

## PICK & PLACE ROBOTS

# YP-X SERIES

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Articulated robots  
YA

Linear conveyor modules  
LCM100

Compact single-axis robots  
TRANSERVO

Single-axis robots  
FLIP-X

Linear motor single-axis robots  
PHASER

Cartesian robots  
XY-X

SCARA robots  
YK-X

Pick & place robots  
YP-X

CLEAN

CONTROLLER

INFORMATION

2-axes

3-axes

4-axes

# YP-X SPECIFICATION SHEET

Type	Model	Maximum payload (kg)	Cycle time (sec) <sup>Note 1</sup>	Structure		Moving range	Detailed info page
2-axes	YP220BX	3	0.45	X-axis	Belt	200mm	P.431
				Z-axis	Belt	100mm	
	YP320X	3	0.57	X-axis	Ball screw	330mm	P.432
				Z-axis	Belt	100mm	
3-axes	YP220BXR	1	0.62	X-axis	Belt	200mm	P.433
				Z-axis	Belt	100mm	
				R-axis	Rotation axis	+/-180°	
	YP320XR	1	0.67	X-axis	Ball screw	330mm	P.434
				Z-axis	Belt	100mm	
				R-axis	Rotation axis	+/-180°	
4-axes	YP340X	1	0.67	X-axis	Ball screw	330mm	P.435
				Y-axis	Ball screw	150mm	
				Z-axis	Belt	100mm	
				R-axis	Rotation axis	+/-180°	
				X-axis	Ball screw	330mm	P.436
				Y-axis	Ball screw	150mm	
				Z-axis	Belt	100mm	
				R-axis	Rotation axis	+/-180°	

Note 1. Cycle time is the time required for moving back and forth 150mm (arch 50) and vertically 50mm (during rough-positioning motion with 1kg load).

## Robot ordering method description

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

### [Example]

#### ■ 2-axis specifications

##### ● Mechanical ▶ YP220BX

- Robot cable length ▶ 3.5m

##### ● Controller ▶ RCX222

- Usable for CE ▶ Not required
- Input/Output selection 1 ▶ NPN
- Input/Output selection 2 ▶ None

#### ● Ordering method

## YP220BX-3L-RCX222-N

Mechanical section

Controller section

		<b>RCX222</b>			
<b>① Model</b>	<b>② Cable length</b>	<b>③ Controller</b>	<b>④ Usable for CE</b>	<b>⑤ Input/Output selection 1</b>	<b>⑥ Input/Output selection 2</b>
YP220BX YP320X	3L 3.5m 5L 5m 10L 10m		No entry Standard E CE marking	N NPN <sup>Note 1</sup> P PNP CC CC-Link DN DeviceNet™ PB PROFIBUS EN Ethernet YC YC-Link <sup>Note 2</sup>	No entry None N1 OP.DIO 24/16 (NPN) <sup>Note 1</sup> P1 OP.DIO 24/17 (PNP) EN Ethernet <sup>Note 3</sup>

Note 1. With the CE marking, it is not possible to select NPN or Ethernet.

Note 2. Available only for the master.

Note 3. Only when CC-Link or DeviceNet™ or PROFIBUS was selected for I/O select 1 above. Ethernet can be selected in I/O select 2.

#### ■ 3 / 4 axis specifications

##### ● Mechanical ▶ YP340X

- Robot cable length ▶ 5m

##### ● Controller ▶ RCX240S

#### ● Ordering method

## YP340X-5L-RCX240S

Mechanical section

Controller section

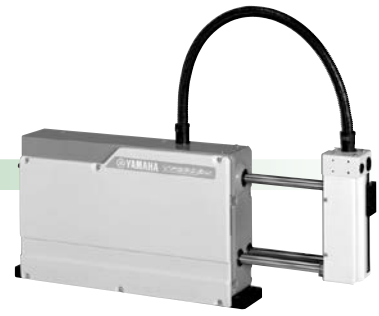
<b>① Model</b>	<b>② Cable length</b>	<b>③ Controller</b>
YP220BXR YP320XR YP330X YP340X	3L 3.5m 5L 5m 10L 10m	RCX240S RCX340

To find detailed controller information see the controller page. **RCX222 ▶ P.526**, **RCX240S ▶ P.534**, **RCX340 ▶ P.544**

## Robot ordering method terminology

<b>① Model</b>	Enter the robot unit model.
<b>② Cable length</b>	Select the length of the robot cable connecting the robot and controller. <b>3L:</b> 3.5m <b>5L:</b> 5m <b>10L:</b> 10m
<b>③ Controller</b>	<b>2-axis specifications:</b> Select the RCX222. <b>3 / 4 axis specifications:</b> Select either the RCX240S or RCX340.

# YP220BX 2 axes



## Ordering method

<b>YP220BX</b>		<b>RCX222</b>			
<b>Model</b>	<b>Cable length</b>	<b>Controller</b>	<b>Usable for CE</b>	<b>Inputs/Outputs selection 1</b>	<b>Inputs/Outputs selection 2</b>
	3L: 3.5m 5L: 5m 10L: 10m	RCX222	No entry: Standard E: CE marking	N: NPN <sup>Note 2</sup> P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS EN: Ethernet YC: YC-Link <sup>Note 1</sup>	No entry: None N1: OP.DIO24/16 (NPN) <sup>Note 2</sup> P1: OP.DIO24/17 (PNP) EN: Ethernet <sup>Note 3</sup>

Note 1. Available only for the master.  
 Note 2. NPN cannot be selected if using CE marking.  
 Note 3. Only when you have selected CC, DN or PB for Input/Output selection 1, you can select EN for Input/Output selection 2.

