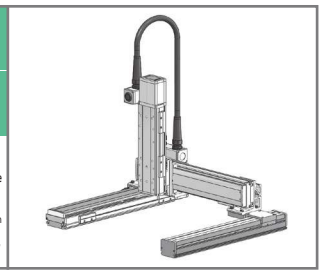
ICSB3-GC□HS1□
ICSPB3-GC□HS1□ High-Precision Specification

±10μm Standard | ±5μm High-Precision | Battery-less Absolute | X-Y-Z 3-axis | XYBG+ZS (Y Slide Gantry Z Slider) | High Speed Type | X: Md (200W) Y: Md (100W) Z: Sml (60W)



■ Model Specification Items

□ — GC□HS1□ — WA — □□ — □□ — □□ — T2 — □ — □

Series	Type	Encoder Type	X-axis Stroke/Option	Y-axis Stroke/Option	Z-axis Stroke/Option	Applicable Controllers	Cable Length	Y-axis - Z-axis Cable Management
ICSB3: Standard 3-axis specification ICSPB3: High precision 3-axis specification	Refer to Model Specification table below	WA: Battery-less Absolute	10: 100mm ~ 100: 1000mm (Every 50mm) Refer to Options table below.	30: 300mm ~ 70: 700mm (Every 50mm) Refer to Options table below.	10: 100mm ~ 40: 400mm (Every 50mm) Refer to Options table below.	T2: SCON SSEL XSEL-P/Q XSEL-RA/SA	3L: 3m 5L: 5m □L: Specified length	Refer to Explanation of Model Designations below

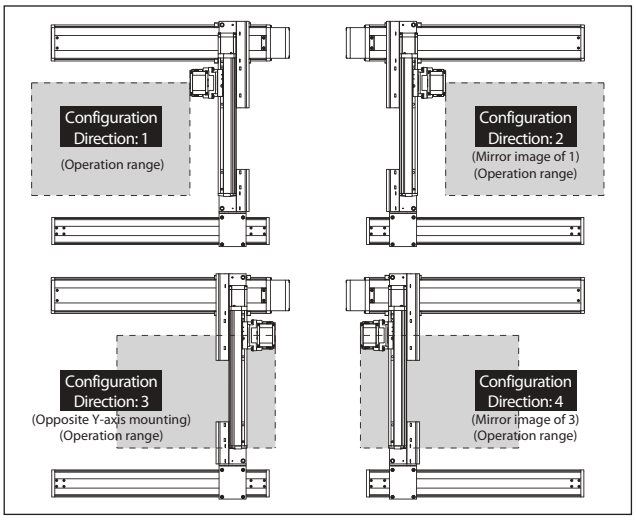
Model Specification

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

XY configuration direction *1	Z-axis speed type *2	Model
1	M	ICSB3[ICSPB3]-GC1HS1M-①-②-③-④-⑤-⑥-⑦-T2-⑧-⑨
	L	ICSB3[ICSPB3]-GC1HS1L-①-②-③-④-⑤-⑥-⑦-T2-⑧-⑨
2	M	ICSB3[ICSPB3]-GC2HS1M-①-②-③-④-⑤-⑥-⑦-T2-⑧-⑨
	L	ICSB3[ICSPB3]-GC2HS1L-①-②-③-④-⑤-⑥-⑦-T2-⑧-⑨
3	M	ICSB3[ICSPB3]-GC3HS1M-①-②-③-④-⑤-⑥-⑦-T2-⑧-⑨
	L	ICSB3[ICSPB3]-GC3HS1L-①-②-③-④-⑤-⑥-⑦-T2-⑧-⑨
4	M	ICSB3[ICSPB3]-GC4HS1M-①-②-③-④-⑤-⑥-⑦-T2-⑧-⑨
	L	ICSB3[ICSPB3]-GC4HS1L-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 ⑨ 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 (Drive axis)	ISB[ISPB]-MXM-①-200-20-②-T2-⑪-③	→ Please contact IAI for more details
X-axis (Driven axis)	ISB-SXM01-N-0-0-②	—
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

* Refer to the symbols within the table Explanation of Model Designations at the upper right for ① through ⑦ 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 ⑪ 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 (Note 1)	10: 100mm ~ 100: 1000mm
③	X-axis option	Refer to Options table below.
④	Y-axis stroke (Note 1)	30: 300mm ~ 70: 700mm
⑤	Y-axis option	Refer to Options table below.
⑥	Z-axis stroke (Note 1)	10: 100mm ~ 40: 400mm
⑦	Z-axis option	Refer to Options table below.
⑧	Cable length (Note 2)	3L:3m 5L:5m □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
X-axis cable exit direction	*	See P.11, P.369
AQ seal (standard equipment)	AQ	See P.369
Brake (equipped as standard on Z-axis) *1	B	See P.369
Creep sensor *2	C/CL	See P.369
Home limit switch *2	L/LL	See P.369
Non-motor end specification *3 (standard Z-axis setting)	NM	See P.369
Guide with ball-retaining mechanism *4	RT	See P.370

*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	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.

