

Mini Cylinder **RCD**



Ultra-Compact Motorized Cylinder with 12mm Cross-Section



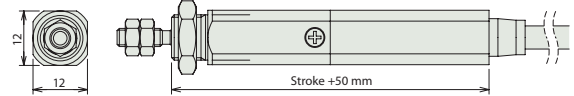
RCD actuators

Features

1. Ultra-compact size makes it a good replacement for compact air cylinders.

Ultra-compact size has been achieved, with a cross-section of only 12 mm and a body length as short as 60 mm.

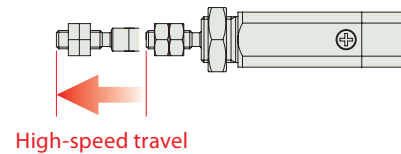
The Mini Cylinder RCD is small enough to replace compact air cylinders used for short-stroke travel, pressing, hoisting, etc.



Slim actuator

2. High-speed performance with maximum acceleration/deceleration of 1 G and maximum speed of 300 mm/s

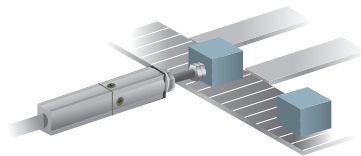
The Mini Cylinder RCD incorporates a newly developed brushless DC motor that generates sufficient torque despite its compact size. Its high-speed performance with maximum acceleration/deceleration of 1 G and maximum speed of 300 mm/s is highly effective in reducing cycle time in a variety of systems.



High-speed travel

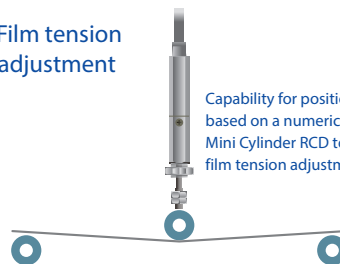
Application Examples

1. Part push-out



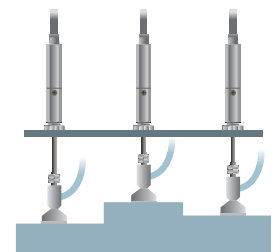
Setting the appropriate acceleration/deceleration rate enables the Mini Cylinder RCD to push out a workpiece without intense impact.

2. Film tension adjustment



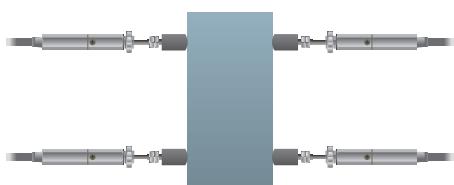
Capability for position adjustment based on a numeric value allows the Mini Cylinder RCD to achieve precise film tension adjustment.

3. Suction pads for height adjustment



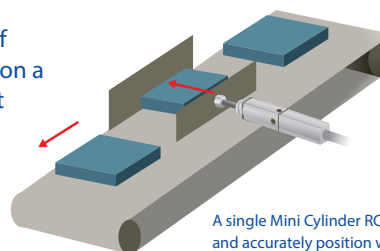
Three-point positioning enables the Mini Cylinder RCD to handle a workpiece with variable height dimensions.

4. Workpiece positioning



Multiple Mini Cylinder RCDs can be used to position a workpiece precisely by pushing it from both sides.

5. Positioning workpieces of varying sizes on a conveyor belt



A single Mini Cylinder RCD can push and accurately position workpieces of different sizes.

RCD-RA1DA

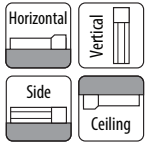
ROBO Cylinder, Ultra-Compact Rod Type, Actuator Width 12mm, DC24V Brushless Motor

Model Specification Items

RCD - RA1DA - I - 3 - 2 - [] - D5 - []
 Series — Type — Encoder Type — Motor Type — Lead — Stroke — Applicable Controllers — Cable Length

I: Incremental 3: DC Brushless Motor 2.5W 2: 2mm 10: 10mm
 ~ 30: 30mm (Every 10mm) D5: DSEP, DCON, MSEP N: None, P: 1m, S: 3m, M: 5m, X[]: Custom length, R[]: Robot cable

Controller is not included.



