SCARA ROBOTS

Arm length of 120 mm to 1200 mm, full-selection of lineup is top in the world. Completely beltless structure pursues the features of SCARA robots to their utmost limits.

History of 40 years
The first YAMAHA robots were SCARA robots. Since the first SCARA robot called "CAME" was produced in 1979, some 40 years of SCARA robot innovations have continually appeared. These SCARA robots have undergone countless modifications in an ever changing marketplace and amassed a hefty record of successful products making them an essential part of the YAMAHA robot lineup.
Comprehensive line of YAMAHA SCARA robots

**Orbit type**  P.392
- Arm length 350 mm / 500 mm
- Maximum payload 5 kg

**Extra small type**  P.396
- Arm length 120 mm to 220 mm
- Maximum payload 1 kg

**Small type**  P.401
- Arm length 250 mm to 400 mm
- Maximum payload 5 kg

**Medium type**  P.408
- Arm length 500 mm to 600 mm
- Maximum payload 5 kg to 20 kg

**Low cost high performance model**  P.405
- Arm length 400 mm to 710 mm
- Maximum payload 4 kg to 10 kg

**Large type**  P.417
- Arm length 700 mm to 1200 mm
- Maximum payload 10 kg to 50 kg

**Wall mount/inverse model**  P.423
- Wall mount type
  - Type where the robot body is installed in the wall.
- Inverse type
  - Type where the wall mount type is installed upside down.

**Dust-proof & drip-proof model**  P.433
- Plays active part in the working environment with a large amount of water or dust (protection class equivalent to IP65).
- Please consult YAMAHA for anti-droplet protection for fluids other than water.
YK-TW Orbit type

**YK-TW POINT 1**

**Layout design freedom**

**User: We want a smaller equipment footprint.**

YK-TW can move anywhere through the full \( \phi 1000 \text{ mm} \) work envelope.

Featuring a ceiling-mount configuration with a wide arm rotation angle, the YK-TW can access any point within the full \( \phi 1000 \text{ mm} \) downward range. This eliminates all motion-related restrictions with regard to pallet and conveyor placement operations, while dramatically reducing the equipment footprint.

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**YK-TW POINT 2**

**Higher productivity**

**User: We need to reduce cycle time.**

Standard cycle time of 0.29 secs. \(^{\text{Note 2}}\)

Y-axis (arm 2) passes beneath the X-axis (arm 1) and it has a horizontal articulated structure, allowing it to move along the optimal path between points. Moreover, the optimized weight balance of the internal components reduces the cycle time by 36% as compared to previous models.

**YK500TW**

<table>
<thead>
<tr>
<th>Previous YAMAHA model</th>
<th>Standard cycle time of 0.29 secs.</th>
<th>Reduced by approx. 36%</th>
</tr>
</thead>
</table>

The standard cycle time for moving a 1-kg load horizontally 300 mm and up/down 25 mm is shortened by approximately 36% compared to existing YAMAHA models.

---

**YK-TW POINT 3**

**High quality**

**User: We want a high precision assembly system.**

YK-TW offers a repeated positioning accuracy of \( \pm 0.01 \text{ mm} \) \(^{\text{Note 1}}\) (XY axes).

Higher repeated positioning accuracy than that offered by a parallel-link robot. This was accomplished by optimizing the robot's weight balance through an extensive re-design of its internal construction. The lightweight yet highly rigid arm has also been fitted with optimally tuned motors to enable high accuracy positioning.

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**YK-TW POINT 4**

**Suitable for a wide range of applications**

**User: We need to move heavy workpieces at high speeds.**

YK-TW handles payloads up to 5 kg.

Handles loads up to 5 kg. Also accommodates arm-end tools which tend to be heavy, making it highly adaptable to various applications.

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**YK-TW POINT 5**

**Smaller equipment footprint**

**User: We want to reduce the height of our equipment.**

YK-TW offers both a lower height and a smaller footprint.

YK-TW height is only 392 mm. This compact size enables more freedom in the equipment layout design.

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Note 1. Applies to the YK350TW  Note 2. Applies to the YK500TW
YK-XG Completely beltless type

Integral structure designed for optimal operation

- Highly rigid independent spline shaft
- Specially developed hollow motor
- Ball screw directly connected structure passed on from the single axis robot
- Tip rotation axis also uses the speed reducer direct coupling structure to ensure the high rigidity and high accuracy.

YK-XG POINT 1

Completely beltless structure

A completely beltless structure was achieved using a ZR-axis direct coupling structure. This completely beltless structure greatly reduces waste motion. This structure also maintains high accuracy for an extended period of time. Additionally, this structure ensures maintenance-free operation for an extended period of time without worrying about belt breakage, elongation, or secular deterioration (except for Orbit type and large type).

YK-XG POINT 2

High speed

The standard cycle time is fast. Additionally, YAMAHA also places special emphasis on the tact time in the practical working area. The speed reduction ratio or maximum motor RPM was reviewed to greatly improve the maximum speed. This contributes to improvement of the tact time.
**YK-XG POINT 3**

**Resolver is used for position detector.**

As the resolver uses a simple and rigid structure without using electronic components and optical elements, it features high environment resistance and low failure ratio. Detection problems due to electronic component breakdown, dew condensation on or oil sticking to the disk that may occur in optical encoders do not occur in the resolver due to its structure. Additionally, as the absolute specifications and incremental specifications use the same mechanical specifications and common controller, the specifications can be changed only by setting parameters. Furthermore, even when the absolute battery is consumed completely, the robot can still operate as the incremental specifications. So, even if a trouble occurs, the line stop is not needed to ensure the safe production line. The backup circuit has been completely renovated and now has a backup period of one year in the non-energizing state.

*Note:* The resolver has a simple structure without using electronic components. So, the resolver is highly resistant to low and high temperatures, impacts, electrical noise, dust particles, and oil, etc., and is used in automobiles, trains, and aircrafts that particularly require the reliability.

**YK-XG POINT 4**

**Excellent maintenance ability**

The covers of YAMAHA SCARA robot YK-XG series can be removed forward or upward. The cover is separated from the cable, so the maintenance work is easy. Additionally, the grease replacement of the speed reducer needs many steps to disassemble the gear and may cause positional deviation. However, since the speed reducer of the YAMAHA SCARA robot uses long-life grease, the grease replacement is not needed.

**YK-XG POINT 5**

**Surprising R-axis tolerable moment of inertia**

The SCARA robot performance cannot be expressed only by the standard cycle time. In actual operating environments, there are various workpieces, such as heavy workpiece or workpiece with large offset. At this time, since the robot with low R-axis tolerable moment of inertia needs to decrease the speed during operation, the cycle time decreases greatly. All YAMAHA SCARA robot YK-XG types have the tip rotation axis directly coupled to the speed reducer. Since the R-axis tolerable moment of inertia is very high when compared to a general structure in which the moment of inertia is transmitted by a belt after decelerating, the robot can operate at a high speed even with workpieces that have been offset.

**YK120XG**

(R-axis tolerable moment of inertia: 0.1 kgfcm/s²)

When the tip load weight is 1 kg, it is possible to operate at approx. 100 mm offset.

**R-axis tolerable moment of inertia: Comparison between YK120XG and other company’s model**

When the offset from the R-axis to the center of gravity of the load is large, the inertia becomes large and the acceleration during operation is restricted. The R-axis tolerable moment of inertia of YAMAHA XG series is exceedingly large when compared to other company’s SCARA robots in the similar class, so it can operate at a high speed even in the offset state.

When the load weight is 1 kg (refer to the right in the figure,)

<table>
<thead>
<tr>
<th>Offset (mm)</th>
<th>Inertia (kgfcm/s²)</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.0039</td>
<td>YK120XG</td>
</tr>
<tr>
<td>45</td>
<td>0.025</td>
<td>Company A</td>
</tr>
<tr>
<td>97</td>
<td>0.1</td>
<td>Company A</td>
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</table>

◆ Operable  X: Out of catalog value tolerance range

◆ R-axis tolerable moment of inertia: YK120XG........ 0.1 kgfcm/s²

Company A....... 0.0039 kgfcm/s²
YK-XG POINT 6

Compact

As the cable layout is changed, the cable height becomes lower than the main body cover. Additionally, use of extruded material base and motor with low overall height achieves the lowest overall height in the same class.

YK-XG POINT 7

Hollow shaft and tool flange options are selectable.

Hollow shaft that allows easy wiring to the tip tool and tool flange for tool mounting are provided as options.

YK-XG POINT 8

Zone control (= Optimal acceleration/deceleration automatic setting) function

In the SCARA robot, the load applied to the motor and speed reducer in the arm folded state greatly differs from that in the arm extended state. YAMAHA SCARA robot automatically selects optimal acceleration and deceleration from the arm postures at operation start and operation end. Therefore, the robot does not exceed the tolerance value of the motor peak torque or speed reducer allowable peak torque only by entering the initial payload. So, full power can be extracted from the motor whenever needed and high acceleration/deceleration are maintained.

For X-axis of YK500XG

The torque in the arm folded state is 5 or more times different from that in the arm extended state.

This may greatly affect the service life, vibration during operation, and controllability.

If the motor torque exceeds the peak value

→ This may adversely affect the controllability and mechanical vibration, etc.

If the torque exceeds the tolerable peak torque value of the speed reducer

→ This may cause early breakage or shorten the service life extremely.

Robot stops at a desired position accurately to ensure long service life.

YK-XG POINT 9

Low price models with the arm length 500 mm/600 mm specifications are also added to the product lineup.

The customers require to use SCARA robots at a more affordable price. Models YK500XGL/YK600XGL were developed to meet these customer’s requests. About 30 % -cost reduction was achieved when compared to the conventional models YK500XG/600XG.
**YK-XE Low cost high performance model**

**YK-XE POINT 1**

New addition of higher payload models to YK-XE series

In addition to existing 400 mm horizontal arm reach YK400-XE, models with 10 kg payload capacity and 610 mm and 710 mm arm reach are added to YK-XE lineup.

**YK-XE POINT 2**

Improvement of productivity by high-speed operation

By reviewing the arm structure, the vibration is reduced and the motion is optimized to shorten the standard cycle time. High-speed, less-vibration, and agile operation contributes to improvement of the productivity.

**YK-XE POINT 3**

Affordable Price and Improved Performance

Both the high operation performance and affordable price are achieved. Production equipment with high cost performance can be constructed.

