



TECHNOLOGY FOR YOUR BUSINESS VALUE



Green Semi_Equip. Inc.

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Wet etching & cleaning

Factory Automation

Parts Clean System

Inspection & Test System

Oven(dry/Vacuum/UV)

Subsidiary Equipments

ROZHEN

A LEADING COMPANY WITH INTEGRITY & TRUST



COMPANY PROFILE

➡ Company Overview

CEO
Dougkim

Company name	Founded on	Gross Capital
GS Industry Inc.	August 23, 2000	KRD 620 million (USD 546 thousand)

Employees 30

Address 41, Yuram-gil 95beon-gil, Paltan-myeon, Hwaseong-si, Gyeonggi-do, Korea

Certificates ISO9001:2000
ISO14001:1996
CLEAN Workplace authentication by MOEL



COMPANY PROFILE

➡ Our Vision & Value

Create value by innovation

Commit on community with responsibility

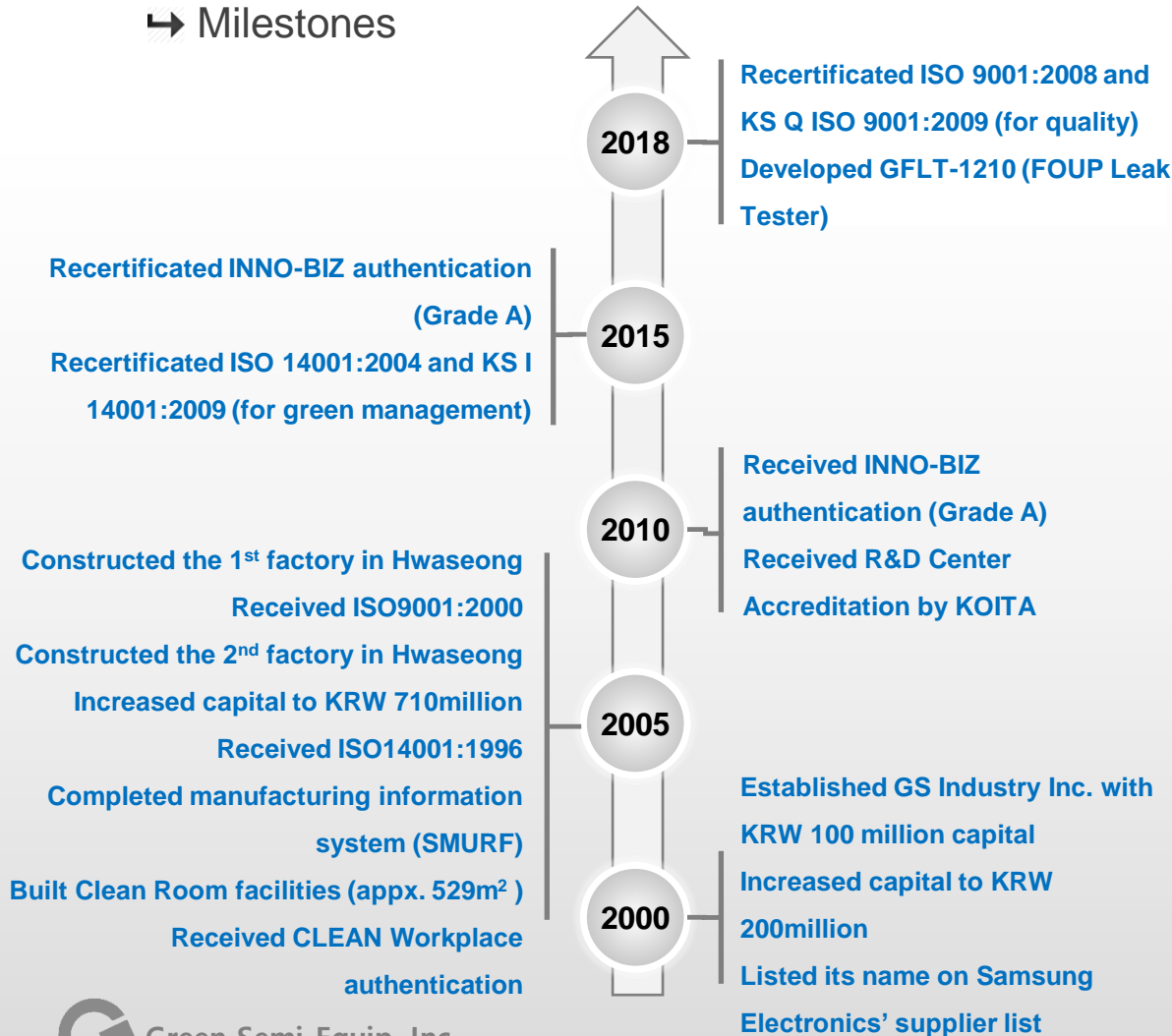
Encourage our people to advance

TRUST and RECTITUDE is our core value.



COMPANY PROFILE

→ Milestones



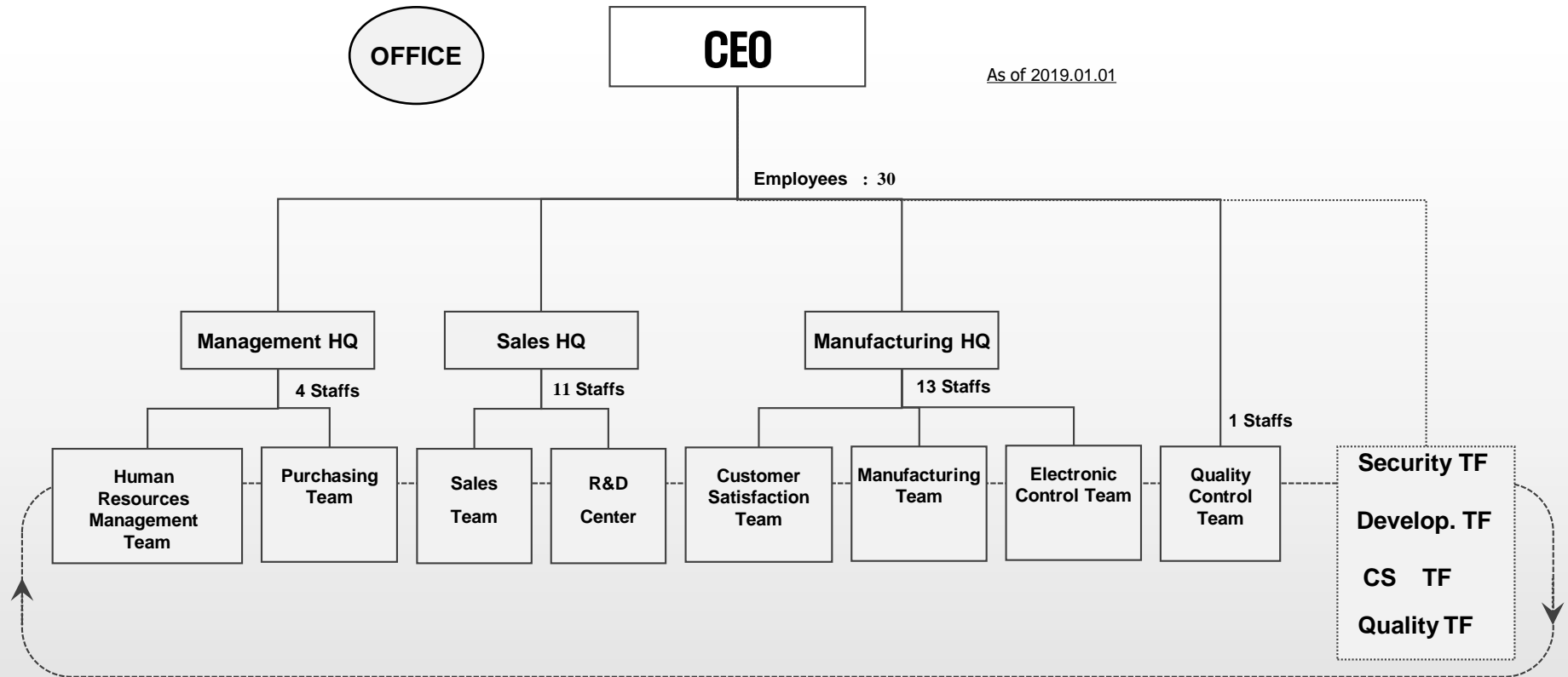
Product development

- CFTS
- GFLT-1200 (FOUP Leak Tester)
- ADGD-2016 (Auto Docking Guide System) for Cassette MG /Single Mask MG/TFE Mask piece
- MSS-400-F (Metal strip system)
- Localized version of Robot Crane
- Auto Wet Station
- Mask testing machine
- Mask Transfer System
- Probe Card Auto Case
- Auto De-cap Station
- LCD Rubbing Roll Stocker
- CA Mask MG
- Probe Card Inspection System
- Mask Container MG
- LCD Welder and Single MG
- Thermal Chamber(Box)
- Metal Mask Cleaner(OLED)
- B2C Hand Shower, Dryer → Product line expansion
- GVTC-300 [Bell jar Cleaner]
- FPM(LCD) Afterimage measuring equipment
- New Hand Shower(GSH-02)
- BLU-70 Measurement sys
- Noncontact door clamp equipment
- Without Engine utensil fine storage device
- Hand Shower (GSH-01)
- PR-920(LCD) measuring equipment
- EIS-300 (SEC. JDP)
- KDNS Organic EL UV/IR Oven



COMPANY PROFILE

→ Organization



COMPANY PROFILE

⇒ Quality Management

- **Our Policy for Quality Management and Sustainability**

Our mission is sustainable growth and quality improvement. With constant commitment on R&D and management innovation, we will achieve high quality for customer satisfaction and enhance green manufacturing system.

