GUMMOON
INDUSTRY CO.,LTD.

GUMMOON INDUSTRY
COMPANY PROFILE

Company Overview

Company Overview

GUMMOON INDUSTRY CO.,LTD.

History of Gummoon

1996. 04	Established as GUMMOON Industries Co., Ltd.
1999. 07	Registered as the Tier 1 Vendor for Hyundai Motor Group
2003. 03	Business Research Institute established
2005. 02	Obtain TS 16949, ISO-14001 Certificates
2007. 01	Registered as the tier 1 Vendor for General Motors
2008.12	Sales office established in the U.S.(Detroit, AL)
2010.01	Started Sales in the North America Region (YF SONATA(HMC)[Black Trivalent Cr3)
2011.11	Plant 2 approved under GM GLOBAL CQI-11
2012.11	Injection Molding Plant established
2013.03	Established a Plant(Assembly Line) at the U.S Branch Office(Gummoon USA)
2013.05	Designated as Root Technology Specialized Business(First ever as a Plating Enterprise)
2015.11	Established LINE 3 for Plating
2016.07	Plating Line 3 approved under GM GLOBAL CQI-11
2016.10	Registered as the tier 1 Vendor for Volkswagen, Ford, DTNA
2017.01	Registered as the tier 1 Vendor for SKODA (Affiliate of Volkswagen(Europe))
2018.11	Obtain GM1927-30 BIQS(LV.3)
2019.06	Build a Smart Plant(ERP System)
2019.12	Established the Robot Painting line (10 shuttles)
2020.12	Awarded GM SQEA two consecutive years (2019~2020)

Overview

Founded	1996. 04
CEO	Moon Sik Kim
Products	• Radiator Grille • Emblem/Lettering • Bumper/Fog Lamp Molding • Garnish
Employees	• 151 Current at 2021 - Research/Design Engineers : 16 - Development PM/QC Engineers : 19
Key Facility	• Research/Design/Injection Molding /Plating Line1,2,3/ Pilot Line (Prototype Production Development)/ Full Automated Robot Painting Line(10 shuttles)

[Sales By Year]

(Unit : 1M,USD/Exchange rate : 1,100 USDKRW)

	Y2019	Y2020	Y2021		
			Jan-Mar (Records)	Apr-Dec (Expected)	Year (Expected)
Sales	81.3	65.4	20.2	66.9	87.1

[Certificate of Registration]

NO	Certificate of Registration	Certification Date	Expiration Date
1	IATF16949:2016	2021.04	2024.04
2	ISO14001:2015	2020.02	2023.02
3	KS I ISO14001:2015	2020.02	2023.02
4	KS Q ISO 45001:2018	2019.11	2022.11
5	ISO 45001:2018	2019.11	2022.11

※SQEA 2020 Award-winning confirmed (Awarded for 2 Consecutive Years)

GM Supplier Quality Excellence (2019, 2020)

※SQEA 2020 Award-winning confirmed (Awarded for 2 Consecutive Years)

Company Overview

GUMMOON INDUSTRY CO.,LTD.

1. Head Office

	PLANT 1(HQ)	PLANT 2	PLANT 3
Established	2000.08	2011.01	2012.12
Production Process	Plating / Painting / Assembly	Plating Line	Injection Molding
Key Facility	Plating Line 1 Plating Line 3 Robot Painting Line Painting Line Assembly/Packaging Line	Plating Line 2	Small-sized(100~220 ton) : 14 units Large-sized(315~2,000 ton) : 31 units
Land Size(sqft)	172,883	32,171	57,651
Address	-Noksan Industry Jungro 224(Songjung-Dong), Gangse-Gu, Busan, Republic of Korea -Contact info : +82+51-831-0151	-8, Noksansandan 261-ro 23beon-gil, Gangseo-gu, Busan, Republic of Korea	-50, Gwahaksandan-ro 333beon-gil, Gangseo-gu, Busan, Republic of Korea

2. Branch Office

	Gummoon USA LLC	Gummoon Europe s.r.o.
Location	North America	Czech Republic
Founded	2013.03	2014.02
Information	- Operating an warehouse and assembly lines - R&D engineers - Sales Business R.E.P - Serving local customers in North America, Canada, Mexico and Brazil	- Operating an warehouse, serving local customers - Sales operation for automakers in the Czech Republic, the Slovak Republic, Germany and Hungary
Address	-2292 Pumphrey Ave, Auburn AL 36830 -Contact Info Office : +1-334-502-8899 -Contact Info Direct : +1-214-881-8042 john.cho@gummoonusa.com	-U Rourovny 556/3, Svinov, 721 00 Ostrava, Czech Republic -Contact Info: +420-725-977-359 hong@gummooncz.com

Core Products

GUMMOON INDUSTRY CO.,LTD.

