Enhanced Movement

EM Co Introduction

Fab-Finder
Providing Cost Effective Equipment Solutions

Confidential

Agenda

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1-3. Certification

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2-2. Infrastructure / Clean Room Facility condition

2-3. Infrastructure / Other equipment Test System

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3-6. Throttle Valve Pressure Test System

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1 Company Profile

1-1. EM Co At a Glance

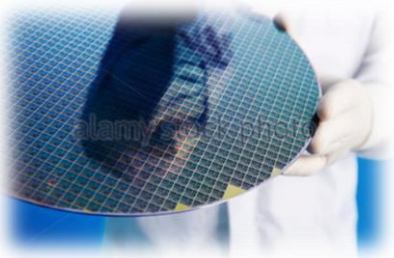
EM Co / Valve Overhaul Business

- Focusing on Overhaul of CKD Valves and Development of special parts
- Expanding business area to MKS valves, RF Generator and other special parts.



1 Company Profile

1-2. Business Segment





EM Co Business

Display Div.	Semiconductor Div.	Facility Div.
FPD Stripper & Cleaner	PR Stripper & Residue Remover	GATE Valve
FPD Thinner & Developer	Thinner & Developer	APC Valve
OLED Mask Cleaners	Special Cleaners	Vacuum / Pressure control Valve
High Purity Wet Chemicals	High Purity Wet Chemicals	
Solvent Recycling		

1 Company Profile

1-3. Certification

ISO 9001 [Quality]



Quality Management System

CERTIFICATE OF REGISTRATION

Quality Management System

EMCo Co., Ltd.

#68, Sandan-ro 52beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea

KIC hereby certifies that the management system of the above organization conforms with the requirement of the following standard :

KS Q ISO 9001:2015 / ISO 9001:2015

This certificate is valid for the following product or service ranges :

Manufacturing and Service of Semiconductor Equipment and Components

Certificate NO. : QSC4464
Valid Until Date : 05-April-2023
Certificate Issue Date : 31-October-2022
Original Certificate Date : 06-April-2020

KOREA INT'L STANDARDS CERTIFICATION

Authorized by : Kim Chun Joo

Kim Chun Joo, President

ISO 14001 [Environmental]



Environmental Management System

CERTIFICATE OF REGISTRATION

Environmental Management System

EMCo Co., Ltd.

#68, Sandan-ro 52beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea

KIC hereby certifies that the management system of the above organization conforms with the requirement of the following standard :

KS I ISO 14001:2015 / ISO 14001:2015

This certificate is valid for the following product or service ranges :

Manufacturing and Service of Semiconductor Equipment and Components

Certificate NO. : ESC3697
Valid Until Date : 05-April-2023
Certificate Issue Date : 31-October-2022
Original Certificate Date : 06-April-2020

