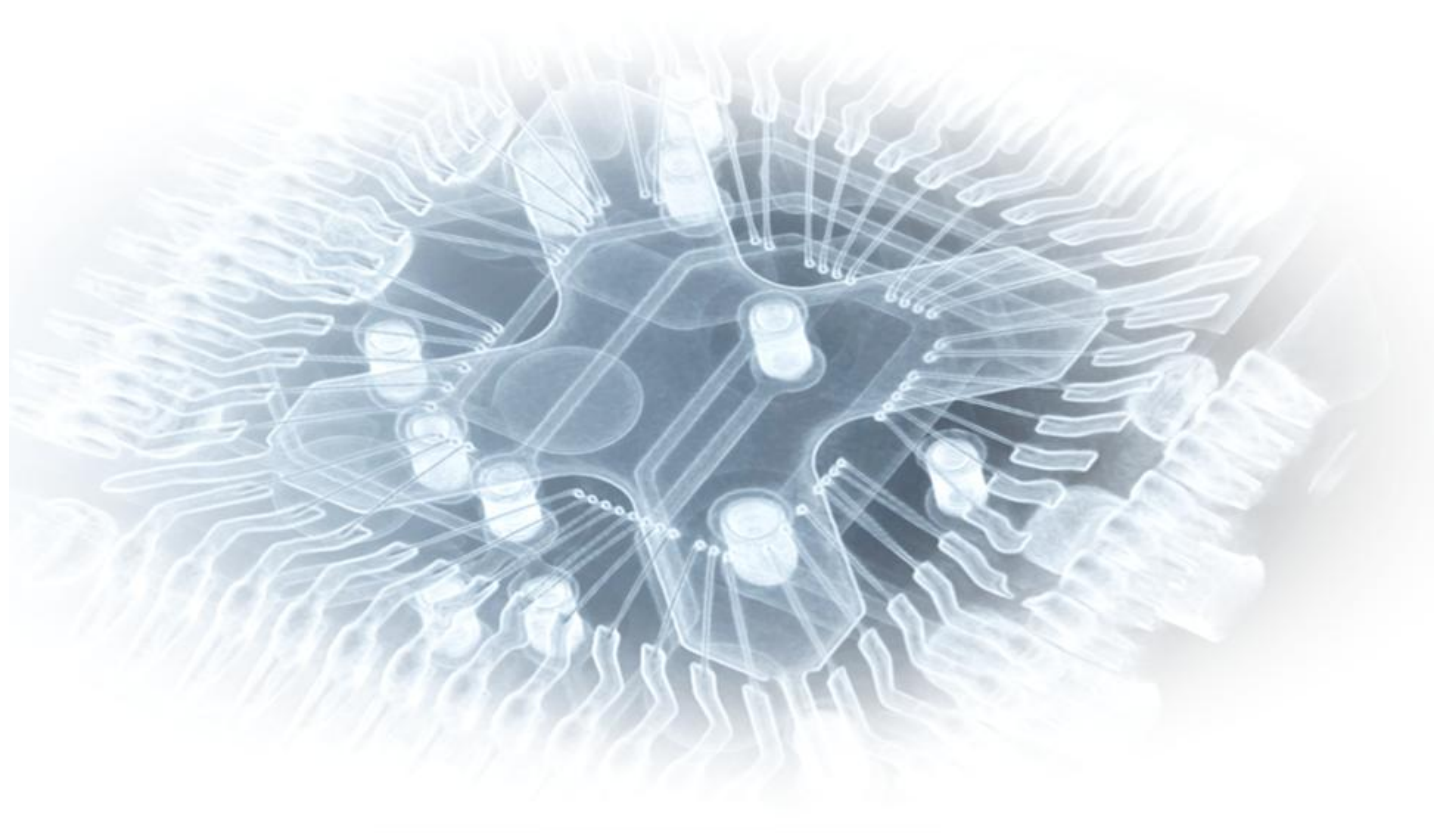


X-ray Inspection Systems

2D AXI / 3D AXI / WAXI



반도체 / SMT 분석 장비

X-eye SF160 Series

- 반도체 SMT 및 전자/ 전기 부품 검사를 위한 비파괴 분석 설비
- Micro-Open Tube 탑재 하여 반영구적 사용 가능
- Dual CT 기능으로 최상의 CT 이미지 구현 / 고속스캔 지원



X-ray Tube	160 kV / 200 μ A (option 160 kV / 500 μ A)
Min. Resolution	0.8 μ m
Table Size	460 X 510 mm (option 550 X 650 mm)
AXIS	X, Y, Z, Tilt (70°), R, Y-aft, Cone beam R
Detector	1.6 M Pixel FPD
CT Scan 방식	Oblique CT / Cone beam CT
Dimension	1,340(W) x 1,950(D) x 1,630(H)mm / 2,000kg