We created effective management principles for quality control and sustainability under the standard of ISO 9001 and ISO 14001. All executive committee and staff shall comply with the principles and contribute to further progress of GSI and customers.

- **Eight Principles for Quality and Sustainability**

- 1 . GSI cares customers first.
- 2 . GSI encourages all employee to promote leadership.
- 3 . GSI supports democratic decision-making process.
- 4 . GSI adheres to standardized process.
- 5 . GSI organizes systematic structure for management.
- 6 . GSI pursues persistent innovation.
- 7 . GSI makes decisions based on clear fact and data.
- 8 . GSI creates mutual beneficial relations with stakeholders.



OUR CUSTOMER

→ Domestic

- **Samsung Electronics**

- **Samsung Display (SDC)**

- **SK Hynix**

- **DB HiTek**

- **Magna Chip/NNFC**

- **Seoul Viosys/Seoul Semiconductor**

- **LB Semicon/SKC solmics/STATS ChipPAC/KODENSHI/Cinos/etc.**



OUR CUSTOMER

➡ Overseas



● Samsung Electronics US

Samsung Austin Semiconductor (SAS) in Texas

● Samsung Electro-Mechanics Philippines

Samsung Electro-Mechanics Philippines Corp. (SEMPHIL) in Laguna

● Samsung Electro-Mechanics Vietnam

Samsung Electro-Mechanics Vietnam Co., Ltd. (SEMV) in Hanoi

● Samsung Display Vietnam

Samsung Display Vietnam (SDV) in Bac Ninh

● Samsung Electro-Mechanics China

Dongguan Samsung Electro-Mechanics Co., Ltd. (DSEM) in Dongguan,
Tianjin Samsung Electro-Mechanics Co., Ltd. (TSEM) in Tianjin,
Samsung High-Tech Electro-Mechanics(Tianjin) Co., Ltd. (STEM) in Gaoxin

● Samsung Electronics China

Samsung China Semiconductor (SCS) in Xian

● Samsung Display China

Samsung Suzhou LCD (SSL) in Suzhou

● Entegris Malaysia in Penang



FACILITIES

↪ Factory scale

● Sheet Metal Forming Facility

- | | |
|--------------------|-----------------|
| • Laser | 1Set (4.5kw) |
| • CNC Bending M/C | 1Set(JP, Amada) |
| • CNC Bending M/C | 1Set(JP, Amada) |
| • CNC Shearing M/C | 1Set(Safan) |

● Processing Facility

- | | |
|----------------------|------------------|
| • CNC M/C | 2Set (6.5) |
| • CNC Router | 1Set (4*8) |
| • Lathe | 1Set (KR 6) |
| • Milling | 1Set (KR 2HO) |
| • Drill M/C | 1Set (KR 430) |
| • Turret Cutting M/C | 1Set (KR, 1.5kw) |

● Welding machine

- | | |
|--------------------|------|
| • Ar Welding M/C | 3Set |
| • Ar Welding M/C | 1Set |
| • CO2 Welding M/C | 2Set |
| • Spot Welding M/C | 2Set |
| • PVC Welder | 3Set |

● Subsidiary Facility

- | | |
|--------------|----------------|
| • Compressor | 4Set (KR, 5Hp) |
|--------------|----------------|

FACILITIES

➡ Factory scale : Building-A



DI SYSTEM



CNC Router(Korea)/SKYCNC-2412, 1200x4800

FACILITIES

➡ Factory scale : Building-B



CNC Bending(JAPAN Amada), Max(2500)



CNC Bending (JAPAN Amada), Max(1200)



Machining center, Doosan (Korea)/DS-650-01



CNC Shearing (US, 4*8)



Machining center, Doosan (Korea)/DS-650-02

FACILITIES

➡ Factory scale : Building-C



CLEAN ROOM [appx. 496m²]

FACILITIES

➡ Factory scale : Building-D



CNC Laser(Mitsubishi 4.5Kw-1200x2400, 12T(STS))

OUR BUSINESS

GSI provides various selections of subsidiary facilities for high-tech manufacturing like semiconductor and LCD/OLED, washing machines, and other eco-friendly machines. All product has high quality and reasonable price, and we follow timely organized schedule for fast delivery and install.

Business sector		
Facilities & Automatic System	Subsidiary Machines	Rozhen
Wet etch(equipment)	Org. Cleaner	Hand Shower
Inspections	U/S Cleaner	Hand Dryer
Metal & PR stripper	Oven(High temp/Normal)	
Conveyor & FA System	Liquid Horning	
Manual Guided Vehicle(MGV)	PJT 전실/Smock	
Foup leakage inspection system	Wet cleaner	
Thermal Chamber	Impinger	



INTELLECTUAL PROPERTY

➔ Patents & Certifications



UL 인증 1건

HAND SHOWER : E328668-A1-UL-1

S-MARK /SEMI-S2 인증제품

030519-안전인증-[GSI-M001]: ORGANIC CLEANER
 030519-안전인증-[GSI-M002]: ULTRASONIC CLEANER
 050324-안전인증-[GSI-BLU70]: 70인치 광휘도 측정설비
 051107-안전인증-[GSI-ORC002]: ORGANIC CLEANER
 051124-안전인증-[GSI-GUC-20]: ULTRASONIC CLEANER
 051124-안전인증-[GSI-ORC001]: ORGANIC CLEANER
 051124-안전인증-[GSI-USC001]: ULTRASONIC CLEANER
 061121-안전인증-[GSI-LH001]: LIQUID HORNING
 061121-안전인증-[GSI-ORC003]: ORGANIC CLEANER
 070405-SEMI-S2 인증-[GSI-SAS-ORC006]: ORGANIC CLEANER
 070405-SEMI-S2 인증-[GSI-SAS-ORC007]: ORGANIC CLEANER
 071120-SEMI-S2 인증-[GSI-SAS-EIS002]: EDGE INSPECTION SYSTEM

- Organic Cleaner
- Ultrasonic Cleaner
- Liquid Horning
- Brightness Measurement Sys.
- Edge Inspection System
- Rubbing Roll Storage System
- Mask Transfer System
- Auto De-cap Station

NO	Category	Product name	Patent type	Application No.	Registration date	Registration No.
1	Patent / Utility model	An air filter using the water	Patent	2004-0070862	2006. 05. 23	10-0584591
2		A hand shower dryer	Patent	2007-0064233	2009. 03. 19	10-0890646
3		Music creation system to purify the motor noise and music source generating scheme	Patent	2015-0082609	2018. 04. 11	10-1849647
4		Metal Strip device and method for LED process	Patent pending	10-2015-0135754	2016. 10. 20	
5		Automatic docking device of MGTV	Patent pending	10-2017-0005213	2017. 01. 12	
6		A non-contact door clampe	Utility model	2005-0019780	2005. 09. 12	10-0396312
7		A non-contact door clamping device	Utility model	2004-0025520	2004. 12. 03	10-0370358
8		A receipt device of the non power things	Utility model	2004-0025519	2004. 11. 08	10-0368893
9		A hand shower and dryer	Utility model	2005-0022658	2005. 11. 01	10-0400595
10		A noise reduction structure of the vacuum and ventilation unit	Utility model	2006-0011287	2006. 09. 06	20-0426358
11		A tube cleaner for semiconductor and LCD	Utility model	2006-0026735	2006. 12. 04	20-0433397
12		An electric powerless ionizer	Utility model	2006-0026611	2006. 12. 04	20-0433387
1	DESIGN	Hand dryer	Design	2008-0007840	2009. 03. 23	30-0524446
2		Hand dryer	Design	2008-0007838	2009. 03. 23	30-0524444
3		Hand dryer	Design	2007-0014978	2008. 02. 21	30-0481191
4		Hand dryer	Design	2007-0014975	2008. 02. 21	30-0481190
5		Hand shower machine	Design	2006-0046995	2007. 05. 25	30-0455097
6		Hand shower machine	Design	2006-0046993	2007. 05. 25	30-0455096
1	Trademark	ROZHEN (for hand dryer)	Trademark	2008-0024287	2009. 05. 25	40-0792859



INTELLECTUAL PROPERTY

→ SMURF System

Small Manufacturing business Unlimited Revolution Framework

❖ Effect of SMURF

Ubiquitous management system
We can handle every process from order to shipment
at anywhere, whenever we want

Essential system
for effective work

지에스인더스트리(주)
Global Giga Supporting IND. Co., LTD
Integrity & Trust

HOME | 인사 | 결재 | 품절 | 영업 | 생산 | 자재

Menu

2007년 품질 향상 방침

1. 환경관련 고객요청
2. 생산합리화 및
3. 품질 개선활동
4. 지속적인 환경개선
5. 납기준수(90%)
6. 고객 A/S 적극

이 방침을 달성하기 위해 IS

효율적인 품질 환경경영시스템을 수립
시스템에 규정된바에 따라 각자의 책무를
통하여 회사 발전에 기여하도록 한다.

