WIN-WINGS

半導體及面板相關部品

信毅科技有限公司

X 新竹營業處: 臺灣新竹市中華路三段9 號10樓之3

TEL:+886-3-528-1001,FAX:+886-3-525-4513

X 中部營業處: 臺灣臺中縣大里市東興路350 號

TEL : +886-4-2406-4668 , FAX: +886-4-2406-6146

Company web site：www.wwtek.com.tw

Standard WTR(Wafer Transfer Robot)

- Transfer 12" Wafer
- Clean room Application
- ODM or OEM Supply
- Single & Dual arm / Multi Blade Type
- Fast & Precise Motion Robot
- 0.1 micron meter CLASS 1 Cleanliness
- Various End-Effector : Vacuum Blade, Edge Gripper
- Linear Track, Mapping Sensor(Optional)
- Customization available when requested

SPECIFICATION

MODEL			SPECIFICATION			
			8"WTR Single	8"WTR Dual	12"WTR Single	12"WTR Dual
Performance	Motion Range	R1,R2 axis(Extension)	510 mm	510 mm	645 mm	645 mm
		T axis(Rotation)	330 deg	330 deg	330 deg	330 deg
		Z axis(Up/down)	200 mm	200 mm	300 mm	300 mm
		X axis(Traverse) Optional	O	O	O	O
	Max. Speed	R1,R2 axis(Extension)	247 deg/sec	247 deg/sec	247 deg/sec	247 deg/sec
		T axis(Rotation)	211 deg/sec	211 deg/sec	211 deg/sec	211 deg/sec
		Z axis(Up/down)	500 mm/sec	500 mm/sec	500 mm/sec	500 mm/sec
		X axis(Traverse) Optional	1000 mm/sec	1000 mm/sec	1000 mm/sec	1000 mm/sec
	Repeata-bility	R1,R2 axis(Extension)	±0.1 mm	±0.1 mm	±0.1 mm	±0.1 mm
		T axis(Rotation)	±0.02 deg	±0.02 deg	±0.02 deg	±0.02 deg
		Z axis(Up/down)	±0.1 mm	±0.1 mm	±0.1 mm	±0.1 mm
		X axis(Traverse) Optional	±0.1 mm	±0.1 mm	±0.1 mm	±0.1 mm
General	Wafer Size		8 inch		12 inch	
	Control Axis		3	4	3	4
	Arm Type		Single Arm	Dual Arm	Single Arm	Dual Arm
	Blade Thinkness		≤ 2.5mm		≤ 3mm	
	Cleanliness		Class 1 @ 0.1μm			
	Load Capacity		1 kgf (Including Gripper)			
	Weight		32 kgf	32 kgf	35 kgf	35 kgf
	Cable Length (Robot - Controller)		3m (Standard)			
Utility	Power (Controller)		Single Phase AC208 ±10%, 50/60Hz			
	Air		More than 0.4~ 0.5MPa , Φ 4mm			
	Vacuum		Less than -50 kPa			
Environment	Operating Temp.		0~40 °			

Flip Robot

- Single or Dual arm Robot
- Handling 8~12" wafers
- 180°Arm flipping function : Single or Dual flip.
- Options : mapping function, Smart motion, Linear Track (Linear motor type, belt type, ball screw type, Rack pinion type)

SPECIFICATION

MODEL			SPECIFICATION	
			12" S-Flip	12" D-Flip
Performance	Motion Range	R1,R2 axis (Extension)	600 mm	600 mm
		T axis(Rotation)	330 deg	330 deg
		Z axis(Up/down)	300 mm	300 mm
		X axis(Traverse) **Optional**	O	O
	Max.. Speed	R1,R2 axis (Extension)	300 deg/sec	300 deg/sec
		T axis(Rotation)	211 deg/sec	211 deg/sec
		Z axis(Up/down)	500 mm/sec	500 mm/sec
		X axis(Traverse) **Optional**	1000 mm/sec	1000 mm/sec
	Repeata-bility	R1,R2 axis (Extension)	±0.1 mm	±0.1 mm
		T axis(Rotation)	±0.02 deg	±0.02 deg
		Z axis(Up/down)	±0.1 mm	±0.1 mm
		X axis(Traverse) **Optional**	±0.1 mm	±0.1 mm
General	Wafer Size		8~12"	
	Control Axis		4	5
	Arm Type		Single Arm	Dual Arm
	Blade Thinkness		≤ 3mm	≤ 3mm
	Cleanliness		Class 10	
	Load Capacity		1 kgf (Including Gripper)	
	Weight		35 kgf	
	Cable Length (Robot - Controller)		3m (Standard)	
Utility	Power (Controller)		Single Phase AC208 ±10%, 50/60Hz	
	Air		More than 0.4~ 0.5MPa , Φ 4mm	
	Vacuum		Less than -50 kPa	
Environment	Operating Temp.		0~40 °	

Telescopic Robot

- Maximum 1,200 mm vertical stroke(Z-stroke) is achieved.
- Up to 3-step telescopic type application
- ODM or OEM Supply
- Dual arm / Multi Blade Type
- Fast & Precise Motion Robot
- 0.1 micron meter CLASS 1 Cleanliness
- Various End-Effector : Vacuum Blade, Edge Gripper
- Linear Track, Wafer mapping sensor(Optional)
- Customization available when requested

