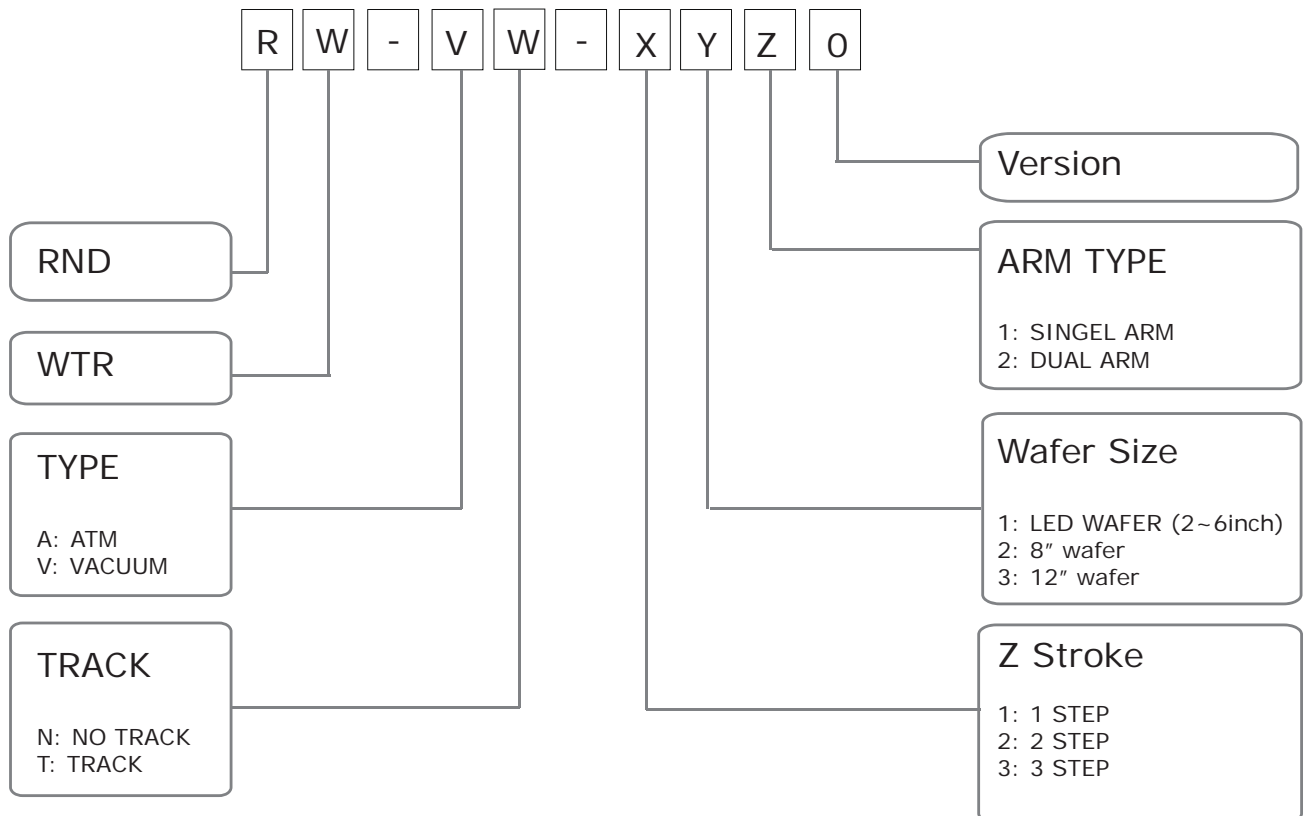


Order Guide for Wafer Transfer Robot



Features

Robots and Design(RND)'s atmospheric robots support the various environment condition depending on customer's requirement. RND robot provides a fast and precise motion with reliable structure and control method.



■ Standard Robot

- Single / Dual Arm handling 8 & 12" wafer
- Clean room application, Clean Class 1
- Availability of various material of blade such as ceramic, aluminum, CFRP, etc.
- Optional : mapping sensor, Linear Track, smart motion, etc.