Radiator Grille, Emblem, Molding(plating/painting molding product for decoration)
Fog(Fog cover)

Radiator Grille

Emblem

Fog Lamp
Molding Cover

Tail Gate Garnish

Bumper Molding

Wheel Cover Cap/Hub

Main Product : Products Manufactured with Gummoon Components

GUMMOON INDUSTRY CO.,LTD.

PALISADE(LX2)

TUCSON(NX4)

SORENTO(MQ4)

ELANTRA(CN7)

K8(GL3)

IONIQ5(NE)

Main Product : Products Manufactured with Gummoon Components

GUMMOON INDUSTRY CO.,LTD.

CAMARO CONV
(A1AC)

TRAX(G1UC)

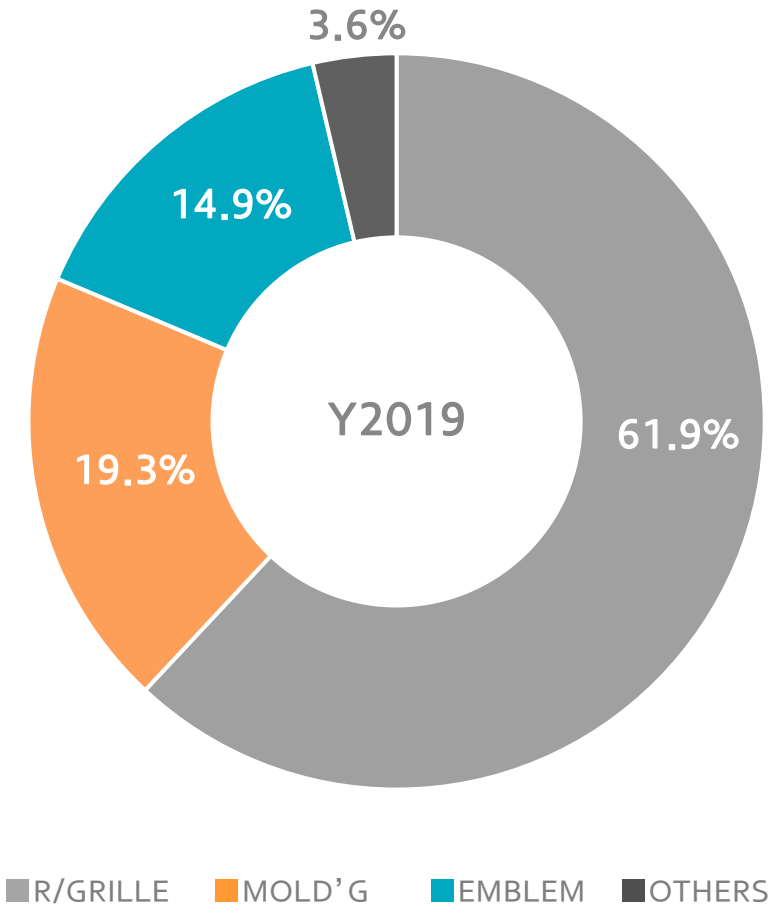
MALIBU(E2SC)

