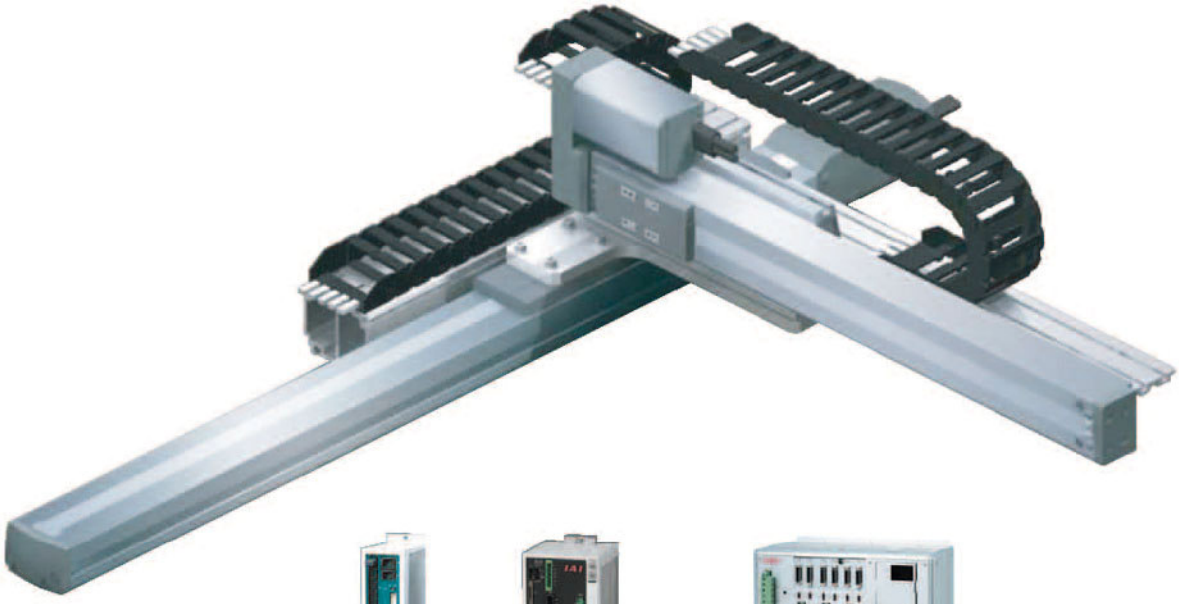
Cartesian Robot

IK Series

ROBO CYLINDER



1-2-axis program controller that achieves high cost performance.

High-performance 1-6-axis program controller.

PSEL SSEL X-SEL

RCP2 Axes Combined

- **2-Axis Pulse Motor System IK2-P**
  x: RCP2 - SS7(8)C/R y: RCP2-SA5(6)(7)R
- **3-Axis Pulse Motor System IK3-P**
  x: RCP2-SS8R y: RCP2-SA7R z: RCP2-SA6R

RCS2 Axes Combined

- **2-Axis Servo Motor System IK2-S**
  x: RCS2-SS7(8)C/R y: RCS2-SA5(6)(7)(8)R
- **3-Axis Servo Motor System IK3-S**
  x: RCS2-SS8R y: RCS2-SA7R z: RCS2-SA6R

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MOTORISATION AXES LINÉAIRES COMMANDES D'AXES

Wide-ranging Lineup
Lineup of IK Series

Combinations

XYB (XY, base mount)

• IK2-PXBD Series • IK2-SXBD Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	Y high-speed type	600mm	200mm	2.5kg
	Y medium-speed type	600mm	200mm	5.0kg
Double-slider	Y high-speed type	450mm	400mm	2.0kg
	Y medium-speed type	450mm	400mm	4.0kg

• IK2-PXBC Series • IK2-SXBC Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	Y high-speed type	600mm	200mm	3.0kg
	Y medium-speed type	600mm	200mm	6.0kg
Double-slider	Y high-speed type	450mm	400mm	3.0kg
	Y medium-speed type	450mm	400mm	6.0kg

