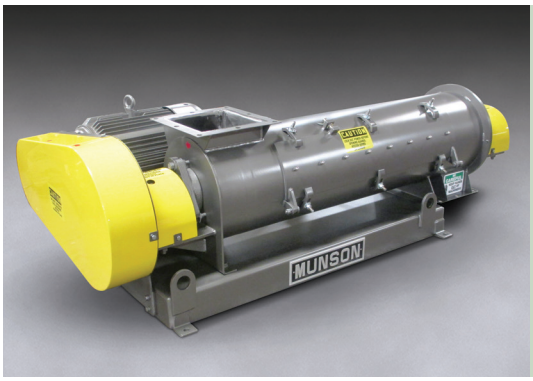
VARIABLE-INTENSITY CONTINUOUS BLENDERS

Greater versatility than continuous ribbon/paddle/plow blenders or pug mills: Slow, gentle blending, homogenizing, coating and de-dusting, up to high-intensity, high-shear mixing and lump-breaking of dry materials, dense pastes and slurries—at high rates.

Infinitely adjustable rotor speed, together with variable-pitch paddles, allows fine-tuning of blending action, from slow-speed consistent progression of material through the cylindrical chamber, to high-speed "backwashing" of material through turbulent zones for rapid, high-shear interspersing of particles—with typical residence times of 20 to 30 seconds.



Carbon steel model VIM-124-MS shown with multiple "V" belt and sheave drive arrangement. Injection ports allow liquid additions during mixing, and cleaning solutions during wash down.

Munson's Variable-Intensity Continuous Bender is based on a horizontal, cylindrical vessel with a single agitator rotating at low to high speed, delivering a wide range of mixing/blending capabilities in high capacities.

Small to large volumes of liquids can be injected through ports strategically located on the vessel, and can be driven into the material rapidly and uniformly.

The agitator is comprised of a large-diameter, solid main shaft equipped with paddles affixed to the main shaft in either of two ways: with threaded paddle shafts that are individually adjustable for pitch up to 180° to impart various degrees of blending intensity, or with permanently fixed and fully seal-welded paddle shafts for sanitary applications.

Shorter residence times of 20 to 30 seconds are typical for dry blends of major ingredients, while longer residence times may be required for critical blends containing minor additives and for materials requiring increased retention for liquid absorption or other conditioning.

An optional weir immediately upstream of the discharge can increase the residence volume as needed for blending of certain dry materials having fluid flow characteristics.

Infinitely adjustable from 50 to 2500 RPM when operated by a variable frequency drive (VFD), the agitator shaft is supported by flange block bearings with mechanical face seals as standard. Optional externally-mounted stand-off bearings are available with air-purged packing gland seals, or block seals of Teflon or UHMW polyethylene, including split designs for sanitary applications and ease of maintenance.

The blender and motor are mounted on a common support base, with multiple "V" belt and sheave drives as standard. Optional gear-reduced drives, synchronous gear belt reduced drives or a combination of both are available to optimize speed and for high-torque requirements. All drives are furnished with complete guarding of rotating members.

For heating or cooling during mixing, optional low-pressure jackets are available, as well as high-pressure jackets constructed to ASME code.

For wash down, water or cleaning solution can be introduced through optional injection ports as the agitator is rotated, and drained through the discharge chute or a separate discharge fitting. The optional weir can also serve to increase the residence volume of liquids injected to dislodge difficult-to-clean materials.

Engineered, constructed and finished to sanitary standards, this Munson model VIM-124-S316 Variable-Intensity Continuous Blender allows rapid, thorough cleaning and sanitizing. (Close-up of paddle-to-shaft welds other side)

Five models offer maximum throughput of 50 to 3000 cu ft/h (1.4 to 85 m^3/h) depending on material characteristics, blend ratios and the residence time required to achieve homogeneity.

The Variable-Intensity Blender is based on a nominal 4-to-1 length-to-diameter ratio allowing high throughput rates for homogeneous blending or conditioning, and is available in carbon steel, #304 and #316 stainless steel, abrasion resistant steel, and a variety of exotic materials.

FEATURES

- Ability to blend an exceptionally broad range of dry bulk materials, emulsions and slurries
- Infinitely adjustable rotor speed provides low- to high-shear mixing action to suit each application
- High throughput with 20 to 30 seconds residence time typical
- Nominal 4-to-1 length-to-diameter ratio for high throughput rates
- Injection ports allow the addition of liquids during mixing, and of water and cleaning solutions during wash down
- 180° adjustable paddle pitch for varying degrees of blending intensity
- Internal mechanical face seals as standard
- Multiple "V" belt and sheave drives
- Fully enclosed guards
- Large, safety-interlocked access doors for ease of access and maintenance
- Complete discharge
- Low maintenance

