

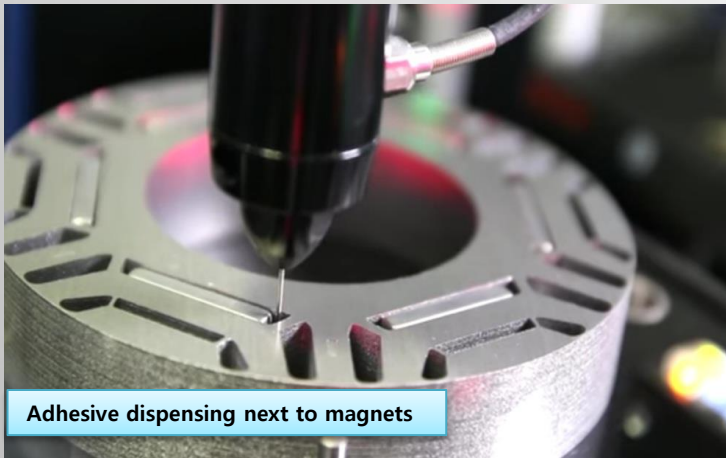
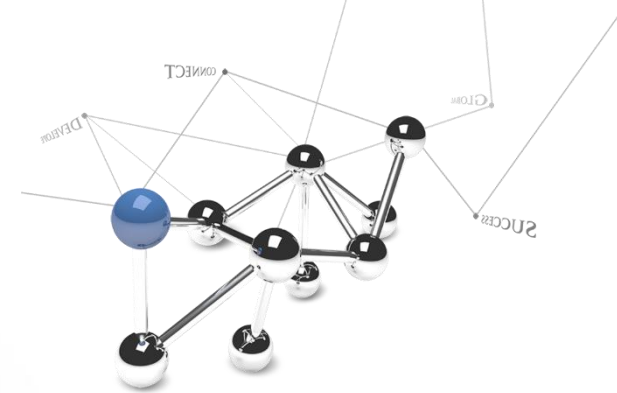


# YU-JIN Chemical

## EV.Motor Core 마그넷 몰딩제

1. Magnet 몰딩용 고 TG 에폭시 YU-ET2230

2. Magnet 접착용 Hybrid Type UE-TL2303



Adhesive dispensing next to magnets

마그넷 본딩, 고TG, 듀얼 type  
Dispensing Magnet Bonding for  
electric motors with YU-JIN Chemical  
**Dual Bond** bdtronic



