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<th>Standard cycle time (sec)</th>
<th>Maximum payload (kg)</th>
<th>R-axis moment of inertia (kgm²)</th>
<th>Completely beltless structure</th>
<th>R-axis harmonic drive (type)</th>
<th>Detailed info page</th>
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</thead>
<tbody>
<tr>
<td>Orbit type</td>
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<td>●</td>
<td>P.427</td>
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</tbody>
</table>

**Note 1.** The standard cycle time is measured under the following conditions.
- During back and forth movement 25mm vertically and 100mm horizontally (TINY)
- During back and forth movement 25mm vertically and 300mm horizontally (small type / medium type / large type)

**Note 2.** Maintains high accuracy over long periods because the beltless structure drastically cuts down on wasted motion.
Operation is also nearly maintenance-free for long periods with no worries about belt breakage, stretching or deterioration over time.

**Note 3.** "Harmonic" and "Harmonic drive" are the registered trademarks of Harmonic Drive Systems Inc.
Robot ordering method description

In the order format for the YAMAHA SCARA robots YK-X series, the notation (letters/numbers) for the mechanical section is shown linked to the controller section notation.

[Example]

- **Mechanical** - YK250XG
  - Z-axis stroke: 150mm
  - Tool flange: With tool flange
  - Hollow shaft: With hollow shaft
  - Cable length: 3.5m

- **Controller** - RCX240S

Ordering method

**YK250XG - 150 - F - S - 3L - RCX240S**

To find detailed controller information see the controller page.

<table>
<thead>
<tr>
<th>① Model</th>
<th>② Z-axis stroke</th>
<th>③ Tool flange</th>
<th>④ Hollow shaft</th>
<th>⑤ Cable</th>
<th>⑥ Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK***</td>
<td>50 50mm</td>
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<td>None</td>
<td>2L 2m</td>
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<tr>
<td>100</td>
<td>100mm</td>
<td>With tool flange</td>
<td>With hollow shaft</td>
<td>3L 3.5m</td>
<td>RCX240S</td>
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<td>400mm</td>
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<td>None</td>
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</tbody>
</table>

Note 1. Available only for the master.

Robot ordering method terminology

1. **Model**: Enter the robot unit model.
2. **Z-axis stroke**: Select the Z axis stroke. The stroke varies with the model you select so see that model’s page to confirm the specifications.
3. **Tool flange**: Tool flange option for easy mounting of a tool to the tip.
   - No entry: None
   - F: With tool flange
4. **Hollow shaft**: Hollow shaft option for easy routing of air tubes and harness wires.
   - No entry: None
   - S: With hollow shaft
5. **Cable**: Select the length of the robot cable connecting the robot and controller.
   - 2L: 2m
   - 3L: 3.5m
   - 5L: 5m
   - 10L: 10m
   - Note 1: Only selectable for YK250XG, YK150XG, YK180XG.
6. **Controller**: Select either the RCX240 (RCX240S) or RCX340.
YK350TW

Ordering method

YK350TW-130

Model

Controller

RCX340

RCX240

RCX340-4

Controller / Number of controllable axis

RCX240-R3

RCX240-R3

Safety standard

Controller

RCX340

RCX240

RCX340-4

RCX240-R3

RCX240-R3

RCX340-4

RCX240-R3

Controller

RCX340

RCX240

RCX340-4

RCX240-R3

RCX240-R3

RCX340-4

RCX240-R3

RCX340-4

RCX240-R3

RCX340-R3

RCX340-4

RCX240-R3

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RCX240-R3

RCX340-4

RCX240-R3

RCX240-R3

RCX340-4

RCX240-R3

RCX240-R3
YK350TW Tool flange mount type

Keep enough space for the maintenance work on the top face of the base.

Note: Upper section requires a space of at least 250mm for detaching/attaching cover.

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

Detailed drawing A

Details of tool flange section

Controller: RCX340 544 RCX240 534
YK500TW Tool flange mount type

<table>
<thead>
<tr>
<th>Tool Flange Mount Type</th>
<th>Diagram</th>
</tr>
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<tbody>
<tr>
<td>Z-axis upper end mechanical stopper position (5mm rise during return-to-origin)</td>
<td><img src="image1" alt="Diagram" /></td>
</tr>
<tr>
<td>Z-axis lower end mechanical stopper position</td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**Note:** Upper section requires a space of at least 250mm for detaching/attaching cover.

R27 (Min. cable bending radius).

Do not move the cable.

**Tube connection port (Ø6 Blue):**
- Connects to spindle tip
- Connects to base
- D-sub connector for user wiring (No.1 to 8 usable)

**Special Notes:**
- Tube (Ø4) through hollow shaft protrudes about 300mm from the spline tip.
- Tube through hollow shaft does not rotate with spline during R-axis rotation.

---

**Diagram Details:**
- Tube through hollow shaft
- User tubing 1 (Ø6 Black)
- User tubing 2 (Ø6 Red)
- User tubing 3 (Ø6 Black)
- User tubing 4 (Ø6 Red)
- D-sub connector for user wiring (No.1 to 8 usable)

---

**Controller Model:**
- RCX340: 544
- RCX240: 534
**YK150XG**

**Ordering method**

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>Z-axis stroke (mm)</th>
<th>Cable</th>
<th>Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK150XG-50</td>
<td>150</td>
<td>~</td>
<td>RCX340-4</td>
</tr>
</tbody>
</table>

**Ordering details**

Specify various controller setting items. RCX340 ▶ 544

Specify various controller setting items. RCX240S ▶ 534

---

**Specifications**

<table>
<thead>
<tr>
<th>Axis specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>75 mm</td>
<td>75 mm</td>
<td>50 mm</td>
<td>+/-360°</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-225°</td>
<td>+/-145°</td>
<td>-</td>
<td>+/-360°</td>
</tr>
</tbody>
</table>

**AC servo motor output**

| AC servo motor output | 30 W | 30 W | 30 W | 30 W |

**Deceleration mechanism**

<table>
<thead>
<tr>
<th>Speed reducer</th>
<th>Harmonic drive</th>
<th>Harmonic drive</th>
<th>Ball screw</th>
<th>Harmonic drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission method</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Repeatability**

<table>
<thead>
<tr>
<th>Travel limit</th>
<th>1. Soft limit</th>
<th>2. Mechanical stopper (X, Y, Z axis)</th>
</tr>
</thead>
</table>

**Maximum payload**

| Weight (Excluding robot cable) | 0.9 kg (2 m) | 1.5 kg (3.5 m) | 2.1 kg (5 m) | 4.2 kg (10 m) |

**Robot cable length**

| Robot cable length | 0.9 kg (2 m) | 1.5 kg (3.5 m) | 2.1 kg (5 m) | 4.2 kg (10 m) |

---

**Controller**

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>300</td>
<td>Programming / H/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
<tr>
<td>RCX240S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Note:**

1. This is the value at a constant ambient temperature. (X, Y axes)
2. When moving 25mm in vertical direction and 100mm in horizontal direction reciprocally.
3. There are limits to acceleration coefficient settings. See P.608.
4. 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.

---

**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 crimbing tool.

---

**Details of B**

- Hollow diameter: -6.4
- Tapped hole for use: 4-M8 x 6.5, depth: 7
- 10-M5 through-hole

---

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

---

**Controller**

<table>
<thead>
<tr>
<th>RCX340</th>
<th>RCX240S</th>
</tr>
</thead>
<tbody>
<tr>
<td>544</td>
<td>534</td>
</tr>
</tbody>
</table>
### Ordering method

<table>
<thead>
<tr>
<th>YK180X-100</th>
<th>RCX340-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>RCX240S</td>
</tr>
<tr>
<td>2-axis stroke</td>
<td></td>
</tr>
<tr>
<td>Arm length</td>
<td>180 mm</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>1kg</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>71 mm</td>
<td>109 mm</td>
<td>100 mm</td>
<td>100 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/−120°</td>
<td>+/−104°</td>
<td>+/−360°</td>
<td></td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>50 W</td>
<td>30 W</td>
<td>30 W</td>
<td>30 W</td>
</tr>
</tbody>
</table>

### Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>500</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
<tr>
<td>RCX240S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Note

- Note 1: This is the value at a constant ambient temperature.
- Note 2: When reciprocating 100 mm in horizontal and 25 mm in vertical directions.
- Note 3: There are limits to acceleration coefficient settings. See P.609.
- Note 4: The total robot weight is the sum of the robot body weight and the cable weight.

---

**YK180X**

- **Standard type:** Tiny type
- **Arm length:** 180 mm
- **Maximum payload:** 1 kg

### Controller

- **Controller**
  - RCX340
  - RCX240S

### Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>71 mm</td>
<td>109 mm</td>
<td>100 mm</td>
<td>100 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/−120°</td>
<td>+/−104°</td>
<td>+/−360°</td>
<td></td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>50 W</td>
<td>30 W</td>
<td>30 W</td>
<td>30 W</td>
</tr>
</tbody>
</table>

### Deceleration mechanism

<table>
<thead>
<tr>
<th>Speed reducer</th>
<th>Harmonic drive</th>
<th>Harmonic drive</th>
<th>Ball screw</th>
<th>Harmonic drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission method</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed reducerc to output</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004°</td>
<td></td>
</tr>
<tr>
<td>Maximum speed</td>
<td>3.3 m/sec</td>
<td>0.7 m/sec</td>
<td>1700°/sec</td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>1.0 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Note

- Note 1: This is the value at a constant ambient temperature.
- Note 2: When reciprocating 100 mm in horizontal and 25 mm in vertical directions.
- Note 3: There are limits to acceleration coefficient settings. See P.609.
- Note 4: The total robot weight is the sum of the robot body weight and the cable weight.
YK220X
Standard type: Tiny type

Arm length 220mm
Maximum payload 1kg

Ordering method

YK220X 100
RCX340-4
RCX240S

Specifications

Axis specification
Arm length
111 mm
109 mm
100 mm
100 mm

Rotation angle
+/-120°
+/-140°
- 
+/-360°

Deceleration mechanism
Speed reducer
Harmonic drive
Harmonic drive
Harmonic drive

Transmission method
Motor to speed reducer
Speed reducer to output

Repeatability
+/-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 kg payload
Note 2
0.42 sec

R-axis tolerable moment of inertia
Note 2
0.01 kgm²

User wiring
0.1 sq × 6 wires

User tubing (Outer diameter)
∅ 3 × 2

Travel limit
1. Soft limit 2. Mechanical stopper (X,Y,Z axis)

Robotic cable length
Standard: 3.5 m Option: 5 m, 10 m

Weight (Excluding robotic cable)
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.609.
Note 4: The total robot weight is the sum of the robot body weight and the cable weight.

Controlled area

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

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/
YK250XG

Standard type: Small type

Arm length 250mm
Maximum payload 5kg

Ordering method

YK250XG - 150

<table>
<thead>
<tr>
<th>Model</th>
<th>2-axis stroke (mm)</th>
<th>3-axis stroke (mm)</th>
<th>4-axis stroke (mm)</th>
<th>Optional 2-axis stroke (mm)</th>
<th>Optional 3-axis stroke (mm)</th>
<th>Optional 4-axis stroke (mm)</th>
<th>Optional 5-axis stroke (mm)</th>
<th>Optional 6-axis stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Controller

RCX340 1000
Controller / Safety standard

Data sheet

Specifications

Axis specifications

- X-axis
- Y-axis
- Z-axis
- R-axis

- Arm length 100 mm
- 150 mm
- 150 mm
- 150 mm
- 150 mm
- 150 mm
- 150 mm
- 150 mm

- Rotation angle
  - +/-140°
  - +/-144°
  - +/-148°
  - +/-150°

- AC servo motor output
  - 200 W
  - 150 W
  - 5 W
  - 100 W

- Deceleration
  - Harmonic drive
  - Harmonic drive
  - Ball screw
  - Harmonic drive

- Transmission method
  - Motor to speed reducer
  - Speed reducer to output
  - Direct-coupled
  - Direct-coupled

- Repeatability
  - +/-0.01 mm
  - +/-0.01 mm
  - +/-0.004 mm

- Maximum speed
  - 4.5 m/sec
  - 1.1 m/sec
  - 1020 °/sec

- Maximum payload
  - 2 kg
  - 5 kg
  - 4 kg

- Standard cycle time: with 2kg payload
  - 0.49 sec

- R-axis tolerable moment of inertia
  - 0.05 kgm²
  - (0.5 kgfcm²)
  - (Options specifications)

- User wiring
  - 0.2 sq × 10 wires

- User tubing (Outside diameter)
  - φ 4 × 3

- Travel limit
  - 1.5 axis: 2 Mechanical stopper (X,Y,Z axis)

- Robot cable length
  - Standard: 3.5 m
  - Option: 5 m, 10 m

- Weight
  - 18.5 kg

Note 1. This is the value at a constant ambient temperature (X,Y axis)
Note 2. When reciprocating 300mm in horizontal and 25mm in vertical directions.
Note 3. There is an acceleration coefficient setting. See P.609.
Note 4. Maximum payload of option specifications (with tool flange attached or with user wiring and tubing routed through spline shaft) is 4 kg.

