Multilayer stack actuators
The actuators are easily scaled, thanks to the stacked construction, flexible adaptation of the travel range is possible. The round cross section ensures easy integration.
UHV-compatible to $10^{-9}$ hPa. The actuators do not outgas and can be baked out at high temperatures.

PICMA® piezo linear actuators
Low operating voltage -20 to 100 V. Ceramic insulation. High reliability, long lifetime.

Possible modifications
Different heights, fast mounting according to customer requirements. Variety of shapes. Precision-ground end plates for reduced tolerances Spherical tips.

Fields of application
Industry and research. For laser tuning, microdispensing, life sciences.
Specifications

<table>
<thead>
<tr>
<th></th>
<th>P-088.721</th>
<th>P-088.741</th>
<th>P-088.781</th>
<th>Unit</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions OD × L</td>
<td>16 × 16</td>
<td>16 × 36</td>
<td>16 × 77</td>
<td>mm</td>
<td></td>
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<tr>
<td>Nominal travel range</td>
<td>14</td>
<td>32</td>
<td>70</td>
<td>µm</td>
<td>-10 % / +20 %</td>
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<tr>
<td>Blocking force</td>
<td>7500</td>
<td>7500</td>
<td>7500</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Stiffness</td>
<td>535</td>
<td>235</td>
<td>105</td>
<td>N/µm</td>
<td></td>
</tr>
<tr>
<td>Electrical capacitance</td>
<td>13</td>
<td>30</td>
<td>68</td>
<td>µF</td>
<td>±20 %</td>
</tr>
<tr>
<td>Resonant frequency</td>
<td>68</td>
<td>35</td>
<td>17</td>
<td>kHz</td>
<td>±20 %</td>
</tr>
</tbody>
</table>

Nominal travel range, blocking force and stiffness at 0 to 100 V.
Axial resonant frequency: Measured at 1 Vpp, unloaded, unclamped. The value is halved for unilateral clamping.
Electrical capacitance: Measured at 1 Vpp, 1 kHz, RT.
Piezo ceramic type: PIC252, ceramic end surfaces made of Al₂O₃.
Standard connections: PTFE-insulated stranded wires, UHV compatible, 100 mm, AWG 28, Ø 0.69 mm. For optional solderable contacts without stranded wires, change the last digit of the product number to 0 (e.g., P-088.720).
Operating voltage range: -20 to 100 V.
Operating temperature range: -40 to 150 °C.
Recommended preload for dynamic operation: 15 MPa.
Maximum preload for constant force: 30 MPa.
Ask about custom designs!

Drawings / images

P-088 PICMA® Stack multilayer piezo actuator, dimensions in mm. Length L, see data table.
Ordering Information

Actuators with PTFE-insulated stranded wires

P-088.721
PICMA® Stack multilayer piezo actuator, round cross section, 14 µm travel range, OD 16 mm × L 16 mm, stranded wires

P-088.741
PICMA® Stack multilayer piezo actuator, round cross section, 32 µm travel range, OD 16 mm × L 36 mm, stranded wires

P-088.781
PICMA® Stack multilayer piezo actuator, round cross section, 70 µm travel range, OD 16 mm × L 77 mm, stranded wires

Actuators with solderable contacts

P-088.720
PICMA® Stack multilayer piezo actuator, round cross section, 14 µm travel range, OD 16 mm × L 16 mm

P-088.740
PICMA® Stack multilayer piezo actuator, round cross section, 32 µm travel range, OD 16 mm × L 36 mm

P-088.780
PICMA® Stack multilayer piezo actuator, round cross section, 70 µm travel range, OD 16 mm × L 77 mm

Ask about custom designs!