RenoNix

RenoNix 200mm ESC Profile

2020.01.07

Venture for Tomorrow

INTERNATIONAL
UKAS MANAGEMENT SYSTEMS
ACCREDITED COMPANY 0046
BS EN ISO 9001 : 2008

INTERNATIONAL
UKAS MANAGEMENT SYSTEMS
ACCREDITED COMPANY 0046
BS EN ISO 14001 : 2004

Contents

1-1. Company Profile

Established	04th November 2010
Business	Semiconductor tools marketing, Refurbishment, Installation, Relocation, Conversion & Modification, Parts outsourcing, Technical Service, On call service & Technical Development & manufacturing
Capital	330K USD
Employee	16 Persons
Address	272, Naehyangan-gil, Jeongnam-myeon, Hwaseong-city, Gyeonggi-do, Korea (445-962)
Tel	+82 31 354 9494
Fax	+82 31 354 9323
E-Mail	renonix@irenonix.com
Web Site	www.irenonix.com

✓ISO9001
QAIC/KR/4291-B

Certificate of Registration

The Governing Board of
Q.A. International Certification Limited
hereby grants to:

(주)리노닉스

Registration No.: QAIC / KR / 4291 - B

KS Q / ISO 9001:2008.

Address to which this Certificate refers:

경기도 화성시 정남면 내향안길 272

Approved Scope to which this Certificate refers:

반도체장비의 설계/개발 및 생산

Signed for and on behalf of the Board

CHIEF EEXECUTIVE
SCHEME MANAGER

This Certificate of Registration is granted subject to the Regulations approved by the Board.

QA INTERNATIONAL

✓ISO14001
QAIC/KR/4292-B

Certificate of Registration

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Registration No.: QAIC / KR / 4292 - B

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QA INTERNATIONAL

✓Enterprise Risk Management
13-22-B-50

안전보건공단

인정번호 : 제 13-22-B-50 호

위험성평가 인정서

사업장명 : (주)리노닉스
대 표 자 : 김종훈
소 재 지 : 경기 화성시 정남면 계향6길 11-29
유효기간 : 2014.1.1~2016.12.31

귀 사업장에 대한 위험성평가 수준을 확인한 결과 위험성평가 인정 기준에 적합하므로 위험성평가 우수사업장으로 인정합니다.

2014 년 1 월 7 일

한국산업안전보건공단
경기남부지도원장

✓Research Institute
2012151144

제 2012151144 호

연구개발전담부서 인정서

1. 전담부서명: 연구개발전담부서
[소속기업명: (주)리노닉스]
2. 소 재 지: 경기 화성시 정남면 쾌랑리 57-2 1층
3. 신고 연월일: 2013년 10월 16일
(최초인정일: 2012년 6월 8일)

「기초연구진흥 및 기술개발지원에 관한 법률」 제14조, 같은 법 시행령 제16조제2항 및 제27조제1항에 따라 위와 같이 기업의 연구개발전담부서로 인정합니다.

2013년 10월16일

한국산업기술진흥협회장

✓Clean Industry
67,684

인정번호 : 제 67,684 호

CLEAN 사업장 인정서

사 업 장 명 : (주)리노닉스
대 표 자 : 김종훈
소 재 지 : 경기 화성시 정남면 쾌랑6길11-29 (쾌랑리57-6)
인 정 일 자 : 2013년 10월 02일 (유효기간 : 인정일로부터 3년)

귀 사업장을 안전하고 쾌적한
'CLEAN 사업장'으로 인정합니다.

2013년 10월 02일

고 용 노 동 부 장 관
한국산업안전보건공단 이사장

발급사유: 최초인정 최초 인정일 2013 .10 .02

1-2. Project Record (The Most Recent 3 Years)

