

HORIZONTAL HELICAL BLADE MIXERS

50 to 10,000 litres

Patented

REDUCED MIXING TIMES

DIVERSE MIXING

PROCESS ADAPTABILITY

EFFICIENT DISCHARGE

MINIMUM MAINTENANCE

BATCH OR CONTINUOUS



J R Boone Ltd

The company with the process plant expertise

HORIZONTAL HELICAL BLADE MIXER (HHBM)

Some years ago we set ourselves a Goal.

To develop a range of interrupted spiral Mixers based on a standard form to give optimum Mixing over the widest range of process applications.

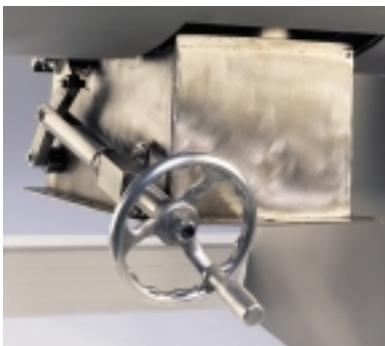
Starting with over 40 years of Mixer test and application experience we undertook an extensive review of current Mixing practice and industry requirements. This enabled us to define a versatile Mixer to meet today's needs and have the flexibility to deal with tomorrows processes.

The resulting machine, the HHBM is simple in construction yet enables a wide range of mixtures and processes to be done in the one machine.

The key benefits of this are:-

1. Versatility to mix dry and damp powders, pastes, slurries and liquids fit for purpose to handle formulations of these products.
2. Efficient Mixing uniformly distributing micro-ingredients in the shortest possible time.
3. Easy to clean with our Patented Clean arm attachment and minimum number of Mixing blades.
4. Competitive pricing structure.
5. A range of options easily incorporated to extend processing applications.
6. Sizes ranging from laboratory to large mass production units.

The HHBM delivers all these features providing far more flexibility and utility than conventional Ribbon or interrupted spiral mixers.



No dead pocket valve



Pressure rated QA sample valve



A 50L HHBM for mixing battery products.

A wide range of applications and processes are catered for utilising the following features in the standard HHBM form:-

Short Trough Aspect Ratio

Efficient end to end mixing action. Good heating/cooling area conditions. Minimum number of mixing elements for easier cleaning and handling of 'pasty' products.

'Circular' Trough

Mixing elements sweep all surfaces, suitable for fitting heating/cooling jackets and internal pressure vacuum conditions.

Helical Blades

Balanced elements lift the products equally inward, outward and obliquely in a criss-cross flow throughout the trough and reduce the power fluctuations. Gentle action minimises the degradation of the product.

Arm Profiles

Shaped plate arms with their connection to the agitator shaft reduces wasted power, adherence of both mixed and unmixed products, enhances the agitator strength and reduces the incidence of stress raisers. Because of the advantages of the design, a patent has been granted.

Capacity

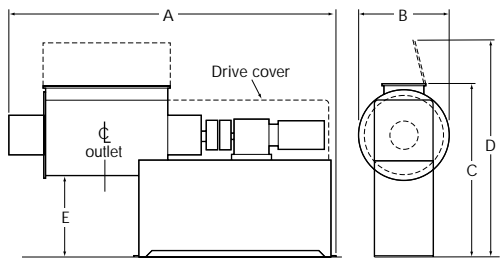
High fill levels mean a smaller mixer, saving space and reduced lower fill levels allow greater flexibility in batch sizes.

Layout

Handing, top covers, drive arrangements or bare shafted units to meet plant conditions.

MANY CONFIGURATIONS ARE POSSIBLE

The Boone HHBM - 50 to 500 litres.

Model	Working capacity		Overall length	Overall width	Overall height		Trough Clearance	Motor Power	
	Max Capacity (l)	Min Capacity (l)			A (mm)	B (mm)			
50	50	20	1600	440	850	1070	410	0.55	
100	100	40	1770	540	940	1250	410	1.10	
150	150	60	1920	605	1010	1300	410	2.20	
200	200	80	2370	685	1070	1400	410	2.20	
300	300	120	2430	770	1160	1550	410	4.00	
400	400	160	2540	830	1250	1650	410	4.00	
500	500	200	2750	890	1270	1700	410	5.50	

The Boone HHBM - 750 to 3000 litres.