X-eye 5100 Series

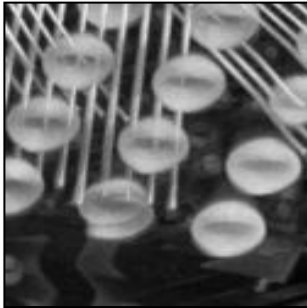
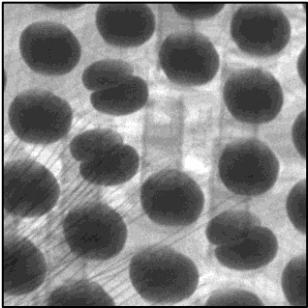
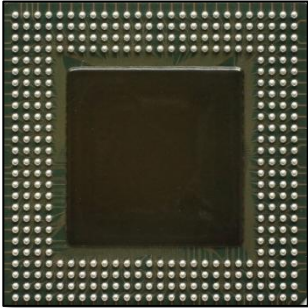
- 반도체 SMT 및 전자/ 전기 부품 검사를 위한 비파괴 분석 설비
- SMT 및 전자/ 전기 부품의 양산 검사 지원 S/W 탑재가능
- 다양한 편의 기능으로 쉬운 사용



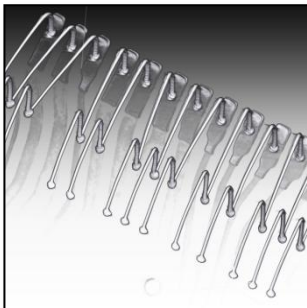
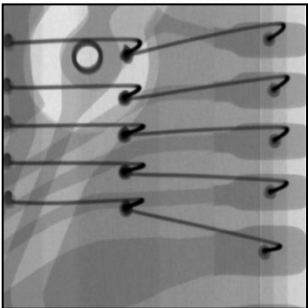
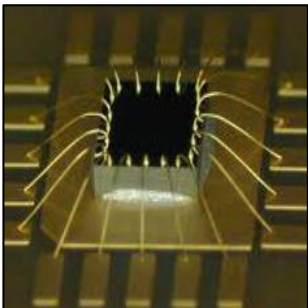
X-ray Tube	100 kV / 200 μ A (option 130 kV / 200 μ A)
Min. Resolution	5 μ m
Table Size	460 X 340 mm (option 550 X 550 mm)
AXIS	X, Y, Z, Tilt (\pm 50°)
Detector	1.6 M Pixel FPD
Dimension	1,270(W) x 1,025(D) x 1,460(H)mm / 900kg

IMAGE GALLERY

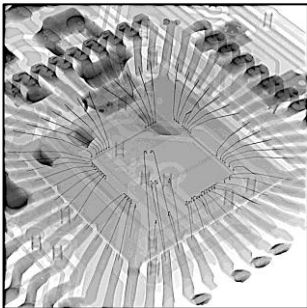
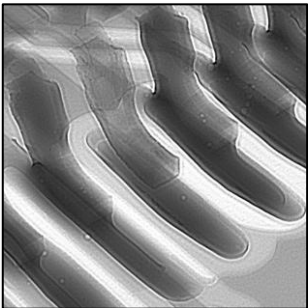
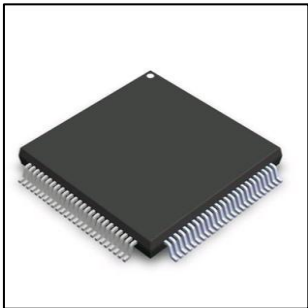
BGA Cold Solder



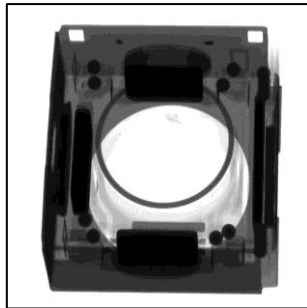
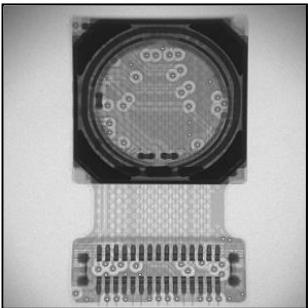
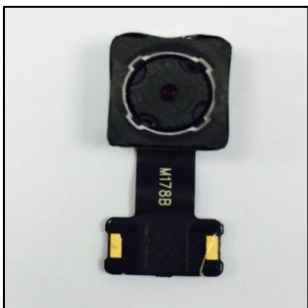
Stacked Die



QFP



Camera Module



AXI Auto X-ray Inspection

X-eye 6300

3D AXI



- 고속 3D In-Line 검사 설비 (~4.3 sec/FOV)
- 양면 PCB의 상태를 검사하기 위한 최고의 Solution
- BGA, Chip부품, 납층 등의 다양한 불량 검사가능

X-ray Tube	160 kV / 500 μ A
Min. Resolution	0.8 ~ 15 μ m
Table Size	Min : 50 x 50 (mm), Max : 330 x 250 (mm)
Detector	10 M Pixel FPD
검사대상	BGA, Through Hole, BGA, Chip, QFN, QFP
검사 항목	BGA Short, Bridging, Open, De-wet, Void, 홀 충전률
Dimension	1,356(W) x 1,880(D) x 1,695(H)mm / 4,000kg