■ Telescopic Robot

- 2 or 3 steps of Z structure allows to cover effectively high work range.
- Maximum accesable vertial traverse is 1200mm
- Single / Dual Arm are avaialbe and handles 8 & 12" wafer without any mecnical change



■ SCARA Robot

- Single or dual arm with 1 or 2 blades
- Wide motion range - 2 to 3 port accesable without travers axis (3 port is available when the arm is modified.)
- Small footprint, fast and precise motion



■ WET Robot

- Used for wet process application such as CMP and others.
- Covered with bellows and highly sealed structure preventing from any damage caused by moisture and humidity operational condition
- Overhang type with down stroke Z axis, is available

Features



- Cylindrical Robot
- Simple and easy operation
- Small foot print and high precision
-



- Caresian Unti Robot
- 2 or 3 steps of long Z axis allows to access vertically upto max.1200mm.
- Single / Dual Arm handling 8 & 12" wafer
- Clean room application, Clean Class 1
- Availability of various material of blade such as ceramic, aluminum, CFRP, etc.
- Optional : mapping sensor, Linear Track, smart motion, etc.



- Variable Pitch WTR
- Handling 12" wafer
- Blade pitch is variable from min. 6mm to 16mm
- Up/down with vertical traverse axis,
- High throughput. Multiple blades get the 5 wafers at once
- One of blade is able to extend sperately
- Touch sensor to stop the robot in emergency case for operator's safety
- Wafer mapping sensor & wafer presense sensor are optional.



- Multiple blade type robot
- Get or put the muntiple wafers at once
- As per customer's requirements, blades can be provided as 1+1, 1+2, 1+3... and 5+5.

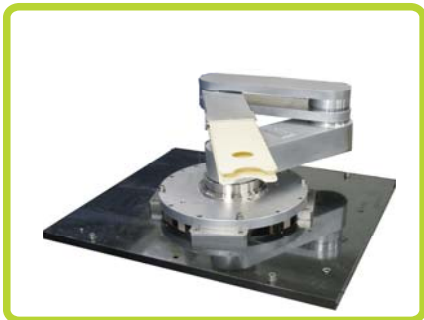


- LED Wafer Transfer Robot
- Specially designed for LED application
- Small footprint and fast precise motion
- Servo-powered control system

Features



- Flip arm Robot
 - Single or dual Arm flipping function is available.
 - 180 degree arm flipping



- Vacuum Robot
 - Used under the vacuum condition
 - 2 types are available : Branch & Boomerang structure
 - Wide Rotation range : ± 185 deg at origin position
 - Longer extension : more than 850 mm

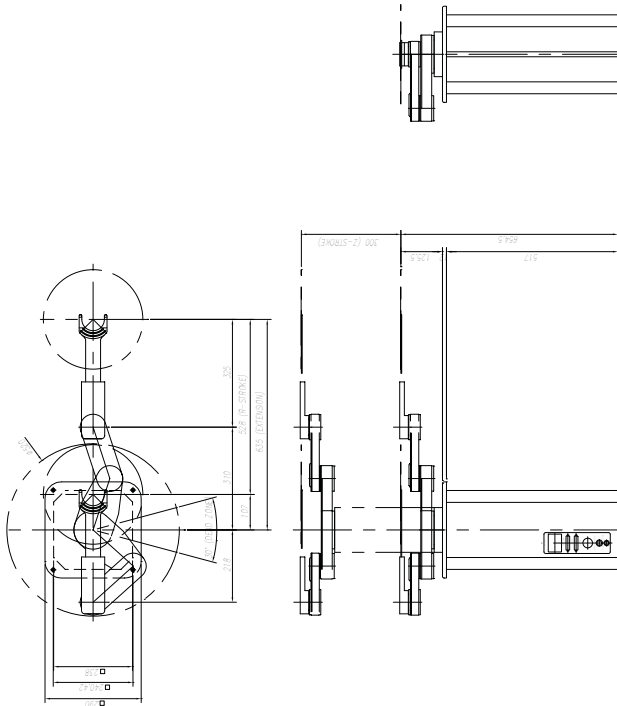


- Option : Linear Track (X axis)
 - 4 types are available : Linear motor type, belt type, rack pinion type, ball screw type. RND standard is Linear motor type.
 - Basic stroke : 505mm (2 port base), 1010mm (3 port base), 1515mm (4 port base). Customization is available when requested.
 - Mounting method : flange mounting or bottom mounting.
 - Max. speed : 1000mm/sec