EV.Motor Core 응용개발 구미사업장

# 1.Intro YU-JIN

-Head Quarter & Branch



CEO

송 덕근

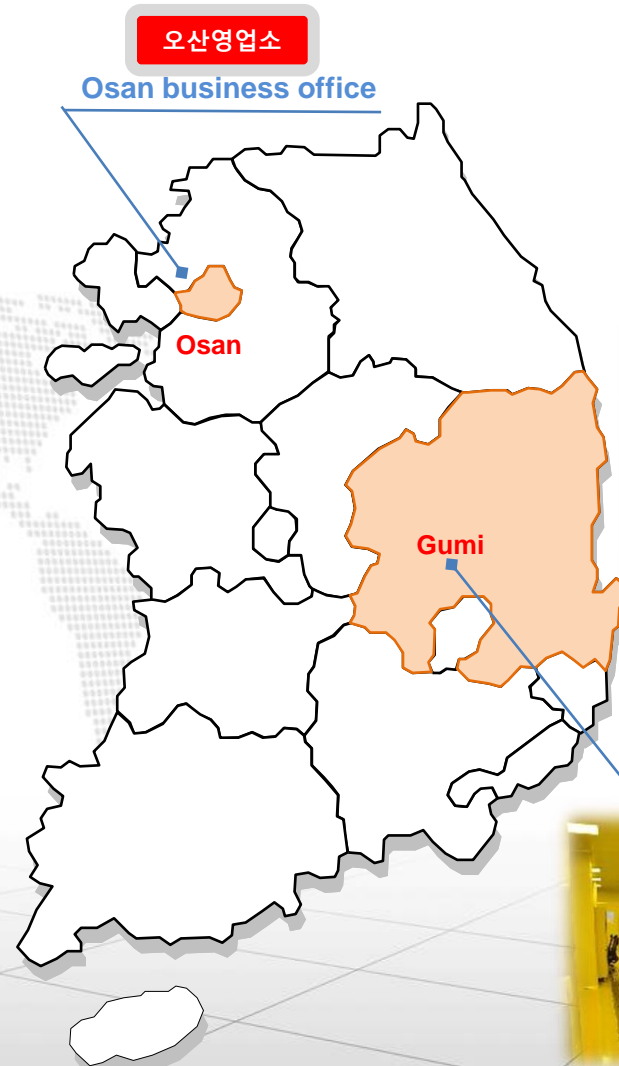
Staff & Member

R&D : 10, Staff : 20

Location Address

▶ 구미공장: 경북 구미시 산동면 첨단기업 5로 109-18 Tel 054)461-2107 Fax 054)461-2108

오산영업소: 임경석소장 H/P 010-3775-0360  
경기도 오산시 동부대로 436번길 54(원동)



오산영업소

Osan business office

Osan

Gumi

구미제조공장&연구소

Gumi Factory  
Manufacture Line

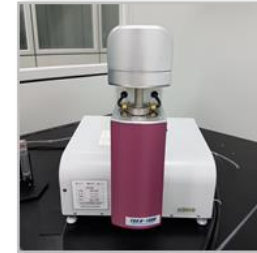
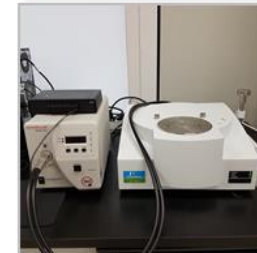
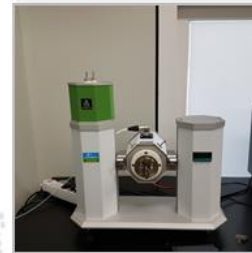
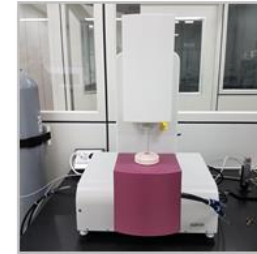
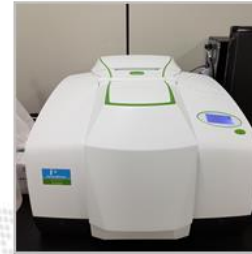


# 1.Intro YU-JIN

## -Analysis Machine for Development



Application	Instrument	Model
Organic Chemical Analysis	FT-IR	FT-IR Frontier
	SEM/EDS	VEGA3 LMH
Polymer Analysis	TMA	TMA N-800
	DMA	DMA 8000
Metal Analysis	DSC	DSC 4000
	TGA	TGA N-1000
Durability Check & Evaluation	Temp/Humidity Chamber	TH510
	TC Chamber	TS510
Others	Low - Viscometer	Brookfield DV2T
	High - Viscometer	Brookfield DV3T
	도막두께 측정기	BRUKER DektaxXT
	Optical Spectrometer	UV/VIS/NIR spectrophotometer
	Optical Microscope	OLYMPUS, BX53MTRF-S
	Microscope	CX31, Olympus



# 1.Intro YU-JIN

## -.Analysis Machine for Development



Application	Instrument	Model
Adhesive strength	UTM	Multitester 10-i
	Dage 4000	DAGE-SERIES-40009xy
Curing	Curing system	MORITEX
	UV LED경화기	OUL-C0192-ACE1317
	수은 경화기	IHCI-152BC
	경도측정기, ASKER	Hardness D Type
Others	Specific Gravity balance	GP-300S
	Oven	Hanbaek-1
	고저항 측정기	MITSUBISHI CHEMICAL ANALYTECH
	Resistivity Tester	Tektronix dmm4020
	DIGITAL FORCE TESTER	DS2-500N
	3 Roll Mill	EXAKT 80E
	Paste Mixer	PDM-1KV
	PLM	PLM-3K
	Polishing Machine	NA-P2000
	SCREEN PRINTER	HC-SM1-6040
Robot	Main Bonder System	FPC Bonder
	Dispenser Robot	Ecoyes-2205
	Dispenser Robot	Shotmini 200sx
	Jetting Robot	DTR-MU-3308
	Dispenser	ML-5000XII