YK250XG

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

Note that the robot cannot be used at a position where the base flange or robot cable interferes with the spline in the working envelope shown above.

X-axis mechanical stopper position: 142°
Y-axis mechanical stopper position: 146°

4-M3 × 0.5 through hole (No phase relation to R-axis origin)
As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

Controller

RCX340 544 RCX240S 534

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.

Note. To set the standard coordinates with high accuracy, use a standard coordinate setting (g option). Refer to the user’s manual (installation manual) for more details.

Our robot manuals (installation manuals) can be downloaded from our website at the address below: http://global.yamaha-motor.com/business/robot/
YK250XG Tool flange mount type

Machine harness

User tubing 1 (ϕ4 black)
User tubing 2 (ϕ4 red)
User tubing 3 (ϕ4 blue)

D-sub connector for user wiring (No. 1 to 10 usable)

M4 ground terminal

Tapped hole for user wiring 6-M3 × 0.5 Depth 9
The weight of the tool attached here should be added to the tip mass.

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

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

Detailed drawing D

4-ϕ9 M8 bolt for installation, 4 bolts used
138 (Base size)

Option:
User wiring/tubing through spline type

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.

X-axis mechanical stopper position: 142°
Y-axis mechanical stopper position: 146°

4-M3 x 0.5 through-hole (No phase relation to R-axis origin.)
As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

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

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.

X-axis mechanical stopper position: 142°
Y-axis mechanical stopper position: 146°

4-M3 x 0.5 through-hole (No phase relation to R-axis origin.)
As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

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

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.

X-axis mechanical stopper position: 142°
Y-axis mechanical stopper position: 146°

4-M3 x 0.5 through-hole (No phase relation to R-axis origin.)
As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

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

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.

X-axis mechanical stopper position: 142°
Y-axis mechanical stopper position: 146°

4-M3 x 0.5 through-hole (No phase relation to R-axis origin.)
As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

Keep enough space for the maintenance work at the rear of the base.
YK350XG Tool flange mount type

- Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.
- X-axis mechanical stopper position: 142°
- Y-axis mechanical stopper position: 146°

If the robot enters the inside of the corner of R190 and dimension 164, the tool flange may be in contact with the base or the arm may be in contact with the machine harness. So, do not perform such motion.

As the hole is intended for the wire/tubing clamp, do not attach a large load to it.

4-M3 × 0.5 through-hole (No phase relation to R-axis origin.)

View of F

View of E

Option:
User wiring/tubing through spline type

Machine harness

User tubing 1 (ϕ4 black)

User tubing 2 (ϕ4 red)

User tubing 3 (ϕ4 blue)

M4 ground terminal

D-sub connector for user wiring (No. 1 to 10 usable)

Tapped hole for user wiring 6.35 x 0.9 Depth 6
The weight of the tool attached here should be added to the tip mass.

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

Min. cable bending radius

Detailed drawing D

View of E

Option:
User wiring/tubing through spline type

4-ϕ4.5 through-hole

4-ϕ4 through-hole

D-sub connector for user wiring (No. 1 to 10 usable)
YK400XG Tool flange mount type

- Machine harness
- User tubing 1 (ø4 black)
- User tubing 2 (ø4 red)
- User tubing 3 (ø4 blue)
- M4 ground terminal

If the robot enters the inside of the corner of R190 and dimension 148, the tool flange may be in contact with the base or the arm may be in contact with the machine harness. So, do not perform such motion.

- Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.
- X-axis mechanical stopper position: 142°
- Y-axis mechanical stopper position: 146°

4-M3 × 0.5 through-hole (No phase relation to R-axis origin)

As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

- Tapped hole for user wiring øM3 × 0.5 Depth 6
- ø27 (Min. cable bending radius)
- Do not move the cable.

The weight of the tool attached here should be added to the tip mass.

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

• Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.
• X-axis mechanical stopper position: 142°
• Y-axis mechanical stopper position: 146°

4-M3 × 0.5 through-hole (No phase relation to R-axis origin)

As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

- Tapped hole for user wiring øM3 × 0.5 Depth 6
- ø27 (Min. cable bending radius)
- Do not move the cable.

The weight of the tool attached here should be added to the tip mass.

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

• Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.
• X-axis mechanical stopper position: 142°
• Y-axis mechanical stopper position: 146°

4-M3 × 0.5 through-hole (No phase relation to R-axis origin)
## Ordering method

### YK400XR
- **Model**: YK400XR
- **Controller**: RCX340-4
- **Axis specifications**
  - **Arm length**: X-axis: 225 mm, Y-axis: 175 mm, Z-axis: 150 mm
  - **Rotation angle**: X-axis: +/-150°, Y-axis: +/-150°, Z-axis: +/-360°
- **AC servo motor output**: 200 W, 100 W, 100 W
- **Deceleration mechanism**
  - **Speed reducer**: Harmonic drive, Harmonic drive, Ball screw
  - **Transmission method**: Direct-coupled, Direct-coupled, Timing belt
- **Repeatability**: +/-0.01 mm, +/-0.01 mm, +/-0.01 mm
- **Maximum speed**: 6 m/sec, 1.1 m/sec, 2600°/sec
- **Maximum payload**: 3 kg (Standard specification), 2 kg (Option specifications)

### Controller
- **Controller**: RCX340
- **Power capacity (VA)**: 1000
- **Operation method**: Programming / Remote command / Operation using RS-232C communication

---

### Specifications

#### Axis specifications
- **Arm length**: X-axis: 225 mm, Y-axis: 175 mm, Z-axis: 150 mm
- **Rotation angle**: X-axis: +/-150°, Y-axis: +/-150°, Z-axis: +/-360°

#### AC servo motor output
- 200 W, 100 W, 100 W

#### Deceleration mechanism
- **Speed reducer**: Harmonic drive, Harmonic drive, Ball screw
- **Transmission method**: Direct-coupled, Direct-coupled, Timing belt

#### Repeatability
- X-axis: +/-0.01 mm, Y-axis: +/-0.01 mm, Z-axis: +/-0.01 mm

#### Maximum speed
- 6 m/sec, 1.1 m/sec, 2600°/sec

#### Maximum payload
- **Standard**: 3 kg, **Option**: 2 kg

#### Note
- **Note 1**: This is the value at a constant ambient temperature: (X,Y,Z axis)
- **Note 2**: When reciprocating 300mm in horizontal and 25mm in vertical directions and performing the coarse positioning arch operation.
- **Note 3**: It is necessary to input the moment of inertia in the actual operating environment.
- **Note 4**: Maximum payload of option specifications (with user wiring/tubing through spline type) is 2 kg.

---

### Controller

#### RCX340
- **Power capacity (VA)**: 1000
- **Operation method**: Programming / Remote command / Operation using RS-232C communication

---

### Note
- "Harmonic" and "Harmonic drive" are the registered trademarks of Harmonic Drive Systems Inc.
- The movement range can be restricted by adding the X- and Y-axis mechanical stoppers. (The maximum movement range was set at shipment.)
- See our robot manuals (installation manuals) for detailed information.
- To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

---

### Image

#### YK400XR
- **Controller**: RCX340
- **RCX340-4**
- **XY-axis origin position**
  - X-axis: 134°, Y-axis: 154°
- **Working envelope**
  - X-axis mechanical stopper position: 134°
  - Y-axis mechanical stopper position: 154°
- **4-M3 × 0.5 through-hole**
  - (No phase relation to R-axis origin.)
- **User wiring connector**
  - Numbers 1 to 10 are usable.
- **XY-axis origin position**
  - (Stroke and specification)
  - When performing return-to-origin, move the X-axis and Y-axis counterclockwise in advance from the position shown above.
YK500XGL

Standard type: Medium type

- Arm length 500mm
- Maximum payload 5kg

### Ordering method

**YK500XGL - 150**

<table>
<thead>
<tr>
<th>Model</th>
<th>Z-axis stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YA</td>
<td>442</td>
</tr>
<tr>
<td>TRANSEVO</td>
<td>442</td>
</tr>
<tr>
<td>FLIP-X</td>
<td>442</td>
</tr>
<tr>
<td>TRANSERVO</td>
<td>442</td>
</tr>
</tbody>
</table>

### Specifications

- **Axes**
  - X-axis: 250 mm
  - Y-axis: 250 mm
  - Z-axis: 150 mm
  - R-axis: +/-144°

- **Deceleration mechanism**
  - Speed reducer: Harmonic drive
  - Transmission method: Direct-coupled

- **AC servo motor output**
  - 200 W

- **Controller**
  - RCX340
  - RCX240S

### Controller

- **Power capacity (VA)**
  - RCX340: 1000
  - RCX240S: 500

### Note

1. This is the value at a constant ambient temperature: (X, Y) axes
2. When reciprocating 300mm in horizontal and 25mm in vertical directions.
3. There are limits to acceleration coefficient settings. See P.610.
4. Maximum payload of option specifications (with tool flange attached or with user wiring and tubing routed through spline shaft) is 4kg.

### Diagram

- User tubing 1 (4 black)
- User tubing 2 (4 red)
- User tubing 3 (4 blue)

- Machine harness
- Z-axis upper end mechanical stopper position
- Z-axis lower end mechanical stopper position

- D-sub connector for user wiring (No. 1 to 10 usable)

- 4-6H M4 bolt for installation, 4 bolts used

- Maximum 315 during arm rotation

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

- Option: User wiring/tubing through spline type

- 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. Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

- Our robot manuals (installation manuals) can be downloaded from our website at the address below: http://global.yamaha-motor.com/business/robot/
### YK500XGL Tool flange mount type

**Controller:**
- RCX340 > 544
- RCX240S > 534

#### Machine harness

- **D-sub connector for user wiring (No. 1 to 10 usable)**

#### User tubing

- **User tubing 1 (ϕ4 black)**
- **User tubing 2 (ϕ4 red)**
- **User tubing 3 (ϕ4 blue)**

#### D-sub connector for user wiring

- **No. 1 to 10 usable**

#### Option:
- **User wiring/tubing through spline type**

---

*Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.*

- **X-axis mechanical stopper position:** 142°
- **Y-axis mechanical stopper position:** 146°

- **If the robot enters the inside of corners of R200 and R250, the arm may be in contact with the machine harness. So, do not perform such motion.**

- **4-M3 x 0.5 through-hole**

  - **(No phase relation to R-axis origin.)**

- **As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.**

---

*The weight of the tool attached here should be added to the tip mass.*

- **Tapped hole for user wiring 5-M3 x 0.5 Depth 6**

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

---

*If the robot enters the inside of corners of R200 and R250, the arm may be in contact with the machine harness. So, do not perform such motion.*

*Do not move the cable.*

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

---

*Option: User wiring/tubing through spline type*
YK500XG

Standard type: Medium type

Arm length 500mm
Maximum payload 10kg

[Image of YK500XG]

Ordering method

YK500XG

Model
Z-axis stroke
200mm

DC servo motor output
400W

Deceleration mechanism
HARMONIC drive

Motor to speed reducer
Direct-coupled

Transmission method
HARMONIC drive

Speed reducer
HARMONIC drive

額定負荷10kg

Maximum payload
10kg

Standard cycle time: with 2kg payload Note 1
0.45sec

R-axis tolerable moment of inertia Note 2
0.30 kgm²

User tubing (Outer diameter)
Φ 6 × 3

Travel limit
1.5 Soft limit 2 Mechanical stopper (X,Y,Z axis)

Robotic cable length
Standard: 3.5 m
Option: 5 m, 10 m

Weight
30 kg

Specifications

Note 1. This is the value at a constant ambient temperature. (X/Y axes)
Note 2. When reciprocating 300mm in horizontal and 25mm in vertical directions.
Note 3. There is a limit to acceleration coefficient settings. See P. 611.

Controller

RCX340

RCX240-R3

Power capacity (VA)
1700

Operation method
Programming / I/O point trace / Remote command / Operation using RS-232C communication

RCX240 S

RCX340-R3 1700

RCX 240 S

RCX340

RCX340-R3

Note 1. “Harmonic” and “Harmonic drive” are the registered trademarks of Harmonic Drive Systems Inc.
Note 2. The movement range can be limited by changing the positions of X and Y axes mechanical stoppers. (The movement range is set to the maximum at the time of shipment.) See our robot manuals (installation manuals) for detailed information.
Note 3. To set the standard coordinates with high accuracy, use a standard coordinate setting (if option). Refer to the user’s manual (installation manual) for more details.

Note: For tool flange specifications, refer to the user’s manual (installation manual) for more details.

http://global.yamaha-motor.com/business/robot/
YK600XGL

Articulated robots

Compact single-axis robots

TRANSERVO Single-axis robots

FLIP-X Linear motor single-axis robots

XY-X SCARA robots

YK-X Pick & place robots

YP-X CLEAN CONTROLLER INFORMATION

Linear conveyor modules

LCM100

Cable Network option

150 Expansion I/O Controller Tool flange

iVY System CE Marking

YK600XGL

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

Maximum payload of option specifications (with tool flange attached or with user wiring and tubing routed through spline shaft) is 4kg.