**YK-XGS Wall mount/inverse model**

Hanging type is renewed. Completely beltless structure and high rigidity

As the conventional hanging type is changed to the wall mount type, the flexibility of the system design is improved. The production equipment can be downsized. Additionally, as an inverse type that allows upward operation is also added to the product lineup, the flexibility of the working direction is widened. Furthermore, use of a completely beltless structure achieves a maximum payload of 20 kg and a R-axis tolerable moment of inertia of 1 kgm². Note that are the top in the class. A large hand can also be installed. So, this robot is suitable for heavy load work.

Note. YK700XGS to YK1000XGS

**YK-XGP Dust-proof & drip-proof model**

Up/down bellows structure improves the dust-proof and drip-proof performance.

The dust-proof and drip-proof type that can be operated even in a work environment where water or particle dust scatters was renewed to a completely beltless structure. The belt does not deteriorate and poor environment resistance is improved. Additionally, an up/down bellows structure is used to improve the dust-proof and drip-proof performance.

Protection class equivalent to IP65 (IEC60529)

Seals are added to the joints to maintain the dust-proof and drip-proof performance without air purging. The robot conforms to the protection class equivalent to IP65 (IEC60529).

Class of protection against invasion of water: 5
Water injected from any direction does not affect adversely.
The standard pressure of the injected water is 30 KPa (30 KN/m², 0.3 kgf/cm²).
The injection speed is 12.5 liters/min. and the injection time is 3 min.
Note. The water injected under conditions exceeding those shown above may enter the unit.

Class of protection against solid objects: 6
No invasion of particle dust.

Protection class equivalent to IP65 (IEC60529)

Dust-proof and drip-proof connector for user wiring is provided as standard.

Note. YK250XGP to YK600XGLP

YK250XGP to 600XGLP (arm part) YK250XGP to 600XGLP (base part)
<table>
<thead>
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<th>Model</th>
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<th>Standard cycle time (sec.)</th>
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</table>

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

YK-X SERIES

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# YK-X SPECIFICATION SHEET

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<tr>
<th>Type</th>
<th>Model</th>
<th>Arm length (mm) and XY axis resultant maximum speed (m/s)</th>
<th>Standard cycle time (sec)</th>
<th>Maximum payload (kg)</th>
<th>R-axis tolerable moment of inertia (kgm²)</th>
<th>Completely beltless structure</th>
<th>Detailed info page</th>
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<tbody>
<tr>
<td>Orbit type</td>
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<td>P.446</td>
</tr>
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<td>1.0</td>
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<td>0.59</td>
<td>20.0</td>
<td>1.0</td>
<td>●</td>
<td>P.448</td>
</tr>
<tr>
<td></td>
<td>YK1000XGP</td>
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<td>0.59</td>
<td>20.0</td>
<td>1.0</td>
<td>●</td>
<td>P.449</td>
</tr>
</tbody>
</table>

Note 1. The standard cycle time is measured under the following conditions.
- During back and forth movement 25mm vertically and 100mm horizontally (extra small type)
- 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.
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** → **RCX340**

**Ordering method**

**YK250XG - 150-F-S - 3L - RCX340**

To find detailed controller information see the controller page. **RCX340**

### Robot ordering method terminology

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Model</td>
<td>2 Z-axis stroke</td>
<td>3 Tool flange</td>
<td>4 Hollow shaft</td>
<td>5 Cable</td>
</tr>
<tr>
<td>YK***</td>
<td>50</td>
<td>None</td>
<td>None</td>
<td>2L</td>
</tr>
<tr>
<td>100</td>
<td>100mm</td>
<td>F</td>
<td>With tool flange</td>
<td>SL</td>
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<tr>
<td>150</td>
<td>150mm</td>
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<td>With hollow shaft</td>
<td>3L</td>
</tr>
<tr>
<td>200</td>
<td>200mm</td>
<td></td>
<td></td>
<td>5L</td>
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<tr>
<td>300</td>
<td>300mm</td>
<td></td>
<td></td>
<td>10L</td>
</tr>
<tr>
<td>400</td>
<td>400mm</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- **Model**
  - Enter the robot unit model.
- **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.
- **Tool flange**
  - Tool flange option for easy mounting of a tool to the tip.
  - **No entry**: None  **F**: With tool flange
- **Hollow shaft**
  - Hollow shaft option for easy routing of air tubes and harness wires.
  - **No entry**: None  **S**: With hollow shaft
- **Cable**
  - Select the length of the robot cable connecting the robot and controller.
  - **2L**: 2m (Note 1)  **3L**: 3.5m  **5L**: 5m  **10L**: 10m
  - Note 1: Only selectable for YK120XG, YK150XG, YK180XG
- **Controller**
  - Select the RCX340.

Note 1. Available only for the master.
## Ordering method

### YK350TW-130

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller</td>
<td>RCX340</td>
</tr>
<tr>
<td>Power capacity (VA)</td>
<td>2500</td>
</tr>
<tr>
<td>Operation method</td>
<td>Programming / Remote command / Communication</td>
</tr>
</tbody>
</table>

### Model

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>YK350TW</td>
<td>Orbit type</td>
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</table>

### Specifications

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<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
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<tbody>
<tr>
<td>X-axis</td>
<td>175 mm</td>
<td>175 mm</td>
<td>130 mm</td>
<td>+/-225°</td>
</tr>
<tr>
<td>Y-axis</td>
<td>175 mm</td>
<td>175 mm</td>
<td>130 mm</td>
<td>+/-225°</td>
</tr>
<tr>
<td>Z-axis</td>
<td>130 mm</td>
<td>130 mm</td>
<td>130 mm</td>
<td>+/-225°</td>
</tr>
<tr>
<td>R-axis</td>
<td>+/-720°</td>
<td>+/-720°</td>
<td>+/-720°</td>
<td>+/-720°</td>
</tr>
</tbody>
</table>

### Deceleration mechanism

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

### Maximum speed

- X-axis: 6.6 m/sec
- Y-axis: 6.6 m/sec
- Z-axis: 6.6 m/sec
- R-axis: 5.6 m/sec

### Controller Power capacity (VA)

- RCX340: 2500 W

### Working envelope

- X-axis: 175 mm
- Y-axis: 175 mm
- Z-axis: 130 mm
- R-axis: 130 mm

### Other specifications

- Weight: 26 kg
- R-axis moment of inertia (load inertia): 60 kgm²

### Note

1. This is the value at a constant ambient temperature.
2. Tool flange specifications (option) are 4 kg.
3. Note 3. When moving a 1 kg load back and forth 300 mm horizontally and 25 mm vertically (rough positioning arm motion).
4. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

---

**Note:**

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

---

**Diagram:**

- YK350TW
- Controller
- RCX340
- 566
YK350TW Tool flange mount type

The YK-TW can be easily installed on top of a customer-provided stand.

* External diagram for the YK350TW

The mounting bracket is assembled by the customer. Refer to the included assembly diagram for assembly.

* YK350TW and YK500TW are parts in common.

* The top plate by itself weighs 19 kg.
YK500TW

Ordering method

YK500TW-130

Model | 2 axis stroke (mm) | Number of controllable axis | Controller / Safety standard | Controller Power capacity (VA) | Operation method
--- | --- | --- | --- | --- | ---
YK500TW | 130 | Direct-coupled | RCX340 | 2500 | Remote command / Programming / I/O point trace / Operation using RS-232C communication

Specifications

Axis specifications | X-axis | Y-axis | Z-axis | R-axis
--- | --- | --- | --- | ---
Arm length | 250 mm | 250 mm | 130 mm | 
Rotation angle | +/-225° | +/-225° | - | +/-720°
AC servo motor output | 750 W | 400 W | 200 W | 105 W
Deceleration mechanism | Motor to speed reducer | Direct-coupled | Timing belt | Timing belt
Speed reducer to output | Timing belt | Direct-coupled | Timing belt | Timing belt
Repeatability | +/-0.015 mm | +/-0.01 mm | +/-0.01° | +/-0.01°
Maximum speed | 6.8 m/sec | 1.5 m/sec | 3000 °/sec | 
Maximum payload | 5 kg | 5 kg | 0.05 kgm | 0.005 kgm

Controller

RCX340

Power capacity (VA) | 2500
Operation method | Remote command / Programming / I/O point trace / Operation using RS-232C communication

YK500TW

Controller: RCX340

Weight: 27 kg

Controller / Safety standard | OPA | OPB | OPC | OPD | OPF
--- | --- | --- | --- | --- | ---

Note 1: This is the value at a constant ambient temperature.
Note 2: For the option specifications (tool flange mount type), the maximum payload becomes 4 kg.
Note 3: When moving a 1 kg load back and forth 300 mm horizontally and 25 mm vertically (rough positioning arch motion).
Note 4. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

Software / Manual: https://global.yamaha-motor.com/business/robot/downloaded from our website at the address below:
https://global.yamaha-motor.com/business/robot

Tube through hollow shaft

* Tube (φ4) through hollow shaft protrudes about 300mm from the spline tip.
* Tube through hollow shaft does not rotate with spline during R-axis rotation.
**Dedicated mounting bracket for the YK-TW <BASE POST ASSY.>**

The YK-TW can be easily installed on top of a customer-provided stand.

- **External diagram for the YK500TW**

The mounting bracket is assembled by the customer. Refer to the included assembly diagram for assembly.

*1. Identical to the height of the robot mounting surface.

<table>
<thead>
<tr>
<th>Height (mm)</th>
<th>Model</th>
<th>Unit weight (kg)</th>
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<tbody>
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<td>KDU-M6100-P0</td>
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<tr>
<td>550</td>
<td>KDU-M6100-50</td>
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<td>600</td>
<td>KDU-M6100-R0</td>
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<td>650</td>
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<td>850</td>
<td>KDU-M6100-80</td>
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* YK350TW and YK500TW are parts in common.

