PRODUCT INFORMATION

RORZE CORPORATION

RORZE

The specifications described in this catalog are subjected to change without notice due to improved functions of the products. When considering purchasing of the products, consult our inquiry office for confirming the latest information.

RORZE's Advantages

All RORZE's products are in-house developed and in-house manufactured.

RORZE and offshore RORZE group develop the product-related core technologies (machine structure, motion controller, and sensors). RORZE group owns the large scale plant (clean room) and various processing equipment, and RORZE group manufactures all products regarding this plant as a core plant of manufacturing.

For the core technologies, main parts are manufactured in-house, and no part of black box exists. We know everything about every product. Making use of this knowledge, we suggest the most suitable solution for the user's requirements and realize quick correspondence for the trouble in emergency.

Processing technology

RM processing

Motor driver

RD SERIES

Sensors

Motion sensor

In-house Development
In-house Manufacture

Motion controller

RC-5 SERIES

Machine structure

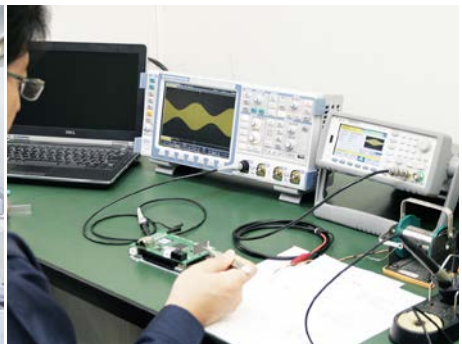
Mechanical design in 3D

Robot

RR SERIES

RORZE ROBOTECH (Vietnam)
Processing factory

RORZE ROBOTECH (Vietnam)
Clean room



RORZE Head Office
Experiment in development

RORZE DRIVE MONITOR: Be effective by adjustment and abnormal analysis

The function of RORZE DRIVE MONITOR, which monitors the robot operation, can be built into RORZE's robot. Robot motion can be monitored by connecting the robot motion controller and PC using Ethernet.

Screen of Operation Monitor (RORZE DRIVE MONITOR)

RORZE DRIVE MONITOR directly acquires the calculated data of the motion control engine inside the motion controller to be clearly graphed on the PC screen.

This function easily grasps the status such as "how much margin is left for the torque of the arm axis motor" and "the cause of the robot vibration may be rapid change in the acceleration of the rotation axis motor".

Additionally, prognostics of trouble can be captured for supporting the stable operation of the robot.

Acquiring information quickly and accurately enables precise and quick adjustment, and the suitable robot operation can be realized.

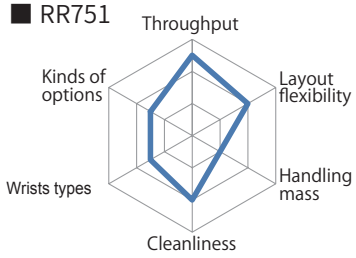
■ Typical items which can be monitored by RORZE DRIVE MONITOR

Item	Unit	Meanings
Rotational speed of the motor	rpm	Rotational speed of the motor
Ratio of the instruction current	%	Ratio of the instruction current to the rated current
Ratio of the load current	%	Ratio of the load current to the instruction current
Acceleration	rad/s^2	Acceleration of the robot

Atmospheric Robot Selection Guide

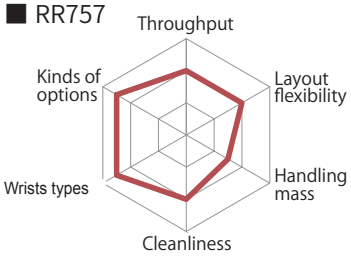
Radar chart

■ RR751



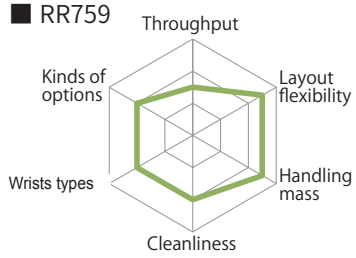
This model regards the cost and throughput as important.
Interpolating operation cannot be performed because the incremental encoder is used.

■ RR757



This model is the most standard model.
Handling mass is increased based on the RR751.
Interpolating operation can be performed by adopting the absolute encoder.

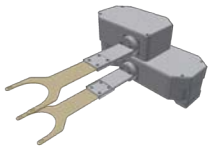
■ RR759



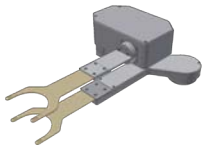
This model has long handling distance of the arm even if it has a small rotation radius and has the long Z-axis stroke with a low pass line.
High level of rigidity is provided, and heavy object such as tape frames can be transferred.

*In principle, RR759 is sold only as an integrated system products.

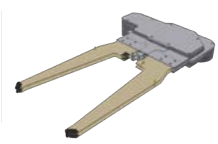
Hand



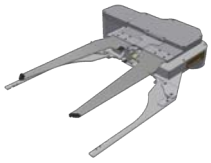
(1) Flip
(2) Flip



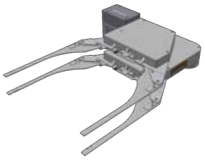
(1) Flip
(2) Vac



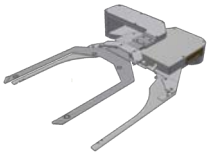
(1) Edge clamp
(2) Edge clamp



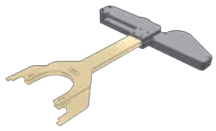
(1) Edge clamp
(2) Frame clamp



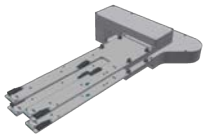
(1) Frame clamp
(2) Frame clamp



(1) Fit-in
(2) Frame clamp



(1) Vac
(2) Vac+Mapping



(1) Reticle
(2) Reticle

Option

- Finger mapping
- Wrist section mapping
- Teaching pendant
- Monitoring software
- Diagnostic software (monitoring features such as voltage and temperature)
- Adding the lifting/lowering axis (option only for the RR757)

RR75 SERIES

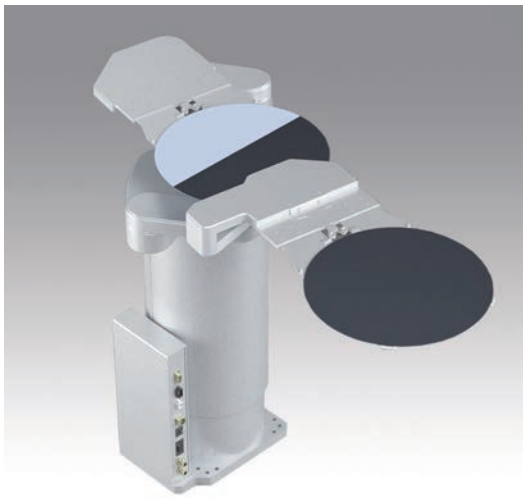


Photo: RR757

The RR75 series robot is a SCARA robot and all axes have stepping motors with encoders. The type of ABS encoder specification accesses two ports without X-axis track by the synchronous interpolating operation of the arm axis and rotation axis. The type of the double-arm specification exchanges wafers in the shortest period of time to improve the transferring throughput. The robot X-axis track can be added outside to perform the simultaneous control from the robot side including the teaching positions.

Features

- ●Stepping servo motors are mounted on all axes.
- ●Two-port access without X-axis track is possible. (ABS encoder specifications)
- ●Heavier object can be handled by increasing the arm rigidity. (RR756, RR757, and RR759)
- ●High throughput by double-arm (RR759) specification
- ●The robot X-axis track can be controlled.
- ●All directions can be accessed without a rotation dead angle.

*In principle, RR759 is sold only as an integrated system products.

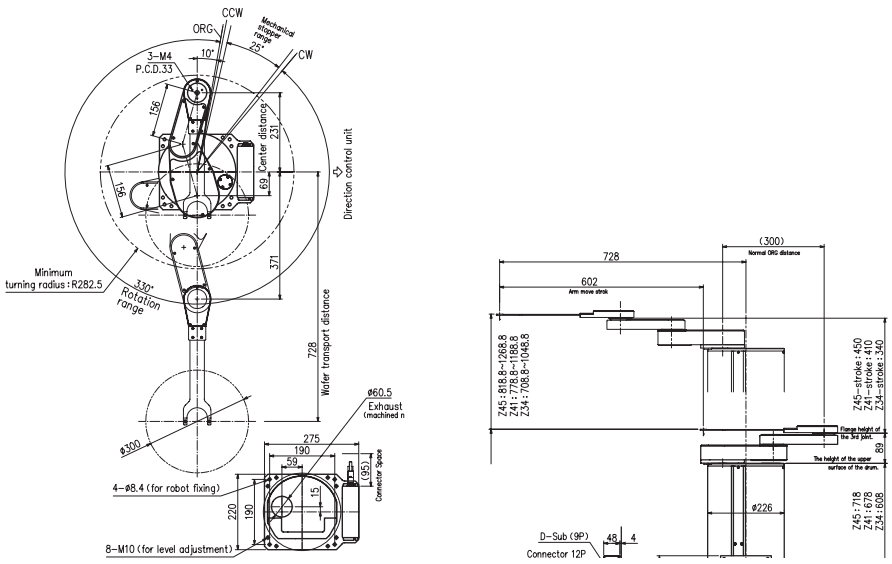
Main specifications

	Number of arms	Arm length [mm]	Z-axis stroke [mm]	Rotation radius Note 1 [mm]	Transferring distance Note 2 [mm]	Rot. range [°]	Transferring accuracy [mm]	ISO-CLASS	Encoder specification Note 3
RR756L15	Single	156	340/350/410/420/450 Note 4	R245 to R282.5	588 to 728	330	± 0.1	1	ABS
RR757L15	Double	156	340/350/410/420/430 Note 4	R282.5 to R335	659 to 766	330	± 0.1	1	ABS
RR759L13	Double	130	280	R175	380	350	± 0.1	1	ABS
RR759L22	Double	220	190/420/550	R270	762	420	± 0.1	1	ABS
RR759L27	Double	270	190/420/550	R320	962	420	± 0.1	1	ABS

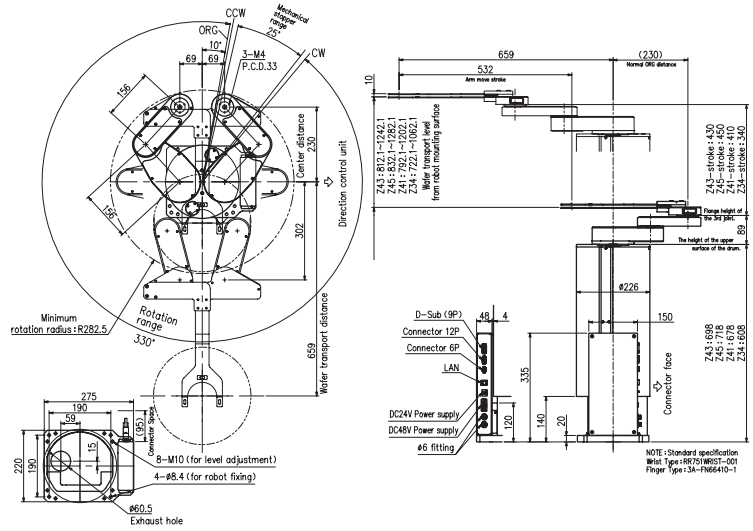
Note 1: Differs according to the wrist section and finger length.
Note 2: For 300 mm wafers
Note 3: INC: Incremental (relative quantity)
ABS: Absolute (absolute quantity)
Note 4: 350 mm and 420 mm include −10 mm.

