# RCP6(S)-WSA12R

±10μm Standard | Simple Dust-proof | Battery-less Absolute | Motor Unit Type | Side-mounted Motor | Body Width 120* mm | 24V Stepper Motor

## Model Specification Items

| Series | Type | Encoder Type | Motor Type | Lead | Stroke | Applicable Controller/I/O Type | Cable Length | Options |
|---|---|---|---|---|---|---|---|---|
| RCP6: Separate Controller<br>RCP6S: Built-in Controller | WSA12R | WA: Battery-less Absolute | 42P: Stepper Motor 42□ Size | 20: 20mm<br>12: 12mm<br>6: 6mm<br>3: 3mm | 50: 50mm<br>~<br>800: 800mm<br>(50mm increments) | [RCP6]<br>P3: PCON<br>MCON<br>MSEL<br>[RCP6S]<br>SE: SIO Type | N : None<br>P : 1m<br>S : 3m<br>M: 5m<br>X□□ : Specified Length<br>R□□ : Robot Cable | Please refer to the options table below.<br>*Please make sure to specify either ML or MR when ordering the side-mounted motor type. |

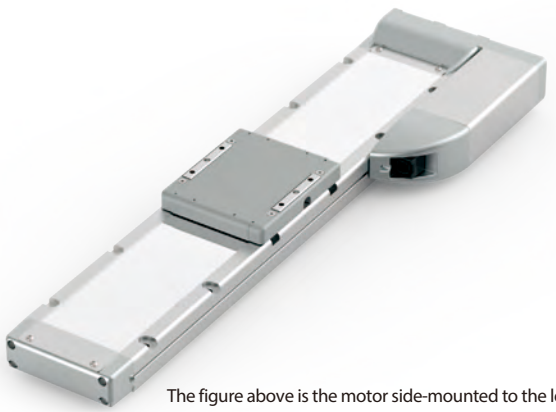
* Body width does not include the width of the side-mounted motor.

* RCP6 does not include a controller. RCP6S includes a built-in controller.
* Please refer to P.10 for more information about the model specification items.

CE RoHS

Horizontal | Vertical | Side | Ceiling

* Depending on the model, there may be some limitations to using the vertical, side, and ceiling mount positions. Please contact IAI for more information regarding mounting positions.



The figure above is the motor side-mounted to the left (ML).

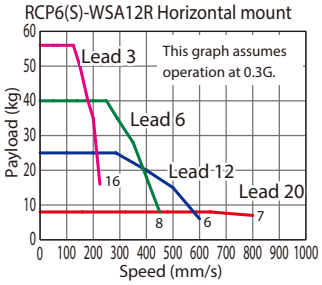
**POINT Selection Notes**

(1) The maximum acceleration/deceleration is 1G for horizontal, and 0.5G for vertical use.
(2) The actuator specification displays the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to the "Selection Guidelines" (RCP6 Tables of Payload by Speed/Acceleration) on P.115 for more details.
(3) When performing push-motion operation, please confirm the push force of each model by checking the "Correlation diagram of push force and current limit" on P.113.
(4) Depending on the ambient operational temperature, duty control is necessary for the RCP6S (built-in controller type) with lead 3/6. Please refer to P.130 for more information.

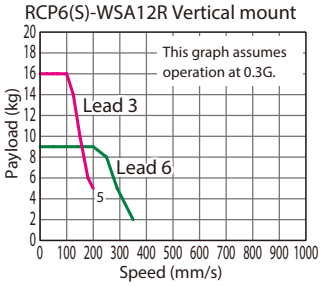
## Correlation Diagrams of Speed and Payload

High-output enabled with PCON/MCON/MSEL connected.