* The top plate by itself weighs 19 kg.
### Ordering method

**YK120XG - 50**

<table>
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<tbody>
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<td>Z axis stroke</td>
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<tr>
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<td>(2 m)</td>
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<td></td>
<td>(3.5 m)</td>
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<tr>
<td></td>
<td>(5 m)</td>
</tr>
<tr>
<td></td>
<td>(10 m)</td>
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<td>(OPB)</td>
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<tr>
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<tr>
<td>Absolute encoder battery</td>
<td></td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340  

### Specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>Specifications</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arm length</td>
<td>45 mm</td>
<td>75 mm</td>
<td>50 mm</td>
<td>+125 °</td>
</tr>
<tr>
<td></td>
<td>Rotation angle</td>
<td>+125 °</td>
<td>+145 °</td>
<td>-145 °</td>
<td>+130 °</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>30 W</td>
<td>30 W</td>
<td>30 W</td>
<td>30 W</td>
<td></td>
</tr>
</tbody>
</table>

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

- **Repeatability**
  - +/0.01 mm
  - +/0.01 mm
  - +/-0.004 °

- **Maximum speed**
  - 3.3 m/sec
  - 4.0 m/sec
  - 1700 °/sec

- **Maximum payload**
  - 1.0 kg

- **R-axis tolerable moment of inertia**
  - 0.01 kgm²

- **User tubing (Outer diameter)**
  - 4 × 2

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

- **Robot cable length**
  - Standard: 2 m
  - Option: 3.5 m, 5 m, 10 m

- **Weight (Excluding robot cable)**
  - 3.9 kg

- **Robot cable weight**
  - 0.9 kg (2 m)
  - 1.5 kg (3.5 m)
  - 2.1 kg (5 m)
  - 4.2 kg (10 m)

### Controller

- **Controller**
  - RCX340
  - 300

- **Power capacity (VA)**
  - 300

- **Operation method**
  - Programming / Remote command / Operation using RS-232C communication

---

**Note 1:** The weight includes the robot body and the cable weight.

**Note 2:** The value is the sum of the robot body weight and the cable weight.

**Note 3:** The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

**Note 4:** When moving 25mm in vertical direction and 100mm in horizontal direction reciprocally.

**Note 5:** This is the value at a constant ambient temperature. (X, Y axes)

**Note 6:** The total robot weight is the sum of the robot body weight and the cable weight.

**Note 7:** The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

**Note 8:** This is the value at a constant ambient temperature. (X, Y axes)

---

**YK120XG Specifications**

- **Arm length:** 120 mm
- **Maximum payload:** 1 kg

---

**Controller**

- **RCX340**
  - **566**
**Articulated robots**

**Linear conveyor modules**

**Compact single-axis robots**

**TRANSERVO**

Motor-less single-axis robots

**PHASER**

Cartesian robots

**XY-X**

**SCARA robots**

**YK-X**

Pick & place robots

**YP-X**

**CLEAN**

**CONTROLLER INFORMATION**

**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 / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

**Specifications**

- **Axis specifications**
  - Arm length: 75 mm (X-axis), 75 mm (Y-axis), 50 mm (Z-axis), 360° (R-axis)
  - AC servo motor output: 30 W (X-axis), 30 W (Y-axis), 30 W (Z-axis), 30 W (R-axis)

- **Deceleration**
  - Transmission method: Motor to speed reducer, Direct-coupled
  - Speed reducer to output: Direct-coupled
  - Repeatability: +/-0.01 mm (X-axis), +/-0.01 mm (Y-axis), +/-0.004° (Z-axis)
  - Maximum speed: 3.4 m/sec (X-axis), 0.9 m/sec (Y-axis), 1700°/sec (Z-axis)
  - Maximum payload: 1 kg (X-axis), 0.3 kg (Y-axis), 0.01 kgm (Z-axis)
  - R-axis tolerable moment of inertia: 0.01 kgm²
  - User wiring: 0.1 sq × 8 wires
  - User tubing (Outer diameter): 4 × 2
  - Travel limit:
    - X-axis: 2.0 mm, Y-axis: 1.0 mm, Z-axis: 5.0 mm
  - Robot cable length:
    - Standard: 2 m
    - Option: 3.5 m, 5 m, 10 m
  - Weight (Excluding robot cable): 4.9 kg
  - Robot cable weight: 0.9 kg (2 m), 1.5 kg (3.5 m), 2.1 kg (5 m), 4.2 kg (10 m)

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

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

**Note 3:** The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

---

**YK150XG**

- **Model:** YK150XG
- **Arm length:** 150 mm
- **Maximum payload:** 1 kg

**Ordering method**

**RCX340-4**

- Controller
- Number of controllable axes
- Safety standard
- Option (OP-1)
- Option (OP-2)
- Option (OP-2)
- Option (OP-2)
- Absolute battery

Specify various controller setting items. RCX340 ▶ 566

**Controller**

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

**Note:** The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

See our robot manuals (installation manuals) for detailed information.

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

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

---

**Details of B**

- Connector for user wiring (No. 1 to 8 usable, socket contact)
- Use the YC12 crimping tool.

**User tubing 1 (ϕ4)**

- Use R30 dog rotational radius
- 38 +/−0.2 mm across flats
- Minimum 322 during arm rotation
- Maximum 322 during arm rotation

**User tubing 2 (ϕ4)**

- 38 +/−0.2 mm across flats
- Minimum 25 during arm rotation
- Maximum 25 during arm rotation

**User tubing 1 (ϕ4)**

- Connect for user wiring (No. 1 to 8 usable, socket contact)
- Use the YC12 crimping machine.

**User tubing 2 (ϕ4)**

- Connect for user wiring (No. 1 to 8 usable, socket contact)
- Use the YC12 crimping machine.

**Details of B**

- No phase relation between flat spot and R-axis origin
- User tool installation range
- Hollow diameter: -4
- Cross section A-A

**Working envelope**

- X, Y axes origin is at ±0.5° with respect to front of robot base
- When performing return-to-origin, move the axes counterclockwise in advance from the position shown above.

**Note:** Do not perform such motion.

---

**Controller**

- RCX340 ▶ 566

---

**Specifications**

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

**Note:** The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

See our robot manuals (installation manuals) for detailed information.

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

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

---

**Specifications**

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

**Note:** The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

See our robot manuals (installation manuals) for detailed information.

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

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

---

**Specifications**

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

**Note:** The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

See our robot manuals (installation manuals) for detailed information.

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

https://global.yamaha-motor.com/business/robot/
YK180XG

Standard type: Extra small type

Arm length 180mm  Maximum payload 1kg

Ordering method

YK180XG - 50 - RCX340-4

Controller / Number of controllable axis

Safety standard

Controller Power capacity (VA) Operation method

RCX340 500 Programming / I/O point trace / Remote command / Operation using RS-232C communication

Specifications

Axis specifications

Arm length

AC servo motor output

Deceleration mechanism

Transmission ratio

Motor to speed reducer

Specify various controller setting items. RCX340 ▶ 566

Controller

RCX340

Controller setting items

Power capacity (VA)

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

Ordering method

YK180XG - 50 - RCX340-4

Controller / Number of controllable axis

Safety standard

Controller Power capacity (VA) Operation method

RCX340 500 Programming / I/O point trace / Remote command / Operation using RS-232C communication

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

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

Note 3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

YK180XG

Connector for user wiring

No. 1 to 8 usable, socket contact

J.S.T. Mfg Co., Ltd. SM connector SM-IRV-B, pin SYM-001T-P0.6 (supplied)

Use the YC12 crimping tool.

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

If attaching wire or tube, make use of these air tubes.

For details, refer to “10 When attaching a new user wire or tube” in Chapter 3.

Working envelope

X, Y axes origin is at +/-5° with respect to front of robot base.

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

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 shipment.) See our robot manuals (installation manuals) for detailed information.

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

- **Model:** YK180X - 100
- **Controller:** RCX340-4
- **Cable:** Direct-coupled
- **Controller / Number of controllable axes:** Direct-coupled
- **Safety standard:** OP1 (OP1)
- **Controller Communication:** OP5 (OP5)
- **Controller Motor:** SP (SP)
- **COMPCB:** (OP2)
- **Controller Battery:** (OP2)
- **Controller Absolute position information:** (OP2)

#### Ordering method

**Model:** YK180X - 100

**Controller:** RCX340-4

**Cable:** Direct-coupled

**Controller / Number of controllable axes:** Direct-coupled

**Safety standard:** OP1 (OP1)

**Controller Communication:** OP5 (OP5)

**Controller Motor:** SP (SP)

**COMPCB:** (OP2)

**Controller Battery:** (OP2)

**Controller Absolute position information:** (OP2)

Specify various controller setting items. RCX340 - P.566

#### Controller

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

### YK180X

- **Arm length:** 180mm
- **Maximum payload:** 1kg

#### Details of B

(Cross section A-A)

- **X-axis Origin:** 0° +/- 5°
- **Y-axis Origin:** 180° (O.P. A)
- **Z-axis Origin:** 0° +/- 5°

#### Working envelope

- **X-axis:** 109mm ± 4.5mm
- **Y-axis:** 109mm ± 4.5mm
- **Z-axis:** 100mm ± 4.5mm

#### Communication

- **Remote:** RS-422
- **Programming / Operation:** RS-232C

#### Robotic positioning accuracy

- **X-axis:** +/- 0.001 mm
- **Y-axis:** +/- 0.001 mm
- **Z-axis:** +/- 0.004 mm

#### Motor to speed reducer

- **Direct-coupled

#### Speed reducer to output

- **Motor to speed reducer:** Direct-coupled

#### Transmission

- **Rise:** 5mm during return-to-origin on Z-axis.

#### Deceleration angle:

- **X-axis:** +/- 120°
- **Y-axis:** +/- 140°
- **Z-axis:** +/- 360°

#### Transmission ratio

- **Z-axis:** 100: 100mm
- **3L:** 3.5m

#### Number of controllable axes

- **X-axis:** 71mm
- **Y-axis:** 109mm
- **Z-axis:** 100mm
- **R-axis:** 105mm

#### Motor to speed reducer deceleration

- **X-axis:** 0.7 m/sec
- **Y-axis:** 3.3 m/sec
- **Z-axis:** 1700 °/sec

#### Robot cable weight

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

### Note

1. This is the value at a constant ambient temperature.
2. When reciprocating 100mm in horizontal and 25mm in vertical directions.
3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
4. The total robot weight is the sum of the robot body weight and the cable weight.

---

For more details, refer to our robot manuals (installation manuals) for detailed information.