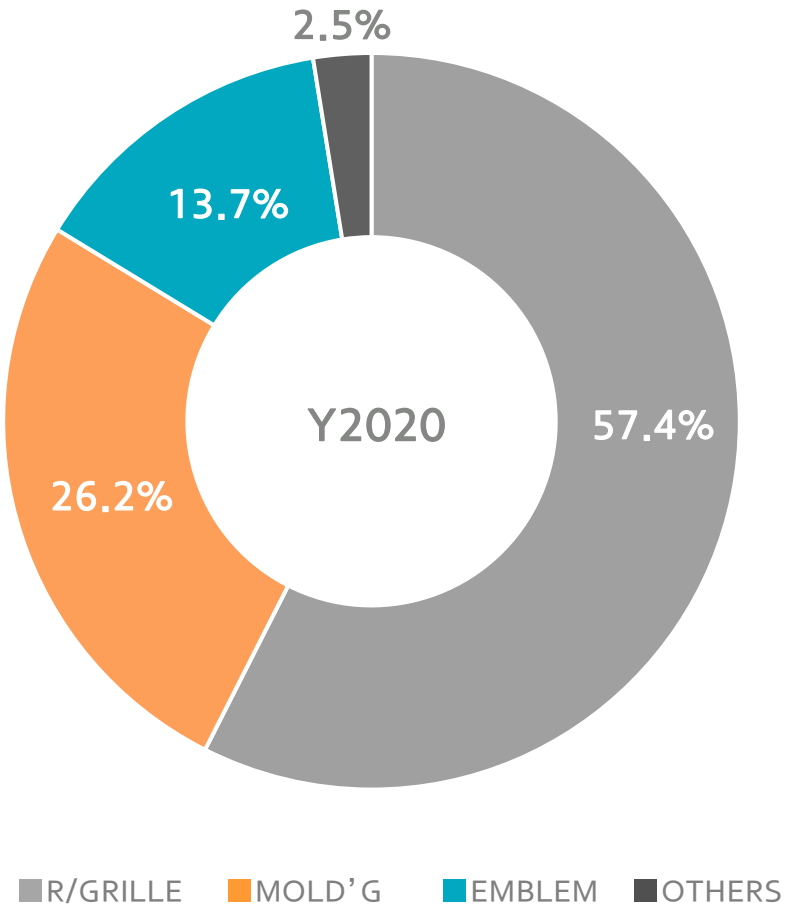
SPIN(G1NC)

BLAZER(C1UC)

ENCORE(G1UB)

Sales share by Products





Unification of Production Process and Smart Factory

GUMMOON INDUSTRY CO.,LTD.

Product development → Mold maintenance → Injection molding → Plating → Painting → Assembly → Inspection

MES System in place

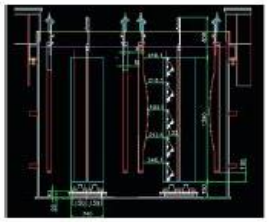
1.DESIGN AND DEVELOPMENT

PRODUCT DESIGN PROCESS

- Prevention of failure through DFMEA
- Standardization and utilization of common design
- Product design considering plating characteristics
- Sensitive engineering design for better design quality
- Structural design for better endurance quality

DEVELOPMENT (PRODUCTS/MOLDS) PROCESS

- Quick response from design review to mass production
- Early review on establishment of FMEA and 4M system for mold development
- Quick response for customers and optimized development of products/molds through standardized systems for design, QC and manufacturing



2. INJECTION MOLDING PROCESS

INJECTION MOLDING PROCESS

- Specialized technology considering characteristics of plating/painting
- Digitalization of track records and performance data through POP SYSTEM
- Utilization of injection molding machines of various capacity
  → producing injection molded products of various shapes and types

[Injection Molding Capacity]

Size	Units	Note
Small-sized	14	100 ~ 220 ton
Mid-sized	24	450 ~ 850 ton
Large-sized	7	1,050 ~ 2,000 ton
Total	45	

Unification of Production Process and Smart Factory

GUMMOON INDUSTRY CO.,LTD.

MES System in place

3. PLATING PROCESS

PLATING PROCESS

- Improved corrosion resistance through micro-porous technology
- Application of various techniques per plating line
  (Satin, White trivalent Cr, Black trivalent Cr, Hexavalent Cr)
- Automation manufacturing line established
- Digitalization of track records and performance data through POP SYSTEM
- PILOT LINE at each plant → plating quality stabilization
- Capable of designing/manufacturing racks → plating quality improvement

[Plating Line Capacity]

	Line 1	Line 2	Line 3
Capacity (/Month)	3,750,000(dm²)	7,500,000(dm²)	13,750,000(dm²)
Finish Color	White Trivalent Cr Black Trivalent Cr Satin, Hexavalent Cr	Hexavalent Cr	White Trivalent Cr Black Trivalent Cr Satin, Hexavalent Cr

*1dm² = 10cm × 10cm

4. PAINTING PROCESS

PAINTING PROCESS

- Automation line established for glossy(body color) and matte(masking) painting

[Plating Line Capacity]

Painting Line	Capacity(/Month)	Finish Color
Robot Painting Line	10,300,000(dm²)	Paint on Chrome(Tinted) / Color / Masking

