



# Cartesian Robot 3-Axis Combinations

# ICSB/ICSPB3



# **Industry first! Cartesian Robot** with Battery-less Absolute Encoder

[MERIT]

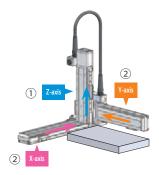
# Now Equipped with a Battery-less Absolute Encoder as Standard

IS(P)B configuration type with battery-less absolute encoder equipped as standard.

# The advantages of using an absolute encoder.

- 1 Home return is not necessary since the current position is always known.
- 2 No external home sensor is required since home return is not necessary.
- 3 Removal of current workpieces is not necessary even in an emergency stop.
- 4 The troublesome creation of home-return programs is not necessary even when stopping inside of a complex machine.





Incremental specification

- (1) Z-axis home return
- (2) X/Y-axis home return
- Startup takes time as home return is performed while avoiding interference.



Battery-less Absolute Encoder specification

Moves to work home while avoiding interference, without home return.

Home return is eliminated, reducing startup time.

Purthermore, battery-related errors do not occur.

[MFRIT]

# **Cost Reduction**

The battery-less absolute encoder type costs the same as the incremental encoder type. Without a battery, the price is less than the conventional absolute encoder specification.

Example ICSB3-BA+MSCON Controller

Absolute Encoder Specification

Reduction

Battery-less Absolute **Encoder Specification** 

Furthermore, there is no need for regular battery replacement.

# **Extensive Variations**

A wide range of configurations is available, from 2-axis to 6-axis specifications and small to large models. Select a model suited to the payload, travel stroke and installation space.

926 variations are available, including 726 models compatible with the battery-less absolute encoder.

|  |                           | Configuration             | specifications         |                         |
|--|---------------------------|---------------------------|------------------------|-------------------------|
| Encoder type                             | 2-axis                    | 3-axis                    | 4-axis                 | 6-axis                  |
| Battery-less<br>Absolute Encoder         | [7 types]<br>202 versions | [7 types]<br>524 versions |                        |                         |
| Incremental Encoder/<br>Absolute Encoder | [1 type]<br>56 versions   | [2 types]<br>136 versions | [1 type]<br>2 versions | [2 types]<br>6 versions |

# Variations

# **2-axis Combinations**



[Y-axis Base Mount]

**XYB Type** 



[Y-axis Slider Mount]

XYS Type



[Z-axis Upright Mount]

XZ Type



[Z-axis Slider Mount]

**YZS Type** 



[Z-axis Base Mount]

**YZB Type** 



[Y-axis Horizontal Gantry]

**XYG Type** 



[Y-axis Side-mounted Gantry]

**XYBG Type** 

# **3-axis Combinations**



[Y-axis Base Mount] [Z-axis Base Mount]

XYB+ZB Type



[Y-axis Base Mount] [Z-axis Slider Mount]

XYB+ZS Type



[Z-axis Upright Mount] [Y-axis Slider Mount]

XZ+YS Type



[Y-axis Horizontal Gantry] [Z-axis Base Mount]

XYG+ZB Type



[Y-axis Horizontal Gantry] [Z-axis Slider Mount]

XYG+ZS Type



[Y-axis Side-mounted Gantry] [Z-axis Base Mount]

XYBG+ZB Type



[Y-axis Side-mounted Gantry] [Z-axis Slider Mount]

XYBG+ZS Type

# **4-axis Combinations**



[X-axis Multi-Slider] [Y-axis Base Mount]

XMYB Type

# 6-axis Combinations



[X-axis Multi-Slider] [Y-axis Side Base Mount] [Z-axis Base Mount]

XMYB+ZB Type



[X-axis Multi-Slider] [Y-axis Side Base Mount] [Z-axis Slider Mount]

XMYB+ZS Type

# **Cartesian Robot 2-axis Combinations**

# XYB Type (Y-axis Base Mount)

| Code                     | T      | Encoder |                | Stroke (mm)    |                | Payload | Max    | . speed (mm | n/s)   | Reference |
|--------------------------|--------|---------|----------------|----------------|----------------|---------|--------|-------------|--------|-----------|
| Series                   | Type   | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | (kg)*   | X-axis | Y-axis      | Z-axis | page      |
|                          | ВА□Н   | WA      | 900            | 400            | _              | 6.1     | 960    | 960         | _      | P. 13     |
|                          | ВА□М   | WA      | 900            | 400            | _              | 19.4    | 480    | 480         | _      | P.15      |
|                          | ВВ□Н   | WA      | 1100           | 400            | _              | 12      | 1200   | 960         | _      | P.17      |
|                          | ВВ□М   | WA      | 1100           | 400            | _              | 25      | 600    | 480         | _      | P.19      |
|                          | ВС□Н   | WA      | 1100           | 500            | _              | 20      | 1200   | 1200        | _      | P.21      |
| ICC (D)D3                | BC □M  | WA      | 1100           | 500            | _              | 30      | 600    | 600         | _      | P.23      |
| ICS (P)B2                | BD□H   | WA      | 2000           | 500            | _              | 20      | 1200   | 1200        | _      | P. 25     |
| 2-axis<br>Combinations   | BE □S  | WA      | 1300           | 700            | _              | 25.7    | 2400   | 1800        | _      | P. 27     |
| Combinations             | ВЕ□Н   | WA      | 1300           | 700            | _              | 45      | 1200   | 1200        | _      | P. 29     |
|                          | ВЕ□М   | WA      | 1300           | 700            | _              | 60      | 600    | 600         | _      | P.31      |
|                          | BF□S   | WA      | 2500           | 700            | _              | 25.7    | 2400   | 1800        | _      | P.33      |
|                          | BF□H   | WA      | 2500           | 700            | _              | 45      | 1200   | 1200        | _      | P.35      |
|                          | BG □S  | WA      | 1300           | 700            | _              | 20.9    | 2400   | 2400        | _      | P.37      |
|                          | BH□S   | WA      | 2500           | 700            | _              | 20.9    | 2400   | 2400        | _      | P.39      |
| 166 (0)00                | ВК□Н   | I/A     | 1300           | 700            | _              | 36.6    | 2400   | 2400        | _      | P.41      |
| ICS (P)B2                | BK□M   | I/A     | 1300           | 700            | _              | 65      | 1200   | 1200        | _      | P. 43     |
| 2-axis<br>Combinations   | BL□H   | I/A     | 2500           | 700            | _              | 36.6    | 2400   | 2400        | _      | P.45      |
| Combinations             | BL□M   | I/A     | 2500           | 700            | _              | 65      | 1200   | 1200        | _      | P.47      |
| ICS (P)B2<br>SSPA+IS(P)B | ВМ □Н  | I/A     | 1500           | 700            | _              | 36.4    | 2500   | 2400        | _      | P.49      |
| 2-axis<br>Combinations   | ВМ □М  | I/A     | 1500           | 700            | _              | 78.6    | 1250   | 1200        | _      | P. 51     |
| ICS (P)A2                | BP□H   | I/A     | 1300           | 700            | _              | 31.7    | 2000   | 2400        | _      | P.53      |
| IS(P)A+IS(P)A            | BP□M   | I/A     | 1300           | 700            | _              | 62.3    | 1250   | 1200        | _      | P. 55     |
| 2-axis<br>Combinations   | BQ □H  | I/A     | 2500           | 700            | _              | 31.7    | 2000   | 2400        | _      | P.57      |
| Combinations             | BQ □M  | I/A     | 2500           | 700            | _              | 62.3    | 1250   | 1200        | _      | P. 59     |
| ICCDAD                   | B1N □H | I/A     | 2200           | 700            | _              | 21.2    | 2400   | 1200        | _      | P.61      |
| ICSPA2<br>(NS+ISPA       | B1N □M | I/A     | 2200           | 700            | _              | 40      | 1300   | 1200        | _      | P.63      |
| 2-axis<br>Combinations   | B2N □H | I/A     | 3000           | 700            | _              | 21.2    | 2400   | 1200        | _      | P.65      |
| Combinations             | B2N □M | I/A     | 3000           | 700            | _              | 40      | 1300   | 1200        | _      | P. 67     |

<sup>\*</sup> The payload shown is the maximum value for the rated acceleration.

# XYS Type (Y-axis Slider Mount)

| Series                  | Tuno   | Encoder |                | Stroke (mm)    |                | Payload | Max    | c. speed (mn | n/s)   | Reference |
|-------------------------|--------|---------|----------------|----------------|----------------|---------|--------|--------------|--------|-----------|
| Series                  | Type   | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | (kg)*   | X-axis | Y-axis       | Z-axis | page      |
|                         | SA□H   | WA      | 600            | 400            | _              | 6.6     | 960    | 960          | _      | P. 69     |
|                         | SA□M   | WA      | 600            | 400            | _              | 19.9    | 480    | 480          | _      | P. 71     |
| ICS (P)B2               | S1C□H  | WA      | 800            | 500            | _              | 10      | 1200   | 1200         | _      | P. 73     |
| IS(P)B+IS(P)B<br>2-axis | S1C □M | WA      | 800            | 500            | _              | 30      | 600    | 600          | _      | P. 75     |
| Combinations            | S2C □H | WA      | 800            | 500            | _              | 31.7    | 1200   | 1200         | _      | P. 77     |
|                         | SG □S  | WA      | 800            | 600            | _              | 22.6    | 2400   | 2400         | _      | P. 79     |
|                         | SG □H  | WA      | 800            | 600            | _              | 27.5    | 1200   | 1200         | _      | P. 81     |

<sup>\*</sup> The payload shown is the maximum value for the rated acceleration.

# XZ Type (Z-axis Upright Mount)

| Series                 |        | Encoder |                | Stroke (mm)    |                | Payload | Max    | speed (mn |        | Reference |
|------------------------|--------|---------|----------------|----------------|----------------|---------|--------|-----------|--------|-----------|
| Series                 | Туре   | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | (kg)*   | X-axis | Y-axis    | Z-axis | page      |
|                        | ZA□H   | WA      | 900            | -              | 300            | 7.0     | 960    | _         | 480    | P. 83     |
|                        | ZA□M   | WA      | 900            | _              | 300            | 13      | 480    | _         | 240    | P. 85     |
| 166 (0)00              | Z1C □H | WA      | 1100           | _              | 400            | 10      | 1200   | _         | 600    | P. 87     |
| ICS (P)B2              | Z1C □M | WA      | 1100           | _              | 400            | 20      | 600    | _         | 300    | P. 89     |
| 2-axis<br>Combinations | Z2C □H | WA      | 1100           | _              | 400            | 18.3    | 1200   | _         | 600    | P. 91     |
| Combinations           | ZD□H   | WA      | 2000           | _              | 400            | 18.3    | 1200   | _         | 600    | P. 93     |
|                        | ZG□S   | WA      | 1300           | _              | 500            | 20      | 2400   | _         | 1200   | P. 95     |
|                        | ZH□S   | WA      | 2500           | _              | 500            | 20      | 2400   | _         | 1200   | P. 97     |

 $<sup>\</sup>ensuremath{^{*}}$  The payload shown is the maximum value for the rated acceleration.

# YZS Type (Z-axis Slider Mount)

| Series                  | Tuna   | Type Encoder X |                | Stroke (mm)    |                | Payload | Max    | speed (mn | n/s)   | Reference |
|-------------------------|--------|----------------|----------------|----------------|----------------|---------|--------|-----------|--------|-----------|
| series                  | Туре   |                | X-axis maximum | Y-axis maximum | Z-axis maximum | (kg)*   | X-axis | Y-axis    | Z-axis | page      |
| . 1                     | YSA □H | WA             | _              | 500            | 400            | 3.9     | _      | 960       | 480    | P. 99     |
| ICS (P)B2               | YSA □M | WA             | _              | 500            | 400            | 11      | _      | 480       | 240    | P. 101    |
| IS(P)B+IS(P)B<br>2-axis | YSC □H | WA             | _              | 700            | 500            | 13.6    | _      | 1200      | 600    | P. 103    |
| Combinations            | YSC □M | WA             | _              | 700            | 500            | 13.3    | _      | 600       | 300    | P. 105    |
|                         | YSG □H | WA             | _              | 700            | 500            | 28.8    | _      | 1200      | 600    | P. 107    |

 $<sup>\</sup>ensuremath{^{*}}$  The payload shown is the maximum value for the rated acceleration.

# YZB Type (Z-axis Base Mount)

| Series                 | Tuna   | Encoder |                | Stroke (mm)    |                | Payload | Max    | . speed (mm | n/s)   | Reference |
|------------------------|--------|---------|----------------|----------------|----------------|---------|--------|-------------|--------|-----------|
| Series                 | Type   | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | (kg)*   | X-axis | Y-axis      | Z-axis | page      |
|                        | ҮВА □Н | WA      | _              | 900            | 400            | 7.0     | _      | 960         | 480    | P. 109    |
| ICC (D)D2              | YBA □M | WA      | _              | 900            | 400            | 14      | _      | 480         | 240    | P. 111    |
| ICS (P)B2              | YBC □H | WA      | _              | 1100           | 500            | 20      | _      | 1200        | 600    | P. 113    |
| 2-axis<br>Combinations | YBC □M | WA      | _              | 1100           | 500            | 20      | _      | 600         | 300    | P. 115    |
| Combinations           | YBG □S | WA      | _              | 1300           | 500            | 20      | _      | 2400        | 1200   | P. 117    |
|                        | YBG □H | WA      | _              | 1300           | 500            | 40      | _      | 1200        | 600    | P. 119    |

 $<sup>\</sup>ensuremath{^{*}}$  The payload shown is the maximum value for the rated acceleration.

# XYG Type (Y-axis Horizontal Gantry)

| Series                 | Tuno   |      |                | Stroke (mm)    |                | Payload | Max    | n/s)   | Reference |        |
|------------------------|--------|------|----------------|----------------|----------------|---------|--------|--------|-----------|--------|
| Series                 | Type   | type | X-axis maximum | Y-axis maximum | Z-axis maximum | (kg)*   | X-axis | Y-axis | Z-axis    | page   |
| ICS (P)B2              | G1J □H | WA   | 2500           | 700            | _              | 45      | 1200   | 1200   | _         | P. 121 |
| 2-axis<br>Combinations | G2J □H | WA   | 2500           | 1200           | _              | 45      | 1200   | 1200   | _         | P. 123 |

 $<sup>\</sup>ensuremath{^{*}}$  The payload shown is the maximum value for the rated acceleration.

# XYBG Type (Y-axis Side-mounted Gantry)

| Series                  | Tuno  | Encoder |                | Stroke (mm)    |                | Payload | Max    | speed (mm | ı/s)   | Reference |
|-------------------------|-------|---------|----------------|----------------|----------------|---------|--------|-----------|--------|-----------|
| Series                  | Type  | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | (kg)*   | X-axis | Y-axis    | Z-axis | page      |
|                         | GB □H | WA      | 1100           | 600            | _              | 12.9    | 1200   | 960       | _      | P. 125    |
|                         | GB □M | WA      | 1100           | 600            | _              | 27      | 600    | 480       | _      | P. 127    |
|                         | GC□H  | WA      | 1100           | 700            | _              | 23      | 1200   | 1200      | _      | P. 129    |
|                         | GC □M | WA      | 1100           | 700            | _              | 26.6    | 600    | 600       | _      | P. 131    |
| ICS (P)B2               | GD □H | WA      | 2000           | 700            | _              | 23      | 1200   | 1200      | _      | P. 133    |
| IS(P)B+IS(P)B<br>2-axis | GE □H | WA      | 1300           | 900            | _              | 45      | 1200   | 1200      | _      | P. 135    |
| Combinations            | GE □M | WA      | 1300           | 900            | _              | 60      | 600    | 600       | _      | P. 137    |
|                         | GF □H | WA      | 2500           | 900            | _              | 45      | 1200   | 1200      | _      | P. 139    |
|                         | GG □H | WA      | 1300           | 1100           | _              | 34.5    | 1200   | 1200      | _      | P. 141    |
|                         | GG □M | WA      | 1300           | 1100           | _              | 34.5    | 600    | 600       | _      | P. 143    |
|                         | GH□H  | WA      | 2500           | 1100           | _              | 34.5    | 1200   | 1200      | _      | P. 145    |

<sup>\*</sup> The payload shown is the maximum value for the rated acceleration.

# **Cartesian Robot 3-axis Combinations**

XYB+ZB Type (Y-axis Base Mount/Z-axis Base Mount)

| Series                           | Tuno       | Encoder | Payl           |                | Dayload /len*  | Max. speed (mm/s)* |        | d (mm/s)* | Reference    |        |
|----------------------------------|------------|---------|----------------|----------------|----------------|--------------------|--------|-----------|--------------|--------|
| Series                           | Type       | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | Payload (kg)*      | X-axis | Y-axis    | Z-axis       | page   |
|                                  | BA □MB1 □  | WA      | 900            | 400            | 300            | 3.5/7.0/8.9        | 480    | 480       | 960/480/240  | P. 147 |
|                                  | ВВ □НВ1 □  | WA      | 1100           | 400            | 300            | 3.5/7.0/7.7        | 1200   | 960       | 960/480/240  | P. 149 |
|                                  | BB □MB1 □  | WA      | 1100           | 400            | 300            | 3.5/7/14           | 600    | 480       | 960/480/240  | P. 151 |
|                                  | BC □HB1 □  | WA      | 1100           | 500            | 400            | 3.5/7/14           | 1200   | 1200      | 960/480/240  | P. 153 |
|                                  | BC □HB2 □  | WA      | 1100           | 500            | 400            | 5/10/13.1          | 1200   | 1200      | 1200/600/300 | P. 155 |
|                                  | ВС □НВЗ □  | WA      | 1100           | 500            | 400            | 10/12.6            | 1200   | 1200      | 1200/600     | P. 157 |
|                                  | BC □MB2 □  | WA      | 1100           | 500            | 400            | 5/10/19            | 600    | 600       | 1200/600/300 | P. 159 |
| ICS (P)B3                        | BC □MB3 □  | WA      | 1100           | 500            | 400            | 10/18.5            | 600    | 600       | 1200/600     | P. 161 |
| IS(P)B+IS(P)B+IS(P)B             | BD □HB1 □  | WA      | 2000           | 500            | 400            | 3.5/7/14           | 1200   | 1200      | 960/480/240  | P. 163 |
| 3-axis Combinations              | BD □HB2 □  | WA      | 2000           | 500            | 400            | 5/10/13.1          | 1200   | 1200      | 1200/600/300 | P. 165 |
|                                  | BD □HB3 □  | WA      | 2000           | 500            | 400            | 10/12.6            | 1200   | 1200      | 1200/600     | P. 167 |
|                                  | BE □HB1 □  | WA      | 1300           | 700            | 500            | 3.5/7/14           | 1200   | 1200      | 960/480/240  | P. 169 |
|                                  | ВЕ □НВ2 □  | WA      | 1300           | 700            | 500            | 5/10/20            | 1200   | 1200      | 1200/600/300 | P. 171 |
|                                  | ВЕ □НВЗ □  | WA      | 1300           | 700            | 500            | 10/20              | 1200   | 1200      | 1200/600     | P. 173 |
|                                  | BF □HB1 □  | WA      | 2500           | 700            | 500            | 3.5/7/14           | 1200   | 1200      | 960/480/240  | P. 175 |
|                                  | BF □HB2 □  | WA      | 2500           | 700            | 500            | 5/10/20            | 1200   | 1200      | 1200/600/300 | P. 177 |
|                                  | BF □HB3 □  | WA      | 2500           | 700            | 500            | 10/20              | 1200   | 1200      | 1200/600     | P. 179 |
|                                  | ВК □НВЗ □  | I/A     | 1300           | 700            | 500            | 10/20              | 2400   | 2400      | 1200/600     | P. 181 |
|                                  | ВК □НВ4Н   | I/A     | 1300           | 700            | 500            | 20                 | 2400   | 2400      | 1200         | P. 183 |
|                                  | ВК □МВЗМ   | I/A     | 1300           | 700            | 500            | 20                 | 1200   | 1200      | 600          | P. 185 |
| ICS(P)B3                         | ВК □МВ4М   | I/A     | 1300           | 700            | 500            | 36.4               | 1200   | 1200      | 600          | P. 187 |
| IS(P)A+IS(P)B+IS(P)B             | BL□HB3 □   | I/A     | 2500           | 700            | 500            | 10/20              | 2400   | 2400      | 1200/600     | P. 189 |
| 3-axis Combinations              | BL□HB4H    | I/A     | 2500           | 700            | 500            | 20                 | 2400   | 2400      | 1200         | P. 191 |
|                                  | BL□MB3M    | I/A     | 2500           | 700            | 500            | 20                 | 1200   | 1200      | 600          | P. 193 |
|                                  | BL□MB4M    | I/A     | 2500           | 700            | 500            | 36.4               | 1200   | 1200      | 600          | P. 195 |
| ICS (P)B3<br>(SSPA+IS(P)B+IS(P)B | ВМ □НВ4Н   | I/A     | 1500           | 700            | 500            | 20                 | 2500   | 2400      | 1200         | P. 197 |
| 3-axis Combination               | ВМ □МВ4М   | I/A     | 1500           | 700            | 500            | 33.1               | 1250   | 1200      | 600          | P. 199 |
| ICCDA2                           | B1N □HB3 □ | I/A     | 2200           | 700            | 500            | 9/11.2             | 2400   | 1200      | 1200/600     | P. 201 |
| ICSPA3                           | B1N □MB3 □ | I/A     | 2200           | 700            | 500            | 9/19               | 1300   | 1200      | 1200/600     | P. 203 |
| 3-axis                           | B2N □HB3 □ | I/A     | 3000           | 700            | 500            | 9/11.2             | 2400   | 1200      | 1200/600     | P. 205 |
| Combinations                     | B2N □MB3 □ | I/A     | 3000           | 700            | 500            | 9/19               | 1300   | 1200      | 1200/600     | P. 207 |

<sup>\*</sup> The payload shown is the maximum value for the rated acceleration. \* For those with multiple lead types, the payload and maximum speed are listed in the order of high lead/medium lead/low lead.

# XYB+ZS Type (Y-axis Base Mount/Z-axis Slider Mount)

|  | _         | Encoder |                | Stroke (mm)    |                | D             | ١      | Лах. speed | d (mm/s)* | Reference |
|--|-----------|---------|----------------|----------------|----------------|---------------|--------|------------|-----------|-----------|
| Series                                   | Туре      | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | Payload (kg)* | X-axis | Y-axis     | Z-axis    | page      |
|  | BA □MS1 □ | WA      | 700            | 400            | 300            | 4.3/11.3      | 480    | 480        | 480/240   | P. 209    |
|  | BB □HS1 □ | WA      | 1000           | 400            | 300            | 4.3/8.1       | 1200   | 960        | 480/240   | P. 211    |
|  | BB □MS1 □ | WA      | 1000           | 400            | 300            | 4.3/11.3      | 600    | 480        | 480/240   | P. 213    |
|  | BC □HS1 □ | WA      | 1000           | 500            | 400            | 4.3/11.3      | 1200   | 1200       | 480/240   | P. 215    |
|  | BC □HS3M  | WA      | 1000           | 500            | 400            | 13.2          | 1200   | 1200       | 600       | P. 217    |
| ICS (P)B3                                | BC □MS3M  | WA      | 1000           | 500            | 400            | 14.3          | 600    | 600        | 600       | P. 219    |
| IS(P)B+IS(P)B+IS(P)B 3-axis Combinations | BD □HS1 □ | WA      | 2000           | 500            | 400            | 4.3/11.3      | 1200   | 1200       | 480/240   | P. 221    |
|  | BD□HS3M   | WA      | 2000           | 500            | 400            | 13.2          | 1200   | 1200       | 600       | P. 223    |
|  | BE □HS1 □ | WA      | 1000           | 700            | 400            | 4.3/11.3      | 1200   | 1200       | 480/240   | P. 225    |
|  | BE □HS3M  | WA      | 1000           | 700            | 400            | 14.3          | 1200   | 1200       | 600       | P. 227    |
|  | BF □HS1 □ | WA      | 2500           | 700            | 400            | 4.3/11.3      | 1200   | 1200       | 480/240   | P. 229    |
|  | BF □HS3M  | WA      | 2500           | 700            | 400            | 14.3          | 1200   | 1200       | 600       | P. 231    |
| $\circ$                                  | BK □HS4 □ | I/A     | 1000           | 700            | 500            | 12/25.1       | 2400   | 2400       | 1200/600  | P. 233    |
| ICS (P)B3                                | BK □MS4 □ | I/A     | 1000           | 700            | 500            | 12/32         | 1200   | 1200       | 1200/600  | P. 235    |
| IS(P)A+IS(P)B+IS(P)B 3-axis Combinations | BL□HS4□   | I/A     | 2500           | 700            | 500            | 12/25.1       | 2400   | 2400       | 1200/600  | P. 237    |
|  | BL□MS4 □  | I/A     | 2500           | 700            | 500            | 12/32         | 1200   | 1200       | 1200/600  | P. 239    |
| ICS (P)B3  SSPA+IS(P)B+IS(P)B            | ВМ □НЅ4Н  | I/A     | 1000           | 700            | 500            | 12            | 2500   | 2400       | 1200      | P. 241    |
| 3-axis Combinations                      | BM □MS4M  | I/A     | 1000           | 700            | 500            | 32            | 1250   | 1200       | 600       | P. 243    |
| ICSPA3                                   | B1N □HS3M | I/A     | 2200           | 700            | 400            | 11.5          | 2400   | 1200       | 600       | P. 245    |
| (NS+ISPA+ISPA                            | B1N □MS3M | I/A     | 2200           | 700            | 400            | 13            | 1300   | 1200       | 600       | P. 247    |
| 3-axis<br>Combinations                   | B2N □HS3M | I/A     | 3000           | 700            | 400            | 11.5          | 2400   | 1200       | 600       | P. 249    |
| Combinations                             | B2N □MS3M | I/A     | 3000           | 700            | 400            | 13            | 1300   | 1200       | 600       | P. 251    |

<sup>\*</sup>The payload shown is the maximum value for the rated acceleration. \*For those with multiple lead types, the payload and maximum speed are listed in the order of high lead/medium lead/low lead.

# XZ+YS Type (Z-axis Upright Mount/Y-axis Slider Mount)

| Series                                      |   | Tuno      | Encoder |                | Stroke (mm)    |                | Payload (kg) |        | Max. spee | ed (mm/s) | Reference |
|---|---|-----------|---------|----------------|----------------|----------------|--------------|--------|-----------|-----------|-----------|
| Series                                      |   | Туре      | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | Payloau (kg) | X-axis | Y-axis    | Z-axis    | page      |
| ICS (P)B3                                   | P | Z3C □HS1H | WA      | 1070           | 400            | 400            | 9.5          | 1200   | 960       | 600       | P. 253    |
| IS(P)B+IS(P)B+IS(P)B<br>3-axis Combinations |   | Z3G □HS2H | WA      | 1270           | 500            | 500            | 16.5         | 2400   | 1200      | 600       | P. 255    |

<sup>\*</sup> The payload shown is the maximum value for the rated acceleration.

# XYG+ZB Type (Y-axis Horizontal Gantry/Z-axis Base Mount)

| Series           | Turno      | Encoder |                | Stroke (mm)    |                | Dayload (kg)* | ٨      | Лах. spee | ed (mm/s)*   | Reference<br>page |
|------------------|------------|---------|----------------|----------------|----------------|---------------|--------|-----------|--------------|-------------------|
| Series           | Type       |         | X-axis maximum | Y-axis maximum | Z-axis maximum | Payload (kg)* | X-axis | Y-axis    | Z-axis       |                   |
|                  | G1J □HB1 □ | WA      | 2500           | 700            | 600            | 3.5/7/14      | 1200   | 1200      | 960/480/240  | P. 257            |
| ICS (P)B3        | G1J □HB2 □ | WA      | 2500           | 700            | 600            | 5/10/20       | 1200   | 1200      | 1200/600/300 | P. 259            |
| (IS(P)B+IS(P)B+  | G1J □HB3 □ | WA      | 2500           | 700            | 600            | 10/20         | 1200   | 1200      | 1200/600     | P. 261            |
| IS(P)B<br>3-axis | G2J □HB1 □ | WA      | 2500           | 1200           | 600            | 3.5/7/14      | 1200   | 1200      | 960/480/240  | P. 263            |
| Combinations     | G2J □HB2 □ | WA      | 2500           | 1200           | 600            | 5/10/20       | 1200   | 1200      | 1200/600/300 | P. 265            |
|                  | G2J □HB3 □ | WA      | 2500           | 1200           | 600            | 10/20         | 1200   | 1200      | 1200/600     | P. 267            |

<sup>\*</sup>The payload shown is the maximum value for the rated acceleration. \*For those with multiple lead types, the payload and maximum speed are listed in the order of high lead/medium lead/low lead.

# XYG+ZS Type (Y-axis Horizontal Gantry/Z-axis Slider Mount)

| Series           |            | Encoder |                | Stroke (mm)    | Payload (kg)*  | Max. speed (mm/s)* |        |        | Reference |        |
|------------------|------------|---------|----------------|----------------|----------------|--------------------|--------|--------|-----------|--------|
| Series           | Type       | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | rayidad (kg)"      | X-axis | Y-axis | Z-axis    | page   |
| ICS (P)B3        | G1J □HS1 □ | WA      | 2500           | 700            | 400            | 4.3/11.3           | 1200   | 1200   | 480/240   | P. 269 |
|                  | G1J□HS2L   | WA      | 2500           | 700            | 500            | 14.8               | 1200   | 1200   | 300       | P. 271 |
| (IS(P)B+IS(P)B+  | G1J □HS3M  | WA      | 2500           | 700            | 500            | 14.3               | 1200   | 1200   | 600       | P. 273 |
| IS(P)B<br>3-axis | G2J □HS1 □ | WA      | 2500           | 1200           | 400            | 4.3/11.3           | 1200   | 1200   | 480/240   | P. 275 |
| Combinations     | G2J □HS2L  | WA      | 2500           | 1200           | 500            | 14.8               | 1200   | 1200   | 300       | P. 277 |
|                  | G2J □HS3M  | WA      | 2500           | 1200           | 500            | 14.3               | 1200   | 1200   | 600       | P. 279 |

<sup>\*</sup>The payload shown is the maximum value for the rated acceleration. \*For those with multiple lead types, the payload and maximum speed are listed in the order of high lead/medium lead/low lead.

# **Cartesian Robot 3-axis Combinations**

# XYGB+ZB Type (Y-axis Side-mounted Gantry/Z-axis Base Mount)

| Series           | Tuno      | Encoder |                | Stroke (mm)    |                | · Payload (kg)* | ٨      | Лах. spee | ed (mm/s)*   | Reference |
|------------------|-----------|---------|----------------|----------------|----------------|-----------------|--------|-----------|--------------|-----------|
| series           | Type      | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | rayidad (kg)"   | X-axis | Y-axis    | Z-axis       | page      |
|                  | GB □HB1 □ | WA      | 1100           | 600            | 300            | 7/7.6           | 1200   | 960       | 480/240      | P. 281    |
|                  | GB □MB1 □ | WA      | 1100           | 600            | 300            | 7/14            | 600    | 480       | 480/240      | P. 283    |
|                  | GC □HB1 □ | WA      | 1100           | 700            | 400            | 7/14            | 1200   | 1200      | 480/240      | P. 285    |
|                  | GC □HB2 □ | WA      | 1100           | 700            | 400            | 10/13           | 1200   | 1200      | 600/300      | P. 287    |
|                  | GC □HB3H  | WA      | 1100           | 700            | 400            | 10              | 1200   | 1200      | 1200         | P. 289    |
|                  | GC □MB2L  | WA      | 1100           | 700            | 400            | 17.6            | 600    | 600       | 300          | P. 291    |
| ICS (P)B3        | GC □MB3M  | WA      | 1100           | 700            | 400            | 17.1            | 600    | 600       | 600          | P. 293    |
| (IS(P)B+IS(P)B+  | GD □HB1 □ | WA      | 2000           | 700            | 400            | 7/14            | 1200   | 1200      | 480/240      | P. 295    |
| IS(P)B<br>3-axis | GD □HB2 □ | WA      | 2000           | 700            | 400            | 10/13           | 1200   | 1200      | 600/300      | P. 297    |
| Combinations     | GD □HB3H  | WA      | 2000           | 700            | 400            | 10              | 1200   | 1200      | 1200         | P. 299    |
|                  | GE □HB1L  | WA      | 1300           | 900            | 500            | 14              | 1200   | 1200      | 240          | P. 301    |
|                  | GE □HB2 □ | WA      | 1300           | 900            | 500            | 10/20           | 1200   | 1200      | 600/300      | P. 303    |
|                  | GE □HB3 □ | WA      | 1300           | 900            | 500            | 10/20/31.8      | 1200   | 1200      | 1200/600/300 | P. 305    |
|                  | GF □HB1L  | WA      | 2500           | 900            | 500            | 14              | 1200   | 1200      | 240          | P. 307    |
|                  | GF □HB2 □ | WA      | 2500           | 900            | 500            | 10/20           | 1200   | 1200      | 600/300      | P. 309    |
|                  | GF □HB3 □ | WA      | 2500           | 900            | 500            | 10/20/31.8      | 1200   | 1200      | 1200/600/300 | P. 311    |

<sup>\*</sup>The payload shown is the maximum value for the rated acceleration. \*For those with multiple lead types, the payload and maximum speed are listed in the order of high lead/medium lead/low lead.

# XYGB+ZS Type (Y-axis Side-mounted Gantry/Z-axis Slider Mount)

| Series                                   | Tuno      | Encoder |                | Stroke (mm)    |                | Payload (kg)* | ٨      | 1ax. spee | d (mm/s)* | Reference |
|--|-----------|---------|----------------|----------------|----------------|---------------|--------|-----------|-----------|-----------|
| Series                                   | Type      | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | rayioau (kg)  | X-axis | Y-axis    | Z-axis    | page      |
|  | GB □HS1 □ | WA      | 1000           | 600            | 300            | 4.3/8         | 1200   | 960       | 480/240   | P. 313    |
|  | GB □MS1 □ | WA      | 1000           | 600            | 300            | 4.3/11.3      | 600    | 480       | 480/240   | P. 315    |
|  | GC □HS1 □ | WA      | 1000           | 700            | 400            | 4.3/11.3      | 1200   | 1200      | 480/240   | P. 317    |
|  | GC □HS3M  | WA      | 1000           | 700            | 400            | 13.1          | 1200   | 1200      | 600       | P. 319    |
|  | GC □MS1 □ | WA      | 1000           | 700            | 400            | 4.3/11.3      | 600    | 600       | 480/240   | P. 321    |
| $\cap$                                   | GC □MS3M  | WA      | 1000           | 700            | 400            | 14.3          | 600    | 600       | 600       | P. 323    |
| ICS (P)B3                                | GD □HS1 □ | WA      | 2000           | 700            | 400            | 4.3/11.3      | 1200   | 1200      | 480/240   | P. 325    |
| IS(P)B+IS(P)B+IS(P)B 3-axis Combinations | GD□HS3M   | WA      | 2000           | 700            | 400            | 13.1          | 1200   | 1200      | 600       | P. 327    |
|  | GE □HS1 □ | WA      | 1000           | 900            | 400            | 4.3/11.3      | 1200   | 1200      | 480/240   | P. 329    |
|  | GE □HS3 □ | WA      | 1000           | 900            | 400            | 14.3/32.9     | 1200   | 1200      | 600/300   | P. 331    |
|  | GE □MS1 □ | WA      | 1000           | 900            | 400            | 4.3/11.3      | 600    | 600       | 480/240   | P. 333    |
|  | GE□MS3L   | WA      | 1000           | 900            | 400            | 34.3          | 600    | 600       | 300       | P. 335    |
|  | GF □HS1 □ | WA      | 2500           | 900            | 400            | 4.3/11.3      | 1200   | 1200      | 480/240   | P. 337    |
|  | GF □HS3 □ | WA      | 2500           | 900            | 400            | 14.3/32.9     | 1200   | 1200      | 600/300   | P. 339    |

<sup>\*</sup> The payload shown is the maximum value for the rated acceleration. \* For those with multiple lead types, the payload and maximum speed are listed in the order of high lead/medium lead/low lead.

# Cartesian Robot 4-axis Combinations

# XMYB Type (X-axis Multi-Slider/Y-axis Base Mount)

| Series                  | Tuno  | Encoder |                | Stroke (mm)    |                |               | - 1    | Max. spee | ed (mm/s) | Reference |
|-------------------------|-------|---------|----------------|----------------|----------------|---------------|--------|-----------|-----------|-----------|
| series                  | Type  | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | Payload (kg)* | X-axis | Y-axis    | Z-axis    | page      |
| ICSPA4<br>(NS+ISPA+ISPA | B3N1H | I/A     | 2250           | 700            | _              | 21.2          | 2400   | 1200      | _         | P. 341    |
| 4-axis<br>Combinations  | B3N1M | I/A     | 2250           | 700            | _              | 40            | 1300   | 1200      | _         | P. 343    |

 $<sup>\</sup>ensuremath{^{*}}$  The payload shown is the maximum value for the rated acceleration.

# Cartesian Robot 6-axis Combinations

# XMYB+ZB Type (X-axis Multi-Slider/Y-axis Side Base Mount/Z-axis Base Mount)

| Series                           | Type     | Encoder |                | Stroke (mm)    |                | Payload (kg)* | Max. speed (mm/s)* |        |          | Reference |
|----------------------------------|----------|---------|----------------|----------------|----------------|---------------|--------------------|--------|----------|-----------|
| series .                         | Туре     | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | rayload (kg)  | X-axis             | Y-axis | Z-axis   | page      |
| ICSPA6                           | B3N1HB3□ | I/A     | 2250           | 700            | 500            | 9/11.2        | 2400               | 1200   | 1200/600 | P. 345    |
| ISPA+ISPA<br>6-axis Combinations | B3N1MB3□ | I/A     | 2250           | 700            | 500            | 9/19          | 1300               | 1200   | 1200/600 | P. 347    |

<sup>\*</sup>The payload shown is the maximum value for the rated acceleration. \*For those with multiple lead types, the payload and maximum speed are listed in the order of high lead/medium lead/low lead.

# XMYB+ZS Type (X-axis Multi-Slider/Y-axis Side Base Mount/Z-axis Slider Mount)

| Series                        | Туре     | Encoder |                | Stroke (mm)    |                | Payload (kg)* | ı      | Reference |        |        |
|-------------------------------|----------|---------|----------------|----------------|----------------|---------------|--------|-----------|--------|--------|
| Series                        | Туре     | type    | X-axis maximum | Y-axis maximum | Z-axis maximum | r ayload (kg) | X-axis | Y-axis    | Z-axis | page   |
| ICSPA6                        | B3N1HS3M | I/A     | 2250           | 700            | 400            | 11.5          | 2400   | 1200      | 600    | P. 349 |
| ISPA+ISPA 6-axis Combinations | B3N1MS3M | I/A     | 2250           | 700            | 400            | 13            | 1300   | 1200      | 600    | P. 351 |

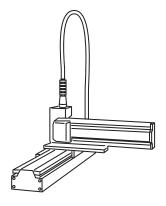
<sup>\*</sup> The payload shown is the maximum value for the rated acceleration.

# Cartesian Robot Selection Notes

# **Wiring Method Types and Features**

The motor/encoder cable management method can be "Self-standing cable" or "Cable track". (Please refer to product pages for selectable wiring methods.)

# ■ Self-standing Cable

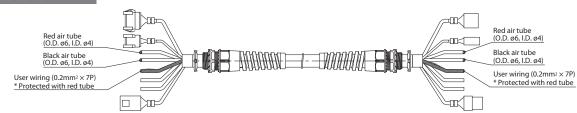


# Cable Management Model: SC

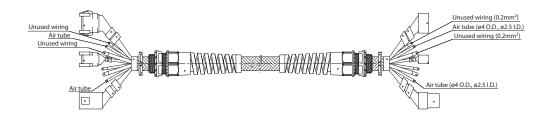
# **Features**

- The flex radius is large, making disconnection less likely.
- · Vertical space is required.
- The composite cable contains service wiring and tubing for users.

# ICSB Series

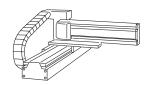


# ICSA Series



009

# **■** Cable Track



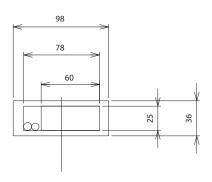
# ICSB Series

Please refer to the dimensions on the product pages.

# ICSA Series

# ● ISA extra-large type 2-axis combinations

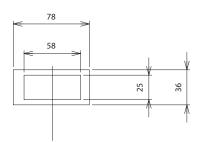
Applicable models: BP□□/BQ□□



Cable track for Y-axis wiring

# Cable Management Model: $CT \square \square$

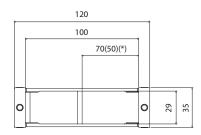
- **Features** Since height can be minimized, vertical space is not required.
  - The wiring of equipment to be mounted on the Y-axis and Z-axis can be stored in the cable track.
  - Four different track sizes can be selected according to the amount of cable to be stored. (ICSA Series exclusive)



Cable track for Z-axis wiring (optional)

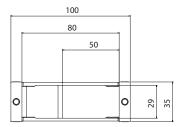
# ● Nut rotation actuator 2-axis/3-axis/4-axis/6-axis combinations

Applicable models:



Cable track for Y-axis wiring

(\*) 70 for 2-axis combinations and 50 for 3-axis combinations and more.



Cable track for Z-axis wiring (optional)

# Cable Exit Direction/Sensor Mounting Direction/Z-axis Wiring Option

# Cable Exit Direction/Sensor Mounting Direction

The cable exit direction of the cartesian robot configured axis and mounting direction of the sensor (creep sensor/home limit switch) differ depending on the configuration type. Please refer to the table below for more information.

(1) Cable exit direction \* Applies only to 2-axis/3-axis combinations.

The cable exit direction is set only when the configured axis is IS(P)B, SSPA or IS(P)A-W.

Only the cable exit direction of the first axis can be changed as an option.

(However, it cannot be changed for YZS/YZB type and ICS(P)A Series.)

To set a different direction from the normal setting, indicate the cable exit direction symbol in the X-axis Option.

If the configured axis is IS(P)A-W, indicate the exit direction symbol in the configuration model name even for the normal setting.

# (2) Sensor (creep sensor/home limit switch) mounting direction

The sensor mounting direction cannot be changed.

Even if the mounting direction is opposite, the option code notation in the configuration type will be "C/L".

Also, if the configured axis is IS(P)A-W or NS, the sensor mounting position will be "C/L" regardless of the configuration direction.

Depending on the configured axis, the sensor may not be mountable. Please check the Options table on the product pages.

### ■ 2-axis Combinations

| Configuration | Configuration | First                   | axis                         | Secon                | nd axis                   | Second axis |
|---------------|---------------|-------------------------|------------------------------|----------------------|---------------------------|-------------|
| type          | direction     | Cable exit direction *1 | Sensor mounting direction *2 | Cable exit direction | Sensor mounting direction | wiring      |
|               | 1             | A3S[A3]                 | CL/LL[C/L]                   | A1S                  | C/L                       |             |
| XYB           | 2             | A1S[A1]                 | C/L[C/L]                     | A3S                  | CL/LL                     | SC          |
| XYBG          | 3             | A3S[A3]                 | CL/LL[C/L]                   | A3S                  | CL/LL                     | CT          |
|               | 4             | A1S[A1]                 | C/L[C/L]                     | A1S                  | C/L                       |             |
|               | 1             | A3S                     | CL/LL                        | A3S                  | C/L                       |             |
| XYS           | 2             | A1S                     | C/L                          | A1S                  | CL/LL                     | SC          |
| XYS           | 3             | A3S                     | CL/LL                        | A1S                  | CL/LL                     | SC          |
|               | 4             | A1S                     | C/L                          | A3S                  | C/L                       |             |
|               | 1             | A3S                     | CL/LL                        | A3S                  | CL/LL                     |             |
|               | 2             | A1S                     | C/L                          | A1S                  | C/L                       |             |
| xz            | 3             | A3S                     | CL/LL                        | A1S                  | C/L                       | ст          |
| ^~            | 4             | A1S                     | C/L                          | A3S                  | CL/LL                     | CI          |
|               | 5             | A3S                     | CL/LL                        | A1S                  | C/L                       |             |
|               | 6             | A1S                     | C/L                          | A3S                  | CL/LL                     |             |
| YZS           | 1             | A1E                     | C/L                          | A3E                  | CL/LL                     | SC          |
| 123           | 2             | A3E                     | CL/LL                        | A1E                  | C/L                       | 3C          |
|               | 1             | A1E                     | C/L                          | A3S                  | CL/LL                     | CT          |
| YZB           | ' I           | AIE                     | C/L                          | A1E                  | C/L                       | SC          |
| 1ZB           | 2             | A3E                     | CL/LL                        | A1S                  | C/L                       | CT          |
|               | 2             | MSE                     | CL/LL                        | A3E                  | CL/LL                     | SC          |
| XYG           | 1             | A3S                     | CL/LL                        | A3E                  | C/L                       | СТ          |
| AIG           | 2             | A1S                     | C/L                          | A1E                  | CL/LL                     | CI          |

| Axis configuration                     | Code                        | Legend   |                         |  |  |  |  |  |
|--|-----------------------------|--|-------------------------|--|--|--|--|--|
|  | A1E                         | Exit direction: Back left  |                         |  |  |  |  |  |
| IS(P)B                                 | A1S                         | Exit direction: Left   |                         |  |  |  |  |  |
| SSPA                                   | A3E                         | Exit direction: Back right   |                         |  |  |  |  |  |
|  | A3S                         | Exit direction: Right  |                         |  |  |  |  |  |
| IC/D\A\M                               | A1 Exit from left side      |  |                         |  |  |  |  |  |
| IS(P)A-W  A3 Exit from right side      |                             |  |                         |  |  |  |  |  |
| Sensor (cree                           | p senso                     | r/home limit switch) mou   | nting direction         |  |  |  |  |  |
|  | p senso                     | · · · · · · · · · · · · · · · · · · ·  | nting direction         |  |  |  |  |  |
| Code                                   | Legend                      | · · · · · · · · · · · · · · · · · · ·  |                         |  |  |  |  |  |
| Sensor (cree<br>Code<br>C/L<br>CL/LL * | Legend<br>Mounti            |  | andard)                 |  |  |  |  |  |
| Code<br>C/L<br>CL/LL *                 | Legend<br>Mounti<br>Mounti  | ng direction: Body right (st   | andard)<br>posite side) |  |  |  |  |  |
| Code<br>C/L<br>CL/LL *                 | Legend<br>Mounti<br>Mounti  | ng direction: Body right (st<br>ng direction: Body left (opp                                 | andard)<br>posite side) |  |  |  |  |  |
| Code<br>C/L<br>CL/LL *                 | Legend<br>Mounti<br>Mounti  | ng direction: Body right (st<br>ng direction: Body left (opp                                 | andard)<br>posite side) |  |  |  |  |  |
| Code C/L CL/LL * The option co         | Legend<br>Mounti<br>Mounti  | ng direction: Body right (st<br>ng direction: Body left (opp<br>tion in the configuration ty | andard)<br>posite side) |  |  |  |  |  |
| Code C/L CL/LL * The option co         | Mounti<br>Mounti<br>de nota | ng direction: Body right (st<br>ng direction: Body left (opp<br>tion in the configuration ty | andard)<br>posite side) |  |  |  |  |  |

# **■** 3-axis Combinations

| Configuration | Configuration | Firs                    | t axis                       | Seco                 | nd axis                   | Thir                 | daxis                     | Third axis |
|---------------|---------------|-------------------------|------------------------------|----------------------|---------------------------|----------------------|---------------------------|------------|
| type          | direction     | Cable exit direction *1 | Sensor mounting direction *2 | Cable exit direction | Sensor mounting direction | Cable exit direction | Sensor mounting direction | wiring     |
|               | 1             | A3S[A3]                 | CL/LL[C/L]                   | A1S                  | C/L                       | A3S<br>A3E           | CL/LL                     | CT<br>SC   |
| хүв           | 2             | A1S[A1]                 | C/L[C/L]                     | A3S                  | CL/LL ·                   | A1S<br>A1E           | C/L                       | CT         |
| +<br>ZB       | 3             | A3S[A3]                 | CL/LL[C/L]                   | A3S                  | CL/LL ·                   | A1S<br>A1E           | C/L                       | CT<br>SC   |
|               | 4             | A1S[A1]                 | C/L[C/L]                     | A1S                  | C/L                       | A3S<br>A3E           | CL/LL                     | CT<br>SC   |
|               | 1             | A3S[A3]                 | CL/LL[C/L]                   | A1S                  | C/L                       | A1E                  | C/L                       |            |
| XYB           | 2             | A1S[A1]                 | C/L[C/L]                     | A3S                  | CL/LL                     | A3E                  | CL/LL                     |            |
| +<br>ZS       | 3             | A3S[A3]                 | CL/LL[C/L]                   | A3S                  | CL/LL                     | A3E                  | CL/LL                     | SC         |
| 23            | 4             | A1S[A1]                 | C/L[C/L]                     | A1S                  | C/L                       | A1E                  | C/L                       |            |
| XZ+YS         | 1             | A3S                     | CL/LL                        | A3E                  | CL/LL                     | A3S                  | C/L                       | SC         |
| AZ+13         | 2             | A1S                     | C/L                          | A1E                  | C/L                       | A1S                  | CL/LL                     | 30         |
| XYG+ZB        | 1             | A3S                     | CL/LL                        | A3E                  | C/L                       | A1S                  | C/L                       | СТ         |
| ATGTZB        | 2             | A1S                     | C/L                          | A1E                  | CL/LL                     | A3S                  | CL/LL                     | CI         |
| XYG+ZS        | 1             | A3S                     | CL/LL                        | A3E                  | C/L                       | A3E                  | CL/LL                     | SC         |
| X1G+23        | 2             | A1S                     | C/L                          | A1E                  | CL/LL                     | A1E                  | C/L                       |            |
|               | 1             | A3S                     | CL/LL                        | A1S                  | C/L                       | A3S<br>A3E           | CL/LL                     | CT<br>SC   |
| XYBG          | 2             | A1S                     | C/L                          | A3S                  | CL/LL                     | A1S<br>A1E           | C/L                       | CT<br>SC   |
| +<br>ZB       | 3             | A3S                     | CL/LL                        | A3S                  | CL/LL ·                   | A1S<br>A1E           | C/L                       | CT<br>SC   |
|               | 4             | A1S                     | C/L                          | A1S                  | C/L                       | A3S<br>A3E           | CL/LL                     | CT<br>SC   |
|               | 1             | A3S                     | CL/LL                        | A1S                  | C/L                       | A1E                  | C/L                       |            |
| XYBG          | 2             | A1S                     | C/L                          | A3S                  | CL/LL                     | A3E                  | CL/LL                     | SC         |
| +<br>ZS       | 3             | A3S                     | CL/LL                        | A3S                  | CL/LL                     | A3E                  | CL/LL                     | SC         |
| 23            | 4             | A1S                     | C/L                          | A1S                  | C/L                       | A1E                  | C/L                       |            |

<sup>\*1</sup> Direction in the normal setting. Cable exit direction can be changed as an option.

# ■ 4-axis Combinations

| Configuration | Configuration |            | Wiring      |            |             |        |
|---------------|---------------|------------|-------------|------------|-------------|--------|
| type          | direction     | First axis | Second axis | Third axis | Fourth axis | wiring |
| ХМҮВ          | 1             | C/L        | -           | C/L        | CL/LL       | СТ     |

# ■ 6-axis Combinations

| Configuration   | Configuration |            | Sensor mounting direction |            |             |            |            |        |  |  |
|-----------------|---------------|------------|---------------------------|------------|-------------|------------|------------|--------|--|--|
| type            | direction     | First axis | Second axis               | Third axis | Fourth axis | Fifth axis | Sixth axis | Wiring |  |  |
| XMYB<br>+<br>ZB | 1             | C/L        | -                         | C/L        | C/L         | CL/LL      | CL/LL      | СТ     |  |  |
| XMYB<br>+<br>ZS | 1             | C/L        | -                         | C/L        | CL/LL       | CL/LL      | C/L        | СТ     |  |  |

<sup>\*1</sup> Direction in the normal setting. Cable exit direction can be changed as an option (YZS/YZB cannot be changed).

<sup>[]</sup> is for IS(P)A-W.
\*2 [] is for IS(P)A-W or NS axis configuration.

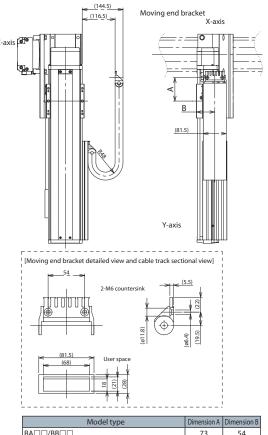
<sup>[]</sup> is for IS(P)A-W.
\*2 [] is for IS(P)A-W or NS axis configuration.

Z-axis Wiring Option

\* Only ICS(P)B2 can be selected

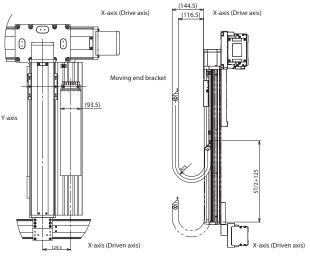
Cable track for wiring is set as an option on the Y-axis slider of XYB, XYBG and XYG for customer device mounting.

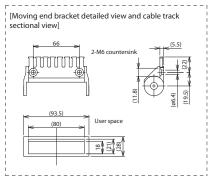
# <Configuration type: XYB, XYBG>



| Model type               | Dimension A | Dimension B |
|--------------------------|-------------|-------------|
| BA□□/BB□□                | 73          | 54          |
| BC□□/BD□□/BE□□/BF□□      | 83          | 65          |
| BG□□/BH□□/BK□□/BL□□/BM□□ | 83          | 80          |
| GB□□                     | 73          | 54          |
| GC□□/GD□□/GE□□/GF□□      | 83          | 65          |
| GG□□/GH□□                | 83          | 80          |

# <Configuration type: XYG-G1J/G2J>

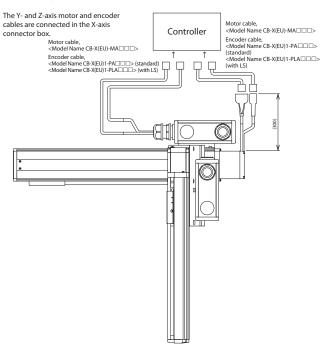




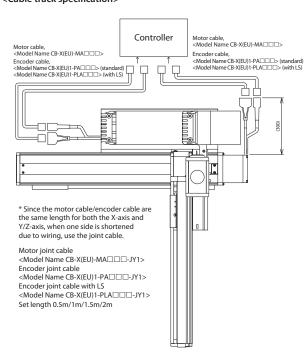
# Cartesian Robot - Controller Connecting Cable \*ICS(P)B

Connect the cartesian robot - controller connecting cable using the single axis robot cable for each configured axis. Please contact IAI for more details on the cables.

### <Self-standing cable specification>



# <Cable track specification>





#### ICSB3-BA□MB1□ Battery-less Absolute X: Sm (60W) Y: Sm (60W) Z: Sm (60W) XYB+ZB X-Y-Z Speed Type Y, Z Base Mo High-Precision ICSPB3-BA□MB Specification ■ Model Specification BA MB1 WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length Waxis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanat L: Specified of Model length Designations bel Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat precisio... specificati XSEL-RA/SA<sup>4</sup>

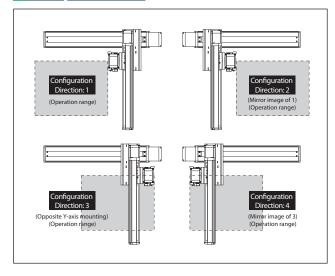
# Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BA1MB1H-①-② ③-④ ⑤-⑦-T2-⑥-⑨   |
| 1                                | М                          | ICSB3[ICSPB3]-BA1MB1M-1]-23-43-67-T2-8-9   |
|                                  | L                          | ICSB3[ICSPB3]-BA1MB1L-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
|                                  | Н                          | ICSB3[ICSPB3]-BA2MB1H-①-23-45-67-T2-8-9    |
| 2                                | М                          | ICSB3[ICSPB3]-BA2MB1M-1]-23-45-67-T2-8-9   |
|                                  | L                          | ICSB3[ICSPB3]-BA2MB1L-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
|                                  | Н                          | ICSB3[ICSPB3]-BA3MB1H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BA3MB1M-1]-23-43-67-T2-8-9   |
|                                  | L                          | ICSB3[ICSPB3]-BA3MB1L-①-② ③-④ ⑤-⑥ ⑦-T2-⑧-⑨ |
|                                  | Н                          | ICSB3[ICSPB3]-BA4MB1H-①-23-43-67-T2-8-9    |
| 4                                | М                          | ICSB3[ICSPB3]-BA4MB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑧-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BA4MB1L-①-23-43-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.

\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                         | Reference page                        |
|--------------|-------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-SXM-①-60-8-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-SXM-①-60-8-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦ | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

- in the above model names.
  Note that the strokes are indicated in mm (millimeters).
  Lead is specified with location in the above model names.
  16: For Z-axis High Speed type
  4: For Z-axis Low Speed type
  4: For Z-axis Low Speed type

- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation   |  |  |  |
|-----|-------------------------------------|--|--|--|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below.  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |
| (5) | Y-axis option                       | Refer to Options table below.  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below.  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |  |  |  |

<sup>\*1</sup> The maximum X-axis stroke is 700mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the ordection, but the creep sensor is specified in the model name as C and the notine limit switch as C regard mounting position.

  Please refer to P.11 for more information.

  3 Cannot be selected for High-Precision Specification.

  To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.
- Please refer to P.11 for the cable exit direction of each axis.

# Common Specifications \* Items in brackets [] are for the High-Precision Specification.

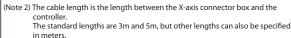
| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |  |  |  |
|---------------------------|--|--|--|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |  |  |  |
| Lost motion               | 0.05mm [0.02mm] or less                          |  |  |  |
| Guide                     | Integrated with base                             |  |  |  |
| Base                      | Material: Aluminum with white alumite treatment  |  |  |  |
| X-axis motor output/lead  | 60W/8mm  |  |  |  |
| Y-axis motor output/lead  | 60W/8mm  |  |  |  |
| Z-axis motor output/lead  | 60W/16mm (H), 8mm (M), 4mm (L)                   |  |  |  |

### Applicable Controllers

Notes

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

(Configuration direction: 3)

(Configuration direction: 3)

# Payload (kg) (Note 3)

\* The payload is based on operation at the rated acceleration.

