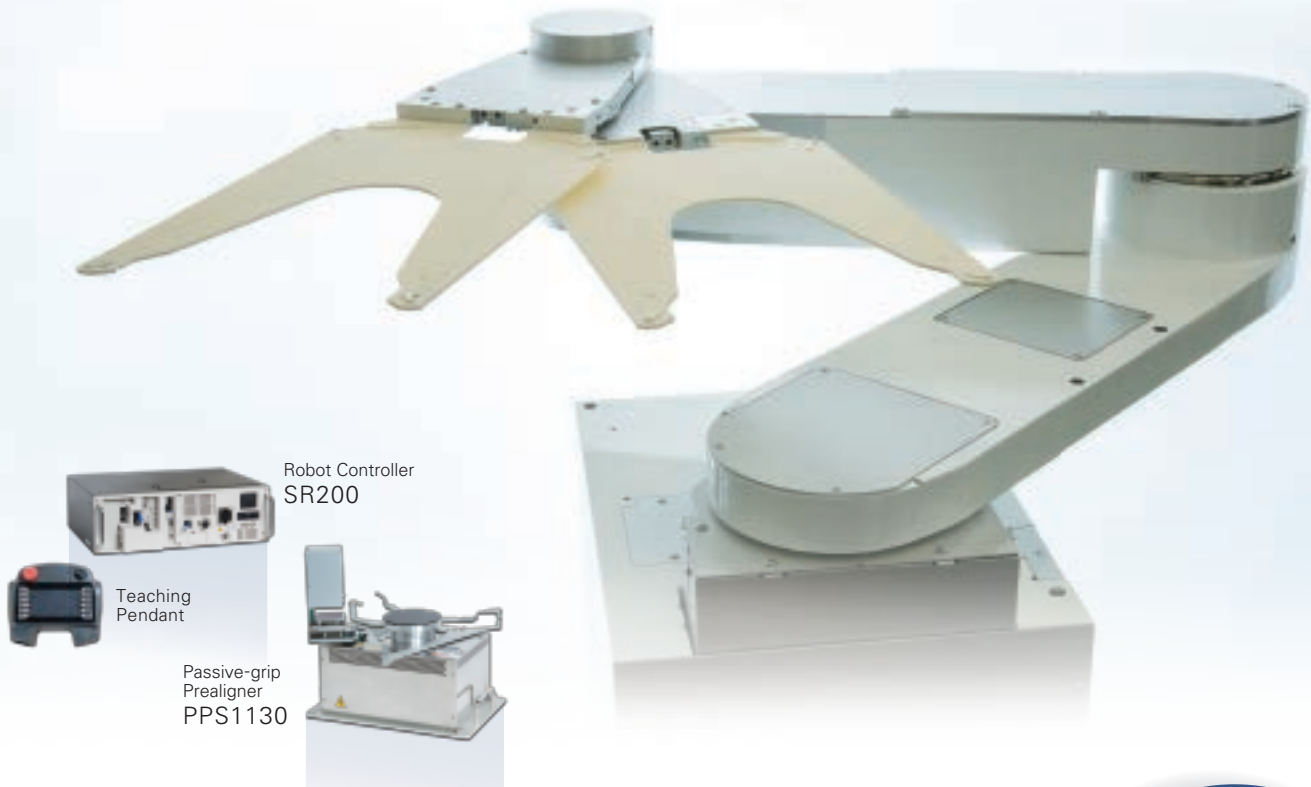


Perfect for the semiconductors of tomorrow

## DD Motor Driven Wafer Handling Robot



Semiconductor Wafer Handling Robot

# SEMISTAR- GEKKO MD124D

Introducing a robot optimized for the near future of miniaturization and multi-layering.

The GEKKO MD124D powered by direct drive motors achieves precise and quick transfer with minimum stress to wafers.

Vibration	0.25 G or less*1
Repeatability	± 0.02 mm
Absolute positioning accuracy	0.05 mm

\*1: This value represents the vertical direction of the end effector when the arm extends or retracts.

Note: The above values are just some examples of results obtained using Yaskawa's in-house measurement conditions and are not official product specifications.

