



Smart Factory Innovation & World Best FA Solution Frontier

Global FA Solution Leading Company of
PCB & Semiconductor, Camera Module, Display Technologies.



주식회사 코엠에스
Customer Oriented Manufacturing Solution

앞서가는 기술력과 노하우로 고객만족을 실현하는 최고의 기업이 되겠습니다 !

(주)코엠에스는 PCB, 반도체, Mobile Camera Module, 디스플레이 등 다양한 산업분야의 최첨단 자동화 장비를 개발 생산해온 자동화 제작 전문 기업입니다.

Customer Oriented Manufacturing Solution의 회사명처럼 고도로 복합화된 자동화 분야에서 어느 곳과 경쟁해도 자신 있게 이겨 낼 수 있는 최고 수준의 탄탄한 기술력과 풍부한 개발 노하우로 품질 개선, 원가절감, 고객 불만 Zero 화를 지향해 왔습니다.

특히 각기 다른 현장의 환경에 가장 잘 부합할 수 있도록 적재적소에 다양한 기능들을 접목한 현장 중심의 제작기술로 높은 안전성과 탁월한 정밀도는 물론 획기적인 생산성 향상을 보장할 수 있는 차별화된 자동화 장비로 고객의 신뢰를 받고 있습니다.

저희 (주)코엠에스는 그동안 축적된 기술력과 다양한 경험을 바탕으로 앞으로도 더욱 새로운 기술 개발과 제품 업그레이드를 위하여 끊임없는 변화와 혁신을 통하여 고객 여러분께 더 큰 만족을 드리는 자동화 분야의 선도 기업으로 성장해 나갈 것입니다.

감사합니다.

(주)코엠에스 대표이사 황 선 오

Welcome!

Corporation CO-MS.

Sincerely had a lot of interest given customers for a while.

Company name as Customer Oriented Manufacturing Solution purpose to continuous commitment to quality, cost reduction and high quality of customer satisfaction in highly complicated automation technology and PCB, Semiconductor, Mobile Camera, Display Knowledge. PCB logistic automation knowledge. In the future, try to satisfaction of customer and we promise to supply upgraded equipment.

Thank you.

您好!

我们是股份有限公司COMS.

非常感谢对COMS的关心.

我们指向就像公司名 Customer Oriented Manufacturing Solution 一样以高度复合化的自动技术和以丰富的自动化关联知识可持续品质改善, 降低成本, 客服不满Zero. 我们相约未来也要为客人的满意努力和以不断的开发技术给客人供应升级的装备. 谢谢.



Company History

2018	02. 2차 전지 분리막(Membrane Film) Re-Winder 개발 공급 04. 정부 국책과제 PCB검사 전기Checker 처녀 출하 12. 무역의날 수출 500만불탑 수상	2013	02. DF/PET Auto Peeler 개발 공급 개시 (박판 핸들링 기술확보) 07. Cu Carrier Detach MC 개발 10. Thickness 측정기/Warpage Sorting MC 개발
2017	08. PKG/HDI MSAP 전용 장비 대량 양산 공급 (Major 6개사)	2012	01. Coreless Detach MC 개발 완료
2016	05. Camera Module 장비 개발 및 제작 (Vision 장비 포함) 공급 개시 12. 무역의날 수출 100만불탑 수상/황선오 대표이사 동탑산업훈장 수여	2009	08. 신축 사옥 이전 12. ISO 9001 취득 / ISO 14001 취득
2015	08. 삼성전기 베트남 자동화 물류 장비 일괄 수주/공급 (65대) 10. Camera Module 新사업 발족 (광학,초정밀 제어 기술 기반)	2008	10. 기판고속캠수취기 특허 취득 11. Magazine Type다열투입/특허취득
2014	06. DFSR 수직 Auto Peeler 개발 08. 본사 확장 이전 (청주공단) 08. COMS VINA 설립	2007	05. 기판Laser Marking System개발 10. 기판Taping기술관련특허취득
		2006	08. 주식회사코엠에스 법인등록 10. 진공+2차press복합Quick press개발 (수동형)
2018	02. Development and supply of the secondary cell separator (Membrane Film) Re-Winder 04. The First release of PCB inspection E-Checker for government's project 12. Awarded five million-dollar tower in export on Trade Day	2018	02. 2次电池分离膜开发供应(Membrane film) Re-Winder 04. 政府国策课题检查PCB电器Checker 第一次出庫 12. 贸易日获奖出口500万美元塔
2017	08. Supply Mass-production of equipment for PKG/HDI MSAP (to Major 6 companies)	2017	08. 大量量产供应PKG/HDI MSAP专业装备(MAJOR 6个公司)
2016	05. Developed and manufactured of Camera Module (Including Vision Equipment) 12. Awarded a million-dollar tower in export on Trade Day / CEO Mr. Hwang, awarded the Order of Industrial Merit on the Bronze Medal of Industrial Effort	2016	05. 开发以及制作相机组件装备(包括视觉装备)并开始供应 12. 贸易日获奖出口100万美元塔/ 黄善五代表理事授予出口有功者铜塔产业勋章
2015	08. Package order & supply of automation logistics equipment(65ea), Samsung Electronics Vietnam 10. Camera Module new business started (based on Optics & Superfine Control Technology)	2015	08. 三星电机越南自动化物流装备一括订货/供应(65台) 10. Camera Module新事业成立(光学超精密控制技术基础)
2014	06. Developed DFSR Vertical Auto Peeler Machine 08. Moved Head-office to a larger facility(Cheongju) 08. Established COMS VINA	2014	06. 开发DFSR垂直Auto-peeler 08. 本公司扩大搬迁(青州) 08. 建立COMS VINA
2013	02. Developed DF/PET Auto Peeler machine (Acquired Thin-Plate Handling Technology) 07. Developed Cu Carrier Detach Machine 10. Developed Thickness measurement MC & Warpage Sorting MC	2013	02. 开发DF/Pet AUTO Peeler 以及开始供应(确保薄板操作技术) 07. 开发Cu Carrier Detach机 10. 开发Thickness测定机/开发Warpage Sorting机
2012	01. Developed Coreless Detach MC	2012	01. 开发Coreless Detach机
2009	08. Moved to new company building 12. Acquired ISO9001 & ISO 14001	2009	08. 新建公司搬遷 12. 取得ISO9001/ 取得ISO14001
2008	10. Acquired patent for receiving machine of substrate with high speed cam 11. Acquired patent for Magazine Type-multiple strip Loader	2008	10. 取得基板高度摄像头收专利 11. 取得Magazine Type多列投入专利
2007	05. Developed substrate Laser Marking System 10. Acquired patent for substrate Taping technology	2007	05. 开发基板Laser Marking System 10. 取得基板Taping技术关联专利
2006	08. Registered CO-MS Corporation 10. Developed Vacuum+Secondary press mixed Quick press(Manual Type)	2006	08. 登记股份有限公司COMS法人 10. 开发复合真空+2次压力复合Quick press(手动型)