XZ (Upright type)

• IK2-PXZB Series • IK2-SXZB Series

		Maximum X-axis stroke	Maximum Z-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	X high-speed/Z high-speed type	1,000mm	250mm	1.5kg
	X high-speed/Z medium-speed type	1,000mm	250mm	2.5kg
	X high-speed/Z low-speed type	1,000mm	250mm	3.0kg
Double-slider	X high-speed/Z high-speed type	800mm	300mm	1.5kg
	X high-speed/Z medium-speed type	800mm	300mm	3.0kg
	X high-speed/Z low-speed type	800mm	300mm	5.5kg

YZB (Cross type, base mount)

• IK2-PYBB Series • IK2-SYBB Series

		Maximum X-axis stroke	Maximum Z-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	X high-speed/Z high-speed type	1,000mm	300mm	1.5kg
	X high-speed/Z medium-speed type	1,000mm	300mm	3.0kg
	X high-speed/Z low-speed type	1,000mm	300mm	5.5kg

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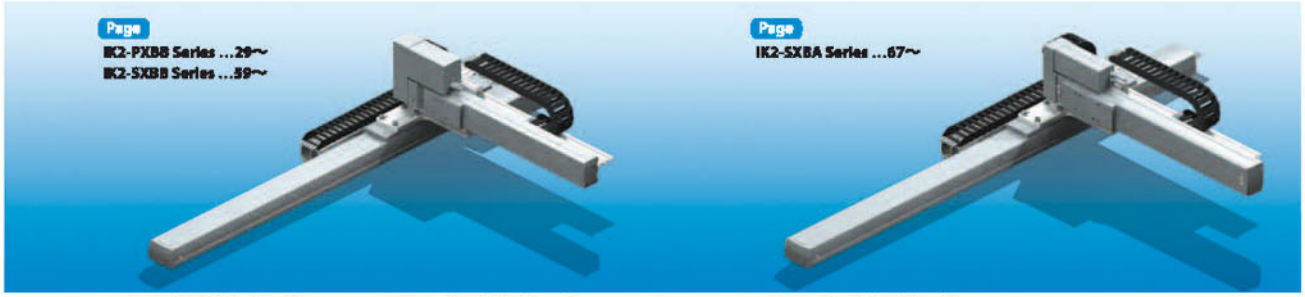
IK2-P Series / IK3-P Series	ROBO Cylinder RCP2 combinations based on pulse motor
IK2-S Series / IK3-S Series	ROBO Cylinder RCS2 combinations based on servo motor



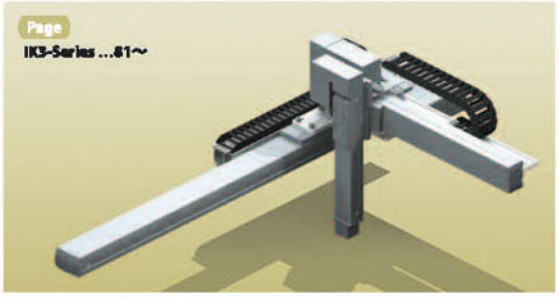
• IK2-PXBB Series • IK2-SXBB Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	High-speed type	1,000mm	300mm	6.0kg
	Medium-speed type	1,000mm	300mm	8.0kg
Double-slider	High-speed type	800mm	400mm	5.5kg
	Medium-speed type	800mm	400mm	10.5kg

• IK2-SXBA Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	High-speed type	1,000mm	350mm	7.0kg
	Medium-speed type	1,000mm	200mm	12.5kg
Double-slider	High-speed type	800mm	400mm	10.0kg
	Medium-speed type	800mm	400mm	11.5kg

3-axis type (XYB+Z, base mount)



