





### Standard type: Tiny type

- Arm length 180mm
- Maximum payload 1kg



### Ordering method

# YK180X-100

<b>Model</b>	<b>Z axis stroke</b> 100: 100mm	<b>Cable</b> 3L: 3.5m 5L: 5m 10L: 10m	<b>Controller /</b> Number of controllable axes	<b>Safety</b> standard	<b>Option A</b> (OP.A)	<b>Option B</b> (OP.B)	<b>Option C</b> (OP.C)	<b>Option D</b> (OP.D)	<b>Option E</b> (OP.E)	<b>Absolute</b> battery
Specify various controller setting items. RCX340 ▶ <b>P508</b>										
<b>RCX240S</b>										<b>BB</b>
<b>Controller</b>	<b>CE Marking</b>	<b>Expansion I/O</b>	<b>Network option</b>	<b>IVY System</b>	<b>Gripper</b>	<b>Battery</b>				

Specify various controller setting items. RCX240/RCX240S ▶ P.495

## ■ Specifications

			X-axis	Y-axis	Z-axis	R-axis
Axis specifications	Arm length		71 mm	109 mm	100 mm	—
	Rotation angle		+/-120 °	+/-140 °	—	+/-360 °
AC servo motor output			50 W	30 W	30 W	30 W
Deceleration mechanism	Speed reducer		Harmonic drive	Harmonic drive	Ball screw	Harmonic drive
	Transmission method	Motor to speed reducer	Direct-coupled			
		Speed reducer to output	Direct-coupled			
Repeatability <sup>Note 1</sup>			+/-0.01 mm		+/-0.01 mm	+/-0.004 °
Maximum speed			3.3 m/sec		0.7 m/sec	1700 °/sec
Maximum payload			1.0 kg			
Standard cycle time: with 0.1kg payload <sup>Note 2</sup>			0.39 sec			
R-axis tolerable moment of inertia <sup>Note 3</sup>			0.01 kgm <sup>2</sup>			
User wiring			0.1 sq × 6 wires			
User tubing (Outer diameter)			φ 3 × 2			
Travel limit			1.Soft limit 2.Mechanical stopper (X,Y,Z axis)			
Robot cable length			Standard: 3.5 m Option: 5 m, 10 m			
Weight (Excluding robot cable) <sup>Note 4</sup>			5.5 kg			
Robot cable weight			1.5 kg (3.5 m) 2.1 kg (5 m) 4.2 kg (10 m)			

Note 1. This is the value at a constant ambient temperature.

Note 2. When reciprocating 100mm in horizontal and 25mm in vertical directions.

Note 3. There are limits to acceleration coefficient settings. See P.536.

Note 4. The total robot weight is the sum of the robot body weight and the cable weight.

#### Controller

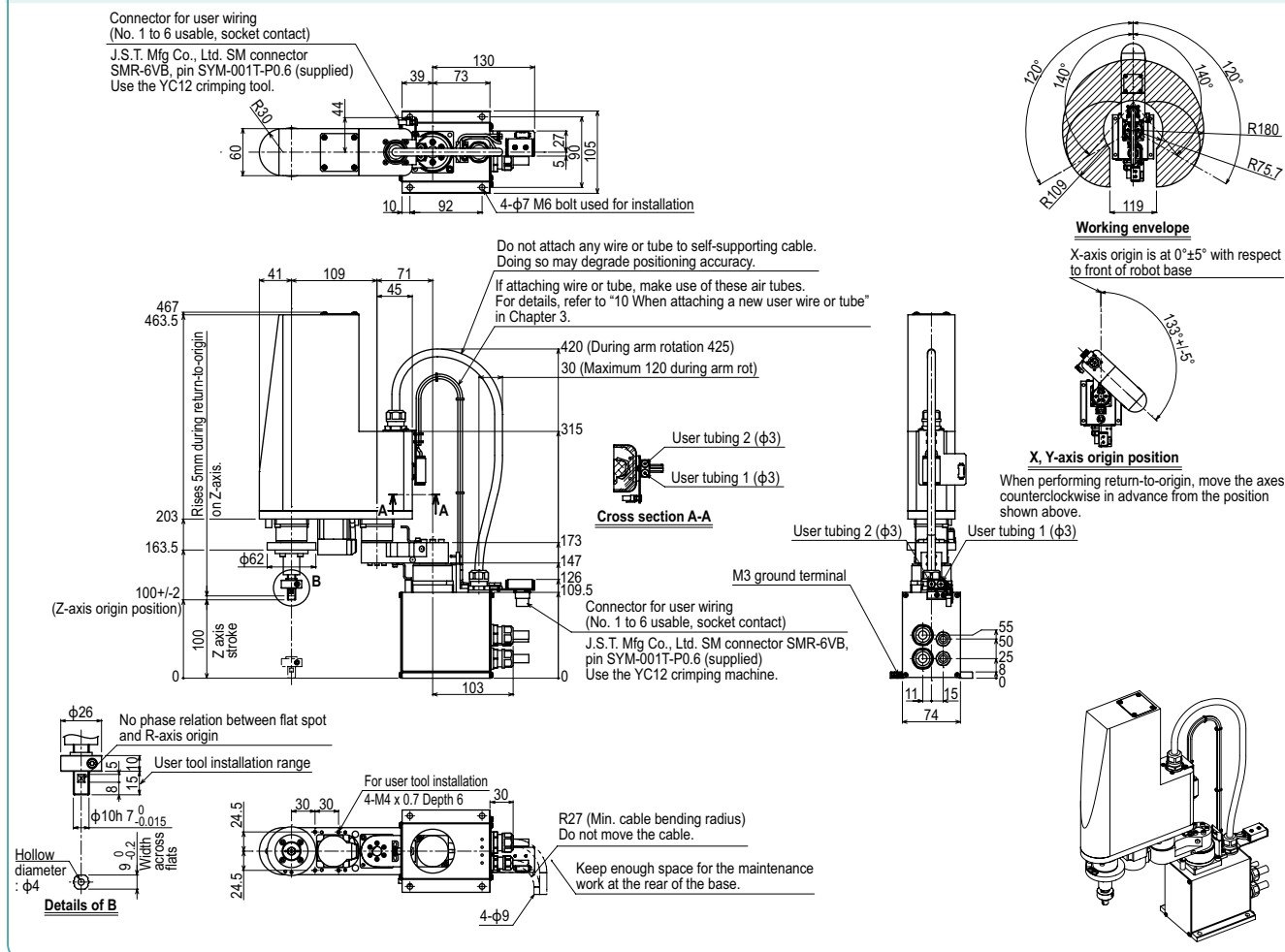
Controller	Power capacity (VA)	Operation method
RCX340 RCX240S	500	Programming / I/O point trace / Remote command / Operation using RS-232C communication