[Download our robot manuals](https://global.yamaha-motor.com/business/robot/)

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**Controller**

RCX340 - P.566

---

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

https://global.yamaha-motor.com/business/robot/
YK220X

Ordering method

YK220X-100
RCX340-4

Specify various controller setting items. RCX340 ⇒ 566

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>111 mm</td>
<td>109 mm</td>
<td>100 mm</td>
<td>+120°</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+140°</td>
<td>+360°</td>
<td>+140°</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>
<tr>
<td>Deceleration mechanism</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
</tr>
<tr>
<td>Transmission</td>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</td>
<td>Repeatability</td>
<td>+/-0.01 mm</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>3.4 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>
<tr>
<td>Standard cycle time: with 0.9kg payload</td>
<td>0.42 sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.01 kgm²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring</td>
<td>0.1 sq × 6 wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>3 × 2</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>Robot cable weight</td>
<td>1.5 kg (3.5 m)</td>
<td>2.1 kg (5 m)</td>
<td>4.2 kg (10 m)</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>500</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

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.)

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

https://global.yamaha-motor.com/business/robot/downloaded from our website at the address below:

Note 1. This is the value at a constant ambient temperature.
Note 2. When reciprocating 100mm in horizontal and 25mm in vertical directions.
Note 3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
Note 4. The total robot weight is the sum of the robot body weight and the cable weight.
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°

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

4-M4 bolt for installation, 4 bolts used

M4 ground terminal

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

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

Tapped hole for user wiring 6.35 x 0.5 Depth 6
The weight of the tool attached here should be added to the tip mass.

Detailed drawing D

View of F

View of E

Option:
User wiring/tubing through spline type

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

Publisher:
Mitsubishi Electric Corporation

404 Controller RCX340 ❯ 566
YK400XE-4

**Ordering method**

<table>
<thead>
<tr>
<th>Model</th>
<th>Maximum payload</th>
<th>Return-to-origin method</th>
<th>Hollow shaft</th>
<th>Z-axis stroke</th>
<th>Cable</th>
<th>Controller / Number of controllable axes</th>
<th>Safety standard</th>
<th>Dimensions (OPA)</th>
<th>Dimensions (OPB)</th>
<th>Dimensions (OPC)</th>
<th>Dimensions (OPD)</th>
<th>Absolute battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK400XE-4</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RCX340-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specify various controller setting items. 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>255 mm</td>
<td>175 mm</td>
<td>150 mm</td>
<td>-</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-132°</td>
<td>+/-150°</td>
<td>-</td>
<td>+/-360°</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>200 W</td>
<td>100 W</td>
<td>100 W</td>
<td>100 W</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**

<table>
<thead>
<tr>
<th>Transmission method</th>
<th>Speed reducer to output</th>
<th>Deceleration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct-coupled</td>
<td>Timing belt</td>
<td></td>
</tr>
<tr>
<td>Direct-coupled</td>
<td>Timing belt</td>
<td></td>
</tr>
</tbody>
</table>

**Repeatability**

<table>
<thead>
<tr>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.01°</td>
</tr>
</tbody>
</table>

**Maximum speed**

<table>
<thead>
<tr>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 m/s</td>
<td>1.1 m/s</td>
<td>2600 m/s</td>
<td></td>
</tr>
</tbody>
</table>

**Maximum payload**

<table>
<thead>
<tr>
<th>Option specifications</th>
<th>4 kg (Standard specification)</th>
<th>3 kg (Option specifications)</th>
</tr>
</thead>
</table>

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

**Note 2.** When reciprocating 300 mm in horizontal and 25 mm in vertical directions and performing the coarse positioning each operation.

**Note 3.** The acceleration coefficient is set automatically in accordance with the tip weight and offset amount for R-axis moment of inertia settings.

**Note 4.** Maximum payload of option specifications (with user wiring/tubing through spline type) is 3 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>1000</td>
<td>Programming / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

---

**Note.** 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.

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: https://global.yamaha-motor.com/business/robot/
### Specifications

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

- **Minimum Deceleration Time**: 0.45 sec
- **Maximum Deceleration Time**: 1.1 msec
- **Maximum Payload**: 5 kg (Standard specification), 4 kg (Option specifications)
- **Repeatability**: +/-0.01 mm
- **Maximum Speed**: 6.1 m/sec
- **R-axis Tolerable Moment of Inertia**: 0.05 kgm² (0.5 kgfcm²)
- **Standard Cycle Time**: with 2kg payload 0.45 sec
- **Robot Cable Length**: Standard: 3.5 m, Option: 5 m, 10 m
- **Weight**: 19.5 kg

### Controller

- **Controller**: RCX340
- **Power Capacity (VA)**: 1000
- **Operation Method**: Remote command / Operation using RS-232C communication

### Ordering method

**YK400XG - 150**

- **Model**: RCX340-4
- **Number of controllable axes**: 4
- **Controller Power capacity (VA)**: Operation method
- **Number of controllable axes**: 4
- **Controller / Number of controllable axes**: Option (A) Remote command / Operation using RS-232C communication

### Notes

1. This is the value at a constant ambient temperature. (X,Y axes)
2. When reciprocating 300 mm in horizontal and 250 mm in vertical directions.
3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
4. Maximum payload of option specifications (with tool flange attached or with user wiring and tubing routed through spline shaft) is 4 kg.

---

**Note**: If the robot enters the inside of the corner of R180 and dimension 144°, the Z-axis upper end stopper 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**: 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:

https://global.yamaha-motor.com/business/robot/
YK400XG Tool flange mount type

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 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.

Tapped hole for user wiring 4-M10 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.

Detailed drawing D

View of E

View of F

Option:
User tubing/tubing through spline type
YK500XGL

**Ordering method**

**Model**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK500XGL-150</td>
<td>Linear conveyor modules</td>
</tr>
<tr>
<td>RCX340-4</td>
<td>Controller</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>250 mm</td>
<td>250 mm</td>
<td>150 mm</td>
<td>+/-144°</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**

<table>
<thead>
<tr>
<th>Method</th>
<th>Motor to speed reducer</th>
<th>Speed reducer to output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct-coupled</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Repeatability**

<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>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004°</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Maximum payload**

| Type | 5 kg (Standard specification) | 4 kg (Option specifications) |

**Weight**

<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>21 kg</td>
<td></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 300mm in horizontal and 25mm in vertical directions.  
**Note 3.** The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.  
**Note 4.** 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.** 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.

---

**YK500XGL**

If the robot enters the inside of the corner of R200 and R250, 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 spline in the working envelope shown above.
- X-axis mechanical stopper position: 142°
- Y-axis mechanical stopper position: 146°

**User tubing**

- 4 blue)
- 4 red)
- 4 black)

**User tubing (Outer diameter)**

| Axis | 4 × 3 |

**Robot cable length**

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

**Weight**

| Type | 21 kg |

**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.

---

**Controller**

<table>
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<tr>
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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.

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**YK500XGL**

If the robot enters the inside of the corner of R200 and R250, 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 spline in the working envelope shown above.
- X-axis mechanical stopper position: 142°
- Y-axis mechanical stopper position: 146°

**User tubing**

- 4 blue)
- 4 red)
- 4 black)

**User tubing (Outer diameter)**

| Axis | 4 × 3 |

**Robot cable length**

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

**Weight**

| Type | 21 kg |

**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.

---

**Controller**

<table>
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<tr>
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**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.

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**YK500XGL**

If the robot enters the inside of the corner of R200 and R250, 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 spline in the working envelope shown above.
- X-axis mechanical stopper position: 142°
- Y-axis mechanical stopper position: 146°

**User tubing**

- 4 blue)
- 4 red)
- 4 black)

**User tubing (Outer diameter)**

| Axis | 4 × 3 |

**Robot cable length**

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

**Weight**

| Type | 21 kg |

**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.

---

**Controller**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
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<td>1000</td>
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</tbody>
</table>

**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.

---

**YK500XGL**

If the robot enters the inside of the corner of R200 and R250, 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 spline in the working envelope shown above.
- X-axis mechanical stopper position: 142°
- Y-axis mechanical stopper position: 146°

**User tubing**

- 4 blue)
- 4 red)
- 4 black)

**User tubing (Outer diameter)**

| Axis | 4 × 3 |

**Robot cable length**

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

**Weight**

| Type | 21 kg |

**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.

---

**Controller**

<table>
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**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.
YK500XGL  Tool flange mount type

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.

- 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°

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

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

Detailed drawing D

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

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

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.

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

Option:
User wiring/tubing through spline type

Machine harness

Hollow diameter: ϕ 11
The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

Note 3. Repeatability

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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

YK500XG

Controller

RCX340

Controller Power capacity (VA) Operation method

RCX340 1700 Programming / I/O point trace / Remote command / Operation using RS-232C communication

YK500XG

Maximum payload

10kg

Arm length

500mm

Specifications

Axis specifications

<table>
<thead>
<tr>
<th>Axis</th>
<th>Arm length</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>200 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>300 mm</td>
<td>+180°</td>
</tr>
<tr>
<td>Y</td>
<td>200 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>300 mm</td>
<td>+145°</td>
</tr>
<tr>
<td>Z</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>–</td>
</tr>
</tbody>
</table>

AC servo motor output

400 W

Deceleration

Direct-coupled

Repeatability

+/-0.01 mm

Maximum speed

7.6 m/sec

R-axis tolerable moment of inertia

0.30 kgm²

User wiring

0.2 sq × 20 wires

Travel limit

1.

Standard cycle time: with 2kg payload

7.6 m/sec

Maximum payload

10 kg

Controller / Motor-less single-axis robots

TRANSERVO

Linear conveyor modules

LCM100

Compact single-axis robots

PHASER

Cartesian robots

XY-X

SCARA robots

YK-X

Pick & place robots

YP-X

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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

YC500XG

Controller

RCX340

Controller Power capacity (VA) Operation method

RCX340 1700 Programming / I/O point trace / Remote command / Operation using RS-232C communication

Note. The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (op. 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:

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

YK600XGL - 150

Model YK600XGL-150

RCX340-4

Controller / Number of controllable axes

Controller

RCX340

Power capacity (VA)

1000

Operation method

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

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>350 mm</td>
<td>250 mm</td>
<td>150 mm</td>
<td>-</td>
</tr>
</tbody>
</table>

Rotation angle

| +/145 ° | +/-144 ° | +/-360 ° |

AC servo motor output

200 W 150 W 50 W 100 W

Deceleration mechanism

Motor to speed reducer Speed reducer to output

Direct-coupled

Repeatability

+/-0.01 mm +/-0.01 mm +/-0.004 °

Maximum speed

4.9 m/sec 1.1 m/sec 1020 °/sec

Maximum payload

6 kg (Standard specifications) 4 kg (Option specifications)

R-axis tolerable moment of inertia

0.05 kglm² (0.5 kgf cm²)

User wiring

0.2 sq × 10 wires

User tubing (Outer diameter)

4 ϕ 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

22 kg

Controller

RCX340

1000

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

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 manual) for detailed information.