Note 2.

Specifications

Axis
Mechanism
AC servo motor output
Deceleration
Speed reducer
Transmission method
Motor to speed reducer
Speed reducer to output
Repeatability
Maximum speed
Maximum payload
Standard cycle time: with 2kg payload
R-axis tolerable moment of inertia
User tubing (Outer diameter)
Travel limit
Robot cable length
Weight

X-axis
350 mm
Harmonic drive
Direct-coupled

Y-axis
250 mm
Harmonic drive

Z-axis
150 mm
Ball screw

R-axis
+1/-140°
Harmonic drive

Rotation angle

AC servomotor output

AC servomotor output

Motor to speed reducer

Harmonic drive

Direct-coupled

Speed reducer

Harmonic drive

1020 °/sec

5 kg (Standard specification), 4 kg (Option specifications)

0.05 kgm (0.5 kgfcm2s)

ϕ 4 × 3

1.5 Soft limit 2 Mechanical stopper (X,Y,Z axis)

1.0 m

Standard: 3.5 m  Option: 5 m, 10 m

22 kg

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

Note 2.
When reciprocating 300mm in horizontal and 25mm in vertical directions.

Note 3.
When reciprocating 300mm in horizontal and 25mm in vertical directions.

Note 4.
The weight of the tool attached here should be added to the tip mass.

Controller

RCX340

RCX240S

1000

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.

Note.
To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

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

YK600XGL
YK600XGL Tool flange mount type

- Note that the robot cannot be used at a position where the base flange or robot cable interferes with the tool flange in the working envelope shown above.
- X-axis mechanical stopper position: 142°
- Y-axis mechanical stopper position: 146°
- User tubing 1 (ϕ4 black)
- User tubing 2 (ϕ4 red)
- User tubing 3 (ϕ4 blue)

Option:
- User wiring/tubing through spline type

Detailed drawing D
View of E

4-ϕ9 M8 bolt for installation, 4 bolts used

• Tapped hole for user wiring Φ4.0 x 0.5 Depth 6.
  The weight of the tool attached here should be added to the tip mass.
• Keep enough space for the maintenance work at the rear of the base.

Controller
RCX340 ▶ 544
RCX240S ▶ 534
YK600XG
Articulated robots

Compact single-axis robots

TRANSERVO Single-axis robots

FLIP-X Linear motor single-axis ... XY-X

SCARA robots

YK-X Pick & place robots

YP-XCLEANCONTROLLERINFORMATION

Linear conveyor modules

LCM100

Z axis stroke

Regenerative unit

Network option

iVY System

Expansion I/O

Tool flange

Battery

M16 x 2 Depth 20 (Bottom of spline)

120

Cable

40

14

140

There are limits to acceleration coefficient settings. See P.611.

Note 2.

When reciprocating 300mm in horizontal and 25mm in vertical directions.

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

Note 1.

Repeatability

Weight

Robot cable length

1. Soft limit

2. Mechanical stopper (X,Y,Z axis)

Travel limit

User tubing (Outer diameter)

Maximum speed

Standard cycle time: with 2kg payload

Deceleration

Arm length

Harmonic drive Harmonic drive Ball screw Harmonic drive

Transmission method

Motor to speed reducer

Speed reducer to output

Direct-coupled

Direct-coupled

+/-0.1 mm +/-0.1 mm +/-0.204 "

6.4 m/sec 3.3 m/sec 1.7 m/sec 1700 °/sec

Arm length 600mm

Maximum payload 10kg

Standard cycle time: with 2kg payload Move 300mm (No.1 to 20 usable)

User tubing 3 (ϕ 6 Blue)

User tubing 2 (ϕ 6 Red)

User tubing 1 (ϕ 4-11 Black)

Maximum speed:

RCX340-4

RCX240

Controller

RCX340

RCX240-R3

1700

Programming / I/O point trace / Operation

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.

Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

http://global.yamaha-motor.com/business/robot

Controller Power capacity (VA) Operation method

RCX340

RCX240-R3

1700

YK600XG

Arm length 600mm

Maximum payload 10kg

Controller

RCX340 544

RCX240 534

Notes:

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

2. When reciprocating 300mm in horizontal and 25mm in vertical directions.

3. There are limits to acceleration coefficient settings. See P.611.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.

YK600XG

Arm length 600mm

Maximum payload 10kg

Controller

RCX340 544

RCX240 534

Notes:

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

2. When reciprocating 300mm in horizontal and 25mm in vertical directions.

3. There are limits to acceleration coefficient settings. See P.611.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.

YK600XG

Arm length 600mm

Maximum payload 10kg

Controller

RCX340 544

RCX240 534

Notes:

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

2. When reciprocating 300mm in horizontal and 25mm in vertical directions.

3. There are limits to acceleration coefficient settings. See P.611.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.

YK600XG

Arm length 600mm

Maximum payload 10kg

Controller

RCX340 544

RCX240 534

Notes:

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

2. When reciprocating 300mm in horizontal and 25mm in vertical directions.

3. There are limits to acceleration coefficient settings. See P.611.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.

If the robot rotates the radius of the corner of dimensions 135 and 220, the arm may be in contact with the machine harness. So, do not perform such motion.
### Ordering method

**YK600XGH**

*Model: Z-axis stroke 400mm, User tubing 3 (No.1 to 20 usable)*

**Controller**

RCX340

**Power capacity (VA):** 2500

**Operation method:**

- Programming / I/O point trace / Remote command / Operation using RS-232C communication

### Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>200 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>750 W</td>
<td>400 W</td>
<td>400 W</td>
<td>200 W</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**

- Speed reducer: Harmonic drive
- Transmission method: Direct-coupled
- Motor to speed reducer: Direct-coupled
- Speed reducer to output: Direct-coupled

**Repeatability**

- +/-0.02 mm
- +/-0.01 mm
- +/-0.004 mm

**Maximum speed**

- 7.7 m/sec
- 3 m/sec
- 7 m/sec
- 920 °/sec

**Maximum payload**

- 20 kg

**Standard cycle time:** 2 kg payload

**Absolute cycle time:** 0.47 sec

**R-axis tolerable moment of inertia**

- 1.0 kgm²

**User wiring**

- 0.2 sq × 20 wires

**User tubing (Outer diameter)**

- 6 × 3

**Travel limit**

- 1. Soft limit
- 2. Mechanical stopper (X, Y, Z axis)

**Robotic cable length**

- Standard: 3.5 m
- Option: 5 m, 10 m

**Weight**

- Z axis 200 mm: 48 kg
- Z axis 400 mm: 50 kg

### Controller

**RCX340**

**RCX240-R3**

**Power capacity (VA):** 2500

**Operation method:**

- Programming / I/O point trace / Remote command / Operation using RS-232C communication

### Notes

1. This is the value at a constant ambient temperature. (X, Y, Z axis)
2. When reciprocating in horizontal and vertical directions.
3. There are limits to acceleration coefficient settings. See P.611.

### Diagrams

- **YK600XGH**
  - Arm length 600mm
  - Maximum payload 20kg

- **Controller**
  - RCX340
  - RCX240-R3

- **Specifications**
  - X-axis: 200 mm
  - Y-axis: 400 mm
  - Z-axis: 200 mm
  - R-axis: 400 mm

The diagram illustrates the working envelope of the robot and various components related to its operation.
**Ordering method**

<table>
<thead>
<tr>
<th>Model</th>
<th>YK700XGL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-axis stroke</td>
<td>200 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>200 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>253 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>283 mm</td>
</tr>
<tr>
<td>Cross-section A-A</td>
<td>Φ14</td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>6 × 3</td>
</tr>
<tr>
<td>User tubing (Inner diameter)</td>
<td>35 × 2</td>
</tr>
<tr>
<td>Tool flange</td>
<td>Φ6 Red</td>
</tr>
<tr>
<td>Tool flange (No. 1 to 20 usable)</td>
<td>40</td>
</tr>
<tr>
<td>D-sub connector for user wiring (No. 1 to 20 usable)</td>
<td>50</td>
</tr>
<tr>
<td>Machine harness</td>
<td>89</td>
</tr>
<tr>
<td>Cross section A-A</td>
<td>4-69</td>
</tr>
<tr>
<td>Hollow diameter</td>
<td>8</td>
</tr>
<tr>
<td>4-M4 x 7 through-hole for tool attachment</td>
<td>4-M4 x 2 Depth of bottom of arm</td>
</tr>
<tr>
<td>4-M4 x 0.7 through-hole for tool attachment</td>
<td>4-69</td>
</tr>
<tr>
<td>4-M4 x 10L binding screws are supplied. Do not screw the screws in deeper than 70mm from bottom surface of arm.</td>
<td>4-69</td>
</tr>
<tr>
<td>4-M4 x 10 (Base installation surface)</td>
<td>4-69</td>
</tr>
</tbody>
</table>

**Specifications**

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>400 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130 °</td>
<td>+/-145 °</td>
<td>+/-360 °</td>
<td></td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>400 W</td>
<td>200 W</td>
<td>200 W</td>
<td>200 W</td>
</tr>
<tr>
<td>Speed reducer</td>
<td>Harmonic drive</td>
<td>Harmonic drive</td>
<td>Ball screw</td>
<td>Harmonic drive</td>
</tr>
<tr>
<td>Transmission method</td>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</td>
<td>Direct-coupled</td>
<td></td>
</tr>
<tr>
<td>Deceleration</td>
<td>0.30 sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>10 kg (Standard type), 9 kg (Option: Tool flange mount type)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.25 kgm²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>0.2 sq × 20 wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Inner diameter)</td>
<td>6 × 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1. Soft limit</td>
<td>2. Mechanical stopper (X, Y, Z axis)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m</td>
<td>Option: 5, 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>32 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Controller**

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>1700</td>
<td>Programming / k/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

**Note:**
- 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.
- Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user's manual (installation manual) for more details.
- Note. This model is a special order product. Please consult us for delivery time.

**Ordering method**

Specify various controller setting items. RCX340 > P.544
YK700XG

***Ordering method***

<table>
<thead>
<tr>
<th>Model</th>
<th>YK700XG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool-flange</td>
<td>RCX340-4</td>
</tr>
<tr>
<td>Cable</td>
<td>RCX340-4</td>
</tr>
</tbody>
</table>

**Controller**

- Controller: RCX340
- Power capacity (VA): 2500
- Operation method: Remote command / Operation using RS-232C communication

**Specifications**

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>300 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/130°</td>
<td>+/150°</td>
<td>+/360°</td>
<td></td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>750 W</td>
<td>400 W</td>
<td>400 W</td>
<td>200 W</td>
</tr>
<tr>
<td>Deceleration mechanism</td>
<td>Speed reducer</td>
<td>Harmonic drive</td>
<td>Harmonic drive</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Motor to speed reducer</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed reducer to output</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum speed</td>
<td>8.4 m/sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>1.0 kgm²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time with 2kg payload</td>
<td>0.42 sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring</td>
<td>0.2 sq × 20 wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>φ6 × 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1. Soft limit: 2 Mechanical stopper (X, Y, Z axis)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robotic cable length</td>
<td>Standard: 3.5 m</td>
<td>Option: 5 m, 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Z-axis 200 mm: 50 kg</td>
<td>Z-axis 400 mm: 52 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: This is the value at a constant ambient temperature (X, Y, Z axes).
Note 2: When reciprocating 300 mm in horizontal and 25 mm in vertical directions.
Note 3: Please consult YAMAHA when connecting other tubes and cables to the self-supporting machine harness.

**Controller**

- Controller: RCX340
- Power capacity (VA): 2500
- Operation method: Remote command / Operation using RS-232C communication

Our robot manuals (installation manuals) can be downloaded from our website at the address below: http://global.yamaha-motor.com/business/robot/
YK800XG

Ordering method

YK800XG
Model
Z-axis stroke
Tool flange
Cable
Controller
Controller power capacity (VA)
Operation method

Specifications

Axis specifications
Arm length
400 mm
400 mm
200 mm
400 mm
R-axis
AC servo motor output
750 W
400 W
400 W
200 W

Deceleration mechanism
Speed reducer
Harmonic drive
Harmonic drive
Ball screw
Harmonic drive
Transmission method
Motor to speed reducer
Direct-coupled
Direct-coupled
Speed reducer to output

Repeatability
+/-0.02 mm
+/-0.01 mm
+/-0.004 mm

Maximum speed
9.2 m/sec
3 m/sec
1 m/sec
920 m/sec

Maximum payload
20 kg

Standard cycle time: with 2kg payload
0.48 sec

R-axis tolerable moment of inertia
1.0 kg-m²

User wiring
0.2 sq x 20 wires

User tubing (Outer diameter)
Φ6 × 3

Travel limit
1. Soft limit
2. Mechanical stopper (X,Y,Z axis)

Robot cable length
User tubing 1 (Φ 6 Black)
User tubing 2 (Φ 6 Red)
User tubing 3 (4-Φ 6 Blue)

Weight
Z-axis 200 mm: 52 kg
Z-axis 400 mm: 54 kg

Note 1. This is the value at a constant ambient temperature (X,Y axes)
Note 2. When reciprocating 300mm in horizontal and 25mm in vertical directions.
Note 3. There are limits to acceleration coefficient settings. See P611.
Note. Please consult YAMAHA when connecting other tubes and cables to the self-supporting machine harness.