Outside dimensions

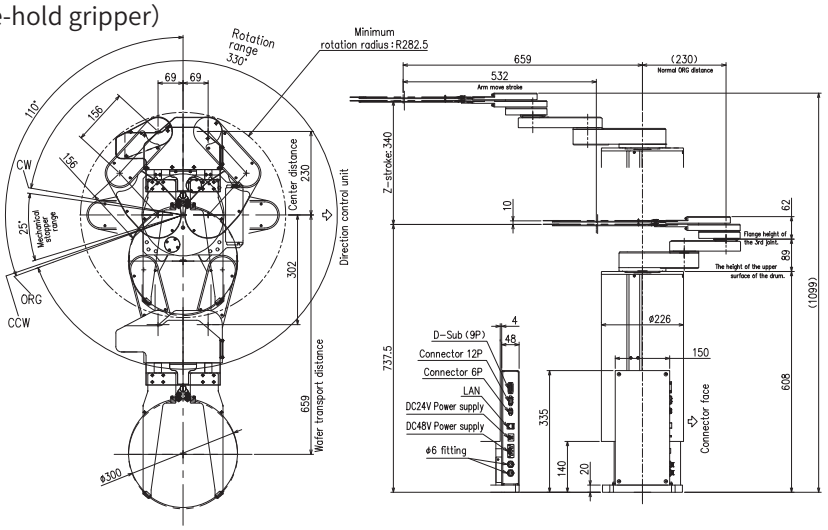
■ RR756L15



■ RR757L15

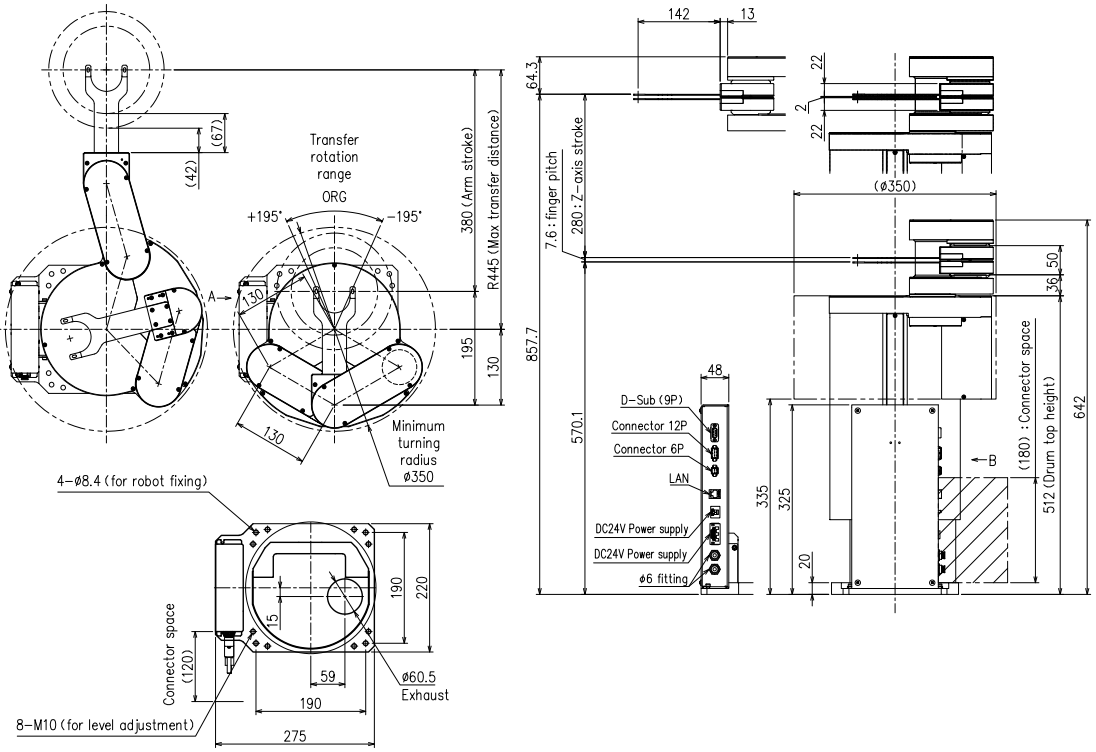


■ RR757L15（edge-hold gripper）

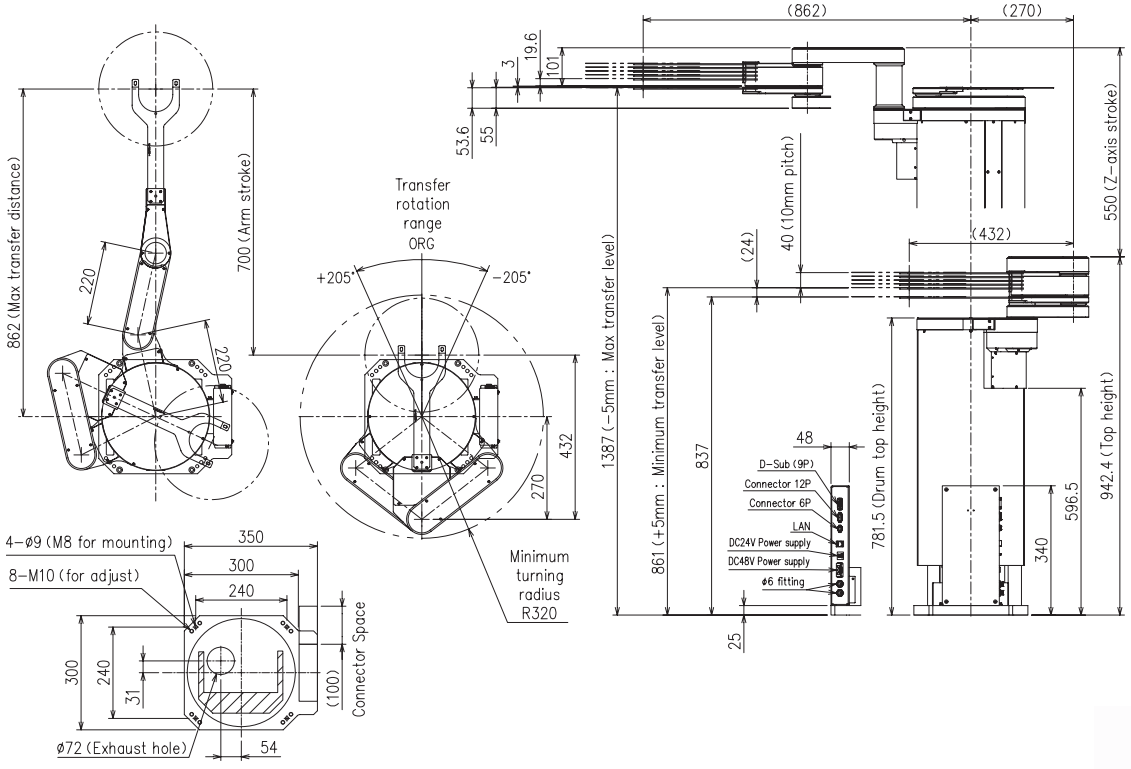


*In principle, RR759 is sold only as an integrated system products.

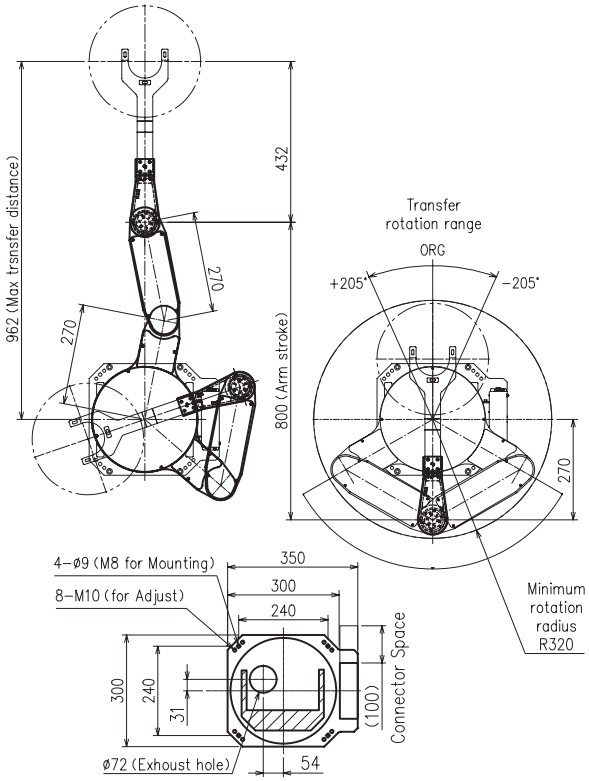
■ RR759L13

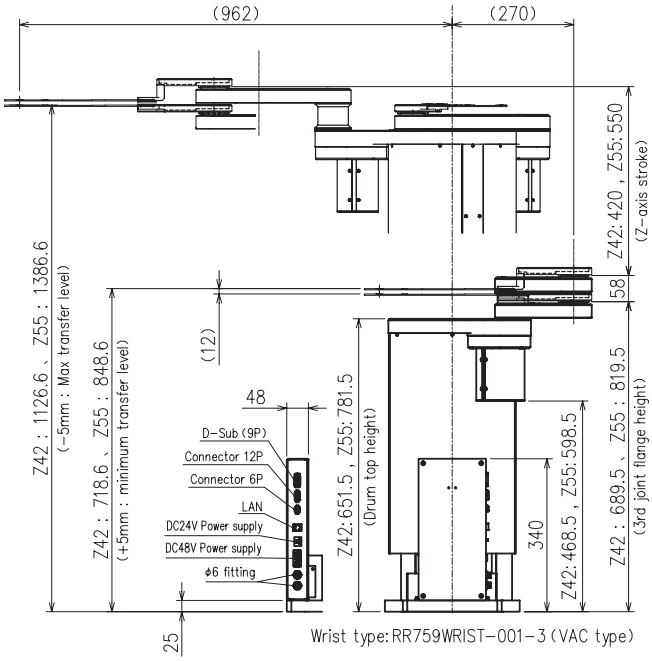


■ RR759L22



■ RR759L27


962 (Max trsnsfer distance)
432
270
270
800 (Arm stroke)
Transfer
rotation range
ORG
+205°
−205°
270
Minimum
rotation
radius
R320
4−ø9 (M8 for Mounting)
8−M10 (for Adjust)
350
300
240
300
240
31
(100)
Connector Space
ø72 (Exhoust hole)
54


(962)
(270)
Z42 : 1126.6 、Z55 : 1386.6
(−5mm : Max transfer level)
Z42 : 718.6 、Z55 : 848.6
(+5mm : minimum transfer level)
Z42: 420 , Z55: 550
(Z−axis stroke)
58
(12)
48
D−Sub (9P)
Connector 12P
Connector 6P
LAN
DC24V Power supply
DC48V Power supply
ø6 fitting
Z42: 651.5 , Z55: 781.5
(Drum top height)
340
Z42: 468.5 , Z55: 598.5
Z42 : 689.5 、Z55 : 819.5
(3rd joint flange height)
25
Wrist type: RR759WRIST−001−3 (VAC type)

RR481 SERIES

Image: RR481L230

The RR481 boomerang arm vacuum robot (dual arms) realizes high positioning repeatability and highly reliable vacuum partition performance by adopting DDM (vacuum direct drive motor) for the drive section. The arm mechanism driven by the steel belt enables the use of long end effector despite of the small rotation area.

Features

- Small rotation area (small footprint)
- Transferring of the long finger and long distance
- Corresponding to the narrow gate opening size (15 mm)
- High accuracy
- Corresponding to ultrahigh vacuum
- High throughput
- Corresponding to the AWC option (wafer position compensation)

Main specifications

■ Work size to be handled

300 mm works, 200 mm works, 150 mm works and square substrates

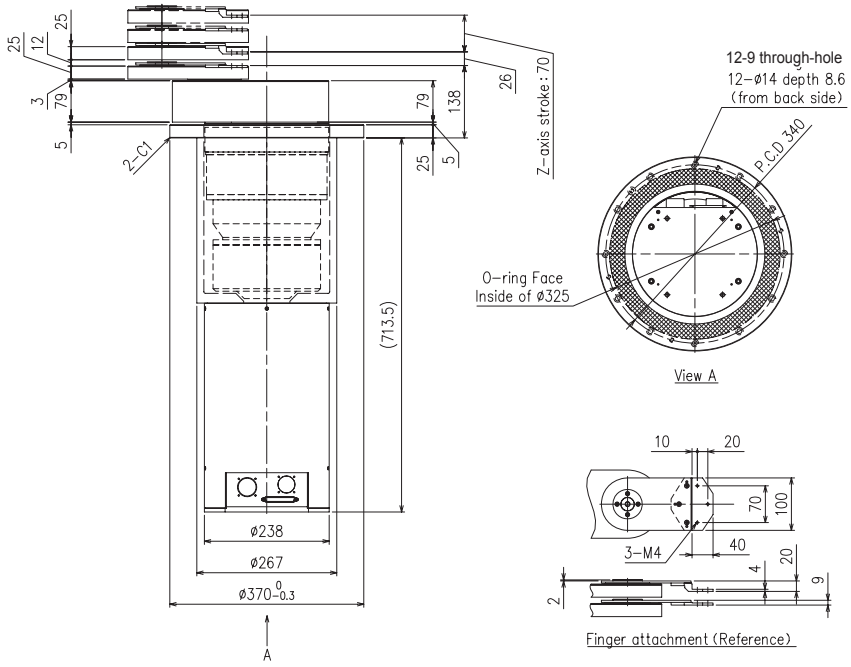
■ Repeatability

R direction	± 0.1 mm
θ direction	± 0.03°
Z direction	± 0.05 mm

■ Operating range

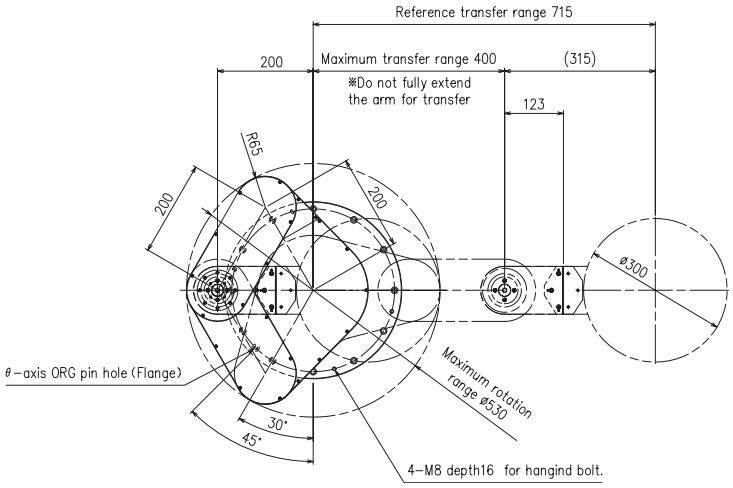
Arm length	L300	L230	L200
Minimum rotation range	ϕ 730	ϕ 590	ϕ 530
Distance of reached work center	1110 mm	830 mm	710 mm
Z-axis	70 mm or 140 mm		

Outside dimensions (common to each arm length)

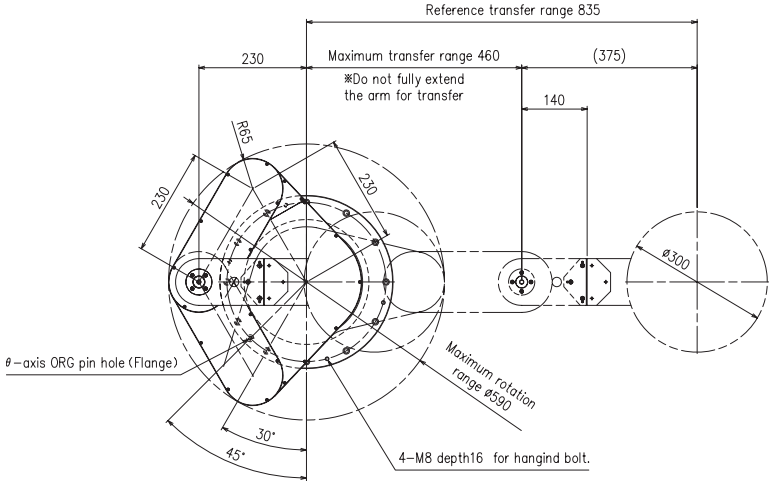


Outside dimensions

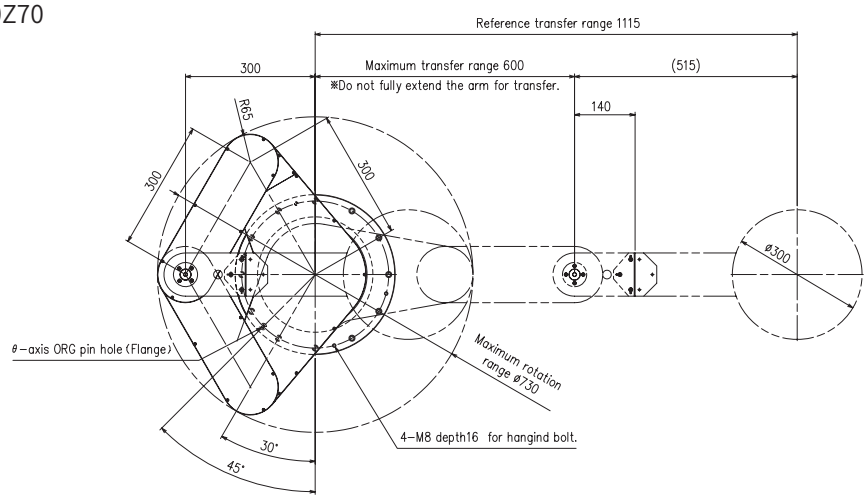
■ RR481L200Z70



■ RR481L230Z70



■ RR481L300Z70



RR493 SERIES

Image: RR493L180

The RR493 SCARA arm vacuum robot (single arm) realizes high positioning repeatability and highly reliable vacuum partition performance by adopting DDM (vacuum direct drive motor) for the drive section. The link arm mechanism driven by the steel belt enables the use of long end effector despite of the small rotation area.