SPECIFICATION

MODEL			SPECIFICATION			
			Tele Single (2-Step)	Tele Dual (2-Step)	Tele Single (3-Step)	Tele Dual (3-Step)
Performance	Motion Range	R1,R2 axis(Extension)	651 mm	651 mm	651 mm	651 mm
		T axis(Rotation)	330 deg	330 deg	330 deg	330 deg
		Z axis(Up/down)	1,050 mm	1,050 mm	1,200 mm	1,200 mm
	Max. Speed	R1,R2 axis(Extension)	360 deg/sec	360 deg/sec	360 deg/sec	360 deg/sec
		T axis(Rotation)	256 deg/sec	256 deg/sec	196 deg/sec	196 deg/sec
		Z axis(Up/down)	600+600 mm/sec		400+400+400 mm/sec	
	Repeatability	R1,R2 axis(Extension)	±0.1 mm	±0.1 mm	±0.1 mm	±0.1 mm
		T axis(Rotation)	±0.02 deg	±0.02 deg	±0.02 deg	±0.02 deg
		Z axis(Up/down)	±0.1 mm	±0.1 mm	±0.1 mm	±0.1 mm
General	Wafer Size		8~12 inch			
	Control Axis		4	5	5	6
	Arm Type		Single Arm	Dual Arm	Single Arm	Dual Arm
	Blade Thinkness		≤ 3mm			
	Cleanliness		Class 1 @ 0.1μm			
	Load Capacity		1 kgf (Including Gripper)			
	Weight		80 kgf	80 kgf	110 kgf	110 kgf
	Cable Length (Robot - Controller)		3m (Standard)	3m (Standard)	3m (Standard)	3m (Standard)
Utility	Power (Controller)		Single Phase AC220V ±10%, 10A			
	Air		More than 0.4~ 0.5MPa , Ø 4mm			
	Vacuum		Less than -50 kPa			
Environment	Operating Temp.		0~40 °			

SCARA Robot

- Transfer 12inch Wafer
- Single Arm with 1 or 2 Blade
- Wide range without traverse axis(track)
- Fast & Precise Motion Robot
- Port Application : 2 port base (3 Port possible if the arm is modified)
- Customization available when requested.

SPECIFICATION

MODEL			SPECIFICATION	
			Scara Single	Scara Dual
Performance	Motion Range	X axis	±798 mm	±798 mm
		Θ axis	330 deg	330 deg
		Roll 1,2	360 deg	360 deg
		Z axis	300 mm	300 mm
	Max. Speed	X axis	360 deg/sec	360 deg/sec
		Θ axis	226 deg/sec	226 deg/sec
		Roll 1,2	500 deg/sec	500 deg/sec
		Z axis	750 mm/sec	750 mm/sec
	Repeatability	X axis	±0.1 mm	±0.1 mm
		Θ axis	±0.1 deg	±0.1 deg
		Roll 1,2	±0.1 deg	±0.1 deg
		Z axis	±0.1 mm	±0.1 mm
General	Wafer Size		12" wafers	
	Control Axis		4	5
	Arm Type		Single Arm	Dual Arm
	Blade Thinkness		≤ 3mm	
	Cleanliness		Class 1 @ 0.1μm	
	Load Capacity		1 kgf (Including Gripper)	
	Weight		45 kgf	45 kgf
	Cable Length (Robot - Controller)		3m (Standard)	
Utility	Power (Controller)		AC220/230V ±10% 1Phase, 50/60 Hz, 6A, 1.2Kva	
	Air		0.25 ~ 0.5MPa, Ø4mm	
	Vacuum		-66.7 kpa, Ø6mm	
Environment	Operating Temp.		0~40 °	

Cartesian Unit Robot

- Cartesian coordinates structure for all axes
- High speed and precise wafer handling
- Short tack time and increase of throughput
- Available to use in lower passline

SPECIFICATION

CONTENTS		SPECIFICATION
Motion Range	R1,R2 axis(Extension)	680 mm
	T axis(Rotation)	330deg
	Z axis(Up/down)	1550 mm
	X axis(Traverse) **Optional**	O
Max. Speed	R1,R2 axis(Extension)	247 deg/sec
	T axis(Rotation)	235 deg/sec
	Z axis(Up/down)	555 mm/sec
	X axis(Traverse)	1500 mm/sec
Repeatability	R1,R2 axis(Extension)	±0.05 mm
	T axis(Rotation)	±0.01 deg
	Z axis(Up/down)	±0.05mm
	X axis(Traverse)	±0.02mm

Cartesian Z axis Robot

Gantry type

Non-Gantry type

- Combination of Cartesian Z axis & link structure (Gantry or Non Gantry type of Z axis)
- High speed and precise wafer handling
- Short tack time and increase of throughput
- Available to use in lower passline

SPECIFICATION

CONTENTS		SPECIFICATION	
		Gantry type	Non-Gantry type
Motion Range	R1,R2 axis(Extension)	680 mm	560 mm
	T axis(Rotation)	330deg	210deg
	Z axis(Up/down)	1550 mm	1100 mm
	X axis(Traverse) **Optional**	O	O
Max. Speed	R1,R2 axis(Extension)	247 deg/sec	247 deg/sec
	T axis(Rotation)	211 deg/sec	211deg/sec
	Z axis(Up/down)	500 mm/sec	500 mm/sec
	X axis(Traverse)	1000 mm/sec	1000 mm/sec
Repeatability	R1,R2 axis(Extension)	±0.05 mm	±0.1 mm
	T axis(Rotation)	±0.01 deg	±0.1 deg
	Z axis(Up/down)	±0.05mm	±0.1 mm
	X axis(Traverse)	±0.02mm	±0.1 mm

Wet Robot

Type 1

Type 2
(Cartesian Z)

Type 3
(Overhang)

- Designed to use in wet/humid condition
- Use of bellows and Teflon coated body with cover
- Highly sealed mechanical structure