Controller

RCX340-4
Controller
RCX340-R3
Power capacity (VA)
2500
Operation method
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.

If the robot enters the inside of R30 and corner of dimensions 100 and 250, the 2-axis upper end stopper or tool flange may be in contact with the base or the arm may be in contact with the machine harness. Do not perform such motion.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:
http://global.yamaha-motor.com/business/robot/
### YK1000XG

**Standard type: Large type**

- **Arm length**: 1000mm
- **Maximum payload**: 20kg

#### Ordering method

<table>
<thead>
<tr>
<th>YK1000XG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td><strong>Z-axis stroke</strong></td>
</tr>
<tr>
<td><strong>Tool flange</strong></td>
</tr>
<tr>
<td><strong>Cable</strong></td>
</tr>
</tbody>
</table>

#### Specifications

- **X-axis**: 600 mm
- **Y-axis**: 400 mm
- **Z-axis**: 200 mm, 400 mm
- **R-axis**: +/-360°

- **AC servo motor output**: 750 W
- **Compact single-axis robots**
- **TRANServo Single-axis robots**
- **FLIP-X Linear motor single-axis robot**
- **XY-X SCARA robots**
- **YK-X Pick & place robots**
- **YP-XCLEANCONTROLLERINFORMATION Linear conveyor modules**

- **Regenerative unit**
- **Tool flange**
- **Network option**
- **iVY System**
- **Gripper**
- **CE Marking**
- **User tool**
- **Z axis**
- **Cable**
- **Controller**

#### Controller

- **RCX340**
- **RCX240**

- **Controller**: RCX340, RCX240-R3
- **Power capacity (VA)**: 2500
- **Operation method**: Programming / I/O point trace / Operation using RS-232C communication

### Note

1. This is the value at a constant ambient temperature (X-Y axis)
2. When reciprocating 300mm in horizontal and 25mm in vertical directions.
3. There are limits to acceleration coefficient settings. See P.611.

Note 1. “Harmonic” and “Harmonic drive” are the registered trademarks of Harmonic Drive Systems Inc.

Note 2. 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 alignment.) See our manuals (installation manuals) for detailed information.

Note 3. To set the standard coordinates with high accuracy, use a standard coordinate setting (option). Refer to the user’s manual (installation manual) for more details.

Our robot manuals (installation manuals) can be downloaded from our website at the address below: [http://global.yamaha-motor.com/business/robot/](http://global.yamaha-motor.com/business/robot/)
YK1200X

Standard type: Large type

Arm length 1200mm

Maximum payload 50kg

### Ordering method

**YK1200X - 400**

<table>
<thead>
<tr>
<th>Model</th>
<th>Z axis stroke</th>
<th>Controller / Number of controller axes</th>
<th>Safety standard</th>
<th>Controller alarm</th>
<th>Controller / Network option</th>
<th>Absolute encoder information</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK1200X</td>
<td>400</td>
<td>RCX340-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340 - P.534

### Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis specifications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arm length</td>
<td>600 mm</td>
<td>600 mm</td>
<td>400 mm</td>
<td></td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+125 °</td>
<td>+150 °</td>
<td></td>
<td>+180 °</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>900 W</td>
<td>800 W</td>
<td>600 W</td>
<td>400 W</td>
</tr>
</tbody>
</table>

Deceleration mechanism

<table>
<thead>
<tr>
<th>Speed reducer mechanism</th>
<th>Planetary gear</th>
<th>Ball screw</th>
<th>Harmonic drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission method</td>
<td>Direct-coupled</td>
<td>Timing belt transmission</td>
<td>Timing belt transmission</td>
</tr>
</tbody>
</table>

| Motor to speed reducer    | Direct-coupled | Direct-coupled |
| Speed reducer to output  | Direct-coupled | Direct-coupled |

Repeatability mm ±0.05 mm ±0.02 mm ±0.005 mm

Maximum speed

7.4 m/sec 0.75 m/sec 600 °/sec

Maximum payload

50 kg

Standard cycle time: with 2kg payload 0.91 sec

R-axis tolerable moment of inertia 2.45 kg·m²

User wiring

0.2 kg × 20 wires

User tubing (Outer diameter) ϕ 6 × 3

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

124 kg

### Controller

**RCX340**

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>2500</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

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

Note 2: When reciprocating 300mm in horizontal and 25mm in vertical directions.

Note 3: There are limits to acceleration coefficient settings. See P.612.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:

---

**YK1200X**

*Aux. shaft fixing plate*

*D-sub connector for user wiring (No. 1 to 20 usable)*

*User tubing 1 (ϕ 6 Black)*

*User tubing 2 (ϕ 6 Red)*

*User tubing 3 (ϕ 6 Blue)*

*X and Y axes mechanical stopper positions*
### Ordering method

<table>
<thead>
<tr>
<th>YK300XGS</th>
<th>Installation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>Wall-mount / inverse type</td>
</tr>
</tbody>
</table>

#### Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>150 mm</td>
<td>150 mm</td>
<td>150 mm</td>
<td>–</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-120°</td>
<td>+/-130°</td>
<td>+/-.360°</td>
<td>–</td>
</tr>
<tr>
<td>Motor to speed reducer</td>
<td>Harmonic drive</td>
<td>Harmonic drive</td>
<td>Ball screw</td>
<td>Harmonic drive</td>
</tr>
<tr>
<td>Speed reducer</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004°</td>
<td>–</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>4.4 m/sec</td>
<td>1.0 m/sec</td>
<td>180°/sec (wall-mount)</td>
<td>0°/sec (chase wall-mount)</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>5 kg (Standard specification)</td>
<td>4 kg (Option specifications)</td>
<td>5 kg (Standard specification), 4 kg (Option specifications)</td>
<td>5 kg (Standard specification), 4 kg (Option specifications)</td>
</tr>
<tr>
<td>Standard cycle time: with 2kg payload</td>
<td>0.49 sec</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.05 kg/m²</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>6 x 3</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Travel limit</td>
<td>1. Soft limit</td>
<td>2 Mechanical stopper (X,Y,Z axis)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m</td>
<td>Option: 5 m, 10 m</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Weight</td>
<td>19.5 kg</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Note 1. This is the value at a constant ambient temperature.
Note 2. When reciprocating 25mm horizontally and 300mm horizontally (with a 2kg payload in rough-positioning arch motion).
Note 3. There are limits to acceleration coefficient settings. See P.609.
Note 4. Maximum payload of option specifications (with tool flange attached or with user wiring and tubing routed through spline shaft) is 4kg.

### Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>1000</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

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

Other robot manuals (installation manuals) can be downloaded from our website at the address below:
http://global.yamaha-motor.com/business/robot/
**YK300XGS** Tool flange mount type

- **D-sub connector for user wiring (No. 1 to 10 usable)**
- **User tubing 2 (Ø4 red)**
- **User tubing 1 (Ø4 black)**
- **User tubing 3 (Ø4 blue)**
- **M4 ground terminal**

---

**Cross section B-B**

- **R27** (Min. cable bending-radius)
- **Do not move the cable.**
- **Maximum 410 during arm rotation**

---

**Working envelope**

- X-axis mechanical stopper position: 122°
- Y-axis mechanical stopper position: 132°

---

**Option:**

- Additional Z-axis upper limit stopper:
  - Allows changing the Z-axis origin position to a point 12mm, 15mm or 18mm (in 3mm steps) lower than the standard position.
- Additional Z-axis lower limit stopper:
  - Allows changing the Z-axis stopper position to a point 17mm or more higher than the standard position.
  - (Lower limit of working envelope: 4mm from additional stopper)
  - (Cannot be used when user wiring and tubing are set through spline shaft.)

---

**Note.** Inverse type is installed upside down.

---

**Controller**

- **RCX340**
- **RCX240S**
### Ordering method

**YK400XGS**

- **Model**: YK400XGS
- **Installation method**: Wall-mount / inverse type
- **Arm length**: 400mm
- **Maximum payload**: 5kg

**Note**: Built-to-order product. Contact us for the delivery period.

### Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>250 mm</td>
<td>150 mm</td>
<td>150 mm</td>
<td>–</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/−125°</td>
<td>+/−144°</td>
<td>+/−360°</td>
<td>–</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>200 W</td>
<td>150 W</td>
<td>50 W</td>
<td>100 W</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**

| Speed reducer | Harmonic drive | Harmonic drive |
| Transmission method | Ball screw | Harmonic drive |

| Repeatability | +/−0.01 mm | +/−0.01 mm | +/-0.004° |
| Maximum speed | 6.1 m/s | 1.1 m/s | +/-0.04° |

- **Maximum payload**: 5 kg (Standard specification), 4 kg (Option specifications) \(^{\text{15}}\)
- **Standard cycle time**: with 2kg payload \(^{\text{15}}\): 0.49 sec
- **R-axis tolerable moment of inertia**: \(40 \text{kgm}^2\) \(^{\text{16}}\)
- **User wiring**: 0.95 kgm
- **User tubing (Outer diameter)**: 4 black, 4 red
- **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**: 20 kg

### Controller

**Controller**

- **RCX340**
- **RCX240S**

| Power capacity (VA) | 1000 |
| Operation method | Programming / I/O point trace / Remote command / Operation using RS-232C communication |

**RCX240S**

- **Number of controllable axes**: 4
- **Number of usable axes**: 4
- **Power capacity**: 1000VA
- **Operation method**: Programming / I/O point trace / Remote command / Operation using RS-232C communication

- **Controller Power capacity (VA) Operation method**
  - **RCX340**: 1000VA
  - Programming / I/O point trace / Remote command / Operation using RS-232C communication

**RCX240S**

- **Controller Power capacity (VA) Operation method**
  - **RCX240S**: 1000VA
  - Programming / I/O point trace / Remote command / Operation using RS-232C communication

**Note**

- Additional Z-axis upper limit stopper: Allows changing the Z-axis single position to a point 12mm, 10mm or 15mm in 3mm steps lower than the standard position.
- Additional Z-axis lower limit stopper: Allows changing the Z-axis stopper position to a point 17mm or more higher than the standard position.

### Controller Information

**Controller Information**

- **RCX340**
- **RCX240S**

<table>
<thead>
<tr>
<th>Model</th>
<th>544</th>
<th>534</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation method</td>
<td>RCX340</td>
<td>RCX240S</td>
</tr>
</tbody>
</table>

**RCX240S**

- **Controller Power capacity (VA) Operation method**
  - **RCX240S**: 1000VA
  - Programming / I/O point trace / Remote command / Operation using RS-232C communication

**Note**

- Additional Z-axis upper limit stopper: Allows changing the Z-axis single position to a point 12mm, 10mm or 15mm in 3mm steps lower than the standard position.
- Additional Z-axis lower limit stopper: Allows changing the Z-axis stopper position to a point 17mm or more higher than the standard position.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:

http://global.yamaha-motor.com/business/robot/
YK400XGS

Option:
User wiring/tubing through spline type

Controller
RCX340 ▶ 544 RCX240S ▶ 534
YK500XGS

Wall-mount / inverse type

Arm length 500mm  Maximum payload 10kg

Ordering method

Model YK500XGS

Installation method ** 
- Wall-mount (same as per external view)
- Inverse wall-mount (upside down)

Z-axis stroke 300mm (Option: 500mm)

Tool flange

Cable

Note 1. When installing the robot, always follow the specifications. Do not install the ceiling-mount robot upside down or do not install the inverse type robot to a ceiling. Incorrect installation can cause trouble or malfunction.

Specifications

<table>
<thead>
<tr>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>-</td>
</tr>
<tr>
<td>+/-105°</td>
<td>+/-125°</td>
<td>-</td>
<td>+/-360°</td>
</tr>
</tbody>
</table>

AC servo motor output

- 400 W
- 200 W
- 200 W
- 200 W

Deceleration mechanism

Speed reducer

Motor to speed reducer

Speed reducer to output

Direct-coupled

Direct-coupled

Repeatability

+/-0.01 mm

+/-0.01 mm

+/-0.004 mm

Maximum speed

7.6 m/sec

11.3 m/sec

1700 °/sec (wall-mount)

Standard cycle time: with 2kg payload (STD)

0.45 sec

0.30 kgm

R-axis tolerable moment of inertia (STD)

0.2 sq × 20 wires

User wiring

User tubing (Outer diameter)

6 X 3

Maximum payload

10 kg (Standard specification), 9 kg (Option specifications)

Note: The movement range is set to the maximum at the time of shipment.