• IK3 Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Maximum Z-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	X high-speed/Y high-speed/Z high-speed type	1,000mm	300mm	200mm	1.0kg
	X high-speed/Y high-speed/Z medium-speed type	1,000mm	300mm	200mm	2.0kg
	X high-speed/Y high-speed/Z low-speed type	1,000mm	300mm	200mm	4.0kg
Double-slider	X high-speed/Y high-speed/Z high-speed type	800mm	400mm	200mm	1.0kg
	X high-speed/Y high-speed/Z medium-speed type	800mm	400mm	200mm	2.0kg
	X high-speed/Y high-speed/Z low-speed type	800mm	400mm	200mm	4.0kg

2-axis combination – Axis configurations

	Axis 1	Axis 2
IK2-PXBD IK2-SXBD	RCP2-SS7□ RCS2-SS7□	RCP2-SA5R RCS2-SA5R
IK2-PXBC IK2-SXBC	RCP2-SS7□ RCS2-SS7□	RCP2-SA6R RCS2-SA6R
IK2-PXBB IK2-SXBB	RCP2-SS8□ RCS2-SS8□ (100W)	RCP2-SA7R RCS2-SA7R
IK2-SXBA	RCS2-SS8□ (150W)	RCS2-SS8R (100W)
IK2-PXZB IK2-SXZB	RCP2-SS8□ RCS2-SS8□ (100W)	RCP2-SA7R RCS2-SA7R
IK2-PYBB IK2-SYBB	RCP2-SS8□ RCS2-SS8□ (100W)	RCP2-SA7R RCS2-SA7R

3-axis combination – Axis configurations

	X axis	Y axis	Z axis
IK3	RCP2-SS8□ RCS2-SS8□ (100W)	RCP2-SA7R RCS2-SA7R	RCP2-SA6R RCS2-SA6R

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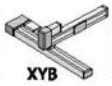
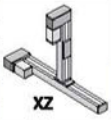
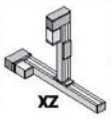
RCP2 Combination Unit List for 2-axis Configuration (XYB) (□ in the model names indicates a value from 1 to 4 specifying the combination direction. For the combination directions, refer to P. 10.)

Page	Combination model	Combined shape	Axis 1 Type	Axis 1 Motor size	Axis 1 Lead (mm)	Axis 1 Maximum speed (mm/sec)	Axis 1 Stroke (mm)	Axis 2 Type
13	IK2-PXBD1□HHS	 XYB	SS7R Reversed	42□	12	400	50–600	SA5R Reversed
	IK2-PXBD1□HMS				12	350		
15	IK2-PXBD1□HHD		SS7R Reversed, double-slider		12	400	50–450	
	IK2-PXBD1□HMD				12	350		
17	IK2-PXBD2□HHS		SS7C Straight		12	400	50–600	
	IK2-PXBD2□HMS				12	350		
19	IK2-PXBD2□HHD		SS7C Straight, double-slider		12	400	50–450	
	IK2-PXBD2□HMD				12	350		
21	IK2-PXBC1□HHS		SS7R Reversed		12	400	50–600	SA6R Reversed
	IK2-PXBC1□HMS				12	250		
23	IK2-PXBC1□HHD		SS7R Reversed, double-slider		12	400	50–450	
	IK2-PXBC1□HMD				12	250		
25	IK2-PXBC2□HHS		SS7C Straight		12	400	50–600	
	IK2-PXBC2□HMS				12	250		
27	IK2-PXBC2□HHD		SS7C Straight, double-slider		12	400	50–450	
	IK2-PXBC2□HMD				12	250		
29	IK2-PXBB1□HHS		SS8R Reversed	56□	20	250	50–1000	SA7R Reversed
	IK2-PXBB1□MMS				10	125		
31	IK2-PXBB1□HHD		SS8R Reversed, double-slider		20	250	50–800	
	IK2-PXBB1□MMD				10	125		
33	IK2-PXBB2□HHS		SS8C Straight		20	250	50–1000	
	IK2-PXBB2□MMS				10	125		
35	IK2-PXBB2□HHD		SS8C Straight, double-slider		20	250	50–800	
	IK2-PXBB2□MMD				10	125		
37	IK2-PXZB1□HHS	 XZ	SS8R Reversed	56□	20	250	50–1000	SA7R Reversed
	IK2-PXZB1□HMS							
	IK2-PXZB1□HLS							
39	IK2-PXZB1□HHD		SS8R Reversed, double-slider				50–800	
	IK2-PXZB1□HMD							
	IK2-PXZB1□HLD							
41	IK2-PYBB1□HHS	YZB	SS8R Reversed				50–1000	
	IK2-PYBB1□HMS							
	IK2-PYBB1□HLS							