X-eye 6200

2D AXI / WAXI

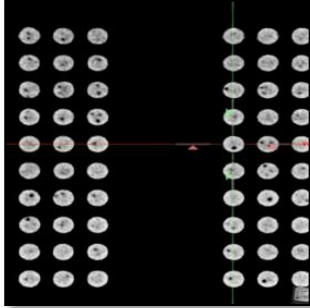
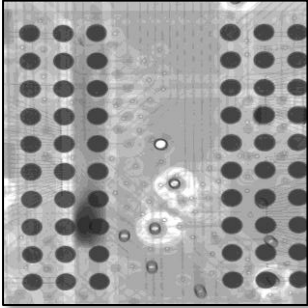
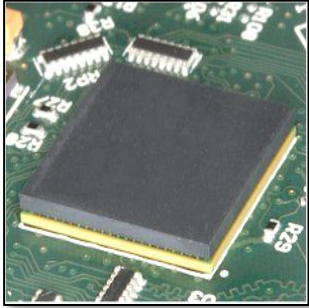


- 고속 2D In-Line 검사 설비
- BGA, Chip, QFN, QFP 등 다양한 불량 검사가능
- Wire 불량 검사 기능 (단락, 휨, 미삽, 오삽 등)

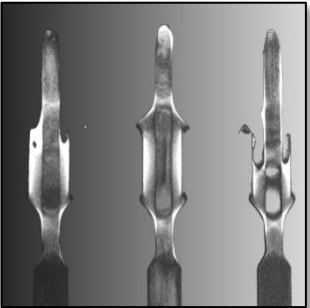
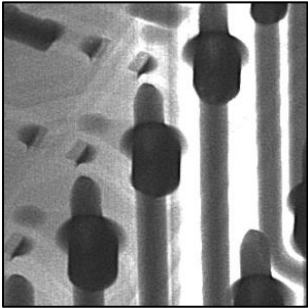
X-ray Tube	160 kV / 500 μ A (option 130 KV / 300 μ A)
Min. Resolution	0.8 ~ 15 μ m
Table Size	Min : 50 x 50 (mm), Max : 330 x 250 (mm)
Detector	1.6 M Pixel FPD
검사대상	BGA, Chip, QFN, QFP, Wire Bonding
검사 항목	BGA : Short, Bridging, Void Chip : Manhattan, Miss align, Short Wire Bonding : Sweep, Broken, Double Bonding, Missing
Dimension	1,000(W) x 1,360(D) x 1,450(H)mm / 2,000kg

IMAGE GALLERY

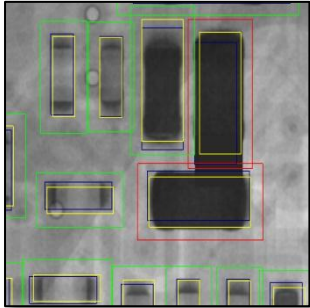
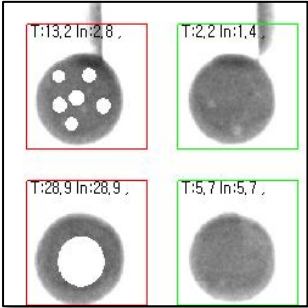
BGA Void / 3D Inspection



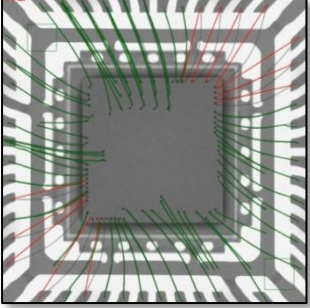
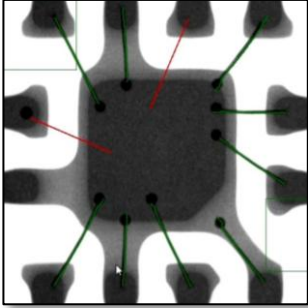
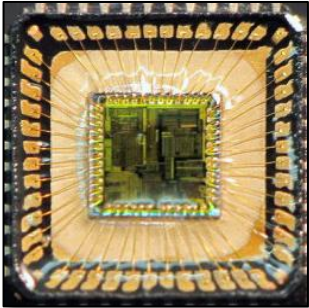
Through Hole Filling / 3D Inspection



SMT Chip BGA / 2D Inspection



Wire Bonding / 2D Inspection



AXI Auto X-ray Inspection

X-eye NF120

세계 최고 분해능



- Wafer Level Packaging 검사를 위한 비파괴 분석 설비
- Dual Type의 CT 지원으로 최상의 이미지 확보
- TSV, Micro Bump, Pattern

