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**FEATURES & BENEFITS**

- High Acceleration, Speed & Rigidity
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- Low Friction, Noise & Vibration
- Strong yet Lightweight & Corrosion Resistant
- Multiple Accessories & Options

**KEY FEATURES**

1. Anodized aluminum housing and carriage
2. Steel reinforced belt capable of handling high loads
3. Ball guided rail system
4. Adjustable belt tension
5. T-slots for mounting and sensor mounting
6. Multiple drive configurations

**NOTE:**

1. Moment arms for calculating moments should be measured from the centerline of the extrusion.
2. Limit switches must be used in order to prevent the carriage from contacting the actuator end blocks, resulting in damage.
3. 25 mm of over-travel has been added to the body length in each direction to allow for carriage over-travel. 25 mm is the recommended over-travel; although a minimum of 10 mm may be specified for special applications.

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Size</th>
<th>mm</th>
<th>42 x 42</th>
<th>in</th>
<th>1.65 x 1.65</th>
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<tbody>
<tr>
<td>Max. Speed</td>
<td>m/s</td>
<td>3</td>
<td>in/s</td>
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<td>Max. Stroke Length</td>
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<td>mm</td>
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<tr>
<td>Pulley Drive Ratio</td>
<td>mm</td>
<td>90</td>
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<tr>
<td>Number of Pulley Teeth</td>
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<td>18</td>
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<td></td>
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<tr>
<td>Max RPM</td>
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<td>2,000</td>
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<td></td>
</tr>
<tr>
<td>Base Weight</td>
<td>Kg</td>
<td>1.6</td>
<td>lb</td>
<td>3.53</td>
</tr>
<tr>
<td>Add for 100 mm or 3.94 in of Stroke</td>
<td>Kg</td>
<td>0.25</td>
<td>lb</td>
<td>0.55</td>
</tr>
<tr>
<td>Max. Load Fx</td>
<td>N</td>
<td>460</td>
<td>lbf</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>1,560</td>
<td>lbf</td>
<td>351</td>
</tr>
<tr>
<td>Max. Moments Mx</td>
<td>Nm</td>
<td>55</td>
<td>lbf-in</td>
<td>487</td>
</tr>
<tr>
<td></td>
<td>Nm</td>
<td>55</td>
<td>lbf-in</td>
<td>487</td>
</tr>
<tr>
<td>Moment of Inertia Ix</td>
<td>cm^4</td>
<td>12</td>
<td>in^4</td>
<td>0.29</td>
</tr>
<tr>
<td></td>
<td>cm^4</td>
<td>15</td>
<td>in^4</td>
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<tr>
<td>Max. Radial Load on Input Shaft</td>
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<td>220</td>
<td>lbf</td>
<td>49.5</td>
</tr>
<tr>
<td>No Load Torque</td>
<td>Nm</td>
<td>0.8</td>
<td>lbf-in</td>
<td>7.1</td>
</tr>
<tr>
<td>Repeatability</td>
<td></td>
<td>±0.05 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For combined loads, the combined loading cannot exceed the following formula.

\[
F = \frac{Fy}{Fy} + \frac{Fz}{Fz} + \frac{Mx}{Mx} + \frac{My}{My} + \frac{Mz}{Mz} = 1
\]
DIMENSIONAL INFORMATION

**DIMENSIONAL INFORMATION**

**DETAIL A**

**SHAFT VERSIONS**
- FEMALE - Ø10 mm
- MALE - Ø12 mm

**MALE SHAFT TYPE OPTIONS:**
- As viewed from drive end with carriage on top
  - H7 +0.018/-0 Dia X 18 mm Length
  - Optional Keyway accepts UNI6604 4x4x14 Keystock with tolerance H9 (+0/-0.030)
  - A1 - Square nut M5 DIN526 already included

