

# Ribbon Blenders and other horizontal mixers



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■ Design  
Flexibility For  
Individualized  
Process  
Solutions

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Member

**AMERICAN  
PROCESS  
SYSTEMS**

Eirich Group

### **The Traditional U-Shaped Shell...**

is found on the majority of ribbon blenders. The full open top allows for ease of access during cleaning.

Cover designs typically include a flanged filtered bag dump work station and end covers. The covers also routinely include nozzles for dumping super sacks of major ingredients or carriers.



### **Cylindrical Shells...**

find application when vacuum or pressure or heating/cooling is required. A cylindrical shape withstands these higher pressures with minimal increase in shell thickness. Also, a cylindrical shell offers more jacketed area in contact with the product. Access is limited to small side access doors or top mounted manways.



### **Semi-Cylindrical Shells...**

lend themselves to cooker/cooler applications where a greater level of heat transfer is needed than can be accommodated in a U-shaped vessel. The large rectangular top provides greater access than found in a cylindrical unit. The 300° cylindrical shell also eliminates pinch points for shear sensitive products.



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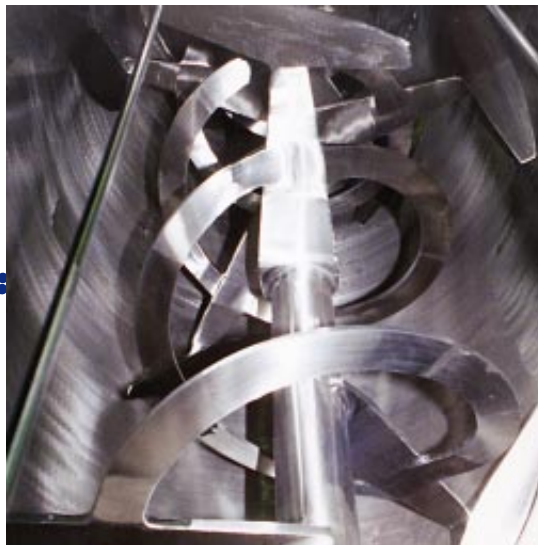
# Design Flexibility for Customized Solutions



## **The Double Ribbon Agitator...**

is valued for its thorough mixing. It consists of an inner and an outer ribbon providing counter-directional flow while keeping the product in constant motion throughout the vessel. Inside ribbons move materials toward the ends of the blender whereas the outside ribbons move material back toward the center discharge.

The long trailing edge of the outer ribbon transmits high mechanical energy and product shear to the mix. Typical mix times are in the 10-15 minute range for fill levels from 40 to 100% of the working volume.

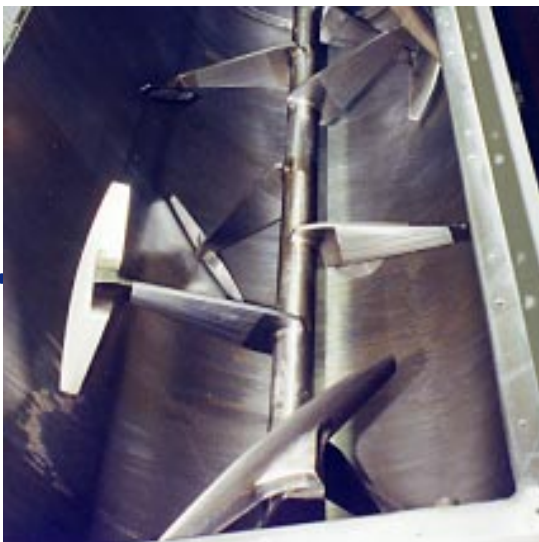


## **The Paddle/Ribbon Agitator...**

combines inner ribbons with outer paddles. It is especially well suited for fragile, heat sensitive products.

While maintaining counter-directional flow, the outer paddles minimize pinch points at the wall thus introducing less frictional heat than a continuous outer ribbon.