X-ray Tube	120 kV / 200 μ A
Min. Resolution	200 nm
Table Size	Max : 300 mm (\varnothing) Wafer 적용
AXIS	X, Y, Z, Tilt (70°), R
Detector	3.2 M Pixel FPD (Option:6.7M / 10M)
Dimension	1,800(W) x 2,700(D) x 2,670(H)mm / 6,500kg
Scan 방식	Oblique CT / Cone beam CT

X-eye 6000 POP

POP전용 3D AXI

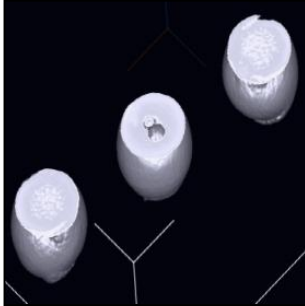
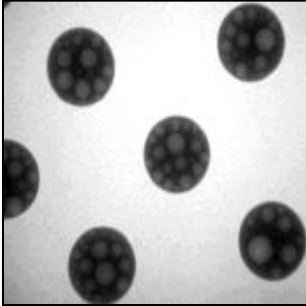
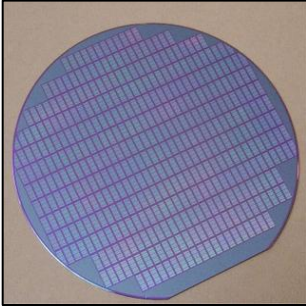


- POP제품 전용의 3D In-Line 검사장비
- 3D CT 기술이 적용된 POP적층면의 자동 양/불 판독
- 검출 시간 : Max. 5 sec/unit

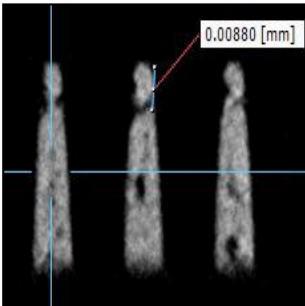
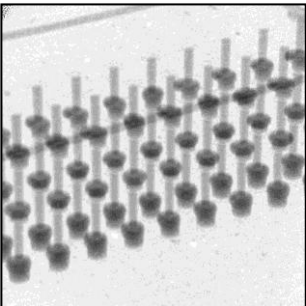
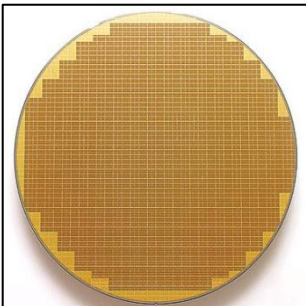
X-ray Tube	130 kV / 200 μ A
Min. Resolution	6~15 μ m
Detector	8 M Pixel FPD
Chip Size	Min : 8 x 6 (mm) , Max : 20 x 20 (mm)
검사항목	Non-wet, Open, Short, Big / Small ball
Dimension	2,300(W) x 2,400(D) x 2,120(H)mm / 4,800kg

IMAGE GALLERY

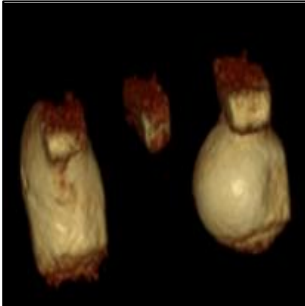
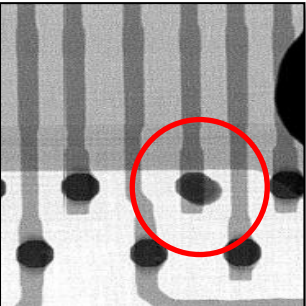
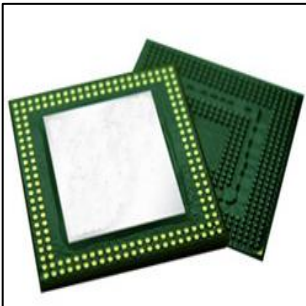
Wafer Bump Void



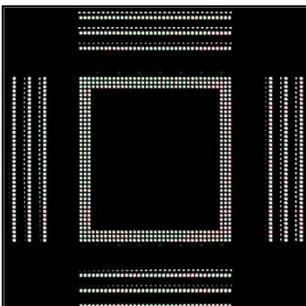
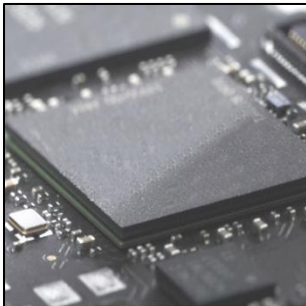
Wafer TSV Void



Cu pillar Bump non wet



POP Short non wet



High-power 3D X-ray Inspection System

X-eye 7000B

대형 금속 제품



- 대형 부품 검사를 위한 비파괴 분석 설비
- 다양한 Power의 X-ray Tube 및 Detector 장착 가능
- 제품 특성에 맞는 고선량 X-ray Tube 선택 가능

X-ray Tube	160 kV / 3 mA
Min. Resolution	6 μ m
Table Size	Max : 600 mm (\varnothing) X 900L mm
AXIS	X, Y, Z, R, Tilt, Z-t, Z-d
Detector	1 M Pixel FPD
Dimension	2,260(W) x 1,800(D) x 2,000(H) mm / 3,500kg
CT Scan 방식	Cone beam CT