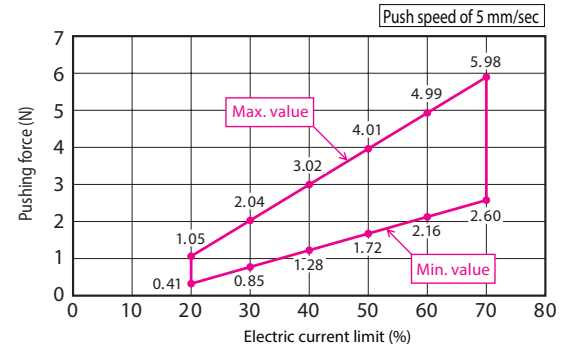
*If you install in a vertical position, there are restrictions applied depending on the model.



- (1) The load capacity is based on operation at an acceleration of 1G. This is the upper limit of the acceleration/deceleration speed.
- (2) The horizontal payload is the value when used in combination with an external guide. Please note that if an external force is applied to the rod in a direction other than the proper direction the rod travels, the detent may get damaged.
- (3) The push motion is when operated at 5mm/s.
- (4) Since this model uses a lead screw, the actuator specifications may change according to the usage.
- (5) Take note that, since there is no brake, the rod may come down when the power is turned off if the actuator is used vertically.

Electric Current Limit and Pushing Force

Electric current limit and pushing force



* The ranges shown in this graph take into account efficiency deterioration caused by wear on the lead screw. Always use the product within the maximum and minimum values.

Actuator Specifications

Lead and Payloads

| Model Number | Motor Output (W) | Feed Screw | Lead (mm) | Maximum Payload | | Maximum Push Force (N) | Stroke (mm) |
|------------------------|------------------|------------|-----------|-----------------|---------------|------------------------|------------------------|
| | | | | Horizontal (kg) | Vertical (kg) | | |
| RCD-RA1DA-I-3-2-①-D5-② | 2.5 | Lead Screw | 2 | 0.7 | 0.3 | 4.2 | 10 to 30 (Every 10 mm) |

Legend: ① Stroke ② Cable length

Stroke and Maximum Speed

| Lead (mm) | 10~30 (Every 10mm) |
|-----------|--------------------|
| 2 | 300 |

(Unit: mm/s)

① Stroke

| Stroke (mm) | Standard Price |
|-------------|----------------|
| 10 | — |
| 20 | — |
| 30 | — |

② Cable Length

| Type | Cable Code | Standard Price |
|----------------|-----------------------|----------------|
| Standard Type | P (1m) | — |
| | S (3m) | — |
| | M (5m) | — |
| Special Length | X06 (6m) ~ X10 (10m) | — |
| | X11 (11m) ~ X15 (15m) | — |
| | X16 (16m) ~ X20 (20m) | — |
| | R01 (1m) ~ R03 (3m) | — |
| Robot Cable | R04 (4m) ~ R05 (5m) | — |
| | R06 (6m) ~ R10 (10m) | — |
| | R11 (11m) ~ R15 (15m) | — |
| | R16 (16m) ~ R20 (20m) | — |
| | R16 (16m) ~ R20 (20m) | — |

