IAI
Quality and Innovation
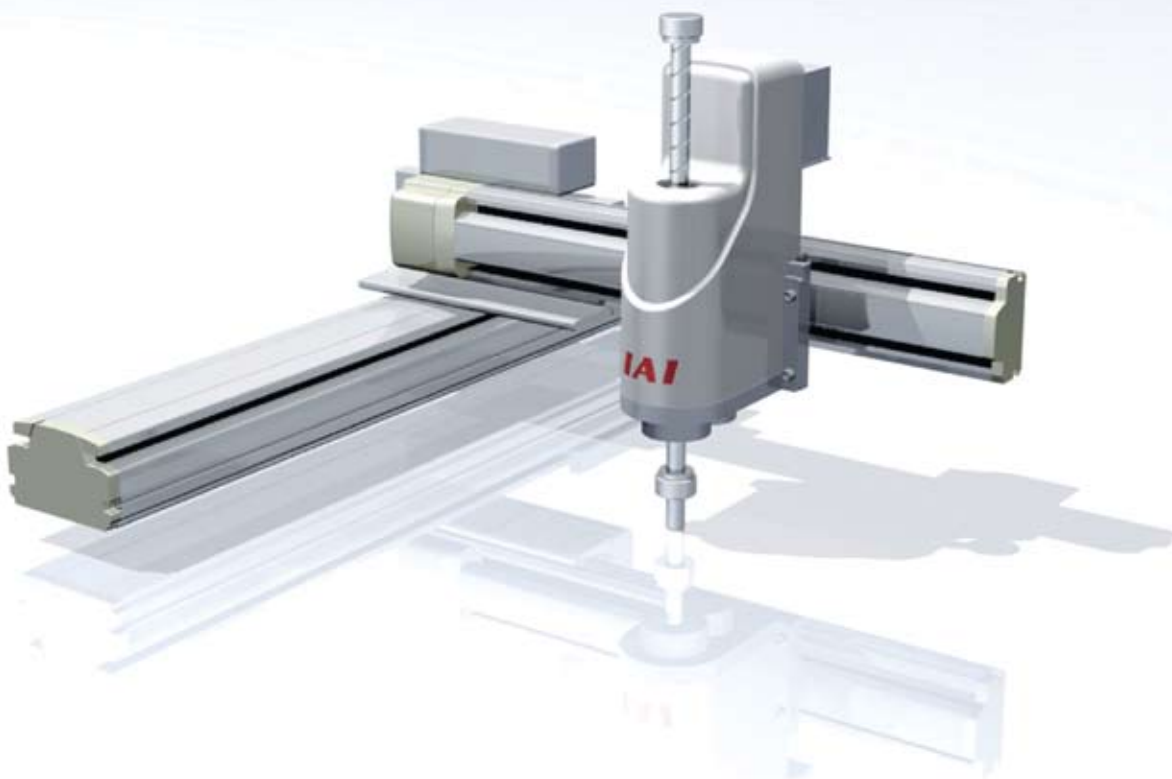
Vertical/Rotation **ZR**-**S/M**

www.intelligentactuator.com

ZR Series

ZR-S (Small Type) - ZR-M (Medium Type)

High Speed Vertical/Rotation Electric Actuator

- Max Stroke: 200mm / 360°
- Max Speed: 1256mm/s - 2200°/s
- Max Payload: 6kg
- Max Positions: 20,000 points
- Controller: XSEL
- Controller Voltage: 200V

ZR — [ ] — [ ] — [ ] — [ ] — [ ] — T2 — [ ] — [ ]

| Series | Type | Encoder type | Z-Axis Motor | Z-Axis Lead | Stroke | Applicable controller | Cable length | Options |

Type	
S	Small Type (Z-Axis 100W / R-Axis 100W)
M	Medium Type (Z-Axis 200W / R-Axis 200W)

Encoder type	
A	Absolute
I	Incremental

Z-Axis Motor	
100	100W (S Type)
200	200W (M Type)

Z-Axis Lead	
16	16mm (S Type)
20	20mm (M Type)

Stroke	
150	150mm (S Type)
200	200mm (M Type)

Applicable controller	
T2	XEL-P/Q

Cable length	
N	No Cable
S	3m
M	5m
X□□	Specified Length

Options	
B	Brake (Z-Axis)
L	Limit switch (Rotation)

1. Add the ZR Unit to a 2-axis System to Create a High Speed 4-axis System

Because of the compact construction of the ZR unit, it is possible to add the ZR unit as a standard configuration to the ICSA/ICSPA series actuators. Take your manufacturing to higher levels of efficiency and productivity.

