



Company Introduction

HANJOO METAL

Introducing HANJOO METAL
the solid company that has been
constantly challenging

World Class Global Hidden Champion

한주금속(주) 회장 | CEO 정삼순 Sam-soon Jung

세계적인 알루미늄 주조(부품) 전문회사인 우리 한주금속(주)을 방문해 주신 여러분께 진심으로 감사의 말씀을 올립니다.

한주금속(주) 대표이사 정삼순입니다.

한주금속(주)은 한국 자동차의 눈부신 국내외 수요로 자동차산업이 양적인 팽창기에 접어들었던 1990년대초, 국내최초로 현대자동차의 DOHC 엔진부품 국산화에 크게 기여를 하였고, 현재는 국내 최대 규모의 알루미늄 주조 생산능력을 갖춘 회사로 발돋움하였습니다.

지난 30년간 제조 경험과 노하우를 축적해온 한주금속(주)은 자동차 부품을 기반으로 한 알루미늄 주조 전문회사로 더욱 발전하기 위하여 독자적인 주조기술 및 소재개발, 품질혁신, 창의적인 인력양성에 매진하고 있으며 미래를 위한 도전과 혁신을 이루어 나가고 있습니다.

고객과 직원, 사회 모두의 상생을 추구하는 한주금속(주)은 알루미늄 주조 산업, 특히 자동차 부품 산업에서의 주조기술개발에 적극 기여하고, 윤리규정 준수를 통한 정도 경영을 실현하여 사회에 나눔과 공헌을 실천하는 신뢰 받는 기업이 될 것을 약속드립니다.

더 나은 세상을 꿈꾸며, 글로벌 리더 기업으로 성장해 나가는 한주금속(주)의 앞날에 많은 성원과 관심을 부탁드립니다.

I would like to express my sincere gratitude to all of you who have visited the website of Hanjoo Metal, the industry-leading expert in aluminum casting (parts).

I am Sam-soon Jung, CEO of Hanjoo Metal.

Hanjoo Metal successfully localized DOHC engine parts for the first time in Korea in the 1980s, when the country's automotive industry experienced quantitative expansion thanks to the increasing demand at home and abroad. We are currently the largest aluminum casting supplier in Korea.

Without settling for our present success, we have endeavored to become an aluminum casting supplier specializing in automotive parts as well, based on experience and know-how accumulated over the past 30 years. To this end, we are committed to developing our own casting technology and new materials, as well as achieving innovation of quality and training creative human resources for the future.

Hanjoo Metal pursues mutual growth for customers, employees, and our society and actively contributes to the development of casting technology in the aluminum casting industry, especially in the market for automotive parts. We will continue aiming to retain the trust and loyalty of our customers by strengthening business ethics and our activities targeting social contribution.

We look forward to receiving your continued support and interest as we advance on our journey to become a global leader, and help make the world a better place.



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03. NEW TECHNOLOGY · NEW PRODUCT

신기술 · 신제품

New Technology_ESDC 전자교반 고압주조기술	24
New Technology_Bimetal Brake Rotor 이종소재 접합주조기술	25
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New Product_LPDC 대형 중공저압주조기술_사이드멤버	27