*1dm² = 10cm × 10cm

5. ASSEMBLY PROCESS

ASSEMBLY/PACKAGING PROCESS

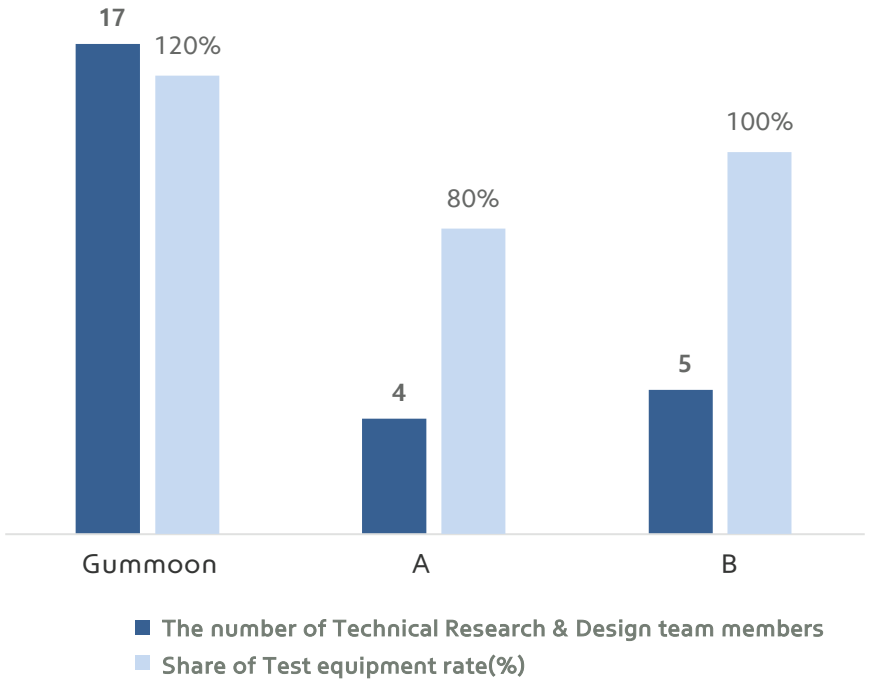
- CELL manufacturing lines established for multi-product production
- Strict product shipping inspection system at various stages by operators and inspectors
- ANDON System to detect and take actions against defective parts
- Digitalization of track records and performance data through POP SYSTEM

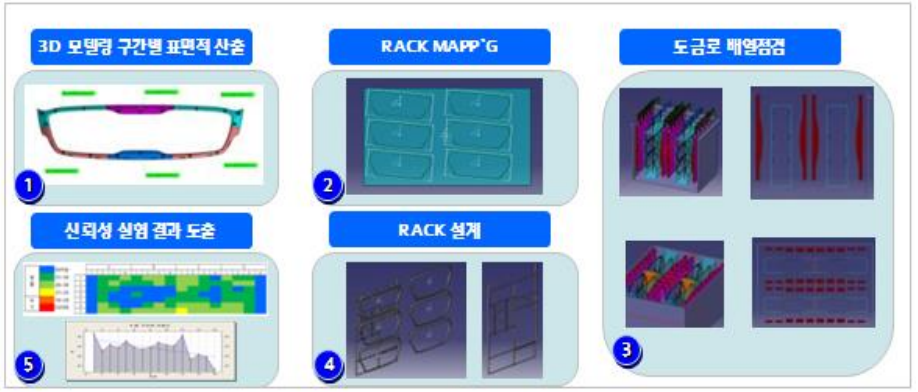
Company Strengths

GUMMOON INDUSTRY CO.,LTD.