Notes

(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.

Payload (kg) (Note 3)

■GC□HS1M

Z-axis stroke \ Y-axis stroke	300~700
100	4.3
150	3.9
200	3.5
250	3.1
300	2.8
350	2.4
400	2.1

■GC□HS1L

Z-axis stroke \ Y-axis stroke	300~700
100	11.3
150	10.9
200	10.5
250	10.1
300	9.8
350	9.4
400	9.1

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

■GC□HS1M

	100~300	300~400	450~700	750~800	850~900	950~1000
X-axis	1200			860	695	570
Y-axis	—	1200		—		
Z-axis	480		—			

■GC□HS1L

	100~300	300~400	450~700	750~800	850~900	950~1000
X-axis	1200			860	695	570
Y-axis	—	1200		—		
Z-axis	240		—			

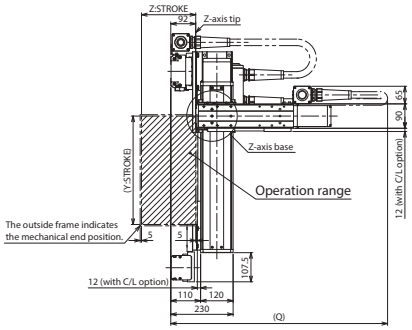
ICSB3 [ICSPB3]-GC□HS1-SC-SC□ (Self-standing cable specification)

Dimensions

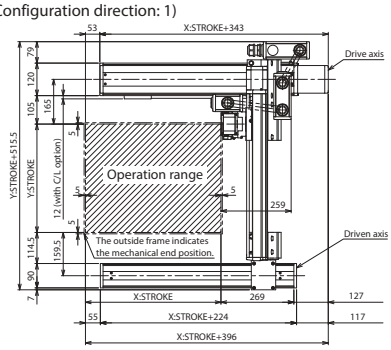
CAD drawings can be downloaded from our website.

2D CAD 3D CAD RoHS

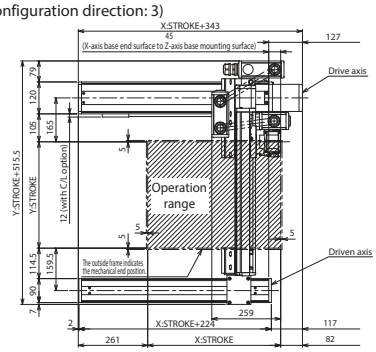
* The position in the figure is the home position with normal settings. Note that changing the home position after purchase will require the actuator to be returned to IAI for adjustment.

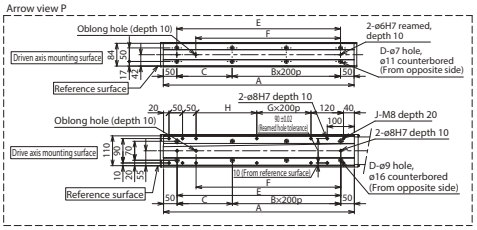


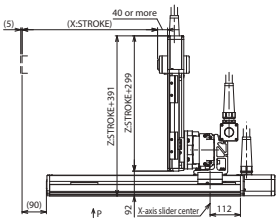
(Configuration direction: 1)

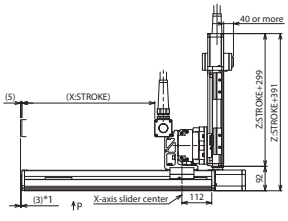


(Configuration direction: 3)

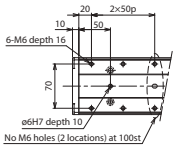




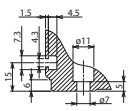




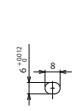
*1 Amount of Y-axis connector box protrusion when X-axis moves to the mechanical end position



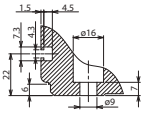
Z-axis base details



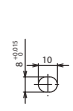
Driven axis base mounting hole details



Driven axis base oblong hole details



Drive axis base mounting hole details



Drive axis base oblong hole details

Q dimension

Z-axis \ Y-axis	300	350	400	450	500	550	600	650	700
100	800	800	800	850	850	900	900	950	950
150	850	850	850	900	900	950	950	1000	1000
200	900	900	900	950	950	1000	1000	1050	1050
250	950	950	950	1000	1000	1050	1050	1100	1100
300	1000	1000	1000	1050	1050	1100	1100	1150	1150
350	1050	1050	1050	1100	1100	1150	1150	1200	1200
400	1100	1100	1100	1150	1150	1200	1200	1250	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
B	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
H	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