User tool installation range

Stand: 3.5 m

Option: 5 m, 10 m

Robot cable length

1. Soft limit

2. Mechanical stopper (X,Y,Z axis)

Weight

30 kg

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

Note 2. When reciprocating 300mm in horizontal and 25mm in vertical directions.

Note 3. These are limits to acceleration coefficient settings. See P.611.

Note 4. Please consult YAMAHA when connecting other tubes and cables to the self-supporting machine harness.

Note 5. This model may be handled by a robot controller provided that the controller has been set to the maximum at the time of shipment.

Controller

RCX340

RCX240-R3

1700

Power capacity (VA)

Programming / I/O point trace / Operation using RS-232C

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.

http://global.yamaha-motor.com/business/robot/
**Ordering method**

**YK600XGS**

- **Model**
  - Installation method (RCX340-R3)
  - Z axis stroke: 300 mm
  - Tool-flange type: All universal arms
  - Cable: 15.8 m

**RCX340-4**

- **Controller**
  - Model: RCX340
  - Power capacity (VA): 1700
  - Operation method: Programming / I/O point trace / Remote command / Operation using RS-232C communication

**Note 1.** When installing the robot, always follow the specifications. Do not install the ceiling-mount robot upside down or do not install the inverse type robot to a ceiling. Incorrect installation can cause trouble or malfunction.

**Specifications**

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>300 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>–</td>
</tr>
<tr>
<td>Rotation</td>
<td>+/-130°</td>
<td>+/-145°</td>
<td>+/-360°</td>
<td>–</td>
</tr>
<tr>
<td>AC servo</td>
<td>400 W</td>
<td>200 W</td>
<td>200 W</td>
<td>200 W</td>
</tr>
<tr>
<td>Speed reducer</td>
<td>Harmonic drive</td>
<td>Harmonic drive</td>
<td>Ball screw</td>
<td>Harmonic drive</td>
</tr>
</tbody>
</table>

- **Deceleration**
  - Motor to speed reducer: Harmonic drive
  - Speed reducer to output: Direct-coupled

- **Repeatability**
  - +/-0.01 mm

- **Maximum speed**
  - 8.4 m/sec

- **Maximum payload**
  - 10 kg (Standard specifications), 9 kg (Option specifications)

- **R-axis tolerable moment of inertia**
  - 0.46 kgm

- **User wiring**
  - 0.2 sq × 20 wires

- **Robot cable length**
  - Standard: 3.5 m, Option: 5 m, 10 m

- **Weight**
  - 31 kg

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

**Note 2.** When reciprocating 300mm in horizontal and 25mm in vertical directions.

**Note 3.** This is the value at a constant ambient temperature. (X,Y axes)

**Note 4.** Please consult YAMAHA when connecting other tubes and cables to the self-supporting machine harness.

**Controller**

- Model: RCX340
  - Power capacity (VA): 1700
  - Operation method: 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.

http://global.yamaha-motor.com/business/robot/

---

**Controller**

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>1700</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

---

**Note.** Inverse type is installed upside down.
Articulated robots

Compact single-axis robots

TRANSERVO Single-axis robots

FLIP-X Linear motor single-axis robots

XY-X SCARA robots

YP-X Pick & place robots

YK-X

Linear conveyor modules

LCM100

YK700XGS

Wall-mount / inverse type

Arm length 700mm

Maximum payload 20kg

Ordering method

YK700XGS

Installation method (shown as per external view)

Z axis stroke 300mm / 200mm

Tool flange

Cable... Specified various controller setting items. RCX340-R3

RCX240

R3

RCX340-4

RCX240-R3

RCX240-R3

RCX240S

YK700XGS

YK700XGS

Controller

Power capacity (VA)

Operation method

RCX340

2500

Programming / I/O point trace / Remote command / Operation using RS-232C communication

Controller / Number of controllable axes

Safety standard

Option (OP-A)

Option (OP-B)

Option (OP-B)

Option (OP-E)

Option (OP-E)

Absolute battery

Note 1. When installing the robot, always follow the specifications. Do not install the ceiling-mount robot upside down or do not install the inverse type robot to a ceiling. Incorrect installation can cause trouble or malfunction.

Specifications

Model

YK700XGS

Arm length 700mm

Maximum payload 20kg

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

Note 2. When reciprocating 300mm in horizontal and 25mm in vertical directions.

Note 3. There are limits to acceleration coefficient settings. See P.611.

When reciprocating 300mm in horizontal and 25mm in vertical directions.

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

Deceleration mechanism

Speed reducer

Motor to speed reducer

Speed reducer to output

Direct-coupled

Direct-coupled

Motor to speed reducer

Direct-coupled

Repeatability

+/-0.02 mm

+/-0.01 mm

+/-0.004 mm

Maximum speed

8.4 m/sec

3.1 m/sec

4.5 m/sec (wall-mount)

Maximum payload

20 kg

19 kg

19 kg

Standard cycle time: with 2kg payload

0.2 sec

0.2 sec

0.2 sec

R-axis tolerable moment of inertia

1.0 kgm²

1.0 kgm²

1.0 kgm²

User wiring

0.2 sq × 20 wires

0.2 sq × 20 wires

0.2 sq × 20 wires

User tubing (Outer diameter)

6 x 5 x 3

6 x 5 x 3

6 x 5 x 3

Travel limit

1. Soft limit 2 Mechanical stopper (X,Y,Z axis)

Z-axis mechanical stopper position 6mm rise during Z-axis return-to-origin

Note 1. 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.

Note. Inverse type is installed upside down.

Note. “Harmonic” and “Harmonic drive” are the registered trademarks of Harmonics Drive Systems Inc.

Note. Our robot manuals (installation manuals) can be downloaded from our website at the address below:

http://global.yamaha-motor.com/business/robot/
YK800XGS

■ Ordering method

<table>
<thead>
<tr>
<th>YK800XGS</th>
<th>Installation method No.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>YK800XGS XG500XGS XG600XGS</td>
</tr>
<tr>
<td>Z-axis stroke</td>
<td>400 mm</td>
</tr>
<tr>
<td>Tool-flange diameter</td>
<td>60 mm</td>
</tr>
<tr>
<td>D-sub connector for user wiring</td>
<td>No. 1 to 20 usable</td>
</tr>
<tr>
<td>Cable</td>
<td>Type A</td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340 ▶ P.544

RCX240

Specify various controller setting items. RCX240/RCX240S ▶ P.534

Note 1. When installing the robot, always follow the specifications. Do not install the ceiling-mount robot upside down or do not install the inverse type robot to a ceiling. Incorrect installation can cause trouble or malfunction.

■ Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis specifications</td>
<td>400 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
<td>+/-145°</td>
<td>+/-360°</td>
<td></td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>750 W</td>
<td>400 W</td>
<td>400 W</td>
<td>200 W</td>
</tr>
<tr>
<td>Deceleration</td>
<td>Speed reducer Harmonic drive Harmonic drive Ball screw Harmonic drive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission method</td>
<td>Motor to speed reducer Harmonic drive Harmonic drive Harmonic drive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.02 mm +/-0.01 mm +/-0.004 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. speed</td>
<td>9.2 m/sec 2.3 m/sec 3.20°/sec (wall-mount) 4.50°/sec (inverse wall-mount)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>20 kg (standard specifications), 19 kg (option specifications)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis moment of inertia</td>
<td>1.0 kgm²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring</td>
<td>0.2 sq x 20 wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>φ 6 x 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1. Soft limit 2. Mechanical stopper (X, Y, Z axis)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m Option: 5 m, 10 m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Z axis: 200 mm: 52 kg Z axis: 400 mm: 54 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1. This is the value at a constant ambient temperature. (X, Y axes)
Note 2. When reciprocating 300 mm in horizontal and 20 mm in vertical directions.
Note 3. There are limits to acceleration coefficient settings. See P.611.
Note 4. Please consult YAMAHA when connecting other tubes and cables to the self-supporting machine harness.

YK800XGS

- Arm length 800mm
- Maximum payload 20kg
Note 1. When installing the robot, always follow the specifications. Do not install the inverse type robot to a ceiling. Incorrect installation can cause trouble or malfunction.

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

Note 2. When reciprocating 300mm in horizontal and 25mm in vertical directions.

Note 3. There are limits to acceleration coefficient settings. See P611.

Note. Please consult YAMAHA when connecting other tubes and cables to the self-supporting machine harness.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:
http://global.yamaha-motor.com/business/robot/
YK1000XGS  
**Wall-mount / inverse type**

### Ordering method

**Model**
- YK1000XGS: Wall-mount / inverse type

**Installation method**
- Wall-mount (same as per external view)
- Inverse (same as per external view)

**Controller**
- RCX340-4

**Number of control axes**
- 4

**Safety standard**
- CE

**Extension**
- Option A
- Option B
- Option C
- Option D
- Option E

**Specify various controller setting items.**

**RCX240**

**Remote command / Communication**
- RCX240-R3

**Power capacity (VA)**
- 2500

**Operation method**
- Programming / I/O point trace / Remote command / Operation using RS-232C communication

---

**Specifications**

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed reducer</td>
<td>610 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>602 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
<td>+/-150°</td>
<td>+/-150°</td>
<td>+/-360°</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>175 W</td>
<td>400 W</td>
<td>400 W</td>
<td>200 W</td>
</tr>
<tr>
<td>Deceleration transmission method</td>
<td>Speed reducer</td>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.02 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004 mm</td>
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</tr>
<tr>
<td>Maximum speed</td>
<td>10.6 m/sec</td>
<td>2.3 m/sec</td>
<td>1.7 m/sec</td>
<td></td>
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<tr>
<td>Maximum payload</td>
<td>20 kg (Standard specifications)</td>
<td>19 kg (Option specifications)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time: with 2kg payload</td>
<td>1.0 kg/m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.49 sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring</td>
<td>0.2 sq × 20 wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>ø 6 × 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1. Soft limit, 2. Mechanical stopper (X,Y,Z axis)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m</td>
<td>Option: 5 m, 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Z axis 200 mm: 56 kg</td>
<td>Z axis 400 mm: 58 kg</td>
<td></td>
<td></td>
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</tbody>
</table>

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

**Note 2.** When reciprocating 300mm in horizontal and 25mm in vertical directions.

**Note 3.** There are limits to acceleration coefficient settings. See P.611.

---

**YK1000XGS**

- Stroke: 400 mm
- Stroke: 200 mm
- Stroke: 600 mm

**Controller**

- RCX340: 544
- RCX240: 534

---

**Note 1.** When installing the robot, always follow the specifications. Incorrect installation can cause trouble or malfunction.

**Note 2.** This is the value at a constant ambient temperature. (X,Y axes)

**Note 3.** There are limits to acceleration coefficient settings. See P.611.
### Ordering method

**YK250XGP - 150**

<table>
<thead>
<tr>
<th>Model</th>
<th>YK250XGP - 150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-axis stroke</td>
<td>150mm</td>
</tr>
<tr>
<td>Tool flange</td>
<td>0.5m</td>
</tr>
<tr>
<td>Hollow start</td>
<td>Flangeless</td>
</tr>
<tr>
<td>Code</td>
<td>S</td>
</tr>
<tr>
<td>Controller / No. of controller axes</td>
<td>RCX340 / 4</td>
</tr>
<tr>
<td>Safety standard</td>
<td>(OP.A)</td>
</tr>
<tr>
<td>Option 1</td>
<td>(OP.B)</td>
</tr>
<tr>
<td>Option 2</td>
<td>(OP.C)</td>
</tr>
<tr>
<td>Option 3</td>
<td>(OP.D)</td>
</tr>
<tr>
<td>Option 4</td>
<td>(OP.E)</td>
</tr>
<tr>
<td>Absolute battery</td>
<td></td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340 > 544

**RCX240S**

Specify various controller setting items. RCX240/RCX240S > 534

### Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>RCX240S</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

**Controller**: RCX340, RCX240S

**Power capacity**: 1000VA

**Operation method**: 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.

Note: To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:

http://global.yamaha-motor.com/business/robot/

---

### Specifications

**Axis specifications**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>100 mm</td>
<td>150 mm</td>
<td>150 mm</td>
<td>150 mm</td>
</tr>
<tr>
<td>AC servo motor output (W)</td>
<td>200</td>
<td>150</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**

<table>
<thead>
<tr>
<th>Speed reducer</th>
<th>Harmonic drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission method</td>
<td>Motor to speed reducer</td>
</tr>
</tbody>
</table>

**Repeatability**

<table>
<thead>
<tr>
<th>Maximum speed</th>
<th>4.5 m/sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard cycle time: with 2kg payload</td>
<td>0.57 sec</td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.05 kgm²</td>
</tr>
</tbody>
</table>

**Maximum payload**

<table>
<thead>
<tr>
<th>Protection class</th>
<th>Equivalent to IP65 (IEC 60529)</th>
</tr>
</thead>
<tbody>
<tr>
<td>User wiring</td>
<td>0.2 sq x 10 wires</td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>4 x 4</td>
</tr>
</tbody>
</table>

**Travel limit**

| Number of controllable axes | 4 |

**Robot control length**

| Weight | 21.5 kg |

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

**Note 2**: When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-pitching arm motion)

**Note 3**: There are limits to acceleration coefficient settings. See P.609.

**Note 4**: Do not use robots where the bellows section is directly exposed to water. Contact our distributor for information on drip-proof structure preventing liquid other than water.