RCP6(S)-WSA12R Horizontal mount




RCP6(S)-WSA12R Vertical mount




## Actuator Specifications

### Lead and Payload

| Model Number | Lead (mm) | Connected Controller | Max. Payload Horizontal (kg) | Max. Payload Vertical (kg) | Stroke (mm) |
|---|---|---|---|---|---|
| RCP6(S)-WSA12R-WA-42P-20-①-②-③-④ | 20 | High-output Enabled | 12 | - | 50~800 (The increment of stroke is 50mm) |
| RCP6(S)-WSA12R-WA-42P-12-①-②-③-④ | 12 | High-output Enabled | 25 | - | |
| RCP6(S)-WSA12R-WA-42P-6-①-②-③-④ | 6 | High-output Enabled | 40 | 9 | |
| RCP6(S)-WSA12R-WA-42P-3-①-②-③-④ | 3 | High-output Enabled | 60 | 16 | |

### Stroke and Max. Speed

(Unit: mm/s)

| Lead (mm) | Connected Controller | 50~350 (Every 50mm) | 400 (mm) | 450 (mm) | 500 (mm) | 550 (mm) | 600 (mm) | 650 (mm) | 700 (mm) | 750 (mm) | 800 (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | High-output Enabled | 800 | | | | | | 740 | 650 | 580 | 520 |
| 12 | High-output Enabled | 600 | | | | 535 | 465 | 405 | 355 | 315 | 285 |
| 6 | High-output Enabled | 450 <400> | 435 <400> | 365 | 310 | 265 | 230 | 200 | 175 | 155 | 140 |
| 3 | High-output Enabled | 225 | 215 | 180 | 150 | 130 | 115 | 100 | 85 | 75 | 70 |

Legend: ① Stroke ② Applicable controller/I/O type ③ Cable length ④ Options

Values in brackets < > are for vertical use.

## ① Stroke

| Stroke (mm) | RCP6 | RCP6S | Stroke (mm) | RCP6 | RCP6S |
|---|---|---|---|---|---|
| **50** | ○ | ○ | **450** | ○ | ○ |
| **100** | ○ | ○ | **500** | ○ | ○ |
| **150** | ○ | ○ | **550** | ○ | ○ |
| **200** | ○ | ○ | **600** | ○ | ○ |
| **250** | ○ | ○ | **650** | ○ | ○ |
| **300** | ○ | ○ | **700** | ○ | ○ |
| **350** | ○ | ○ | **750** | ○ | ○ |
| **400** | ○ | ○ | **800** | ○ | ○ |

## ③ Cable Length

| Cable Type | Cable Code | RCP6 | RCP6S |
|---|---|---|---|
| Standard | **P** (1m) | ○ | ○ |
| | **S** (3m) | ○ | ○ |
| | **M** (5m) | ○ | ○ |
| Specified Length | **X06** (6m) ~**X10** (10m) | ○ | ○ |
| | **X11** (11m) ~**X15** (15m) | ○ | ○ |
| | **X16** (16m) ~**X20** (20m) | ○ | ○ |
| Robot Cable | **R01** (1m) ~**R03** (3m) | ○ | ○ |
| | **R04** (4m) ~**R05** (5m) | ○ | ○ |
| | **R06** (6m) ~**R10** (10m) | ○ | ○ |
| | **R11** (11m) ~**R15** (15m) | ○ | ○ |
| | **R16** (16m) ~**R20** (20m) | ○ | ○ |

* Please refer to P.144 for more information regarding the maintenance cables.

## ④ Options

| Name | Option Code | Reference Page |
|---|---|---|
| Brake | **B** | See P.105 |
| Cable exit direction (Outside) | **CJO** | See P.105 |
| Motor side-mounted to the left | **ML** | See P.109 |
| Motor side-mounted to the right | **MR** | See P.109 |
| Non-motor end specification | **NM** | See P.110 |

# When selecting multiple options, please list them in alphabetical order. (e.g. B-CJB-NM)

## Actuator Specifications

| Item | Description |
|---|---|
| Drive system | Ball screw ϕ10mm, rolled C10 |
| Positioning repeatability | ±0.01mm |
| Lost motion | 0.1mm or less |
| Base | Material: Aluminum with white alumite treatment |
| Static allowable moment | Ma: 311N•m, Mb: 311N•m, Mc: 827N•m |
| Dynamic allowable moment (*1) | Ma: 87.5N•m, Mb: 87.5N•m, Mc: 233N•m |
| Ambient operating temp. & humidity | 0~40°C, 85% RH or less (Non-condensing) |