SPECIFICATION

CONTENTS		SPECIFICATION	
		TYPE 1	TYPE 2 (Cartesian Z)
Motion Range	R1,R2 axis(Extension)	645 mm	680 mm
	T axis(Rotation)	330deg	330deg
	Z axis(Up/down)	300 mm	1255 mm
	X axis(Traverse) **Optional**	O	O
Max. Speed	R1,R2 axis(Extension)	247 deg/sec	275 deg/sec
	T axis(Rotation)	211 deg/sec	188 deg/sec
	Z axis(Up/down)	500 mm/sec	500 mm/sec
	X axis(Traverse)	1000 mm/sec	1000 mm/sec
Repeatability	R1,R2 axis(Extension)	±0.1 mm	±0.1 mm
	T axis(Rotation)	±0.05 deg	±0.05 deg
	Z axis(Up/down)	±0.1 mm	±0.1 mm
	X axis(Traverse)	±0.1 mm	±0.1 mm

Variable Pitch WTR

- 6~25mm pitch variation
  (Accessible to different pitch of cassettes)
- Easy Maintenance
- Multi-chuck wafer transfer(5 wafer/time)
- Single wafer transfer(1+4 Blade type)
- Wafer mapping(Optional)
- High reliability
- Customization for customer's needs

SPECIFICATION

MODEL		SPECIFICATION
Work Space	X axis	450 mm
	T axis	236 deg
	Z axis	1050 mm
	V axis	6 mm ~ 25mm
	W axis	120 deg
Max Speed	X axis	500 mm/sec
	T axis	200 deg/sec
	Z axis	500 mm/sec
	V axis	15 mm/sec
	W axis	90 deg/sec
Repeatable Accuracy	X axis	±0.1mm
End-Effector		4 + 1 Blade
End-Effector Grip type		Pocket Type

Foup Handling Robot

- 12 inch Foup handling
- Mounted to AGV (Automated Guided Vehicle)
- 25 kg of payload maximum
- Wide motion range with Scara arm structure

SPECIFICATION

MODEL			SPECIFICATION
Performance	Motion Range	R axis (Arm)	900 (615 + 285) mm
		T axis (rotation)	360 deg
		Z axis(Up/down)	250 mm
	Max. Speed	R axis (Arm)	118 deg/sec (Wrist) 151 deg/sec (Elbow)
		T axis (rotation)	188 deg/sec
		Z axis(Up/down)	500 mm/sec
	Repeatability		±0.10 mm
General	Handling Object		300mm 25 Slot FOUP, Ring Frame Cassette
	Control Axis		5
	Arm Type		SCARA
	Cleanliness		Class 10
	Load Capacity		15 kgf
	Weight		About 70 Kgf
	Cable Length (Robot - Controller)		3m (Standard)
Utility	Power (Controller)		DC12 or 24V (using 1Kw DC-AC converter)
	Communication		Ethernet

Foup Transfer Unit

- Transfer FOUP containing 25 of 300mm wafers to stocker
- Smooth and precise mechanism
- 10 kg of load capacity
- Vertical traverse axis allows to transfer the Foup from low and high position

SPECIFICATION

MODEL		SPECIFICATION
Operation range	Z axis(Up/Down)	2163mm
	Y axis(Travers)	505mm(2 FOUP)
	X axis(In/Out)	+354~-396mm
Transfer Speed	Z axis(Up/Down)	300 mm/sec
	Y axis(Travers)	500 mm/sec
	X axis(In/Out)	90 deg/sec
Repeatability	Z axis(Up/Down)	±0.20
	Y axis(Travers)	±0.10mm
	X axis(In/Out)	±0.20mm
Load Capacity		10kg(300mm 25slot FOUP)
Cleanliness		Clean Class10

Cylindrical Type Robot

- Arm link structure with Cylindrical type of long Z axis for LED wafer Transfer
- Fast & precise motion and low cost
- Small footprint
- easy operation & maintenance
- Wide operation range

SPECIFICATION

MODEL			SPECIFICATION	
			SINGLE ARM	DUAL ARM
Performance	Motion Range	R1,R2 axis(Extension)	530 mm	530 mm
		T axis(Rotation)	330 deg	330 deg
		Z axis(Up/down)	600 mm	600 mm
	Max.Speed	R1,R2 axis(Extension)	288 deg/sec	288 deg/sec
		T axis(Rotation)	733 mm/sec	733 mm/sec
		Z axis(Up/down)	500 mm/sec	500 mm/sec
	Repeatability	R1,R2 axis(Extension)	±0.1 mm	±0.1 mm
		T axis(Rotation)	±0.02 deg	±0.02 deg
		Z axis(Up/down)	±0.1 mm	±0.1 mm
General	Wafer Size		2~8"	
	Control Axis		3	4
	Arm Type		Single Arm	Dual Arm
	Blade Thinkness		≤ 3mm	
	Cleanliness		Class 1 @ 0.1μm	
	Load Capacity		0.7 kgf (Including Gripper)	
	Cable Length (Robot - Controller)		3m (Standard)	
Utility	Power (Controller)		Single Phase AC220V ±10%, 10A,	
	Air		More than 0.4~ 0.5MPa , Φ 4mm	
	Vacuum		Less than -50 kPa	
Environment	Operating Temp.		0~40 °	

18 inch Wafer Transfer Robot

- Clean Robot handling 18 inch wafer
- 2 step of Z axis
- Advanced motion control system
- High rigidity & lower vibration

SPECIFICATION

MODEL			SPECIFICATION	
			SINGLE ARM	DUAL ARM
Performance	Motion Range	R1,R2 axis(Extension)	885 mm	885 mm
		T axis(Rotation)	330 deg	330 deg
		Z axis(Up/down)	600 mm	600 mm
	Max.Speed	R1,R2 axis(Extension)	360 deg/sec	360 deg/sec
		T axis(Rotation)	211 mm/sec	211 mm/sec
		Z axis(Up/down)	500 mm/sec	500 mm/sec
	Repeatability	R1,R2 axis(Extension)	±0.1 mm	±0.1 mm
		T axis(Rotation)	±0.02 deg	±0.02 deg
		Z axis(Up/down)	±0.1 mm	±0.1 mm
General	Wafer Size		8~18"	
	Control Axis		4	5
	Arm Type		Single Arm	Dual Arm
	Blade Thinkness		≤ 3mm	
	Cleanliness		Class 1 @ 0.1μm	
	Load Capacity		1 kgf (Including Gripper)	
	Cable Length (Robot - Controller)		3m (Standard)	
Utility	Power (Controller)		Single Phase AC208 ±10%, 50/60Hz	
	Air		More than 0.4~ 0.5MPa , Φ 4mm	
	Vacuum		Less than -50 kPa	
Environment	Operating Temp.		0~40 °	

