Heavy Duty Commercial Grade Linear Actuator

New improved series 2 providing a low cost solution available from stock with AC or DC motors
‘IJ2’ SERIES INDUSTRIAL ACTUATOR

**STANDARD FEATURES**

* Economical  
* Quite operation  
* Up to 500kg static capacity  
* Self aligning rod end on acme screw versions  
* Weather resistant TENV motors (approx. IP54)  
* Screw lead 5.08” (both acme and ball screw)  
* Integral individually adjustable top and bottom limit switches for <= 610mm strokes (longer strokes require external limit switches)  
* Ball screw version has extra trunnion bearings  
* Ideal for high force, low duty cycle applications  
* Corrosion resistant  
* Fully repairable  
* Brushed DC PM motors  
* 4 pole AC motor (1400 rpm) c/with integral capacitor and thermal protection  
* Self-locking acme screw  
* Integral load holding brake for ball screw versions  
* Precision ball thrust bearings  
* 20:1 gear ratio  
* Customisation is readily achieved

**OPTIONAL FEATURES**

* Bellows boot rod protection  
* Optional screw thread leads  
* Stepper motors, servo motors, brushless motors  
* Silicone sealed motors (approx. IP65)  
* Potentiometer position feedback  
* Wide choice of optional screw leads  
* 2 pole AC motor (double speed, half thrust)  
* DC speed controllers, click [here](#) for separate catalogue.  
* Bronze acme screw nut  
* Rotatable rear clevis  
* Custom rod ends  
* IP65 cable gland  
* Custom strokes  
* Output shaft version (without lift screw)  
* Travelling nut design

**APPLICATIONS**

Agricultural equipment:  
Silage chutes, conveyors, transmission shifter, tractor accessory lifts, belt tensioner, spray broom operator, automatic gate opener, remote throttle controller.

Industrial Equipment:  
Belt speed and tension controls, flue and draft controls, table lifts, hatch covers, ventilator controls, valve actuators, window operators, clamping, damper controls, variable pump controllers, fluid coupling controllers.

Medical Equipment:  
Hospital beds, dental chairs, examination tables, invalid lifts.

Materials Handling:  
Container tippers, dumper chute doors, elevators, barrel lift, conveyor gate diverter.

Office Equipment:  
Computer terminal desks, chairs, drafting tables.
**IJ2 PERFORMANCE DATA**

**DC actuators:**
1) Rated max thrust = 350 kg
2) Travel rate = 10 mm/sec max.
3) Current draw =
   - 24Vdc ~ 6 amps max.
   - 12VDC ~ 12 amps max.
4) Rated duty cycle = 25%

**AC Actuators:**
1) Rated max thrust = 300 kg
2) Travel rate = 5 mm/sec max.
3) Current draw = 6 amps at rated load
4) Rated at 220VAC ±10%, 1 phase, 50Hz, 0.75A, 58 Watts
5) Rated duty cycle: On time 1 min., off time 9 min.
6) Motor run time must be considered with respect to stroke.
7) Supplied with 400mm long 4C cable

**Notes:**
1) Column strength capacity must be considered for compressive loads, especially for long stroke applications.
2) Load and rotor inertia may cause coasting when motor is turned off.
3) Do not use physical hard stops at end of travel as non-warrantable damage is possible. It is recommended to always use limit switches to stop travel at the required stroke.
4) Models with long strokes may exceed rated duty cycle within a single stroke.
HOW TO SET LIMIT SWITCHES

These procedures must be followed for warranty to apply.
Limit switch settings as supplied are not guaranteed unless requested at time of order.

Step 1: Power actuator to retract. Allow rod to rotate till retract limit turns motor off.
Step 2: Screw rod in/out by hand until the desire start point is reached. At least three full extending turns of rod from fully mechanical retracted position is recommended.
Step 3: Restrain rod from rotating for remaining steps. Do not use a screw driver or the like through the rod clevis as accidental over-travel may cause harm to operator. NOTE: Do not manually rotate the rod after this step.
Step 4: Power jog actuator to extend to desired stroke and stop by switching jog power supply off.
Step 5: Remove rear cover and loosen top cam. Rotate top cam until switch activates. Tighten cam locking screw. Warning, do not over-tighten as non-warrantable damage can result.
Step 6: Replace cover
Step 7: Test cycle actuator before installing and re-adjust if necessary.