RCS2 Combination Unit List for 2-axis Configuration (XYB) (□ in the model names indicates a value from 1 to 4 specifying the combination direction. For the combination directions, refer to P. 10.)

Page	Combination model	Combined shape	Axis 1 Type	Axis 1 Motor output (W)	Axis 1 Lead (mm)	Axis 1 Maximum speed (mm/sec)	Axis 1 Stroke (mm)	Axis 2 Type
43	IK2-SXBD1□HHS	XYB	SS7R Reversed	60	12	600	50–600	SA5R Reversed
	IK2-SXBD1□HMS				12	600		
45	IK2-SXBD1□HHD		SS7R Reversed, double-slider		12	600	50–450	
	IK2-SXBD1□HMD				12	600		
47	IK2-SXBD2□HHS		SS7C Straight		12	600	50–600	
	IK2-SXBD2□HMS				12	600		
49	IK2-SXBD2□HHD		SS7C Straight, double-slider		12	600	50–450	
	IK2-SXBD2□HMD				12	600		
51	IK2-SXBC1□HHS		SS7R Reversed		12	600	50–600	SA6R Reversed
	IK2-SXBC1□MMS				6	300		
53	IK2-SXBC1□HHD		SS7R Reversed, double-slider		12	600	50–450	
	IK2-SXBC1□MMD				6	300		
55	IK2-SXBC2□HHS		SS7C Straight		12	600	50–600	
	IK2-SXBC2□MMS				6	300		
57	IK2-SXBC2□HHD		SS7C Straight, double-slider		12	600	50–450	
	IK2-SXBC2□MMD				6	300		
59	IK2-SXBB1□HHS		SS8R (100W) Reversed	100	20	1000	50–1000	SA7R Reversed
	IK2-SXBB1□MMS				10	500		
61	IK2-SXBB1□HHD		SS8R (100W) Reversed, double-slider		20	1000	50–800	
	IK2-SXBB1□MMD				10	500		
63	IK2-SXBB2□HHS		SS8C (100W) Straight		20	1000	50–1000	
	IK2-SXBB2□MMS				10	500		
65	IK2-SXBB2□HHD		SS8C (100W) Straight, double-slider		20	1000	50–800	
	IK2-SXBB2□MMD				10	500		
67	IK2-SXBA1□HHS		SS8R (150W) Reversed	150	20	1000	50–1000	SS8R (100W) Reversed
	IK2-SXBA1□MMS				10	500		
69	IK2-SXBA1□HHD		SS8R (150W) Reversed, double-slider		20	1000	50–800	
	IK2-SXBA1□MMD				10	500		
71	IK2-SXBA2□HHS		SS8C (150W) Straight		20	1000	50–1000	
	IK2-SXBA2□MMS				10	500		
73	IK2-SXBA2□HHD		SS8C (150W) Straight, double-slider		20	1000	50–800	
	IK2-SXBA2□MMD				10	500		
75	IK2-SXZB1□HHS	 XZ	SS8R (100W) Reversed	100	20	1000	50–1000	SA7R Reversed
	IK2-SXZB1□HMS							
	IK2-SXZB1□HLS							
77	IK2-SXZB1□HHD		SS8R (100W) Reversed, double-slider				50–800	
	IK2-SXZB1□HMD							
	IK2-SXZB1□HLD							
79	IK2-SYBB1□HHS	YZB	SS8R (100W) Reversed				50–1000	
	IK2-SYBB1□HMS							
	IK2-SYBB1□HLS							

