

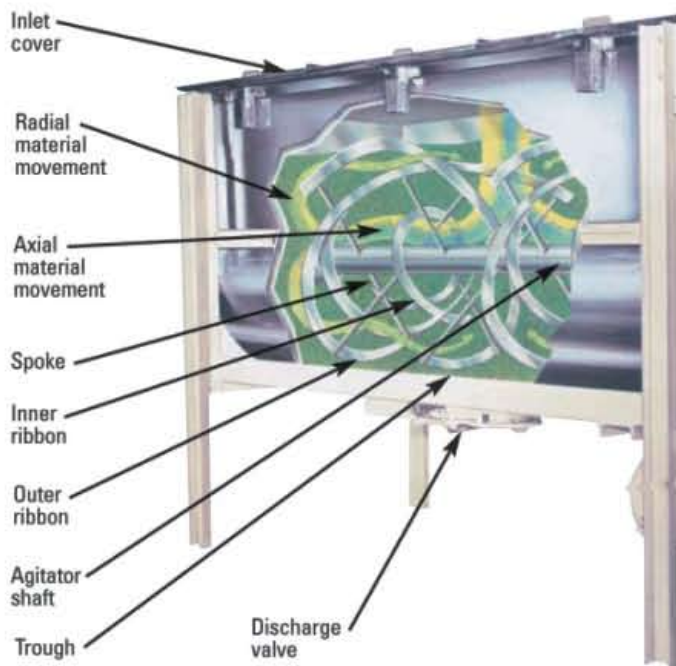
RIBBON BLENDERS



RIBBON BLENDERS

The batch ribbon blender's versatility for mixing solids and for combining mixing with heating, cooling, coating, and other processes makes it a real workhorse in the bulk solids processing application. The Ribbon Blender can also heat, cool or dry materials. Also it can coat solid particles with small amount of liquid to produce pigments, pharmaceuticals, chemical blending and other products.

The Ribbon Blender like all solid to solid mixers operates by inducing one or a combination of diffusion, shear and convection. Small scale random motion called diffusion and it is easily achieved with free flowing ingredients in any mixer. Shear resulting from particle to agitator, particle to wall and particle to particle collisions Large scale random motion called convection where it intermixed with large group of particles. The ability to provide high speed convective mixing is the Ribbon Blenders real advantage among bulk solid mixers.

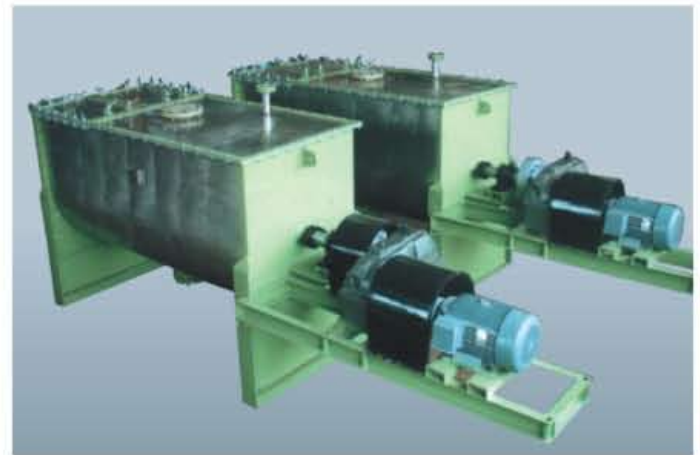


CONSTRUCTION

The ribbon blender consists of a U-shaped horizontal trough mounted on leg supports and containing a rotating agitator. The agitator shaft is powered by a drive and mounted with spokes that support outer and inner helical blades called ribbons. Typically, the inlet is at the trough's top center and the discharge is at the bottom center. The

inlet is usually an opening with a cover; the cover can also be fitted with a charge port or spout to provide a connection to upstream equipment such as hopper. The inlet cover also provides maintenance and cleaning access to the trough interior. The discharge can be fitted with any of various valves, depending on the application.

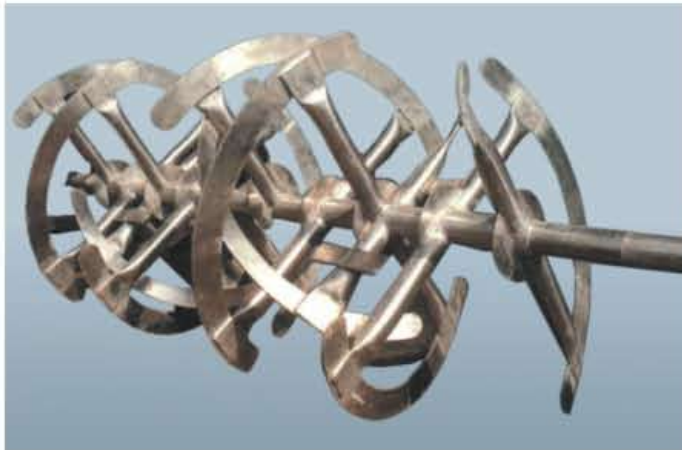
Fabricated from heavy gauge steel or any specified material of construction. Design aspect planned for maximum efficiency in leak proof construction.



DESCRIPTION

In operation, ingredients are loaded into the blender its rated capacity. This is up to the level of the outer ribbon's tip, less than the unit's total holding volume, and allows room for the material to be vigorously agitated and mixed depending on the application. The ribbons move material radially. The outer ribbons move the ingredients in toward the blender's center, and the inner ribbons move ingredients out toward the blender wall. The difference in the outer and inner ribbons' speeds moves material laterally or axially along the blender's horizontal axis - in two opposite directions. These radial and axial mixing actions promote diffusion, convection and shear.