# 4. Major Customer

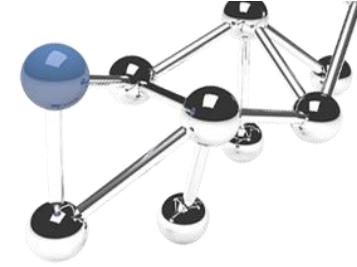
## Mobile Phone Camera Module



## Car Camera Module



# 4. Manufacturing Capability



## 제조 1 LINE (Paste)

- Planetary Mixer 3L 1대
- Planetary Mixer 30L 1대
- Planetary Mixer 100L 1대 (Capa. 4ton/月)

## 제조 2 LINE (UV Resin, UV+Thermal)

- Reactor 20L 2대
- Paste Mixer 2kg 1대
- 3Roll Mill (5kg/일)

## 제조 3 LINE (G-Protector)

- Reactor 300L 1대 (Capa. 13ton/月)

## 제조 4 LINE (Paste)

- Reactor 1000L 1대 (Capa. 45ton/月)
- Mixer 3000L 1대 (Capa. 130ton/月)

## YU-ET2230 고 TG 에폭시 Technical data

VULCAN SERIES

Color	적갈색
Density [g/cm <sup>3</sup> ] at room temperature (approx., 25 °C)	1.2
Viscosity [cPs] at 25 °C, Viscometer, DV2T, #14, 50 rpm	800 ± 300
Curing time with air convection oven [min] At +150°C OR 180°C	60 30
Shore Hardness D	90
Heat Resistance [°C]	-40 ~ 230
Glass transition temperature [°C] DMA	180
Volume resistivity Ω - cm	1.30 X 10 <sup>15</sup>
Surface resistivity Ω	1.46 X 10 <sup>17</sup>
Work life [day] Room temperature 25 °C	3
Weight loss [%]	<3
Storage life at -20°C [months] Also – 40°C to – 20°C possible In unopened original container	6