The cupped outer paddles can mix quicker than a second outer ribbon and will achieve an even greater range of possible batch sizes.



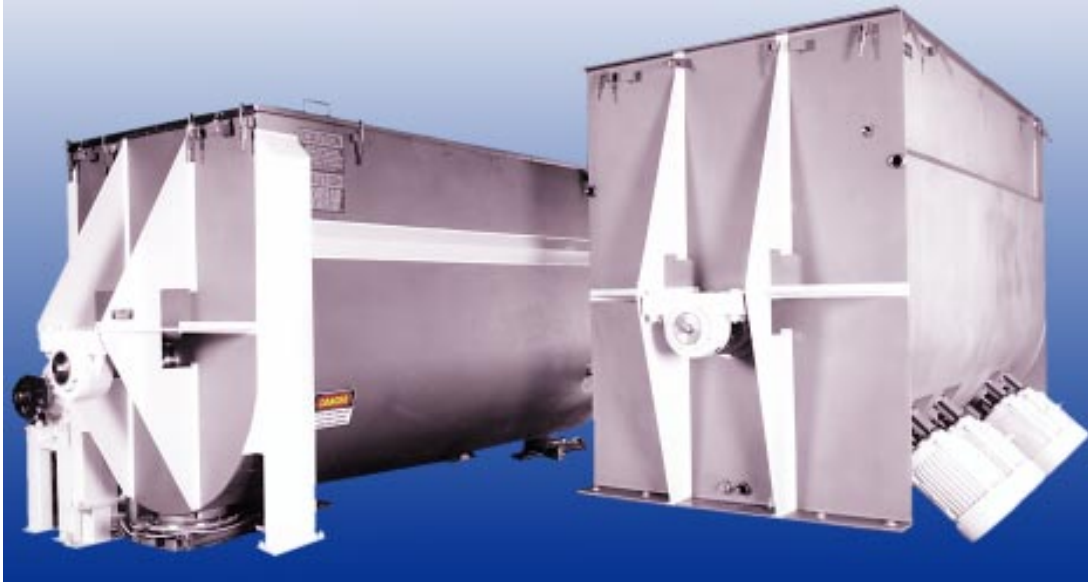
## **Paddle-Only Designs...**

are best suited to products of uniform size and density such as feed and grain, non-directional liquid or slurry mixes, and soap pellets with fragrance.

Drawbacks of the lack of an inner agitator are mounding of the product reducing mixer effective capacity and possible de-mixing and segregating mixtures of different size or density.



# System Installations & Process Solutions.....



Bakery premix system: Main blender for flour / shortening mix with high speed dispersing choppers and secondary agitated surge feeding two packaging lines.

## Sanitary Mixers

The APS sanitary and ultra-sanitary ribbon, paddle and combination paddle/ribbon blenders consist of a stainless steel, U-shaped mixing tank with a two piece, removable solid bar shaft agitator supported at each end by suspended pillow block bearings.

The tank is a one-piece weldment. There are no removable or slotted endplates with seams for unmixed materials to accumulate.

Heavy duty, plasma cut support posts, flange free construction and continuous welds ground smooth with large radii throughout add further to the structural integrity and cleanliness of our design.



## The APS Guarantee

Every APS mixer is constructed from stainless steel and designed for long life. The design provides for easy maintenance and cleaning.

The agitator is designed to be free of any sharp edges or corners, ensuring a smooth and safe operation.

Spice blending operation: bag/dump, conveying, dust collection, mixing, and packaging.

## APS Expertise

American Process Systems has for over 25 years developed and installed equipment tailored to the requirements of many different industries.

Our installations can be found in plants ranging from bakeries to pesticides, seasonings to PVC, dairy to detergents, pigments to pharmaceutical.