2. High Speed Rotation

The high speed R-axis is capable of up to 2200°/s and will cut your cycle time, improving ROI.
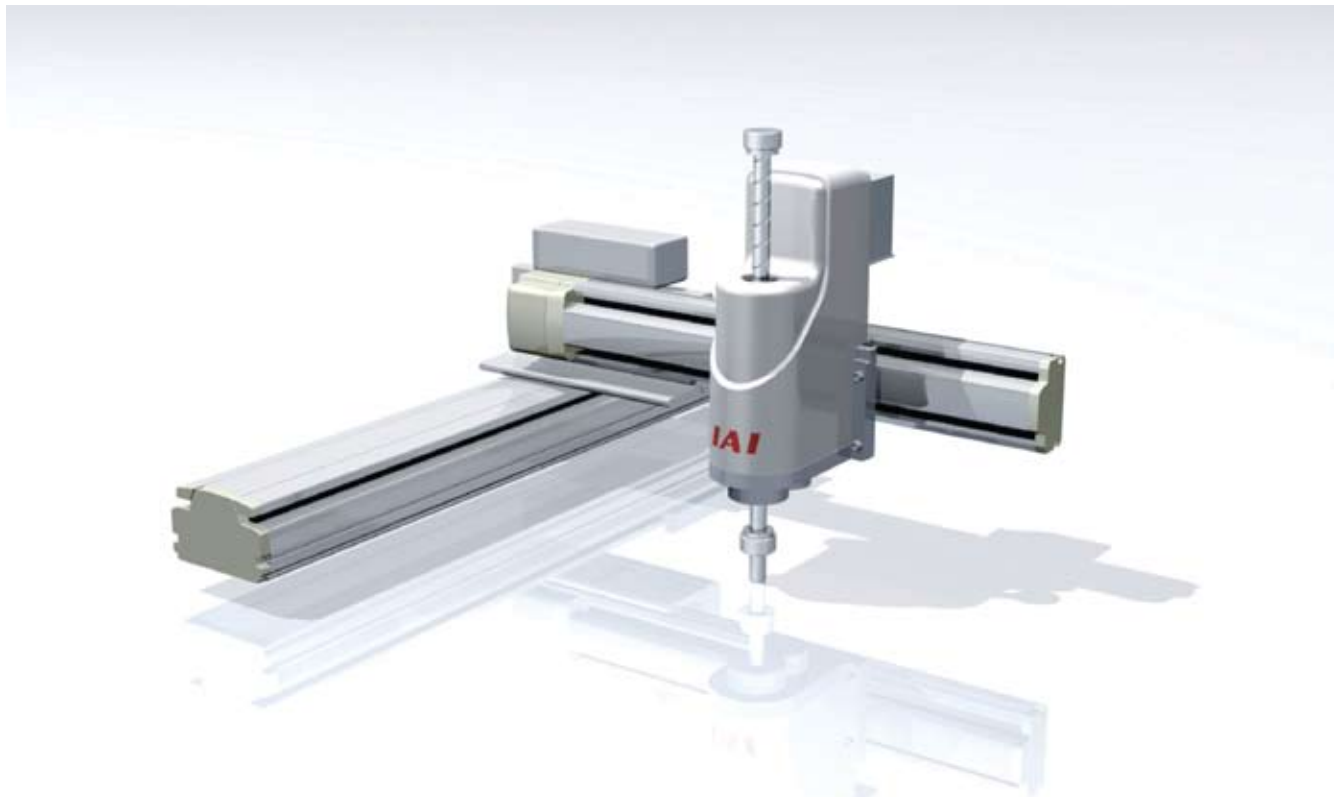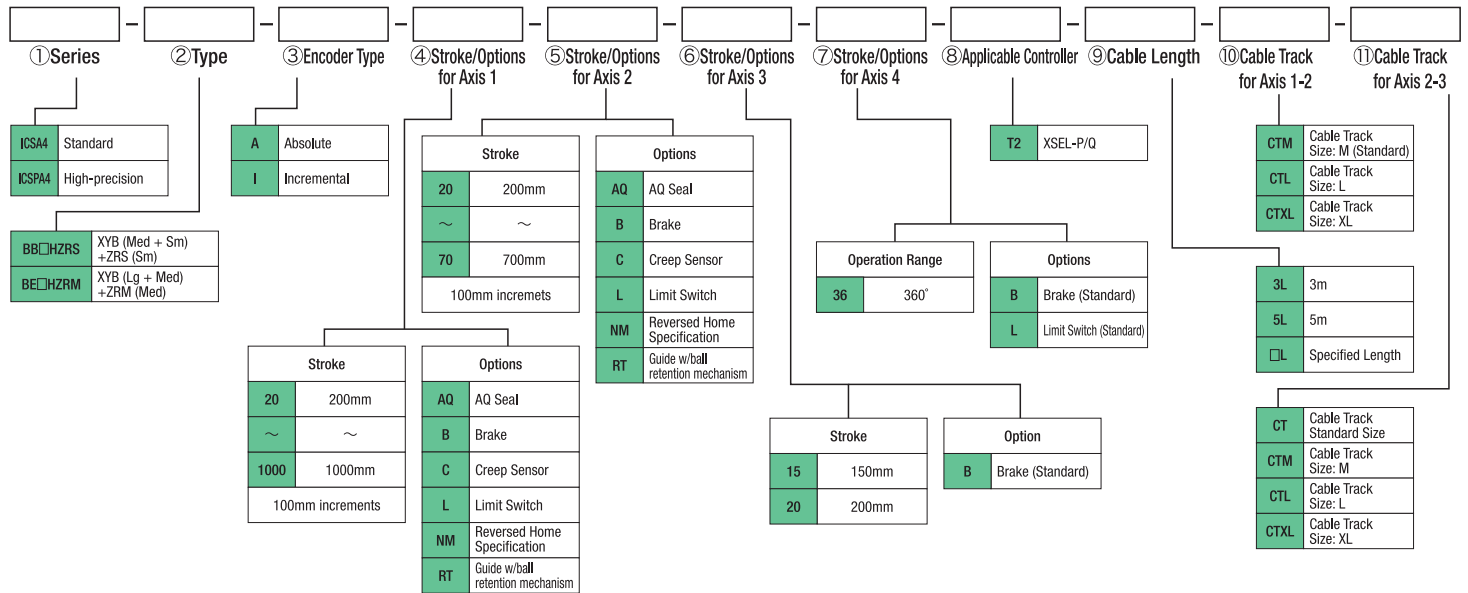
3. 2 Sizes to Fit Your Application

Select the small or medium type ZR unit with either the absolute or incremental encoder.

Specifications		ZR-S (Small Type)	ZR-M (Medium Type)
Motor Output	Z-Axis (Vertical) (W)	100	200
	R-Axis (Rotation) (W)	100	200
Work Envelope	Z-Axis (Vertical) (mm)	150	200
	R-Axis (Rotation) (Deg)	±360°	±360°
Maximum Operating Speed	Z-Axis (Vertical) (mm/s)	1005	1256
	R-Axis (Rotation) (Deg/s)	2200°	2200°
Load Capacity	Rated (kg)	1	2
	Max (kg)	3	6

ICSA4/ICSPA4 Series

XY 2-axis combination + ZR (Z-axis and rotation axis)

Model configuration:

① Series – ② Type – ③ Encoder Type – ④ Stroke/Options for Axis 1 – ⑤ Stroke/Options for Axis 2 – ⑥ Stroke/Options for Axis 3 – ⑦ Stroke/Options for Axis 4 – ⑧ Applicable Controller – ⑨ Cable Length – ⑩ Cable Track for Axis 1-2 – ⑪ Cable Track for Axis 2-3

① Series

ICSA4	Standard
ICSPA4	High-precision

BB☐HZRS	XYB (Med + Sm) +ZRS (Sm)
BE☐HZRM	XYB (Lg + Med) +ZRM (Med)