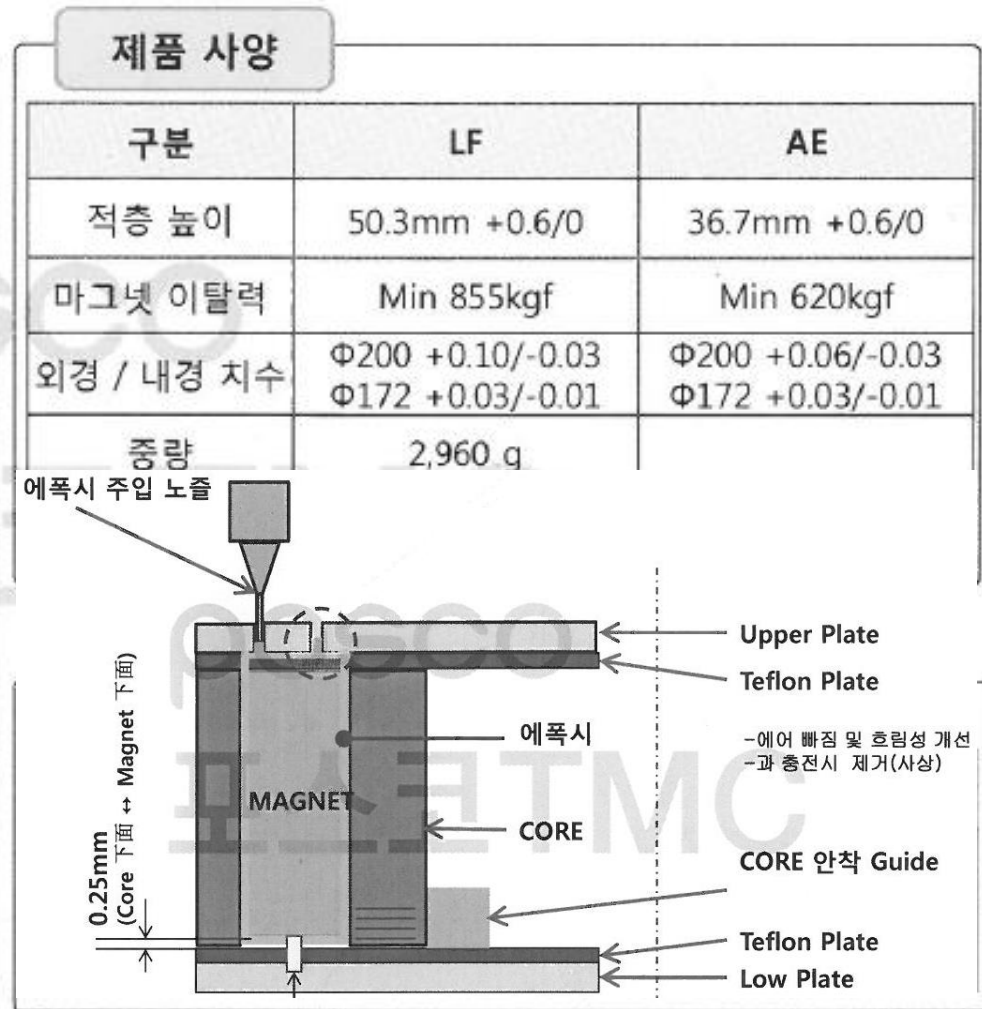


# SYSTEM의 개발 배경

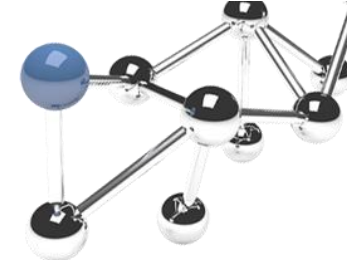
## [ HYBRID CORE MAGNET ASSY'1



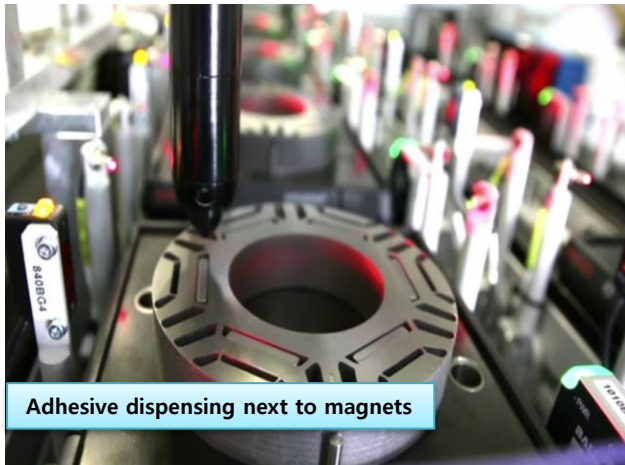
### ▣ 개발 제품 : CORE MAGNET ASSY'



# YU-ET2230 생산공정

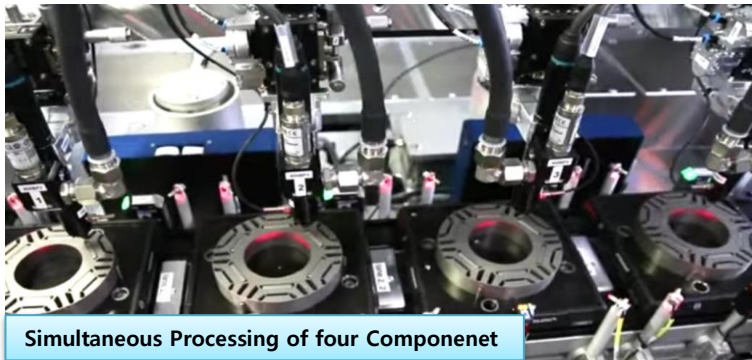


고 TG를 기반으로 배합한 Epoxy 수지로써 내구성 및 내약품성이 우수하며 점성을 낮게 유지 하므로 어떠한 구간 에서도 몰딩.충진 도포가 우수함.