* Reference for overhang load length: Ma: 450mm or less, Mb, Mc: 450mm or less

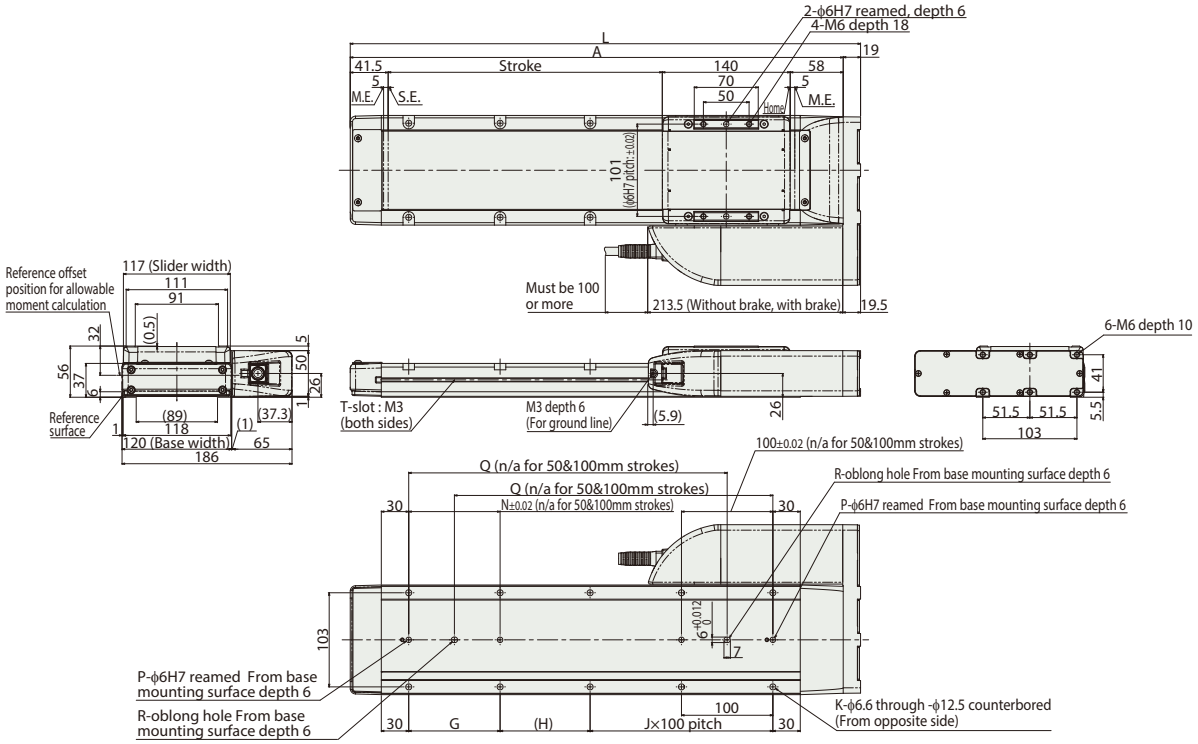
(*1) Assumes a standard rated life of 5,000km. The service life will vary depending on operation and installation conditions.

Please refer to our website for more information regarding the directions of the allowable moment and overhang load length.

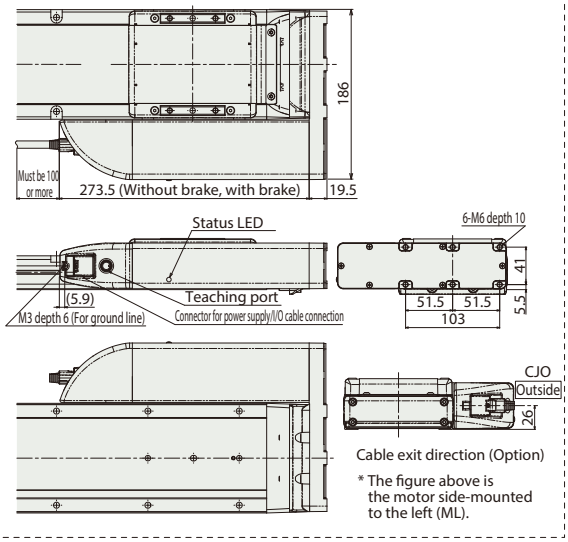
## Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com

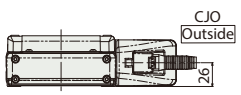
*1 When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
M.E: Mechanical end S.E: Stroke end



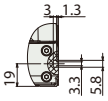

### ■RCP6S-WSA12R



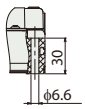

* The figure above is the motor side-mounted to the left (ML).