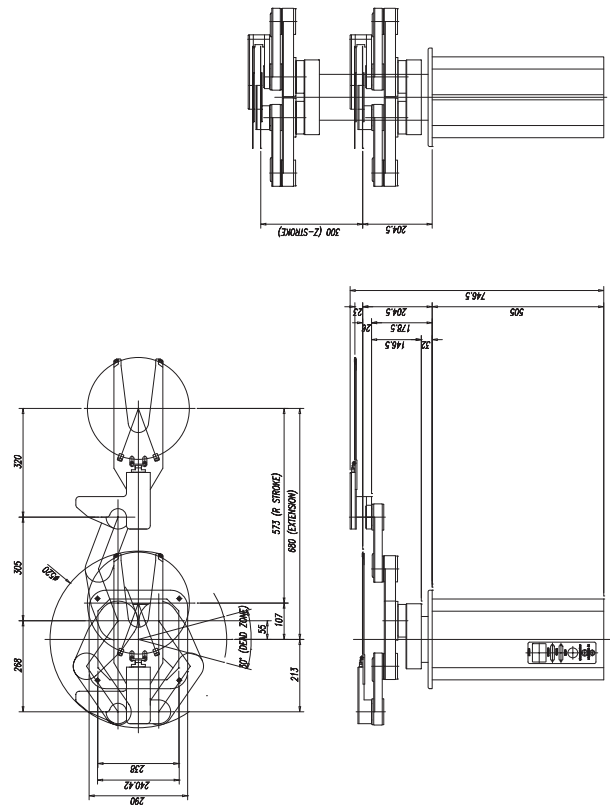


- Foup Transfer robot Unit
 - Transfer the FOUP for 25 slots of 300mm wafer
 - Full Foup Transfer robot unit with high vertical traverse axis
 - Load capacity : 10 kg.
 - Includes FOUP presence and placement sensor