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Axis 1: Mount axis | Axis 2: Axis installed on axis 1 | Axis 3: Axis installed on axis 2 | Cable wiring 1: Wiring for axis 2 | Cable wiring 2: Wiring for axis 3

Axis 2				Load capacity by axis 2 stroke							
Motor size	Lead (mm)	Maximum speed (mm/sec)	Stroke (mm)	50	100	150	200	250	300	350	400
42□	12	600	50–200	3.0	3.0	2.5	2.5				
	6	300	50–200	6.0	6.0	5.0	5.0				
	12	600	250–400					2.5	2.0	2.0	2.0
	6	300	250–400					5.0	4.0	4.0	4.0
	12	600	50–200	3.0	3.0	2.5	2.5				
	6	300	50–200	6.0	6.0	5.0	5.0				
	12	600	250–400					2.5	2.0	2.0	2.0
	6	300	250–400					5.0	4.0	4.0	4.0
42□	12	600	50–200	4.5	4.5	4.0	3.0				
	6	300	50–200	9.0	9.0	8.0	6.0				
	12	600	250–400					3.0	3.0	3.0	3.0
	6	300	250–400					6.0	6.0	6.0	6.0
	12	600	50–200	4.5	4.5	4.0	3.0				
	6	300	50–200	9.0	9.0	8.0	6.0				
	12	600	250–400					3.0	3.0	3.0	3.0
	6	300	250–400					6.0	6.0	6.0	6.0
56□	16	450	50–300	8.0	8.0	7.0	7.0	6.0	6.0		
	8	220	50–300	16.0	16.0	15.0	12.5	9.0	8.0		
	16	450	350–400							6.0	5.5
	8	220	200–400				15.0	12.5	12.5	12.0	10.5
	16	450	50–300	8.0	8.0	7.0	7.0	6.0	6.0		
	8	220	50–300	16.0	16.0	15.0	12.5	9.0	8.0		
	16	450	350–400							6.0	5.5
	8	220	200–400				15.0	12.5	12.5	12.0	10.5
56□	16	360	50–250	2.0	2.0	2.0	2.0	1.5			
	8	180	50–250	4.0	4.0	3.5	3.5	2.5			
	4	90	50–250	8.0	7.0	5.0	4.0	3.0			
	16	400	300						1.5		
	8	200	300						3.0		
	4	100	150–300			7.0	7.0	5.5	5.5		
	16	360	50–300	2.0	2.0	2.0	2.0	1.5	1.5		
	8	180	50–300	4.0	4.0	3.5	3.5	3.0	3.0		
	4	90	50–300	8.0	8.0	7.0	7.0	6.0	5.5		