06. SOCIAL CONTRIBUTION

사회공헌

Live Together 더불어사는 한주	38
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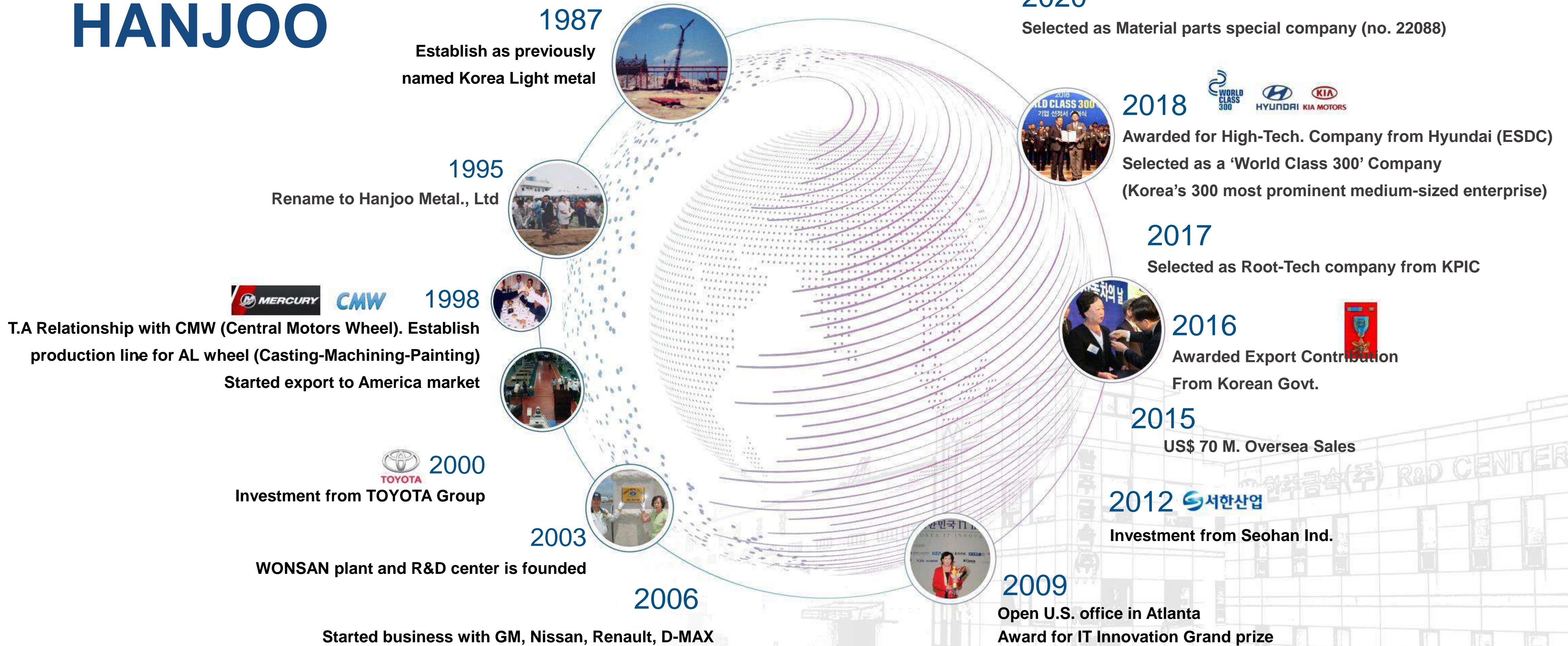
01



COMPANY INTRODUCTION

- Company History
- Company Overview
- Business Strategy
- Organization Structure
- Major Customers_Export
- Major Customers_Domestic
- Sales Status_Sales Growth
- Sales Status_Sales Analysis