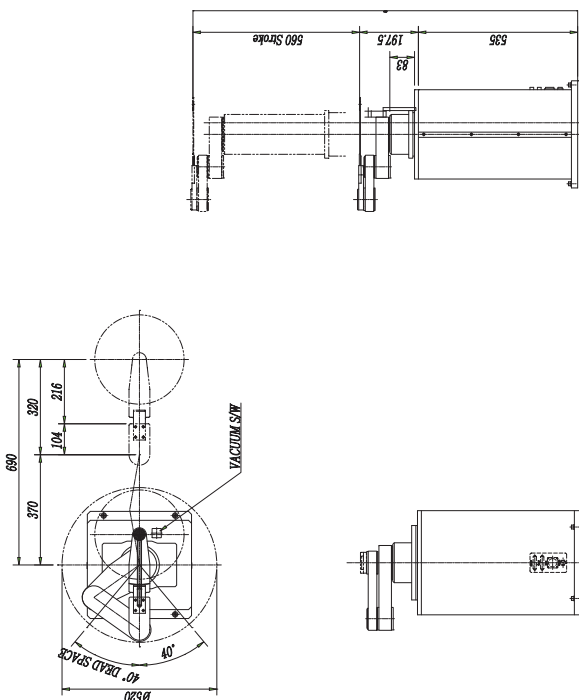
Single Arm Robot
RW-AN-1310



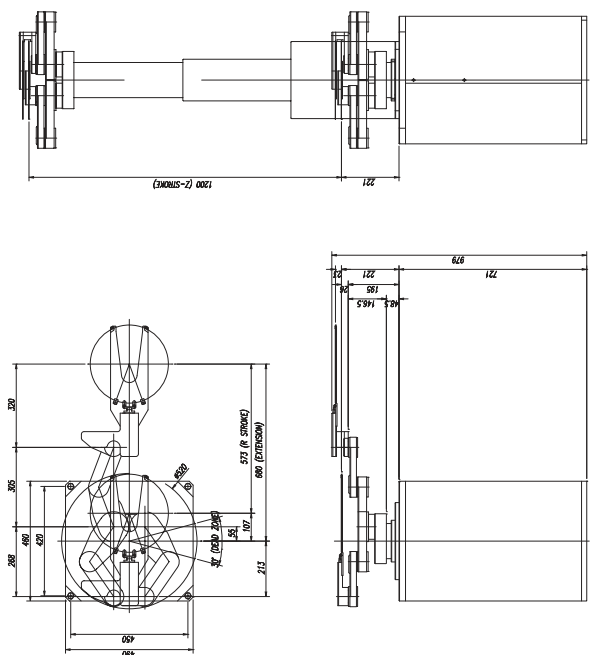
Dual Arm Robot
RW-AN-1320



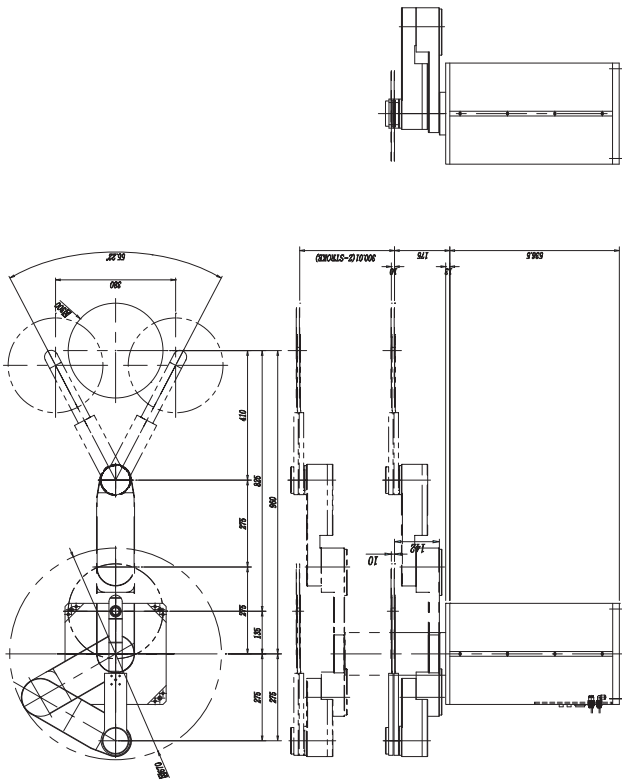
Telescopic Single Arm Robot (2 step)
RW-AN-2310



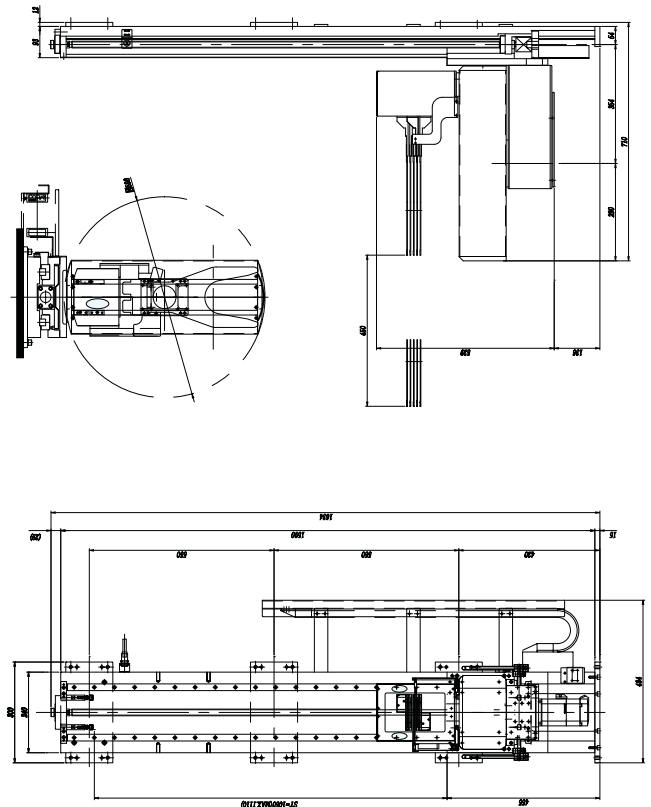
Telescopic Dual Arm Robot (3 step)
RW-AN-3320



