Robotic & Linear Positioning Actuators

The following products suit many applications that include linear positioning, robotic applications, pick and place mechanisms, and XYZ axis gantry systems.

- High Strength Belt or Ballscrew Driven Linear Actuators
- Belt Driven Linear Actuator
- Ballscrew Driven Linear Actuator
- Built-in Linear Ball Rail Guide System
- High Precision Reinforced Polyurethane Belt Drive
- Ballscrew and Leadscrew Driven Actuators
- Options that include built-in low backlash planetary gear reducers, belt reduction drive systems, and custom built adapters.
- Accessories

High Strength Belt or Ballscrew Driven Linear Actuators

Features

- Linear velocities over 3M/sec
- Heavy duty anodized aluminum extrusion
- Low friction bearing guide system
- Clamps for rigid mounting of actuators
- Optional belt reduction drives
- Optional linear scale feedback for high positional accuracy
- Built-in single point lubrication for guide system
- Lengths to 12 meters
- Mechanical and proximity switch ready
- Assembled to the customer’s requirements
- Optional built-in low backlash planetary gear reducer
- Adapter plates available for easy machine assembly
- Complete systems are available.
**Belt Driven Linear Actuator**

**Features**
- High thrust capacities
- Belt acts as cover
- Highly repeatable positioning
- Ideal for high speed applications

**Ballscrew Driven Linear Actuator**

**Features**
- Precision rolled ballscrews
- Optional ground ballscrews or threadscrews
- Bellows cover to protect screw and guide system
- High accuracy applications
- High thrust capacity

**Built-in Linear Ball Rail Guide System**

**Features**
- Smooth operation with high stiffness and excellent moment capacity
- Low friction
- Supports high loads in most mounting configurations

**High Precision Re-inforced Polyurethane Belt Drive**

**Features**
- New arc-power design belt
- Reduced noise
- Zero backlash meshing of belts and pulleys
- Less vibration
- Self tracking
- Increased thrust power
- Improved linear repeatability
Ballscrew and Leadscrew Driven Actuators

Features

- Precision rolled and ground ballscrews are available in 5, 10, 20, and 25 mm leads
- ACME leadscrews can be provided at lower cost for less demanding applications
- Several ball nut options for low or zero backlash requirements

Options

Built-in Low Backlash Planetary Gear Reducers

- No interface adapters required
- No shaft couplings
- Reducers can be adapted to most any motor

Belt Reduction Drive Systems

- Space saving belt drive motor to actuator mounting
- Adapts to your motor dimensions
- Available with reduction ratios up to 3:1

Custom Built Adapters

- Adapters for motor to actuator mounting
- Can be supplied with high-torsional servo couplings


**Accessories**

- T-slot compatible w/ Bosch aluminum extrusion hardware for mounting fasteners/connectors, electrical conduit, etc.
- Clamps are available for secure mounting of the actuators to machine frames
- Mechanical and proximity limit switches
- Linear scale feedback
- Custom length torque tubes for dual-axis gantry style applications
- Motor couplings
- Cable carriers
- Adapter plates for creating most any XYZ configuration.

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### Extrusion

<table>
<thead>
<tr>
<th>Model</th>
<th>Moment of Inertia</th>
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<td>Ix (cm^4)</td>
<td>Iy (cm^4)</td>
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<tr>
<td>B80</td>
<td>200</td>
<td>55</td>
</tr>
<tr>
<td>B110</td>
<td>270</td>
<td>120</td>
</tr>
</tbody>
</table>

**Notes:**
- Straightness 0.0125”/ft./length
- Twist ¼”/ft, 3” max./6m length

### Belt Drive

<table>
<thead>
<tr>
<th>Model</th>
<th>Lead Constant (mm/rev.)</th>
<th>Max. Input Torque (N-M)</th>
<th>Maximum Force N (lbs)</th>
<th>Elastic Limit N (lbs)</th>
<th>Type</th>
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<tbody>
<tr>
<td>B80</td>
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<td>7500 (1686)</td>
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<td>3750 (843)</td>
<td>7500 (1686)</td>
<td>BAT10</td>
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### Ballscrew