지에스인더스트리(주)

www.gsi.kr

원구번호	생선번호	품목	재품납기	작성일자	검核
W0707-022-001	P07-175-1	PUMP LINE COVER	2007-07-20	이항후	200
W0707-013-001	P07-175-1	PUMP LINE COVER (REVIEW)	2007-07-20	이항후	200
W0707-015-001	P07-175-1	PUMP LINE COVER	2007-07-20	이항후	200
W0707-014-001	P07-175-1	PUMP LINE COVER (REVIEW)	2007-07-20	이항후	200
W0707-016-001	P07-175-1	PUMP LINE COVER	2007-07-20	이항후	200
W0707-023-001	P07-175-1	PUMP LINE COVER(NEW)	2007-07-20	이항후	200
W0707-024-001	P07-175-1	PUMP LINE COVER(NEW)	2007-07-20	이항후	200
W0707-007-001	P07-175-1	PUMP LINE COVER(NEW)	2007-07-20	이항후	200
MR07-0710-003		개별창고		이항후	200
MR07-0710-002		개별창고		이항후	200
MR07-0710-001	P07-179	개별창고		김형득	200
W0704-079-002	P07-113	PC TABLE	2007-08-06	윤원식	200
MR07-0629-003	P07-174	개별창고		이항진	200
MR07-0629-002	P07-174	DOOR 상부 회그리움 발생			200
W0706-047-002	P07-187	설비 DOOR-1	2007-07-05	이항후	200

MAIN PRODUCT

- ❖ **Wet etching & cleaning**
- ❖ **Factory Automation**
- ❖ **Parts Clean System**
- ❖ **Inspection & Test System**
- ❖ **Oven(dry/Vacuum/UV)**
- ❖ **Subsidiary Equipments**
- ❖ **ROZHEN**

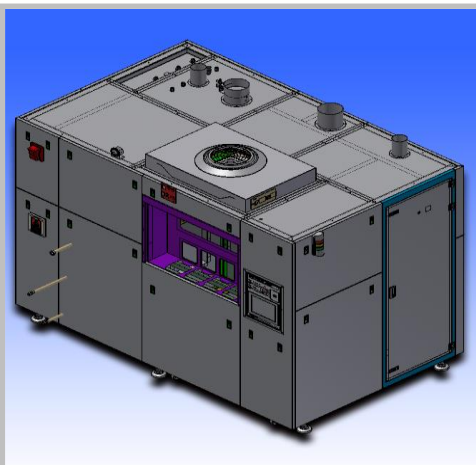


MAIN PRODUCT

Wet etching

WET ETCHING

We produce various etching equipment for semiconductor, LED, flat panel display, foundry manufacturing. Equipment that we provide are as following: Etching equipment that can etch 25 pieces cassette unit, Manual equipment, Full Auto equipment, Single wafer, Metal stripper equipment that is essential for metal strip (lift off) process of LED facilities.



MAIN PRODUCT

Wet etching & cleaning

WAFER AUTO ETCHING

This equipment is necessary for wafer etching process of semiconductor manufacturing. The target size of wafer is 8 inches. You can start operation by loading the cassette into the loader. After then, the equipment runs following processes automatically. The internal robot will move the cassette. Users can easily operate the equipment through the System Recipe.



Features

- System dimension : 4,550(w)x3,250(d)x2,100(h)
- Foot print : ≈14.8M2(Total)
- Power : 200A/3PHASE @220VAC
- ROBOT: 3Axis control, Chuck, Up/Down, X-Axis
- 8 Bath : SPM/H.QDR/SOLVENT/IR/DRY(Malangoni Dry)
- Target Wafer : 8"x25pcs Carrier
- Control : PLC & PC(GUI)
- Safety light curtain/Various interlock
- Chemical circulation/SOLPM, 0.1um filter
- S-Mark

- System dimension : 2,770(w)x1,250(d)x2,800(h)
- Foot print : ≈3.5M2(Total)
- Power : 50A/3PHASE @220VAC
- ROBOT: 3Axis control, Chuck, Up/Down, X-Axis
- 4 Bath : MSA/PFR/FR/DRY(Malangoni Dry)
- Target Wafer : 8"&6"x25pcs Carrier
- Control : PLC
- Safety light curtain/Various interlock
- Chemical circulation/SOLPM, 0.1um filter
- S-Mark



MAIN PRODUCT

Wet etching & cleaning

LED WAFER ETCHER

Manual Wet Station(12Bath) : Device for etching and cleaning by using various chemicals in LED / semiconductor manufacturing. This equipment can deal with various sized wafers (2-inch, 4-inch, 6-inch) by injecting various chemicals (EKC, ACE, BOE, ITO, DI, SPM, etc.) in 12 baths.



Features

- System dimension : 2,200(w)x1,400(d)x2,200(h)
- 300A Exhaust & Partition
- Power : 200A/3PHASE @220VAC
- 12 Bath : ITO/EKC/SPM/BOE/QDR/FR
- Target Wafer : 4" & 6" x25pcs Carrier
- Control : PLC & Touch screen
- Safety light curtain/Various interlock
- Chemical circulation/0.1um filter
- Quartz heater
- Hot tank, Cooling tank
- Non-resistance 16M & Densitometer



MAIN PRODUCT

This facility is used to check for any abnormality by peeling off housings of molded chips byproducts of high-tech manufacturing system such as semiconductors, LEDs, and LCDs. Housings will be peeled off automatically by using various chemicals. We put user's safety at a top priority when we produce Auto De-cap Station.

Wet etching & cleaning

AUTO DE-CAP STATION



Features

- Model : ADS-001
- Size : 3300(W)×1370(D)×2255(H) <Except the Exhausts>
- Weight : 0.65t
- Utility : 220VAC, 60Hz, 30A
- Material of the Bath : PVC, PTFE
- Used Chemicals : Fuming nitric acid, Hydrazine, DI
- Composition of the Bath : Hydrazine, ACID, QDR, Dry, Spare
- Control : With PLC
- Robot : Front position of the body(Cylinder & Motor)
- Operation Area : FFU & Exhaust(down flow)
- Door : Manual Open Close
- Supply System : Individual Installation for Local Unit
- Supply Type : Diaphragm Pump
- Environment for location : Clean room with Class 1,000

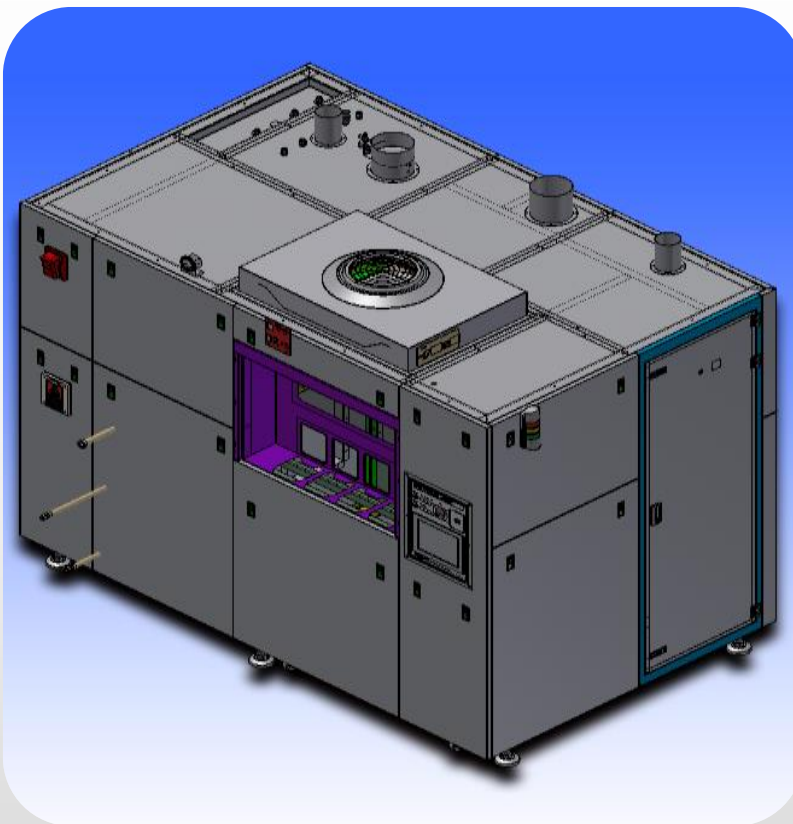


MAIN PRODUCT

Wet etching & cleaning

METAL & PR STRIPPER MSS-400F(FLIP TYPE)

This metal (strip) system is automatic metal stripper designed to eliminate unnecessary metal and PR after applying metal and PR in LED manufacturing process. We put special chemicals for strip and designed high pressure supply method. When you load 4 sets of four-inched cassette, the robot performs wafer mapping and the system runs the rest process automatically. If you unload the cassette set after finished and then load a new cassette, system will recognize it and runs the process automatically.