Features

- Small rotation area (small footprint)
- Transferring of the long finger and long distance
- Corresponding to the narrow gate opening size (15 mm)
- High accuracy
- Corresponding to ultrahigh vacuum
- High throughput
- Corresponding to the AWC option (wafer position compensation)

Main specifications

■ Work size to be handled

300 mm works, 200 mm works, 150 mm works, and square substrates

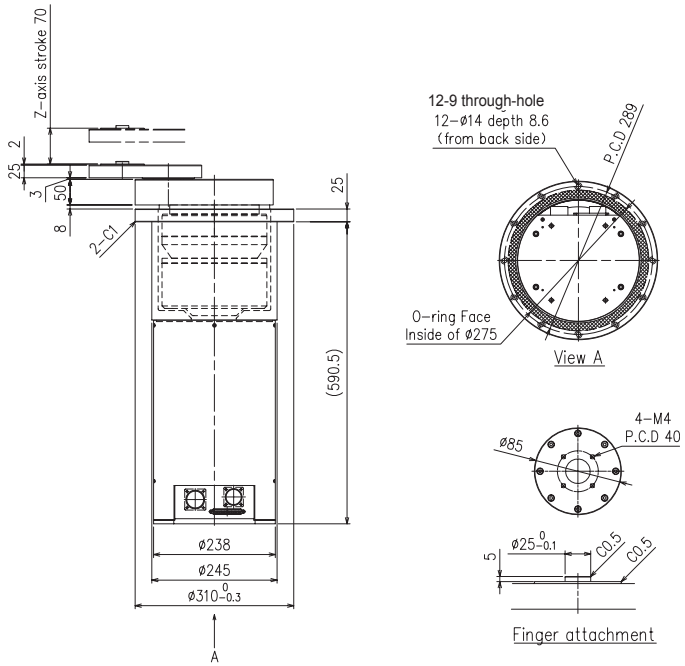
■ Repeatability

R direction	± 0.1 mm
θ direction	± 0.03°
Z direction	± 0.05 mm

■ Operating range

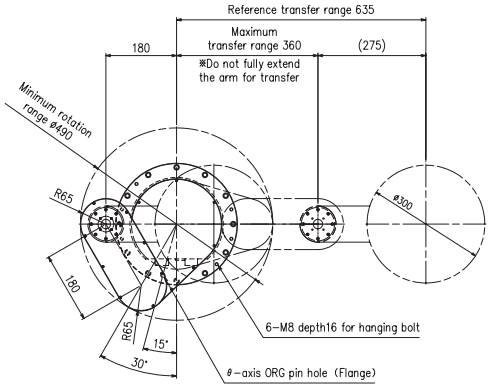
Arm length	L300	L230	L200	L180
Minimum rotation range	ϕ 730	ϕ 590	ϕ 530	ϕ 490
Distance of reached work center	1110 mm	830 mm	710 mm	630 mm
Z-axis	70 mm or 140 mm			

Outside dimensions (common to each arm length)

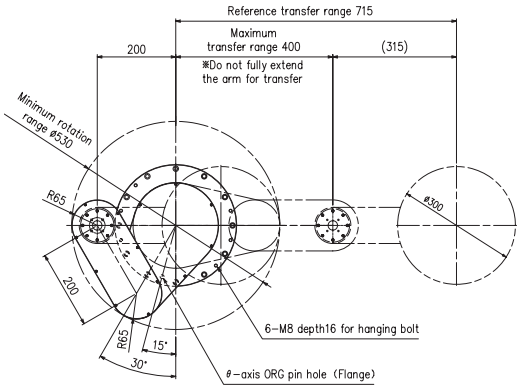


Outside dimensions

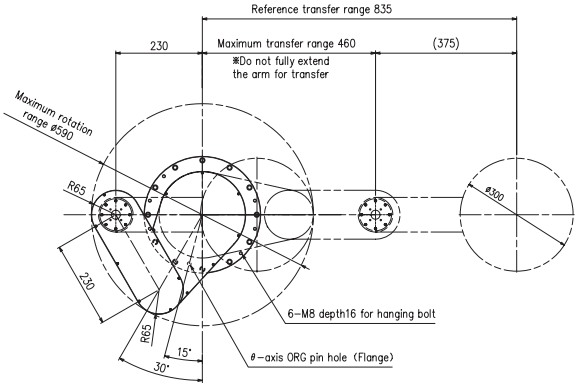
■ RR493L180Z70



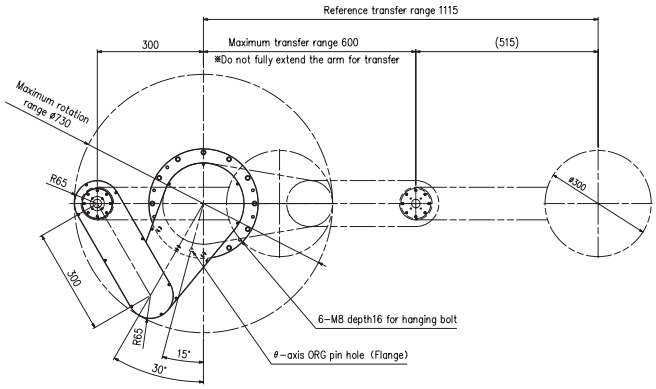
■ RR493L200Z70



■ RR493L230Z70



■ RR493L300Z70



RR491/RR492 SERIES

The RR491/RR492 frog leg arm vacuum robot realizes high positioning repeatability and highly reliable vacuum partition performance by adopting DDM (vacuum direct drive motor) for the drive section. The full-link arm mechanism realizes highly accurate positioning repeatability.

Image: RR491L300

Image: RR492L400

Features

- High accuracy
- Corresponding to ultrahigh vacuum
- High throughput
- Corresponding to the AWC option (wafer position compensation)

Main specifications (RR491)

■ Work size to be handled

300 mm works, 200 mm works, and 150 mm works

■ Operating range

Arm length	L300
Minimum rotation range	ϕ 810
Distance of reached work center Note 1	770 mm
Z-axis	70 mm or 140 mm

■ Repeatability

R direction	± 0.05 mm
θ direction	± 0.03°
Z direction	± 0.05 mm

Main specifications (RR492)

■ Work size to be handled

300 mm works, 200 mm works, and 150 mm works

■ Operating range

Arm length	L400
Minimum rotation range	ϕ 980
Distance of reached work center Note 1	1030 mm
Z-axis	70 mm or 140 mm

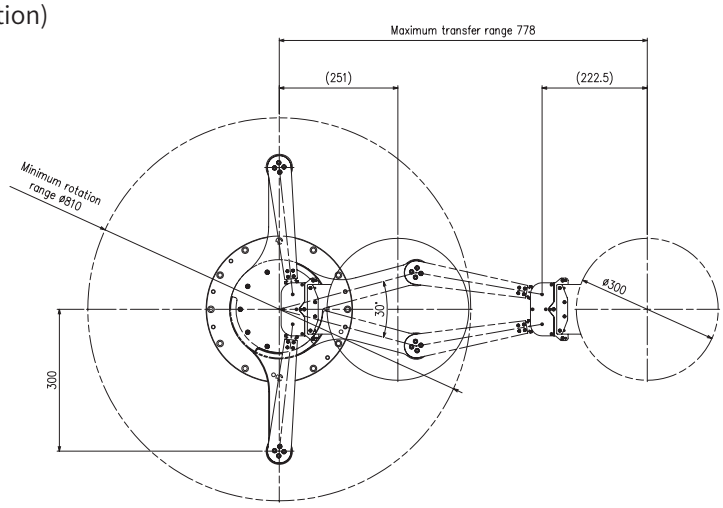
■ Repeatability

R direction	± 0.05 mm
θ direction	± 0.03°
Z direction	± 0.05 mm

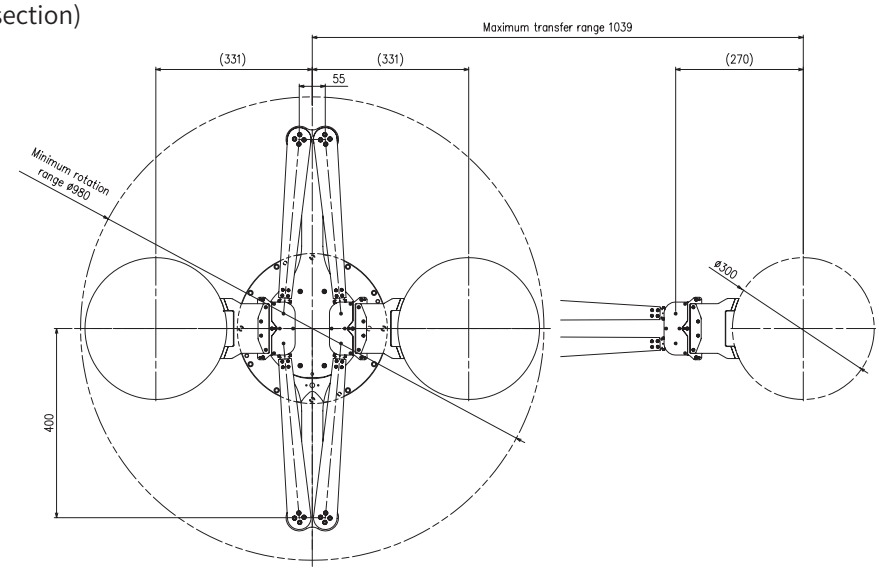
Note 1: The distance of reached work center can be customized by changing the arm length and finger length.

Outside dimensions

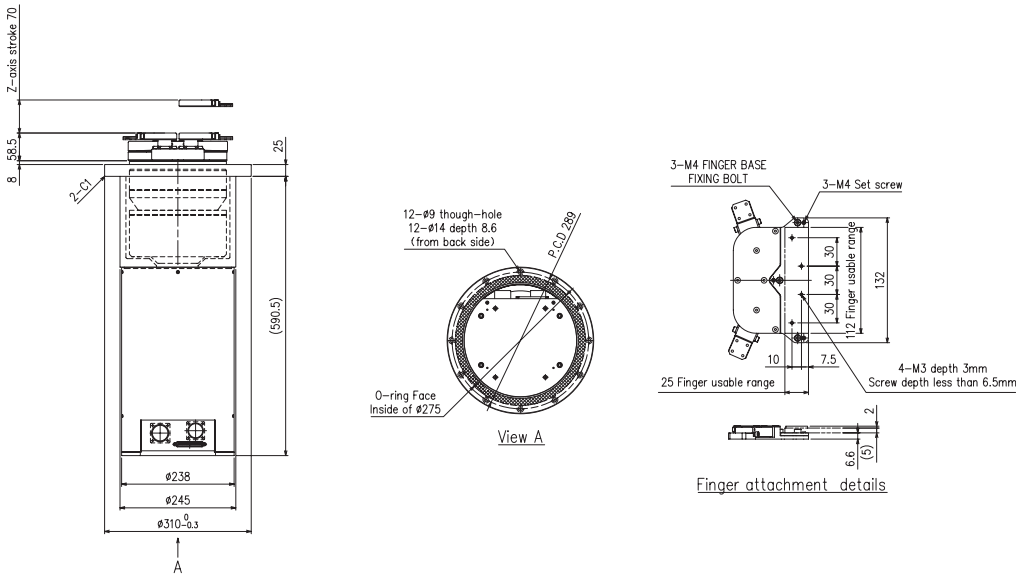
RR491L300 (arm section)



RR492L400 (arm section)



RR491/RR492 (common section)



RV200 SERIES

Photo: RV201-F07-001

Features

- Handling of the FOUP and Auto Door FOSB is available as a standard.
- Original mechanism for opening/closing the door and precise operation control bring high level of cleanliness.

Option

- Info pad pin and lockout pin
- RF-ID/Bar code
- Customization of indication lamp
- Corresponding to E84
- Corresponding to External I/O
- RS232C communication specifications
- N2 and XCDA purge
- Handling of 200 mm and 300 mm works

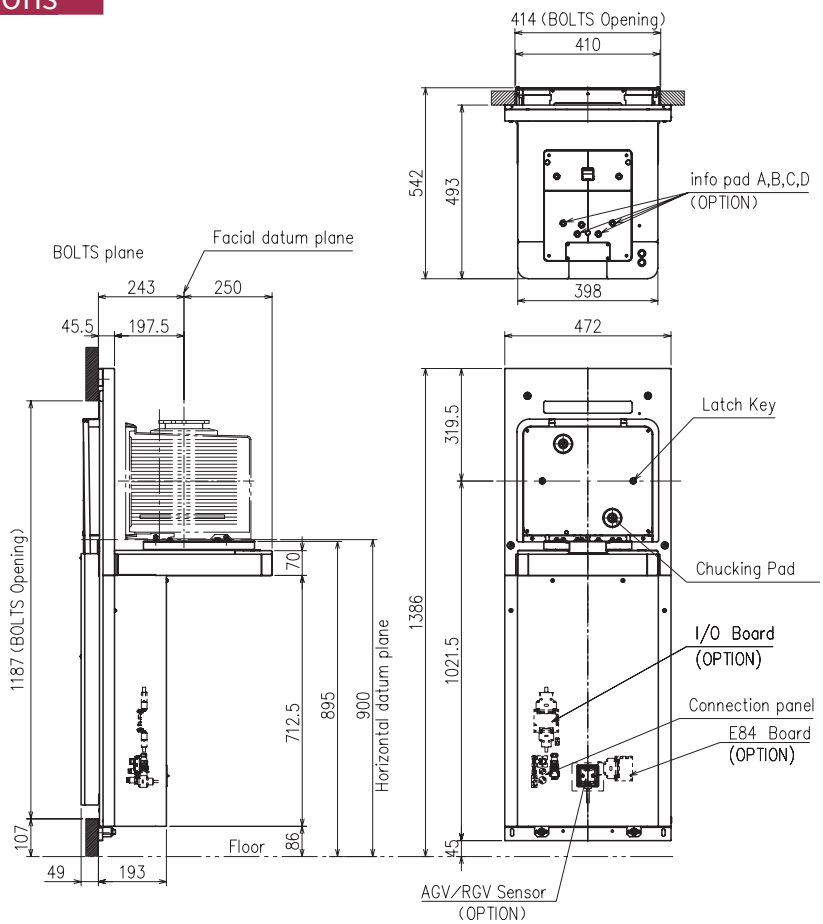
Main specifications

OC: Open Cassette, G: Handling of glass works, S: Stocker connection, P: Purge, T: Turn

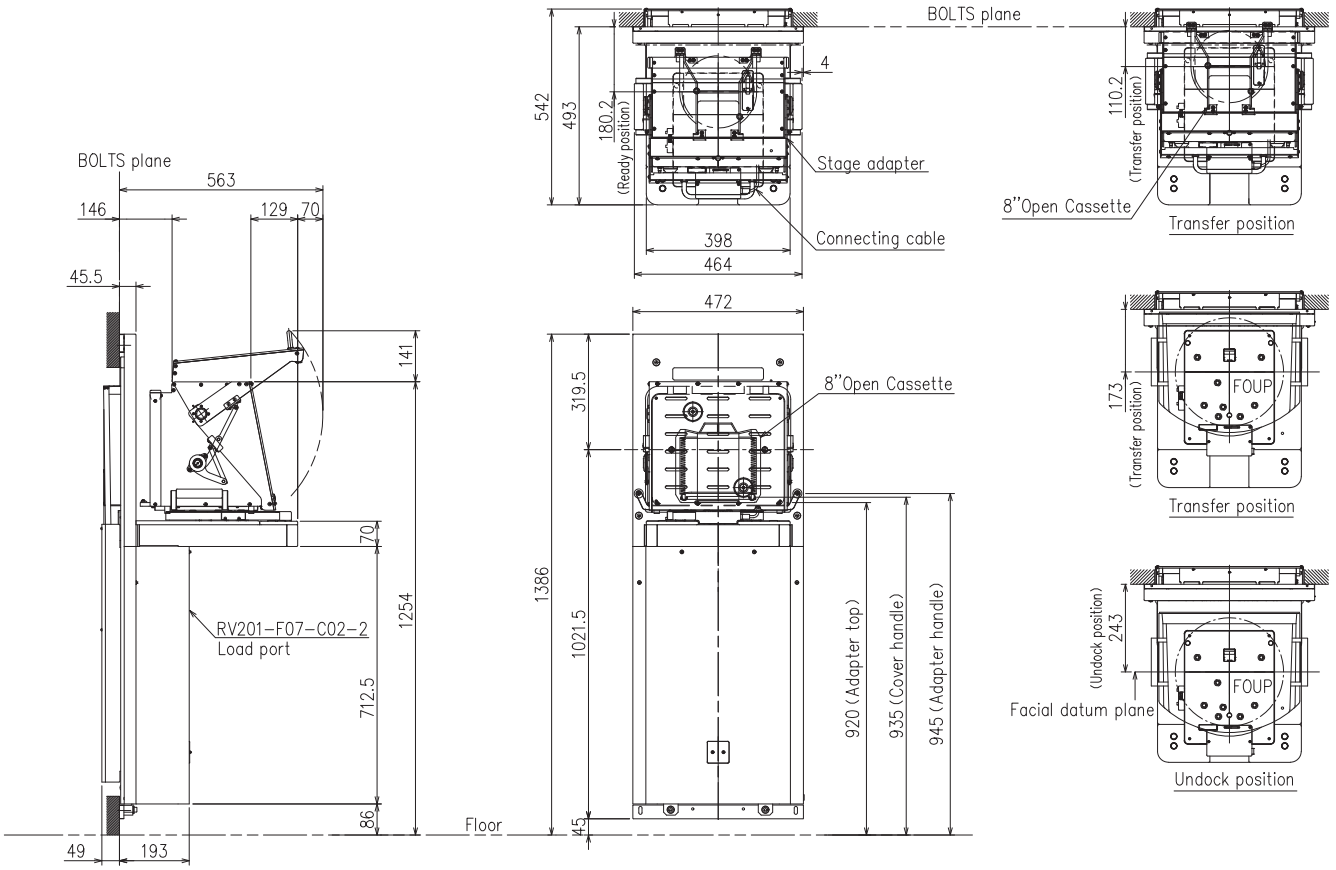
Model	Special specifications	Supply power	Compressed air	Vacuum air	N_2
RV201-F07-0		24VDC ± 10% 6A	0.5 to 0.6 MPa Flow rate: 10 L/min or more	-60 to -80 kPa, Flow rate: 10 L/min or more	
RV201-F07-C	OC				
RV201-F07-G	G				
RV201-F07-T	S/T				
RV201-F07-N	P/T	24VDC ± 10% 9A			○

