



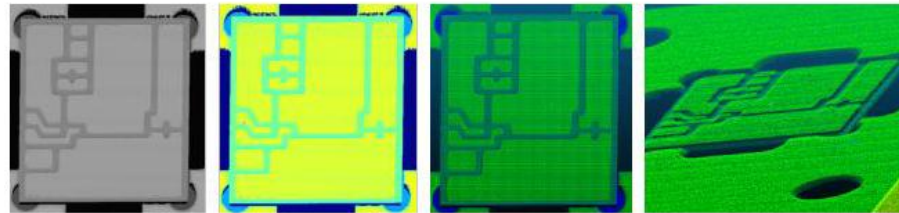
Portfolio

COOPERATION
& SYNERGY

Business Area

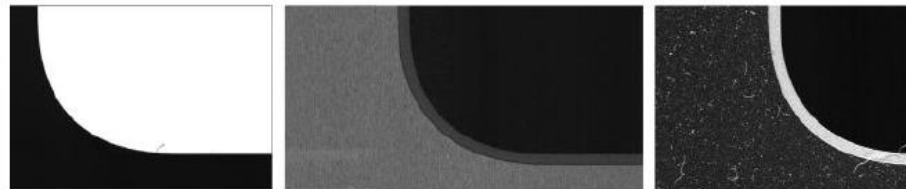
SEMICONDUCTOR

- 2D / 3D AOI System
- Pre-align System
- Laser Marking System
- Heat-Sink Stacker System
- Strip Loading/Unloading
- SWIR Inspection System



DISPLAY

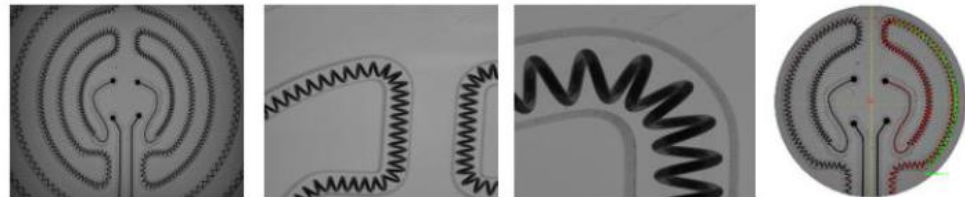
- UTG Inspection
- Epoxy 유/무 검사
- 제품 외관 검사



Business Area

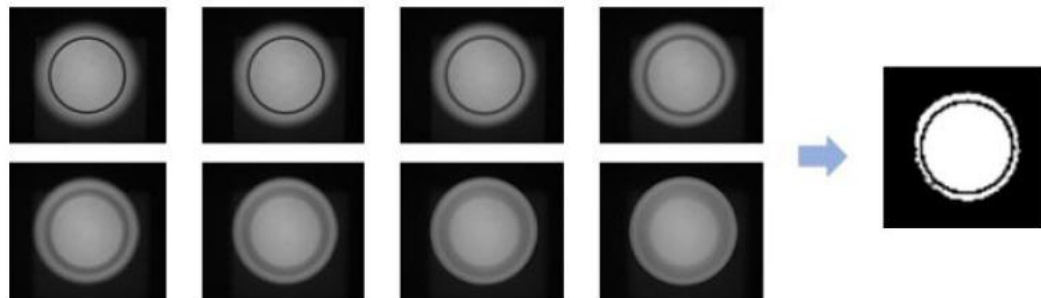
FA SYSTEM

- CID Deep-Learning AOI Inspection
- Curling Vision Inspection
- Syringe Vision Inspection
- Chamfer & Inspection System



SECONDARY BATTERY

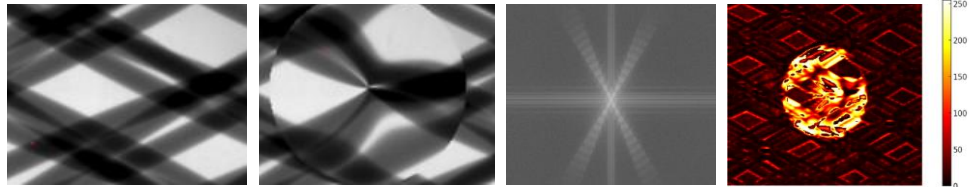
- Secondary Battery Align Vision
- CAN Deep Learning AOI Inspection



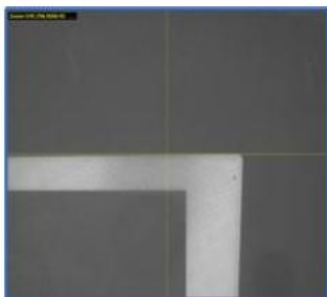
Business Area

X-RAY SYSTEM

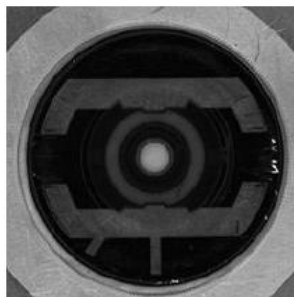
- Tire X-ray Inspection
- E-Axle Coolant Path Inner X-ray Inspection
- 2ND Battery Lead inner Layer X-ray Inspection