Note 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.

Note 3. Our robot manuals (installation manuals) can be downloaded from our website at the address below:
https://global.yamaha-motor.com/business/robot/

YPK600XGL

Arm length 600 mm

Maximum payload 5 kg

Model YPK600XGL-150

Controller

RCX340

Power capacity (VA)

1000

Operation method

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

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>350 mm</td>
<td>250 mm</td>
<td>150 mm</td>
<td>-</td>
</tr>
</tbody>
</table>

Rotation angle

| +/145 ° | +/-144 ° | +/-360 ° |

AC servo motor output

200 W 150 W 50 W 100 W

Deceleration mechanism

Motor to speed reducer Speed reducer to output

Direct-coupled

Repeatability

+/-0.01 mm +/-0.01 mm +/-0.004 °

Maximum speed

4.9 m/sec 1.1 m/sec 1020 °/sec

Maximum payload

6 kg (Standard specifications) 4 kg (Option specifications)

R-axis tolerable moment of inertia

0.05 kglm² (0.5 kgf cm²)

User wiring

0.2 sq × 10 wires

User tubing (Outer diameter)

4 ϕ 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

22 kg

Controller

RCX340

1000

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

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 manual) for detailed information.

Note 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.

Note 3. Our robot manuals (installation manuals) can be downloaded from our website at the address below:
https://global.yamaha-motor.com/business/robot/
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°

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

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

Tapped hole for user wiring (d4.5 × 0.5 Depth)
The weight of the tool attached here should be added to the tip mass.

Detailed drawing D  View of E

- User tubing 1 (d4 black)
- User tubing 2 (d4 red)
- User tubing 3 (d4 blue)

Option:
User wiring/tubing through spline type

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

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

4-ϕ9 through-hole

User tubing 1 (ϕ4 black)
User tubing 2 (ϕ4 red)
User tubing 3 (ϕ4 blue)
**YK600XG**

**Standard type: Medium type**

### Ordering method

<table>
<thead>
<tr>
<th>Model</th>
<th>RCX340-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK600XG</td>
<td>Controller</td>
</tr>
<tr>
<td></td>
<td>Number of controllable axes</td>
</tr>
<tr>
<td></td>
<td>Safety standard</td>
</tr>
<tr>
<td></td>
<td>Motor-less single-axis robots</td>
</tr>
<tr>
<td></td>
<td>Compact single-axis robots</td>
</tr>
<tr>
<td></td>
<td>Linear conveyor modules</td>
</tr>
<tr>
<td></td>
<td>Articulated robots</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>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>
</tbody>
</table>

### Controller

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

**Note**: The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

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

---

**Specifications**

- **Axial specifications**
  - **Rotation angle**: +/130°, +/-145°
  - **Deceleration mechanism**: Transmission method
    - Motor to speed reducer: Direct-coupled
    - Speed reducer to output: Direct-coupled
  - **Repeatability**: +/-0.01 mm
  - **Maximum speed**: 8.4 m/sec
  - **Maximum payload**: 10 kg (Standard type), 9 kg (Tool flange mount type)
  - **R-axis tolerable moment of inertia**: 0.3 kgm²
  - **User wiring (Outer diameter)**: φ 6 x 3
  - **Travel limit**: 1. Soft limit
  - **Robot cable length**: Standard: 3.5 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: The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

---

**Controller**

<table>
<thead>
<tr>
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<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>

---

**YK600XG**

**Standard type: Medium type**

- **Arm length**: 600mm
- **Maximum payload**: 10kg

---

**Specifications**

- **Axis**: X, Y, Z
- **Rotation angle**: +/130°, +/-145°
- **Deceleration mechanism**: Transmission method
  - Motor to speed reducer: Direct-coupled
  - Speed reducer to output: Direct-coupled
- **Repeatability**: +/-0.01 mm
- **Maximum speed**: 8.4 m/sec
- **Maximum payload**: 10 kg (Standard type), 9 kg (Tool flange mount type)
- **R-axis tolerable moment of inertia**: 0.3 kgm²
- **User wiring (Outer diameter)**: φ 6 x 3
- **Travel limit**: 1. Soft limit
- **Robot cable length**: Standard: 3.5 m
- **Weight**: 31 kg

---

**Controller**

<table>
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</thead>
<tbody>
<tr>
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<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
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**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.)

Our robot manuals (installation manuals) can be downloaded from our website at the address below:
https://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>204 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>
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<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>

#### Controller

- **Controller**: RCX340
- **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) axes.
2. When reciprocating 300mm in horizontal and 25mm in vertical directions.
3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

Our robot manuals (installation manuals) can be downloaded from our website at the address below: https://global.yamaha-motor.com/business/robot/
YK700XGL

Standard type: Large type

Arm length 700mm
Maximum payload 10kg

Note. This model is a special order product. Please consult us for delivery time.

Ordering method

YK700XGL

Model

Controller /
Number of controllable axes

Safety standard

Controller Power capacity (VA)

Operation method

RCX340

1700

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

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

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

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>300 mm</td>
<td>200 mm</td>
<td>100 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>
</tbody>
</table>

Deceleration mechanism

<table>
<thead>
<tr>
<th>Transmission method</th>
<th>Motor to speed reducer</th>
<th>Speed reducer to output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct-coupled</td>
<td></td>
<td>Direct-coupled</td>
</tr>
</tbody>
</table>

Repeatability

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>R-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.005 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maximum speed

<table>
<thead>
<tr>
<th>Speeds (m/s)</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2 m/s</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Travel limit

<table>
<thead>
<tr>
<th>Limit</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Mechanical stopper position

<table>
<thead>
<tr>
<th>Position</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>132°</td>
<td>147°</td>
<td>123°</td>
<td></td>
</tr>
</tbody>
</table>

Robot cable length

<table>
<thead>
<tr>
<th>Length</th>
<th>Standard</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5 m</td>
<td>5 m</td>
<td>10 m</td>
</tr>
</tbody>
</table>

Weight

<table>
<thead>
<tr>
<th>Weight</th>
<th>32 kg</th>
</tr>
</thead>
</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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

Controller

RCX340

1700

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

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:
https://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>300 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>
<tr>
<td>Deceleration</td>
<td>+/135 °</td>
<td>+/-150 °</td>
<td>+/-180 °</td>
<td></td>
</tr>
</tbody>
</table>

**Controller**

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

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: 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.)

Note 4: 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.

The working envelopes shown in ( ) for tool flange specifications

For tool flange specifications
**ORDERING METHOD**

**YK800XG**

- Model: YK800XG
- Servo: TRANSERVO
- Controller: RCX340-4

**SPECS**

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

- **AC Servo Motor Output**: 750 W
- **Deceleration Mechanism**: +/0.02 mm
- **Transmission Method**: Speed Reducer to Output
- **Motor to Speed Reducer**: Direct-coupled

**Controller**

- **RCX340**
  - Power Capacity (VA): 2500
  - Operation Method: Programming / I/O point tracing / Remote command / Operation using RS-232C communication

**Tool Flange Specifications**

- **Arm Length**: 800 mm
- **Maximum Payload**: 20 kg

**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>800 mm</td>
<td>800 mm</td>
<td>800 mm</td>
<td>800 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>400 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Max. Speed</td>
<td>9.2 m/sec</td>
<td>0.48 sec</td>
<td>3.83 m/sec</td>
<td>3.83 m/sec</td>
</tr>
<tr>
<td>Motor</td>
<td>3.0 m</td>
<td>3.0 m</td>
<td>1.7 m/sec</td>
<td>1.7 m/sec</td>
</tr>
<tr>
<td>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>52 kg (Z-axis 200 mm)</td>
<td>54 kg (Z-axis 400 mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

**Diagram**

- View of B
- View of A-A
- Diagram of working envelope of right-handed system
- Diagram of working envelope of left-handed system
- Diagram of Z-axis mechanical stopper position: 132°

---

**Controller**

- **RCX340**
  - Power Capacity (VA): 2500
  - Operation Method: Programming / I/O point tracing / Remote command / Operation using RS-232C communication

---

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

https://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>400 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
<td>+/-150°</td>
<td>+/-180°</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>

**Repeatability**

- X-axis: +/-0.02 mm
- Y-axis: +/-0.01 mm
- Z-axis: +/-0.004 mm

**Maximum speed**

- X-axis: 9.9 m/sec
- Y-axis: 3 m/sec
- Z-axis: 17 m/sec
- R-axis: 920 °/sec

**Maximum payload**

- 20 kg (Standard type), 19 kg (Tool flange mount type)

**Standard cycle time**

- X-axis: 0.49 sec
- Y-axis: 0.59 sec
- Z-axis: 0.76 sec
- R-axis: 1.00 sec

**User wiring**

- 0.2 sq × 20 wires

**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**

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

**Note:**

1. This is the value at a constant ambient temperature (X, Y axis).
2. When reciprocating 330 mm in horizontal and 25 mm in vertical directions.
3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

---

**Controller**

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

**Note:**

- The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)
- See our robot manuals (installation manuals) for detailed information.
- 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: https://global.yamaha-motor.com/business/robot/
### Ordering method

**YK1000XG**

<table>
<thead>
<tr>
<th>Model</th>
<th>Z-axis stroke</th>
<th>Number of controllable axes</th>
<th>Safety standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCX340-4</td>
<td>400 mm</td>
<td>6</td>
<td>(OPA)</td>
</tr>
<tr>
<td>RCX340-5</td>
<td>500 mm</td>
<td>6</td>
<td>(OPB)</td>
</tr>
<tr>
<td>RCX340-6</td>
<td>600 mm</td>
<td>6</td>
<td>(OPC)</td>
</tr>
<tr>
<td>RCX340-7</td>
<td>700 mm</td>
<td>6</td>
<td>(OPD)</td>
</tr>
<tr>
<td>RCX340-8</td>
<td>800 mm</td>
<td>6</td>
<td>(OPE)</td>
</tr>
<tr>
<td>RCX340-9</td>
<td>900 mm</td>
<td>6</td>
<td>Absolute battery</td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340 ➤ P.566