Double Ribbon Blender with chopper for mixing calcium carbonate and pigment for carpenter's chalk

## APS Agitator Shaft—Guaranteed For Life

Agitator shaft is constructed of solid stainless or carbon designed to be free of any nuts, bolts, or flanges. The unique design provides much greater strength than pipes or tubes.

It is warranted to the Purchaser by American Process Systems for any defects, including breakage, for the life of the mixer.

for drum dumping, and screening.



Value added sugar processor with scaling of major ingredient and filtered bag dump for minors

## Mixers For Industrial Applications

Industrial processes require either carbon steel or stainless steel construction. Some applications call for internal polishing of welds to prevent contamination between batches.

Tanks can be U-shaped, semi-cylindrical or cylindrical and have pressurized jacketing for a variety of applications.

The APS agitator which is "Guaranteed For Life" against breakage is a definite advantage when heavy duty or extra heavy duty construction is required.



Heavy duty sanitary carbon steel mixer for a colored mortar mix consisting of iron oxides and cement.

## The APS Advantage

# More Standard Features

### ■ “Guaranteed For Life” solid bar agitator shafts

- Agitators designed to exceed torque and twist of drive and deflection due to rotor and batch weight.
- Machined shafts straightened to less than 0.004" TIR.

### ■ Split packing glands for easy removal and maintenance

- Sanitary design allows for external access
- Flush inner boss is machined to limit buildup

### ■ The best agitator for your product

- Double ribbon
- Outer paddle/inner ribbon combination
- Paddle only

### ■ Sanitary designs

- All continuous internal and external welds
- Single weldment mixing tank without seams to avoid product contamination

### ■ Flange free rotor construction

- No nuts or bolts to come loose in your mix

### ■ Endplate scrapers

- Prevent materials from accumulating at the ends

### ■ Machined stub shaft assembly

- Allows for easy agitator removal, if necessary

### ■ Trouble free operation

- Inverted bearing housing protects suspended double pillow block bearings from dust

### ■ Solid support structure

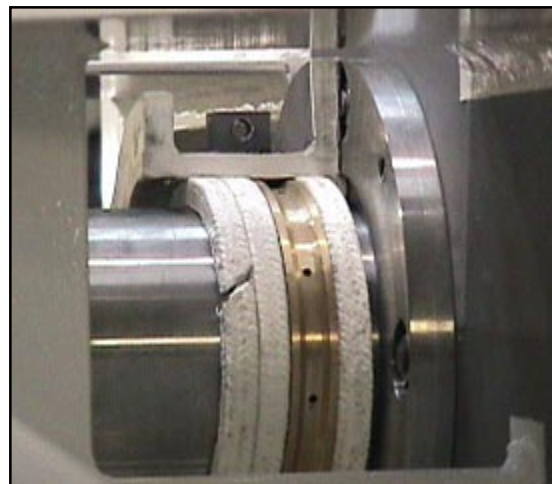
- Legs built from enclosed, rectangular tubing

### ■ Choice of materials and construction

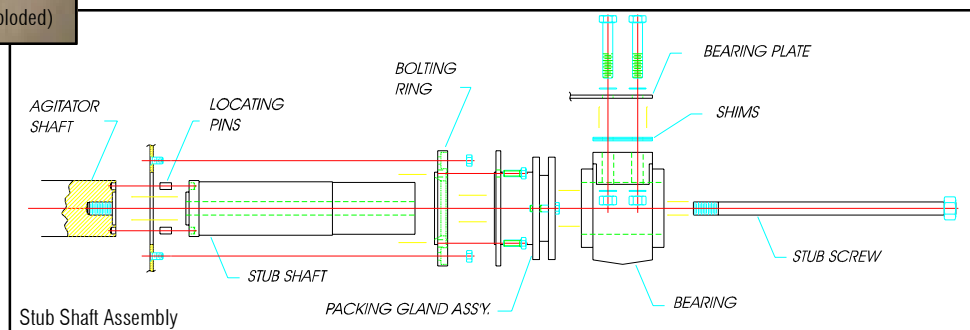
- Stainless or carbon steel
- Sanitary or industrial finish
- Standard, heavy duty, or extra heavy duty construction
- Dairy, USDA and FDA compliant designs