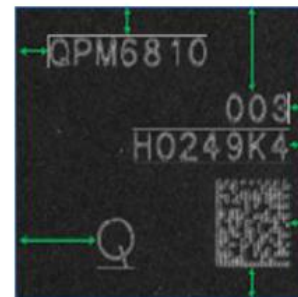
Vision System



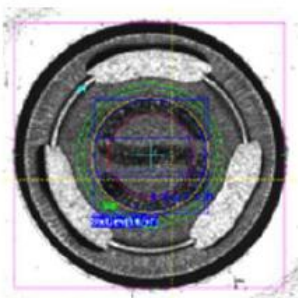
Car Glass Align 검사



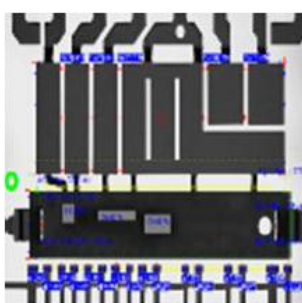
Glass Film 검사



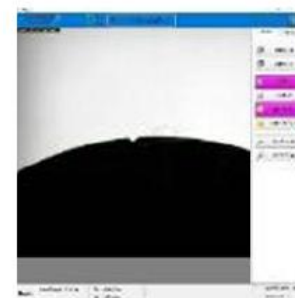
Laser Marking 검사



2차 전지 CID 검사



Lead Pin Vision 검사



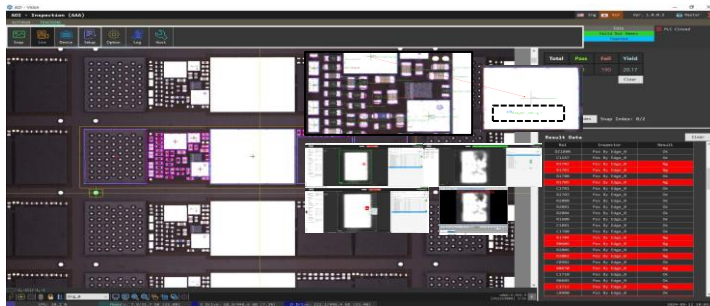
Wafer Pre Align 검사

Vision System



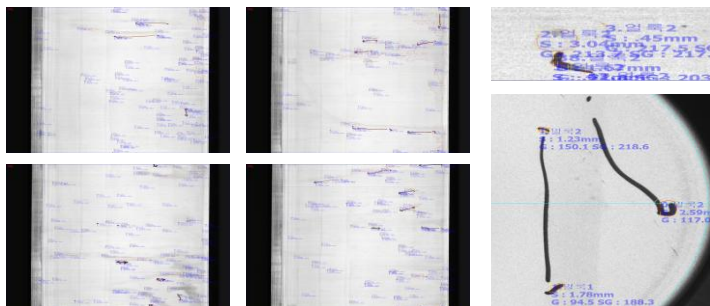
원통형 2차 전지 26800 Cell 양극 Cap을 flying 으로 검사할 수 있는 Deep Learning AOI 솔루션을 개발, 납품하였습니다.

녹, 긁힘, 눌림, 찍힘, Trimming, Burr, 오염 등 다수의 불량 항목을 지도 학습을 통해 검출합니다.



Die, Capacitor, Ball attach 등 작업이 이뤄진 Strip 상에서 발생하는 불량을 Deep Learning AOI 솔루션을 통해 2D / 3D 병행 검사하여 검출하는 솔루션을 개발하였습니다.

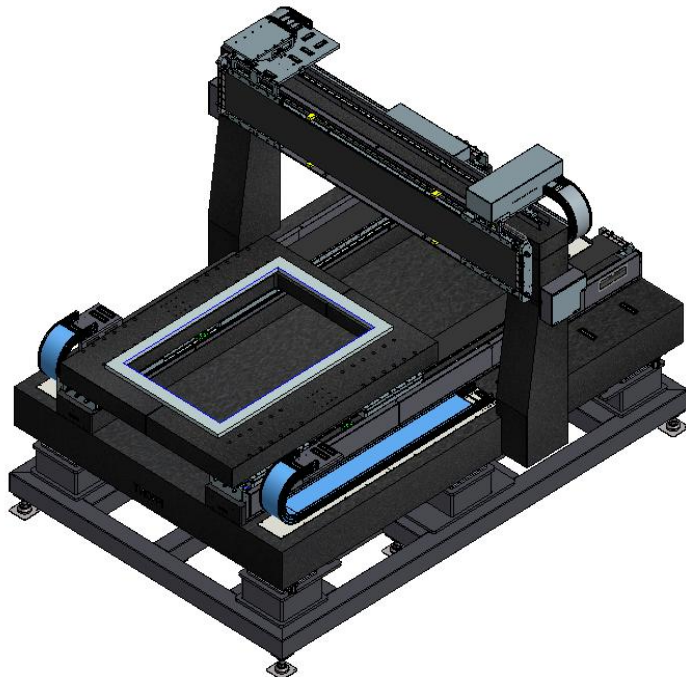
부품 들뜸, 파손, 납 부족, 극성 불량, 부품 치우짐, 오염, 부품 오삽, 부품 미삽, 부품 크기 불량, 부품 기울기 불량 등 다수의 불량을 지도 학습을 통해 검출합니다.



2차 전지 46950 Cell 원통 내 / 외부 검사를 Deep Learning AOI 시스템을 통해 검사하는 솔루션을 납품하였습니다.

크기, 물 얼룩, 기름 얼룩, 찍힘, 긁힘, 눌림, 오염 등 다수의 불량 항목을 지도 학습을 통해 검출합니다.

