

# CLEAN Type

Product Lineup

## CLEAN ROBOTS

Suitable for electronics component, food, and medical unit related work in clean room.

High sealing structure, dust generation prevention, and improvement of suction efficiency are achieved.

Both the high cleanliness degree and high performance are established.

Clean robots contribute to automation and labor saving of production systems in clean rooms.



# Both high cleanliness degree and high performance were achieved. Clean single-axis, Cartesian, and SCARA robots were added to the product lineup.

## Clean SCARA robots

### YK-XGC/XC type

The Z-axis spline is covered with bellows made of materials with low dust generation and other sliding parts are sealed completely. Harnesses are also incorporated completely and the inside of the robot is sucked from the rear of the base to prevent dust generation.

- Arm length: 180 mm to 1000 mm
- Suction amount: 30 to 60 Nℓ/min.
- Cleanliness degree: CLASS ISO3 (ISO14644-1)  
CLASS10 (FED-STD-209D)
- Maximum payload: 20 kg



P.486

### POINT 1

#### Vertical bellows structure improves the reliability of the clean performance.

As a beltless structure is used, no dust generation caused by the belt occurs. Furthermore, as the YK-XGC type was renewed to a structure, in which the bellows are installed on the Z-axis vertically, the reliability of the clean performance was further improved.

Note. Except for YK500XC to YK1000XC



### POINT 2

#### High durability

As a beltless structure is used, the robot can be operated without worry about belt elongation and secular change <sup>Note</sup>. Additionally, the bellows installed on the Z-axis use material with high durability to ensure the durability performance.

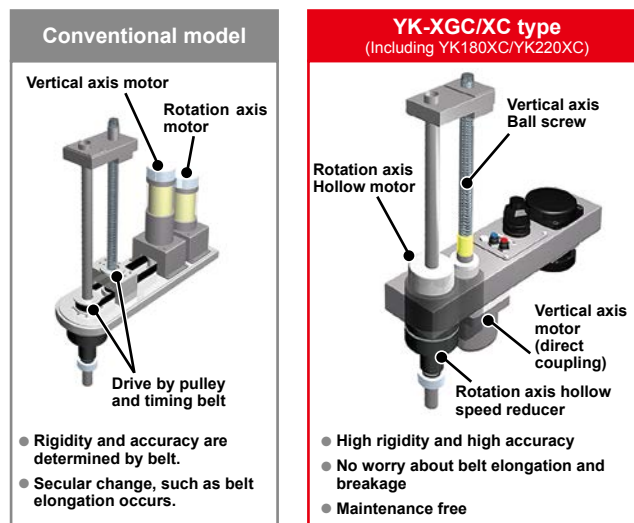
Note. Except for YK500XC to YK1000XC

### POINT 3

#### Completely beltless structure improves the rigidity.

A completely beltless structure was achieved using a ZR-axis direct coupling structure. As a speed reducer is coupled to the tip rotation axis, the R-axis tolerable moment of inertia is very high and the high-speed movement is possible even with a heavy workpiece or largely offset workpiece.

Note. Except for YK500XC to YK1000XC



Type	Model	Arm length (mm)	Maximum payload (kg)	Standard cycle time (sec.)	Beltless structure	Page
Extra small type	YK180XC	180	1.0	0.42	○	P.486
	YK220XC	220		0.45	○	P.487
Small type	YK250XGC	250	4.0	0.50	○	P.488
	YK350XGC	350		0.52	○	P.490
	YK400XGC	400		0.50	○	P.492
Medium type	YK500XC	500	10.0	0.53	-	P.496
	YK500XGLC	500	4.0	0.66	○	P.494
	YK600XC	600	10.0	0.56	-	P.499
	YK600XGLC	600	4.0	0.71	○	P.497
Large type	YK700XC	700	20.0	0.57	-	P.500
	YK800XC	800			-	P.501
	YK1000XC	1000			-	P.502

## Clean single-axis robots

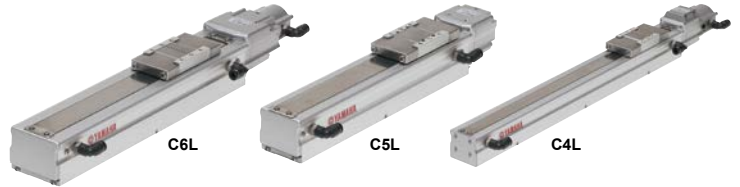
### FLIP-XC type

P.466

The FLIP-XC type robots are single-axis robots "FLIP-X series" with clean room specifications. According to the applications, an optimal robot can be selected from 14 models from a lightweight and compact model to a large model with a maximum payload of 120 kg. As an air joint for suction is provided as standard equipment, grease with low dust generative characteristics is used, and stainless sheets with an excellent durability are used for the slide table surface, high cleanliness degree is achieved.

- Stroke: 50 to 2050 mm
- Suction amount: 15 to 90 Nℓ/min.
- Cleanliness degree: CLASS10<sup>Note</sup>
- Maximum payload: 120 kg (When installed horizontally)

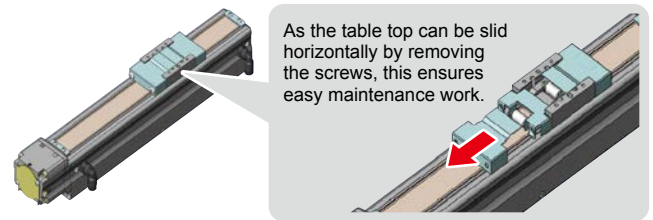
Note. C4L/C4LH, C5L/C5LH, and C6L are CLASS ISO3 (ISO14644-1).