Features

Description		unit	Specifications
Wafer Diameter	-	-	4 inch(*6inch)
Process Method	-	-	Full Automatic (CST to CST)
Control	-	-	PLC/Touch screen
Wafer	Table Type	-	Aluminum-anodizing
	Chuck Method	-	Flip type, Vacuum
Spinner	Back side protect	-	Air Wall Chuck Table
Table	Spin Speed	RPM	0~3,500
	Ass'y sealing	-	Air Seal-bearing
Strip chamber	Dimension	mm	330 x 330 x 400
	Door type	-	Up/Down Shutter
Cassette Capacity		EA	2
Spray Arm	Nozzle	mm	Φ0.03, 10°, 2ea/arm
	Stroke	Mm	90degree
Description		unit	Specifications
Pump	Drive	-	Air Driven Hi-pressure Control
Unit	Range	kg/cm ²	0 ~ 150
Chemical	Capacity	-	20ℓ/Bottle, 2 Bottle
Supply	Usage	ℓ/day	Acetone-20,
	Power	-	Φ3, 220V, 3.0kw
	DI	kg/cm ²	2.5 ~ 4.5
Utility	N2	kg/cm ²	3.5 ~ 5.5g
	Air	kg/cm ²	4.5 ~ 7.0
	Exh.	mmAq	20/100Φ
	Drain		50/A
	C/W	Kg/cm ²	
Capa.(UPEH)		wafer	100

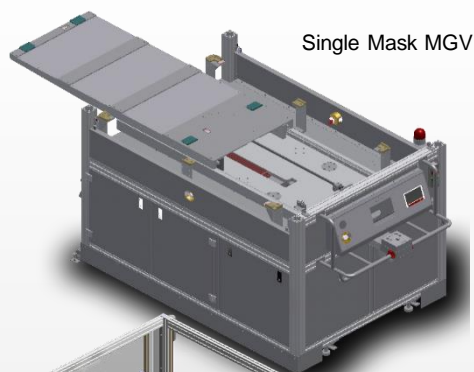


MAIN PRODUCT

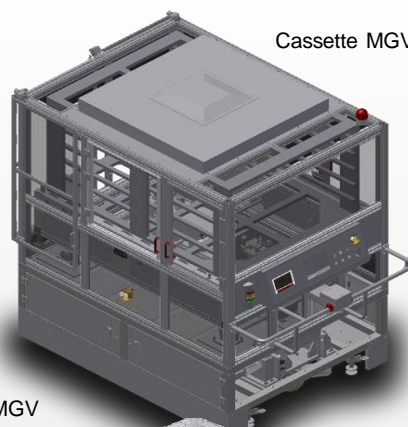
FACTORY AUTOMATION

MGV

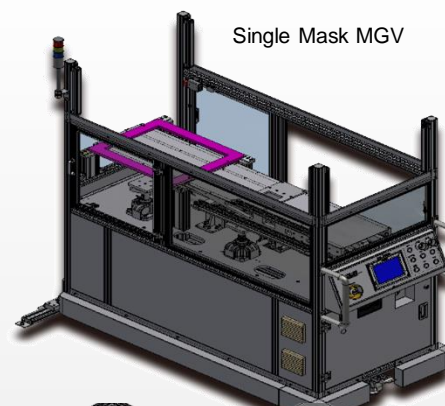
As the LCD became bigger, parts of major equipment, mask and reticle were enlarged as well, resulting in an increase in size and weight that could not be handled by human. So, a machine called Manual Guided Vehicle (MGV) is incented for carrying, loading, and reversing. Unlike AVG that runs all operations including changing direction, driving, and docking automatically, MGV must be driven by person. There are two types of MGV: manual MGV (human operate all process.) and automatic MGV (human only decide direction and all other operations are carried out by machine.) We produce and supplies both manual and automatic MGVs.



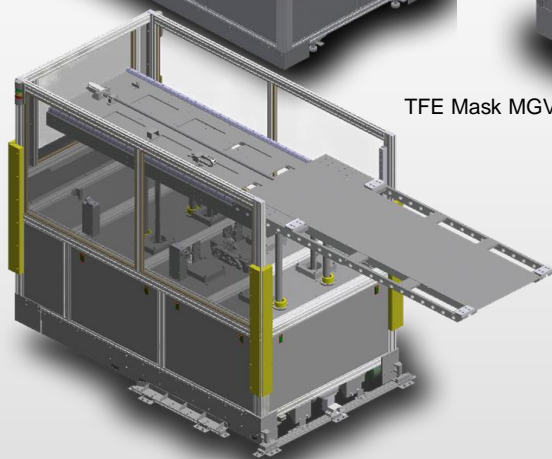
Single Mask MGV



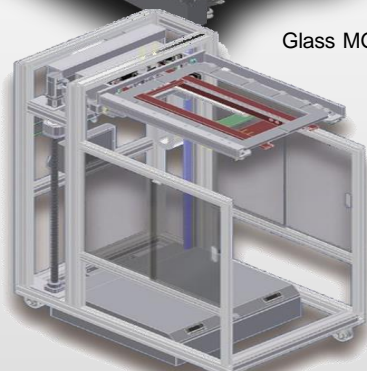
Cassette MGV



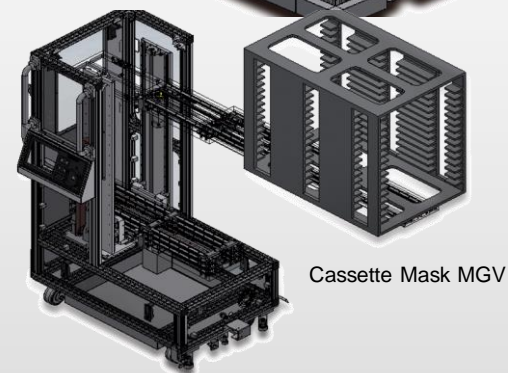
Single Mask MGV



TFE Mask MGV



Glass MGV



Cassette Mask MGV



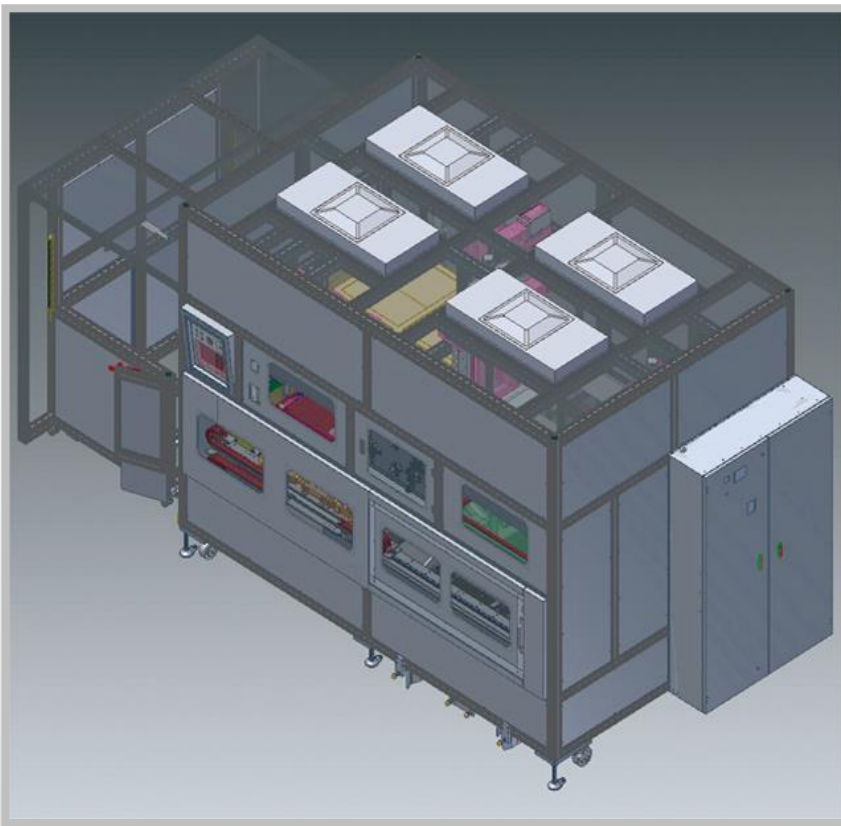
MAIN PRODUCT

FACTORY AUTOMATION

MASK TRANSFER SYSTEM

(MTS; Mask Case Loading & Mask departing and carrying equipment)

This system automatically loads heavy masks into the make case of equipment after bringing up them from other mask case. It is designed for preventing safety accidents and lessening workers' fatigue by using robot to carry heavy-weighted mask cases (150kg for each). Two mask models with different sizes and shapes (Nikon and Canon masks) can be carried.



