**RCP2-BA7/BA7U** ROBO Cylinder

**Series** - Type - Encoder - Motor - Lead - Stroke - Compatible Controllers - Cable Length - Option

<table>
<thead>
<tr>
<th>Configuration:</th>
<th>RCP2-</th>
<th>I</th>
<th>42P</th>
<th>54</th>
<th>Stroke</th>
<th>Compatible Controllers</th>
<th>Cable Length</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA7 : Belt type</td>
<td>BA7U : Belt type</td>
<td>Incremental</td>
<td>42P: Pulse motor</td>
<td>54:54mm</td>
<td>600 : 600mm</td>
<td>P1: PCON RPIDON</td>
<td>8</td>
<td>Bottom-Mounted Motor</td>
</tr>
</tbody>
</table>

* See page P-35 for explanation of each code that makes up the configuration name.

### Options
- **BA7U**: Belt type
- **BA7**: Belt type
- **I**: Incremental
- **42P**: Pulse motor
- **54**: 54mm

**Notes on Selection**

1. Operating the belt type actuators at low speeds may cause vibration or resonance. Therefore, please set the speed at 100mm/s or faster.
2. Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
3. The load capacity is based on operation at an acceleration of 0.5G. 0.5G is the upper limit for the acceleration.

### Lead and Load Capacity

**Model**

- **RCP2-BA7-I-42P-54-**
  - **1**: Stroke
  - **2**: Compatible controller
  - **3**: Cable length
  - **4**: Options

**Actuator Specifications**

#### Lead and Load Capacity

**Table**

<table>
<thead>
<tr>
<th>Model</th>
<th>Motor Mounting Direction</th>
<th>Lead (mm)</th>
<th>Max. Load Capacity (Note 1)</th>
<th>Stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCP2-BA7-I-42P-54-</td>
<td>Top</td>
<td>600 – 1200</td>
<td>54 equivalent</td>
<td>8</td>
</tr>
<tr>
<td>RCP2-BA7U-I-42P-54-</td>
<td>Bottom</td>
<td>Not Allowed</td>
<td>54 equivalent</td>
<td>1500</td>
</tr>
</tbody>
</table>

**Legend**

- **1**: Stroke
- **2**: Compatible controller
- **3**: Cable length
- **4**: Options

**Stroke List**

<table>
<thead>
<tr>
<th>Stroke (mm)</th>
<th>Standard Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td></td>
</tr>
<tr>
<td>700</td>
<td></td>
</tr>
<tr>
<td>750</td>
<td></td>
</tr>
<tr>
<td>800</td>
<td></td>
</tr>
<tr>
<td>850</td>
<td></td>
</tr>
<tr>
<td>900</td>
<td></td>
</tr>
<tr>
<td>950</td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>1050</td>
<td></td>
</tr>
<tr>
<td>1100</td>
<td></td>
</tr>
<tr>
<td>1150</td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td></td>
</tr>
</tbody>
</table>

**Special Lengths**

- **X06**: 6m
- **X11**: 11m
- **X16**: 16m
- **R01**: 1m
- **R03**: 3m
- **R05**: 5m
- **R07**: 7m
- **R09**: 9m
- **R11**: 11m
- **R15**: 15m
- **R20**: 20m

**Robot Cable**

- **R01**: 1m
- **R03**: 3m
- **R05**: 5m
- **R07**: 7m
- **R09**: 9m
- **R11**: 11m
- **R15**: 15m
- **R20**: 20m

**Cable List**

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable Symbol</th>
<th>Standard Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>P (5m)</td>
<td></td>
</tr>
<tr>
<td>Special Lengths</td>
<td>X06 (6m)</td>
<td></td>
</tr>
<tr>
<td>Robot Cable</td>
<td>R01 (1m)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- *See page A-39 for cables for maintenance.*