### 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>600 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>Transmission method</td>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct-coupled</td>
<td>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>10.6 m/sec</td>
<td>3.3 m/sec</td>
<td>17 m/sec</td>
<td>920°/sec</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>20 kg (Standard type), 19 kg (Tool flange mount type)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>200 kg (Standard type), 19 kg ( Tool flange mount type)</td>
<td></td>
<td></td>
<td></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>1.0 kgm²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring</td>
<td>0.2 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</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>Z axis 200 mm: 56 kg</td>
<td>Z axis 400 mm: 58 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1. The value at a constant ambient temperature (X,Y axes)
Note 2. When reciprocating 300mm in horizontal and 25mm in vertical directions.
Note 3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

### 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. 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.)

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: https://global.yamaha-motor.com/business/robot/
**YK1200X**  
Standard type: Large type

- **Arm length:** 1200mm  
- **Maximum payload:** 50kg

### Ordering method

**YK1200X - 400**  
**RCX340-4**

Specify various controller setting items. RCX340 ➔ 566

### 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><strong>Arms specifications</strong></td>
<td><strong>Arm length</strong></td>
<td><strong>Rotation angle</strong></td>
<td><strong>AC servo motor output</strong></td>
<td><strong>Deceleration mechanism</strong></td>
</tr>
<tr>
<td><strong>Arm length</strong></td>
<td>600 mm</td>
<td>600 mm</td>
<td>400 mm</td>
<td>180°</td>
</tr>
<tr>
<td><strong>Rotation angle</strong></td>
<td>+/125°</td>
<td>+/150°</td>
<td>+/180°</td>
<td></td>
</tr>
<tr>
<td><strong>AC servo motor output</strong></td>
<td>900 W</td>
<td>800 W</td>
<td>600 W</td>
<td>400 W</td>
</tr>
</tbody>
</table>

### Controller

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

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

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

**YK300XGS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Installation method</th>
<th>150</th>
<th>Z-axis stroke</th>
<th>Z-axis arm length</th>
<th>Y-axis arm length</th>
<th>Z-axis arm length</th>
<th>R-axis arm length</th>
<th>X-axis maximum payload</th>
<th>Y-axis maximum payload</th>
<th>Z-axis maximum payload</th>
<th>R-axis maximum payload</th>
</tr>
</thead>
</table>

**Controller**

- **RCX340-4**

**Specifications**

- **Axis specifications**
  - X-axis: 150 mm
  - Y-axis: 150 mm
  - Z-axis: 150 mm
  - R-axis: –
- **Rotation angle**
  - +/120°
  - +/130°
  - +/-360°
- **AC servo motor output**
  - 200 W
  - 150 W
  - 50 W
  - 100 W
- **Deceleration mechanism**
  - Motor to speed reducer
  - Speed reducer to output
- **Repeatability**
  - +/-0.01 mm
  - +/-0.01 mm
  - +/-0.004°
- **Maximum speed**
  - 4.4 m/sec
  - 1.0 m/sec
  - 1020 °/sec (wall mount)
- **Maximum payload**
  - 5 kg (Standard specification)
  - 4 kg (Option specifications)
- **Standard cycle time**
  - With 2kg payload: 16.5 sec
- **R-axis tolerable moment of inertia**
  - +/-0.01 mm
  - +/-0.01 mm
  - +/-0.004°
- **Robot cable length**
  - Standard: 3.5 m
  - Option: 5 m, 10 m
- **Weight**
  - 19.5 kg

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. The movement range can be limited by changing the position of Y axis mechanical stopper. (The movement range is set to the maximum at the time of shipment.)
Note 4. Maximum payload of option specifications (with tool flange attached or with user wiring and tubing routed through spline shaft) is 4kg.

---

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.

---

**Controller**

- **RCX340**

**Specifications**

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

Note. The movement range can be limited by changing the position of Y axis mechanical stopper. (The movement range is set to the maximum at the time of shipment.)

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

YK400XGS

Model

Installation method

- Wall mount / inverse type

Controller

RCX340-4

Specify various controller setting items. RCX340 → P.566

Controller / Number of controllable axes

Safety standard

Certification

[ ] OPA  
[ ] OPC  
[ ] OPC  
[ ] OPC  
[ ] OPC  

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

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

Note 3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

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

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. When reciprocating 25mm horizontally and 300mm horizontally (with a 2kg payload in rough-positioning arch motion).

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

Note. The movement range can be limited by changing the position of Y axis mechanical stopper. (The movement range is set to the maximum at the time of shipment.)

Our robot manuals (installation manuals) can be downloaded from our website at the address below:
https://global.yamaha-motor.com/business/robot/
**YK400XGS** Tool flange mount type

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

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

User tubing 1 (ϕ4 black)

M4 ground terminal

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

(ϕ6H7 through-hole)

4-M3 through-holes

Hollow diameter: ϕ11

4-M3 through-holes

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

Z-axis lower and mechanical stopper position

4-M3 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.

4-M3 through-hole

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

Cross section B-B

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

Working envelope

X-axis mechanical stopper position: 127°

Y-axis mechanical stopper position: 146°

(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 envelopes: 4mm from additional stopper)

(Cannot be used when user wiring and tubing are set through spline shaft.)

Controller RCX340 ▶ 566
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>Arm length</td>
<td>200 mm</td>
<td>300 mm</td>
<td>200 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-105°</td>
<td>+/-125°</td>
<td>+/-125°</td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>400 W</td>
<td>200 W</td>
<td>200 W</td>
</tr>
<tr>
<td>Deceleration specifications</td>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004°</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>7.6 m/sec</td>
<td>2.5 m/sec</td>
<td>1.7 m/sec</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>10 kg (Standard type), 9 kg (Tool flange mount type)</td>
<td></td>
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<tr>
<td>Standard cycle time: with 2kg payload</td>
<td>0.45 sec</td>
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<tr>
<td>User tubing (Outer diameter)</td>
<td>0.2 sq x 20 wires</td>
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<tr>
<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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</tr>
<tr>
<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
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<td>User tubing (No. 1 to 20 usable)</td>
<td>7</td>
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<tr>
<td>User tubing (No. 1 to 20 usable)</td>
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</tr>
<tr>
<td>User tubing (No. 1 to 20 usable)</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (No. 1 to 20 usable)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (No. 1 to 20 usable)</td>
<td>3</td>
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<td></td>
</tr>
<tr>
<td>User tubing (No. 1 to 20 usable)</td>
<td>2</td>
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<tr>
<td>User tubing (No. 1 to 20 usable)</td>
<td>1</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 300mm in horizontal and 25mm in vertical directions.
Note 3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

### Controller

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

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

Our robot manuals (installation manuals) can be downloaded from our website at the address below: https://global.yamaha-motor.com/business/robot/
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>Arm length</td>
<td>300 mm</td>
<td>300 mm</td>
<td>200 mm</td>
<td>–</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
<td>+/-145°</td>
<td>+/-160°</td>
<td>+/-360°</td>
</tr>
<tr>
<td>Deceleration</td>
<td>8.4 m/sec</td>
<td>2.3 m/sec</td>
<td>5.0 m/sec</td>
<td>11.0 m/sec</td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004 mm</td>
<td>+/-0.004 mm</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>10 kg (Standard type), 9 kg (Tool flange mount type)</td>
<td>0.46 kg</td>
<td>0.30 kgm</td>
<td>0.025 kgm</td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>0.2 sq x 20 wires</td>
<td>0.2 sq x 20 wires</td>
<td>0.2 sq x 20 wires</td>
<td>0.2 sq x 20 wires</td>
</tr>
<tr>
<td>Travel limit</td>
<td>1. Soft</td>
<td>2. Mechanical stopper (X, Y, Z axis)</td>
<td>3.5 m</td>
<td>5 m</td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m</td>
<td>10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>31 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 2. This is the value at a constant ambient temperature. (X, Y axes) Note 3. When reciprocating 300 mm in horizontal and 25 mm in vertical directions. Note 4. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings. Note 5. Please consult YAMAHA when connecting other tubes and cables to the self-supporting machine harness.

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

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

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

Note 3: The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.)

See our robot manuals (installation manuals) for detailed information.

Our robot manuals (installation manuals) can be downloaded from our website at the address below: https://global.yamaha-motor.com/business/robot/
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## 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>200 mm</td>
<td>–</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
<td>+/-145°</td>
<td>+/-360°</td>
<td></td>
</tr>
<tr>
<td>Deceleration</td>
<td>9.2 m/sec</td>
<td>+/-0.02 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004</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>9.2 m/sec</td>
<td>12.7 m/sec</td>
<td>7.3 m/sec</td>
<td>7.3 m/sec</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>20 kg (Standard type), 19 kg (Tool flange mount type)</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>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>ϕ 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 Option: 5m, 10m</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 300mm in horizontal and 25mm in vertical directions.
Note 3. The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maxium at the time of shipment.)
See our robot manuals (installation manuals) for detailed information.

---

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

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

Note 3. 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.)

Our robot manuals (installation manuals) can be downloaded from our website at the address below: https://global.yamaha-motor.com/business/robot/
YK1000XGS

Ordering method

<table>
<thead>
<tr>
<th>YK1000XGS</th>
<th>RCX340-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
</tr>
<tr>
<td>Installation method(s)</td>
<td></td>
</tr>
<tr>
<td>Z-axis stroke</td>
<td>610 mm</td>
</tr>
<tr>
<td>Tool-flange (as per external view)</td>
<td></td>
</tr>
<tr>
<td>Motor to speed reducer</td>
<td>Direct-coupled</td>
</tr>
<tr>
<td>Speed reducer to output</td>
<td>Direct-coupled</td>
</tr>
<tr>
<td>Deceleration mechanism</td>
<td></td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-130°</td>
</tr>
<tr>
<td>Motor-less single-axis robots</td>
<td></td>
</tr>
<tr>
<td>Safety standard</td>
<td></td>
</tr>
<tr>
<td>Option(s)</td>
<td></td>
</tr>
<tr>
<td>Controller/ Number of controllable axis</td>
<td></td>
</tr>
<tr>
<td>Number of controller setting items</td>
<td>RCX340</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>AC 200V</td>
</tr>
<tr>
<td>Controller Power capacity (VA)</td>
<td>2500</td>
</tr>
<tr>
<td>Operation method</td>
<td>Operation using RS-232C communication</td>
</tr>
<tr>
<td>Note: Specify various controller setting items. RCX340</td>
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</tr>
</tbody>
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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>Standard cycle time: with 2kg payload</td>
<td>Note 1</td>
<td>0.49 sec</td>
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</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>Note 1</td>
<td>1.0 kgm</td>
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</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>6 mm × 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1. Soft limit 2. Mechanical stopper (X, Y, Z axis)</td>
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<td></td>
</tr>
<tr>
<td>Robot cable length</td>
<td>Standard: 3.5 m  Option: 5 m, 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Z-axis 200 mm: 56 kg  Z-axis 400 mm: 58 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: When installing the robot, always follow the specifications.
Note 2: When reciprocating 300 mm in horizontal and 25 mm in vertical directions.