### ■BA□MB1H

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~400       |
| a             | 100 |               |
| Š             | 150 |               |
| s st          | 200 | 3.5           |
| Z-axis stroke | 250 |               |
| Z             | 300 |               |

### ■BA□MB1M

|             |     | Y-axis stroke |     |     |     |     |  |  |
|-------------|-----|---------------|-----|-----|-----|-----|--|--|
|             |     | 100~200       | 250 | 300 | 350 | 400 |  |  |
| a           | 100 | 7.0           | 7.0 | 7.0 | 6.6 | 5.1 |  |  |
| Š           | 150 |               | 7.0 | 7.0 | 6.2 | 4.7 |  |  |
| axis stroke | 200 |               | 7.0 | 7.0 | 5.8 | 4.3 |  |  |
|             | 250 |               | 7.0 | 6.8 | 5.4 | 3.9 |  |  |
| Ż-          | 300 |               | 6.7 | 6.5 | 5.1 | 3.6 |  |  |

#### ■BA□MB1L

|        |     |     |     | ١   | /-axis strok | e   |     |     |
|--------|-----|-----|-----|-----|--------------|-----|-----|-----|
|        |     | 100 | 150 | 200 | 250          | 300 | 350 | 400 |
| a      | 100 | 8.9 | 8.7 | 8.5 | 8.2          | 8.0 | 6.6 | 5.1 |
| stroke | 150 | 8.5 | 8.3 | 8.1 | 7.8          | 7.6 | 6.2 | 4.7 |
| s st   | 200 | 8.1 | 7.9 | 7.7 | 7.4          | 7.2 | 5.8 | 4.3 |
| -axis  | 250 | 7.7 | 7.5 | 7.3 | 7.0          | 6.8 | 5.4 | 3.9 |
| Ż-     | 300 | 7.4 | 7.2 | 7.0 | 6.7          | 6.5 | 5.1 | 3.6 |

# Maximum Speed by Stroke (mm/s) (Note 4)

### **■**ВА□МВ1Н

|    |        | 100~300 | 350~400 | 450~600 | 650~700 | 750~800 | 850~900 |
|----|--------|---------|---------|---------|---------|---------|---------|
|    | X-axis |         | 480     |         | 330     | 260     | 210     |
|    | Y-axis | 480     |         |         | -       |         |         |
| -[ | Z-axis | 960     |         |         | _       |         |         |

# ■BA□MB1M

|   |        | 100~300 | 350~400 | 450~600 | 650~700 | 750~800 | 850~900 |
|---|--------|---------|---------|---------|---------|---------|---------|
| ſ | X-axis |         | 480     |         | 330     | 260     | 210     |
| ı | Y-axis | 48      | 30      |         | -       |         |         |
| П | 7-axis | 480     |         |         |         |         |         |

### ■BA□MB1L

|        | 100~300    | 350~400 | 450~600 | 650~700 | 750~800 | 850~900 |
|--------|------------|---------|---------|---------|---------|---------|
| X-axis |            | 480     |         | 330     | 260     | 210     |
| Y-axis | 480<br>240 |         |         | _       | _       |         |
| Z-axis |            |         |         | _       |         |         |

# ICSB3 [ICSPB3]-BA□MB1□-SC-SC (Self-standing cable specification)

#### Dimensions

CAD drawings can be

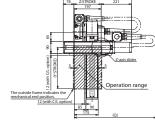


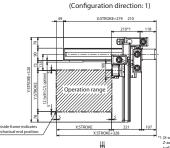


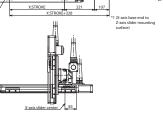


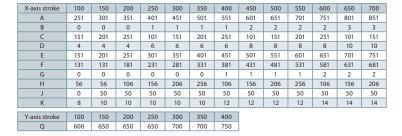
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

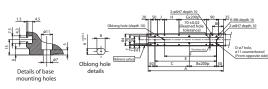












(Configuration direction: 1)

# ICSB3 [ICSPB3]-BA□MB1□-CT-CT (Cable track specification)

### Dimensions

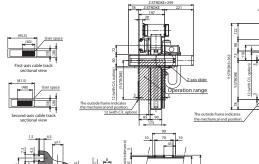
CAD drawings can be downloaded from our website.





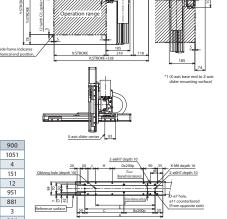


\* The configuration position in the figure is the home position. To change the home position, indicate NM in The options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



|     | etails of baseunting hol | ø7  | Oblong<br>hole det |     |     | 2-d6l- | 8 § |
|-----|--------------------------|-----|--------------------|-----|-----|--------|-----|
| 500 | 550                      | 600 | 650                | 700 | 750 | 800    | 850 |
|     |                          |     |                    |     |     |        |     |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850  | 900  |    |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|----|
| Α             | 251 | 301 | 351 | 401 | 451 | 501 | 551 | 601 | 651 | 701 | 751 | 801 | 851 | 901 | 951 | 1001 | 1051 |    |
| В             | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    |    |
| C             | 151 | 201 | 251 | 101 | 151 | 201 | 251 | 101 | 151 | 201 | 251 | 101 | 151 | 201 | 251 | 101  | 151  |    |
| D             | 4   | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   |    |
| E             | 151 | 201 | 251 | 301 | 351 | 401 | 451 | 501 | 551 | 601 | 651 | 701 | 751 | 801 | 851 | 901  | 951  |    |
| F             | 131 | 131 | 181 | 231 | 281 | 331 | 381 | 431 | 481 | 531 | 581 | 631 | 681 | 731 | 781 | 831  | 881  | Ι. |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3    | 3    |    |
| Н             | 56  | 56  | 106 | 156 | 206 | 256 | 106 | 156 | 206 | 256 | 106 | 156 | 206 | 256 | 106 | 156  | 206  |    |
| J             | 0   | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50   | 50   |    |
| K             | 8   | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16  | 16   | 16   |    |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525 | 550  | 575  |    |





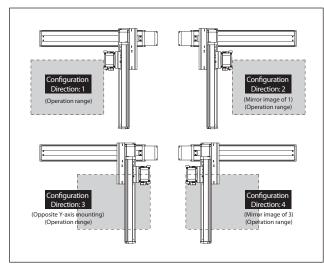
#### ICSB3-BB□HB1 ±10µm Battery-less Absolute X: Md (100W X-Y-Z XYB+ZB Speed Y: Sm (60W) Z: Sm (60W) ICSPB3-BB High-Precision Specification ■ Model Specification BB□HB1□ WA -**T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length Waxis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati L: Specified of Model length Designations belong Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below XSEL-RA/SA specification.

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
|                                  | Н                          | ICSB3[ICSPB3]-BB1HB1H-①-②③-④⑤-D-T2-⑧-⑨        |
| 1                                | М                          | ICSB3[ICSPB3]-BB1HB1M-①-② 3-④ 5-6 7-T2-®-9    |
|                                  | L                          | ICSB3[ICSPB3]-BB1HB1L-①-②③-④⑤-⑥-T2-⑥-⑨        |
|                                  | Н                          | ICSB3[ICSPB3]-BB2HB1H-①-23-43-67-T2-0-9       |
| 2                                | М                          | ICSB3[ICSPB3]-BB2HB1M-①-② ③-④ ⑤-6⑦-T2-⑧-⑨     |
|                                  | L                          | ICSB3[ICSPB3]-BB2HB1L-①-②③-④⑤-⑦-T2-⑥-⑨        |
|                                  | Н                          | ICSB3[ICSPB3]-BB3HB1H-①-②③-④⑤-⑥7-T2-⑩-⑨       |
| 3                                | М                          | ICSB3[ICSPB3]-BB3HB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨    |
|                                  | L                          | ICSB3[ICSPB3]-BB3HB1L-①-② 3]-4 5]-6 ⑦-T2-8]-9 |
|                                  | Н                          | ICSB3[ICSPB3]-BB4HB1H-①-23-45-67-T2-8-9       |
| 4                                | М                          | ICSB3[ICSPB3]-BB4HB1M-①-② ③-④ ⑤-⑦-T2-⑥-⑨      |
|                                  | L                          | ICSB3[ICSPB3]-BB4HB1L-11-23-43-67-T2-8-9      |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                          | Reference page                        |
|--------------|--------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]MXM-①-100-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-SXM-①-60-16-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for 🛈 through 🕡 in the above model names.

- in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  Lead is specified with log in the above model names.

  16. For Z-axis High Speed type

  8. For Z-axis Medium Speed type

  4. For Z-axis Low Speed type

- Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                         | Notation   |  |  |  |
|-----|-------------------------------------|--|--|--|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>110: 1100mm (100: 1000mm) *1  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below.  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |
| (5) | Y-axis option                       | Refer to Options table below.  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below.  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |  |  |  |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in  $\underline{\text{alphabetical order}}$ .

| Туре                                      | Model | Reference page  |  |  |
|---|-------|-----------------|--|--|
| X-axis cable exit direction               | *     | See P.11, P.353 |  |  |
| AQ seal (standard equipment)              | AQ    | See P.353       |  |  |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |  |  |
| Creep sensor *2                           | C/CL  | See P.353       |  |  |
| Home limit switch *2                      | L/LL  | See P.353       |  |  |
| Non-motor end specification               | NM    | See P.353       |  |  |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |  |  |

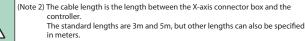
### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |  |  |  |  |
|---------------------------|--|--|--|--|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |  |  |  |  |
| Lost motion               | 0.05mm [0.02mm] or less                          |  |  |  |  |
| Guide                     | ntegrated with base                              |  |  |  |  |
| Base                      | Material: Aluminum with white alumite treatment  |  |  |  |  |
| X-axis motor output/lead  | 100W/20mm  |  |  |  |  |
| Y-axis motor output/lead  | 60W/16mm   |  |  |  |  |
| Z-axis motor output/lead  | 60W/16mm (H), 8mm (M), 4mm (L)                   |  |  |  |  |

### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

<sup>\*1</sup> Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the direction, but the creep sensor is specified in the model name as "C" and the nome limit switch as "L" regard mounting position.

Please refer to P.11 for more information.

3 Cannot be selected for High-Precision Specification.

To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

\* The payload is based on operation at the rated acceleration.

# **■**ВВ□НВ1Н

|               |     | Y-axis stroke |  |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|--|
|               |     | 100~400       |  |  |  |  |  |  |
| е             | 100 |               |  |  |  |  |  |  |
| rok           | 150 |               |  |  |  |  |  |  |
| s st          | 200 | 3.5           |  |  |  |  |  |  |
| Z-axis stroke | 250 |               |  |  |  |  |  |  |
| Z             | 300 |               |  |  |  |  |  |  |

|               |      |     | Y-axis stroke |     |     |     |     |     |     |  |  |  |  |
|---------------|------|-----|---------------|-----|-----|-----|-----|-----|-----|--|--|--|--|
|               |      |     | 100           | 150 | 200 | 250 | 300 | 350 | 400 |  |  |  |  |
| ۵             | n)   | 100 | 7.0           | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |  |  |  |  |
|               | rok  | 150 | 7.0           | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |  |  |  |  |
| Z-axis stroke | s st | 200 | 7.0           | 7.0 | 6.9 | 6.9 | 6.9 | 6.9 | 6.8 |  |  |  |  |
|               | 250  | 6.6 | 6.6           | 6.6 | 6.5 | 6.5 | 6.5 | 6.5 |     |  |  |  |  |
|               | Ν    | 200 |               |     |     |     |     |     |     |  |  |  |  |

# ■BB□HB1L

|             |     | Y-axis stroke |     |     |     |     |     |     |  |  |  |  |
|-------------|-----|---------------|-----|-----|-----|-----|-----|-----|--|--|--|--|
|             |     | 100           | 150 | 200 | 250 | 300 | 350 | 400 |  |  |  |  |
| n,          | 100 | 7.7           | 7.7 | 7.7 | 7.6 | 7.6 | 7.6 | 7.6 |  |  |  |  |
| ş           | 150 | 7.3           | 7.3 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 |  |  |  |  |
| axis stroke | 200 | 7.0           | 7.0 | 6.9 | 6.9 | 6.9 | 6.9 | 6.8 |  |  |  |  |
| -axi        | 250 | 6.6           | 6.6 | 6.6 | 6.5 | 6.5 | 6.5 | 6.5 |  |  |  |  |
| Ż-          | 300 | 6.3           | 6.3 | 6.3 | 6.3 | 6.3 | 6.2 | 6.2 |  |  |  |  |

# Maximum Speed by Stroke (mm/s) (Note 4)

### ■BB□HB1H

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 96      | 50      |         |         | _       |          |           |
| Z-axis | 960     |         |         | _       | _       |          |           |

**■**ВВ□НВ1М

### ■BB□HB1M

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 96      | 50      |         |         | _       |          |           |
| Z-axis | 480     |         |         | -       | _       |          |           |

### **■**BB□HB1L

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 96      | 50      |         |         | _       |          |           |
| Z-axis | 240     |         |         | -       |         |          |           |

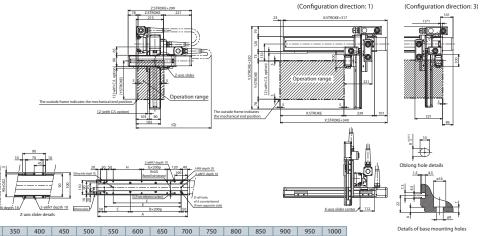
# ICSB3 [ICSPB3]-BB□HB1□-SC-SC (Self-standing cable specification)







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



(Configuration direction: 1)

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |
| В             | 0   | 0   | 1   | - 1 | - 1 | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 |     |     |     |     |     |     |     |      |      |      |      |      |
| Q             | 600 | 650 | 650 | 700 | 700 | 750 | 750 |     |     |     |     |     |     |     |      |      |      |      |      |

#### Petails of base mounting I \*1 (X-axis base end to Z-axis slider mounting surface)

(Configuration direction: 3)

# ICSB3 [ICSPB3]-BB□HB1□-CT-CT (Cable track specification)

# Dimensions

CAD drawings can be downloaded from our website.



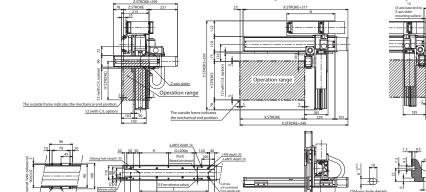




\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.







| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1254 | 1304 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| C             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 154  | 204  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1154 | 1204 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1084 | 1134 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 174  | 224  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  |



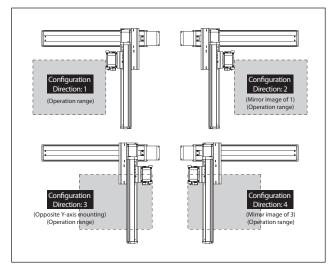
#### $\mathsf{ICSB3} ext{-}\mathsf{BB}\square\mathsf{MB1}\square$ ±10µm Battery-less Absolute X: Md (100W) X-Y-Z XYB+ZB Speed Type Y: Sm (60W) Z: Sm (60W) High-Precision ICSPB3-BB Specification ■ Model Specification BA MB1 WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-axis - Z-a Length Manage 31: 3m 51: 5m Refer to Ex Call: Specified of Model Iength Designati Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat XSEL-RA/SA precisio... specificati

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                       |
|----------------------------------|----------------------------|---|
|                                  | Н                          | ICSB3[ICSPB3]-BB1MB1H-①-② ③-④ ⑤-⑦-T2-⑥-⑨    |
| 1                                | М                          | ICSB3[ICSPB3]-BB1MB1M-1]-23-43-67-T2-8-9    |
|                                  | L                          | ICSB3[ICSPB3]-BB1MB1L-①-②③-④⑤-⑥-T2-⑥-⑨      |
|                                  | Н                          | ICSB3[ICSPB3]-BB2MB1H-①-②③-④⑤-⑥⑦-T2-⑧-⑨     |
| 2                                | М                          | ICSB3[ICSPB3]-BB2MB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨  |
|                                  | L                          | ICSB3[ICSPB3]-BB2MB1L-①-②③-④⑤-⑦-T2-⑥-⑨      |
|                                  | Н                          | ICSB3[ICSPB3]-BB3MB1H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨  |
| 3                                | М                          | ICSB3[ICSPB3]-BB3MB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨  |
|                                  | L                          | ICSB3[ICSPB3]-BB3MB1L-①-②③-④⑤-⑥7-T2-⑧-⑨     |
|                                  | Н                          | ICSB3[ICSPB3]-BB4MB1H-1]-2 3-4 5-6 7-T2-8-9 |
| 4                                | М                          | ICSB3[ICSPB3]-BB4MB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑧-⑨  |
|                                  | L                          | ICSB3[ICSPB3]-BB4MB1L-①-2③-4⑤-07-T2-⑥-9     |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



# Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |  |  |  |
|--------------|---------------------------------|---------------------------------------|--|--|--|
| X-axis       | ISB[ISPB]-MXM-①-100-10-②-T2-①-③ | → Please contact IAI for more details |  |  |  |
| Y-axis       | ISB[ISPB]-SXM-①-60-8-④-T2-①-⑤   | → Please contact IAI for more details |  |  |  |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |  |  |  |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

- in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  Lead is specified with 1 in the above model names.

  16: For Z-axis High Speed type

  8: For Z-axis Medium Speed type

- 4: For Z-axis Low Speed type
- Cable exit direction is specified with 110 in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation   |  |  |  |  |
|-----|-------------------------------------|--|--|--|--|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>110: 1100mm (100: 1000mm) *1  |  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below.  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |  |
| (5) | Y-axis option                       | Refer to Options table below.  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below.  |  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |  |  |  |  |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |  |  |
|---|-------|-----------------|--|--|
| X-axis cable exit direction               | *     | See P.11, P.353 |  |  |
| AQ seal (standard equipment)              | AQ    | See P.353       |  |  |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |  |  |
| Creep sensor *2                           | C/CL  | See P.353       |  |  |
| Home limit switch *2                      | L/LL  | See P.353       |  |  |
| Non-motor end specification               | NM    | See P.353       |  |  |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |  |  |

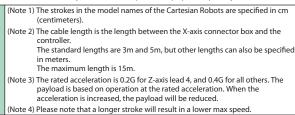
# Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |  |  |  |  |
|---------------------------|--|--|--|--|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |  |  |  |  |
| Lost motion               | 0.05mm [0.02mm] or less                          |  |  |  |  |
| Guide                     | ntegrated with base                              |  |  |  |  |
| Base                      | Material: Aluminum with white alumite treatment  |  |  |  |  |
| X-axis motor output/lead  | 100W/10mm  |  |  |  |  |
| Y-axis motor output/lead  | 60W/8mm  |  |  |  |  |
| Z-axis motor output/lead  | 60W/16mm (H), 8mm (M), 4mm (L)                   |  |  |  |  |

# Applicable Controllers

Notes

Contact IAI. The controller for this system needs to be purchased/prepared separately.



<sup>\*1</sup> Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
Please refer to P.11 for more information

<sup>&</sup>quot;3 Cannot be selected for High-Precision Specification.

\*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.

Please refer to P.11 for the cable exit direction of each axis.

# **■**ВВ□МВ1Н

\* The payload is based on operation at the rated acceleration.

# 100 150 200 250 3.5

| <b>D</b>      | ■DD□IVID I IVI |               |  |  |  |  |  |  |  |
|---------------|----------------|---------------|--|--|--|--|--|--|--|
|               |                | Y-axis stroke |  |  |  |  |  |  |  |
|               |                | 100~400       |  |  |  |  |  |  |  |
| a             | 100            |               |  |  |  |  |  |  |  |
| 호             | 150            |               |  |  |  |  |  |  |  |
| s st          | 200            | 7.0           |  |  |  |  |  |  |  |
| Z-axis stroke | 250            |               |  |  |  |  |  |  |  |
| 7             | 300            |               |  |  |  |  |  |  |  |

| <b>D</b>      | DLINID | ) I L         |  |  |  |  |  |
|---------------|--------|---------------|--|--|--|--|--|
|               |        | Y-axis stroke |  |  |  |  |  |
|               |        | 100~400       |  |  |  |  |  |
| a             | 100    |               |  |  |  |  |  |
| Š             | 150    |               |  |  |  |  |  |
| s st          | 200    | 14.0          |  |  |  |  |  |
| Z-axis stroke | 250    |               |  |  |  |  |  |
| Z             | 300    |               |  |  |  |  |  |

# Maximum Speed by Stroke (mm/s) (Note 4)

### ■BB□MB1H

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
| Y-axis | 48      | 30      |         |         | _       |          |           |
| Z-axis | 960     |         |         | _       | _       |          |           |

# ■BB□MB1M

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
| Y-axis | 48      | 30      |         |         | _       |          |           |
| Z-axis | 480     |         |         | -       | _       |          |           |

### ■BB□MB1L

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
| Y-axis | 48      | 30      |         |         | _       |          |           |
| Z-axis | 240     |         |         | _       | _       |          |           |

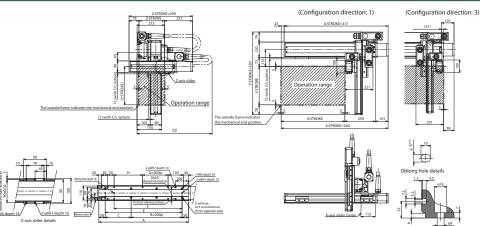
# ICSB3 [ICSPB3]-BB□MB1□-SC-SC (Self-standing cable specification)







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |
| В             | 0   | 0   | - 1 | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | - 1 | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |
|               |     |     |     |     |     |     |     | 1   |     |     |     |     |     |     |      |      |      |      |      |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 |     |     |     |     |     |     |     |      |      |      |      |      |
| Q             | 600 | 650 | 650 | 700 | 700 | 750 | 750 | ]   |     |     |     |     |     |     |      |      |      |      |      |

# ICSB3 [ICSPB3]-BB□MB1□-CT-CT (Cable track specification)

# Dimensions CAD drawings can be downloaded from our website



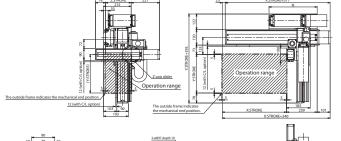


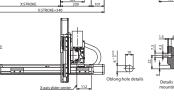


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

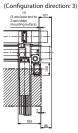








(Configuration direction: 1)



| nole details | Details of base mounting holes |
|--------------|--------------------------------|
|--------------|--------------------------------|

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1254 | 1304 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 154  | 204  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1154 | 1204 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1084 | 1134 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 174  | 224  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  |



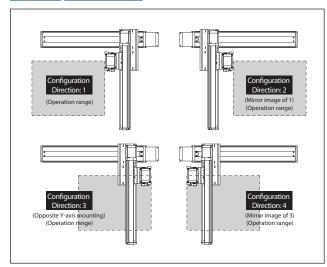
#### ICSB3-BC□HB1 Battery-less Absolute X-Y-Z XYB+ZB Type ±5μm ICSPB3-BC High-Precision Specification ■ Model Specification BC□HB1□ WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length Waxis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati L: Specified of Model length Designations belong Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat XSEL-RA/SA precisio... specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BC1HB1H-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
| 1                                | М                          | ICSB3[ICSPB3]-BC1HB1M-①-23-45-67-T2-8-9    |
|                                  | L                          | ICSB3[ICSPB3]-BC1HB1L-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
|                                  | Н                          | ICSB3[ICSPB3]-BC2HB1H-①-②③-④⑤-⑥7-T2-⑧-⑨    |
| 2                                | М                          | ICSB3[ICSPB3]-BC2HB1M-①-② ③-④ ⑤-⑥⑦-T2-⑧-⑨  |
|                                  | L                          | ICSB3[ICSPB3]-BC2HB1L-①-②③-④⑤-⑥7-T2-⑧-⑨    |
|                                  | Н                          | ICSB3[ICSPB3]-BC3HB1H-①-②③-④⑤-⑥⑦-T2-⑥-⑥    |
| 3                                | М                          | ICSB3[ICSPB3]-BC3HB1M-①-23-43-67-T2-8-9    |
|                                  | L                          | ICSB3[ICSPB3]-BC3HB1L-①-②3-4-⑤-⑥ ⑦-T2-⑧-⑨  |
|                                  | Н                          | ICSB3[ICSPB3]-BC4HB1H-1]-23-45-67-T2-8-9   |
| 4                                | М                          | ICSB3[ICSPB3]-BC4HB1M-①-② ③-④ ⑤-6 ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BC4HB1L-11-23-43-67-T2-8-9   |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



# Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-200-20-②-T2-①-③  | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-1-100-20-4-T2-11-5 | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-⑪-⑦    | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names. in the above model names.

Note that the strokes are indicated in mm (millimeters).

Lead is specified with location in the above model names.

16: For Z-axis High Speed type

4: For Z-axis Low Speed type

4: For Z-axis Low Speed type

- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                         | Notation   |  |  |  |  |  |
|-----|-------------------------------------|--|--|--|--|--|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>110: 1100mm (100: 1000mm) *1  |  |  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below.  |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |  |  |
| 5   | Y-axis option                       | Refer to Options table below.  |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below.  |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |  |  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |  |  |  |  |  |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis.

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

# Common Specifications \* Items in brackets [] are for the High-Precision Specification.

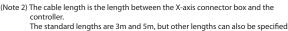
| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 60W/16mm (H), 8mm (M), 4mm (L)                   |

### Applicable Controllers

Notes

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

<sup>\*1</sup> Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.

<sup>\*3</sup> Cannot be selected for High-Precision Specification.
\* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

\* The payload is based on operation at the rated acceleration.

### ■РС□ПР1П

| ■ B           | ■BC□HBIH |               |  |  |  |  |  |  |  |
|---------------|----------|---------------|--|--|--|--|--|--|--|
|               |          | Y-axis stroke |  |  |  |  |  |  |  |
|               |          | 100~500       |  |  |  |  |  |  |  |
|               | 100      |               |  |  |  |  |  |  |  |
| a             | 150      |               |  |  |  |  |  |  |  |
| rok           | 200      |               |  |  |  |  |  |  |  |
| Z-axis stroke | 250      | 3.5           |  |  |  |  |  |  |  |
| -axi          | 300      |               |  |  |  |  |  |  |  |
| Z             | 350      |               |  |  |  |  |  |  |  |
|               | 400      |               |  |  |  |  |  |  |  |

### **■**ВС□НВ1М

|  |               |     | Y-axis stroke |  |  |  |  |  |  |
|--|---------------|-----|---------------|--|--|--|--|--|--|
|  |               |     | 100~500       |  |  |  |  |  |  |
|  |               | 100 |               |  |  |  |  |  |  |
|  | au            | 150 |               |  |  |  |  |  |  |
|  | ş             | 200 |               |  |  |  |  |  |  |
|  | Z-axis stroke | 250 | 7.0           |  |  |  |  |  |  |
|  | -axi          | 300 |               |  |  |  |  |  |  |
|  | 7             | 350 |               |  |  |  |  |  |  |
|  |               | 400 |               |  |  |  |  |  |  |

### **■**BC□HB1L

|               |     | Y-axis stroke |      |      |
|---------------|-----|---------------|------|------|
|               |     | 100~400       | 450  | 500  |
|               | 100 |               | 14.0 | 13.2 |
| a             | 150 |               | 14.0 | 12.8 |
| S,            | 200 |               | 14.0 | 12.4 |
| s st          | 250 | 14.0          | 14.0 | 12.0 |
| Z-axis stroke | 300 |               | 14.0 | 11.7 |
| Z             | 350 |               | 13.6 | 11.3 |
|               | 400 |               | 13.3 | 11.0 |

### Maximum Speed by Stroke (mm/s) (Note 4)

### **■**ВС□НВ1Н

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| Z-axis | 960     |         |         | _       | _       |          |           |

# **■**ВС□НВ1М

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| Z-axis | 480     |         |         | -       | -       |          |           |

# **■**BC□HB1L

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| 7-avic | 240     |         |         | _       |         |          |           |

# ICSB3 [ICSPB3]-BC□HB1□-SC-SC (Self-standing cable specification)

# Dimensions

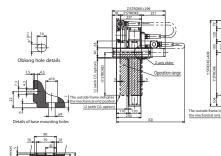
CAD drawings can be downloaded from our

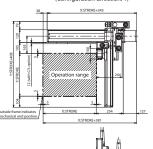


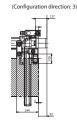


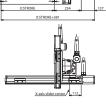


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



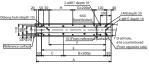






(Configuration direction: 1)

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |    |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|----|
| Α             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1= |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 1  |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 1  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 1  |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1  |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1  |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | ]  |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 1  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | ]  |
|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      | _  |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |     |     |     |     |     |      |      |      |      |      |    |
| Q             | 650 | 650 | 700 | 700 | 750 | 750 | 800 | 800 | 850 |     |     |     |     |     |      |      |      |      |      |    |



# ICSB3 [ICSPB3]-BC□HB1□-CT-CT (Cable track specification)

# Dimensions

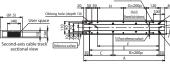


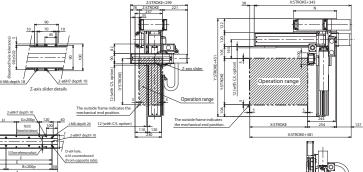


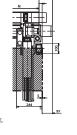


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.









(Configuration direction: 3)



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1254 | 1304 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| C             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 154  | 204  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1154 | 1204 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1084 | 1134 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 174  | 224  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  |



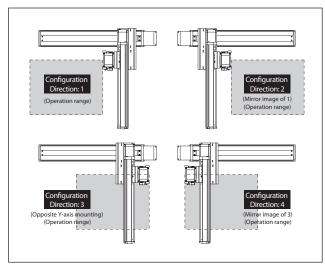
#### ICSB3-BC□HB2□ ±10µm Battery-less Absolute X: Md (200W X-Y-Z XYB+ZB Y: Md (100W) Z: Md (100W) Speed Type ±5µm High-Precision ICSPB3-BC Specification ■ Model Specification BC□HB2□ WA -**T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-axis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati □L: Specified of Model length Designations belo Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat precisio... specificati XSEL-RA/SA<sup>4</sup>

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BC1HB2H-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
| 1                                | М                          | ICSB3[ICSPB3]-BC1HB2M-①-23-45-67-T2-8-9    |
|                                  | L                          | ICSB3[ICSPB3]-BC1HB2L-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
|                                  | Н                          | ICSB3[ICSPB3]-BC2HB2H-①-23-43-67-T2-8-9    |
| 2                                | М                          | ICSB3[ICSPB3]-BC2HB2M-①-② ③-④ ⑤-⑥⑦-T2-⑧-⑨  |
|                                  | L                          | ICSB3[ICSPB3]-BC2HB2L-①-②③-④⑤-⑥7-T2-⑧-⑨    |
|                                  | Н                          | ICSB3[ICSPB3]-BC3HB2H-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
| 3                                | М                          | ICSB3[ICSPB3]-BC3HB2M-①-23-43-67-T2-8-9    |
|                                  | L                          | ICSB3[ICSPB3]-BC3HB2L-①-② 3]-4             |
|                                  | Н                          | ICSB3[ICSPB3]-BC4HB2H-1]-23-45-67-T2-8-9   |
| 4                                | М                          | ICSB3[ICSPB3]-BC4HB2M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BC4HB2L-1]-23-43-67-T2-8-9   |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-200-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-20-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-100-⑩-⑥-T2-⑪-⑦  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names.

Note that the strokes are indicated in mm (millimeters).

\* Lead is specified with 1 in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

5: For Z-axis Low Speed type

5: For Z-axis Low Speed type

\* Cable exit direction is specified with 1 in the above model names.

Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                         | Notation  |
|-----|-------------------------------------|---|
| 1   | Encoder type                        | WA: Battery-less Absolute   |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>110: 1100mm (100: 1000mm) *1   |
| 3   | X-axis option                       | Refer to Options table below.   |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm   |
| (5) | Y-axis option                       | Refer to Options table below.   |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm   |
| 7   | Z-axis option                       | Refer to Options table below.   |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m   |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis.

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*\*I Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

  \*\*When selecting the creep sensor and home limits witch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  \*\*Please refer to P.11 for more information.

  \*\*3 Cannot be selected for High-Precision Specification.

  \*\*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.
- Please refer to P.11 for the cable exit direction of each axis.

# Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 100W/20mm (H), 10mm (M), 5mm (L)                 |

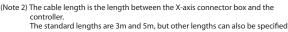
### Applicable Controllers

⚠

Notes

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 5, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### ■BC□HB2H

| ■ B           | СПНВ | 2H            |
|---------------|------|---------------|
|               |      | Y-axis stroke |
|               |      | 100~500       |
|               | 100  |               |
| a             | 150  |               |
| ş             | 200  |               |
| Z-axis stroke | 250  | 5.0           |
| -axi          | 300  |               |
| Z             | 350  |               |
|               | 400  |               |

# **■**ВС□НВ2М

|               |     |      |      |      | Y-   | axis stro | ke   |      |      |     |
|---------------|-----|------|------|------|------|-----------|------|------|------|-----|
|               |     | 100  | 150  | 200  | 250  | 300       | 350  | 400  | 450  | 500 |
|               | 100 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0      | 10.0 | 10.0 | 10.0 | 9.2 |
| a             | 150 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0      | 10.0 | 10.0 | 10.0 | 8.6 |
| Z-axis stroke | 200 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0      | 10.0 | 10.0 | 10.0 | 8.0 |
| s st          | 250 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0      | 10.0 | 10.0 | 9.6  | 7.3 |
| -ax           | 300 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0      | 10.0 | 10.0 | 9.0  | 6.7 |
| Z             | 350 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0      | 10.0 | 10.0 | 8.3  | 6.0 |
|               | 400 | 9.7  | 9.7  | 9.6  | 9.6  | 9.6       | 9.6  | 9.5  | 7.7  | 5.4 |

# ■BC□HB2L

|               |     |      | Y-axis stroke |      |      |      |      |      |      |     |  |  |  |  |
|---------------|-----|------|---------------|------|------|------|------|------|------|-----|--|--|--|--|
|               |     | 100  | 150           | 200  | 250  | 300  | 350  | 400  | 450  | 500 |  |  |  |  |
|               | 100 | 13.1 | 13.1          | 13.1 | 13.0 | 13.0 | 13.0 | 13.0 | 11.5 | 9.2 |  |  |  |  |
| au            | 150 | 12.6 | 12.5          | 12.5 | 12.5 | 12.5 | 12.4 | 12.4 | 10.9 | 8.6 |  |  |  |  |
| Z-axis stroke | 200 | 12.0 | 12.0          | 12.0 | 11.9 | 11.9 | 11.9 | 11.9 | 10.3 | 8.0 |  |  |  |  |
| s st          | 250 | 11.4 | 11.4          | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 9.6  | 7.3 |  |  |  |  |
| -axi          | 300 | 10.8 | 10.8          | 10.8 | 10.8 | 10.8 | 10.7 | 10.7 | 9.0  | 6.7 |  |  |  |  |
| Z             | 350 | 10.2 | 10.2          | 10.2 | 10.1 | 10.1 | 10.1 | 10.1 | 8.3  | 6.0 |  |  |  |  |
|               | 400 | 9.7  | 9.7           | 9.6  | 9.6  | 9.6  | 9.6  | 9.5  | 7.7  | 5.4 |  |  |  |  |

# Maximum Speed by Stroke (mm/s) (Note 4)

# **■**ВС□НВ2Н

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| Z-axis | 1200    |         |         | -       | _       |          |           |

### **■**BC□HB2L

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| Z-axis | 300     |         |         | _       | _       |          |           |

### **■**ВС□НВ2М

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| Z-axis | 600     |         |         | _       | _       |          |           |

# ICSB3 [ICSPB3]-BC□HB2□-SC-SC (Self-standing cable specification)

### Dimensions

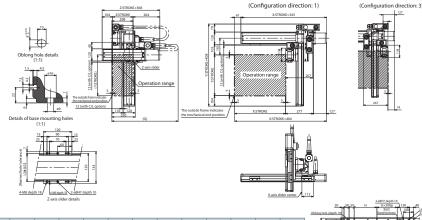
CAD drawings can be downloaded from our website.







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      | - |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|---|
| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |   |
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |   |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |   |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |   |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |   |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |   |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |   |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |   |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |   |
|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |   |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |     |     |     |     |     |      |      |      |      |      |   |
| Q             | 650 | 700 | 700 | 750 | 750 | 800 | 800 | 850 | 850 |     |     |     |     |     |      |      |      |      |      |   |



# ICSB3 [ICSPB3]-BC□HB2□-CT-CT (Cable track specification)

### Dimensions

CAD drawings can be



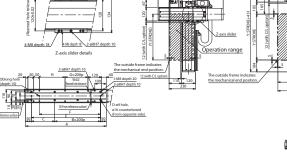


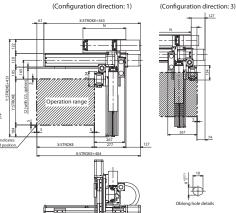


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.









|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      | A-axis siluei | center / L. |      |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|---------------|-------------|------|
| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000          | 1050        | 1100 |
| Α             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204          | 1254        | 1304 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5             | 5           | 5    |
| C             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104           | 154         | 204  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14            | 14          | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104          | 1154        | 1204 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034          | 1084        | 1134 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4             | 4           | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124           | 174         | 224  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18            | 18          | 18   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625           | 650         | 675  |





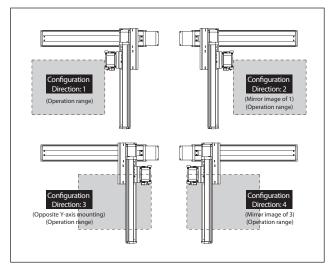
#### ICSB3-BC□HB3 Battery-less Absolute X: Md (200W) Y: Md (100W) Z: Md (200W) X-Y-Z XYB+ZB Speed Type ±5µm **High-Precision** ICSPB3-BC Specification ■ Model Specification BC□HB3□ WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat XSEL-RA/SA<sup>4</sup> precision 3 specification

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BC1HB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑧-⑨ |
| '                                | М                          | ICSB3[ICSPB3]-BC1HB3M-①-23-43-607-T2-8-9   |
| 2                                | Н                          | ICSB3[ICSPB3]-BC2HB3H-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
| 2                                | М                          | ICSB3[ICSPB3]-BC2HB3M-①-23-43-67-T2-8-9    |
| 3                                | Н                          | ICSB3[ICSPB3]-BC3HB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BC3HB3M-①-23-43-607-T2-8-9   |
| 4                                | Н                          | ICSB3[ICSPB3]-BC4HB3H-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
| 4                                | М                          | ICSB3[ICSPB3]-BC4HB3M-①-23-43-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-200-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-20-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-⑩-⑥-T2-⑪-⑦  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names.

### **Explanation of Model Designations**

| No. | Description                         | Notation  |  |  |  |  |  |  |
|-----|-------------------------------------|---|--|--|--|--|--|--|
| 1   | Encoder type                        | WA: Battery-less Absolute   |  |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>110: 1100mm (100: 1000mm) *1   |  |  |  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below.   |  |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>,<br>50: 500mm   |  |  |  |  |  |  |
| (5) | Y-axis option                       | Refer to Options table below.   |  |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm   |  |  |  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below.   |  |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m   |  |  |  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable CT-CT: Cable track - Cable track |  |  |  |  |  |  |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis.

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

<sup>\*1</sup> Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details

Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 200W/20mm (H), 10mm (M)                          |

# Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the



controller. The standard lengths are 3m and 5m, but other lengths can also be specified

in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.

in the above model names.

Note that the strokes are indicated in mm (millimeters).

Lead is specified with [10] in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

<sup>\*</sup> Cable exit direction is specified with 1 in the above model names. Please refer to P.11 for the exit directions.

<sup>\*2</sup> When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regard mounting position.

Please refer to P.11 for more information.

3 Cannot be selected for High-Precision Specification.

To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.



\* The payload is based on operation at the rated acceleration.

# **■**ВС□НВ3Н

|        |     | Y-axis stroke |      |      |      |      |      |      |      |     |  |  |  |
|--------|-----|---------------|------|------|------|------|------|------|------|-----|--|--|--|
|        |     | 100           | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500 |  |  |  |
|        | 100 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.7 |  |  |  |
| a      | 150 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.0 |  |  |  |
| stroke | 200 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.7  | 7.4 |  |  |  |
| sst    | 250 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0  | 6.7 |  |  |  |
| -axis  | 300 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.4  | 6.1 |  |  |  |
| -Z     | 350 | 9.8           | 9.7  | 9.7  | 9.7  | 9.7  | 9.7  | 9.6  | 7.8  | 5.5 |  |  |  |
|        | 400 | 9.2           | 9.2  | 9.2  | 9.2  | 9.1  | 9.1  | 9.1  | 7.2  | 4.9 |  |  |  |

### **■**ВС□НВ3М

|  |        |     |      |      |      | ١    | '-axis strok | е    |      |      |     |
|--|--------|-----|------|------|------|------|--------------|------|------|------|-----|
|  |        |     | 100  | 150  | 200  | 250  | 300          | 350  | 400  | 450  | 500 |
|  |        | 100 | 12.6 | 12.6 | 12.6 | 12.6 | 12.6         | 12.5 | 12.5 | 11.0 | 8.7 |
|  | a      | 150 | 12.0 | 12.0 | 12.0 | 11.9 | 11.9         | 11.9 | 11.9 | 10.3 | 8.0 |
|  | stroke | 200 | 11.5 | 11.5 | 11.4 | 11.4 | 11.4         | 11.4 | 11.3 | 9.7  | 7.4 |
|  | s st   | 250 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8         | 10.7 | 10.7 | 9.0  | 6.7 |
|  | -axis  | 300 | 10.3 | 10.3 | 10.3 | 10.2 | 10.2         | 10.2 | 10.2 | 8.4  | 6.1 |
|  | -Z     | 350 | 9.8  | 9.7  | 9.7  | 9.7  | 9.7          | 9.7  | 9.6  | 7.8  | 5.5 |
|  |        | 400 | 9.2  | 9.2  | 9.2  | 9.2  | 9.1          | 9.1  | 9.1  | 7.2  | 4.9 |

(Configuration direction: 1)

# Maximum Speed by Stroke (mm/s) (Note 4)

### **■**ВС□НВ3Н

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| Z-axis | 1200    |         |         | -       | _       |          |           |

### **■**ВС□НВ3М

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      | 460       |
| Y-axis | 12      | 00      |         |         | _       |          |           |
| 7-axis | 600     |         |         |         | _       |          |           |

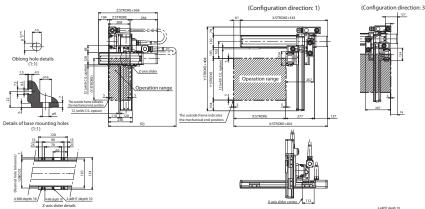
# ICSB3 [ICSPB3]-BC□HB3□-SC-SC (Self-standing cable specification)

# Dimensions

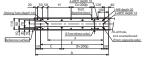




\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|---|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1 |
| В             | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 1 |
| C             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 1 |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 1 |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | - 1 | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 1 |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 1 |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | ] |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 1   |     |     |     |     |      |      |      |      |      |   |



#### $\square$ -CT-CT (Cable track specification) ICSB3 [ICSPB3]-BC□HB3[





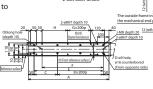


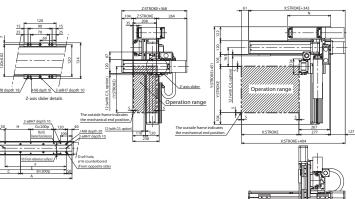
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

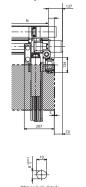




650 700 700 750 750 800 800 850 850







(Configuration direction: 3)



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 |  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|--|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1254 | 1304 |  |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    |  |
| C             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 154  | 204  |  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   |  |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1154 | 1204 |  |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1084 | 1134 |  |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    |  |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 174  | 224  |  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   |  |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  |  |



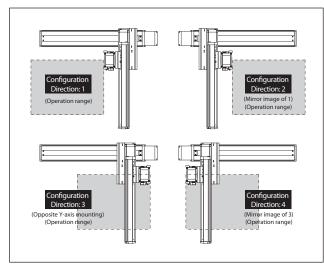
#### ICSB3-BC□MB2□ Battery-less Absolute X: Md (100W Medium X-Y-Z XYB+ZB Speed Type Y: Md (100W) Z: Md (100W) ±5µm High-Precision ICSPB3-BC□MB2 Specification ■ Model Specification BC□MB2□ WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below precisio... specificati XSEL-RA/SA<sup>4</sup>

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
|                                  | Н                          | ICSB3[ICSPB3]-BC1MB2H-①-② ③-④ ⑤-⑦-T2-⑥-⑨        |
| 1                                | M                          | ICSB3[ICSPB3]-BC1MB2M-1]-23-43-67-T2-8-9        |
|                                  | L                          | ICSB3[ICSPB3]-BC1MB2L-①-②③-④⑤-⑥-72-⑥-◎          |
|                                  | Н                          | ICSB3[ICSPB3]-BC2MB2H-①-23-43-607-T2-8-9        |
| 2                                | М                          | ICSB3[ICSPB3]-BC2MB2M-1]-23-43-67-T2-8-9        |
|                                  | L                          | ICSB3[ICSPB3]-BC2MB2L-①-23-45-67-T2-8-9         |
|                                  | Н                          | ICSB3[ICSPB3]-BC3MB2H-①-② ③-④ ⑤-⑦-T2-⑥-⑨        |
| 3                                | М                          | ICSB3[ICSPB3]-BC3MB2M-1]-2 3]-4 5]-6 7]-T2-8 -9 |
|                                  | L                          | ICSB3[ICSPB3]-BC3MB2L-①-②③-④⑤-⑦-T2-⑧-⑨          |
|                                  | Н                          | ICSB3[ICSPB3]-BC4MB2H-①-23-05-67-T2-0-9         |
| 4                                | М                          | ICSB3[ICSPB3]-BC4MB2M-①-②③-④⑤-⑦-T2-⑧-⑨          |
|                                  | L                          | ICSB3[ICSPB3]-BC4MB2L-11-23-43-67-T2-8-9        |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of through in the model names above.

# XY Configuration Direction



# Axis Configuration \*Items in brackets [] are for the High-Precision Specification

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-100-10-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-10-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-100-⑩-⑥-T2-⑪-⑦  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names.

Note that the strokes are indicated in mm (millimeters).

\* Lead is specified with 1 in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

5: For Z-axis Low Speed type

5: For Z-axis Low Speed type

\* Cable exit direction is specified with 1 in the above model names.

Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                         | Notation   |  |  |  |  |  |  |
|-----|-------------------------------------|--|--|--|--|--|--|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |  |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below.  |  |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |  |  |  |
| 5   | Y-axis option                       | Refer to Options table below.  |  |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm  |  |  |  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below.  |  |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |  |  |  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |  |  |  |  |  |  |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis.

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 100W/10mm  |
| Y-axis motor output/lead  | 100W/10mm  |
| Z-axis motor output/lead  | 100W/20mm (H), 10mm (M), 5mm (L)                 |

# Applicable Controllers

 ${\tt Contact\ IAI.\ The\ controller\ for\ this\ system\ needs\ to\ be\ purchased/prepared\ separately.}$ 

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 5, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

<sup>\*2</sup> The payload and the max. speed may vary depending on the type of Z-axis.

<sup>\*1</sup> Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
Please refer to P.11 for more information

<sup>\*3</sup> Cannot be selected for High-Precision Specification.

\*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.



\*The payload is based on operation at the rated acceleration.

### **■**BC□MB2H

# 100~500 150 200 Z-axis stroke 250 300 5.0 350

### **■**BC□MB2M

|               |     | Y-axis  | stroke |     |
|---------------|-----|---------|--------|-----|
|               |     | 100~400 | 450    | 500 |
|               | 100 |         | 10.0   | 9.2 |
| a             | 150 |         | 10.0   | 8.6 |
| 호             | 200 |         | 10.0   | 8.0 |
| Z-axis stroke | 250 | 10.0    | 9.6    | 7.3 |
| -aX           | 300 |         | 9.0    | 6.7 |
| 7             | 350 |         | 8.3    | 6.0 |
|               | 400 |         | 7.7    | 5.4 |

### **■**BC□MB2L

|        | _   |      |      |      | ١    | '-axis strok | e    |      |      |     |
|--------|-----|------|------|------|------|--------------|------|------|------|-----|
|        |     | 100  | 150  | 200  | 250  | 300          | 350  | 400  | 450  | 500 |
|        | 100 | 19.0 | 18.7 | 18.3 | 17.9 | 17.6         | 17.2 | 14.2 | 11.5 | 9.2 |
| ٥      | 150 | 18.4 | 18.1 | 17.7 | 17.3 | 17.0         | 16.6 | 13.6 | 10.9 | 8.6 |
| stroke | 200 | 17.8 | 17.5 | 17.1 | 16.7 | 16.4         | 16.0 | 13.0 | 10.3 | 8.0 |
| is st  | 250 | 17.1 | 16.8 | 16.4 | 16.0 | 15.7         | 15.3 | 12.3 | 9.6  | 7.3 |
| Z-axis | 300 | 16.5 | 16.2 | 15.8 | 15.4 | 15.1         | 14.7 | 11.7 | 9.0  | 6.7 |
| 7      | 350 | 15.8 | 15.5 | 15.1 | 14.7 | 14.4         | 14.0 | 11.0 | 8.3  | 6.0 |
|        | 400 | 15.2 | 14.9 | 14.5 | 14.1 | 13.8         | 13.4 | 10.4 | 7.7  | 5.4 |

# Maximum Speed by Stroke (mm/s) (Note 4)

### **■**ВС□МВ2Н

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
| Y-axis | 60      | 00      |         |         | _       |          |           |
| Z-axis | 1200    |         |         | -       | _       |          |           |

#### ■BC□MB2L

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
| Y-axis | 60      | 00      |         |         | _       |          |           |
| 7-axis | 300     |         |         | _       | _       |          |           |

### **■**BC□MB2M

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
| Y-axis | 60      | 00      |         |         | _       |          |           |
| 7-avic | 600     |         |         | _       |         |          |           |

# ICSB3 [ICSPB3]-BC□MB2□-SC-SC (Self-standing cable specification)

### Dimensions

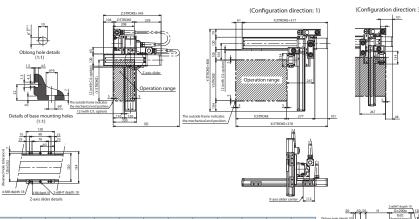
CAD drawings can be downloaded from our website.



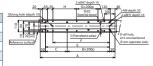




\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | ľ |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|---|
| Α             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 1 |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 1 |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 1 |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 1 |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 1 |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 1 |
|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      | - |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |     |     |     |     |     |      |      |      |      |      |   |
| Q             | 650 | 700 | 700 | 750 | 750 | 800 | 800 | 850 | 850 |     |     |     |     |     |      |      |      |      |      |   |



#### ICSB3 [ICSPB3]-BC□MB2[ $\square$ -CT-CT (Cable track specification)

# Dimensions



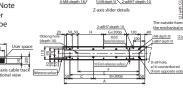


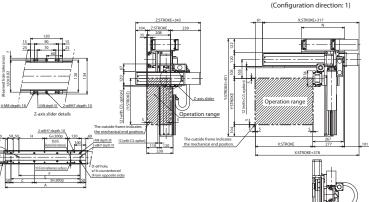


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

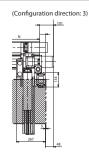








| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| Α             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1254 | 1304 |
| В             | 0   | 0   | - 1 | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 154  | 204  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1154 | 1204 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1084 | 1134 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 174  | 224  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  |
|               |     |     |     |     |     |     |     |     | `   |     |     |     |     |     |      |      |      |      |      |      |      |







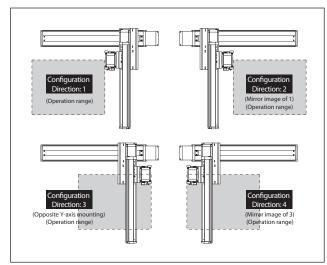
#### ICSB3-BC□MB3□ Battery-less Absolute X: Md (100W) Y: Md (100W) Z: Md (200W) X-Y-Z XYB+ZB Speed Type Y, Z Base Mo ICSPB3-BC□MB3 High-Precision Specification ■ Model Specification BC MB3 WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-axis - Z-axis La Length Management 3L: 3m 5L: 5m Refer to Explanati □L: Specified of Model length Designations belong Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below precisio... specificati XSEL-RA/SA<sup>4</sup>

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | Н                          | ICSB3[ICSPB3]-BC1MB3H-①-② ③-④ ③-⑥ ⑦-T2-⑧-⑨      |
| '                                | М                          | ICSB3[ICSPB3]-BC1MB3M-1]-23-43-67-T2-8-9        |
| 2                                | Н                          | ICSB3[ICSPB3]-BC2MB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨      |
| 2                                | М                          | ICSB3[ICSPB3]-BC2MB3M-1]-23-43-67-T2-8-9        |
| 3                                | Н                          | ICSB3[ICSPB3]-BC3MB3H-①-② ③-④ ⑤-⑦-T2-⑥-⑨        |
| 3                                | M                          | ICSB3[ICSPB3]-BC3MB3M-1]-2 3]-4 5]-6 7]-T2-6 -9 |
| 4                                | Н                          | ICSB3[ICSPB3]-BC4MB3H-①-② ③-④ ⑤-⑦-T2-⑥-⑨        |
| 4                                | М                          | ICSB3[ICSPB3]-BC4MB3M-1]-23-43-67-T2-8-9        |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



# Axis Configuration \*Items in brackets [] are for the High-Precision Specification

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-100-10-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-10-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-⑩-⑥-T2-⑪-⑦  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names.

### **Explanation of Model Designations**

| No. | Description                         | Notation   |
|-----|-------------------------------------|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>110: 1100mm (100: 1000mm) *1  |
| 3   | X-axis option                       | Refer to Options table below.  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm  |
| 5   | Y-axis option                       | Refer to Options table below.  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm  |
| 7   | Z-axis option                       | Refer to Options table below.  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

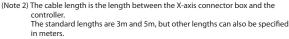
### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

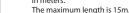
| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 100W/10mm  |
| Y-axis motor output/lead  | 100W/10mm  |
| Z-axis motor output/lead  | 200W/20mm (H), 10mm (M)                          |

# Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).





(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

in the above model names.

Note that the strokes are indicated in mm (millimeters).

Lead is specified with [10] in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

<sup>\*</sup> Cable exit direction is specified with 1 in the above model names. Please refer to P.11 for the exit directions.

<sup>\*1</sup> Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

Please refer to P.11 for more information.
\*3 Cannot be selected for High-Precision Specification.

<sup>\*</sup> To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

\* The payload is based on operation at the rated acceleration.

### **■**ВС□МВЗН

|               |     | 1311          |      |      |     |
|---------------|-----|---------------|------|------|-----|
|               |     | Y-axis stroke |      |      |     |
|               |     | 100~350       | 400  | 450  | 500 |
|               | 100 |               | 10.0 | 10.0 | 8.7 |
| a             | 150 |               | 10.0 | 10.0 | 8.0 |
| Š             | 200 |               | 10.0 | 9.7  | 7.4 |
| Z-axis stroke | 250 | 10.0          | 10.0 | 9.0  | 6.7 |
| -a            | 300 |               | 10.0 | 8.4  | 6.1 |
| Z             | 350 |               | 10.0 | 7.8  | 5.5 |
|               | 400 |               | 9.9  | 7.2  | 4.9 |

### **■**ВС□МВ3М

|             |     | Y-axis stroke |      |      |      |      |      |      |      |     |
|-------------|-----|---------------|------|------|------|------|------|------|------|-----|
|             |     | 100           | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500 |
|             | 100 | 18.5          | 18.2 | 17.8 | 17.4 | 17.1 | 16.7 | 13.7 | 11.0 | 8.7 |
| ٥           | 150 | 17.8          | 17.5 | 17.1 | 16.7 | 16.4 | 16.0 | 13.0 | 10.3 | 8.0 |
| axis stroke | 200 | 17.2          | 16.9 | 16.5 | 16.1 | 15.8 | 15.4 | 12.4 | 9.7  | 7.4 |
| s st        | 250 | 16.5          | 16.2 | 15.8 | 15.4 | 15.1 | 14.7 | 11.7 | 9.0  | 6.7 |
|             | 300 | 15.9          | 15.6 | 15.2 | 14.8 | 14.5 | 14.1 | 11.1 | 8.4  | 6.1 |
| Ż-          | 350 | 15.3          | 15.0 | 14.6 | 14.2 | 13.9 | 13.5 | 10.5 | 7.8  | 5.5 |
|             | 400 | 14.7          | 14.4 | 14.0 | 13.6 | 13.3 | 12.9 | 9.9  | 7.2  | 4.9 |

# Maximum Speed by Stroke (mm/s) (Note 4)

### **■**ВС□МВ3Н

|   |        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|---|--------|---------|---------|---------|---------|---------|----------|-----------|
| П | X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
|   | Y-axis | 60      | 00      |         |         | _       |          |           |
|   | Z-axis | 1200    |         |         | _       | _       |          |           |

### **■**ВС□МВ3М

|        | 100~400 | 450~500 | 500~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 |
|--------|---------|---------|---------|---------|---------|----------|-----------|
| X-axis |         | 600     |         | 430     | 345     | 280      | 230       |
| Y-axis | 60      | 00      |         |         | _       |          |           |
| Z-axis | 600     |         |         | _       | _       |          |           |

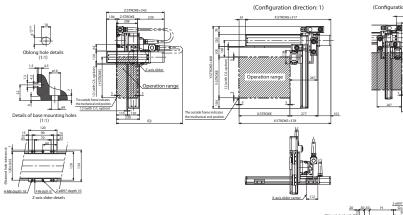
# ICSB3 [ICSPB3]-BC□MB3□-SC-SC (Self-standing cable specification)

# Dimensions

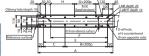




\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | - 1 | 1   | - 1 | - 1 | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 1   |     |     |     |     |      |      |      |      |      |



# ICSB3 [ICSPB3]-BC□MB3□-CT-CT (Cable track specification)

# Dimensions



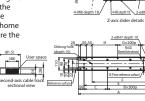


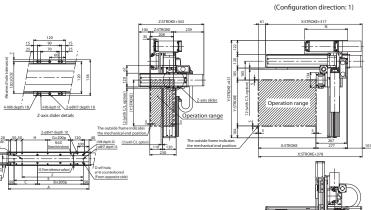


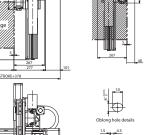
Q 650 700 700 750 750 800 800 850 850

\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.









| ~ ~    |              | -            |
|--------|--------------|--------------|
| - 4-1  |              |              |
| v1     | ·            | _ a9         |
| Detail | s of base mo | unting holes |
|        |              |              |

(Configuration direction: 3)

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| Α             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1254 | 1304 |
| В             | 0   | 0   | 1   | - 1 | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 154  | 204  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1154 | 1204 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1084 | 1134 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | - 1 | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 174  | 224  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  |



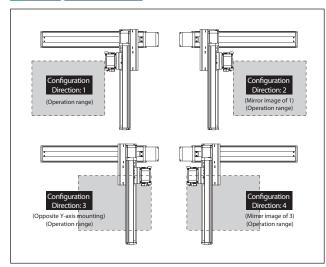
#### ICSB3-BD□HB1 Battery-less Absolute X: Md (200W XYB+ZB X-Y-Z Y: Md (100W Z: Sm (60W) Y, Z Base Mo High-Precision ICSPB3-BD Specification ■ Model Specification BD HB1 WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Beter to 10:100mm Refer t Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Y-axis - Z-axis La Length Management 3L: 3m 5L: 5m Refer to Explanati L: Specified of Model length Designations belo Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below precision . specificati

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BD1HB1H-①-② ③-④ ⑤-⑥⑦-T2-⑥-⑨  |
| 1                                | M                          | ICSB3[ICSPB3]-BD1HB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BD1HB1L-①-②③-④⑤-⑥-T2-⑥-⑨     |
|                                  | Н                          | ICSB3[ICSPB3]-BD2HB1H-①-② 3-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BD2HB1M-①-② ③-④ ⑤-⑦-T2-⑧-⑨   |
|                                  | L                          | ICSB3[ICSPB3]-BD2HB1L-①-23-45-67-T2-8-9    |
|                                  | Н                          | ICSB3[ICSPB3]-BD3HB1H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BD3HB1M-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
|                                  | L                          | ICSB3[ICSPB3]-BD3HB1L-①-23-45-67-T2-8-9    |
|                                  | Н                          | ICSB3[ICSPB3]-BD4HB1H-①-23-45-67-T2-8-9    |
| 4                                | М                          | ICSB3[ICSPB3]-BD4HB1M-①-②③-④⑤-⑦-T2-⑥-⑨     |
|                                  | L                          | ICSB3[ICSPB3]-BD4HB1L-1]-23-43-67-T2-8-9   |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

### XY Configuration Direction



# Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXMX-①-200-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-1-100-20-4-T2-11-5 | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦    | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names. in the above model names.

