

## RCS3CR-SA8C

Cleanroom Robo Cylinder, Slider Type, Actuator Width 80mm, 200V Servo Motor, Aluminum Base, Coupled

## RCS3PCR-SA8C

Cleanroom Robo Cylinder, Slider Type, Actuator Width 80mm, 200V Servo Motor, Aluminum Base, Coupled **High-precision specification**

| Model Specification Items | Series                                                                    | Type | Encoder type              | Motor type                                       | Lead                                       | Stroke                                           | Applicable controller                             | Cable length                                                                 | Options                                                                                        |
|---------------------------|---------------------------------------------------------------------------|------|---------------------------|--------------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|                           | RCS3CR : Standard specification<br>RCS3PCR : High-precision specification | SA8C | WA: Battery-less absolute | 100: Servo motor, 100W<br>150: Servo motor, 150W | 30: 30mm<br>20: 20mm<br>10: 10mm<br>5: 5mm | 50: 50mm<br>1100: 1100mm (50mm pitch increments) | T2: SCON<br>SSEL, XSEL<br>T4: RCON<br>RSEL, SCON2 | N: None<br>P: 1m<br>S: 3m<br>M: 5m<br>X□□: Custom length<br>R□□: Robot cable | See Options below.<br>*Be sure to specify a code indicating your desired cable exit direction. |

\* See page Pre-47 for details on the model descriptions.



\*CE compliance is optional.



Technical References

Appendix P.5



- (1) When the stroke is increased, the maximum speed will drop to prevent reaching dangerous speeds of ball screws. Confirm the maximum speed at the desired stroke by referring to the table of strokes and maximum speeds below.
- (2) The payload represents a value when the actuator is operated at a horizontal acceleration of 0.3G (0.2G for the 5mm-lead model) and vertical acceleration of 0.2G.
- (3) The payload drops when the acceleration is raised. For details, refer to the list of payloads by acceleration provided on page A-108.

\* There are note notes for this item. Please contact IAI for more details and latest information.

## Actuator Specifications

## Lead and Payload

| Model number                          | Motor output (W) | Lead (mm) | Maximum payload<br>Horizontal (kg) Vertical (kg) | Rated thrust (N) | Stroke (mm)               |
|---------------------------------------|------------------|-----------|--------------------------------------------------|------------------|---------------------------|
| RCS3CR[RCS3PCR]-SA8C-①-100-30-②-③-④-⑤ | 100              | 30        | 8 2                                              | 56.6             | 50 ~ 1100<br>(every 50mm) |
| RCS3CR[RCS3PCR]-SA8C-①-100-20-②-③-④-⑤ |                  | 20        | 20 4                                             | 84.9             |                           |
| RCS3CR[RCS3PCR]-SA8C-①-100-10-②-③-④-⑤ |                  | 10        | 40 8                                             | 169.8            |                           |
| RCS3CR[RCS3PCR]-SA8C-①-100-5-②-③-④-⑤  |                  | 5         | 80 16                                            | 339.7            |                           |
| RCS3CR[RCS3PCR]-SA8C-①-150-30-②-③-④-⑤ | 150              | 30        | 12 3                                             | 85.1             | 50 ~ 1100<br>(every 50mm) |
| RCS3CR[RCS3PCR]-SA8C-①-150-20-②-③-④-⑤ |                  | 20        | 30 6                                             | 127.6            |                           |
| RCS3CR[RCS3PCR]-SA8C-①-150-10-②-③-④-⑤ |                  | 10        | 60 12                                            | 255.3            |                           |

Code explanation ① Encoder type ② Stroke ③ Applicable Controller ④ Cable length ⑤ Options