Outside dimensions

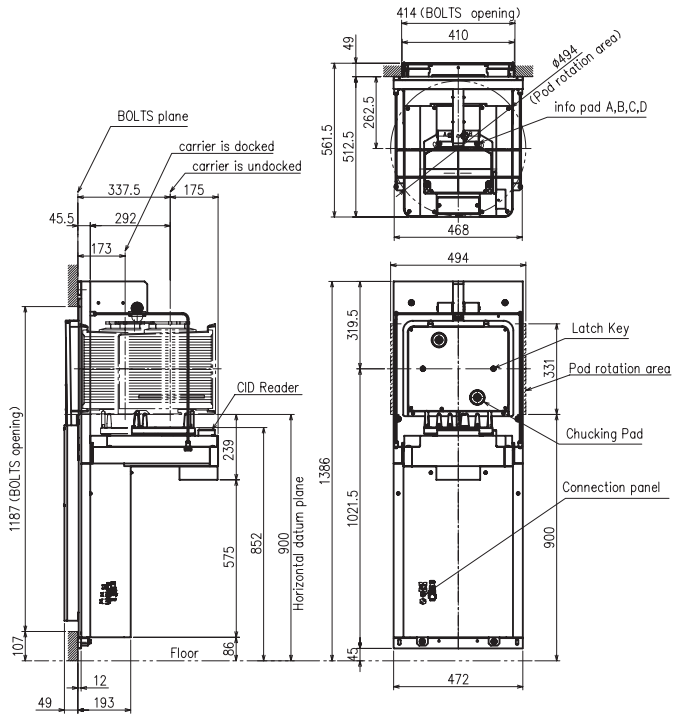
■ RV201-F07-0



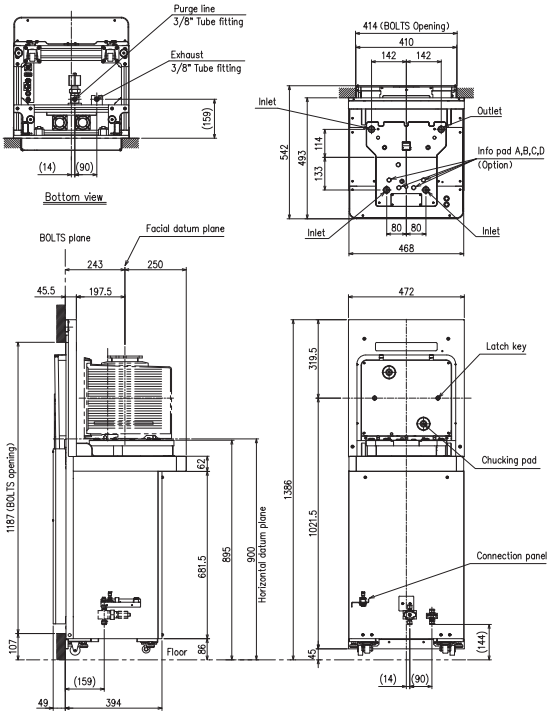
■ RV201-F07-C



■ RV201-F07-T



■ RV201-F07-N



Aligner Selection Guide

List of aligners

○ Available △ Available optionally × Not available

Type	Series	Wafer size							Model	Handling of glass works	Features
		2	3	4	5	6	8	12			
VAC	RA320						●		RA320-822	×	• Compact • Cost saving
								●	RA320-C22	×	
	RA320W						●	●	RA320-822-W	△ Note 1	• Handling of two kinds of wafer sizes
	RA320L							●	RA320-C22-L	○	• Compact • High accuracy
CLAMP	RA321						●		RA321-80C	△ Note 1	• Small area of wafer contacting surface • No tubes
								●	RA321-C0C	×	
VAC	RA420L			●	●	●	●		RA420-48V-L	○	• High accuracy • Handling of multi-wafer sizes
						●	●	●	RA420-6CV-L	○	

Consult our inquiry office for handling of laminate wafers.
Note 1: Option


RA420L SERIES


RA320L SERIES


RA321 SERIES

Effective case for the L series

The new sensor, in which many minimum-size sensor elements of 14 μm are lined, is used for the L Series adding to the existing optical sensor which could acquire only one-dimensional information until now. Unprecedented high level of two-dimensional very high resolution information can be acquired from the object. This achieves the alignment operation for the following objects that were difficult to be aligned in the past.

- ●Laminate wafer having jagged edges of the glass surface
- ●Silicon part of the laminate wafer
- ●Glass work having rough edge surface
- ●Glass work that cannot be detected by the laser sensor due to too sharp edge

Difference in detected data of new type and existing type sensors

Newly developed sensor and new original alignment algorithm enable the alignment operation even for the works in which the alignment error occurred due to largely disturbed waveform using the existing sensor.

RA420L SERIES

Photo: RA420-48V-L

This is the high-accuracy aligner with the X-axis,Y-axis and θ-axis, and has the Z-axis mechanism for compensating the wafer position.

Features

- Throughput is improved.
- Handling of transparent glass works and laminate wafers

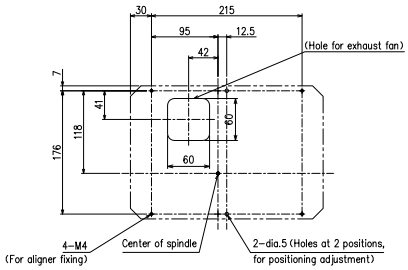
Main specifications

Wafer size	Positioning accuracy		Positioning interval Note 1
	Notch angle accuracy Note 1	Center accuracy Note 1	
ϕ 100 mm to ϕ 300 mm	± 0.05° to ± 0.2°	± 0.05 to ± 0.1 mm	2 sec to 6 sec

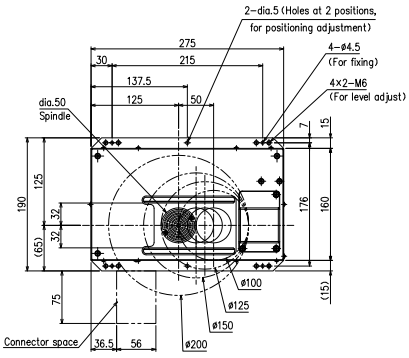
Note 1: Changes according to the kind of the sensor and wafer size.

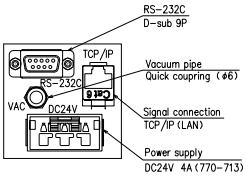
Outside dimensions

■ RA420-48V-L

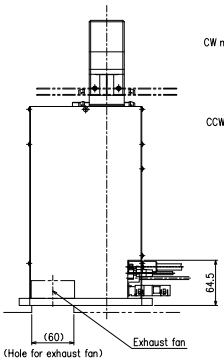


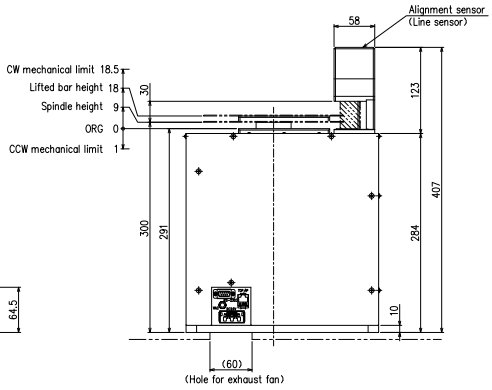
Details of mounting base



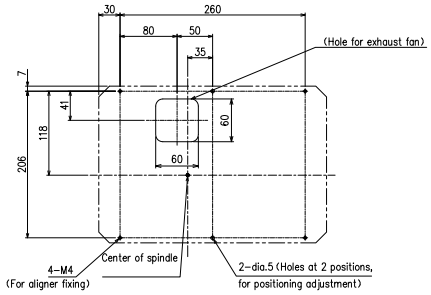


Details of Connection Panel (S=1/1)

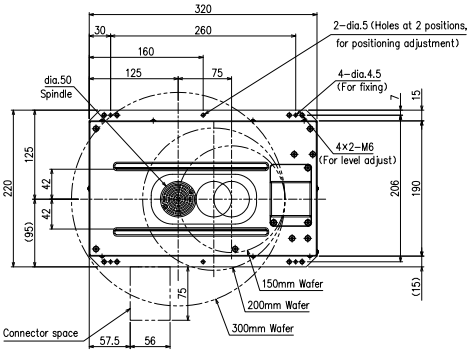


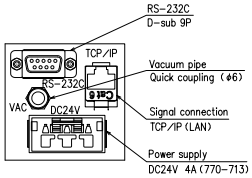


■ RA420-6CV-L

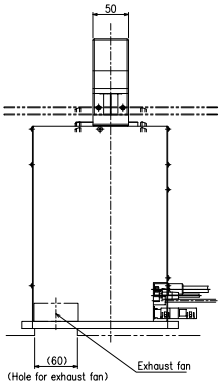


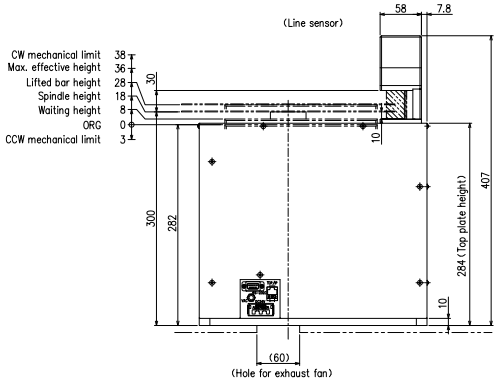
Details of mounting base





Details of Connection Panel (S=1/1)





RA320 SERIES

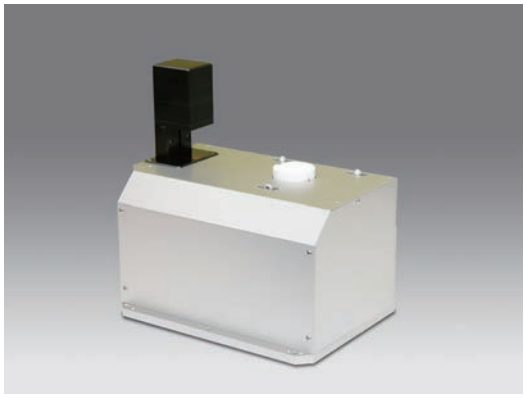


Photo: RA320-C22-L101

The aligner (RA320 SERIES) has the Z-axis and X-axis mechanisms for compensating the wafer position inaddition to the θ axis. This is a small and lightweight type to reduce the installation footprint. Various kinds of wafer alignment operations are available according to the type of non-contact optical sensors.

Features

- Handling of transparent objects (glass), laminate, and notch-less wafers (L type)
- Small type and lightweight
- Small footprint

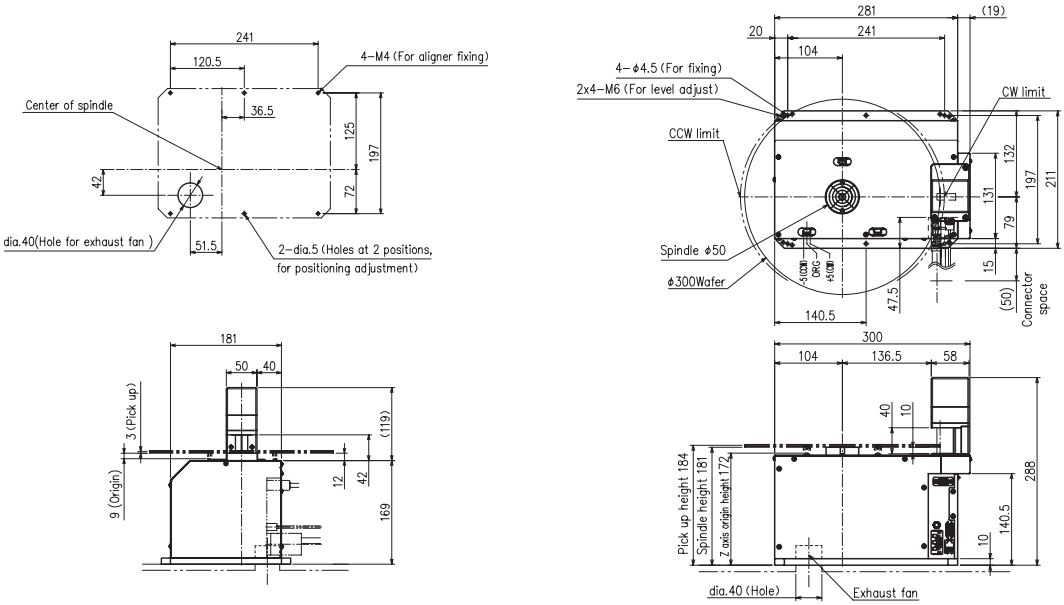
Main specifications

Wafer size	Positioning accuracy		Positioning interval Note 1
	Angle accuracy Note 1	Center accuracy	
ϕ 100 mm to ϕ 300 mm	± 0.05° to ± 0.2°	± 0.1mm	Average 5sec

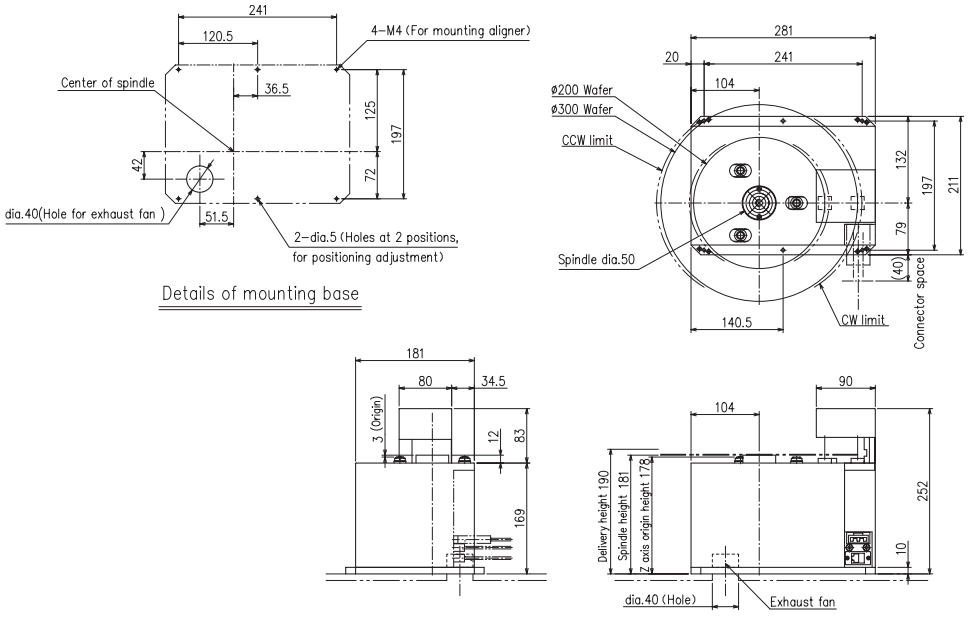
Note 1: This is the processing time interval of standard accuracy, and changes according to the kind of sensor, wafer size, and required accuracy.

Outline dimensions

■ RA320-C22-L



■ RA320-822-W



RA321 SERIES

Photo: RA321

The aligner (RA321 SERIES) is the edge clamp type aligner which has the clamp axis, θ-axis, and Z-axis. The edge clamp method, which clamps the outer periphery of the wafer, minimizes the particle generation.

Features

- ●High speed and high accuracy
- ●Throughput of the system is improved (with buffer).
- ●Handling of transparent objects (glass) and laminate wafers
  Notch-less wafers can be handled using the image sensor.

