

CARTESIAN ROBOTS

Offering a full lineup of Cartesian robots that come with just the right performance and size to match user needs & ideal for diverse spectrum of job tasks.



Complete line-up

Full spectrum robot lineup includes the compact and low-priced PXYx type, the long distance HXYLx type conveying payloads up to 50kg, and the NXY that supports double-arm specs with a hollow servo motor in the X-axis. Full selection of arm and performance variations is perfect for meeting diverse customer needs. We also accept special orders for models not listed in the catalog. Feel free to consult us for help in meeting your special work needs.

Product Lineup

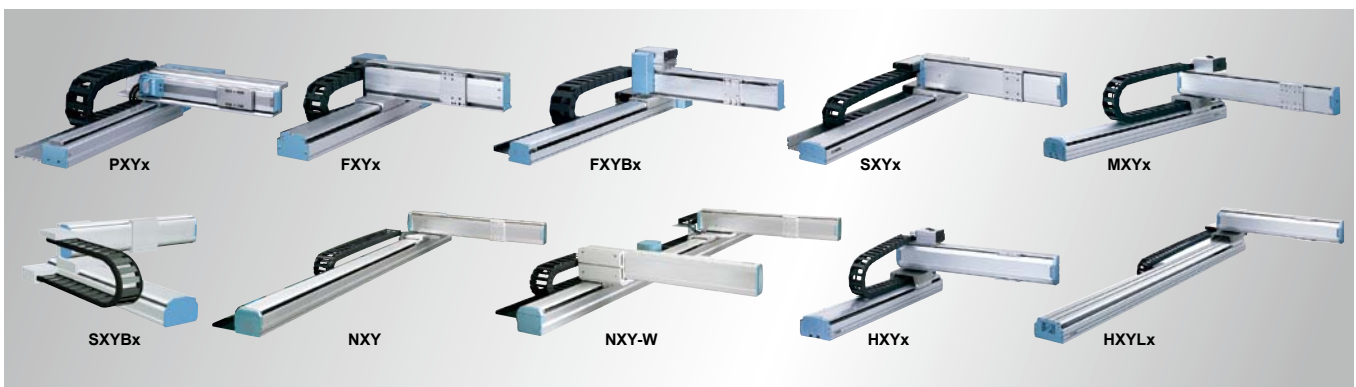
XY-X
Series

Offering a full lineup of Cartesian robots to support a wide array of applications

Various variations

Models with 3 or more axes can be selected from: • Z-axis clamped base and moving table type
• Z-axis clamped table and moving base type

P.154



Model	Arm variations					Number of axes	Maximum payload (kg)	Maximum stroke (mm)	
	Arm	Gantry	Moving arm	Pole	XZ			X axis	Y axis
PXYx	●	-	-	-	-	2 axes	4.5	150 to 650	50 to 300
FXYx	●	-	-	-	-	2 axes / 3 axes	12	150 to 1050	150 to 550
FXYBx	●	-	-	-	-	2 axes	7	150 to 2450	150 to 550
SXYx	●	-	●	●	●	2 axes / 3 axes / 4 axes	20	150 to 1050	150 to 650
SXYBx	●	-	-	-	●	2 axes / 3 axes / 4 axes	14	150 to 3050	150 to 550
MXYx	●	●	●	●	●	2 axes / 3 axes / 4 axes	30	250 to 1250	150 to 650
NXY	●	-	-	-	-	2 axes / 3 axes	25	500 to 2000	150 to 650
NXY-W	●	-	-	-	-	4 axes / 6 axes	25	250 to 1750	150 to 650
HXYx	●	●	●	●	●	2 axes / 3 axes / 4 axes	40	250 to 1250	250 to 650
HXYLx	●	●	-	-	-	2 axes	40	1150 to 2050	250 to 650

Note. The above maximum payloads are maximum stroke lengths are values when using arm type/cable carrier specifications.