Technology Patent Possession / Facilities

Technology Patent Possession

Taping and Rolling Device for PCB
High speed CAM Unloader for PCB
Multifid Loader / Unloader
Non-contact Loader / Unloader
Film Coating Device for Chipmaking
Auto Loader / Unloader for Cleaning
Loader / Unloader for PCB
Auto Peeler of Protecting Film for Semiconductor
Coreless Detach MC Corner Cut Mechanism & Etc.
Membrane Film Re-Winder

Facilities



Clean Room



Machining Center



Manufacturing Room



Storage



Business Categories

Peeler & Detach MC

- DF Auto Peeler
- DFSR Auto Peeler
- Carrier C-Foil Detach
- Coreless Detach

Measurement & Vision MC

- Warpage Sorting MC (One-side, Both-sides)
- PCB Panel Thickness Measurement MC
- Thickness Measurement MC
- Package Strip Thickness Measurement & Visual Sorting MC
- Impedance Measurement MC
- F2F Distance Measurement MC
- R/F Pad to Pad Distance Measurement MC
- Mylar Film Detecting System

Auto LD/ULD & Other MCs

- PCB Strip Multi-Row Magazine & Stack Handler
- Box, Tray, Basket Type Handler for Large Sized Panel
- Electric Checker Handler (Strip Stack Type, Magazine Type)
- White Ink Marking MC
- Full Auto R/F Servo Press MC

Camera Module Assembly MC

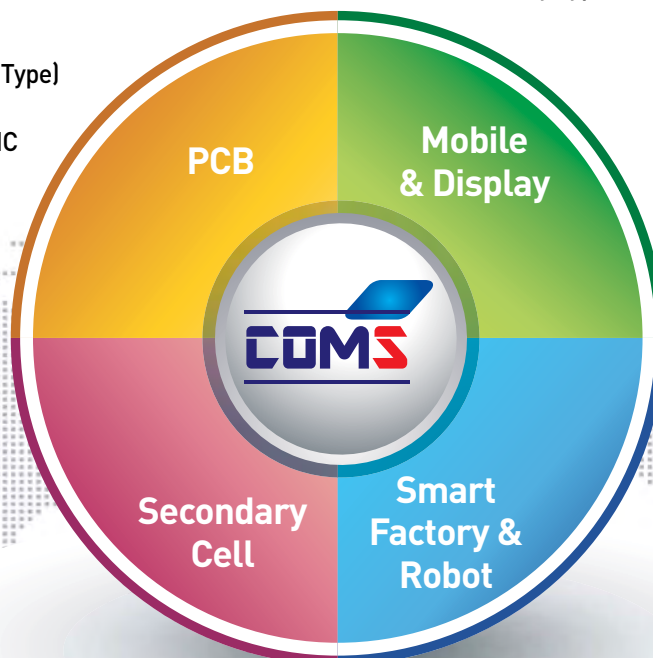
- Ball Insert MC
- Housing Carrier Insert MC
- Pallet Loading MC
- Shield Can Insert MC (2-Slide Type)
- Dummy Lens L/UL MC
- Mobile Cover 3D Forming MC(3-Head)

Inspection MC

- Raw Material Direction Automatic Inspection MC
- Ball Quantity Vision Inspection MC
- Lens Combined Angle Inspection MC
- Carrier Bonding Inspection MC
- Vision Inspection MC (Dust Trap, Grease, Bonding Inspection)

Superfine JIG

- Shield Can Ass'y JIG, etc. Bar Type and More
- Array Type JIG, etc.



Factory Automation MC

- Secondary Cell Membrane Trimming Winder
- Secondary Cell Membrane Film Pipe Separator

Smart Factory & Robot

- TM, Aubo, Sawyer, etc.
- Collaborative Robot
- Self Driving System
- System Integration for Smart Factory



Dry Film Auto Peeler (Horizontal)



회로용 Dry Film 공정에서 노광후 보호용 Mylar Film을 수평으로 Peeling하는 설비

It peels the Mylar Film horizontally during Dry Film for circuit process after exposing.

在电路用Dry Film工程曝光后保护用Mylar Film把水平Peeling的设备

Standard Type

초박판 대응이 원활한 장비이며, 평판 테이블에 기판을 Pick up하고 테이프를 점착하여 1면씩 박리하여 배출

It is applicable to super thin plate, and picking up the substrate from the flat table and peeling a side by taping and then unload the substrate.

对应超薄板顺畅的装备, 在平板桌子Pick up基板黏着胶带剥离每一面排出的设备

Compact Type

박판 제품 Handling 대응에 적합한 장비이며, 장비 Size 최소화로 공간 제약이 있고 Tact Time이 빠르지 않는 Package 기판에 제안.

It is applicable to thin plate product handling, and it is small sized equipment for space constraint company.

对应薄板产品Handling很合适的装备 为装备Size最小化对有空间限制的客户可以适用的设备

Specification

Model No. : APH-5060S/C

Items	Standard Type	Compact Type
Work Size	510mm × 610mm / 405mm × 510mm	405[~415]mm × 510mm
Work Thickness	0.04mm ~ 1.2mm	0.04mm ~ 1.2mm
Tact Time	13sec (Customize)	16sec (Customize)
Footprint	Main MC : 2,350(L) × 1,250(W) × 1,850(H) Box Loader (additional) : 1,400(L) × 1,250(W) × 1,850(H)	Main MC : 1,850(L) × 1,250(W) × 1,850(H) Box Loader (additional) : 1,400(L) × 1,250(W) × 1,850(H)
Structure	Main Auto Peeler MC In Line or Loading System	Main Auto Peeler MC In Line or Loading System
Loading Unloading (Customize&Option)	In Line to DES or N.C Developing MC Loading MC to DES or N.C Developing MC	In Line to DES or N.C Developing MC Loading MC to DES or N.C Developing MC
Applications	Package Substrate, HDI DF Process	Package Substrate, HDI DF Process

※ It is subject to change without any notice for better quality, and a customizable equipment.



