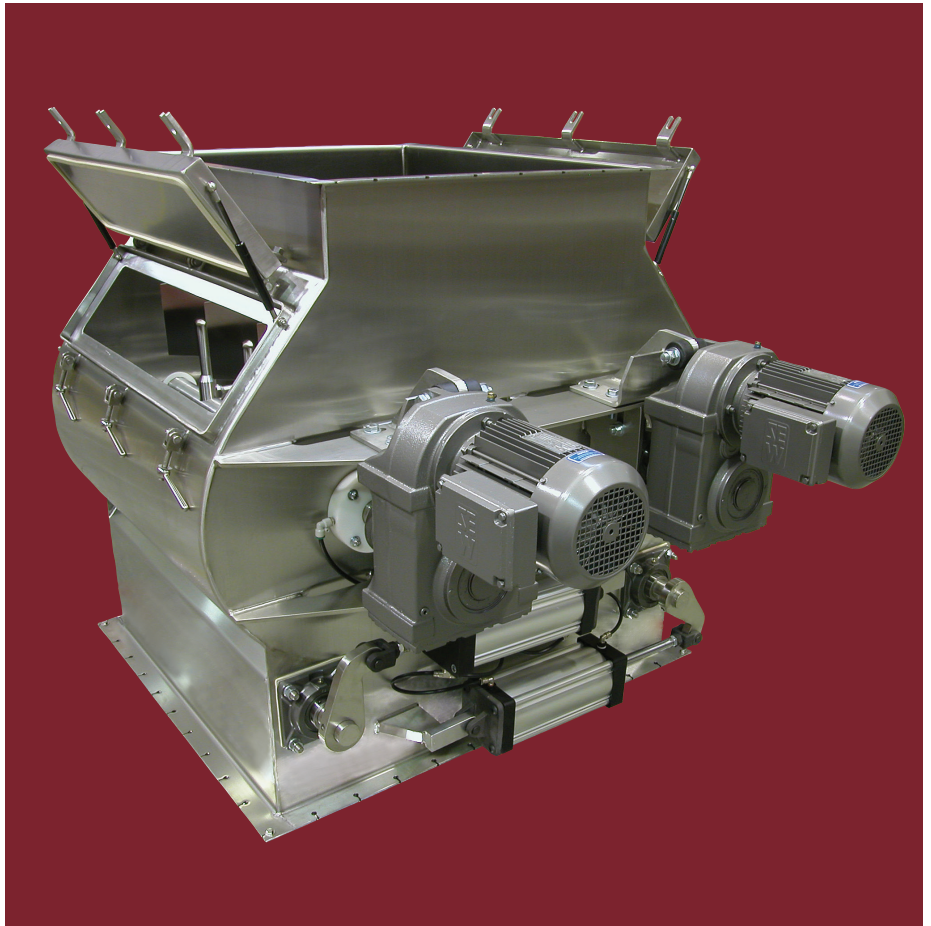
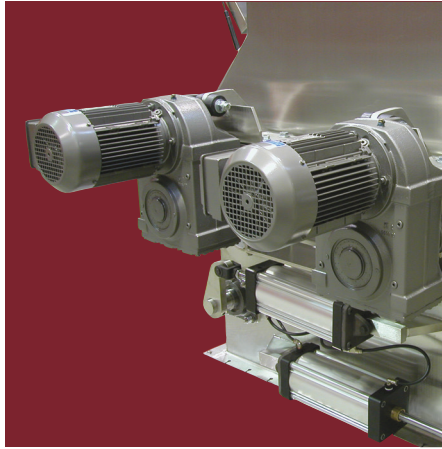


Bella[®]

FLUIDIZED ZONE MIXER



The Mixer with the Weightless Zone

Highly Efficient Mixing of Powders, Granules, Flakes and Pellets

Super fast, gentle, precision mixing

The Bella® Fluidized Zone Mixer by Dynamic Air features an original design that achieves fast, high capacity, thorough, precision mixing of either dry bulk solids or liquids with solids. Regardless of particle size, shape or density, materials are mixed with a fast, efficient and gentle action. A weightless zone created by low speed counter-rotating shafts generates very low friction without shear. This makes the Bella mixer ideal for fragile products that cannot tolerate rough handling. Even flakes or spray dried bodies remain intact.