Note that the strokes are indicated in mm (millimeters).

Lead is specified with location in the above model names.

16: For Z-axis High Speed type

4: For Z-axis Low Speed type

4: For Z-axis Low Speed type

- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | WA: Battery-less Absolute        |
| 2   | X-axis stroke<br>(Note 1)        | 80: 800mm<br>200: 2000mm         |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm      |
| 5   | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regard mounting position.

  Please refer to P.11 for more information.

  3 Cannot be selected for High-Precision Specification.

  To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

# Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 60W/16mm (H), 8mm (M), 4mm (L)                   |

# Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 15m. (Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

# ■BD□HB1H

| <b>=</b> D    | ■ВИ⊔ПВІП |               |  |  |  |  |  |
|---------------|----------|---------------|--|--|--|--|--|
|               |          | Y-axis stroke |  |  |  |  |  |
|               |          | 100~500       |  |  |  |  |  |
|               | 100      |               |  |  |  |  |  |
| a             | 150      |               |  |  |  |  |  |
| ş             | 200      |               |  |  |  |  |  |
| Z-axis stroke | 250      | 3.5           |  |  |  |  |  |
| -axi          | 300      |               |  |  |  |  |  |
| Z             | 350      |               |  |  |  |  |  |
|               | 400      |               |  |  |  |  |  |

### ■BD□HB1M

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~500       |
|               | 100 |               |
| a             | 150 |               |
| 호             | 200 |               |
| Z-axis stroke | 250 | 7.0           |
| -a×           | 300 |               |
| 7             | 350 |               |
|               | 400 |               |

### ■BD□HB1L

|               |     | Y-axis stroke |      |      |
|---------------|-----|---------------|------|------|
|               |     | 100~400       | 450  | 500  |
|               | 100 |               | 14.0 | 13.2 |
| a             | 150 |               | 14.0 | 12.8 |
| S,            | 200 |               | 14.0 | 12.4 |
| s st          | 250 | 14.0          | 14.0 | 12.0 |
| Z-axis stroke | 300 |               | 14.0 | 11.7 |
| Z             | 350 |               | 13.6 | 11.3 |
|               | 400 |               | 13.3 | 11.0 |

# Maximum Speed by Stroke (mm/s) (Note 4)

# ■BD□HB1H

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis | 12      | 00      |          |      |      |      | _    |      |      |      |      |      |
| Z-axis | 960     |         |          |      |      | _    | _    |      |      |      |      |      |

# ■BD□HB1L

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis | 1200    |         |          |      |      |      |      |      |      |      |      |      |
| 7-axis | 240     |         |          |      |      | _    | _    |      |      |      |      |      |

# ■BD□HB1M

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis | 1200    |         |          |      |      |      | _    |      |      |      |      |      |
| 7      | 400     |         |          |      |      |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BD□HB1□-CT-CT (Cable track specification)

# Dimensions

CAD drawings can be downloaded from our website.



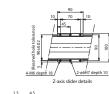


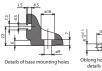


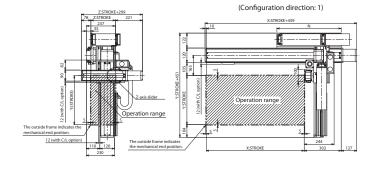
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

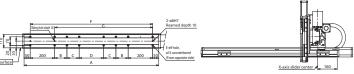


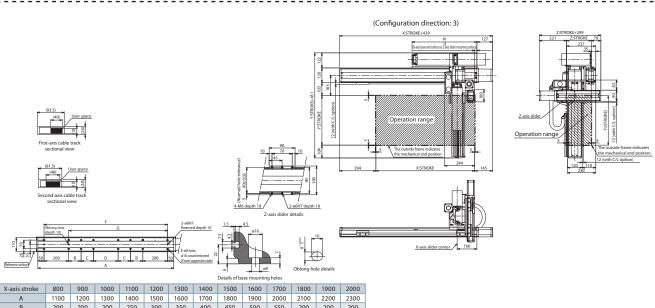






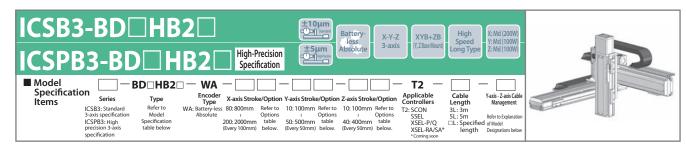






| X-axis stroke | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A             | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
| В             | 200  | 200  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 200  | 200  | 200  |
| С             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 400  | 450  | 500  |
| D             | 200  | 300  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  |
| E             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   |
| F             | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 |
| G             | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
| N             | 525  | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 |



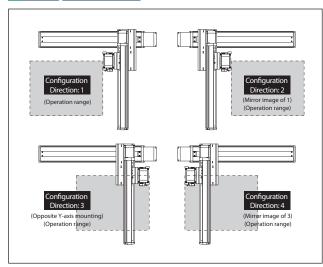


### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BD1HB2H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 1                                | М                          | ICSB3[ICSPB3]-BD1HB2M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BD1HB2L-①-②③-④⑤-⑥-T2-⑥-⑨     |
|                                  | Н                          | ICSB3[ICSPB3]-BD2HB2H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BD2HB2M-①-② ③-④ ⑤-⑦-T2-⑥-⑨   |
|                                  | L                          | ICSB3[ICSPB3]-BD2HB2L-①-②③-④ ⑤-⑥-T2-⑥-⑨    |
|                                  | Н                          | ICSB3[ICSPB3]-BD3HB2H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BD3HB2M-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
|                                  | L                          | ICSB3[ICSPB3]-BD3HB2L-①-②③-④⑤-⑥-T2-⑥-⑨     |
|                                  | Н                          | ICSB3[ICSPB3]-BD4HB2H-1]-23-45-67-T2-8-9   |
| 4                                | М                          | ICSB3[ICSPB3]-BD4HB2M-①-② ③-④ ⑤-⑦-T2-⑧-⑨   |
|                                  | L                          | ICSB3[ICSPB3]-BD4HB2L-1]-23-43-67-T2-8-9   |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

### XY Configuration Direction



### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXMX-①-200-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-1-100-20-4-T2-11-5 | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-100-⑩-⑥-T2-⑪-⑦   | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names. in the above model names.

Note that the strokes are indicated in mm (millimeters).

Lead is specified with location in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

5: For Z-axis Low Speed type

- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | WA: Battery-less Absolute        |
| 2   | X-axis stroke<br>(Note 1)        | 80: 800mm<br>200: 2000mm         |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm      |
| (5) | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in <u>alphabetical order</u>.

| when selecting manapic options, specify them in alphabe | trear or acr. |                 |
|---|---------------|-----------------|
| Туре  | Model         | Reference page  |
| X-axis cable exit direction                             | *             | See P.11, P.353 |
| AQ seal (standard equipment)                            | AQ            | See P.353       |
| Brake (equipped as standard on Z-axis) *1               | В             | See P.353       |
| Creep sensor *2   | C/CL          | See P.353       |
| Home limit switch *2                                    | L/LL          | See P.353       |
| Non-motor end specification                             | NM            | See P.353       |
| Guide with ball-retaining mechanism *3                  | RT            | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details
- "I Brake option for \( \) and \( \) or \( \) axes increases the length of the motor unit(s). Please contact I/A for details.

  "2" When selecting the creep sensor and home limits witch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  "1" Please refer to P.11 for more information.

  "3" Cannot be selected for High-Precision Specification.

- \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

# Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 100W/20mm (H), 10mm (M), 5mm (L)                 |

### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the

The standard lengths are 3m and 5m, but other lengths can also be specified The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 5, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed



\* The payload is based on operation at the rated acceleration.

### ■BD□HB2H

|               |     | Y-axis stroke |  |  |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|--|--|
|               |     | 100~500       |  |  |  |  |  |  |  |
|               | 100 |               |  |  |  |  |  |  |  |
| a             | 150 |               |  |  |  |  |  |  |  |
| r<br>Š        | 200 |               |  |  |  |  |  |  |  |
| Z-axis stroke | 250 | 5.0           |  |  |  |  |  |  |  |
| -axi          | 300 |               |  |  |  |  |  |  |  |
| Z             | 350 |               |  |  |  |  |  |  |  |
|               | 400 |               |  |  |  |  |  |  |  |

# ■BD□HB2M

|               |     |      | Y-axis stroke |      |      |      |      |      |      |     |  |  |  |
|---------------|-----|------|---------------|------|------|------|------|------|------|-----|--|--|--|
|               |     | 100  | 150           | 200  | 250  | 300  | 350  | 400  | 450  | 500 |  |  |  |
|               | 100 | 10.0 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.2 |  |  |  |
| a             | 150 | 10.0 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.6 |  |  |  |
| Z-axis stroke | 200 | 10.0 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.0 |  |  |  |
| s st          | 250 | 10.0 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.6  | 7.3 |  |  |  |
| -axi          | 300 | 10.0 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0  | 6.7 |  |  |  |
| Z             | 350 | 10.0 | 10.0          | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.3  | 6.0 |  |  |  |
|               | 400 | 9.7  | 9.7           | 9.6  | 9.6  | 9.6  | 9.6  | 9.5  | 7.7  | 5.4 |  |  |  |

### ■BD□HB2L

|               |     | Y-axis stroke |      |      |      |      |      |      |      |     |  |  |  |
|---------------|-----|---------------|------|------|------|------|------|------|------|-----|--|--|--|
|               |     | 100           | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500 |  |  |  |
|               | 100 | 13.1          | 13.1 | 13.1 | 13.0 | 13.0 | 13.0 | 13.0 | 11.5 | 9.2 |  |  |  |
| ۵             | 150 | 12.6          | 12.5 | 12.5 | 12.5 | 12.5 | 12.4 | 12.4 | 10.9 | 8.6 |  |  |  |
| Z-axis stroke | 200 | 12.0          | 12.0 | 12.0 | 11.9 | 11.9 | 11.9 | 11.9 | 10.3 | 8.0 |  |  |  |
| s st          | 250 | 11.4          | 11.4 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 9.6  | 7.3 |  |  |  |
| -ax           | 300 | 10.8          | 10.8 | 10.8 | 10.8 | 10.8 | 10.7 | 10.7 | 9.0  | 6.7 |  |  |  |
| Z             | 350 | 10.2          | 10.2 | 10.2 | 10.1 | 10.1 | 10.1 | 10.1 | 8.3  | 6.0 |  |  |  |
|               | 400 | 9.7           | 9.7  | 9.6  | 9.6  | 9.6  | 9.6  | 9.5  | 7.7  | 5.4 |  |  |  |

# Maximum Speed by Stroke (mm/s) (Note 4)

# ■BD□HB2H

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis | 12      | 1200    |          |      |      |      | _    |      |      |      |      |      |
| Z-axis | 1200    |         | _        |      |      |      |      |      |      |      |      |      |

### ■BD□HB2M

|     |        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|-----|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
|     | X-axis | -       | -       |          | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
|     | Y-axis | 12      | 1200    |          |      |      |      | _    |      |      |      |      |      |
| - [ | 7-axis | 600     |         |          |      |      |      |      |      |      |      |      |      |

# ■BD□HB2L

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis | 12      | 00      |          |      |      |      | _    |      |      |      |      |      |
| Z-axis | 300     |         | _        |      |      |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BD□HB2□-CT-CT (Cable track specification)

# Dimensions

downloaded from our website.



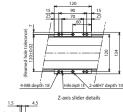




\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

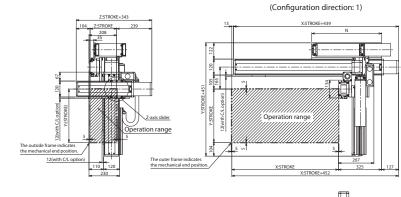


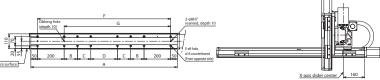


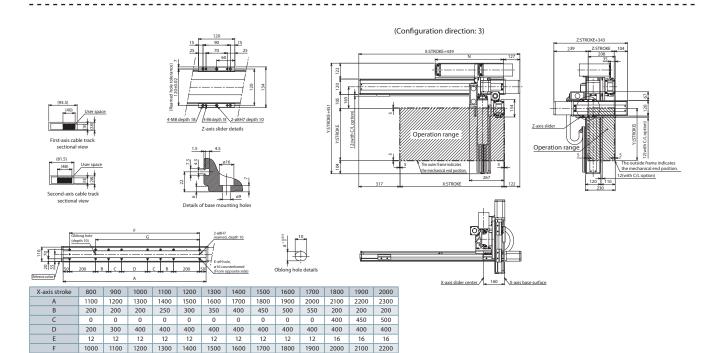




525 575 625 675 725 775 825 875 925 975 1025 1075 1125









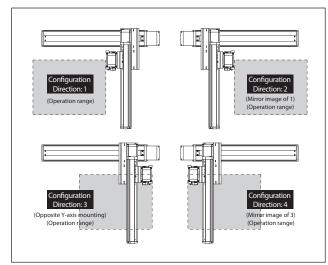
#### ICSB3-BD□HB3□ Battery-less Absolute X: Md (200W X-Y-Z XYB+ZB Speed Long Type Y: Md (100W) Z: Md (200W) High-Precision ICSPB3-BD□HB3 Specification ■ Model Specification BD□HB3□ WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Beter to 10:100mm Refer t Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Y-axis -Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati DL: Specified of Model length Designations belong Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat precision 3 specification

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BD1HB3H-①-23-43-67-T2-8-9    |
| '                                | М                          | ICSB3[ICSPB3]-BD1HB3M-①-②③-④⑤-⑦-T2-⑥-⑨     |
| 2                                | Н                          | ICSB3[ICSPB3]-BD2HB3H-①-② ③-④ ③-⑥ ⑦-T2-⑧-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BD2HB3M-①-②③-④⑤-⑦-T2-⑥-⑨     |
| 3                                | Н                          | ICSB3[ICSPB3]-BD3HB3H-①-2 ③-4 ⑤-6 ⑦-T2-⑧-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BD3HB3M-①-②③-④⑤-⑦-T2-⑥-⑨     |
| 4                                | Н                          | ICSB3[ICSPB3]-BD4HB3H-①-② ③-④ ③-⑥ ⑦-T2-⑧-⑨ |
| 4                                | М                          | ICSB3[ICSPB3]-BD4HB3M-①-②③-④③-⑥ ⑦-T2-⑧-⑨   |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

# XY Configuration Direction



# Axis Configuration \* Items in brackets [] are for the High-Precision Specification

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXMX-①-200-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-1-100-20-4-T2-11-5 | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-⑩-⑥-T2-⑪-⑦   | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names. in the above model names.

Note that the strokes are indicated in mm (millimeters).

Lead is specified with [10] in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

- \* Cable exit direction is specified with 1 in the above model names. Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | WA: Battery-less Absolute        |
| 2   | X-axis stroke<br>(Note 1)        | 80: 800mm<br>200: 2000mm         |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>¿<br>50: 500mm      |
| (5) | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| and the server of the server o |       |                 |
|--|-------|-----------------|
| Туре   | Model | Reference page  |
| X-axis cable exit direction  | *     | See P.11, P.353 |
| AQ seal (standard equipment)   | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1  | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2   | L/LL  | See P.353       |
| Non-motor end specification  | NM    | See P.353       |
| Guide with ball-retaining mechanism *3   | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regard mounting position.

  Please refer to P.11 for more information.

  3 Cannot be selected for High-Precision Specification.

  To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

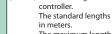
### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 200W/20mm (H), 10mm (M)                          |

# Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the



The standard lengths are 3m and 5m, but other lengths can also be specified The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

# **■**BD□HB3H

|        |     |      |      |      | ١    | /-axis strok | e    |      |      |     |
|--------|-----|------|------|------|------|--------------|------|------|------|-----|
|        |     | 100  | 150  | 200  | 250  | 300          | 350  | 400  | 450  | 500 |
|        | 100 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0         | 10.0 | 10.0 | 10.0 | 8.7 |
| a      | 150 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0         | 10.0 | 10.0 | 10.0 | 8.0 |
| stroke | 200 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0         | 10.0 | 10.0 | 9.7  | 7.4 |
| s st   | 250 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0         | 10.0 | 10.0 | 9.0  | 6.7 |
| -axis  | 300 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0         | 10.0 | 10.0 | 8.4  | 6.1 |
| -Ż     | 350 | 9.8  | 9.7  | 9.7  | 9.7  | 9.7          | 9.7  | 9.6  | 7.8  | 5.5 |
|        | 400 | 9.2  | 9.2  | 9.2  | 9.2  | 9.1          | 9.1  | 9.1  | 7.2  | 4.9 |

### ■BD□HB3M

| - 1 |        |     |      |      |      |      | /-axis strok | e    |      |      |     |
|-----|--------|-----|------|------|------|------|--------------|------|------|------|-----|
| ı   |        |     | 100  | 150  | 200  | 250  | 300          | 350  | 400  | 450  | 500 |
|     |        | 100 | 12.6 | 12.6 | 12.6 | 12.6 | 12.6         | 12.5 | 12.5 | 11.0 | 8.7 |
| ١   | e      | 150 | 12.0 | 12.0 | 12.0 | 11.9 | 11.9         | 11.9 | 11.9 | 10.3 | 8.0 |
| ١   | stroke | 200 | 11.5 | 11.5 | 11.4 | 11.4 | 11.4         | 11.4 | 11.3 | 9.7  | 7.4 |
| 1   | s st   | 250 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8         | 10.7 | 10.7 | 9.0  | 6.7 |
| 1   | -axis  | 300 | 10.3 | 10.3 | 10.3 | 10.2 | 10.2         | 10.2 | 10.2 | 8.4  | 6.1 |
| 1   | -Z     | 350 | 9.8  | 9.7  | 9.7  | 9.7  | 9.7          | 9.7  | 9.6  | 7.8  | 5.5 |
| -1  |        | 400 | 9.2  | 9.2  | 9.2  | 9.2  | 9.1          | 9.1  | 9.1  | 7.2  | 4.9 |

# Maximum Speed by Stroke (mm/s) (Note 4)

### **■**BD□HB3H

| ı |        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|---|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
|   | X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
|   | Y-axis | 1200    |         |          |      |      |      | _    |      |      |      |      |      |
| ı | 7-axis | 1200    |         |          |      |      |      | _    |      |      |      |      |      |

#### ■BD□HB3M

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis | 1200    |         |          |      |      |      |      |      |      |      |      |      |
| 7-axis | 600     |         | •        |      |      |      | _    |      |      |      |      |      |

# ICSB3 [ICSPB3]-BD□HB3□-CT-CT (Cable track specification)





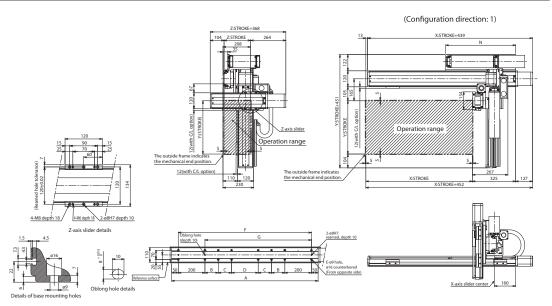


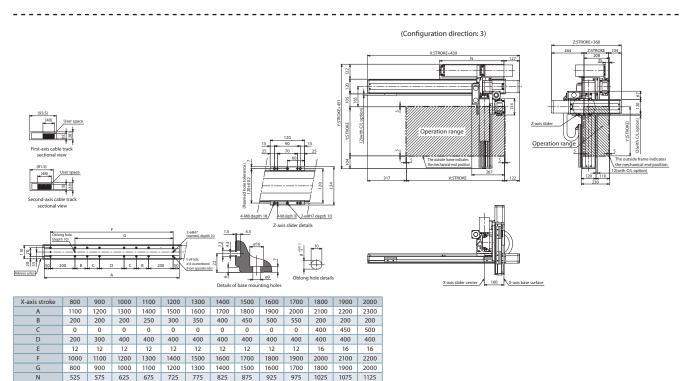


\*The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.











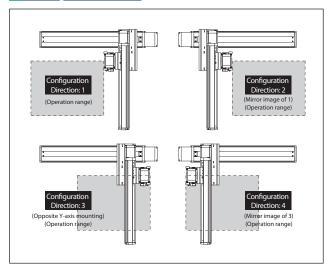
#### ICSB3-BE□HB1 ±10µm Battery-less Absolute X: Lg (400W) Y: Md (200W) Z: Sm (60W) X-Y-Z XYB+ZB Speed Type ±5µm High-Precision **ICSPB3-BE** Specification ■ Model Specification BE□HB1□ WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option D-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat XSEL-RA/SA precisio... specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |  |
|----------------------------------|----------------------------|--|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BE1HB1H-①-②③-④⑤-⑥-T2-⑥-⑨     |  |
|                                  | М                          | ICSB3[ICSPB3]-BE1HB1M-①-② 3-④ ⑤-⑥ ⑦-T2-⑥-⑨ |  |
|                                  | L                          | ICSB3[ICSPB3]-BE1HB1L-①-②③-④⑤-⑥-72-⑥-⑨     |  |
| 2                                | Н                          | ICSB3[ICSPB3]-BE2HB1H-①-②③-④⑤-⑦-T2-⑥-⑨     |  |
|                                  | М                          | ICSB3[ICSPB3]-BE2HB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |  |
|                                  | L                          | ICSB3[ICSPB3]-BE2HB1L-1]-23-45-67-T2-8-9   |  |
| 3                                | Н                          | ICSB3[ICSPB3]-BE3HB1H-①-②③-④⑤-⑥-T2-⑥-⑨     |  |
|                                  | М                          | ICSB3[ICSPB3]-BE3HB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |  |
|                                  | L                          | ICSB3[ICSPB3]-BE3HB1L-1]-23-45-67-T2-8-9   |  |
| 4                                | Н                          | ICSB3[ICSPB3]-BE4HB1H-①-②③-④⑤-⑥7-T2-⑧-⑨    |  |
|                                  | М                          | ICSB3[ICSPB3]-BE4HB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |  |
|                                  | L                          | ICSB3[ICSPB3]-BE4HB1L-①-23-43-67-T2-8-9    |  |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

### XY Configuration Direction



# Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXM-①-400-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |

Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names. in the above model names.

Note that the strokes are indicated in mm (millimeters).

Lead is specified with log in the above model names.

16: For Z-axis High Speed type

4: For Z-axis Medium Speed type

4: For Z-axis Low Speed type

- Cable exit direction is specified with 🗓 in the above model names. Please refer to P.11 for the exit directions.

### **Explanation of Model Designations**

| No. | Description                         | Notation   |
|-----|-------------------------------------|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>130: 1300mm (100: 1000mm) *1  |
| 3   | X-axis option                       | Refer to Options table below.  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm  |
| (5) | Y-axis option                       | Refer to Options table below.  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm  |
| 7   | Z-axis option                       | Refer to Options table below.  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.
- \*3 Cannot be selected for High-Precision Specification.

  \*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

# Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 400W/20mm  |
| Y-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 60W/16mm (H), 8mm (M), 4mm (L)                   |

### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller The standard lengths are 3m and 5m, but other lengths can also be specified

in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

## ■BE□HB1H

| ■BE□HB1H      |     |               |  |  |  |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|--|--|--|
|               |     | Y-axis stroke |  |  |  |  |  |  |  |  |
|               |     | 100~700       |  |  |  |  |  |  |  |  |
|               | 100 |               |  |  |  |  |  |  |  |  |
|               | 150 |               |  |  |  |  |  |  |  |  |
| au            | 200 |               |  |  |  |  |  |  |  |  |
| Z-axis stroke | 250 |               |  |  |  |  |  |  |  |  |
| s st          | 300 | 3.5           |  |  |  |  |  |  |  |  |
| -axi          | 350 |               |  |  |  |  |  |  |  |  |
| Z             | 400 |               |  |  |  |  |  |  |  |  |
|               | 450 |               |  |  |  |  |  |  |  |  |
|               | 500 |               |  |  |  |  |  |  |  |  |

#### **■**ВЕ□НВ1М

| Y-axis stroke 100-700 150 200 250 250 330 7.0 350 7.0 |      |     | 1141          |
|---|------|-----|---------------|
| 100<br>150<br>200<br>250<br>250<br>300<br>350<br>7.0  |      |     | Y-axis stroke |
| 150<br>200<br>250<br>300<br>350<br>7.0                |      |     | 100~700       |
| 900<br>250<br>300<br>350<br>7.0                       |      | 100 |               |
| 250<br>250<br>300<br>7.0                              |      | 150 |               |
| 250<br>300<br>7.0<br>350<br>400                       | a u  | 200 |               |
| 300 7.0<br>350<br>400                                 | ş    | 250 |               |
| 350<br>  400  | s st | 300 | 7.0           |
| N 400   | Ä    | 350 |               |
|   | 7    | 400 |               |
| 450   |      | 450 |               |
| 500   |      | 500 |               |

#### ■BE□HB1L

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~700       |
|               | 100 |               |
|               | 150 |               |
| a             | 200 |               |
| ջ             | 250 |               |
| s st          | 300 | 14.0          |
| Z-axis stroke | 350 |               |
| 7             | 400 |               |
|               | 450 |               |
|               | 500 |               |
|               |     |               |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**ВЕ□НВ1Н

| [ |        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|---|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
|   | X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
|   | Y-axis | 12      | 00      |         |         | -        | -         |           |           |
|   | Z-axis | 960     |         |         |         | _        |           |           |           |

#### ■BE□HB1M

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
| Y-axis | 12      | 00      |         |         | -        | -         |           |           |
| Z-axis | 480     |         |         |         | _        |           |           |           |

#### ■BE□HB1L

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
| Y-axis | 12      | 00      |         |         | -        | _         |           |           |
| Z-axis | 240     |         |         |         | _        |           |           |           |

# ICSB3 [ICSPB3]-BE□HB1□-SC-SC (Self-standing cable specification)

# Dimensions

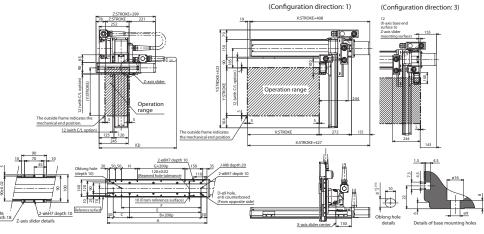
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The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 |
| F             | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 |     |      |      |      |      |      |
| Q             | 650 | 700 | 700 | 750 | 750 | 800 | 800 | 800 | 850 | 850 | 900 | 900 | 950 |     |      |      |      |      |      |

# ICSB3 [ICSPB3]-BE□HB1□-CT-CT (Cable track specification)

### Dimensions

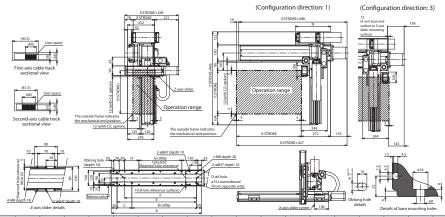
CAD drawings can be





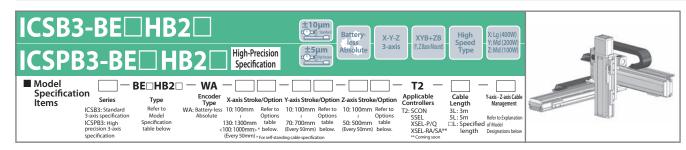


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-a | xis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 |
|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
|     | Α          | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 | 1488 | 1538 |
|     | В          | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
|     | С          | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  | 188  | 238  | 288  | 138  | 188  | 238  |
|     | D          | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
|     | E          | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 |
|     | F          | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 | 1118 | 1168 | 1218 | 1268 | 1318 | 1368 |
|     | G          | 0   | 0   | 0   | 0   | 0   | 0   | 1   | - 1 | - 1 | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
|     | Н          | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  | 183  | 233  | 283  | 133  | 183  | 233  |
|     | J          | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   | 18   | 20   | 20   | 20   |
|     | N          | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  | 700  | 725  | 750  | 775  |





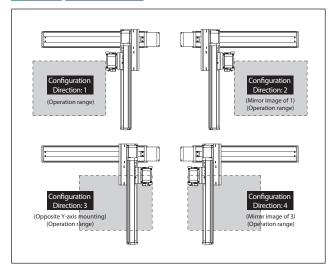
#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BE1HB2H-①-23-45-67-T2-8-9    |
| 1                                | М                          | ICSB3[ICSPB3]-BE1HB2M-①-② 3-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BE1HB2L-①-②③-④⑤-⑥-72-⑥-⑨     |
|                                  | Н                          | ICSB3[ICSPB3]-BE2HB2H-①-②③-④⑤-⑦-T2-⑥-⑨     |
| 2                                | М                          | ICSB3[ICSPB3]-BE2HB2M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BE2HB2L-1]-23-45-67-T2-8-9   |
|                                  | Н                          | ICSB3[ICSPB3]-BE3HB2H-①-②③-④⑤-⑥-T2-⑥-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BE3HB2M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BE3HB2L-1]-23-45-67-T2-8-9   |
|                                  | Н                          | ICSB3[ICSPB3]-BE4HB2H-①-②③-④⑤-⑥7-T2-⑧-⑨    |
| 4                                | М                          | ICSB3[ICSPB3]-BE4HB2M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BE4HB2L-①-23-43-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.

\*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXM-①-400-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-100-⑩-⑥-T2-①-⑦  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for 🛈 through 🕡 in the above model names. Note that the strokes are indicated in mm (millimeters).

- Lead is specified with local to the above model names.

  20: For Z-axis High Speed type

  10: For Z-axis Medium Speed type

  5: For Z-axis Low Speed type

- \* Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation   |
|-----|-------------------------------------|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>130: 1300mm (100: 1000mm) *1  |
| 3   | X-axis option                       | Refer to Options table below.  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm  |
| (5) | Y-axis option                       | Refer to Options table below.  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm  |
| 7   | Z-axis option                       | Refer to Options table below.  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as °C' and the home limit switch as °L' regardless of the mounting position.

  Please refer to P.11 for more information.

  \*3 Cannot be selected for High-Precision Specification.

  \*1 Cart Additional Variety and the part of the property of the proper
- \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 400W/20mm  |
| Y-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 100W/20mm (H), 10mm (M), 5mm (L)                 |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 5, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### **■**ВЕ□НВ2Н

| ■DL□IIDZII |                                 |               |  |  |  |  |  |  |  |  |
|------------|---------------------------------|---------------|--|--|--|--|--|--|--|--|
|            |                                 | Y-axis stroke |  |  |  |  |  |  |  |  |
|            |                                 | 100~700       |  |  |  |  |  |  |  |  |
|            | 100                             |               |  |  |  |  |  |  |  |  |
|            | 150                             |               |  |  |  |  |  |  |  |  |
| ۵          | 200<br>250<br>300<br>350<br>250 |               |  |  |  |  |  |  |  |  |
| ş          |                                 |               |  |  |  |  |  |  |  |  |
| s st       | 300                             | 5.0           |  |  |  |  |  |  |  |  |
| -axi       | 350                             |               |  |  |  |  |  |  |  |  |
| Z          | N 400                           |               |  |  |  |  |  |  |  |  |
|            | 450                             |               |  |  |  |  |  |  |  |  |
|            | 500                             |               |  |  |  |  |  |  |  |  |

#### ■BE□HB2M

|               |     | Y-axis str | oke  |      |
|---------------|-----|------------|------|------|
|               |     | 100~600    | 650  | 700  |
|               | 100 |            | 10.0 | 10.0 |
|               | 150 |            | 10.0 | 10.0 |
| a             | 200 |            | 10.0 | 10.0 |
| Z-axis stroke | 250 |            | 10.0 | 10.0 |
| s st          | 300 | 10.0       | 10.0 | 9.7  |
| -ax           | 350 |            | 10.0 | 9.0  |
| Z             | 400 |            | 10.0 | 8.4  |
|               | 450 |            | 9.9  | 7.8  |
|               | 500 |            | 9.3  | 7.2  |

#### **■**BE□HB2L

|        | _   |         | Y-a  | xis stroke |      |      |      |
|--------|-----|---------|------|------------|------|------|------|
|        |     | 100~450 | 500  | 550        | 600  | 650  | 700  |
|        | 100 |         | 20.0 | 19.2       | 16.6 | 14.3 | 12.2 |
|        | 150 |         | 20.0 | 18.6       | 16.0 | 13.7 | 11.6 |
| a u    | 200 |         | 20.0 | 18.0       | 15.4 | 13.1 | 11.0 |
| stroke | 250 |         | 20.0 | 17.3       | 14.7 | 12.4 | 10.3 |
| is st  | 300 | 20.0    | 19.8 | 16.7       | 14.1 | 11.8 | 9.7  |
| Z-axis | 350 |         | 19.1 | 16.0       | 13.4 | 11.1 | 9.0  |
| 7      | 400 |         | 18.5 | 15.4       | 12.8 | 10.5 | 8.4  |
|        | 450 |         | 17.9 | 14.8       | 12.2 | 9.9  | 7.8  |
|        | 500 |         | 17.3 | 14.2       | 11.8 | 9.3  | 7.2  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BE□HB2H

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
| Y-axis | 12      | 00      |         |         | -        | _         |           |           |
| Z-axis | 1200    |         |         |         | _        |           |           |           |

#### ■BE□HB2L

|        |   | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axi  | S |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
| Y-axi  | 5 | 12      | .00     |         |         | -        | _         |           |           |
| Z-axis | 5 | 300     |         |         |         | _        |           |           |           |

#### ■BE□HB2M

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
| Y-axis | 12      | 00      |         |         | -        | _         |           |           |
| Z-axis | 600     |         |         |         | _        |           |           |           |

# ICSB3 [ICSPB3]-BE□HB2□-SC-SC (Self-standing cable specification)

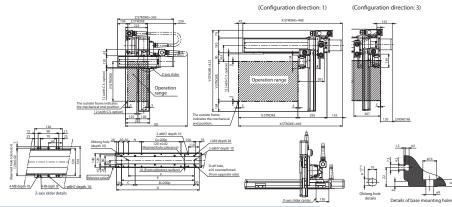


downloaded from our website.





\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 |
| В             | 0   | 0   | 1   | - 1 | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 |
| F             | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |
|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 |     |      |      |      |      |      |
| 0             | 700 | 700 | 750 | 750 | 800 | 800 | 800 | 850 | 850 | 900 | 900 | 950 | 950 |     |      |      |      |      |      |

## ICSB3 [ICSPB3]-BE□HB2□-CT-CT (Cable track specification)

#### Dimensions

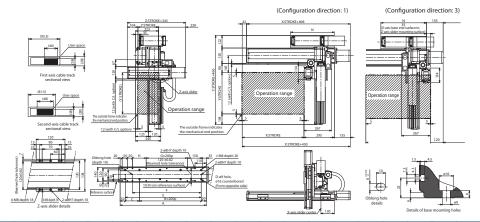
CAD drawings can be downloaded from our website.





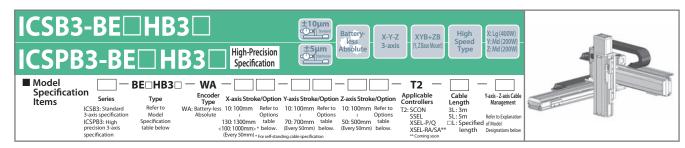


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| A             | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 | 1388 | 1538 |
| В             | 0   | 0   | 1   | - 1 | - 1 | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
| С             | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  | 188  | 238  | 288  | 138  | 188  | 238  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
| E             | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 |
| F             | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 | 1118 | 1168 | 1218 | 1268 | 1318 | 1368 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | - 1 | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| Н             | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  | 183  | 233  | 283  | 133  | 183  | 233  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   | 18   | 20   | 20   | 20   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  | 700  | 725  | 750  | 775  |



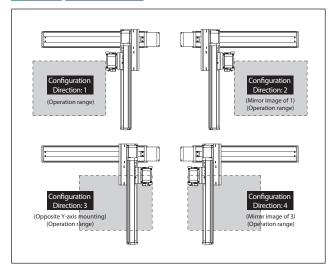


#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BE1HB3H-①-② ③-④ ③-⑥ ⑦-T2-⑥-⑨ |
| '                                | М                          | ICSB3[ICSPB3]-BE1HB3M-①-23-45-67-T2-8-9    |
| 2                                | Н                          | ICSB3[ICSPB3]-BE2HB3H-①-②③-④⑤-⑥-T2-⑥-⑨     |
| 2                                | М                          | ICSB3[ICSPB3]-BE2HB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | Н                          | ICSB3[ICSPB3]-BE3HB3H-①-23-45-67-T2-8-9    |
| 3                                | М                          | ICSB3[ICSPB3]-BE3HB3M-①-23-45-67-T2-8-9    |
| 4                                | Н                          | ICSB3[ICSPB3]-BE4HB3H-①-23-43-67-T2-8-9    |
| 4                                | М                          | ICSB3[ICSPB3]-BE4HB3M-①-23-45-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                              | Reference page                        |
|--------------|------------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXM-①-400-20-②-T2-①-③    | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-10200-20-40-T2-10-50 | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-11-200-10-6-T2-11-7  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names. Note that the strokes are indicated in mm (millimeters).

#### **Explanation of Model Designations**

| No. | Description                         | Notation   |
|-----|-------------------------------------|--|
| 1   | Encoder type                        | WA: Battery-less Absolute  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>130: 1300mm (100: 1000mm) *1  |
| 3   | X-axis option                       | Refer to Options table below.  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm  |
| (5) | Y-axis option                       | Refer to Options table below.  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm  |
| 7   | Z-axis option                       | Refer to Options table below.  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |  |  |  |  |  |  |
| Lost motion               | 0.05mm [0.02mm] or less                          |  |  |  |  |  |  |
| Guide                     | Integrated with base                             |  |  |  |  |  |  |
| Base                      | Material: Aluminum with white alumite treatment  |  |  |  |  |  |  |
| X-axis motor output/lead  | 400W/20mm  |  |  |  |  |  |  |
| Y-axis motor output/lead  | 200W/20mm  |  |  |  |  |  |  |
| Z-axis motor output/lead  | 200W/20mm (H), 10mm (M)                          |  |  |  |  |  |  |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).

(Note 2) The cable length is the length between the X-axis of



| e 2) | The cable length is the length between the X-axis connector box and the     |
|------|---|
|      | controller.   |
|      | The standard lengths are 3m and 5m, but other lengths can also be specified |
|      | in meters.  |

The maximum length is 15m. (Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated

When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.

Lead is specified with 100 in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

<sup>\*</sup> Cable exit direction is specified with n the above model names. Please refer to P.11 for the exit directions.

<sup>\*</sup>I Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

Please refer to P.11 for more information.

\*3 Cannot be selected for High-Precision Specification.

\*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.

Please refer to P.11 for the cable exit direction of each axis.



\* The payload is based on operation at the rated acceleration.

#### **■**ВЕ□НВЗН

|               |     | Y-axis stroke |      |      |  |  |  |  |  |  |  |  |  |
|---------------|-----|---------------|------|------|--|--|--|--|--|--|--|--|--|
|               |     | 100~600       | 650  | 700  |  |  |  |  |  |  |  |  |  |
|               | 100 |               | 10.0 | 10.0 |  |  |  |  |  |  |  |  |  |
|               | 150 |               | 10.0 | 10.0 |  |  |  |  |  |  |  |  |  |
| au            | 200 |               | 10.0 | 10.0 |  |  |  |  |  |  |  |  |  |
| Z-axis stroke | 250 |               | 10.0 | 9.7  |  |  |  |  |  |  |  |  |  |
| s st          | 300 | 10.0          | 10.0 | 9.1  |  |  |  |  |  |  |  |  |  |
| -aXi          | 350 |               | 10.0 | 8.5  |  |  |  |  |  |  |  |  |  |
| Z             | 400 |               | 10.0 | 7.9  |  |  |  |  |  |  |  |  |  |
|               | 450 |               | 9.3  | 7.2  |  |  |  |  |  |  |  |  |  |
|               | 500 |               | 8.7  | 6.6  |  |  |  |  |  |  |  |  |  |

#### **■**ВЕ□НВ3М

|        |     |         | Y-a  | xis stroke |      |      |      |
|--------|-----|---------|------|------------|------|------|------|
|        |     | 100~450 | 500  | 550        | 600  | 650  | 700  |
|        | 100 |         | 20.0 | 18.7       | 16.1 | 13.8 | 11.7 |
|        | 150 |         | 20.0 | 18.0       | 15.4 | 13.1 | 11.0 |
| ۵      | 200 |         | 20.0 | 17.4       | 14.8 | 12.5 | 10.4 |
| stroke | 250 |         | 19.8 | 16.7       | 14.1 | 11.8 | 9.7  |
| sst    | 300 | 20.0    | 19.2 | 16.1       | 13.5 | 11.2 | 9.1  |
| -axis  | 350 |         | 18.6 | 15.5       | 12.9 | 10.6 | 8.5  |
| ·Z     | 400 |         | 18.0 | 14.9       | 12.3 | 10.0 | 7.9  |
|        | 450 |         | 17.3 | 14.2       | 11.6 | 9.3  | 7.2  |
|        | 500 |         | 16.7 | 13.6       | 11.0 | 8.7  | 6.6  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**ВЕ□НВЗН

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
| Y-axis | 12      | 00      |         |         | -        | _         |           |           |
| Z-axis | 1200    |         |         |         | _        |           |           |           |

#### ■BE□HB3M

| Ī |        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|---|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| I | X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 440       |
|   | Y-axis | 12      | 00      |         |         | -        | -         |           |           |
| ı | Z-axis | 600     |         |         |         | _        |           |           |           |

# ICSB3 [ICSPB3]-BE□HB3□-SC-SC (Self-standing cable specification)

#### Dimensions

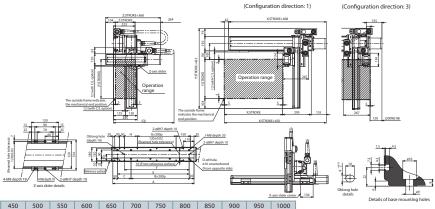
CAD drawings can be downloaded from our website.







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 |
| В             | 0   | 0   | 1   | - 1 | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 |
| F             | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |
|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 |     |      |      |      |      |      |
| Q             | 700 | 700 | 750 | 750 | 800 | 800 | 800 | 850 | 850 | 900 | 900 | 950 | 950 |     |      |      |      |      |      |

# ICSB3 [ICSPB3]-BE□HB3□-CT-CT (Cable track specification)

#### Dimensions

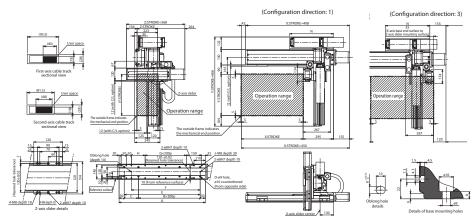
CAD drawings can be







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| A             | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 | 1388 | 1538 |
| В             | 0   | 0   | 1   | - 1 | - 1 | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
| С             | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  | 188  | 238  | 288  | 138  | 188  | 238  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
| E             | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 |
| F             | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 | 1118 | 1168 | 1218 | 1268 | 1318 | 1368 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| Н             | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  | 183  | 233  | 283  | 133  | 183  | 233  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   | 18   | 20   | 20   | 20   |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  | 700  | 725  | 750  | 775  |



#### ICSB3-BF□HB1 Battery-less Absolute X-Y-Z XYB+ZB High-Precision CSPB3-BF Specification ■ Model Specification BF□HB1□ - WA -T2 | Chernoder | Cher Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Y-axis -Z-axis Cal Length Management 31: 3 m 51: 5 m Refer to Explanat □1: Specified of Model length Designations belong Series Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below specification.

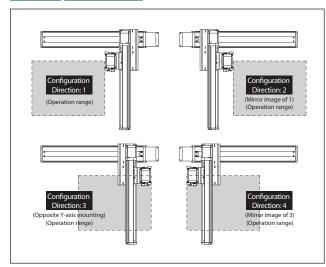
#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BF1HB1H-①-②③-④⑤-⑥-T2-⑥-⑨     |
| 1                                | М                          | ICSB3[ICSPB3]-BF1HB1M-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
|                                  | L                          | ICSB3[ICSPB3]-BF1HB1L-①-②③-④⑤-⑥-72-⑥-⑨     |
|                                  | Н                          | ICSB3[ICSPB3]-BF2HB1H-①-23-45-67-T2-8-9    |
| 2                                | М                          | ICSB3[ICSPB3]-BF2HB1M-1]-23-45-67-T2-8-9   |
|                                  | L                          | ICSB3[ICSPB3]-BF2HB1L-1]-23-45-67-T2-8-9   |
|                                  | Н                          | ICSB3[ICSPB3]-BF3HB1H-①-②③-④⑤-⑥-T2-⑥-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BF3HB1M-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
|                                  | L                          | ICSB3[ICSPB3]-BF3HB1L-1]-23-45-67-T2-8-9   |
|                                  | Н                          | ICSB3[ICSPB3]-BF4HB1H-①-②③-4 ⑤-⑥-T2-⑥-⑨    |
| 4                                | М                          | ICSB3[ICSPB3]-BF4HB1M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BF4HB1L-①-23-43-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.

\*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                               | Reference page                        |
|--------------|-------------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXMX-10-400-20-20-T2-10-3 | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-①-⑤     | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-⑪-⑦       | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names. In the above model names.
Note that the strokes are indicated in mm (millimeters).
\*Lead is specified with 100 in the above model names.
16: For Z-axis High Speed type
4: For Z-axis Low Speed type
4: For Z-axis Low Speed type

- \* Cable exit direction is specified with 1 in the above model names. Please refer to P.11 for the exit directions.

# **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | WA: Battery-less Absolute        |
| 2   | X-axis stroke<br>(Note 1)        | 100: 1000mm<br>250: 2500mm       |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm      |
| (5) | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction            | *     | See P.11, P.353 |
| AQ seal (standard equipment)           | AQ    | See P.353       |
| Brake *1                               | В     | See P.353       |
| Creep sensor *2                        | C/CL  | See P.353       |
| Home limit switch *2                   | L/LL  | See P.353       |
| Non-motor end specification            | NM    | See P.353       |
| Guide with ball-retaining mechanism *3 | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
- Please refer to P.11 for more information.
- \*3 Cannot be selected for High-Precision Specification.
- \*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]  |
|---------------------------|---|
| Dive system               | buil screw, folica e fo [equivalent to folica es] |
| Positioning repeatability | ±0.01mm [±0.005mm]                                |
| Lost motion               | 0.05mm [0.02mm] or less                           |
| Guide                     | Integrated with base                              |
| Base                      | Material: Aluminum with white alumite treatment   |
| X-axis motor output/lead  | 400W/20mm   |
| Y-axis motor output/lead  | 200W/20mm   |
| Z-axis motor output/lead  | 60W/16mm (H), 8mm (M), 4mm (L)                    |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).
The cable length is the length between the X-axis of رد. ۲h/ 2) actor be (Not



| te 2) | The cable length is the length between the X-axis connector box and the     |
|-------|---|
|       | controller.   |
|       | The standard lengths are 3m and 5m, but other lengths can also be specified |

fied in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

BETHB1H

BETHB1M

| -0            | гшпв | 111           |                 | ь | гшпв | 1171          |
|---------------|------|---------------|-----------------|---|------|---------------|
|               |      | Y-axis stroke |                 | _ |      | Y-axis stroke |
|               |      | 100~700       |                 |   |      | 100~700       |
|               | 100  |               |                 |   | 100  |               |
|               | 150  |               |                 |   | 150  |               |
| <u>\$</u>     | 200  |               | 3               | ņ | 200  |               |
| 5             | 250  |               | 3               | 2 | 250  |               |
| Z-axis stroke | 300  | 3.5           | 7 mile observed | 2 | 300  | 7.0           |
| axi           | 350  |               | 1               | Ķ | 350  |               |
| Z,            | 400  |               | 1               | 7 | 400  |               |
|               | 450  |               |                 |   | 450  |               |
|               | 500  |               |                 |   | 500  |               |
| _             |      |               |                 |   |      |               |

| ■BF□HB | 1L          |
|--------|-------------|
|        | Y-axis stro |
|        | 100~70      |
| 100    |             |

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~700       |
|               | 100 |               |
|               | 150 |               |
| â             | 200 |               |
| Z-axis stroke | 250 |               |
| s st          | 300 | 14.0          |
| äX.           | 350 |               |
| Ż             | 400 |               |
|               | 450 |               |
|               | 500 |               |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BF□HB1H

|        | 100~500      | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|--------------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -            | _       | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 12           | 00      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Z-axis | Z-axis 960 — |         |           |      |      |      |      |      |      |      |      |      |      |      |      |      |

#### ■BF□HB1M

|        | 100~500       | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -             | -       | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | /-axis 1200 — |         |           |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Z-axis | 480           |         |           |      |      |      |      | _    | _    |      |      |      |      |      |      |      |

#### ■BF□HB2L

|        | 100~500 | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 12      | 00      |           |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| Z-axis | 240     |         |           |      |      |      |      | _    | _    |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BF□HB1□-CT-CT (Cable track specification)

## Dimensions

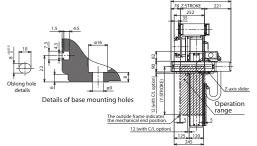


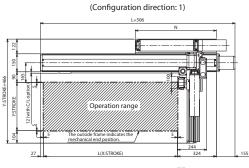


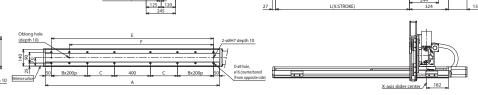
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



Z-axis slider details







(Configuration direction: 3) Operation range

| X-axis stroke | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| L             | 1014 | 1114 | 1214 | 1314 | 1414 | 1514 | 1614 | 1714 | 1814 | 1914 | 2014 | 2114 | 2214 | 2314 | 2414 | 2514 |
| A             | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 | 2850 |
| В             | 1    | 1    | 1    | - 1  | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    |
| С             | 225  | 275  | 325  | 375  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  |
| D             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   | 16   | 20   | 20   | 20   | 20   |
| E             | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 |
| F             | 1050 | 1150 | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 |
| N             | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



#### ICSB3-BF□HB2□ Battery-less Absolute X: Lg (400W) Y: Md (200W) Z: Md (100W) X-Y-Z XYB+ZB Y, Z Base Mo High-Precision ICSPB3-BF Specification ■ Model Specification BF□HB2□ WA T2 Encoder Type X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Delay. Absolute Options Options Options Options 70:700mm table (Every 100mm) below. (Every 50mm) below. Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Y-axis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati CL: Specified of Model length Designations below Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below specification.

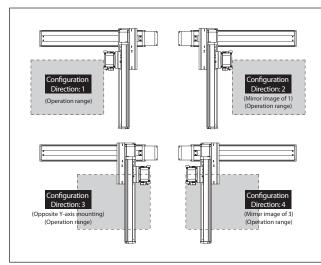
#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
|                                  | Н                          | ICSB3[ICSPB3]-BF1HB2H-①-②③-④⑤-⑥-T2-⑥-⑨     |
| 1                                | М                          | ICSB3[ICSPB3]-BF1HB2M-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
|                                  | L                          | ICSB3[ICSPB3]-BF1HB2L-①-②③-④⑤-⑥-72-⑥-⑨     |
|                                  | Н                          | ICSB3[ICSPB3]-BF2HB2H-①-②③-④⑤-⑦-T2-⑥-⑨     |
| 2                                | М                          | ICSB3[ICSPB3]-BF2HB2M-1]-23-45-67-T2-8-9   |
|                                  | L                          | ICSB3[ICSPB3]-BF2HB2L-1]-23-45-67-T2-8-9   |
|                                  | Н                          | ICSB3[ICSPB3]-BF3HB2H-①-②③-④⑤-⑥-T2-⑥-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BF3HB2M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | L                          | ICSB3[ICSPB3]-BF3HB2L-1]-23-43-67-T2-8-9   |
|                                  | Н                          | ICSB3[ICSPB3]-BF4HB2H-①-②③-4 ⑤-⑥-T2-⑥-⑨    |
| 4                                | М                          | ICSB3[ICSPB3]-BF4HB2M-①-② ③-④ ⑤-⑦-T2-⑥-⑨   |
|                                  | L                          | ICSB3[ICSPB3]-BF4HB2L-①-23-43-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.

\*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| N | ame of axis | Model                            | Reference page                        |
|---|-------------|----------------------------------|---------------------------------------|
|   | X-axis      | ISB[ISPB]-LXMX-①-400-20-②-T2-①-③ | → Please contact IAI for more details |
|   | Y-axis      | ISB[ISPB]-MXM-①-200-20-④-T2-①-⑤  | → Please contact IAI for more details |
|   | Z-axis      | ISB[ISPB]-MXM-①-100-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |

Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names. Note that the strokes are indicated in mm (millimeters).

Lead is specified with local to the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

5: For Z-axis Low Speed type

\* Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | WA: Battery-less Absolute        |
| 2   | X-axis stroke<br>(Note 1)        | 100: 1000mm<br>250: 2500mm       |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm      |
| 5   | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Type                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |

1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 400W/20mm  |
| Y-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 100W/20mm (H), 10mm (M), 5mm (L)                 |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the The standard lengths are 3m and 5m, but other lengths can also be specified

in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 5, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

<sup>\*2</sup> When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regard mounting position.

Please refer to P.11 for more information.

3 Cannot be selected for High-Precision Specification.

To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.



\* The payload is based on operation at the rated acceleration.

#### ■BF□HB2H

#### ■BF□HB2M

|                          | HIDZH         |               | гшп | IDZIVI  |          |      |
|--------------------------|---------------|---------------|-----|---------|----------|------|
|                          | Y-axis stroke |               |     | Y-ax    | s stroke |      |
|                          | 100~700       |               |     | 100~600 | 650      | 700  |
| 100                      |               |               | 100 |         | 10.0     | 10.0 |
| 150                      |               |               | 150 |         | 10.0     | 10.0 |
| <b>9</b> 200             |               | ê             | 200 |         | 10.0     | 10.0 |
| 250                      |               | 2             | 250 |         | 10.0     | 10.0 |
| 250<br>300<br>350<br>400 | 5.0           | Z-axis stroke | 300 | 10.0    | 10.0     | 9.7  |
| ੜ 350                    |               | ă             | 350 |         | 10.0     | 9.0  |
| Ń 400                    |               | Ź             | 400 |         | 10.0     | 8.4  |
| 450                      |               |               | 450 |         | 9.9      | 7.8  |
| 500                      |               |               | 500 |         | 9.3      | 7.2  |

#### **■**BF□HB2L

|               |     |         |      | Y-axis str | oke  |      |      |
|---------------|-----|---------|------|------------|------|------|------|
|               |     | 100~450 | 500  | 550        | 600  | 650  | 700  |
|               | 100 |         | 20.0 | 19.2       | 16.6 | 14.3 | 12.2 |
|               | 150 |         | 20.0 | 18.6       | 16.0 | 13.7 | 11.6 |
| â             | 200 |         | 20.0 | 18.0       | 15.4 | 13.1 | 11.0 |
| Z-axis stroke | 250 |         | 20.0 | 17.3       | 14.7 | 12.4 | 10.3 |
| sst           | 300 | 20.0    | 19.8 | 16.7       | 14.1 | 11.8 | 9.7  |
| ă             | 350 |         | 19.1 | 16.0       | 13.4 | 11.1 | 9.0  |
| Ź             | 400 |         | 18.5 | 15.4       | 12.8 | 10.5 | 8.4  |
|               | 450 |         | 17.9 | 14.8       | 12.2 | 9.9  | 7.8  |
|               | 500 |         | 17.3 | 14.2       | 11.6 | 9.3  | 7.2  |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BF□HB2H

|        | 100~500 | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 12      | 00      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Z-axis | 1200    |         |           |      |      |      |      | _    |      |      |      |      |      |      |      |      |

#### ■BF□HB2M

|        | 100~500 | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 1200 —  |         |           |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 7-axis | 600     | _       |           |      |      |      |      |      |      |      |      |      |      |      |      |      |

#### ■BF□HB2L

|        | 100~500 | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 1200    |         |           |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| Z-axis | 300     |         |           |      |      |      |      | _    | -    |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BF□HB2□-CT-CT (Cable track specification)

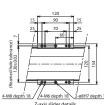
#### Dimensions

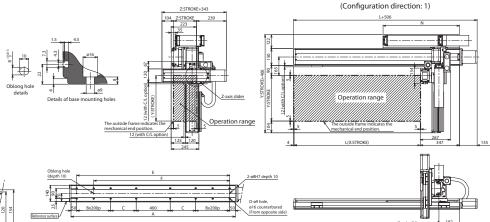
## CAD drawings can be downloaded from our website.

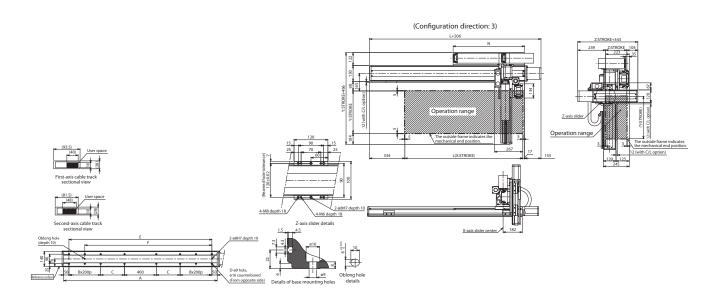




\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

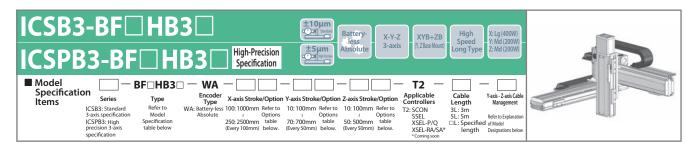






| X-axis stroke | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| L             | 1014 | 1114 | 1214 | 1314 | 1414 | 1514 | 1614 | 1714 | 1814 | 1914 | 2014 | 2114 | 2214 | 2314 | 2414 | 2514 |
| A             | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 | 2850 |
| В             | 1    | 1    | 1    | - 1  | 1    | - 1  | 1    | 1    | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    |
| С             | 225  | 275  | 325  | 375  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  |
| D             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   | 16   | 20   | 20   | 20   | 20   |
| E             | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 |
| F             | 1050 | 1150 | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 |
| N             | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



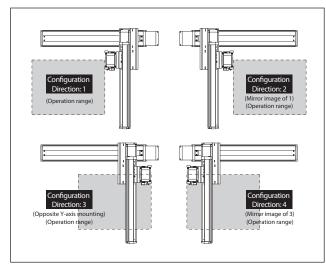


## Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                    |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BF1HB3H-①-②③-④⑤-T2-®-⑨     |
| '                                | M                          | ICSB3[ICSPB3]-BF1HB3M-1]-23-45-67-T2-8-9 |
| 2                                | Н                          | ICSB3[ICSPB3]-BF2HB3H-①-23-45-67-T2-8-9  |
| 2                                | M                          | ICSB3[ICSPB3]-BF2HB3M-1]-23-45-67-T2-8-9 |
| 3                                | Н                          | ICSB3[ICSPB3]-BF3HB3H-①-23-45-67-T2-8-9  |
| 3                                | M                          | ICSB3[ICSPB3]-BF3HB3M-①-23-45-67-T2-8-9  |
| 4                                | Н                          | ICSB3[ICSPB3]-BF4HB3H-①-23-43-67-T2-8-9  |
| 4                                | М                          | ICSB3[ICSPB3]-BF4HB3M-①-23-45-67-T2-8-9  |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXMX-①-400-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-①-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |

Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names. Note that the strokes are indicated in mm (millimeters).