Long SCARA robot

- Extended motion range without traverse axis.
- Save the space and simplify the system configuration (One robot for multiple stages)
- Use the SCARA link with Cartesian Z axis
- Achieve the high speed of wafer transferring upto 417 wafers per an hour (WPH).

SPECIFICATION

CONTENTS		SPECIFICATION
Motion Range	R axis(Extension)	680 mm
	T axis(Rotation)	170mm (Roll1 : 165mm, Roll2 : 275mm)
	Z axis(Up/down)	130 mm
Max. Speed	R axis(Extension)	600 deg/sec (Wrist) 450 deg/sec (Elbow)
	T axis(Rotation)	286 deg/sec
	Z axis(Up/down)	500 mm/sec
Repeatability	R axis(Extension)	±0.1 mm
	T axis(Rotation)	±0.05 deg
	Z axis(Up/down)	±0.1 mm
Load capacity		2 kg (including gripper)

Reticle/Mask handling Robot

- Handle the 150x150 reticle/mask.
- Use the specially designed gripper for handling
- Reticle or mask flipping is available

SPECIFICATION

CONTENTS		SPECIFICATION
Motion Range	R axis(Extension)	645 mm
	T axis(Rotation)	330 deg
	Z axis(Up/down)	200 mm
	X axis(Traverse) **Optional**	O
Max. Speed	R axis(Extension)	72 deg/sec
	T axis(Rotation)	106 deg/sec
	Z axis(Up/down)	250 mm/sec
	X axis(Traverse)	750 mm/sec
Repeatability	R axis(Extension)	±0.1 mm
	T axis(Rotation)	±0.02 deg
	Z axis(Up/down)	±0.1 mm
	X axis(Traverse)	±0.1 mm
Load capacity		3 kg (including gripper)

Pre-aligners

CCD ALIGNER (XYR TYPE)

CCD ALIGNER (XZR TYPE)

- Controller integrated compact Design.
- High Accuracy and reliable repeatability
- Compatible with 200mm/300mm wafer without any mechanical change (Edge grip type is only for 300mm)

SPECIFICATION

MODEL			SPECIFICATION	
			CCD (XYR TYPE)	CCD (XZR TYPE)
General	Axes		3	3
	Handling Wafer		8~12 inch	2~8 inch
	Body dimension	W	320 mm	305 mm
		D	230 mm	200 mm
		H	210 mm	248 mm
	Weight		About 10 kg	About 10 kg
	Accuracy	Center Offset(mm)	±5 mm	±5 mm
		Centering(mm)	±0.1 mm	±0.1 mm
		Rotation(Deg.)	±0.1 deg.	±0.1 deg.
	Alignment Time		≤4 sec	≤6 sec
Utility	Power		24V DC±10%, 5A	
	Vacuum		Less than -80 kPa	
	Communication		RS232C	

CCD ALIGNER (WARPAGE TYPE)

EDGE GRIP ALIGNER

SPECIFICATION

Specification			SPECIFICATION	
			CCD (Warpage)	Edge Grip Type
General	Axes		3	3
	Handling Wafer		8~12 inch (for warpage wafer)	12 inch
	Body dimension	W	290 mm	260 mm
		D	250 mm	260 mm
		H	237 mm	305 mm
	Weight		About 12 Kg	About 15 kg
	Accuracy	Center Offset(mm)	±5 mm	±1.5 mm
		Centering(mm)	±0.1 mm	±0.1 mm
		Rotation(Deg.)	±0.1 deg.	±0.2 deg.
	Alignment Time		≤7 sec	≤9 sec
Utility	Power		24V DC ±10, 5A	24V DC±10%,
	Vacuum		Less than -80kPa	4A Max
	Communication		RS232C	

SMIF(Standard Mechanical Interface)

SPECIFICATION

MODEL	SPECIFICATION
Wafer Size	200mm
Cassette Pickup Position	909mm
Load Height of SMIF Pod	900mm
Max. Reach of Load Arm	410mm
Height	1820mm
Width	410mm
Depth	495mm
Weight(without Pod, Cassette, Wafer)	77.27kg
Power	2 Amp/230VAC(+10, –5%), 50~60Hz, Single Phase
Communication	Serial RS-232C(SECS I/SECS II) Parallel Input/Output

- Ergonomically designed I/O easily integrates SMIF
  - Pod cassette loading and unloading into a wide variety of 150 ~ 200 mm wafer processing and metrology tools
- Designed to be adaptive for equipment manufacturer applications for vacuum load-lock tools
- SMIF-LP provides capability for a wide variety of wafer fab tools and leads the industry in reduced cycle time and footprint

Foup Opener

12" FOUP (STANDARD)

8" CASSETTE ADAPTOR

18" FOUP

12"FOUP
WITH N2 PURGE

FOR FOUP
CLEANING TOOL

- RS-232 communication interface
- Foup Present, placement & protrusion sensors are included
- Mapping function is included
- BEOL/FEOL lock out pin
- Module design for quick service swap-outs
- Designed for 12" SEMI compliant FOUP, 18" FOUP, MAC FOUP for 12"ring frame wafer individually

12" FOUP opener (only)