## Stroke and Max. Speed/Suction Volume by Lead (Unit: mm/s)

| Stroke Lead | 50 to 650 (every 50mm) | 700  | 750  | 800  | 850  | 900 | 950 | 1000 | 1050 | 1100 | Suction Rate N <sub>L</sub> /min |
|-------------|------------------------|------|------|------|------|-----|-----|------|------|------|----------------------------------|
| 30          | 1800                   | 1510 | 1340 | 1190 | 1070 | 960 | 870 | 790  | 720  | 660  | 130 (160) (*)                    |
| 20          | 1200                   | 1010 | 890  | 790  | 710  | 640 | 580 | 530  | 480  | 440  | 110                              |
| 10          | 600                    | 500  | 440  | 390  | 350  | 320 | 290 | 260  | 240  | 220  | 60                               |
| 5           | 300                    | 260  | 220  | 190  | 170  | 160 | 140 | 130  | 120  | 110  | 30                               |

(\*) 130N<sub>L</sub>/min if the speed is 1,500mm/s or below, or 160N<sub>L</sub>/min if the speed exceeds 1,500mm/s.

## ① Encoder Type / ② Stroke

| ② Stroke (mm) | Lineup        |      |   |               |      |   |
|---------------|---------------|------|---|---------------|------|---|
|               | RCS3CR-SA8C   |      |   | RCS3PCR-SA8C  |      |   |
|               | Motor wattage |      |   | Motor wattage |      |   |
|               | 100W          | 150W |   | 100W          | 150W |   |
| 50/100        | —             | —    | — | —             | —    | — |
| 150/200       | —             | —    | — | —             | —    | — |
| 250/300       | —             | —    | — | —             | —    | — |
| 350/400       | —             | —    | — | —             | —    | — |
| 450/500       | —             | —    | — | —             | —    | — |
| 550/600       | —             | —    | — | —             | —    | — |
| 650/700       | —             | —    | — | —             | —    | — |
| 750/800       | —             | —    | — | —             | —    | — |
| 850/900       | —             | —    | — | —             | —    | — |
| 950/1000      | —             | —    | — | —             | —    | — |
| 1050/1100     | —             | —    | — | —             | —    | — |

## ④ Cable Length

| Type           | Cable symbol          | Standard price |
|----------------|-----------------------|----------------|
| Standard type  | P (1m)                | —              |
|                | S (3m)                | —              |
|                | M (5m)                | —              |
| Special 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) | —              |
|                |                       | —              |

\* See page A-59 for cables for maintenance.

## ⑤ Options

| Name                           | Option code | Page   | Standard Price |
|--------------------------------|-------------|--------|----------------|
| Cables exit from back left     | A1E         | → A-41 | —              |
| Cables exit from left side     | A1S         | → A-41 | —              |
| Cables exit from back right    | A3E         | → A-41 | —              |
| Cables exit from right side    | A3S         | → A-41 | —              |
| Brake                          | B           | → A-42 | —              |
| CE compliance                  | CE          | → A-42 | —              |
| Non-motor end specification    | NM          | → A-52 | —              |
| L-shaped suction joint         | VL          | → A-58 | —              |
| No suction joint specification | VN          | → A-58 | —              |

Additional option and code: (\*Please contact IAI for more details and latest information.)

Designated grease specification: G3/G4

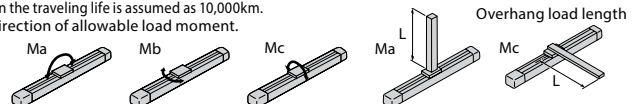
Double Slider Specification: W

## Actuator Specifications RCS3PCR specifications are shown in [ ]. (Other items are the same.)

| Item                                   | Description                                                         |
|----------------------------------------|---------------------------------------------------------------------|
| Drive method                           | Ball screw, ø16mm, rolled C10 (rolled C5)                           |
| Positioning repeatability              | ±0.02mm (±0.01mm)                                                   |
| Lost motion                            | 0.1mm (0.05mm) or less                                              |
| Base                                   | Material: Aluminum, white alumite treatment                         |
| Allowable static moment                | Ma: 113.5 N·m, Mb: 177 N·m, Mc: 266 N·m                             |
| Allowable dynamic moment (*)           | Ma: 23.1 N·m, Mb: 32.9 N·m, Mc: 54.1 N·m                            |
| Allowable overhang                     | 390mm or less in Ma, Mb and Mc directions                           |
| Grease                                 | Low dust-raising grease is used (for both the ball screw and guide) |
| Cleanliness class                      | Class 10 (0.1μm)                                                    |
| Ambient operating temperature/humidity | 0 to 40°C, 85% RH max. (Non-condensing)                             |

(\*) When the traveling life is assumed as 10,000km.