#### **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | WA: Battery-less Absolute        |
| 2   | X-axis stroke<br>(Note 1)        | 100: 1000mm<br>250: 2500mm       |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm      |
| (5) | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm      |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре                                      | Model | Reference page  |  |  |
|---|-------|-----------------|--|--|
| X-axis cable exit direction               | *     | See P.11, P.353 |  |  |
| AQ seal (standard equipment)              | AQ    | See P.353       |  |  |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |  |  |
| Creep sensor *2                           | C/CL  | See P.353       |  |  |
| Home limit switch *2                      | L/LL  | See P.353       |  |  |
| Non-motor end specification               | NM    | See P.353       |  |  |
| Guide with ball-retaining mechanism *3    | RT    | See P.354       |  |  |

<sup>\*3</sup> Cannot be selected for High-Precision Specification.

\* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

| <b>Common Specifications</b> | * Items in brackets [] are for the High-Precision Specification. |
|------------------------------|--|
|                              |  |

| Drive system                        | Ball screw, rolled C10 [equivalent to rolled C5] |  |  |  |  |
|-------------------------------------|--|--|--|--|--|
| Positioning repeatability           | ±0.01mm [±0.005mm]                               |  |  |  |  |
| Lost motion 0.05mm [0.02mm] or less |  |  |  |  |  |
| Guide Integrated with base          |  |  |  |  |  |
| Base                                | Material: Aluminum with white alumite treatment  |  |  |  |  |
| X-axis motor output/lead            | 400W/20mm  |  |  |  |  |
| Y-axis motor output/lead            | 200W/20mm  |  |  |  |  |
| Z-axis motor output/lead            | 200W/20mm (H), 10mm (M)                          |  |  |  |  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (N



| Note 2) | The cable length is the length between the X-axis connector box and the   |
|---------|---|
|         | controller.   |
|         | The standard lengths are 3m and 5m, but other lengths can also be specifi |

ified in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.

Lead is specified with 100 in the above model names.

20: For Z-axis High Speed type

10: For Z-axis Medium Speed type

<sup>\*</sup> Cable exit direction is specified with n the above model names. Please refer to P.11 for the exit directions.

<sup>\*1</sup> Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.



(Configuration direction: 1)

#### Payload (kg) (Note 3)

\* The payload is based on operation at the rated acceleration.

#### **■**ВБ□НВЗН

| _             | ווכטוום וט |               |      |      |  |  |  |  |  |  |  |  |
|---------------|------------|---------------|------|------|--|--|--|--|--|--|--|--|
|               |            | Y-axis stroke |      |      |  |  |  |  |  |  |  |  |
|               |            | 100~600       | 650  | 700  |  |  |  |  |  |  |  |  |
|               | 100        |               | 10.0 | 10.0 |  |  |  |  |  |  |  |  |
|               | 150        |               | 10.0 | 10.0 |  |  |  |  |  |  |  |  |
| ě             | 200        |               | 10.0 | 10.0 |  |  |  |  |  |  |  |  |
| 2             | 250        |               | 10.0 | 9.7  |  |  |  |  |  |  |  |  |
| Z-axis stroke | 300        | 10.0          | 10.0 | 9.1  |  |  |  |  |  |  |  |  |
| ă             | 350        |               | 10.0 | 8.5  |  |  |  |  |  |  |  |  |
| Ź             | 400        |               | 10.0 | 7.9  |  |  |  |  |  |  |  |  |
|               | 450        |               | 9.3  | 7.2  |  |  |  |  |  |  |  |  |
|               | 500        |               | 8.7  | 6.6  |  |  |  |  |  |  |  |  |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**ВF□НВ3Н

|        | 100~500  | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|----------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | _        |         | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | xis 1200 |         |           |      |      |      |      |      |      | _    |      |      |      |      |      |      |
| Z-axis | 1200     |         |           |      |      |      |      | _    | -    |      |      |      |      |      |      |      |

#### ■BF□HB3M

|        | 100~500 | 550~700 | 1000~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 1200      | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 1200    |         |           |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 600     |         |           |      |      |      |      |      |      |      |      |      |      |      |      |      |

#### **■**ВЕ□НВЗМ

|        |     | Y-axis stroke |      |      |      |      |      |  |  |  |  |  |  |  |
|--------|-----|---------------|------|------|------|------|------|--|--|--|--|--|--|--|
|        |     | 100~450       | 500  | 550  | 600  | 650  | 700  |  |  |  |  |  |  |  |
|        | 100 |               | 20.0 | 18.7 | 16.1 | 13.8 | 11.7 |  |  |  |  |  |  |  |
|        | 150 |               | 20.0 | 18.0 | 15.4 | 13.1 | 11.0 |  |  |  |  |  |  |  |
| â      | 200 |               | 20.0 | 17.4 | 14.8 | 12.5 | 10.4 |  |  |  |  |  |  |  |
| stroke | 250 |               | 19.8 | 16.7 | 14.1 | 11.8 | 9.7  |  |  |  |  |  |  |  |
| s st   | 300 | 20.0          | 19.2 | 16.1 | 13.5 | 11.2 | 9.1  |  |  |  |  |  |  |  |
| axis   | 350 |               | 18.6 | 15.5 | 12.9 | 10.6 | 8.5  |  |  |  |  |  |  |  |
| Ž-i    | 400 |               | 18.0 | 14.9 | 12.3 | 10.0 | 7.9  |  |  |  |  |  |  |  |
|        | 450 |               | 17.3 | 14.2 | 11.6 | 9.3  | 7.2  |  |  |  |  |  |  |  |
|        | 500 |               | 16.7 | 13.6 | 11.0 | 8.7  | 6.6  |  |  |  |  |  |  |  |

# ICSB3 [ICSPB3]-BF□HB3□-CT-CT (Cable track specification)

#### Dimensions

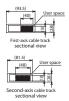
CAD drawings can be downloaded from our website.

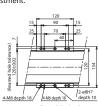


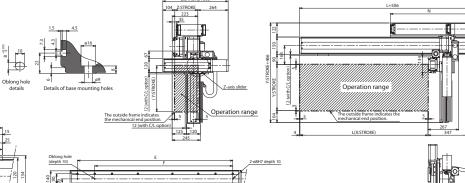


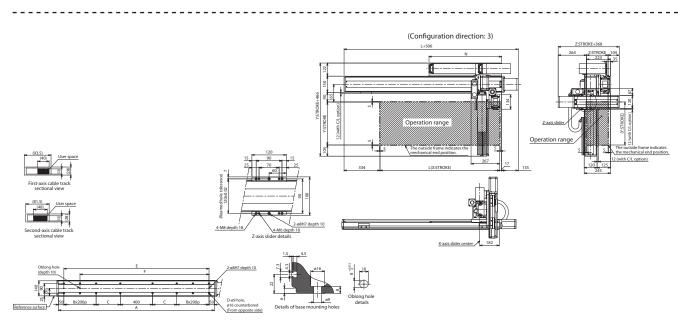


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.









| X-axis stroke | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| L             | 1014 | 1114 | 1214 | 1314 | 1414 | 1514 | 1614 | 1714 | 1814 | 1914 | 2014 | 2114 | 2214 | 2314 | 2414 | 2514 |
| A             | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 | 2850 |
| В             | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    |
| С             | 225  | 275  | 325  | 375  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  |
| D             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   | 16   | 20   | 20   | 20   | 20   |
| E             | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 |
| F             | 1050 | 1150 | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 |
| N             | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



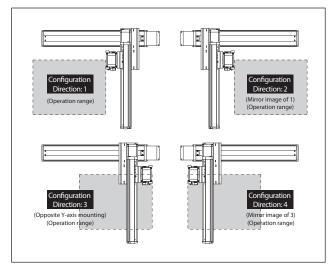
#### ICSB3-BK□HB3[ X **±20μm** Y/Z **±10μm** X: XL (600W) Y: Lg (400W) Z: Md (200W Type X±10μm Y/Z±5μn **High-Precision** CSPB3-BK□HB Specification ■ Model Specification BK□HB3□ **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-axis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati □L: Specified of Model Plangth Personal Per Series Encoder Type Absolute 10: 100mm Refer to 10: 100mm Refer to 10: 100mm Refer to Y-axis - Z-axis Cabl Management Туре | 10:100mm | Refer to | 10:100mm | 10:100mm | Refer to | 10:100mm ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below specificati XSEL-RA/SA<sup>4</sup>

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BK1HB3H-①-②③-④⑤-6⑦-T2-⑧-⑨    |
| '                                | М                          | ICSB3[ICSPB3]-BK1HB3M-①-23-43-67-T2-8-9    |
| 2                                | Н                          | ICSB3[ICSPB3]-BK2HB3H-①-②③-④⑤-⑥⑦-T2-⑧-⑨    |
| 2                                | М                          | ICSB3[ICSPB3]-BK2HB3M-①-23-03-67-T2-8-9    |
| 3                                | Н                          | ICSB3[ICSPB3]-BK3HB3H-①-23-43-67-T2-8-9    |
| 3                                | М                          | ICSB3[ICSPB3]-BK3HB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                                | Н                          | ICSB3[ICSPB3]-BK4HB3H-①-②③-④⑤-⑥⑦-T2-⑧-◎    |
| 4                                | М                          | ICSB3[ICSPB3]-BK4HB3M-①-23-43-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXM-①-600-40-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-40-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-⑩-⑥-T2-①-⑦  | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

Note that the strokes are indicated in mm (millimeters).

\* Lead is specified with ⑩ in the above model names.

20. For Z-axis High Speed type

10. For Z-axis Medium Speed type

#### **Explanation of Model Designations**

| No. | Description                         | Notation  |
|-----|-------------------------------------|---|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental   |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>130: 1300mm (100: 1000mm) *1   |
| 3   | X-axis option                       | Refer to Options table below.   |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm   |
| 5   | Y-axis option                       | Refer to Options table below.   |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm   |
| 7   | Z-axis option                       | Refer to Options table below.   |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m   |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

|   | -     |                 |
|---|-------|-----------------|
| Туре  | Model | Reference page  |
| X-axis cable exit direction *                         | A1/A3 | See P.11, P.353 |
| AQ seal (equipped as standard on Y/Z-axis)            | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1             | В     | See P.353       |
| Creep sensor *2                                       | C/CL  | See P.353       |
| Home limit switch *2 (equipped as standard on X-axis) | L/LL  | See P.353       |
| Non-motor end specification                           | NM    | See P.353       |
| Guide with ball-retaining mechanism (Y/Z-axis only)   | RT    | See P.354       |

<sup>\*1</sup> Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/40mm   |
| Y-axis motor output/lead  | 400W/40mm   |
| Z-axis motor output/lead  | 200W/20mm (H), 10mm (M)   |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the



The table length a the length between the Alaxie Confidence to box and the controller.

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.

Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

<sup>\*2</sup> When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

Please refer to P.11 for more information.

\* Please refer to P.11 for the X-axis cable exit direction.



\* The payload is based on operation at the rated acceleration.

#### **■**ВК□НВЗН

| ■ВК□ПВЭП      |     |               |  |  |  |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|--|--|--|
|               |     | Y-axis stroke |  |  |  |  |  |  |  |  |
|               |     | 100~700       |  |  |  |  |  |  |  |  |
|               | 100 |               |  |  |  |  |  |  |  |  |
|               | 150 |               |  |  |  |  |  |  |  |  |
| au            | 200 |               |  |  |  |  |  |  |  |  |
| ş             | 250 |               |  |  |  |  |  |  |  |  |
| Z-axis stroke | 300 | 10.0          |  |  |  |  |  |  |  |  |
| -axi          | 350 |               |  |  |  |  |  |  |  |  |
| Z             | 400 |               |  |  |  |  |  |  |  |  |
|               | 450 |               |  |  |  |  |  |  |  |  |
|               | 500 |               |  |  |  |  |  |  |  |  |
|               |     |               |  |  |  |  |  |  |  |  |

#### **■**ВК□НВ3М

|        | _   |         |      |      | Y-axis str | oke  |      |      |      |      |
|--------|-----|---------|------|------|------------|------|------|------|------|------|
|        |     | 100~300 | 350  | 400  | 450        | 500  | 550  | 600  | 650  | 700  |
|        | 100 |         | 20.0 | 20.0 | 20.0       | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 |
|        | 150 |         | 20.0 | 20.0 | 20.0       | 20.0 | 20.0 | 19.2 | 18.4 | 17.6 |
| ۵      | 200 |         | 20.0 | 20.0 | 20.0       | 20.0 | 19.4 | 18.7 | 17.8 | 17.1 |
| stroke | 250 |         | 20.0 | 20.0 | 20.0       | 19.7 | 18.8 | 18.0 | 17.2 | 16.4 |
| sst    | 300 | 20.0    | 20.0 | 20.0 | 20.0       | 19.1 | 18.3 | 17.5 | 16.7 | 15.9 |
| -axis  | 350 |         | 20.0 | 20.0 | 19.4       | 18.6 | 17.7 | 17.0 | 16.1 | 15.3 |
| Ż      | 400 |         | 20.0 | 19.8 | 18.9       | 18.0 | 17.2 | 16.4 | 15.6 | 14.8 |
|        | 450 |         | 19.9 | 19.1 | 18.3       | 17.4 | 16.6 | 15.8 | 14.9 | 14.2 |
|        | 500 |         | 19.4 | 18.6 | 17.7       | 16.9 | 16.0 | 15.3 | 14.4 | 13.6 |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**ВК□НВ3Н

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 2400    |         | 1840    | 1530     | 1290      | 1100      | 880       |
| Y-axis | 24      | 00      |         |         | -        | _         |           |           |
| Z-axis | 1200    |         |         |         | _        |           |           |           |

#### **■**ВК□НВ3М

|   |        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|---|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
|   | X-axis |         | 2400    |         | 1840    | 1530     | 1290      | 1100      | 880       |
| Г | Y-axis | 24      | 00      |         |         | -        | _         |           |           |
| П | 7 avic | 600     |         |         |         |          |           |           |           |

# ICSB3 [ICSPB3]-BK□HB3□-SC-SC (Self-standing cable specification)

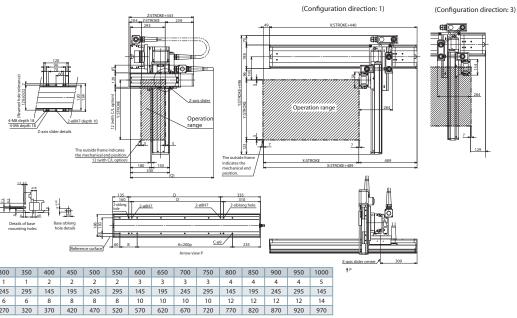
# Dimensions CAD drawings can be downloaded from our







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

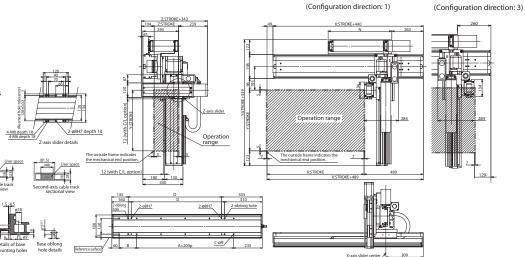


| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600  | 650  | 700  | 750 | 800 | 850 | 900 | 950 | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|-----|-----|------|
| A             | -   | -   | - 1 | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3   | 4   | 4   | 4   | 4   | 5    |
| В             | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  | 195  | 245  | 295 | 145 | 195 | 245 | 295 | 145  |
| С             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10   | 10   | 10   | 10  | 12  | 12  | 12  | 12  | 14   |
| D             | 70  | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570  | 620  | 670  | 720 | 770 | 820 | 870 | 920 | 970  |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600  | 650  | 700  |     |     |     |     |     |      |
| Q             | 750 | 800 | 800 | 850 | 850 | 900 | 900 | 900 | 950 | 950 | 1000 | 1000 | 1050 |     |     |     |     |     |      |

## ICSB3 [ICSPB3]-BK□HB3□-CT-CT (Cable track specification)

## Dimensions 3D CAD 2D CAD RoHS

\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| A             | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
| В             | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  | 195  | 245  | 295  | 145  | 195  | 245  |
| С             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
| D             | 70  | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970  | 1020 | 1070 | 1120 | 1170 | 1220 | 1270 |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525 | 550 | 575 | 600 | 625  | 650  | 675  | 700  | 725  | 750  | 775  |



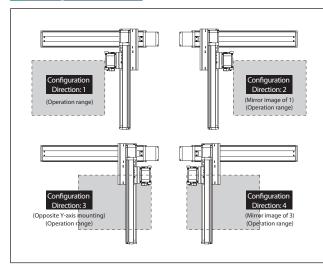
#### ICSB3-BK□HB4H X-Y-Z 3-axis XYB+ZB X ±10μm Y/Z ±5μm High-Precision ICSPB3-BK□HB4H Specification ■ Model Specification ВК□НВ4Н **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Series Encoder Type Absolute 10: 100mm Refer to 10: 100mm Refer to 10: 100mm Refer to Туре | 10:100mm | Refer to | 10:100mm | 10:100mm | Refer to | 10:100mm ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below XSEL-RA/SA precisio... specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                   |
|----------------------------------|----------------------------|---|
| 1                                | Н                          | ICSB3[ICSPB3]-BK1HB4H-①-23-43-67-T2-8-9 |
| 2                                | Н                          | ICSB3[ICSPB3]-BK2HB4H-①-23-43-67-T2-0-9 |
| 3                                | Н                          | ICSB3[ICSPB3]-BK3HB4H-①-②③-④⑤-⑥7-T2-⑥-⑨ |
| 4                                | Н                          | ICSB3[ICSPB3]-BK4HB4H-①-23-43-67-T2-8-9 |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \*Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXM-①-600-40-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-40-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-20-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  Cable exit direction is specified with ⑩ in the above model names.

  Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation   |
|-----|-------------------------------------|--|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>130: 1300mm (100: 1000mm) *1  |
| 3   | X-axis option                       | Refer to Options table below.  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm  |
| (5) | Y-axis option                       | Refer to Options table below.  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm  |
| 7   | Z-axis option                       | Refer to Options table below.  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| when selecting multiple options, specify them in uphrabetical order. |       |                 |  |  |  |  |  |  |  |  |
|--|-------|-----------------|--|--|--|--|--|--|--|--|
| Туре   | Model | Reference page  |  |  |  |  |  |  |  |  |
| X-axis cable exit direction *  | A1/A3 | See P.11, P.353 |  |  |  |  |  |  |  |  |
| AQ seal (equipped as standard on Y/Z-axis)                           | AQ    | See P.353       |  |  |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                            | В     | See P.353       |  |  |  |  |  |  |  |  |
| Creep sensor *2  | C/CL  | See P.353       |  |  |  |  |  |  |  |  |
| Home limit switch *2 (equipped as standard on X-axis)                | L/LL  | See P.353       |  |  |  |  |  |  |  |  |
| Non-motor end specification  | NM    | See P.353       |  |  |  |  |  |  |  |  |
| Guide with ball-retaining mechanism (Y/Z-axis only)                  | RT    | See P.354       |  |  |  |  |  |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

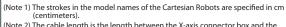
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
  Please refer to P.11 for more information.
- \* Please refer to P.11 for the X-axis cable exit direction.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/40mm   |
| Y-axis motor output/lead  | 400W/40mm   |
| Z-axis motor output/lead  | 400W/20mm   |

### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.





- (Note 2) The cable length is the length between the X-axis connector box and the Controller.

  The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

  The maximum length is 20m.
- (Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.
- (Note 4) Please note that a longer stroke will result in a lower max speed.

\* The payload is based on operation at the rated acceleration.

#### **■**ВК□НВ4Н

|        |     |      |      |      |      |      | ١    | /-axis strok | 2    |      |      |      |      |      |
|--------|-----|------|------|------|------|------|------|--------------|------|------|------|------|------|------|
|        |     | 100  | 150  | 200  | 250  | 300  | 350  | 400          | 450  | 500  | 550  | 600  | 650  | 700  |
|        | 100 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 19.8         | 19.0 | 18.1 | 17.3 | 16.5 | 15.7 | 14.9 |
|        | 150 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 19.8 | 19.0         | 18.2 | 17.3 | 16.5 | 15.7 | 14.9 | 14.1 |
| ب ا    | 200 | 20.0 | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.2         | 17.4 | 16.5 | 15.7 | 14.9 | 14.0 | 13.3 |
| stroke | 250 | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 | 17.4         | 16.6 | 15.7 | 14.9 | 14.1 | 13.2 | 12.5 |
| sst    | 300 | 20.0 | 20.0 | 19.9 | 19.1 | 18.3 | 17.5 | 16.7         | 15.8 | 15.0 | 14.1 | 13.4 | 12.5 | 11.7 |
| -axis  | 350 | 20.0 | 20.0 | 19.1 | 18.3 | 17.5 | 16.7 | 15.9         | 15.0 | 14.2 | 13.3 | 12.6 | 11.7 | 10.9 |
| Z      | 400 | 19.9 | 19.3 | 18.4 | 17.6 | 16.8 | 15.9 | 15.2         | 14.3 | 13.5 | 12.6 | 11.8 | 11.0 | 10.2 |
|        | 450 | 19.1 | 18.5 | 17.6 | 16.7 | 16.0 | 15.1 | 14.4         | 13.5 | 12.6 | 11.8 | 11.0 | 10.2 | 9.4  |
|        | 500 | 18.3 | 17.6 | 16.8 | 15,9 | 15.2 | 14.3 | 13.5         | 12.7 | 11.8 | 11.0 | 10.2 | 9.4  | 8.6  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**ВК□НВ4Н

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 2400    |         | 1840    | 1530     | 1290      | 1100      | 880       |
| Y-axis | 24      | 00      |         |         | -        | -         |           |           |
| 7 avie | 1200    |         |         |         |          |           |           |           |

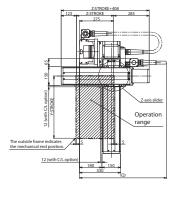
## ICSB3 [ICSPB3]-BK□HB4H□-SC-SC (Self-standing cable specification)

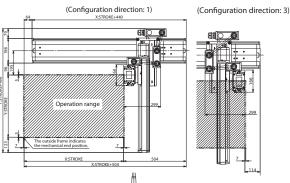


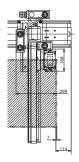


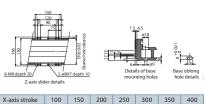


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.







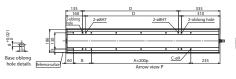


245

70



100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 800 800 850 850 900 900 900 950 950 1000 1000 1050



| 188 | H7 depth 10 | -1_ | 6 Detai | e9<br>ils of base<br>nting holes | Bas | e oblong<br>le details | Reference surface | 60  | В   | •   | A×200p<br>Arrow | view P | C-ø9 | 235 |     |     |     |      | ↑P X-axis slider cen |
|-----|-------------|-----|---------|----------------------------------|-----|------------------------|-------------------|-----|-----|-----|-----------------|--------|------|-----|-----|-----|-----|------|----------------------|
|     | 150         | 200 | 250     | 300                              | 350 | 400                    | 450               | 500 | 550 | 600 | 650             | 700    | 750  | 800 | 850 | 900 | 950 | 1000 |                      |
|     | -           | 1   | 1       | 1                                | 1   | 2                      | 2                 | 2   | 2   | 3   | 3               | 3      | 3    | 4   | 4   | 4   | 4   | 5    |                      |
|     | 295         | 145 | 195     | 245                              | 295 | 145                    | 195               | 245 | 295 | 145 | 195             | 245    | 295  | 145 | 195 | 245 | 295 | 145  |                      |
|     | 4           | 6   | 6       | 6                                | 6   | 8                      | 8                 | 8   | 8   | 10  | 10              | 10     | 10   | 12  | 12  | 12  | 12  | 14   |                      |
|     | 120         | 170 | 220     | 270                              | 320 | 370                    | 420               | 470 | 520 | 570 | 620             | 670    | 720  | 770 | 820 | 870 | 920 | 970  |                      |

| CSB3  CSPB3 -BK      HB4H    -C  -C   (Caple track specification) | ICSB3 [ICSPB3]-BK□HB4H□-CT-CT | (Cable track specification |
|---|-------------------------------|----------------------------|
|---|-------------------------------|----------------------------|

# Dimensions

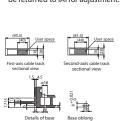
CAD drawings can be downloaded from our website

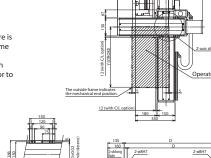


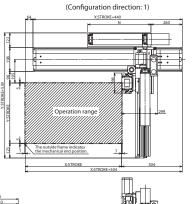
D

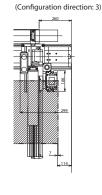


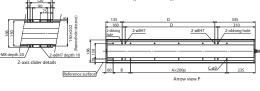
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.











| mounting no   | mountaing notes note usuals Xaxii sidet center / 1 309 1 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |
|---------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| X-axis stroke | 100  | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 |
| Α             | 0  | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
| В             | 245  | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  | 195  | 245  | 295  | 145  | 195  | 245  |
| С             | 4  | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
| D             | 70   | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970  | 1020 | 1070 | 1120 | 1170 | 1220 | 1270 |
| N             | 175  | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525 | 550 | 575 | 600 | 625  | 650  | 675  | 700  | 725  | 750  | 775  |



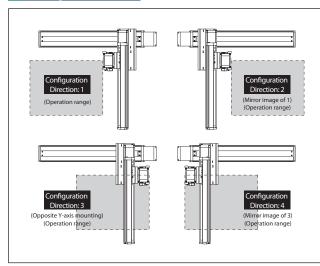
#### ICSB3-BK□MB3M X-Y-Z 3-axis XYB+ZB X±10μm High-Precision ■ Model Specification ВК ПМВЗМ **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Series Туре 10:100mm Refer to 10:100mm Refer to 10:100mm Refer to 13:100mm Refer to 13:1300mm table 70:700mm table 50:500mm table 100:1000mm below. (Every 50mm) below. (Every 50mm) below. (Every 50mm) below. ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below precisio... specificati XSEL-RA/SA<sup>4</sup>

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | М                          | ICSB3[ICSPB3]-BK1MB3M-①-② ③-④ ⑤-⑦-T2-⑧-⑨   |
| 2                                | М                          | ICSB3[ICSPB3]-BK2MB3M-①-② ③-④ ⑤-T2-⑧-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BK3MB3M-①-② ③-④ ⑤-⑥-T2-⑧-⑨   |
| 4                                | М                          | ICSB3[ICSPB3]-BK4MB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑧-⑨ |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXM-①-600-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \*\*Cable exit direction is specified with 1® in the above model names.

  \*Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation   |
|-----|-------------------------------------|--|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>130: 1300mm (100: 1000mm) *1  |
| 3   | X-axis option                       | Refer to Options table below.  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm  |
| (5) | Y-axis option                       | Refer to Options table below.  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm  |
| 7   | Z-axis option                       | Refer to Options table below.  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| When selecting multiple options, specify them in alphabetical order. |       |                 |  |  |  |  |  |  |  |
|--|-------|-----------------|--|--|--|--|--|--|--|
| Туре   | Model | Reference page  |  |  |  |  |  |  |  |
| X-axis cable exit direction *  | A1/A3 | See P.11, P.353 |  |  |  |  |  |  |  |
| AQ seal (equipped as standard on Y/Z-axis)                           | AQ    | See P.353       |  |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                            | В     | See P.353       |  |  |  |  |  |  |  |
| Creep sensor *2  | C/CL  | See P.353       |  |  |  |  |  |  |  |
| Home limit switch *2 (equipped as standard on X-axis)                | L/LL  | See P.353       |  |  |  |  |  |  |  |
| Non-motor end specification  | NM    | See P.353       |  |  |  |  |  |  |  |
| Guide with ball-retaining mechanism (Y/Z-axis only)                  | RT    | See P.354       |  |  |  |  |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
  Please refer to P.11 for more information.
- \* Please refer to P.11 for the X-axis cable exit direction.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/20mm   |
| Y-axis motor output/lead  | 400W/20mm   |
| Z-axis motor output/lead  | 200W/10mm   |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller.

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### **■**ВК□МВ3М

|               |            | Y-axis stroke |      |
|---------------|------------|---------------|------|
|               |            | 100~650       | 700  |
|               | 100        |               | 20.0 |
|               | 150        |               | 20.0 |
| a             | au 200     |               | 20.0 |
| Z-axis stroke | 250        |               | 20.0 |
| s st          | 300        | 20.0          | 20.0 |
| -ax           | 350        |               | 19.4 |
| Z             | 400<br>450 |               | 18.8 |
|               |            |               | 18.1 |
|               | 500        |               | 17.5 |

#### Maximum Speed by Stroke (mm/s) (Note 4)

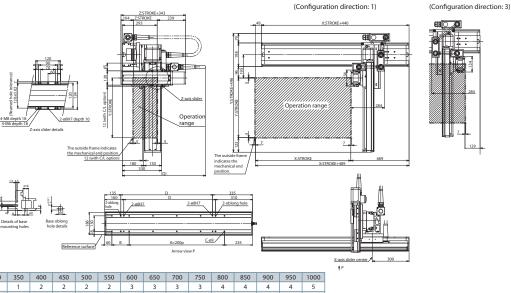
#### ■BK $\square$ MB3M

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 475       |
| Y-axis | 12      | 00      |         |         | -        | _         |           |           |
| 7      | 600     | 600     |         |         |          |           |           |           |

## ICSB3 [ICSPB3]-BK□MB3M□-SC-SC (Self-standing cable specification)

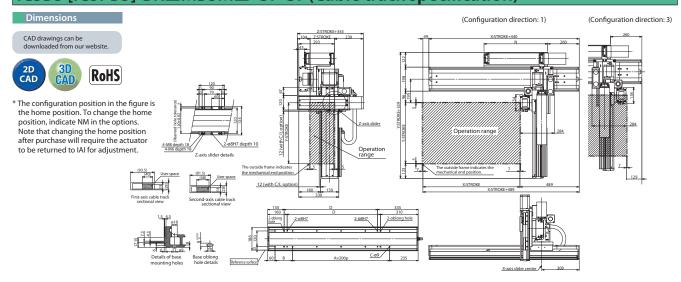


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600  | 650  | 700  | 750 | 800 | 850 | 900 | 950 | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|-----|-----|------|
| Α             | -   | -   | - 1 | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3   | 4   | 4   | 4   | 4   | 5    |
| В             | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  | 195  | 245  | 295 | 145 | 195 | 245 | 295 | 145  |
| С             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10   | 10   | 10   | 10  | 12  | 12  | 12  | 12  | 14   |
| D             | 70  | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570  | 620  | 670  | 720 | 770 | 820 | 870 | 920 | 970  |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600  | 650  | 700  |     |     |     |     |     |      |
| 0             | 750 | 800 | 800 | 850 | 850 | 900 | 900 | 900 | 950 | 950 | 1000 | 1000 | 1050 |     |     |     |     |     |      |

## ICSB3 [ICSPB3]-BK□MB3M□-CT-CT (Cable track specification)



| X-axi | s stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 |
|-------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
|       | Α        | 0   | 0   | - 1 | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
|       | В        | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  | 195  | 245  | 295  | 145  | 195  | 245  |
|       | C        | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
|       | D        | 70  | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970  | 1020 | 1070 | 1120 | 1170 | 1220 | 1270 |
|       | N        | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525 | 550 | 575 | 600 | 625  | 650  | 675  | 700  | 725  | 750  | 775  |



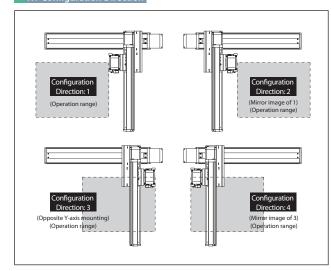
#### ICSB3-BK□MB4M X ±20µm Y/Z ±10µn XYB+ZB X-Y-Z 3-axis X ±10μm Y/Z ±5μm ICSPB3-BK□MB4M High-Precision ■ Model Specification BK MB4M **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Series X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Туре 10:100mm Refer to 10:100mm Refer to 10:100mm Refer to 13:100mm Refer to 13:1300mm table 70:700mm table 50:500mm table 100:1000mm below. (Every 50mm) below. (Every 50mm) below. (Every 50mm) below. ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below precisio... specificati XSEL-RA/SA<sup>4</sup>

#### Model Specification \*Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | М                          | ICSB3[ICSPB3]-BK1MB4M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BK2MB4M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BK3MB4M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                                | М                          | ICSB3[ICSPB3]-BK4MB4M-①-②③-④⑤-⑦-T2-⑥-⑨     |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXM-①-600-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-10-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.
- Note that the strokes are indicated in mm (millimeters).

  Cable exit direction is specified with n the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation  |
|-----|-------------------------------------|---|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental   |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>130: 1300mm (100: 1000mm) *1   |
| 3   | X-axis option                       | Refer to Options table below.   |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm   |
| (5) | Y-axis option                       | Refer to Options table below.   |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm   |
| 7   | Z-axis option                       | Refer to Options table below.   |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m   |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| The first secting manages options, specify them in appraised an order. |       |                 |  |  |  |  |  |  |  |  |  |  |
|--|-------|-----------------|--|--|--|--|--|--|--|--|--|--|
| Туре   | Model | Reference page  |  |  |  |  |  |  |  |  |  |  |
| X-axis cable exit direction *  | A1/A3 | See P.11, P.353 |  |  |  |  |  |  |  |  |  |  |
| AQ seal (equipped as standard on Y/Z-axis)                             | AQ    | See P.353       |  |  |  |  |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                              | В     | See P.353       |  |  |  |  |  |  |  |  |  |  |
| Creep sensor *2  | C/CL  | See P.353       |  |  |  |  |  |  |  |  |  |  |
| Home limit switch *2 (equipped as standard on X-axis)                  | L/LL  | See P.353       |  |  |  |  |  |  |  |  |  |  |
| Non-motor end specification  | NM    | See P.353       |  |  |  |  |  |  |  |  |  |  |
| Guide with ball-retaining mechanism (Y/Z-axis only)                    | RT    | See P.354       |  |  |  |  |  |  |  |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as °C' and the home limit switch as °L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*Please refer to P.11 for the X-axis cable exit direction.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/20mm   |
| Y-axis motor output/lead  | 400W/20mm   |
| Z-axis motor output/lead  | 400W/10mm   |

#### Applicable Controllers

controller

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (Note 2) The cable length is the length between the X-axis connector box and the



controller. The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 20m. (Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



(Configuration direction: 3)

#### Payload (kg) (Note 3)

\* The payload is based on operation at the rated acceleration.

#### ■BK□MB4M

|        |     |      | Y-axis stroke |      |      |      |      |      |      |      |      |      |      |      |  |  |  |
|--------|-----|------|---------------|------|------|------|------|------|------|------|------|------|------|------|--|--|--|
|        |     | 100  | 150           | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |  |  |  |
|        | 100 | 36.4 | 35.8          | 35.3 | 34.8 | 34.3 | 33.8 | 33.3 | 32.7 | 32.2 | 28.6 | 24.9 | 21.6 | 18.6 |  |  |  |
|        | 150 | 35.5 | 34.9          | 34.4 | 33.9 | 33.4 | 32.9 | 32.4 | 31.8 | 31.3 | 27.7 | 24.0 | 20.7 | 17.7 |  |  |  |
| ω      | 200 | 34.6 | 34.0          | 33.5 | 33.0 | 32.5 | 32.0 | 31.5 | 30.9 | 30.4 | 26.8 | 23.1 | 19.8 | 16.8 |  |  |  |
| stroke | 250 | 33.7 | 33.1          | 32.6 | 32.1 | 31.6 | 31.1 | 30.6 | 30.0 | 29.5 | 25.9 | 22.2 | 18.9 | 15.9 |  |  |  |
| sst    | 300 | 32.9 | 32.3          | 31.8 | 31.3 | 30.8 | 30.3 | 29.8 | 29.2 | 28.7 | 25.1 | 21.4 | 18.1 | 15.1 |  |  |  |
| -axis  | 350 | 32.0 | 31.4          | 30.9 | 30.4 | 29.9 | 29.4 | 28.9 | 28.3 | 27.8 | 24.2 | 20.5 | 17.2 | 14.2 |  |  |  |
| Z      | 400 | 31.2 | 30.6          | 30.1 | 29.6 | 29.1 | 28.6 | 28.1 | 27.5 | 27.0 | 23.4 | 19.7 | 16.4 | 13.4 |  |  |  |
|        | 450 | 30.3 | 29.7          | 29.2 | 28.7 | 28.2 | 27.7 | 27.2 | 26.6 | 26.1 | 22.5 | 18.8 | 15.5 | 12.5 |  |  |  |
|        | 500 | 29.4 | 28.8          | 28.3 | 27.8 | 27.3 | 26.8 | 26.3 | 25.7 | 25.2 | 21.6 | 17.9 | 14.6 | 11.6 |  |  |  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BK□MB4M

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 |
|--------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| X-axis |         | 1200    |         | 920     | 765      | 645       | 550       | 475       |
| Y-axis | 12      | 00      |         |         | -        | _         |           |           |
| 7 avie | 600     | 600     |         |         |          |           |           |           |

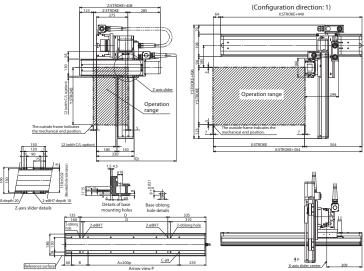
## ICSB3 [ICSPB3]-BK□MB4M□-SC-SC (Self-standing cable specification)







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



|               |     |     |     |     |     | Reference | 8 8 9 0 | 60 B |     | A×200p | urrow view P | <u>C-e9</u> | 235  |     |     |     | 1   | ∳ P<br>Caxis slider o |      |
|---------------|-----|-----|-----|-----|-----|-----------|---------|------|-----|--------|--------------|-------------|------|-----|-----|-----|-----|-----------------------|------|
| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350       | 400     | 450  | 500 | 550    | 600          | 650         | 700  | 750 | 800 | 850 | 900 | 950                   | 1000 |
| A             | -   | -   | 1   | 1   | 1   | 1         | 2       | 2    | 2   | 2      | 3            | 3           | 3    | 3   | 4   | 4   | 4   | 4                     | 5    |
| В             | 245 | 295 | 145 | 195 | 245 | 295       | 145     | 195  | 245 | 295    | 145          | 195         | 245  | 295 | 145 | 195 | 245 | 295                   | 145  |
| С             | 4   | 4   | 6   | 6   | 6   | 6         | 8       | 8    | 8   | 8      | 10           | 10          | 10   | 10  | 12  | 12  | 12  | 12                    | 14   |
| D             | 70  | 120 | 170 | 220 | 270 | 320       | 370     | 420  | 470 | 520    | 570          | 620         | 670  | 720 | 770 | 820 | 870 | 920                   | 970  |
| Y-axis stroke | 100 | 150 | 200 | 250 | 300 | 350       | 400     | 450  | 500 | 550    | 600          | 650         | 700  |     |     |     |     |                       |      |
| Q             | 750 | 800 | 800 | 850 | 850 | 900       | 900     | 900  | 950 | 950    | 1000         | 1000        | 1050 |     |     |     |     |                       |      |

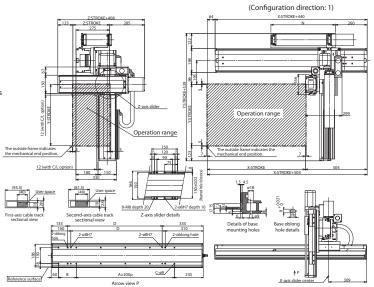
# ICSB3 [ICSPB3]-BK□MB4M□-CT-CT (Cable track specification)

# Dimensions CAD drawings can be downloaded from our website.





\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| A             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
| В             | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  | 195  | 245  | 295  | 145  | 195  | 245  |
| C             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
| D             | 70  | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970  | 1020 | 1070 | 1120 | 1170 | 1220 | 1270 |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525 | 550 | 575 | 600 | 625  | 650  | 675  | 700  | 725  | 750  | 775  |

(Configuration direction: 3)



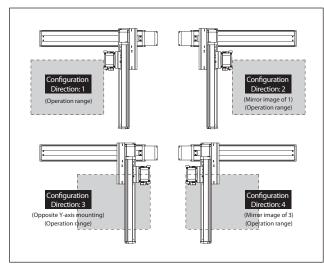
#### X±20µm Y/Z±10µm ICSB3-BL□HB3 X-Y-Z 3-axis XYB+ZB (Y, Z Base Mount X ±10μm Y/Z ±5μm **High-Precision** Specification ■ Model Specification BL□HB3□ **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Y-axis -Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati DL: Specified of Model length Designations belong Series Encoder Type Absolute 90:900mm Refer to 10:100mm Refer to 10:100mm Refer to Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below 90:900mm | Refer to | 10:100mm | 10:100mm | Refer to | 10:100mm | 10:100mm | Refer to | precisio... specificati

## Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BL1HB3H-①-23-43-67-T2-8-9    |
| ļ.                               | М                          | ICSB3[ICSPB3]-BL1HB3M-①-②③-④⑤-⑥7-T2-⑥-⑨    |
| 2                                | Н                          | ICSB3[ICSPB3]-BL2HB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BL2HB3M-①-②③-④⑤-⑥7-T2-⑥-⑨    |
| 3                                | Н                          | ICSB3[ICSPB3]-BL3HB3H-①-②③-④⑤-⑥-T2-⑧-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BL3HB3M-①-②③-④⑤-⑥7-T2-⑥-⑨    |
| 4                                | Н                          | ICSB3[ICSPB3]-BL4HB3H-①-②③-④⑤-D-T2-⑥-⑨     |
| 4                                | М                          | ICSB3[ICSPB3]-BL4HB3M-①-23-45-67-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXMX-①-600-40-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-40-④-T2-①-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

- In the above model names.

  Note that the strokes are indicated in mm (millimeters).

  Lead is specified with [10] in the above model names.

  20: For Z-axis High Speed type

  10: For Z-axis Medium Speed type
- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                         |  |  |  |  |  |  |  |
|-----|----------------------------------|----------------------------------|--|--|--|--|--|--|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental    |  |  |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 90: 900mm                        |  |  |  |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.    |  |  |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm      |  |  |  |  |  |  |  |
| (5) | Y-axis option                    | Refer to Options table below.    |  |  |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |  |  |  |  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.    |  |  |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |  |  |  |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |  |  |  |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Model | Reference page          |  |  |  |
|-------|-------------------------|--|--|--|
| A1/A3 | See P.11, P.353         |  |  |  |
| AQ    | See P.353               |  |  |  |
| В     | See P.353               |  |  |  |
| C/CL  | See P.353               |  |  |  |
| L/LL  | See P.353               |  |  |  |
| NM    | See P.353               |  |  |  |
| RT    | See P.354               |  |  |  |
|       | A1/A3 AQ B C/CL L/LL NM |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as °C' and the home limit switch as °L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*Please refer to P.11 for the X-axis cable exit direction.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |  |  |  |  |  |  |  |
|---------------------------|---|--|--|--|--|--|--|--|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |  |  |  |  |  |  |  |
| Lost motion               | 0.05mm [0.02mm] or less   |  |  |  |  |  |  |  |
| Guide                     | Integrated with base  |  |  |  |  |  |  |  |
| Base                      | Material: Aluminum with white alumite treatment                         |  |  |  |  |  |  |  |
| X-axis motor output/lead  | 600W/40mm   |  |  |  |  |  |  |  |
| Y-axis motor output/lead  | 400W/40mm   |  |  |  |  |  |  |  |
| Z-axis motor output/lead  | 200W/20mm (H), 10mm (M)   |  |  |  |  |  |  |  |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



| (Note 2) The cable length is the length between the X-axis connector box and the |
|--|
| controller.  |
| The standard lengths are 3m and 5m, but other lengths can also be specified      |
| in meters.   |
|  |

The maximum length is 20m.
(Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■BL□HB3H

 $\ensuremath{^*}$  The payload is based on operation at the rated acceleration.

|               |       | Y-axis stroke |  |  |  |  |  |  |  |  |
|---------------|-------|---------------|--|--|--|--|--|--|--|--|
|               |       | 100~700       |  |  |  |  |  |  |  |  |
|               | 100   |               |  |  |  |  |  |  |  |  |
|               | 9 200 |               |  |  |  |  |  |  |  |  |
| ê             |       |               |  |  |  |  |  |  |  |  |
| 2             | 250   |               |  |  |  |  |  |  |  |  |
| s st          | 300   | 10.0          |  |  |  |  |  |  |  |  |
| Z-axis stroke | 350   |               |  |  |  |  |  |  |  |  |
| Ž,            | 400   |               |  |  |  |  |  |  |  |  |
|               | 450   |               |  |  |  |  |  |  |  |  |
|               | 500   |               |  |  |  |  |  |  |  |  |

| -      |     | J. 111        |      |      |      |      |      |      |      |      |  |  |  |  |  |  |
|--------|-----|---------------|------|------|------|------|------|------|------|------|--|--|--|--|--|--|
|        |     | Y-axis stroke |      |      |      |      |      |      |      |      |  |  |  |  |  |  |
|        |     | 100~300       | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |  |  |  |  |  |  |
|        | 100 |               | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 |  |  |  |  |  |  |
|        | 150 |               | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 19.2 | 18.4 | 17.6 |  |  |  |  |  |  |
| â      | 200 |               | 20.0 | 20.0 | 20.0 | 20.0 | 19.4 | 18.7 | 17.8 | 17.1 |  |  |  |  |  |  |
| stroke | 250 |               | 20.0 | 20.0 | 20.0 | 19.7 | 18.8 | 18.0 | 17.2 | 16.4 |  |  |  |  |  |  |
|        | 300 | 20.0          | 20.0 | 20.0 | 20.0 | 19.1 | 18.3 | 17.5 | 16.7 | 15.9 |  |  |  |  |  |  |
| axis   | 350 |               | 20.0 | 20.0 | 19.4 | 18.6 | 17.7 | 17.0 | 16.1 | 15.3 |  |  |  |  |  |  |
| 7      | 400 |               | 20.0 | 19.8 | 18.9 | 18.0 | 17.2 | 16.4 | 15.6 | 14.8 |  |  |  |  |  |  |
|        | 450 |               | 19.9 | 19.1 | 18.3 | 17.4 | 16.6 | 15.8 | 14.9 | 14.2 |  |  |  |  |  |  |
|        | 500 |               | 19.4 | 18.6 | 17.7 | 16.9 | 16.0 | 15.3 | 14.4 | 13.6 |  |  |  |  |  |  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**BL□HB3H

|        | 100~500 | 550~700 | 900~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 2400     | 2200 | 1965 | 1725 | 1530 | 1365 | 1225 | 1110 | 1005 | 915  | 840  | 770  | 710  | 655  |
| Y-axis | 24      | 00      |          |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 1200    |         |          |      |      |      |      | _    |      |      |      |      |      |      |      |      |

#### ■BL□HB3M

| ſ  |        | 100~500 | 550~700 | 900~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|----|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| -[ | X-axis | -       | _       | 2400     | 2200 | 1965 | 1725 | 1530 | 1365 | 1225 | 1110 | 1005 | 915  | 840  | 770  | 710  | 655  |
|    | Y-axis | 2400    |         |          |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| П  | 7-axis | 600     |         |          |      |      |      |      |      |      |      |      |      |      |      |      |      |

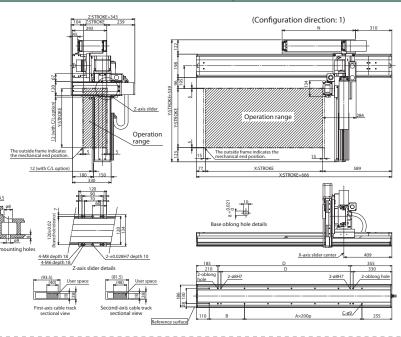
# ICSB3 [ICSPB3]-BL□HB3□-CT-CT (Cable track specification)

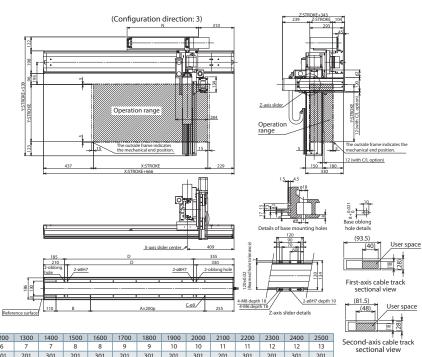






\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.





| X-axis stroke | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A             | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    | 9    | 9    | 10   | 10   | 11   | 11   | 12   | 12   | 13   |
| В             | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  |
| С             | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   | 22   | 22   | 24   | 24   | 26   | 26   | 28   | 28   | 30   |
| D             | 1026 | 1126 | 1226 | 1326 | 1426 | 1526 | 1626 | 1726 | 1826 | 1926 | 2026 | 2126 | 2226 | 2326 | 2426 | 2526 | 2626 |
| N             | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



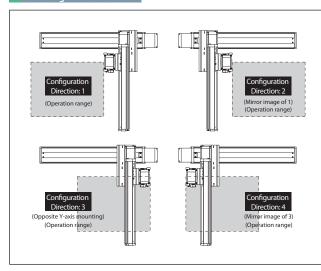
#### ICSB3-BL□HB4H X ±20μm Y/Z ±10μm X-Y-Z XYB+ZB Y, Z Base Mou X **±10**μn Y/Z **±5**μr High-Precision Specification ■ Model Specification ВК□НВ4Н **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Y-axis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati CL: Specified of Model length Designations belo Series Туре Encoder Type Absolute 90:900mm Refer to 10:100mm Refer to 10:100mm Refer to ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below | Negret | 10:100mm | Refer to | 10:100mm | Refer to | 10:100mm | Refer to | 1:Incremental | 1 | Options | 2 | Options | 2 | Options | 2 | Options | 2 | Options | 1 | Opt precisio... specificati

## Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                    |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BL1HB4H-①-②③-④⑤-⑥-T2-⑥-⑨   |
| 2                                | Н                          | ICSB3[ICSPB3]-BL2HB4H-①-②③-④⑤-⑥-T2-⑥-⑨   |
| 3                                | Н                          | ICSB3[ICSPB3]-BL3HB4H-①-②③-④⑤-T2-⑥-⑨     |
| 4                                | Н                          | ICSB3[ICSPB3]-BL4HB4H-1]-23-43-67-T2-8-9 |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of \( \bigcirc\) through \( \bigcirc\) in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXMX-①-600-40-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-40-④-T2-⑩-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-20-⑥-T2-⑩-⑦  | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names. Note that the strokes are indicated in mm (millimeters).
- \* Cable exit direction is specified with lold in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental    |
| 2   | X-axis stroke<br>(Note 1)        | 90: 900mm                        |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm      |
| (5) | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| men selecting matapie options, specify them in alphabe |       |                 |
|--|-------|-----------------|
| Туре   | Model | Reference page  |
| X-axis cable exit direction *                          | A1/A3 | See P.11, P.353 |
| AQ seal (equipped as standard on Y/Z-axis)             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1              | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2 (equipped as standard on X-axis)  | L/LL  | See P.353       |
| Non-motor end specification                            | NM    | See P.353       |
| Guide with ball-retaining mechanism (Y/Z-axis only)    | RT    | See P.354       |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as °C' and the home limit switch as °L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*Please refer to P.11 for the X-axis cable exit direction.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/40mm   |
| Y-axis motor output/lead  | 400W/40mm   |
| Z-axis motor output/lead  | 400W/20mm   |

#### Applicable Controllers

 $Contact\ IAI.\ The\ controller\ for\ this\ system\ needs\ to\ be\ purchased/prepared\ separately.$ 

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm



- (Note 2) The cable length is the length between the X-axis connector box and the
  - Controller:
    The standard lengths are 3m and 5m, but other lengths can also be specified in meters.
    The maximum length is 20m.
- (Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.
- (Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### ■BL□HB4H

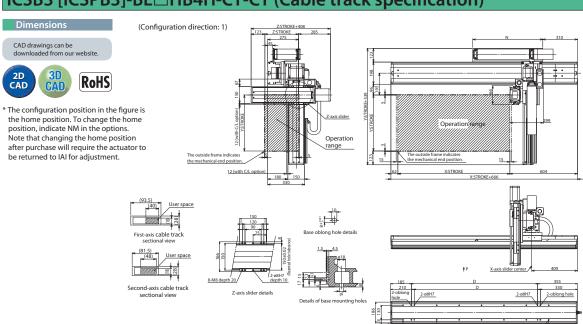
|        |     |      | Y-axis stroke |      |      |      |      |      |      |      |      |      |      |      |
|--------|-----|------|---------------|------|------|------|------|------|------|------|------|------|------|------|
|        |     | 100  | 150           | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
|        | 100 | 20.0 | 20.0          | 20.0 | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.1 | 17.3 | 16.5 | 15.7 | 14.9 |
|        | 150 | 20.0 | 20.0          | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 | 17.3 | 16.5 | 15.7 | 14.9 | 14.1 |
| ۰      | 200 | 20.0 | 20.0          | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 | 17.4 | 16.5 | 15.7 | 14.9 | 14.0 | 13.3 |
| stroke | 250 | 20.0 | 20.0          | 20.0 | 19.8 | 19.0 | 18.2 | 17.4 | 16.6 | 15.7 | 14.9 | 14.1 | 13.2 | 12.5 |
| is st  | 300 | 20.0 | 20.0          | 19.9 | 19.1 | 18.3 | 17.5 | 16.7 | 15.8 | 15.0 | 14.1 | 13.4 | 12.5 | 11.7 |
| Z-axis | 350 | 20.0 | 20.0          | 19.1 | 18.3 | 17.5 | 16.7 | 15.9 | 15.0 | 14.2 | 13.3 | 12.6 | 11.7 | 10.9 |
| 7      | 400 | 19.9 | 19.3          | 18.4 | 17.6 | 16.8 | 15.9 | 15.2 | 14.3 | 13.5 | 12.6 | 11.8 | 11.0 | 10.2 |
|        | 450 | 19.1 | 18.5          | 17.6 | 16.7 | 16.0 | 15.1 | 14.4 | 13.5 | 12.6 | 11.8 | 11.0 | 10.2 | 9.4  |
|        | 500 | 18.3 | 17.6          | 16.8 | 15,9 | 15.2 | 14.3 | 13.5 | 12.7 | 11.8 | 11.0 | 10.2 | 9.4  | 8.6  |

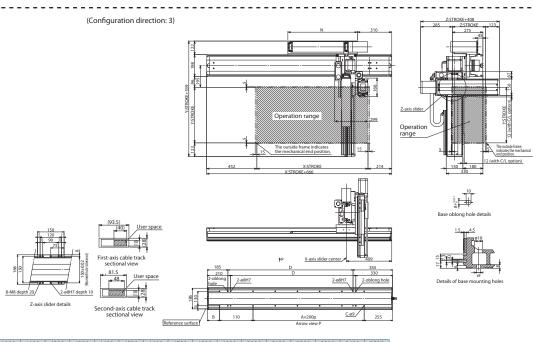
#### Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BL□HB4H

|        | 100~500 | 550~700 | 900~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 2400     | 2200 | 1965 | 1725 | 1530 | 1365 | 1225 | 1110 | 1005 | 915  | 840  | 770  | 710  | 655  |
| Y-axis | 24      | 00      |          |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 1200    |         |          |      |      |      |      |      | _    |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BL□HB4H-CT-CT (Cable track specification)





| X-axis stroke | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α             | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    | 9    | 9    | 10   | 10   | 11   | 11   | 12   | 12   | 13   |
| В             | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  |
| С             | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   | 22   | 22   | 24   | 24   | 26   | 26   | 28   | 28   | 30   |
| D             | 1026 | 1126 | 1226 | 1326 | 1426 | 1526 | 1626 | 1726 | 1826 | 1926 | 2026 | 2126 | 2226 | 2326 | 2426 | 2526 | 2626 |
| N             | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



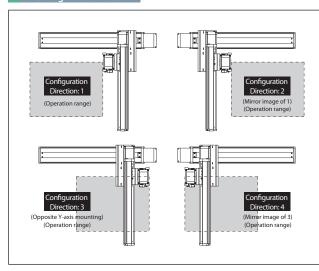
#### X±20µm I/Z±10µm ICSB3-BL□MB3M XYB+ZB (Y. Z Base Mour X ±10μm Y/Z ±5μm High-Precision Specification ■ Model Specification BL MB3M **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Y-axis -Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati DL: Specified of Model length Designations belong Series Encoder Type Absolute 90:900mm Refer to 10:100mm Refer to 10:100mm Refer to Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below 90:900mm | Refer to | 10:100mm | 10:100mm | Refer to | 10:100mm | 10:100mm | Refer to | precisio... specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | М                          | ICSB3[ICSPB3]-BL1MB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BL2MB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BL3MB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                                | М                          | ICSB3[ICSPB3]-BL4MB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

|   | Name of axis | Model                            | Reference page                        |
|---|--------------|----------------------------------|---------------------------------------|
| Y-axis ISB[ISPB]-LXM-①-400-20-①-T2-⑩-⑤ → Please contact IAI for more deta | X-axis       | ISA[ISPA]-WXMX-①-600-20-②-T2-⑩-③ | → Please contact IAI for more details |
|   | Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-⑩-⑤  | → Please contact IAI for more details |
| Z-axis ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦ → Please contact IAI for more deta | Z-axis       | ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦  | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names. Note that the strokes are indicated in mm (millimeters).
- Cable exit direction is specified with 1 in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                         |
|-----|----------------------------------|----------------------------------|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental    |
| 2   | X-axis stroke<br>(Note 1)        | 90: 900mm<br>250: 2500mm         |
| 3   | X-axis option                    | Refer to Options table below.    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm      |
| 5   | Y-axis option                    | Refer to Options table below.    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                        |
| 7   | Z-axis option                    | Refer to Options table below.    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in **alphabetical order**.

| when selecting multiple options, specify them in appropriate. |       |                 |  |  |  |  |  |
|---|-------|-----------------|--|--|--|--|--|
| Туре  | Model | Reference page  |  |  |  |  |  |
| X-axis cable exit direction *                                 | A1/A3 | See P.11, P.353 |  |  |  |  |  |
| AQ seal (equipped as standard on Y/Z-axis)                    | AQ    | See P.353       |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                     | В     | See P.353       |  |  |  |  |  |
| Creep sensor *2   | C/CL  | See P.353       |  |  |  |  |  |
| Home limit switch *2 (equipped as standard on X-axis)         | L/LL  | See P.353       |  |  |  |  |  |
| Non-motor end specification                                   | NM    | See P.353       |  |  |  |  |  |
| Guide with ball-retaining mechanism (Y/Z-axis only)           | RT    | See P.354       |  |  |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as °C' and the home limit switch as °L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*Please refer to P.11 for the X-axis cable exit direction.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/20mm   |
| Y-axis motor output/lead  | 400W/20mm   |
| Z-axis motor output/lead  | 200W/10mm   |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



- (Note 2) The cable length is the length between the X-axis connector box and the controller.
  The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 20m.
- (Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.
- (Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### ■BL□MB3M

|               |     | Y-axis stroke |      |  |  |  |  |  |  |  |  |
|---------------|-----|---------------|------|--|--|--|--|--|--|--|--|
|               |     | 100~650       | 700  |  |  |  |  |  |  |  |  |
|               | 100 |               | 20.0 |  |  |  |  |  |  |  |  |
|               | 150 |               | 20.0 |  |  |  |  |  |  |  |  |
| a             | 200 |               | 20.0 |  |  |  |  |  |  |  |  |
| Z-axis stroke | 250 |               | 20.0 |  |  |  |  |  |  |  |  |
| s st          | 300 | 20.0          | 20.0 |  |  |  |  |  |  |  |  |
| -aX           | 350 |               | 19.4 |  |  |  |  |  |  |  |  |
| Z             | 400 |               | 18.8 |  |  |  |  |  |  |  |  |
|               | 450 |               | 18.1 |  |  |  |  |  |  |  |  |
|               | 500 |               | 17.5 |  |  |  |  |  |  |  |  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**BL□MB3M

|        | 100~500     | 550~700 | 900~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|-------------|---------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -           |         | 1200     | 1100 | 980  | 860  | 765  | 680  | 610  | 555  | 500  | 455  | 420  | 385  | 355  | 325  |
| Y-axis | Y-axis 1200 |         |          |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 600         |         |          |      |      |      |      |      | _    |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BL□MB3M-CT-CT (Cable track specification)





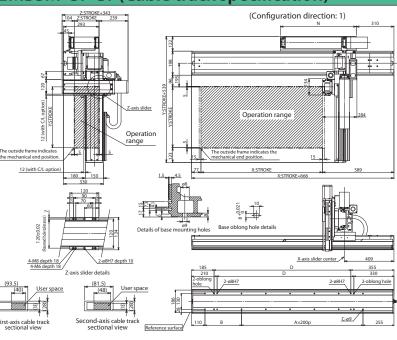


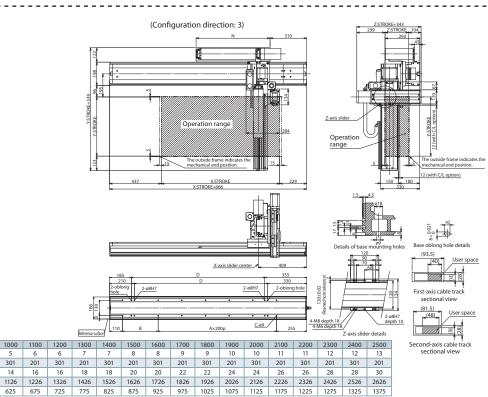
301 201

16

14

\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.