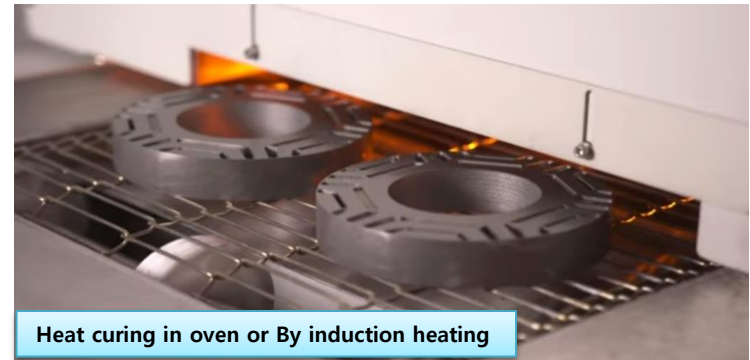


Adhesive dispensing next to magnets

- 고TG 에폭시 정량 충전
- 자동화 충전과 이동
- 열경화 공정으로 마그넷 접착 종료



Simultaneous Processing of four Component

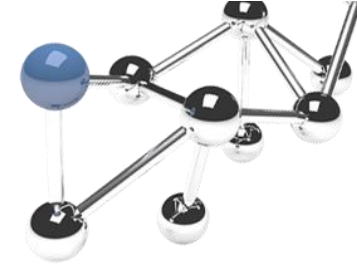


Heat curing in oven or By induction heating

## UE-TL2303 UV+열경화 Hybrid Type Technical data

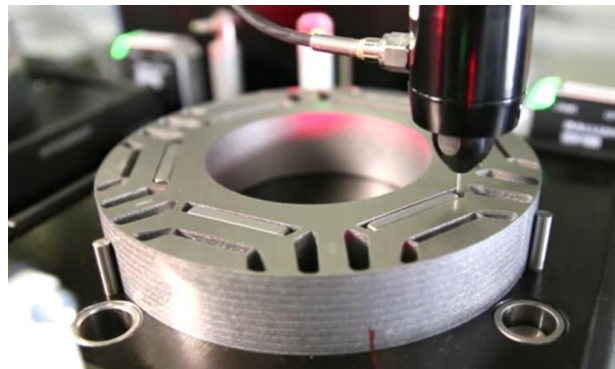
VULCAN SERIES

Color	유백색
Density [g/cm <sup>3</sup> ] at room temperature (approx., 25 °C)	1.2
Viscosity [cPs] at 25 °C, Viscometer, DV2T, #14, 50 rpm	70,000 ± 15,000
Fixing Condition [mJ/cm <sup>2</sup> ] at LED 365nm	3,000
Curing time with air convection oven [min] At +100°C	40~50
Shore Hardness D	85
Heat Resistance [°C]	-40 ~ 150
Glass transition temperature [°C] DMA	120
Volume resistivity Ω - cm	1.20 X 10 <sup>15</sup>
Surface resistivity Ω	1.36 X 10 <sup>27</sup>
Work life [day] Room temperature 25 °C	3
Weight loss [%]	<3
Storage life at -20°C [months] Also - 40°C to - 20°C possible In unopened original container	6



# UE-TL2303 생산공정

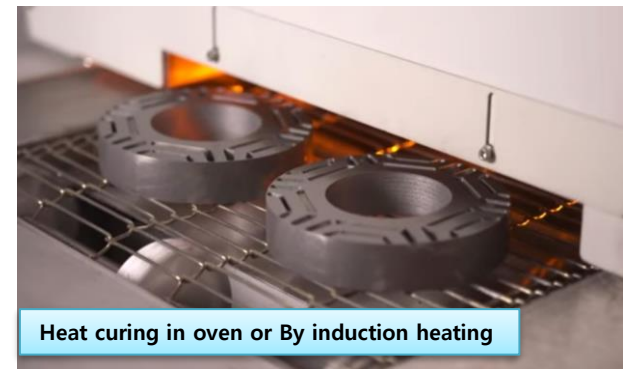
UV+열경화를 갖는 Dual Type의 에폭시으로써 1차 UV 경화로 Magnet의 자리를 잡고 2차 열 경화로 고 접착력을 발휘하는 생산공정



Dual type 에폭시 충전

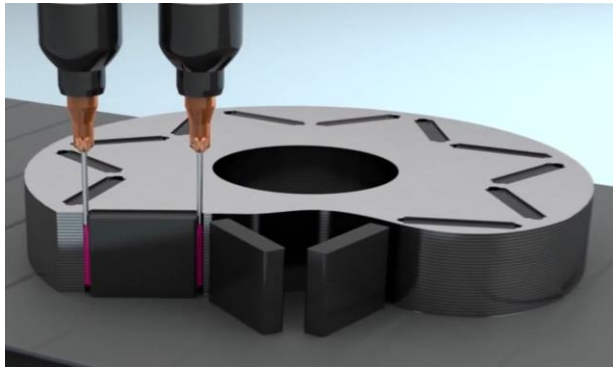


공정의 스피드에 맞는 점성의 Control 가능



Heat curing in oven or By induction heating

최종 열경화 공정



Epoxy 흐름성 조정으로 바닥면 Plate 불필요



마그넷 + 슬롯부 접착



Functional strength by light Fixation for ongoing process steps

마그넷 자리를 잡기위한 1단계 UV조사



THANK YOU

NOV, 2022