Features

- . Equipment Size : 5,713(W) x 2,560(D) x 3,089(H) mm
- . Specification : AC220V 3phase 30A, Air 1.5kg/cm²
- . Material : AL Profile / AL line / non-interrupting PVC etc resins
- . Basics 3axis(Hardware) + Cylinder 1axis + FFU Control
- . Barcord System application, Available Mask history management
- . Safety Interlock feature is applied. (a tool & an operator)

. S-MARK Certified

※) Application place : S company LCD (October. 2013)

■ Configuration

- . Carrying target : Mask Case
- . Appropriate Size : 1600(w)*1400(d)*20(h) / customized size
- . Drive basics 3axis(X, Y, Z-Axis) + Cylinder 1axis + FFU
- . Purpose : Auto carry-in and out, Managing the Product history for the barcode
- . Target Mask : Dual type of Nikon and Canon
- . Auto & Manual Control (PLC Base, Touch Screen)
- . Automatic to the facility mask case from the moving mask case
- . Servo Motor & Driver and sensors, Safety Door SW etc application

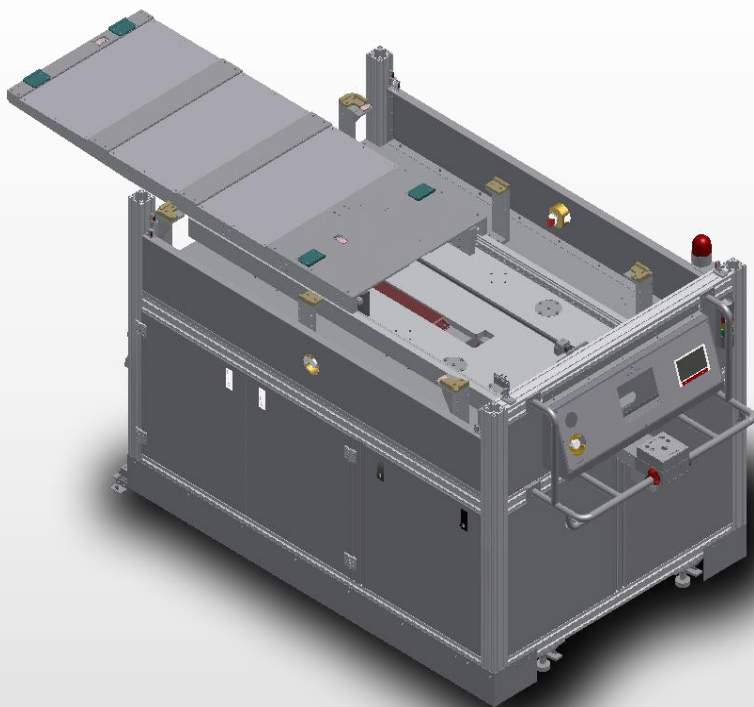


MAIN PRODUCT

FACTORY AUTOMATION

LCE/OLED MASK MGV

This MGV is used for LCD Metal Mask welding. The LCD Metal Mask is taken out from the stocker one by one and loaded to the mask welder. It has 2 stage arm structure for efficient operation. Users can load and unload the metal mask of 80 ~ 100kg weight on this MGV by using 2100mm Stroke.



Features

- Target Object : Mask
- Target size : 1701(W)*1105(L)*30(H)
- Target weight : 80 Kg
- Stroke (Y-Axis) : 2100mm
- Stroke (Z-Axis) : 800mm
- Dimension : 1460x2150x1450
- Auto docking system(Patent)
- Power driving system
- Smart control system

★ Auto docking guide System

It is a system that users can automatically dock one pin by just pressing a docking switch after fixing a pin on the other side. Unlike the existing MGV that requires workers to manipulate handle or direction lever and dock by their own, this system makes docking much easier with the help of downward docking wheels. [PATENT OF GSI]

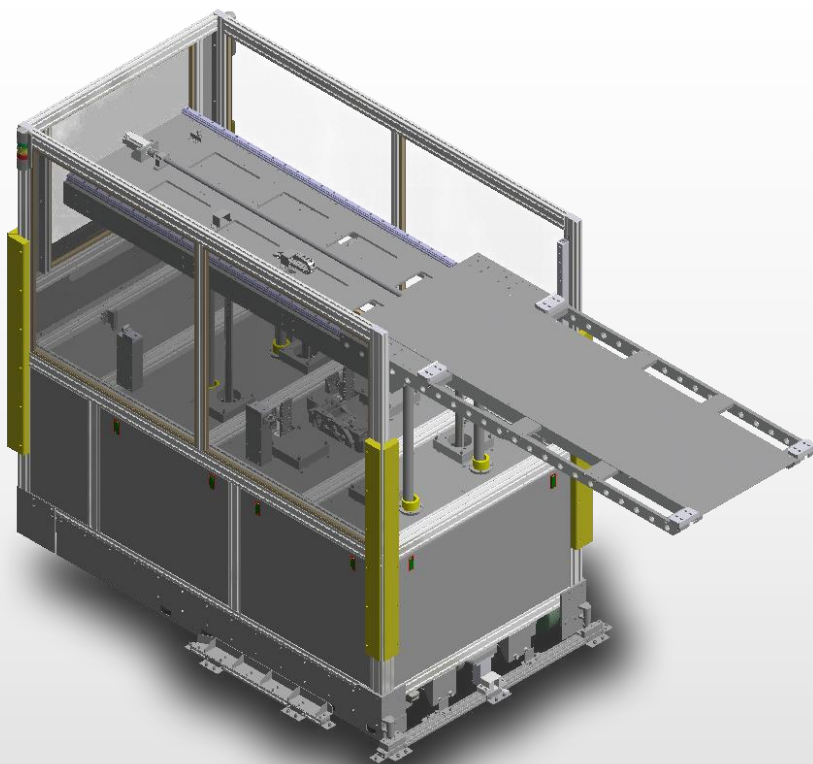


MAIN PRODUCT

FACTORY AUTOMATION

TFE MASK MGV

TFE Mask MGV is developed to easily load and unload SUS Frame Mask of heavy weight (20Kg ~) to various equipment and cases, as it is difficult for workers to carry, load and unload heavy masks. Docking guided system is installed for automatic docking with facilities, making it easier, faster and safer to work.



Features

- Target : TFE Mask
- Target size : 1701(W)*1105(L)*30(H)
- Target weight : 80 Kg
- Stroke (Y-Axis) : 2100mm
- Stroke (Z-Axis) : 800mm
- Dimension : : 2400x1300x2350
- Auto docking system(Patent)
- Power driving system
- Smart control system

★ Auto docking guide System

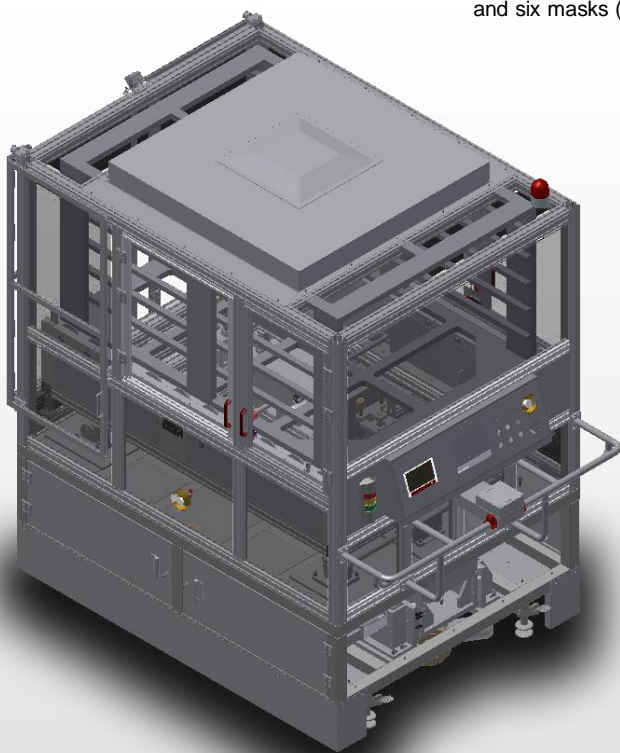
It is a system that users can automatically dock one pin by just pressing a docking switch after fixing a pin on the other side. Unlike the existing MGV that requires workers to manipulate handle or direction lever and dock by their own, this system makes docking much easier with the help of downward docking wheels. [PATENT OF GSI]



MAIN PRODUCT

FACTORY AUTOMATION

MASK CASSETTE MGV



This product is a device for loading or unloading cassette onto cassette stocker while carrying mask cassette used in AMOLED manufacturing process. Pass line on the front control panel helps users to semi-automatically load and unload cassettes using roller.

Cassette MGV can load and carry more than 700kg of total weight, including a cassette (appx. 250kg) and six masks (80kg for each, 480kg for six pieces).