## Specifications

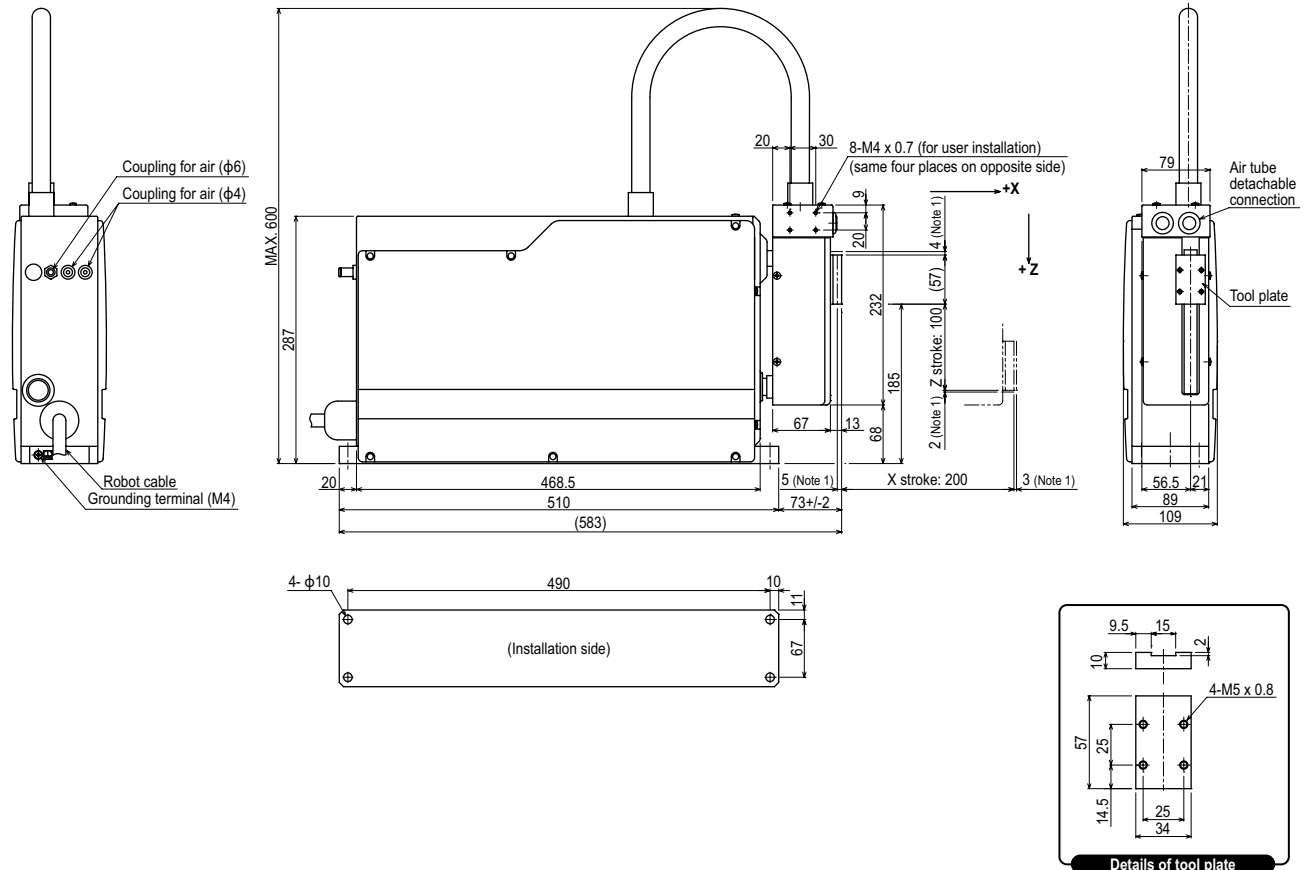
	X axis	Z axis
AC servo motor output (W)	200	200
Repeatability <sup>Note 1</sup> (mm)	+/-0.05	+/-0.05
Drive system	Timing belt	Timing belt
Deceleration ratio (mm)	Equivalent to lead 24	Equivalent to lead 20
Maximum speed <sup>Note 2</sup> (mm/sec)	1440	1200
Moving range (mm)	200	100
Cycle time (sec)	0.45 <sup>Note 3</sup>	
Maximum payload (kg)	3	
Robot cable length (m)	Standard: 3.5 Option: 5,10	
Weight (kg)	17	

Note 1. Positioning repeatability precision in a single swing when residual vibration is stabilized (variable depending on the load and stroke).  
 Note 2. When the moving stroke is short, the maximum speed may not be reached.  
 Note 3. Reciprocating time in vertical direction (50mm) and longitudinal direction (150mm) with the arch amount of 50 (when executing rough-positioning arch motion with 1kg load).

## Controller

Controller	Power consumption (VA)	Operating method
RCX222	500	Programming / I/O point trace / Remote command / Operation using RS-232C communication

## YP220BX



Note 1. Distance to mechanical stopper.  
 Note 2. Return-to-origin on the YP220BX is by absolute reset. So the origin position must be set the first time (making initial settings) but after that is not required.