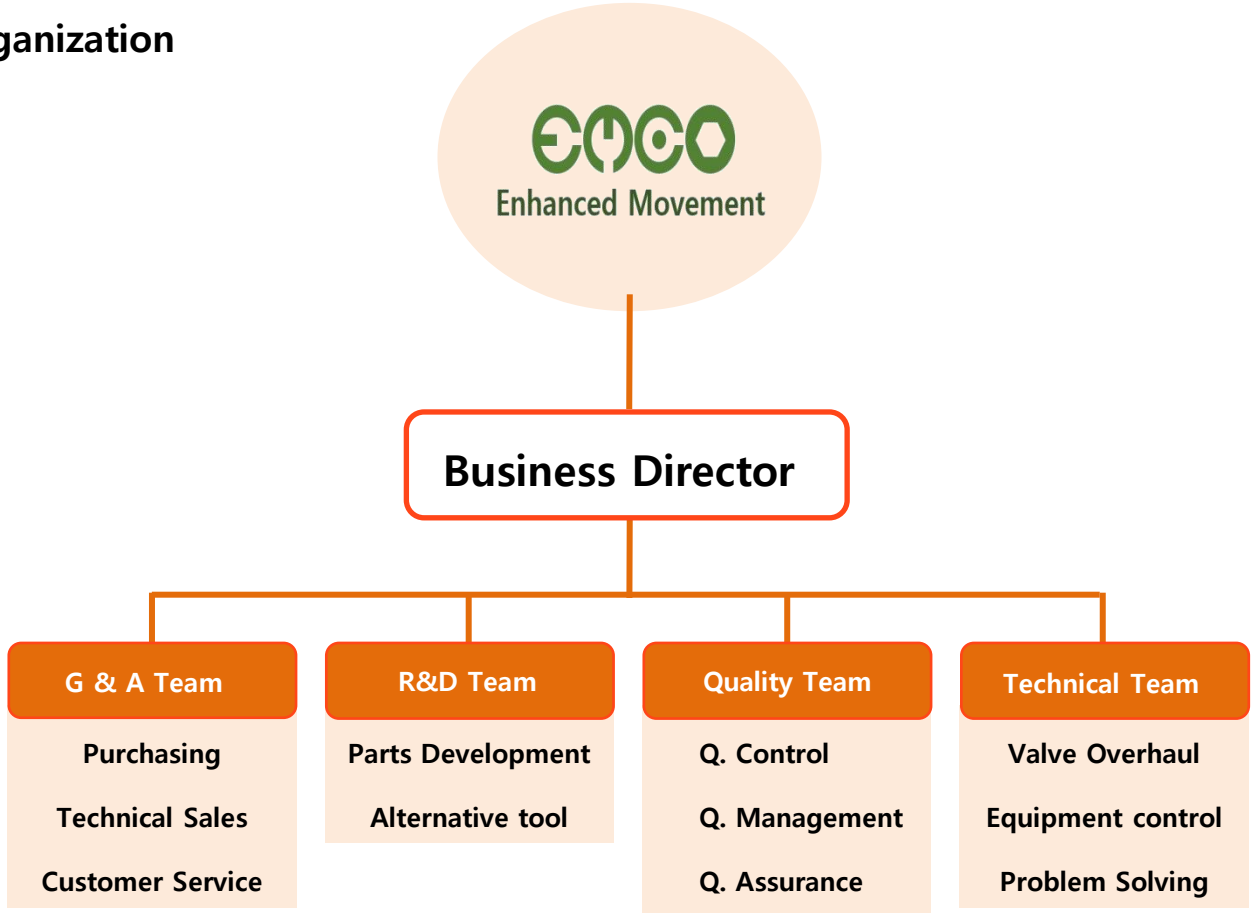
KOREA INT'L STANDARDS CERTIFICATION

Authorized by : Kim Chun Joo

Kim Chun Joo, President

2 Valve Overhaul Center

2-1. Div. Organization



2 Valve Overhaul Center

2-2. Infrastructure / Clean Room Facility condition

Total Area		730 sqm
Cleanliness (Fed-std-209)	**Clean Room**	10,000 class
	Clean Booth	1000 class
Valve Overhaul Center		
Clean Room	**10,000 class**	Whole Repair Center
		Test room
		Monitoring room
Clean Booth	**1000 class**	Particle room Packing room
Temp & Humidity Control	**23 ± 5 ℃ 50 ± 10 %**	Incoming room
		Disassembly & Cleaning room
		Material room
		Outgoing room
		Equipment room





2 Valve Overhaul Center

2-3. Infrastructure / Other equipment Test System



He Leak Detector



Assist Pump



Pneumatic Controller



역압 Controller



APC Controller



Service Box



MKS Controller



VAT Controller



MKS 253A Controller



CKD Controller

3 Professional

3-1. Technical Expertise with Professional Engineer

★ Qualification criteria

Eligibility evaluation items	Evaluation standard	Points
Theoretical evaluation	VEC maintenance Repair procedure and specification evaluation	30
Practical evaluation	Overhaul skill evaluation	40
Valve Repair experience	Angle, SLIT, Gate, APC, VEC, Etc Valve Overhaul Experience	20
Semiconductor related (PM, Facilities, etc.)	Semiconductor companies related experience	10

Experience	xx Kim	xx Khim	xx Cho	xx Kim	xx Rho
CKD 社 maintenance Certified	Certified	Certified	Certified		
CKD Valve experience	9 Y	9 Y	8 Y	4 Y	3 Y
Semiconductor (PM, Equip,)	3 Y	2 Y	2 Y	5 Y	9 Y