Features

Target : Mask cassette

Target size : 1210(W)x1700(D)x850(H)

Target weight : Empty 220 Kg

Full cassette 630Kg

Stroke (Y-Axis) : 2200mm

Stroke (Z-Axis) : 800mm

Dimension : 1480x2430x1960

Auto docking system(Patent)

Power driving system

Smart control system

★ Auto docking guide System

It is a system that users can automatically dock one pin by just pressing a docking switch after fixing a pin on the other side. Unlike the existing MGV that requires workers to manipulate handle or direction lever and dock by their own, this system makes docking much easier with the help of downward docking wheels. [PATENT OF GSI]

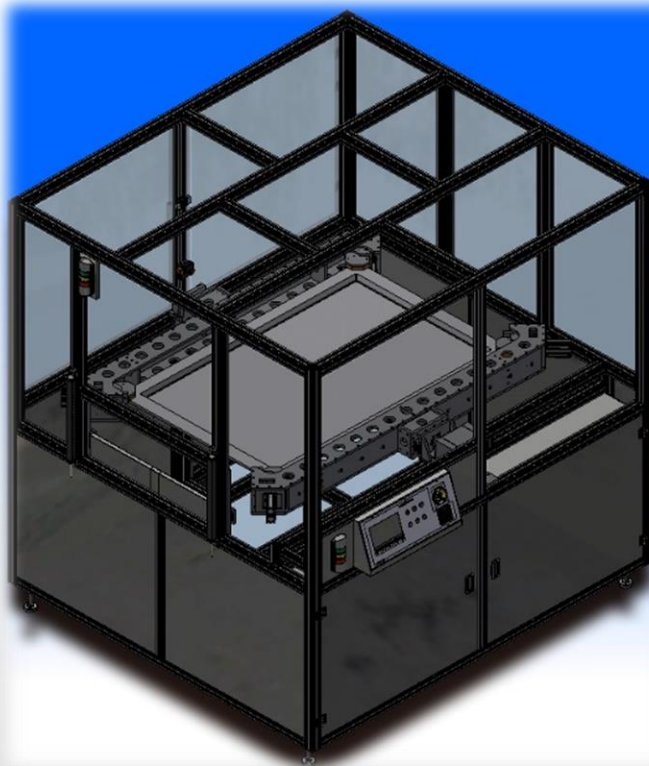


MAIN PRODUCT

FACTORY AUTOMATION

MASK HALF ROTATION SYSTEM

This product is designed to help operation on the front and back side of mask during the LCD manufacturing process. It rotates 100kg-or-more-weighted mask. When MGV comes close to the system, it senses MGV and opens the auto shutter. When a mask is placed, it grips the mask and rotates it automatically. The AUTO GRIPING SYSTEM is installed to prevent damaging mask by misplacing or dropping it.



Features

Contents	Description
Model.	MHR-001
Size	2,175(W)x2,422(D)x2,583(H)
Weight	≈500kg
Electric power	AC 220V, 1Phase/60Hz, 15A@max
Frame Body	AL PROFILE 60*60 and others
Rotation unit	AL6061
Mask Sensor	JND04N(Sensor)-Rico
Mask Home & over sensor	Photo micro sensor (EE-SX676 – 4 places)
Area sensor	SK-S224P(Polarimetric sensor)
Motion unit	- Rotation : AC Servo Motor (HG-KR43B)/Mitsubishi Gear head : KSB-62A-25-P1/Ratio 25:1 Worm Gear head : WS-S-100 /Ratio 50:1 - Cylinder : Mask grip CDQ2F32-90DZ-A93_0_1_0(TPC) - Cylinder : Prevention for collision between the MGV Arm and the Mask TCD-A2K-L-50-400-A54K(TPC)



MAIN PRODUCT

FACTORY AUTOMATION

RUBBING ROLL AUTO STORAGE SYSTEM

When you dock a cart with a rubbing roll to this storage system, it carries the roll to the rack automatically. With this system, you can also manage information of rubbing roll and carry-in and out records.



Features

- . Size : 3000W x 1400D x 2490H
- . Specification : AC220V 3phase 30A, Air 1.5kg/cm²
- . Material : AL Profile / AL line // non-interrupting PVC etc resins
- . Basics 3axis(Hardware) + Cylinder 1axis + FFU Control
- . Barcode & available in PC Program
- . Safety Interlock feature is applied. (a tool & an operator)

. S-MARK Certificated

※) Application place : S company LCD (September. 2012)

■ Configuration

- . Carriage and Stock target : Rubbing Roll
- . Target Size : R/Roll d140*1900L (≈20kg/ea)
- . Drive basics 3axis(X, Y, Z-Axis) + Cylinder 1axis + FFU
- . Function : The automatic warehousing and delivery,
The product custody, Product input/output Database
- . Total amount of stock : 21ea (R/Roll In)
- . Auto & Manual Control (PLC Base, Touch Screen)
- . Product notice only Rubbing Roll Cart link
- . Servo/rack, jack Motor & Driver and sensors, Safety Door SW etc application



MAIN PRODUCT

FACTORY AUTOMATION

LOGISTICS AUTOMATION CONVEYOR SYSTEM

This system continuously transfers box products in logistics automation line using conveyor system. It can carry out all logistics process from storing to shipment. In addition, related software helps to automate logistics process including storage and shipment information management and automatic labeling.



Direct shipment facilities (conveyor system)

■ Configuration

1. Storing & Reject (Cancel) conveyor Unit
: Roller Conveyor, Diverter, Stopper, Pusher, Weight Check, Scanner
: Storing management PRG(GUI) & Control panel #1(PLC)
2. Shipment (labelling) conveyor Unit
: Roller Conveyor, Belt conveyer, Auto Labeler, Stopper, W/C, Scanner, Tapping device
: Shipment management PRG(GUI) & Control panel #2(PLC)
3. Cross analysis of storage and shipment info, labelling (ERP, SAP)
4. Read Product (Box) info, Volume, Weight

■ Specification

1. Roller Conveyor Module : Vacuum & Power Drive Roller
2. Product Stopper (pause) function : 9place
3. Pusher (push a device) function : 2place
4. Divertor (direction conversion apparatus) function : 3place,
Chain Divertor the way
5. Belt Conveyor Module
6. Auto Labeler Module : barcode print & attach shipping label
7. Equipment Control : warehouse & shipping area operation
panel (PLC control) and operations program (PC, GUI)



MAIN PRODUCT

CLEANERS

PVC PARTS CLEANER

We produce various kinds of wet cleaning and etching equipment for semiconductor, flat panel display and foundry manufacturing. Furthermore, we produce wafer and parts cleaning equipment with engineering plastic such as PVC, wafer etching equipment and various chemical supply devices.



MAIN PRODUCT

CLEANERS

OLED MASK CLEANER

This facility is a mask cleaner that automatically loads and unloads metal masks used in OLED manufacturing. When a certain amount of masks are loaded in a mask cassette, robot moves the mask one by one. Users can easily operate the facility through System Recipe.



Features

- System dimension : 8,000(w)x2,100(d)x2,600(h)
- Foot print : ≈28M2(Total)
- Power : 250A/3PHASE @220VAC
- ROBOT: 2Axis control,X-Axis-Leaner sys., Z-Axis-LM/Ball screw, X-Axis accuracy-10um
- 10 Bath : ACID, Organic, QDR, FR, IR, ID(IPA Dryer)
- Target Mask size : 520x420
- Control : PLC & PC
- GU(PC) process & Scheduler control
- Safety light curtain/Various interlock
- S-Mark



MAIN PRODUCT

CLEANERS

AUTO TUBE/BOAT CLEANER

Tube Cleaner : it is a device that can clean the quartz tubes and boats used in the furnace of the diffusion process in the semiconductor process by using various chemicals. This equipment is used to clean tubes and boats corresponding to 12inch wafers by using various chemical (Hydrofluoric acid, sulfuric acid) in 3 baths.



Features

- System Dimension : 3,400(W)x3,800(D)x4,200(H)
- MATERIALS ; Ivory PVC body, Teflon bath, PVC bath
- Target : 12"Wafer Quartz Tube & Boat Cleaning 용
- Operation : Auto & Manual
- Control : PLC & Touch screen
- Various Recipe
- Safety : Area sensor(Front door) & Various Interlock
- The driving part of the Hum perfection interception method
- Process time reduction and Bubbling for Perfect Cleaning & Showering
- 3Bath : Chemical, QDR, FR



MAIN PRODUCT

CLEANERS

ORGANIC(BOWL) CLEANER

In semiconductor and wafer manufacturing process, it cleans parts by using various organic chemicals including Acetone. It can be customized into Full Auto, Semi Auto, or Manual mode.