Articulated robots  
YA

Linear conveyor modules  
LCM100

Compact single-axis robots  
TRANSEVO

Single-axis robots  
FLIP-X

Linear motor single-axis robots  
PHASER

Cartesian robots  
XY-X

SCARA robots  
YK-X

Pick & place robots  
YP-X

CLEAN

CONTROLLER INFORMATION

2-axes

3-axes

4-axes

# YP320X 2 axes



## Ordering method

<b>YP320X</b>		<b>RCX222</b>			
<b>Model</b>	<b>Cable length</b>	<b>Controller</b>	<b>Usable for CE</b>	<b>Inputs/Outputs selection 1</b>	<b>Inputs/Outputs selection 2</b>
	3L: 3.5m 5L: 5m 10L: 10m	RCX222	No entry: Standard E: CE marking	N: NPN <sup>Note 2</sup> P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS EN: Ethernet YC: YC-Link <sup>Note 1</sup>	No entry: None N1: OP.DIO24/16 (NPN) <sup>Note 2</sup> P1: OP.DIO24/17 (PNP) EN: Ethernet <sup>Note 3</sup>

Note 1. Available only for the master.  
 Note 2. NPN cannot be selected if using CE marking.  
 Note 3. Only when you have selected CC, DN or PB for Input/Output selection 1, you can select EN for Input/Output selection 2.

## Specifications

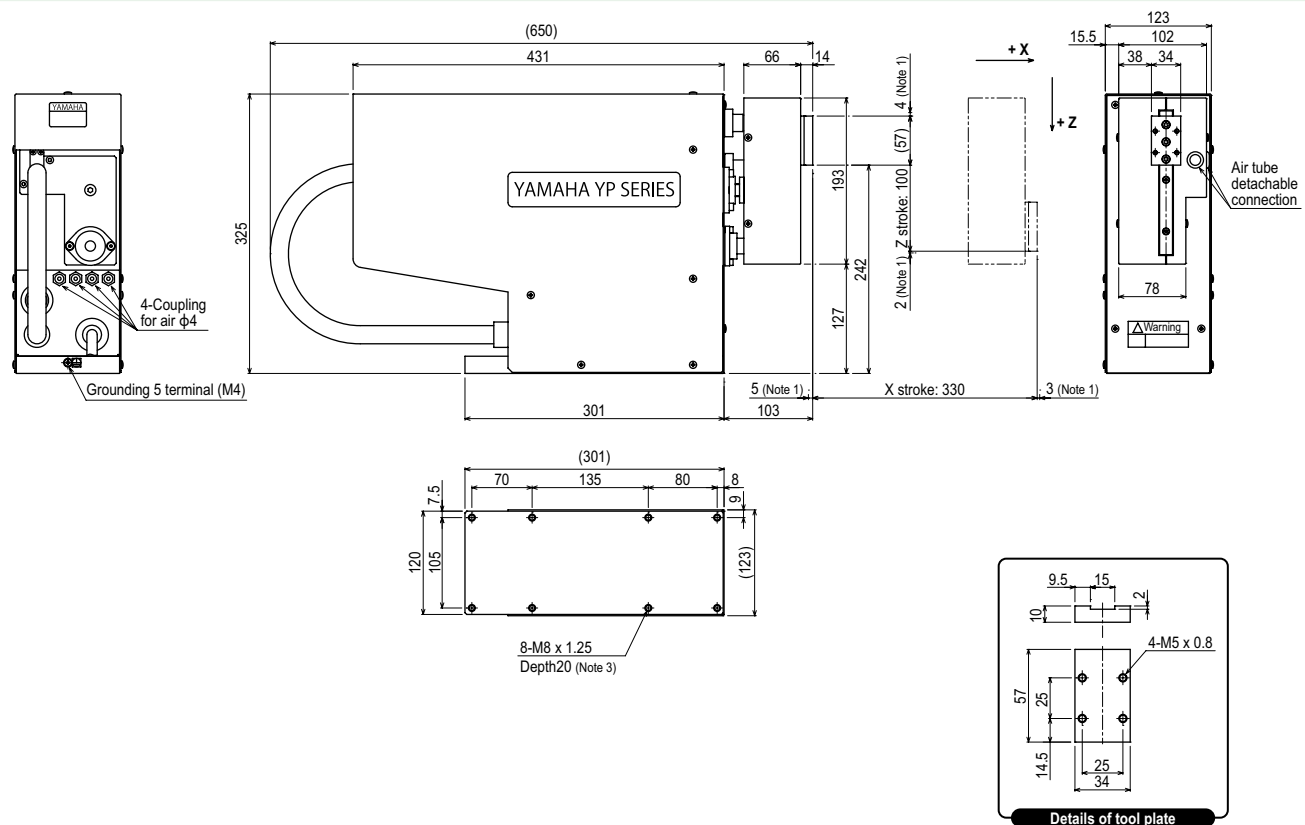
	X axis	Z axis
<b>AC servo motor output (W)</b>	200	200
<b>Repeatability<sup>Note 1</sup> (mm)</b>	+/-0.02	+/-0.05
<b>Drive system</b>	Ball screw (C7 class)	Timing belt
<b>Deceleration ratio (mm)</b>	Equivalent to lead 20	Equivalent to lead 25
<b>Maximum speed<sup>Note 2</sup> (mm/sec)</b>	1500	1500
<b>Moving range (mm)</b>	330	100
<b>Cycle time (sec)</b>	0.57 <sup>Note 3</sup> , 0.78 <sup>Note 4</sup>	
<b>Maximum payload (kg)</b>	3	
<b>Robot cable length (m)</b>	Standard: 3.5 Option: 5,10	
<b>Weight (kg)</b>	21	

Note 1. Positioning repeatability precision in a single swing when residual vibration is stabilized (variable depending on the load and stroke).  
 Note 2. When the moving stroke is short, the maximum speed may not be reached.  
 Note 3. Reciprocating time in vertical direction (50mm) and longitudinal direction (150mm) with the arch amount of 50 (when executing rough-positioning arch motion with 1kg load).  
 Note 4. Reciprocating time in vertical direction (25mm) and longitudinal direction (300mm) with the arch amount of 25 (when executing rough-positioning arch motion with 1kg load).