X-eye 7000R

대형 금속 제품 양산형

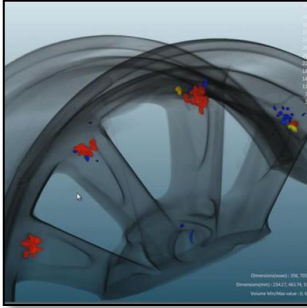
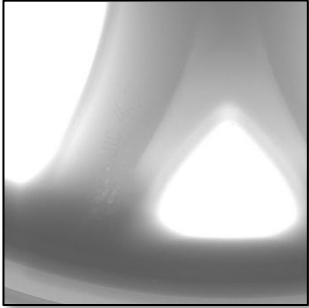


- 자동차 부품, 마그네슘, 다이캐스팅, 주조물 검사용
- 간편한 Loading / Un Loading 으로 전수검사에 최적화
- Porosity / Crack 자동 검사 지원

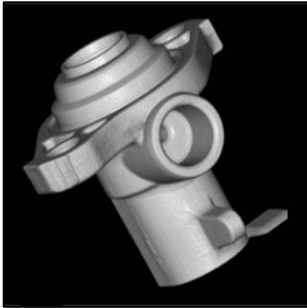
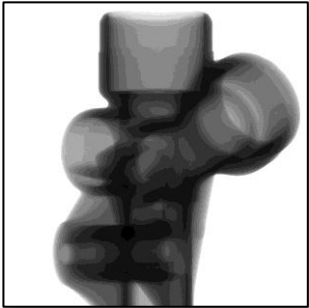
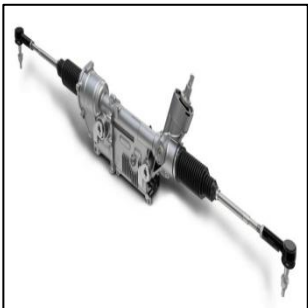
X-ray Tube	160 kV / 11.25 mA
Min. Resolution	0.4 mm
Table Size	Max : 400 mm (\varnothing) X 800L mm
AXIS	X, Y-t, Y-d, Z-t, Z-d, R, Tilt-t, Tilt-d
Detector	4.6 M Pixel FPD
Dimension	2,550(W) x 3,150(D) x 2,450(H) mm / 6,000kg
CT Scan 방식	Cone beam CT

IMAGE GALLERY

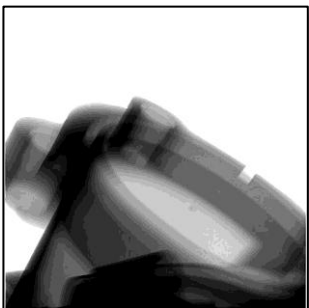
Wheel Porosity



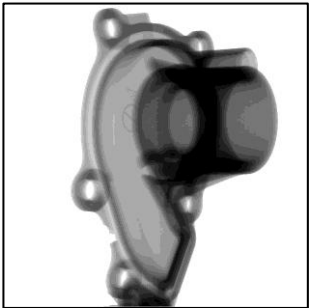
Power Steering Crack



Air Intake Manifold



Water Pump Porosity



High-power 3D X-ray Inspection System

X-eye 7000BS

중소형 제품



- 중 소형 부품 검사를 위한 비파괴 분석 설비
- Open Tube 사용으로 고해상도 영상 획득
- 연속스캔으로 CT 영상 획득 가능 (약 5분 소요)

X-ray Tube	160 kV / 1 mA
Min. Resolution	6 μ m
Table Size	Max : 300 mm (\varnothing) X 300L mm
AXIS	X, Y, Z, R, T
Detector	1.6 M Pixel FPD
Dimension	1,840(W) x 1,860(D) x 1,700(H)mm / 2,000kg
CT Scan 방식	Cone beam CT

X-eye PCT

고선량 CT 전용

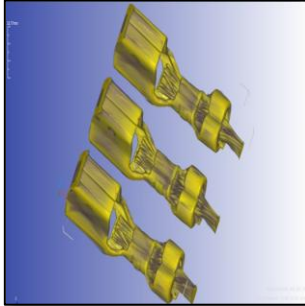
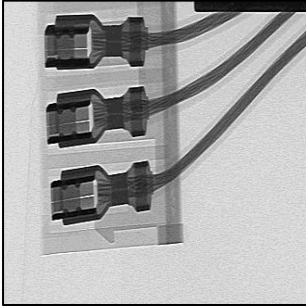
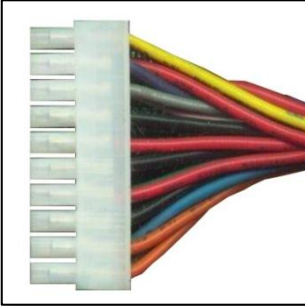