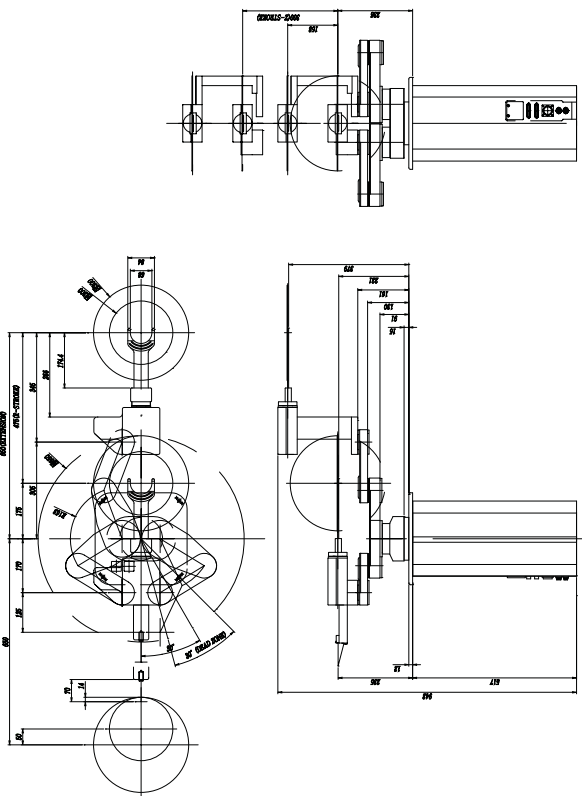
SCARA Robot
RW-AN-1310



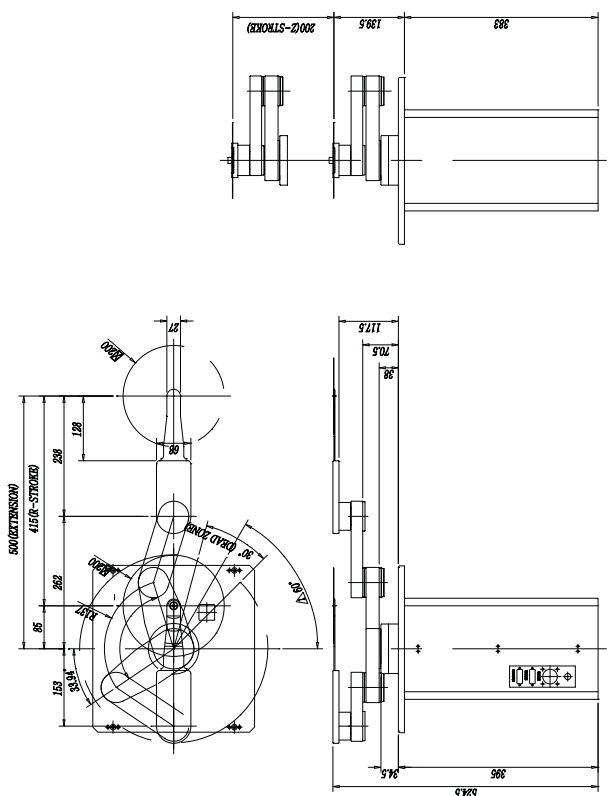
Variable Pitch WTR
RW-AT-1310



Dual Arm Flip Robot
RW-AN-1320



LED wafer Transfer Robot (Single)
RW-AN-1120



RND Wafer Transfer Robot Specification

Specification			MODEL						
			STD ETR	STD WTR(8")	STD WTR(12")	Telescopic (2 step)	Telescopic (3 step)	SCARA Robot	Variable Pitch WTR
			RW-AN-1110 RW-AN-1120	RW-AN-1210 RW-AN-1220	RW-AN-2310 RW-AN-2320	RW-AN-3310 RW-AN-3320	RW-AN-3310 RW-AN-3320	RW-AN-1310 RW-AN-1320	RW-AT-1313
Performance	Motion Range	R1 (R2) axis (extention)	470 mm	510 mm	645 mm	651 mm	651 mm	X axis: ±798 mm	450 mm
		T axis (rotation)	330 deg	330 deg	330 deg	330 deg	330 deg	θ axis : 330° Roll 1,2: 360°	236 deg
		Z axis (up/down)	200 mm	200 mm	300 mm	1,050 mm	1,200 mm	300 mm	1,050 mm
		X axis (Traverse) - Optional	505 mm	○	○	○	○	○	-
	1,010 mm		○	○	○	○	○	-	-
	1,515 mm		○	○	○	○	○	-	-
	Max. speed	R1 (R2) axis (extention)	640 mm/sec	1,200 mm/sec	1,200 mm/sec	1,200 mm/sec	1,200 mm/sec	X: 360mm/sec	≤420 mm/sec
		T axis (rotation)	180 deg/sec	240 deg/sec	240 deg/sec	240 deg/sec	240 deg/sec	θ axis: 400°/s Roll 1,2: 540°/s	≤27rpm(≤160°)
		Z axis (up/down)	240 mm/sec	300 mm/sec	300 mm/sec	800 mm/sec	800 mm/sec	500 mm/sec	≤400 mm/sec
		X axis (Traverse)	1,000 mm/sec	1,000 mm/sec	1,000 mm/sec	1,000 mm/sec	1,000 mm/sec	-	V: ≤11mm/sec, W: 15rpm(≤99°)
	Repeatability	R1 (R2) axis (extention)	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm
		T axis (rotation)	≤ ±0.02deg.	≤ ±0.02deg.	≤ ±0.02deg.	≤ ±0.02deg.	≤ ±0.02deg.	θ/Roll 1,2 axis: ≤ ±0.1deg	≤ ±0.1deg.
		Z axis (up/down)	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm
		X axis (Traverse)	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	≤ ±0.1mm	V: ≤ ±0.1mm, W: ≤ ±0.1deg.
	MTBF (Mean time between failure)		≥20,000 hrs/system						
MTTR (Mean time to repair)		≥3 hrs/system							
General	Wafer Size	2 inch	○	○	○	X	X	○	X
		4 inch	○	○	○	X	X	○	X
		6 inch	○	○	○	X	X	○	X
		8 inch	X	○	○	○	○	○	X
		12 inch	X	X	○	○	○	○	○
	Controller Axis		Single : 3 axes Dual : 4 axes	Single : 3 axes Dual : 4 axes	Single : 3 axes Dual : 4 axes	Single : 4 axes Dual : 5 axes	Single : 5 axes Dual : 6 axes	Single : 4 axes Dual : 5 axes	4 axes
	Arm Type		Single /Dual	Single /Dual	Single /Dual	Single /Dual	Single /Dual	Single /Dual	Single
	Blade Thickness		≤2 mm	≤2.5 mm	≤3 mm	≤3 mm	≤3 mm	≤3 mm	≤3 mm
	Cleanliness		Class 1@0.1µm						
	Load Capacity		0.7 kgf (including gripper)	1 kgf (including gripper)					
Weight		18 kgf	32 kgf	35 kgf	80 kgf	110 kgf	45 kgf	150 kgf	
Cable Length (robot - controller)		3m (Standard)							
Options	Wafer mapping sensor		○	○	○	○	○	○	○
	Wafer presence sensor		○	○	○	○	○	○	○
	Grip type 1	Vacuum Grip(Standard)	○	○	○	○	○	○	X
		Edge Grip	X	X	○	○	○	X	X
		Pocket Grip	○	○	○	○	○	○	○ (4+1)
	Grip type 2	Upper side Grip	○	○	○	○	○	○	○
Backside Grip		X	X	○	○	○	X	X	
Utility	Power (Controller)		1 Phase AC220V ±10%, 10A	1 Phase AC208V ±10%, 50/60 Hz		1 Phase AC220V ±10%, 10A		1 Phase AC220V /230V±10%, 6A	1 Phase AC220V ±10%, 10A
	Air		More than 0.4 ~0.5 MPa, φ 4 mm						
	Vacuum		Less than -50kPa						
Environment	Operating Temperature		0~40°						
Material	Robot Body		Anodized Aluminum						
	Blade	Ceramic	○	○	○	○	○	○	○
		Aluminum	○	○	○	○	○	○	X
		CFRP	X	X	○	○	○	X	X