Customer	Project Name	Brief Description	Q'TY	Year
Korea	DxZ PE SiH4 System Controller	Relocation	1	2019
Korea	CxZ Giga Fill Process Conversion From PSG to BPSG	Conversion	1	2019
Korea	Endura PCII Chamber Addition	Addition	1	2019
Korea	WxZ 4 Chamber Dual Divert	Conversion	1	2019
Korea	HDP SPEED USG 3 Chamber	Relocation	1	2019
Czech	Endura Back Metal 4 Chamber	Refurbish & Set-up	1	2019
Korea	CxZ Chamber From Bottom RPS to Top RPS	Conversion	1	2019
Singapore	Endura System From 6" to 8"	Conversion	1	2019
Korea	CxZ Chamber From Bottom RPS to Top RPS	Conversion	1	2019
Korea	Endura Chamber From HTHU Heater to STF 4F Heater	Conversion	1	2018
Korea	DxZ PE TEOS 4 Chamber	Refurbish & Set-up	1	2018
USA	2 WxZ Chamber, 2 WxP Chamber	Refurbish & Set-up	1	2018
Korea	WxZ 4 Chamber Dual Divert	Conversion	1	2018
Korea	DLH PE SiH4 3 Chamber	Relocation	1	2018
Korea	AMAT Centura TPCC DPN	Refurbishment/Start up	1	2017
Singapore	AMAT Endura5500 Ai Cu	Refurbishment/Start up	1	2017
USA	AMAT Centura	Refurbishment	1	2017
Korea	AMAT Producer-S 200mm	Refurbishment	1	2017
Korea	AMAT Endura5500 MOCVD	Retrofit & Start up	1	2017
Korea	AMAT Centura WCVD	Refurbishment/Start up	1	2017

1-3. Project Record (The Most Recent 9 Years)

Summary list for project

Project Name	Endura	Centura	Producer	LAM / Novellus	TEL SCCM	DNS	Other	TOTAL
Refurbishment/ Start up	18	8	2	2	1	1	5	37
Retrofit / Start up	22	10	-	-	-	-	3	35
Relocation/ Start up	1	12	-	1	-	-	4	18
Refurbishment	6	2	2	-	1(Upgrade)	-	3	14
TOTAL (104)	47	32	4	3	2	1	15	104

Summary list for country

Country	Q'TY	Rate
Korea	54	52%
China	18	17%
Singapore	18	17%
Taiwan	8	8%
Other	6	6%
TOTAL	104	100%

1-4. Business Detail

Customer Satisfaction

Equipment Refurbish

2nd / OPM NEW Overhaul Items

Spare Parts

- ✓ AMAT PVD / CVD / ETCH, LAM / Novellus ETCH / CVD, PSK TERA / SUPRA, TEL ETCH / TRACK, DNS Scrubber, etc. System Refurbishment, Modification, Relocation, Upgrade & Conversion Start-up.

- ✓ Shower Head 2nd NEW (200mm / 300mm)
- ✓ Magnet 2nd NEW (150mm / 200mm)
- ✓ Ceramic Heater 2nd NEW
- ✓ Heater Block 2nd NEW (150mm / 200mm)
- ✓ WJ 999 / 1000 / 1500 EQUIP Parts 2nd NEW

- ✓ OEM / OPM / 2nd New Parts
- ✓ OPM : LAM Electrode / Stud Socket / ESC / ALN Heater / Gasket etc.
- ✓ 2nd New : Ceramic Pin.
- ✓ Provide process kits for PVD, CVD, ETCH process chamber.
- ✓ AMAT / LAM / NOVELLUS DNS / TEL etc. system part.

2-1. ESC 2nd NEW

➢ ESC 2nd NEW Items

Polymide ESC’s are widely used on semiconductor manufacturing equipment such as AMAT, LAM, TEL.

Recently, domestic product of ESC used in ETCH Process has shown fail trend during Production.

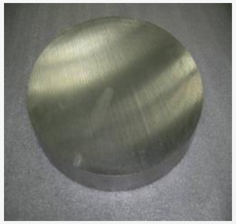
The following problem has shown during production.

- *System up time decrease*
- *Cost Increase*
- *Lower Quality*
- *PM time Increase*

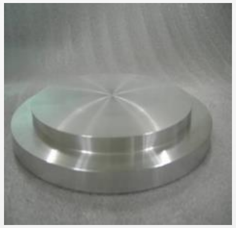
Therefore, RenoNix here to introduce an product which has qualified by other foundries.