## Controller

Controller	Power consumption (VA)	Operating method
RCX222	500	Programming / I/O point trace / Remote command / Operation using RS-232C communication

## YP320X



Note 1. Distance to mechanical stopper.  
 Note 2. Return-to-origin on the YP320X is by absolute reset. So the origin position must be set the first time (making initial settings) but after that is not required.  
 Note 3. Do not use bolts longer than 20mm (robot bottom plate thickness).

# YP220BXR 3 axes



## Ordering method

**YP220BXR**

Model	Cable length
	3L: 3.5m
	5L: 5m
	10L: 10m

**RCX340-3**

Controller / Number of controllable axes	Safety standard	Option A (OP.A)	Option B (OP.B)	Option C (OP.C)	Option D (OP.D)	Option E (OP.E)	Absolute battery
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Specify various controller setting items. RCX340 ▶ **P.544**

**RCX240S**

Controller	CE Marking	Expansion I/O	Network option	iVY System	Gripper	Battery
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Specify various controller setting items. RCX240/RCX240S ▶ **P.534**

## Specifications

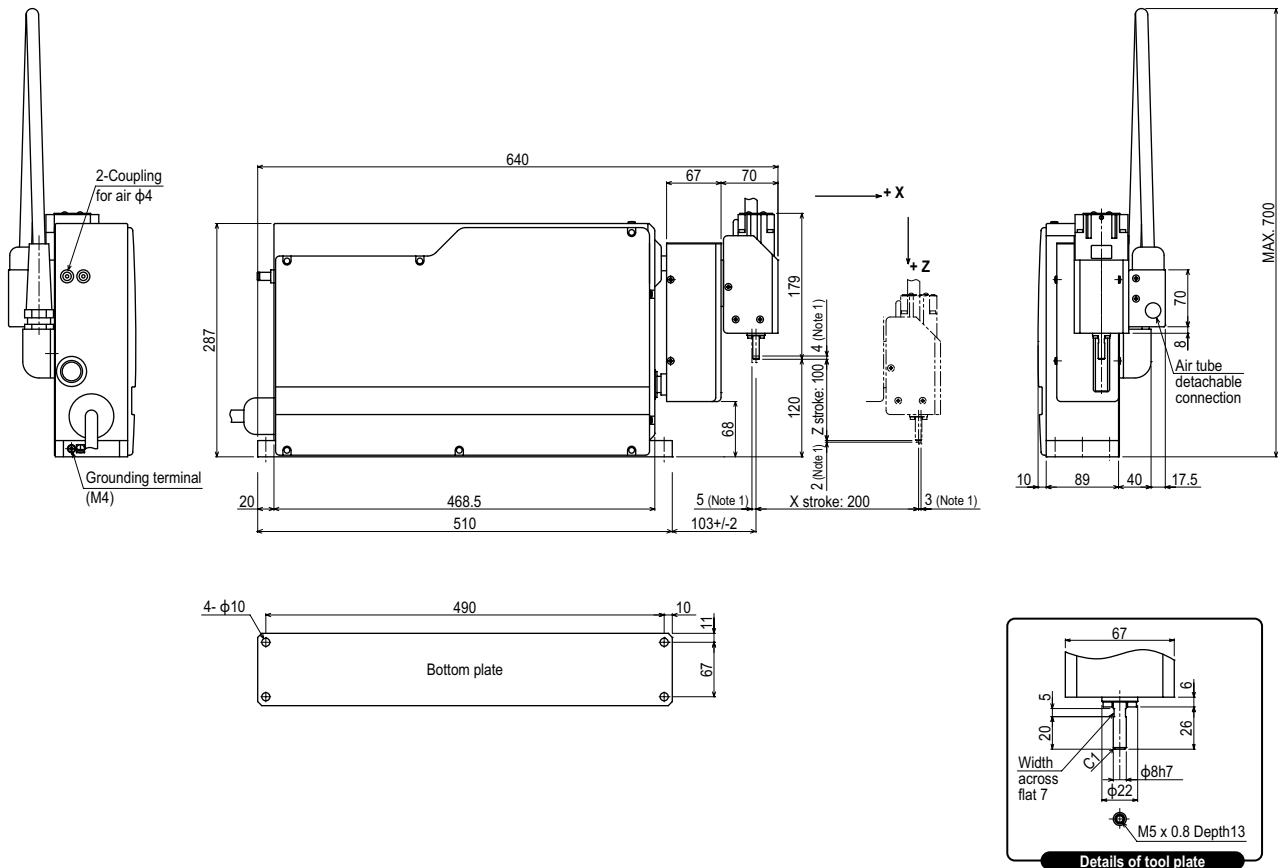
	X axis	Z axis	R axis
AC servo motor output (W)	200	200	60
Repeatability <sup>Note 1</sup> (mm)	+/-0.05	+/-0.05	+/-0.1
Drive system	Timing belt	Timing belt	Ball Reducer
Deceleration ratio (mm)	Equivalent to lead 24	Equivalent to lead 20	1/18
Maximum speed <sup>Note 2</sup> (XZ: mm/sec) (R: °/sec)	1440	1200	1000
Moving range (XZ: mm) (R: °)	200	100	+/-180
Cycle time (sec)	0.62 <sup>Note 3</sup>		
Maximum payload (kg)	1		
R-axis allowable moment inertia (kgm <sup>2</sup> [kgfcm <sup>2</sup> ])	0.00098 [0.01]		
Robot cable length (m)	Standard: 3.5 Option: 5,10		
Weight (kg)	19		