Packing gland (exploded)



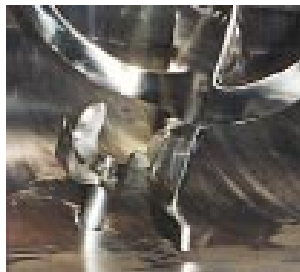
Braided packing, lantern ring and split housing on agitator shaft





# More Options

## Choppers



Standard, with tulip blade



Wide mouth, for easy removal/cleaning



Piggy-back arrangement



Removable, for routine cleaning

## Valves



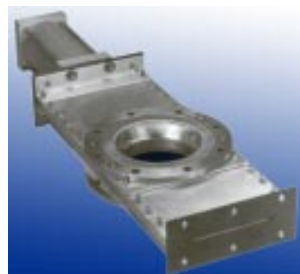
Paddle gate



Spherical disc



Flush plug



Slide Gate

## Drives



Space-saver: underneath the blender



Shaft mounted drive



Side-by-side chain drive



"Snuggler"

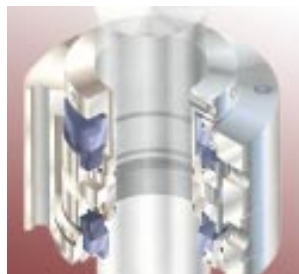
## Seals



APS standard seal



Semi-mechanical seal



Mechanical seal



USDA approved ultra-sanitary seal

## Externals



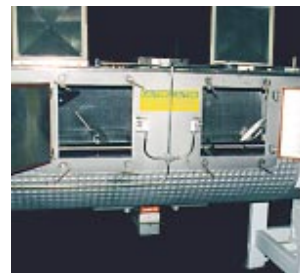
Shrouded endplate



Steam poppet valves

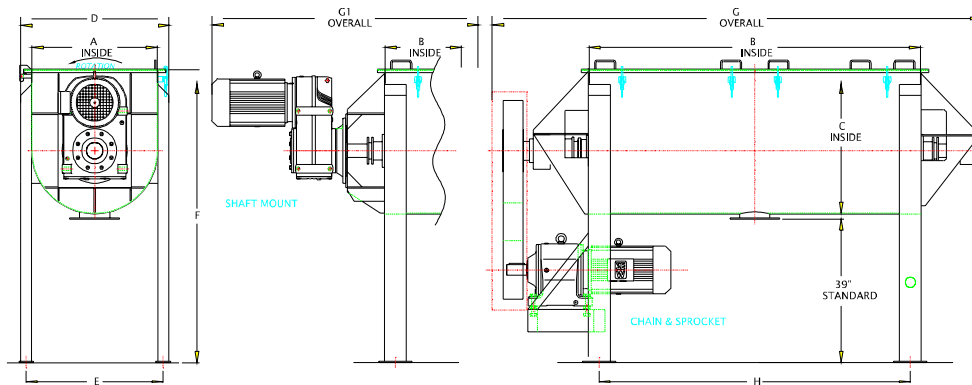


Vacuum capable, domed cover



Side doors and jacketing

# Standard blender sizes and approximate dimensions



| MODEL   | WORKING CAP.    |         |        | HORSEPOWER    |            |                  | Cover Pieces | Disch. Dia. | APPROXIMATE DIMENSIONS (INCHES) |     |    |    |    |     |     |     |     |
|---------|-----------------|---------|--------|---------------|------------|------------------|--------------|-------------|---------------------------------|-----|----|----|----|-----|-----|-----|-----|
|         | ft <sup>3</sup> | Gallons | Liters | Standard Duty | Heavy Duty | Extra Heavy Duty |              |             | A                               | B   | C  | D  | E  | F   | G   | G1  | H   |
| DRB-5   | 5               | 37      | 142    | 1½            | 3          | 5                | 1            | 4           | 17                              | 38  | 20 | 21 | 19 | 62  | 69  | 83  | 34  |
| DRB-11  | 11              | 82      | 311    | 3             | 5          | 7½               | 1            | 4           | 21                              | 48  | 26 | 25 | 23 | 68  | 79  | 93  | 44  |
| DRB-20  | 20              | 150     | 566    | 5             | 7½         | 10               | 1            | 6           | 26                              | 60  | 30 | 30 | 28 | 72  | 91  | 110 | 56  |
| DRB-24  | 24              | 180     | 679    | 7½            | 10         | 15               | 2            | 6           | 26                              | 66  | 30 | 30 | 28 | 72  | 97  | 117 | 62  |
| DRB-30  | 30              | 224     | 849    | 10            | 15         | 20               | 2            | 6           | 30                              | 72  | 34 | 34 | 32 | 76  | 103 | 128 | 68  |
| DRB-36  | 36              | 269     | 1,019  | 15            | 20         | 25               | 2            | 6           | 30                              | 78  | 34 | 36 | 33 | 76  | 126 | 138 | 74  |