**Detail B**
- 2 PLCS.
- A
- B
- C
- D

**Detail C**
- 2 PLCS.

**Detail D**
- 2 PLCS.

**ACCESSORIES** (Available upon request.)

**End Cap Mounting Bracket**
- MTB042A-A0AA001
- MTB042A-A0AA001-Kit

**Mid Section Mounting Bracket**
- MTB042A-A0AA002
- MTB042A-A0AA002-Kit

**Sq Nut & T-Nut Accessories for Details B, C & D**
- 6100504 Sq Nut M5 X 0.8

**For Detail C**
- 6100443 T-Nut M5 X 0.8

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MTB</th>
<th>042</th>
<th>X</th>
<th>XXXX</th>
<th>XX</th>
<th>XX</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Series</strong></td>
<td><strong>Size (mm) (Base x Height)</strong></td>
<td><strong>System Type</strong></td>
<td><strong>Body Length</strong></td>
<td><strong>Shaft Diameter</strong></td>
<td><strong>Shaft Type</strong></td>
<td><strong># Carriage</strong></td>
<td><strong>Guidance Type</strong></td>
</tr>
<tr>
<td>MTB</td>
<td>Belt Driven Unit</td>
<td>D = Driven N = Undriven</td>
<td>2,000 mm (max.)</td>
<td>Must include 50 mm over-travel For lengths greater than 1,500 mm, consult factory</td>
<td>00 = No shaft (undriven system) 10 = 10 mm 12 = 12 mm</td>
<td>F = Female hollow (10) L = Left Male (12) R = Right Male (12) B = Both Male (12) 0 = No shaft (undriven system) LW = Left Male w/o Keyway RW = Right Male w/o Keyway BW = Both Male w/o Keyway</td>
<td>1 Standard 2 3 4</td>
</tr>
</tbody>
</table>

* No belt or motor mount, contact manufacturer for "N" version.
** Contact manufacturer for other options and availability. Profile rail will be segmented for lengths over 1 m.

**Common Drive Combinations**
- 12B - 40% 12F - 20% 12R - 20% 12L - 10% 10F - 10%

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For technical & application information call 1-888-962-8979.

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LITMTB042-001 v2 (04-2019)
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6. Multiple drive configurations

**NOTE:**
1. Moment arms for calculating moments should be measured from the centerline of the extrusion.
2. Limit switches must be used in order to prevent the carriage from contacting the actuator end blocks, resulting in damage.
3. 25 mm of over-travel has been added to the body length in each direction to allow for carriage over-travel. 25 mm is the recommended over-travel; although a minimum of 10 mm may be specified for special applications.

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Size</th>
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<th>55 x 55 in</th>
<th>2.17 x 2.17</th>
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<tbody>
<tr>
<td>Max. Speed</td>
<td>m/s</td>
<td>3</td>
<td>118.11</td>
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<tr>
<td>Max. Stroke Length</td>
<td>mm</td>
<td>6,000</td>
<td>236.22</td>
</tr>
<tr>
<td>Min. Stroke Length</td>
<td>mm</td>
<td>100</td>
<td>3.94</td>
</tr>
<tr>
<td>Pulley Drive Ratio</td>
<td>mm</td>
<td>120</td>
<td>4.72</td>
</tr>
<tr>
<td>Number of Pulley Teeth</td>
<td></td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Max RPM</td>
<td></td>
<td>1,500</td>
<td></td>
</tr>
<tr>
<td>Base Weight</td>
<td>Kg</td>
<td>4.8</td>
<td>10.58</td>
</tr>
<tr>
<td>Add for 100 mm or 3.94 in of Stroke Kg</td>
<td>0.37</td>
<td>lb</td>
<td>0.816</td>
</tr>
<tr>
<td>Max. Load</td>
<td>N</td>
<td>820</td>
<td>184</td>
</tr>
<tr>
<td></td>
<td>Fy</td>
<td>1,850</td>
<td>416</td>
</tr>
<tr>
<td></td>
<td>Fz</td>
<td>1,850</td>
<td>416</td>
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<tr>
<td>Max. Moments</td>
<td>Nm</td>
<td>25</td>
<td>221</td>
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<tr>
<td></td>
<td>Mx</td>
<td>120</td>
<td>1,062</td>
</tr>
<tr>
<td></td>
<td>My</td>
<td>120</td>
<td>1,062</td>
</tr>
<tr>
<td>Moment of Inertia</td>
<td></td>
<td>36</td>
<td>0.86</td>
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<tr>
<td></td>
<td>Iy</td>
<td>45</td>
<td>1.08</td>
</tr>
<tr>
<td>Max. Radial Load on Input Shaft</td>
<td>N</td>
<td>300</td>
<td>67.4</td>
</tr>
<tr>
<td>No Load Torque</td>
<td>Nm</td>
<td>1</td>
<td>8.9</td>
</tr>
<tr>
<td>Repeatability</td>
<td></td>
<td>+−0.05 mm</td>
<td></td>
</tr>
</tbody>
</table>