Note 1. Positioning repeatability precision in a single swing when residual vibration is stabilized (variable depending on the load and stroke).  
 Note 2. When the moving stroke is short, the maximum speed may not be reached.  
 Note 3. Reciprocating time in vertical direction (50mm) and longitudinal direction (150mm) with the arch amount of 50 (when executing rough-positioning arch motion with 1kg load).

## Controller

Controller	Power consumption (VA)	Operating method
RCX340 RCX240S	700	Programming / I/O point trace / Remote command / Operation using RS-232C communication

## YP220BXR



Note 1. Distance to mechanical stopper.  
 Note 2. Return-to-origin on the YP220BXR is by absolute reset. So the origin position must be set the first time (making initial settings) but after that is not required.

Articulated robots  
YA

Linear conveyor modules  
LCM100

Compact single-axis robots  
TRANSEVO

Single-axis robots  
FLIP-X

Linear motor single-axis robots  
PHASER

Cartesian robots  
XX-X

SCARA robots  
YK-X

Pick & place robots  
YP-X

CLEAN

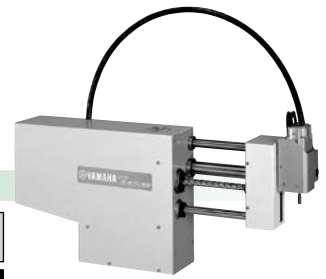
CONTROLLER INFORMATION

2-axes

3-axes

4-axes

# YP320XR 3 axes



## Ordering method

**YP320XR**  **RCX340-3**

Model Cable length  
 3L: 3.5m  
 5L: 5m  
 10L: 10m

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

Specify various controller setting items. RCX340 ▶ **P.544**

**RCX240S**

Controller CE Marking Expansion I/O Network option iVY System Gripper Battery

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

## Specifications

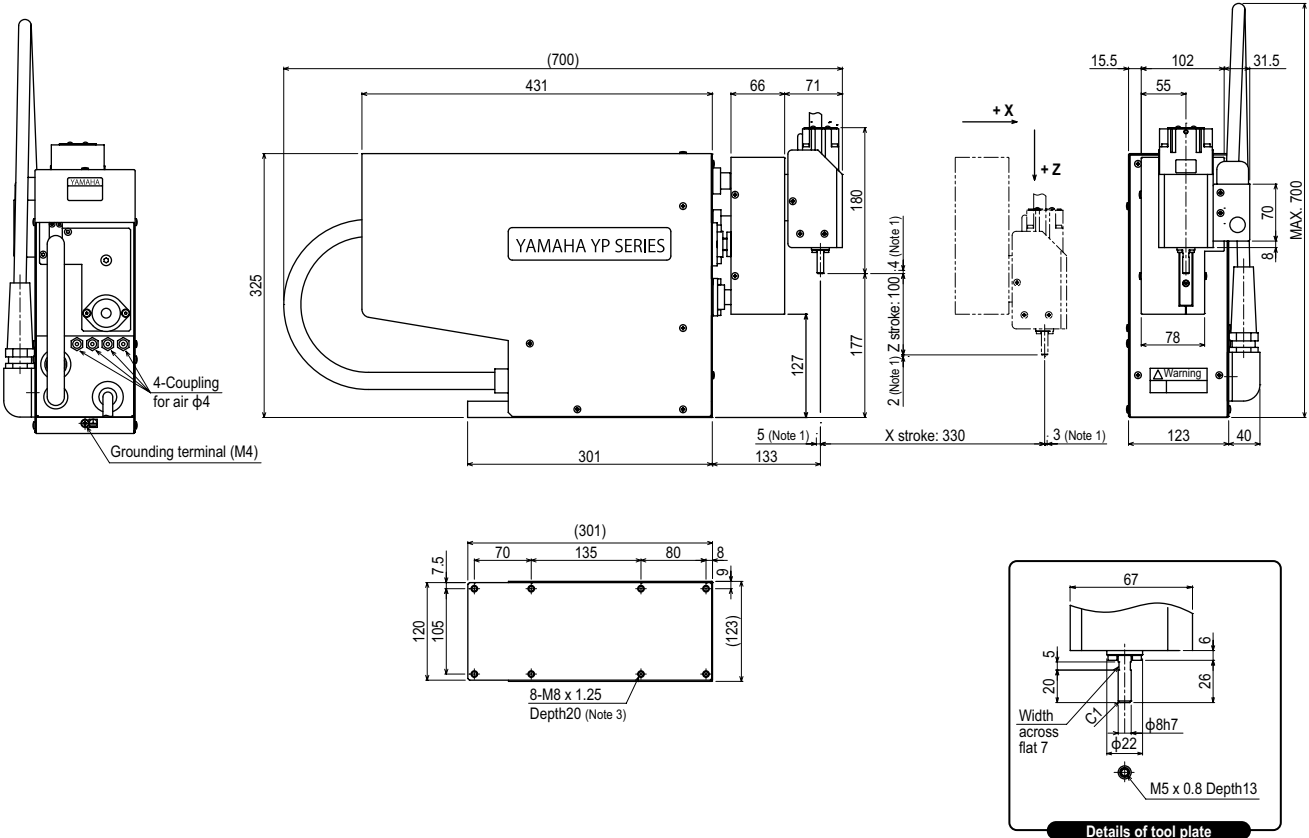
	X axis	Z axis	R axis
AC servo motor output (W)	200	200	60
Repeatability <sup>Note 1</sup> (XZ: mm) (R: °)	+/-0.02	+/-0.05	+/-0.1
Drive system	Ball screw (C7 class)	Timing belt	Ball Reducer
Deceleration ratio (mm)	Equivalent to lead 20	Equivalent to lead 25	1/18
Maximum speed <sup>Note 2</sup> (XZ: mm/sec) (R: °/sec)	1500	1500	1000
Moving range (XZ: mm) (R: °)	330	100	+/-180
Cycle time (sec)	0.67 <sup>Note 3</sup> , 0.87 <sup>Note 4</sup>		
Maximum payload (kg)	1		
R-axis allowable moment inertia (kgm <sup>2</sup> [kgfcm <sup>2</sup> ])	0.00098 [0.01]		
Robot cable length (m)	Standard: 3.5 Option: 5,10		
Weight (kg)	23		