| DRB-40  | 40              | 299     | 1,132  | 15            | 20         | 25               | 2            | 6           | 32                              | 78  | 36 | 38 | 35 | 78  | 126 | 138 | 72  |
| DRB-55  | 55              | 411     | 1,557  | 20            | 30         | 40               | 2            | 8           | 34                              | 90  | 39 | 40 | 37 | 81  | 138 | 155 | 84  |
| DRB-66  | 66              | 494     | 1,868  | 20            | 30         | 40               | 2            | 8           | 37                              | 96  | 41 | 43 | 40 | 83  | 144 | 162 | 90  |
| DRB-80  | 80              | 598     | 2,264  | 25            | 40         | 60               | 2            | 8           | 40                              | 96  | 48 | 46 | 43 | 90  | 144 | 165 | 90  |
| DRB-100 | 100             | 748     | 2,830  | 30            | 50         | 75               | 2            | 8           | 45                              | 96  | 54 | 51 | 48 | 96  | 144 | n/a | 90  |
| DRB-120 | 120             | 898     | 3,396  | 30            | 50         | 75               | 3            | 10          | 44                              | 120 | 52 | 52 | 48 | 94  | 168 | n/a | 112 |
| DRB-155 | 155             | 1,159   | 4,387  | 40            | 60         | 100              | 3            | 10          | 50                              | 120 | 59 | 58 | 54 | 101 | 168 | n/a | 112 |
| DRB-180 | 180             | 1,346   | 5,094  | 40            | 60         | 100              | 3            | 10          | 54                              | 120 | 61 | 62 | 58 | 103 | 168 | n/a | 112 |
| DRB-215 | 215             | 1,608   | 6,085  | 50            | 75         | 125              | 3            | 10          | 54                              | 144 | 61 | 62 | 58 | 103 | 192 | n/a | 136 |
| DRB-270 | 270             | 2,020   | 7,641  | 50            | 75         | 125              | 3            | 10          | 60                              | 144 | 66 | 68 | 64 | 108 | 196 | n/a | 136 |
| DRB-325 | 325             | 2,431   | 9,198  | 60            | 100        | 150              | 3            | 10          | 66                              | 144 | 73 | 74 | 70 | 115 | 196 | n/a | 136 |
| DRB-385 | 385             | 2,880   | 10,896 | 60            | 100        | 150              | 3            | 12          | 72                              | 144 | 80 | 80 | 76 | 122 | 196 | n/a | 136 |
| DRB-515 | 515             | 3,852   | 14,575 | 60            | 100        | 150              | 4            | 12          | 72                              | 192 | 80 | 80 | 76 | 122 | 262 | n/a | 184 |

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