Special orders

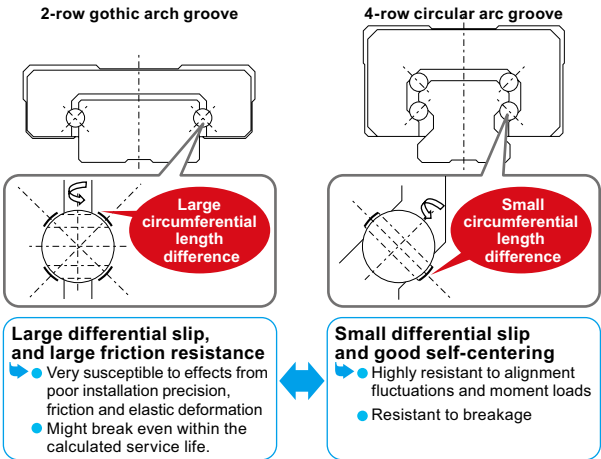
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URL
<http://www.yamaha-motor.co.jp/global/industrial/robot/>
 E-mail
robotn@yamaha-motor.co.jp

Point 1

Uses a 4-row 2-point groove guide rail for superb durability!

The XY-X uses 4-row circular arc groove 2-point contact guides having minimal differential ball slip. These can handle large static loads when compared to 2-row Gothic arch 4-point contact guides and deliver a stable product service life even on Cartesian robots where a constant moment is applied.



Point 2

Streamlined maintenance tasks

Even though it uses a built-in structure, components such as the motor and ball screw can be replaced individually so maintenance tasks are smooth and simple.

Point 3

Tough & highly reliable resolver

The position detector is a resolver. The resolver has a simple yet strong structure using not electronic components or elements and so has great features such as being extremely tough in harsh environments as well as a low breakdown rate. The resolver structure has none of the detection problems that occur in other detectors such as optical encoders whose electronic components breakdown or suffer from moisture or oil that sticks to the disk. Moreover, **mechanical specifications for both absolute and incremental specifications are common to all controllers** ^{Note 1} so one can switch to either absolute or incremental specifications just by setting a parameter. Also even if the absolute battery is completely worn down, the XY-X can operate on incremental specifications so in the unlikely event of trouble one can feel secure knowing that there will be no need to stop the production line. The backup circuit has been completely renovated and now has a backup period extending to 1 year. ^{Note 2}

Note 1. Not including the ERCD and RD series that are only for incremental operation.
 Note 2. Exclude DRCX

Point 4

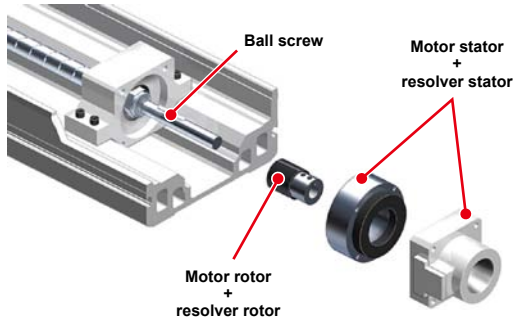
Reasonable price

We achieved an even lower price by cutting down on the number of parts while boosting basic performance. Using a resolver in the structure helped to finally eliminate the "absolute units are expensive" idea. Moreover, the mechanical components are the same regardless of whether incremental or absolute unit specifications are used.

Point 5

Lightweight & compact

Ball screw drive motor is built directly into the unit with no coupling. This arrangement eliminates dead space and delivers a smaller unit footprint.

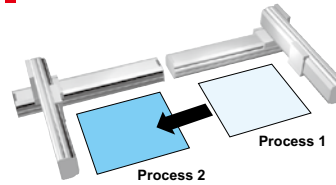


Point 6

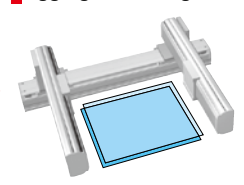
Supports double Y axis standard specs

The NXY with its nut rotation type structure supports a double Y axis where 2 carriers are placed along the same axis. The compact unit formed here by 2 Cartesian robots not only boosts work efficiency but saves space at a low cost.

Layout using 2 units of conventional cartesian robots



Space saving & process aggregation using NXY-W



Arm & cable variations

Cable variations

Cable specifications are available in 2 types. One type is the cable carrier and the other is the whipover (separate cable) (PXYx only uses cable carrier specs.)