② Type

A	Absolute
I	Incremental

③ Encoder Type / ④ Stroke/Options for Axis 1

Stroke

20	200mm
~	~
70	700mm
	100mm incremets

Stroke

20	200mm
~	~
1000	1000mm
	100mm increments

Options

AQ	AQ Seal
B	Brake
C	Creep Sensor
L	Limit Switch
NM	Reversed Home Specification
RT	Guide w/ball retention mechanism

⑤ Stroke/Options for Axis 2

Options

AQ	AQ Seal
B	Brake
C	Creep Sensor
L	Limit Switch
NM	Reversed Home Specification
RT	Guide w/ball retention mechanism

⑥ Stroke/Options for Axis 3

Stroke

15	150mm
20	200mm

Option

B	Brake (Standard)

⑦ Stroke/Options for Axis 4

Operation Range

36	360°

Options

B	Brake (Standard)
L	Limit Switch (Standard)

⑧ Applicable Controller

T2	XSEL-P/Q

⑨ Cable Length

3L	3m
5L	5m
☐L	Specified Length

⑩ Cable Track for Axis 1-2

CTM	Cable Track Size: M (Standard)
CTL	Cable Track Size: L
CTXL	Cable Track Size: XL

⑪ Cable Track for Axis 2-3

CT	Cable Track Standard Size
CTM	Cable Track Size: M
CTL	Cable Track Size: L
CTXL	Cable Track Size: XL

ZR-S
Vertical/Rotational Axis Integrated Type, Compact type, 100W

■ Model ZR － S － □ － 100 － 16 － 150 － T2 － □ － B － L

Series － Type － Encoder Type － Motor Type － Z-axis lead － Z-axis stroke － Applicable Controller － Cable Length － Options

A: Absolute   100:100W   16:16mm   150:150mm   T2:XSEL
I: Incremental

N: None
S: 3m
M: 5m
X□□: Specified Length

B: Brake (standard feature)
L: Limit switch
(standard feature on rotational axis)

Models/Specifications

Model	Axis Configuration	Encoder Type	Motor Capacity (W)	Operation Range	Positioning Repeatability (mm)	Maximum Operating Speed (note 1)	Loading Capacity (kg)		Vertical Axis Push force (N)		Rotational Axis Allowable load	
							Rated (note 2)	Max (note 2)	Push motion operation (note 3)	Max thrust (note 3)	Allowable inertial moment (kg·m²)(note 4)	Allowable torque (N·m)
ZR-S- ① -100-16-150-T2- ② -B-L	Vertical axis	Absolute	100	150mm	±0.010	1005mm/s	1	3	74.8	107	0.015	1.9
	Rotational axis	Incremental	100	±360°	±0.005	2200°/s						

* In the above model name, ① indicates the encoder type, while ② indicates the cable length.

Options

Name	Option code	Remarks
Brake	B	Standard feature on vertical axis/rotational axis
Home Limit Switch	L	Standard feature on rotational axis

* The following adjustment jig (sold separately) is required for the absolute specification.
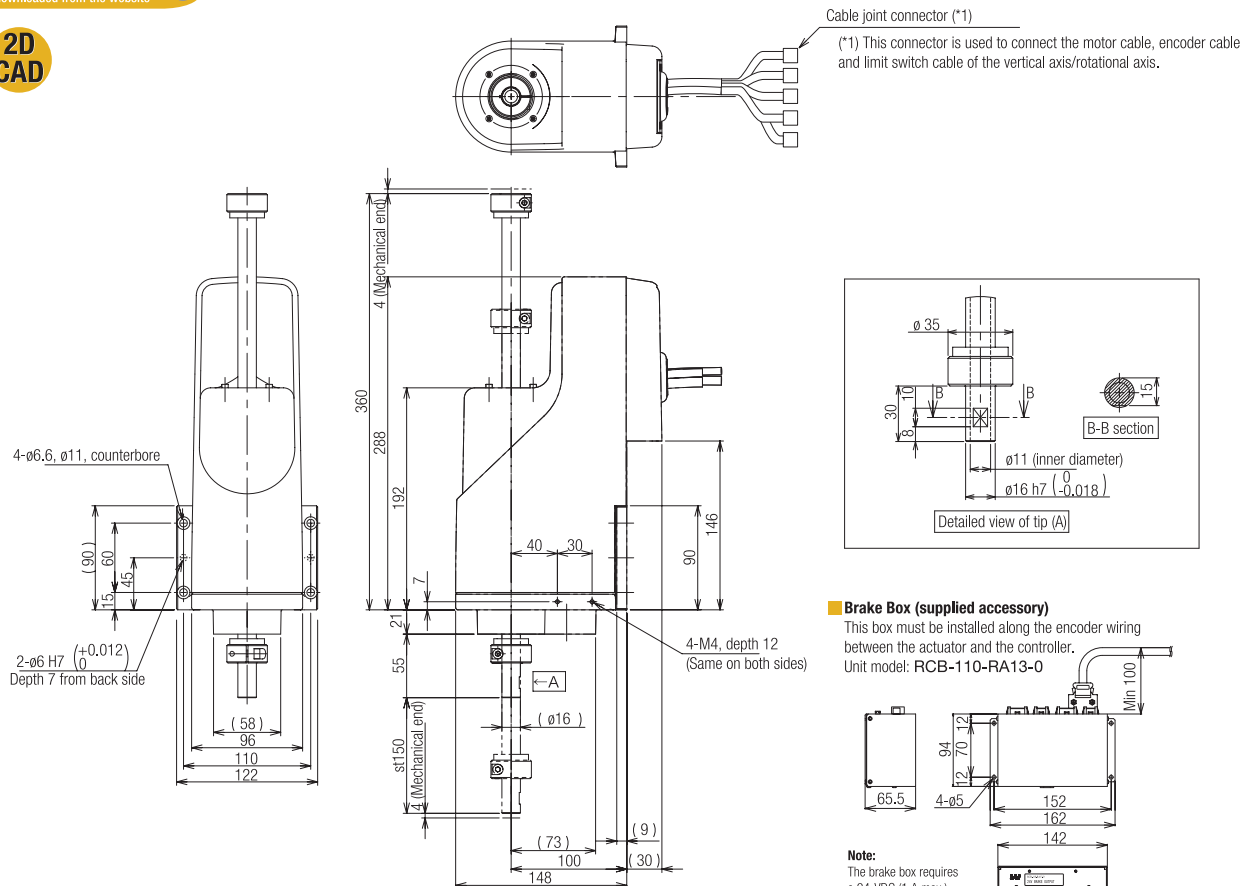Absolute reset adjustment jig (model: JG-ZRS)