Note 1. Positioning repeatability precision in a single swing when residual vibration is stabilized (variable depending on the load and stroke).  
 Note 2. When the moving stroke is short, the maximum speed may not be reached.  
 Note 3. Reciprocating time in vertical direction (50mm) and longitudinal direction (150mm) with the arch amount of 50 (when executing rough-positioning arch motion with 1kg load).  
 Note 4. Reciprocating time in vertical direction (25mm) and longitudinal direction (300mm) with the arch amount of 25 (when executing rough-positioning arch motion with 1kg load).

## Controller

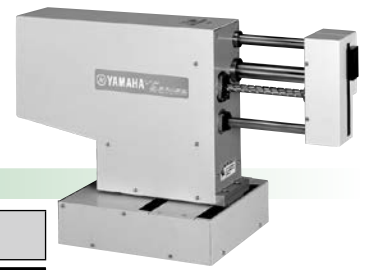
Controller	Power consumption (VA)	Operating method
RCX340 RCX240S	700	Programming / I/O point trace / Remote command / Operation using RS-232C communication

## YP320XR



Note 1. Distance to mechanical stopper.  
 Note 2. Return-to-origin on the YP320XR is by absolute reset. So the origin position must be set the first time (making initial settings) but after that is not required.  
 Note 3. Do not use bolts longer than 20mm (robot bottom plate thickness).

# YP330X 3 axes



## Ordering method

### YP330X

Model	Cable length
	3L: 3.5m
	5L: 5m
	10L: 10m

### RCX340-3

Controller / Number of controllable axes	Safety standard	Option A (OP.A)	Option B (OP.B)	Option C (OP.C)	Option D (OP.D)	Option E (OP.E)	Absolute battery
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Specify various controller setting items. RCX340 ▶ **P.544**

### RCX240S

Controller	CE Marking	Expansion I/O	Network option	iVY System	Gripper	Battery
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Specify various controller setting items. RCX240/RCX240S ▶ **P.534**