For combined loads, the combined loading cannot exceed the following formula.

\[
\begin{bmatrix}
    F_y \\
    F_z \\
    M_x \\
    M_y \\
    M_z
\end{bmatrix} \leq 1
\]
DIMENSIONAL INFORMATION

**DETAIL A**

- SHAFT VERSIONS
  - FEMALE - Ø 12 mm - 14 mm
  - MALE - Ø 16 mm

**MALE SHAFT TYPE OPTIONS:**
- As viewed from drive end with carriage on top
  - 16H7 +0.018/-0 Dia x 18.5 mm Length
  - Optional Keyway accepts UNI6604 5x5x20 Keystock with tolerance H9 (+0/-0.030)

**Female Bore & Keyway Width**
- 12H7 -0/+0.018 Dia Bore with 4N9 -0.030/+0 Keyway Width
- 14H7 -0/+0.018 Dia Bore with 5N9 -0.030/+0 Keyway Width

**DIMENSIONAL INFORMATION**

**ACCESSORIES** (Available upon request.)

- End Cap Mounting Bracket
  - MTB055A-A1A001
  - MTB055A-A1A001-Kit

- Mid Section Mounting Bracket
  - MTB055A-A1AA002
  - MTB055A-A1AA002-Kit

- Sq Nut & T-Nut Accessories for Detail B
  - 6100445 SQ NUT M5 X 0.8

- Sq Nut & T-Nut Accessories for Detail C
  - 6100443 T-NUT M5 X 0.8

**ORDERING INFORMATION**

Example: MTB-055D-1000-12F12

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<tr>
<th>MTB</th>
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<th>XXXX</th>
<th>X</th>
<th>X</th>
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<td>Size (mm) (Base x Height)</td>
<td>System Type</td>
<td>Body Length**</td>
<td>Shaft Diameter</td>
<td>Shaft Type</td>
</tr>
<tr>
<td>MTB Belt Driven Unit</td>
<td>55 mm x 55 mm</td>
<td>D = Driven N = Undriven</td>
<td>6,000 mm (max.) Must include 50 mm over-travel For lengths greater than 1,500 mm consult factory</td>
<td>00 = No shaft (undriven system)</td>
<td>F = Female hollow (12,14)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 = 12 mm</td>
<td>L = Left Male (16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14 = 14 mm</td>
<td>R = Right Male (16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16 = 16 mm</td>
<td>B = Both Male (16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>O = No shaft (undriven system)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LW = Left Male w/o Keyway</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RW = Right Male w/o Keyway</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>BW = Both Male w/o Keyway</td>
</tr>
</tbody>
</table>

**Common Drive Combinations**
- 12F - 40%
- 14F - 20%
- 16L - 10%
- 16B - 20%
- 16R - 10%

* No belt or motor mount, contact manufacturer for "N" version.
** Contact manufacturer for other options and availability. Profile rail will be segmented for lengths over 1 m.