CONNECTION DIAGRAMS

A) AC motors:

B) DC motors:
### Dimensions

<table>
<thead>
<tr>
<th>DC motor (12 or 24 volt)</th>
<th>AC motor (240 volt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ØA</td>
<td>64</td>
</tr>
<tr>
<td>B</td>
<td>118</td>
</tr>
</tbody>
</table>
| C | 338
388
438
538
698
848 |
| D | 215
265
315
415
575
725 |
| E | 18 |
| F | 32 |
| ØG | 37 |
| ØH | 45 |
| ØJ | 12.7 |
| K | 17 |
| L | 35 |
| Approx kg | 5
5.2
5.5
6
6.5
7 |
| C | 382
483
584
787
939
1244
1550 |
| D | 295
396
497
700
850
1155
1460 |
| E | 12.7 |
| F | 19 |
| ØG | 44.5 |
| ØH | 51 |
| ØJ | 13.1 |
| K | 14.3 |
| L | 25.4 |
| Approx kg | 7
7.5
8
9.5
10
13
15 |
| M (retracted) | 223.5
325.1
426.7
629.9
782.3
604.5
737.6 |

### Notes
- Adjusted limit switches beneath cover plate (only for <= 610 stroke)
- Spherical rod end (for acme lift screw version only)
- Available rotated 90° on request
- Cable entry with gland

---

**dc motor**

(12 or 24 volt)

**AC motor**

(240 volt)

**Acme lift screw**

**Ball lift screw**

---

**і22 Actuator Sales General Arrangement**

---

**Motion Technologies Pty Limited**

---

**GENERAL TOLERANCES**

- Unless otherwise noted:
  - Tolerance: ± 0.05mm
  - Decimal: ± 0.005mm

---

**CAD DWG - NO MANUAL REVISION.**
## Other Linear Actuators

<table>
<thead>
<tr>
<th>Details</th>
<th>Haydon Kerk</th>
<th>LEA3</th>
<th>U2</th>
<th>LinearMech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acme/Trapezoidal Screw</td>
<td>Std</td>
<td>Std</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>Ball Screw</td>
<td>N/A</td>
<td>N/A</td>
<td>POA</td>
<td>POA</td>
</tr>
<tr>
<td>Self locking</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Standard IEC motors available</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>DC motor volts</td>
<td>2 to 12</td>
<td>12, 24 (36 POA)</td>
<td>24 (others POA)</td>
<td>12 &amp; 24 (other POA)</td>
</tr>
<tr>
<td>240 VAC Single Phase</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>415 VAC Three Phase</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Servo or Stepper options</td>
<td>Stepper only</td>
<td>Stepper</td>
<td>Both</td>
<td>Both</td>
</tr>
<tr>
<td>Stroke (mm)</td>
<td>&lt; 500</td>
<td>&lt; 300</td>
<td>&lt; 1200</td>
<td>&lt; 800</td>
</tr>
<tr>
<td>Requires anti-rotation guide</td>
<td>Opt</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Built-in Limit Switches</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Opt</td>
</tr>
<tr>
<td>Adjustable Limit Switches</td>
<td>N</td>
<td>Y (factory set)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Compression Switch</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Base material</td>
<td>Aluminium</td>
<td>Anodised Aluminium</td>
<td>Aluminium</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Outer Tube material</td>
<td>N/A</td>
<td>Aluminium</td>
<td>Powder coated steel</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Rod Material</td>
<td>N/A</td>
<td>Anodised Aluminium</td>
<td>Powder coated steel</td>
<td>S/S</td>
</tr>
<tr>
<td>Double clevis mount</td>
<td>N/A</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Standard IP rating</td>
<td>IP44</td>
<td>IP65</td>
<td>IP44</td>
<td>DC: IP54 AC: IP55</td>
</tr>
<tr>
<td>Speeds (mm/sec)</td>
<td>up to 130</td>
<td>6 to 45</td>
<td>5 to 8</td>
<td>2 to 100</td>
</tr>
<tr>
<td>Local availability</td>
<td>indent</td>
<td>stocked</td>
<td>stocked</td>
<td>limited</td>
</tr>
<tr>
<td>Duty</td>
<td>light industrial</td>
<td>light economy</td>
<td>medium economy</td>
<td>medium commercial</td>
</tr>
</tbody>
</table>
## Other Linear Actuators