Direction of allowable load moment.



475

RCS3CR/RCS3PCR-SA8C

# Dimensional Drawings

CAD drawings can be downloaded from the website.

[www.intelligentactuator.com](http://www.intelligentactuator.com)

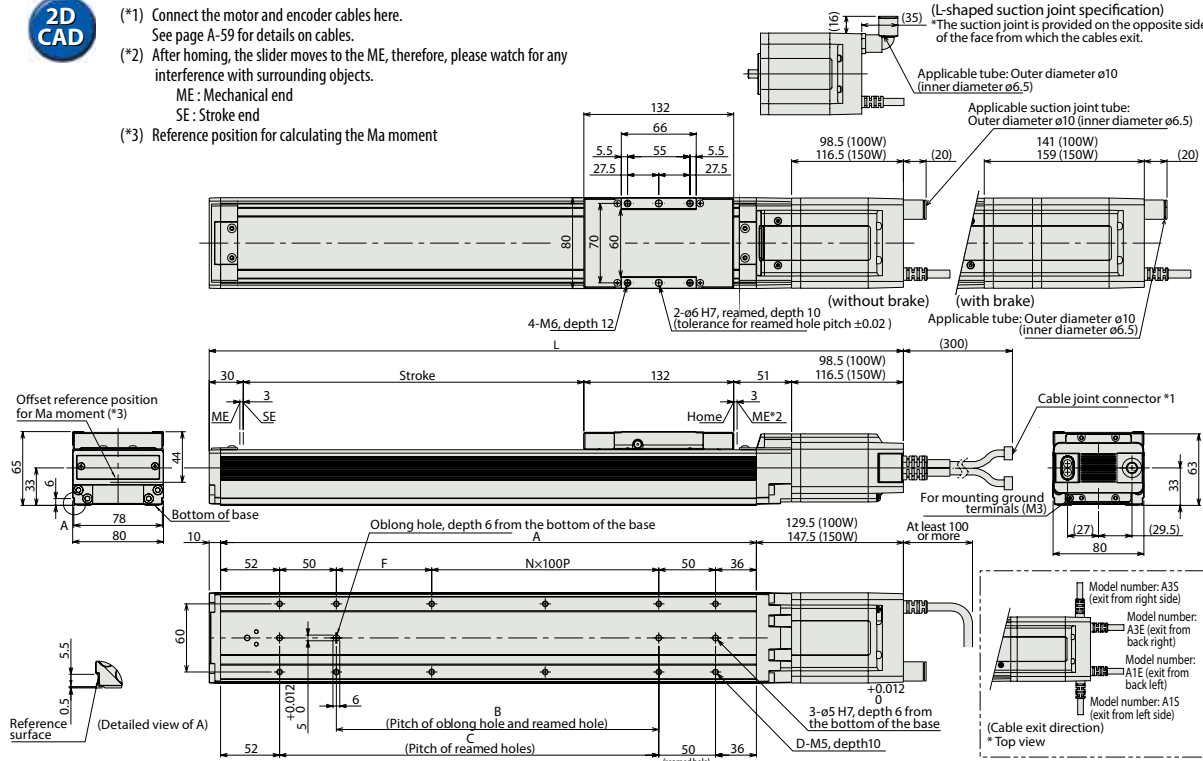


- (\*1) Connect the motor and encoder cables here.  
See page A-59 for details on cables.
- (\*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.  
ME : Mechanical end  
SE : Stroke end
- (\*3) Reference position for calculating the Ma moment