HANJOO



Company Overview



Head Quarter/ Hwasan Plant

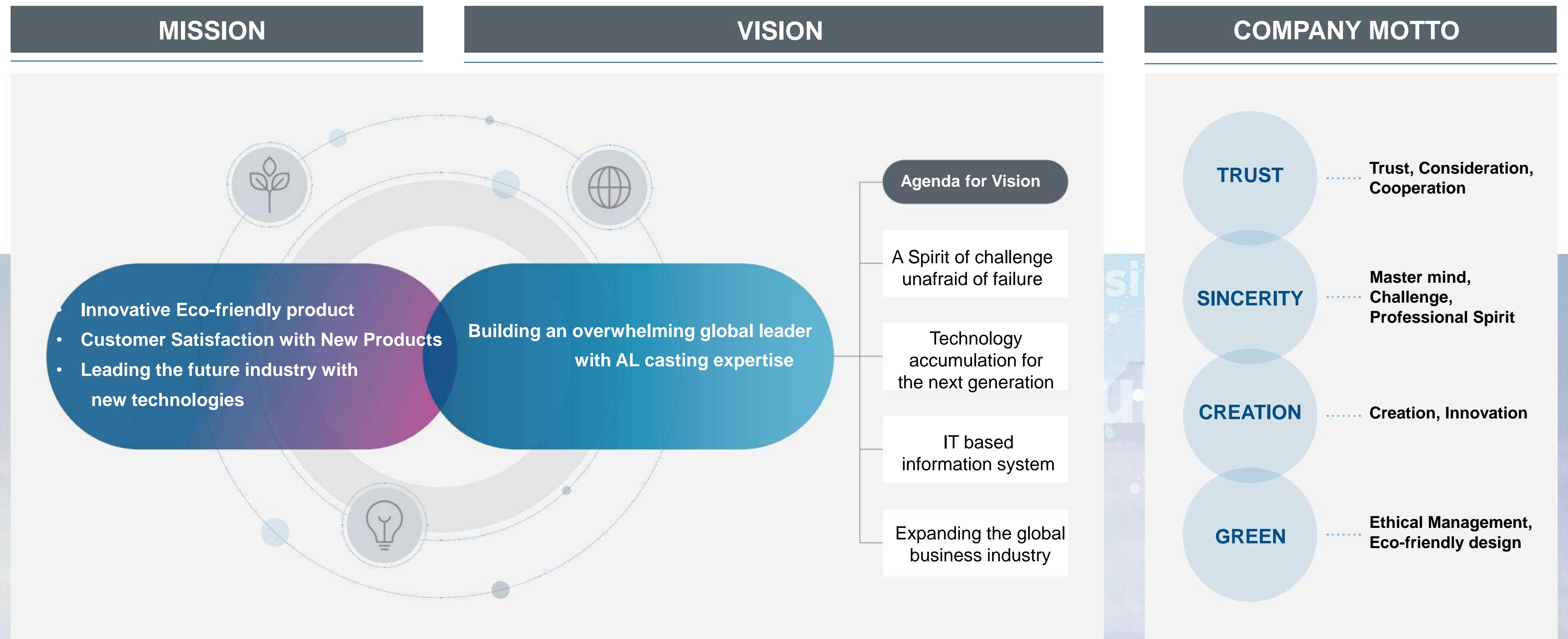
Establish Day	December 8, 1987
Location	34-5, Hwasan 2-gil, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea
Plant Area	15,000m ²
Staff	72 (Include Outsourcing 183)
Main Processes	LPDC, Machining, painting Line for AI Wheel



