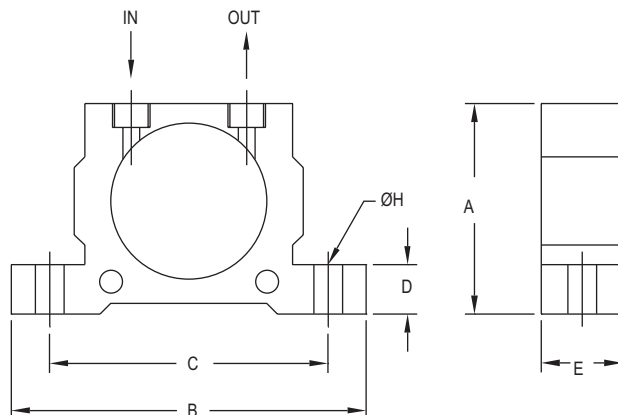




## Series BPV Pneumatic Ball Vibrator

### Specifications - Installation and Operating Instructions



DIMENSIONS							
Model	A	B	C	D	E	H	IN/OUT
BPV-1	2-1/32 [51.59]	3-27/64 [86.92]	2-11/16 [68.26]	31/64 [12.30]	51/64 [20.24]	9/32 [7.14]	1/4 BSPT
BPV-2 & BPV-3	2-41/64 [67.07]	4-29/64 [113.11]	3-35/64 [90.09]	41/64 [16.27]	61/64 [24.21]	23/64 [9.13]	1/4 BSPT
BPV-4 & BPV-5	3-9/32 [83.34]	5-3/64 [128.19]	4-7/64 [104.38]	41/64 [16.27]	1-15/16 [33.34]	23/64 [9.13]	1/4 BSPT
BPV-6	4-1/16 [103.19]	6-5/16 [160.34]	5-1/8 [130.18]	51/64 [20.24]	1-47/64 [44.05]	7/16 [11.11]	3/8 BSPT

Series BPV Pneumatic Ball Vibrator is the best choice for bridge-break in thin walls and small tanks. This model can be used in vibrating separators, vibrating conveyors, and against electroplating build-up. It can also be used on material compacted while packing or sand compacted while molding.

**FEATURES**

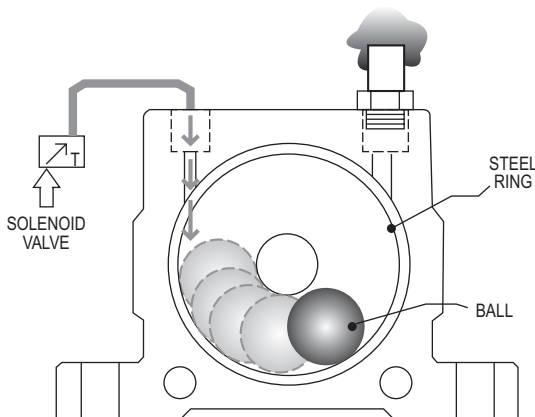
- The body is made of high strength aluminum alloy.
- Small in size and light-weight.
- Can be used in high humidity or dusty working areas.
- Frequency and amplitude of vibration can be adjusted as needed.

**HOW IT OPERATES**

The aluminum body is equipped with a steel ring and ball inside that is tightly closed by plastic side covers. Vibration is caused when the internal ball, pushed by compressed air, runs in a rotary motion to produce centrifugal force.

**SPECIFICATIONS**

**Temperature Limits:** 212°F (100°C).  
**Noise Level:** 75 to 95 dBA.  
**Supply Pressure:** 29 to 87 psi (2 to 6 bar).  
**Air Consumption:** See model chart.  
**Air Connections:** 1/4" BSPT female with 1/4" OD push to connect adapter on BPV-1, BPV-2, BPV-3, BPV-4 and BPV-5; 3/8" BSPT female with 3/8" OD push to connect on BPV-6. Also includes muffler for exhaust port.  
**Housing Material:** Aluminum.