Note. "Harmonic" and "Harmonic drive" are the registered trademarks of Harmonic Drive Systems Inc.

Note: The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.) See our robot manuals (installation manuals) for detailed information.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:  
**<http://global.yamaha-motor.com/business/robot/>**

## YK180X



Controller

**RCX340 ▶ 508** **RCX240S ▶ 495**

# YK180XG

Standard type: Tiny type

● Arm length 180mm

● Maximum payload 1kg

## Ordering method

**YK180XG - 50**

Model

Z axis stroke

50 : 50mm

Cable

2L: 2m

3L: 3.5m

5L: 5m

10L: 10m

**RCX340-4**

Controller /  
Number of controllable axes

Safety  
standard

Option A  
(OP.A)

Option B  
(OP.B)

Option C  
(OP.C)

Option D  
(OP.D)

Option E  
(OP.E)

Absolute  
battery

Specify various controller setting items. RCX340 ▶ **P.508**

**RCX240S**

Controller

CE Marking

Expansion I/O

Network option

IVY System

Gripper

Battery

Specify various controller setting items. RCX240/RCX240S ▶ **P.495**

## Specifications

			X-axis	Y-axis	Z-axis	R-axis
Axis specifications	Arm length		105 mm	75 mm	50 mm	—
	Rotation angle		+/-125 °	+/-145 °	—	+/-360 °
AC servo motor output			30 W	30 W	30 W	30 W
Deceleration mechanism	Speed reducer		Harmonic drive	Harmonic drive	Ball screw	Harmonic drive
	Transmission method	Motor to speed reducer	Direct-coupled			
		Speed reducer to output		Direct-coupled		
Repeatability <sup>Note 1</sup>			+/-0.01 mm		+/-0.01 mm	+/-0.004 °
Maximum speed			3.3 m/sec		0.9 m/sec	1700 °/sec
Maximum payload			1.0 kg			
Standard cycle time: with 0.1kg payload <sup>Note 2</sup>			0.33 sec			
R-axis tolerable moment of inertia <sup>Note 3</sup>			0.01 kgm <sup>2</sup>			
User wiring			0.1 sq × 8 wires			
User tubing (Outer diameter)			φ 4 × 2			
Travel limit			1.Soft limit 2.Mechanical stopper (X,Y,Z axis)			
Robot cable length			Standard: 2 m Option: 3.5 m, 5 m, 10 m			
Weight (Excluding robot cable) <sup>Note 4</sup>			4.1 kg			
Robot cable weight			0.9 kg (2 m)	1.5 kg (3.5 m)	2.1 kg (5 m)	4.2 kg (10 m)

Note 1. This is the value at a constant ambient temperature. (X,Y axes)

Note 2. When moving 25mm in vertical direction and 100mm in horizontal direction reciprocally.