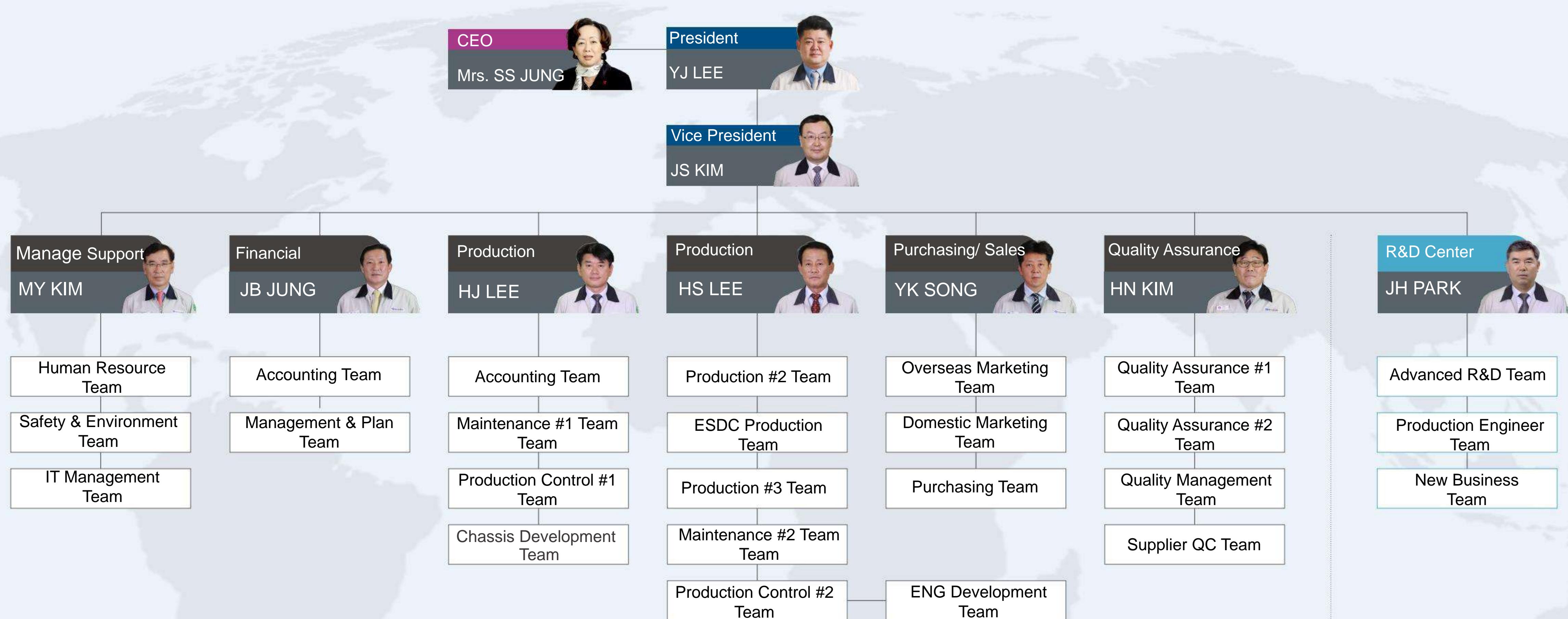
Wonsan Plant

Establish Day	December 20, 2003
Location	69, Sannam-gil, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea
Plant Area	27,000m ²
Staff	191 (Include Outsourcing 436)
Main Processes	GDC, LPDC, ESDC, Machining and Assembling