Features

- Model : GSI-ROC002
- Size : 4,000(W)×1370(D)×2255(H)
- Basket size : 970(W)×970(D)×360(H)
- AGL(allowed gross load) : 20Kg@max
- Target part size 80mm~900mm@max
- POWER : : 220VAC, 60Hz, 30A, 3Phase
- Material of the Bath : STS316L
- Used Chemicals : Acetone
- Composition of the Bath : ACE,DI,DEV
- Control : With PLC & 10" color touch screen
- Robot : Z-axis(AC Servo)
- Operation : Full auto/Semi Auto, Manual
- Safety : Area sensor(Front door) & Various Interlock

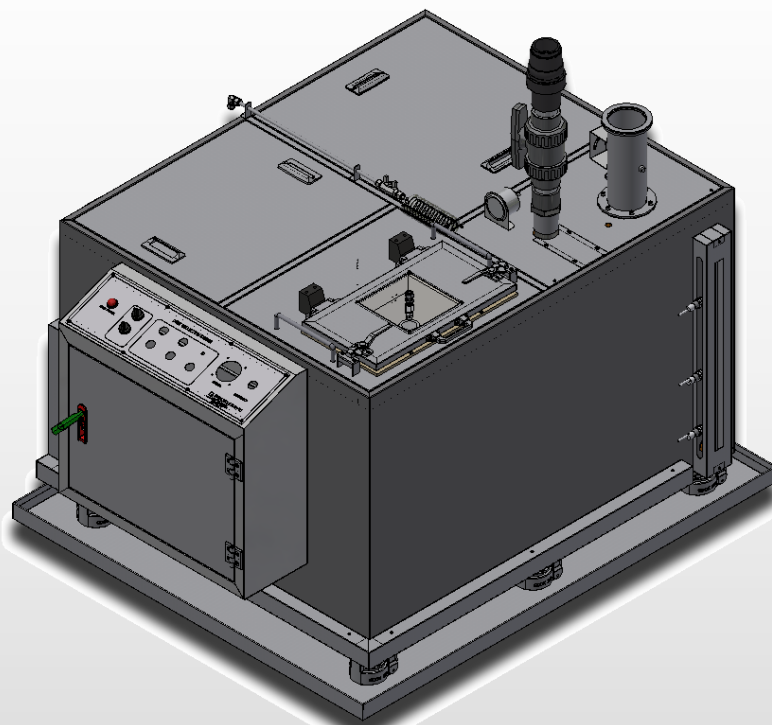


MAIN PRODUCT

CLEANERS

SLUDGE COLLECTING SYSTEM

Sludge Collecting system collects wastewater and sludge from various cleaning equipment used in semiconductor manufacturing, such as organic cleaner, wet cleaner, ultrasonic cleaner and liquid honing. It separates wastewater and sludge by precipitation method and emit sludge separately.



Features

- System Dimension : 3,400(W)x3,800(D)x4,200(H)
- MATERIALS ; Ivory PVC body, Teflon bath, PVC bath
- Target : 12"Wafer Quartz Tube & Boat Cleaning 용
- Operation : Auto & Manual
- Control : PLC & Touch screen
- Various Recipe
- Safety : Area sensor(Front door) & Various Interlock
- The driving part of the Hum perfection interception method
- Process time reduction and Bubbling for Perfect Cleaning & Showering
- 3Bath : Chemical, QDR, FR

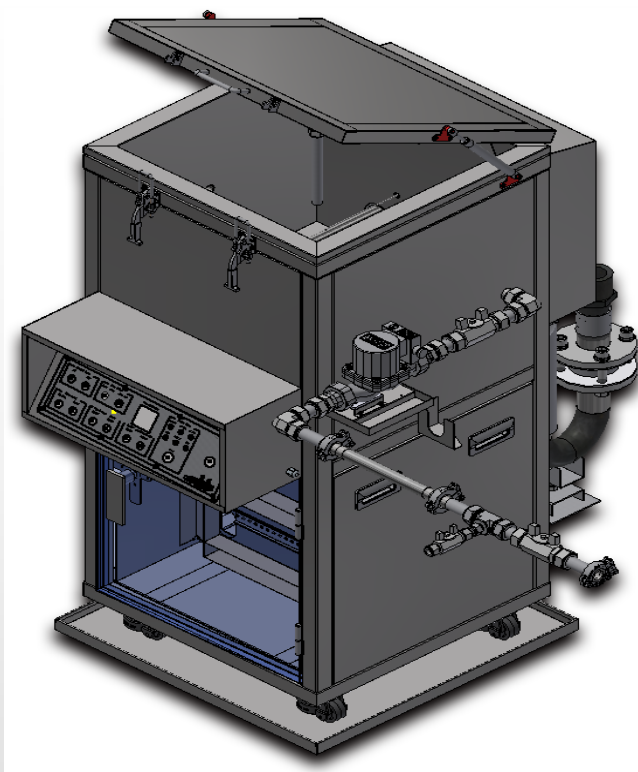


MAIN PRODUCT

CLEANERS

HOT BATH PLUMBING CLEANING SYSTEM

It is a system to remove pollutants and clean up pipes that are used in LCD manufacturing process. When you connect pipe to the system, the built-in pump circulates the pipe and removes pollutants in the pipe.



Features

Dimension	580(W)*580(D)*1,230(H)
Body Material	STS304 1.5t
Machine Weight	180kg
Power Voltage	AC 208V 60Hz 3Phase 50A
Heater	220v 3상 6kw *2EA
Circulation Pump	RS 25/6(WILO)
Drain Pump	PH-350M(WILO)
Supply DI	¾ (SUS Tube)
Supply Air	¼ (SUS Tube)
Circulation Line	NW25(NW40/50 Link Type)
DI Drain	50A (HT PVC)

MAIN PRODUCT

CLEANERS

ULTRA SONIC CLEANER

This Ultrasonic Cleaner disperses and decomposes contaminants in parts and cleans them. When ultrasound is propagated into liquid, sudden pressure change causes a cavitation phenomenon. Microbubbles are created with high temperatures and high pressures and help cleaning.



Features

DIMENSION	L x W x H(mm)	1290x1385x1190	
BASKET SIZE	L x W x H(mm)	1020x660x590	
SHEATH HEATER	kw x EA	15 x 2	
ULTRA SONIC	L x W x H(mm)	450x270x100	40Kh x 3Set
CAPACITY WEIGHT	kg	20	
DOOR SIZE	L x W x H(mm)	1110x800x80	Manual Open Type
WORKING HEIGHT	H(mm)	1100	
Weights	kg	150	
POWER	A/V	125A/AC220/3P	



MAIN PRODUCT

CLEANERS

LIQUID HORNING BEAD BLASTER

Pump impeller rotates and generate high pressure. It helps to mix water and bead powder to be slurry. Then, through the Bead Gun, the slurry is discharged with air on the surface of semiconductor part.



Features

1. Size : 1050(W)x1000(D)x1550(H)
2. Material : SUS304
3. Required Air Quantity & Water Volume
- Users Spec
4. CW 토출량 : 10L/Min, 2Kg/cm²
5. Remark : Pump & Motor Control
온.습도 Control
Foot Switch Control



MAIN PRODUCT

INSPECTION & TESTING

FPM/EIS/LBI SYSTEM

The system runs inspection and measuring wafer, LCD panel, BLU that is used in semiconductor, flat panel display, BLU manufacturing. It requires not only hardware but also software technology, so we focus on core technology development.

LCM Measurement System



GSINDUSTRY.Co.,LTD



Edge Inspection System

- ▶ Measurement Target: Wafer
- ▶ Size Range : ~ Max 8inch Wafer
- ▶ Measurement : Chipping, Defect, User Sequence
- ▶ Number of Axis : 5-Axis Control
- ▶ Micro Scope & Digital CCD Camera
- Touch Panel & Joy-stick Control
- Motion Capture Program
- Vacuum Chucking

GSINDUSTRY.Co.,LTD

Monitor LCD Module Characteristic Measurement System



- ▶ Measurement Target : LCD Module
- ▶ DUT Size Range : ~ Max 46inch
- ▶ Detector : SR-3 A-L2, RD805
- ▶ Number of Axis : 5Axis
- ▶ Measurement Standard : VESA

GSINDUSTRY.Co.,LTD

Mobile Display Measurement System



- ▶ Measurement Target : Mobile Display
- ▶ DUT Size Range : ~ Max 7inch
- ▶ Detector : SC-1000 (Minolta)
- ▶ Number of Axis : 9Axis
- ▶ Measurement Standard : VESA
- ▶ Dark Box : below 1Lux
- (VESA standard)



MAIN PRODUCT

INSPECTION & TESTING

SLURRY FILTER TEST SYSTEM

It mixes the slurry (DI 99.9% + 0.1% of acid) and DI water used in the process of flattening wafers at a certain ratio and measures the pressure before filtering the liquid to the pump. After filtering, it measures flow rate, pH, conductivity, and temperature of the liquid.