2-2. ESC Production Flow Chart

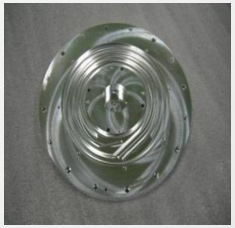
Purchase Material



CNC First Processing

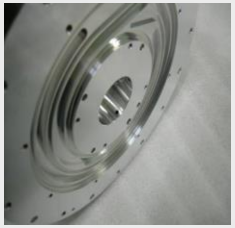


MCT First Processing

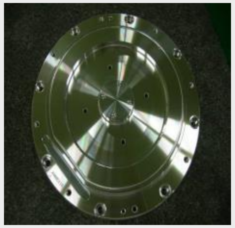


MCT Second Processing

MCT Third Processing

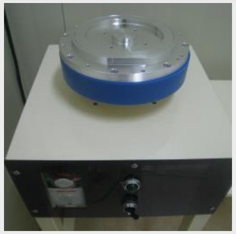


CNC Second Processing

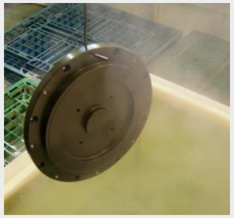


First Inspection

S/B Processing

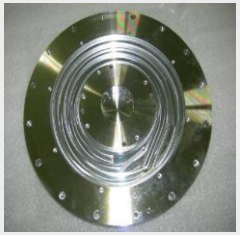


ANODIZING

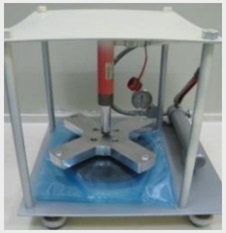


Second Inspection

CNC Third Processing



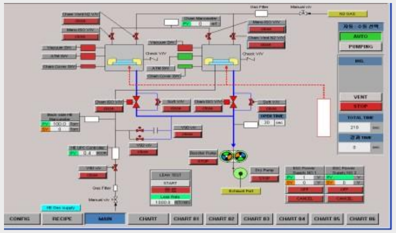
BONDING



EPOXY Processing

TEST

TEST Program



2-3. ESC Final Inspection Report & Packaging Flow Chart

Final Inspection Report

Normal Information

Report No.	RNESC20181210-1	Date	2018.12.10
Parts No.	718-094523-281	Description	LAM ESC 8"

Material Information

ESC Type	Bipolar Type	Equipment	LAM TCP
Material	AL6061	Dielectric	Anodizing

Test Data

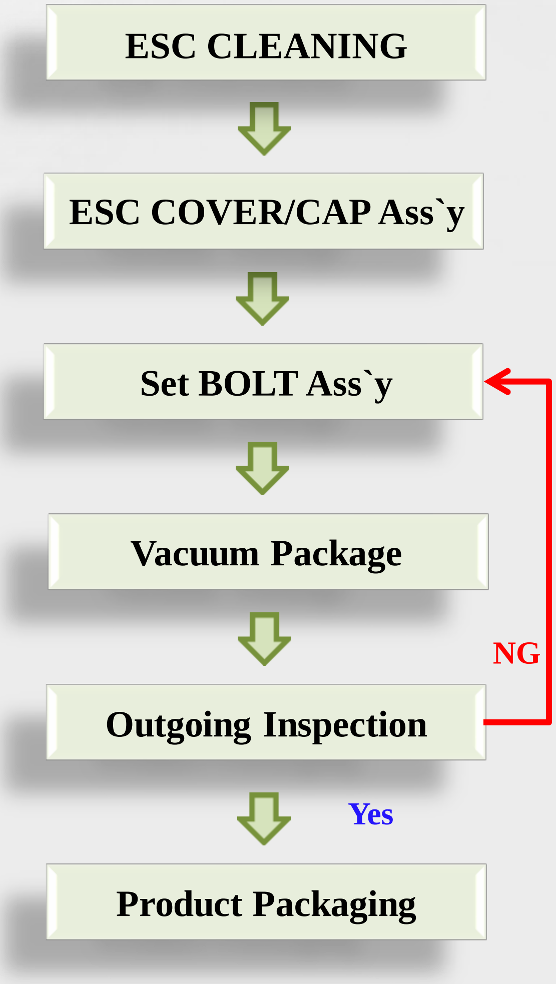
Description	Spec	Result	Judge	
Anodizing Thickness	50 ± 5㎛	52.5	PASS	
Anodizing Roughness	⩽ 0.8 Ra	0.72	PASS	
Donut Recess	⩽ 8㎛	7	PASS	
Capacitance	3.5~5.5nF	5.18	PASS	
Withstand Voltage	1.0KV, dwell 10sec	OK	PASS	
Chucking Flow	20 torr ↑, dwell 120sec	OK	PASS	
Maximun Flow	≥25 torr	31.2	PASS	
He Leakage (DC 700V)	0.3~4.0 sccm at 10 torr	2.21	PASS	
	0.6~6.0 sccm at 15 torr	3.80	PASS	
	1~8.0 sccm at 20 torr	4.53	PASS	
Wafer Sticky	≤20 scecons release time	6.21	PASS	

