



**Standard type: Extra small type**

- Arm length 150mm
- Maximum payload 1kg

### Ordering method

# YK150XG - 50

## RCX340-4

|       |                           |                                                   |                                             |                    |                    |                    |                    |                    |                    |                     |
|-------|---------------------------|---------------------------------------------------|---------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Model | Z axis stroke<br>50: 50mm | Cable<br>2L: 2m<br>3L: 3.5m<br>5L: 5m<br>10L: 10m | Controller /<br>Number of controllable axes | Safety<br>standard | Option A<br>(OP.A) | Option B<br>(OP.B) | Option C<br>(OP.C) | Option D<br>(OP.D) | Option E<br>(OP.E) | Absolute<br>battery |
|-------|---------------------------|---------------------------------------------------|---------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|

Specify various controller setting items. RCX340 ▶ **P.636**

## ■ Specifications

|                                                           |                     |                         | X-axis                                           | Y-axis         | Z-axis       | R-axis        |
|-----------------------------------------------------------|---------------------|-------------------------|--------------------------------------------------|----------------|--------------|---------------|
| Axis specifications                                       | Arm length          |                         | 75 mm                                            | 75 mm          | 50 mm        | –             |
|                                                           | Rotation angle      |                         | +/-125 °                                         | +/-145 °       | –            | +/-360 °      |
| AC servo motor output                                     |                     |                         | 30 W                                             | 30 W           | 30 W         | 30 W          |
| Deceleration mechanism                                    | 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                                        |                | 0.9 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>          |                     |                         | 4.0 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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

#### Controller

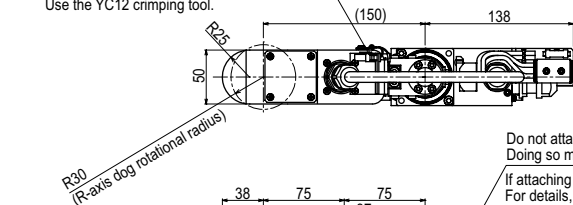
| Controller | Power capacity (VA) | Operation method                                                                                      |
|------------|---------------------|-------------------------------------------------------------------------------------------------------|
| RCX340     | 300                 | Programming /<br>I/O point trace /<br>Remote command /<br>Operation<br>using RS-232C<br>communication |

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.

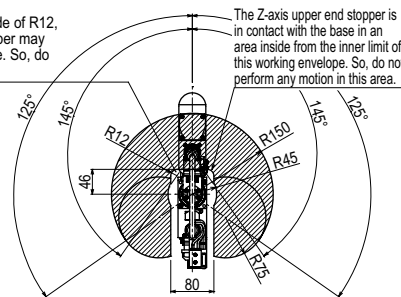
Our robot manuals (installation manuals) can be downloaded from our website at the address below:  
**<https://global.yamaha-motor.com/business/robot/>**

## YK150XG

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.



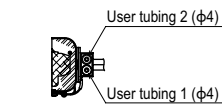
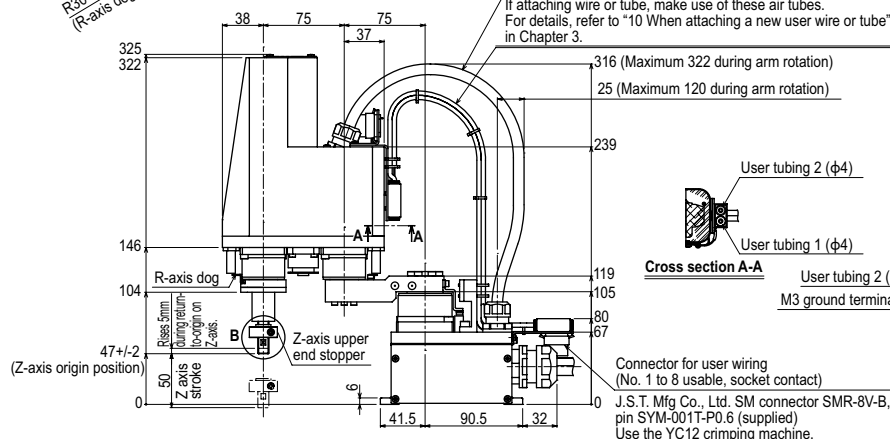
If the robot enters the inside of R12 the Z-axis upper end stopper may be in contact with the base. So, do not perform such motion.