3 Professional

3-2. Overhaul Process / General Overhaul Step

1 Incoming

① Customer requirement
② Logging

2 Diagnosis

① Trouble check
② Parts condition
-. Damage condition, lost, shelf life
③ Overhaul scheme

3 Overhaul

① Assembly
-. Regular change
-. damaged parts change
-. Preventive change

4 Test Process

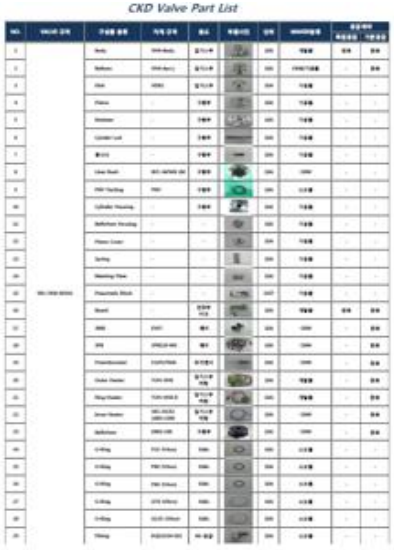
① Leak Test
② Function Test
-. Elec., Voltage, Heater,,,
③ Chamber Test
-. Pressure, Angle, Hunting

5 Outgoing

① Customer requirement
② COA
③ TAT 7days
④ Warranty 3months





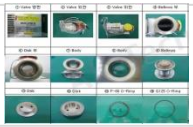
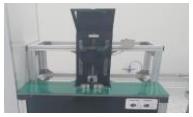
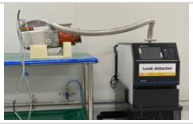






3 Professional

3-3. Overhaul Process / Quality Control Process and Monitoring item

Step	QC Process	Inspection	Control item	Facility
Valve Receiving	**Incoming inspection**	Exterior Function	Valve, Heater damage Heater fail, Current leak	
Disassemble /Cleaning	**Lifetime Cleanliness**	Parts inspection Appearance	Parts change Seal Scratch	
Mechanical Repair	**Mechanical Inspection**	Function	Bellofram abrasion Cylinder operation	
Vacuum Repair	**Functional Inspection**	Function	Bellows, Disk, Body abrasion Leak	
Functional Repair	**Functional Inspection**	Function	3PB Leak Potentiometer corrosion Regular/Irregular replacement parts	
Test	**Final Test**	Leak Test	Flow Spec In/Out Auto Teaching function Angle Control function	
Reliability	**Final Inspection**	Chamber Test	Slow pumping Angle control Pressure control	
Packing	**Outgoing Inspection**	Appearance	Vacuum packaing	

3 Professional

3-4. QA System / Process Control by Standardized Procedures



- EMTP-20-R1-01 Disassemble Operation
- EMTP-20-R1-02 Cleaning Process
- EMTP-20-R1-03 Assembly Process
- EMTP-20-R1-04 Grease Application Process
- EMTP-20-Q1-01 Leak Test Procedure
- EMTP-20-Q1-02 Electrical Test Procedure
- EMTP-20-Q1-03 Heater Test Procedure
- EMTP-20-Q1-04 Chamber Test Procedure
- EMTP-20-C1-01 Part Replacement Standard
- EMTP-20-C1-02 Cleaned Parts Control Procedure
- EMTP-20-C1-03 Non-conforming Product Control Procedure
- EMTP-20-C1-04 COA Control Procedure

3 Professional

3-5. QA System / Chamber Test System (CKD APC Valve)