## Specifications

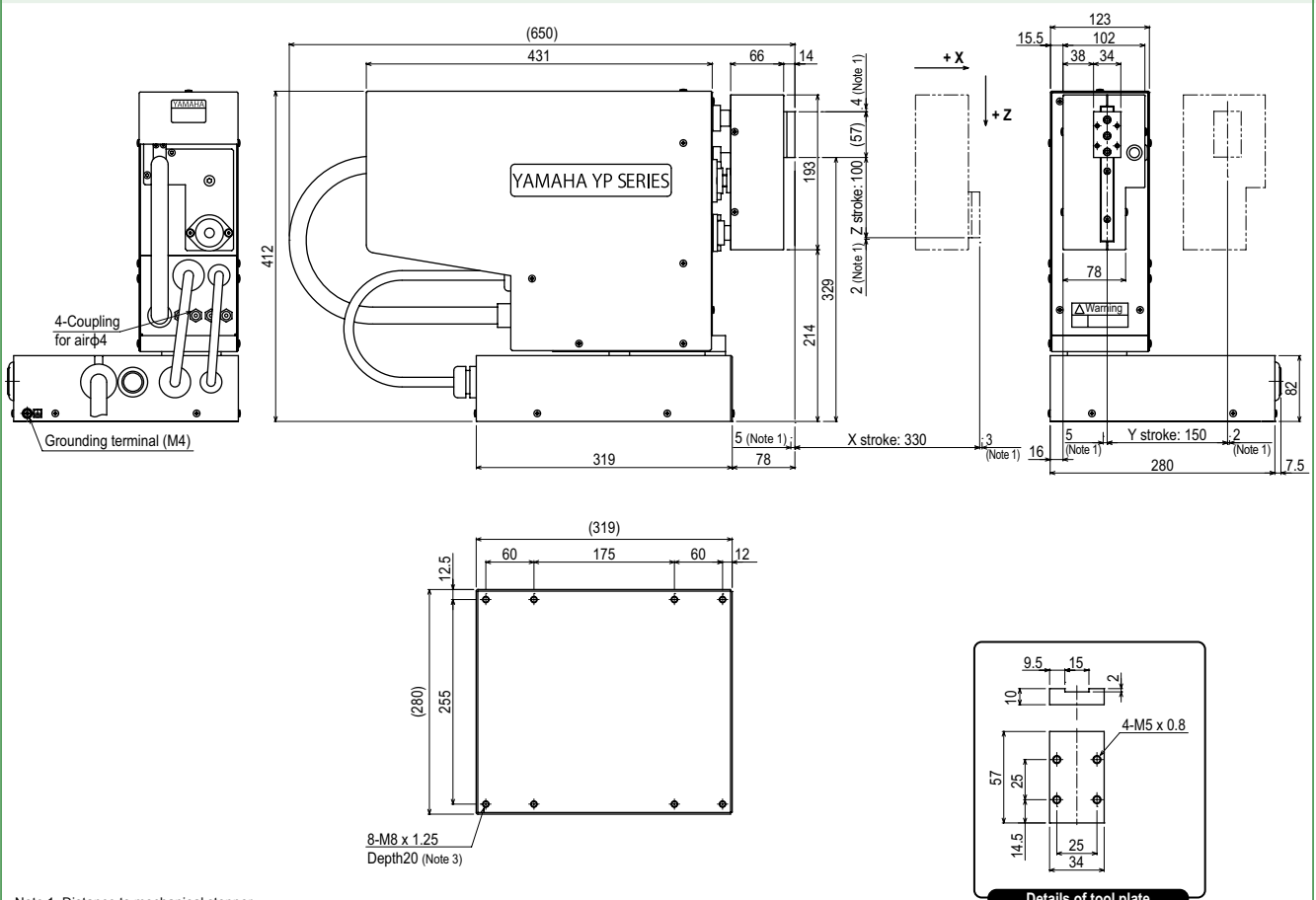
	X axis	Y axis	Z axis
AC servo motor output (W)	200	200	200
Repeatability <sup>Note 1</sup> (mm)	+/-0.02	+/-0.02	+/-0.05
Drive system	Ball screw (C7 class)	Ball screw (C7 class)	Timing belt
Deceleration ratio (mm)	Equivalent to lead 20	Equivalent to lead 20	Equivalent to lead 25
Maximum speed <sup>Note 2</sup> (mm/sec)	1500	1000	1500
Moving range (mm)	330	150	100
Cycle time (sec)	0.57 <sup>Note 3</sup> , 0.78 <sup>Note 4</sup>		
Maximum payload (kg)	3		
Robot cable length (m)	Standard: 3.5 Option: 5,10		
Weight (kg)	32		

Note 1. Positioning repeatability precision in a single swing when residual vibration is stabilized (variable depending on the load and stroke).  
 Note 2. When the moving stroke is short, the maximum speed may not be reached.  
 Note 3. Reciprocating time in vertical direction (50mm) and longitudinal direction (150mm) with the arch amount of 50 (when executing rough-positioning arch motion with 1kg load).  
 Note 4. Reciprocating time in vertical direction (25mm) and longitudinal direction (300mm) with the arch amount of 25 (when executing rough-positioning arch motion with 1kg load).

## Controller

Controller	Power consumption (VA)	Operating method
RCX340 RCX240S	700	Programming / I/O point trace / Remote command / Operation using RS-232C communication

YP330X



Note 1. Distance to mechanical stopper.  
 Note 2. Return-to-origin on the YP330X is by absolute reset. So the origin position must be set the first time (making initial settings) but after that is not required.  
 Note 3. Do not use bolts longer than 20mm (robot bottom plate thickness).

Controller

**RCX340 ▶ 544 RCX240S ▶ 534**

Articulated robots  
YA

Linear conveyor modules  
LCM100

Compact single-axis robots  
TRANSEVO

Single-axis robots  
FLIP-X

Linear motor single-axis robots  
PHASER

Cartesian robots  
XX-X

SCARA robots  
YK-X

Pick & place robots  
YP-X

CLEAN

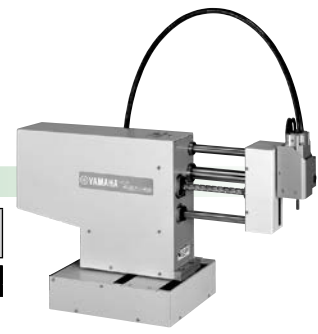
CONTROLLER INFORMATION

2-axes

3-axes

4-axes

# YP340X 4 axes



## Ordering method

**YP340X**

Model

Cable length  
3L: 3.5m  
5L: 5m  
10L: 10m

**RCX340-4**

Controller /  
Number of controllable axes

Safety  
standard

Option A  
(OP.A)

Option B  
(OP.B)

Option C  
(OP.C)

Option D  
(OP.D)

Option E  
(OP.E)