6G OMM AOI Machine



Specification

- Laser Repair / Mask 상면 흡착성 이물 제거
- Air Repair / Mask 상면 부유성 이물 제거

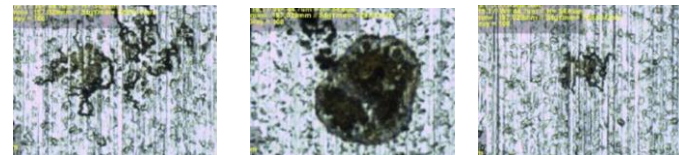
Before



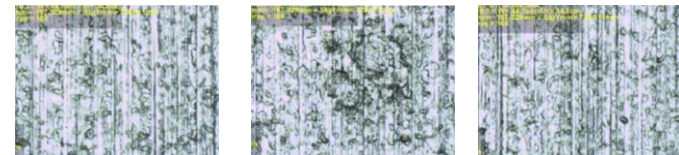
After



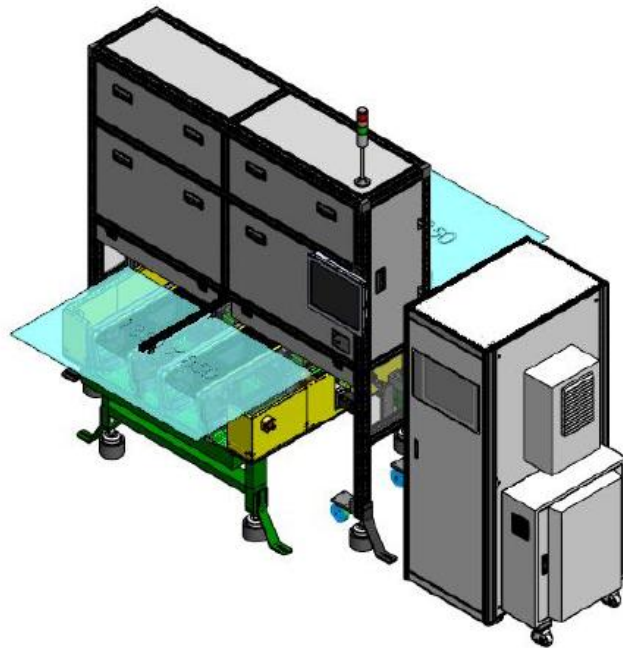
Before



After



CAR GLASS INSPECTION SYSTEM



Specification

- Size: 3,620 X 1,600 X 2,560(H)
- Speed: 2000mm/s

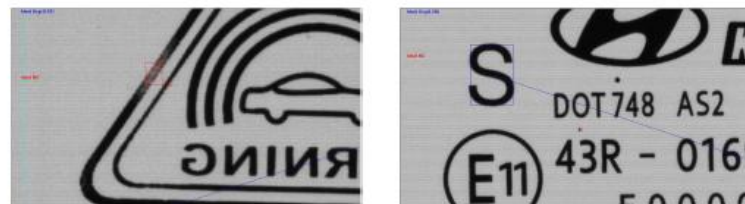
- 이물, 크랙, 조개피 검사



- 스파이더웹 검사



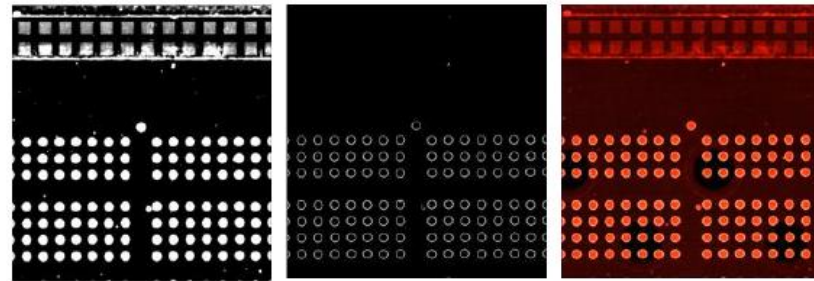
- Marking 검사



3D AOI SYSTEM

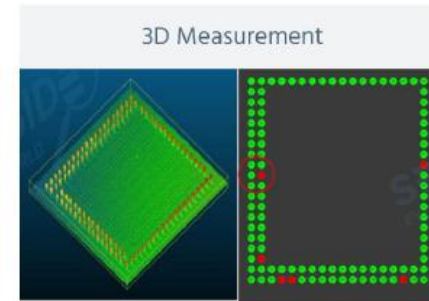
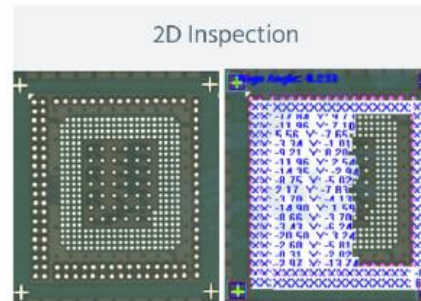


- 2D Resolution 5um / FOV 15mm(Line Scan/Area Flying)
- 3D Z Resolution 0.2um / FOV 7mm(Scanner)

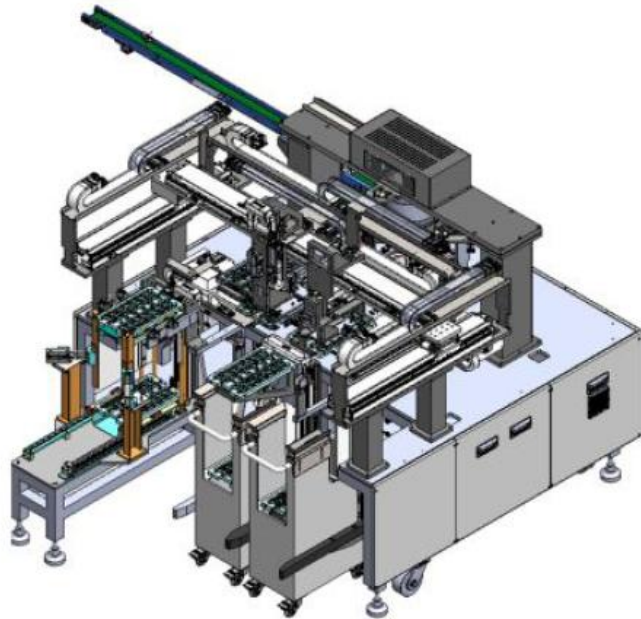


Specification

- Size: 1,000(L) X 950(W) X 2,300(H)
- Scan Time : 25 Sec(1 Strip 2D&3D)