---

**Example Diagram**

- Connector for user wiring (No.1 to 10 usable, cable clamp size: Ø13.1x15)
- Cover with the caps provided when not used.
- User tubing 1 (Ø4 black)
- Insert the plug provided when not used.

- User tubing 2 (Ø4 red)
- Insert the plug provided when not used.
- User tubing 3 (Ø4 blue)
- User tubing 4 (Ø4 white)
- Insert the plug provided when not used.

- Machine Harness
- View of F
- User tool installation range
- If the robot enters the inside from the inner limit of the working envelope, the Z-axis bellows may be in contact with the base or the arm may be in contact with the machine harness. So, do not perform such motion.

---

**Controller Information**

- **Ordering method**: RCX340 > 544, RCX240S > 534

---

**Note**: This manual is provided for reference purposes only. It is not intended to be used as a standalone guide. For detailed information, refer to the user's manual or contact the manufacturer.
YK350XGP

Dust-proof & drip-proof type

Arm length 350mm
Maximum payload 4kg

Ordering method

YK350XGP - 150

Controller

RCX340-4

RCX240S

RCX240S

Specifications

Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>1000</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
<tr>
<td>RCX240S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
- “Harmonic” and “Harmonic drive” are the registered trademarks of Harmonic Drive Systems Inc.
- 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.
- Note that the robot cannot be used at a position where the base flange, robot cable, spline, bellow, and tool flange interfere with each other in the working envelope shown above.
- X-axis mechanical stopper position : -131°
- Y-axis mechanical stopper position : 138°

YK350XGP

Connector for user wiring (No.1 to 10 usable, cable clamp size: φ13.1 to φ15)
Cover the caps provided when not used.
User tubing 1 (φ4 black)
Insert the plug provided when not used.
User tubing 2 (φ4 red)
M8 bolt for installation, 4 bolts used
183 (Base size)

Maximum 190 during arm rotation

Machine Harness

632 x 10 during arm rotation

Z-axis upper and mechanical stopper position
Z-axis rises 4mm during return-to-origin.

Z-axis lower end mechanical stopper position

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

R32 (Min. cable bending radius)
Do not move the cable.

User tubing 1 (φ4 black)
Insert the plug provided when not used.
User tubing 2 (φ4 red)

View of F

• Note that the robot cannot be used at a position where the base flange, robot cable, spline, bellow, and tool flange interfere with each other in the working envelope shown above.

If the robot enters the inside from the inner limit of the working envelope, the Z-axis mechanical stopper position is set to the maximum at the time of shipment. (The movement range is set to the maximum at the time of shipment.)

Relation to the base or the arm may be in contact with the machine harness. Do, not perform such motion.

If the robot enters the inside from the inner limit of the working envelope, the Z-axis mechanical stopper position is set to the maximum at the time of shipment. (The movement range is set to the maximum at the time of shipment.)

Since this port is not used, cover it with the cap supplied with the joint.

Connector for user wiring (No.1 to 10 usable, cable clamp size: φ13.1 to φ15)
Cover the caps provided when not used.

User tool installation range

4/16

User tool installation range

Z-axis tip shape

http://global.yamaha-motor.com/business/robot/

Controller

RCX340  544  RCX240S  534

Controller information

Orbit / Tiny

Controller

Wall-mount / inverse type

Cable / harness

Machine / Acc. / Tool type

Machine / Acc. / Tool type

Controller

Robot type

Option A

Option B

Option C

Option D

Option E
### YK350XGP Tool flange mount type

**Connector for user wiring**
(No.1 to 10 usable, cable clamp size: φ13.1 to 15)
Cover with the caps provided when not used.

**User tubing 1 (φ4 black)**
Insert the plug provided when not used.

**User tubing 2 (φ4 red)**

**User tubing 3 (φ4 blue)**

**User tubing 4 (φ4 white)**

**4-M3 × 0.5 Depth 5**
(no phase relation to R-axis origin)
As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

**Z-axis bellows**
Hollow diameter: φ11
If the robot enters the inside from the inner limit of the working envelope, the Z-axis bellows may be in contact with the base or the arm may be in contact with the machine harness. Do not perform such motion.

**Machine Harness**

**Tapped hole for user wiring 6-M3 × 0.5 Depth 6**
The weight of the tool attached here should be added to the tip mass.

**R32** (Min. cable bending radius) Do not move the cable.

**M4 ground terminal**
Hollow diameter: φ11

**4-φ11 through-hole**

**4-φ4.5 through-hole**

**4-φ9 through-hole**

**Cover with the caps provided when not used.**

**Since this port is not used, cover it with the cap supplied with the joint.**

**View of E**

**Detailed drawing D**

**View of F**

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

**4-M3 × 0.5 Depth 5**

**Note that the robot cannot be used at a position where the base flange, robot cable, spline, bellows, and tool flange interfere with each other in the working envelopes shown above:**

- X-axis mechanical stopper position: 131°
- Y-axis mechanical stopper position: 136°
### Ordering method

<table>
<thead>
<tr>
<th>Model</th>
<th>YK400XGP-150</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RCX340-4</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Controller</strong></td>
<td>Power capacity (VA)</td>
<td>Operation method</td>
</tr>
<tr>
<td>RCX340</td>
<td>1000</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

**Note.** “Harmonic” and “Harmonic Drive” are the registered trademarks of Harmonic Drive Systems Inc.

- When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
- This is the value at a constant ambient temperature. (X,Y axes)
- Maximum speed: 6.1 m/sec 1.1 m/sec 1020 °/sec

**Specifications**

- **Controller:** RCX340 / RCX340S
- **Power capacity (VA):** 1000
- **Operation method:** Programming / I/O point trace / Remote command / Operation using RS-232C communication

---

**YK400XGP**

- **Connector for user wiring:** (No.1 to 10 usable, cable clamp size: Ø13.1 to 15)
- **Cover with the caps provided when not used.**

- **User tubing 1 (Ø4 black):** Insert the plug provided when not used.
  - **User tubing 2 (Ø4 red):**

- **User tubing 3 (Ø4 blue):**

- **User tubing 4 (Ø4 white):**

- **4-49 Mil bolt for installation, 4 bolts used:**
  - **13.4 (Base size):**

- **809 (X-axis length):**

- **183 (Y-axis length):**

- **581 (Z-axis length):**

- **4.63 x 0.9 Depth 5:**
  - **(No phase relation to R-axis origin.)**
  - **As this hole is intended for the wire/guide clamp, do not attach a large load to it.**

- **Note:** If the robot enters the inside of the working envelope, the Z-axis bellows may be in contact with the base of the arm and may be in contact with the nematic, etc. Do not perform such motion.

- **User tool installation range:**
  - **(No.1 to 10 usable, cable clamp size: Ø13.1 to 15)**
  - **Cover with the caps provided when not used.**

- **Connector for user wiring:** (No.1 to 10 usable, cable clamp size: Ø13.1 to 15)
  - **Cover with the caps provided when not used.**

**User tool installation range:**

- **View of F**
- **R32 (Mn. bending radius): Do not move the cable.**
- **Cross section A-A:**
  - **Tapped hole for user wiring 6.30 x 0.5 Depth 6:**
  - **The weight of the tool attached here should be added to the tip mass.**

---

**YPX CLEAN CONTROLLER INFORMATION**

- **Articulated robots**
- **Compact single-axis robots**
- **TRANSERVO Single-axis robots**
- **FLIP-X Linear motor single-axis robots**
- **XY-X SCARA robots**
- **YK-X Pick & place robots**
- **YP-X CLEAN CONTROLLER INFORMATION**
- **Linear conveyor modules**

**YPX**

- **Hollow shaft**
- **Z axis**
- **Tool flange**
- **Controller**
- **CE Marking**
- **Cable**
YK400XGP

YK400XGP Tool flange mount type

- Connector for user wiring (No.1 to 10 usable, cable clamp size: ϕ13.1 to15)
- Cover the caps provided when not used.
- User tubing 1 (ϕ4 black)
- Insert the plug provided when not used.
- User tubing 2 (ϕ4 red)
- User tubing 3 (ϕ4 blue)
- User tubing 4 (ϕ4 white)
- 4-M3 bolt for installation, 4 bolts used
- 4-M3 × 0.5 Depth 5 (No phase relation to R-axis origin.)
- As this hole is intended for the wiring/hubbing clamp, do not attach a large load to it.

- Note that the robot cannot be used at a position where the base flange, robot cable, spline, bellows, and tool flange interfere with each other in the working envelope shown above.
- X-axis mechanical stopper position : 131°
- Y-axis mechanical stopper position : 146°

- User tubing 1 (ϕ4 black)
- Insert the plug provided when not used.
- User tubing 2 (ϕ4 red)
- Since this port is not used, cover it with the cap supplied with the joint.
- Connector for user wiring (No.1 to 10 usable, cable clamp size: ϕ13.1 to15)
- Cover with the caps provided when not used.
- User tubing 3 (ϕ4 blue)
- User tubing 4 (ϕ4 white)

- M4 ground terminal
- Tapped hole for user wiring 6-M3 × 0.5 Depth 6
- The weight of the tool attached here should be added to the tip mass.
- R32 (Min. cable bending radius)
- Do not move the cable.

- Hollow diameter: ϕ11
- If the robot enters the inside from the inner limit of the working envelope, the Z-axis bellows may be in contact with the base or the arm may be in contact with the machine harness.
- So, do not perform such motion.

- Machine Harness
- R32 (Min. cable bending radius)

- Do not move the cable.

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

- Detailed drawing D
- View of E
- View of F
- 4-ϕ4.5 through-hole

- 4-ϕ11
- 4-ϕ8.5 through-hole

- Controller
  - RCX340 ▶ 544
  - RCX240S ▶ 534
YK500XGLP

Dust-proof & drip-proof type

Arm length 500mm
Maximum payload 4kg

### Ordering method

<table>
<thead>
<tr>
<th>YK500XGLP-150</th>
<th>S</th>
<th>RCX340-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
<td>Controller / Encoder / I/O option / ( \text{OP}_1 )</td>
</tr>
<tr>
<td>Z axis stroke</td>
<td>150</td>
<td>Safety standard / ( \text{OP}_2 )</td>
</tr>
<tr>
<td>Tool flange</td>
<td>20</td>
<td>( \text{OP}_3 )</td>
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<tr>
<td>Hollow shaft</td>
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<td>( \text{OP}_4 )</td>
</tr>
<tr>
<td>Cable</td>
<td></td>
<td>( \text{OP}_5 )</td>
</tr>
</tbody>
</table>

Specify various controller setting items.

RCX340 \( \rightarrow \) P.544
RCX240S \( \rightarrow \) P.534

### Specifications

<table>
<thead>
<tr>
<th>Axis specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>250 mm</td>
<td>250 mm</td>
<td>150 mm</td>
<td>150 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-129°</td>
<td>+/-144°</td>
<td>+/-360°</td>
<td></td>
</tr>
</tbody>
</table>

AC servo motor output

- 200 W: 150 W
- 50 W: 100 W

Deceleration mechanism

<table>
<thead>
<tr>
<th>Speed reducer</th>
<th>Harmonic drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission method</td>
<td>Harmonic drive</td>
</tr>
<tr>
<td>Motor to speed reducer</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Speed reducer to output</td>
<td>Harmonic drive</td>
</tr>
</tbody>
</table>

Repeatability

- Direct-coupled
- Direct-coupled

Maximum speed

- 5.1 m/sec
- 1.1 m/sec
- 100°/sec

Maximum payload

- 4 kg

Standard cycle time with 2kg payload:

- 0.74 sec

R-axis tolerable moment of inertia:

- 0.05 kgm²

Protection class:

- Equivalent to IP65 (IEC 60529)

User wiring

- 0.2 sq × 10 wires

User tubing (Outer diameter)

- 4 red

Travel limit

- 1.80 ft limit: 2 Mechanical stopper (X,Y,Z axis)
- Standard: 3.5 m
- Option: 5 m, 10 m

Robot cable length

- Standard: 3.5 m
- Option: 5 m, 10 m

Weight

- 25 kg

Note 1: This is the value at a constant ambient temperature. (XY axis)

Note 2: When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).

Note 3: There are limits to acceleration coefficient settings. See P.610.

Note 4: Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof structure preventing liquid other than water.

### Controller

- Controller: RCX340
- Power capacity (VA): 1000
- Operation method
  - 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 changed 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.