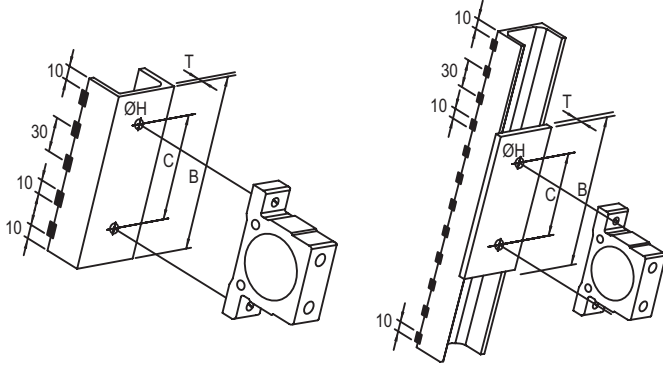
MODEL CHART										
Model	Frequency (V.P.M.)			Force lbf (N)			Air Consumption cfm (l/min)			Weight
	Pressure Input			Pressure Input			Pressure Input			
	29 psi (2 bar)	58 psi (4 bar)	87 psi (6 bar)	29 psi (2 bar)	58 psi (4 bar)	87 psi (6 bar)	29 psi (2 bar)	58 psi (4 bar)	87 psi (6 bar)	lb (kg)
BPV-1	22500	28000	34000	56 (250)	106 (470)	160 (710)	3.25 (92)	5.30 (150)	7.06 (200)	.31 (0.14)
BPV-2	15000	18500	22500	72 (320)	124 (550)	195 (870)	3.32 (94)	5.58 (158)	7.95 (225)	.57 (.26)
BPV-3	13000	17000	19500	101(450)	180 (800)	247 (1100)	4.31 (122)	7.06 (200)	9.89 (280)	.66 (.30)
BPV-4	10500	14500	16500	162 (720)	274 (1220)	387 (1720)	4.59 (130)	8.12 (230)	12.01 (340)	1.2 (.53)
BPV-5	9200	12200	14000	209 (930)	353 (1570)	461 (2050)	5.65 (160)	10.24 (290)	15.01 (425)	1.4 (.63)
BPV-6	7800	9700	12500	339 (1510)	555 (2470)	722 (3210)	7.59 (215)	13.24 (375)	20.13 (570)	2.54 (1.15)

V.P.M. = vibrations per minute

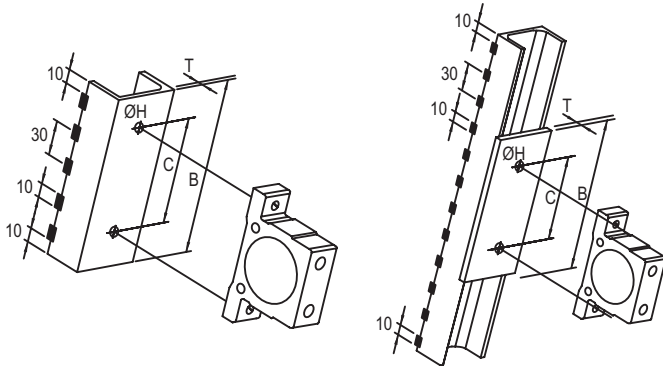
## INSTALLATION

Vibration force transmits more efficiently in a conical hopper tank as opposed to a rectangular hopper. It is recommended that you install two vibrators in rectangular hoppers.

1. Vibrator force can be transmitted more efficiently by using "U" shape steel supports. It can help materials run smoother in the tank or pipe. It also reduces tank damage accidents.
2. To avoid tank wall amplitude caused by the vibrator moving in a left or right direction, use "U" shape steel.
3. Reinforced board is required between "U" shape steel and a thin tank wall.
4. To increase vibration fields in a big hopper tank, criss-cross "U" shape steel.



**Attention:** Vibration has to be fixed by a high tension bolt, washer, and spring washer. Connect with a security cable if the vibrator is installed onto a hopper.



**Note:** Various tanks are based on application requirement. Customers choose appropriate vibrator types to meet with various applicant demand (tank shape, material, applied material, etc). Suitable vibrators will not only prevent obstruction problems but won't damage the tank walls.

## VIBRATION FORCE CALCULATION

Taking the accumulated situation into consideration, the appropriate vibrator will give 0.2~0.5 G accelerated vibration onto the target object.

$$F=0.2-0.4GW$$

F: Vibration force (N)

G: Acceleration of gravity

W: Material weight (KG)

## MATERIAL WEIGHT CALCULATION

Generally speaking, the hopper portion of the tank should be taken into consideration.

W: MATERIAL WEIGHT (KG)  
V: CHUTE VOLUME (M<sup>3</sup>)  
y: SPECIFIC GRAVITY

$$W = 1000V y$$

$$W = \frac{\pi H}{3} (R^2 + Rr + r^2)$$

$$V = \frac{H}{6} [A \times B + (A + a)(B + b) + a \times b]$$

## MAINTENANCE

Upon final installation of the Series BPV Pneumatic Ball Vibrator, no routine maintenance is required. A periodic check of the system calibration is recommended. The Series BPV is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return good authorization number before shipping.