- Compatible with all SEMI compliant 12" FOUPs
- CE,S2 and SEMI compliant
- FOUP pinch point protection
- 8" cassette is compatible with optional adaptor
- Option: adaptor for 8" cassette, RFID, etc

Cassette Loader

8" CASSETTE & 12" RING FRAME CASSETTE

12" RING FRAME CASSETTE

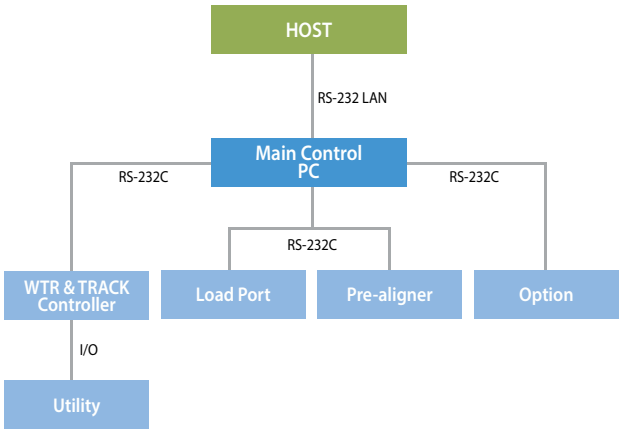
MAC FOUP

12" FOUP & 12" RING FRAME CASSETTE

- Designed for cassette for 8 or 12" ring frame wafer
- Cassette loading & docking are available
- Ring frame alignment function
- Cassette presence sensor is included
- Manual or automatic lift-up cover
- Option: RFID, Multi-cassette handling, etc.

EFEM (Equipment Front End Module)

- Integrating a pre-aligner with a clean robot results in a small footprint and allows space to be used with great efficiency
- Clean robot with an end-effector on a rotary axis operates without a traverse axis contributing to a high throughput
- Clean robot's air-flow simulation optimizes and ensures high level of cleanliness



RE-2P

RE-3P

RE-4P

CONFIGURATION

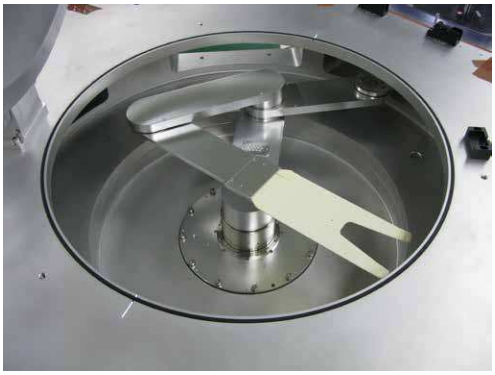
- Loadport(Mapping)
- Single or Dual Arm Robot
- Linear Track for Robot Traveling
- Encloser structure
  - *Fan Filter Unit*
  - *Area Sensor*
- System Software
- System Electrics
- Option
  - *Wafer Aligner*
  - *Ionization System*
  - *PIO Sensor*
  - *RFID Reader/ Writer*
  - *Edge Grip Blades*

  Teaching Pendent

SPECIFICATION

MODEL	RE-2P	RE-3P	RE-4P
Loadport	2 Ports	3 Ports	4 Ports
Size	1355×760×2,000mm	1,860×678×2,000mm	2,365×678×2,000mm
Weight	250kg	350kg	450kg
Height	2,000mm ~ 2,800mm		
Width	1,650mm ~ 1,854mm(at 3 PODs)		
Depth	678mm		
Weight	Less than 480kg		
Carrier	300mm FOUP (SEMI E14.7 – 1101 Compliance)		
Cleanliness	Class@0.1μm(PEFE)		
Laminar Flow Recovery Time	Less than 1 minute		
Repeatability	Less than 0.1mm@3sigma		
Alignment Accuracy / Time	±0.05Degree/6sec		
Electric Supply	220V±10%(60Hz, 1Φ)3wires + ground, no neutral		
Acoustic Noise	Less than 65dB		
Communication	Ether-Net(HSMS)		
MTBF/MTTR	More than 20,000hrs / Less than 2hrs		
User Interface	GUI - Touch Screen(optional)		

Vacuum Robot



- Minimizing the rotation diameter and maximizing the extension.
- Magnetic fluid sealing
- Servo motor for all axes
- Used for 1E-6Pa of vacuum environment.

SPECIFICATION

MODEL			SPECIFICATION	
			Branch Structure	Boomerang Structure
Performance	Motion Range	R1,R2 axis (Extension)	1100 mm	800 mm
		T axis(Rotation)	±185 deg at origin position	±185 deg at origin position
		Z axis(Up/down)	0~+104 mm	0~+104 mm
	Max. Speed	R1,R2 axis (Extension)	120 deg/sec	240 deg/sec
		T axis(Rotation)	120 deg/sec	240 deg/sec
		Z axis(Up/down)	42 mm/sec	42 mm/sec
	Repeatability	R1,R2 axis (Extension)	±0.1 mm	±0.1 mm
		Z axis(Up/down)	±0.05 mm	±0.05 mm
General	Wafer Size		12" wafer	12" wafer
	Control Axis		4	4
	Arm Type		Dual Arm	Dual Arm
	Blade Thinkness		≤ 3mm	≤ 3mm
	Load Capacity		1.5 kg	1.5 kg
	Cable Length (Robot - Controller)		3m (Standard)	3m (Standard)
Utility	Power (Controller)		Single Phase AC208V ±10%, 5A	Single Phase AC208V ±10%, 5A
	Communicaton		RS232C	RS232C
Environment	Operating Pressure		Atmospheric pressure~10^{-6} Pa	Atmospheric pressure~10^{-6} Pa

