APPLICATION
TRANSERVO Compact single-axis robots
FLIP-X Single-axis robots
PHASER Linear motor single-axis robots
XY-X Cartesian robots
YK-XG SCARA robots
YP-X Pick & place robots
CLEAN
CONTROLLER
INFORMATION
Single-axis
Cartesian
SCARA

# YK400XGC

● Arm length 400mm ● Maximum payload 4kg

## ■ Ordering method

YK400XGC - 150 □□□ □ RCX240S □ □□ □□ □□ □ BB

| Model | Z axis stroke | Tool flange | Cable length | Controller | Usable for CE | Expansion I/O Note 1 | Network optuon | iVY System | Gripper | Battery |
|---|---|---|---|---|---|---|---|---|---|---|
| | 150: 150mm | No entry: None<br>F: With tool flange | 3L: 3.5m<br>5L: 5m<br>10L: 10m | | No entry: Standard<br>E: CE marking | N, P: Standard I/O 16/8<br>N1, P1: 40/24<br>N2, P2: 64/40<br>N3, P3: 88/56<br>N4, P4: 112/72 | No entry: None<br>CC: CC-Link<br>DN: DeviceNet<br>PB: Profibus<br>EN: Ethernet<br>EP: EtherNet/IP<br>YC: YC-Link Note 2 | No entry: None<br>VY: iVY (Vision)<br>TR: iVY+Light +Tracking<br>LC: iVY+Light | No entry: None<br>GR: Gripper | BB: 4 pcs |

Note 1. Use N to N4 when NPN is selected on the I/O board, and P to P4 when PNP is selected.
Note 2. Available only for the master. See P.39 for details on YC-Link system.

## ■ Basic specifications

| Axis specifications | | X axis | Y axis | Z axis | R axis |
|---|---|---|---|---|---|
| | Arm length (mm) | 250 | 150 | 150 | – |
| | Rotation angle (°) | +/-129 | +/-144 | – | +/-360 |
| AC servo motor output (W) | | 200 | 150 | 50 | 100 |
| Repeatability Note 1 (XYZ: mm) (R: °) | | +/-0.01 | | +/-0.01 | +/-0.004 |
| Maximum speed (XYZ: m/sec) (R: °/sec) | | 6.1 | | 1.1 | 1020 |
| Maximum payload (kg) | | 4 | | | |
| Standard cycle time: with 2kg payload (sec)Note 2 | | 0.57 | | | |
| R-axis tolerable moment of inertia Note 3 (kgm²) | | 0.05 | | | |
| User wiring (sq × wires) | | 0.2×10 | | | |
| User tubing (Outer diameter) | | φ4×4 | | | |
| Travel limit | | 1.Soft limit,  2.Mechanical stopper (X, Y, Z axes) | | | |
| Robot cable length (m) | | Standard: 3.5  Option: 5, 10 | | | |
| Weight (kg) | | 22.5 | | | |
| Degree of cleanliness | | Class ISO 3 (ISO 14644-1) Note 4 +ESDNote 5 | | | |
| Intake air (Nℓ/min) | | 30 Note 6 | | | |