Cable exit direction (Option)




Side T-slot details




Details of base mounting part

* The figure above is the motor side-mounted to the left (ML).

### ■ Dimensions and Mass by Stroke

| Stroke | | | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | | | 308.5 | 358.5 | 408.5 | 458.5 | 508.5 | 558.5 | 608.5 | 658.5 | 708.5 | 758.5 | 808.5 | 858.5 | 908.5 | 958.5 | 1,008.5 | 1,058.5 |
| A | | | 289.5 | 339.5 | 389.5 | 439.5 | 489.5 | 539.5 | 589.5 | 639.5 | 689.5 | 739.5 | 789.5 | 839.5 | 889.5 | 939.5 | 989.5 | 1,039.5 |
| G | | | - | - | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| H | | | 148.5 | 198.5 | 48.5 | 98.5 | 48.5 | 98.5 | 48.5 | 98.5 | 48.5 | 98.5 | 48.5 | 98.5 | 48.5 | 98.5 | 48.5 | 98.5 |
| J | | | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 7 |
| K | | | 4 | 4 | 8 | 8 | 10 | 10 | 12 | 12 | 14 | 14 | 16 | 16 | 18 | 18 | 20 | 20 |
| N | | | - | - | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| P | | | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Q | | | - | - | 198.5 | 248.5 | 298.5 | 348.5 | 398.5 | 448.5 | 498.5 | 548.5 | 598.5 | 648.5 | 698.5 | 748.5 | 798.5 | 848.5 |
| R | | | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mass (kg) | RCP6 | w/o brake | 4.1 | 4.4 | 4.7 | 5.1 | 5.4 | 5.7 | 6.1 | 6.4 | 6.7 | 7.1 | 7.4 | 7.7 | 8.1 | 8.4 | 8.7 | 9.1 |
| | | w/ brake | 4.1 | 4.5 | 4.8 | 5.1 | 5.5 | 5.8 | 6.1 | 6.5 | 6.8 | 7.1 | 7.5 | 7.8 | 8.1 | 8.5 | 8.8 | 9.1 |
| | RCP6S | w/o brake | 4.2 | 4.5 | 4.9 | 5.2 | 5.5 | 5.9 | 6.2 | 6.5 | 6.9 | 7.2 | 7.5 | 7.9 | 8.2 | 8.5 | 8.9 | 9.2 |
| | | w/ brake | 4.3 | 4.6 | 4.9 | 5.3 | 5.6 | 5.9 | 6.3 | 6.6 | 6.9 | 7.3 | 7.6 | 7.9 | 8.3 | 8.6 | 8.9 | 9.3 |

## ② Applicable Controllers

The RCP6 series actuators can be operated by the controllers indicated below. Please select the type depending on your intended use. * Please refer to P.147 for more information about the built-in controller of RCP6S series.

| Name | External view | Max. number of controlled axes | Input power | Control method: Positioner | Control method: Pulse train | Control method: Program | Control method: Network *Option | Maximum number of positioning points | Reference page |
|---|---|---|---|---|---|---|---|---|---|
| PCON-CB/CGB |  | 1 | DC24V | ● *Option | ● *Option | - | DeviceNet, MECHATROLINK, CC-Link, EtherCAT, PROFIBUS, EtherNet/IP, CompoNet, PROFINET | 512 (768 for network spec.) | Please see P.131 |
| MCON-C/CG |  | 4 | | This model is network-compatible only. | | | | 256 | Please see the MCON catalog. |
| MSEL-PC/PG |  | 4 | Single-phase 100~230VAC | - | - | ● | | 30,000 | Please see the MSEL-PC/PG catalog. |

Note:
· The type of compatible networks will vary depending on the controller.
Please refer to reference page for more information.

* Please select "high-output specification" as an option for the MCON. With the MCON, operation is possible only when the high-output specification is selected.