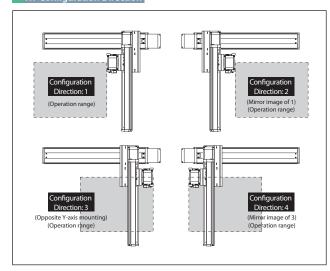
#### X **±20μm** Y/Z **±10μm** ICSB3-BL□MB4M XYB+ZB (Y. Z Base Mour X ±10μm Y/Z ±5μm High-Precision Specification ■ Model Specification BL MB4M **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-axis -Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati DL: Specified of Model length Designations belong Series Encoder Type Absolute 90:900mm Refer to 10:100mm Refer to 10:100mm Refer to Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below 90:900mm | Refer to | 10:100mm | 10:100mm | Refer to | 10:100mm | 10:100mm | Refer to | XSEL-RA/SA\* precisio... specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | М                          | ICSB3[ICSPB3]-BL1MB4M-①-② ③-④ ⑤-6 ⑦-T2-⑥-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BL2MB4M-①-② ③-④ ⑤-6 ⑦-T2-⑥-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BL3MB4M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                                | М                          | ICSB3[ICSPB3]-BL4MB4M-①-② ③-④ ⑤-⑥-⑦-T2-⑥-⑨ |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \*Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXMX-①-600-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-⑩-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-10-⑥-T2-⑩-⑦  | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names.
- In the above model names.

  Note that the strokes are indicated in mm (millimeters).

  Cable exit direction is specified with in the above model names.

  Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                         |  |  |  |  |  |
|-----|----------------------------------|----------------------------------|--|--|--|--|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental    |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 90: 900mm<br>250: 2500mm         |  |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.    |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm      |  |  |  |  |  |
| 5   | Y-axis option                    | Refer to Options table below.    |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm      |  |  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.    |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m          |  |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | CT-CT: Cable track - Cable track |  |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| <u></u> |                         |  |  |  |  |  |  |  |  |  |
|---------|-------------------------|--|--|--|--|--|--|--|--|--|
| Model   | Reference page          |  |  |  |  |  |  |  |  |  |
| A1/A3   | See P.11, P.353         |  |  |  |  |  |  |  |  |  |
| AQ      | See P.353               |  |  |  |  |  |  |  |  |  |
| В       | See P.353               |  |  |  |  |  |  |  |  |  |
| C/CL    | See P.353               |  |  |  |  |  |  |  |  |  |
| L/LL    | See P.353               |  |  |  |  |  |  |  |  |  |
| NM      | See P.353               |  |  |  |  |  |  |  |  |  |
| RT      | See P.354               |  |  |  |  |  |  |  |  |  |
|         | A1/A3 AQ B C/CL L/LL NM |  |  |  |  |  |  |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as °C' and the home limit switch as °L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*Please refer to P.11 for the X-axis cable exit direction.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/20mm   |
| Y-axis motor output/lead  | 400W/20mm   |
| Z-axis motor output/lead  | 400W/10mm   |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the



The table length is the length between the Alaxie Confidence to box and the controller.

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G for X-axis and 0.4G for Y/Z-axis. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### ■BL□MB4M

|        |     |      | Y-axis stroke |      |      |      |      |      |      |      |      |      |      |      |  |  |  |
|--------|-----|------|---------------|------|------|------|------|------|------|------|------|------|------|------|--|--|--|
|        |     | 100  | 150           | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |  |  |  |
|        | 100 | 36.4 | 35.8          | 35.3 | 34.8 | 34.3 | 33.8 | 33.3 | 32.7 | 32.2 | 28.6 | 24.9 | 21.6 | 18.6 |  |  |  |
|        | 150 | 35.5 | 34.9          | 34.4 | 33.9 | 33.4 | 32.9 | 32.4 | 31.8 | 31.3 | 27.7 | 24.0 | 20.7 | 17.7 |  |  |  |
| e e    | 200 | 34.6 | 34.0          | 33.5 | 33.0 | 32.5 | 32.0 | 31.5 | 30.9 | 30.4 | 26.8 | 23.1 | 19.8 | 16.8 |  |  |  |
| stroke | 250 | 33.7 | 33.1          | 32.6 | 32.1 | 31.6 | 31.1 | 30.6 | 30.0 | 29.5 | 25.9 | 22.2 | 18.9 | 15.9 |  |  |  |
| is st  | 300 | 32.9 | 32.3          | 31.8 | 31.3 | 30.8 | 30.3 | 29.8 | 29.2 | 28.7 | 25.1 | 21.4 | 18.1 | 15.1 |  |  |  |
| -axis  | 350 | 32.0 | 31.4          | 30.9 | 30.4 | 29.9 | 29.4 | 28.9 | 28.3 | 27.8 | 24.2 | 20.5 | 17.2 | 14.2 |  |  |  |
| Z      | 400 | 31.2 | 30.6          | 30.1 | 29.6 | 29.1 | 28.6 | 28.1 | 27.5 | 27.0 | 23.4 | 19.7 | 16.4 | 13.4 |  |  |  |
|        | 450 | 30.3 | 29.7          | 29.2 | 28.7 | 28.2 | 27.7 | 27.2 | 26.6 | 26.1 | 22.5 | 18.8 | 15.5 | 12.5 |  |  |  |
|        | 500 | 29.4 | 28.8          | 28.3 | 27.8 | 27.3 | 26.8 | 26.3 | 25.7 | 25.2 | 21.6 | 17.9 | 14.6 | 11.6 |  |  |  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

## ■BL□MB4M

|        | 100~500     | 550~700 | 900~1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|-------------|---------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -           | _       | 1200     | 1100 | 980  | 860  | 765  | 680  | 610  | 555  | 500  | 455  | 420  | 385  | 355  | 325  |
| Y-axis | Y-axis 1200 |         |          |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7 avic | 600         |         |          |      |      |      |      |      |      |      |      |      |      |      |      |      |

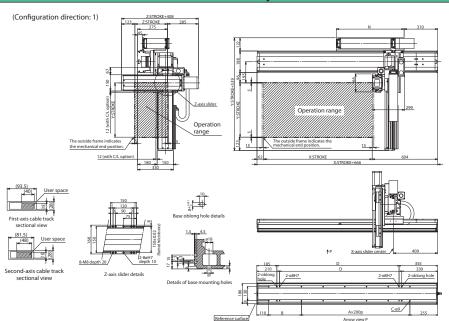
# ICSB3 [ICSPB3]-BL□MB4M-CT-CT (Cable track specification)

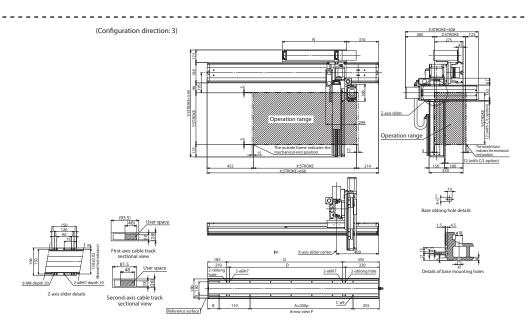
CAD drawings can be downloaded from our website.





\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.





| X-axis stroke | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α             | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    | 9    | 9    | 10   | 10   | 11   | 11   | 12   | 12   | 13   |
| В             | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  |
| C             | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   | 22   | 22   | 24   | 24   | 26   | 26   | 28   | 28   | 30   |
| D             | 1026 | 1126 | 1226 | 1326 | 1426 | 1526 | 1626 | 1726 | 1826 | 1926 | 2026 | 2126 | 2226 | 2326 | 2426 | 2526 | 2626 |
| N             | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



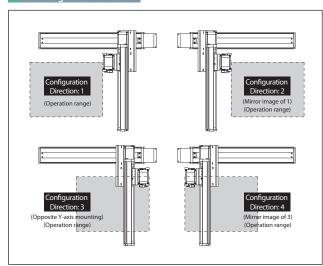
#### ICSB3-BM□HB4H X±5μm (/Z±10μm CSPB3-BM High-Precision Specification ■ Model Specification BM HB4H **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length Waxis - Z-axis Cat Length Management 3L: 3m 5L: 5m Refer to Explanati CL: Specified of Model length Designations belong the companion of the compa Series Туре Encoder Type X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Absolute 10: 100mm Refer to 10: 100mm Refer to 10: 100mm Refer to 10:100mm Ref ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below precisio... specificati XSEL-RA/SA<sup>4</sup>

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                      |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BM1HB4H-①-② ③-④ ⑤-6 ⑦-T2-⑥-⑨ |
| 2                                | Н                          | ICSB3[ICSPB3]-BM2HB4H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 3                                | Н                          | ICSB3[ICSPB3]-BM3HB4H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                                | Н                          | ICSB3[ICSPB3]-BM4HB4H-①-②③-④⑤②-T2-⑥-⑨      |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | SSPA-LXM-11-750-50-2-T2-10-3    | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-40-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-20-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names. Note that the strokes are indicated in mm (millimeters).
- Cable exit direction is specified with in in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation   |
|-----|-------------------------------------|--|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental  |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>150: 1500mm (100: 1000mm) *1  |
| 3   | X-axis option                       | Refer to Options table below.  |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>≀<br>70: 700mm  |
| (5) | Y-axis option                       | Refer to Options table below.  |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm  |
| 7   | Z-axis option                       | Refer to Options table below.  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m  |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable<br>CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in  $\underline{\mbox{{\bf alphabetical order}}}.$ 

| Туре                                      | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction               | *     | See P.11, P.353 |
| AQ seal (standard equipment)              | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1 | В     | See P.353       |
| Creep sensor *2                           | C/CL  | See P.353       |
| Home limit switch *2                      | L/LL  | See P.353       |
| Non-motor end specification               | NM    | See P.353       |
| Guide with ball-retaining mechanism       | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.

  To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.

  Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]  |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.005mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.005mm, Y/Z-axis ±0.005mm]   |
| Lost motion               | X-axis $\pm 0.02$ mm or less, Y/Z-axis $\pm 0.05$ mm or less [X-axis $\pm 0.02$ mm or less, Y/Z-axis $\pm 0.02$ mm or less] |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment   |
| X-axis motor output/lead  | 750W/50mm   |
| Y-axis motor output/lead  | 400W/40mm   |
| Z-axis motor output/lead  | 400W/20mm   |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the controller.

The standard lengths are 3m and 5m, but other lengths can also be specified



- in meters. The maximum length is 20m. (Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated
- acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### **■**ВМ□НВ4Н

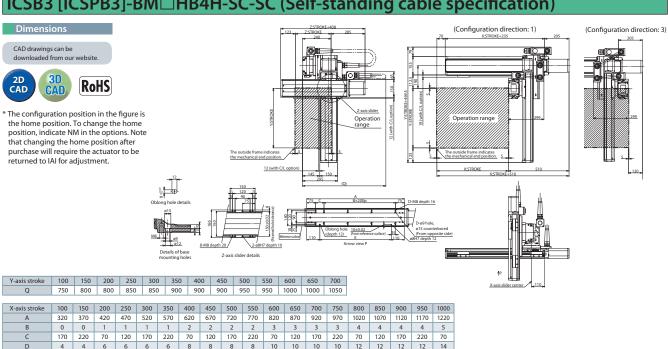
|        |     | Y-axis stroke |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|-----|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |     | 100           | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
|        | 100 | 20.0          | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.1 | 17.3 | 16.5 | 15.7 | 13.0 |
|        | 150 | 20.0          | 20.0 | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 | 17.3 | 16.5 | 15.7 | 14.8 | 12.1 |
| ب ا    | 200 | 20.0          | 20.0 | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 | 17.4 | 16.5 | 15.7 | 14.9 | 13.9 | 11.2 |
| stroke | 250 | 20.0          | 20.0 | 20.0 | 19.8 | 19.0 | 18.2 | 17.4 | 16.6 | 15.7 | 14.9 | 14.1 | 13.0 | 10.3 |
| sst    | 300 | 20.0          | 20.0 | 19.9 | 19.1 | 18.3 | 17.5 | 16.7 | 15.8 | 15.0 | 14.1 | 13.4 | 12.2 | 9.5  |
| -axis  | 350 | 20.0          | 20.0 | 19.1 | 18.3 | 17.5 | 16.7 | 15.9 | 15.0 | 14.2 | 13.3 | 12.6 | 11.3 | 8.6  |
| Z      | 400 | 19.9          | 19.3 | 18.4 | 17.6 | 16.8 | 15.9 | 15.2 | 14.3 | 13.5 | 12.6 | 11.8 | 10.5 | 7.8  |
|        | 450 | 19.1          | 18.5 | 17.6 | 16.7 | 16.0 | 15.1 | 14.4 | 13.5 | 12.6 | 11.8 | 11.0 | 96   | 6.9  |
|        | 500 | 18.3          | 17.6 | 16.8 | 15,9 | 15.2 | 14.3 | 13.5 | 12.7 | 11.8 | 11.0 | 10.2 | 8.7  | 6.0  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**ВМ□НВ4Н

|     |        | 100~500 | 550~700 | 750~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 | 1400 | 1500 |
|-----|--------|---------|---------|---------|----------|-----------|-----------|-----------|------|------|
|     | X-axis |         | 2500    |         | 2320     | 1950      | 1660      | 1440      | 1250 | 1100 |
|     | Y-axis | 24      | 00      |         |          |           | _         |           |      |      |
| - 1 | 7-avic | 1200    |         |         |          |           |           |           |      |      |

# ICSB3 [ICSPB3]-BM□HB4H-SC-SC (Self-standing cable specification)



#### CSB3 [ICSPB3]-BM HB4H-CT-CT (Cable track specification)

650 700

500 550

350 400

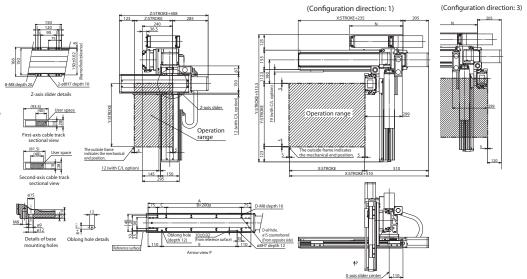


150 200



\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

RoHS



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A             | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970 | 1020 | 1070 | 1120 | 1170 | 1220 | 1270 | 1320 | 1370 | 1420 | 1470 | 1520 | 1570 | 1620 | 1670 | 1720 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 6    | 6    | 6    | 6    | 7    | 7    | 7    |
| С             | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70   | 120  | 170  | 220  | 70   | 120  | 170  | 220  | 70   | 120  | 170  | 220  | 70   | 120  | 170  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   | 14   | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| E             | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  | 700  | 725  | 750  | 775  | 800  | 825  | 850  | 875  |



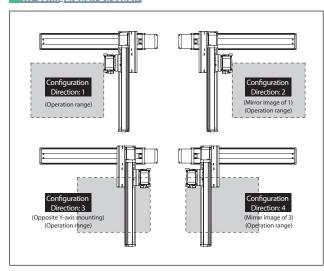
#### X±5μm Y/Z±10μn ICSB3-BM□MB4M X-Y-Z 3-axis CSPB3-BM□MB4N **High-Precision** Specification ■ Model Specification BM MB4M **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-axis - Z-axis La Length Management 3L: 3m SL: 5m Refer to Explanati CL: Specified of Model length Designations belong the control of Series X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Y-axis - Z-axis Cabl Management Туре | 10:100mm | Refer to | 10:100mm | 10:100mm | Refer to | 10:100mm ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below precisio... specificati XSEL-RA/SA<sup>4</sup>

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                    |
|----------------------------------|----------------------------|--|
| 1                                | М                          | ICSB3[ICSPB3]-BM1MB4M-①-23-45-67-T2-8-9  |
| 2                                | М                          | ICSB3[ICSPB3]-BM2MB4M-11-23-43-67-T2-8-9 |
| 3                                | М                          | ICSB3[ICSPB3]-BM3MB4M-①-②③-④⑤-⑥7-T2-⑥-⑨  |
| 4                                | М                          | ICSB3[ICSPB3]-BM4MB4M-1]-23-43-67-T2-8-9 |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | SSPA-LXM-①-750-25-②-T2-⑩-③      | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-10-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \*Cable exit direction is specified with 1® in the above model names.

  Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                         | Notation  |
|-----|-------------------------------------|---|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental   |
| 2   | X-axis stroke<br>(Note 1)           | 10: 100mm<br>150: 1500mm (100: 1000mm) *1   |
| 3   | X-axis option                       | Refer to Options table below.   |
| 4   | Y-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>70: 700mm   |
| (5) | Y-axis option                       | Refer to Options table below.   |
| 6   | Z-axis stroke<br>(Note 1)           | 10: 100mm<br>?<br>50: 500mm   |
| 7   | Z-axis option                       | Refer to Options table below.   |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m   |
| 9   | Y-axis - Z-axis<br>Cable Management | SC-SC: Self-standing cable - Self-standing cable CT-CT: Cable track - Cable track |

<sup>\*1</sup> The maximum X-axis stroke is 1000mm for the self-standing cable specification.

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре  | Model | Reference page  |
|---|-------|-----------------|
| X-axis cable exit direction                         | *     | See P.11, P.353 |
| AQ seal (Standard equipment)                        | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1           | В     | See P.353       |
| Creep sensor *2                                     | C/CL  | See P.353       |
| Home limit switch *2                                | L/LL  | See P.353       |
| Non-motor end specification                         | NM    | See P.353       |
| Guide with ball-retaining mechanism (Y/X-axis only) | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the
- mounting position.

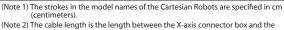
  Please refer to P.11 for more information.
- \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]   |
|---------------------------|--|
| Positioning repeatability | X-axis ±0.005mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.005mm, Y/Z-axis ±0.005mm]                              |
| Lost motion               | X-axis ±0.02mm or less, Y/Z-axis ±0.05mm or less<br>[X-axis ±0.02mm or less, Y/Z-axis ±0.02mm or less] |
| Guide                     | Integrated with base   |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 750W/25mm  |
| Y-axis motor output/lead  | 400W/20mm  |
| Z-axis motor output/lead  | 400W/10mm  |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.





- controller.
  The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 20m.
- (Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.
  When the acceleration is increased, the payload will be reduced.
- (Note 4) Please note that a longer stroke will result in a lower max speed.



\* The payload is based on operation at the rated acceleration.

#### ■BM□MB4M

|        |     |      |      |      |      |      | ١    | /-axis strok | e    |      |      |      |      |      |
|--------|-----|------|------|------|------|------|------|--------------|------|------|------|------|------|------|
|        |     | 100  | 150  | 200  | 250  | 300  | 350  | 400          | 450  | 500  | 550  | 600  | 650  | 700  |
|        | 100 | 33.1 | 32.6 | 32.0 | 31.5 | 31.0 | 30.5 | 30.0         | 29.4 | 25.8 | 22.0 | 18.7 | 15.7 | 13.0 |
|        | 150 | 32.2 | 31.7 | 31.1 | 30.6 | 30.1 | 29.6 | 29.1         | 28.5 | 24.9 | 21.1 | 17.8 | 14.8 | 12.1 |
| e e    | 200 | 31.3 | 30.8 | 30.2 | 29.7 | 29.2 | 28.7 | 28.2         | 27.6 | 24.0 | 20.2 | 16.9 | 13.9 | 11.2 |
| stroke | 250 | 30.4 | 29.9 | 29.3 | 28.8 | 28.3 | 27.8 | 27.3         | 26.7 | 23.1 | 19.3 | 16.0 | 13.0 | 10.3 |
| is st  | 300 | 29.6 | 29.1 | 28.5 | 28.0 | 27.5 | 27.0 | 26.5         | 25.9 | 22.3 | 18.5 | 15.2 | 12.2 | 9.5  |
| -axis  | 350 | 28.7 | 28.2 | 27.6 | 27.1 | 26.6 | 26.1 | 25.6         | 25.0 | 21.4 | 17.6 | 14.3 | 11.3 | 8.6  |
| Ż      | 400 | 27.9 | 27.4 | 26.8 | 26.3 | 25.8 | 25.3 | 24.8         | 24.2 | 20.6 | 16.8 | 13.5 | 10.5 | 7.8  |
|        | 450 | 27.0 | 26.5 | 25.9 | 25.4 | 24.9 | 24.4 | 23.9         | 23.3 | 19.7 | 15.9 | 12.6 | 9.6  | 6.9  |
|        | 500 | 26.1 | 25.6 | 25.0 | 24.5 | 24.0 | 23.5 | 23.0         | 22.4 | 18.8 | 15.0 | 11.7 | 8.7  | 6.0  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

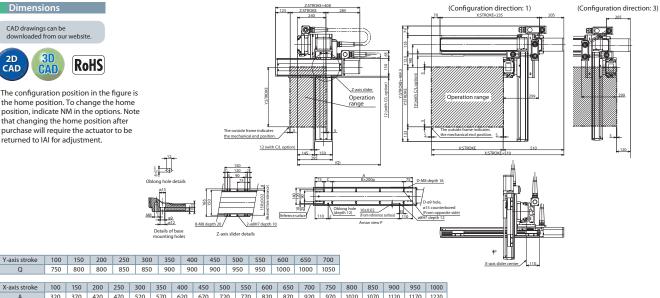
#### **■**ВМ□МВ4М

| ſ   |        | 100~500 | 550~700 | 750~900 | 950~1000 | 1050~1100 | 1150~1200 | 1250~1300 | 1400 | 1500 |
|-----|--------|---------|---------|---------|----------|-----------|-----------|-----------|------|------|
| -[  | X-axis |         | 1250    |         | 1160     | 970       | 830       | 720       | 620  | 550  |
|     | Y-axis | 1200    |         |         |          |           | _         |           |      |      |
| - 1 | 7 avie | 600     |         |         |          |           |           |           |      |      |

# ICSB3 [ICSPB3]-BM□MB4M-SC-SC (Self-standing cable specification)



The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| Α             | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970 | 1020 | 1070 | 1120 | 1170 | 1220 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70   | 120  | 170  | 220  | 70   |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| Е             | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |

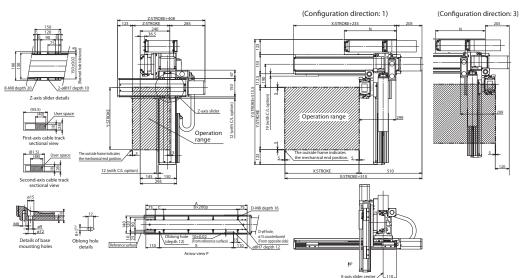
# ICSB3 [ICSPB3]-BM□MB4M-CT-CT (Cable track specification)





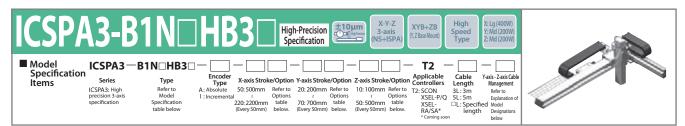


\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A             | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970 | 1020 | 1070 | 1120 | 1170 | 1220 | 1270 | 1320 | 1370 | 1420 | 1470 | 1520 | 1570 | 1620 | 1670 | 1720 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 6    | 6    | 6    | 6    | 7    | 7    | 7    |
| С             | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70   | 120  | 170  | 220  | 70   | 120  | 170  | 220  | 70   | 120  | 170  | 220  | 70   | 120  | 170  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   | 14   | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| E             | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 |
| N             | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  | 700  | 725  | 750  | 775  | 800  | 825  | 850  | 875  |



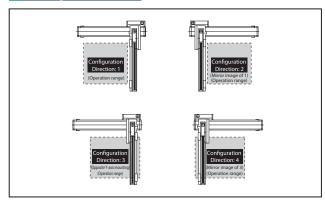


#### Model Specification

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                |
|----------------------------------|----------------------------|--------------------------------------|
| 1                                | Н                          | ICSPA3-B1N1HB3H-①-23-45-67-T2-8-9    |
| '                                | M                          | ICSPA3-B1N1HB3M-①-23-45-67-T2-8-9    |
| 2                                | Н                          | ICSPA3-B1N2HB3H-①-②③-④⑤-6⑦-T2-⑧-⑨    |
| 2                                | M                          | ICSPA3-B1N2HB3M-①-2 ③-0 ⑤-6 ⑦-T2-⑥-9 |
| 3                                | Н                          | ICSPA3-B1N3HB3H-①-②③-④⑤-⑥⑦-T2-⑥-⑥    |
| 3                                | М                          | ICSPA3-B1N3HB3M-①-23-45-67-T2-8-9    |
| 4                                | Н                          | ICSPA3-B1N4HB3H-①-②③-④⑤-6⑦-T2-⑧-⑨    |
| 4                                | М                          | ICSPA3-B1N4HB3M-①-23-05-67-T2-09     |

- \*1 Please refer to the following diagram under XY Configuration Direction.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.
  \*Please refer to the table on the right for details of ① through ② in the model names above.

#### XY Configuration Direction



#### Axis Configuration

| Axis configuration | Model                     | Reference page                        |
|--------------------|---------------------------|---------------------------------------|
| X-axis             | NS-LXMS-①-400-40-②-T2-③-⑩ | → Please contact IAI for more details |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤  | → Please contact IAI for more details |
| Z-axis             | ISPA-MXM-①-200-①-⑥-T2-⑦   | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

- Note that the strokes are indicated in mm (millimeters).

  \*The following symbols are specified with <sup>100</sup>/<sub>2</sub> in the above model names.

  NT1: For cartesian configuration directions 1 and 3.

  NT2: For cartesian configuration directions 2 and 4.

  Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2).

  \*Lead is specified with <sup>100</sup>/<sub>2</sub> in the above model names.

  20: For Z-axis Migh Speed type

  10: For Z-axis Medium Speed type

#### **Explanation of Model Designations**

| No. | Description                         | Notation                      |  |  |  |  |  |  |  |
|-----|-------------------------------------|-------------------------------|--|--|--|--|--|--|--|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental |  |  |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 50:500mm                      |  |  |  |  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below. |  |  |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm<br>?<br>70:700mm     |  |  |  |  |  |  |  |
| 5   | Y-axis option                       | Refer to Options table below. |  |  |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm                      |  |  |  |  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below. |  |  |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m       |  |  |  |  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track            |  |  |  |  |  |  |  |

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре  | Model | Reference page |
|---|-------|----------------|
| AQ seal (standard equipment)                              | AQ    | See P.353      |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1 | В     | See P.353      |
| Creep sensor *2   | C/CL  | See P.353      |
| Home limit switch *2                                      | L/LL  | See P.353      |
| Non-motor end specification (Y/Z-axis only)               | NM    | See P.353      |
| Guide with ball-retaining mechanism                       | RT    | See P.354      |

- \*1 Brake option for Y-axis increases the length of the non-motor side.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.

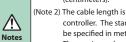
#### Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/40mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/20mm <h>, 10mm <m></m></h>                 |

<sup>\* &</sup>lt; > indicates the Z-axis medium speed specification.

## Applicable Controllers

 ${\tt Contact\ IAI.\ The\ controller\ for\ this\ system\ needs\ to\ be\ purchased/prepared\ separately.}$ 



(Note 2) The cable length is the length between the X-axis connector box and the controller. The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 20m.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm

(Note 3) The rated acceleration is 0.3G. Although it is operable up to 1G, increasing the acceleration will reduce the payload.



#### Payload (kg)

#### ■B1N□HB3H

|               |       |     | Y-axis stroke |     |     |     |     |  |  |  |  |  |  |
|---------------|-------|-----|---------------|-----|-----|-----|-----|--|--|--|--|--|--|
|               |       | 200 | 300           | 400 | 500 | 600 | 700 |  |  |  |  |  |  |
|               | 100   |     | 9.0           |     | 8.2 | 7.2 | 6.2 |  |  |  |  |  |  |
| oke           | ~ 200 | 9   | .0            | 8.3 | 7.2 | 6.2 | 5.2 |  |  |  |  |  |  |
| Z-axis stroke | ~ 300 | 9.0 | 8.3           | 7.3 | 6.2 | 5.2 | 4.2 |  |  |  |  |  |  |
| Z-a>          | ~ 400 | 8.2 | 7.3           | 6.3 | 5.2 | 4.2 | 3.2 |  |  |  |  |  |  |
|               | ~ 500 | 7.1 | 6.2           | 5.2 | 4.1 | 3.1 | 2.1 |  |  |  |  |  |  |

#### Maximum Speed by Stroke (mm/s)

#### ■B1N□HB3H

|        |     |      |      |     | Stroke |      |      |   |   |  |  |
|--------|-----|------|------|-----|--------|------|------|---|---|--|--|
|        | 100 | 200  | 300  | 600 | 700    | 800~ | 2200 |   |   |  |  |
| X-axis | _   | 2400 |      |     |        |      |      |   |   |  |  |
| Y-axis | _   |      | _    | -   |        |      |      |   |   |  |  |
| Z-axis |     |      | 1200 |     |        | _    | _    | _ | _ |  |  |

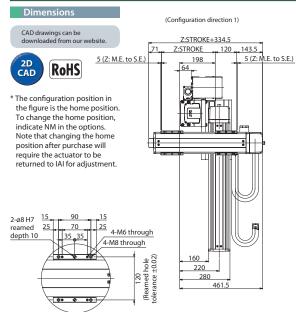
#### ■B1N□HB3M

|         |       |      |      | Y-axis stroke |     |     |     |  |  |  |  |  |  |  |
|---------|-------|------|------|---------------|-----|-----|-----|--|--|--|--|--|--|--|
|         |       | 200  | 300  | 400           | 500 | 600 | 700 |  |  |  |  |  |  |  |
|         | 100   | 11.2 | 10.2 | 9.2           | 8.2 | 7.2 | 6.2 |  |  |  |  |  |  |  |
| stroke  | ~ 200 | 10.2 | 9.3  | 8.3           | 7.2 | 6.2 | 5.2 |  |  |  |  |  |  |  |
| cis str | ~ 300 | 9.0  | 8.3  | 7.3           | 6.2 | 5.2 | 4.2 |  |  |  |  |  |  |  |
| Z-axis  | ~ 400 | 8.2  | 7.3  | 6.3           | 5.2 | 4.2 | 3.2 |  |  |  |  |  |  |  |
|         | ~ 500 | 7.1  | 6.2  | 5.2           | 4.1 | 3.1 | 2.1 |  |  |  |  |  |  |  |

#### ■B1N□HB3M

|        |     |     |      |     | Stroke |     |     |          |  |  |
|--------|-----|-----|------|-----|--------|-----|-----|----------|--|--|
|        | 100 | 200 | 300  | 400 | 500    | 600 | 700 | 800~2200 |  |  |
| X-axis | _   | _   |      |     |        |     |     |          |  |  |
| Y-axis | _   |     | 1200 |     |        |     |     |          |  |  |
| Z-axis |     |     | _    | _   | _      |     |     |          |  |  |

# ICSPA3-B1N□HB3□-CT-CT (Cable track specification)



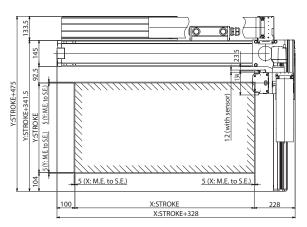
Z-axis slider details

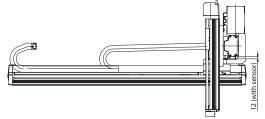
120(100) 100(80) \_\_\_50

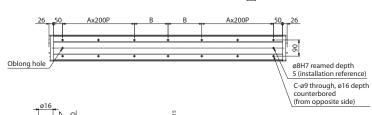
Cable track sectional view
\* ( ) dimensions indicate Y-Z cable track

side used











X-axis base mounting hole details

Oblong hole depth 10

X-axis base bottom oblong hole details

| X stroke | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| Α        | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 3    |
| В        | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 113 | 138 | 163 | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  |
| С        | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 14  | 14  | 14  | 14   | 14   | 14   | 14   | 14   | 14   | 18   | 18   |

| X stroke | 1400 | 1450 | 1500 | 1550 | 1600 | 1650 | 1700 | 1750 | 1800 | 1850 | 1900 | 1950 | 2000 | 2050 | 2100 | 2150 | 2200 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α        | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| В        | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  |
| C        | 18   | 18   | 18   | 18   | 18   | 18   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 26   | 26   | 26   |



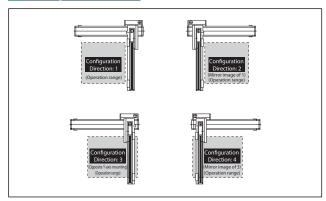
#### Medium XYB+ZB **High-Precision** Speed Type Y: Md (200W) Z: Md (200W) Y. Z Base Mour Specification ICSPA3-B1N□MB3□ T2 Specification Items X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option S-0xis Stroke/Option Z-0xis Stroke/Option S-0xis Stroke/Option Z-0xis St Cable Length 3L:3m 5L:5m L:Spec leng Encoder Type A: Absolute I: Incrementa Y-axis - Z-axis Cable Management Series Type ICSPA3: High precision 3-axis specification Refer to Model Specification table below Refer to 220: 2200mm "-----v 50mm)

#### Model Specification

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                |
|----------------------------------|----------------------------|--------------------------------------|
| 1                                | Н                          | ICSPA3-B1N1MB3H-①-② ③-④ ⑤-⑥ ②-T2-⑥-⑨ |
| '                                | M                          | ICSPA3-B1N1MB3M-1]-23-45-67-T2-8-9   |
| 2                                | Н                          | ICSPA3-B1N2MB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                                | M                          | ICSPA3-B1N2MB3M-1]-23-45-67-T2-8-9   |
| 3                                | Н                          | ICSPA3-B1N3MB3H-①-23-45-67-T2-8-9    |
| 3                                | M                          | ICSPA3-B1N3MB3M-①-② ③-④ ⑤-⑦-T2-⑥-⑨   |
| 4                                | Н                          | ICSPA3-B1N4MB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
|                                  | М                          | ICSPA3-B1N4MB3M-①-②③-④⑤-⑦-T2-⑧-⑨     |

- \*1 Please refer to the following diagram under XY Configuration Direction.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.
  \*Please refer to the table on the right for details of ① through ② in the model names above.

#### XY Configuration Direction



#### Axis Configuration

| Axis configuration | Model                     | Reference page                        |
|--------------------|---------------------------|---------------------------------------|
| X-axis             | NS-LXMS-①-400-20-②-T2-③-⑩ | → Please contact IAI for more details |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤  | → Please contact IAI for more details |
| Z-axis             | ISPA-MXM-①-200-①-⑥-T2-⑦   | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

- Note that the strokes are indicated in mm (millimeters).

  \*The following symbols are specified with [\$\overline{0}\$] in the above model names.

  NT1: For cartesian configuration directions 1 and 3

  NT2: For cartesian configuration directions 2 and 4

  Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2).

  \*Lead is specified with [\$\overline{0}\$] in the above model names.

  20: For Z-axis Medium Speed type

  10: For Z-axis Medium Speed type

#### **Explanation of Model Designations**

| No. | Description                         | Notation                      |
|-----|-------------------------------------|-------------------------------|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental |
| 2   | X-axis stroke<br>(Note 1)           | 50:500mm<br>220:2200mm        |
| 3   | X-axis option                       | Refer to Options table below. |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm<br>?<br>70:700mm     |
| (5) | Y-axis option                       | Refer to Options table below. |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm<br>?<br>50:500mm     |
| 7   | Z-axis option                       | Refer to Options table below. |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m       |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track            |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре  | Model | Reference page |
|---|-------|----------------|
| AQ seal (standard equipment)                              | AQ    | See P.353      |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1 | В     | See P.353      |
| Creep sensor *2   | C/CL  | See P.353      |
| Home limit switch *2                                      | L/LL  | See P.353      |
| Non-motor end specification (Y/Z-axis only)               | NM    | See P.353      |
| Guide with ball-retaining mechanism                       | RT    | See P.354      |

- \*1 Brake option for Y-axis increases the length of the non-motor side.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the
- mounting position.
  Please refer to P.11 for more information.

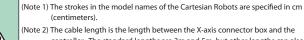
#### Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
|                           | +0.01mm   |
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/20mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/20mm <h>, 10mm <m></m></h>                 |

<sup>\* &</sup>lt; > indicates the Z-axis medium speed specification.

#### Applicable Controllers

 ${\tt Contact\ IAI.\ The\ controller\ for\ this\ system\ needs\ to\ be\ purchased/prepared\ separately.}$ 





- controller. The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 20m.
- (Note 3) The rated acceleration is 0.3G. Although it is operable up to 1G, increasing the acceleration will reduce the payload.



#### Payload (kg)

#### ■B1N□MB3H

|               |       |     | Y-axis stroke |     |  |     |     |  |  |  |  |  |  |  |
|---------------|-------|-----|---------------|-----|--|-----|-----|--|--|--|--|--|--|--|
|               |       | 200 | 600           | 700 |  |     |     |  |  |  |  |  |  |  |
|               | 100   |     | 9.0           |     |  |     |     |  |  |  |  |  |  |  |
| oke           | ~ 200 |     | 7.9           |     |  |     |     |  |  |  |  |  |  |  |
| Z-axis stroke | ~ 300 |     | 6.9           |     |  |     |     |  |  |  |  |  |  |  |
| Z-a>          | ~ 400 |     |               | 9.0 |  |     | 5.9 |  |  |  |  |  |  |  |
|               | ~ 500 |     | 9             | 0   |  | 8.5 | 4.8 |  |  |  |  |  |  |  |

#### Maximum Speed by Stroke (mm/s)

#### ■B1N□MB3H

|        |     |         |      |     | Stroke |      |     |      |   |  |
|--------|-----|---------|------|-----|--------|------|-----|------|---|--|
|        | 100 | 200 300 |      | 400 | 500    | 600  | 700 | 2200 |   |  |
| X-axis | _   | _       | _    | _   |        | 1300 |     |      |   |  |
| Y-axis | _   |         |      | 12  | 00     |      |     | -    | - |  |
| Z-axis |     |         | 1200 |     |        | _    |     | _    | _ |  |

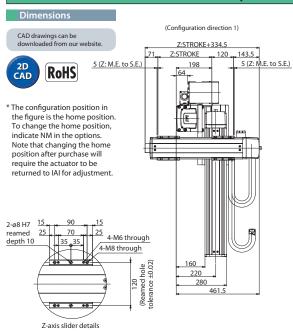
#### ■B1N□MB3M

|               |       |     |      | Y-axis | stroke |      |     |
|---------------|-------|-----|------|--------|--------|------|-----|
|               |       | 200 | 300  | 400    | 500    | 600  | 700 |
|               | 100   |     | 19.0 |        | 17.0   | 12.6 | 8.9 |
| oke           | ~ 200 |     | 19.0 |        | 16.1   | 11.6 | 7.9 |
| Z-axis stroke | ~ 300 |     | 19.0 |        | 15.1   | 10.6 | 6.9 |
| Z-a>          | ~ 400 |     | 19.0 |        | 14.1   | 9.6  | 5.9 |
|               | ~ 500 | 19  | 0.0  | 18.8   | 13.0   | 8.5  | 4.8 |

#### ■B1N□MB3M

|        |     |     |     |      | Stroke |     |     |      |      |
|--------|-----|-----|-----|------|--------|-----|-----|------|------|
|        | 100 | 200 | 300 | 400  | 500    | 600 | 700 | 800~ | 2200 |
| X-axis | _   | _   | _   | 1300 |        |     |     |      |      |
| Y-axis | _   |     |     | 12   | 00     |     |     | -    | _    |
| Z-axis |     |     | 600 |      |        | _   | _   | _    | _    |

## ICSPA3-B1N□MB3□-CT-CT (Cable track specification)



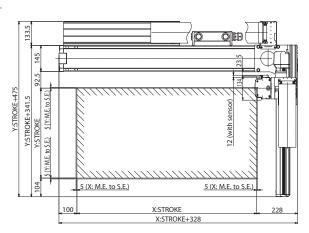
120(100)

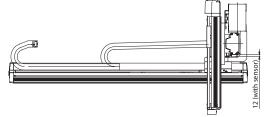
100(80)

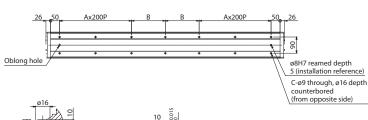
Cable track sectional view
\*( ) dimensions indicate Y-Z cable track

Manufacturer side used

M.E: Mechanical end S.E: Stroke end









X-axis base mounting hole details



X-axis base bottom oblong hole details

| X stroke | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| Α        | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 3    |
| В        | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 113 | 138 | 163 | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  |
| С        | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 14  | 14  | 14  | 14   | 14   | 14   | 14   | 14   | 14   | 18   | 18   |

| X stroke | 1400 | 1450 | 1500 | 1550 | 1600 | 1650 | 1700 | 1750 | 1800 | 1850 | 1900 | 1950 | 2000 | 2050 | 2100 | 2150 | 2200 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α        | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| В        | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  |
| С        | 18   | 18   | 18   | 18   | 18   | 18   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 26   | 26   | 26   |



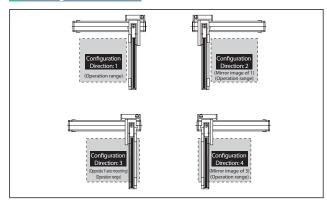
#### X: Lg (400W) Y: Md (200W) Z: Md (200W) High XYB+ZB High-Precision Y. Z Base Moun Specification ICSPA3-−B2N□HB3□ T2 Specification Items | X-axis Stroke/Option | Y-axis Stroke/Option | Z-axis Stroke/Option Cable Length 3L:3m 5L:5m L:Spec leng Encoder Type A: Absolute I: Incrementa Y-axis - Z-axis Cable Management Series Type ICSPA3: High precision 3-axis specification Refer to Model Specification table below 225:2250mm Refer to tal ≀ Options 300:3000mm table (Every 50mm) below. (Every 50mm) below. Refer to

#### Model Specification

| XY configuration direction *1 | Z-axis<br>speed<br>type *2 | Model                                |
|-------------------------------|----------------------------|--------------------------------------|
| 1                             | Н                          | ICSPA3-B2N1HB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑧-⑨ |
| '                             | М                          | ICSPA3-B2N1HB3M-①-②③-④⑤-⑥⑦-T2-⑥-⑨    |
| 2                             | Н                          | ICSPA3-B2N2HB3H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                             | М                          | ICSPA3-B2N2HB3M-1-23-45-67-T2-8-9    |
| 3                             | Н                          | ICSPA3-B2N3HB3H-①-② ③-④ ⑤-⑦-T2-⑥-⑨   |
| 3                             | M                          | ICSPA3-B2N3HB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                             | Н                          | ICSPA3-B2N4HB4H-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                             | М                          | ICSPA3-B2N4HB4M-1]-23-45-67-T2-8-9   |

- \*1 Please refer to the following diagram under XY Configuration Direction.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.
  \*Please refer to the table on the right for details of ① through ② in the model names above.

#### XY Configuration Direction



#### Axis Configuration

| Axis configuration | Model                      | Reference page                        |  |  |  |
|--------------------|----------------------------|---------------------------------------|--|--|--|
| X-axis             | NS-LXMXS-①-400-40-②-T2-③-⑩ | → Please contact IAI for more details |  |  |  |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤   | → Please contact IAI for more details |  |  |  |
| Z-axis             | ISPA-MXM-①-200-①-⑥-T2-⑦    | → Please contact IAI for more details |  |  |  |

- Refer to the symbols within the table Explanation of Model Designations at upper right for through in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  The following symbols are specified with in the above model names.

  NT1: For cartesian configuration directions 1 and 3.

  NT2: For cartesian configuration directions 2 and 4.

  Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2). should specify the no-cable track specification (NT1 or NT2).
- \* Lead is specified with 10-Lable track specification (i 20: For Z-axis High Speed type 10: For Z-axis Medium Speed type

#### **Explanation of Model Designations**

| No. | Description                         | Notation                                 |  |  |  |  |
|-----|-------------------------------------|--|--|--|--|--|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental            |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)           | 225:2250mm<br><sup>1</sup><br>300:3000mm |  |  |  |  |
| 3   | X-axis option                       | Refer to Options table below.            |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm<br>?<br>70:700mm                |  |  |  |  |
| (5) | Y-axis option                       | Refer to Options table below.            |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm<br>?<br>50:500mm                |  |  |  |  |
| 7   | Z-axis option                       | Refer to Options table below.            |  |  |  |  |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m                  |  |  |  |  |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track                       |  |  |  |  |

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре  | Model | Reference page |  |
|---|-------|----------------|--|
| AQ seal (standard equipment)                              | AQ    | See P.353      |  |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1 | В     | See P.353      |  |
| Creep sensor *2   | C/CL  | See P.353      |  |
| Home limit switch *2                                      | L/LL  | See P.353      |  |
| Non-motor end specification (Y/Z-axis only)               | NM    | See P.353      |  |
| Guide with ball-retaining mechanism                       | RT    | See P.354      |  |

- \*1 Brake option for Y-axis increases the length of the non-motor side.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.

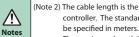
### Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/40mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/20mm <h>, 10mm <m></m></h>                 |

<sup>\* &</sup>lt; > indicates the Z-axis medium speed specification.

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.



(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (Note 2) The cable length is the length between the X-axis connector box and the controller. The standard lengths are 3m and 5m, but other lengths can also

The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G. Y-axis is operable up to 1G, but the upper limit for the X-axis is 0.3G.



## Payload (kg)

#### ■B2N□HB3H

|               |       | Y-axis stroke |     |     |     |     |     |  |  |  |  |
|---------------|-------|---------------|-----|-----|-----|-----|-----|--|--|--|--|
|               |       | 200 300       |     | 400 | 500 | 600 | 700 |  |  |  |  |
|               | 100   |               | 9.0 |     | 8.2 | 7.2 | 6.2 |  |  |  |  |
| oke           | ~ 200 | 9             | 9.0 |     | 7.2 | 6.2 | 5.2 |  |  |  |  |
| Z-axis stroke | ~ 300 | 9.0           | 8.3 | 7.3 | 6.2 | 5.2 | 4.2 |  |  |  |  |
| Z-a>          | ~ 400 | 8.2           | 7.3 | 6.3 | 5.2 | 4.2 | 3.2 |  |  |  |  |
|               | ~ 500 | 7.1           | 6.2 | 5.2 | 4.1 | 3.1 | 2.1 |  |  |  |  |

## Maximum Speed by Stroke (mm/s)

#### ■B2N□HB3H

|        |     | Stroke        |      |     |     |     |     |       |       |  |  |  |
|--------|-----|---------------|------|-----|-----|-----|-----|-------|-------|--|--|--|
|        | 100 | 200           | 300  | 400 | 500 | 600 | 700 | 2250- | ~3000 |  |  |  |
| X-axis | _   |               |      |     |     | _   | _   | 2400  |       |  |  |  |
| Y-axis | _   | <b>—</b> 1200 |      |     |     |     |     |       |       |  |  |  |
| Z-axis |     |               | 1200 |     |     | _   | _   | _     | _     |  |  |  |

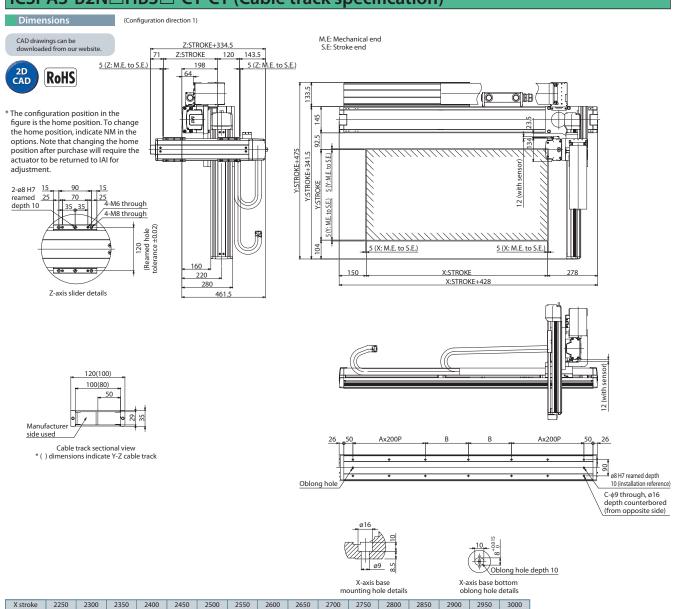
#### ■B2N□HB3M

|         |       | Y-axis stroke |      |     |     |     |     |  |  |  |  |
|---------|-------|---------------|------|-----|-----|-----|-----|--|--|--|--|
|         |       | 200           | 300  | 400 | 500 | 600 | 700 |  |  |  |  |
|         | 100   | 11.2          | 10.2 | 9.2 | 8.2 | 7.2 | 6.2 |  |  |  |  |
| stroke  | ~ 200 | 10.2          | 9.3  | 8.3 | 7.2 | 6.2 | 5.2 |  |  |  |  |
| cis str | ~ 300 | 9.0           | 8.3  | 7.3 | 6.2 | 5.2 | 4.2 |  |  |  |  |
| Z-axis  | ~ 400 | 8.2           | 7.3  | 6.3 | 5.2 | 4.2 | 3.2 |  |  |  |  |
|         | ~ 500 | 7.1           | 6.2  | 5.2 | 4.1 | 3.1 | 2.1 |  |  |  |  |

#### ■B2N□HB3M

|        |     | Stroke |     |     |     |     |     |       |       |  |  |  |
|--------|-----|--------|-----|-----|-----|-----|-----|-------|-------|--|--|--|
|        | 100 | 200    | 300 | 400 | 500 | 600 | 700 | 2250~ | ~3000 |  |  |  |
| X-axis | _   |        |     |     | _   | _   | _   | 2400  |       |  |  |  |
| Y-axis | _   |        | _   |     |     |     |     |       |       |  |  |  |
| Z-axis |     |        | 600 |     |     | _   | _   | _     | _     |  |  |  |

## ICSPA3-B2N□HB3□-CT-CT (Cable track specification)



| X stroke | 2250 | 2300 | 2350 | 2400 | 2450 | 2500 | 2550 | 2600 | 2650 | 2700 | 2750 | 2800 | 2850 | 2900 | 2950 | 3000 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A        | 5    | 5    | 5    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 7    | 7    | 7    | 7    | 7    |
| В        | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  |
| С        | 26   | 26   | 26   | 30   | 30   | 30   | 30   | 30   | 30   | 30   | 30   | 34   | 34   | 34   | 34   | 34   |



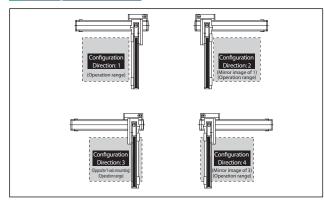
#### Medium High-Precision Y, Z Base Mount Specification (NS+ISPA) Long Type Z: Md (200W) ICSPA3-B2N□MB3□ T2 Specification Items | X-axis Stroke/Option | Y-axis Stroke/Option | Z-axis Stroke/Option Cable Length 3L:3m 5L:5m □L:Spec leng Encoder Type A: Absolute I: Incrementa Y-axis - Z-axis Cable Management Туре Series ICSPA3: High precision 3-axis specification Refer to Model Specification table below 225:2250mm Refer to tal ≀ Options 300:3000mm table (Every 50mm) below. (Every 50mm) below. Refer to Explanation of Model

## Model Specification

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model  |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSPA3-B2N1MB3H-①-[2]3-[4]5-[6]7-T2-[8-9]        |
| '                                | М                          | ICSPA3-B2N1MB3M-①-23-45-67-T2-8-9                |
| 2                                | Н                          | ICSPA3-B2N2MB3H-①-23-45-67-T2-8-9                |
| 2                                | М                          | ICSPA3-B2N2MB3M-[]-[2] 3]-[4] 5]-[6] 7-T2-[8]-[9 |
| 3                                | Н                          | ICSPA3-B2N3MB3H-①-[2]3]-[4]5-[6]7-T2-[8-[9]      |
| 3                                | М                          | ICSPA3-B2N3MB3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑥             |
| 4                                | Н                          | ICSPA3-B2N4MB3H-①-23-45-67-T2-8-9                |
| 4                                | М                          | ICSPA3-B2N4MB3M-①-23-43-67-T2-8-0                |

- \*1 Please refer to the following diagram under XY Configuration Direction.
  \*2 The payload and the max. speed may vary depending on the type of Z-axis.
  \*Please refer to the table on the right for details of ① through ② in the model names above.

## XY Configuration Direction



## Axis Configuration

| Axis configuration | Model                      | Reference page                        |
|--------------------|----------------------------|---------------------------------------|
| X-axis             | NS-LXMXS-①-400-20-②-T2-③-⑩ | → Please contact IAI for more details |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤   | → Please contact IAI for more details |
| Z-axis             | ISPA-MXM-①-200-①-⑥-T2-⑦    | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

- Note that the strokes are indicated in mm (millimeters).

  \*The following symbols are specified with [10] in the above model names.

  NT1: For cartesian configuration directions 1 and 3

  NT2: For cartesian configuration directions 2 and 4

  Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2).

  \*Lead is specified with [10] in the above model names.

  20: For Z-axis Medium Speed type

  10: For Z-axis Medium Speed type

#### **Explanation of Model Designations**

| No. | Description                         | Notation                      |
|-----|-------------------------------------|-------------------------------|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental |
| 2   | X-axis stroke<br>(Note 1)           | 225:2250mm                    |
| 3   | X-axis option                       | Refer to Options table below. |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm<br>?<br>70:700mm     |
| (5) | Y-axis option                       | Refer to Options table below. |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm<br>?<br>50:500mm     |
| 7   | Z-axis option                       | Refer to Options table below. |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m       |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track            |

## Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре  | Model | Reference page |  |
|---|-------|----------------|--|
| AQ seal (standard equipment)                              | AQ    | See P.353      |  |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1 | В     | See P.353      |  |
| Creep sensor *2   | C/CL  | See P.353      |  |
| Home limit switch *2                                      | L/LL  | See P.353      |  |
| Non-motor end specification (Y/Z-axis only)               | NM    | See P.353      |  |
| Guide with ball-retaining mechanism                       | RT    | See P.354      |  |

- \*1 Brake option for Y-axis increases the length of the non-motor side.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.

## Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/20mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/20mm <h>, 10mm <m></m></h>                 |

<sup>\* &</sup>lt; > indicates the Z-axis medium speed specification.

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the



controller. The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G. Y-axis is operable up to 1G, but the upper limit for the X-axis is 0.3G.