Load Lock Chamber

- 2 or 1 shelf pass-through chamber (loading/Unloading)
- 4 of view point
- Auto door open structure
- Included wafer slide out detection sensor
- Control the vacuum when transferring the wafer, which is in/out from vacuum chamber and Atmospheric equipment(EFEM)

TM chamber

- 7 Side for 6PMs, 1 Load Locks integrated
- Vacuum Robot integrated
- Wafer detection sensor, Wafer slide out detection sensor, wafer presence sensor are installed
- 6 of view point

Cluster Tool

- Up to 7 sides for 5PMs TM Chamber for 300mm Wafer
- 2 slots of L/L chamber
- Includes Load lock options : 2 wafer pass-through
- 2 wafer with cooing and pre-heat
- 26-wafer batch or 13-wafer batch with cooling
- Dual Arm Vacuum Robot
- Vacuum Pumping system
- SEMI compliance

SPECIFICATION

MODEL		SPECIFICATION
General Info.	Wafer Size	300 mm
	Configuration	EFEM, Load Lock, TM Chamber
	Dimension	1,180(W)×1,190(D)×1,190(H)
	Valve	Vacuum Slot Valve
	LIP	Manual Gear Type
	Passline	1,100 mm
	Vacuum	$1x10E^{-2} \sim 5x10E^{-2}$
Utility	Vent	Nitrogen
	PCW	Norminal 40Psi
	CDA	$5kg/cm^2$

Glass Transfer Robot(LTR)

- Specialized robot for transferring LCD/FPD glass
- Currently developed for 2 to 4 generation of LCD/FPD glass
- Transfer the LCD/FPD glass with Parallel End-effector with vacuum chuck
- Single/Dual Arm available.
- Options : Traverse axis , Step availability (1 to 3 steps), glass presence sensor

SPECIFICATION

MODEL			SPECIFICATION		
			LTR SINGLE (2 STEP)	LTR SINGLE (2 STEP)	LTR DUAL (2 STEP)
Performance	Motion Range	R1,R2 axis(Extension)	1250 mm	1300 mm	1300 mm
		T axis(Rotation)	330 deg	320 deg	320 deg
		Z axis(Up/down)	700 (350+350) mm	620 mm	620 mm
		X axis(Traverse) Optional	O	O	O
	Max. Speed	R1,R2 axis(Extension)	1200 mm/sec	1200 mm/sec	1200 mm/sec
		T axis(Rotation)	200 deg/sec	200 deg/sec	200 deg/sec
		Z axis(Up/down)	600 mm/sec	600 mm/sec	600 mm/sec
		X axis(Traverse)	500 mm/sec	500 mm/sec	500 mm/sec
	Repeatability		±0.2 or deg		
General	Carrying Object		500x400x1t Quartz + Glass	620x720 mm (0.15~0.7t)	620x720 mm (0.15~0.7t)
	Control Axis		4	5	6
	Load Capacity		1.5 kg	3.5 kg	3.5 kg
Utility	Power (Controller)		Single Phase AC220V ±10%, 15A	Single Phase AC220V ±10%, 20A	
	Vacuum		-50 kPa or more	-73 kPa or more	

Glass transfer Robot (Multi glass handling)

SPECIFICATION

MODEL		SPECIFICATION	
		LTR (8 Glass multi)	LTR (18 Glass multi)
Motion Range	R1,R2 axis(Extension)	959 mm	968 mm
	T axis(Rotation)	330deg	-
	Z axis(Up/down)	700 mm	700 mm
	X axis(Traverse) Optional	○	○
Max. Speed	R1,R2 axis(Extension)	500 mm/sec	500 mm/sec
	T axis(Rotation)	90 deg/sec	-
	Z axis(Up/down)	250 mm/sec	250 mm/sec
	X axis(Traverse)	1000 mm/sec	1000 mm/sec
Repeatability		±0.2 or deg	
Carrying Object		500x400x1t Quartz + Glass	620x720 mm (0.15~0.7t)
Control Axis		4	5
Load Capacity		1.5 kg	3.5 kg
Power (Controller)		Single Phase AC220V ±10%, 15A	Single Phase AC220V ±10%, 20A
Vacuum		-50 kPa or more	-73 kPa or more

LED Wafer Transfer Robot

Sigle Arm

Dual Arm

- Specialized Robot for LED wafer handling
- Compact size & Light weight Design
- Handling 2~6 inch of sapphire wafer for LED process
- Different size of wafer compatible without any mechanical conversion
- Minimized rotation diameter allows downsizing the whole equipment & maximizing the space-effectiveness
- Customization available when requested

SPECIFICATION

MODEL		SPECIFICATION	
		SINGLE ARM	DUAL ARM
Motion Range	R axis(Extension)	470mm	470mm
	Θ axis(Rotation)	330deg	330deg
	Z axis(Up/Down)	200mm	200mm
Maximum Speed	R axis	640mm/sec	
	Θ axis	180deg/sec	
	Z axis	240mm/sec	
Repeatable Accuracy	R axis	±0.1mm	
	Θ axis	±0.1deg	
	Z axis	±0.1mm	
Min. Diameter of Rotation		460mm	430mm
Noise Generation		≤ 70db	
Cleanliness		Class 1@0.1μm	
Robot Body Material		Anodized Alumimun (8±2 μm)	
Blade Material		Ceramic ≤2mm	
Power(Controller)		Single Phase AC 220V±10%, 10A	
Air Supply		More than 0.4~0.5MPa, Ø4mm	
Vacuum Supply		Less than –50kPa	
Weight		Approx. 18 kgf	
Playload		0.7kgf (Including Gripper)	
End-Effector Grip Type		Vacuum	
Wafer Mapping(Option)		Laser Sensor	

LED EFEM

FEATURES

- LED wafer handling Clean Robot & Aligner integrated system
- Loading the cassette for 2~6 inch LED wafer
- Cassette Loader: 2 to 4 cassettes expandable
- Cleanliness: ISO class 3
- Customization available when requested