For Special Orders



Appendix P.15



## ■ Dimensions and Weights by Stroke

| Stroke      |      |               | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   |
|-------------|------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| L           | 100W | without brake | 361.5 | 411.5 | 461.5 | 511.5 | 561.5 | 611.5 | 661.5 | 711.5 | 761.5 | 811.5 | 861.5 | 911.5 | 961.5 | 1011.5 | 1061.5 | 1111.5 | 1161.5 | 1211.5 | 1261.5 | 1311.5 | 1361.5 | 1411.5 |
|             |      | with brake    | 404   | 454   | 504   | 554   | 604   | 654   | 704   | 754   | 804   | 854   | 904   | 954   | 1004  | 1054   | 1104   | 1154   | 1204   | 1254   | 1304   | 1354   | 1404   | 1454   |
|             | 150W | without brake | 379.5 | 429.5 | 479.5 | 529.5 | 579.5 | 629.5 | 679.5 | 729.5 | 779.5 | 829.5 | 879.5 | 929.5 | 979.5 | 1029.5 | 1079.5 | 1129.5 | 1179.5 | 1229.5 | 1279.5 | 1329.5 | 1379.5 | 1429.5 |
|             |      | with brake    | 422   | 472   | 522   | 572   | 622   | 672   | 722   | 772   | 822   | 872   | 922   | 972   | 1022  | 1072   | 1122   | 1172   | 1222   | 1272   | 1322   | 1372   | 1422   | 1472   |
| A           |      |               | 222   | 272   | 322   | 372   | 422   | 472   | 522   | 572   | 622   | 672   | 722   | 772   | 822   | 872    | 922    | 972    | 1022   | 1072   | 1122   | 1172   | 1222   | 1272   |
| B           |      |               | 34    | 84    | 134   | 184   | 234   | 284   | 334   | 384   | 434   | 484   | 534   | 584   | 634   | 684    | 734    | 784    | 834    | 884    | 934    | 984    | 1034   | 1084   |
| C           |      |               | 84    | 134   | 184   | 234   | 284   | 334   | 384   | 434   | 484   | 534   | 584   | 634   | 684   | 734    | 784    | 834    | 884    | 934    | 984    | 1034   | 1084   | 1134   |
| D           |      |               | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18    | 20    | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     |
| F           |      |               | 34    | 84    | 34    | 84    | 34    | 84    | 34    | 84    | 34    | 84    | 34    | 84    | 34    | 84     | 34     | 84     | 34     | 84     | 34     | 84     | 34     | 84     |
| N           |      |               | 0     | 0     | 1     | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6      | 7      | 7      | 8      | 8      | 9      | 9      | 10     | 10     |
| Weight (kg) | 100W | without brake | 2.8   | 3.1   | 3.4   | 3.7   | 4.0   | 4.3   | 4.6   | 4.9   | 5.2   | 5.5   | 5.8   | 6.1   | 6.4   | 6.7    | 7.0    | 7.3    | 7.6    | 7.9    | 8.2    | 8.5    | 8.8    | 9.1    |
|             |      | with brake    | 3.2   | 3.5   | 3.8   | 4.1   | 4.4   | 4.7   | 5.0   | 5.3   | 5.6   | 5.9   | 6.2   | 6.5   | 6.8   | 7.1    | 7.4    | 7.7    | 8.0    | 8.3    | 8.6    | 8.9    | 9.2    | 9.5    |
|             | 150W | without brake | 2.9   | 3.2   | 3.5   | 3.8   | 4.1   | 4.4   | 4.7   | 5.0   | 5.3   | 5.6   | 5.9   | 6.2   | 6.5   | 6.8    | 7.1    | 7.4    | 7.7    | 8.0    | 8.3    | 8.6    | 8.9    | 9.2    |
|             |      | with brake    | 3.4   | 3.7   | 4.0   | 4.3   | 4.6   | 4.9   | 5.2   | 5.5   | 5.8   | 6.1   | 6.4   | 6.7   | 7.0   | 7.3    | 7.6    | 7.9    | 8.2    | 8.5    | 8.8    | 9.1    | 9.4    | 9.7    |