Direct  
drive  
motor

Low  
vibration  
High  
accuracy

Low  
wafer  
stress

## SEMISTAR-GEKKO MD124D

## ■ Manipulator &amp; Preamplifier Specifications

Items	Specifications	
Applicable Wafer Size	300 mm (SEMI compliant)	
Wafer Grip Method	Passive grip (vacuum and edge grip are also available)	
Length of Standard EE*1	345 mm for 300-mm wafer	
Number of Axes	5 axes	
Arm Type	Single	
Range of Motion	EX-axis (Extension)*2	1215 mm
	TH-axis (Rotation)	330°
	Z-axis (Elevation)	480 mm
	H-axis (EE Rotation)	440°
	Minimum Rotation Radius*1	510 mm
Repeatability*1	0.05 mm (P-P)	
Approx. Mass	86 kg	
Clean Class*3	ISO class 1	
MCBF (SEMI F10 Compliant)	15 M cycles or more	
Ambient Conditions	Operating Environment	Temperature: +20°C to +30°C Humidity: 35% to 55%RH (non-condensing)
	Storage Environment	Temperature: 0°C to +40°C Humidity: 20% to 80%RH (non-condensing)
	Altitude	1000 m or less
	Atmosphere	Free from explosive, inflammable, and corrosive gas
Preamplifier	Applicable Wafer Size	300 mm
	Wafer Grip Method	Passive grip
	Detection Target	Notch
	Material of Wafer	Silicon*4
	Alignment Accuracy	±0.1°
	Alignment Time	5.0 s or less
Approx. Mass	8.5 kg	

## ■ Controller Specifications

Items	Specifications
Dimensions	425 (W) × 300 (D) × 133 (H) mm (Protrusions are not included)
Approx. Mass	13 kg max.
Power Supply	Three-phase 200 VAC to 240 VAC (+10% to -15%), 50/60 Hz Single-phase 200 VAC to 240 VAC (+10% to -15%), 50/60 Hz
Communications (Connection to Host)	Ethernet (10BASE-T/100BASE-TX) 2 ports
Optional Board Slot	2 slots
Number of Control Axes	8 axes max.
Applicable Standards	SEMI S2, S8, F47 UL61010-1 ISO 13849-1, Category 3 (PL=d), etc.

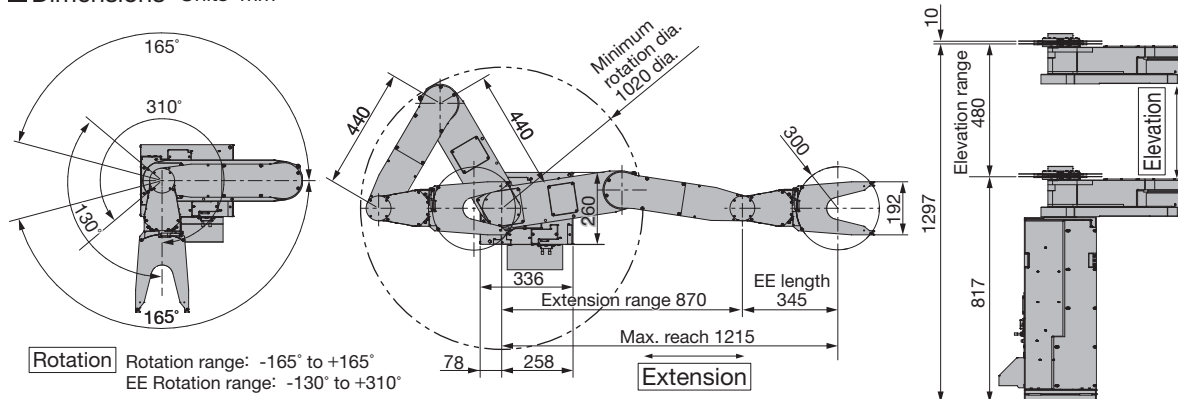
\*1: 300-mm wafer (SEMI compliant), using Yaskawa's standard 300-mm EE

\*2: Center of manipulator rotation to center of wafer when using Yaskawa's standard 300-mm EE

\*3: Based on Yaskawa's recommended installation conditions when used in a downflow environment of 0.3 m/s

\*4: SEMI compliant silicon wafer. Contact your Yaskawa representative for quartz wafer use. Related parameters need to be adjusted and evaluated. (Yaskawa has experiences with quartz wafer.)

## ■ Dimensions Units: mm



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# YASKAWA

YASKAWA ELECTRIC CORPORATION

In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply. Specifications are subject to change without notice for ongoing product modifications and improvements.

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