The designs of the Moving Magnet Voice Coil Actuators have been proven in various high-end industrial equipment. These actuators can be applied frequently where high speed, high force density and a high reliability/lifetime are required. These actuators are also suitable for application in vacuum environments.

The working principle of these moving magnet voice coil actuators is that the moving part is a magnet. The coils are attached to the static part of the actuator which enables a good thermal path. A good thermal path is beneficial for high force densities. The absence of moving wires leads to a very high reliability and lifetime and does not limit the achievable accelerations and speeds.

Left: static part consisting of coil and housing. Right: moving part on which driving force acts.

**Key Features:**
- High reliability and lifetime due to the absence of moving wires.
- Compact design
- No heat load on the moving part
- Suitable for vacuum environments
- High peak and continuous force possible
- Simple control through optional integrated sensor possible. (MMS-series contact factory)
- Very high acceleration.
- Optional: leaf springs, air bearings, low-cost slide bearings, hall sensor, linear encoder, see model MMA-6033-ENC-LS

**Application Areas:**
- Production automation.
- Cryogenic pumps.
- Fast-tool applications.

**Technical Data**

<table>
<thead>
<tr>
<th>Parameter [unit]</th>
<th>Note</th>
<th>MMA Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>OD [mm]</td>
<td>1)</td>
<td>159</td>
</tr>
<tr>
<td>Height [mm]</td>
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<td>55</td>
</tr>
<tr>
<td>Stroke [mm]</td>
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<td>F continuous [N] middle position</td>
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<td>F peak [N]</td>
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<tr>
<td>Moving mass [kg]</td>
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</table>

Note:

1) Standard range. Other dimensions and force ranges available upon request.
2) Continuous force at 25°C ambient and 155 °C coil temperature
3) Peak force for 10 sec. at 25°C ambient and 155 °C coil temperature

MI-MMA series are patented

Mechanical drawings are available upon request. Please contact info@magneticinnovations.com