## Payload (kg)

#### ■B2N□MB3H

|               |       | Y-axis stroke |     |     |     |     |     |  |  |  |
|---------------|-------|---------------|-----|-----|-----|-----|-----|--|--|--|
|               |       | 200           | 300 | 400 | 500 | 600 | 700 |  |  |  |
|               | 100   |               | 9.0 |     |     |     |     |  |  |  |
| əyc           | ~ 200 |               | 7.9 |     |     |     |     |  |  |  |
| Z-axis stroke | ~ 300 |               | 6.9 |     |     |     |     |  |  |  |
| Z-a>          | ~ 400 |               | 5.9 |     |     |     |     |  |  |  |
|               | ~ 500 |               | 8.5 | 4.8 |     |     |     |  |  |  |

## Maximum Speed by Stroke (mm/s)

#### ■B2N□MB3H

|        |     | Stroke |      |     |     |     |     |       |       |  |  |  |
|--------|-----|--------|------|-----|-----|-----|-----|-------|-------|--|--|--|
|        | 100 | 200    | 300  | 400 | 500 | 600 | 700 | 2250- | ~3000 |  |  |  |
| X-axis | _   |        |      |     |     | _   | _   | 13    | 00    |  |  |  |
| Y-axis | _   |        |      | -   | -   |     |     |       |       |  |  |  |
| Z-axis |     |        | 1200 |     |     | _   |     | _     | _     |  |  |  |

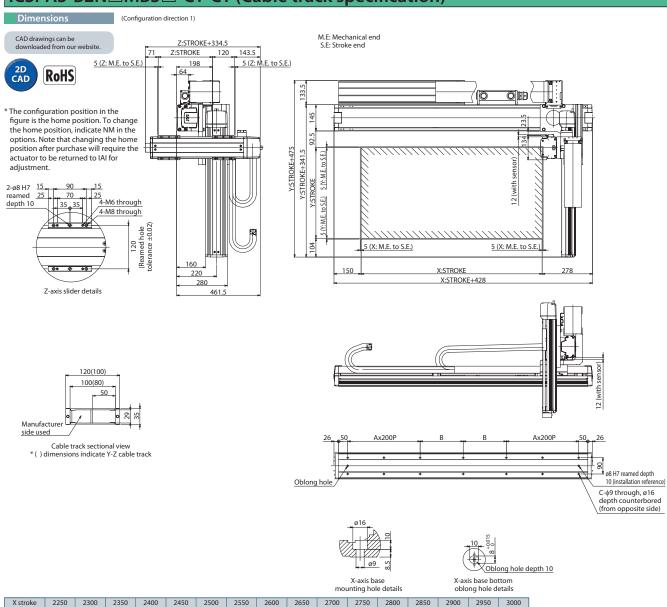
#### ■B2N□MB3M

|               |       | Y-axis stroke |      |      |      |      |     |  |  |  |
|---------------|-------|---------------|------|------|------|------|-----|--|--|--|
|               |       | 200 300 400   |      | 400  | 500  | 600  | 700 |  |  |  |
|               | 100   |               | 19.0 |      | 17.0 | 12.6 | 8.9 |  |  |  |
| oke           | ~ 200 |               | 19.0 |      | 16.1 | 11.6 | 7.9 |  |  |  |
| Z-axis stroke | ~ 300 |               | 19.0 |      | 15.1 | 10.6 | 6.9 |  |  |  |
| Z-a>          | ~ 400 | 19.0          |      |      | 14.1 | 9.6  | 5.9 |  |  |  |
|               | ~ 500 | 19            | 0.0  | 18.8 | 13.0 | 8.5  | 4.8 |  |  |  |

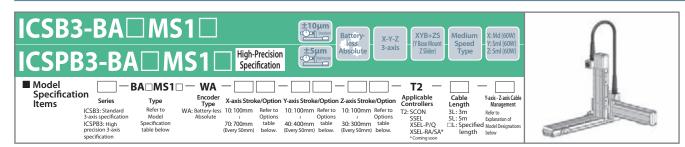
#### ■B2N□MB3M

|        | Stroke |     |     |     |     |     |     |       |       |  |  |
|--------|--------|-----|-----|-----|-----|-----|-----|-------|-------|--|--|
|        | 100    | 200 | 300 | 400 | 500 | 600 | 700 | 2250~ | -3000 |  |  |
| X-axis | _      | _   | _   | _   | _   | _   | _   | 1300  |       |  |  |
| Y-axis | _      |     |     | _   |     |     |     |       |       |  |  |
| Z-axis |        |     | 600 |     |     | _   | _   | _     | _     |  |  |

## ICSPA3-B2N□MB3□-CT-CT (Cable track specification)



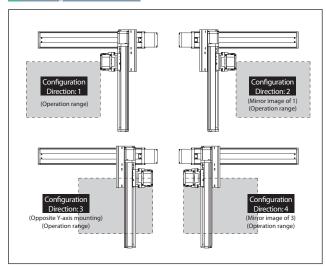




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BA1MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| '                                | L                          | ICSB3[ICSPB3]-BA1MS1L-①-23-43-67BNM-T2-8-9    |
| 2                                | М                          | ICSB3[ICSPB3]-BA2MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 2                                | L                          | ICSB3[ICSPB3]-BA2MS1L-①-23-43-67BNM-T2-8-9    |
| 3                                | М                          | ICSB3[ICSPB3]-BA3MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | L                          | ICSB3[ICSPB3]-BA3MS1L-①-23-43-67BNM-T2-8-9    |
| 4                                | М                          | ICSB3[ICSPB3]-BA4MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 4                                | L                          | ICSB3[ICSPB3]-BA4MS1L-①-② ③-④ ③-⑥⑦BNM-T2-⑧-⑨  |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                          | Reference page                        |
|--------------|--------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-SXM-①-60-8-②-T2-①-③  | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-SXM-1-60-8-4-T2-11-5 | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦  | → Please contact IAI for more details |

Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names.

Note that the strokes are indicated in mm (millimeters).

- Lead is specified with 100 in the above model names. 8: For Z-axis Medium Speed type 4: For Z-axis Low Speed type
- \*Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm                      |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm  |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm<br>30: 300mm                           |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

The option codes should be entered after the stroke for each axis. . Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| The state of the s |       |                 |  |  |  |  |  |  |
|--|-------|-----------------|--|--|--|--|--|--|
| Туре   | Model | Reference page  |  |  |  |  |  |  |
| X-axis cable exit direction  | *     | See P.11, P.353 |  |  |  |  |  |  |
| AQ seal (standard equipment)   | AQ    | See P.353       |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1  | В     | See P.353       |  |  |  |  |  |  |
| Creep sensor *2  | C/CL  | See P.353       |  |  |  |  |  |  |
| Home limit switch *2   | L/LL  | See P.353       |  |  |  |  |  |  |
| Non-motor end specification *3 (standard Z-axis setting)   | NM    | See P.353       |  |  |  |  |  |  |
| Guide with ball-retaining mechanism *4   | RT    | See P.354       |  |  |  |  |  |  |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of mounting position.

  Please refer to P.11 for more information.

  "3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.
- Note that changing the home position are positions may be a considered as the case of the construction of
- Please refer to P.11 for the cable exit direction of each axis.

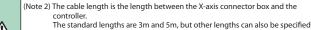
#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 60W/8mm  |
| Y-axis motor output/lead  | 60W/8mm  |
| Z-axis motor output/lead  | 60W/8mm (M), 4mm (L)                             |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm



in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■BA□MS1M

|               |     | Y-axis stroke |  |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|--|
|               |     | 100~400       |  |  |  |  |  |  |
| Z-axis stroke | 100 | 4.3           |  |  |  |  |  |  |
|               | 150 | 3.9           |  |  |  |  |  |  |
|               | 200 | 3.5           |  |  |  |  |  |  |
|               | 250 | 3.1           |  |  |  |  |  |  |
| Z             | 300 | 2.8           |  |  |  |  |  |  |

## ■BA□MS1L

|               | _   |      | Y-axis stroke |      |      |     |     |     |  |  |  |  |
|---------------|-----|------|---------------|------|------|-----|-----|-----|--|--|--|--|
|               |     | 100  | 150           | 200  | 250  | 300 | 350 | 400 |  |  |  |  |
| Z-axis stroke | 100 | 11.3 | 11.3          | 11.3 | 11.2 | 8.9 | 7.0 | 5.5 |  |  |  |  |
|               | 150 | 10.3 | 10.1          | 9.8  | 9.6  | 8.5 | 6.6 | 5.1 |  |  |  |  |
|               | 200 | 9.0  | 8.8           | 8.5  | 8.3  | 8.1 | 6.2 | 4.7 |  |  |  |  |
| -ax           | 250 | 7.9  | 7.7           | 7.5  | 7.3  | 7.1 | 5.8 | 4.3 |  |  |  |  |
| Z             | 300 | 7.0  | 6.8           | 6.6  | 6.4  | 6.3 | 5.5 | 4.0 |  |  |  |  |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BA□MS1M

|        | 100~300 | 350~400 | 450~600 | 650~700 |  |  |
|--------|---------|---------|---------|---------|--|--|
| X-axis |         | 480     |         | 330     |  |  |
| Y-axis | 48      | 30      | _       |         |  |  |
| Z-axis | 480     |         |         |         |  |  |

## ■BA□MS1L

|        | 100~300 | 350~400 | 450~600 | 650~700 |
|--------|---------|---------|---------|---------|
| X-axis |         | 480     |         | 330     |
| Y-axis | 48      | 30      | -       | -       |
| Z-axis | 240     |         | _       |         |

# ICSB3 [ICSPB3]-BA□MS1□-SC-SC (Self-standing cable specification)

#### Dimensions

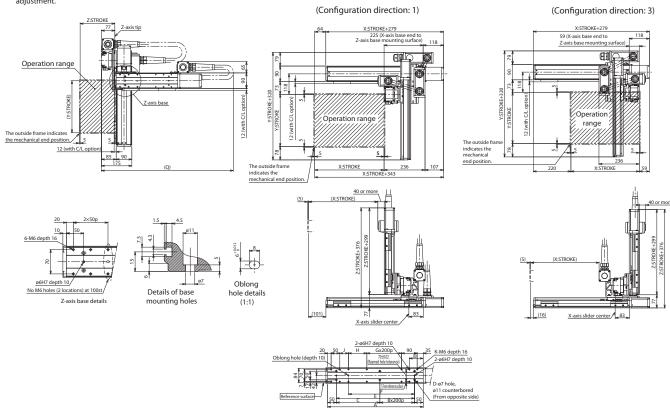
CAD drawings can be downloaded from our website.







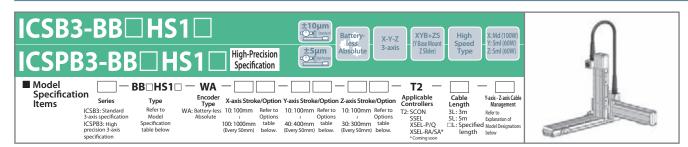
\*The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A             | 251 | 301 | 351 | 401 | 451 | 501 | 551 | 601 | 651 | 701 | 751 | 801 | 851 |
| В             | 0   | 0   | 0   | 1   | 1   | - 1 | 1   | 2   | 2   | 2   | 2   | 3   | 3   |
| С             | 151 | 201 | 251 | 101 | 151 | 201 | 251 | 101 | 151 | 201 | 251 | 101 | 151 |
| D             | 4   | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  |
| E             | 151 | 201 | 251 | 301 | 351 | 401 | 451 | 501 | 551 | 601 | 651 | 701 | 751 |
| F             | 131 | 131 | 181 | 231 | 281 | 331 | 381 | 431 | 481 | 531 | 581 | 631 | 681 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   |
| Н             | 56  | 56  | 106 | 156 | 206 | 256 | 106 | 156 | 206 | 256 | 106 | 156 | 206 |
| J             | 0   | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  |
| K             | 8   | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  |

| Z-axis Y-axis | 100 | 150 | 200 | 250 | 300 | 350 | 400  |
|---------------|-----|-----|-----|-----|-----|-----|------|
| 100           | 650 | 700 | 700 | 750 | 750 | 750 | 800  |
| 150           | 700 | 750 | 750 | 800 | 800 | 800 | 850  |
| 200           | 750 | 800 | 800 | 850 | 850 | 850 | 900  |
| 250           | 800 | 850 | 850 | 900 | 900 | 900 | 950  |
| 300           | 850 | 900 | 900 | 950 | 950 | 950 | 1000 |

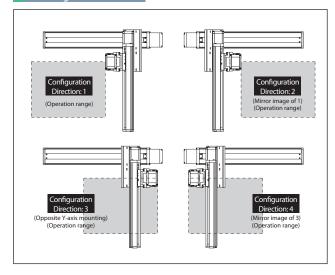




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BB1HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| '                                | L                          | ICSB3[ICSPB3]-BB1HS1L-1]-23-45-67BNM-T2-8-9   |
| 2                                | М                          | ICSB3[ICSPB3]-BB2HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 2                                | L                          | ICSB3[ICSPB3]-BB2HS1L-①-②③-④⑤-⑦BNM-T2-⑧-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BB3HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | L                          | ICSB3[ICSPB3]-BB3HS1L-①-②③-④⑤-⑥ ØBNM-T2-⑧-⑨   |
| 4                                | М                          | ICSB3[ICSPB3]-BB4HS1M-①-② ③-④ ⑤-⑦BNM-T2-⑧-⑨   |
| 4                                | L                          | ICSB3[ICSPB3]-BB4HS1L-①-②③-④⑤-⑦BNM-T2-⑧-⑨     |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-100-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-SXM-①-60-16-④-T2-①-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-⑪-⑦   | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names. Note that the strokes are indicated in mm (millimeters).
- \* Lead is specified with 100 in the above model names.
  8: For Z-axis Medium Speed type
  4: For Z-axis Low Speed type
- \*Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

## **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>100: 1000mm                         |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm  |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm<br>30: 300mm                           |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction                              | *     | See P.11, P.353 |
| AQ seal (standard equipment)                             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2                                     | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism *4                   | RT    | See P.354       |
|  |       |                 |

- Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the
- mounting position. Please refer to P.11 for more information
- Please reter to P. I I for more information.

  3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  4 Cannot be selected for High-Precision Specification.
- \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 100W/20mm  |
| Y-axis motor output/lead  | 60W/16mm   |
| Z-axis motor output/lead  | 60W/8mm (M), 4mm (L)                             |

## Applicable Controllers

Notes

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).

(Note 2) The cable length is the length between the X-axis connector box and the controller.
The standard lengths are 3m and 5m, but other lengths can also be specified

in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■BB□HS1M

|               |     | Y-axis stroke |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|
|               |     | 100~400       |  |  |  |  |
| a             | 100 | 4.3           |  |  |  |  |
| rok           | 150 | 3.9           |  |  |  |  |
| s st          | 200 | 3.5           |  |  |  |  |
| z-axis stroke | 250 | 3.1           |  |  |  |  |
| 7             | 300 | 2.8           |  |  |  |  |

## ■BB□HS1L

|               | _   | Y-axis stroke |     |     |     |     |     |     |  |  |  |
|---------------|-----|---------------|-----|-----|-----|-----|-----|-----|--|--|--|
|               |     | 100           | 150 | 200 | 250 | 300 | 350 | 400 |  |  |  |
| a             | 100 | 8.1           | 8.0 | 8.0 | 8.0 | 8.0 | 7.9 | 7.9 |  |  |  |
| Š             | 150 | 7.7           | 7.7 | 7.7 | 7.6 | 7.6 | 7.6 | 7.6 |  |  |  |
| Z-axis stroke | 200 | 7.3           | 7.3 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 |  |  |  |
| -axi          | 250 | 7.0           | 7.0 | 6.9 | 6.9 | 6.9 | 6.9 | 6.8 |  |  |  |
| Z             | 300 | 6.7           | 6.7 | 6.7 | 6.6 | 6.6 | 6.6 | 6.6 |  |  |  |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BB□HS1M

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|---------|----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      |
| Y-axis | 960     |         |         | _       |         |          |
| Z-axis | 480     |         |         | _       |         |          |

#### ■BB□HS1L

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|---------|----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      |
| Y-axis | 960     |         |         | -       | _       |          |
| Z-axis | 240     |         |         | _       |         |          |

# ICSB3 [ICSPB3]-BB□HS1□-SC-SC (Self-standing cable specification)

#### **Dimensions**

CAD drawings can be downloaded from our website

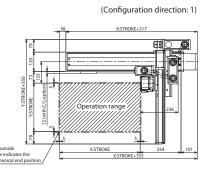


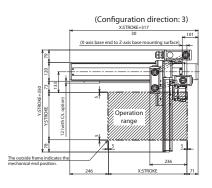


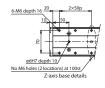


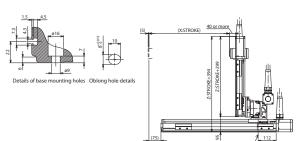
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

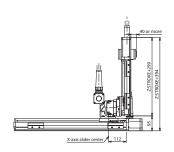
# The outside frame indicates he mechanical and position 12 (with C/L option) 103 90 (Q)











## Q dimension

| Z-axis Y-axis | 100 | 150 | 200 | 250 | 300 | 350  | 400  |
|---------------|-----|-----|-----|-----|-----|------|------|
| 100           | 700 | 700 | 700 | 750 | 750 | 800  | 800  |
| 150           | 750 | 750 | 750 | 800 | 800 | 850  | 850  |
| 200           | 800 | 800 | 800 | 850 | 850 | 900  | 900  |
| 250           | 850 | 850 | 850 | 900 | 900 | 950  | 950  |
| 300           | 900 | 900 | 900 | 950 | 950 | 1000 | 1000 |

10 10

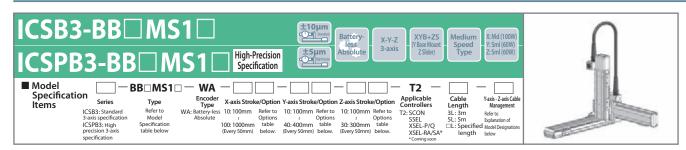
10 10 12



16 16 16

12 12 12 14 14

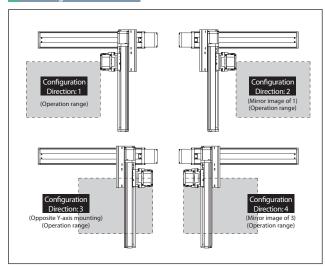




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BB1MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| '                                | L                          | ICSB3[ICSPB3]-BB1MS1L-①-23-43-67BNM-T2-8-9    |
| 2                                | M                          | ICSB3[ICSPB3]-BB2MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 2                                | L                          | ICSB3[ICSPB3]-BB2MS1L-①-23-43-67BNM-T2-8-9    |
| 3                                | М                          | ICSB3[ICSPB3]-BB3MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | L                          | ICSB3[ICSPB3]-BB3MS1L-①-23-43-67BNM-T2-0-9    |
| 4                                | М                          | ICSB3[ICSPB3]-BB4MS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 4                                | L                          | ICSB3[ICSPB3]-BB4MS1L-①-23-43-67BNM-T2-8-9    |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-100-10-②-T2-①-③  | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-SXM-①-60-8-④-T2-①-⑤    | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-1-60-10-60-T2-11-7 | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

- \* Lead is specified with 100 in the above model names.
  8: For Z-axis Medium Speed type
  4: For Z-axis Low Speed type

- \*Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

## **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>100: 1000mm                         |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm  |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis.

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction                              | *     | See P.11, P.353 |
| AQ seal (standard equipment)                             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2                                     | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism *4                   | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details
- To lake option from A and/or 1 axes increases are region to the minor of units), Pietase Contact van of relatis.

  2. When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.
- Trises refer to F.1 in India minimation.

  3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation.
- Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*4 Cannot be selected for High-Precision Specification.

  \*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.

  Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 100W/10mm  |
| Y-axis motor output/lead  | 60W/8mm  |
| Z-axis motor output/lead  | 60W/8mm (M), 4mm (L)                             |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller.

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

Note that the strokes are indicated in mm (millimeters).



#### ■BB□MS1M

|               |     | Y-axis stroke |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|
|               |     | 100~400       |  |  |  |  |  |
| a             | 100 | 4.3           |  |  |  |  |  |
| 충             | 150 | 3.9           |  |  |  |  |  |
| s st          | 200 | 3.5           |  |  |  |  |  |
| Z-axis stroke | 250 | 3.1           |  |  |  |  |  |
| 7             | 300 | 2.8           |  |  |  |  |  |

## ■BB□MS1L

|               |     | 1-dxIS SUORE |
|---------------|-----|--------------|
|               |     | 100~400      |
| e             | 100 | 11.3         |
| 支             | 150 | 10.9         |
| Z-axis stroke | 200 | 10.5         |
| -axi          | 250 | 10.1         |
| Z             | 300 | 9.8          |

## Maximum Speed by Stroke (mm/s) (Note 4)

## ■BB□MS1M

|        | 100~300 350~400 450~700 |     | 750~800 | 850~900 | 950~1000 |     |
|--------|-------------------------|-----|---------|---------|----------|-----|
| X-axis |                         | 600 |         | 430     | 345      | 280 |
| Y-axis | 48                      | 30  |         | _       |          |     |
| Z-axis | 480                     |     |         | _       |          |     |

#### ■BB□MS1L

|        | 100~300 | 350~400 | 450~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|---------|----------|
| X-axis |         | 600     |         | 430     | 345     | 280      |
| Y-axis | 4       | 80      |         | -       | _       |          |
| Z-axis | 240     |         |         | _       |         |          |

# ICSB3 [ICSPB3]-BB□MS1□-SC-SC (Self-standing cable specification)

#### Dimensions

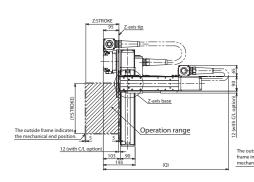
CAD drawings can be downloaded from our website.

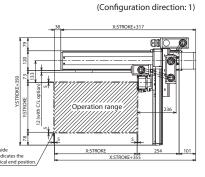


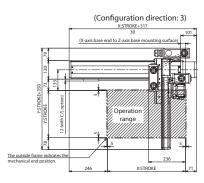


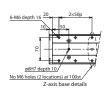


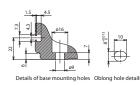
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

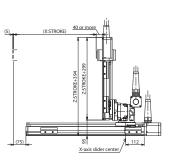


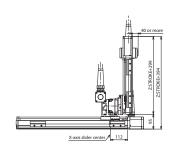




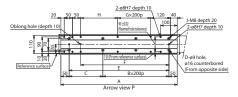








| Quillelision  |     |     |     |     |     |      |      |  |  |
|---------------|-----|-----|-----|-----|-----|------|------|--|--|
| Z-axis Y-axis | 100 | 150 | 200 | 250 | 300 | 350  | 400  |  |  |
| 100           | 700 | 700 | 700 | 750 | 750 | 800  | 800  |  |  |
| 150           | 750 | 750 | 750 | 800 | 800 | 850  | 850  |  |  |
| 200           | 800 | 800 | 800 | 850 | 850 | 900  | 900  |  |  |
| 250           | 850 | 850 | 850 | 900 | 900 | 950  | 950  |  |  |
| 300           | 900 | 900 | 900 | 950 | 950 | 1000 | 1000 |  |  |



| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |
| В             | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |



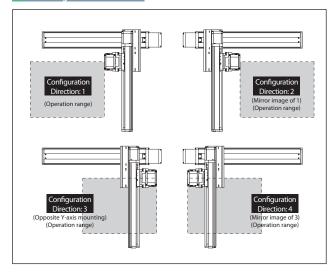
#### ICSB3-BC□HS1 X-Y-Z Absolute Z Slider) Type High-Precision ICSPB3-BC Specification ■ Model Specification BC□HS1□ WA **T2** Encoder Type A-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Delatery-less in Collodom Absolute Options Option Pafer to 10: 100mm Refer to 10: 100mm Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length 3L: 3m 5L: 5m Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat 3L: 3m Re 5L: 5m Eq □L: Specified Mo Refer to XSEL-RA/SA precisio... specificati length

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model  |
|----------------------------------|----------------------------|--|
| 1                                | М                          | ICSB3[ICSPB3]-BC1HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑥-⑨  |
| '                                | L                          | ICSB3[ICSPB3]-BC1HS1L-①-②③-④⑤-⑥ ØBNM-T2-⑧-⑨    |
| 2                                | М                          | ICSB3[ICSPB3]-BC2HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨  |
| 2                                | L                          | ICSB3[ICSPB3]-BC2HS1L-①-23-43-67BNM-T2-8-9     |
| 3                                | М                          | ICSB3[ICSPB3]-BC3HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑥-⑨  |
| 3 L                              |                            | ICSB3[ICSPB3]-BC3HS1L-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨     |
| 4 M                              |                            | ICSB3[ICSPB3]-BC4HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨  |
| 4                                | L                          | ICSB3[ICSPB3]-BC4HS1L-11-213-413-607BNM-T2-8-9 |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
- \*2 The payload and the max speed may vary depending on the type of Z-axis

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-200-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-20-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.
- In the above model names.

  Note that the strokes are indicated in mm (millimeters).

  Lead is specified with in in the above model names.
  For Z-axis Medium Speed type
- 4: For Z-axis Low Speed type
- Cable exit direction is specified with the in the above model names. Please refer to P.11 for the exit directions.

## **Explanation of Model Designations**

| No. | Description                      | Notation   |  |  |  |  |
|-----|----------------------------------|--|--|--|--|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>100: 1000mm                         |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.                    |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm  |  |  |  |  |
| 5   | Y-axis option                    | Refer to Options table below.                    |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.                    |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Type   | Model | Reference page  |
|--|-------|-----------------|
|  |       | . 3             |
| X-axis cable exit direction                              | *     | See P.11, P.353 |
| AQ seal (standard equipment)                             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2                                     | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism *4                   | RT    | See P.354       |

- 1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details
- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
  Please refer to P.11 for more information.
  \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position for purpose unit products the product part of the product products and increases.
- position after purchase will require the actuator to be returned to IAI for adjustment.
- position after purchase win require the action to be featured as a second of the position of the selected for high-Precision Specification.

  \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 60W/8mm (M), 4mm (L)                             |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller.

The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■BC□HS1M

| <b>D</b> | ■ DC □ U3 I M     |               |  |  |  |  |  |  |
|----------|-------------------|---------------|--|--|--|--|--|--|
|          |                   | Y-axis stroke |  |  |  |  |  |  |
|          |                   | 100~400       |  |  |  |  |  |  |
|          | 100               | 4.3           |  |  |  |  |  |  |
| a        | 150               | 3.9           |  |  |  |  |  |  |
| Š        | ਤੱ 200            | 3.5           |  |  |  |  |  |  |
| s st     | 250               | 3.1           |  |  |  |  |  |  |
| -axi     | 200<br>250<br>300 | 2.8           |  |  |  |  |  |  |
| Z        | 350               | 2.4           |  |  |  |  |  |  |
|          | 400               | 2.1           |  |  |  |  |  |  |

## **■**BC□HS1L

| ш |               |     | Y-axis stroke |
|---|---------------|-----|---------------|
| L |               |     | 100~400       |
|   |               | 100 | 11.3          |
| Ш | a             | 150 | 10.9          |
| ш | š             | 200 | 10.5          |
| ш | Z-axis stroke | 250 | 10.1          |
| Ш | -a×           | 300 | 9.8           |
| Ш | Z             | 350 | 9.4           |
|   |               | 400 | 9.1           |

## Maximum Speed by Stroke (mm/s) (Note 4)

## ■BC□HS1M

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 |  |
|--------|---------|---------|---------|---------|---------|----------|--|
| X-axis |         | 1200    |         | 860     | 695     | 570      |  |
| Y-axis | 12      | 00      |         | -       | -       |          |  |
| Z-axis | 480     |         |         | -       |         |          |  |

## **■**BC□HS1L

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|---------|----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      |
| Y-axis | 12      | 00      |         | -       | -       |          |
| Z-axis | 240     |         |         |         |         |          |

# ICSB3 [ICSPB3]-BC□HS1□-SC-SC (Self-standing cable specification)

#### Dimensions

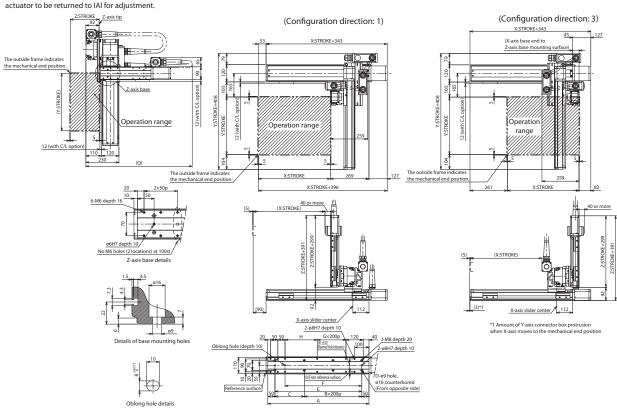
CAD drawings can be downloaded from our website.







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the



| Quillelisio   | 1    |      |      |      |      |      |      |      |      |
|---------------|------|------|------|------|------|------|------|------|------|
| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |
| 100           | 700  | 700  | 750  | 750  | 800  | 800  | 800  | 850  | 850  |
| 150           | 750  | 750  | 800  | 800  | 850  | 850  | 850  | 900  | 900  |
| 200           | 800  | 800  | 850  | 850  | 900  | 900  | 900  | 950  | 950  |
| 250           | 850  | 850  | 900  | 900  | 950  | 950  | 950  | 1000 | 1000 |
| 300           | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 | 1050 | 1050 |
| 350           | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 | 1100 | 1100 |
| 400           | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 | 1150 | 1150 |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |
| В             | 0   | 0   | - 1 | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| C             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |



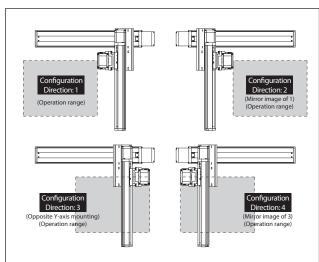
#### ICSB3-BC□HS3M ±10µm Battery-less Absolute XYB+ZS X: Md (200V) X-Y-Z Y Base Mou Z Slider) Speed Y: Md (100W) Z: Md (200W) ICSPB3-BC **High-Precision** Specification ■ Model Specification BC BS3M - WA -**T2** Encoder Type A-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Delatery-less in Collodom Absolute Options Option Pafer to 10: 100mm Refer to 10: 100mm Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length 3L: 3m 5L: 5m Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat 3L: 3m Re 5L: 5m Er □L: Specified M Refer to XSEL-RA/SA length precision : specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BC1HS3M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BC2HS3M-①-23-45-67BNM-T2-8-9    |
| 3                                | М                          | ICSB3[ICSPB3]-BC3HS3M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 4                                | М                          | ICSB3[ICSPB3]-BC4HS3M-①-23-45-67BNM-T2-8-9    |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

## XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-200-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-20-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for 🛈 through (2) in the above model names.
- Note that the strokes are indicated in mm (millimeters).
- \* Cable exit direction is specified with 100 in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation   |  |  |  |
|-----|----------------------------------|--|--|--|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>¿<br>100: 1000mm                    |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.                    |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>2<br>50: 500mm                      |  |  |  |
| 5   | Y-axis option                    | Refer to Options table below.                    |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.                    |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |  |  |  |

## Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in <u>alphabetical order</u>.

| Туре   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction                              | *     | See P.11, P.353 |
| AQ seal (standard equipment)                             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2                                     | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism *4                   | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
  Please refer to P.11 for more information.
- \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To \*3 Ine configuration position in the figure is the nome position. Ine normal setting for Z-axis is non-motor end (NM). Io set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.
  \*4 Cannot be selected for High-Precision Specification.
  \*5 Os et a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 200W/10mm  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated

acceleration.
When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



## **■**BC□HS3M

|        |     |      |      |      | ١    | /-axis strok | e    |      |      |     |
|--------|-----|------|------|------|------|--------------|------|------|------|-----|
|        |     | 100  | 150  | 200  | 250  | 300          | 350  | 400  | 450  | 500 |
|        | 100 | 13.2 | 13.2 | 13.1 | 13.1 | 13.1         | 13.1 | 13.1 | 11.6 | 9.3 |
| a      | 150 | 12.6 | 12.5 | 12.5 | 12.5 | 12.5         | 12.4 | 12.4 | 10.9 | 8.6 |
| stroke | 200 | 12.0 | 12.0 | 12.0 | 11.9 | 11.9         | 11.9 | 11.9 | 10.3 | 8.0 |
| s st   | 250 | 11.4 | 11.4 | 11.3 | 11.3 | 11.3         | 11.3 | 11.3 | 9.6  | 7.3 |
| -axis  | 300 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8         | 10.7 | 10.7 | 9.0  | 6.7 |
| -Z     | 350 | 10.3 | 10.3 | 10.3 | 10.2 | 10.2         | 10.2 | 10.2 | 8.4  | 6.1 |
|        | 400 | 9.8  | 9.7  | 9.7  | 9.7  | 9.7          | 9.7  | 9.6  | 7.8  | 5.5 |

## Maximum Speed by Stroke (mm/s) (Note 4)

## **■**BC□HS3M

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|---------|----------|
| X-axis |         | 1200    |         | 860     | 695     | 570      |
| Y-axis | 12      | 00      |         | _       | -       |          |
| Z-axis | 600     |         |         |         |         |          |

# ICSB3 [ICSPB3]-BC□HS3M□-SC-SC (Self-standing cable specification)

#### Dimensions

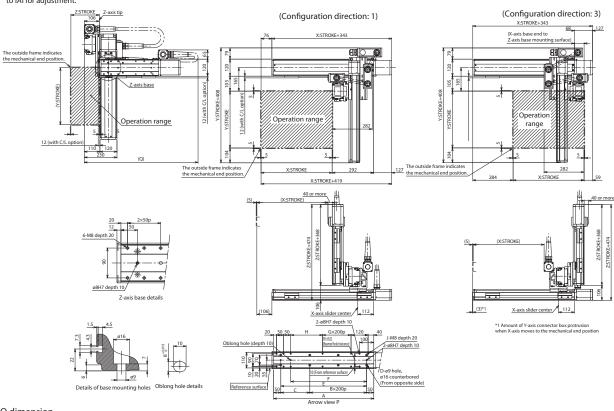
CAD drawings can be downloaded from our website.







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Quillension   |      |      |      |      |      |      |      |      |      |  |  |  |
|---------------|------|------|------|------|------|------|------|------|------|--|--|--|
| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |  |  |  |
| 100           | 750  | 750  | 800  | 800  | 850  | 850  | 900  | 900  | 950  |  |  |  |
| 150           | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 |  |  |  |
| 200           | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 |  |  |  |
| 250           | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 |  |  |  |
| 300           | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 |  |  |  |
| 350           | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 |  |  |  |
| 400           | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 |  |  |  |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| Α             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |
| В             | 0   | 0   | - 1 | - 1 | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |



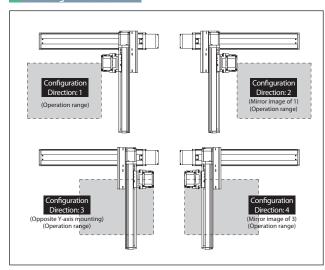
#### ICSB3-BC□MS3M Battery-less Absolute XYB+ZS Medium X: Md (100W X-Y-Z / Base Mou Z Slider) Speed Y: Md (100W) Z: Md (200W) ICSPB3-BC MS3M High-Precision Specification High-Precision ■ Model Specification BC\BC\BS3M WA **T2** Encoder Type A-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Delatery-less in Collodom Absolute Options Option Pafer to 10: 100mm Refer to 10: 100mm Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length 3L: 3m 5L: 5m Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below 3L: 3m Re 5L: 5m E □L: Specified M Refer to XSEL-RA/SA length precision : specificati

## Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BC1MS3M-1]-23-43-67BNM-T2-8-9   |
| 2                                | М                          | ICSB3[ICSPB3]-BC2MS3M-①-②③-④⑤-⑥BNM-T2-⑥-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BC3MS3M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑥-⑨ |
| 4                                | М                          | ICSB3[ICSPB3]-BC4MS3M-1]-23-43-67BNM-T2-8-9   |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

## XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXM-①-100-10-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-10-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names. Note that the strokes are indicated in mm (millimeters).
- Cable exit direction is specified with 100 in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm  |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm                      |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| <u>=====================================</u> |                                 |  |  |  |  |  |  |  |  |
|--|---------------------------------|--|--|--|--|--|--|--|--|
| Model  | Reference page                  |  |  |  |  |  |  |  |  |
| *  | See P.11, P.353                 |  |  |  |  |  |  |  |  |
| AQ   | See P.353                       |  |  |  |  |  |  |  |  |
| В  | See P.353                       |  |  |  |  |  |  |  |  |
| C/CL   | See P.353                       |  |  |  |  |  |  |  |  |
| L/LL   | See P.353                       |  |  |  |  |  |  |  |  |
| NM   | See P.353                       |  |  |  |  |  |  |  |  |
| RT   | See P.354                       |  |  |  |  |  |  |  |  |
|  | Model  *  AQ  B  C/CL  L/LL  NM |  |  |  |  |  |  |  |  |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home
- position after purchase will require the actuator to be returned to IAI for adjustment.
- \*4 Cannot be selected for High-Precision Specification.

  \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 100W/10mm  |
| Y-axis motor output/lead  | 100W/10mm  |
| Z-axis motor output/lead  | 200W/10mm  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller.

The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



## **■**BC□MS3M

|               |     | Y-axis stroke |      |     |
|---------------|-----|---------------|------|-----|
|               |     | 100~400       | 450  | 500 |
|               | 100 | 14.3          | 11.6 | 9.3 |
| a             | 150 | 13.6          | 10.9 | 8.6 |
| Z-axis stroke | 200 | 13.0          | 10.3 | 8.0 |
| sst           | 250 | 12.3          | 9.6  | 7.3 |
| -ax           | 300 | 11.7          | 9.0  | 6.7 |
| Z             | 350 | 11.1          | 8.4  | 6.1 |
|               | 400 | 10.5          | 7.8  | 5.5 |

## Maximum Speed by Stroke (mm/s) (Note 4)

## **■**BC□MS3M

|        | 100~400 | 450~500 | 550~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|---------|----------|
| X-axis |         | 600     |         | 430     | 345     | 280      |
| Y-axis | 60      | 00      |         | -       | _       |          |
| Z-axis | 600     |         |         |         |         |          |

# ICSB3 [ICSPB3]-BC□MS3M□-SC-SC (Self-standing cable specification)

#### Dimensions

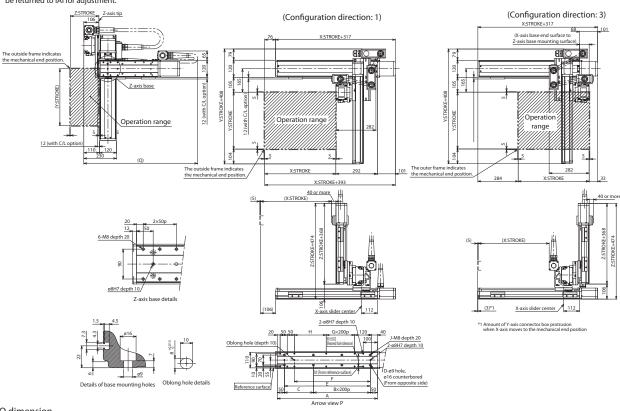
CAD drawings can be downloaded from our website.







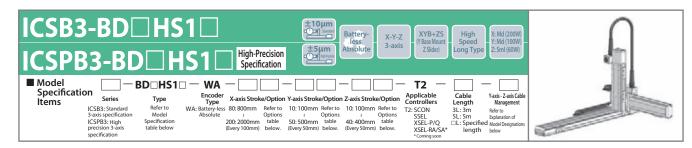
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Q difficition |      |      |      |      |      |      |      |      |      |  |  |  |
|---------------|------|------|------|------|------|------|------|------|------|--|--|--|
| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |  |  |  |
| 100           | 750  | 750  | 800  | 800  | 850  | 850  | 900  | 900  | 950  |  |  |  |
| 150           | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 |  |  |  |
| 200           | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 |  |  |  |
| 250           | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 |  |  |  |
| 300           | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 |  |  |  |
| 350           | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 |  |  |  |
| 400           | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 |  |  |  |
|               |      |      |      |      |      |      |      |      |      |  |  |  |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 |
| В             | 0   | 0   | 1   | 1   | - 1 | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 204 | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 |
| F             | 134 | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 24  | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |

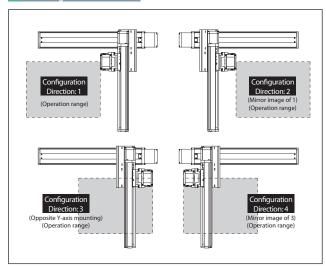




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BD1HS1M-①-② ③-④ ③-⑥ ⑦BNM-T2-⑧-⑨ |
| '                                | L                          | ICSB3[ICSPB3]-BD1HS1L-①-②③-④⑤-⑥PBNM-T2-⑧-⑨    |
| 2                                | М                          | ICSB3[ICSPB3]-BD2HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 2                                | L                          | ICSB3[ICSPB3]-BD2HS1L-①-23-43-67BNM-T2-8-9    |
| 3                                | М                          | ICSB3[ICSPB3]-BD3HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | L                          | ICSB3[ICSPB3]-BD3HS1L-①-②③-④⑤-⑥7BNM-T2-®-⑨    |
| 4                                | М                          | ICSB3[ICSPB3]-BD4HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 4                                | L                          | ICSB3[ICSPB3]-BD4HS1L-①-23-43-67BNM-T2-8-9    |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXMX-①-200-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-20-④-T2-①-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦    | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names.

  Note that the strokes are indicated in mm (millimeters).
- \* Lead is specified with look in the above model names. 8: For Z-axis Medium Speed type
- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

## **Explanation of Model Designations**

| No. | Description                        | Notation                                 |  |  |  |  |  |
|-----|------------------------------------|--|--|--|--|--|--|
| 1   | Encoder type                       | WA: Battery-less Absolute                |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)          | 80: 800mm                                |  |  |  |  |  |
| 3   | X-axis option                      | Refer to Options table below.            |  |  |  |  |  |
| 4   | Y-axis stroke (Note 1) 10: 100mm ( |  |  |  |  |  |  |
| (5) | Y-axis option                      | Refer to Options table below.            |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)          | 10: 100mm                                |  |  |  |  |  |
| 7   | Z-axis option                      | Refer to Options table below.            |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)           | 3L:3m<br>5L:5m<br>□L:□m                  |  |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management   | CT-SC: Cable track - Self-standing cable |  |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction                              | *     | See P.11, P.353 |
| AQ seal (standard equipment)                             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2                                     | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism *4                   | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
  Please refer to P.11 for more information.
- Please refer to P.11 for more information.

  3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*Cannot be selected for High-Precision Specification.

  \*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.

- Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |  |  |  |  |  |
| Lost motion               | 0.05mm [0.02mm] or less                          |  |  |  |  |  |
| Guide                     | Integrated with base                             |  |  |  |  |  |
| Base                      | Material: Aluminum with white alumite treatment  |  |  |  |  |  |
| X-axis motor output/lead  | 200W/20mm  |  |  |  |  |  |
| Y-axis motor output/lead  | 100W/20mm  |  |  |  |  |  |
| Z-axis motor output/lead  | 60W/8mm (M), 4mm (L)                             |  |  |  |  |  |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



## ■BD□HS1M

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~500       |
|               | 100 | 4.3           |
| ۵             | 150 | 3.9           |
| Z-axis stroke | 200 | 3.5           |
| is st         | 250 | 3.1           |
| -axi          | 300 | 2.8           |
| Z             | 350 | 2.4           |
|               | 400 | 2.1           |

## ■BD□HS1L

|               |     | Y-axis stroke |  |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|--|
|               |     | 100~500       |  |  |  |  |  |  |
|               | 100 | 11.3          |  |  |  |  |  |  |
| ٥             | 150 | 10.9          |  |  |  |  |  |  |
| Z-axis stroke | 200 | 10.5          |  |  |  |  |  |  |
| s st          | 250 | 10.1          |  |  |  |  |  |  |
| -axi          | 300 | 9.8           |  |  |  |  |  |  |
| Z             | 350 | 9.4           |  |  |  |  |  |  |
|               | 400 | 9.1           |  |  |  |  |  |  |

## Maximum Speed by Stroke (mm/s) (Note 4)

## ■BD□HS1M

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | 1200    |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis |         |         |          |      |      |      | _    |      |      |      |      |      |
| Z-axis | 480     |         |          |      |      |      | _    |      |      |      |      |      |

#### **■**BD□HS1L

|   |        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|---|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| П | X-axis | 1200    |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 550  | 450  |
| П | Y-axis |         |         |          |      |      |      | _    |      |      |      |      |      |
|   | Z-axis | 240     |         |          | _    |      |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BD□HS1□-CT-SC (Cable track - Self-standing cable specification)

## Dimensions

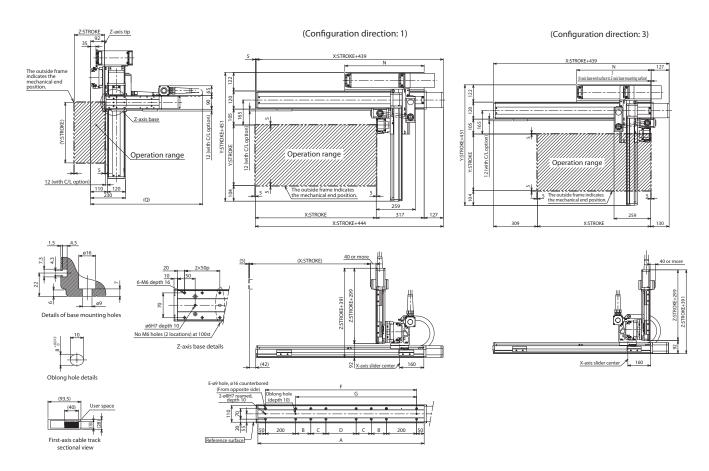
CAD drawings can be downloaded from our website.







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| X-axis stroke | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A             | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
| В             | 200  | 200  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 200  | 200  | 200  |
| C             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 400  | 450  | 500  |
| D             | 200  | 300  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  |
| E             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   |
| F             | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 |
| G             | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
| N             | 525  | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 |

| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |
|---------------|------|------|------|------|------|------|------|------|------|
| 100           | 700  | 700  | 750  | 750  | 800  | 800  | 800  | 850  | 850  |
| 150           | 750  | 750  | 800  | 800  | 850  | 850  | 850  | 900  | 900  |
| 200           | 800  | 800  | 850  | 850  | 900  | 900  | 900  | 950  | 950  |
| 250           | 850  | 850  | 900  | 900  | 950  | 950  | 950  | 1000 | 1000 |
| 300           | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 | 1050 | 1050 |
| 350           | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 | 1100 | 1100 |
| 400           | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 | 1150 | 1150 |



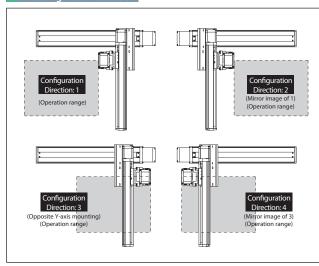
#### ICSB3-BD□HS3M XYB+ZS (Y Base Mount Z Slider) X: Md (200W) Y: Md (100W) Z: Md (200W) Battery-less X-Y-Z Absolute ±5µm High-Precision ICSPB3-BD□HS3N Specification ■ Model Specification BD\BS3M - WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Battery-less 80:800mm Refer to 10:100mm Ref Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-a Length 3L: 3m Re 5L: 5m Eq DL: Specified Mo Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat Refer to XSEL-RA/SA length precision : specificati

## Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BD1HS3M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 2                                | М                          | ICSB3[ICSPB3]-BD2HS3M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BD3HS3M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 4                                | М                          | ICSB3[ICSPB3]-BD4HS3M-①-② ③-① ⑤-⑥ ⑦BNM-T2-⑥-⑨ |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

## XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXMX-①-200-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-20-④-T2-⑩-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦  | → Please contact IAI for more details |
|              |                                  |                                       |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for lacktriangle through lacktriangle in the above model names. Note that the strokes are indicated in mm (millimeters).
- Cable exit direction is specified with 1 in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                                 |  |  |  |  |  |
|-----|----------------------------------|--|--|--|--|--|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 80: 800mm<br>200: 2000mm                 |  |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.            |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm                                |  |  |  |  |  |
| 5   | Y-axis option                    | Refer to Options table below.            |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                                |  |  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.            |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                  |  |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | CT-SC: Cable track - Self-standing cable |  |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| when selecting multiple options, specify them in <u>uphrabeteur order</u> . |       |                 |  |  |  |  |  |  |  |  |
|---|-------|-----------------|--|--|--|--|--|--|--|--|
| Туре  | Model | Reference page  |  |  |  |  |  |  |  |  |
| X-axis cable exit direction   | *     | See P.11, P.353 |  |  |  |  |  |  |  |  |
| AQ seal (standard equipment)  | AQ    | See P.353       |  |  |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                                   | В     | See P.353       |  |  |  |  |  |  |  |  |
| Creep sensor *2   | C/CL  | See P.353       |  |  |  |  |  |  |  |  |
| Home limit switch *2  | L/LL  | See P.353       |  |  |  |  |  |  |  |  |
| Non-motor end specification *3 (standard Z-axis setting)                    | NM    | See P.353       |  |  |  |  |  |  |  |  |
| Guide with ball-retaining mechanism *4                                      | RT    | See P.354       |  |  |  |  |  |  |  |  |
|   |       |                 |  |  |  |  |  |  |  |  |

- \*\* IB Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

  \*\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*\*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*\*4 Cannot be selected for High-Precision Specification.

  \*\*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Y-axis motor output/lead  | 100W/20mm  |
| Z-axis motor output/lead  | 200W/10mm  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



## ■BD□HS3M

|        |     |         | Y-axis stroke |      |                |      |      |      |      |     |  |  |  |  |  |  |  |
|--------|-----|---------|---------------|------|----------------|------|------|------|------|-----|--|--|--|--|--|--|--|
|        |     | 100     | 150           | 200  | 250            | 300  | 350  | 400  | 450  | 500 |  |  |  |  |  |  |  |
|        | 100 | 13.2    | 13.2          | 13.1 | 13.1           | 13.1 | 13.1 | 13.1 | 11.6 | 9.3 |  |  |  |  |  |  |  |
| a      | 150 | 12.6    | 12.5          | 12.5 | 12.5 12.5 12.5 |      | 12.4 | 12.4 | 10.9 | 8.6 |  |  |  |  |  |  |  |
| stroke | 200 | 12.0    | 12.0          | 12.0 | 11.9           | 11.9 | 11.9 | 11.9 | 10.3 | 8.0 |  |  |  |  |  |  |  |
| s st   | 250 | 11.4    | 11.4          | 11.3 | 11.3           | 11.3 | 11.3 | 11.3 | 9.6  | 7.3 |  |  |  |  |  |  |  |
| -axis  | 300 | 10.8    | 10.8          | 10.8 | 10.8           | 10.8 | 10.7 | 10.7 | 9.0  | 6.7 |  |  |  |  |  |  |  |
| -Z     | 350 | 10.3    | 10.3          | 10.3 | 10.2           | 10.2 | 10.2 | 10.2 | 8.4  | 6.1 |  |  |  |  |  |  |  |
|        | 400 | 9.8 9.7 |               | 9.7  | 9.7            | 9.7  | 9.7  | 9.6  | 7.8  | 5.5 |  |  |  |  |  |  |  |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**BD□HS3M

|        | 100~400 | 450~500 | 800~1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|---------|---------|----------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200     | 1100 | 1000 | 950  | 800  | 700  | 600  | 550  | 500  | 450  |
| Y-axis | 1200    |         |          |      |      |      | _    |      |      |      |      |      |
| Z-axis | 600     |         |          |      |      |      | _    |      |      |      |      |      |

# ICSB3 [ICSPB3]-BD□HS3M□-CT-SC (Cable track - Self-standing cable specification)

## Dimensions

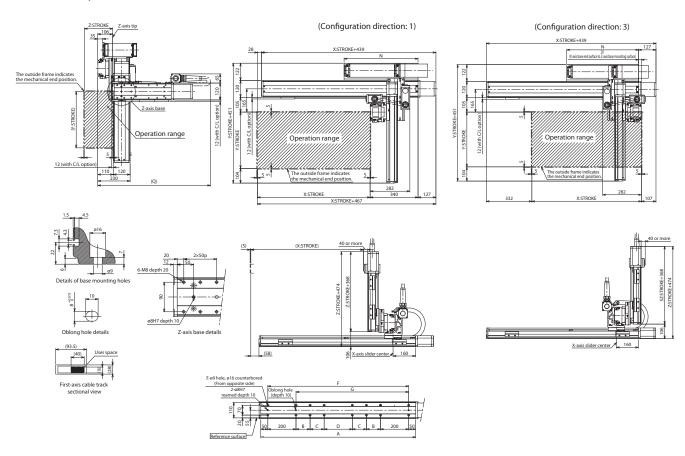
CAD drawings can be downloaded from our website.







\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

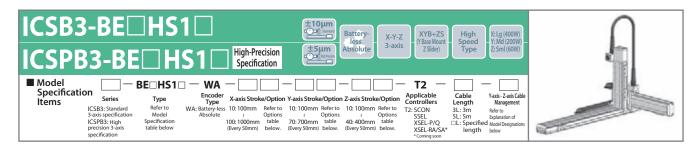


| X-axis stroke | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A             | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
| В             | 200  | 200  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 200  | 200  | 200  |
| С             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 400  | 450  | 500  |
| D             | 200  | 300  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  |
| E             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   |
| F             | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 |
| G             | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
| N             | 525  | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 |

| 0 | dime  | ension  |
|---|-------|---------|
| V | dilli | 1131011 |

| Z-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |
|--------|------|------|------|------|------|------|------|------|------|
| 100    | 750  | 750  | 800  | 800  | 850  | 850  | 900  | 900  | 950  |
| 150    | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 |
| 200    | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 |
| 250    | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 |
| 300    | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 |
| 350    | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 |
| 400    | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 |
|        |      |      |      |      |      |      |      |      |      |

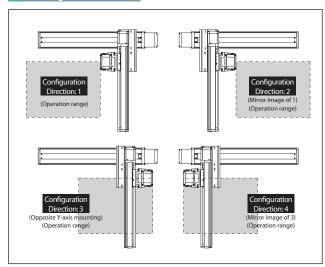




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BE1HS1M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨    |
| '                                | L                          | ICSB3[ICSPB3]-BE1HS1L-1]-23-43-67BNM-T2-8-9   |
| 2                                | М                          | ICSB3[ICSPB3]-BE2HS1M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨    |
| 2                                | L                          | ICSB3[ICSPB3]-BE2HS1L-①-② 3-4 3-6 7BNM-T2-8-9 |
| 3                                | М                          | ICSB3[ICSPB3]-BE3HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | L                          | ICSB3[ICSPB3]-BE3HS1L-1]-23-43-6              |
| 4                                | М                          | ICSB3[ICSPB3]-BE4HS1M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨    |
| 4                                | L                          | ICSB3[ICSPB3]-BE4HS1L-1]-23-43-67BNM-T2-8-9   |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXM-①-400-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |

- \*Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \*Lead is specified with 10 in the above model names.

  8: For Z-axis Medium Speed type
  4: For Z-axis Low Speed type

- \* Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation   |  |  |  |  |  |
|-----|----------------------------------|--|--|--|--|--|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>100: 1000mm                         |  |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.                    |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm  |  |  |  |  |  |
| 5   | Y-axis option                    | Refer to Options table below.                    |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |  |  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.                    |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |  |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |  |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| men selecting manaple options, specify them in <u>appropertient order</u> . |                                 |  |  |  |  |  |  |
|---|---------------------------------|--|--|--|--|--|--|
| Model   | Reference page                  |  |  |  |  |  |  |
| *   | See P.11, P.353                 |  |  |  |  |  |  |
| AQ  | See P.353                       |  |  |  |  |  |  |
| В   | See P.353                       |  |  |  |  |  |  |
| C/CL  | See P.353                       |  |  |  |  |  |  |
| L/LL  | See P.353                       |  |  |  |  |  |  |
| NM  | See P.353                       |  |  |  |  |  |  |
| RT  | See P.354                       |  |  |  |  |  |  |
|   | Model  *  AQ  B  C/CL  L/LL  NM |  |  |  |  |  |  |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the
- mental position. Please refer to P.11 for more information.

  Please refer to P.11 for more information.

  3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.
- \*4 Cannot be selected for High-Precision Specification.
- \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

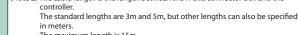
## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 400W/20mm  |
| Y-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 60W/8mm (M), 4mm (L)                             |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the



The maximum length is 15m. (Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.





#### ■BE□HS1M

| ■DL□1131IWI |               |     |               |  |  |  |  |  |
|-------------|---------------|-----|---------------|--|--|--|--|--|
|             |               |     | Y-axis stroke |  |  |  |  |  |
|             |               |     | 100~700       |  |  |  |  |  |
|             |               | 100 | 4.3           |  |  |  |  |  |
|             | a             | 150 | 3.9           |  |  |  |  |  |
|             | ş             | 200 | 3.5           |  |  |  |  |  |
|             | Z-axis stroke | 250 | 3.1           |  |  |  |  |  |
|             | -axi          | 300 | 2.8           |  |  |  |  |  |
|             | Z             | 350 | 2.4           |  |  |  |  |  |
|             |               | 400 | 2.1           |  |  |  |  |  |

## ■BE□HS1L

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~700       |
|               | 100 | 11.3          |
| a             | 150 | 10.9          |
| š             | 200 | 10.5          |
| Z-axis stroke | 250 | 10.1          |
| -a×           | 300 | 9.8           |
| 7             | 350 | 9.4           |
|               | 400 | 9.1           |

## Maximum Speed by Stroke (mm/s) (Note 4)

## ■BE□HS1M

|        | 100~400 | 450~700 | 750~800 | 850~900 | 950~1000 |  |  |  |  |
|--------|---------|---------|---------|---------|----------|--|--|--|--|
| X-axis |         | 1200    |         | 920 76  |          |  |  |  |  |
| Y-axis | 12      | 00      |         | _       |          |  |  |  |  |
| Z-axis | 480     |         | _       | _       |          |  |  |  |  |

## ■BE□HS1L

|        | 100~400 | 450~700 | 750~800 | 850~900 | 950~1000 |  |  |  |  |
|--------|---------|---------|---------|---------|----------|--|--|--|--|
| X-axis |         | 1200    |         | 920     |          |  |  |  |  |
| Y-axis | 12      | 00      |         | _       |          |  |  |  |  |
| Z-axis | 240     | _       |         |         |          |  |  |  |  |

# ICSB3 [ICSPB3]-BE□HS1□-SC-SC (Self-standing cable specification)

## Dimensions

CAD drawings can be



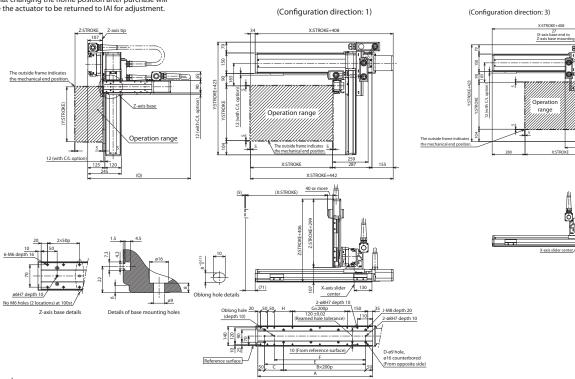




\* The configuration position in the figure is the home position.

To change the home position, indicate NM in the options.

Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Q difficilision | 2 differision |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Z-axis Y-axis   | 100           | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
| 100             | 700           | 750  | 750  | 750  | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 950  |
| 150             | 750           | 800  | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 |
| 200             | 800           | 850  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 |
| 250             | 850           | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 |
| 300             | 900           | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1150 |
| 350             | 950           | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1200 |
| 400             | 1000          | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1250 |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| Α             | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 |
| В             | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| C             | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 |
| F             | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |



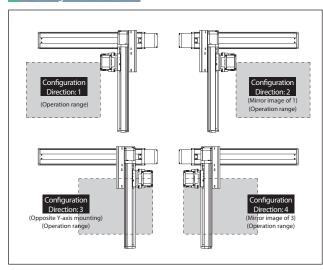
#### ICSB3-BE□HS3M Battery-less Absolute X: Lg (400W) Y: Md (200W) Z: Md (200W) XYB+ZS Y Base Moun X-Y-Z Z Slider) Type ±5μm High-Precision CSPB3-BE HS3M High-Precision Specification ■ Model Specification BE BS3M WA **T2** Encoder Type A-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Delatery-less in Collodom Absolute Options Option Pafer to 10: 100mm Refer to 10: 100mm Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Y-a Length 3L: 3m Ref 5L: 5m Exp □L: Specified Mo Series Y-axis - Z-axis Cab Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat Refer to XSEL-RA/SA length precision : specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                       |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BE1HS3M-①-②③-④⑤-⑥⑦BNM-T2-⑥-⑨  |
| 2                                | М                          | ICSB3[ICSPB3]-BE2HS3M-1]-23-43-67BNM-T2-6-9 |
| 3                                | М                          | ICSB3[ICSPB3]-BE3HS3M-①-②③-④⑤-⑥⑦BNM-T2-⑥-⑨  |
| 4                                | М                          | ICSB3[ICSPB3]-BE4HS3M-①-23-43-67BNM-T2-0-9  |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXM-①-400-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \*Cable exit direction is specified with ⑩ in the above model names.