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

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

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

<table>
<thead>
<tr>
<th>Model</th>
<th>YK250XGP - 150</th>
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<th>RCX340-4</th>
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<tbody>
<tr>
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<td>150 mm</td>
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<tr>
<td>Hollow shaft</td>
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<td>150 mm</td>
<td>150 mm</td>
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<tr>
<td>Cable</td>
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<td>600 mm</td>
</tr>
<tr>
<td>Controller  / Number of controllable axes</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Safety standard</td>
<td>OP.A</td>
<td>OP.B</td>
<td>OP.C</td>
</tr>
<tr>
<td>Remote command / I/O point trace / Communication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Option A</td>
<td>RCX340-1000</td>
<td>RCX340-2000</td>
<td>RCX340-3000</td>
</tr>
<tr>
<td>Option B</td>
<td>RCX340-4000</td>
<td>RCX340-5000</td>
<td>RCX340-6000</td>
</tr>
<tr>
<td>Option C</td>
<td>RCX340-7000</td>
<td>RCX340-8000</td>
<td>RCX340-9000</td>
</tr>
<tr>
<td>Option D</td>
<td>RCX340-10000</td>
<td>RCX340-11000</td>
<td>RCX340-12000</td>
</tr>
<tr>
<td>Option E</td>
<td>RCX340-13000</td>
<td>RCX340-14000</td>
<td>RCX340-15000</td>
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</tbody>
</table>

Specify various controller setting items. RCX340 b: 5666

**Controller**

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

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

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**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>100 mm</td>
<td>150 mm</td>
<td>150 mm</td>
<td></td>
</tr>
<tr>
<td>Rotation angle</td>
<td>+/-129°</td>
<td>+/-134°</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>
<tr>
<td>Deceleration mechanism</td>
<td>Transmission method</td>
<td>Motor to speed reducer</td>
<td>Direct-coupled</td>
<td></td>
</tr>
<tr>
<td>Deceleration mechanism</td>
<td>Transmission method</td>
<td>Speed reducer to output</td>
<td>Direct-coupled</td>
<td></td>
</tr>
<tr>
<td>Repeatability H0.01</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004 °</td>
<td></td>
</tr>
<tr>
<td>Maximum speed</td>
<td>4.5 m/sec</td>
<td>1.1 m/sec</td>
<td>1020 °/sec</td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>4 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time with 2kg payload H0.01</td>
<td>0.50 sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia H0.01</td>
<td>0.05 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</td>
<td>0.2 sq × 10 wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>φ 4 × 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel limit</td>
<td>1.2m 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, Option: 5 m, 10 m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>21.5 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 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
Note 3: The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
Note 4: Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof specifications.
Note 5: 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.
YK350XGP

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

- **Arm length**: 350mm
- **Maximum payload**: 4kg

### Ordering method

**YK350XGP - 150**

<table>
<thead>
<tr>
<th>Model</th>
<th>Z-axis stroke</th>
<th>Tool flange</th>
<th>Hollow shaft</th>
<th>Cable</th>
<th>Controller</th>
<th>Number of controllable axes</th>
<th>Safety standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>150 mm</td>
<td></td>
<td></td>
<td></td>
<td>RCX340-4</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340  P.566

### Specifications

- **Arm length**: X-axis 200 mm, Y-axis 150 mm, Z-axis 150 mm
- **AC servo motor output**: X-axis 200 W, Y-axis 150 W, Z-axis 50 W, R-axis 100 W
- **Deceleration mechanism**: Direct-coupled
- **Transmission method**: Motor to speed reducer
- **Speed reducer to output**: Direct-coupled
- **Repeatability**: X-axis +/- 0.01 mm, Y-axis +/- 0.01 mm, Z-axis +/- 0.004°
- **Maximum speed**: X-axis 5.6 m/sec, Y-axis 1.1 m/sec, Z-axis 1020°/sec
- **Maximum payload**: 4 kg
- **Standard cycle time**: X-axis 200 W, Y-axis 150 W, Z-axis 50 W, R-axis 100 W
- **Maximum payload**: X-axis 200 W, Y-axis 150 W, Z-axis 50 W, R-axis 100 W
- **Robot cable length**: Standard: 3.5 m, Option: 5 m, 10 m
- **Robot weight**: 22 kg

### Controller

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

Note:
- The movement range can be limited by changing the positions of X and Y axis mechanical stoppers. (The movement range is set to the maximum at the time of shipment.) See our robot manuals (installation manuals) for detailed information.
- Note to set the standard coordinates with high accuracy, use a standard coordinate setting (g) (options). Refer to the user’s manual (installation manual) for more details.

### Notes

1. This is the value at a constant ambient temperature. (X, Y axes)
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 axes)
4. Do not move the cable.
5. Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof

---

**YK350XGP Diagram**

- **Connector for user wiring** (No.1 to 10 usable, cable clamp size: φ13.1 to φ15)
- **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)**
- **M8 bolt for installation, 4 bolts used**

**Dimensions**

- **Maximum 150 mm into arm rotation**
- **Machine Harness**: Width across flats 150 mm
- **Cross section A-A**
- **Height**: Width across flats 150 mm
- **Width across flats**: 150 mm

**Warning**

- Do not use robots where the bellows section is directly exposed to water jet.
### 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>150 mm</td>
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<tr>
<td>Deceleration</td>
<td>200 W</td>
<td>150 W</td>
<td>50 W</td>
<td>100 W</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>6.1 m/sec</td>
<td>1.1 m/sec</td>
<td>1020°/sec</td>
<td></td>
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<tr>
<td>Deceleration mechanism</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission method</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>4 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time</td>
<td>0.50 sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.05 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</td>
<td>0.2 sq x 10 wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>φ 4 x 4</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>
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<td></td>
</tr>
<tr>
<td>Weight</td>
<td>22.5 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 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
Note 3: The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

### 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>Remote command / Remote command / Remote command / Remote command</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communication</td>
</tr>
</tbody>
</table>

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:
https://global.yamaha-motor.com/business/robot/
YK500XGLP Tool flange mount type

- **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-M3 × 0.5 Depth 6** (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.

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.

- **4-M3 × 0.5 Depth 6**

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

- **Z-axis bellows**

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

- **Machine Harness**

  - Tapped hole for user wiring 6-M3 × 0.5 Depth 6

- **4-M3 through-hole**

  - Do not use the hole for the wiring/tubing clamp.

- **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)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **Tapped hole for installation**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.

  - **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)

  - Insert the plug provided when not used.

- **User tubing 3** (ø4 blue)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **4-M3 × 0.5 Depth 6**

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

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.

- **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)

  - Insert the plug provided when not used.

- **User tubing 3** (ø4 blue)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **4-M3 × 0.5 Depth 6**

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

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.

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- **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)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **4-M3 × 0.5 Depth 6**

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

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

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  - Insert the plug provided when not used.

- **User tubing 2** (ø4 red)

  - Insert the plug provided when not used.

- **User tubing 3** (ø4 blue)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **4-M3 × 0.5 Depth 6**

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

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.

- **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)

  - Insert the plug provided when not used.

- **User tubing 3** (ø4 blue)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **4-M3 × 0.5 Depth 6**

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

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.

- **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)

  - Insert the plug provided when not used.

- **User tubing 3** (ø4 blue)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **4-M3 × 0.5 Depth 6**

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

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.

- **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)

  - Insert the plug provided when not used.

- **User tubing 3** (ø4 blue)

  - Insert the plug provided when not used.

- **User tubing 4** (ø4 white)

  - Insert the plug provided when not used.

- **4-M3 × 0.5 Depth 6**

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

- **M4 ground terminal**

  - 4 bolts used

- **R32** (Min. cable bending radius)

  - Do not move the cable.
**Articulated robots**

**Linear conveyor modules**

**Compact single-axis robots**

**TRANSERVO Motor-less single-axis robots**

**PHASER Cartesian robots**

**XY-X SCARA robots**

**YP-X Pick & place robots**

**YP-XCLEANCONTROLLERINFORMATION**

---

**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>
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<td>+/-145°</td>
<td>+/-360°</td>
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<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>Direct-coupled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission method</td>
<td>Motor to speed reducer</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>Repeatability</td>
<td>+/-0.01 mm</td>
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</tr>
<tr>
<td>Maximum speed</td>
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<tr>
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<tr>
<td>Standard cycle time</td>
<td>0.55 sec</td>
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</tr>
<tr>
<td>R-axis tolerable moment of inertia</td>
<td>0.3 kgm²</td>
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</tr>
<tr>
<td>Protection class</td>
<td>Equivalent to IP65 (IEC 60529)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User wiring</td>
<td>0.2 sq × 20 wires</td>
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<td></td>
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</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. 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: 3.5m, Option: 5m, 10m</td>
<td></td>
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</tr>
<tr>
<td>Weight</td>
<td>2 axis 200 mm: 32 kg, 3 axis 300 mm: 33 kg</td>
<td></td>
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</tr>
</tbody>
</table>

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**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 1**
This is the value at a constant ambient temperature (X,Y axes) 25°C.

**Note 2**
When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arm motion) and accelerating, the coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

**Note 4**
Do not use robots where the bellows section is directly exposed to water or dust. Contact our distributor for information on drip-proofing.

---

[YK500XGP Dust-proof & drip-proof type](https://global.yamaha-motor.com/business/robot/)
### Ordering method

<table>
<thead>
<tr>
<th>Model</th>
<th>150</th>
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</thead>
<tbody>
<tr>
<td>YK600XGLP</td>
<td>S</td>
</tr>
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</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>
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<td>X-axis</td>
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<td>Y-axis</td>
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<td>105 W</td>
<td>100 W</td>
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<tr>
<td>Z-axis</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
<td>Direct-coupled</td>
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<tr>
<td>R-axis</td>
<td>+/-0.01 mm</td>
<td>+/-0.01 mm</td>
<td>+/-0.004°</td>
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</tr>
<tr>
<td>Maximum speed</td>
<td>4.9 m/sec</td>
<td>1.1 m/sec</td>
<td>1020°/sec</td>
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<tr>
<td>Maximum payload</td>
<td>4 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time: with 2kg payload</td>
<td>0.71 sec</td>
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<tr>
<td>Protection class</td>
<td>IP65 (IEC 60529)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>User wiring (sq x wires)</td>
<td>0.2 x 10</td>
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<td></td>
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</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>4 x 4</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>
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</tr>
<tr>
<td>Weight</td>
<td>20 kg</td>
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### 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: 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 (optional). 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:
https://global.yamaha-motor.com/business/robot/
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)

4.0 x 0.5 Depth 5
No phase relation to R-axis origin.
As this hole is intended for the wiring/tubing clamps, do not attach a large load to it.