<table>
<thead>
<tr>
<th>Model</th>
<th>Lead Constant (mm/rev.)</th>
<th>Dynamic Load N (lbs)</th>
<th>Static Load N (lbs)</th>
<th>Dynamic Load Kg (lbs)</th>
<th>Static Load Kg (lbs)</th>
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<td>21200 (4770)</td>
<td>13400 (3010)</td>
<td>1519 (3350)</td>
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<td>539 (1188)</td>
<td>1039 (2290)</td>
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<td>20</td>
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<td></td>
<td>719 (1585)</td>
<td>1280 (2822)</td>
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<tr>
<td>S110</td>
<td>5</td>
<td>26000 (5850)</td>
<td>16600 (3730)</td>
<td>1078 (2377)</td>
<td>2594 (5720)</td>
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<tr>
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<td>3853 (8496)</td>
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<td>25</td>
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<td></td>
<td>804 (1773)</td>
<td>1624 (3581)</td>
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### Dynamic Moment Capacity

<table>
<thead>
<tr>
<th>Model</th>
<th>Carriage Length (mm)</th>
<th>Dynamic Load Capacity C (N)</th>
<th>ROLL M(_R) (NM)</th>
<th>PITCH M(_P) (NM)</th>
<th>YAW M(_Y) (NM)</th>
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<tbody>
<tr>
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Ordering Codes – Ballscrew Driven Linear Actuator:

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<th>Style</th>
<th>Module</th>
<th>Carriage</th>
<th>Stroke</th>
<th>Drive</th>
<th>Lead</th>
<th>Ratio</th>
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</table>

- Screw
  - 80
  - 110

- A
  - B

Number of Bearing Blocks

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<thead>
<tr>
<th>Carriage Type</th>
<th>Carriage</th>
<th>Length</th>
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<tr>
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<tr>
<td></td>
<td></td>
<td>305</td>
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</tbody>
</table>

Dimensions – Ballscrew Driven Linear Actuator:

**Dimensions & Ordering Information**

| Actuator | A | B | C | D | E | F | G | H | J | K | L | M | N | P | R | S | T | U | W | X | Y | Z |
| 580      | 60 | 12 | 100.3 | 31.8 | 109 | 50 | 66 | 10 | 73 | 48 | 11.5 | 25 | 16 | 89.8 | 40 | 18 | 85.5 | 55.29 | 220 | 34.24 | 156 | 190 | 260 |
| 5110     | 110 | 15 | 137 | 20.1 | 134 | 10 | 10 | 90 | 75 | 50 | 11.5 | 25 | 16 | 16.2 | 60 | 23 | 91.1 | 85.5 | 90.0 | 203.2 | 50.8 | 132 | 210 | 305 |

O.A.L = “J” + “N” + “L” + (G X D) + 38 + STROKE + CARRIAGE LENGTH
Ordering Codes – Belt Driven Actuator:

<table>
<thead>
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<th>Style</th>
<th>Module</th>
<th>Carriage</th>
<th>Stroke</th>
<th>Drive</th>
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<th>Ratio</th>
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Belt 80

Number of Bearing Blocks

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<th>Carriage</th>
<th>Length</th>
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<td>210</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>B80</td>
<td>305</td>
</tr>
</tbody>
</table>

Dimensions – Belt Driven Actuator:

- **4-10mm SLOTS**
- **2-8mm SLOTS**

| ACTUATOR | A | B | C | D | E | F | G | H | I | J | K | L | M | N | P | R | S | T | U | SINGLE | DOUBLE |
| B80      | 80| 19| 110| 111| 112| 31.75| 89.35| 43| 121| 82.5| 90.25| 9.5| MB | 8 | 88.88| 45| 13| 55| -     | 150    | 250    |
| B110     | 110| 20| 129| 150| 127| 38| 101.6| 57.5| 150| 114.3| 111.8| 9.3| MB | 12 | 88.9 | 60| 25| 85| 85   | 210    | 305    |

O.A.L = "D" + "T" + 30(mm) + STROKE(mm) + CARRIAGE LENGTH

NOTE: 8mm SLOTS IN CARRIAGE