

PHT

Link To The World

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Cylindrical Coordinate Clean Robot

PHT-R-4



Product Features

This product is a horizontal multi-joint robot for use in clean rooms. It is capable of moving forward and backward (X-axis), rotating (θ -axis), moving up and down (Z-axis) + hand rotation ($0\sim 180^\circ$), and is suitable for atmospheric transportation of wafers. The drive motor is an AC servo motor, with absolute encoders for all axes.

Product Overview

Model Name	PHT-R-4
Installation Environment	In a clean room, in the atmosphere, temperature $10^\circ\text{C} \sim 35^\circ\text{C}$, humidity 70% RH or less.
Arm	Single arm, material: Aluminum, Carbon Fiber Reinforced Polymer (CFRP), Ceramic.
Range of Motion	X-axis: 500mm, θ -axis: 340 degrees, Z-axis: 300mm, hand rotation: $0 \sim 180^\circ$.
Operating Speed (fastest)	X-axis: 500mm/sec, θ -axis: 200deg/sec, Z-axis: 250mm/sec, hand rotation: 180deg/sec.
Carrying Capacity	3kg (total weight of the hand base, hand, and workpiece)

Standard Robot Specifications

Robot Model	PHT-R-4-2022
Conveyed Object	~300mm Wafer (We also flexibly customize for other special works, shapes, and materials)
Wafer Holding Method	Vacuum Adhesion, Edge Clamp, Edge Hold
Mechanical Structure Form	Horizontal multi-joint type, cylindrical coordinate system
Control Axis	4-axis
Motor Type	AC Servo Motor, Absolute Encoder Specification
Weight	Main Body Weight: Approximately 47Kg, Controller: Approximately 8Kg
Control Cable	3m (standard), 5m, 10m
Control Specification (1)	Parallel Interface: 32 input points, 32 output points
Control Specification (2)	Serial Interface: RS-232C × 1 line
Repeatability Accuracy	Less than $\pm 0.1\text{mm}$
Cleanliness	ISO Class 2 ($0.1\mu\text{m}$ and above, less than 10 particles/ m^3)
Utility	Rated Voltage: Single phase AC200~230V $\pm 10\%$ Rated Current: 5A Vacuum: Below -80kPa, 10NL/min or more

Controller Specification

Controller Model	MFD
Interface	RS232C 1 line Digital IO input: 32 points, DC24V 8mA Output: 32 points, DC24V $\pm 3\text{V}$ 0.1A or less