Actuator Specifications

Encoder type	Absolute / Incremental
Actuator weight	5.5kg
Applicable controller	T2 : XSEL-P/Q
Cable Length (note 5)	N : No cable, S : 3m, M : 5m, X□□ : Specified length
Ambient operating temp/humidity	Temperature 0 to 40°C, Humidity 20 to 85% RH max. (non-condensing)

Dimensions

CAD drawings can be downloaded from the website

2D CAD

Cable joint connector (*1)

(*1) This connector is used to connect the motor cable, encoder cable and limit switch cable of the vertical axis/rotational axis.

4-ø6.6, ø11, counterbore

(90)
60
45
15

2-ø6 H7 ($^{+0.012}_{0}$)
Depth 7 from back side

(58)
96
110
122

4 (Mechanical end)
360
288
192
7
21
55
st150
4 (Mechanical end)

40   30
146
90
4-M4, depth 12
(Same on both sides)
A
(ø16)
(73)   (9)
100   (30)
148

ø 35
10
30
8
B   B
B-B section
15
ø11 (inner diameter)
ø16 h7 ($^{0}_{-0.018}$)
Detailed view of tip (A)

■ Brake Box (supplied accessory)
This box must be installed along the encoder wiring between the actuator and the controller.
Unit model: RCB-110-RA13-0

Min 100
94
70   12
12
65.5   4-ø5
152
162
142

Note:
The brake box requires a 24-VDC (1 A max.) power supply.

Note:
When this unit is combined with a cartesian robot, reduce the speed and acceleration if the actuator is to be moved with the vertical axis lowered.

Applicable Controller Specifications

Applicable Controller	Max number of controlled axes	Connectable encoder type	Operating method	Power-supply voltage
X-SEL-P/Q	6 axes	Absolute/incremental	Program	Single-phase/3-phase 200 VAC

⚠ Caution

(Note 1) Based on PTP command operation.
(Note 2) The rated loading capacity assumes operation at an acceleration/deceleration of 0.3G, while the maximum loading capacity assumes operation at an acceleration/deceleration of 0.1G.
(Note 3) The push force of the vertical axis represents the force that pushes an object at the tip of the vertical axis. The value indicated under "Push-motion operation" corresponds to the maximum push force when a push command is executed in the program. The value indicated under "Maximum thrust" corresponds to the maximum thrust achieved during normal positioning operation. If you are performing push-motion operation, be sure to use a push command in the program.
(Note 4) Allowable inertial moment converted to an equivalent value at the center of the rotational axis. The actual value may be lower depending on the conditions of use.
(Note 5) The maximum cable length is 30m. Specify a desired length in meters. (Example X08 = 8m)

ZR-M

Vertical/Rotational Axis Integrated Type, Medium size type, 200W

■ **Model**

ZR	–	M	–	☐	–	200	–	20	–	200	–	T2	–	☐	–	B	–	L
Series		Type		Encoder Type		Motor Type		Z-axis lead		Z-axis stroke		Applicable Controller		Cable Length		Options		

A: Absolute
I: Incremental

200:200W

20:20mm

200:200mm

T2:XSEL-P/Q

N: None
S: 3m
M: 5m
X☐☐: Specified Length

B: Brake (standard feature)
L: Limit switch (standard feature on rotational axis)

Models/Specifications

Model	Axis Configuration	Encoder Type	Motor Capacity (W)	Operation Range	Positioning Repeatability (mm)	Maximum Operating Speed (note 1)	Loading Capacity (kg)		Vertical Axis Push force (N)		Rotational Axis Allowable load	
							Rated (note 2)	Max (note 2)	Push motion operation (note 3)	Max thrust (note 3)	Allowable inertial moment (kg·m²)(note 4)	Allowable torque (N·m)
ZR-M-①-200-20-200-T2-②-B-L	Vertical axis	Absolute	200	200mm	±0.010	1256mm/s	2	6	120	171	0.03	3.8
	Rotational axis	Incremental	200	±360º	±0.005	2200º/s						

* In the above model name, ① indicates the encoder type, while ② indicates the cable length.

Options

Name	Option code	Remarks
Brake	B	Standard feature on vertical axis/rotational axis
Home Limit Switch	L	Standard feature on rotational axis