DFSR/ABF Auto Peeler (Vertical)



PCB 기판의 DFSR 공정에서 노광 후 보호용 Mylar Film을 수직으로 Peeling하는 설비
 It peels the Mylar Film vertically during DFSR process of PCB substrate after exposing.
 在PCB基板的 DFSR工程曝光后保护用Mylar Film把垂直 Peeling的设备

Features

- Auto Peeling Unit for DFSR Protecting Film,
- Detect un-peeling product,
- Dust elimination and Clean Technology,
- Manufacture Customizing Process Machine (In Line or Off Line)

Specification

Model No. : APV-4050/5060SR

Items	Specification
Work Size	415mm[W] × 510mm[L] / 510mm[W] × 610mm[L]
Work Thickness	Min 0.04mm ~ Max 1.2mm
Tact Time	32sec (Customize)
Footprint	5095mm × 2600mm × 2275mm
LD/ULD Type	Basket to Basket Tray to Tray In Line
Utility	3phase 220V, 50/60Hz Air Pressure : 5 ±0.5 Kg/cm ² , Vacuum Pressure : 625 ±25(85KPa ±3)
Applications	Package Substrate, HDI DFSR Process, SAP ABF Process

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Mylar Film Detecting System *InvisibleFind*

The First in the World !



PCB 또는 각종 산업자재의 제조 공정 중에 사용되는 필름(투명, 반투명)의 부착 상태 또는 제거 상태를 검출하는 Sensor

Sensor that detect the attached or removed(peeling) condition of the film using in manufacture process for PCB or various industry material..

在PCB或各种产业材料的制造工序中使用的薄膜(透明、半透明)附着状态或检出去除状态的sensor

Specification

Model No. : CS-IF01, 02

Items		Sensor		Controller
Sensor Type		Dual Sensing	Dynamic Sensing	-
Model		CS-IF01	CS-IF02	CS-IFC01
Input		1 Input 5V	1 Input 5V	4 Input : Sensor 2 Input : Controller
Output	PNP	1 Output 1~5V	1 Output 1~5V	2 Output (24V)
Light Source		Green LED, 520nm	Green LED, 520nm	-
Power	Voltage	DC5V	DC5V	DC20V~25V
	Power	Under 2Watt		
Detecting Method		Actinography		
Response Time		20ms (including stable time of LED)		
User Environment		Temperature : -10℃ ~ +55℃, Vibration : Below 60HZ		
Size		29mm × 14mm × 17mm	40mm × 40mm × 50mm	110mm × 160mm × 50mm
Weight		50g	150g	300g
FOV		10mm ~ 20mm	10mm ~ 20mm	-
Warpage		Below 5mm	Below 5mm	-

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Carrier Copper Foil Detach MC



MSAP공법에서 Carrier Copper Foil을 Detach하는 장비이며, PCB 기판 업계에 검증된 장비로 특화된 Knurling 방식과 Grinding 기능으로 제품 미분리 최소화하며 Detach Process를 완벽 구현하는 설비

Equipment that detaching Carrier Copper Foil in MSAP method of construction, and also that qualified in PCB substrate field with specialized Knurling method and Grinding function.

It minimizes the products from un-peeling and will fully implemented for Detach Process.

在MSAP工法 Detach Carrier Copper Foil的装备于PCB基板业界验证好的装备把专业化的Knurling方式和Grinding功能产品未分离最小化完美体现Detach Process的设备

Features

- Carrier Copper Foil Auto Detaching Machine
- Vision Inspection
- Product Handling of Precise Position Control Technology Application
- Selectable Option between Knurling and Grinding

Specification

Model No. : CR-4050/5060

Items	Specification
Work Size	405~415mm[W] × 510mm[L] 510mm[W] × 610mm[L]
Work Thickness	Carrier : 18um ~ 35um, Copper : 2um ~ 5um, Core : 40um ~ 400um
Tact Time	27sec (Customize) / 22 sec (Option)
Footprint	MAIN : 1100mm × 3540mm × 1930mm LD : 1130mm × 1110mm × 1930mm ULD : 1130mm × 1780mm × 1930mm
Utility	3phase 220V, 1phase 220V(110V), 50/60Hz Air Pressure : 5 ±0.5 Kg/cm ² , Vacuum Pressure : 625 ±25(85KPa ±3)
Applications	Package Substrate, HDI MSAP

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Coreless Detach MC



- Coreless(ETS, MIS등) 제품의 DCF층과 기판을 자동으로 분리해주는 장비
- 기판 분리 장비로 제품의 외곽 부분의 코너만 Cutting하여 제품 Damage를 최소화 및 특화된 분리 방식(Warpage방지)을 적용한 설비
- It automatically detachs between DCF level and the substrate of coreless(ETS, MIS etc.) products
- Coreless Detaching equipment for cutting outter corner for minizing damage and apply specialized separation method for warpage prevention.
- 自动分离Coreless(ETS, MIS等)产品的DCF层和基板的装备
- 基板分离装备, 只有 Cutting产品外围部分的角适用产品 Damage 最小化及专业化的分离方式(防止Warpage)的设备

Features

- Substrate Automatic Detaching ▪ Cutting Position Smart Teaching
- Product Handling of Precise Position Control Technology Application.

Specification

Model No. : CL-4500/5060

Items	Specification
Work Size	415mm[W] × 510mm[L] 510mm[W] × 610mm[L]
Work Thickness	Min 0.035mm ~ Max 0.2mm
Corner Cutting	Min. 2mm ~
Tact Time	30sec (Customize)
Footprint	6100mm[L] × 2450mm[W] × 2050mm[H] (415×510)
Utility	3phase 220V, 1phase 220V(110V), 50/60Hz Air Pressure : 5 ±0.5 Kg/cm ² , Vacuum Pressure : 625 ±25(85KPa ±3)
Applications	Package Coreless Products (Coreless, ETS, MIS)

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PCB Panel Thickness Measurement MC (Full Auto)



PCB 제조 공정을 거쳐 제작된 제품의 완성 두께를 접촉 Type의 Probe를 사용하여 측정하는 설비
 This equipment for measuring finished thickness of products through PCB manufacturing process by using contact type probe.
 经过PCB制造工程制作的产品的完成厚度测定使用接触Type的Probe的设备

Specification

Model No. : TMP-4050/6050, TMS-0720

Items	Specification
Product Size(mm)	405~510mm(W) × 510~610mm(L), T: 0.04~1t
Measure Point	5 Points / Panel
Scan Table	Granite Plate
Precision	0.08t ~ 0.8t $\pm 3\mu m$ / 0.8t ~ 2.0t $\pm 5\mu m$
Tact Time	12 Points 21sec
Product Moving	Vacuum Pad
Product Supply	Hand (Robot)
Product Unloading	Lift Box Type (4Box)
Pass Line(mm)	940 ± 20
Machine Size	(L)2,042mm × (W)1,070mm × (H)1,805mm
Frame	SS41, H-IV0504-S9/HT (Ivory)
Input Device	24" Wide Monitor & Keyboard, Mouse
Motion Control	PC Control
Utility	Air : 5 Kgf/cm ² , Power : AC220V $\pm 10\%$, 3Ø 50~60Hz

※ It is subject to change without any notice for better quality, and a customizable equipment.