Torr	5	10	15	20	25	30	He Flow
sccm	1.23	2.21	3.80	4.53	5.21	5.94	5 Sccm

Visual

Description	Spec	Result	Judge	Remark
Color	Black Brown	OK	PASS	
Scratch	Visual Inspection	OK	PASS	
Crack	Visual Inspection	OK	PASS	
He Hole	Visual Inspection	OK	PASS	

ESC Packaging Flow Chart



ESC CLEANING

ESC COVER/CAP Ass`y

Set BOLT Ass`y

Vacuum Package

Outgoing Inspection

NG

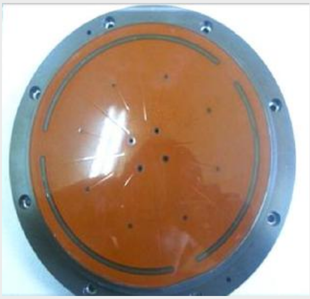
Yes

Product Packaging

2-4. ESC 2nd NEW Items (Ⅰ)

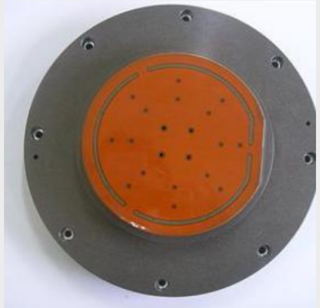
➢ TEL ESC (200mm)

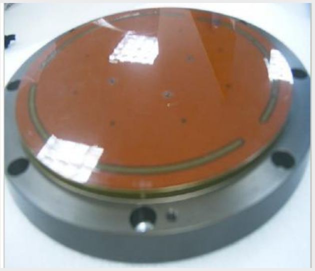
TEL P/N.	**16-271392-00**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	TE-8500 8˝ UNITY-II-85DP	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	45 ± 5㎛	**Chucking Force**	50 ± 20Torr, dwell 120sec, (Center & Edge)	
	≤ 0.8Ra			

TEL P/N.	**1810-120900-13**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	TE-8500 8˝ Jeida UNITY-II-85DP	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	45 ± 5㎛	**Chucking Force**	50 ± 20Torr, dwell 120sec, (Center & Edge)	
	≤ 0.8Ra			

2-4. ESC 2nd NEW Items (Ⅱ)

➢ TEL ESC (150mm / 200mm)

TEL P/N.	**1810-121296-12** **1885-022353-17**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	TEL TE-8500 6˝ UNITY-II-DP 6˝	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	45 ± 5㎛	**Chucking Force**	50 ± 20Torr, dwell 120sec, (Center & Edge)	
	≤ 0.8Ra			

TEL P/N.	**1810-121603-11**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	TEL UNITY-II-85DI 8˝ (IEM-8J-UP)	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	45 ± 5㎛	**Chucking Force**	50 ± 20Torr, dwell 120sec, (Center & Edge)	
	≤ 0.8Ra			

2-4. ESC 2nd NEW Items (Ⅲ)

➢ TEL ESC (200mm)

TEL P/N.	**1810-121613-11**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	TEL UNITY-II-85DI 8˝ (IEM-NOTCH)	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	45 ± 5㎛ ≤ 0.8Ra	**Chucking Force**	50 ± 20Torr, dwell 120sec, (Center & Edge)	

TEL P/N.	**1810-121188-11** **1810-121189-12**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	TEL UNITY-II-85DI 8˝ (IEM-NOTCH)	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	45 ± 5㎛ ≤ 0.8Ra	**Chucking Force**	50 ± 20Torr, dwell 120sec, (Center & Edge)	