Highest Mass Production in House Design of Radiator Grille in History in Korea	Modular Component Strategy	Development & Competitive Mass Production Capability	Starting Smart Factory (Design-Final Product) Automation
• Great Relationship between Tiers built Trust to Growth • In House Design Capability & Tool Build Capability : Radiator Grille Design Top-Tier Level (10 Vehicle/year Avg) • Radiator Grille, Bumper Molding, Lamp ETC : Counter Component Design Capability to Ensure of Fitment/Function • Faster Counter Action due to in House Design/Molding/Painting/ Plating Capability	• Acquired Business Venture Relationship with Automotive Lighting Company Targeting LED, PCB/FPCB to Accommodate Trend of Automobile World • Acquired Tooling Development of lenses based PC • Acquired of Expert Engineer in Variety Surface Finishes & Injection Molding to Create a Harmony Process of Production • Designated TFT will be established to specifically Target Lighting Radiator Grille/Front End Facia by Third Quarter of 2021	• Able to Produce High in Volume of Mass Production due to Proprietary Technology • Total # of Injection Molding of 45 (100 ton~ 2,000 ton) • 3 Lines of Plating • Fully Automated Paint Robot/Convey/Shuttle Capability • Automated Cell Type Assembly Line	• One Stop Process Design till Final Product with Automation • In House Pilot Line for Trials before Mass Production to Ensuring Quality of the Component • IN House 3D Printing Capability • Full Line of Testing Equipment in House • MES System Operation of Smart Factory to Ensuring Quality Process Components with Accumulated Data to Prevent Failure in House/OEM/Final Consumer

High Technical Perfection and Design Ability of Global Top-Tier Product





- Collaboration for New Technology Product with Customer
- Investment in R&D and Design has High Development Capacity
- Test Equipment Retention Rate is 120% Approved by OEM
- Leader of Trivalent Chrome Plating, HOTSTAMPING, etc. (First Mass Production Implemented of New Surface Finish Technology)

- Global Top Tier Level of Design in Rad Grille (10 Vehicles Per Year on Average)
- Excellent Design Capabilities & Reinforcement of Electrical/Electronic to Accommodate Future Technology
- Pre-Production of Trial Product with 3D Printer
- Analyze Failure Factors of Process and Design to Ensure the Quality of Mass Production

Securement of Global Customer: Top 10% Suppliers in Korea

GUMMOON INDUSTRY CO.,LTD.

HYUNDAI

KIA MOTORS

GM

HOLDEN

VAUXHALL

NISSAN

OPEL

Ford

Volkswagen

ŠKODA

PLASTIC OMNIUM

MAGNA

FREIGHTLINER WESTERN STAR DETROIT Thomas Built Buses

DAIMLER TRUCKS NORTH AMERICA

A.P. PLASMAN
A DIVISION OF PLASMAN GROUP

Growth Strategies

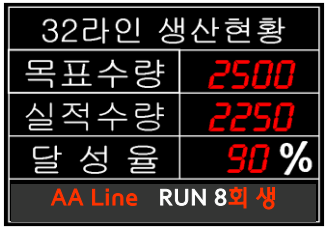
Development Roadmap

GUMMOON INDUSTRY CO.,LTD.

~2020

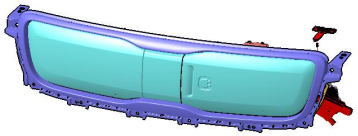
Investment

2021



Stabilization of Production/Operation and Smart Plant Improvement

2022



Expansion of Eco-Friendly Car Parts and Expanding Electrical Device Collaboration on Exterior Components

2023

XOS

TESLA

BYD

RIVIAN

LUCID

Global Expansion

Smart Plant Level Improvement

GUMMOON INDUSTRY CO.,LTD.

	Level	Standard	Focus	Key Factor	Condition
Top	Level5	Self Drive	Workers, Equipment, Materials, Operating Condition+ Environment	Customization +Automation	Full Self-Automation
Mid2	Level4	Optimized	Workers, Equipment, Materials, Operating Condition	Optimized	Prevention Control Capability Through Process Simulation
Mid1	Level3	Control	Workers, Equipment, Materials	Analyzed	Operation Full Control based on Collected Data
Entry 2	Level2	Monitoring	Workers, Equipment, Materials	Assessment	Real Time Monitoring Full Production
Entry	Level1	Inspect	Materials	Identify	Partially Standardizing+ Managing data

2023~2024: Lv5 Build

2021~2022: Lv4 Build

GUMMOON INDUSTRY CO.,LTD.

Expansion of Eco-Friendly Car Parts and Electrical Components

GUMMOON INDUSTRY CO.,LTD.