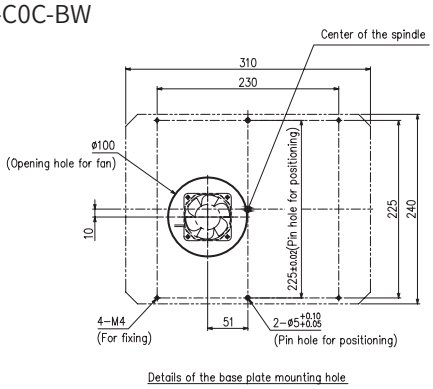
Main specifications

Processing object	Positioning accuracy		Positioning interval
	Angle accuracy	Center accuracy	
ϕ 200 mm ϕ 300 mm	± 0.2°	± 0.1mm	Approximately 4 sec Note 1

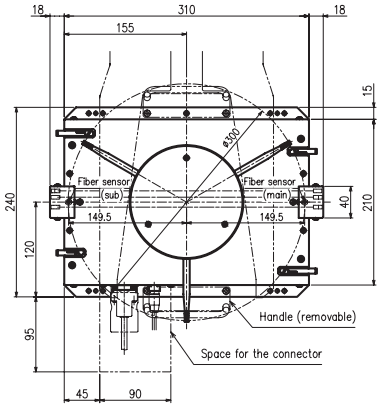
Note 1: For 300 mm wafers

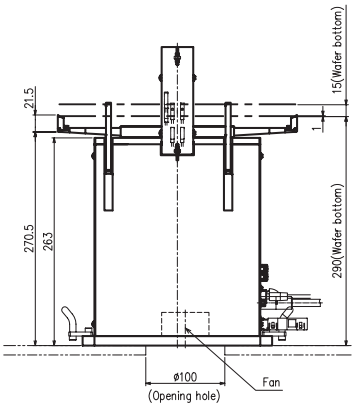
Outline dimensions

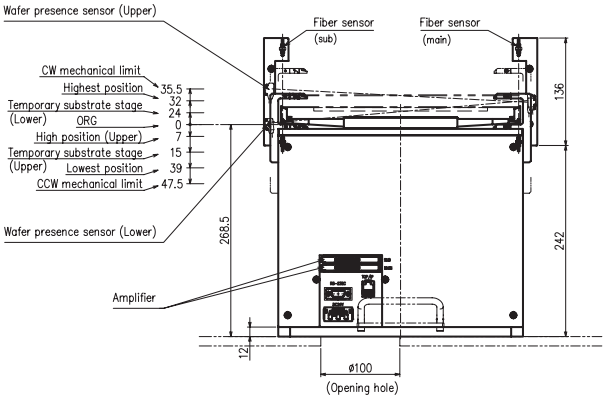
■ RA321-C0C-BW



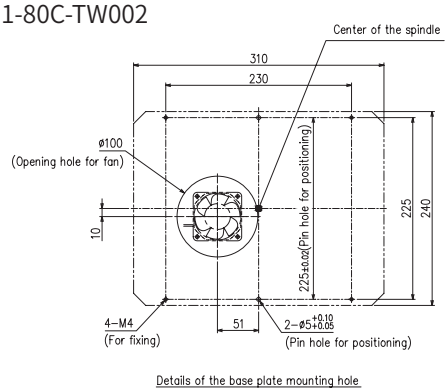
Details of the base plate mounting hole



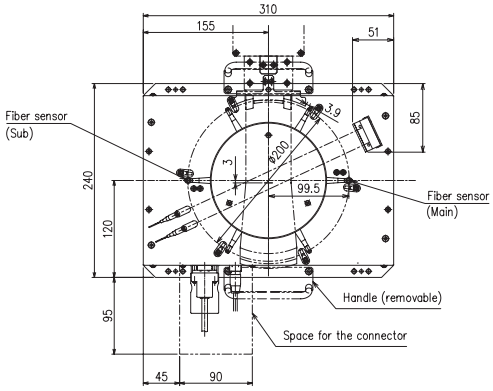


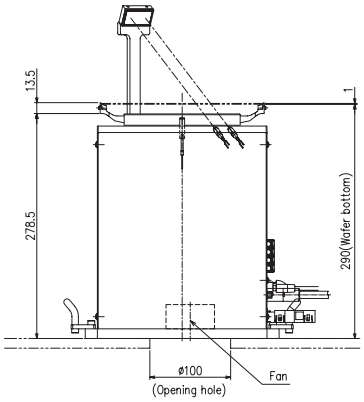


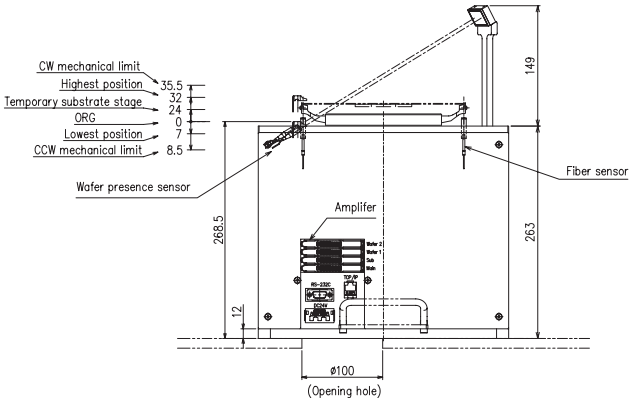
■ RA321-80C-TW002



Details of the base plate mounting hole







ACE EFEM

Photo: RSC141

The high speed transferring system is realized by mounting the new type clean robot and high speed linear track axis. Connection with the OHT and AGV is available.

Features

- Higher throughput can be attained by mounting two aligners.
- Corresponding to the vacuum chucking type and edge clamp type (option)
- Compatible use of 200 mm and 300 mm works (option)

Option

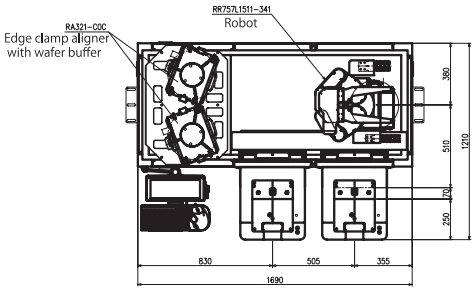
- Automatic teaching system
- Ionizer
- Chemical filter
- Wafer internal buffer
- RF-ID/Bar code
- E84
- The load port with N2/XCDA purge
- Teaching pendant

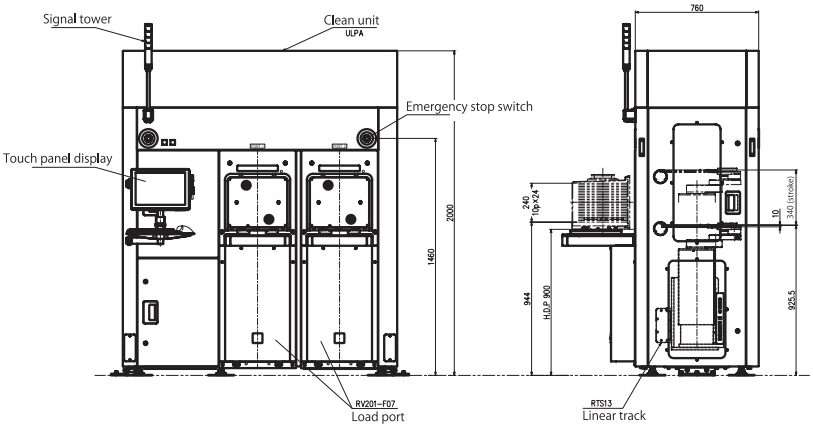
Main specifications

Type	RSC131	RSC141
Number of ports	2 ports	3 ports
Transferring object	300 mm wafer: dia. 300 ± 0.2 mm, Thickness: 775 μ m	
Carrier	25-slot 300 mm FOUP (SEMI E47.1)	
	25-slot 300 mm FOSB (SEMI M31)	
Power voltage	Single-phase 200V AC ± 10%, 50/60Hz ± 5%	
Current consumption	4kVA (20A/200V AC) Including FFU	
Vacuum (source pressure)	-80 kPa to -90 kPa	
Vacuum (flow rate)	40 L/min	50 L/min
Positive pressure (source pressure)	0.6 MPa to 0.7 MPa	
Positive pressure (flow rate)	20 L/min	30 L/min
EMO contact output	2 systems (dry contact)	
Interlock	Input: 8 points/Output: 8 points (insulated I/O)	

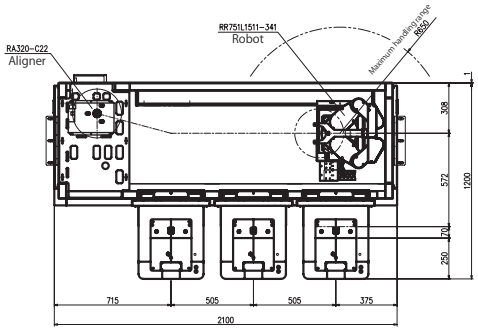
Outline dimensions

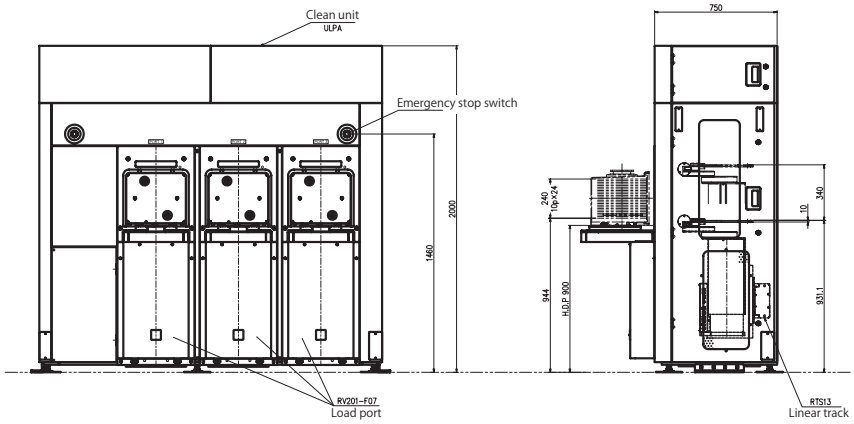
■ RSC131





■ RSC141





ACE SORTER

Photo: RSC192 (8 ports configuration)

High throughput sorting is realized by using the clean robot on which the new servo is mounted, aligner, and linear track axis. The frame has the configuration so that the load port can be mounted at the front, back, left, and right of the frame , and the load port and various units can be addd kater. Direct connection with the OHT and stocker is available.

Features

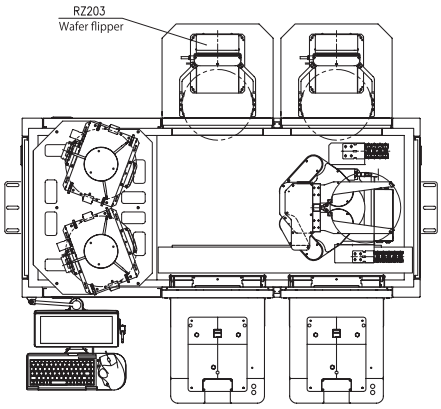
- ●High speed alignment using two aligners
- ●The edge clamp method prevents transferring particles onto the back surface of a wafer.
- ●IDs on both surfaces of a wafer can be read.
- ●Corresponding to the system on which the OHT and stocker are mounted.
- ●Transferring wafers can be instructed on the touch panel to realize easy-to-understand operability.

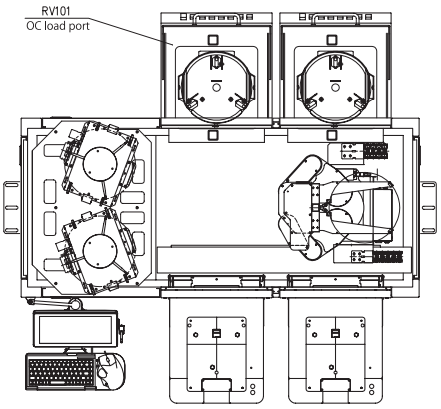
Main specifications

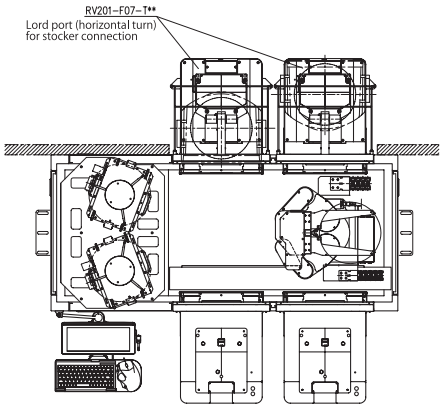
Type	RSC132	RSC142	RSC152
Number of ports	2 ports	3 ports	4 ports
Transferring object	300 mm wafer: dia. 300 ± 0.2 mm, Thickness: 775 μ m		
Carrier	25-slot 300 mm FOUP (SEMI E47.1)		
	25-slot 300 mm FOSB (SEMI M31)		
Power voltage	Single-phase 200V AC ± 10%, 50/60Hz ± 5%		
Current consumption	4kVA (20A/200V AC) Including FFU		
Vacuum (source pressure)	-80 kPa to -90 kPa		
Vacuum (flow rate)	30 L/min	40 L/min	50 L/min
Positive pressure (source pressure)	0.6 MPa to 0.7 MPa		
Positive pressure (flow rate)	20 L/min	30 L/min	40 L/min

Option

- ●Corresponding to various transferring operations such as reversing a wafer and open casette
- ●Glass wafers and laminate wafers
- ●Various chemical filters
- ●RF-ID/Bar code
- ●Compatible transferring of 200 mm and 300 mm works
- ●FOUP for the stocker-mounted type
- ●E84
- ●Ionizer
- ●N2/XCDA purge

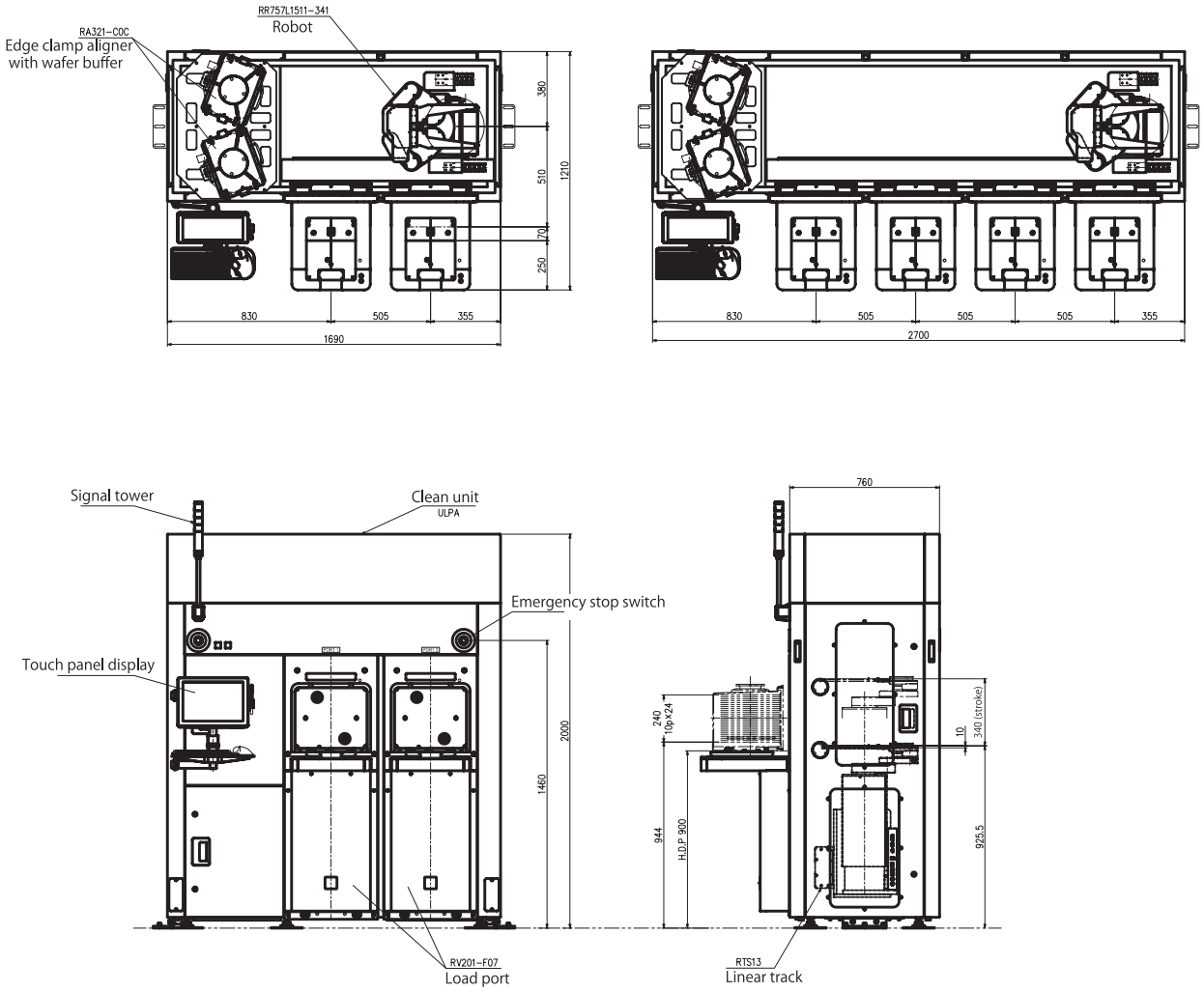






Outline dimensions

■ RSC132/152



N2-BWS200/800/1600/3200 (Nitrogen purge)

Photo: N2-BWS3200

The area for storing wafers (POD having the purge function) is provided for the wafer sorter. Test wafers and process wafers are contained inside the POD where is kept at low humidity and low oxygen to minimize the change of processed film of wafers.