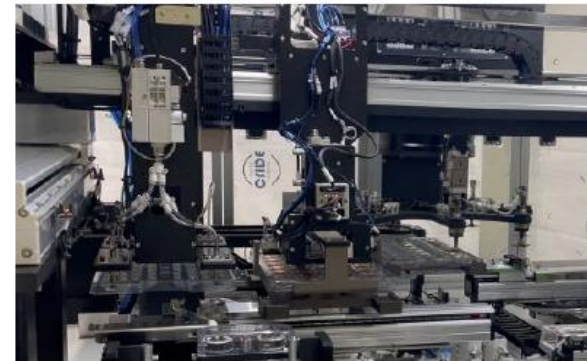
DUAL TRANSFER STACKER SYSTEM



Specification

- Size: 2,500(L) X 2,000(W) X 1,700(H)
- SPM 100

프레스를 통한 사출물을 자동으로 픽업하여
트레이에 자동으로 적재하는 설비



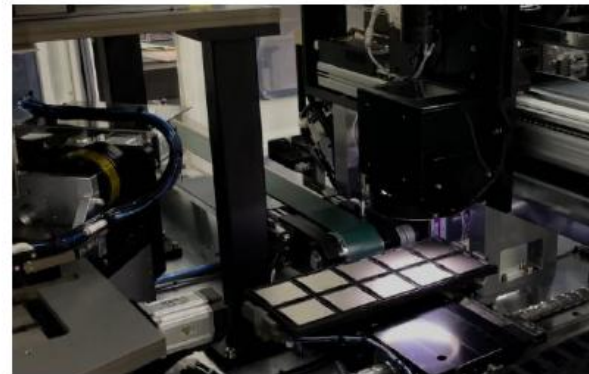
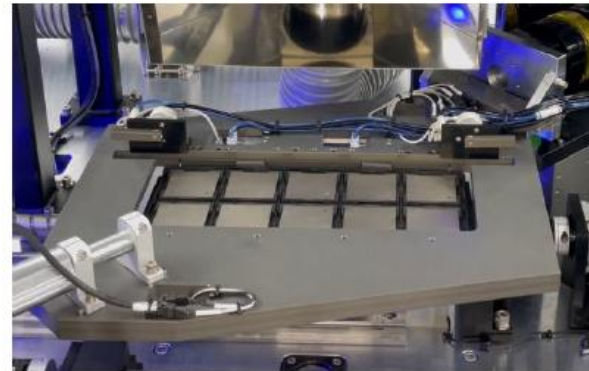
JEDEC TRAY LASER MARKING SYSTEM



Specification

- Size: 3,000(L) X 1,800(W) X 2,100(H)
- SPM: 5 Tray
- Inspection: Loading/Unloading Top Cam

Jedec tray상의 자재에 레이저 마킹을 진행하며
마킹된 코드를 인식하여 양/불 판정을 하는 설비



WAFER PRE-ALIGNER



Specification

- Size: 250(L) X 330(W) X 300(H)
- Vision Cam Type
- Alignment Time : 5 seconds or less

설비 내부에 장착하여 WAFER를 이송 전 자동으로 ALIGN을 진행하는 모듈 시스템

- **실리콘: 200mm(8inch)**

- Flat : 회전중심과 자재중심 보정오차 5mm 이하 반복도 50um
- Notch : 회전중심과 자재중심 보정오차 5mm 이하 반복도 50um

- **실리콘: 300mm(12inch)**

- Flat : 회전중심과 자재중심 보정오차 5mm 이하 반복도 50um
- Notch : 회전중심과 자재중심 보정오차 5mm 이하 반복도 50um
- Notch Taping : 회전중심과 자재중심 보정오차 5mm 이하 반복도 60um

- **GLASS: 200mm(8inch)**

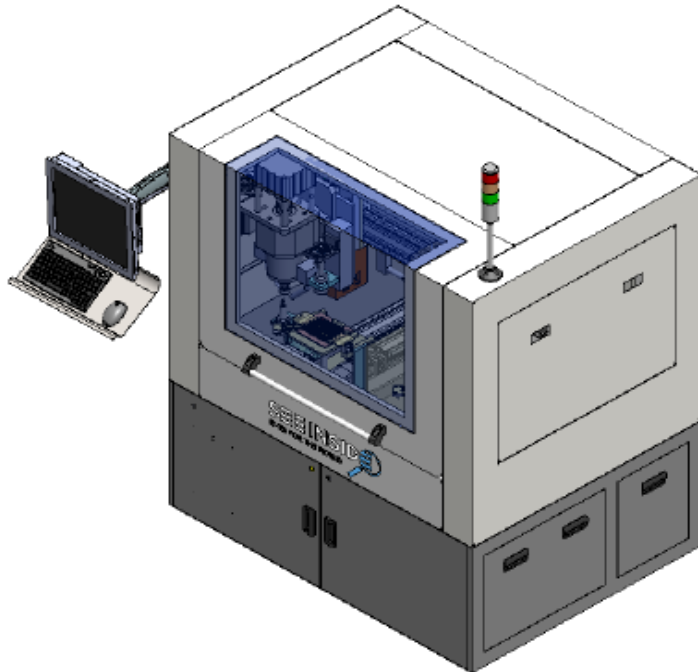
- Flat : 회전중심과 자재중심 보정오차 4mm 이하 반복도 30um
- Notch : 회전중심과 자재중심 보정오차 5mm 이하 반복도 70um

- **PLASTIC: 300mm(8inch)**

- Flat : 회전중심과 자재중심 보정오차 5mm 이하 1회 보정 반복도 100um
- 2회 보정 반복도 60um

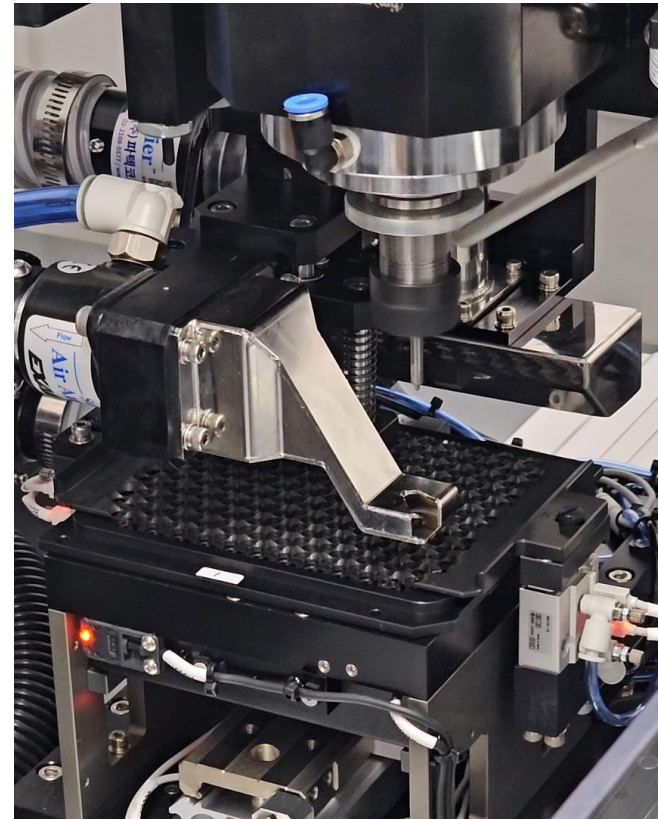
MODEL	WPA-46	WPA-8	WPA-12
제품 사이즈	4 ~ 6 inch	8 inch	12 inch
반복 정도	30 ~ 50µm	30 ~ 50µm	30 ~ 50µm