Lens Cutting MC



렌즈 사출물의 게이트를 컷팅하며 트레이에 정렬하는 설비

Equipment that cuts the gate of the lens injection and aligns it to the tray.

切割透镜射出物注射口,排列在托盘上的设备。

Specification

Model No. : LCS-24

Items	Specification
Product Size	φ5.05, φ5.2, φ5.4, φ5.6, φ6, φ6.5, φ6.9
Product Weight	Up to 20g
Product Material	Plastic
Utility	• Rated Voltage : 220V • Rated Frequency : 50/60hz • Power(Kw) : 15Kw • Air Pressure : 5Kgf
Footprint & Weight	2600mm X 1560mm X 2275mm / 2000kg
Applicable Process	Lens Injection Process
Product Flow	Left -> Right
Operating Environment	Temp(℃) : 22 ±2℃ / Humidity(%) : 50 ±5%

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MLCC Packing Auto Remove MC



열처리 후 비닐 포장으로 압착된 제품과 부자재를 비전과 레이저를 이용하여 자동으로 분리 및 배출하는 설비
Equipment that automatically separates and ejects products and sub-materials pressed with vinyl package using Vision and Laser after heat treatment.
열처리后用塑料包装压榨的产品和辅料,利用Vision和激光自动分离和排出的设备。

Specification

Model No. : MLS - 2020

Items	Specification
Product Size	220mm X 220mm
Product Weight	Up to 2Kg
Tact Time	10Sec
Power	220V 3phrase, 50/60kHz
Footprint	3,200mm X 1,600mm X 1,850mm
Weight	1500kg
Pass Line	1150 ±20mm
Control Method	PC, PLC Control
Operating Environment	Temp(℃) : 22 ±2℃ / Humidity(%) : 50 ±5%

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R/F Pad to Pad Distance Measurement MC



PCB 제품의 Fiducial Point(or Pad to Pad)간 거리를 Vision Camera로 자동 측정 후 분류하는 설비
It is automatically measure the distance between Fiducial Points(or Pad to Pad) of PCB product by Vision Camera and categorize it of OK or NG.

利用夜視摄像机自动测定PCB产品的基准点(or Pad to Pad)之间距离后分类的设备





Model No. : PTP-2025Q

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Impedance Measurement MC



Package 기판의 Strip내에 지정된 쿠폰(측정위치)의 Impedance를 자동으로 측정 및 Sorting하는 장비
It automatically measures and sorts the impedance of desinated coupon(measuring point) within strip of package substrate.

在Package基板的Strip内指定的Coupon(测定位置)的Impedance自动测定及Sorting的装备

Specification

Model No. : IMS-0720

Items	Specification
Work Size	Package Strip Size (65/74/95mm[W] × 240mm[L])
Work Thickness	0.1mm ~
Tact Time	16sec (6Point based)
Footprint	MAIN : 2000mm × 2000mm × 1700mm LD : 1350mm × 2000mm × 1250mm UD : 1350mm × 2000mm × 1250mm
LD/ULD Type	Multiple Magazine & Stack two-way
Utility	3phase 220V, 60Hz / Air Pressure : 5 ±0.5 kgf/cm ²
Applications	Package Substrate Impedance Product

※ It is subject to change without any notice for better quality, and a customizable equipment.



Warpage Sorting MC (One Side, Both Sides)



PCB(Package/HDI)기판의 Strip 상태에서 휨을 선별하여 OK 또는 NG 구분 및 Data를 저장하는 장치

This equipment for selecting OK or NG on the strip status of PCB(Package/HDI) substrate and saving the Data.

在PCB(Package/HDI)基板的Strip状态筛选弯曲区分OK or NG及保存Data的装置

Specification

Model No. : WS-0720S

Items	Specification	
	One Side	Both Sides
Product Size	W: 60 ~ 100, L: 120 ~ 300, T: 0.15 ~ 1	W: 60 ~ 120, L: 120 ~ 300, T: 0.1 ~ 1
Scan Type	Scanner Moving (Servo)	Scanner Moving (Linear Servo)
Scan Table	Granite Plate	Granite Plate
Resolution	$\pm 100\mu m$	$\pm 30\mu m$
Tact Time	8.5sec	One-side 5sec, Both-sides 7sec
Product Transfer	Vacuum Pad	Vacuum Pad
Product Supply	Lift Stack Type (Stroke=200mm)	Lift Stack Type (Stroke=200mm)
Product Unloading	Dedicated Case Stack Type	Dedicated Case Stack Type (Max Height 70mm)
Pass Line(mm)	1100 $\pm$ 20	1100 $\pm$ 20
Machine Size	(W)1,300mm $\times$ (L)1,200mm $\times$ (H)1,810mm	(W)1,250mm $\times$ (L)2,200mm $\times$ (H)1,860mm
Frame	SS41, H-IV0504-S9/HT (Ivory)	SS41, H-IV0504-S9/HT (Ivory)
Input Device	24" Wide Monitor & Keyboard, Mouse	24" Wide Monitor & Keyboard, Mouse
Motion Control	PC Control	PC Control
Utility	Air: 5 Kgf/cm ² / Power: AC220V $\pm$ 10% / 3 ϕ 50~60Hz	Air: 5 Kgf/cm ² / Power: AC220V $\pm$ 10% / 3 ϕ 50~60Hz

※ It is subject to change without any notice for better quality, and a customizable equipment.



F2F Distance Measurement Machine



PCB 제품의 Fiducial Point(or F to F)간 거리를 Vision Camera로 측정 후 분류하는 설비
 Equipment that measures and categorizes the distance between the Fiducial Point (or F to F) of
 PCB products with Vision Camera.
 用夜视相机测定PCB产品的基准点(or F to F)之间距离后分类的设备

Specification

Model No. : FTF-1025S

Items	Specification
Work Size	W : 50 ~ 130mm L : 50 ~ 300mm
Work Thickness	Min 0.17~0.40 (±0.25mm)
Tact Time	15 sec/strip
Footprint	(W) 1,100mm × (L) 3,200mm × (H) 1,750mm (FFU exception, SIZE)
Repeatability	± 3 μm
Utility	Power : AC220V ±10%, 3Ø 60Hz Air : 5 ~ 6 kgf/cm ²

※ It is subject to change without any notice for better quality, and a customizable equipment.



INK & Laser Marking MC



AOI/VRS Data와 연동하여 Panel내에 불량 Cell 위치를 자동으로 찾아 Ink를 Marking 하는 장비

This equipment that automatically finds failed Cell position within Panel by interlocking with AOI/VRS and marks ink on the panel.