- 석정반 베이스에 탑재된 고정밀 구동축 제어
- 제품 특성에 맞는 고선량 X-ray Tube 선택 가능
- 대형 제품 검사 가능

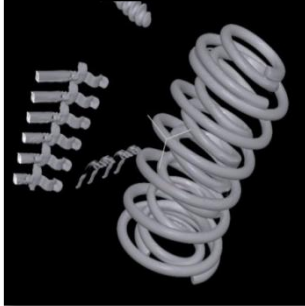
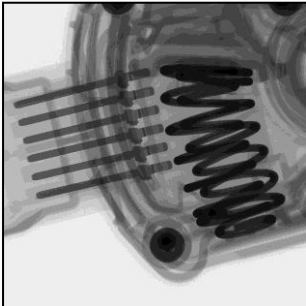
X-ray Tube	225 kV / 3 mA (option 320 kV / 450 kV)
Min. Resolution	6 μ m (option 0.4 mm)
Table Size	Max : 500 mm (\varnothing) X 1,000L mm
AXIS	X, X-d, Y-t, Y-d, Z, R
Detector	4 M Pixel FPD
Dimension	2,700(W) x 1,800(D) x 2,200(H)mm / 10,000kg
CT Scan 방식	Cone beam CT

IMAGE GALLERY

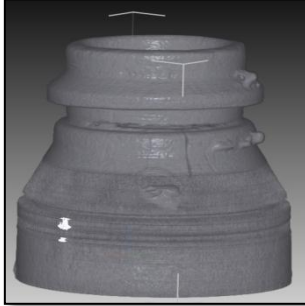
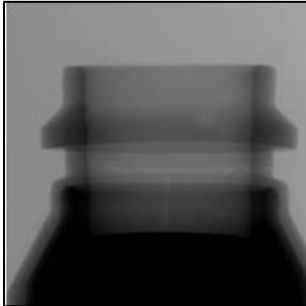
Connector



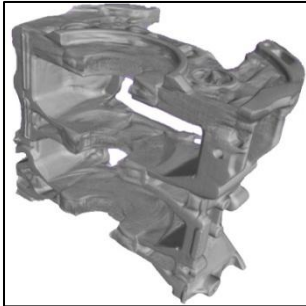
Car Accelerator



Plug Coil



Die Casting



기타 AXI Auto X-ray Inspection

X-eye 4000A Chip Counter



- 검사 속도 9초 이내
- Chip 및 이형부품 릴 상태 수량 검사
- 별도의 Inspection Parameter Setting 없이 검사 가능

X-ray Tube.	100 kV / 200 μ A
Min. Resolution	5 μ m
Table Size	430 x 430 (mm)
Z-AXIS	Z축 Auto Moving
Detector	9.4 M Pixel FPD
Dimension	750(W) x 830(D) x 1,450(H)mm / 700kg
Cycle Time	9초 (\varnothing 180 Reel 기준)
Counting Accuracy	>99.9%
Scan Reel Diameter Max.	\varnothing 400

X-eye 9000 series 2차 전지 전용



- 이차전지 전수검사용 In-Line 검사기
- 각형, 원형, 파우치 형 전지 내부 극판 검사
- 최대 180ppm 검사 가능

X-ray Tube.	100 kV / 200 μ A
Min. Resolution	5 μ m
검사능력	120ppm , 150ppm, 180ppm
구성	Conveyor / Index / Pick&Place 방식 Loading
Dimension	1,800(W) x 1,560(D) x 2,070(H)mm / 5,000kg

반도체 Packaging 설비

Flip Chip Bonder



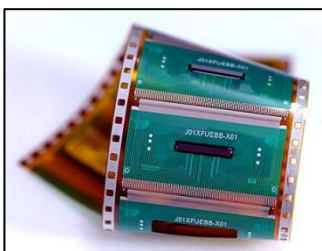
- 고속, 고정밀 Linear Motor 적용
- Vision Image UI 최적화
- Auto 조명 Controller 적용
- 설비 국산화로 유지 보수 용이
- FPC 공급 방식 : Reel or Magazine
- Dispensing 기능

Model	FCB-200	FCB-300
Accuracy	2.0 μm (3 σ)	1.5 μm (3 σ)
Cycle Time	1.7sec / IC	1.3sec / IC
Temperature	30~550°C	30~550°C
Bonding Force	10~343N	10~343N
Wafer Size	Φ 6 inch (Φ 150 mm)	Φ 8 inch (Φ 200 mm)
	Φ 8 inch (Φ 200 mm)	Φ 12 inch (Φ 300 mm)
Dimension	2,680(W) x 1,440(D) x 1,850(H)mm	2,894(W) x 1,624(D) x 1,840(H)mm