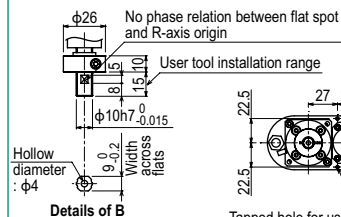
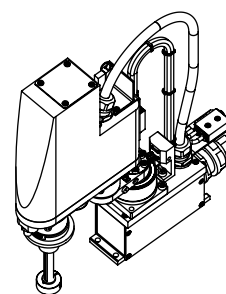
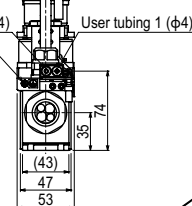
### Working envelope

X, Y-axis origin is at  $\pm 5^\circ$  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**



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

Use four M5 mounting bolts  
R27 (Min. cable bending radius)  
Do not move the cable.

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

# YK180XG

Standard type: Extra small type



- Arm length 180mm
- Maximum payload 1kg

## Ordering method

**YK180XG - 50**

**RCX340-4**

| Model | Z axis stroke | Cable                                    |
|-------|---------------|------------------------------------------|
|       | 50 : 50mm     | 2L: 2m<br>3L: 3.5m<br>5L: 5m<br>10L: 10m |

| 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.636**

## Specifications

| Axis specifications                     | Arm length              | X-axis                                           | Y-axis          | Z-axis            | R-axis          |
|-----------------------------------------|-------------------------|--------------------------------------------------|-----------------|-------------------|-----------------|
|                                         | Rotation angle          | 105 mm                                           | 75 mm           | 50 mm             | —               |
|                                         |                         | $\pm 125^\circ$                                  | $\pm 145^\circ$ | —                 | $\pm 360^\circ$ |
| AC servo motor output                   |                         | 30 W                                             | 30 W            | 30 W              | 30 W            |
| Deceleration mechanism                  | Transmission method     | Direct-coupled                                   |                 |                   |                 |
|                                         | Motor to speed reducer  | Direct-coupled                                   |                 |                   |                 |
|                                         | Speed reducer to output | Direct-coupled                                   |                 |                   |                 |
| Repeatability                           | Note 1                  | $\pm 0.01$ mm                                    | $\pm 0.01$ mm   | $\pm 0.004^\circ$ |                 |
| Maximum speed                           |                         | 3.3 m/sec                                        | 0.9 m/sec       | 1700 °/sec        |                 |
| Maximum payload                         |                         | 1.0 kg                                           |                 |                   |                 |
| Standard cycle time: with 0.1kg payload | Note 2                  | 0.33 sec                                         |                 |                   |                 |
| R-axis tolerable moment of inertia      | Note 3                  | 0.01 kgm <sup>2</sup>                            |                 |                   |                 |
| User wiring                             |                         | 0.1 sq × 8 wires                                 |                 |                   |                 |
| User tubing (Outer diameter)            |                         | $\phi 4 \times 2$                                |                 |                   |                 |
| 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)          | Note 4                  | 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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

## Controller

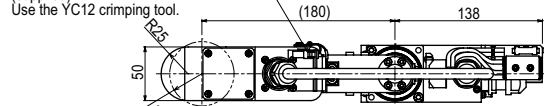
| Controller | Power capacity (VA) | Operation method                                                                       |
|------------|---------------------|----------------------------------------------------------------------------------------|
| RCX340     | 500                 | Programming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

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:  
<https://global.yamaha-motor.com/business/robot/>