AUTOMATED MESH CHAMFER TOOLING MACHINE

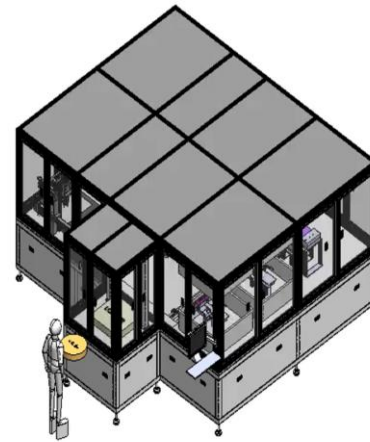
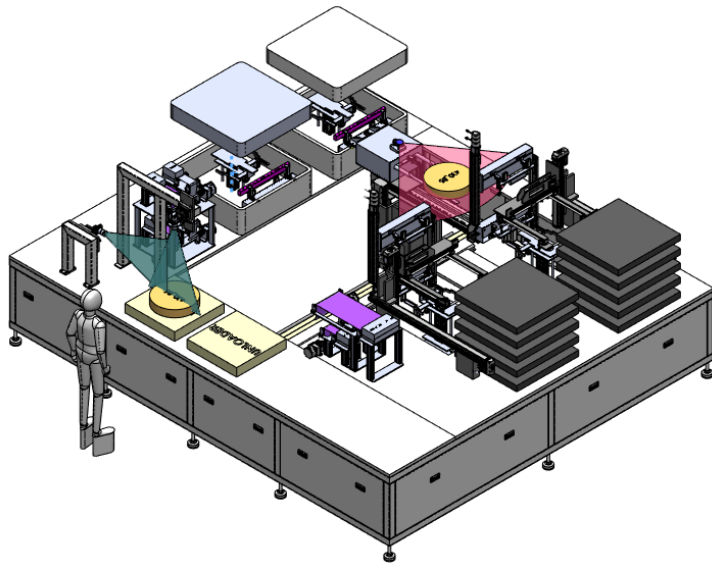


Specification

- Tooling Part / Chamfer Mesh Tooling
- Vision Part / 위치 추적 및 가공 양불 판정



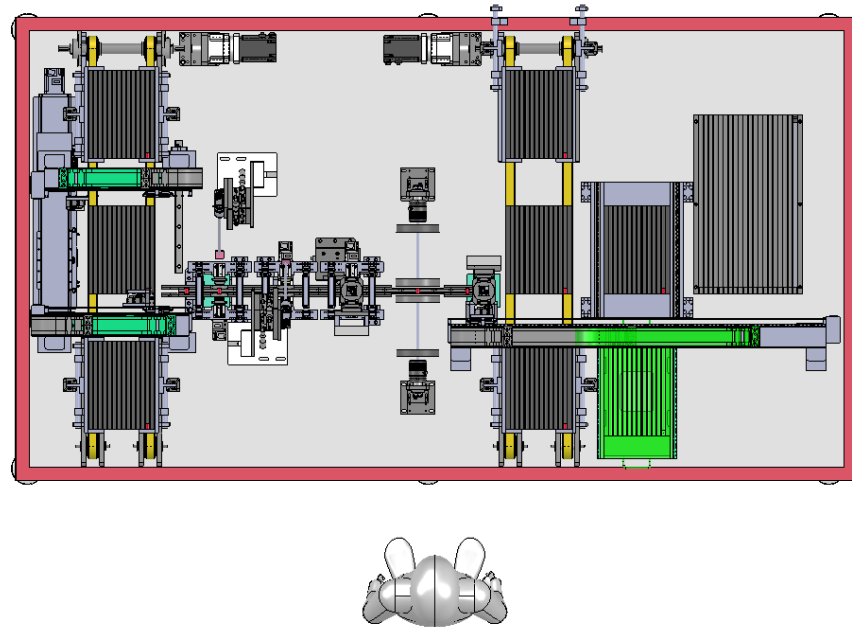
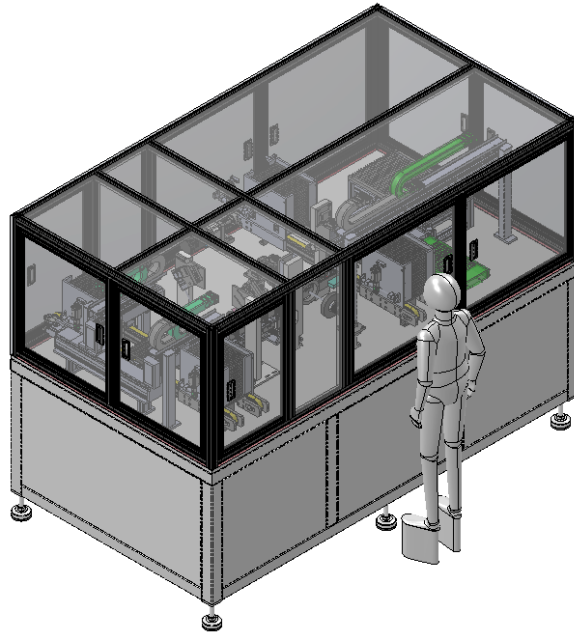
AUTOMATED PACKAGING MACHINE



