## Spur Gearheads

For combination with:
DC-Micromotors: MD1219

### Series MD12B

<table>
<thead>
<tr>
<th>Housing material</th>
<th>MD12B</th>
<th>zinc die-cast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geartrain material</td>
<td></td>
<td>metal</td>
</tr>
</tbody>
</table>

**Recommended max. input speed for:**
- continuous operation: 5,000 rpm
- Backlash, at no-load: ≤ 3°
- Bearings on output shaft: sintered bronze sleeves

**Shaft load, max.**
- radial (10 mm from mounting face): ≤ 1 N
- axial: ≤ 2 N
- Shaft press fit force, max.: ≤ 0.07 mm
- Shaft play (on bearing output):
  - radial: ≤ 0.25 mm
  - axial: ≤ 10 to + 60 °C

**Operating temperature range**
- −10 to +60 °C

### Specifications

<table>
<thead>
<tr>
<th>Reduction ratio (nominal)</th>
<th>Number of gear stages</th>
<th>Weight without motor (g)</th>
<th>Length without motor (mm)</th>
<th>Output torque (continuous operation) M max. (mNm)</th>
<th>Direction of rotation (reversible)</th>
<th>Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5:1</td>
<td>2</td>
<td>4.9</td>
<td>12.8</td>
<td>11.8</td>
<td>CW</td>
<td>81</td>
</tr>
<tr>
<td>16:1</td>
<td>3</td>
<td>5.0</td>
<td>12.8</td>
<td>11.8</td>
<td>CCW</td>
<td>73</td>
</tr>
<tr>
<td>31:1</td>
<td>4</td>
<td>5.2</td>
<td>12.8</td>
<td>14.7</td>
<td>CW</td>
<td>66</td>
</tr>
<tr>
<td>52:1</td>
<td>4</td>
<td>5.2</td>
<td>12.8</td>
<td>24.5</td>
<td>CCW</td>
<td>59</td>
</tr>
<tr>
<td>100:1</td>
<td>5</td>
<td>5.4</td>
<td>12.8</td>
<td>24.5</td>
<td>CCW</td>
<td>59</td>
</tr>
<tr>
<td>144:1</td>
<td>5</td>
<td>5.4</td>
<td>12.8</td>
<td>73.5</td>
<td>CCW</td>
<td>59</td>
</tr>
<tr>
<td>209:1</td>
<td>5</td>
<td>5.4</td>
<td>12.8</td>
<td>73.5</td>
<td>CCW</td>
<td>59</td>
</tr>
</tbody>
</table>

**Weight without motor includes pinion and screws.**

**Spur Gearheads**

**Housing material:** zinc die-cast

**Geartrain material:** metal

**Recommended max. input speed for:**
- continuous operation: 5,000 rpm
- Backlash, at no-load: ≤ 3°
- Bearings on output shaft: sintered bronze sleeves

**Shaft load, max.:**
- radial (10 mm from mounting face): ≤ 1 N
- axial: ≤ 2 N
- Shaft press fit force, max.: ≤ 0.07 mm
- Shaft play (on bearing output):
  - radial: ≤ 0.25 mm
  - axial: ≤ 10 to +60 °C

**Operating temperature range:** −10 to +60 °C

**Efficiency:**
- 7.5:1: 81%
- 16:1: 73%
- 31:1: 66%
- 52:1: 59%
- 100:1: 59%
- 144:1: 59%
- 209:1: 59%

---

**Orientation with respect to motor terminals not defined**

**Front View**

2X M1.7
1.2 deep max

8.5±0.2
30°

**Rear View**

2
18.5
12.8
9.5
140±10
31.3

2X M1.7
1.2 deep max

φ10.8
(φ12±0.1)

φ5±0.01
φ2±0.005
φ1.5±0.1

φ9±0.2

Specifications subject to change without notice

www.micro-drives.com

Edition Dec. 10 2010
### Series MD12B

<table>
<thead>
<tr>
<th>Part number</th>
<th>Ratio</th>
<th>Description</th>
<th>Stocked Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD12B 7:5:1</td>
<td>7:5:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
<tr>
<td>MD12B 15:1</td>
<td>15:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
<tr>
<td>MD12B 31:1</td>
<td>31:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
<tr>
<td>MD12B 52:1</td>
<td>52:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
<tr>
<td>MD12B 72:1</td>
<td>72:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
<tr>
<td>MD12B 100:1</td>
<td>100:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
<tr>
<td>MD12B 144:1</td>
<td>144:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
<tr>
<td>MD12B 209:1</td>
<td>209:1</td>
<td>Sintered bronze sleeve bearings</td>
<td>X</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice

www.micro-drives.com

Edition Dec. 10 2010