary mixing flights distribute particles dynamically with every degree of drum rotation
- Highest mechanical efficiency: lowest power usage per amount of material blended
- Lowest labor cost per amount of material blended
- External "trunnion rollers" eliminate the need for internal shafts, shaft seals and associated maintenance
- Mixing drum sealed at both ends to prevent product and atmospheric contamination
- Capacities to 10,000 cu ft/h (283 $m^3$/h) at standard residence times
- Uniform blends regardless of disparate bulk densities and particle sizes
- Long life with minimal maintenance
- Low power requirements
- Externally-mounted seals are accessed from outside of the mixing drum for fast, easy replacement

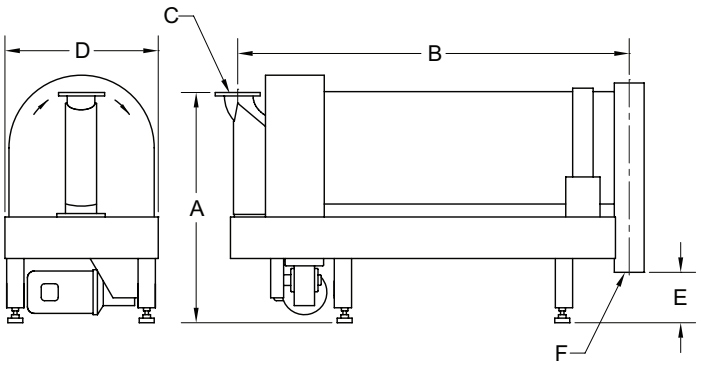
## OPTIONS

- Internal spray line(s) plumbed through the discharge end for liquid additions, coating, de-dusting or perfuming
- Reversing "discharge weir" option allows reversing of drum rotation for removal of residual material for changeovers, cleaning or maintenance
- Finishes meeting USDA, FDA and pharmaceutical requirements
- Abrasion-resistant steel, #304 or #316 stainless steel, exotic alloys, UHMW liners and epoxy coatings for corrosive or abrasive conditions
- Sanitary designs, construction and finishes
- Support structure and guards available constructed of #304 and #316 stainless steel
- Removable breach-locking disc plate for removal of entire discharge end
- Rotary inlet spring-loaded Teflon® seal for corrosive or abrasive applications
- CIP lines
- Extra-heavy-duty models for materials with high bulk densities
- Low pressure or ASME-code high pressure jackets for heating or cooling with water, steam or oil
- Custom mixing flight geometry for special applications
- Mixing flights welded to inside of drum

## SPECIFICATIONS

| Model Number [Dia (in) x Length* (ft)] | 1 Minute Product Residence (Cu-Ft/Hr)/ ($M^3$/Hr) | 2 Minute Product Residence (Cu-Ft/Hr)/ ($M^3$/Hr) | Power Requirements (hp/kw) | Approximate Overall Dimension (in/mm) A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|---|
| CM-16x4 | 85/2.4 | 42/1.2 | 0.50/0.37 | 38/965 | 57/1448 | 4 Dia/102 Dia | 22/559 | 8/203 | 8x4/203x102 |
| CM-24x6 | 280/7.9 | 140/3.9 | 1/0.75 | 48/1219 | 81/2057 | 6 Dia/152 Dia | 36/914 | 10/254 | 8x4/203x102 |
| CM-36x9 | 950/26.9 | 475/13.5 | 3/2.23 | 63/1600 | 121/3073 | 8 Dia/203 Dia | 48/1219 | 12.5/318 | 8x6/203x152 |
| CM-48x12 | 2100/59.5 | 1050/29.7 | 7.5/5.59 | 54/1372 | 159/4039 | 12 Sq/305 Sq | 69/1753 | 2.5/64 | 16x12/406x305 |
| CM-60x12 | 3500/99.1 | 1750/49.6 | 15/11.19 | 70/1778 | 159/4039 | 12 Sq/305 Sq | 73/1854 | 3/76 | 24x12/610x305 |
| CM-60x15 | 4200/118.9 | 2100/59.5 | 20/14.91 | 72/1829 | 198/5029 | 12 Sq/305 Sq | 73/1854 | 3/76 | 24x12/610x305 |
| CM-72x18 | 7600/215.2 | 3800/107.6 | 25/18.64 | 85/2159 | 241/6121 | 12x22/305x559 | 104/2642 | 4/102 | 18x24/457x610 |
| CM-72x20 | 8400/237.9 | 4200/118.9 | 30/22.37 | 87/2210 | 227/7036 | 12x22/305x559 | 104/2642 | 4/102 | 18x24/457x610 |
| CM 72x24 | 10000/283 | 5000/141.6 | 40/29.83 | 89/2261 | 313/7950 | 12x22/305x559 | 104/2642 | 4/102 | 18x24/457x610 |

**Custom lengths also available*





*Rotary Continuous Mixer shown with ASME-code high pressure jacket for heating or cooling with water, steam or oil.*

*Solid "weirs" at the discharge end of the mixing drum function as a dam to build a "residence volume" of material before it overflows the weir. For applications requiring complete clean-out, an optional "discharging weir" (shown) scoops remaining material from the drum when its rotation is reversed.*

**RELATED MUNSON® EQUIPMENT:**

MIXERS: Rotary Batch, Ribbon/Paddle/Plow, Cylindrical Plow, Vee-Cone, Double-Cone, Rotary Continuous, Variable Intensity, Fluidized Bed

SIZE REDUCTION EQUIPMENT: Knife Cutters, Screen Classifying Cutters, Pin Mills, Attrition Mills, Hammer Mills, Lump Breakers, Shredders

SEPARATORS: Rotating Drum Screens, Centrifugal Sifters

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