**Actuator Specifications**

**Drive System**

- **Timing Belt**
- **Positioning Repeatability**
- **Lost Motion**
- **Allowable Dynamic Moment**
- **Ambient Operating Temp./Humidity**
- **Overhang Load Length**

- **Ma**: 13.8 N·m
- **Mb**: 19.7 N·m
- **Mc**: 29.0 N·m
- **Ma**: direction 150mm or less
- **Mc**: direction 150mm or less
- **Ma**: 0~40°C, 85% RH or less Non-condensing

**Overhang Load Length**

- **Ma**: 0.1mm or less
- **Mb**: 0.1mm or less
- **Mc**: 0.1mm or less

**Options**

- **Reversed-home**: NM

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**Technical References**

**A-5**
The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

### Compatible Controllers

<table>
<thead>
<tr>
<th>Item</th>
<th>External View</th>
<th>Model</th>
<th>Description</th>
<th>Max Positioning Points</th>
<th>Input Voltage</th>
<th>Power Supply Capacity</th>
<th>Standard Price</th>
<th>See Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid Valve Type</td>
<td></td>
<td>PMEC-C-42PI-NP-2-0</td>
<td>Easy-to-use controller, even for beginners</td>
<td>3 points</td>
<td>AC100V</td>
<td>See P481</td>
<td>--</td>
<td>P477</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PMEC-C-42PI-NP-2-0</td>
<td>Operates with same signals as solenoid type, supports both single and double solenoid types, no homing necessary with single solenoid type.</td>
<td></td>
<td>AC200V</td>
<td></td>
<td>--</td>
<td>P497</td>
</tr>
<tr>
<td>Splash-Proof Solenoid Valve Type</td>
<td></td>
<td>PMEC-CW-42PI-NP-2-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td>P517</td>
</tr>
<tr>
<td>Positioner Type</td>
<td></td>
<td>PCON-C-42PI-NP-2-0</td>
<td>Positioning is possible up to 512 points</td>
<td>512 points</td>
<td>DC24V</td>
<td>24 max.</td>
<td>--</td>
<td>P525</td>
</tr>
<tr>
<td>Safety-Compliant Positioner Type</td>
<td></td>
<td>PCON-CS-42PI-NP-2-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td>P525</td>
</tr>
<tr>
<td>Pulse Train Input Type (Differential Line Driver)</td>
<td></td>
<td>PCON-PL-42PI-NP-2-0</td>
<td>Pulse train input type with differential line driver support</td>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td>P525</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCON-PL-42PI-NP-2-0</td>
<td>Pulse train input type with open collector support</td>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td>P525</td>
</tr>
<tr>
<td>Serial Communication Type</td>
<td></td>
<td>PCON-SE-42PI-NP-2-0</td>
<td>Dedicated to serial communication</td>
<td>54 points</td>
<td></td>
<td></td>
<td>--</td>
<td>P525</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCON-SE-42PI-NP-2-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td>P525</td>
</tr>
<tr>
<td>Field Network Type</td>
<td></td>
<td>RFPCN-2F</td>
<td>Dedicated to field network</td>
<td>760 points</td>
<td></td>
<td></td>
<td>--</td>
<td>P530</td>
</tr>
<tr>
<td>Program Control Type</td>
<td></td>
<td>PSEL-C-1-42PI-NP-2-0</td>
<td>Programmed operation is possible. Can operate up to 2 axes</td>
<td>1280 points</td>
<td></td>
<td></td>
<td>--</td>
<td>P537</td>
</tr>
</tbody>
</table>

*1 The motor-encoder cable is connected here.

*2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.

*3 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.

SE: Stroke end
ME: Mechanical end

*1 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.

*1 The motor-encoder cable is connected here.

For Special Orders...

Dimensions

For Special Orders...

Dimensions

For Special Orders...

Dimensions

For Special Orders...

Dimensions

For Special Orders...

Dimensions

For Special Orders...

Dimensions

For Special Orders...

Dimensions

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Dimensions