

# Bin Activators

## Bin Activator Model Selection Guide



### SELECTION OF A BIN ACTIVATOR (BAV)

When selecting the proper type and size of BAV to use, you need to know the following:

1. *Ingredient* type and properties.
2. *Bin diameter*, height, and cone angle.
3. Desired *flow rate*.

Use the Application Data Sheet (DOC REF: **7100 C02-1**) to gather the information you need to select the correct:

- a) BAV model.
- b) BAV outlet size.
- c) material of construction.

### CONSULT THE FACTORY

If one or more of the following conditions prevail, *consult the factory*.

1. Height of the straight side of bin is more than 2 x bin internal diameter.
2. The angled section of the bin has an angle less than 55° to horizontal.
3. Baffles, agitators or other severe restrictions are present inside the bin.
4. Moisture can penetrate the inside of the bin.
5. Bulk density is above 100 lbs. per cu.ft.
6. Ingredient temperature is above 150°F, or below 10°F.

### BAV FLOW CATEGORY

**Table 1** identifies common ingredient characteristics and places them in flow categories. Identify the *flow category* of the ingredient.

Now you need to know the *bin diameter* to use the ratios provided in **Table 1** in order to calculate the best *BAV diameter*.

| INGREDIENT DESCRIPTION                              | SPECIAL FEATURE                      | MESH       | EXAMPLE  | BAV FLOW CATEGORY | RATIO OF BAV DIA TO BIN DIA |
|---|--------------------------------------|------------|--|-------------------|-----------------------------|
| <b>Free Flowing</b>                                 | angle of slide 30°                   |            | granular salt, sugar, plastic pellets, pebble lime, PVC powder                                       | <b>1</b>          | .25 to .33                  |
| <b>Medium Flowing</b><br>tends to bridge            | angle of slide 35° to 55°            | 100 to 300 | flour, starch  | <b>2</b>          | .33 to .5                   |
| <b>Poor Flowing</b><br>adhesive or easily fluidized |                                      | -325       | adhesive hydrated lime, TiO <sub>2</sub> , foundry sand, pigments fluidizing talc's, cement, fly ash | <b>3</b>          | .4 to .7                    |
| <b>*Very Poor Flowing</b><br>tends to interlock     | *bulk density below 20 lbs per cu ft |            | *wood chips, fiber glass, plastic scrap  | <b>*4</b>         | *.6 to 1                    |

\* Keep the head above the BAV low (BAV > DIA head height).

**TABLE 1. BAV FLOW CATEGORY AND BAV DIA. RATIO**

### SELECTING THE BAV MODEL

Now you have the *BAV diameter*, select the *BAV Model number* from **Table 2** and consult back page for attachment code and construction/ finish code.

| BAV DIAMETER | ATTACHED TO BIN BY | MATERIAL /FINISH |
|--------------|--------------------|------------------|
| 2 ft         | WF/BS/BF           | 00/01/02         |
| 3 ft         | WF/BS/BF           | 00/01/02         |
| 4 ft         | WF/BS/BF           | 00/01/02         |
| 5 ft         | WF/BS/BF           | 00/01/02         |
| 6 ft         | WF/BS/BF           | 00/01/02         |
| 7 ft         | WF/BS/BF           | 00/01/02         |
| 8 ft         | WF/BS/BF           | 00/01/02         |
| 10 ft        | WF/BS/BF           | 00/01/02         |

**TABLE 2. BAV MODEL NUMBER AND BAV DIAMETER**

Model Number Example: **603/WF/00**

## FLOW RATE

The desired discharge (flow) rate out of the bin influences the selection of BAV *outlet diameter*. Identify the *desired flow rate* and select the BAV outlet size using **Table 3** overleaf.

## BAV OUTLET DIAMETER

**Table 3** provides the mass flow rate in free fall conditions in cu.ft./hr., the ingredient flow category and the recommended BAV outlet diameter.

| BAV<br>FLOW<br>CATEGORY | BAV OUTLET DIAMETER (IN) / MASS FLOW RATE ( CU FT PER HR ) IN<br>FREE FALL |      |      |      |      |       |       |
|-------------------------|--|------|------|------|------|-------|-------|
|                         | 6"   | 8"   | 10"  | 12"  | 16"  | 20"   | 30"   |
| 1                       | 600  | 1100 | 1700 | 2400 | 8300 | 13100 | 29400 |
| 2                       | 300  | 600  | 900  | 1200 | 4200 | 6600  | 14700 |
| 3                       | 300  | 500  | 700  | 1000 | 3400 | 5300  | 11800 |
| 4                       |  | 200  | 200  | 300  | 1000 | 1800  | 3600  |

**TABLE 3. BAV OUTLET DIAMETER/MASS FLOW RATE**

Please note that the relative values indicated are a general guideline only and caution should be taken, especially in the following circumstances.

## DOWNSTREAM DEVICES

If downstream devices such as valves and feeders are to be fitted, they must be sized to achieve the desired flows. Be careful not to undersize the BAV outlet diameter.

## REFILL

When using a BAV to refill a Loss in Weight Feeder, note that maximum flow from a BAV does not begin instantly when the vibrator is initiated. A few seconds delay (2 to 5 seconds) can be expected.

**Attachment to bin** (where bin supplied by others)

3 standard methods:

- **WF** Brabender supplied flange to be welded. (This is usual Brabender supply).
- **BS** Bolted suspension assembly to customer's flange. (Brabender does not supply flange.)
- **BF** Bolted flange assembly to customer's flange. (Brabender supplies mating flange to customer supplied flange.)

## CONSTRUCTION

Three standard material options:

- 00** mild steel, blue enamel painted.
- 01** 304 stainless steel contact parts.
- 02** S04SS sanitary finish contact parts.

## OPTIONS, ACCESSORIES, DAY BINS AND FEEDERS

See Model Specification Documents.



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