PM-SHAKERS
Specifications

MB PM-Series Shakers use permanent magnet technology and the voice coil principle to create vibration. These general-purpose shakers are heavy duty, industrial-quality equipment with a proven track record of lasting ten, fifteen, even over twenty years in demanding applications. You can buy "bargain basement" shakers or you can invest in MB PM-Shakers that will provide you with years of dependable, reliable, and consistent testing. Choose from five different sizes -- depending on your needs -- with maximum sine force ratings of 25, 50, 100, 250 or 500 pounds.

The PM25A, PM50A, and PM100A Shakers all have ½" stroke and a 2.7" diameter mounting table. The PM250HP and PM500HP Shakers each have 2" of stroke and a 4.1" diameter mounting table.

PERFORMANCE RATINGS

<table>
<thead>
<tr>
<th>Description</th>
<th>PM25A</th>
<th>PM50A</th>
<th>PM100A</th>
<th>PM250HP</th>
<th>PM500HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force Output</td>
<td>25 pounds Pk*</td>
<td>50 pounds Pk*</td>
<td>100 pounds Pk*</td>
<td>250 pounds Pk*</td>
<td>500 pounds Pk*</td>
</tr>
<tr>
<td>Displacement</td>
<td>0.5&quot; Pk-Pk</td>
<td>0.5&quot; Pk-Pk</td>
<td>0.5&quot; Pk-Pk</td>
<td>2&quot; Pk-Pk</td>
<td>2&quot; Pk-Pk</td>
</tr>
<tr>
<td>Velocity</td>
<td>70 in/sec Pk</td>
<td>70 in/sec Pk</td>
<td>70 in/sec Pk</td>
<td>60 in/sec Pk</td>
<td>60 in/sec Pk</td>
</tr>
<tr>
<td>Acceleration (bare table)</td>
<td>50 g Pk</td>
<td>80 g Pk</td>
<td>106 g Pk</td>
<td>80 g Pk</td>
<td>80 g Pk</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>DC-10,000 Hz</td>
<td>DC-10,000 Hz</td>
<td>DC-7000 Hz</td>
<td>DC-3500 Hz</td>
<td>DC-3000 Hz</td>
</tr>
<tr>
<td>Cooling</td>
<td>8 scfm @3&quot; H2O</td>
<td>13 scfm @3&quot; H2O</td>
<td>26 scfm @12&quot; H2O</td>
<td>80 scfm @30&quot; H2O</td>
<td>80 scfm @30&quot; H2O</td>
</tr>
<tr>
<td>Coil Current &amp; Resistance</td>
<td>4 amps; 2.7 ohms</td>
<td>8.5 amps; 1.3 ohms</td>
<td>8 amps; 2.6 ohms</td>
<td>40 amps; 0.21 ohms</td>
<td>38 amps; 0.5 ohms</td>
</tr>
<tr>
<td>Suspension Stiffness</td>
<td>75 lbs/in</td>
<td>75 lbs/in</td>
<td>75 lbs/in</td>
<td>40 lbs/in</td>
<td>40 lbs/in</td>
</tr>
<tr>
<td>Stray Field - 1&quot; over center</td>
<td>&lt; 20 gauss</td>
<td>&lt; 7 gauss</td>
<td>&lt; 8 gauss</td>
<td>&lt; 40 gauss</td>
<td>&lt; 20 gauss</td>
</tr>
<tr>
<td>DC Centering</td>
<td>Drives 25 lbs to 1&quot; Pk-Pk with 20% force derating</td>
<td>Drives 50 lbs to 1&quot; Pk-Pk with 20% force derating</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## MECHANICAL SPECIFICATIONS

### Mounting Surface Bolt Holes
- **PM25A**: Six 10-32 threaded holes at 60° on 2.25" bolt circle (+ center)
- **PM50A**: Six 10-32 threaded holes at 60° on 2.25" bolt circle (+ center)
- **PM100A**: Six 10-32 threaded holes at 60° on 2.25" bolt circle (+ center)
- **PM250HP**: Six ¼x28 threaded holes at 60° on 3.50" bolt circle (+ center)
- **PM500HP**: Six ¼x28 threaded holes at 60° on 3.50" bolt circle (+ center)

### Moving Element Diam.
- **PM25A**: 2.70"  
- **PM50A**: 2.70"  
- **PM100A**: 2.70"  
- **PM250HP**: 4.10"  
- **PM500HP**: 4.10"