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. There are limits to acceleration coefficient settings. See P.478.
Note 4. Class 10 (0.1μm) equivalent to FED-STD-209D
Note 5. ESD (ElectroStatic Discharge) prevention is an option. Please contact our distributor.
Note 6. The necessary intake amount varies depending on the use conditions and environment.
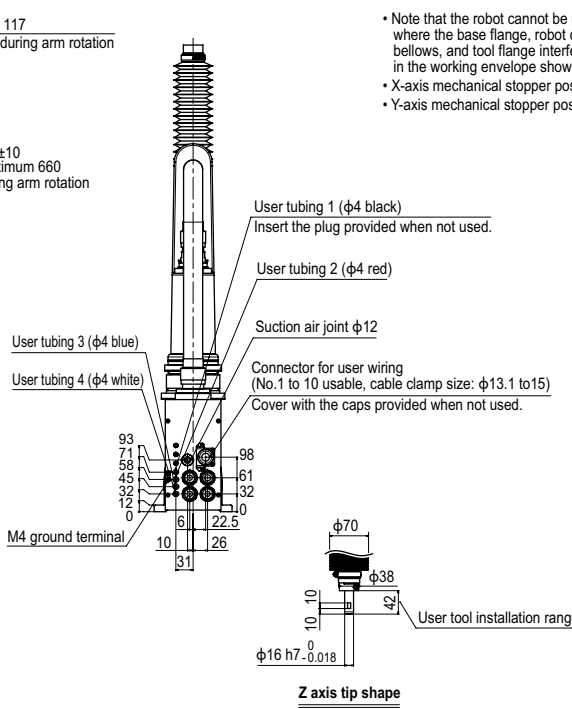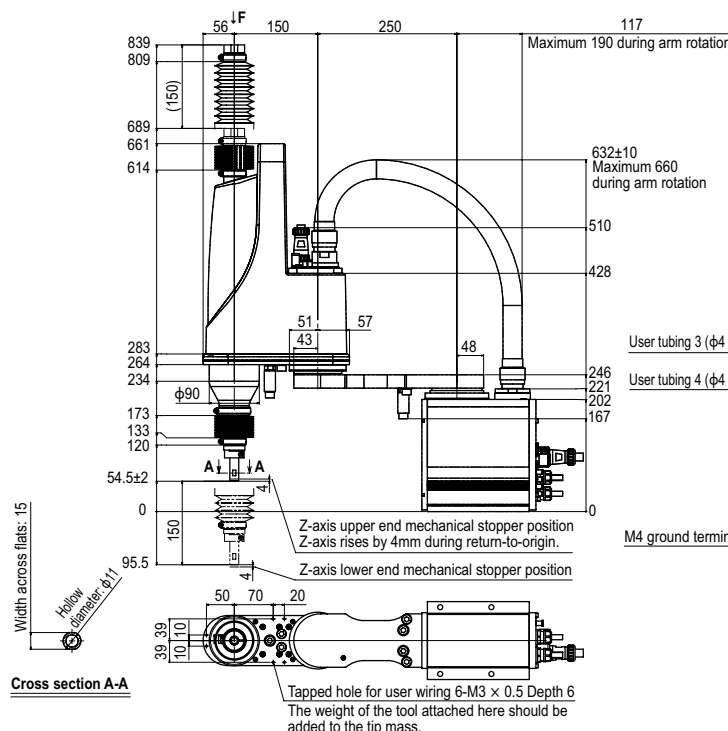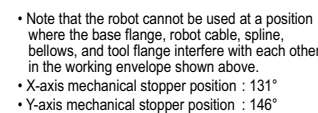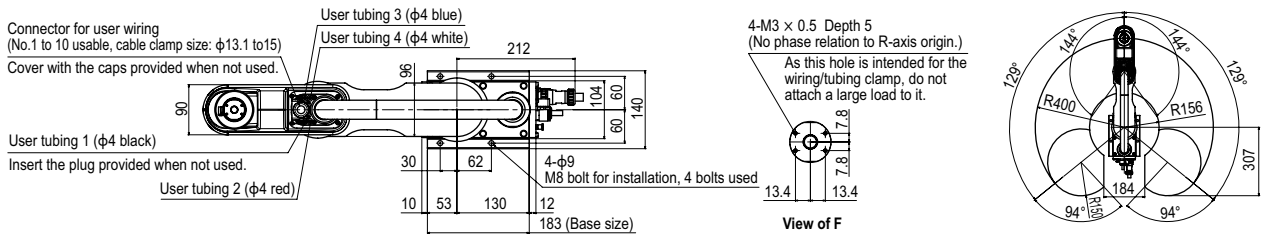
## ■ Controller

| Controller | Power capacity (VA) | Operation method |
|---|---|---|
| RCX240S | 1000 | 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.)
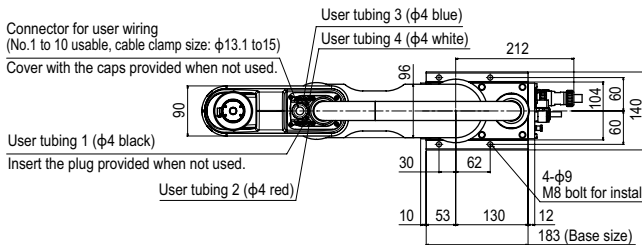See our robot manuals (installation manuals) for detailed information.
Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user's manual (installation manual) for more details.