  Please refer to P.11 for the exit directions.

## **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                        |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm  |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm                      |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |  |  |
|--|-------|-----------------|--|--|
| X-axis cable exit direction                              | *     | See P.11, P.353 |  |  |
| AQ seal (standard equipment)                             | AQ    | See P.353       |  |  |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |  |  |
| Creep sensor *2  | C/CL  | See P.353       |  |  |
| Home limit switch *2                                     | L/LL  | See P.353       |  |  |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |  |  |
| Guide with ball-retaining mechanism *4                   | RT    | See P.354       |  |  |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the
- direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of t mounting position.

  Please refer to P.11 for more information.

  \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*4 Cannot be selected for High-Precision Specification.
- \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis

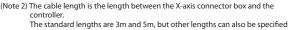
## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 400W/20mm  |
| Y-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 200W/10mm  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



## ■BE□HS3M

|               |     | Y-axis stroke |      |
|---------------|-----|---------------|------|
|               |     | 100~650       | 700  |
|               | 100 | 14.3          | 12.3 |
| a             | 150 | 13.6          | 11.6 |
| rok           | 200 | 13.0          | 11.0 |
| Z-axis stroke | 250 | 12.3          | 10.3 |
| -ax           | 300 | 11.7          | 9.7  |
| Z             | 350 | 11.1          | 9.1  |
|               | 400 | 10.5          | 8.5  |
|               |     |               |      |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BE□HS3M

|        | 100~400 | 450~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|----------|
| X-axis |         | 1200    | 920     | 765     |          |
| Y-axis | 12      | 00      |         | _       |          |
| 7-axis | 600     |         | _       | _       |          |

# ICSB3 [ICSPB3]-BE□HS3M□-SC-SC (Self-standing cable specification)

## Dimensions

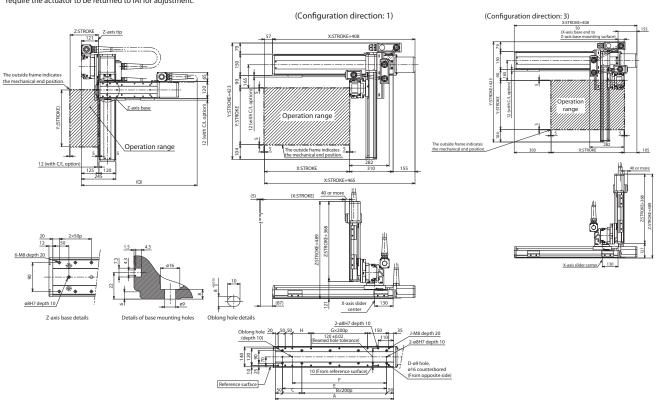
CAD drawings can be downloaded from our website.







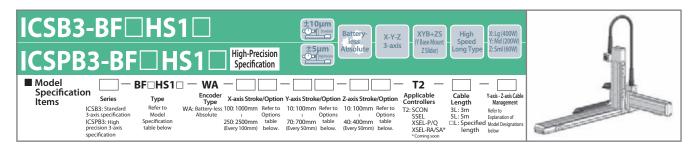
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 100           | 750  | 800  | 800  | 850  | 850  | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 |
| 150           | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 |
| 200           | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 |
| 250           | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 |
| 300           | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 |
| 350           | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 |
| 400           | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| Α             | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 |
| В             | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| C             | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 238 | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 |
| F             | 168 | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 |
| G             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    |
| Н             | 33  | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  |
| J             | 10  | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   |

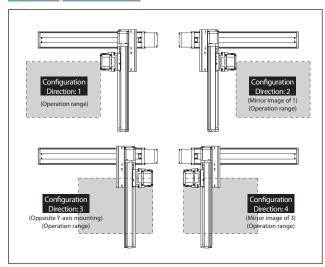




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BF1HS1M-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| '                                | L                          | ICSB3[ICSPB3]-BF1HS1L-1]-23-45-67BNM-T2-8-9   |
| 2                                | М                          | ICSB3[ICSPB3]-BF2HS1M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨    |
| 2                                | L                          | ICSB3[ICSPB3]-BF2HS1L-①-②③-④⑤-⑥               |
| 3                                | М                          | ICSB3[ICSPB3]-BF3HS1M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨    |
| 3                                | L                          | ICSB3[ICSPB3]-BF3HS1L-1]-23-45-67BNM-T2-8-9   |
| 4                                | М                          | ICSB3[ICSPB3]-BF4HS1M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨    |
| 4                                | L                          | ICSB3[ICSPB3]-BF4HS1L-1]-23-43-67BNM-T2-8-9   |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                               | Reference page                        |
|--------------|-------------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXMX-10-400-20-20-T2-10-3 | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-①-⑤     | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-SXM-①-60-⑩-⑥-T2-①-⑦       | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for  $\bigcirc$  through  $\bigcirc$  in the above model names.
- Note that the strokes are indicated in mm (millimeters).
- Lead is specified with 100 in the above model names. 8: For Z-axis Medium Speed type 4: For Z-axis Low Speed type
- \*Cable exit direction is specified with [1] in the above model names. Please refer to P.11 for the exit directions.

## **Explanation of Model Designations**

| No. | Description                      | Notation                                 |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                |
| 2   | X-axis stroke<br>(Note 1)        | 100: 1000mm<br>250: 2500mm               |
| 3   | X-axis option                    | Refer to Options table below.            |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm              |
| (5) | Y-axis option                    | Refer to Options table below.            |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                                |
| 7   | Z-axis option                    | Refer to Options table below.            |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                  |
| 9   | Y-axis - Z-axis Cable Management | CT-SC: Cable track - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Model | Reference page                |
|-------|-------------------------------|
| *     | See P.11, P.353               |
| AQ    | See P.353                     |
| В     | See P.353                     |
| C/CL  | See P.353                     |
| L/LL  | See P.353                     |
| NM    | See P.353                     |
| RT    | See P.354                     |
|       | AQ<br>B<br>C/CL<br>L/LL<br>NM |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the direction, but the creep sensor is specified in the model name as C and the notine intime switch as Engagement of the mounting position.

  Please refer to P.11 for more information.

  \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*4 Cannot be selected for High-Precision Specification.

  \*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.

- Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 400W/20mm  |
| Y-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 60W/8mm (M), 4mm (L)                             |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.2G for Z-axis lead 4, and 0.4G for all others. The payload is based on operation at the rated acceleration. When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■BF□HS1M

|               | 1 1113 | 1141          |
|---------------|--------|---------------|
|               |        | Y-axis stroke |
|               |        | 100~700       |
|               | 100    | 4.3           |
| a             | 150    | 3.9           |
| Š             | 200    | 3.5           |
| Z-axis stroke | 250    | 3.1           |
| -axi          | 300    | 2.8           |
| Z             | 350    | 2.4           |
|               | 400    | 2.1           |

## **■**BF□HS1L

|  |               | _   | Y-axis stroke |
|--|---------------|-----|---------------|
|  |               |     | 100~700       |
|  |               | 100 | 11.3          |
|  | a             | 150 | 10.9          |
|  | Z-axis stroke | 200 | 10.5          |
|  |               | 250 | 10.1          |
|  |               | 300 | 9.8           |
|  | 7             | 350 | 9.4           |
|  |               | 400 | 9.1           |

## Maximum Speed by Stroke (mm/s) (Note 4)

## **■**BF□HS1M

|        | 100~400 | 450~700 | 1,000~1,200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 1200        | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 1200    |         |             |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 480     |         |             |      |      |      |      |      | _    |      |      |      |      |      |      |      |

## **■**BF□HS1L

|        | 100~400 | 450~700 | 1,000~1,200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis |         | _       | 1200        | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 1200    |         |             |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 240     |         |             |      |      |      |      |      | _    |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BF□HS1□-CT-SC (Cable track - Self-standing cable specification)

#### Dimensions

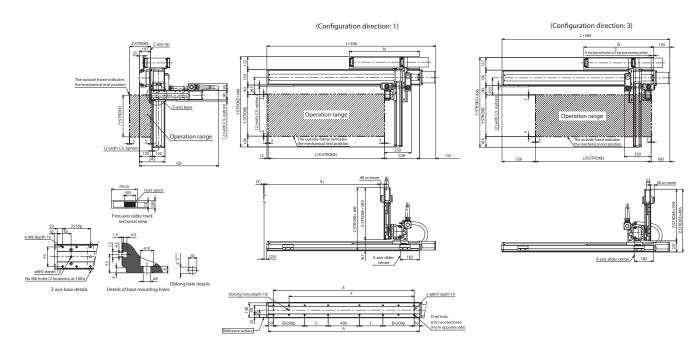
CAD drawings can be downloaded from our web





## RoHS

\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 100           | 700  | 750  | 750  | 750  | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 950  |
| 150           | 750  | 800  | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 |
| 200           | 800  | 850  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 |
| 250           | 850  | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 |
| 300           | 900  | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1150 |
| 350           | 950  | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1200 |
| 400           | 1000 | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1250 |
|               |      |      |      |      |      |      |      |      |      |      |      |      |      |

| L         1014         1114         1214         1314         1414         1514         1614         1714         1814         1914         2014         2214         2214         2314         2414         2514           A         1350         1450         1550         1650         1750         1850         1950         2050         2150         2250         2350         2450         2550 <th>X-axis stroke</th> <th>1000</th> <th>1100</th> <th>1200</th> <th>1300</th> <th>1400</th> <th>1500</th> <th>1600</th> <th>1700</th> <th>1800</th> <th>1900</th> <th>2000</th> <th>2100</th> <th>2200</th> <th>2300</th> <th>2400</th> <th>2500</th> | X-axis stroke | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| B 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 3 3 3 3  | L             | 1014 | 1114 | 1214 | 1314 | 1414 | 1514 | 1614 | 1714 | 1814 | 1914 | 2014 | 2114 | 2214 | 2314 | 2414 | 2514 |
| D 12 12 12 12 12 12 12 12 12 12 12 12 16 16 16 20 20 20 20 E 1250 1350 1450 1550 1650 1750 1850 1950 2050 2150 2250 2350 2450 2550 2650 2750   | Α             | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 | 2850 |
| D 12 12 12 12 12 12 12 12 12 12 12 12 16 16 16 20 20 20 20 E 1250 1350 1450 1550 1650 1750 1850 1950 2050 2150 2250 2350 2450 2550 2650 2750   | В             | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    |
| E 1250 1350 1450 1550 1650 1750 1850 1950 2050 2150 2250 2350 2450 2550 2650 2750  | C             | 225  | 275  | 325  | 375  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  |
|  | D             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   | 16   | 20   | 20   | 20   | 20   |
| F 1050 1150 1350 1350 1450 1550 1450 1750 1050 1050 2050 2350 2350 2450 2550   | Е             | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 |
| F   1030   1130   1230   1330   1430   1330   1630   1750   1850   1950   2050   2150   2250   2350   2450   2550  | F             | 1050 | 1150 | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 |
| N 625 675 725 775 825 875 925 975 1025 1075 1125 1175 1225 1275 1325 1375  | N             | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



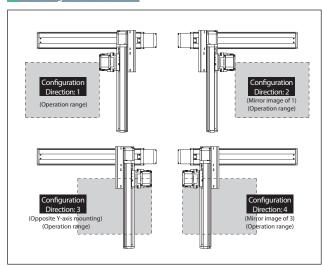
#### ICSB3-BF□HS3M Battery-less Absolute XYB+ZS (Y Base Mount Z Slider) X: Lg (400W) Y: Md (200W) Z: Md (200W) X-Y-Z ±5μm ⊕րթե High-Precision CSPB3-BF HS3M High-Precision Specification ■ Model Specification BF HS3M WA **T2** Encoder Type X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Delay. Absolute Options Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length 3L: 3m 5L: 5m Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat 3L: 3m Re 5L: 5m Er □L: Specified M Refer to XSEL-RA/SA length precision : specificati

### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                       |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BF1HS3M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨  |
| 2                                | M                          | ICSB3[ICSPB3]-BF2HS3M-1]-23-43-67BNM-T2-8-9 |
| 3                                | M                          | ICSB3[ICSPB3]-BF3HS3M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨  |
| 4                                | М                          | ICSB3[ICSPB3]-BF4HS3M-1]-23-45-67BNM-T2-8-9 |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXMX-①-400-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-200-20-④-T2-⑩-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-10-⑥-T2-⑩-⑦  | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names.

  Note that the strokes are indicated in mm (millimeters).
- Cable exit direction is specified with fine in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                                 |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                |
| 2   | X-axis stroke<br>(Note 1)        | 100: 1000mm<br>250: 2500mm               |
| 3   | X-axis option                    | Refer to Options table below.            |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm              |
| (5) | Y-axis option                    | Refer to Options table below.            |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                                |
| 7   | Z-axis option                    | Refer to Options table below.            |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                  |
| 9   | Y-axis - Z-axis Cable Management | CT-SC: Cable track - Self-standing cable |

## Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction                              | *     | See P.11, P.353 |
| AQ seal (standard equipment)                             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2                                     | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism *4                   | RT    | See P.354       |

- "I Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

  "2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.

  "3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  "4 Cannot be selected for High-Precision Specification.

  "5 oset a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.

  Please refer to P.11 for the cable exit direction of each axis.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 400W/20mm  |
| Y-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 200W/10mm  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



## **■**BF□HS3M

|               |     | Y-axis stroke |      |  |  |
|---------------|-----|---------------|------|--|--|
|               |     | 100~650       | 700  |  |  |
|               | 100 | 14.3          | 12.3 |  |  |
| س ا           | 150 | 13.6          | 11.6 |  |  |
| Z-axis stroke | 200 | 13.0          | 11.0 |  |  |
| sst           | 250 | 12.3          | 10.3 |  |  |
| -ax           | 300 | 11.7          | 9.7  |  |  |
| 7             | 350 | 11.1          | 9.1  |  |  |
|               | 400 | 10.5          | 8.5  |  |  |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### **■**BF□HS3M

|        | 100~400 | 450~700 | 1,000~1,200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | -       | _       | 1200        | 1150 | 1000 | 950  | 830  | 740  | 650  | 590  | 540  | 490  | 440  | 410  | 370  | 340  |
| Y-axis | 1200    |         |             |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 600     |         |             |      |      |      |      |      | _    |      |      |      |      |      |      |      |

# ICSB3 [ICSPB3]-BF□HS3M-CT-SC (Cable track - Self-standing cable specification)

#### Dimensions

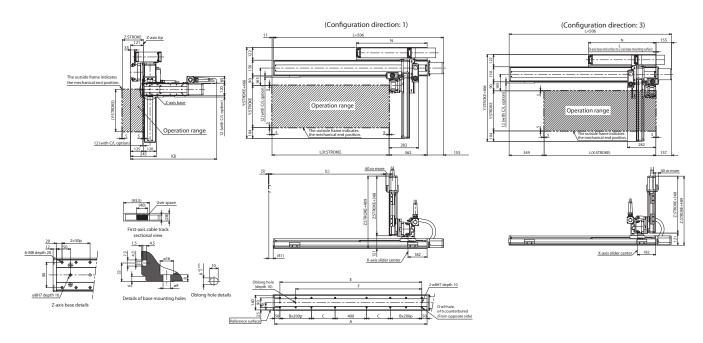
CAD drawings can be downloaded from our website.





## RoHS

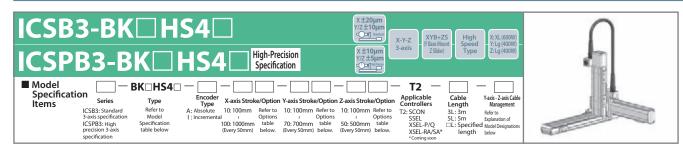
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 100           | 750  | 800  | 800  | 850  | 850  | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 |
| 150           | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 |
| 200           | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 |
| 250           | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 |
| 300           | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 |
| 350           | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 |
| 400           | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 |

| - 1 | X-axis stroke | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|-----|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|     | L             | 1014 | 1114 | 1214 | 1314 | 1414 | 1514 | 1614 | 1714 | 1814 | 1914 | 2014 | 2114 | 2214 | 2314 | 2414 | 2514 |
|     | Α             | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 | 2850 |
|     | В             | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    |
|     | С             | 225  | 275  | 325  | 375  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  | 425  | 475  | 525  | 575  |
|     | D             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 16   | 16   | 16   | 16   | 20   | 20   | 20   | 20   |
|     | E             | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 | 2650 | 2750 |
|     | F             | 1050 | 1150 | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 | 1950 | 2050 | 2150 | 2250 | 2350 | 2450 | 2550 |
|     | N             | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |

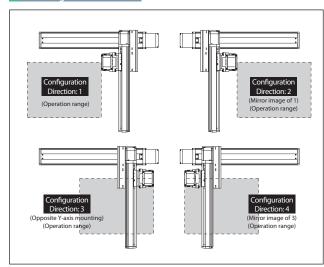




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | Н                          | ICSB3[ICSPB3]-BK1HS4H-①-23-43-67BNM-T2-8-9    |
| '                                | M                          | ICSB3[ICSPB3]-BK1HS4M-①-② ③-④ ⑤-⑥ ØBNM-T2-⑧-⑨ |
| 2                                | Н                          | ICSB3[ICSPB3]-BK2HS4H-①-②③-④⑤-⑥⑦BNM-T2-⑥-⑨    |
| 2                                | M                          | ICSB3[ICSPB3]-BK2HS4M-①-② 3-④ 3-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | Н                          | ICSB3[ICSPB3]-BK3HS4H-①-23-43-67BNM-T2-8-9    |
| 3                                | M                          | ICSB3[ICSPB3]-BK3HS4M-①-② ③-④ ⑤-⑥ ØBNM-T2-⑧-⑨ |
| 4                                | Н                          | ICSB3[ICSPB3]-BK4HS4H-①-②③-④⑤-⑥⑦BNM-T2-⑥-⑨    |
| 4                                | М                          | ICSB3[ICSPB3]-BK4HS4M-11-23-45-67BNM-T2-8-9   |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXM-①-600-40-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-40-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-⑩-⑥-T2-①-⑦  | → Please contact IAI for more details |
|              |                                 |                                       |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

Note that the strokes are indicated in mm (millimeters).

## **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental                    |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>¿<br>100: 1000mm                    |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm                      |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm                      |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |  |  |
|--|-------|-----------------|--|--|
| X-axis cable exit direction *                            | A1/A3 | See P.11, P.353 |  |  |
| AQ seal (equipped as standard on Y/Z-axis)               | AQ    | See P.353       |  |  |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |  |  |
| Creep sensor *2  | C/CL  | See P.353       |  |  |
| Home limit switch *2 (equipped as standard on X-axis)    | L/LL  | See P.353       |  |  |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |  |  |
| Guide with ball-retaining mechanism (Y/Z-axis only)      | RT    | See P.354       |  |  |

<sup>\*1</sup> Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/40mm   |
| Y-axis motor output/lead  | 400W/40mm   |
| Z-axis motor output/lead  | 400W/20mm (H), 10mm (M)   |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters). (Note 2) The cable length is the length between the X-axis connector box and the



controller. The standard lengths are 3m and 5m, but other lengths can also be specified

in meters.
The maximum length is 20m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.
When the acceleration is increased, the payload will be reduced.

(Note 4) Please note that a longer stroke will result in a lower max speed.

Note that the strokes are indicated in finit (minimeters).

\*Lead is specified with [10] in the above model names.

20. For Z-axis High Speed type

10. For Z-axis Medium Speed type

\*Cable exit direction is specified with [10] in the above model names.

Please refer to P.11 for the exit directions.

To lake option from 1-ass increases the length of the motor than, the assection factor to details.

2. When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

Please refer to P.11 for more information.

Trisase feet (0.1.1) for index information.

3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

\* Please refer to P.11 for the X-axis cable exit direction.



#### ■BK□HS4H

|               |     | •••           |  |  |  |  |  |  |  |
|---------------|-----|---------------|--|--|--|--|--|--|--|
|               |     | Y-axis stroke |  |  |  |  |  |  |  |
|               |     | 100~700       |  |  |  |  |  |  |  |
|               | 100 | 12.0          |  |  |  |  |  |  |  |
|               | 150 | 11.1          |  |  |  |  |  |  |  |
| a             | 200 | 10.2          |  |  |  |  |  |  |  |
| rok           | 250 | 9.3           |  |  |  |  |  |  |  |
| Z-axis stroke | 300 | 8.5           |  |  |  |  |  |  |  |
| -axi          | 350 | 7.6           |  |  |  |  |  |  |  |
| Z             | 400 | 6.8           |  |  |  |  |  |  |  |
|               | 450 | 5.9           |  |  |  |  |  |  |  |
|               | 500 | 5.0           |  |  |  |  |  |  |  |

## ■BK□HS4M

|        |     |      |      |      |      |      | ,    | ∕-axis strok | e    |      |      |      |      |      |
|--------|-----|------|------|------|------|------|------|--------------|------|------|------|------|------|------|
|        |     | 100  | 150  | 200  | 250  | 300  | 350  | 400          | 450  | 500  | 550  | 600  | 650  | 700  |
|        | 100 | 25.1 | 24.4 | 23.5 | 22.7 | 21.9 | 21.1 | 20.3         | 19.4 | 18.6 | 17.7 | 17.0 | 16.1 | 15.3 |
|        | 150 | 24.3 | 23.6 | 22.7 | 21.9 | 21.1 | 20.3 | 19.5         | 18.6 | 17.8 | 16.9 | 16.2 | 15.3 | 14.5 |
| a      | 200 | 23.4 | 22.8 | 21.9 | 21.1 | 20.3 | 19.4 | 18.7         | 17.8 | 17.0 | 16.1 | 15.3 | 14.5 | 13.7 |
| ctroke | 250 | 22.6 | 22.0 | 21.1 | 20.3 | 19.5 | 18.6 | 17.9         | 17.0 | 16.2 | 15.3 | 14.5 | 13.7 | 12.9 |
| 5      | 300 | 21.9 | 21.2 | 20.4 | 19.5 | 18.8 | 17.9 | 17.1         | 16.3 | 15.4 | 14.6 | 13.8 | 13.0 | 12.2 |
| i ×    | 350 | 21.1 | 20.4 | 19.6 | 18.7 | 18.0 | 17.1 | 16.3         | 15.5 | 14.6 | 13.8 | 13.0 | 12.2 | 11.4 |
| 7      | 400 | 20.4 | 19.7 | 18.9 | 18.0 | 17.2 | 16.4 | 15.6         | 14.8 | 13.9 | 13.1 | 12.3 | 11.4 | 10.7 |
|        | 450 | 19.6 | 18.9 | 18.0 | 17.2 | 16.4 | 15.6 | 14.8         | 14.0 | 13.1 | 12.2 | 11.5 | 10.6 | 9.9  |
|        | 500 | 18.8 | 18.1 | 17.2 | 16.4 | 15.6 | 14.8 | 14.0         | 13.1 | 12.3 | 11.4 | 10.7 | 9.8  | 9.0  |

## Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BK□HS4H

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 |  |  |  |
|--------|---------|---------|---------|---------|----------|--|--|--|
| X-axis |         | 2400    |         | 1840    | 1530     |  |  |  |
| Y-axis | 24      | 00      | _       |         |          |  |  |  |
| Z-axis | 1200    | _       |         |         |          |  |  |  |

#### ■BK□HS4M

|        | 100~500 | 550~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|----------|
| X-axis |         | 2400    | 1840    | 1530    |          |
| Y-axis | 24      | 00      |         | _       |          |
| Z-axis | 600     |         | _       |         |          |

# ICSB3 [ICSPB3]-BK□HS4□-SC-SC (Self-standing cable specification)

#### Dimensions

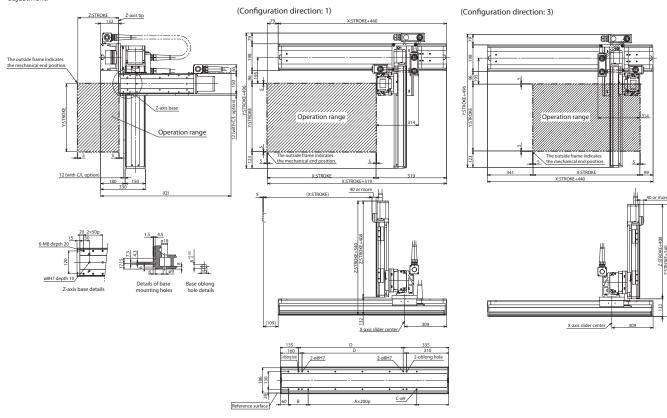
CAD drawings can be downloaded from our website.





## RoHS

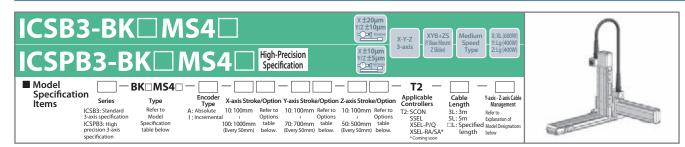
\*The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 100           | 850  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 |
| 150           | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 |
| 200           | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 |
| 250           | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 |
| 300           | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 |
| 350           | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 |
| 400           | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 |
| 450           | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 |
| 500           | 1250 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 | 1500 | 1500 |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Α             | 0   | 0   | - 1 | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 5    |
| В             | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  |
| С             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14   |
| D             | 70  | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970  |

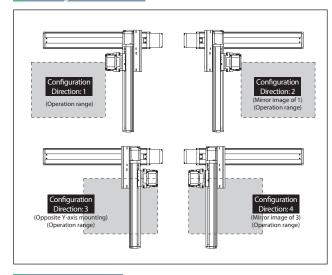




| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | Н                          | ICSB3[ICSPB3]-BK1MS4H-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| '                                | M                          | ICSB3[ICSPB3]-BK1MS4M-①-②③-④⑤-⑤BNM-T2-⑥-⑨     |
| 2                                | Н                          | ICSB3[ICSPB3]-BK2MS4H-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 2                                | M                          | ICSB3[ICSPB3]-BK2MS4M-①-② ③-④ ③-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | Н                          | ICSB3[ICSPB3]-BK3MS4H-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 3                                | М                          | ICSB3[ICSPB3]-BK3MS4M-①-② ③-④ ③-⑥ ⑦BNM-T2-⑧-⑨ |
| 4                                | Н                          | ICSB3[ICSPB3]-BK4MS4H-①-② ③-④ ⑤-⑦BNM-T2-⑧-⑨   |
| 4                                | М                          | ICSB3[ICSPB3]-BK4MS4M-①-②③-④⑤-⑦BNM-T2-⑧-⑨     |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXM-①-600-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-①-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-⑩-⑥-T2-①-⑦  | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \* Lead is specified with ⑩ in the above model names.

  20. For Z-axis High Speed type

  10: For Z-axis Medium Speed type

- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

## **Explanation of Model Designations**

| No. | Description                      | Notation   |  |  |  |  |  |
|-----|----------------------------------|--|--|--|--|--|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental                    |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>≀<br>100: 1000mm                    |  |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.                    |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>≀<br>70: 700mm                      |  |  |  |  |  |
| (5) | Y-axis option                    | Refer to Options table below.                    |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |  |  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.                    |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |  |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |  |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis.

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| <u> </u>   |       |                 |  |  |  |  |  |  |  |
|--|-------|-----------------|--|--|--|--|--|--|--|
| Туре   | Model | Reference page  |  |  |  |  |  |  |  |
| X-axis cable exit direction *                            | A1/A3 | See P.11, P.353 |  |  |  |  |  |  |  |
| AQ seal (equipped as standard on Y/Z-axis)               | AQ    | See P.353       |  |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |  |  |  |  |  |  |  |
| Creep sensor *2  | C/CL  | See P.353       |  |  |  |  |  |  |  |
| Home limit switch *2 (equipped as standard on X-axis)    | L/LL  | See P.353       |  |  |  |  |  |  |  |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |  |  |  |  |  |  |  |
| Guide with ball-retaining mechanism (Y/Z-axis only)      | RT    | See P.354       |  |  |  |  |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.

  Please refer to P.11 for more information.

  \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after rure-fase will require the actuator to be returned to All for adjustments.
- home position after purchase will require the actuator to be returned to IAI for adjustment.

  \* Please refer to P.11 for the X-axis cable exit direction.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/20mm   |
| Y-axis motor output/lead  | 400W/20mm   |
| Z-axis motor output/lead  | 400W/20mm (H), 10mm (M)   |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (Note 2) The cable length is the length between the X-axis connector box and the



- controller.
  The standard lengths are 3m and 5m, but other lengths can also be specified in meters.
  The maximum length is 20m.
- (Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated
- acceleration.

  When the acceleration is increased, the payload will be reduced.
- (Note 4) Please note that a longer stroke will result in a lower max speed.



## ■BK□MS4H

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~700       |
|               | 100 | 12.0          |
|               | 150 | 11.1          |
| a             | 200 | 10.2          |
| 支             | 250 | 9.3           |
| Z-axis stroke | 300 | 8.5           |
| -a×           | 350 | 7.6           |
| 7             | 400 | 6.8           |
|               | 450 | 5.9           |
|               | 500 | 5.0           |

## ■BK□MS4M

|        |     |         |      |      | Y-axis str | stroke |      |      |      |      |  |
|--------|-----|---------|------|------|------------|--------|------|------|------|------|--|
|        |     | 100~300 | 350  | 400  | 450        | 500    | 550  | 600  | 650  | 700  |  |
|        | 100 | 32.0    | 32.0 | 32.0 | 32.0       | 32.0   | 29.1 | 25.4 | 22.1 | 19.1 |  |
|        | 150 | 31.1    | 31.1 | 31.1 | 31.1       | 31.1   | 28.2 | 24.5 | 21.2 | 18.2 |  |
| ۵      | 200 | 30.2    | 30.2 | 30.2 | 30.2       | 30.2   | 27.3 | 23.6 | 20.3 | 17.3 |  |
| stroke | 250 | 29.3    | 29.3 | 29.3 | 29.3       | 29.3   | 26.4 | 22.7 | 19.4 | 16.4 |  |
| is st  | 300 | 28.5    | 28.5 | 28.5 | 28.5       | 28.5   | 25.6 | 21.9 | 18.6 | 15.6 |  |
| -axis  | 350 | 27.6    | 27.6 | 27.6 | 27.6       | 27.6   | 24.7 | 21.0 | 17.7 | 14.7 |  |
| -Z     | 400 | 26.8    | 26.4 | 26.0 | 25.5       | 25.1   | 23.9 | 20.2 | 16.9 | 13.9 |  |
|        | 450 | 23.5    | 235  | 23.5 | 235        | 23.2   | 22.8 | 19.3 | 16.0 | 13.0 |  |
|        | 500 | 19.2    | 19.2 | 19.2 | 19.2       | 19.2   | 19.2 | 18.4 | 15.1 | 12.1 |  |

## Maximum Speed by Stroke (mm/s) (Note 4)

## ■BK□MS4H

|        | 100~400 | 450~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|----------|
| X-axis |         | 1200    | 920     | 765     |          |
| Y-axis | 12      | 00      |         | _       |          |
| Z-axis | 1200    |         | _       |         |          |

## ■BK□MS4M

|        | 100~400 | 450~700 | 750~800 | 850~900 | 950~1000 |
|--------|---------|---------|---------|---------|----------|
| X-axis |         | 1200    | 920     | 765     |          |
| Y-axis | 12      | 00      |         | _       |          |
| Z-axis | 600     |         | _       | _       |          |

# ICSB3 [ICSPB3]-BK□MS4□-SC-SC (Self-standing cable specification)

## Dimensions

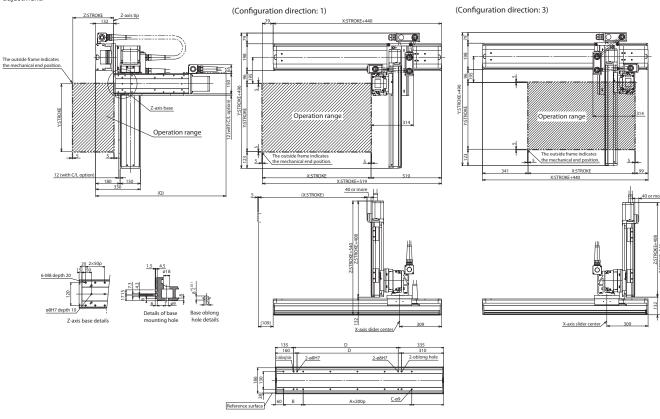
CAD drawings can be downloaded from our website.





## RoHS

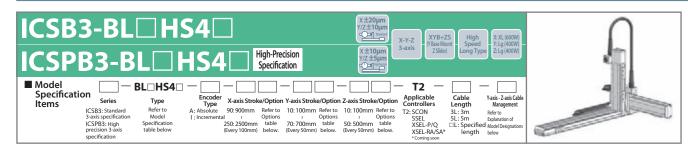
\*The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



| Q difficilision |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Z-axis Y-axis   | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |  |
| 100             | 850  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 |  |
| 150             | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 |  |
| 200             | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 |  |
| 250             | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 |  |
| 300             | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 |  |
| 350             | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 |  |
| 400             | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 |  |
| 450             | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 |  |
| 500             | 1250 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 | 1500 | 1500 |  |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Α             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 5    |
| В             | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145 | 195 | 245 | 295 | 145  |
| С             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14   |
| D             | 70  | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970  |

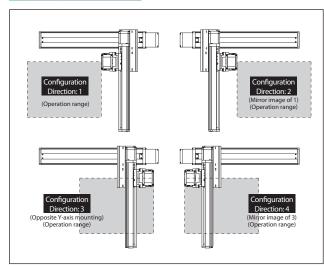




| XY configuration direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|-------------------------------|----------------------------|---|
| 1                             | Н                          | ICSB3[ICSPB3]-BL1HS4H-①-② ③-④ ③-⑥ ⑦BNM-T2-⑧-⑨ |
| '                             | М                          | ICSB3[ICSPB3]-BL1HS4M-①-23-45-67BNM-T2-8-9    |
| 2                             | Н                          | ICSB3[ICSPB3]-BL2HS4H-①-②③-④ ③-⑥              |
| 2                             | М                          | ICSB3[ICSPB3]-BL2HS4M-1]-23-45-67BNM-T2-8-9   |
| 3                             | Н                          | ICSB3[ICSPB3]-BL3HS4H-①-②③-④⑤-⑥⑦BNM-T2-⑥-⑨    |
| 3                             | М                          | ICSB3[ICSPB3]-BL3HS4M-①-23-43-67BNM-T2-8-9    |
| 4                             | Н                          | ICSB3[ICSPB3]-BL4HS4H-①-②③-④⑤-⑥/BNM-T2-⑥-⑨    |
| 4                             | М                          | ICSB3[ICSPB3]-BL4HS4M-1]-23-43-67BNM-T2-8-9   |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXMX-①-600-40-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-40-④-T2-①-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-⑩-⑥-T2-①-⑦   | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \* Lead is specified with ⑩ in the above model names.

  20. For Z-axis High Speed type

  10: For Z-axis Medium Speed type

- Cable exit direction is specified with in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                                 |
|-----|----------------------------------|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental            |
| 2   | X-axis stroke<br>(Note 1)        | 90: 900mm<br>≀<br>250: 2500mm            |
| 3   | X-axis option                    | Refer to Options table below.            |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm              |
| (5) | Y-axis option                    | Refer to Options table below.            |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                                |
| 7   | Z-axis option                    | Refer to Options table below.            |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                  |
| 9   | Y-axis - Z-axis Cable Management | CT-SC: Cable track - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number.

| when selecting multiple options, specify them in appraise transfer. |       |                 |  |  |  |  |  |  |  |
|---|-------|-----------------|--|--|--|--|--|--|--|
| Туре  | Model | Reference page  |  |  |  |  |  |  |  |
| X-axis cable exit direction *                                       | A1/A3 | See P.11, P.353 |  |  |  |  |  |  |  |
| AQ seal (equipped as standard on Y/Z-axis)                          | AQ    | See P.353       |  |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                           | В     | See P.353       |  |  |  |  |  |  |  |
| Creep sensor *2   | C/CL  | See P.353       |  |  |  |  |  |  |  |
| Home limit switch *2 (equipped as standard on X-axis)               | L/LL  | See P.353       |  |  |  |  |  |  |  |
| Non-motor end specification *3 (standard Z-axis setting)            | NM    | See P.353       |  |  |  |  |  |  |  |
| Guide with ball-retaining mechanism (Y/Z-axis only)                 | RT    | See P.354       |  |  |  |  |  |  |  |

- \*1 Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.
- \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

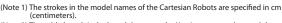
  \*Please refer to P.11 for the X-axis cable exit direction.

## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5]                        |
|---------------------------|---|
| Positioning repeatability | X-axis ±0.02mm, Y/Z-axis ±0.01mm<br>[X-axis ±0.01mm, Y/Z-axis ±0.005mm] |
| Lost motion               | 0.05mm [0.02mm] or less   |
| Guide                     | Integrated with base  |
| Base                      | Material: Aluminum with white alumite treatment                         |
| X-axis motor output/lead  | 600W/40mm   |
| Y-axis motor output/lead  | 400W/40mm   |
| Z-axis motor output/lead  | 400W/20mm (H), 10mm (M)   |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.





- (Note 2) The cable length is the length between the X-axis connector box and the controller.
  The standard lengths are 3m and 5m, but other lengths can also be specified in meters.
  - The maximum length is 20m.
- (Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.
  When the acceleration is increased, the payload will be reduced.
- (Note 4) Please note that a longer stroke will result in a lower max speed.



## ■BL□HS4H

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~700       |
|               | 100 | 12.0          |
|               | 150 | 11.1          |
| ê             | 200 | 10.2          |
| Z-axis stroke | 250 | 9.3           |
| S SI          | 300 | 8.5           |
| axi           | 350 | 7.6           |
| Ž-            | 400 | 6.8           |
|               | 450 | 5.9           |
|               | 500 | 5.0           |

## Maximum Speed by Stroke (mm/s) (Note 4)

## ■BL□HS4H

|        | 100~500 | 550~700 | 900~1,200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 2400      | 2200 | 1965 | 1725 | 1530 | 1365 | 1225 | 1110 | 1005 | 915  | 840  | 770  | 710  | 655  |
| Y-axis | 24      | 00      |           |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 1200    |         |           |      |      |      |      | _    |      |      |      |      |      |      |      |      |

#### ■BL□HS4M

|        | 100~500 | 550~700 | 900~1,200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | is —    |         | 2400      | 2200 | 1965 | 1725 | 1530 | 1365 | 1225 | 1110 | 1005 | 915  | 840  | 770  | 710  | 655  |
| Y-axis | 24      | 2400    |           |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| 7-axis | 600     |         |           |      |      |      |      | _    |      |      |      |      |      |      |      |      |

## ■BL□HS4M

|        |     |      |      |      |      |      | ١    | ∕-axis strok | e    |      |      |      |      |      |
|--------|-----|------|------|------|------|------|------|--------------|------|------|------|------|------|------|
|        |     | 100  | 150  | 200  | 250  | 300  | 350  | 400          | 450  | 500  | 550  | 600  | 650  | 700  |
|        | 100 | 25.1 | 24.4 | 23.5 | 22.7 | 21.9 | 21.1 | 20.3         | 19.4 | 18.6 | 17.7 | 17.0 | 16.1 | 15.3 |
|        | 150 | 24.3 | 23.6 | 22.7 | 21.9 | 21.1 | 20.3 | 19.5         | 18.6 | 17.8 | 16.9 | 16.2 | 15.3 | 14.5 |
| 9      | 200 | 23.4 | 22.8 | 21.9 | 21.1 | 20.3 | 19.4 | 18.7         | 17.8 | 17.0 | 16.1 | 15.3 | 14.5 | 13.7 |
| stroke | 250 | 22.6 | 22.0 | 21.1 | 20.3 | 19.5 | 18.6 | 17.9         | 17.0 | 16.2 | 15.3 | 14.5 | 13.7 | 12.9 |
| S S1   | 300 | 21.9 | 21.2 | 20.4 | 19.5 | 18.8 | 17.9 | 17.1         | 16.3 | 15.4 | 14.6 | 13.8 | 13.0 | 12.2 |
| axis   | 350 | 21.1 | 20.4 | 19.6 | 18.7 | 18.0 | 17.1 | 16.3         | 15.5 | 14.6 | 13.8 | 13.0 | 12.2 | 11.4 |
| -7     | 400 | 20.4 | 19.7 | 18.9 | 18.0 | 17.2 | 16.4 | 15.6         | 14.8 | 13.9 | 13.1 | 12.3 | 11.4 | 10.7 |
|        | 450 | 19.6 | 18.9 | 18.0 | 17.2 | 16.4 | 15.6 | 14.8         | 14.0 | 13.1 | 12.2 | 11.5 | 10.6 | 9.9  |
|        | 500 | 18.8 | 18.1 | 17.2 | 16.4 | 15.6 | 14.8 | 14.0         | 13.1 | 12.3 | 11.4 | 10.7 | 9.8  | 9.0  |

# ICSB3 [ICSPB3]-BL□HS4□-CT-SC (Cable track - Self-standing cable specification)

(Configuration direction: 1)

## Dimensions

CAD drawings can be downloaded from our website.

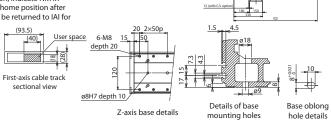


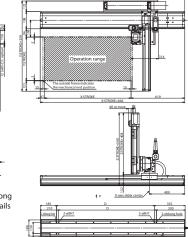


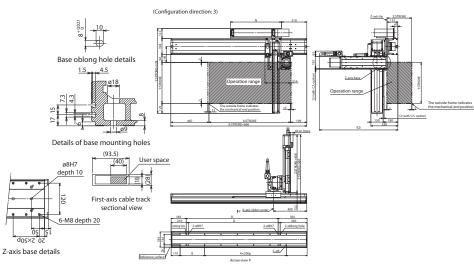
## RoHS

\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

(93.5)







| Q differsion  |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
| 100           | 850  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 |
| 150           | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 |
| 200           | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 |
| 250           | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 |
| 300           | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 |
| 350           | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 |
| 400           | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 |
| 450           | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 |
| 500           | 1250 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 | 1500 | 1500 |

| X-axis stroke | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α             | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    | 9    | 9    | 10   | 10   | 11   | 11   | 12   | 12   | 13   |
| В             | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  |
| C             | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   | 22   | 22   | 24   | 24   | 26   | 26   | 28   | 28   | 30   |
| D             | 1026 | 1126 | 1226 | 1326 | 1426 | 1526 | 1626 | 1726 | 1826 | 1926 | 2026 | 2126 | 2226 | 2326 | 2426 | 2526 | 2626 |
| N             | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



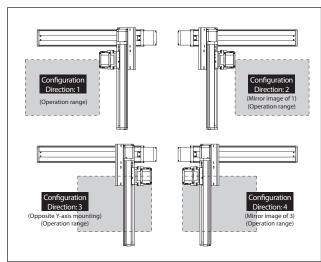
#### XYB+ZS Medium X: XL (600W) X-Y-Z Y: Lg (400W) Z: Lg (400W) Y Base Mou Z Slider) **High-Precision** Specification ■ Model Specification BL□MS4□ **T2** Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length 3L: 3m 5L: 5m Series X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below 90:900mm Refer to Options 10:100mm Refer to Include the Include 3L: 3m R 5L: 5m E □L: Specified N Refer to XSEL-RA/SA length precision : specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model  |
|----------------------------------|----------------------------|--|
| 1                                | Н                          | ICSB3[ICSPB3]-BL1MS4H-①-②③-④⑤-⑦BNM-T2-⑥-⑨      |
| '                                | М                          | ICSB3[ICSPB3]-BL1MS4M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨     |
| 2                                | Н                          | ICSB3[ICSPB3]-BL2MS4H-①-23-43-67BNM-T2-8-9     |
| 2                                | M                          | ICSB3[ICSPB3]-BL2MS4M-①-② 3-④ 3-⑥ ⑦BNM-T2-⑧-⑨  |
| 3                                | Н                          | ICSB3[ICSPB3]-BL3MS4H-①-②③-④⑤-⑥⑦BNM-T2-⑥-⑨     |
| 3                                | М                          | ICSB3[ICSPB3]-BL3MS4M-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨     |
| 4                                | Н                          | ICSB3[ICSPB3]-BL4MS4H-①-23-43-67BNM-T2-8-9     |
| 4                                | М                          | ICSB3[ICSPB3]-BL4MS4M-11-2 3-4 5-6 7BNM-T2-8-9 |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
\*2 The payload and the max speed may vary depending on the type of Z-axis.

## XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                            | Reference page                        |
|--------------|----------------------------------|---------------------------------------|
| X-axis       | ISA[ISPA]-WXMX-①-600-20-②-T2-①-③ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-①-⑤  | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-⑩-⑥-T2-⑪-⑦   | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

Note that the strokes are indicated in mm (millimeters).

- Note that the strokes are indicated in finit (minimeters).

  \*Lead is specified with [10] in the above model names.

  20. For Z-axis High Speed type

  10. For Z-axis Medium Speed type

  \*Cable exit direction is specified with [10] in the above model names.

  Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                                 |  |  |  |  |  |  |  |  |
|-----|----------------------------------|--|--|--|--|--|--|--|--|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental            |  |  |  |  |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 90: 900mm<br>250: 2500mm                 |  |  |  |  |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.            |  |  |  |  |  |  |  |  |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm              |  |  |  |  |  |  |  |  |
| (5) | Y-axis option                    | Refer to Options table below.            |  |  |  |  |  |  |  |  |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm                                |  |  |  |  |  |  |  |  |
| 7   | Z-axis option                    | Refer to Options table below.            |  |  |  |  |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                  |  |  |  |  |  |  |  |  |
| 9   | Y-axis - Z-axis Cable Management | CT-SC: Cable track - Self-standing cable |  |  |  |  |  |  |  |  |

## Options

The option codes should be entered after the stroke for each axis.

Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction *                            | A1/A3 | See P.11, P.353 |
| AQ seal (equipped as standard on Y/Z-axis)               | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2 (equipped as standard on X-axis)    | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism (Y/Z-axis only)      | RT    | See P.354       |

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |  |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|--|--|
| Drive system              | ball sciew, folied CTO [equivalent to folied C5] |  |  |  |  |  |  |  |
| Positioning repeatability | ±0.02mm [±0.01mm]                                |  |  |  |  |  |  |  |
| Lost motion               | 0.05mm [0.02mm] or less                          |  |  |  |  |  |  |  |
| Guide                     | Integrated with base                             |  |  |  |  |  |  |  |
| Base                      | Material: Aluminum with white alumite treatment  |  |  |  |  |  |  |  |
| X-axis motor output/lead  | 600W/20mm  |  |  |  |  |  |  |  |
| Y-axis motor output/lead  | 400W/20mm  |  |  |  |  |  |  |  |
| Z-axis motor output/lead  | 400W/20mm (H), 10mm (M)                          |  |  |  |  |  |  |  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 20m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.

<sup>\*1</sup> Brake option for Y-axis increases the length of the motor unit. Please contact IAI for details.

\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the

mounting position. Please refer to P.11 for more information.

<sup>\*3</sup> The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

\*Please refer to P.11 for the X-axis cable exit direction.



## ■BL□MS4H

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~700       |
|               | 100 | 12.0          |
|               | 150 | 11.1          |
| au            | 200 | 10.2          |
| ş             | 250 | 9.3           |
| Z-axis stroke | 300 | 8.5           |
| -axi          | 350 | 7.6           |
| Z             | 400 | 6.8           |
|               | 450 | 5.9           |
|               | 500 | 5.0           |

## Maximum Speed by Stroke (mm/s) (Note 4)

## ■BL□MS4H

|        | 100~500 | 550~700 | 900~1,200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|---------|---------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | _       |         | 1200      | 1100 | 980  | 860  | 765  | 680  | 610  | 555  | 500  | 455  | 420  | 385  | 355  | 325  |
| Y-axis | 1200    |         |           |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| Z-axis | 1200    |         |           |      |      |      |      | _    |      |      |      |      |      |      |      |      |

## ■BL□MS4M

|        | 100~500 550~700 |     | 900~1,200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|--------|-----------------|-----|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| X-axis | _               |     | 1200      | 1100 | 980  | 860  | 765  | 680  | 610  | 555  | 500  | 455  | 420  | 385  | 355  | 325  |
| Y-axis | 12              | .00 |           |      |      |      |      |      | _    |      |      |      |      |      |      |      |
| Z-axis | 600             |     |           |      |      |      |      |      |      |      |      |      |      |      |      |      |

## ■BL□MS4M

|        |     |         |      |      | Y-ax | is stroke |      |      |      |      |
|--------|-----|---------|------|------|------|-----------|------|------|------|------|
|        |     | 100~300 | 350  | 400  | 450  | 500       | 550  | 600  | 650  | 700  |
|        | 100 | 32.0    | 32.0 | 32.0 | 32.0 | 32.0      | 29.1 | 25.4 | 22.1 | 19.1 |
|        | 150 | 31.1    | 31.1 | 31.1 | 31.1 | 31.1      | 28.2 | 24.5 | 21.2 | 18.2 |
| a      | 200 | 30.2    | 30.2 | 30.2 | 30.2 | 30.2      | 27.3 | 23.6 | 20.3 | 17.3 |
| stroke | 250 | 29.3    | 29.3 | 29.3 | 29.3 | 29.3      | 26.4 | 22.7 | 19.4 | 16.4 |
| sst    | 300 | 28.5    | 28.5 | 28.5 | 28.5 | 28.5      | 25.6 | 21.9 | 18.6 | 15.6 |
| -axis  | 350 | 27.6    | 27.6 | 27.6 | 27.5 | 27.0      | 24.7 | 21.0 | 17.7 | 14.7 |
| -Z     | 400 | 26.8    | 26.4 | 26.0 | 25.5 | 25.1      | 23.9 | 20.2 | 16.9 | 13.9 |
|        | 450 | 23.5    | 235  | 23.5 | 235  | 23.2      | 22.8 | 19.3 | 16.0 | 13.0 |
|        | 500 | 19.2    | 19.2 | 19.2 | 19.2 | 19.2      | 19.2 | 18.4 | 15.1 | 12.1 |

# ICSB3 [ICSPB3]-BL□MS4□-CT-SC (Cable track - Self-standing cable specification)

## Dimensions

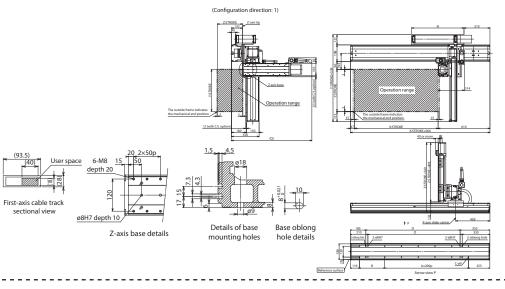
CAD drawings can be downloaded from our website.

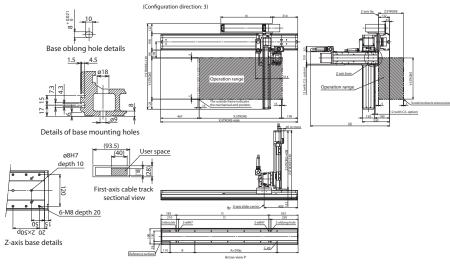




## RoHS

\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.





| Q differsion  |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
| 100           | 850  | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 |
| 150           | 900  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 |
| 200           | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 |
| 250           | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 |
| 300           | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 |
| 350           | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 |
| 400           | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 |
| 450           | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 |
| 500           | 1250 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 | 1500 | 1500 |

| X-axis stroke | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α             | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    | 9    | 9    | 10   | 10   | 11   | 11   | 12   | 12   | 13   |
| В             | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  | 301  | 201  |
| С             | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   | 22   | 22   | 24   | 24   | 26   | 26   | 28   | 28   | 30   |
| D             | 1026 | 1126 | 1226 | 1326 | 1426 | 1526 | 1626 | 1726 | 1826 | 1926 | 2026 | 2126 | 2226 | 2326 | 2426 | 2526 | 2626 |
| N             | 575  | 625  | 675  | 725  | 775  | 825  | 875  | 925  | 975  | 1025 | 1075 | 1125 | 1175 | 1225 | 1275 | 1325 | 1375 |



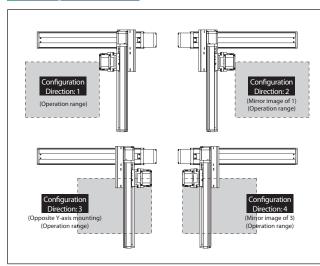
#### ICSB3-BM□HS4H XYB+ZS (Y Base Mount Z Slider) X: Lg (750W) Y: Lg (400W) Z: Lg (400W) X-Y-Z Speed Type High-Precision CSPB3-BM Specification ■ Model Specification BM<sub>HS4H</sub> T2 Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Length 3L: 3m 5L: 5m Series Туре Encoder Type X-axis Stroke/Option Y-axis Stroke/Option Z-axis Stroke/Option 10:100mm Refer to 10:100 Y-axis - Z-axis Cabl Management ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below 3L: 3m Re 5L: 5m Eq □L: Specified Mo Refer to XSEL-RA/SA length precision : specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | Н                          | ICSB3[ICSPB3]-BM1HS4H-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑥-⑨ |
| 2                                | Н                          | ICSB3[ICSPB3]-BM2HS4H-①-②③-④⑤-⑥⑦BNM-T2-⑥-⑨    |
| 3                                | Н                          | ICSB3[ICSPB3]-BM3HS4H-①-② ③-④ ⑤-⑥ ⑦BNM-T2-⑧-⑨ |
| 4                                | Н                          | ICSB3[ICSPB3]-BM4HS4H-①-23-03-07BNM-T2-0-9    |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



## Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                             | Reference page                        |  |
|--------------|-----------------------------------|---------------------------------------|--|
| X-axis       | SSPA-LXM-①-750-50-②-T2-⑩-③        | → Please contact IAI for more details |  |
| Y-axis       | ISB[ISPB]-LXM-1-400-40-4-T2-10-5  | → Please contact IAI for more details |  |
| Z-axis       | ISB[ISPB]-LXM-①-400-20-⑩-⑥-T2-⑩-⑦ | → Please contact IAI for more details |  |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \*Cable exit direction is specified with 1® in the above model names.

  Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental                    |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>100: 1000mm                         |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm                      |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm  |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| when selecting mataple options, specify them in <u>uphrabetical order</u> . |       |                 |
|---|-------|-----------------|
| Туре  | Model | Reference page  |
| X-axis cable exit direction   | *     | See P.11, P.353 |
| AQ seal (standard equipment)  | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                                   | В     | See P.353       |
| Creep sensor *2   | C/CL  | See P.353       |
| Home limit switch *2  | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Z-axis setting)                    | NM    | See P.353       |
| Guide with ball-retaining mechanism   | RT    | See P.354       |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position.
  Please refer to P.11 for more information.
- Please refer to P.11 for more information.

  3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM),
  To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the
  home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*\*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.
  Please refer to P.11 for the cable exit direction of each axis.