Business Strategy

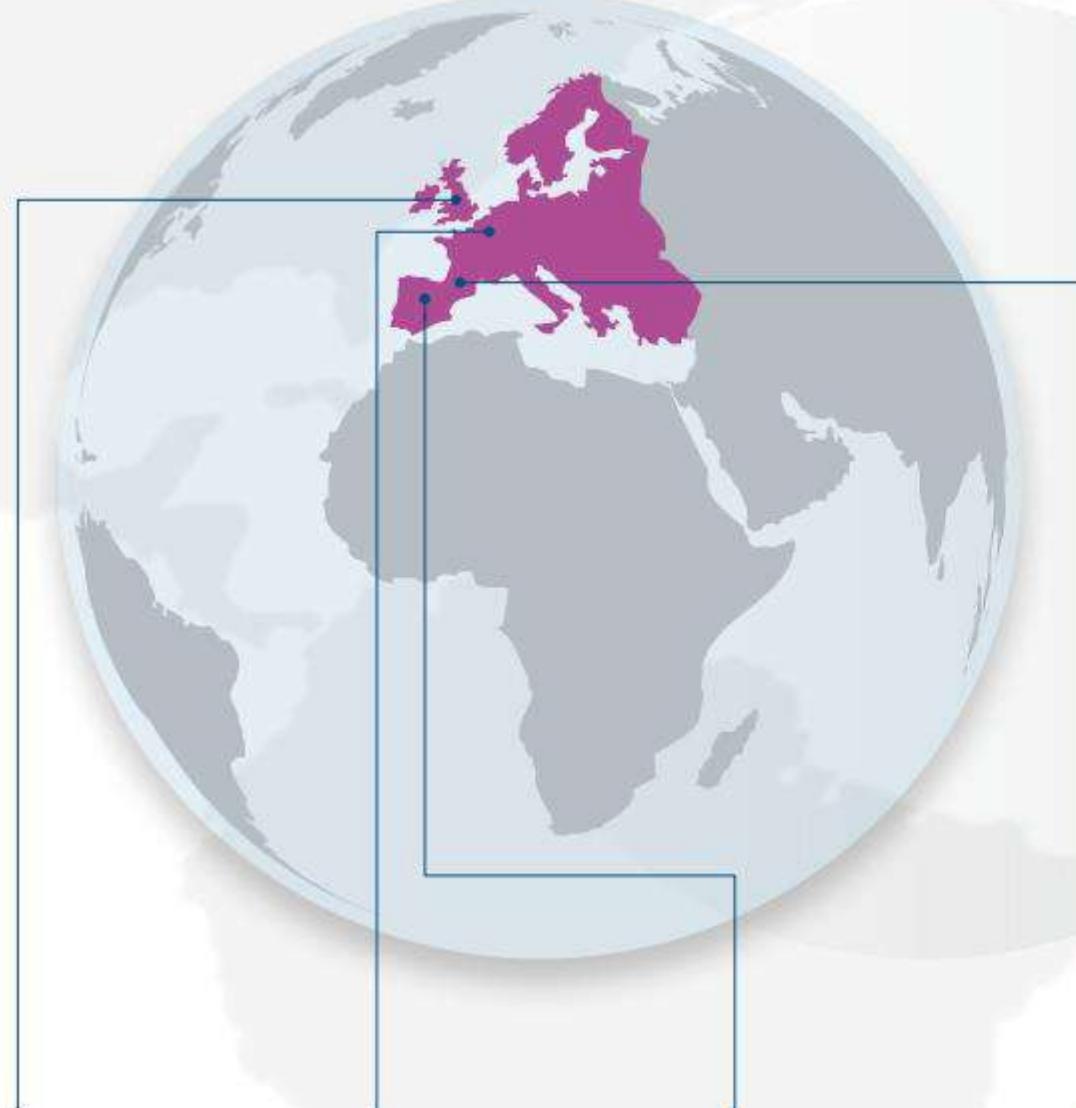


Organization Structure



Major Customers - Export

EUROPE