Versatile for liquid additions

Liquids can be added at much higher rates than normally possible and vast material surfaces are constantly being exposed for maximum dispersion. A wide range of viscosities can be quickly dispersed whether poured, streamed or sprayed. Particle sizes dictate rate and method of liquid addition. In the Bella mixer you can add small amounts of powder or fibers, small amounts of liquid, solid fat (shortening) or liquid fat, or liquid with high viscosity. You can also coat particles or pellets and agglomerate in the mixer.

Weightless zone provides:

- Gentle mixing
- Free particle movement
- Minimal heat generation
- Low shear

Twin mixer shafts provide:

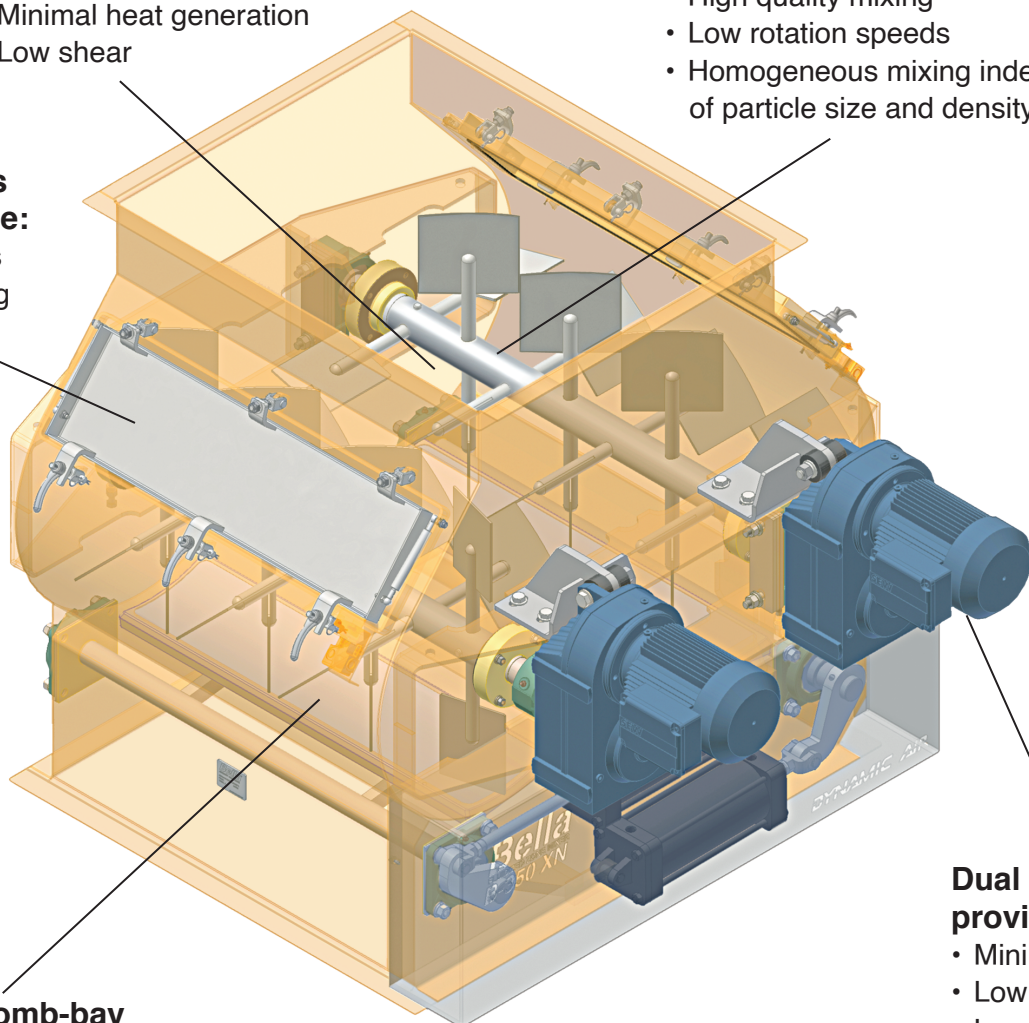
- Optimal particle movement
- Short mix times
- High quality mixing
- Low rotation speeds
- Homogeneous mixing independent of particle size and density