Features

PRODUCT SPECIFICATION

BODY SIZE	3,300 x 1,200 x 2,280(WxDxH)mm
FRAME	STS304
EXTERIOR	White P.V.C 10t
WEIGHT	≒ 1,200 Kg
MAIN POWER	AC 220V, 1 Phase/60Hz, 20A/
D.I SUPPLY & RETURN	C-P.V.C 25A
N2 SUPPLY	STS316 3/8" Tube
AIR SUPPLY	STS316 1/2",3/8" Tube
SLURRY	20ℓ drum
MIXING TANK	P.P TANK 40ℓ ,수위 조절 Sensor
SUPPLY TANK	P.P TANK 40ℓ , 수위 조절 Sensor
CENTRIFUGAL PUMP	Max. Flow : 75 liters/min Max. Diff.-Pressure : 3.2 bar Max. Viscosity : 100 Cp
BELLOWS PUMP	Max. Flow : 20 liters/min Max. Diff.-Pressure : 3.2 bar
DIAPHRAGM PUMP	DP-10F Max. Flow : 27 liters/min
DIAPHRAGM PUMP	DP-20F Max. Flow : 27 liters/min



MAIN PRODUCT

INSPECTION & TESTING

FOUP LEAK TEST SYSTEM

This system can easily find out leaks in FOUP by applying N2 to In/Out Port of FOUP. If any leakage is detected in the FOUP during a test, it alarms immediately. If leakage occurs in the FOUP you are testing, the system displays an alarm on the touch screen with alarming melody.



Features

Description		unit	Specifications
System Dimension		mm	450(w) x 610(d) x 870(h)
Application		-	12" FOUP Cassette
Test method		-	Auto/Manual
Cassette type		-	2 Port & 4 Port(Auto/Manual)(*1)
N2 Operation	On/Off Type	-	N2 or Air Operation Valve
	Solenoid valve	-	Manifold, Pilot 2 Valve
Measurement Range	Inlet 1	LPM	20±20
	Inlet 2	LPM	20±20
	Outlet	Pa	850±300
FOUP Sensing		-	Dog Up/down (Photo interrupter)
N2 Nozzle		-	Spring Tension Up/Down
FOUP Locking system		-	Cylinder(Double acting- Closed center type)

MAIN PRODUCT

INSPECTION & TESTING

MISK INSPECTIVE SYSTEM

It is produced for OLED PHOTO MASK INSPECTION. It improves quality of OLED FAB process from the beginning by inspecting debris, contamination, scratches on mask surface.



Features

- SYSTEM DIMENSION : 2,300mm x 2,200mm x 2,515mm (W x D x H)
- SYSTEM WEIGHT : 800Kg
- POWER : 3KW, 3Phase@220VAC
- UTILITY : AIR : 250L/min, 3/8"
- 3Axis : UP/DOWN, Y-axis1, Y-axis2
- Arm stroke : 1,500mm
- SHUTTER DOOR : Cylinder
- CONTROL : PLC & TOUCH SCREEN
- COVER : BLACK CONDUCTABLE PC PLATE
- SAFETY : DOOR LOCK, AUTO SHUTTER, EMO SWITCH
- Laser sensor, Optical sensor, Capacity sensor, Tower lamp



MAIN PRODUCT

OVEN(DRY/VACUUM/UV)

VACUUM OVEN DRY OVEN, UV/IR OVEN

It is dryer for parts outgassing after cleaning and LCD panel (IR / UV). It cleans contaminated parts from manufacturing process like semiconductor manufacturing, and dries the parts after cleaning. By circulating hot air in the oven, parts can be dried quickly.



MAIN PRODUCT

REFURBISH & REMODELING

REMODELING & REFURBISH

We can improve or remodel any equipment like cleaner for silicon wafers from semiconductor and wafer manufacturing process, loader, unloader, organic and rinse tank, wafer transfer robot, dryer, etc. We can also refurbish these equipment and systems.

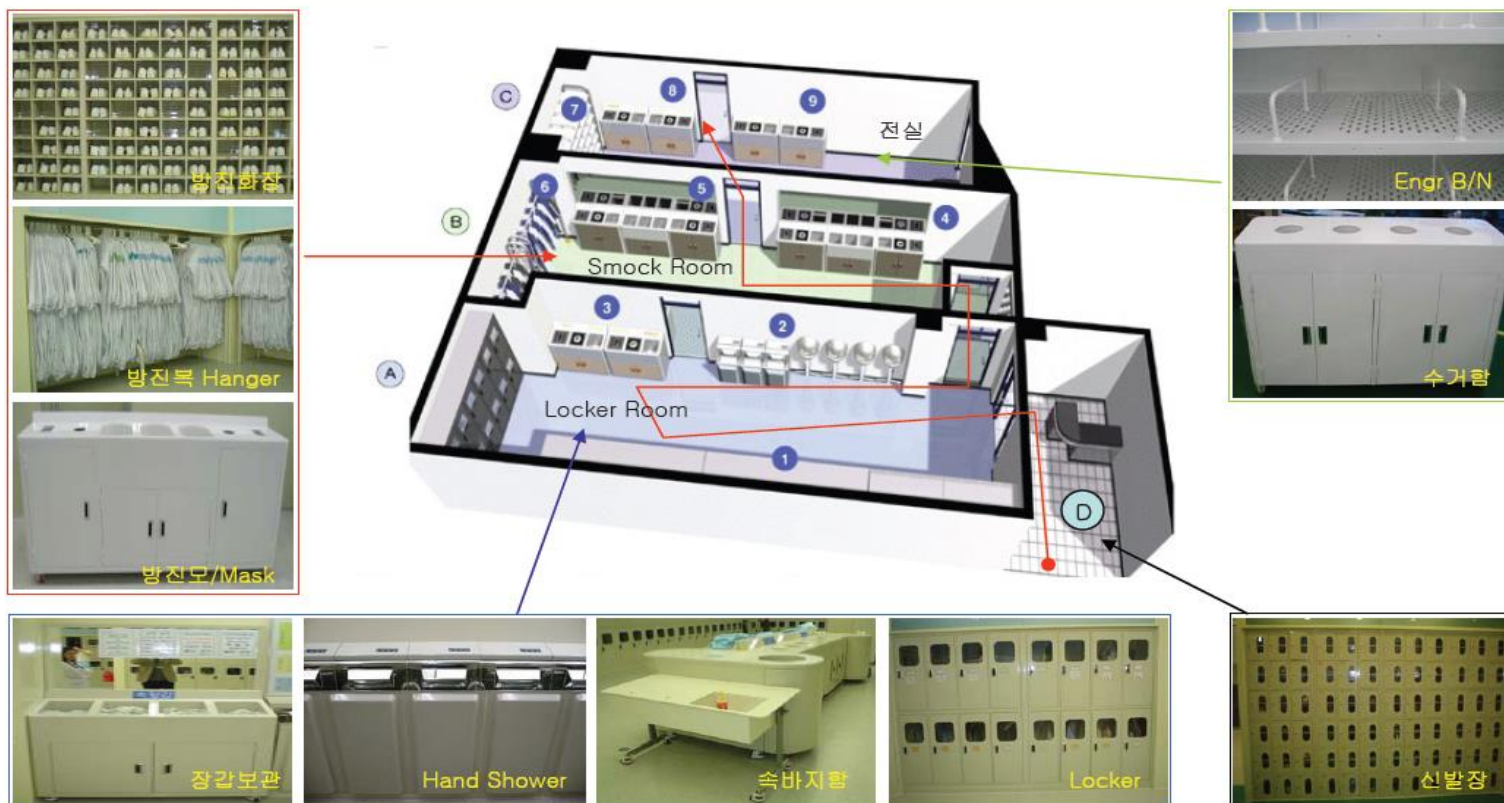


MAIN PRODUCT

SUBSIDIARY EQUIPMENTS

SUBSIDIARY EQUIPMENT OF CLEAN ROOM

We provide great environment for entrance room and Clean Room for semiconductor / LCD / SDI manufacturing with various subsidiary equipment lines. We are continuously differentiating our products by customizing all subsidiary equipment of entrance room such as locker, smock, and outside shoe box, following user's request.



MAIN PRODUCT

SUBSIDIARY EQUIPMENTS

FUNITURE (STOCKER, CART, TABLE)

We produce various kinds of furniture, such as STOCKER, CART, TABLE, which can store parts and materials and eliminate pollution like particles for clean manufacturing systems including semiconductor production and pharmaceutical field. It can be made of STS, STEEL, PVC material for specific chemical or usage.



MAIN PRODUCT

ROZHEN

HAND SHOWER

It is designed for the industries that require clean hands care, such as hi-tech businesses including semiconductors, the medical industry such as hospitals and clinics, and the hygiene industry such as restaurants. When you put your hands on the sink, it cleans and dries your hands automatically. Dry time and wafer supply time can be customized. You can also add heater function so that hot wind can warm up your hands in winter.

ROZHEN for public hygiene

We provide hand shower machine for hand cleaning in various public places such as restrooms, service stations and residential buildings.



GSH-03



GSH-01



GSH-02



MAIN PRODUCT

ROZHEN

HAND DRYER

ROZHEN for public hygiene

We provide hand shower machine for hand cleaning in various public places such as restrooms, service stations and residential buildings.

It is designed for the industries that require clean hands care, such as hi-tech businesses including semiconductors, the medical industry such as hospitals and clinics, and the hygiene industry such as restaurants. When you put your hands on the sink, it cleans and dries your hands automatically. Dry time and wafer supply time can be customized. You can also add heater function so that hot wind can warm up your hands in winter.





TECHNOLOGY FOR YOUR BUSINESS VALUE

Thank you !



Green Semi_Equip. Inc.

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