U.K.	Germany	Spain	France
			

ASIA



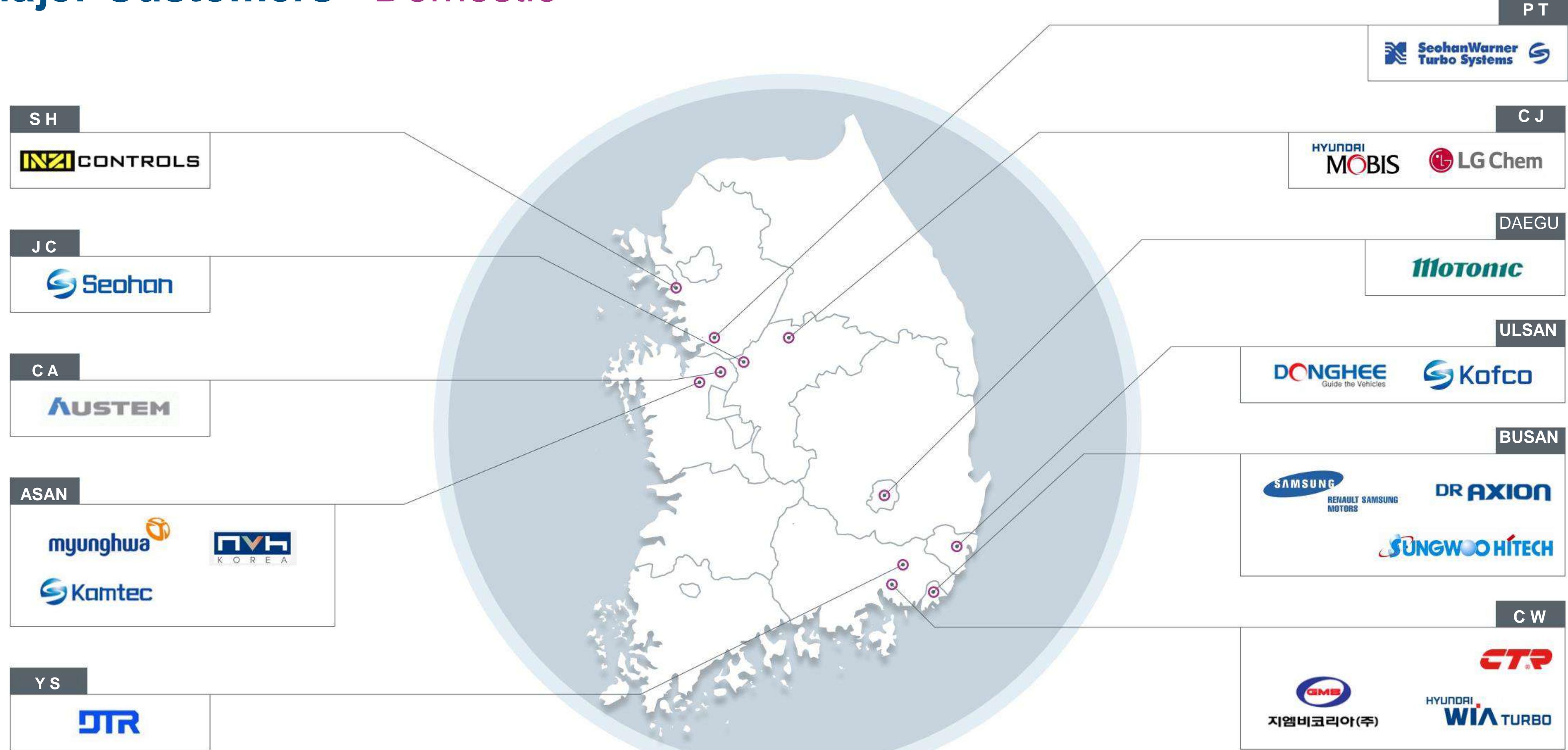
China	Japan
 MEIDEN  BRIDGESTONE	  MITSUBISHI FUSO   ISUZU TOSHIBA