Large access doors provide:

- Quick access
- Easy cleaning

Large bomb-bay discharge doors provide:

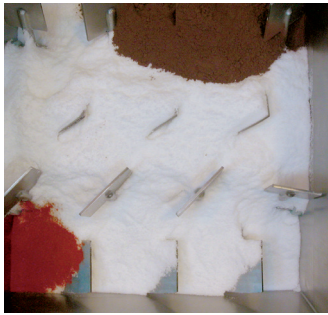
- Fast discharging
- Reduced segregation



Dual direct drives provide:

- Minimal wear
- Low maintenance
- Low friction

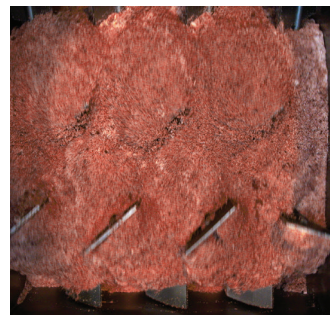
How the Bella Mixer Works



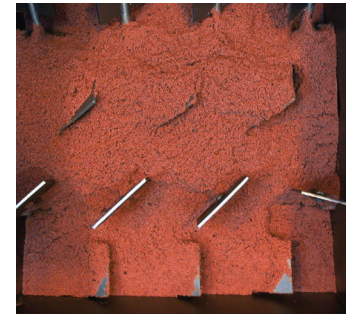
Start



After 2 seconds



After 5 seconds



After 10 seconds

The rapid mixing time of the Bella fluidized zone mixer is demonstrated here as three dissimilar materials achieve quick homogeneity regardless of particle size, shape or density. Typical mix times are from 10 to 60 seconds for dry, free-flowing materials.

How It Works

The Bella mixer consists of twin drums which have two counter-rotating agitators with specifically angled paddles. The paddles sweep the entire bottom of both mixer drums and yet allow the mixer to be started under full load (figure 1). The material in the mixer moves in a horizontal counter-clockwise direction at the perimeter while simultaneously moving both left and right in the center (figure 2).

The material in Zone B (figure 1) is in its normal gravimetric state as it is being moved and disbursed. In Zone A, a weightless zone is created that effectively lifts the ingredients to an almost weightless state allowing them to move freely and randomly, regardless of particle size and density. Thus, the two zones' interaction becomes highly efficient as every particle moves rapidly to a highly homogenous mix, the key to the Bella mixing technology for fast, precise mixing.