The ribbon blender can achieve complete mixing in a short time with little possibility of over mixing or un-mixing, especially for ingredients with similar particle sizes and bulk densities. In fact, ingredient particle size and bulk density have the strongest influence. The more similar these characteristics are among your ingredients, the faster the ribbon blender can mix them.



Ribbon Type Agitator

Another strong influence on mixing time is the blender design. The trough and ribbons should be precisely designed and fabricated for the application to ensure fast mixing with well-balanced radial and axial ingredient transfer. The trough design and ribbon-tip-to-wall clearance should eliminate dead spots where ingredients can stagnate rather than mix. The ribbon width, spacing between the outer and inner ribbons, and ribbon pitch (the distance between spokes supporting the ribbons) is matched to the ingredients' characteristics.

CHOPPER BLADES

In certain cases the mixing of solid powder is carried out with liquid and during the process lumps are formed and to over come this, the use of chopper blades are provided to break the lumps and to carry out the operation. The chopper blades are flanged on either side of the trough of the blender. The chopper consist of multiple sharp edged blades and rotates at high speed to carryout the operation.

ADDITIONAL FEATURES

Additional features could be provided for

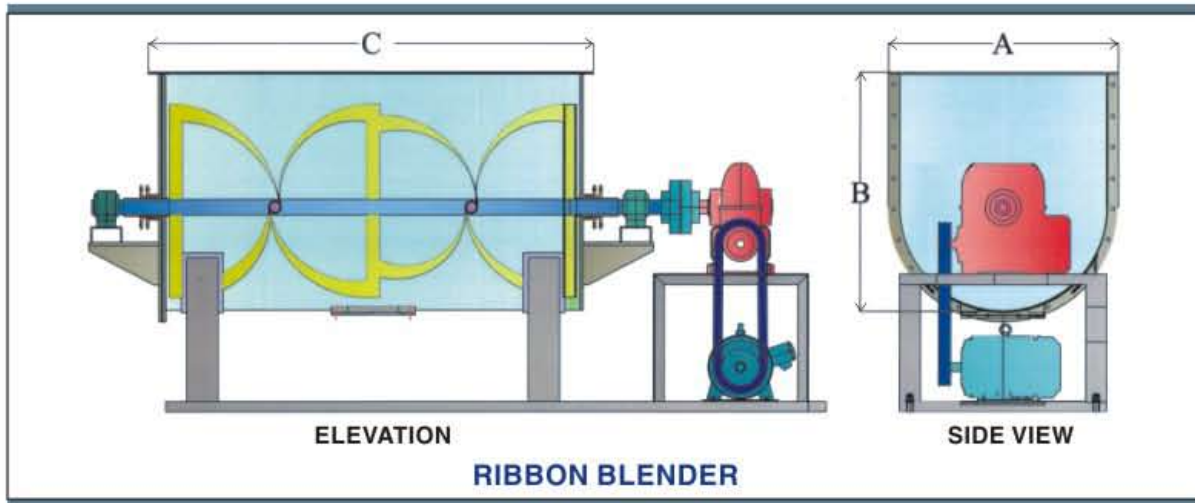
- Chopper Blades - 2 Nos. moving at cutting speed, provided diagonally on opposite sides to break lumps / coarse particle of the mixer.
- Liquid spraying nozzles with dozing system.
- Nitrogen (N₂) blanketing.
- Pneumatically operated bottom valve.
- The unit can be provided on load cells to weigh the mass accurately.
- Jacket for heating and cooling.



Bottom Discharge Outlet with Pneumatic Operated Slide Gate Valve



CHOPPER BLADES



TECHNICAL DATA

MODEL	WORKING VOLUME		FULL VOLUME		A (INSIDE) mm	B (INSIDE) mm	C (OUTSIDE) mm	H.P.	SPEED RPM
	CFT	Cu.M	CFT	Cu.M					
RB-03	10	0.3	14	0.40	500	600	1500	3 TO 5	56
RB-05	20	0.5	27	0.75	600	750	1800	5 TO 10	48
RB-10	35	1.0	45	1.27	800	950	1800	7.5 TO 15	38
RB-15	50	1.5	65	1.84	900	1050	2000	10 TO 20	32
RB-20	70	2.0	90	2.55	1050	1200	2000	15 TO 30	28
RB-30	100	3.0	120	3.34	1050	1200	3000	20 TO 30	26
RB-45	150	4.5	185	5.25	1350	1500	3000	30 TO 50	24
RB-55	200	5.5	235	6.65	1500	1650	3000	40 TO 60	21
RB-70	250	7.0	300	8.5	1500	1650	4000	40 TO 60	18
RB-85	300	8.5	350	9.9	1650	1800	4000	50 TO 75	18

NOTE : * HP Selection will be based on material characteristics.

* The designs and dimensions are subject to alterations without prior notice due to constant development for better performance.

OTHER RANGE OF PRODUCT

CENTRIFUGES	JET MILLS
# MANUAL TOP DISCHARGE	ROTARY VACUUM DRIERS
# BAG LIFTING TYPE	BUCKET ELEVATORS
# BOTTOM DRIVEN BOTTOM DISCHARGE	SCREW CONVEYORS
WITH SCRAPER	BELT CONVEYORS
# TOP DRIVEN BOTTOM DISCHARGE	DRUM DRIERS AND FLAKERS
REACTION VESSEL	ROTARY DRIERS
HEAT EXCHANGERS	ROTARY KILNS
AIR CLASSIFYING MILLS (ACM)	



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