Specification

- Size : 3920(L) X 4600 (W) X 2000(H)
 - Feature : 치수 측정 및 자동 포장 수행
-

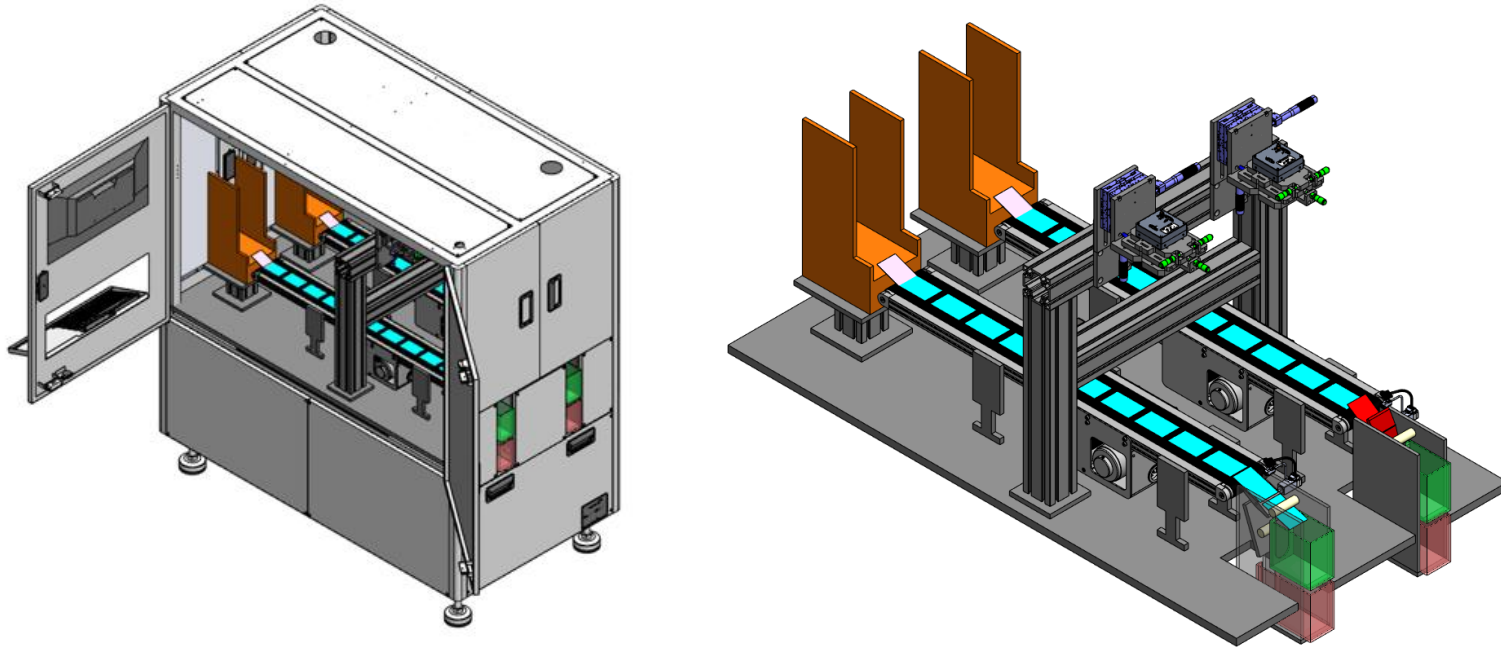
WARM GEAR VISION INSPECTION MACHINE



Specification

- Size : 2550(L) X 1400 (W) X 1800(H)
- Feature : 비전 검사 및 부품 자동 분류/적재

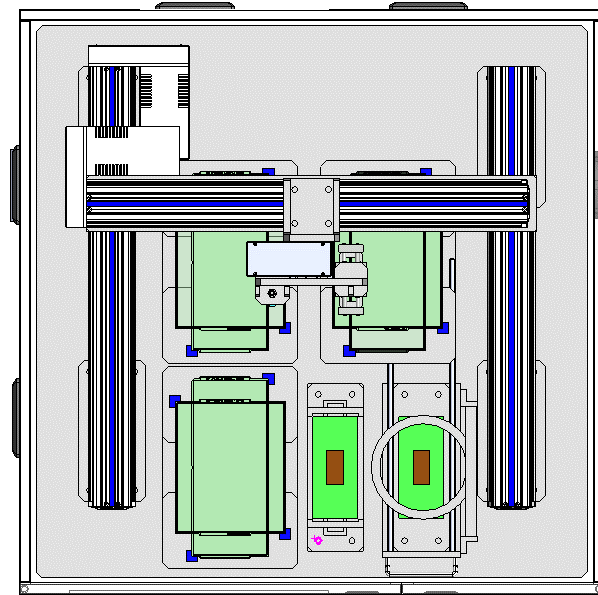
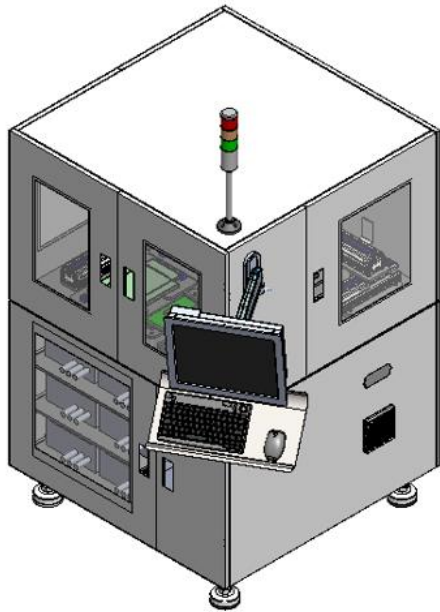
CARD VISION INSPECTION MACHINE