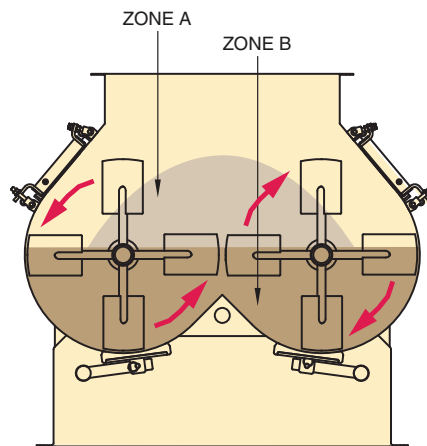


Figure 1

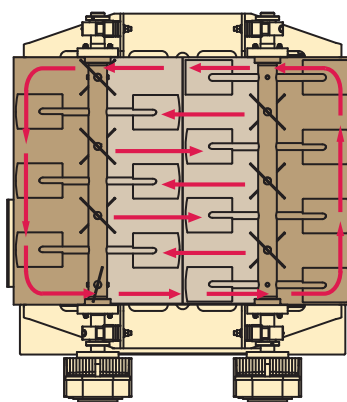
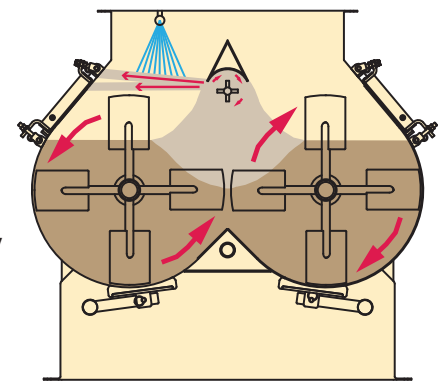


Figure 2

Options

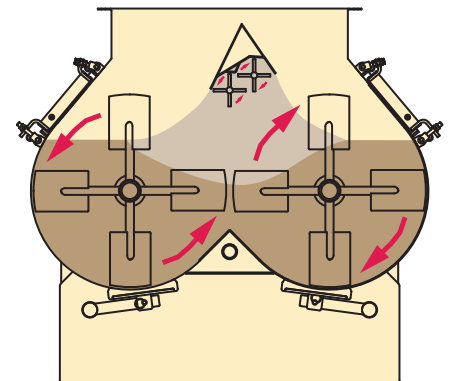
Liquid Addition with the Flow Distortion Bar

When adding liquid to materials which tend to agglomerate, a flow distortion bar is used to improve performance. It consists of a rapidly rotating bar with pins located close together to create a moving curtain of material over the paddles during mixing for maximum exposure to the material. This improves product uniformity and liquid dispersion. A fill level of 140 percent of batch capacity is normally required.



Mixing with the Pin Mill System

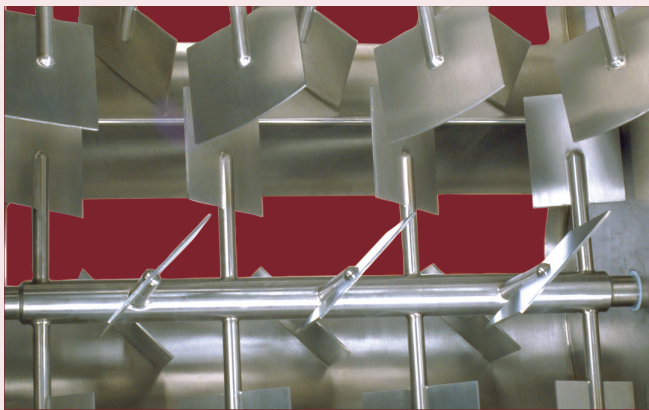
When higher shear is required, the use of the pin mill system is employed. It consists of two rapidly rotating bars with pins and a stationary shroud. The pin mill system is used to introduce high shear into the material during mixing for breaking soft lumps and agglomerates that may be present. A fill level of 140 percent of batch capacity is normally required.



Special Features and Options

Twin Mixing Agitators - Standard

The Bella Fluidized Zone Mixer features twin counter-rotating shafts to achieve a high degree of random material movement throughout the mixer. This tremendous mixing action optimizes overall mixing performance and produces a homogeneous mix in a very short period of time. Most mix times for dry materials are less than 60 seconds to achieve the desired quality. Mix times with liquid addition are longer and will vary with the application.