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

## YK400XGC



Connector for user wiring
(No.1 to 10 usable, cable clamp size: φ13.1 to15)
Cover with the caps provided when not used.

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

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

User tubing 2 (φ4 red)

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

View of F

4-φ9
M8 bolt for installation, 4 bolts used

183 (Base size)

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

Maximum 190 during arm rotation

632±10
Maximum 660 during arm rotation

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

User tubing 2 (φ4 red)

Suction air joint φ12

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

Connector for user wiring
(No.1 to 10 usable, cable clamp size: φ13.1 to15)
Cover with the caps provided when not used.

M4 ground terminal

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

Z-axis lower end mechanical stopper position

Width across flats: 15

Hollow diameter φ11

Cross section A-A

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.

Z axis tip shape

φ70
φ38
φ16 h7 -0.018
User tool installation range

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## YK400XGC  Tool flange mount type

Connector for user wiring
(No.1 to 10 usable, cable clamp size: φ13.1 to15)
Cover with the caps provided when not used.

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

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

User tubing 2 (φ4 red)

212

96

90

104

60

60

140

30

62

4-φ9
M8 bolt for installation, 4 bolts used

10  53  130  12

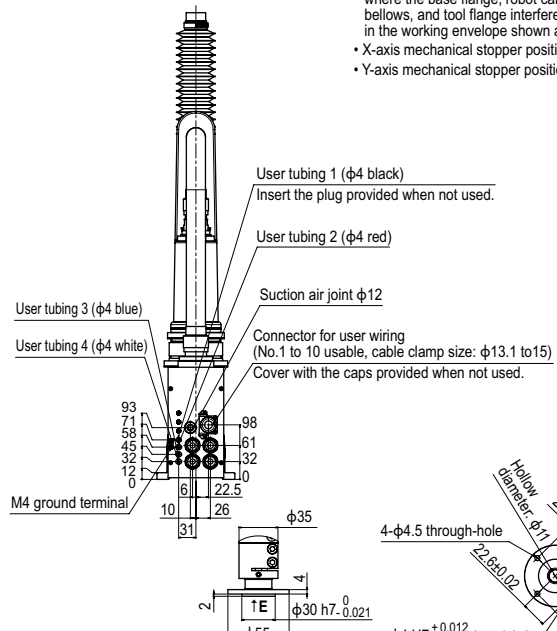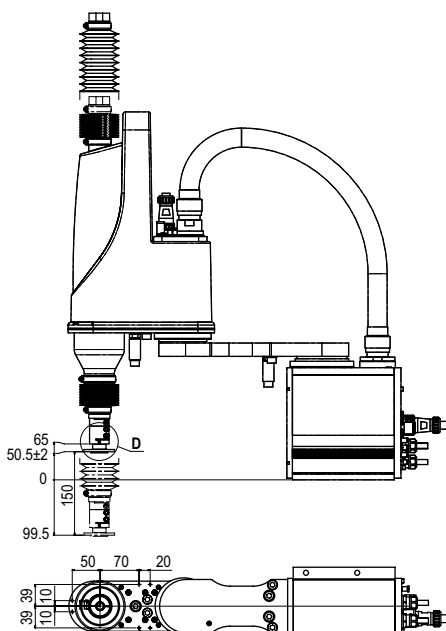183 (Base size)

4-M3 × 0.5  Depth 5
(No phase relation to R-axis origin.)

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

7.8

7.8

13.4  13.4

**View of F**

144°  144°
129°  129°
R400  R156
R150

307

184

94°  94°

R150

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

65
50.5±2
0

150

99.5

D

50  70  20

39  39
10 10
0

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.

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

User tubing 2 (φ4 red)

Suction air joint φ12

Connector for user wiring
(No.1 to 10 usable, cable clamp size: φ13.1 to15)
Cover with the caps provided when not used.

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

M4 ground terminal

93
71
58
45
32
12
0

6

98
61
32
0

22.5

10  26

31

φ35

4

2

↑E

φ30 h7 $_{-0.021}^{0}$

φ55

**Detailed drawing D**

Hollow diameter, φ11

22.6

22.6±0.02

22.6

22.6

90°

4-φ4.5 through-hole

φ4 H7 $_{0}^{+0.012}$ through-hole

7±0.02

22.6

**View of E**