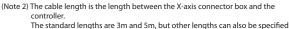
## Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.02mm or less                                   |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 750W/50mm  |
| Y-axis motor output/lead  | 400W/40mm  |
| Z-axis motor output/lead  | 400W/20mm  |

## Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



in meters. The maximum length is 20m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated



acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■BM□HS4H

|               |     | Y-axis stroke |
|---------------|-----|---------------|
|               |     | 100~700       |
|               | 100 | 12.0          |
|               | 150 | 11.1          |
| a             | 200 | 10.2          |
| Z-axis stroke | 250 | 9.3           |
| is st         | 300 | 8.5           |
| -axi          | 350 | 7.6           |
| Z             | 400 | 6.8           |
|               | 450 | 5.9           |
|               | 500 | 5.0           |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BM□HS4H

|        | 100~500 | 550~700 | 750~900 | 950~1000 |  |  |
|--------|---------|---------|---------|----------|--|--|
| X-axis |         | 2500    |         | 2320     |  |  |
| Y-axis | 24      | 00      | _       |          |  |  |
| Z-axis | 1200    |         | _       |          |  |  |

## ICSB3 [ICSPB3]-BM□HS4H-SC-SC (Self-standing cable specification)

#### Dimensions

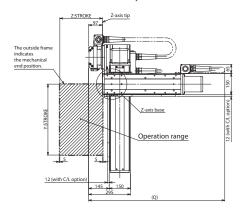
CAD drawings can be downloaded from our website

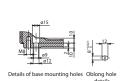


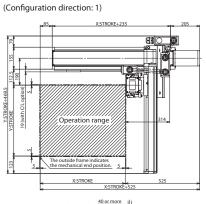


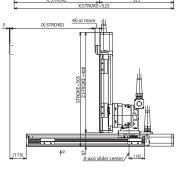
### RoHS

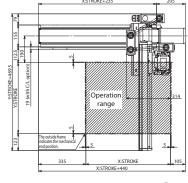
\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



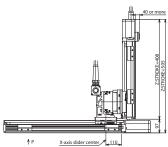


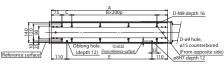






(Configuration direction: 3)





#### Q dimension

| Q diffici |        |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Z-axis    | Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
| 100       |        | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 |
| 150       |        | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 |
| 200       |        | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 |
| 250       |        | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 |
| 300       |        | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 |
| 350       |        | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 |
| 400       |        | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 |
| 450       |        | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 |
| 500       |        | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 |
|           |        |      |      |      |      |      |      |      |      |      |      |      |      |      |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970 | 1020 | 1070 | 1120 | 1170 | 1220 |
| В             | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70   | 120  | 170  | 220  | 70   |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |



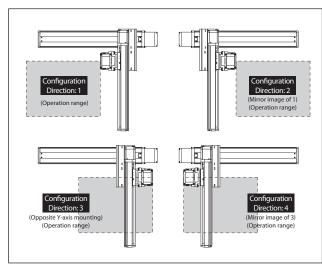
#### ICSB3-BM□MS4M XYB+ZS (Y Base Mount Z Slider) Medium X: Lg (750W) Y: Lg (400W) Z: Lg (400W) X-Y-Z Speed Type **High-Precision** CSPB3-BM□MS4N Specification ■ Model Specification BM MS4M T2 Applicable Controllers T2: SCON SSEL XSEL-P/Q Encoder Type Absolute U:0:100mm Refer to 10:100mm Refer to 10:100mm Refer to Cable Length 3L: 3m 5L: 5m Series Y-axis - Z-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below 3L: 3m Re 5L: 5m E □L: Specified M Refer to XSEL-RA/SA length precision : specificati

#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                       |
|----------------------------------|----------------------------|---|
| 1                                | М                          | ICSB3[ICSPB3]-BM1MS4M-①-23-45-67BNM-T2-8-9  |
| 2                                | М                          | ICSB3[ICSPB3]-BM2MS4M-11-23-45-67BNM-T2-8-9 |
| 3                                | М                          | ICSB3[ICSPB3]-BM3MS4M-①-23-45-67BNM-T2-8-9  |
| 4                                | М                          | ICSB3[ICSPB3]-BM4MS4M-1]-23-43-67BNM-T2-8-9 |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of ① through ② in the model names above.
  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \*Items in brackets [] are for the High-Precision Specification

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | SSPA-LXM-11-750-25-22-T2-101-3  | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-LXM-①-400-20-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-10-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).
- Cable exit direction is specified with the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation   |
|-----|----------------------------------|--|
| 1   | Encoder type                     | A: Absolute<br>I: Incremental                    |
| 2   | X-axis stroke<br>(Note 1)        | 10: 100mm<br>₹<br>100: 1000mm                    |
| 3   | X-axis option                    | Refer to Options table below.                    |
| 4   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>70: 700mm                      |
| (5) | Y-axis option                    | Refer to Options table below.                    |
| 6   | Z-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm                      |
| 7   | Z-axis option                    | Refer to Options table below.                    |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                          |
| 9   | Y-axis - Z-axis Cable Management | SC-SC: Self-standing cable - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number.

| when selecting multiple options, specify them in alphabe | when selecting multiple options, specify them in alphabetical order. |                 |  |  |  |  |  |  |  |  |
|--|--|-----------------|--|--|--|--|--|--|--|--|
| Туре   | Model  | Reference page  |  |  |  |  |  |  |  |  |
| X-axis cable exit direction                              | *  | See P.11, P.353 |  |  |  |  |  |  |  |  |
| AQ seal (standard equipment)                             | AQ   | See P.353       |  |  |  |  |  |  |  |  |
| Brake (equipped as standard on Z-axis) *1                | В  | See P.353       |  |  |  |  |  |  |  |  |
| Creep sensor *2  | C/CL   | See P.353       |  |  |  |  |  |  |  |  |
| Home limit switch *2                                     | L/LL   | See P.353       |  |  |  |  |  |  |  |  |
| Non-motor end specification *3 (standard Z-axis setting) | NM   | See P.353       |  |  |  |  |  |  |  |  |
| Guide with ball-retaining mechanism                      | RT   | See P.354       |  |  |  |  |  |  |  |  |

- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information
- "3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.
- Please refer to P.11 for the cable exit direction of each axis.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.02mm or less                                   |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 750W/25mm  |
| Y-axis motor output/lead  | 400W/20mm  |
| Z-axis motor output/lead  | 400W/10mm  |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller The standard lengths are 3m and 5m, but other lengths can also be specified

in meters. The maximum length is 20m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■BM□MS4M

|        |     |      |      |      |      |      | ١    | /-axis strok | е    |      |      |      |      |      |
|--------|-----|------|------|------|------|------|------|--------------|------|------|------|------|------|------|
|        |     | 100  | 150  | 200  | 250  | 300  | 350  | 400          | 450  | 500  | 550  | 600  | 650  | 700  |
|        | 100 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0         | 30.6 | 26.3 | 22.5 | 19.2 | 16.2 | 13.5 |
|        | 150 | 31.1 | 31.1 | 31.1 | 31.1 | 31.1 | 31.1 | 31.1         | 29.7 | 25.4 | 21.6 | 18.3 | 15.3 | 12.6 |
| ω      | 200 | 30.2 | 30.2 | 30.2 | 30.2 | 30.2 | 30.2 | 30.2         | 28.8 | 24.5 | 20.7 | 17.4 | 14.4 | 11.7 |
| stroke | 250 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.2         | 27.9 | 23.6 | 19.8 | 16.5 | 13.5 | 10.8 |
| sst    | 300 | 28.5 | 28.5 | 28.5 | 28.0 | 27.5 | 27.1 | 26.6         | 26.1 | 22.8 | 19.0 | 15.7 | 12.7 | 10.0 |
| -axis  | 350 | 27.0 | 26.5 | 26.0 | 25.6 | 25.2 | 24.7 | 24.3         | 23.8 | 21.9 | 18.1 | 14.8 | 11.8 | 9.1  |
| Z      | 400 | 24.8 | 24.4 | 24.0 | 23.5 | 23.1 | 22.7 | 223          | 21.9 | 21.1 | 17.3 | 14.0 | 11.0 | 8.3  |
|        | 450 | 22.9 | 22.4 | 22.0 | 21.6 | 21.2 | 20.8 | 20.5         | 20.1 | 19.6 | 16.4 | 13.1 | 10.1 | 7.4  |
|        | 500 | 19.2 | 19.2 | 19.2 | 19.2 | 19.2 | 19.2 | 18.8         | 18.4 | 18.0 | 15.5 | 12.2 | 9.2  | 6.5  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### ■BM□MS4M

|        | 100~500 | 550~700 | 750~900 | 950~1000 |  |  |
|--------|---------|---------|---------|----------|--|--|
| X-axis |         | 1250    |         | 1160     |  |  |
| Y-axis | 12      | 00      | _       |          |  |  |
| Z-axis | 600     |         | _       |          |  |  |

## ICSB3 [ICSPB3]-BM□MS4M-SC-SC (Self-standing cable specification)

#### Dimensions

CAD drawings can be downloaded from our website.



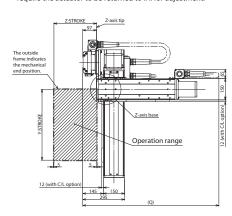


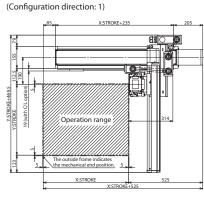
### RoHS

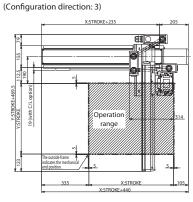
\* The configuration position in the figure is the home position.

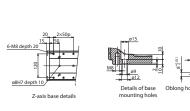
To change the home position, indicate NM in the options.

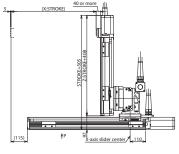
Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

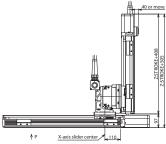


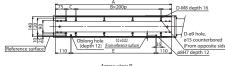












| Q dimension   | า    |      |      |      |      |      |      |      |      |      |      | -    |      |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  |
| 100           | 800  | 800  | 850  | 850  | 900  | 900  | 950  | 950  | 950  | 1000 | 1000 | 1050 | 1050 |
| 150           | 850  | 850  | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 |
| 200           | 900  | 900  | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 |
| 250           | 950  | 950  | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 |
| 300           | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 |
| 350           | 1050 | 1050 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 |
| 400           | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 |
| 450           | 1150 | 1150 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 |
| 500           | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 | 1350 | 1350 | 1400 | 1400 | 1450 | 1450 |

| X-axis stroke | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| A             | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770 | 820 | 870 | 920 | 970 | 1020 | 1070 | 1120 | 1170 | 1220 |
| В             | 0   | 0   | 1   | - 1 | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    |
| С             | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70  | 120 | 170 | 220 | 70   | 120  | 170  | 220  | 70   |
| D             | 4   | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   |
| E             | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800  | 850  | 900  | 950  | 1000 |



ICSPA3

Series

ICSPA3: High precision 3-axis specification

High-Precision Specification

Encoder Type

50: 500mm 220: 2200mm /Guery 50mm)

A: Abso

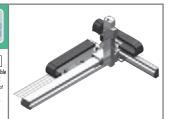




XYB+ZS ' Base Moun Z Slider)

High

Speed Type T2 | X-axis Stroke/Option | Y-axis Stroke/Option | Z-axis Stroke/Option Cable Length Waxis - Z-axis Cable Management
3L: 3m Explanation of Model
L: Specified Designations length below



#### Model Specification

Specification Items

| XY configuration direction *1 | Model                                     |
|-------------------------------|---|
| 1                             | ICSPA3-B1N1HS3M-①-② ③-④ ⑤-⑥②-T2-⑥-⑨       |
| 2                             | ICSPA3-B1N2HS3M-①-② ③-④ ⑤-⑥⑦-T2-⑥-⑨       |
| 3                             | ICSPA3-B1N3HS3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨      |
| 4                             | ICSPA3-B1N4HS3M-①-②3-4\\$\-6\7\-T2-\8\-\9 |

B1N□HS3M

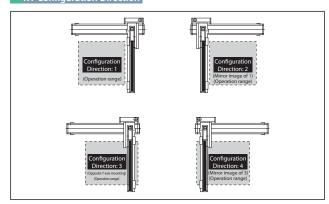
Type

Refer to Model Specification table below

\*1 Please refer to the following diagram under XY Configuration Direction.

Please refer to the table on the right for details of ① through ② in the model names above.

#### XY Configuration Direction



#### Axis Configuration

| Axis configuration | Model                         | Reference page                        |
|--------------------|-------------------------------|---------------------------------------|
| X-axis             | NS-LXMS-11-400-40-22-T2-33-10 | → Please contact IAI for more details |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤      | → Please contact IAI for more details |
| Z-axis             | ISPA-MZM-11-200-10-6-T2-7     | → Please contact IAI for more details |

- \* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.
- in the above moder names.

  Note that the strokes are indicated in mm (millimeters),

  The following symbols are specified with 100 in the above model names.

  NT1: For cartesian configuration directions 1 and 3

  NT2: For cartesian configuration directions 2 and 4
- Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2).

#### **Explanation of Model Designations**

| No. | Description                         | Notation                      |
|-----|-------------------------------------|-------------------------------|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental |
| 2   | X-axis stroke<br>(Note 1)           | 50:500mm<br>220:2200mm        |
| 3   | X-axis option                       | Refer to Options table below. |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm<br>?<br>70:700mm     |
| (5) | Y-axis option                       | Refer to Options table below. |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm                      |
| 7   | Z-axis option                       | Refer to Options table below. |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m       |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track            |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order

| Туре  | Model | Reference page |
|---|-------|----------------|
| AQ seal (standard equipment)  | AQ    | See P.353      |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1             | В     | See P.353      |
| Creep sensor *2   | C/CL  | See P.353      |
| Home limit switch *2  | L/LL  | See P.353      |
| Non-motor end specification (Y/Z-axis only (standard Z-axis setting)) | NM    | See P.353      |
| Guide with ball-retaining mechanism                                   | RT    | See P.354      |

- \*I Brake option for Y-axis increases the length of the non-motor side. Please contact IAI for details.

  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.

  \*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

#### Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/40mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/10mm                                       |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G. Although it is operable up to 1G, increasing the acceleration will reduce the payload.



#### ■B1N□HS3M

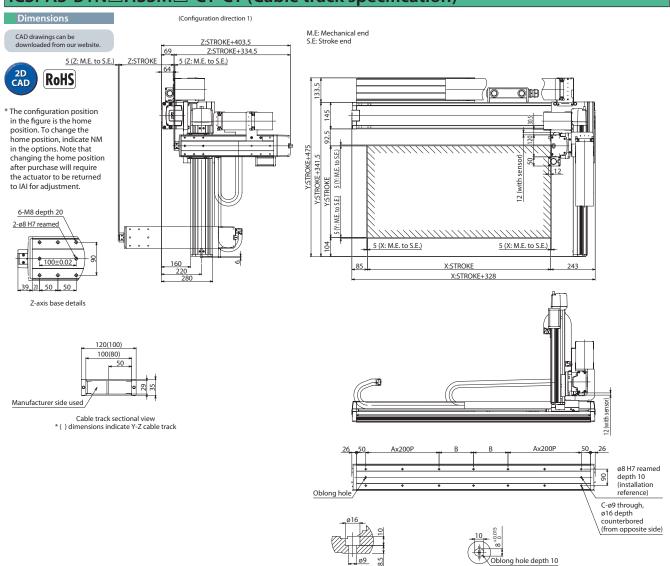
|               |       | Y-axis stroke |      |     |     |     |     |  |  |  |  |  |  |
|---------------|-------|---------------|------|-----|-----|-----|-----|--|--|--|--|--|--|
|               |       | 200           | 300  | 400 | 500 | 600 | 700 |  |  |  |  |  |  |
| a             | 100   | 11.5          | 10.5 | 9.5 | 8.4 | 7.5 | 6.5 |  |  |  |  |  |  |
| strok         | ~ 200 | 10.5          | 9.5  | 8.5 | 7.4 | 6.5 | 5.5 |  |  |  |  |  |  |
| Z-axis stroke | ~ 300 | 9.5           | 8.5  | 7.5 | 6.4 | 5.5 | 4.5 |  |  |  |  |  |  |
| Z             | ~ 400 | 8.4           | 7.4  | 6.5 | 5.4 | 4.4 | 3.4 |  |  |  |  |  |  |

#### Maximum Speed by Stroke (mm/s)

#### ■B1N□HS3M

|        | 100 | 200 | 300 | 400 | 500 | 500 600 |   | 800~ | 2200 |
|--------|-----|-----|-----|-----|-----|---------|---|------|------|
| X-axis | _   | _   |     |     |     |         |   |      |      |
| Y-axis | _   |     | -   | -   |     |         |   |      |      |
| Z-axis |     | 60  | 00  |     | _   | _       | _ | _    | _    |

### ICSPA3-B1N□HS3M□-CT-CT (Cable track specification)



| X stroke | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| Α        | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 3    |
| В        | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 113 | 138 | 163 | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  |
| C        | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 14  | 14  | 14  | 14   | 14   | 14   | 14   | 14   | 14   | 18   | 18   |

X-axis base mounting hole details

| X stroke | 1400 | 1450 | 1500 | 1550 | 1600 | 1650 | 1700 | 1750 | 1800 | 1850 | 1900 | 1950 | 2000 | 2050 | 2100 | 2150 | 2200 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α        | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| В        | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  |
| С        | 18   | 18   | 18   | 18   | 18   | 18   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 26   | 26   | 26   |

X-axis base bottom oblong hole details



High-Precision Specification



XYB+ZS / Base Moun Z Slider)

T2

Speed Type

Y: Md (200W) Z: Md (200W)

Specification Items

ICSPA3-B1N□MS3M Series ICSPA3: High precision 3-axis specification

Type Refer to Model Specification table below

Encoder Type A: Abso

50: 500mm 220: 2200mm "50mm)

| X-axis Stroke/Option | Y-axis Stroke/Option | Z-axis Stroke/Option

Cable Y-axis-Z-Length Manag 3L:3m Explar 5L:5m Model □L:Specified Design length below Y-axis - Z-axis Cabl Management Explanation of



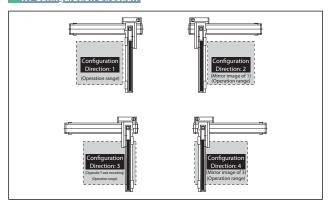
#### Model Specification

| XY configuration<br>direction *1 | Model                                |
|----------------------------------|--------------------------------------|
| 1                                | ICSPA3-B1N1MS3M-①-23-45-67-T2-8-9    |
| 2                                | ICSPA3-B1N2MS3M-①-② ③-④ ③-⑥ ⑦-T2-⑧-⑨ |
| 3                                | ICSPA3-B1N3MS3M-①-② ③-④ ⑤-⑦-T2-⑥-◎   |
| 4                                | ICSPA3-B1N4MS3M-①-② ③-④ ⑤-⑦-T2-⑥-⑥   |

\*1 Please refer to the following diagram under XY Configuration Direction.

Please refer to the table on the right for details of ① through ② in the model names above.

#### XY Configuration Direction



#### Axis Configuration

| Axis configuration | Model                     | Reference page                        |
|--------------------|---------------------------|---------------------------------------|
| X-axis             | NS-LXMS-①-400-20-②-T2-③-⑩ | → Please contact IAI for more details |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤  | → Please contact IAI for more details |
| Z-axis             | ISPA-MZM-①-200-10-⑥-T2-⑦  | → Please contact IAI for more details |

- \*Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \*The following symbols are specified with ⑩ in the above model names.

  \*NTI: For cartesian configuration directions 1 and 3

  NTI: For cartesian configuration directions 2 and 4

  Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2).

**Explanation of Model Designations** 

| No. | Description                         | Notation                      |
|-----|-------------------------------------|-------------------------------|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental |
| 2   | X-axis stroke<br>(Note 1)           | 50:500mm                      |
| 3   | X-axis option                       | Refer to Options table below. |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm<br>?<br>70:700mm     |
| 5   | Y-axis option                       | Refer to Options table below. |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm                      |
| 7   | Z-axis option                       | Refer to Options table below. |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m       |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track            |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number.
When selecting multiple options, specify them in alphabetical order.

| when selecting multiple options, specify them in <u>alphabetical order</u> . |       |                |  |  |  |  |  |
|--|-------|----------------|--|--|--|--|--|
| Туре   | Model | Reference page |  |  |  |  |  |
| AQ seal (standard equipment)   | AQ    | See P.353      |  |  |  |  |  |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1                    | В     | See P.353      |  |  |  |  |  |
| Creep sensor *2  | C/CL  | See P.353      |  |  |  |  |  |
| Home limit switch *2   | L/LL  | See P.353      |  |  |  |  |  |
| Non-motor end specification (Y/Z-axis only (standard Z-axis setting))        | NM    | See P.353      |  |  |  |  |  |
| Guide with ball-retaining mechanism  | RT    | See P.354      |  |  |  |  |  |

- \*\*Brake option for Y-axis increases the length of the non-motor side. Please contact IAI for details.

  \*\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.

  \*\*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).

  To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the
- home position after purchase will require the actuator to be returned to IAI for adjustment.

#### Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/20mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/10mm                                       |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G. Although it is operable up to 1G, increasing the acceleration will reduce the payload.



#### ■B1N□MS3M

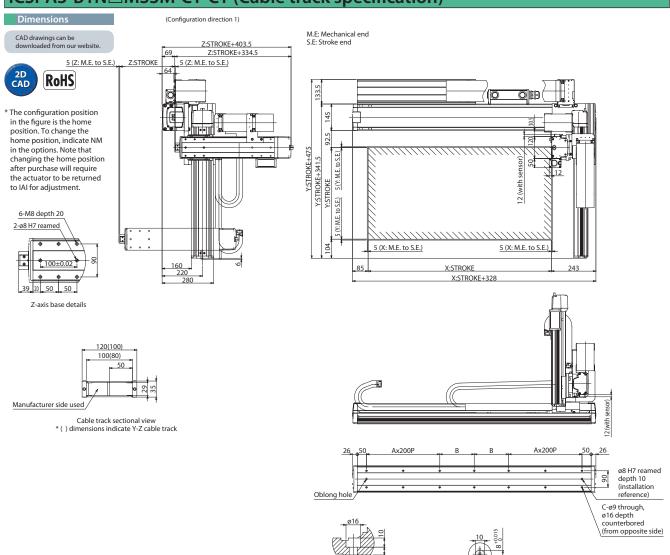
|               |       |          | Y-axis stroke |      |     |     |     |  |  |  |
|---------------|-------|----------|---------------|------|-----|-----|-----|--|--|--|
|               |       | 200      | 300           | 400  | 500 | 600 | 700 |  |  |  |
| a             | 100   |          | 13.0          |      |     |     |     |  |  |  |
| strok         | ~ 200 |          |               | 11.7 |     |     | 8.1 |  |  |  |
| Z-axis stroke | ~ 300 | 10.7 7.1 |               |      |     |     |     |  |  |  |
| Z             | ~ 400 |          |               | 9.7  |     |     | 6.1 |  |  |  |

#### Maximum Speed by Stroke (mm/s)

#### ■B1N□MS3M

|        |     | Stroke |        |     |     |     |      |      |      |
|--------|-----|--------|--------|-----|-----|-----|------|------|------|
|        | 100 | 200    | 300    | 400 | 500 | 600 | 700  | 800~ | 2200 |
| X-axis | _   | _      | _      | _   |     |     | 1300 |      |      |
| Y-axis | _   |        | 1200 — |     |     |     |      |      | -    |
| Z-axis |     | 60     | 00     |     | _   | _   | _    | _    | _    |

### ICSPA3-B1N□MS3M-CT-CT (Cable track specification)



| X stroke | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 | 1250 | 1300 | 1350 |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| Α        | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 3    |
| В        | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 113 | 138 | 163 | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  |
| С        | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 14  | 14  | 14  | 14   | 14   | 14   | 14   | 14   | 14   | 18   | 18   |

X-axis base mounting hole details

| X stroke | 1400 | 1450 | 1500 | 1550 | 1600 | 1650 | 1700 | 1750 | 1800 | 1850 | 1900 | 1950 | 2000 | 2050 | 2100 | 2150 | 2200 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α        | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| В        | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  |
| С        | 18   | 18   | 18   | 18   | 18   | 18   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 26   | 26   | 26   |

Oblong hole depth 10

X-axis base bottom oblong hole details









T2

High Long Type

Y: Md (200W) Z: Md (200W)



ICSPA3 Specification Items

Series ICSPA3: High precision 3-axis specification

Type Refer to Model Specification table below

B2N□HS3M

Encoder Type A: Abso

X-axis Stroke/Option Y-axis Stroke/Option Z-axis St 225: 2250mm Refer to 20: 200mm Refer to 1sl ₹ Options 300: 3000mm table (Every 50mm) below. (Every 50mm) below.

Cable Y-axis - Z-axis Cable Length Management
3L: 3m Explanation of Model

L: Specified Designations length below

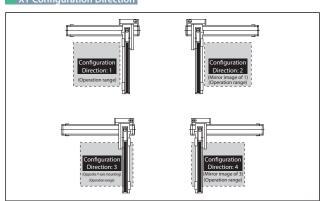
#### Model Specification

| XY configuration<br>direction *1 | Model                                |
|----------------------------------|--------------------------------------|
| 1                                | ICSPA3-B2N1HS3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 2                                | ICSPA3-B2N2HS3M-①-23-43-62-T2-8-9    |
| 3                                | ICSPA3-B2N3HS3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |
| 4                                | ICSPA3-B2N4HS3M-①-② ③-④ ⑤-⑥ ⑦-T2-⑥-⑨ |

\*1 Please refer to the following diagram under XY Configuration Direction.

Please refer to the table on the right for details of ① through ② in the model names above.

#### XY Configuration Direction



#### Axis Configuration

| Axis configuration | Model                      | Reference page                        |
|--------------------|----------------------------|---------------------------------------|
| X-axis             | NS-LXMXS-①-400-40-②-T2-③-⑩ | → Please contact IAI for more details |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤   | → Please contact IAI for more details |
| Z-axis             | ISPA-MZM-11-200-10-6-T2-7  | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

  Note that the strokes are indicated in mm (millimeters).

  \*\*The following symbols are specified with 1® in the above model names.

  NT1: For cartesian configuration directions 1 and 3

- NT2: For cartesian configuration directions 2 and 4

  Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2).

#### **Explanation of Model Designations**

| No. | Description                         | Notation                      |
|-----|-------------------------------------|-------------------------------|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental |
| 2   | X-axis stroke<br>(Note 1)           | 225:2250mm                    |
| 3   | X-axis option                       | Refer to Options table below. |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm                      |
| 5   | Y-axis option                       | Refer to Options table below. |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm                      |
| 7   | Z-axis option                       | Refer to Options table below. |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m       |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track            |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order

| Туре  | Model | Reference page |
|---|-------|----------------|
| AQ seal (standard equipment)  | AQ    | See P.353      |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1             | В     | See P.353      |
| Creep sensor *2   | C/CL  | See P.353      |
| Home limit switch *2  | L/LL  | See P.353      |
| Non-motor end specification (Y/Z-axis only (standard Z-axis setting)) | NM    | See P.353      |
| Guide with ball-retaining mechanism                                   | RT    | See P.354      |

- \*\*Brake option for Y-axis increases the length of the non-motor side. Please contact IAI for details.

  \*\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.

  \*\*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM). To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

#### Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/40mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/10mm                                       |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G. Y-axis is operable up to 1G, but the upper limit for the X-axis is 0.3G.



#### ■B2N□HS3M

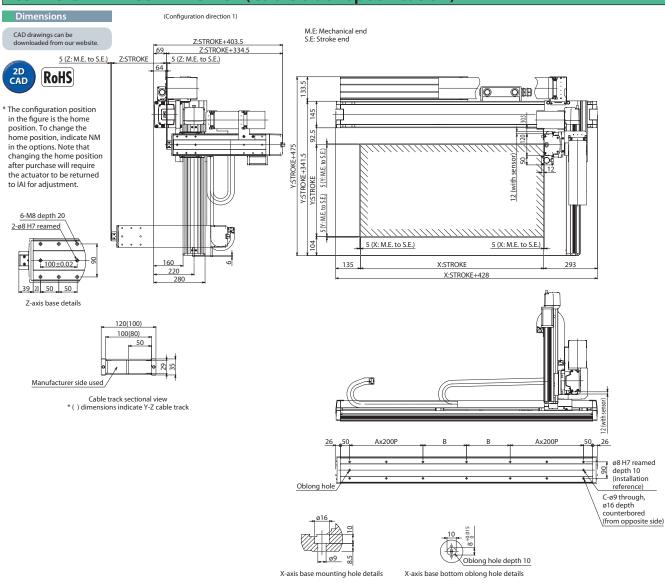
|               |       | Y-axis stroke |      |     |     |     |     |  |  |  |  |
|---------------|-------|---------------|------|-----|-----|-----|-----|--|--|--|--|
|               |       | 200 300       |      | 400 | 500 | 600 | 700 |  |  |  |  |
| a             | 100   | 11.5          | 10.5 | 9.5 | 8.4 | 7.5 | 6.5 |  |  |  |  |
| strok         | ~ 200 | 10.5          | 9.5  | 8.5 | 7.4 | 6.5 | 5.5 |  |  |  |  |
| Z-axis stroke | ~ 300 | 9.5           | 8.5  | 7.5 | 6.4 | 5.5 | 4.5 |  |  |  |  |
| Z             | ~ 400 | 8.4           | 7.4  | 6.5 | 5.4 | 4.4 | 3.4 |  |  |  |  |

#### Maximum Speed by Stroke (mm/s)

#### ■B2N□HS3M

|        |     | Stroke |        |     |     |     |     |       |       |  |  |  |  |
|--------|-----|--------|--------|-----|-----|-----|-----|-------|-------|--|--|--|--|
|        | 100 | 200    | 300    | 400 | 500 | 600 | 700 | 2250- | ~3000 |  |  |  |  |
| X-axis | _   | _      | _      | _   | _   | _   | _   | 24    | 00    |  |  |  |  |
| Y-axis | _   |        | 1200 — |     |     |     |     |       |       |  |  |  |  |
| Z-axis |     | 60     | 00     |     | _   | _   | _   | _     | _     |  |  |  |  |

### ICSPA3-B2N $\square$ HS3M $\square$ -CT-CT (Cable track specification)



| X stroke | 2250 | 2300 | 2350 | 2400 | 2450 | 2500 | 2550 | 2600 | 2650 | 2700 | 2750 | 2800 | 2850 | 2900 | 2950 | 3000 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Α        | 5    | 5    | 5    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 7    | 7    | 7    | 7    | 7    |
| В        | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  |
| С        | 26   | 26   | 26   | 30   | 30   | 30   | 30   | 30   | 30   | 30   | 30   | 34   | 34   | 34   | 34   | 34   |



High-Precision Specification



XYB+ZS ' Base Moun Z Slider)

T2

Speed Long Type

Y: Md (200W) Z: Md (200W)

Specification Items

Series ICSPA3: High precision 3-axis specification

ICSPA3

Type Refer to Model Specification table below

B2N□MS3M

Encoder Type A: Abso

| X-axis Stroke/Option Y-axis Stroke/Option | Z-axis Stroke/Option | 225: 2250mm Refer to 20: 200mm Refer to 1sl ₹ Options 300: 3000mm table (Every 50mm) below. (Every 50mm) below.

Cable Y-axis-Z-Length Manag 3L:3m Explar 5L:5m Mode □L:Specified Design length below Y-axis - Z-axis Cabl Management Explanation of Model



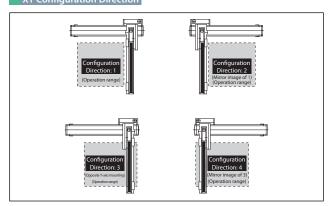
#### Model Specification

| XY configuration direction *1 | Model                               |
|-------------------------------|-------------------------------------|
| 1                             | ICSPA3-B2N1MS3M-①-23-43-67-T2-8-9   |
| 2                             | ICSPA3-B2N2MS3M-①-② ③-④ ⑤-⑥⑦-T2-⑥-⑨ |
| 3                             | ICSPA3-B2N3MS3M-①-② ③-④ ⑤-⑥⑦-T2-⑥-⑨ |
| 4                             | ICSPA3-B2N4MS3M-①-② ③-④ ⑤-⑥⑦-T2-⑥-⑨ |

<sup>\*1</sup> Please refer to the following diagram under XY Configuration Direction.

Please refer to the table on the right for details of ① through ② in the model names above.

#### XY Configuration Direction



### Axis Configuration

| Axis configuration | Model                      | Reference page                        |
|--------------------|----------------------------|---------------------------------------|
| X-axis             | NS-LXMXS-①-400-20-②-T2-③-⑩ | → Please contact IAI for more details |
| Y-axis             | ISPA-MYM-①-200-20-④-T2-⑤   | → Please contact IAI for more details |
| Z-axis             | ISPA-MZM-①-200-10-⑥-T2-⑦   | → Please contact IAI for more details |

<sup>\*</sup> Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.

Note that the strokes are indicated in mm (millimeters)

#### **Explanation of Model Designations**

| No. | Description                         | Notation                      |
|-----|-------------------------------------|-------------------------------|
| 1   | Encoder type                        | A: Absolute<br>I: Incremental |
| 2   | X-axis stroke<br>(Note 1)           | 225:2250mm                    |
| 3   | X-axis option                       | Refer to Options table below. |
| 4   | Y-axis stroke<br>(Note 1)           | 20:200mm<br>?<br>70:700mm     |
| 5   | Y-axis option                       | Refer to Options table below. |
| 6   | Z-axis stroke<br>(Note 1)           | 10:100mm<br>2<br>40:400mm     |
| 7   | Z-axis option                       | Refer to Options table below. |
| 8   | Cable length<br>(Note 2)            | 3L:3m<br>5L:5m<br>□L:□m       |
| 9   | Y-axis - Z-axis<br>Cable Management | CT-CT: Cable track            |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in <u>alphabetical order</u>.

| Туре   | Model | Reference page |
|--|-------|----------------|
| AQ seal (standard equipment)   | AQ    | See P.353      |
| Brake (Y/Z-axis only (equipped as standard on Z-axis)) *1                | В     | See P.353      |
| Creep sensor *2  | C/CL  | See P.353      |
| Home limit switch *2   | L/LL  | See P.353      |
| Non-motor end specification *3 (Y/Z-axis only (standard Z-axis setting)) | NM    | See P.353      |
| Guide with ball-retaining mechanism                                      | RT    | See P.354      |

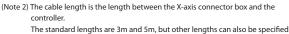
#### Common Specifications

| Drive system              | Ball screw, equivalent to rolled C5             |
|---------------------------|---|
| •                         |   |
| Positioning repeatability | ±0.01mm   |
| Lost motion               | 0.02mm or less                                  |
| Guide                     | Integrated with base                            |
| Base                      | Material: Aluminum with white alumite treatment |
| X-axis motor output/lead  | 400W/20mm                                       |
| Y-axis motor output/lead  | 200W/20mm                                       |
| Z-axis motor output/lead  | 200W/10mm                                       |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



in meters. The maximum length is 20m.

(Note 3) The rated acceleration is 0.3G. Y-axis is operable up to 1G, but the upper limit for the X-axis is 0.3G. (Please inquire regarding the payload at increased Y-axis acceleration)

Note that the strokes are indicated in mm (millimeters).

\*The following symbols are specified with [0] in the above model names.

NT1: For cartesian configuration directions 1 and 3

NT2: For cartesian configuration directions 2 and 4

Note: Although the rotating nut types and linear servo types are equipped with cable tracks even for individual axes, a different cable track is used when it is assembled in a Cartesian system, so replacement actuators should specify the no-cable track specification (NT1 or NT2).

<sup>\*1</sup> Brake option for Y-axis increases the length of the non-motor side. Please contact IAI for details.
\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "!" regardless of the mounting position. Please refer to P.11 for more information.
\*3 The configuration position in the figure is the home position. The normal setting for Z-axis is non-motor end (NM).
To set the Z-axis descent position as home, remove the non-motor end (NM) designation. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



#### ■B2N□MS3M

|               |       | Y-axis stroke |                     |  |  |  |  |  |  |  |
|---------------|-------|---------------|---------------------|--|--|--|--|--|--|--|
|               |       | 200           | 200 300 400 500 600 |  |  |  |  |  |  |  |
| a             | 100   |               | 9.1                 |  |  |  |  |  |  |  |
| Z-axis stroke | ~ 200 |               | 8.1                 |  |  |  |  |  |  |  |
|               | ~ 300 |               | 7.1                 |  |  |  |  |  |  |  |
| Z             | ~ 400 |               | 6.1                 |  |  |  |  |  |  |  |

#### Maximum Speed by Stroke (mm/s)

#### ■B2N□MS3M

|        |     | Stroke |     |     |     |     |     |       |       |  |  |  |  |
|--------|-----|--------|-----|-----|-----|-----|-----|-------|-------|--|--|--|--|
|        | 100 | 200    | 300 | 400 | 500 | 600 | 700 | 2250- | ~3000 |  |  |  |  |
| X-axis | _   | _      | _   | _   | _   | _   | _   | 1300  |       |  |  |  |  |
| Y-axis | _   |        |     |     |     |     |     |       |       |  |  |  |  |
| Z-axis |     | 60     | 00  |     | _   | _   | _   | _     | _     |  |  |  |  |

5 (Z: M.E. to S.E.)

## ICSPA3-B2N□MS3M-CT-CT (Cable track specification)

(Configuration direction 1)

5 (Z: M.E. to S.E.)

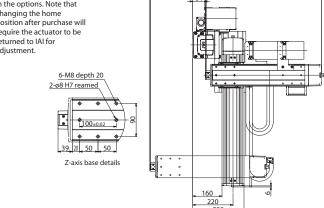
Z:STROKE+403.5 Z:STROKE+334.5

#### Dimensions

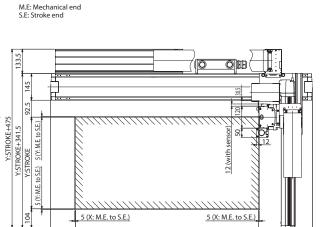
CAD drawings can be downloaded from our website.



\* The configuration position in the figure is the home position. To change the home position, indicate NM in the options. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.



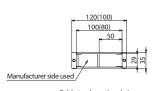
Z:STROKE



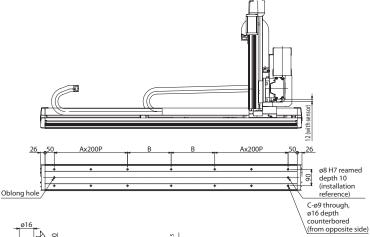
X:STROKE

X:STROKE+428

293



Cable track sectional view
\*( ) dimensions indicate Y-Z cable track



135



X-axis base mounting hole details

Oblong hole depth 10

|             | _      |        |      |        |
|-------------|--------|--------|------|--------|
| X-axis base | bottom | oblong | hole | detail |

| X stroke | 2250 | 2300 | 2350 | 2400 | 2450 | 2500 | 2550 | 2600 | 2650 | 2700 | 2750 | 2800 | 2850 | 2900 | 2950 | 3000 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A        | 5    | 5    | 5    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 7    | 7    | 7    | 7    | 7    |
| В        | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  | 263  | 288  | 313  | 138  | 163  | 188  | 213  | 238  |
| С        | 26   | 26   | 26   | 30   | 30   | 30   | 30   | 30   | 30   | 30   | 30   | 34   | 34   | 34   | 34   | 34   |



#### ICSB3-Z3C□HS1H Battery-less Absolute XZ+YS (Y Slider Z Upright) X: Md (200W X-Y-Z :: Md (200W :: Sm (60W) Speed Type **High-Precision** ICSPB3-Z3C Specification ■ Model Specification Z3C HS1H WA **T2** Encoder Type A-axis Stroke/Option Z-axis Stroke/Option Y-axis Stroke/Option P-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q XSEL-RA/SA\* Cable Z-axis-Y-Length Manag 3L: 3m 5L: 5m Refer to E L: Specified of Model Length Designati Z-axis - Y-axis Cabl Management Series Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat length precision : specificati

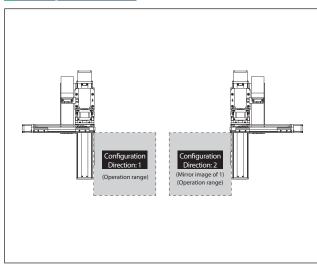
#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model                                       |
|----------------------------------|----------------------------|---|
| 1                                | Н                          | ICSB3[ICSPB3]-Z3C1HS1H-①-②③-④⑤-⑥DBNM-T2-⑥-⑨ |
| 2                                | Н                          | ICSB3[ICSPB3]-Z3C2HS1H-①-23-43-67BNM-T2-8-9 |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right for details of 11 through 12 in the model names above.

  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \*Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-MXL-①-200-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-MXM-①-200-10-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-SXM-①-60-16-⑥-T2-⑩-⑦  | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ② in the above model names.
- Note that the strokes are indicated in mm (millimeters).
- \* Cable exit direction is specified with 100 in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                                 |  |  |  |  |
|-----|----------------------------------|--|--|--|--|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                |  |  |  |  |
| 2   | X-axis stroke<br>(Note 1)        | 12: 120mm                                |  |  |  |  |
| 3   | X-axis option                    | Refer to Options table below.            |  |  |  |  |
| 4   | Z-axis stroke<br>(Note 1)        | 10: 100mm                                |  |  |  |  |
| (5) | Z-axis option                    | Refer to Options table below.            |  |  |  |  |
| 6   | Y-axis stroke<br>(Note 1)        | 10: 100mm                                |  |  |  |  |
| 7   | Y-axis option                    | Refer to Options table below.            |  |  |  |  |
| 8   | Cable length<br>(Note 2)         | 3L:3m<br>5L:5m<br>□L:□m                  |  |  |  |  |
| 9   | Z-axis - Y-axis Cable Management | CT-SC: Cable track - Self-standing cable |  |  |  |  |

#### Options

The option codes should be entered after the stroke for each axis. Make sure to indicate the standard equipped option in the model number. When selecting multiple options, specify them in alphabetical order.

| Туре   | Model | Reference page  |
|--|-------|-----------------|
| X-axis cable exit direction                              | *     | See P.11, P.353 |
| AQ seal (standard equipment)                             | AQ    | See P.353       |
| Brake (equipped as standard on Z-axis) *1                | В     | See P.353       |
| Creep sensor *2  | C/CL  | See P.353       |
| Home limit switch *2                                     | L/LL  | See P.353       |
| Non-motor end specification *3 (standard Y-axis setting) | NM    | See P.353       |
| Guide with ball-retaining mechanism (Y/Z-axis only) *4   | RT    | See P.354       |

- 1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
- \*1 Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.
  \*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.
  3 The configuration position in the figure is the home position. The normal setting for Y-axis is non-motor end (NM).
  To reverse the home position of the Y-axis, remove the non-motor end (NM) designation.
  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.
  \*4 Cannot be selected for High-Precision Specification.
  \*To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol.
  Please refer to P.11 for the cable exit direction of each axis.

#### Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 200W/10mm  |
| Y-axis motor output/lead  | 60W/16mm   |

#### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately.

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm (centimeters).



(Note 2) The cable length is the length between the X-axis connector box and the controller

The standard lengths are 3m and 5m, but other lengths can also be specified in meters. The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.



#### ■Z3C□HS1H

|               |     | Z-axis stroke |
|---------------|-----|---------------|
|               |     | 100~400       |
|               | 100 | 9.5           |
| au            | 150 | 9.2           |
| rok           | 200 | 8.8           |
| Y-axis stroke | 250 | 8.5           |
| -axi          | 300 | 8.2           |
| >             | 350 | 7.8           |
|               | 400 | 7.6           |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### ■Z3C□HS1H

|        | 120~670 | 720~770 | 820~870 | 920~970 | 1020~1070 |
|--------|---------|---------|---------|---------|-----------|
| X-axis | 1200    | 860     | 695     | 570     | 460       |

|        | 100~400 |
|--------|---------|
| Z-axis | 600     |
| Y-axis | 960     |

## ICSB3 [ICSPB3]-Z3C□HS1H-CT-SC (Cable track - Self-standing cable specification)

Óblong hole details

## Dimensions

CAD drawings can be downloaded from our website.

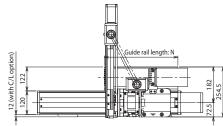


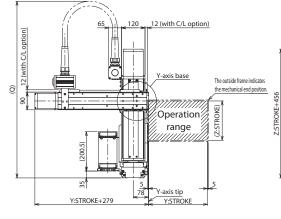


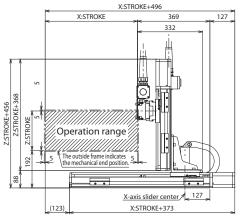


\* The position in the figure is the home position with normal settings. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

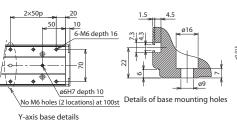
### (Configuration direction: 1)

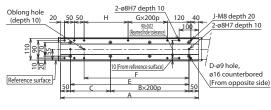












#### O dimension

| ~             |      |      |      |      |      |      |      |  |  |  |
|---------------|------|------|------|------|------|------|------|--|--|--|
| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  |  |  |  |
| 100           | 900  | 900  | 950  | 950  | 1000 | 1000 | 1000 |  |  |  |
| 150           | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1100 |  |  |  |
| 200           | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1200 |  |  |  |
| 250           | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1300 |  |  |  |
| 300           | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1400 |  |  |  |
| 350           | 1400 | 1400 | 1450 | 1450 | 1500 | 1500 | 1500 |  |  |  |
| 400           | 1500 | 1500 | 1550 | 1550 | 1600 | 1600 | 1600 |  |  |  |

| X-axis stroke | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770  | 820  | 870  | 920  | 970  | 1020 | 1070 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| A             | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904 | 954 | 1004 | 1054 | 1104 | 1154 | 1204 | 1254 | 1304 |
| В             | 0   | 1   | 1   | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| C             | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104 | 154 | 204 | 254 | 104  | 154  | 204  | 254  | 104  | 154  | 204  |
| D             | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   |
| E             | 254 | 304 | 354 | 404 | 454 | 504 | 554 | 604 | 654 | 704 | 754 | 804 | 854 | 904  | 954  | 1004 | 1054 | 1104 | 1154 | 1204 |
| F             | 184 | 234 | 284 | 334 | 384 | 434 | 484 | 534 | 584 | 634 | 684 | 734 | 784 | 834  | 884  | 934  | 984  | 1034 | 1084 | 1134 |
| G             | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    |
| Н             | 74  | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124 | 174 | 224 | 274 | 124  | 174  | 224  | 274  | 124  | 174  | 224  |
| J             | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   |
| N             | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  |



#### ICSB3-Z3G□HS2H ±10µm Battery-less Absolute XZ+YS (Y Slider Z Upright X: Lg (200W) Z: Lg (400W) Y: Md (100W) X-Y-Z Speed High-Precision ICSPB3-Z3G□HS2 Specification ■ Model Specification Z3G HS2H WA **T2** Encoder Type A-axis Stroke/Option Z-axis Stroke/Option Y-axis Stroke/Option P-axis Stroke/Op Applicable Controllers T2: SCON SSEL XSEL-P/Q Cable Z-axis -Y-axis Cab Length Management 3L: 3m 5L: 5m Refer to Explanatio DL: Specified of Model length Designations belon Series Z-axis - Y-axis Cabl Management Туре ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis Refer to Model Specification table below WA: Bat XSEL-RA/SA precision : specificati

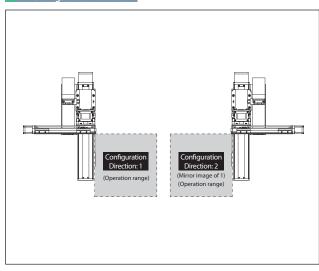
#### Model Specification \* Items in brackets [] are for the High-Precision Specification.

| XY configuration<br>direction *1 | Z-axis<br>speed<br>type *2 | Model   |
|----------------------------------|----------------------------|---|
| 1                                | Н                          | ICSB3[ICSPB3]-Z3G1HS2H-①-②③-④⑤-⑥⑦BNM-T2-⑧-⑨   |
| 2                                | Н                          | ICSB3[ICSPB3]-Z3G2HS2H-①-②③-④ ⑤-⑥ ⑦BNM-T2-⑥-⑨ |

- \*1 Please refer to the following diagram under XY Configuration Direction. Please refer to the table on the right
- for details of 11 through 12 in the model names above.

  \*2 The payload and the max speed may vary depending on the type of Z-axis.

#### XY Configuration Direction



#### Axis Configuration \* Items in brackets [] are for the High-Precision Specification.

| Name of axis | Model                           | Reference page                        |
|--------------|---------------------------------|---------------------------------------|
| X-axis       | ISB[ISPB]-LXL-①-200-20-②-T2-⑩-③ | → Please contact IAI for more details |
| Z-axis       | ISB[ISPB]-LXM-①-400-10-④-T2-⑩-⑤ | → Please contact IAI for more details |
| Y-axis       | ISB[ISPB]-MXM-①-100-20-⑥-T2-⑩-⑦ | → Please contact IAI for more details |

- Refer to the symbols within the table Explanation of Model Designations at the upper right for 1 through 2 in the above model names.

  Note that the strokes are indicated in mm (millimeters).
- Cable exit direction is specified with long in the above model names. Please refer to P.11 for the exit directions.

#### **Explanation of Model Designations**

| No. | Description                      | Notation                                 |
|-----|----------------------------------|--|
| 1   | Encoder type                     | WA: Battery-less Absolute                |
| 2   | X-axis stroke<br>(Note 1)        | 12: 120mm                                |
| 3   | X-axis option                    | Refer to Options table below.            |
| 4   | Z-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm              |
| (5) | Z-axis option                    | Refer to Options table below.            |
| 6   | Y-axis stroke<br>(Note 1)        | 10: 100mm<br>?<br>50: 500mm              |
| 7   | Y-axis option                    | Refer to Options table below.            |
| 8   | Cable length<br>(Note 2)         | 3L3m<br>5L:5m<br>□L:□m                   |
| 9   | Z-axis - Y-axis Cable Management | CT-SC: Cable track - Self-standing cable |

#### Options

The option codes should be entered after the stroke for each axis Make sure to indicate the standard equipped option in the model number.

| When selecting multiple options, specify them in <u>alphabe</u> | tical order. |                 |
|---|--------------|-----------------|
| Туре  | Model        | Reference page  |
| X-axis cable exit direction                                     | *            | See P.11, P.353 |
| AQ seal (standard equipment)                                    | AQ           | See P.353       |
| Brake (equipped as standard on Z-axis) *1                       | В            | See P.353       |
| Creep sensor *2   | C/CL         | See P.353       |
| Home limit switch *2  | L/LL         | See P.353       |
| Non-motor end specification *3 (standard Y-axis setting)        | NM           | See P.353       |
| Guide with ball-retaining mechanism (Y/Z-axis only) *4          | RT           | See P.354       |

- \*\* I Brake option for X and/or Y axes increases the length of the motor unit(s). Please contact IAI for details.

  \*\*2 When selecting the creep sensor and home limit switch, the mounting position differs according to the configuration direction, but the creep sensor is specified in the model name as "C" and the home limit switch as "L" regardless of the mounting position. Please refer to P.11 for more information.

  \*\*3 The configuration position in the figure is the home position. The normal setting for Y-axis is non-motor end (NM).

  To reverse the home position of the Y-axis, remove the non-motor end (NM) designation.

  Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

  \*\*4 Cannot be selected for High-Precision Specification.

- \* To set a different X-axis cable exit direction from the normal setting, indicate the cable exit direction symbol. Please refer to P.11 for the cable exit direction of each axis.

Common Specifications \* Items in brackets [] are for the High-Precision Specification.

| Drive system              | Ball screw, rolled C10 [equivalent to rolled C5] |
|---------------------------|--|
| Positioning repeatability | ±0.01mm [±0.005mm]                               |
| Lost motion               | 0.05mm [0.02mm] or less                          |
| Guide                     | Integrated with base                             |
| Base                      | Material: Aluminum with white alumite treatment  |
| X-axis motor output/lead  | 200W/20mm  |
| Z-axis motor output/lead  | 400W/10mm  |
| Y-axis motor output/lead  | 100W/20mm  |

### Applicable Controllers

Contact IAI. The controller for this system needs to be purchased/prepared separately

(Note 1) The strokes in the model names of the Cartesian Robots are specified in cm

(Note 2) The cable length is the length between the X-axis connector box and the controller. The standard lengths are 3m and 5m, but other lengths can also be specified in meters.

The maximum length is 15m.

(Note 3) The rated acceleration is 0.4G. The payload is based on operation at the rated acceleration.

When the acceleration is increased, the payload will be reduced. (Note 4) Please note that a longer stroke will result in a lower max speed.





#### ■Z3G□HS2H

|               |     |     |     |      | Ž    | Z-axis strok | е    |      |      |      |
|---------------|-----|-----|-----|------|------|--------------|------|------|------|------|
|               |     | 100 | 150 | 200  | 250  | 300          | 350  | 400  | 450  | 500  |
|               | 100 |     |     | 16   | 5.5  |              |      | 15.4 | 13.7 | 12.0 |
|               | 150 |     |     | 15   |      | 14.8         | 13.1 | 11.4 |      |      |
| ω             | 200 |     |     | 14.2 | 12.5 | 10.8         |      |      |      |      |
| Y-axis stroke | 250 |     |     | 13.5 | 11.8 | 10.1         |      |      |      |      |
| sst           | 300 |     |     | 12.9 | 11.2 | 9.5          |      |      |      |      |
| -ax           | 350 |     |     | 12.2 | 10.5 | 8.8          |      |      |      |      |
| >             | 400 |     |     | 12   |      | 11.6         | 9.9  | 8.2  |      |      |
|               | 450 |     |     |      | 9.3  | 7.6          |      |      |      |      |
|               | 500 |     |     |      | 10.1 |              |      |      | 8.7  | 7.0  |

#### Maximum Speed by Stroke (mm/s) (Note 4)

#### ■Z3G□HS2H

|        | 120~770 | 820~870 | 920~970 | 1020~1070 | 1120~1170 | 1220~1270 |
|--------|---------|---------|---------|-----------|-----------|-----------|
| X-axis | 1200    | 920     | 765     | 645       | 550       | 440       |

|        | 100~500 |
|--------|---------|
| Z-axis | 600     |
| Y-axis | 1200    |

## ICSB3 [ICSPB3]-Z3G□HS2H-CT-SC (Cable track - Self-standing cable specification)

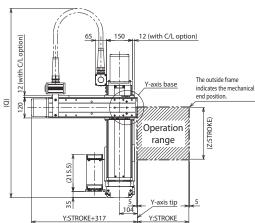
### Dimensions

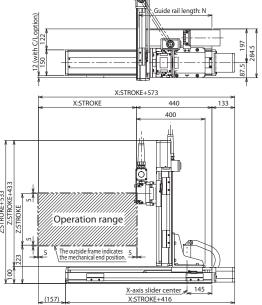
downloaded from our website.





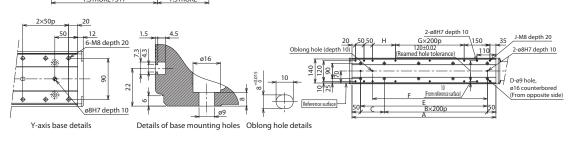
\* The position in the figure is the home position with normal settings. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.





(Configuration direction: 1)





(157)

#### Q dimension

| Z-axis Y-axis | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |
|---------------|------|------|------|------|------|------|------|------|------|
| 100           | 950  | 1000 | 1000 | 1000 | 1050 | 1050 | 1100 | 1100 | 1150 |
| 150           | 1050 | 1100 | 1100 | 1100 | 1150 | 1150 | 1200 | 1200 | 1250 |
| 200           | 1150 | 1200 | 1200 | 1200 | 1250 | 1250 | 1300 | 1300 | 1350 |
| 250           | 1250 | 1300 | 1300 | 1300 | 1350 | 1350 | 1400 | 1400 | 1450 |
| 300           | 1350 | 1400 | 1400 | 1400 | 1450 | 1450 | 1500 | 1500 | 1550 |
| 350           | 1450 | 1500 | 1500 | 1500 | 1550 | 1550 | 1600 | 1600 | 1650 |
| 400           | 1550 | 1600 | 1600 | 1600 | 1650 | 1650 | 1700 | 1700 | 1750 |
| 450           | 1650 | 1700 | 1700 | 1700 | 1750 | 1750 | 1800 | 1800 | 1850 |
| 500           | 1750 | 1800 | 1800 | 1800 | 1850 | 1850 | 1900 | 1900 | 1950 |

| X-axis stroke | 120 | 170 | 220 | 270 | 320 | 370 | 420 | 470 | 520 | 570 | 620 | 670 | 720 | 770  | 820  | 870  | 920  | 970  | 1020 | 1070 | 1120 | 1170 | 1220 | 1270 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| A             | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938 | 988 | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 | 1488 | 1538 |
| В             | 0   | - 1 | - 1 | 1   | - 1 | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 6    | 6    | 6    |
| С             | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138 | 188 | 238 | 288 | 138  | 188  | 238  | 288  | 138  | 188  | 238  | 288  | 138  | 188  | 238  |
| D             | 4   | 6   | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  | 10  | 10  | 12   | 12   | 12   | 12   | 14   | 14   | 14   | 14   | 16   | 16   | 16   |
| E             | 288 | 338 | 388 | 438 | 488 | 538 | 588 | 638 | 688 | 738 | 788 | 838 | 888 | 938  | 988  | 1038 | 1088 | 1138 | 1188 | 1238 | 1288 | 1338 | 1388 | 1438 |
| F             | 218 | 268 | 318 | 368 | 418 | 468 | 518 | 568 | 618 | 668 | 718 | 768 | 818 | 868  | 918  | 968  | 1018 | 1068 | 1118 | 1168 | 1218 | 1268 | 1318 | 1368 |
| G             | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 5    | 5    | 5    |
| Н             | 83  | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133 | 183 | 233 | 283 | 133  | 183  | 233  | 283  | 133  | 183  | 233  | 283  | 133  | 183  | 233  |
| J             | 10  | 10  | 10  | 10  | 10  | 12  | 12  | 12  | 12  | 14  | 14  | 14  | 14  | 16   | 16   | 16   | 16   | 18   | 18   | 18   | 18   | 20   | 20   | 20   |
| N             | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525  | 550  | 575  | 600  | 625  | 650  | 675  | 700  | 725  | 750  | 775  |

## Cartesian Robot Options

#### **Cable exit direction**

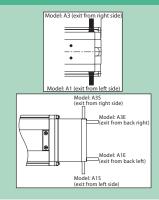
Model A1/A3

Description Specify when changing the actuator cable exit direction.

Model A1S/A1E/A3S/A3E

Description The exit direction of the actuator cable can be selected from back left, side left, back right and side right.

\* It is required to select an exit direction.



#### **AQ** seal

Model

**A0** 

R

AQ seal is a lubricant unit that uses a lubricating member made of lubricating oil solidified with resin.

Because it is a porous member that contains a large amount of lubricating oil, the oil seeps out on the surface through capillary action. Lubricating oil is supplied by pressing the AQ seal on the surface of the guide and ball screw (steel ball rolling surface), enabling long-term use without maintenance in a synergistic effect by the combined use of the grease.

#### **Brake**

Model

Description

When used vertically, this works as a holding mechanism that prevents the Z-axis slider from falling and damaging any attached fittings when the power or servo is turned off.

As the Z-axis is designed to be used vertically, a brake will be equipped as a standard feature.

For axes other than the Z-axis, please use the brake option as required.

#### Creep sensor

Model

C / CL

Description A sensor for performing homing at high speed.

As homing is normally done by pressing the slider against the stopper on the motor side stroke end and reversing it, the homing speed is kept to 10~20mm/s. Therefore, types with long stroke take time until homing is completed. In order to shorten this, the proximity sensor is used to return the slider at high speed halfway through, then drop the speed to normal homing return speed just before home. The mounting position of the sensor is by default on the right side of the actuator body as viewed from the motor side (C) and the left side for the opposite type (CL).

The mounting position of the sensor is determined by the axis configuration direction. Please refer to P.11 for more information.

#### Home limit switch

Model

Description

When performing home return, the standard type determines the home position by pushing against the mechanical end and reversing. This option allows reverse motion to be triggered by a

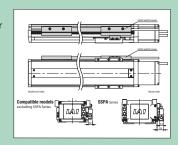
Use when changing or adjusting the reversing position during home return or confirming that the home position has been reached.

The mounting position of the limit switch and cover is by default on the right side of the actuator body as viewed from the motor side (L) and the left side for the opposite type (LL).

The mounting position of the sensor is determined by the axis configuration direction. Please refer to P.11 for more information.

\* IS(S)P-W has a limit switch equipped as standard.

Also, as the limit switch is built into the body, there is no cover on the body side.



#### Non-motor end specification

Model

Description

The normal home position is set to the motor side, but this is the option to set the home position on the other side in order to accommodate variations in equipment layout, etc. (Please note that changing the home position after the actuators are shipped may require the products to be sent back to IAI for re-setting.)

#### **Guide with ball-retaining mechanism**

Model

Description

RT

A spacer (retainer) is placed between steel balls of the guide in order to reduce noise and extend the service life.

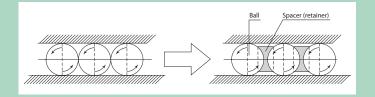
It eliminates metallic noise due to balls colliding with each other, reducing harsh noise.

It reduces wear caused by friction of balls, extending the life of the guide.

It eliminates the interference between balls, making the movement smoother and improving the operating capability of the slider.

\* It cannot be used with ISB/ISPB-SXL/MXL/LXL or ISA/ISPA-WXM/WXMX.



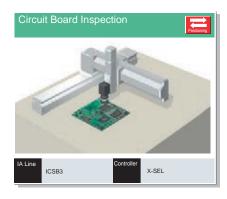


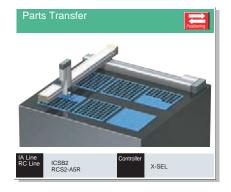
## Cartesian Robot Application Examples

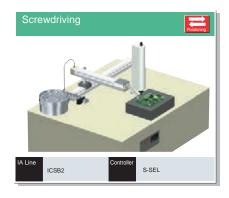


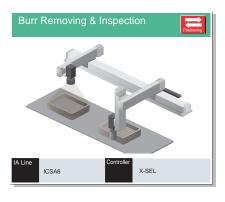
















# ICSB&ICSA Series Catalogue No. 0417-E

The information contained in this catalog is subject to change without notice for the purpose of product inprovement





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