Note: To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:
http://global.yamaha-motor.com/business/robot/
**YK500XGLP** Tool flange mount type

- Connector for user wiring (No.1 to 10 usable, cable clamp size: φ13.1 to 15)
  - Cover with the caps provided when not used.

- User tubing 1 (φ4 black)
  - Insert the plug provided when not used.

- User tubing 2 (φ4 red)
  - 4-M3 x 0.5 Depth 5 (No phase relation to R-axis origin)
  - As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

- User tubing 3 (φ4 blue)
  - User tubing 4 (φ4 white)
  - M4 bolt for installation, 4 bolts used
  - Hollow diameter: φ11

- Machine Harness

- Z-axis bellows

- User tubing 3 (φ4 blue)
  - User tubing 4 (φ4 white)

- Connector for user wiring (No.1 to 10 usable, cable clamp size: φ13.1 to 15)
  - Cover with the caps provided when not used.

- User tubing 1 (φ4 black)

- User tubing 2 (φ4 red)
  - Insert the plug provided when not used.

- Since this port is not used, cover it with the cap supplied with the joint.

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

- Tapped hole for user wiring 6-M3 x 0.5 Depth 6
  - The weight of the tool attached here should be added to the tip mass.

- R32 (Min. cable bending radius): Do not move the cable.

- Keep 4-M3 bolt for installation at depth 5.

- If the robot enters the inside from the inner limit of the working envelope, the Z-axis bellows may be in contact with the base or the arm may be in contact with the machine harness. Do not perform such motion.

- Note that the robot cannot be used at a position where the base flange, robot cable, spline, bellows, and tool flange interfere with each other in the working envelope shown above.

- X-axis mechanical stopper position: 131°

- Y-axis mechanical stopper position: 146°

- **Controller**
  - RCX340 > 544
  - RCX240S > 534
**Ordering method**

<table>
<thead>
<tr>
<th>Model</th>
<th>RCX340-4</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z axis stroke</td>
<td>Test flange</td>
<td>Cable</td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340 > P.544

Specify various controller setting items. RCX240/RCX240S > P.534

**Specifications**

<table>
<thead>
<tr>
<th>Axis specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>204 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
<td>+/-145°</td>
<td>+/-130°</td>
<td>+/-360°</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>400 W</td>
<td>200 W</td>
<td>200 W</td>
<td>200 W</td>
</tr>
</tbody>
</table>

Deceleration mechanism

<table>
<thead>
<tr>
<th>Speed reducer</th>
<th>Harmonic drive</th>
<th>Harmonic drive</th>
<th>Ball screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission method</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td></td>
</tr>
<tr>
<td>Speed to speed reducer</td>
<td>7.6 m/sec</td>
<td>3 m/sec</td>
<td></td>
</tr>
<tr>
<td>Speed to output</td>
<td>1700 75sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td></td>
</tr>
<tr>
<td>Maximum speed</td>
<td>1700 75sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>8 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time: with 2kg payload (Note 2)</td>
<td>0.55 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis moment of inertia (Note 2)</td>
<td>0.3 kgm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection class (Note 2)</td>
<td>Equivalent to IP65 (IEC 60529)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring</td>
<td>0.2 sq × 20 wires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>ø 6 × 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1.95 soft limit</td>
<td>2 Mechanical stopper (X,Y,Z axis)</td>
<td></td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m</td>
<td>Option: 5 m, 10 m</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>200 mm: 32 kg</td>
<td>200 mm: 33 kg</td>
<td></td>
</tr>
</tbody>
</table>

**Controller**

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>1700</td>
<td></td>
</tr>
<tr>
<td>Programming / i/O point trace / Remote command / Operation using RS-232C communication</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

Note. To set the standard coordinates with high accuracy, use a standard coordinate setting (p.9). Refer to the user’s manual (installation manuals) for more details.

**YK500XGP**

<table>
<thead>
<tr>
<th>Connector for user wiring (No.1 to 20 usable, cable clamp size: ø6 to ø11)</th>
<th>Cover with the caps provided when not used.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z300mm 785 Stroke</td>
<td>Z300mm 665 Stroke</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>User tubing 1 (ø6 black)</th>
<th>User tubing 2 (ø6 red)</th>
<th>User tubing 3 (ø6 blue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base size</td>
<td>(ø81)</td>
<td>6-M5 × 0.8 Depth 11</td>
</tr>
</tbody>
</table>

Insert the plug provided when not used.

<table>
<thead>
<tr>
<th>X-axis lower end mechanical stopper position</th>
<th>Y-axis lower end mechanical stopper position</th>
</tr>
</thead>
<tbody>
<tr>
<td>R32 (Min. cable bending radius) Do not move the cable.</td>
<td></td>
</tr>
</tbody>
</table>

**Working envelope of left-handed system**

- X-axis mechanical stopper position: 132°
- Y-axis mechanical stopper position: 147°

If the robot enters the inside of the corner of dimensions 120 and 200, the Z-axis tip may be in contact with the F30R or the arm may be in contact with the machine, bellows interfere with each other in the working envelope shown above.

- X-axis mechanical stopper position: 132°
- Y-axis mechanical stopper position: 147°

There is no phase relation between each position of M5 tapped holes and R-axis origin position.

**Working envelope of right-handed system**

- Note that the robot cannot be used at a position where the base flange, robot cable, spline, and bellows interfere with each other in the working envelope shown above.

- X-axis mechanical stopper position: 132°
- Y-axis mechanical stopper position: 147°

If the robot enters the inside of the corner of dimensions 120 and 200, the Z-axis tip may be in contact with the F30R or the arm may be in contact with the machine, bellows interfere with each other in the working envelope shown above.

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

Note 2. When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).

Note 3. When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).

Note 4. Insert the plug provided when not used.

Equivalent to IP65 (IEC 60529)

Maximum cycle time: with 2kg payload (Note 2)

Maximum speed

Maximum payload

Standard cycle time: with 2kg payload (Note 2)

R-axis moment of inertia (Note 2)

Protection class (Note 2)

User wiring

User tubing (Outer diameter)

Travel limit

Robot cable length

Weight

Note. Insert the plug provided when not used.

Note. To set the standard coordinates with high accuracy, use a standard coordinate setting (p.9). Refer to the user’s manual (installation manuals) for more details.

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

**YK600XGLP** - Dust-proof & drip-proof type

- **Arm length**: 600mm
- **Maximum payload**: 4kg

### Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis length</td>
<td>350 mm</td>
<td>250 mm</td>
<td>150 mm</td>
<td>350 mm</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>200 W</td>
<td>150 W</td>
<td>50 W</td>
<td>100 W</td>
</tr>
</tbody>
</table>

### Deceleration mechanism

- Speed reducer: Harmonic drive
- Transmission method: Direct-coupled
- Motor to speed reducer: Harmonic drive
- Speed reducer to output: Direct-coupled

### Controller

- **Controller**: RCX340, RCX240S
- **Power capacity (VA)**: 1000
- **Operation method**: Programming / I/O point trace / Remote command / Operation using RS-232C communication

### Note

1. Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof models.
2. When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
3. This is the value at a constant ambient temperature. (X,Y,Z axes)
4. Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof models.
YK600XGLP Tool flange mount type

Connector for user wiring (No. 1 to 10 usable, cable clamp size: φ13.1 to 15)
Cover with the caps provided when not used.

User tubing 1 (φ4 black)
Insert the plug provided when not used.

User tubing 2 (φ4 red)

User tubing 3 (φ4 blue)

User tubing 4 (φ4 white)

4-M3 × 0.5 Depth 5
(No phase relation to R-axis origin.)
As this hole is intended for the wiring/tubing clamp, do not attach a large load to it.

4-φ9 M6 bolt for installation, 4 bolts used.

131° X-axis mechanical stopper position
146° Y-axis mechanical stopper position

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

Insert the plug provided when not used.
Cover with the caps provided when not used.

Since this port is not used, cover it with the cap supplied with the joint.

Connector for user wiring
(No. 1 to 10 usable, cable clamp size: φ13.1 to 15)
Cover with the caps provided when not used.

User tubing 1 (φ4 black)

User tubing 2 (φ4 red)
Insert the plug provided when not used.

User tubing 3 (φ4 blue)

User tubing 4 (φ4 white)

Tapped hole for user wiring 6-M3 × 0.5 Depth 6
The weight of the tool attached here should be added to the tip mass.

R32 (Min. cable bending radius)
Do not move the cable.

M4 ground terminal

Z-axis bellows

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

M4 ground terminal

Detailed drawing D

View of E

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

• Note that the robot cannot be used at a position where the base flange, robot cable, spline, bellows, and tool flange interfere with each other in the working envelope shown above.

• X-axis mechanical stopper position : 131°
• Y-axis mechanical stopper position : 146°

Since this port is not used, cover it with the cap supplied with the joint.

Connector for user wiring
(No. 1 to 10 usable, cable clamp size: φ13.1 to 15)
Cover with the caps provided when not used.

User tubing 1 (φ4 black)

User tubing 2 (φ4 red)
Insert the plug provided when not used.

User tubing 3 (φ4 blue)

User tubing 4 (φ4 white)

Tapped hole for user wiring 6-M3 × 0.5 Depth 6
The weight of the tool attached here should be added to the tip mass.

R32 (Min. cable bending radius)
Do not move the cable.

M4 ground terminal

Z-axis bellows

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

M4 ground terminal

Detailed drawing D

View of E

The arm may be in contact with the machine harness in an area inside from the inner limit of this working envelope. So, do not operate the arm in this area.

• Note that the robot cannot be used at a position where the base flange, robot cable, spline, bellows, and tool flange interfere with each other in the working envelope shown above.

• X-axis mechanical stopper position : 131°
• Y-axis mechanical stopper position : 146°

Since this port is not used, cover it with the cap supplied with the joint.

Connector for user wiring
(No. 1 to 10 usable, cable clamp size: φ13.1 to 15)
Cover with the caps provided when not used.

User tubing 1 (φ4 black)

User tubing 2 (φ4 red)
Insert the plug provided when not used.

User tubing 3 (φ4 blue)

User tubing 4 (φ4 white)

Tapped hole for user wiring 6-M3 × 0.5 Depth 6
The weight of the tool attached here should be added to the tip mass.

R32 (Min. cable bending radius)
Do not move the cable.
### Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>300 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>400 W</td>
<td>200 W</td>
<td>200 W</td>
<td>200 W</td>
</tr>
<tr>
<td>Deceleration mechanism</td>
<td>Speed reducer</td>
<td>Harmonic drive</td>
<td>Harmonic drive</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Transmission method</td>
<td>Motor to speed reducer</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004 °</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>8.4 m/sec</td>
<td>8 m/sec</td>
<td>8 m/sec</td>
<td>8 m/sec</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>8 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.3 kgm²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection class</td>
<td>Equivalent to IP65 (IEC 60529)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring (sq x wires)</td>
<td>0.2 x 20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing</td>
<td>φ 6 x 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1.5m Soft Limit 2. Mechanical stopper (X, Y, Z, Axis)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m Option: 5 m, 10 m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Z axis 200 mm: 33 kg Z axis 300 mm: 34 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: This is the value at a constant ambient temperature. (X, Y, Z axes)
Note 2: There are limits to acceleration coefficient settings. See P.611.
Note 3: Stroke limits are limited by the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

### Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340-4</td>
<td>1700</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

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

Our robot manuals (installation manuals) can be downloaded from our website at the address below: http://global.yamaha-motor.com/business/robot/
YK600XGHP Dust-proof & drip-proof type

**Ordering method**

<table>
<thead>
<tr>
<th>Model</th>
<th>RCX340-4</th>
<th>RCX340-R3</th>
<th>RCX240-R3</th>
<th>RCX240</th>
<th>RCX240-R3</th>
<th>RCX240-R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK600XGHP</td>
<td>F</td>
<td>Option A</td>
<td>Option B</td>
<td>Option C</td>
<td>Option D</td>
<td>Option E</td>
</tr>
</tbody>
</table>

### Specifications

**Axis specifications**

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>200 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>750 W</td>
<td>400 W</td>
<td>400 W</td>
<td>200 W</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**

- Speed reducer: Harmonic drive
- Transmission method: Direct-coupled
- Motor to speed reducer: Harmonic drive
- Speed reducer to output: Harmonic drive

- Repeatability: +/-0.02 mm
- Maximum speed: 7 m/s
- Travel limit: 1.9 Soft limit
- Robot cable length: Standard: 3.5 m
- Weight: 2-axis 200 mm: 52 kg

Note 1: This is the value at a constant ambient temperature. (X, Y axis)
Note 2: When reciprocating 20mm in vertical direction and 30mm in horizontal direction (rough-positioning arch motion).
Note 3: There are limits to acceleration coefficient settings. See P.611.
Note 4: Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof structure preventing liquid other than water.

**Controller**

- Controller: RCX340
- Power capacity (VA): 2500
- Operation method: 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.

**Specifications**

- Connector for user wiring:
  - No.1 to 20 usable, cable clamp size: φ6/10mm
- Cover with the caps provided when not used.