* The following adjustment jig (sold separately) is required for the absolute specification. Absolute reset adjustment jig (model: JG-ZRM)
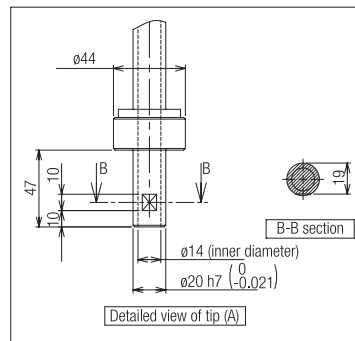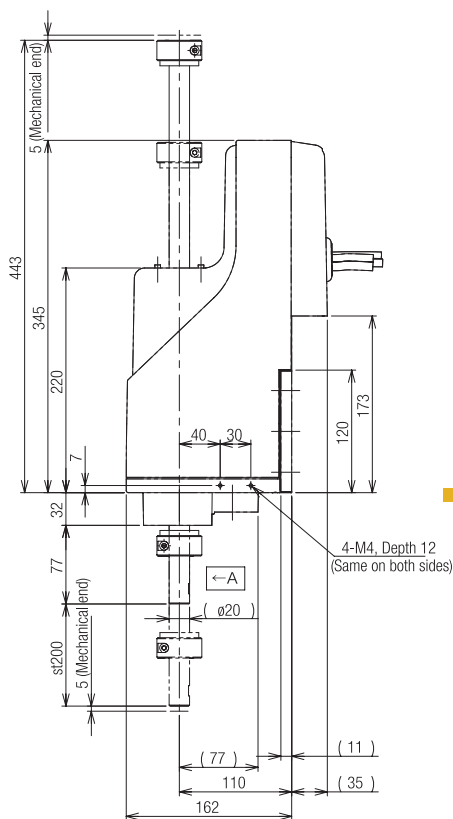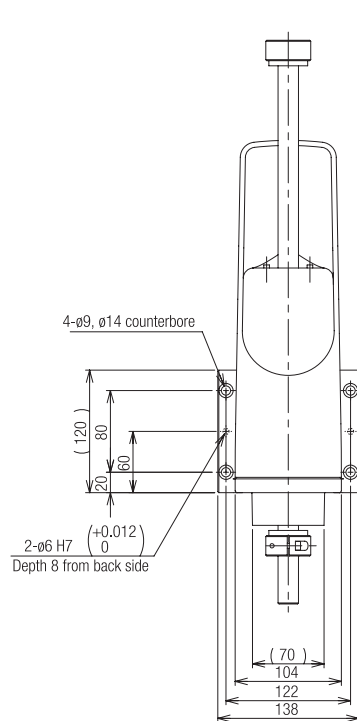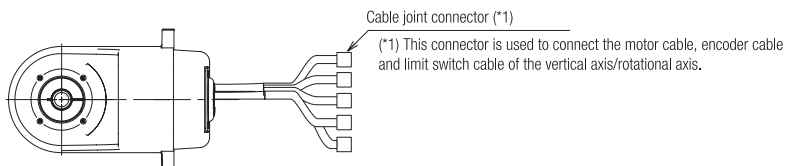
Actuator Specifications

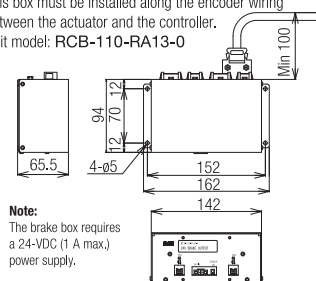| Encoder type	Absolute / Incremental
Actuator weight	8kg
Applicable controller	T2 : XSEL-P/Q
Cable Length (note 5)	N : No cable, S : 3m, M : 5m, X☐☐ : Specified length
Ambient operating temp/humidity	Temperature 0 to 40°C, Humidity 20 to 85% RH max. (non-condensing)

Dimensions

CAD drawings can be downloaded from the website

2D CAD

4-ø9, ø14 counterbore

2-ø6 H7 $\binom{+0.012}{0}$
Depth 8 from back side

Cable joint connector (*1)

(*1) This connector is used to connect the motor cable, encoder cable and limit switch cable of the vertical axis/rotational axis.

ø44

ø14 (inner diameter)
ø20 h7 $\binom{0}{-0.021}$

Detailed view of tip (A)

B-B section

4-M4, Depth 12 (Same on both sides)

Brake Box (supplied accessory)
This box must be installed along the encoder wiring between the actuator and the controller.
Unit model: RCB-110-RA13-0

Min 100

Note:
The brake box requires a 24-VDC (1 A max.) power supply.

Note:
When this unit is combined with a cartesian robot, reduce the speed and acceleration if the actuator is to be moved with the vertical axis lowered.

Applicable Controller Specifications

Applicable Controller	Max number of controlled axes	Connectable encoder type	Operating method	Power-supply voltage
X-SEL-P/Q	6 axes	Absolute/incremental	Program	Single-phase/3-phase 200 VAC

⚠ Caution

(Note 1) Based on PTP command operation.
(Note 2) The rated loading capacity assumes operation at an acceleration/deceleration of 0.3G, while the maximum loading capacity assumes operation at an acceleration/deceleration of 0.1G.
(Note 3) The push force of the vertical axis represents the force that pushes an object at the tip of the vertical axis. The value indicated under "Push-motion operation" corresponds to the maximum push motion force when a push command is executed in the program. The value indicated under "Maximum thrust" corresponds to the maximum thrust achieved during normal positioning operation. If you are performing push-motion operation, be sure to use a push command in the program.
(Note 4) Allowable inertial moment converted to an equivalent value at the center of the rotational axis. The actual value may be lower depending on the conditions of use.
(Note 5) The maximum cable length is 30m. Specify a desired length in meters. (Example X08 = 8m)
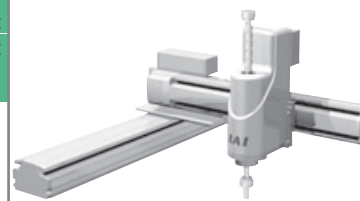
4

ICSA4-BB□HZRS
ICSPA4-BB□HZRS

Cartesian Robot 4-axis Combination of X/Y and ZR Unit
Cartesian Robot 4-axis Combination of X/Y and ZR Unit

High-precision Specification

■ **Model**

□ – BB□HZRS – □ – □ – □ – □ – B – □ BL – T2 – □ – □ – □ – □

Series	Type	Encoder	Stroke/options for axis 1	Stroke/options for axis 2	Stroke/options for axis 3	Operation range/ Options for axis 4	Controller	Cable Length	Cable wiring for Y-axis	Cable wiring for Z-axis
ICSA4: Standard 4-axis Specification	Refer to model table below	A : Absolute I : Incremental	20:200mm ∫ 80:800mm (100mm steps)	10:100mm ∫ 40:400mm (100mm steps)	15:150mm	36:360 Deg	T2:XSEL-P/Q	3L:3m 5L:5m		Refer to Explanation of Symbols in Model Names below
ICSPA4: High-precision 4-axis Specification			Refer to options table below	Refer to options table below	Refer to options table below	Refer to options table below		□L: Specified Length		

Model

* Models of high-precision specification are shown in [ ].