跟AOI/VRS Data联动在Panel内自动找到不良Cell位置Marking Ink的装备

Specification

Model No. : AO-WIP-4050

Items	Specification
Work Size	605mm[W] × 650mm[L]
Work Thickness	Min 0.05mm ~ Max 2mm
Tact Time	2.4sec/1 Dot Marking • Align • Pre-Marking • UV Curing • Bar Code Recognition
Footprint	1300mm × 1600mm × 1800mm
Utility	3phase 220V, 60Hz Air Pressure : 5 ±0.5 kgf/cm ²
Applications	Package Substrate

※ It is subject to change without any notice for better quality, and a customizable equipment.



Electric Checker Handler (Strip Stack Type)



PCB Strip 제품의 적재,투입 및 수취하는 일체형 Type으로 전기검사하는 설비

Equipment to conduct electrical inspection with an integral type that Stacks, Loads and Unloads PCB Strip products.

PCB Strip 产品的装载, 投入以及接收的一体型方式,检查电器的设备

Specification

Model No. : ECS-0720S

Items	Specification
Product Size	*Strip - Width Min. : 50~100mm - Length Min. : 100~250mm - Warpage : 2mm
Applications	BGA Products such as CSP, SIP, etc. (Strip Type)
Product Thickness	0.2 ~ 1.0mm
Equip. Structure	Loader & Unloader Integrated Type 1ea
Equip. Size (mm)	1760(W) × 1680(L) × 1810(H)
Pass Line	902,5mm ±50
Work Direction	Body (Left), Loader&Unloader (Right)
Tact Time	15Sec/Strip

※ It is subject to change without any notice for better quality, and a customizable equipment.



Electric Checker Handler (Magazine Type)



PCB Strip 제품을 적재 및 Magazine type으로 투입하여 Electric checking 하여 수취하는 설비.
일반적인 AL Magazine, Plastic Magazine 모두 가능.

Equipment that loads and unloads PCB Strip products in the magazine type by electronic checking
Both normal AL Magazine and Plastic Magazine are available.

装载PCB Strip产品以及用Magazine方式投入进行电气检查后接收的设备, 一般的AL Magazine,
塑料Magazine都可以

Specification

Model No. : ECM-0720S

Items	Specification
Product Size	*Strip - Width Min. : 45~150mm (+20mm available when using Adapter) - Length Min. : 100~250mm
Applications	BGA Products such as CSP, SIP, etc. (Strip Type)
Product Thickness	0.15 ~ 1.0t
Magazine Spec	Width Min. : 45~106mm / Length Min. : 150~250mm / Height : 144mm Height Pitch : 6mm / Stackable Q'ty : 20 Strip
Equip. Size (mm)	2400(W) × 1840(L) × 1810(H)mm
Equip. Weight	1800Kg
Pass Line	Strip : 902.5mm ±20 / Magazine : 902.5mm ±20
Work Direction	Standard : Right → Right / Customizing : Left → Left (Option)

※ It is subject to change without any notice for better quality, and a customizable equipment.



PCB Strip Multi-Row Magazine & Stack Handler



전용 Pallet에 적재된 Strip 제품을 다열로 LD/ULD 하는 설비

It automatically Loads & Unloads with multi-row the strip products stacked in a dedicated pallet.

LD/ULD装载在专用托盘中Strip产品的设备

Specification

Model No. : MLD-0720S/ MUD-0720S

Items	Specification
Product Size	(W)40~100, (L)150~250mm, T : 0.09~0.6t
Tact Time	9sec
Product Transfer	Vacuum Pad, × Servo Moving
Stacking Lift	3 ~ 6rows, High 70mm
Conveyor	Ø16 SUS304 Shaft (Teflon Tubing)
Conveyor Speed	0.5 ~ 7m/min
2 Panels Separation	Load Cell
Product Unloading	Lift Box Type (4Box)
Pass Line(mm)	940 ±20
Machine Size	(L)1,180mm × (W)1,200mm × (H)1,800mm
Frame	SS41, H-IV0504-S9/HT (Ivory)
Input Device	5.7" Touch Screen (Proface)
Motion Control	PLC (Mitsubishi)
Utility	Air : 5 Kg/cm ² , Power : AC220V ±10%, 3Ø 50~60Hz

※ It is subject to change without any notice for better quality, and a customizable equipment.



Box, Tray, Basket Type Handler for Large Sized Panel



Box, Tray 또는 Basket에 적재된 Panel을 LD/ULD 하는 설비

It automatically Load & Unload the panels which has stacked in a **Box, Tray or Basket**.

装载在箱子, 盘子或框的Panel进行LD/ULD的设备

Specification

Model No. : MLD-0720M/MUD-0720M

Items	Specification
Product Size	(W)450 ~ 510, (L)510 ~ 610mm, T : 0.04 ~ 1t
Tact Time	12sec
Product Transfer	Vacuum Pad, × Servo Moving
Box Lift	Geared Motor, Max 200Kg
Box Changer	Rod-less Cylinder
Box Stacking Cart	2 Units
2 Panels Separation	2panels Detaching(Cylinder), Air Blower, Ionizer
Product Unloading	Lift Box Type (4Box)
Pass Line(mm)	1050 ±20
Machine Size	(L)1,650mm × (W)1,375mm × (H)1,950mm
Frame	SS41, H-IV0504-S9/HT (Ivory)
Input Device	5.7" Touch Screen (Proface)
Motion Control	PLC (Mitsubishi)
Utility	Air : 5 Kg/㎥, Power : AC220V ±10%, 3Ø 50~60Hz

※ It is subject to change without any notice for better quality, and a customizable equipment.



Full Auto R/F Servo Press MC



Servo Press를 사용하여 Rigid Flexible 제품 외형을 타발하는 Full Auto 설비
작업자 조작이 간편 | Model별 Recipe 구성

It is fully automatic for punching out shapes of the Rigid Flexible product using Servo Press.

Easy to operate | Configure recipes by Model

使用伺服压力机生产Rigid Flexible产品的全自动设备.