Specification

- Size : 1600(L) X 900 (W) X 1700(H)
 - Feature : 비전 검사 및 부품 자동 분류/적재
-

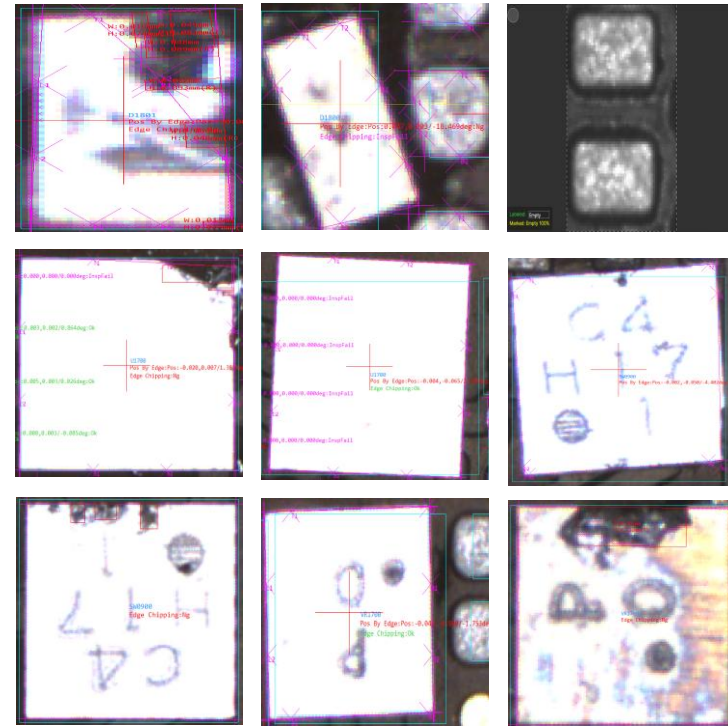
COIL INSPECTION MACHINE



Specification

- Size : 1000(L) X 1000 (W) X 1500(H)
 - Feature : PCB Strip의 Coil Electricity 측정 후 양불 판정 수행
-

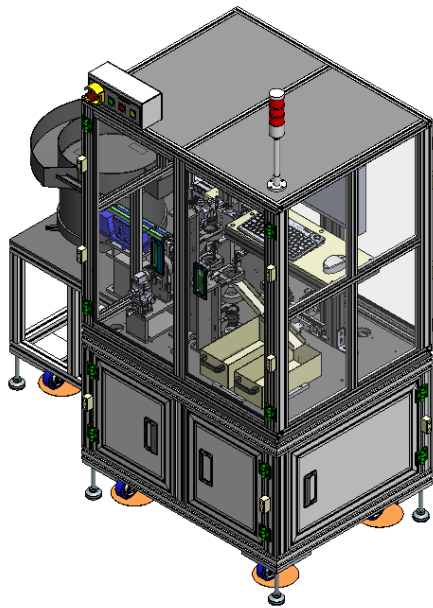
STRIP AOI MACHINE



Specification

- Size : 1000(L) X 1000 (W) X 1500(H)
- Feature : 딥러닝을 통해 PCB Strip의 자재 불량 유형 판별

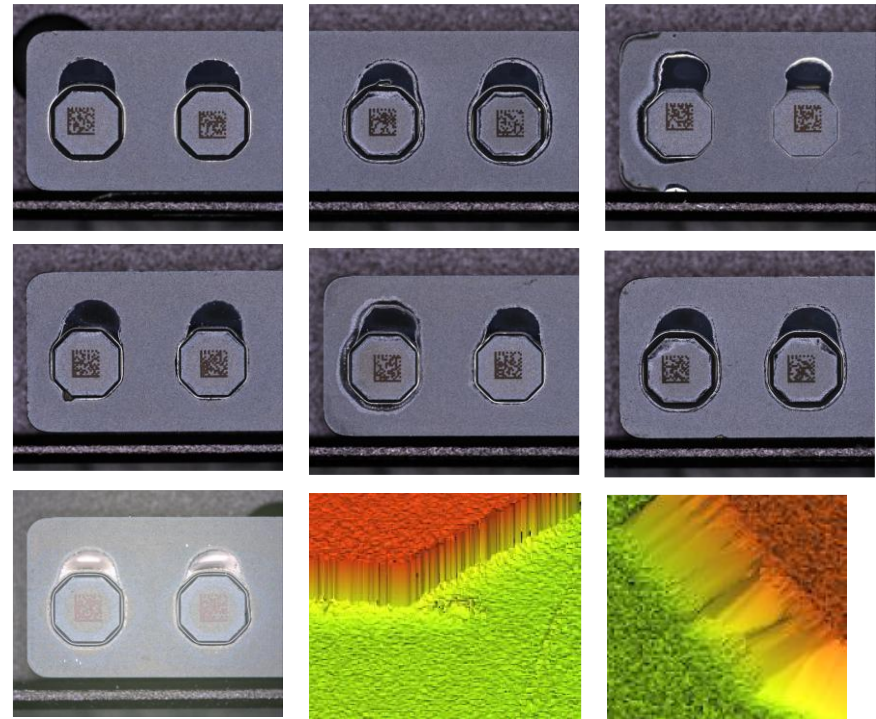
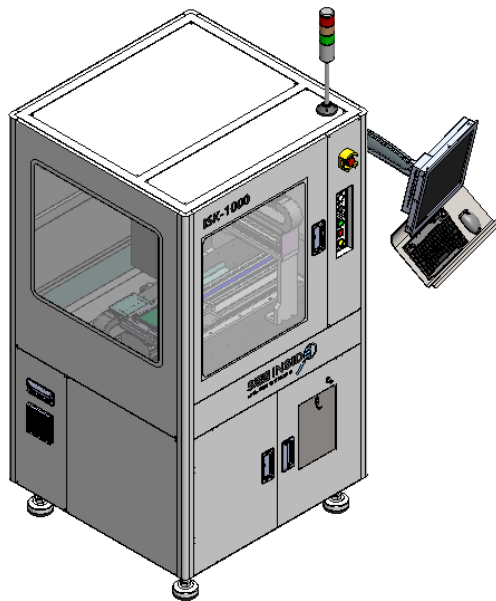
CONNECTOR VISION INSPECTION MACHINE