## 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

119

105

80

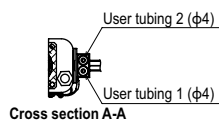
67

0

41.5

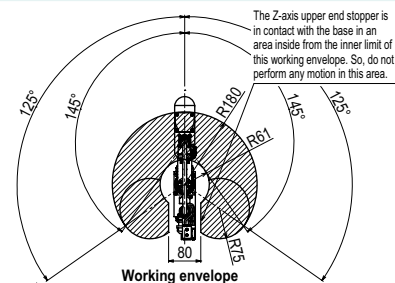
90.5

32



Cross section A-A

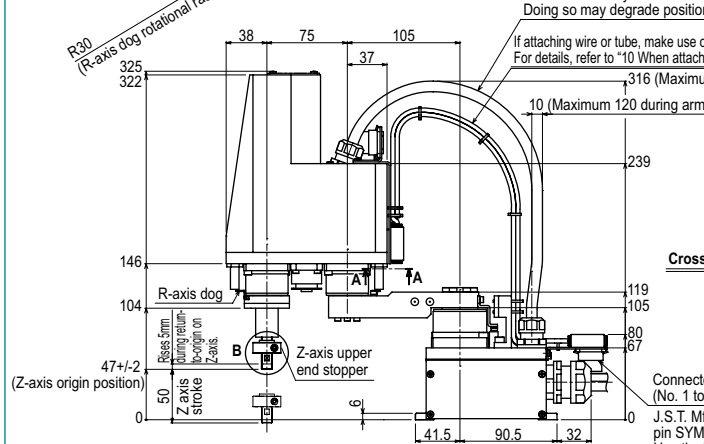
Connector for user wiring  
(No. 1 to 8 usable, socket contact)  
J.S.T. Mfg Co., Ltd. SM connector SMR-8V-B,  
pin SYM-001T-P0.6 (supplied)  
Use the YC12 crimping machine.



Working envelope

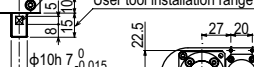
X, Y-axis origin is at  $\pm 5^\circ$  with respect to front of robot base

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

Hollow diameter :  $\phi 4$

Width across flats

$\phi 10h 7 \pm 0.015$

9.0.2

22.5

27.20

4.5

123

32

2.5.5

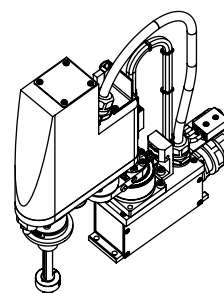
14

43

14

4- $\phi 9$

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



# YK180X

Standard type: Extra small type

- Arm length 180mm
- Maximum payload 1kg

## Ordering method

**YK180X - 100**

**RCX340-4**

| Model | Z axis stroke | Cable    |
|-------|---------------|----------|
|       | 100: 100mm    | 3L: 3.5m |
|       |               | 5L: 5m   |
|       |               | 10L: 10m |

| Controller /<br>Number of controllable axes | Safety<br>standard | Option A<br>(OP.A) | Option B<br>(OP.B) | Option C<br>(OP.C) | Option D<br>(OP.D) | Option E<br>(OP.E) | Absolute<br>battery |
|---------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
|---------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|

Specify various controller setting items. RCX340 ▶ **P.636**

## Specifications

| Axis specifications                     | Arm length              | X-axis                                         | Y-axis       | Z-axis        | R-axis   |
|-----------------------------------------|-------------------------|------------------------------------------------|--------------|---------------|----------|
|                                         | Rotation angle          | 71 mm                                          | 109 mm       | 100 mm        | —        |
|                                         |                         | +/-120 °                                       | +/-140 °     | —             | +/-360 ° |
| AC servo motor output                   |                         | 50 W                                           | 30 W         | 30 W          | 30 W     |
| Deceleration mechanism                  | Transmission method     | Direct-coupled                                 |              |               |          |
|                                         | Motor to speed reducer  | Direct-coupled                                 |              |               |          |
|                                         | Speed reducer to output | Direct-coupled                                 |              |               |          |
| Repeatability                           | Note 1                  | +/-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 | Note 2                  | 0.39 sec                                       |              |               |          |
| R-axis tolerable moment of inertia      | Note 3                  | 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)          | Note 4                  | 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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