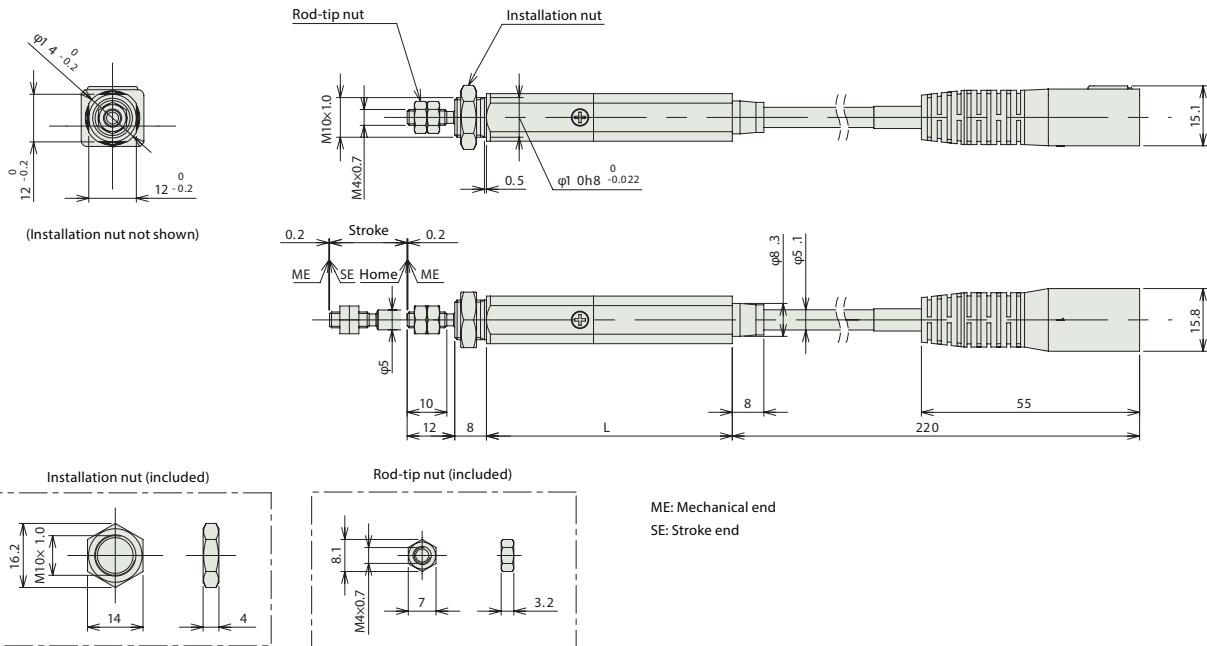
Actuator Specifications

| Item | Description |
|--|---|
| Drive Method | Ball screw, ø3mm |
| Positioning Repeatability | ±0.05mm |
| Lost Motion | 0.2mm or less |
| Encoder Resolution | 480 pulses/rev |
| Base | Material: Aluminum, white alumite treated |
| Rod Allowable Static Moment | 0.02 N·m |
| Rod Non-rotation Precision | ±3 deg |
| Ambient Operating Temperature/Humidity | 0 to 40°C, 85% RH max. (Non-condensing) |
| Service Life | 10 million cycles (for horizontal and vertical) |

Dimensional Drawings

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



ME: Mechanical end
SE: Stroke end

| | | | |
|------------|----|----|----|
| Stroke | 10 | 20 | 30 |
| L | 52 | 62 | 72 |
| Weight (g) | 47 | 51 | 55 |

Applicable Controllers

RCD series actuators can be operated with the controllers indicated below. Select the type according to your intended application.

| Name | External View | Model | Max. Number of Connectable Axes | Max. Positioning Points | Input Voltage | Standard Price |
|--|---------------|------------------|---------------------------------|-------------------------|---------------|----------------|
| Solenoid Valve Type | | DSEP-C-3I-①-2-0 | 1 | 3 points | DC24V | — |
| Dust-proof Solenoid Valve Type | | DSEP-CW-3I-①-2-0 | | | | — |
| Solenoid Valve Multi-axis Type (PIO Specification) | | MSEP-③-④-~①-2-0 | C : 8 LC : 6 | 3 points | | — |
| Solenoid Valve Multi-axis Type (Network Specification) | | MSEP-③-④-~②-0-0 | | 256 points | | — |
| Positioner Type | | DCON-CA-3I-①-2-0 | 1 | 512 points | | — |
| Network Type | | DCON-CA-3I-②-0-0 | | 768 points | | — |

*① indicates I/O type (NP/PN) *② indicates Field Network specification code *③ indicates C (standard) or LC (with PLC function) type *④ indicates the number of axes

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The information contained in this product brochure may change without prior notice due to product improvements.

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