Note 3. There are limits to acceleration coefficient settings. See P.536.

Note 4. The total robot weight is the sum of the robot body weight and the cable weight.

## Controller

Controller	Power capacity (VA)	Operation method
RCX340 RCX240S	500	Programming / I/O point trace / Remote command / Operation using RS-232C communication

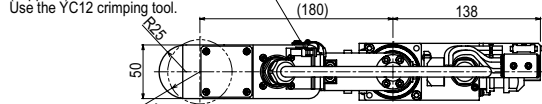
Note. "Harmonic" and "Harmonic drive" are the registered trademarks of Harmonic Drive Systems Inc.

Note. The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.) See our robot manuals (installation manuals) for detailed information.

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## YK180XG

Connector for user wiring  
(No. 1 to 8 usable, socket contact)  
J.S.T. Mfg Co., Ltd. SM connector  
SMR-8V-B, pin SYM-001T-P0.6  
(supplied)  
Use the YC12 crimping tool.



Do not attach any wire or tube to self-supporting cable.  
Doing so may degrade positioning accuracy.

If attaching wire or tube, make use of these air tubes.  
For details, refer to "10 When attaching a new user wire or tube" in Chapter 3.

316 (Maximum 322 during arm rotation)

10 (Maximum 120 during arm rotation)

239

146

104

R-axis dog

47±2 (Z-axis origin position)

50

2 axis stroke

Z-axis upper end stopper

41.5 90.5 32

φ26

No phase relation between flat spot and R-axis origin

User tool installation range

φ10h 7<sup>0</sup><sub>-0.015</sub>

Hollow diameter : φ4

Width across flats

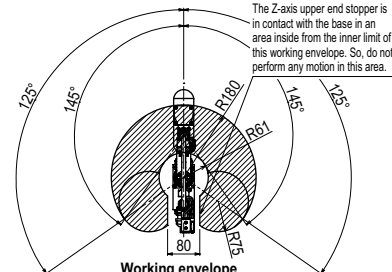
Tapped hole for user 4-M3 x 0.5, depth: 7

2-φ5.5 through-hole (Use four M5 mounting bolts.)

R27 (Min. cable bending radius) Do not move the cable.

4-φ9

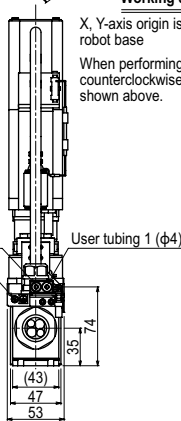
Keep enough space for the maintenance work at the rear of the base.



Working envelope

X, Y-axis origin is at ±5° with respect to front of robot base

When performing return-to-origin, move the axes counterclockwise in advance from the position shown above.



Cross section A-A

User tubing 2 (φ4)

User tubing 1 (φ4)

User tubing 2 (φ4)

M3 ground terminal

User tubing 1 (φ4)

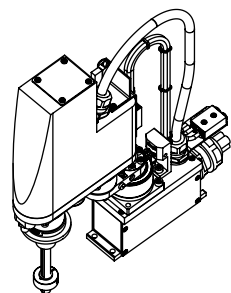
35 74

(43)

47

53

Connector for user wiring  
(No. 1 to 8 usable, socket contact)  
J.S.T. Mfg Co., Ltd. SM connector SMR-8V-B,  
pin SYM-001T-P0.6 (supplied)  
Use the YC12 crimping machine.





## YK220X

Standard type: Tiny type

● Arm length 220mm

● Maximum payload 1kg



## Ordering method

YK220X - 100

Model	Z axis stroke	Cable
	100: 100mm	SL: 3.5m SL: 5m 10L: 10m

RCX340-4

Controller / Number of controllable axes	Safety standard	Option A (OP.A)	Option B (OP.B)	Option C (OP.C)	Option D (OP.D)	Option E (OP.E)	Absolute battery
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Specify various controller setting items. RCX340 ▶ P.508

RCX240S

Controller	CE Marking	Expansion I/O	Network option	IVY System	Gripper	Battery
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Specify various controller setting items. RCX240/RCX240S ▶ P.495