● **Cable carrier (C)**

[Supplied with user cable as standard items]
When adding cables to a cable carrier track, keep the cable occupation rate at 30% or less.
Note. User cable: 10 cores, 0.3 sq.



● **Whipover (S)**

[Supplied with user cable and air tubing as standard items]
Adding a load on whipover will result in sagging and cut. Sagging may also occur when using long strokes.
Note. User cable: 7 cores, 0.2 sq.
Note. User tube: two φ4 air tubes



Arm variations

2 axes
Combinations

● **Arm type**

The type with moving Y-axis carriage.



● **Moving arm type**

The type with a moving Y-axis arm.



● **Gantry type**

The type with a guide railing at the end of Y-axis for support.



● **Pole type**

The type with vertically moving Y-axis carriage.



● **XZ type**

The type with combination of X-axis for horizontal movement and Z-axis for vertical movement.



● **Dual robots (2axes)**

Type synchronously drives 2 axes.



Note. Dual robot is a special order item.

3
axes
Combinations

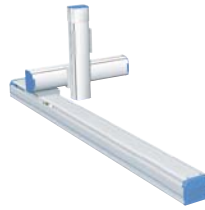
● Z axis clamped base · moving table type

ZR axis models: ZT / ZF / ZFL / ZL



● Z axis clamped table · moving base type

ZR axis models: ZFH / ZH

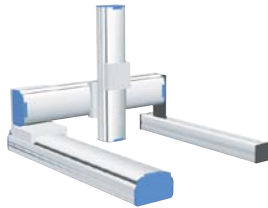


● Shaft upward/downward type

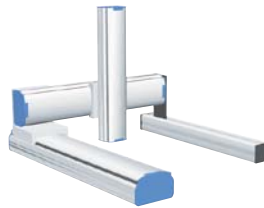
ZR axis models: ZS



● X-Y gantry + Z axis
(clamped base · moving table)



● X-Y gantry + Z axis
(clamped table · moving base)



● Dual robot (3-axes)

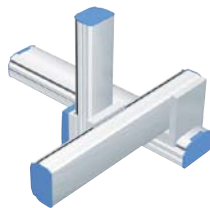


Note. Special orders

4
axes
Combinations

● Z axis clamped base · moving table type + rotating axis

ZR axis models: ZRF / ZRFL / ZRL



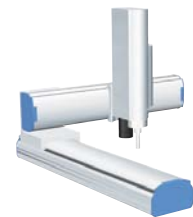
● Z axis clamped table · moving base type + rotating axis

ZR axis models: ZRFH / ZRH

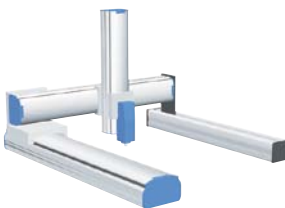


● ZR axis integrated model/
Shaft upward/downward type

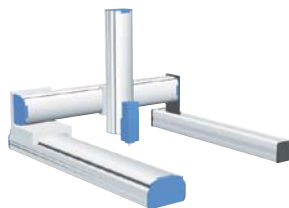
ZR axis models: ZRS



● X-Y gantry + Z axis
(clamped base · moving table)
+ rotating axis



● X-Y gantry + Z axis
(clamped table · moving base)
+ rotating axis



● Dual robot (4-axes)



Note. Special orders

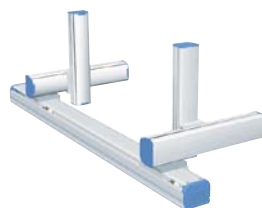
● Double Y axes specs
Robot models: NXY-W



6
axes
Combinations

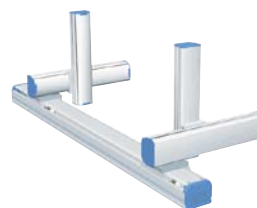
● Double Y axis specs / Z axis clamped base · moving table type

Robot models: NXY-W-ZFL



● Double Y axis specs / Z axis clamped table · moving base type

Robot models: NXY-W-ZFH



**Special
orders**

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E-mail : robotn@yamaha-motor.co.jp