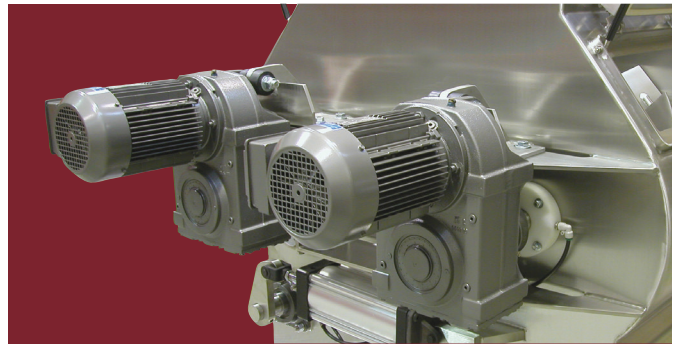
Fixed Paddle Option

Fixed, all welded paddles are available for those applications that require an all welded design. Welds are ground smooth to minimize material buildup and for easier cleaning.



Removable Paddle Option

Special agitator shafts accommodate easily removable paddles. These paddles can be removed in place without removing the agitator shafts. This unique design also provides a machined smooth surface to minimize material build-up.

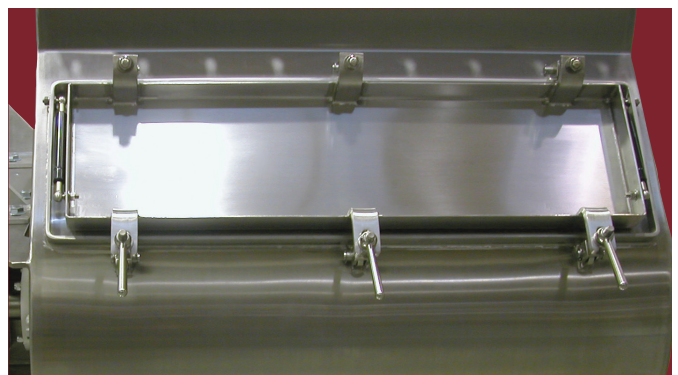
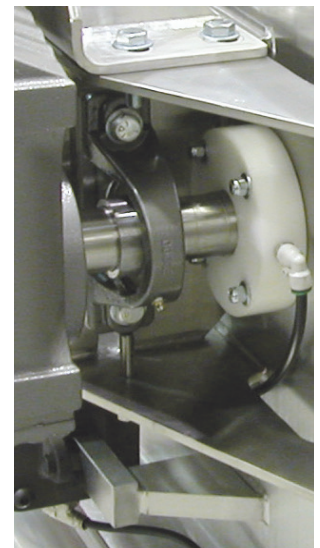


Dual Direct Drive System

The Bella Mixer includes two (2) direct drive gearboxes that drive the twin mixing shafts in opposite directions to achieve low shear fluidized zone mixing.

Air Purged Bearings - Standard

A specially designed and proven air purged bearing seal provides much longer life to the main mixer shaft bearings and helps prevent mixed material from leaking from the twin mixer shafts. A packing gland design is also available for special or high temperature applications.



Quick Opening Access Door Option

Quick opening access doors are available as an option. The standard design provides a high quality seal, yet minimizes any material buildup at the openings. Special limit switches on every door provide lockout protection during operation.

Special Features and Options

Bomb-Bay Discharge Doors - Standard

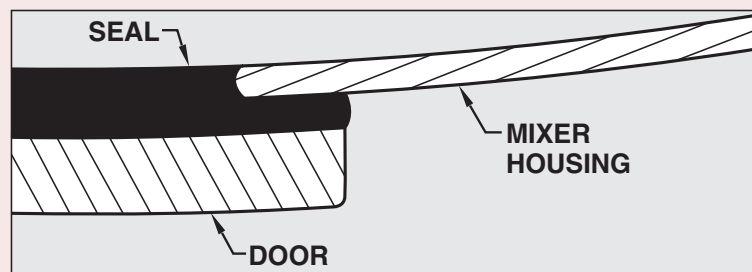
The large twin bomb-bay door openings are key to fast, efficient discharging. They also minimize any segregation during the discharge cycle, which is normally inherent to mixers with a single port discharge valve.