Encoder Model	XY combination direction (*1)	Z-axis Type	Model
Absolute	1	H	ICSA4 [ICSPA4]-BB1HZRS-A-①-②-③B-④ BL-⑤-⑥-⑦-⑧
	2	H	ICSA4 [ICSPA4]-BB2HZRS-A-①-②-③B-④ BL-⑤-⑥-⑦-⑧
	3	H	ICSA4 [ICSPA4]-BB3HZRS-A-①-②-③B-④BL-⑤-⑥-⑦-⑧
	4	H	ICSA4 [ICSPA4]-BB4HZRS-A-①-②-③B-④BL-⑤-⑥-⑦-⑧
Incremental	1	H	ICSA4 [ICSPA4]-BB1HZRS-I-①-②-③B-④BL-⑤-⑥-⑦-⑧
	2	H	ICSA4 [ICSPA4]-BB2HZRS-I-①-②-③B-④BL-⑤-⑥-⑦-⑧
	3	H	ICSA4 [ICSPA4]-BB3HZRS-I-①-②-③B-④BL-⑤-⑥-⑦-⑧
	4	H	ICSA4 [ICSPA4]-BB4HZRS-I-①-②-③B-④BL-⑤-⑥-⑦-⑧

*1 See the figure below for the XY combination directions.

* For the descriptions of ① to ⑧ in the above model names, refer to the table provided in the top right.

> * The following adjustment jig (sold separately) is required for models of absolute specification:
> Absolute reset adjustment jig (model: JG-ZRS)

Explanation of Symbols in Model Names

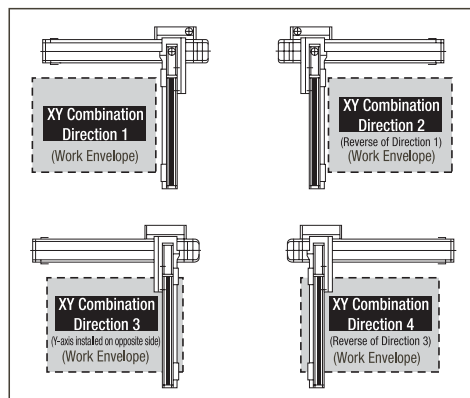| No.	Description	Value
①	X-axis stroke (Note 1)	20 : 200mm ∫ 80 : 800mm
②	Y-axis stroke (Note 1)	10 : 100mm ∫ 40 : 400mm
③	Z-axis stroke (Note 1)	15 : 150mm
④	R-axis Operation Range	36 : 360deg
⑤	Applicable Controllers	T2 : XSEL-P/Q
⑥	Cable Length (Note 2)	3L : 3m 5L : 5m
⑦	Y-axis Cable Wiring	CTM: Cable track size M (Standard) CTL: Cable track size L CTXL: Cable track size XL
⑧	Z-axis Cable Wiring	CT: Cable Track (Standard) CTM: Cable track size M CTL: Cable track size L CTXL: Cable track size XL

*The above table describes ① to ⑧ in the model names shown to the left.

Options

Enter the applicable option symbol after the stroke of each axis.
If multiple options are selected, enter them in alphabetical order.

Name	Model
AQ Seal	AQ
Brake	B
Creep Sensor	C
Home Limit Switch	L
Reversed Home Specification	NM
Guide with ball retention mechanism	RT

XY Combination Directions

XY Combination Direction 1 (Work Envelope)

XY Combination Direction 2 (Reverse of Direction 1) (Work Envelope)

XY Combination Direction 3 (Y-axis installed on opposite side) (Work Envelope)

XY Combination Direction 4 (Reverse of Direction 3) (Work Envelope)

Common Specifications

* Models of high-precision specification are shown in [ ].

Drive Method	Ball screw, rolled C10 [rolled C5 or equivalent]
Positioning Repeatability	±0.02mm [±0.01mm]
Lost Motion	0.05mm max [0.02mm max]
Guide	Base integrated type
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	100W/16mm
Motor output of rotational axis	100W
Allowable inertial moment of rotational axis	0.015kg・㎡
Allowable torque of rotational axis	1.9N・m

Axis Configuration

* Models of high-precision specification are shown in [ ].

Axis Name	Axis Name
X-axis	ISA [ISPA]-MXM-□- 100-20-(Stroke)
Y-axis	ISA [ISPA]-SYM-□-60-16-(Stroke)
Z-axis/rotational-axis	ZR-S-□-100-16-150-T2-#-B-L

* In the □ in the above model names, enter A (absolute) or I (incremental) as the applicable encoder type.
# - Cable length

⚠ Caution

(Note 1) Strokes are expressed in cm (centimeters) in the model names.
(Note 2) The cable length is measured from the X-axis connector box to the controller. Although the standard length is 3m or 5m, other lengths can also be specified in m (Meters). Cable lengths of up to 20 meters are supported.
(Note 3) The actual value may be lower depending on the conditions of use.
(Note 4) The rated acceleration is 0.3G. When the acceleration is increased, the loading capacity decreases.
(Note 5) Take note that the maximum speed drops when the stroke becomes longer. If the robot is to be moved with the vertical axis lowered, raise the speed and acceleration.

ICSA4 [ICSPA4] - BE□HZRS

Loading Capacities (kg) (Note 4)

BB□HZRS

		Y-axis Stroke			
		100	200	300	400
Z-axis Stroke	150	Rated: 1.0 kg (at acceleration/deceleration of 0.3 G) Maximum: 3.0 kg (at acceleration /deceleration of 0.1 G)			

Maximum Speeds by Stroke (mm/s) (Note 5)

BB□HZRS

	Stroke							
	100	200	300	400	500	600	700	800
X-axis	—	1000						795
Y-axis	800		—	—	—	—		