Features

- 200, 800, 1600 or 3200 wafers storage
- Delivers low oxygen, low humidity, and high level of cleanliness with low nitrogen flow volume
- Automated teaching for aligners and stockers
- The shutter mechanism which opens/closes only the front of the wafer pod minimizes the opening when accessing
- Robot accesses to load ports by interpolation action of VAC adsorption end-effector, which eliminated X-axis

Main specifications

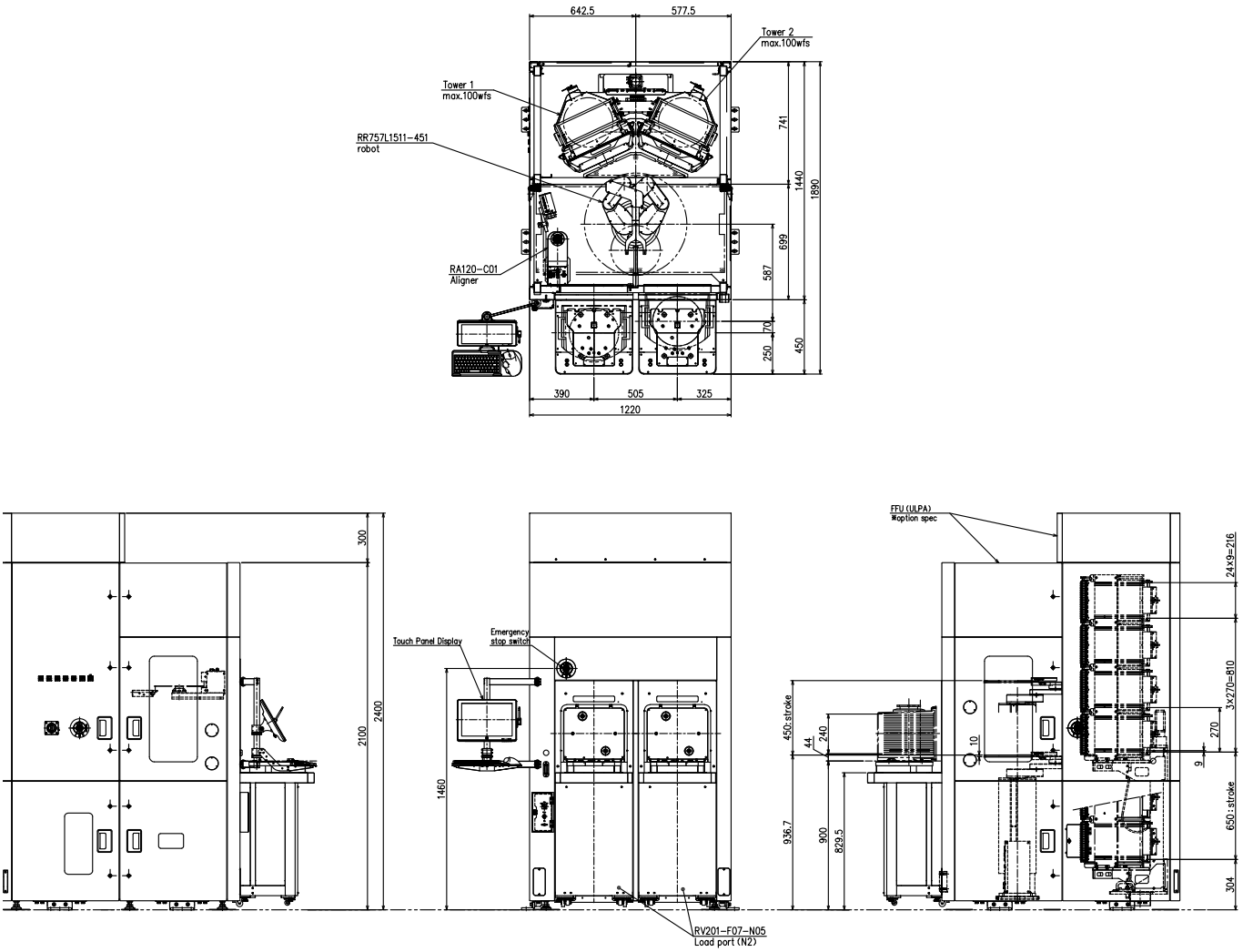
Type	BWS200	BWS800	BWS1600	BWS3200
	RSC151	RI76172	RI76192	RSC2E2
Handling object	300 mm wafer: dia. 300±0.2 mm, Thickness: 775±20 µm			
Carrier	25-slot 300 mm FOUP (SEMI E47.1)			
	25-slot 300 mm FOSB (SEMI M31)			
Power voltage	Single-phase 200 V AC±10% 50/60 Hz±3%	Three-phase 208 V AC ±10%, 50/60 Hz ±5%		
Current consumption (including FFU)	6 kVA (30 A/200 V AC)	10 kVA (30 A/200 V AC)		25 kVA (75 A/200 V AC)
Vacuum（source pressure）	-90 kPa to -80 kPa			
Vacuum（flow rate）	40 L/min	60 L/min		
Positive pressure（source pressure）	0.6 MPa - 0.7 MPa			
Positive pressure（flow rate）	50 L/min	30 L/min		40 L/min
N2（source pressure）	0.4 MPa - 0.5 MPa			
N2（flow rate）	250 L/min	300 L/min	600 L/min	1200 L/min

Option

- Chemical filter
- Bar code reader/RF-ID

Outline dimensions

■ RSC151



Reticle Handling System

RSR160

Photo: RSR160

The reticle transferring system (RSR160) clamps the reticle edge in a minimum range to transfer the reticle without receiving particles, and is applicable for the next-generation EUV mask.

Features

- Various carriers can be handled by mounting RORZE POD opener.
- Corresponding to transferring of reticles with pelicle (by changing the robot hand)
- Receiving particle is avoided using the air flow control based on the air flow analysis.

Option

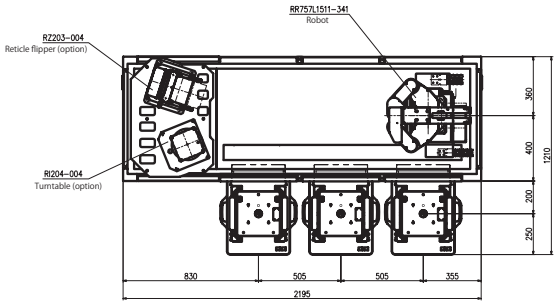
- Reticle turntable
- Reticle flipper
- Reticle non-contact alignment
- Reticle QR code reader

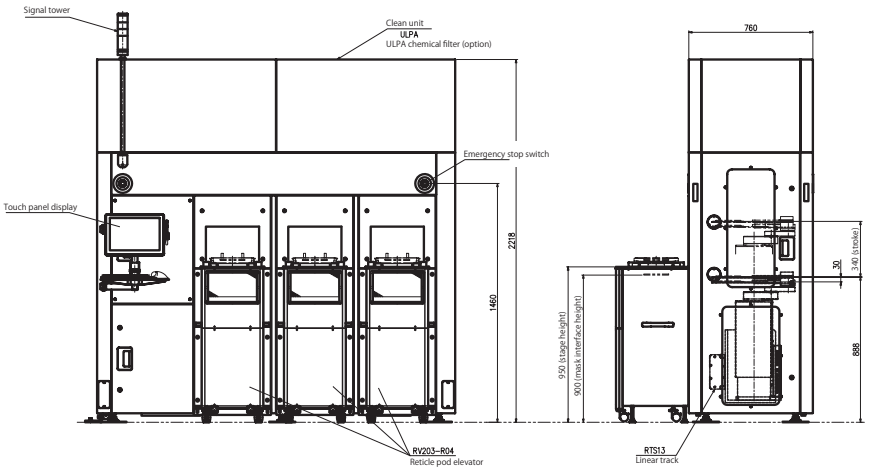
Main specifications

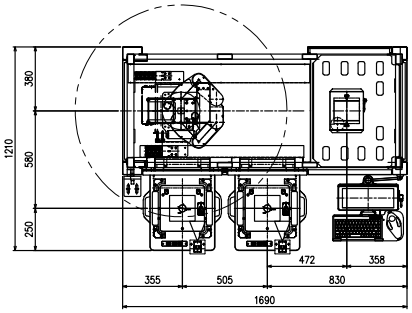
Type	RSR160
Number of ports	3 ports
Transferring object	Photomask, EUV mask 6" x 6" (Side: 152 ± 0.4 mm, Thickness: 6.35 mm ± 0.1 mm)
Carrier	RSP-200、RSP-150、EUV POD
Power voltage	Single-phase 200V AC ± 10%, 50/60Hz ± 5%
Current consumption	4kVA (20A/200V AC) including FFU
Positive pressure (source pressure)	0.6 MPa to 0.7 MPa
Positive pressure (flow rate)	10 L/min

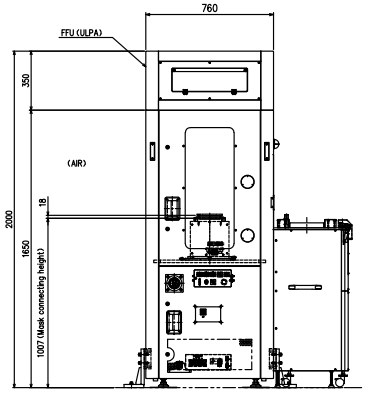
Outline dimensions

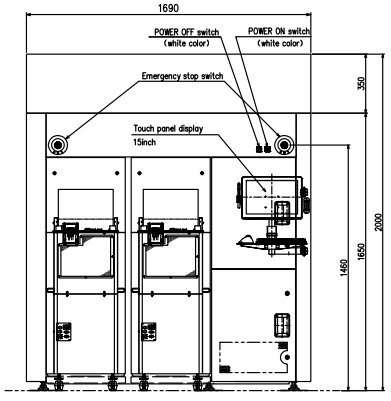
RSR160

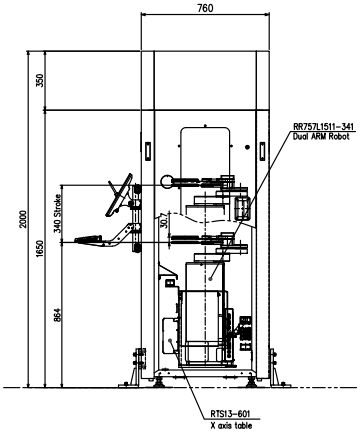












PLVS (PLUS)

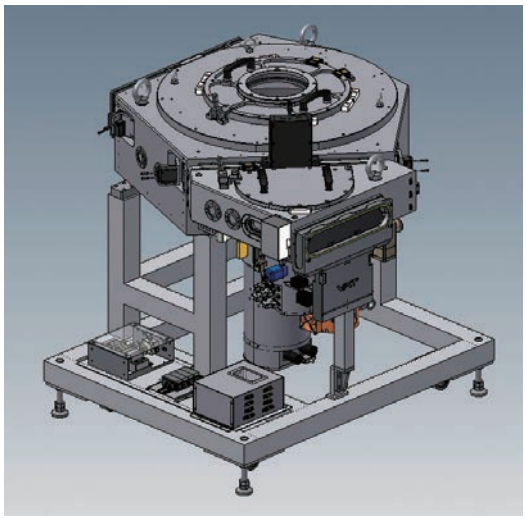


Image: Vacuum Platform for 300 mm

The PLVS/vacuum platform is a clean transferring system which has high positioning repeatability and highly reliable vacuum partition performance using various units of the DDM (vacuum direct drive motor) drive section, which is a common feature of the vacuum robot and vacuum aligner.
The simple and high performance vacuum transferring system is realized by combining system configurations to meet the needs of the customer to apply to various semiconductor applications such as E-Beam Lithography, PVC, CVD, Etch, MR Head Deposition, MEMS, and Inspection & Metrology.

Features

- Suitable system configuration and small footprint
- Clean transferring operation
- Ultrahigh vacuum
- High throughput

Main specifications

Load lock	Single, dual, and buffer type
Single unit	DDM vacuum robot, Vacuum aligner, and Vacuum elevator
Work size to be handled	450 mm, 300 mm, 200 mm, 150 mm, and square substrates
Connecting process	1 process to 8 processes and various processes
Vacuum performance	1E-6Pa or less
Vacuum pump	Dry pump and turbo pump
Surface treatment	PM processing and various treatments

Turntable RI150 SERIES

■ Work size to be handled

- 300 mm works, 200 mm works, 150 mm works, and square substrates

■ Main Specifications

- Ultrahigh vacuum using the vacuum partition structure
- Motion speed: 3 sec/360 deg
- Resolution: 0.000343 deg/pulse
- Load capacity: 1 kg maximum
- Repeatability: ± 0.02 deg Note 1

Note 1: Reference value for 300 mm wafer notch orientation using a camera

Elevator RE161 SERIES

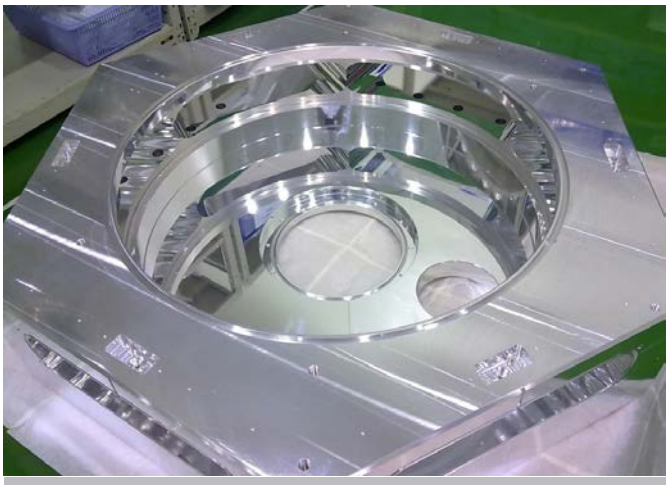
■ Main Specifications

- Ultrahigh vacuum using the bellows structure
- Motion stroke: 70 mm or 300 mm
- Load capacity: 50 kg
- Repeatability: ± 0.05 mm

RM processing (Surface treatment technology)

■ Surface treatment

The surface area is minimized by planarizing the nano-level minute uneven surface using the etching process. Extremely-low outgas performance is realized by lowering gas emission and minimizing gas adsorption using the creating process of the dense oxide passive film.