Gummoon Product is Applied in Customer's Demand of Eco-Friendly Car Line
Collaboration of Product Improvement as Expansion of Eco-Friendly Car

Gummoon's Exclusive Design for Electric Vehicles Radiator Grille

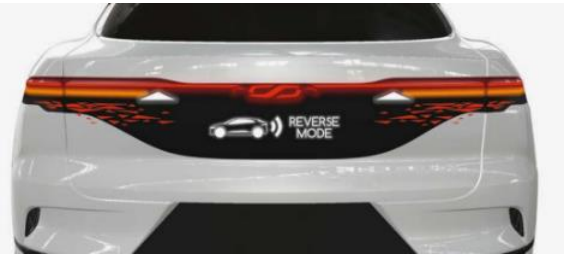
EV

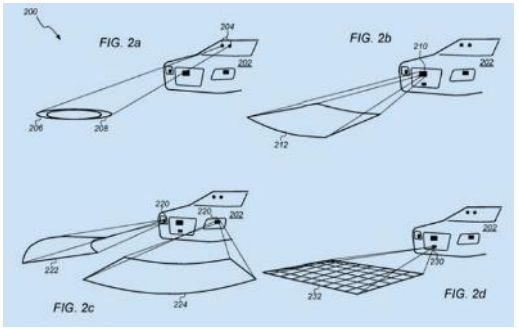
PHEV

Expansion of Eco-Friendly Vehicle Parts and Electrical Components

GUMMOON INDUSTRY CO.,LTD.

Following the Trend of Surface Treatment Variation therefore Strengthening of Grille Functionality





〈Example of Front Grille Design〉

▶ Communication Lighting Radiator Grille
Front-end Electronics Module Development(2020 ~)

• Gummoon is investing in New LED Radiator Grille as the Trend of Automotive Direction

• Gummoon is investing in Front Facia as Global Trend is Focused on EV

• Advantage
① Communication between Vehicle and Pedestrian
: Sense the Pedestrians, Sending Warning Audible/Visual Light to Protect both Pedestrians and Vehicle(Driver)
② Warning Fiction of lamp during Braking
③ Change of Color Mode of Driving(Self-Drive: Blue, Driver Drive: Green)
④ Visual Signal Indicator During Left Turn or Right Turn
⑤ Design Enhancement

Current Grille → Signal Grille (Semi-Self Driving) → AI Grille (Full Self Driving)

Expansion of Eco-Friendly Vehicle Parts and Electrical Components

GUMMOON INDUSTRY CO.,LTD.

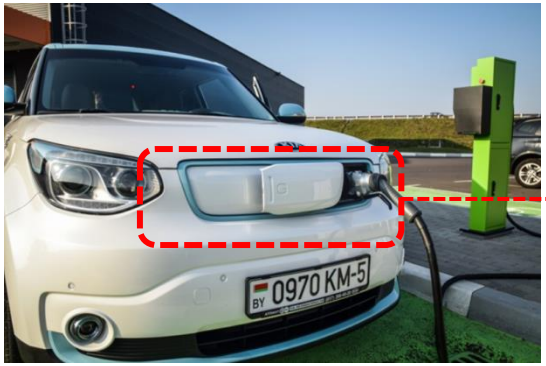
Following the Trend of Surface Treatment Variation therefore Strengthening of Grille Functionality

AUDI (EV)

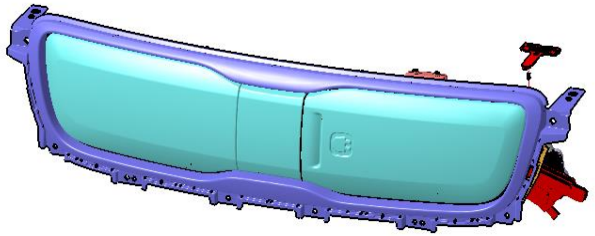
▶ Started EV Radiator Grille Development (2019~)

• Mechanism module operated for EV charger door open and shut is added including motor, actuator, etc., in order to Achieve a Full Functioning Radiator Grille Design

• As well as Charger Module, Design/Function of Lamp-Bumper-Radiator Grille is Developed. So as high Demand Design Ability is needed to Role of Sensor Housing for Automatic Driving and Lamp/DRL.



KIA SOUL (EV)



〈 Grille Front Mechanism Module Component

Growth of Global Customer Base

GUMMOON INDUSTRY CO.,LTD.

Expansion of Business with Existing Customer with EV OEM

Existing Customer

OEM Company

HYUNDAI

KIA MOTORS

CHEVROLET

GM

VAUXHALL

HOLDEN

Tier Company

MAGNA

PLASTIC OMNIUM

A.P. PLASMAN
A DIVISION OF PLASMAN GROUP

Future Customer

EV OEM

LUCID

XOS

TESLA

BYD

RIVIAN