	Stroke : 150mm
Z-axis	1005mm/s

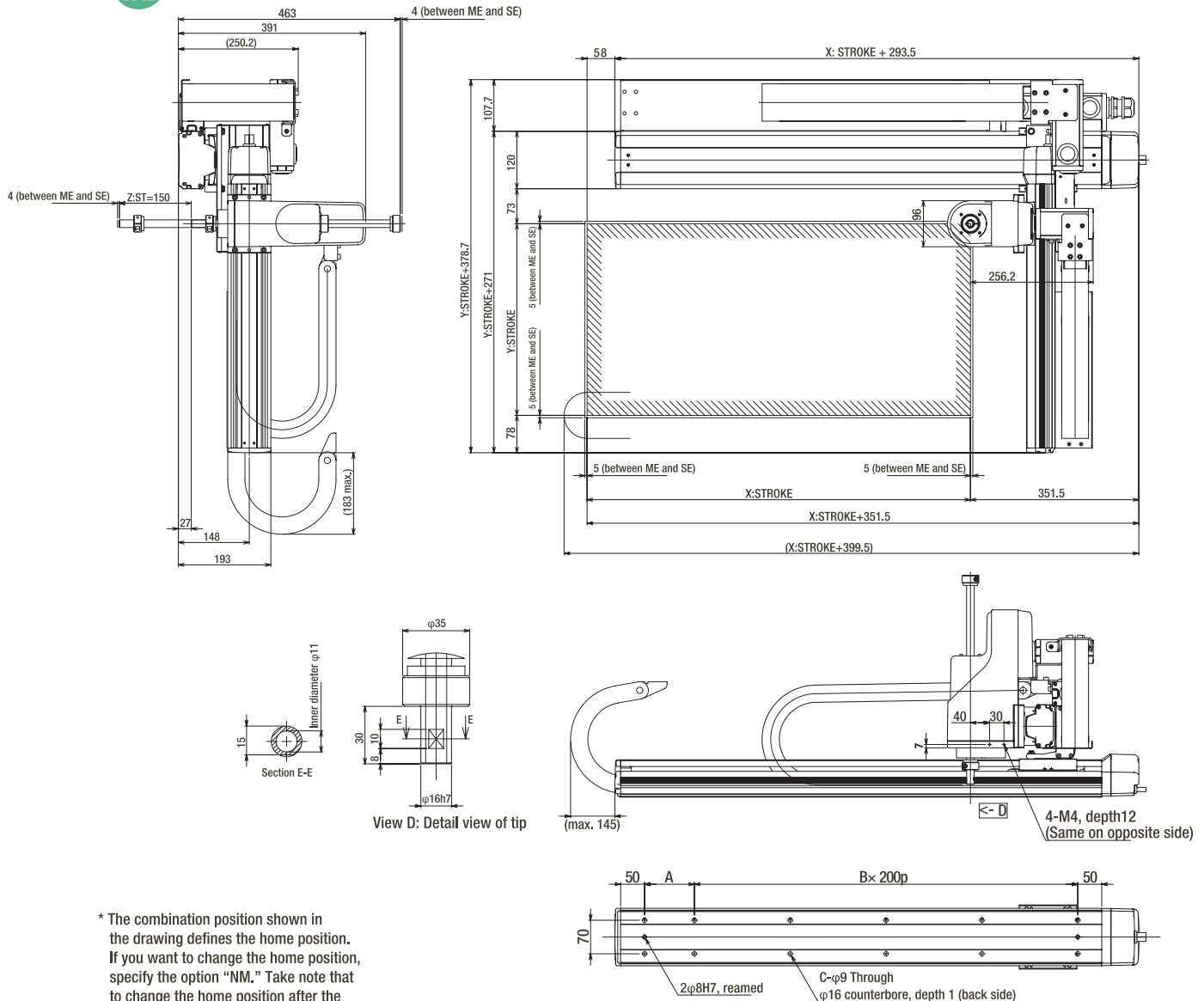|	Stroke: ±360˚
Rotational Axis	2200˚/s

Dimensions

* The figure below is the figure for XY combination direction 1.

CAD drawings can be downloaded from the website

2D CAD

* In the figure below, the cable track dimensions is CTM for the Y-axis and CT for the ZR-axes.
(CT cannot be used for the Y-axis)

View D: Detail view of tip

Section E-E

* The combination position shown in the drawing defines the home position. If you want to change the home position, specify the option "NM." Take note that to change the home position after the delivery, the robot must be returned for adjustment.

4-M4, depth12 (Same on opposite side)

2φ8H7, reamed
C-φ9 Through
φ16 counterbore, depth 1 (back side)

Brake Box (Accessory)

This device must be installed along the cable wired between the actuator and the actuator's encoder.

Brake Box Model: RCB-110-RA13-0

X Stroke	200	300	400	500	600	700	800
A	104	204	104	204	104	204	104
B	1	1	2	2	3	3	4
C	6	6	8	8	10	10	12
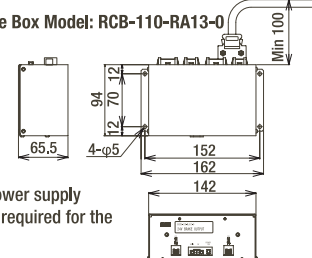
Note

A 24-VDC power supply (1A max.) is required for the brake box.

ICSA4-BE□HZRM
ICSPA4-BE□HZRM

Cartesian Robot 4-axis Combination of X/Y and ZR Unit
Cartesian Robot 4-axis Combination of X/Y and ZR Unit

High-precision Specification

■ Model

| | - BE□HZRM - | | | | | | B - | BL - T2 - | | | |

| Series | Type | Encoder | Stroke/options for axis 1 | Stroke/options for axis 2 | Stroke/options for axis 3 | Operation range/ Options for axis 4 | Controller | Cable Length | Cable wiring for Y-axis | Cable wiring for Z-axis |

ICSA4:
Standard 4-axis Specification

ICSPA4:
High-precision 4-axis Specification

Type: Refer to model table below

A : Absolute
I : Incremental

Encoder

30:300mm ～ 100:1000mm (100mm steps) — Refer to options table below

20:200mm ～ 70:700mm (100mm steps) — Refer to options table below

20:200mm — Refer to options table below

36:360 Deg — Refer to options table below

Controller: T2:XSEL-P/Q

Cable Length: 3L:3m 5L:5m □L: Specified Length

Refer to Explanation of Symbols in Model Names below

Model

*Models of high-precision specification are shown in [ ].