操作简单 | 型号别 菜单结构

공정 : 제품 적재 ⇒ Shuttle 이동 ⇒ 제품 Clamp ⇒ 타발기 이동 ⇒ 타발 ⇒ 제품 Unloading ⇒ 금형 Plate cleaning

Process : Loading Product ⇒ Shuttle Moves ⇒ Product Clamps ⇒ Servo Press Moves ⇒ Pressing Unloading Product ⇒ Cleaning the Mold Plate

工序 : 装载产品 ⇒ Shuttle 移动 ⇒ 产品 Clamp ⇒ 移动压力机 ⇒ 压力机 ⇒ 卸载产品 ⇒ 清洗模具板

Specification

Model No. : SP-2025Q

Items	Specification
Product Information	Rigid Flexible PCB / Thickness : max. 1.0T Panel Size : Max.500~200mm / Thin paper automatically remove or insert
Capability	Accuracy : $\pm 25\mu\text{m}$ / Ionizer System / Brush Cleaning + Dust Clean System Tact Time : within 2sec(per 1pressing) / Press MC Power : Max. 15Ton
Servo Press Spec	Capability : 500~ 15,000Kgf / Power: 9kVA Allowable JIG(Mold) Weight : 100kg / Repeatability : Free Load $\pm 5\mu\text{m}$, Loading
Loading & Unloading	Product loading & unloading automatically stacked appr. 50~100mm Thin paper inserting function(Able to select "use" or "out of use")
Utility	Customize* 3phase 220V 60HZ / Air Usage : 200LPM Air Pressure : $5.5 \pm 0.5\text{kgf/cm}^2$ / Vacuum Pressure : $625 \pm 25(85\text{KPa} \pm 3)$
Controller	PLC(Mitsubishi)
Eq. Size	(L)2300 × (W)2000 × (H)2000 – Customizing

※ It is subject to change without any notice for better quality, and a customizable equipment.



Package Strip Thickness Measurement & Visual Sorting MC



Package기판 완성 제품의 Strip 두께를 측정하고 ITS(추적관리), AOI결과, 두께 측정결과를 종합적으로 선별(Sorting)해주는 Full Automation 장비

It fully automation equipment that measures Strip Thickness of Package substrate completion product and sorts with ITS(tracking management), AOI result, and Thickness measurement result.

測定Package基板完成产品的Strip厚度把綜合筛选 ITS(追迹管理), AOI結果, 厚度 測定結果的 Full Automation 裝置

Specification

Model No. : TMVS-0720

Items	Specification
Work Size	40mm~100mm[W] × 100~300mm[L]
Work Thickness	Min 0.04mm ~ Max 0.3mm
Tact Time	ITS : 14Sec / AOI : 14 Sec Thickness Measure Only : 125Sec Thickness Measure + ITS, AOI : 125Sec
Footprint	Body : 1800mm[X] × 765mm[Y] × 1900mm[Z] Handler : 1800mm[X] × 1630mm[Y] × 1900mm[Z]
AOI (Vision)	Camera : 8K Line Scan Camera Pixel Resolution : 12.5 um
Thickness Measuring	Contact Type / Accuracy : $\pm 2\mu\text{m}$
Utility	3phase 220V, 50/60Hz / Air Pressure : 5~6 $\pm 0.5 \text{ Kg/cm}^2$
Applications	PCB Substrate Back End Process

※ It is subject to change without any notice for better quality, and a customizable equipment.



The Secondary Cell Membrane Trimming Re-winder



Tape, Film을 폐기하기 위해 감아주는 설비
Equipment to wind up tape and film.
为废弃胶带, 膜片而缠绕的设备

Specification

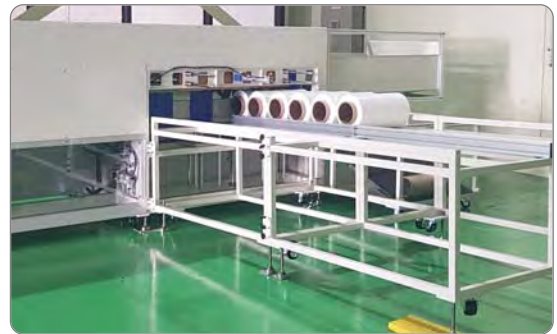
Model No. : SCM-800R

Items	Specification
Product Size	13000 × 700
Product Width	30mm
Tact Time	36m/min
Power	3phases 440V × 60Hz
Supply	5 kgf/cm ²
Equip. Size	2,627mm(L) × 1,203mm(D) × 1,610mm(H)
Equip. Weight	600kg
PASS LINE	820 ± 20mm
Frame	SS41, H-IV631-T3 (Ivory)
Control Method	PLC Control
Accessories	SENSOR : AUTONICS / MOTOR, LM GUIDE : JY Torque / Pneumatic : SMC

※ It is subject to change without any notice for better quality, and a customizable equipment.



The Secondary Cell Membrane Film Pipe Film Separator



지관 재활용을 목적으로 지관을 둘러싼 폐필름을 분리하는 장비

Equipment to separate waste film surrounding the district office for recycling of district offices

以支管再利用为目的分离围绕支管废膜片的设备

Specification

Model No. : SCP-800R

Items	Specification
Product Size	Paper Pipe $\varnothing 172 \times 550 \sim 680$ (Film $\varnothing 180 \sim 300 \times 450 \sim 580$)
Product Width	Max 28kg
Tact Time	Min. size based - 30sec (200ea/day)
Power	380V 3phases 60Hz
Equip. Size	6,000mm(L) $\times$ 5,000mm(D) $\times$ 1,600mm(H)
Equip. Weight	800kg
PASS LINE	820 $\pm$ 20mm
Frame	SS41, Paint (H-IV0631-T3)
Control Method	PLC Control
Accessories	SENSOR : AUTONICS / MOTOR, LM GUIDE : SPG, GGM, WON ST, HYUNDAI Pneumatic : SMC, TPC / Oil Pressure: D.H.C, SEWON

※ It is subject to change without any notice for better quality, and a customizable equipment.



Camera Module(VCM) Equipment

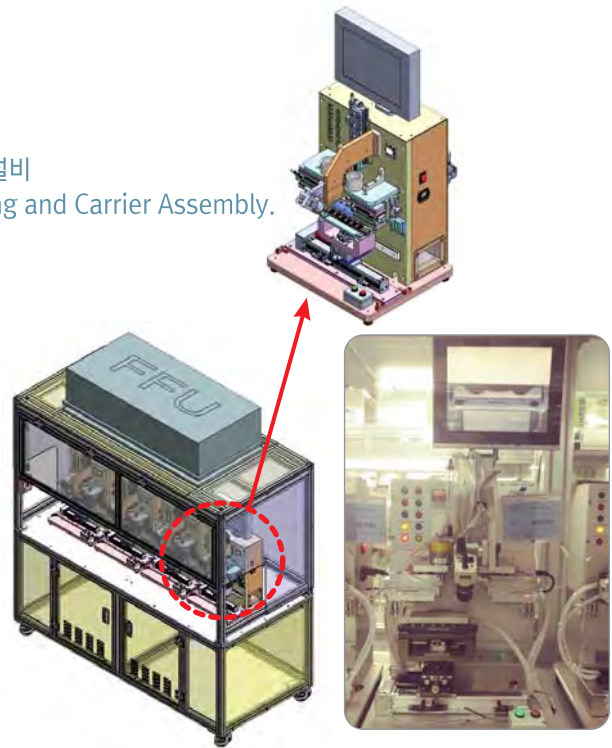
Ball Insert MC

VCM Housing과 Carrier Ass'y 사이에 구동용 Ball을 삽입하는 설비

A machine to insert a driving ball between the VCM Housing and Carrier Assembly.