### POINT

#### Excellent maintenance ability

For C4L to C6L models, removing the screws from the side panel of the slider will allow replacement of the inner roller without detaching the tool. For C8 to C20 models, even when the direct coupling structure is used, the motor or ball screw can be replaced individually.



Model	Size (mm) <sup>Note</sup>	Lead (mm)	Maximum payload (kg)		Maximum speed (mm/sec.)	Stroke (mm)	Page
			Horizontal	Vertical			
C4L C4LH	W45 × H55	12	4.5	1.2	720	50 to 400	C4L : P.466 C4LH : P.467
		6	6	2.4	360		
		2	6	7.2	120		
C5L C5LH	W55 × H65	20	3	-	1000	50 to 800	C5L : P.468 C5LH : P.469
		12	5	1.2	800		
		6	9	2.4	400		
C6L	W65 × H65	20	10	-	1000	50 to 800	P.470
		12	12	4	800		
		6	30	8	400		
C8	W80 × H75	20	12	-	1000	150 to 800	P.471
		12	20	4	720		
		6	40	8	360		
C8L	W80 × H75	20	20	4	1000	150 to 1050	P.472
		10	40	8	600		
		5	50	16	300		
C8LH	W80 × H75	20	30	-	1000	150 to 1050	P.473
		10	60	-	600		
		5	80	-	300		
C10	W104 × H85	20	20	4	1000	150 to 1050	P.474
		10	40	10	500		
		5	60	20	250		
C14	W136 × H96	20	30	4	1000	150 to 1050	P.475
		10	55	10	500		
		5	80	20	250		
C14H	W136 × H96	20	40	8	1000	150 to 1050	P.476
		10	80	20	500		
		5	100	30	250		
C17	W168 × H114	20	80	15	1000	250 to 1250	P.477
		10	120	35	600		
C17L	W168 × H114	50	50	10	1000	1150 to 2050	P.478
C20	W202 × H117	20	120	25	1000	250 to 1250	P.479
		10	-	45	500		

Note 1. The size shows approximate maximum cross sectional size.

## Clean single-axis robots

### SSC type (TRANSERVO)

P.463

The SSC type robots are stepping motor single-axis robots "TRANSERVO series" with clean room specifications. Use of a newly developed vector control method achieves the function and performance equivalent to the servomotor at a low cost even using the stepping motor. As an air joint for suction is provided as standard equipment, grease with low dust generative characteristics is used and stainless sheets with an excellent durability are used for the slide table surface, the high cleanliness degree is achieved.

- Stroke: 50 to 800 mm
- Suction amount: 15 to 80 Nℓ/min.
- Cleanliness degree: CLASS10
- Maximum payload: 12 kg (When installed horizontally)



Model	Size (mm) <sup>Note 1</sup>	Lead (mm)	Maximum payload (kg)		Maximum speed (mm/sec.)	Stroke (mm)	Page
			Horizontal	Vertical			
SSC04	W49 × H59	12	2	1	600	50 to 400	P.463
		6	4	2	300		
		2	6	4	100		
SSC05	W55 × H56	20	4	-	1000	50 to 800	P.464
		12	6	1	600		
		6	10	2	300		
SSC05H	W55 × H56	20	6	-	1000	50 to 800	P.465
		12	8	2	600 (horizontal) / 500 (vertical)		
		6	12	4	300 (horizontal) / 250 (vertical)		

Note 1. The size shows approximate maximum cross sectional size.

## Clean Cartesian robots

### XY-XC type

P.480

This Cartesian robot XY-XC type is applicable to clean rooms. As stainless sheets with excellent durability are used, the opening can be designed to be its minimum level and the robots area applicable to CLASS10 with less suction amount. Furthermore, as the ZR-axis of the SXYxC uses a super high speed unit of the SCARA robot, this achieves great reduction of the cycle time.

- Suction amount: 60 to 90 Nℓ/min.
- Cleanliness degree: CLASS10 <sup>Note</sup>
- Maximum payload: 20 kg
- Maximum speed: 1000 mm/sec.

Note. User wiring: D-Sub 25-pin connector (Numbers 1 to 24 are already wired and number 25 is frame ground.)  
Note. User tubing: φ 6-air tube, 3 pcs.



Type	Model	Axis	Movement range	Maximum speed (mm/sec.)	Maximum payload (kg)	Page
2 axes	SXYxC	X	150 to 1050 mm	1000	20	P.480
		Y	150 to 650 mm	1000		
3 axes	SXYxC (ZSC12)	X	150 to 1050 mm	1000	3	P.482
		Y	150 to 650 mm	1000		
		Z	150 mm	1000		
3 axes	SXYxC (ZSC6)	X	150 to 1050 mm	1000	5	P.483
		Y	150 to 650 mm	1000		
		Z	150 mm	500		
4 axes	SXYxC (ZRSC12)	X	150 to 1050 mm	1000	3	P.484
		Y	150 to 650 mm	1000		
		Z	150 mm	1000		
		R	360 °	1020 °/sec		
4 axes	SXYxC (ZRSC6)	X	150 to 1050 mm	1000	5	P.485
		Y	150 to 650 mm	1000		
		Z	150 mm	500		
		R	360 °	1020 °/sec		