Encoder Model	XY combination direction (*1)	Z-axis Type	Model
Absolute	1	H	ICSA4 [ICSPA4]-BE1HZRM-A-①-②-③ B-④ BL-⑤-⑥-⑦-⑧
	2	H	ICSA4 [ICSPA4]-BE2HZRM-A-①-②-③ B-④ BL-⑤-⑥-⑦-⑧
	3	H	ICSA4 [ICSPA4]-BE3HZRM-A-①-②-③ B-④ BL-⑤-⑥-⑦-⑧
	4	H	ICSA4 [ICSPA4]-BE4HZRM-A-①-②-③ B-④ BL-⑤-⑥-⑦-⑧
Incremental	1	H	ICSA4 [ICSPA4]-BE1HZRM-I-①-②-③ B-④ BL-⑤-⑥-⑦-⑧
	2	H	ICSA4 [ICSPA4]-BE2HZRM-I-①-②-③ B-④ BL-⑤-⑥-⑦-⑧
	3	H	ICSA4 [ICSPA4]-BE3HZRM-I-①-②-③ B-④ BL-⑤-⑥-⑦-⑧
	4	H	ICSA4 [ICSPA4]-BE4HZRM-I-①-②-③ B-④ BL-⑤-⑥-⑦-⑧

*1 See the figure below for the XY combination directions.

* For the descriptions of ① to ⑧ in the above model names, refer to the table provided in the top right.

* The following adjustment jig (sold separately) is required for models of absolute specification:
Absolute reset adjustment jig (model: JG-ZRM)

Explanation of Symbols in Model Names

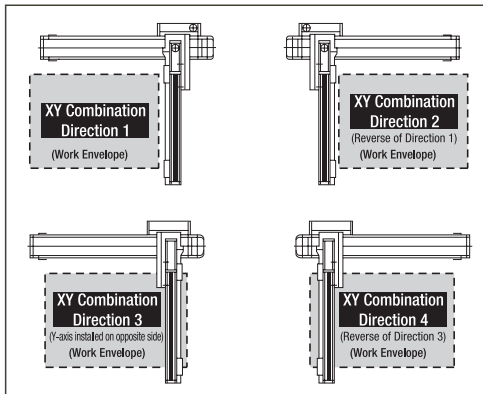| No.	Description	Indication
①	X-axis stroke (Note 1)	30 : 300mm ～ 100 : 1000mm
②	Y-axis stroke (Note 1)	20 : 200mm ～ 70 : 700mm
③	Z-axis stroke (Note 1)	20 : 200mm
④	R-axis Operation Range	36 : 360deg
⑤	Applicable Controllers	T2 : XSEL-P/Q
⑥	Cable Length (Note 2)	3L : 3m 5L : 5m
⑦	Y-axis Cable Wiring	CTM: Cable track size M (Standard) CTL: Cable track size L CTXL: Cable track size XL
⑧	Z-axis Cable Wiring	CT: Cable Track (Standard) CTM: Cable track size M CTL: Cable track size L CTXL: Cable track size XL

*The above table describes ① to ⑧ in the model names shown to the left.

Options

Enter the applicable option symbol after the stroke of each axis.
If multiple options are selected, enter them in <u>alphabetical</u> order.

Name	Model
AQ Seal	AQ
Brake	B
Creep Sensor	C
Home Limit Switch	L
Reversed Home Specification	NM
Guide with ball retention mechanism	RT

XY Combination Directions

XY Combination Direction 1
(Work Envelope)

XY Combination Direction 2
(Reverse of Direction 1)
(Work Envelope)

XY Combination Direction 3
(Y-axis installed on opposite side)
(Work Envelope)

XY Combination Direction 4
(Reverse of Direction 3)
(Work Envelope)

Common Specifications

*Models of high-precision specification are shown in [ ].

Drive Method	Ball screw, rolled C10 [rolled C5 or equivalent]
Positioning Repeatability	±0.02mm [±0.01mm]
Lost Motion	0.05mm max [0.02mm max]
Guide	Base integrated type
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
Motor output of rotational axis	200W
Allowable inertial moment of rotational axis	0.03kg・㎡
Allowable torque of rotational axis	3.8N・m

Axis Configuration

*Models of high-precision specification are shown in [ ].

Axis Name	Axis Name
X-axis	ISA [ISPA]-LXM- □ - 400-20-(Stroke)
Y-axis	ISA [ISPA]-MYM- □ -200-20-(Stroke)
Z-axis/rotational-axis	ZR-M-□-200-20-200-T2-#-B-L

* In the □ in the above model names, enter A (absolute) or I (incremental) as the applicable encoder type.
# - Cable length

⚠ Caution

(Note 1) Strokes are expressed in cm (centimeters) in the model names.
(Note 2) The cable length is measured from the X-axis connector box to the controller.
Although the standard length is 3m or 5m, other lengths can also be specified in m (Meters). Cable lengths of up to 20 meters are supported.
(Note 3) The actual value may be lower depending on the conditions of use.
(Note 4) The rated acceleration is 0.3G. When the acceleration is increased, the loading capacity decreases.
(Note 5) Take note that the maximum speed drops when the stroke becomes longer. If the robot is to be moved with the vertical axis lowered, raise the speed and acceleration.

ICSA4 [ICSPA4] - BE□HZRM

Loading Capacities (kg) (Note 4)

BB□HZRM

		Y-axis Stroke					
		200	300	400	500	600	700
Z-axis Stroke	200	Rated: 2.0 kg (at acceleration/deceleration of 0.3 G) Maximum: 6.0 kg (at acceleration /deceleration of 0.1 G)					

Maximum Speeds by Stroke (mm/s) (Note 5)

BB□HZRM

	Stroke									
	100	200	300	400	500	600	700	800	900	1000
X-axis	—				1000				830	690
Y-axis	—			1000			—	—	—	

	Stroke : 200mm
Z-axis	1256mm/s

	Stroke: ±360°
Rotational Axis	2200°/s

Dimensions

* The figure below is the figure for XY combination direction 1.

CAD drawings can be downloaded from the website

2D CAD

* In the figure below, the cable track dimensions is CTM for the Y-axis and CT for the ZR-axes.
  (CT cannot be used for the Y-axis)

View D: Detail view of tip

Section E-E

* The combination position shown in the drawing defines the home position. If you want to change the home position, specify the option "NM." Take note that to change the home position after the delivery, the robot must be returned for adjustment.

■ **Brake Box (Accessory)**
This device must be installed along the cable wired between the actuator and the actuator's encoder.
Brake Box Model: RCB-110-RA13-0

Note
A 24-VDC power supply (1A max.) is required for the brake box.

X Stroke	300	400	500	600	700	800	900	1000
A	238	138	238	138	238	138	238	138
B	1	2	2	3	3	4	4	5
C	6	8	8	10	10	12	12	14

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