Control mode

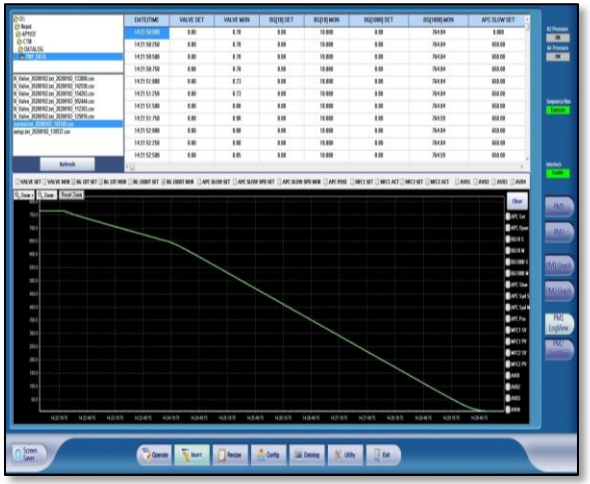
- ✓ Pressure control
- ✓ Angle control
- ✓ Slow Pumping
- ✓ Heater Temp Control

System Software

- ✓ 0.25 Data log
- ✓ Recipe step
- ✓ Pressure monitoring

Testable model

- ✓ Normal CKD Valve
- ✓ Fast CKD Valve





★ Chamber Tester Information

Chamber volume	214.86L (300mm Same as facility)
Baratron gauge	High vacuum(10Torr), Low vacuum(1,000Torr)
MFC	ATM Flow(50 SLM), Pressure control Flow(1 SLM)
Pump volume	30,000ℓ/min
Application model	VEC-VH8, VH9, VF8, VF9

3 Professional

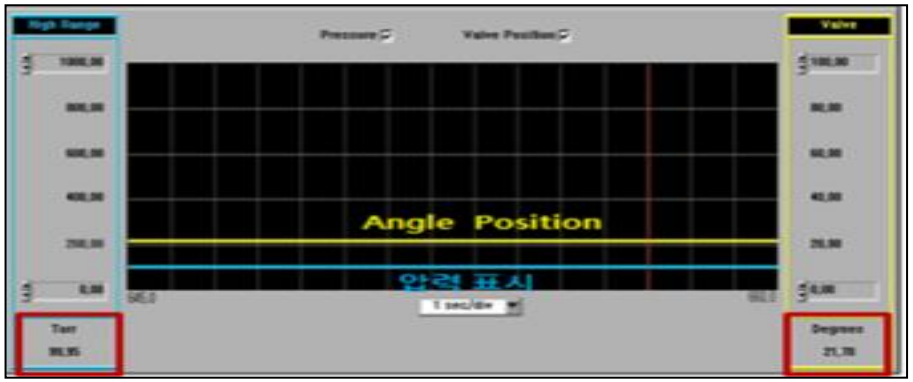
3-6. Throttle Valve Pressure Test System (mks, VAT..)



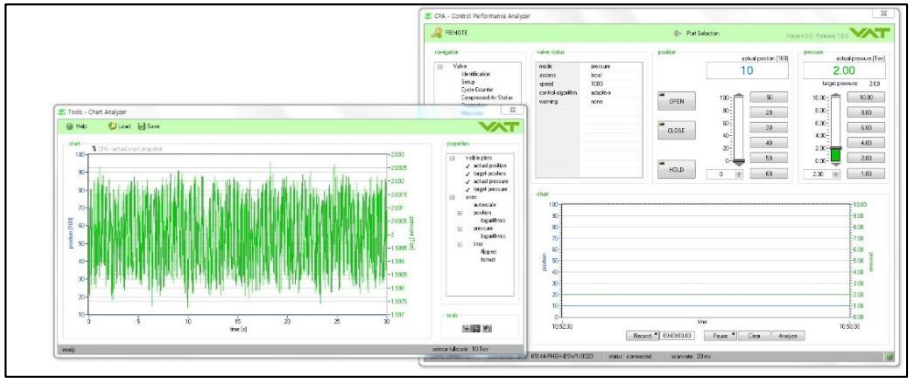
★ **Chamber Tester Information**

Chamber volume	80L * 200, 300mm equipment specifications
Baratron gauge	High vacuum(10Torr), Low vacuum(100Torr)
MFC	Pressure control Flow(10 SLM)
Pump volume	10,000ℓ/min
Application model	153D,253B,653B,683B,T3B