## Controller

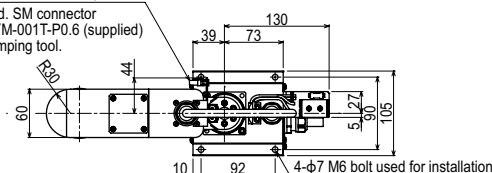
| Controller | Power capacity (VA) | Operation method                                                                                      |
|------------|---------------------|-------------------------------------------------------------------------------------------------------|
| RCX340     | 500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

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.

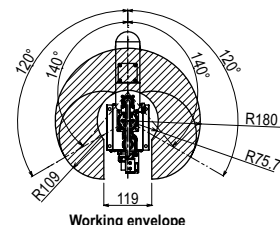
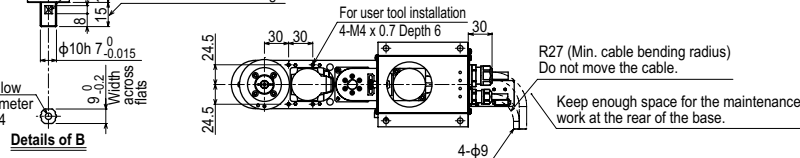
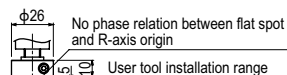
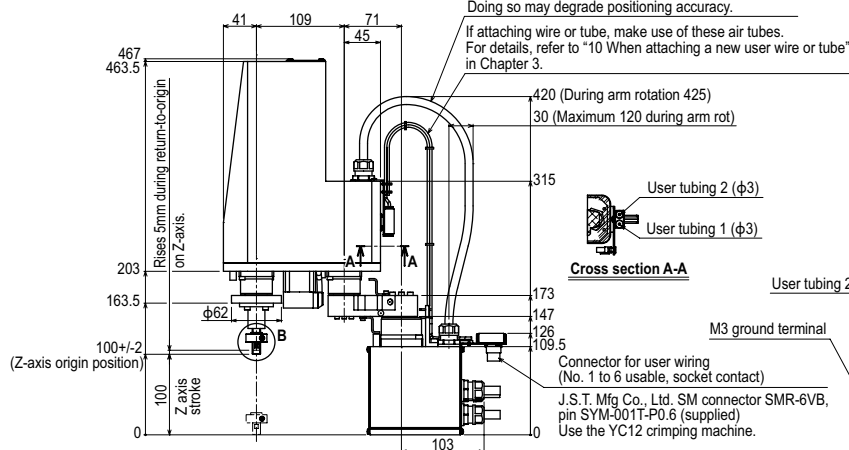
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## YK180X

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.

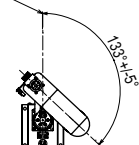


Do not attach any wire or tube to self-supporting cable.  
Doing so may degrade positioning accuracy.  
If attaching wire or tube, make use of these air tubes.  
For details, refer to "10 When attaching a new user wire or tube"  
in Chapter 3.



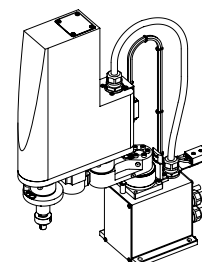
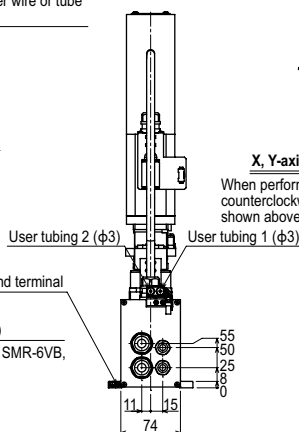
### Working envelope

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.