VCM Housing和Carrier Ass'y之间插入驱动用球的设备

Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Ball Size		Ø0.65mm ~ Ø0.75mm
Tact Time		3.6 sec/pcs within (Based on 4 devices)
Footprint		1,800mm x 800mm x 1,800mm (FFU Excl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	5 kgf/cm ²



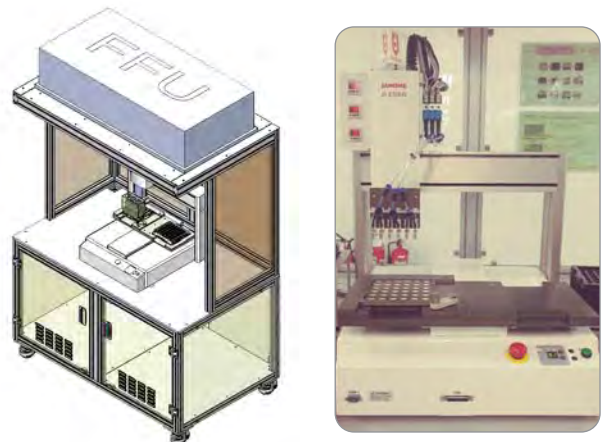
Pallet Loading MC

Pallet 안착 VCM Housing을 공정 투입 지그로 옮겨 담는 설비

A machine to load Pallet setting VCM Housing into the process inserting JIG.

Pallet放置VCM Housing을工程投入JIG搬送的设备

Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Tact Time		1.3 sec/pcs
Footprint		1,300mm x 1,000mm x 1,800mm (FFU Excl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	5 kgf/cm ²



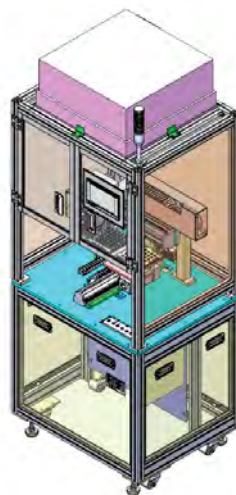


Camera Module(VCM) Equipment

Housing Carrier Insert MC

VCM Housing에 Carrier Ass'y를 Insert하는 설비
A machine to insert Carrier Ass'y into VCM Housing.
VCM Housing插入Carrier Ass'y的设备

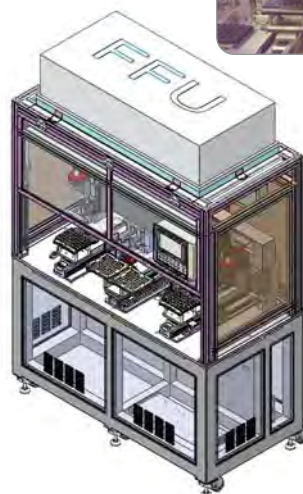
Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Gap Clearance		100 μ m
Tact Time		1.2 sec/pcs
Footprint		800mm x 650mm x 1,800mm (FFU Excl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	5 kgf/cm ²



Shield Can Insert MC (2-Slide Type)

VCM Housing에 Shield Can을 삽입하는 설비
A machine to insert a Shield Can into VCM Housing.
VCM Housing插入Shield Can的设备

Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Gap Clearance		40 μ m
Tact Time		3.6 sec/pcs within
Footprint		1,400mm x 700mm x 2,100mm (FFU Incl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	5 kgf/cm ²





Camera Module(VCM) Equipment

Lens Combined Angle Inspection MC

VCM Module에 삽입된 Lens의 각도를 Vision을 통해 검사하여 양/불 판정하는 설비
A machine to determine a pass or a fail by inspecting of the Lens angle which inserted into VCM Module through a Vision.

VCM Module插入的Lens角度通过Vision检查判定正品/不良的设备

Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Tact Time		2.5 sec/pcs
Footprint		640mm x 640mm x 1,960mm (FFU Incl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	N/A

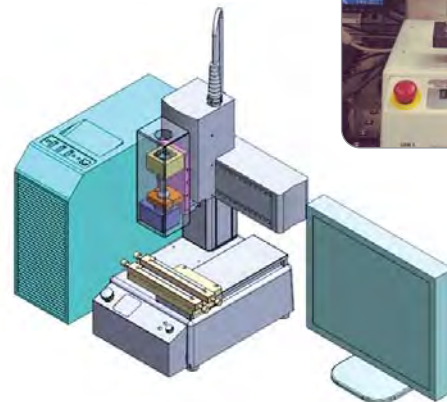


Carrier Bonding Inspection MC

끊어짐 및 과도포 검사를 위하여 VCM Carrier Bonding 상태를 Vision 검사를 통해 양/불 판정하는 설비
A machine to determine a pass or a fail by inspecting of the VCM Carrier Bonding for cutting or over spreading through a Vision test.

为断开以及过度涂抹通过Vision检查判定VCMCARRIER键正品/不良的设备

Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Tact Time		1.5 sec/pcs
Footprint		940mm x 450mm x 760mm
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	N/A





Camera Module(VCM/OIS) Equipment

Vision Inspection MC

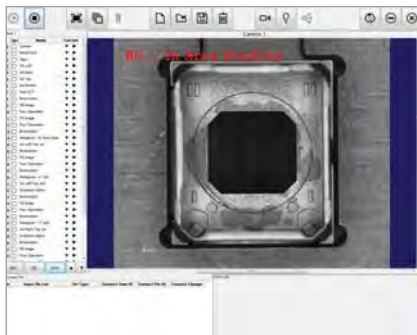
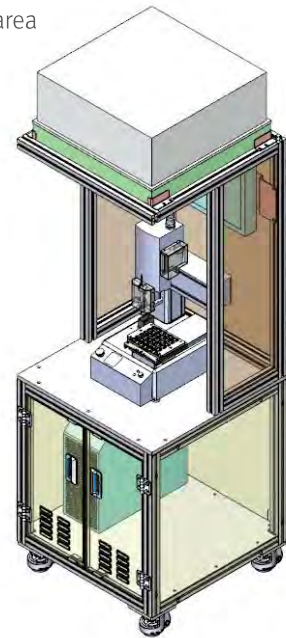
Dusttrap, Grease, IR Filter Bonding 도포량, 위치, 영역 등을 검사하는 장비

Inspection machine for spread volume, location, area, etc. of Dusttrap, Grease, IR Filter Bonding.

