PRV Series Pneumatic Roller Vibrators

- Special aluminum body is small in size and light-weight.
- Frequency and amplitude of vibration can be adjusted as required.
- The strongest vibration force driven by rollers among the same size products.

Series PRV Pneumatic roller vibrators have a high vibration frequency feature that can prevent material jams in pipe delivery. It can also be applied for bridge-break or concrete injection operation conditions.

**HOW IT OPERATES**

The special aluminum body is equipped with a roller and ring with multi-nozzles. It is tightly closed by plastic side covers. Vibration is caused when the roller pushed by compressed air runs in a rotary motion to produce centrifugal force.

**SPECIFICATIONS**

- **Temperature Limit:** 212°F (100°C).
- **Noise Level Range:** 75-100 dBA.
- **Supply Pressure:** 29 to 87 psi (2 to 6 bar).
- **Air Consumption:** See model chart.

**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.

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**Model | A | B | C | D | E | øH | Connection**

<table>
<thead>
<tr>
<th>Model</th>
<th>mm (in)</th>
<th>mm (in)</th>
<th>mm (in)</th>
<th>mm (in)</th>
<th>mm (in)</th>
<th>mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRV-1</td>
<td>2.01(51)</td>
<td>3.39(86)</td>
<td>2.68(68)</td>
<td>0.47(12)</td>
<td>1.14(29)</td>
<td>0.28(7)</td>
</tr>
<tr>
<td>PRV-2</td>
<td>2.64(67)</td>
<td>4.45(113)</td>
<td>3.54(90)</td>
<td>0.63(16)</td>
<td>1.46(37)</td>
<td>0.35(8)</td>
</tr>
<tr>
<td>PRV-3</td>
<td>3.27(83)</td>
<td>5.04(128)</td>
<td>4.09(104)</td>
<td>0.63(16)</td>
<td>1.67(42)</td>
<td>0.35(8)</td>
</tr>
<tr>
<td>PRV-4</td>
<td>4.06(103)</td>
<td>6.30(160)</td>
<td>5.12(130)</td>
<td>0.79(20)</td>
<td>2.05(52)</td>
<td>0.43(11)</td>
</tr>
</tbody>
</table>

V.P.M. = vibrations per minute
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.

Notes: 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.

Large amplitude and low frequency piston types fit in granule with low specific gravity applied material. It is recommended to use multiple vibrators in serious clog situations or large tank surroundings.

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.

\[ F = 0.2\text{~to~}0.4GW \]

- **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 (M³)
**γ**: specific gravity

\[ W = 1000\gamma V \]
\[ V = \frac{\pi H}{3}(R^2+Rr+r^2) \]
\[ V = \frac{H}{6} \left(A \times B + (A+a)(B+b) + a \times b \right) \]