Model	Working capacity		Overall length	Overall width	Overall height		Trough Clearance	Motor Power	
	Max Capacity (l)	Min Capacity (l)			A (mm)	B (mm)			
750	750	300	2730	1040	1430	2000	380	7.5	
1000	1000	400	2975	1150	1540	2100	380	11.0	
1250	1250	500	3290	1220	1600	2200	380	15.0	
1500	1500	600	3600	1290	1670	2260	380	15.0	
2000	2000	800	3760	1400	1800	2450	380	22.0	
2500	2500	1000	4280	1500	1930	2600	380	30.0	
3000	3000	1200	4420	1600	2010	2750	380	30.0	

The Boone HHBM - 4000 to 10000 litres.

Model	Working capacity		Overall length	Overall width	Overall height		Trough Clearance	Motor Power	
	Max Capacity (l)	Min Capacity (l)			A (mm)	B (mm)			
4000	4000	1600	4000	1850	2160	2750	400	45.0	
5000	5000	2000	5500	2000	2300	3100	400	55.0	
7500	7500	3000	5850	2260	2600	3550	400	75.0	
10000	10000	4000	6400	2450	2800	3750	400	110.0	

Motor power and overall dimensions may vary by clients process and installation requirements.

The discharge outlet is positioned midway along the trough, its type selected to meet process requirements.

Owing to our continual development, JR Boone reserve the right to amend the figures and dimensions given without prior notice.

Continuous mixing

The above batch mixers can be converted to meet continuous process mixing applications.

Standard drive arrangements

50 to 500 litre - geared motor and flexible coupling to the agitator

750 to 3000 litre - motor, vee belt drive, gearbox and flexible coupling to the agitator.

4000 to 10000 litre - motor, vee belt drive, gearbox and flexible coupling to the agitator.

Electrics

D.O.L. starting is advised to ensure mixers will start under load.

Hygiene

The 50-500 litre Boone HHBM range features the optional quick release agitator for ease of cleaning. This is achieved without disturbing the drive, seals or bearings at the drive and non-drive ends. 'Clean in Place' systems (CIP) are also available.

Safety: Compliance

In accordance with EEC Directive S89/392 and 91/368. All moving parts guarded (to BS 5304), top access and outlets suitably interlocked or supplied with grids.

Range of options

To ensure that our mixers will meet the exact requirements of the process and plant layout, options include:-

- Flexible feed arrangements
- Variety of discharge valves
- Air purged glands/mechanical seals
- Jacketed and internal pressure/vacuum troughs
- Liquid addition systems
- Polished or bead blast finishes
- Flame proof electrics, explosion and earthing requirements
- Electrical and instrument systems and controls
- Various materials of construction

Size range

Capacities given are Mixing / working volumes, standard sizes range from 50 to 10,000 litres. Non-standard sizes and aspect ratios can be provided.

Testing

Available for tests at our works or to place at your site is a small 'Horizontal Helical Blade Mixer' which can be set for various process conditions. From the resultant tests we are able to scale up your production requirements.



Other Equipment:- J R Boone also manufacture very low shear Drum Mixers, large capacity Vertical Mixers and associated proportioning equipment. We also offer a complete service for an integrated process from design through manufacture to installation and commissioning. Engineering excellence and high standards of customer service have earned J R Boone a reputation as a leading name in the Process Industry.

Some of the typical mixing applications:-

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|--------------------------------------|-----------------------|
| Dry cell battery powders | Powdered drinks |
| Catering recipes | Flour batter mixes |
| Plastic powders and granules, etc. | Spice and flavours |
| Fine chemical powder mixing | Meat mixes |
| Powdered soup mixes | Thick slurry mixing |
| Breakfast cereals prior to extrusion | Toiletry preparations |
| | Resin based pastes |

Advantages of the Boone Horizontal Helical Blade Mixer

1. Complete mixing versatility; can handle free flowing and cohesive dry powders, damp powders, pastes and liquids.
2. Short mixing times, also reduces the need for pre-mixing with small percentage additions.
3. Simple design, minimum number of working parts; the drive in particular can be obtained 'off the shelf' from many suppliers.
4. Very little maintenance required, few working parts need attention.
5. Will discharge virtually any product without problems even through small orifices. The helical blades bring the product to the outlet for full discharge.
6. Loading and discharge arrangements are simple and can be easily made to suit all conditions of a plant scheme.
7. Can be easily adapted to meet other process conditions such as drying, wetting, agglomeration, vacuum, auto-claving, liquid addition, etc.
8. Reduces cleaning time due to minimum agitator elements and arm attachment design.
9. Batch or continuous operation.
10. Performs as an exceptional 'live' bunker. Storing and discharging the most problematic materials without difficulty.

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