SPECIFICATION

MODEL	SPECIFICATION		
	RE-2C	RE-3C	RE-4C
Cassette Loader	2 Cassette	3 Cassette	4 Cassette
Frame Size	1600×730×2000	1800×730×2000	2100×730×2000
Carrier	2~6 inch (20~150mm) LED cassette		
Repeatability	Less than 0.1mm		
Cleanliness	ISO class 3		
Alignment Accuracy/Time	0.5 Degree/6sec		
Electric Supply	220V 10% (60Hz, 1), 3 Wires + Ground, No Neutral		
Acustic Noise	Less than 65dB		
User Interface	GUI-touch screen (optional)		
MTBF	≥ 20,000 hours		
MTTR	>2 hours		

SCARA(SCARA 600/miniSCARA series)

- Compact Size & Light Weight Design
- Wide Motion Range & Shift
- Newly designed AC/DC Servo Driver and Harmonic gear reducer
- Using Dynax controller
- 3 dimensional palletizing / 2 dimensional dispensing function
- Serial linked I/O module, 16 DI/16 DO (Max.256)
- Easy to attach Vacuum tool on Hand
- Various application for industrial, educational and research
- SCARA Series : Clean Environment
- Clean class 100 : Atmosphere air flow suction
- Various customizing available

SPECIFICATION

MODEL		SPECIFICATION		
		MINI SCARA 200	MINI SCARA300/300C	SCARA600
Arm Length		200mm(100+100)	300mm(150+150)	600mm(350+250)
Z-axis Stroke		50mm	80mm	200mm
Repeatability	X,Y axis	±0.050mm	±0.050mm	±0.030mm
	Z axis	±0.050mm	±0.050mm	±0.030mm
	R axis	±0.06deg	±0.06deg	±0.05deg
Max. Speed	X axis	300deg/sec	240deg/sec	240deg/sec
	Y axis	300deg/sec	480deg/sec	360deg/sec
	Z axis	50mm/sec	200mm/sec	1,000mm/sec
	R axis	1,200deg/sec	1,200deg/sec	900deg/sec
Motors	X axis	DC Servo Motor	AC Servo Motor	ABS Type AC Servo Motor(400W)
	Y axis	DC Servo Motor	AC Servo Motor	ABS Type AC Servo Motor(200W)
	Z axis	Micro Stepping Motor	Micro Stepping Motor	ABS Type AC Servo Motor(200W)
	R axis	Micro Stepping Motor	Micro Stepping Motor	ABS Type AC Servo Motor(100W)
Reducer	X axis	Harmonic Drive 1/50	Harmonic Drive 1/100	Harmonic Drive 1/50
	Y axis	Harmonic Drive 1/50	Harmonic Drive 1/50	Harmonic Drive 1/50
	Z axis	Lead Screw Lead 4.0mm	Lead Screw Lead 13.5mm	Ball Screw Lead 20mm
	R axis	Timing Belt 1/4	Timing Belt 1/5	Timing Belt 1/20
Payload		Max. 0.8kg	Max. 1.5kg	Max. 3.0kg
User Wiring		4 Wires	6 Wires	4 Wires
User Tubing		Ø 4×2	Ø 4×2	Ø 6×2
Weight		Approx. 3.8kg	Approx. 5.5kg	Approx. 30kg

miniCRANE

- Compact Size & Light Weight Design
- Controller integrated design
- Wide motion range(465mm), 1kg of payload
- Use Of The Integrated Cable & Air Tube Which Enables Easy Modification of End-Of-Arm Tools (Option : Electro-motion Gripper)
- Easy Installation & Programming
- OEM/ODM Manufacturing Available
- Long Lasting Durability & Minimized Backlash by Using Integrated harmonic Gear Reducers

SPECIFICATION

MODEL		SPECIFICATION
DOF		5 DOF
Arm Length		250mm + 200mm + 65mm
Max Radial Reach		515mm
Motor Drive		R,A,B axis (AC Servo Motor) C,U axis (DC Servo Motor)
Position Detection		Incremental Encoder
Max. Load Capacity		1.0kg
Repeatability	At Point P	±0.1mm
Motion Range	R axis	−150deg ~ +150deg
	A axis	−60deg ~ +120deg
	B axis	−60deg ~ +120deg
	C axis	−100deg ~ +100deg
	U axis	−160deg ~ +160deg
Gear Ratio	R axis	100 : 1
	A axis	200 : 1
	B axis	120 : 1
	C axis	213.3 : 1
	U axis	100 : 1
Max. Speed	R axis	180deg/sec
	A axis	90deg/sec
	B axis	180deg/sec
	C axis	90deg/sec
	U axis	180deg/sec
Wiring		Power(24V), I/O, 3.2mm Pneumanatic Barb Fitting(2 ea)
Weight		Approx. 7.2kg

Well Plate Transfer Robot

- Transfer Well Plate in Bio Lab
- Compact design & small footprint
- Easy to load the well plate with Hand gripper
- Reliable and precise motion
- Easy and user-friendly operation
- Customization available when requested

SPECIFICATION

MODEL			SPECIFICATION
Performance	Motion Range	G axis	10 mm
		R axis	270 mm
		T axis	330 deg
		Z axis	300 mm
	Max. Speed	G axis	≤5 mm/sec
		R axis	≤270 mm/sec
		T axis	≤±320 deg/sec
		Z axis	≤80 mm/sec
	Repeatability	G,R,Z axis	±0.1 mm
		T axis	±0.02 deg
General	Carrying Object (Well Plate)		5.03 inch (127.8) x 3.366 inch (85.5)
	Control Axis		4
	Grip Method		Hand Grip
	Max. Load Capacity		1.0 kgf (Including Gripper)
	Controller		AC servo motor
	Weight		Approx. 10.5 kgf