Large bomb-bay discharge doors - bottom view

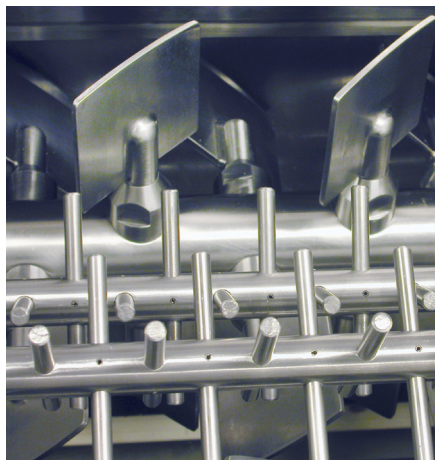
Bomb-Bay Discharge Door Seal - Standard

All Bella mixers come standard with a reliable flush molded rubber door seal, which is bonded to the steel discharge door. This molded seal is available in Buna N, EPDM or silicone compounds as standard. However, any rubber compound is available as an option. The rugged rubber door seal is also very positive and reliable because it is molded to our exact specifications for maximum performance.



Pin Mill System Option

Twin pin mills are an option when additional shear is required during the mixing cycle, or to break down unwanted lumps of material to grain size after the addition of liquids. These twin shafts are normally operated at higher speeds and are custom to the application.



Portable Mixer Option

For applications that require the mixer to be moved, wheels can be added.

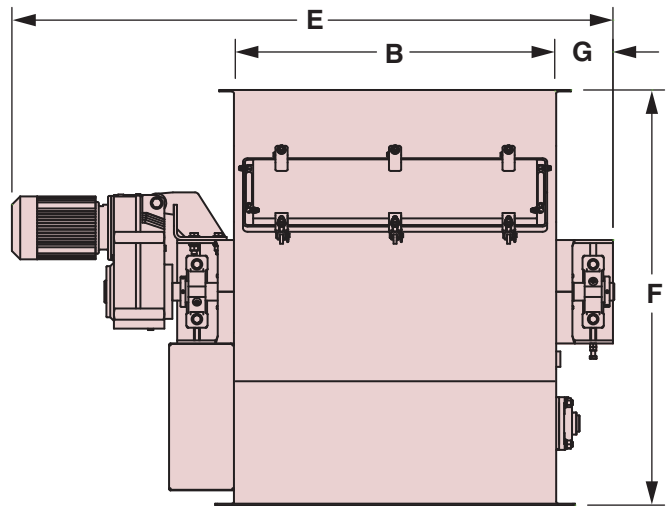
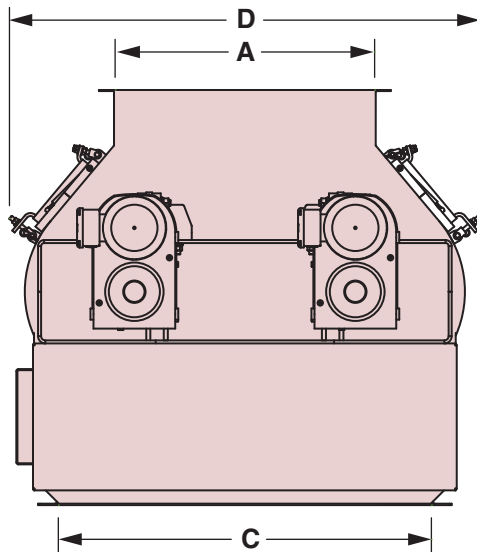


Liquid Addition Option

Custom liquid addition systems are available and sized to meet the application. Even special liquid heating is available to accommodate those very viscous materials that need to be added. Special nozzles and pumping systems can also be included and sized for the application.