### Base Footprint
- **PM25A**: 10" x 7.5"  
- **PM50A**: 10" x 7.5"  
- **PM100A**: 10" x 7.5"  
- **PM250HP**: 18" x 14"  
- **PM500HP**: 18" x 14"

### Body Diameter
- **PM25A**: 7"  
- **PM50A**: 7"  
- **PM100A**: 7"  
- **PM250HP**: 14¼"  
- **PM500HP**: 14¼"

### Height (to table top)
- **PM25A**: 7½"  
- **PM50A**: 9½"  
- **PM100A**: 13½"  
- **PM250HP**: 17¼"  
- **PM500HP**: 20¼"

### Moving Element Axial Resonance
- **PM25A**: 8200 Hz  
- **PM50A**: 8000 Hz  
- **PM100A**: 6000 Hz  
- **PM250HP**: 3000 Hz  
- **PM500HP**: 2800 Hz

### Weight, Moving Element
- **PM25A**: 0.50 pounds  
- **PM50A**: 0.62 pounds  
- **PM100A**: 0.94 pounds  
- **PM250HP**: 2.6 pounds  
- **PM500HP**: 5.0 pounds

### Weight, Exciter
- **PM25A**: 38 pounds  
- **PM50A**: 55 pounds  
- **PM100A**: 80 pounds  
- **PM250HP**: 250 pounds  
- **PM500HP**: 420 pounds

### Weight, Base
- **PM25A**: 7 pounds  
- **PM50A**: 11 pounds  
- **PM100A**: 15 pounds  
- **PM250HP**: 25 pounds  
- **PM500HP**: 25 pounds

### Trunnion Base
- **PM25A**: optional  
- **PM50A**: optional  
- **PM100A**: optional  
- **PM250HP**: standard  
- **PM500HP**: Standard

### Cooling Connections
- **PM25A**: 0.5" NPT  
- **PM50A**: 0.5" NPT  
- **PM100A**: 0.5" NPT  
- **PM250HP**: 2.0" port  
- **PM500HP**: 2.0" port

### DIMENSIONS

#### PM SHAKERS
- **25A / 50A / 100A**
- **250HP / 500HP**

### Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PM25A</strong></td>
<td>10&quot;</td>
<td>5&quot;</td>
<td>5 ½&quot;</td>
<td>2.25&quot;</td>
<td>7-3/8&quot;</td>
<td>7-7/32&quot;</td>
<td>7-15/32&quot;</td>
<td>10-32&quot;</td>
<td>½ NPT connection for cooling air 8 CFM at 3&quot; H2O</td>
</tr>
<tr>
<td><strong>PM50A</strong></td>
<td>10&quot;</td>
<td>5&quot;</td>
<td>7 ½&quot;</td>
<td>2.25&quot;</td>
<td>7-3/8&quot;</td>
<td>9-7/32&quot;</td>
<td>9-15/32&quot;</td>
<td>10-32&quot;</td>
<td>½ NPT connection for cooling air 13 CFM at 4&quot; H2O</td>
</tr>
<tr>
<td><strong>PM100A</strong></td>
<td>10&quot;</td>
<td>5&quot;</td>
<td>7 ½&quot;</td>
<td>2.25&quot;</td>
<td>7-3/8&quot;</td>
<td>13-7/32&quot;</td>
<td>13-15/32&quot;</td>
<td>10-32&quot;</td>
<td>½ NPT connection for cooling air 26 CFM at 12&quot; H2O</td>
</tr>
<tr>
<td><strong>PM250HP</strong></td>
<td>18&quot;</td>
<td>9&quot;</td>
<td>14&quot;</td>
<td>3.50&quot;</td>
<td>14 1/4&quot;</td>
<td>16-5/8&quot;</td>
<td>17-3/16&quot;</td>
<td>½ - 28&quot;</td>
<td>2&quot; connection for cooling air 80 CFM</td>
</tr>
<tr>
<td><strong>PM500HP</strong></td>
<td>18&quot;</td>
<td>9&quot;</td>
<td>14&quot;</td>
<td>3.50&quot;</td>
<td>14 1/4&quot;</td>
<td>19-3/4&quot;</td>
<td>20-5/16&quot;</td>
<td>½ - 28&quot;</td>
<td>2&quot; connection for cooling air 80 CFM</td>
</tr>
</tbody>
</table>

(Ratings & Specifications subject to change without notice 05/97)