2-4. ESC 2nd NEW Items (Ⅳ)

➢ TEL & AMAT ESC (200mm)

TEL P/N.	**1D10-100956-12**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	TEL UNITY-II-85DD 8˝	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	45 ± 5㎛	**Chucking Force**	50 ± 20Torr, dwell 120sec, (Center & Edge)	
	≤0.8Ra			

AMAT P/N.	**0090-35112 0020-38733 / 39834**	**Capacitance**	6.0 ~ 9.0nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	AMAT CENTURA MxP-5200 Metal 8˝	**He Pressure**	< 6 min, 20Torr ↑ (Center & Edge)	
Anodizing Thickness Roughness	30 ± 10㎛	**Chucking Force**	30 ± 10Torr, dwell 120sec	
	≤0.8Ra			

2-4. ESC 2nd NEW Items (Ⅴ)

➢ AMAT ESC (150mm / 200mm)

AMAT P/N.	**0040-09956 / 99964** **0010-10527**	**Capacitance**	2.0 ~ 5.0nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	AMAT CENTURA MxP-5200 Poly 6˝ / 8˝	**Anodizing Thickness** **Roughness**	55 ± 5㎛	
			≤0.8Ra	

AMAT P/N.	**0020-34862 / 99952** **0010-10982**	**Capacitance**	8.0 ~ 12nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 120sec	
Equipment	AMAT P5000 Oxide 6˝	**Anodizing Thickness** **Roughness**	45 ± 5㎛	
			≤0.8Ra	

2-4. ESC 2nd NEW Items (Ⅵ)

➢ AMAT & LAM ESC (150mm / 200mm)

TEL P/N.	**0090-35133 (Soft Anodizing)**	**Capacitance**	6.0 ~ 9.0nF	Photo
Type	Unipolar Polymide	**Withstand Voltage**	1.8kV, dwell 10sec	
Equipment	AMAT CENTURA DPS 6″ / 8″	**Chucking Force**	30 ± 10Torr, dwell 120sec	
Anodizing Thickness	30 ±10㎛	**Anodizing Roughness**	≤0.8Ra	

LAM P/N.	**718-094523-282**	**Capacitance**	2.0 ~ 3.5nF	Photo
Type	Bipolar Polymide	**Withstand Voltage**	1.0kV, dwell 10sec	
Equipment	LAM Anodizing 8″ FLTD	**Chucking Force**	20Torr ↑,dwell 120sec	
Anodizing Thickness	50 ± 5㎛	**Anodizing Roughness**	≤0.8Ra	

2-4. ESC 2nd NEW Items (Ⅶ)

➢ LAM ESC (150mm / 200mm)

LAM P/N.	**718-094523-281**	**Capacitance**	2.0 ~ 3.5nF	Photo
Type	Bipolar Polymide	**Withstand Voltage**	1.0kV, dwell 10sec	
Equipment	LAM Anodizing 8″ Notched	**Chucking Force**	20 Torr↑, dwell 120sec	
Anodizing Thickness	50 ± 5㎛	**He Leakage (DC700V)**	0.3~4.0 SCCM at 10Torr	

LAM P/N.	**718-094523-261** **718-092326-061**	**Capacitance**	2.0 ~ 3.5nF	Photo
Type	Bipolar Polymide	**Withstand Voltage**	1.0kV, dwell 10sec	
Equipment	LAM Anodizing 6″ MJR FLT	**Chucking Force**	20Torr↑, dwell 120sec	
Anodizing Thickness	50 ± 5㎛	**Anodizing Roughness**	≤0.8Ra	

RenoNix Major Customer

SK hynix

SMIC

HEJIAN

Dongbu HiTek
Agricultural Business

SILTERRA

UMC
聯華電子

MIMOS

诺思(天津)微系统有限公司
ROFS MICROSYSTEM (TIANJIN) CO.,LTD.

长电科技
JCET CHANGJIANG ELEC. TECH.

tsmc

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世界先進
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SSMC

Contact Point

We’re Capable of Most of service for PVD,CVD, ETCH areas.
If you have any inquiry or interest , please feel free to contact us.

RenoNix Co., Ltd

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Email : Alvin.ryoo@irenonix.com
renonix@163.com
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