6-Axis Crane Robot

- 6-Axis vertical articulated robot
- Max. 3kg of payload
- Pneumatic Griper on End-of-hand (Optional)
- Customized grip type is available.
- Easy operation and reliable motion

SPECIFICATION

MODEL			SPECIFICATION
Motion Range	1 axis	Rotation range	±140 deg
	2 axis	Arm length	450mm
		Rotation range	–60 ~ 120 deg
	3 axis	Arm length	400mm
		Rotation range	0 ~ 130 deg
	4 axis	Rotation range	±135 deg
	5 axis	Arm length	100mm
		Rotation range	±120 deg
	6 axis	Rotation range	±165deg
Max. Speed	1 axis		120 deg/s
	2 axis		90 deg/s
	3 axis		90 deg/s
	4 axis		90 deg/s
	5 axis		90 deg/s
	6 axis		120 deg/s
Motors	1 axis		AC Servo motor (200W) (ABS)
	2 axis		AC Servo motor (with brake) (400W) (ABS)
	3 axis		AC Servo motor (with brake) (400W) (ABS)
	4 axis		AC Servo motor (with brake) (100 W) (ABS)
	5 axis		AC Servo motor (with brake) (50 W) (ABS)
	6 axis		AC Servo motor (50 W) (ABS)
Payload			Max 3 kg
Repeatability			± 0.1mm
User wring			5 wires
Power (controller)			DC48V

miniDeskTop / Tabletop Stage

- Compact Size & Light Weight Design
- Precision ball screw applied
- Various range of models (3 ~ 5 axis)
- Optional motor for machine purpose
- Vision-Guidance function (optional)
- For precision part assembling, dispensing, screwing, and soldering
- Easy Installment
- Customization for customer's needs

- Application of linear scale (resolution 0.5um) : High precision movement control
- AC / DC Servo or Stepping motor either can be applied
- High-precision Ball Screw leads Backlash Zero
- Application of 485 communication link
- Integrated Cable : Simple Design
- Closed Loop Control : Drive level position feedback
- PCI type Stand Alone : 24V & 5V self-operation on exterior power
- Easy to set up tools for convenient operation environment
- Customization for user when required

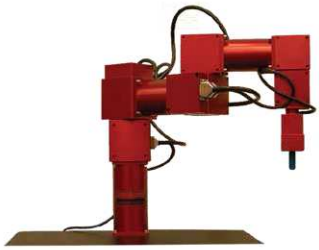
Educational Robot

Intelligence Robot Platform

- Equipped with Control Unit, Manipulator,Vision Guide &Mobile base for Educating Students Task Performance & Mobility
- Expandable Software Contents to Target Unilateral Comprehension of the Intelligent Robot System

Robot Arm & Hand

- Light-weight Body
- Multi-jointed Structure
- Control Simulation
- Modular Concept Application
- Safety Design without Sharp Edges



Power Module

- Easy Assembly & Disassembly
- PC Direct Control
- Compact Size & Light Weight
- Modular Concept
- Expandable Interface
- Harmonic Drive : Precise & Smooth Motion
- Simple Design : Driver & Controller in 1 Unit
- Power Supply Safety (24V Input)
- Electricity Overload Prevention Circuit
- Vertical & Horizontal Multi Axis Combination
- Learning Robot Control by Inputting parameter(Educational Effect)

Stage

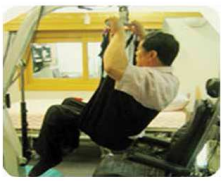
370×470

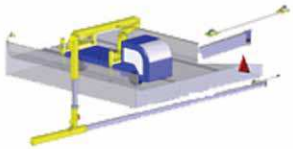
1100×1300

Alignment Stage
- FPD/LCD Flat Panel Inspection (Vision Guided)
- Scanning Probe microscope
- Precision System Position Setting
- Clean Environment Application
- Design Customization
- ODM/OEM Supply
- Repeatability : ±5μm
- Accuracy : ±50μm
- Clean Environment Application
- Scanning Probe Microscope

X-Y STAGE
- Designed for user convenient
- Small footprint
- X-Y flat stage used for research, inspection, metrology purpose etc.
- Installed the device onto the upper stage such as scanner or Position feedback from linear scale
- 2 step motors (5 phase) & cross roller linear guide allows the flat stage move in X-Y plane
- Highly precise and reliable in motion
- Customization available when requested

Field Service





Human Aid Robot
- Provided by ODM
- Mobile Based System
- Assist Disabled People for Self-Transfer (Between Bed, Wheel-chair & Bathroom)
- Easy to Control & Change Direction
- Modular Components
- Competitive Price by Minimizing Components

Bridge Inspection Robot
- Provided by ODM
- Inspection Range : 15m × 12m
- Max Height of Inspection Range : 6m
- Capturing Time : 40 min
- Positioning Accuracy : ±0.05m
- Size of Image (FOV) : 1.5m × 1.1m
- Transportation Equipment Preparing Time: 10 min
- Transportation Equipment Accuracy : ±0.02 m

Bio Lab Automation

Well-Chip Micro Arrayer
- Manufacture Well-Type Protein Chip
- Drug Screening & Testing
- User-Friendly Operation
- High Quality & Efficiency
- HTS System Application

Nano-Chip Bonder
- Chip Size : 2 (Tray) × 45 (Chip)
- Applicable for Various Chips
- Stepping Motor, AC Servo Motor
- Highly Efficient Dissolution
- Low Noise
- Precision Position Setting
- Precision Dispensing Using Syringe Pump
- PC Based Control, User-Friendly GUI

Automatic Cell Culturing System
- Fully Automated System
- Cultivates Bio-Material
- Temperature Control
- Clean Environment
- Reliable Mass Production