Axis 2				Load capacity by axis 2 stroke							
Motor output (W)	Lead (mm)	Maximum speed (mm/sec)	Stroke (mm)	50	100	150	200	250	300	350	400
20	12	800	50–200	3.0	3.0	2.5	2.5				
	6	400		6.0	6.0	5.0	5.0				
	12	800	250–400					2.5	2.0	2.0	2.0
	6	400						5.0	4.0	4.0	4.0
	12	800	50–200	3.0	3.0	2.5	2.5				
	6	400		6.0	6.0	5.0	5.0				
	12	800	250–400					2.5	2.0	2.0	2.0
	6	400						5.0	4.0	4.0	4.0
30	12	800	50–200	4.5	4.5	4.0	3.0				
	6	400		9.0	9.0	8.0	6.0				
	12	800	250–400					3.0	3.0	3.0	3.0
	6	400						6.0	6.0	6.0	6.0
	12	800	50–200	4.5	4.5	4.0	3.0				
	6	400		9.0	9.0	8.0	6.0				
	12	800	250–400					3.0	3.0	3.0	3.0
	6	400						6.0	6.0	6.0	6.0
60	16	800	50–300	8.0	8.0	7.0	7.0	6.0	6.0		
	8	400		16.0	16.0	15.0	12.5	9.0	8.0		
	16	800	350–400							6.0	5.5
	8	400	200–400				15.0	12.5	12.5	12.0	10.5
	16	800	50–300	8.0	8.0	7.0	7.0	6.0	6.0		
	8	400		16.0	16.0	15.0	12.5	9.0	8.0		
	16	800	350–400							6.0	5.5
	8	400	200–400				15.0	12.5	12.5	12.0	10.5
100	20	1000	50–350	12.0	12.0	11.5	11.0	10.0	8.5	7.0	
	10	500		24.0	20.5	15.5	12.5				
	20	1000	300–400						11.0	10.5	10.0
	10	500	100–400		24.0	24.0	23.0	19.0	16.0	13.5	11.5
	20	1000	50–350	12.0	12.0	11.5	11.0	10.0	8.5	7.0	
	10	500		24.0	20.5	15.5	12.5				
	20	1000	300–400						11.0	10.5	10.0
	10	500	100–400		24.0	24.0	23.0	19.0	16.0	13.5	11.5
60	16	800	50–250	2.0	2.0	2.0	2.0	1.5			
	8	400		4.0	4.0	3.5	3.5	2.5			
	4	200		8.0	7.0	5.0	4.0	3.0			
	16	800	300						1.5		
	8	400							3.0		
	4	200	150–300			7.0	7.0	5.5	5.5		
	16	800	50–300	2.0	2.0	2.0	2.0	1.5	1.5		
	8	400		4.0	4.0	3.5	3.5	3.0	3.0		
	4	200		8.0	8.0	7.0	7.0	6.0	5.5		

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RCP2 Combination Unit List for 3-axis Configuration (XYB+Z-axes, base mount) (□ in the model names indicates a value from 1 to 4 specifying the combination direction. For the combination directions, refer to P. 10.)

Page	Combination model	Combined shape	X axis					Y axis	
			Type	Motor size	Lead (mm)	Maximum speed (mm/sec)	Stroke (mm)	Type	
81	IK3-PBBG1□HHHS	XYB+Z, base mount	SS8R Reversed, single-slider	56□	20	220	50–1000	SA7R Reversed	
	IK3-PBBG1□HHMS								
	IK3-PBBG1□HHLS								
83	IK3-PBBG1□HHHD		SS8R Reversed, double-slider				50–800		
	IK3-PBBG1□HHMD								
	IK3-PBBG1□HHLD								

RCS2 Combination Unit List for 3-axis Configuration (XYB+Z-axes, base mount) (□ in the model names indicates a value from 1 to 4 specifying the combination direction. For the combination directions, refer to P. 10.)

Page	Combination model	Combined shape	X axis					Y axis	
			Type	Motor output (W)	Lead (mm)	Maximum speed (mm/sec)	Stroke (mm)	Type	
85	IK3-SBBG1□HHHS	XYB+Z, base mount	SS8R (100W) Reversed, single-slider	100	20	1000	50–1000	SA7R Reversed	
	IK3-SBBG1□HHMS								
	IK3-SBBG1□HHLS								
88	IK3-SBBG1□HHHD		SS8R (100W) Reversed, double-slider				50–800		
	IK3-SBBG1□HHMD								
	IK3-SBBG1□HHLD								

Tips on Selection

1. Differences between RCP2 and RCS2

Features of RCP2

[1] Adopting a pulse motor.

[2] Characterized by high thrust at low speed.

[3] Less expensive than the RCS2.