Controller

**RCX340 ▶ 636**

# YK220X

Standard type: Extra small type

- Arm length 220mm
- Maximum payload 1kg



## Ordering method

**YK220X - 100**

**RCX340-4**

| Model | Z axis stroke | Cable    |
|-------|---------------|----------|
|       | 100: 100mm    | 3L: 3.5m |
|       |               | 5L: 5m   |
|       |               | 10L: 10m |

| Controller /<br>Number of controllable axes | Safety<br>standard | Option A<br>(OP.A) | Option B<br>(OP.B) | Option C<br>(OP.C) | Option D<br>(OP.D) | Option E<br>(OP.E) | Absolute<br>battery |
|---------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
|---------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|

Specify various controller setting items. RCX340 ▶ **P.636**

## Specifications

| Axis specifications | Arm length                                                | X-axis                                         | Y-axis       | Z-axis        | R-axis   |
|---------------------|-----------------------------------------------------------|------------------------------------------------|--------------|---------------|----------|
|                     | Rotation angle                                            | 111 mm                                         | 109 mm       | 100 mm        | —        |
|                     |                                                           | +/-120 °                                       | +/-140 °     | —             | +/-360 ° |
|                     | AC servo motor output                                     | 50 W                                           | 30 W         | 30 W          | 30 W     |
|                     | Deceleration mechanism                                    | Direct-coupled                                 |              |               |          |
|                     | Transmission method                                       | Direct-coupled                                 |              |               |          |
|                     | 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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

## Controller

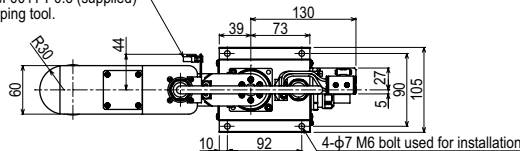
| Controller | Power capacity (VA) | Operation method                                                                                      |
|------------|---------------------|-------------------------------------------------------------------------------------------------------|
| RCX340     | 500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

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

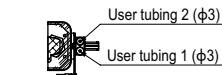
Connector for user wiring  
(No. 1 to 6 usable, socket contact)  
J.S.T. Mfg Co., Ltd. SM connector  
SMR-6VB, pin SYM-001T-P0.6 (supplied)  
Use the YC12 crimping tool.



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.

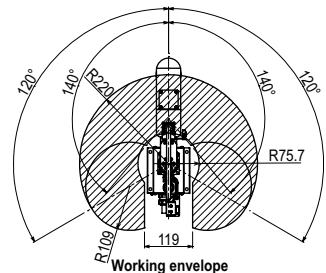
420 (During arm rotation 425)  
30 (Maximum 120 during arm rotation)



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.

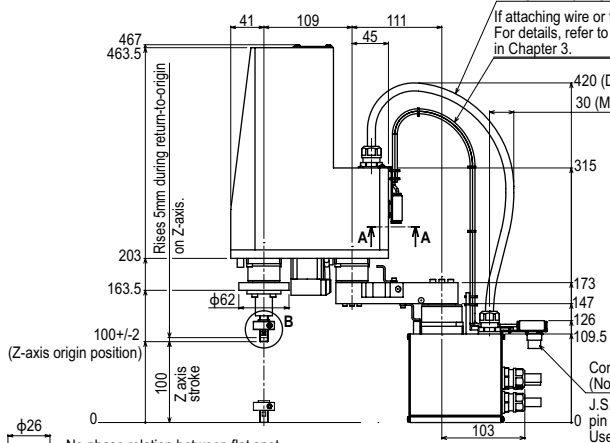
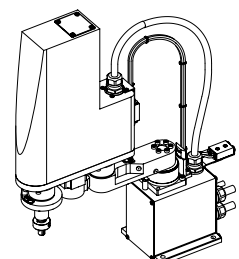
X-axis origin is at 0°/+5° with respect to front of robot base



Working envelope

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

For user tool installation

4-M4 x 0.7 Depth6

30

24.5

24.5

4-φ9

R27 (Min. cable bending radius)

Do not move the cable.

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

Details of B