Specification

- Size : 1500(L) X 1800 (W) X 2190(H)
- Feature : 딥러닝을 통해 모바일 충전 커넥터의 양불 판정

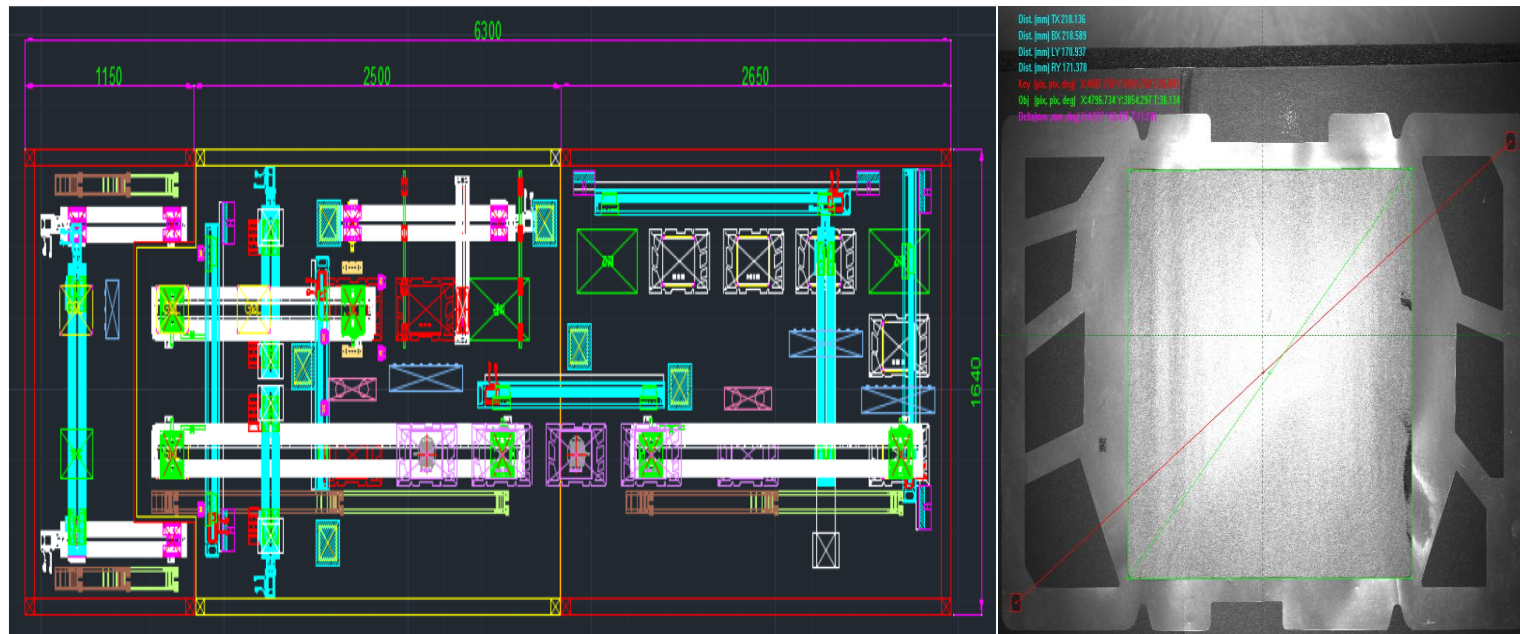
UNDERFILL AOI MACHINE



Specification

- Size : 1000(L) X 1000 (W) X 1500(H)
- Feature : 딥러닝을 통해 PCB Strip의 자재 불량 유형 판별

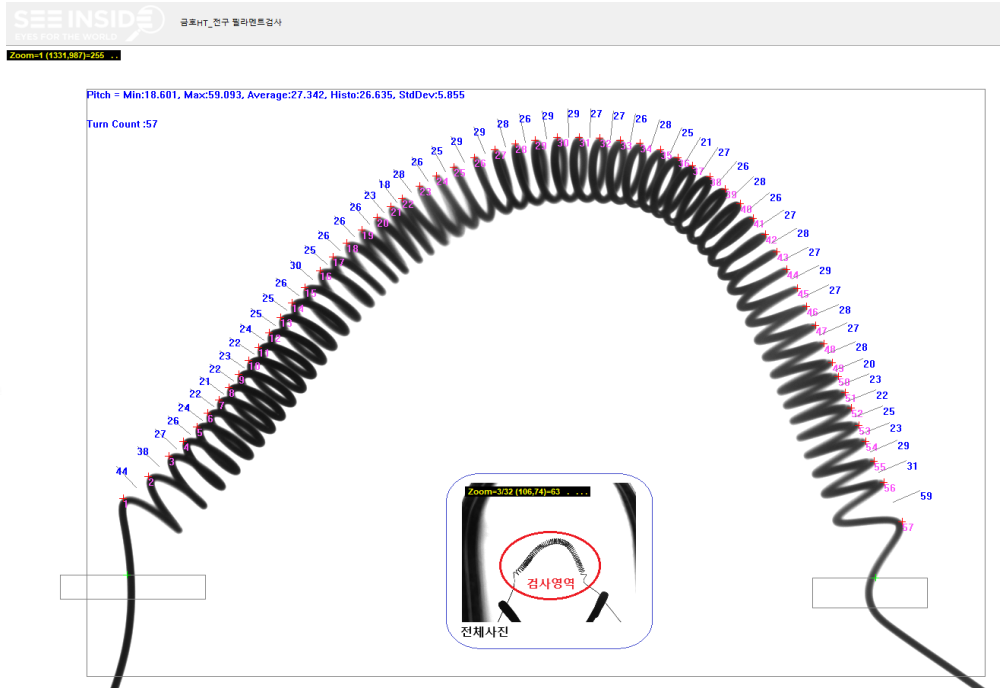
GDL LAMINATOR



Specification

- Size : 6300(L) X 1640 (W) X 2500(H)
- Feature : 수소전지 디스펜서 도포 후 합지, 치수 / 불량 비전 검사

FILAMENT INSPECTOR



Specification

- Size : 1000(L) X 840 (W) X 1400(H)
- Feature : 자동차 Head Lamp 用 Filament Vision Inspection