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---

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Size</th>
<th>mm</th>
<th>80 x 80</th>
<th>in 3.15 x 3.15</th>
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</thead>
<tbody>
<tr>
<td>Max. Speed</td>
<td>m/s</td>
<td>3</td>
<td>118.11</td>
</tr>
<tr>
<td>Max. Stroke Length</td>
<td>mm</td>
<td>6,000</td>
<td>236.22</td>
</tr>
<tr>
<td>Min. Stroke Length</td>
<td>mm</td>
<td>100</td>
<td>3.94</td>
</tr>
<tr>
<td>Pulley Drive Ratio</td>
<td>mm</td>
<td>160</td>
<td>6.30</td>
</tr>
<tr>
<td>Number of Pulley Teeth</td>
<td></td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Max RPM</td>
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<td>1,125</td>
<td></td>
</tr>
<tr>
<td>Base Weight</td>
<td>Kg</td>
<td>6.0</td>
<td>13.23</td>
</tr>
<tr>
<td>Add for 100 mm or 3.94 in of Stroke</td>
<td>Kg</td>
<td>0.90</td>
<td>1.98</td>
</tr>
<tr>
<td>Max Load Fx</td>
<td>N</td>
<td>1,650</td>
<td>370.93</td>
</tr>
<tr>
<td>Fy</td>
<td>N</td>
<td>4,500</td>
<td>1011.64</td>
</tr>
<tr>
<td>Fz</td>
<td>N</td>
<td>4,500</td>
<td>1011.64</td>
</tr>
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<td>Nm</td>
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<td>Mz</td>
<td>Nm</td>
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<td>3,983</td>
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<td>Moment of Inertia Ix</td>
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<td>4.39</td>
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<tr>
<td>Iy</td>
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<td>5.42</td>
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<td>Max. Radial Load on Input Shaft</td>
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<td>67.4</td>
</tr>
<tr>
<td>No Load Torque</td>
<td>Nm</td>
<td>1.1</td>
<td>9.7</td>
</tr>
<tr>
<td>Repeatability</td>
<td></td>
<td>±0.05 mm</td>
<td></td>
</tr>
</tbody>
</table>

For combined loads, the combined loading cannot exceed the following formula.

**For combined loads:**

\[
F_x \leq F_{x_{\max}} + F_y + F_z
\]

\[
M_x \leq M_{x_{\max}} + M_y + M_z
\]
**DIMENSIONAL INFORMATION**

![Diagram of linear motion components]

**ACCESSORIES** (Available upon request.)

**End Cap Mounting Bracket**
MTB080A-A2AA001
MTB080A-A2AA001-Kit

MTB080A-A2AA001-Kit Includes:
(2 PCS) MTB080A-A2AA001 Bracket
(4 PCS) M6 x 16MM SHCS
(Secondary Support - Do Not Use Alone)

**Mid Section Mounting Bracket**
MTB080A-A2AA002
MTB080A-A2AA002-Kit

MTB080A-A2AA002-Kit Includes:
(2 PCS) MTB080A-A2AA002 Bracket
(4 PCS) M8 X 16MM SHCS
(4 PCS) M8 T-NUT

**Sq Nut & T-Nut Accessories for Detail B**
6100649 SQ NUT M6 X 1.0
For Detail C
6100436 T-NUT M8 X 1.25

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MTB</th>
<th>080</th>
<th>X</th>
<th>XXXX</th>
<th></th>
<th>XX</th>
<th>XX</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Size (mm)</td>
<td>System Type*</td>
<td>Body Length**</td>
<td>Shaft Diameter</td>
<td>Shaft Type</td>
<td># Carriage**</td>
<td>Guidance Type</td>
<td></td>
</tr>
<tr>
<td>MTB Belt Driven Unit</td>
<td>80 mm x 80 mm</td>
<td>D = Driven N = Undriven</td>
<td>6,000 mm (max.) Must include 50 mm over-travel For lengths greater than 1,500 mm consult factory</td>
<td>00 = No shaft (undriven system) 16 = 16 mm 19 = 19 mm</td>
<td>F = Female hollow (16, 19) L = Left Male (19) R = Right Male (19) B = Both Male (19) 0 = No shaft (undriven system) LW = Left Male w/o Keyway RW = Right Male w/o Keyway BW = Both Male w/o Keyway</td>
<td>1 Standard 2 = Profile rail w/2 runner blocks per carriage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* No belt or motor mount, contact manufacturer for "N" version.

**Contact manufacturer for other options and availability. Profile rail will be segmented for lengths over 1 m.**

**Common Drive Combinations**
19F - 50% 19L - 20% 19R - 10% 19B - 10% 16F - 10%

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