Absolute  
battery

Specify various controller setting items. RCX340 ▶ **P.544**

**RCX240S**

Controller

CE Marking

Expansion I/O

Network option

iVY System

Gripper

Battery

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

## Specifications

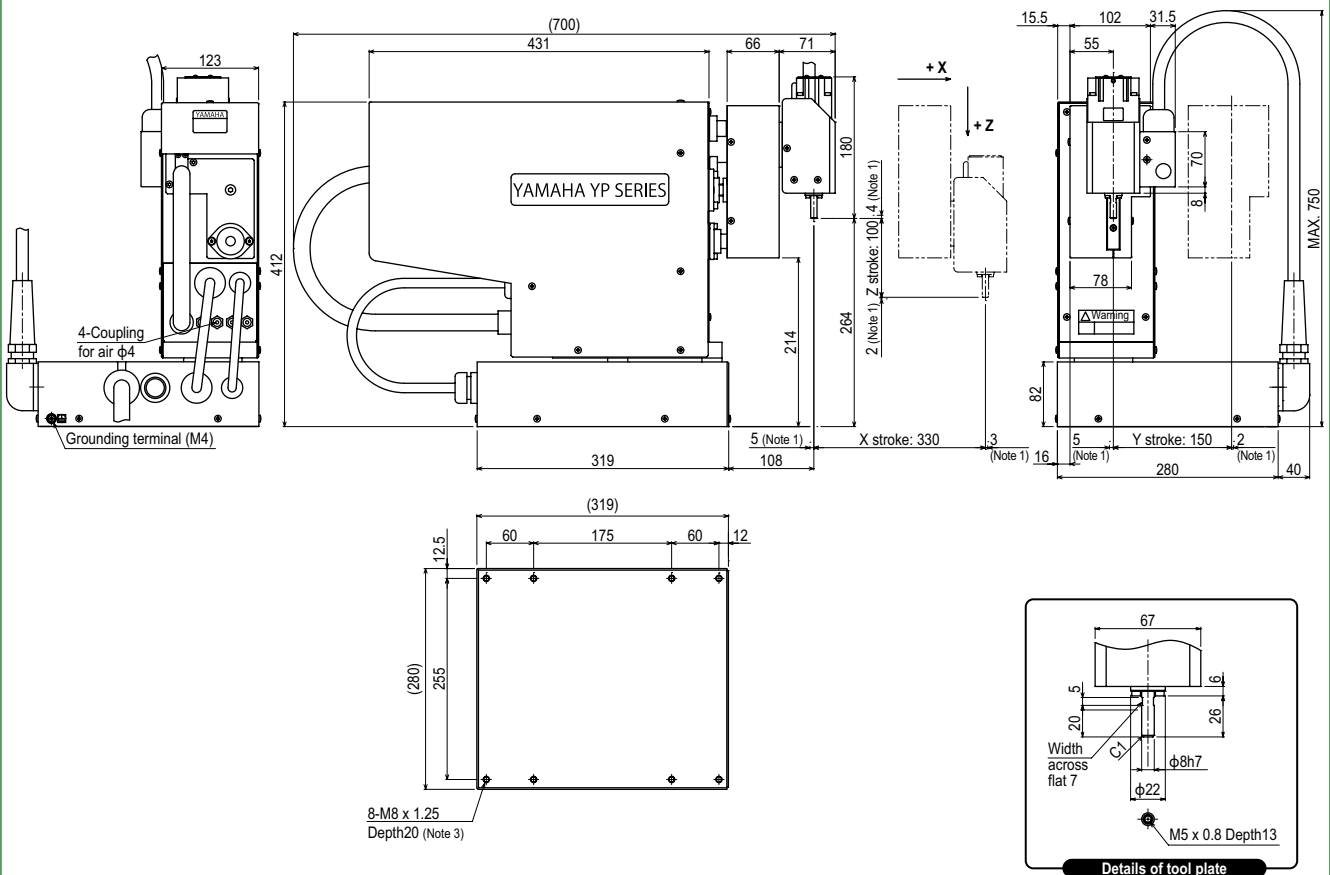
	X axis	Y axis	Z axis	R axis
AC servo motor output (W)	200	200	200	60
Repeatability <sup>Note 1</sup> (XYZ: mm)(R: °)	+/-0.02	+/-0.02	+/-0.05	+/-0.1
Drive system	Ball screw (C7 class)	Ball screw (C7 class)	Timing belt	Ball Reducer
Deceleration ratio (mm)	Equivalent to lead 20	Equivalent to lead 20	Equivalent to lead 25	1/18
Maximum speed <sup>Note 2</sup> (XYZ: mm/sec) (R: °/sec)	1500	1000	1500	1000
Moving range (XYZ: mm) (R: °)	330	150	100	+/-180
Cycle time (sec)	0.67 <sup>Note 3</sup> , 0.87 <sup>Note 4</sup>			
Maximum payload (kg)	1			
R-axis allowable moment inertia (kgm <sup>2</sup> [kgfcm <sup>2</sup> ])	0.00098 [0.01]			
Robot cable length (m)	Standard: 3.5 Option: 5,10			
Weight (kg)	34			

- Note 1. Positioning repeatability precision in a single swing when residual vibration is stabilized (variable depending on the load and stroke).  
 Note 2. When the moving stroke is short, the maximum speed may not be reached.  
 Note 3. Reciprocating time in vertical direction (50mm) and longitudinal direction (150mm) with the arch amount of 50 (when executing rough-positioning arch motion with 1kg load).  
 Note 4. Reciprocating time in vertical direction (25mm) and longitudinal direction (300mm) with the arch amount of 25 (when executing rough-positioning arch motion with 1kg load).

## Controller

Controller	Power consumption (VA)	Operating method
RCX340 RCX240S	800	Programming / I/O point trace / Remote command / Operation using RS-232C communication

## YP340X



- Note 1. Distance to mechanical stopper.  
 Note 2. Return-to-origin on the YP340X is by absolute reset. So the origin position must be set the first time (making initial settings) but after that is not required.  
 Note 3. Do not use bolts longer than 20mm (robot bottom plate thickness).