View of F

View of E

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

Tapped hole for user wiring 4-M3 x 0.5 Depth 6

RC32 (Min. cable bending radius)
Do not move the cable.

Hollow diameter: φ11

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.

Machine Harness

Z-axis bellows

M4 ground terminal

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

Detailed drawing D
View of E

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)
Insert the plug provided when not used.

User tubing 2 (φ4 red)

User tubing 3 (φ4 blue)

User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)

4.0 x 0.5 bolt for installation, 4 bolts used

Cover with the caps provided when not used.

Insert the plug 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)
User tubing 3 (φ4 blue)
User tubing 4 (φ4 white)
### Ordering method

<table>
<thead>
<tr>
<th>Model</th>
<th>YK600XGP</th>
<th>F</th>
<th>Tool flange</th>
<th>Cable</th>
<th>Controller</th>
<th>Safety standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RCX340-4</td>
<td>(OPA), (OPB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(OPC), (OPD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Absolute battery</td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340 ➔ P.566

### 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>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>Direct-coupled</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission method</td>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor speed range</td>
<td>-150°</td>
<td>+145°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC servo motor output</td>
<td>10 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>10 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>250 mm</td>
<td>250 mm</td>
<td>300 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>Z-axis</td>
<td>33 kg</td>
<td>34 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 25mm in vertical direction and 300mm in horizontal direction. (Rough-positioning arch motion).
Note 3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
Note 4. Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on drip-proof types.

### 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. 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:
https://global.yamaha-motor.com/business/robot/

---

**YK600XGP**

- **Arm length 600mm**
- **Maximum payload 10kg**

### Dust-proof & drip-proof type

#### Working envelope of left-handed system

- **Note** that the robot cannot be used at a position where the base flanges, robot cables, spline, and bellows interfere with each other in the working envelopes shown above.
- **X-axis mechanical stopper position**: 122°
- **Y-axis mechanical stopper position**: 147°

#### Working envelope of right-handed system

- **Note** that the robot cannot be used at a position where the base flanges, robot cables, spline, and bellows interfere with each other in the working envelopes shown above.
- **X-axis mechanical stopper position**: 122°
- **Y-axis mechanical stopper position**: 147°

---

**Controller**

**RCX340 ➔ P.566**
### Ordering method

**YK600XGHP**

<table>
<thead>
<tr>
<th>Model</th>
<th>F</th>
<th>RCX340-4</th>
<th>Controller / Number of controllable axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-axis stroke</td>
<td>200mm</td>
<td>400mm</td>
<td>Specify various controller setting items.</td>
</tr>
<tr>
<td>Tool Range</td>
<td>With tool flange</td>
<td>3.5m</td>
<td>RCX340</td>
</tr>
<tr>
<td>Cable</td>
<td>3.5m</td>
<td>3m</td>
<td>10m</td>
</tr>
<tr>
<td>Controller</td>
<td></td>
<td></td>
<td>RCX340-4</td>
</tr>
</tbody>
</table>

### 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>204mm</td>
<td>400mm</td>
<td>200mm</td>
<td>400mm</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>Transmission method</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 °</td>
<td></td>
</tr>
<tr>
<td>Maximum speed</td>
<td>7.7 m/sec</td>
<td>3.3 m/sec</td>
<td>17 m/sec</td>
<td></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>0.57 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 tubing (sq × wires)</td>
<td>0.2 × 20</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>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>2 axis 200 mm: 52 kg</td>
<td>Z axis 400 mm: 54 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: This is the value at a constant ambient temperature (X-Y axis)
Note 2: When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
Note 3: The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
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 / Operation using RS-232C communication

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

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:
**Specifications**

<table>
<thead>
<tr>
<th>Axis/Arm</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>300 mm</td>
<td>400 mm</td>
<td>200 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>Rotation angle</td>
<td>$\pm 130^\circ$</td>
<td>$\pm 150^\circ$</td>
<td>$\pm 180^\circ$</td>
<td>$\pm 360^\circ$</td>
</tr>
</tbody>
</table>

**Deceleration mechanism**
Direct-coupled

**Speed reducer to output**
Direct-coupled

**Repeatability**
$\pm 0.02$ mm

**Maximum speed**
8.4 m/sec

**Maximum payload**
3 kg

**Standard cycle time**
With 2 kg payload
0.52 sec

**R-axis tolerable moment of inertia**
1.0 kgm²

**Protection class**
 Equivalent to IP65 (IEC 60529)

**User wiring (Outer diameter)**
$\phi 6 \times 3$ wires

**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: 54 kg  Z-axis 400 mm: 56 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-positioning arm motion)

**Note 3.** The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

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

**Note 5.** 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 6.** 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 7.** Our robot manuals (installation manuals) can be downloaded from our website at the address below:
https://global.yamaha-motor.com/business/robot/
Articulated robots

Linear conveyor modules

Compact single-axis robots

TRANSERVO Motor-less single-axis robots

PHASER Cartesian robots

XY-X SCARA robots

YP-X Pick & place robots

YP-XCLEAN CONTROLLER INFORMATION

### 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>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>Direct-coupled</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission method</td>
<td>Motor to speed reducer</td>
<td>Speed reducer to output</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>9.2 m/sec</td>
<td>3 m/sec</td>
<td>17/sec</td>
<td>920 °/sec</td>
</tr>
<tr>
<td>Maximum payload</td>
<td>20 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard cycle time: with 2kg payload</td>
<td>0.58 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</td>
<td>0.2 sq x 20 wires</td>
<td>φ 6 x 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User tubing (Outer diameter)</td>
<td>φ 6 to 14</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>User tubing 1 φ 6</td>
<td>User tubing 2 φ 6</td>
<td>User tubing 3 φ 6</td>
<td>User tubing 4 φ 6</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>
</tr>
</tbody>
</table>

### Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>RCX340</th>
<th>Power capacity (VA)</th>
<th>2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation method</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</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 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
Note 3. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
Note 4. Do not use robots where the blowout section is directly exposed to water jet. Contact our distributor for information on drip-proof structure preventing liquid other than water.

YK800XGP

Connect for user wiring (No.1 to 20 cable, cable clamp size: φ 6 to 18)
Cover with the caps provided when not used.

If the robot enters the inside of R205 and corner of dimensions 190 and 400, the Z axis tip may be in contact with the base or the arm. The user may set to the maximum at the time of shipment.

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

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 : 152°

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

<table>
<thead>
<tr>
<th>YK900XGP</th>
<th>F</th>
<th>RCX340-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
<td>Controller</td>
</tr>
<tr>
<td>Z-axis stroke</td>
<td></td>
<td>Power capacity (VA)</td>
</tr>
<tr>
<td>800mm</td>
<td></td>
<td>2500</td>
</tr>
<tr>
<td>Tool flange</td>
<td></td>
<td>Operation method</td>
</tr>
<tr>
<td>400mm</td>
<td></td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
<tr>
<td>Cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specify various controller setting items. RCX340  P.566

Specifications

Axis  | X-axis  | Y-axis  | Z-axis  | R-axis  |
------|---------|---------|---------|---------|
Arm length | 500 mm  | 400 mm  | 200 mm  | 400 mm  |
Deceleration mechanism | Direct-coupled  | Direct-coupled  |
Repeatability | +/-0.02 mm  | +/-0.01 mm  | +/-0.004 |
Maximum speed | 9.9 m/sec  | 2.3 m/sec  | 1.7 m/sec  | 920 °/sec |
Maximum payload | 20 kg  |  |
Standard cycle time: with 2kg payload | 0.59 sec  | | |
R-axis tolerable moment of inertia | 1.0 kgm²  | | |
Protection class | Equivalent to IP65 (IEC 60529)  | | |
User wiring (sq × wires) | 0.2 × 20  | | |
User tubing (Outer diameter) | 6 × 3  | | |
Travel limit | 1. Soft limit  | 2. Mechanical stopper (X, Y, Z axis)  | | |
Robust cable length | | Standard: 3.5 m  | Option: 5 m, 10 m  | |
Weight | | Z axis 200 mm: 58 kg  | Z axis 400 mm: 60 kg  | |

Note 1. This is the value at a constant ambient temperature. (X, Y, Z axis)
Note 2. When reciprocating 25mm in vertical direction and 300mm in horizontal direction (rough-positioning arch motion).
Note 3. This is the value at a constant ambient temperature. (X, Y, Z axis)
Note 4. Do not use robots where the bellows section is directly exposed to water jet. Contact our distributor for information on dust-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>
</tbody>
</table>

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

Controller Power capacity (VA) Operation method

RCX340  2500  Programming / I/O point trace / Remote command / Operation using RS-232C communication

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.

YK900XGP

Connector for user wiring (No.1 to 20 usable), cable clamp size: ø16 to 18
Cover with the caps provided when not used.

4-11

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

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

If the robot enters the inside of R265 and corner of dimensions 98 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 motions.

Working envelope of left-handed system

X-axis mechanical stopper position : 132°
Y-axis mechanical stopper position : 158°

Working envelope of right-handed system

X-axis mechanical stopper position : 132°
Y-axis mechanical stopper position : 158°

There is no phase relation between each position of M5 tapped holes and R-axis origin position.
**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>600 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>100 W</td>
</tr>
<tr>
<td>Deceleration mechanism</td>
<td>Direct-coupled</td>
<td></td>
<td></td>
<td></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>Repeatability</td>
<td>+/- 0.02 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum speed</td>
<td>10.6 m/sec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum payload</td>
<td>20 kg</td>
<td></td>
<td></td>
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</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 (Outer diameter)</td>
<td>ϕ 6</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: 60 kg  Z axis 400 mm: 62 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>2500</td>
<td>Programming / I/O point trace / Remote command / Operation using RS-232C communication</td>
</tr>
</tbody>
</table>

**Note:**
- **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:** The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.
- **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.