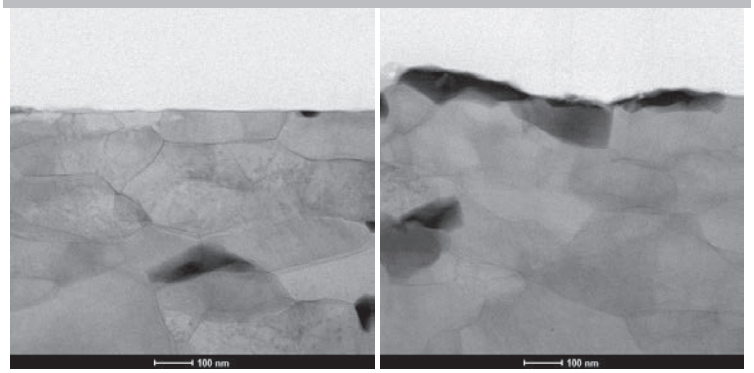
Transferring chamber on which RM processing is performed

■ Features

The dense oxide passive film (thickness of 10 nm or less) is created on the surface after the RM processing is performed, and barrier effect for reducing of outgas included in the base material is expected. The residue is removed by performing the cleaning process after "RM processing" to minimize impurities.

Regarding the components of the outgas in ultrahigh vacuum and generated by baking, the most of the removed components are m/z=18 (H_2O water); therefore, a high cleaning level is realized without fear of impurity contamination.

Difference of the surfaces due to the difference in the processing method



■ Application

This is suitable for vacuum chamber which needs the ultrahigh vacuum performance and low contamination performance, semiconductor processing equipment, semiconductor processing equipment improving throughput by shortening the time interval of vacuum evacuation with ultralow outgas performance, and transferring chamber.

CIMControlFramework

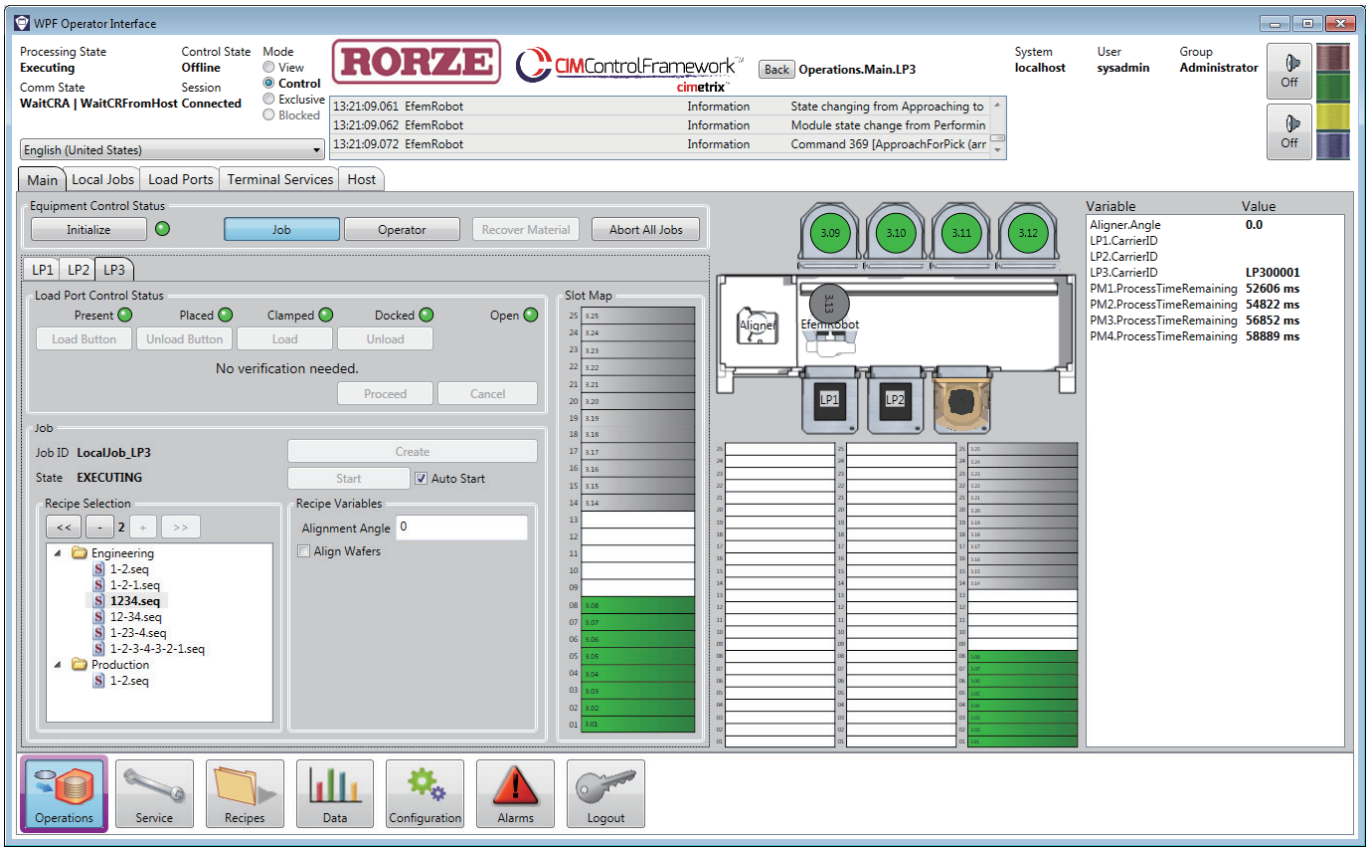
The CIMControlFramework software development toolkit enables you to design and implement a high-quality equipment control solution using off-the-shelf components for supervisory control, material handling, operator interface, platform and process control, and automation requirements. Users can leverage framework components through configuration and extension, or customize when unique requirements exist. CIMControlFramework, unlike in-house solutions, is supported and maintained as a product with upgrades, improvements, and performance enhancements.

For more information, please contact the developer of the software tool, Cimetrix Incorporated.

*Cimetrix HP

Screen image

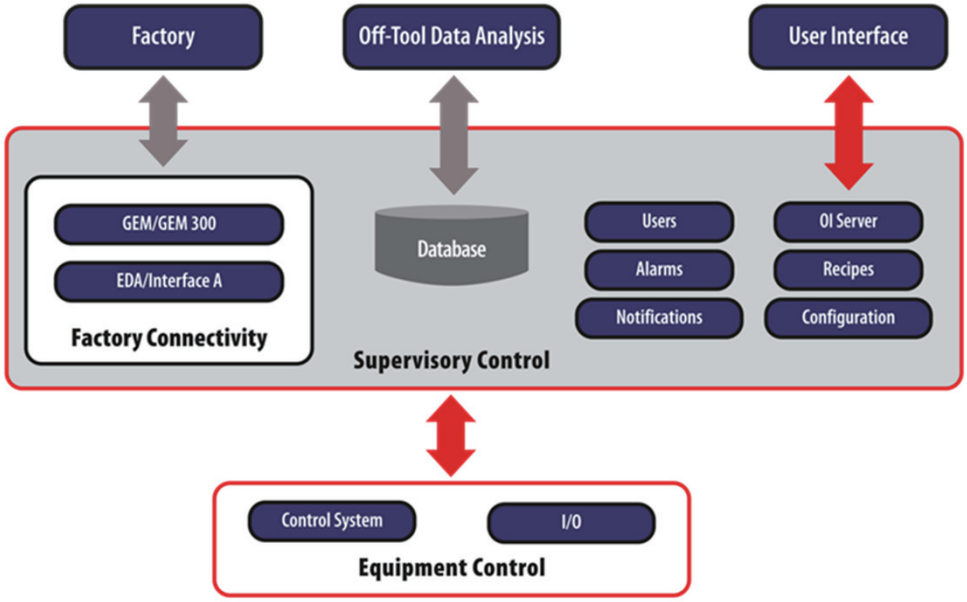
The CCF GUI framework has the ability to use Visual Studio to customize screens to meet the requirements of the specific system. It provides functionality for subscribing to system information and receiving updates using a WCF service interface. Screen access privilege control is also a part of CCF.



Architecture

CIMControlFramework uses a modular architecture composed of services with well-defined interfaces that can be reused to solve new problems and replaced or reconfigured without impacting the reliability of the other components.

At the core of the framework is a data-driven architecture that acts as a high-speed data router. Any CIMControlFramework module or external application can easily access the data from any point in the system.



Product Feature

■Open architecture

Well defined interfaces allows customization and/or replacement CIMControlFramework components based on business needs. GUIs can be developed using either WPF or WinForms.

■SEMI standards are built-in

Reduces effort to implement SECS/GEM, GEM300, EDA Interface A standards and reduces the time for factory acceptance. The simulators of the factory side are included.

■Source code included

Reduces time to resolve problems and enables you to perform maintenance effectively.

■Optimize equipment

Ultimate control to optimize equipment performance and leverage your in-house expertise to add value to your process module and platform.

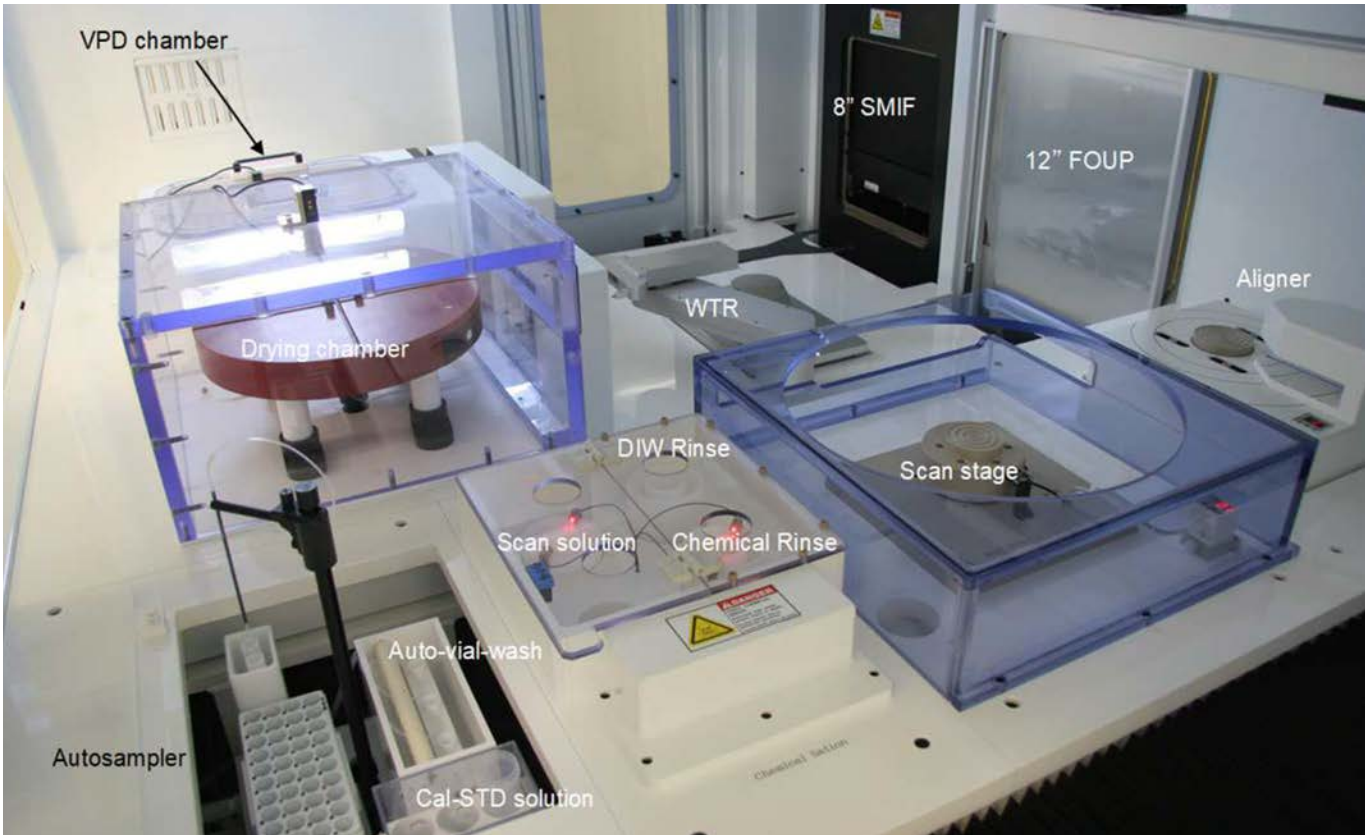
■Robust system diagnostics

The function of collecting the equipment data, logging and data visualization are built in.

These can be used as a troubleshooting tool.

Analysis Device

In March 2023, IAS Inc., specializing in the development of impurity analysis device for semiconductor manufacturing process, joined in RORZE Group. Their product, which integrates ICP-MS (Inductively Coupled Plasma Mass Spectrometry) and enables fully automated inspections, has already been delivered to leading semiconductor manufacturers worldwide, establishing a reputation for reliability and performance.



IAS inc.

[Head Office]
2-2-1 Hinohonmachi, Hino, Tokyo 191-0011, Japan
TEL : +81-42-589-5525
Mail : info_ias@iasinc.jp

*Contact us
IAS inc. HP

Main Products

IAS possesses multiple patents for analytical methods of inspection and solution handling techniques, along with analysis devices for gas, chemical solution, and wafer.

Gas

GED_Q

GED

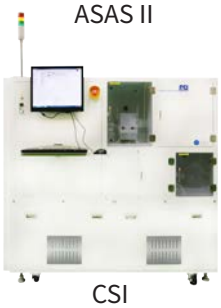
GED_SEMI

MSAG

GPD

Chemical Solution

ASAS II



CSI

ASDM

Wafer

Expert

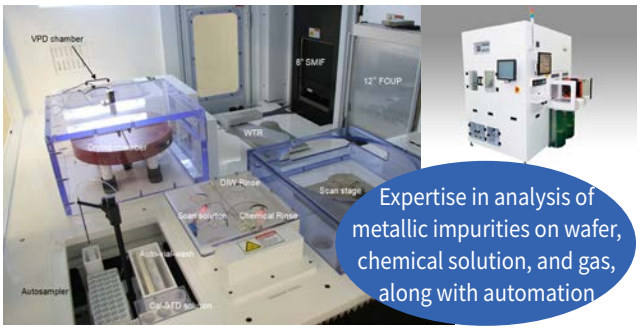
LAGM/Expert LA

Improve the yield rate of semiconductor

In the advancing semiconductor manufacturing process characterized by miniaturization, we believe that IAS's measurement technology and expertise in analysis of ultra trace level metallic impurities will contribute to the further evolution of the clean wafer handling technology cultivated within the group. We will continue to work on product development to achieve one-of-a-kind products that meet the needs of our customers.

RORZE × IAS

Clean wafer handling with zero particle



Expertise in analysis of metallic impurities on wafer, chemical solution, and gas, along with automation

Improve the yield rate of semiconductor by preventing contamination

FPD

In RORZE group, RORZE SYSTEMS CORPORATION, a subsidiary based in South Korea, is responsible for the development, manufacturing, and sales of FPD related equipment. Since its establishment in 1997, the company has been working closely with customers in South Korea to enhance technology and quality, and has been selling its products.