<table>
<thead>
<tr>
<th>Servomech</th>
<th>Cosmic</th>
<th>Pfaff ALS</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Servomech Image" /></td>
<td><img src="image2" alt="Cosmic Image" /></td>
<td><img src="image3" alt="Pfaff ALS Image" /></td>
<td><img src="image4" alt="Model Image" /></td>
</tr>
<tr>
<td><strong>Details</strong></td>
<td><strong>Details</strong></td>
<td><strong>Details</strong></td>
<td><strong>Details</strong></td>
</tr>
<tr>
<td><strong>Servomech</strong></td>
<td><strong>Cosmic</strong></td>
<td><strong>Pfaff ALS</strong></td>
<td><strong>Model</strong></td>
</tr>
<tr>
<td><strong>Std</strong></td>
<td><strong>Std</strong></td>
<td><strong>Y</strong></td>
<td><strong>Acme/Trapezoidal Screw</strong></td>
</tr>
<tr>
<td><strong>Std</strong></td>
<td><strong>Std</strong></td>
<td><strong>Y</strong></td>
<td><strong>Ball Screw</strong></td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>brake option</strong></td>
<td><strong>Y</strong></td>
<td><strong>Self locking</strong></td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td><strong>Y</strong></td>
<td><strong>Standard IEC motors available</strong></td>
</tr>
<tr>
<td><strong>12 &amp; 24 (other POA)</strong></td>
<td><strong>on application</strong></td>
<td><strong>on application</strong></td>
<td><strong>DC motor volts</strong></td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>Y</strong></td>
<td><strong>Y</strong></td>
<td><strong>240 VAC Single Phase</strong></td>
</tr>
<tr>
<td><strong>Both</strong></td>
<td><strong>Both</strong></td>
<td><strong>Both</strong></td>
<td><strong>415VAC Three Phase</strong></td>
</tr>
<tr>
<td><strong>&lt; 800</strong></td>
<td><strong>&lt; 2000</strong></td>
<td><strong>&lt; 2000</strong></td>
<td><strong>Servo or Stepper options</strong></td>
</tr>
<tr>
<td><strong>Optional</strong></td>
<td><strong>Optional</strong></td>
<td><strong>Optional</strong></td>
<td><strong>Stoke (mm)</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td><strong>N</strong></td>
<td><strong>Y</strong></td>
<td><strong>Requires anti-rotation guide</strong></td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>Y</strong></td>
<td><strong>Y</strong></td>
<td><strong>Built in Limit Switches</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td><strong>N</strong></td>
<td><strong>Y</strong></td>
<td><strong>Adjust Limit Switches</strong></td>
</tr>
<tr>
<td><strong>&lt; Size 50 Aluminium</strong></td>
<td><strong>C/Steel</strong></td>
<td><strong>C/Steel</strong></td>
<td><strong>Compression Switch</strong></td>
</tr>
<tr>
<td><strong>&gt; Size 50 Cast Iron</strong></td>
<td><strong>Steel</strong></td>
<td><strong>Steel</strong></td>
<td><strong>Base material</strong></td>
</tr>
<tr>
<td><strong>5/5</strong></td>
<td><strong>Chrome plated steel</strong></td>
<td><strong>Chrome plated steel</strong></td>
<td><strong>Outer Tube material</strong></td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>Y</strong></td>
<td><strong>Y</strong></td>
<td><strong>Outer Rod Material</strong></td>
</tr>
<tr>
<td><strong>DC: IP54</strong></td>
<td><strong>DC: N/A</strong></td>
<td><strong>up to IP66</strong></td>
<td><strong>Double clevis mount</strong></td>
</tr>
<tr>
<td><strong>AC: IP55</strong></td>
<td><strong>AC: IP55</strong></td>
<td><strong>up to 300</strong></td>
<td><strong>IP rating</strong></td>
</tr>
<tr>
<td><strong>2 to 200</strong></td>
<td><strong>up to 150</strong></td>
<td><strong>up to 300</strong></td>
<td><strong>Speeds (mm/sec)</strong></td>
</tr>
<tr>
<td><strong>limited</strong></td>
<td><strong>limited</strong></td>
<td><strong>limited</strong></td>
<td><strong>Local availability</strong></td>
</tr>
<tr>
<td><strong>medium industrial</strong></td>
<td><strong>heavy duty industrial</strong></td>
<td><strong>heavy duty industrial</strong></td>
<td><strong>Duty</strong></td>
</tr>
</tbody>
</table>
Other Motion Tech Products

Distributors for Australia & New Zealand
MOTION TECHNOLOGIES PTY LTD
24/22-30 Northumberland Road
Caringbah NSW 2229 Australia
Phone: (02) 9524 4782
Fax: (02) 9525 3878
sales@motiontech.com.au
www.motiontech.com.au
© 21/03/19