## Specifications

			X-axis	Y-axis	Z-axis	R-axis
Axis specifications	Arm length		111 mm	109 mm	100 mm	—
	Rotation angle		+/-120 °	+/-140 °	—	+/-360 °
AC servo motor output			50 W	30 W	30 W	30 W
Deceleration mechanism	Speed reducer		Harmonic drive	Harmonic drive	Ball screw	Harmonic drive
	Transmission method	Motor to speed reducer	Direct-coupled			
		Speed reducer to output	Direct-coupled			
Repeatability <sup>Note 1</sup>			+/-0.01 mm		+/-0.01 mm	+/-0.004 °
Maximum speed			3.4 m/sec		0.7 m/sec	1700 °/sec
Maximum payload			1.0 kg			
Standard cycle time: with 0.1kg payload <sup>Note 2</sup>			0.42 sec			
R-axis tolerable moment of inertia <sup>Note 3</sup>			0.01 kgm <sup>2</sup>			
User wiring			0.1 sq × 6 wires			
User tubing (Outer diameter)			φ 3 × 2			
Travel limit			1.Soft limit 2.Mechanical stopper (X,Y,Z axis)			
Robot cable length			Standard: 3.5 m Option: 5 m, 10 m			
Weight (Excluding robot cable) <sup>Note 4</sup>			5.5 kg			
Robot cable weight			1.5 kg (3.5 m)	2.1 kg (5 m)	4.2 kg (10 m)	

Note 1. This is the value at a constant ambient temperature.

Note 2. When reciprocating 100mm in horizontal and 25mm in vertical directions.

Note 3. There are limits to acceleration coefficient settings. See P.536.

Note 4. The total robot weight is the sum of the robot body weight and the cable weight.

## Controller

Controller	Power capacity (VA)	Operation method
RCX340 RCX240S	500	Programming / I/O point trace / Remote command / Operation using RS-232C communication

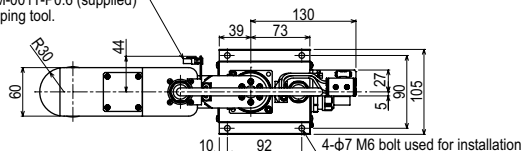
Note. "Harmonic" and "Harmonic drive" are the registered trademarks of Harmonic Drive Systems Inc.

Note. The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.) See our robot manuals (installation manuals) for detailed information.

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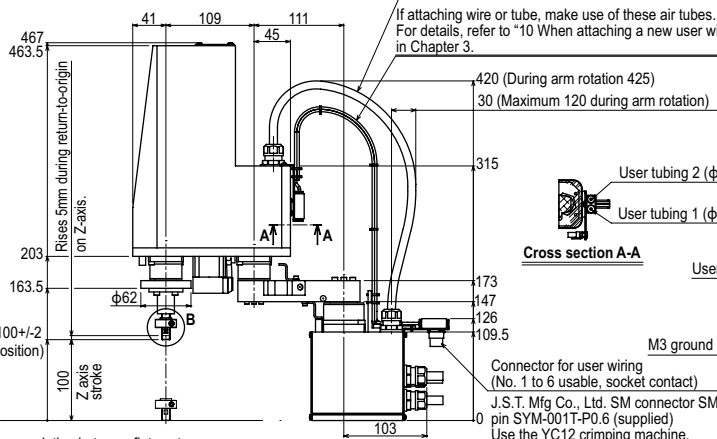
## YK220X

Connector for user wiring  
(No. 1 to 6 usable, socket contact)  
J.S.T. Mfg Co., Ltd. SM connector  
SMR-6VB, pin SYM-001T-P0.6 (supplied)  
Use the YC12 crimping tool.



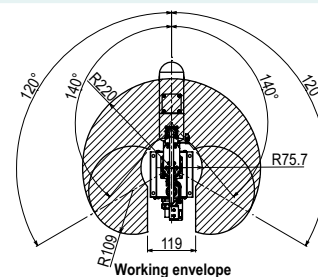
Do not attach any wire or tube to self-supporting cable.  
Doing so may degrade positioning accuracy.

If attaching wire or tube, make use of these air tubes.  
For details, refer to "10 When attaching a new user wire or tube"  
in Chapter 3.



Cross section A-A

Connector for user wiring  
(No. 1 to 6 usable, socket contact)  
J.S.T. Mfg Co., Ltd. SM connector SMR-6VB,  
pin SYM-001T-P0.6 (supplied)  
Use the YC12 crimping machine.



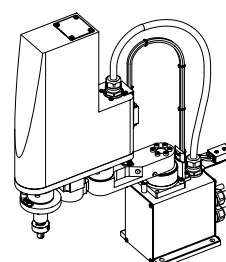
Working envelope

X-axis origin is at 0°±5° with respect to  
front of robot base



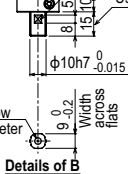
X, Y-axis origin position

When performing return-to-origin, move the  
axes counterclockwise in advance from the  
position shown above.

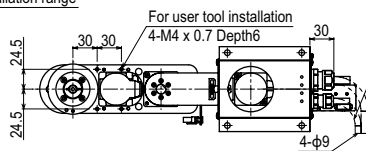


No phase relation between flat spot  
and R-axis origin

User tool installation range



Details of B



R27 (Min. cable bending radius)  
Do not move the cable.

Keep enough space for the maintenance  
work at the rear of the base.