TYPICAL APPLICATIONS

- Dry and moist ingredients
- Slurries, pastes, emulsions and sludges
- Asphalt hot blending
- Battery materials
- Carbon dust
- Coal slurry
- De-dusting fly ash, lime and clays
- Fruit slurries
- Lump breaking
- Nuclear waste
- Polymer and rubber compounds
- Remediation of soils and sewage liquids
- Shredded vegetables
- Tobacco

OPTIONS

- Liquid injection ports
- Polished sanitary construction finish to meet USDA, FDA or pharmaceutical requirements
- Legs and structurals constructed of carbon steel, #304 stainless steel or #316 stainless steel
- Gear-reduced drives, synchronous gear belt reduced drives or a combination of both to optimize speed and high-torque requirements
- Pillow block bearings for high-temperature or abrasive applications
- Externally-mounted stand-off bearings with air-purged packing gland seals, or block seals of Teflon or UHMW polyethylene in solid and split/sanitary designs
- Insulated low-pressure jackets, and high-pressure jackets constructed to ASME code for heating or cooling
- Construction of #304 and #316 stainless steel, or AR235 abrasion resistant steel and exotic materials, including additional weld hard facing for exceptionally abrasive materials
- Piggyback systems for dual blending requirements such as dry blending followed by liquid additions
- Control packages
- Configurations for batch blending

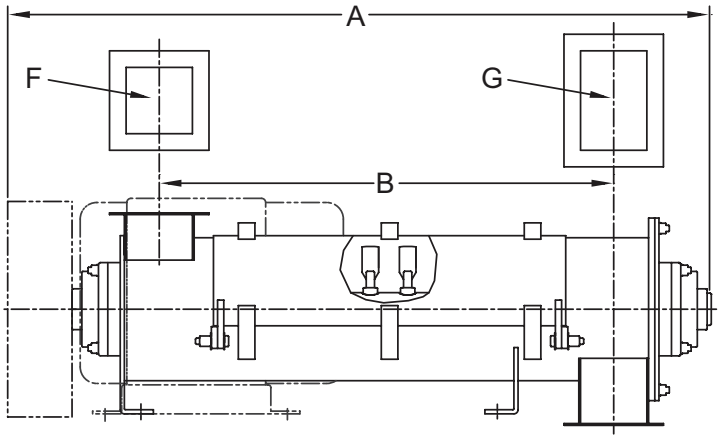
Large-radius ground and polished welds connecting paddles to the solid shaft eliminate crevices where materials could lodge, allowing rapid cleaning and sanitizing. For non-sanitary applications, the shaft can be equipped with 180° adjustable paddles (right) for varying degrees of blending intensity.

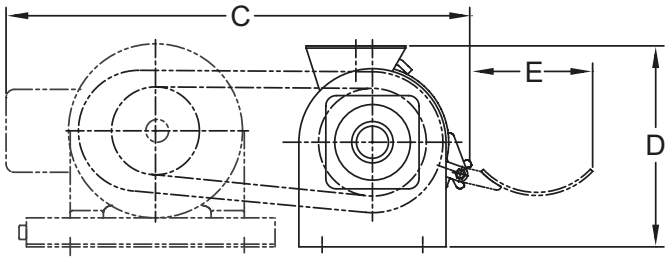
Model VIM-306-SS Variable-Intensity Continuous Blender constructed of stainless steel is equipped with a high-pressure vessel jacket to ASME code for heating or cooling. Shown with 180° adjustable paddles for varying degrees of blending intensity. Welded paddles (left) for sanitary service also available. Shown with doors removed.

CAPACITIES AND DIMENSIONS

High Intensity Continuous Blender Models & Capacities

MODEL NUMBER Dia (in) x Length (ft)	APPROXIMATE OVERALL DIMENSIONS (IN/MM)						
	A	B	C	D	E	F (Intake Opening	G (Discharge Opening)
VIM-83	44/1118	28/711	28/711	13/330	7/178	4x4/ 102x102	4x6/ 102x152
VIM-124	61/1549	42/1067	36/914	18/457	9/229	6x6/ 152x152	6x8/ 152x203
VIM-165	76/1930	52/1321	48/1219	22/559	13/330	8x8/ 203x203	8x10/ 203x254
VIM-206	94/2388	60/1524	58/1473	28/711	17/432	12x12/ 305x305	12x12/ 305x305
VIM-306	100/2540	59/1499	64/1626	40/1016	17/432	12x12/ 305x305	12x12/ 305x305
VIM-368	135/3429	84/2134	72/1829	48/1219	20/508	14x14/ 356x356	14x14/ 356x356





RELATED MUNSON EQUIPMENT:

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

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

MUNSON MACHINERY CO., INC.

+1-315-797-0090
USA: 1-800-944-6644

INFO@MUNSONMACHINERY.COM

WWW.MUNSONMACHINERY.COM

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