Standard Bella Mixer

B-6XN – B-8000XN



DIMENSIONS & SPECIFICATIONS

MODEL	BATCH CAPACITY ① CUBIC FEET (LITERS)	MOTOR SIZE ② SIZE (QTY.)	DIMENSIONS: INCHES (MM)							MIXER WEIGHT ③ POUNDS (KILOGRAMS)
			A	B	C	D	E	F	G	
B-6XN	0.21 (6)	0.25 HP (2) 0.2 KW (2)	7.50 (191)	10.56 (268)	13.88 (353)	16.88 (429)	30.50 (775)	17.19 (437)	5.00 (114)	300 (136)
B-20XN	0.71 (20)	0.5 HP (2) 0.4 KW (2)	10.75 (273)	15.69 (399)	21.00 (533)	24.00 (610)	36.50 (927)	25.81 (656)	5.00 (127)	650 (295)
B-60XN	2.12 (60)	1.5 HP (2) 1.1 KW (2)	15.25 (387)	22.50 (572)	31.00 (787)	34.00 (864)	59.38 (1508)	34.00 (864)	6.00 (152)	800 (363)
B-120XN	4.24 (120)	2.0 HP (2) 1.5 KW (2)	19.00 (483)	28.31 (719)	37.00 (940)	42.00 (1067)	52.00 (1321)	36.69 (932)	7.00 (178)	1050 (476)
B-200XN	7.06 (200)	3.0 HP (2) 2.2 KW (2)	22.50 (572)	33.50 (851)	43.69 (1110)	48.69 (1237)	66.69 (1694)	45.19 (1148)	7.00 (178)	1338 (607)
B-350XN	12.36 (350)	5.0 HP (2) 3.7 KW (2)	27.00 (686)	39.38 (1000)	54.00 (1372)	61.31 (1557)	74.62 (1895)	51.19 (1300)	7.50 (191)	2020 (916)
B-500XN	17.66 (500)	5.0 HP (2) 3.7 KW (2)	30.50 (775)	45.69 (1161)	59.62 (1514)	64.62 (1641)	78.62 (1997)	54.31 (1379)	7.50 (191)	2466 (1119)
B-750XN	26.49 (750)	7.5 HP (2) 5.6 KW (2)	35.00 (889)	52.00 (1321)	68.50 (1740)	74.69 (1897)	93.19 (2367)	66.12 (1679)	7.50 (191)	3310 (1501)
B-1000XN	35.31 (1000)	10 HP (2) 7.5 KW (2)	39.00 (991)	57.00 (1448)	75.50 (1918)	80.50 (2045)	99.50 (2527)	69.38 (1762)	10.00 (254)	4506 (2044)
B-1500XN	52.97 (1500)	15 HP (2) 11 KW (2)	44.00 (1118)	66.00 (1676)	85.50 (2172)	94.12 (2391)	118.31 (3005)	80.69 (2050)	10.00 (254)	6790 (3080)
B-2000XN	70.63 (2000)	20 HP (2) 15 KW (2)	49.00 (1245)	73.62 (1870)	94.12 (2391)	99.12 (2518)	125.12 (3178)	85.00 (2159)	11.00 (279)	9187 (4167)
B-2500XN	88.29 (2500)	20 HP (2) 15 KW (2)	52.00 (1321)	77.88 (1978)	101.31 (2573)	110.31 (2802)	138.19 (3510)	95.38 (2423)	11.00 (279)	11,750 (5330)
B-3600XN	127.13 (3600)	25 HP (2) 19 KW (2)	59.00 (1499)	91.13 (2315)	115.88 (2943)	124.88 (3172)	163.69 (4158)	107.00 (2718)	15.00 (381)	16,000 (7257)
B-5000XN	176.57 (5000)	40 HP (2) 30 KW (2)	66.00 (1676)	98.50 (2502)	129.00 (3277)	138.00 (3505)	167.00 (4242)	114.00 (2896)	16.00 (406)	20,000 (9072)
B-6000XN	211.89 (6000)	40 HP (2) 30 KW (2)	70.00 (1778)	106.31 (2700)	137.19 (3485)	146.19 (3713)	167.81 (4262)	123.00 (3124)	17.00 (432)	23,000 (10,433)
B-8000XN	282.52 (8000)	50 HP (2) 37 KW (2)	77.00 (1956)	118.50 (3010)	151.00 (3835)	160.00 (4064)	183.00 (4648)	132.00 (3353)	17.00 (432)	26,000 (11,793)

① Batch capacity may be increased or decreased for specific applications.