Mks GUI



VAT GUI



3 Professional

3-7. Our Capacity / CKD VEC model

① CKD Normal Type 80A & 100A Standard

No	Spec	Model	No	Spec	Model	No	Spec	Model	No	Spec	Model
1	80A	VEC-V8-X0109	11	80A	VEC-VH8-X0305-2	21	80A	VEC-VH8-X0905	31	100A	VEC-VH9-X0304
2	80A	VEC-V8-X0201	12	80A	VEC-VH8-X0307	22	80A	VEC-VH8G-X0101	32	100A	VEC-VH9-X0304-2
3	80A	VEC-V8-X0301	13	80A	VEC-VH8-X0307-1	23	80A	VEC-VH8G-X0105	33	100A	VEC-VH9-X0305
4	80A	VEC-VH8-X0103	14	80A	VEC-VH8-X0307-2	24	80A	VEC-VH8G-X0106	34	100A	VEC-VH9-X0313
5	80A	VEC-VH8-X0105	15	80A	VEC-VH8-X0318	25	80A	VEC-VH8G-X0302	35	100A	VEC-VH9-X0329
6	80A	VEC-VH8-X0106	16	80A	VEC-VH8-X0318-1	26	80A	VEC-VH8G-X0901	36	100A	VEC-VH9-X0511
7	80A	VEC-VH8-X0111	17	80A	VEC-VH8-X0318-2	27	80A	VYX-0240-VALVE			
8	80A	VEC-VH8-X0207	18	80A	VEC-VH8-X0320	28	80A	VYX-0240-VALVE-2			
9	80A	VEC-VH8-X0305	19	80A	VEC-VH8-X0331-2	29	80A	VYX-0245-VALVE			
10	80A	VEC-VH8-X0305-1	20	80A	VEC-VH8-X0338-2	30	80A	VYX-0295-VALVE			

② CKD Fast & Renewal Type

No	Spec	Model
1	Fast	VEC-VF8-X0001
2	Fast	VEC-VF8-X0002
3	Fast	VEC-VF8-X1008
4	Fast	VEC-VF9-X1009
5	Fast	VYX-0304-VALVE
6	Fast	VEC-VF9-X1004
7	Renewal	VEC-R-V80B0W2-400H
8	Renewal	VEC-R-V90H1D1-202R



[80Ø KE]



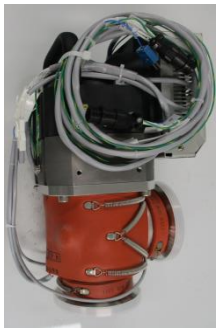
[80Ø TEL]



[100Ø]



[Fast VEC]



[Renewal]

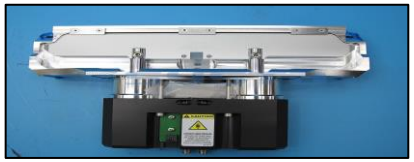
3 Professional

3-8. Our Capacity / Other Repair model

VAT Silt Valve



S-02 Serial



S-03 Serial



S-04 Serial



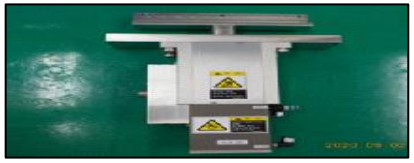
S-07 Serial

SMC Silt Valve



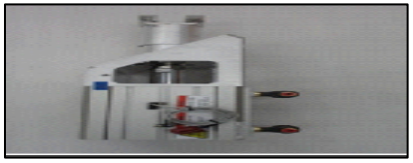
XGT-310,311 Serial

V-TEX Silt Valve



CX12-000028-11 Serial

AMAT Silt Valve



0010-20609 Serial

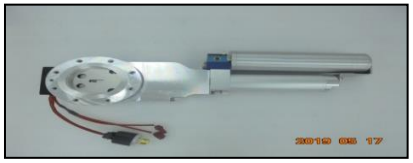
VAT Gate Valve



S-01 Serial

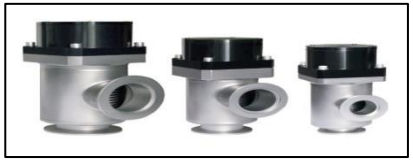


S-14 Serial



S-12 Serial

Angle Valve







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Thank You