TAB IC Potting System

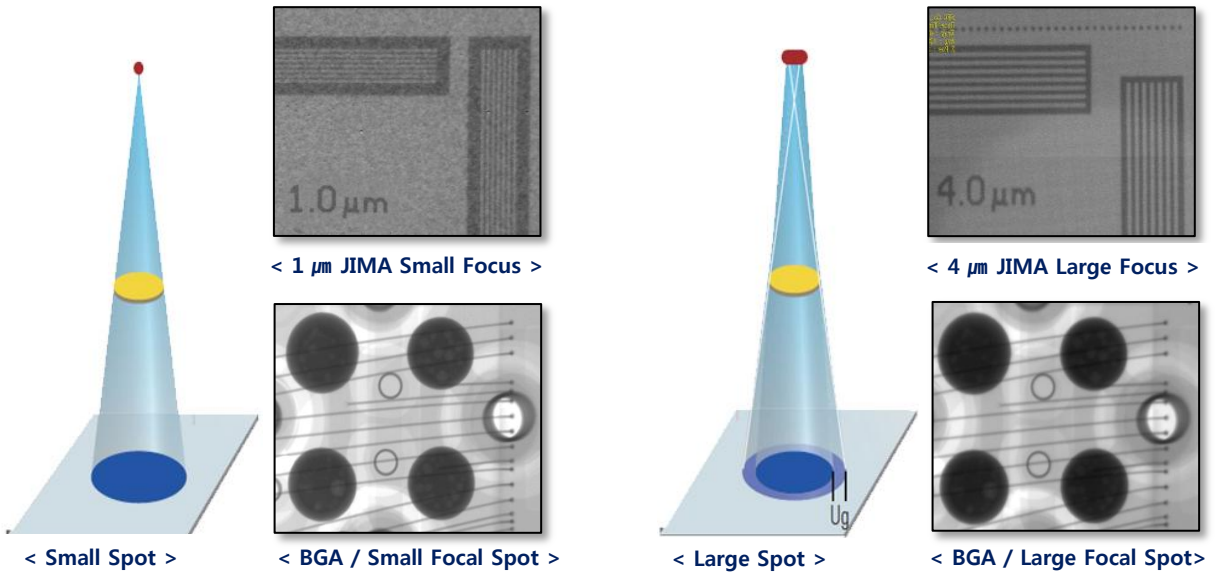


- 안정된 경화조건 (Heater Zone 개별제어)
- 정밀 Tape Indexing (Encoder Feedback)
- Needle Auto Calibration
- Auto 조명 Control
- 다양한 모델 적용가능 : 2 ~ 20 PF (0.5 PF 단위)



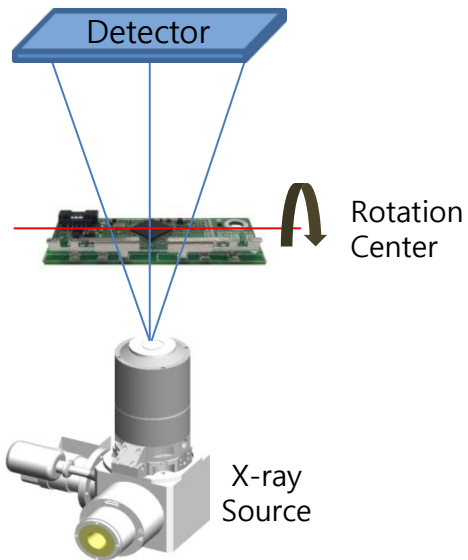
대상 Tape	35 mm, 48 mm, 70 mm (Super, Wide)
Tape 두께	0.025 mm – 0.125 mm (TCP, COF)
Chip Size	1 x 1 to 20 x 20 mm
Chip 두께	0.2 – 1.0 mm
Tape 재질	Polyimide
REEL 외경	Max. TAB Reel Φ 620 (Spacer Reel Φ 530)

기하학적 선명도에 대한 이해 (Focal Spot)



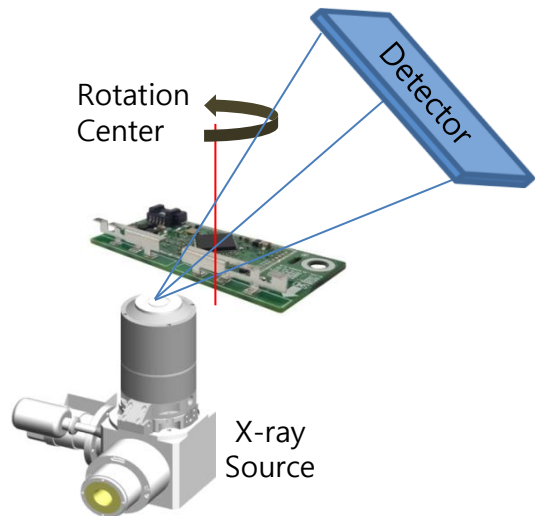
CT 시스템 소개

< Cone beam CT >



▪대면적 시료 고배율 촬영 불가능

< Oblique CT >



▪대면적 시료 고배율 촬영 가능

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2000년 (주)세크 법인 전환

소재지 경기도 수원시

생산품 산업용 X-ray 검사기, Mini-SEM, FCB

- X-ray 국내 시장 점유율 1위
- 세계 최고 분해능 X-ray 발생장치 개발 및 제조
- 세계 최고정밀 Flip Chip Bonder 개발 및 제조