吸尘器, 润滑油, IR Filter 键 涂抹量, 位置, 检查领域等的设备

- Dusttrap 도포 검사기 : Dusttrap 도포량 및 영역 검사
- Grease 도포 검사기 : Grease 도포량 및 위치 검사
- IR Filter Bonding 검사기 : IR Filter Bonding 도포량 및 영역 검사
- Dusttrap Spread Inspection Device : Inspecting of Dusttrap spread volume and area
- Grease Spread Inspection Device : Inspecting of Grease spread volume and location
- IR Filter Bonding Inspection Device : Inspecting of IR Filter Bonding spread volume and area
- 吸尘器 涂抹检查机 : 吸尘器涂抹量以及领域检查
- 润滑油 涂抹检查量 : 润滑油 涂抹量以及位置检查
- 红外滤光片键检查机 : 红外滤光片键涂抹量以及领域检查

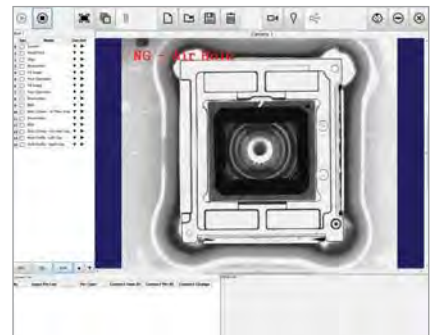
Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Tact Time		1.7 sec/pcs
Footprint		650mm x 650mm x 1,800mm (FFU Excl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V , 50~60Hz Combined
	Air	N/A



Dusttrap Spread



Grease Spread



IR Filter Bonding



Camera Module(VCM) Equipment

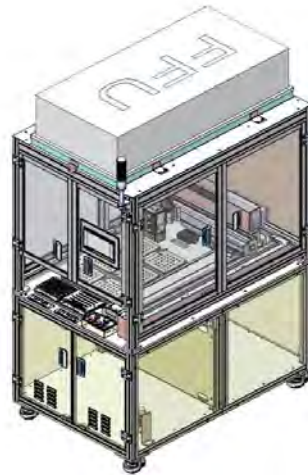
Dummy Lens L/UL MC

VCM 구동 검사용 Dummy Lens를 Loading 및 Unloading하는 설비

A machine to load and unload Dummy Lens for VCM driving inspection.

VCM驱动检查用Dummy Lens进行装载ing以及卸载的设备

Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Tact Time		1.0 sec/pcs
Footprint		800mm x 1,200mm x 2,100mm (FFU Incl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	5 kgf/cm ²



Mobile Phone Equipment

Mobile Cover Film 3D Forming MC

Mobile 및 IT기기의 Display 보호 Film을 특정 형상으로 성형하는 설비

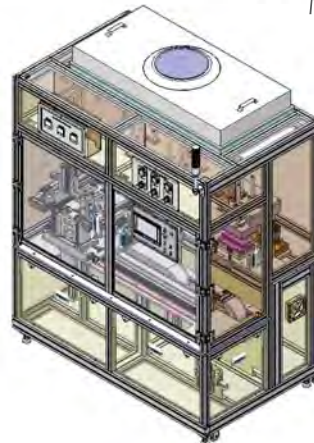
A machine to mold the Display protection Film of Mobile or IT devices into a specific shape.

用特定形象Mobile以及IT机器的Display保护膜成形的设备



Mobile film

Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		(Min) 120mm x 46mm ~ (Max) 174mm x 92mm
Tact Time		30 sec/pcs
Footprint		1,500mm x 900mm x 2,000mm
LD/ULD Type		Lift Loading / Air Blow Unloading
Utility	Power	3-Phase 220V, 50Hz Combined
	Air	5 kgf/cm ²





Camera Module(VCM) Equipment

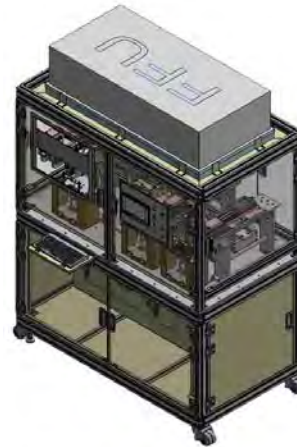
Raw Material Direction Automatic Inspection MC

지정 Tray에 적재되어 있는 VCM의 원자재 혼입 및 방향을 Vision 검사하여 양/불 판정하는 설비
A machine to determine a pass or a fail by inspecting of the VCM raw material which loaded on specific tray for mixing and direction through a Vision test.

Vision检查 在指定Tray装载的VCM原材料的混入以及方向判定正品/不良的设备



Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		All tray sizes within user designated
Tact Time		0.5 sec/pcs
Footprint		1,640mm x 800mm x 1,960mm (FFU Incl.)
LD/ULD Type		Magazine Lift Loading / Tray Lift Unloading
Utility	Power	1-Phase 220V, 50~60Hz Combined
	Air	5 kgf/cm ²



Ball Q'ty Vision Inspection MC

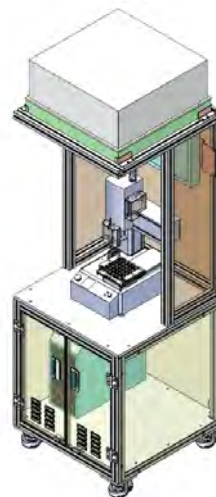
VCM Housing과 Carrier Ass'y 사이에 구동용 Ball을 삽입하는 설비

A machine to insert a driving ball between the VCM Housing and Carrier Assembly.

VCM Housing和Carrier Ass'y之间插入驱动用球的设备



Items		Specification
Clean Class		1,000 Class
Work Model		All
Work Size		Normal
Tact Time		1.7 sec/pcs
Footprint		650mm x 650mm x 1,800mm (FFU Excl.)
LD/ULD Type		Operator handling
Utility	Power	1-Phase 220V , 50~60Hz Combined
	Air	N/A





Super Fine JIG Business

코엠에스에서 제작되는 정밀 JIG로 휴대폰 카메라 모듈 제작시 사용되는 JIG

Super fine JIG manufactured by CO-MS that is used to produce Camera Module for mobile phones(VCM & IRIS).

超级摄像机模块的生产用于移动电话,由制造好的JIG CO-MS(氯乙烯与IRIS)。



Main Push Jig



Housing Jig



Holder Jig



Shield Can Ass'y Jig



6x6 Array Jig



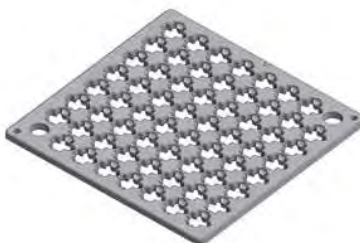
Shield Can Swap Jig



Carrier Swap Jig



Housing Swap Jig



Tape Attaching Jig



Dummy Lens Swap Jig

Business Categories

PCB

Mobile & Display

Secondary Cell

Smart Factory & Robot



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