- Z-axis lower end mechanical stopper position
- Insert the plug provided when not used.

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

- If the robot enters the inside of R265 and corner of dimensions 30 and 400, the Z-axis tip flange may be in contact with the base or the arm may be in contact with the machine harness. So, do not perform such motion.

- X-axis mechanical stopper position: 132°
- X-axis mechanical stopper position: 152°

- There is no phase relation between each position of M5 tapped holes and R-axis origin position.
### Ordering method

**YK700XGP**

- Model: F
- Z-axis stroke: 700mm, 800mm, 1000mm
- Taper flange: 40, 50
- Tool flange: 25, 30
- Cable: 3, 6, 14
- Controller / Number of controllable axes:
  - Controller (OP.C): RCX340
  - Number of controllable axes: 4

Specify various controller setting items. RCX340-R3, P.544

Specify various controller setting items. RCX240/RCX240S, P.534

### Specifications

**Axis specifications**

- X-axis: 300 mm
- Y-axis: 400 mm
- Z-axis: 200 mm
- R-axis: 400 mm

**AC servo motor output**

- 750 W
- 400 W
- 400 W
- 200 W

**Deceleration mechanism**

**Speed reducer**

- Harmonic drive
- Harmonic drive
- Ball screw
- Harmonic drive

**Transmission method**

- Direct-coupled
- Direct-coupled
- Direct-coupled

**Repeatability**

- +/0.02 mm
- +/0.01 mm
- +/0.004 °

**Maximum speed**

- 8.4 m/sec
- 3.0 m/sec
- 1.7 m/sec
- 920 °/sec

**Maximum payload**

- 18 kg

**Standard cycle time:** with 2kg payload (Maximum 920 during arm rotation)

- 0.52 sec

**R-axis tolerable moment of inertia**

- 1.0 kgm²

**Protection class**

- Equivalent to IP65 (IEC 60529)

**User wiring**

- 0.2 sq × 20 wires

**User tubing (Outer diameter)**

- ϕ 6 × 3

**Robot cable length**

- Standard: 3.5 m
- Option: 5 m, 10 m

**Weight**

- Z axis 200 mm: 54 kg
- Z axis 400 mm: 56 kg

### Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>2500</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

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.

Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

---

**YK700XGP**

- **Arm length:** 700mm
- **Maximum payload:** 18kg

<table>
<thead>
<tr>
<th>Specification</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 mm Stroke</td>
<td>1000</td>
<td>800</td>
<td>400</td>
<td>200</td>
</tr>
<tr>
<td>220 mm Stroke</td>
<td>800</td>
<td>600</td>
<td>400</td>
<td>200</td>
</tr>
<tr>
<td>324 mm Stroke</td>
<td>600</td>
<td>400</td>
<td>400</td>
<td>200</td>
</tr>
<tr>
<td>400 mm Stroke</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>200</td>
</tr>
</tbody>
</table>

**Deceleration**

- X-axis: 1.530 °
- Y-axis: 1.530 °
- Z-axis: 3.650 °
- R-axis: 3.650 °

**Maximum speed**

- 8.4 m/sec
- 3.0 m/sec
- 1.7 m/sec
- 920 °/sec

**Maximum payload**

- 18 kg

**Robot cable length**

- Standard: 3.5 m
- Option: 5 m, 10 m

**Weight**

- Z axis 200 mm: 54 kg
- Z axis 400 mm: 56 kg

---

**Controller**

- RCX340
- RCX240-R3

**Power capacity (VA)**

- 2500

**Operation method**

- Programming / I/O point trace / Remote command / Operation using RS-232C communication

---

**Note:**

1. The working envelope of the robot 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.)

2. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

3. Use the robot in an environment where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof type.

4. Do not use controller in an environment where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof type.

---

**Working envelopes**

**Left-handed system**

- R-axis mechanical stopper position: 132°
- Y-axis mechanical stopper position: 195°

**Right-handed system**

- X-axis mechanical stopper position: 132°
- Y-axis mechanical stopper position: 195°

---

**Maintenance**

- Keep enough space for the maintenance work at the rear of the base.
- Do not move the cable.

---

**Contact information**

- Download manuals from our website at the address below:
YK800XGP Dust-proof & drip-proof type

- Arm length 800mm
- Maximum payload 18kg

### Ordering method

<table>
<thead>
<tr>
<th>Model</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK800XGP</td>
<td></td>
</tr>
</tbody>
</table>

- Z-axis stroke
- Tool flange
- Cable

Specify various controller setting items. RCX340  

RCX240  

Specify various controller setting items. RCX240/RCX340

### Specifications

<table>
<thead>
<tr>
<th>Axis specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>400 mm</td>
<td>400 mm</td>
<td>400 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
<td>+/-150°</td>
<td>+/-130°</td>
<td>+/-360°</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>750 W</td>
<td>400 W</td>
<td>400 W</td>
<td>200 W</td>
</tr>
</tbody>
</table>

### Deceleration mechanism

<table>
<thead>
<tr>
<th>Speed reducer</th>
<th>Harmonic drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission</td>
<td>Method Motor to speed reducer Direct-coupled</td>
</tr>
<tr>
<td>Speed reducer</td>
<td>Reducer to output Direct-coupled</td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.02 mm</td>
</tr>
<tr>
<td>Standard speed</td>
<td>+/-0.01 mm</td>
</tr>
<tr>
<td>Standard speed</td>
<td>+/-0.004°</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>9.2 m/sec</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>3 m/sec</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>2.8 sec</td>
</tr>
</tbody>
</table>

### Standard deviation

- Standard deviation: 0.58 sec
- R-axis tolerance moment of inertia: 1.0 kgm²
- Protection class: IP65

### User wiring

- User tubing: 1.98 mm (2)
- User tubing: 2.54 mm (2)
- User tubing: 3.18 mm (1)

### Robot cable length

- Standard: 3.5 m
- Option: 5 m, 10 m

### Weight

- Z-axis: 200 mm, 56 kg
- Z-axis: 400 mm, 58 kg

Note 1: This is the value at a constant ambient temperature. (X, Y axes)
Note 2: This value is for a constant ambient temperature. (X, Y axes)
Note 3: There are limits to acceleration coefficient settings. See p.611.
Note 4: Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof structure preventing liquid other than water.

### Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Power capacity (VA)</th>
<th>Operation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340</td>
<td>2500</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
<tr>
<td>RCX240-R3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. "Harmonic" and "Harmonic drive" are the registered trademarks of Harmonic Drive Inc.
Note. The movement range can be limited by changing the positions of X and Y axes mechanical stoppers. (The movement range is set to the maximum at the time of alignment.)
See our robot manuals (installation manuals) for detailed information.
Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user’s manual (installation manual) for more details.

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

---

For further information, please visit our website: http://global.yamaha-motor.com/business/robot
# Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm length</td>
<td>500 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>500 mm</td>
</tr>
<tr>
<td>Deceleration mechanism</td>
<td>Speed reducer Harmonic drive</td>
<td>Harmonic drive Ball screw</td>
<td>Harmonic drive</td>
<td></td>
</tr>
<tr>
<td>Transmission Method</td>
<td>Motor to speed reducer Direct-coupled</td>
<td>Speed reducer to output Direct-coupled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.02 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004 °</td>
<td></td>
</tr>
<tr>
<td>Maximum speed</td>
<td>9.9 m/sec</td>
<td>3 m/sec</td>
<td>1 m/sec</td>
<td>920 °/sec</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>18 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time: with 2kg payload</td>
<td>0.59 sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>1.0 kgm²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection class</td>
<td>Equivalent to IP65 (IEC 60529)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring (sq × wires)</td>
<td>0.2 × 20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>φ 6 × 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1.2 Soft limit, 2 Mechanical stopper (X,Y,Z axis)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m, Optional: 5 m, 10 m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Z axis 200 mm: 58 kg, Z axis 400 mm: 69 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
1. This is the value at a constant ambient temperature (Y, X axis).
2. When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
3. There are limits to acceleration coefficient settings. See P.611.
4. Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof structure preventing liquid other than water.
### Ordering method

**YK1000XGP**

- **Model:**
  - Model: YK1000XGP
  - Controller: RCX340-4
  - Tool flange: F
  - Controller / Number of controllable axes: RCX340-4
  - Motor power capacity (VA): 4500
  - Travel limit: 1012 mm
  - Transmission: Harmonic drive
  - Motor to speed reducer: Harmonic drive
  - Robot cable length: 401 mm
  - Robot weight: 22 kg
  - AC servo motor output: 710 W
  - Maximum payload: 18 kg

**(controller setting items)**

- **Controller:**
  - RCX340
  - RCX340-4
  - RCX340-F

**Optical encoder**

- **Encoder:** SMI-AH12

**Specifications**

<table>
<thead>
<tr>
<th>Axis</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>600 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-150°</td>
<td>+/-150°</td>
<td>+/-180°</td>
<td></td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>750 W</td>
<td>400 W</td>
<td>400 W</td>
<td>200 W</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**

| Speed reducer | Harmonic drive |
| Motor to speed reducer | Harmonic drive |
| Speed reducer to output | Direct-coupled |

**Repeatability**

<table>
<thead>
<tr>
<th>Max. / Min.</th>
<th>+/-0.02 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. / Min.</td>
<td>+/-0.01 mm</td>
</tr>
<tr>
<td>Max. / Min.</td>
<td>+/-0.004 °</td>
</tr>
</tbody>
</table>

**Maximum speed**

<table>
<thead>
<tr>
<th>Speed</th>
<th>10.6 m/sec</th>
</tr>
</thead>
</table>

**Standard cycle time**

<table>
<thead>
<tr>
<th>Payload</th>
<th>10.6 m/sec</th>
</tr>
</thead>
</table>

**Motor power capacity (VA)**

- RCX340: 544
- RCX240: 534

**Controller**

- **Controller:**
  - RCX340
  - RCX340-4
  - RCX340-F

**Operation method**

- 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.
- The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. See P.611 for detailed information.
- Our robot manuals (installation manuals) can be downloaded from our website at the address below:

**YK1000XGP**

- **Controller:**
  - RCX340
  - RCX340-4
  - RCX340-F

**Specifications**

- **Controller power capacity (VA):** 2500
- **Operation method:** Programming / I/O point trace / Remote command / Operation using RS-232C communication

**Note:**

- Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof type.
- There are limits to acceleration coefficient settings. See P.611 for details.
- Note the movement range can be limited by changing the positions of X and Y axis mechanical stoppers. See P.611 for detailed information.

**Ordering method**

- **Model:** YK1000XGP
  - Controller: RCX340
  - Tool flange: F
  - Controller / Number of controllable axes: RCX340-4
  - Motor power capacity (VA): 4500
  - Travel limit: 1012 mm
  - Transmission: Harmonic drive
  - Motor to speed reducer: Harmonic drive
  - Robot cable length: 401 mm
  - Robot weight: 22 kg
  - AC servo motor output: 710 W
  - Maximum payload: 18 kg

**Deceleration mechanism**

- **Speed reducer:**
  - Harmonic drive

**Repeatability**

- **Max. / Min.:**
  - +/-0.02 mm
  - +/-0.01 mm
  - +/-0.004 °

**Maximum speed**

- **Speed:**
  - 10.6 m/sec

**Standard cycle time**

- **Payload:**
  - 10.6 m/sec

**Motor power capacity (VA)**

- **RCX340:** 544
- **RCX240:** 534

**Controller**

- **Controller:**
  - RCX340
  - RCX340-4
  - RCX340-F

**Operation method**

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  - AC servo motor output: 710 W
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**Deceleration mechanism**

- **Speed reducer:**
  - Harmonic drive

**Repeatability**

- **Max. / Min.:**
  - +/-0.02 mm
  - +/-0.01 mm
  - +/-0.004 °

**Maximum speed**

- **Speed:**
  - 10.6 m/sec

**Standard cycle time**

- **Payload:**
  - 10.6 m/sec

**Motor power capacity (VA)**

- **RCX340:** 544
- **RCX240:** 534

**Controller**

- **Controller:**
  - RCX340
  - RCX340-4
  - RCX340-F

**Operation method**

- Programming / I/O point trace / Remote command / Operation using RS-232C communication

**Note:**

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**YK1000XGP**

- **Controller:**
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  - RCX340-F

**Specifications**

- **Controller power capacity (VA):** 2500
- **Operation method:** Programming / I/O point trace / Remote command / Operation using RS-232C communication

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  - Maximum payload: 18 kg

**Deceleration mechanism**

- **Speed reducer:**
  - Harmonic drive

**Repeatability**

- **Max. / Min.:**
  - +/-0.02 mm
  - +/-0.01 mm
  - +/-0.004 °

**Maximum speed**

- **Speed:**
  - 10.6 m/sec

**Standard cycle time**

- **Payload:**
  - 10.6 m/sec

**Motor power capacity (VA)**

- **RCX340:** 544
- **RCX240:** 534

**Controller**

- **Controller:**
  - RCX340
  - RCX340-4
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