② Larger drive motors are available for extreme or specific applications.

③ The weight of the mixer will vary depending on equipment options.

All specifications are subject to change without notice.

Note: The Bella mixer is available in custom sizes, finishes and materials of construction on request.

Typical Applications

Food

Aspartame
Baby formula
Brown sugar
Cake mixes
Cereals
Cereals/fruit
Cheese powder
Coffee
Confections
Corn starch
Drink mix
Doughnut mix
Dried soups
Flours
Fruit mixes
Grains
Granola
Herbs
Licorice
Meat seasonings
Meusli cereals
Milk powder
Mixed nuts
Potato flakes
Raisins/Flakes
Rice
Saffron mix
Salads
Salt tablets
Snack foods
Spices
Sugars
Vanilla powders
Fresh vegetables
Frozen vegetables

Plastics

Plastic additives
Polyethylene
Polymers
Polypropylene
PVC chips
Resins

Chemicals

Boric acid
Boric oxide
Carbon
Carpet freshener
Chalk/talcum
Cleansers
Cosmetics
Detergents/bleach
Detergents/wax
Drain cleaner
Graphite/carbon
Fertilizer
Fly ash
Fungicides
Powdered paint
Pesticides
Soda ash
Toiletries

Building Materials

Brick facings
Cement/fibers
Crushed marble
Drilling mud
Drywall compound
Flooring materials
Grouts
Gypsum
Joint compounds
Lime
Mortar mixes
Pre-mixed cements
Road lining materials
Thermosetting paint
Wall plasters
Wallpaper pastes

Metal Powders

Metal oxides
Copper/graphite
Iron powder/graphite
Magnesium
Stellite powder
Titanium
Zinc powder

Feeds

Dairy additives
Animal feed
Fish food
Pet food
Zoological food

Foundry

Core sand
Molding sand
Sand/bentonite

Rubber

Carbon black
Ground rubber
Talc

Ceramics

Glass batch
Cement/clay
Clay/sand
Glazes
Pumice
Refractories

Other

Cat box litter
Electrode mass
Fish medicine
Peat moss mixes
Pharmaceuticals
Potting soil
Potpourri
Pyrotechnics
Wood chips



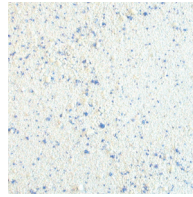
Cereal



Potting soil



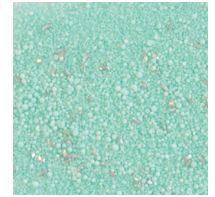
Grains



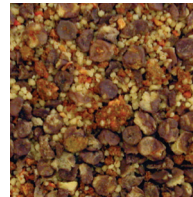
Detergent



Fruit/snack mix



Drain cleaner



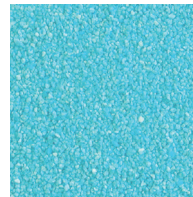
Dried soup



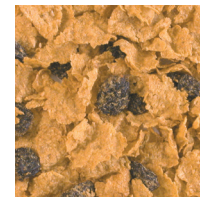
Drink mix



Frozen vegetables



Cleanser



Raisins/flakes



Coffee



Herbs and spices



Grout



Cat box litter



Metal powders



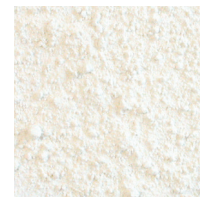
Potpourri



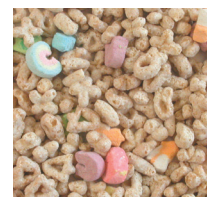
Ceramic glaze



Snack foods



Glass batch



Cereal

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