RORZE
RORZE SYSTEMS CORPORATION

RORZE SYSTEMS CORPORATION

[Head Office]
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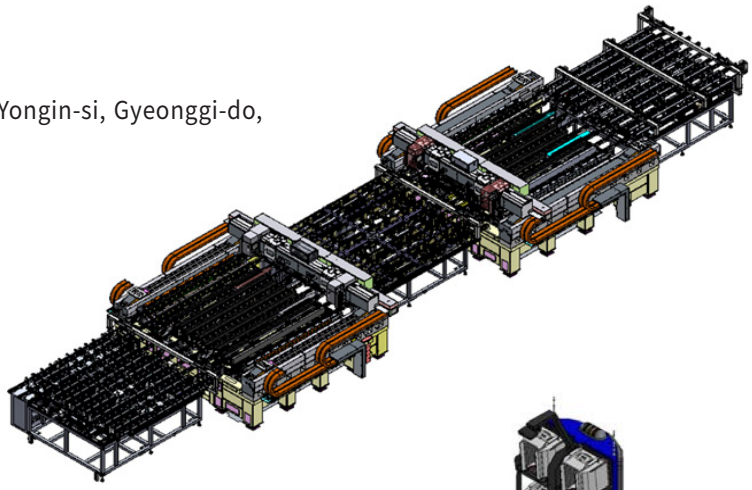
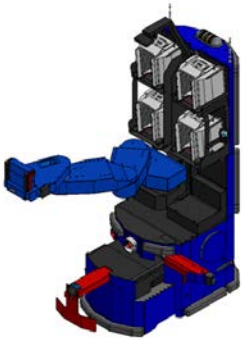
Korea 17115
TEL : +82-31-335-9100
Mail : admin2@rorze.co.kr



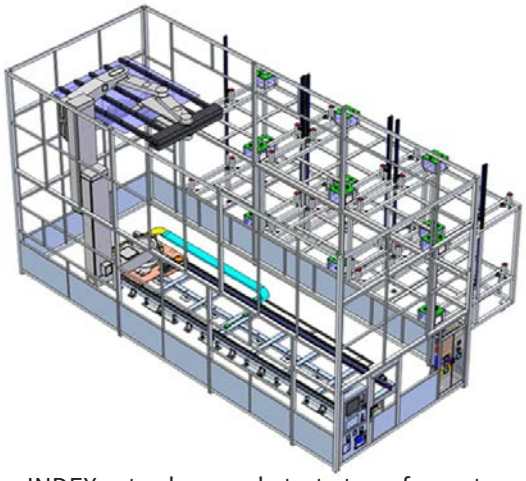


*Contact us
RORZE SYSTEMS CORPORATION HP

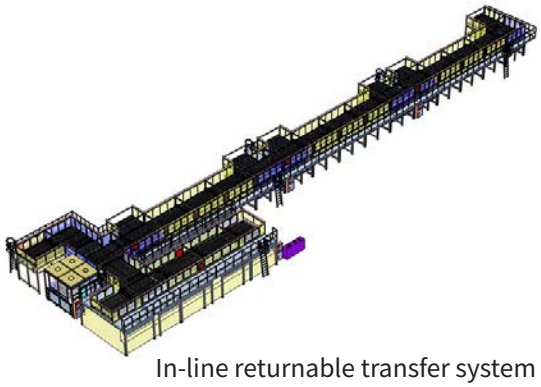
Main Products

We provide a wide range of automation equipment for FPD manufacturing, including extra-large substrate transfer system, laser cutting equipment for the front-end process, and display module equipment, wheel cutting machine, and packing equipment for the back-end process. In addition to FPD, RORZE SYSTEMS CORPORATION also handles its own automation equipment such as semiconductor-related transfer systems and mobile robots.

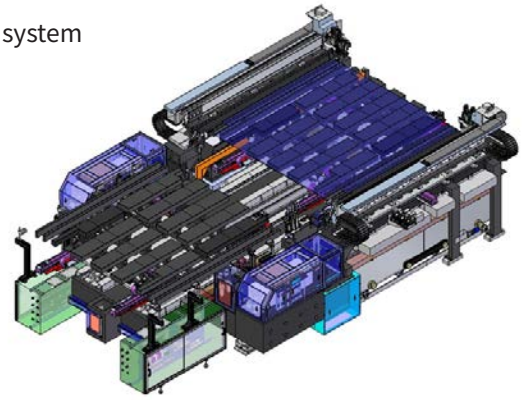
Front-end



INDEX extra-large substrate transfer system

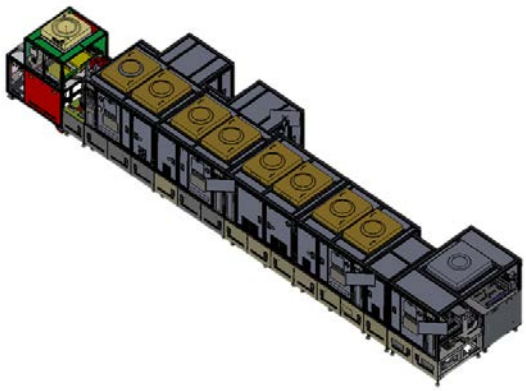


In-line returnable transfer system

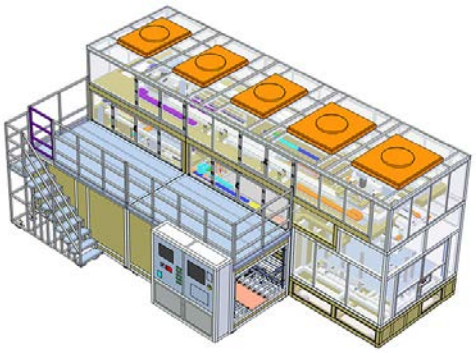


Laser cutting equipment

Back-end



Display module equipment



Cell type extra-large packing equipment

Life Science Relevant Products

RORZE Lifescience, a group company, develops and commercializes automated cell culture systems (applications) for drug discovery research, iPS cell research, and regenerative medicine based on the automation technologies (hardware and software) that the RORZE Group has developed in the semiconductor industry.

RORZE Lifescience Inc.

[Head Office]
430-1 Kamiyokoba Tsukuba-shi, Ibaraki, 305-0854, JAPAN
TEL : +81-29-875-9330

[Research Location]
Graduate School of Engineering, Osaka University
RLS Joint Research Chair for Cell Culture Engineering
CT-604/605 Central Terrace, 2-1 Yamadaoka Suita-shi,
Osaka, 565-0871, JAPAN

*Lifescience product catalog

*Contact us
RORZE Lifescience HP

Cell Culture Solutions

High reliability is required for cell culture, especially for primary cultured cells and iPS cells. Roze Lifescience has solved many of the problems of older incubators.

In addition, we develop and provide a line of products that support cell culture with the latest technologies, such as automated media exchange, automated cell observation, and scheduling software. To accelerate regenerative medicine, we established RORZE ReMed LIFESCIENCE CO., LTD. in Shanghai, a joint venture with ReMed, which conducts vitiligo treatment using cell sheets created from autologous skin in China. The automation technologies of RORZE Group is also contributing to the field of regenerative medicine.

RORZE | ReMed
AUTOMATED CELL PRODUCTION EXPERT

SHANGHAI RORZE ReMed BIOTECHNOLOGY CO., LTD.

Location

C204 NO.3 Building 2388 Chenhang Road, Minhang District, Shanghai, 201114, China

TEL : +86-21-34783686

*RORZE ReMed HP

Drug Discovery Screening

The equipment used in the lab come from many different suppliers, and scheduling automation is complex. GBG (Green Button Go) is an automation scheduling software that supports more than 400 device types and advanced scheduling such as interruptions.

We also develop and provide labware handling equipment for storage, transfer, sealing, shaking, cap/recap and spin-down for lab automation. They can handle not only SBS standard plates but also a variety of labware including flasks, petri dishes, sample tubes, etc., including ID management.

A New Company Joined the RORZE Group in September 2024

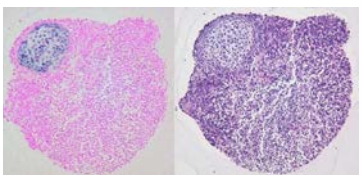
GenoStaff Co., Ltd, a contract research company for tissue staining and gene function analysis, joined our group. Based on solid technology backed by experience, they have a proven track record with universities and other academic fields, and pharmaceutical manufacturers. In particular, they possess exceptional know-how in molecular pathology and cell and tissue staining, such as In situ Hybridization.

Genostaff Co., Ltd

GS Building, 2-5-8 Yayoi, Bunkyo-ku, Tokyo, 113-0032, JAPAN

TEL：+81-3-5615-8857

*Genostaff HP

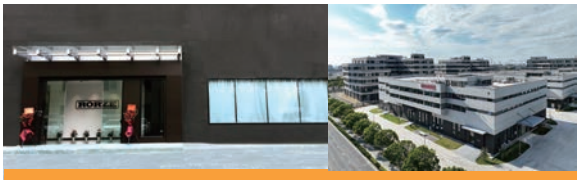


Support Network

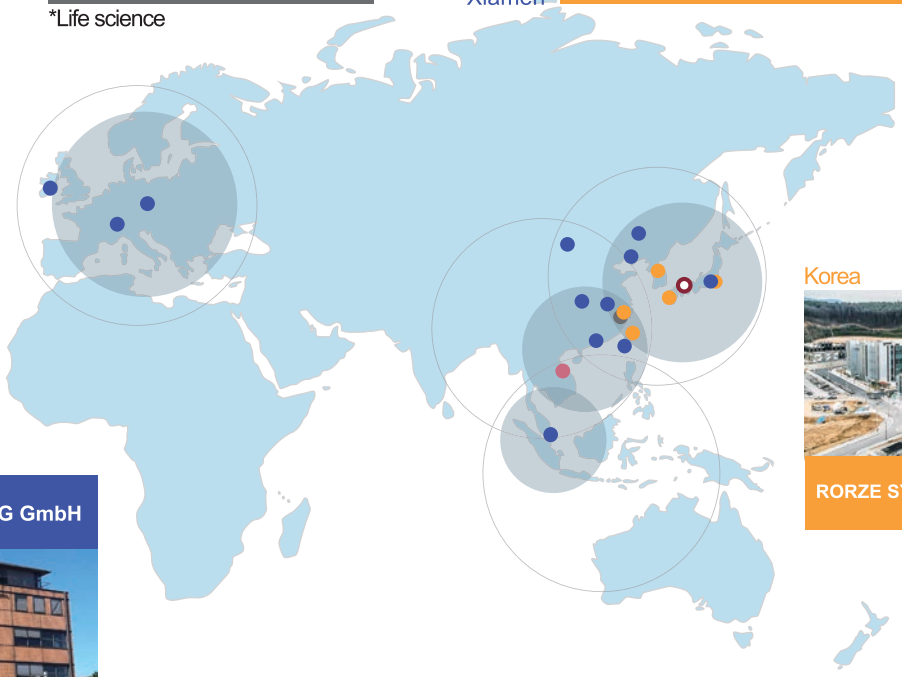
Shanghai Rorze Remed Biotechnology Co., Ltd.

*Life science

China Shanghai
Shenyang
Dalian
Suzhou
Beijing
Nanjing
Xiamen



RORZE CREATECH CO.,LTD.
RORZE CREATECH SEMICONDUCTOR EQUIPMENT CO., LTD.



Korea

RORZE SYSTEMS CORPORATION

Germany Dresden
France Grenoble
Ireland Dublin

RORZE ENGINEERING GmbH

Taiwan Hsinchu
Taichung
Tainan

Singapore

RORZE TECHNOLOGY SINGAPORE PTE. LTD.

RORZE TECHNOLOGY, INC.

Vietnam

RORZE ROBOTECH CO.,LTD.

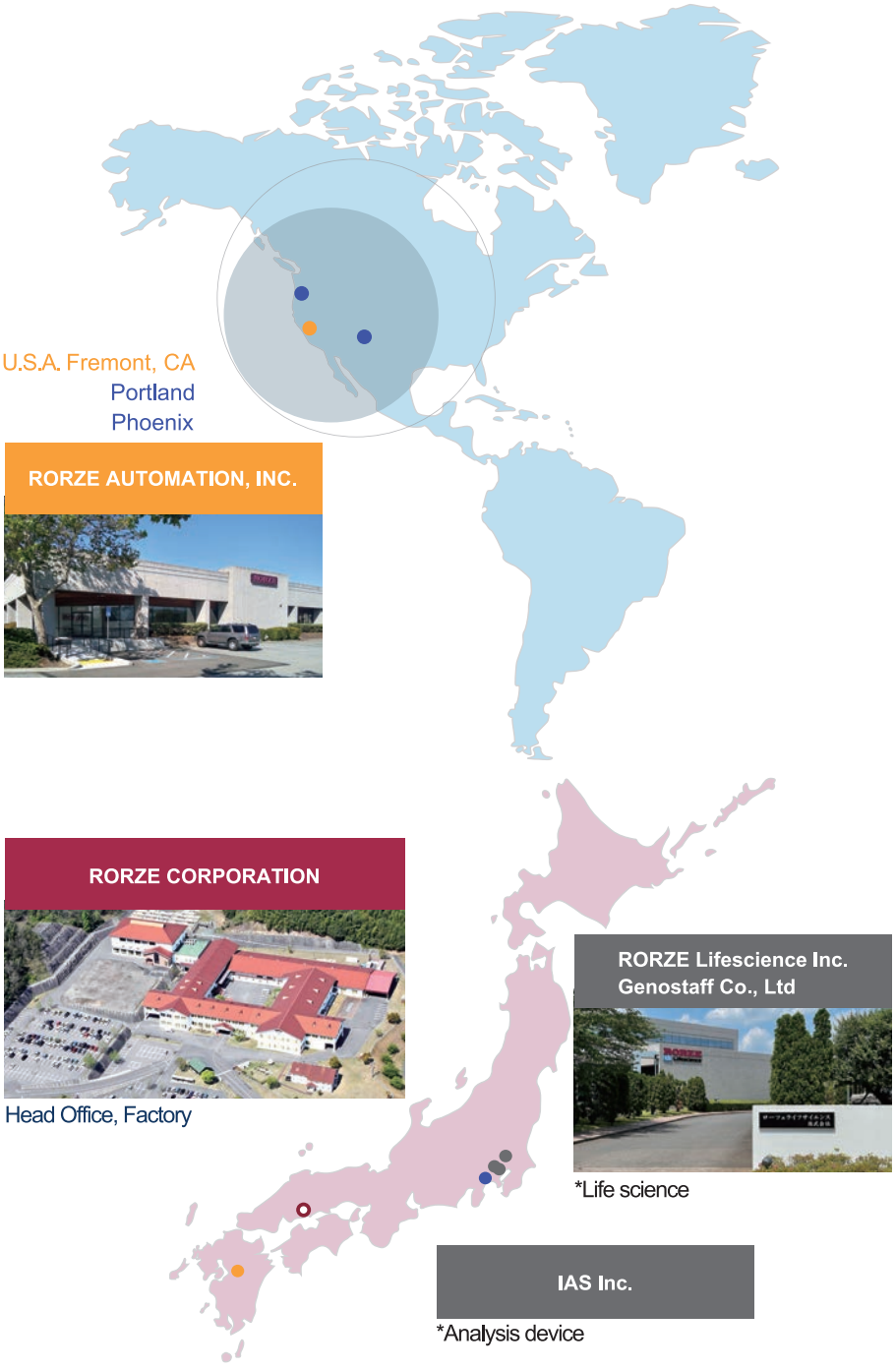
RORZE SYSTEMS VINA CO.,LTD.

Sales, Support

Head office, Eng., Mfg., Sales, Support

Eng., Mfg.

Eng., Mfg., Sales, Support



U.S.A. Fremont, CA
Portland
Phoenix

RORZE AUTOMATION, INC.

RORZE CORPORATION

Head Office, Factory

RORZE Lifescience Inc.
Genostaff Co., Ltd

*Life science

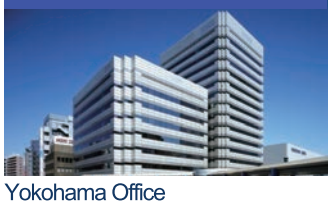
IAS Inc.

*Analysis device

RORZE CORPORATION

Kyushu Factory

RORZE CORPORATION



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