Features of RCS2

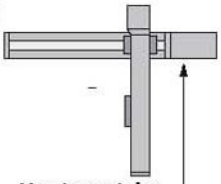
[1] Adopting a servo motor.

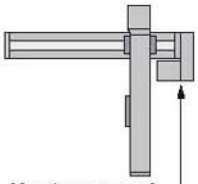
[2] Able to operate at a constant thrust regardless of the speed.

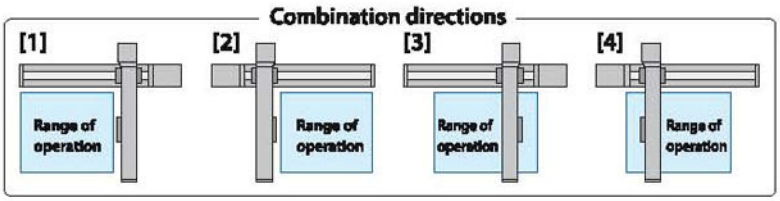
[3] Able to move at higher speeds than the RCP2.

2. Differences between X-axis Straight and Reversed Types

The X-axis reversed type can have a shorter dimension in the X-axis direction. When the 150-watt RCS2-SS8C (straight) and 150-watt SS8R (reversed) are compared, for example, the SS8R is shorter by 130 mm. Note, however, that the reversed type does not support configurations based on combination directions [3] and [4].

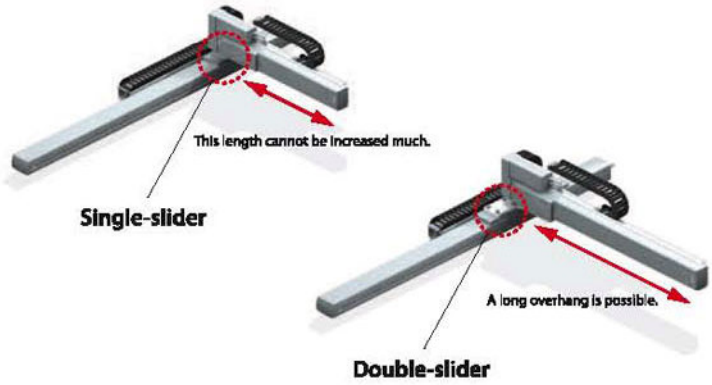






3. Differences between Single-slider and Double-slider Types

A double-slider consists of two sliders connected to each other and has a greater permissible load moment compared to a single-slider type. Accordingly, double-slider units are used as the X-axis in XY configurations with a long overhang.
Note, however, that because the double-slider structure naturally has a longer slider section, a double-slider unit has a shorter stroke than a single-slider unit of the same total length.



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The IA kit is a set of the following components needed to assemble a cartesian robot robot.

X-axis ROBO Cylinder

Y-axis ROBO Cylinder

XY bracket

Guide rail X

Frame cover

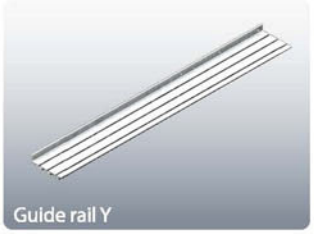

Guide rail Y

Plate X (single)

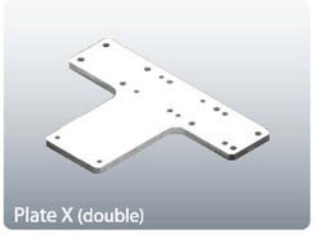
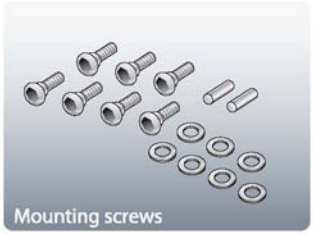


Plate X (double)