해외 주요 대리점 현황



* Korea

* Japan

* China

* Taiwan

* Vietnam

* Philippine

* Malaysia

* Indonesia

* India

* Australia

* Russia

* Israel

* Hungary

* France

* Germany

* U.K

* Italy

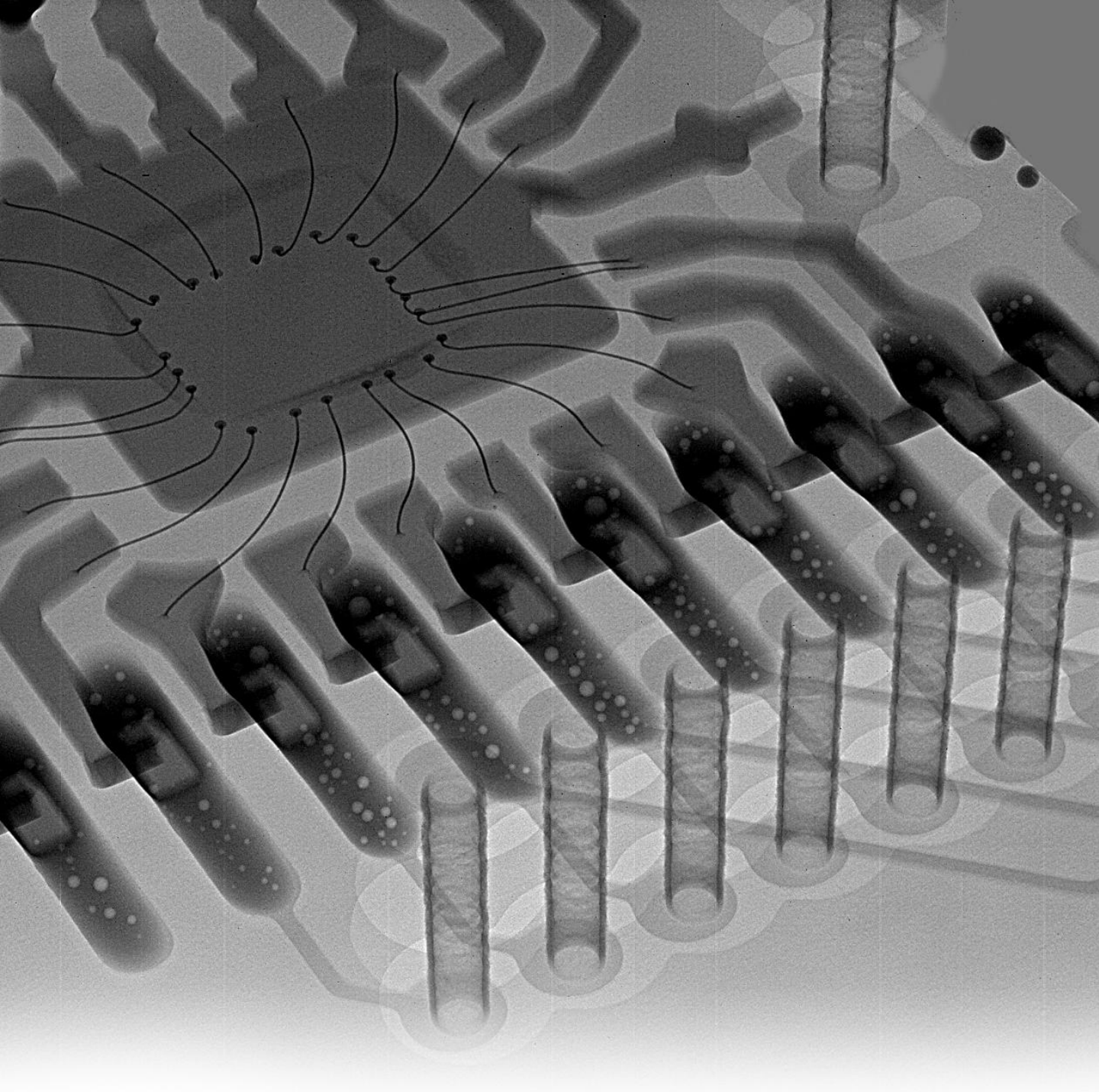
* Spain

* Canada

* U.S

* Mexico

* Brazil



(주) 씨크

South Korea - Headquarters

경기도 수원시 권선구 산업로 155번길 111(고색동)

Tel : +82 31 215 7341 Fax : +82 31 215 7343 Email : secmaster@seceng.co.kr

www.seceng.co.kr

China - Shenzhen Office

Room 109&111, Building B, Huachuangda Culture and Technology Industrial Park,
Haihui Road, Xin'an Street, Bao'an District

Tel : +86 755 273299696 Fax : +82 755 27399696 Email : wenri@seceng.co.kr

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