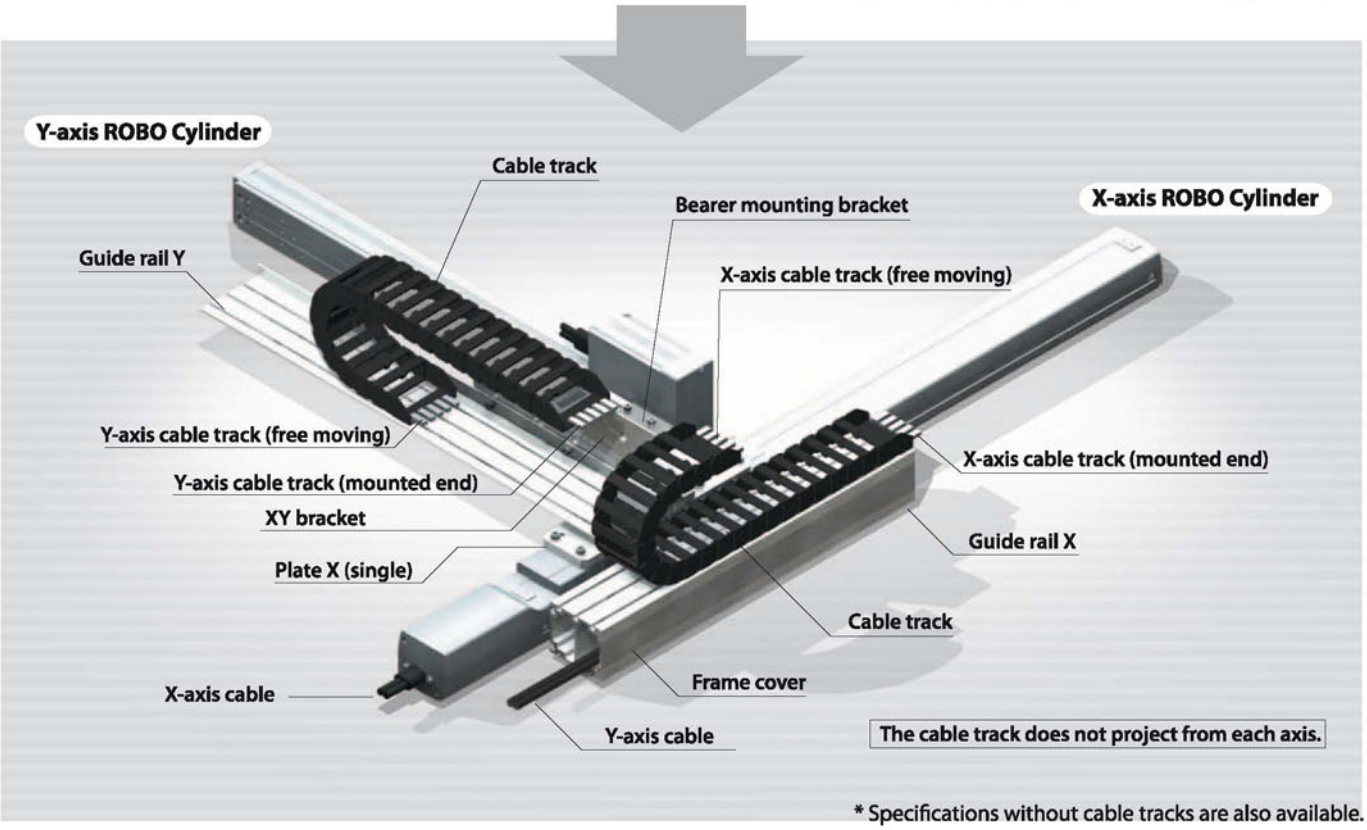
Cable track

Bearer mounting bracket (SS8)

Bearer mounting bracket (SS7)


Mounting screws

Note: The above images are provided for reference purposes only.
The actual components may vary depending on the combination type, direction, etc.



* Specifications without cable tracks are also available.

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