NORTH AMERICA



Canada	U.S.A
 	       

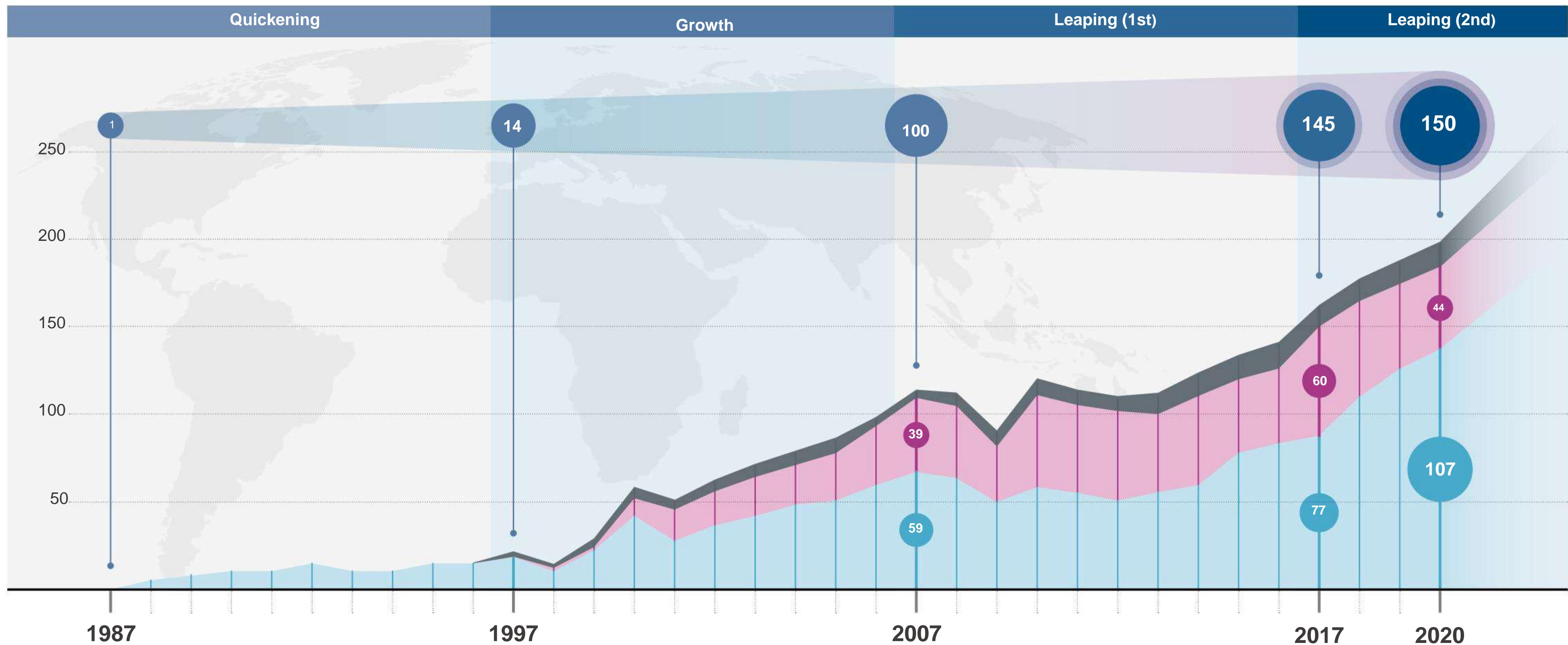
Major Customers - Domestic



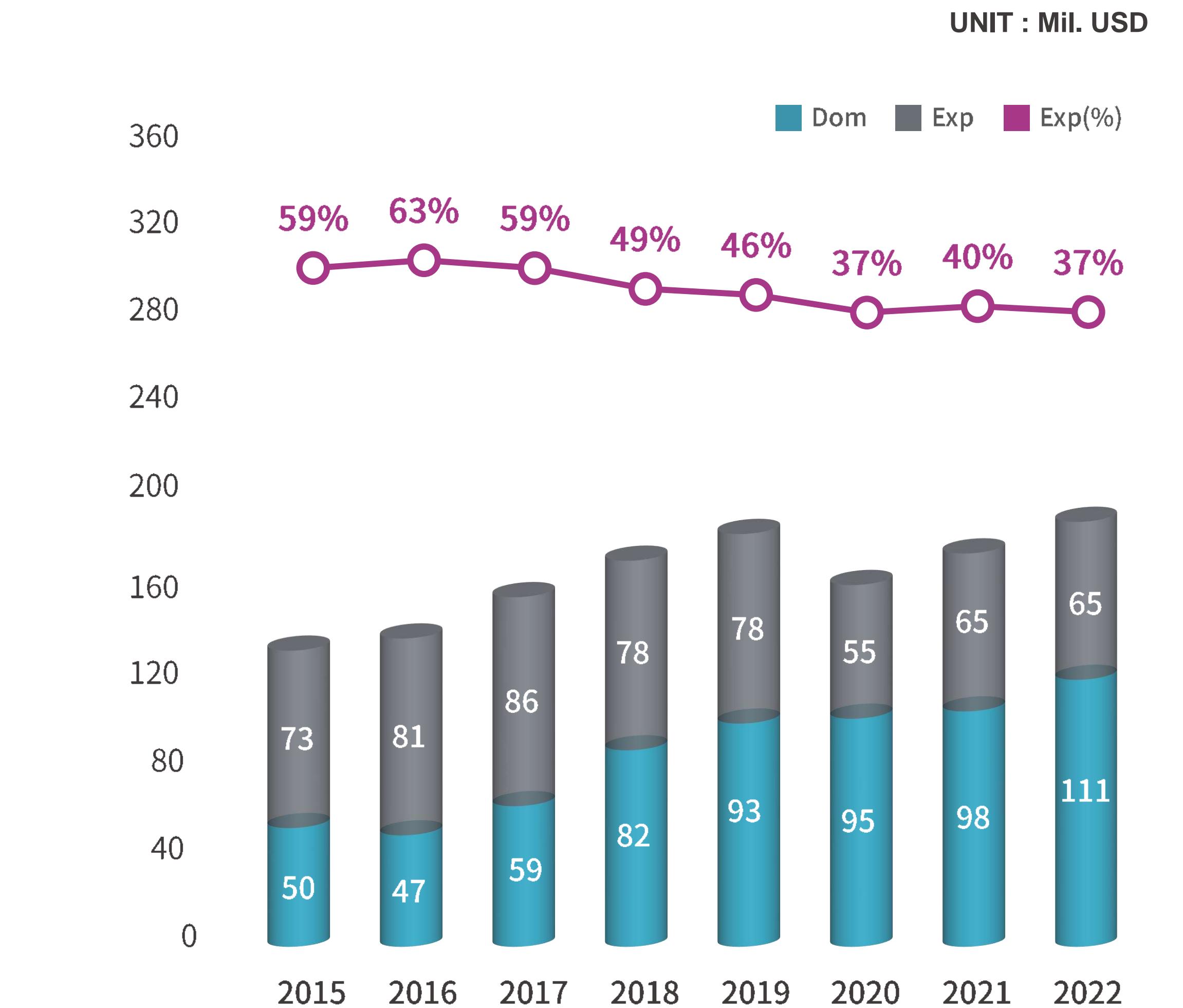
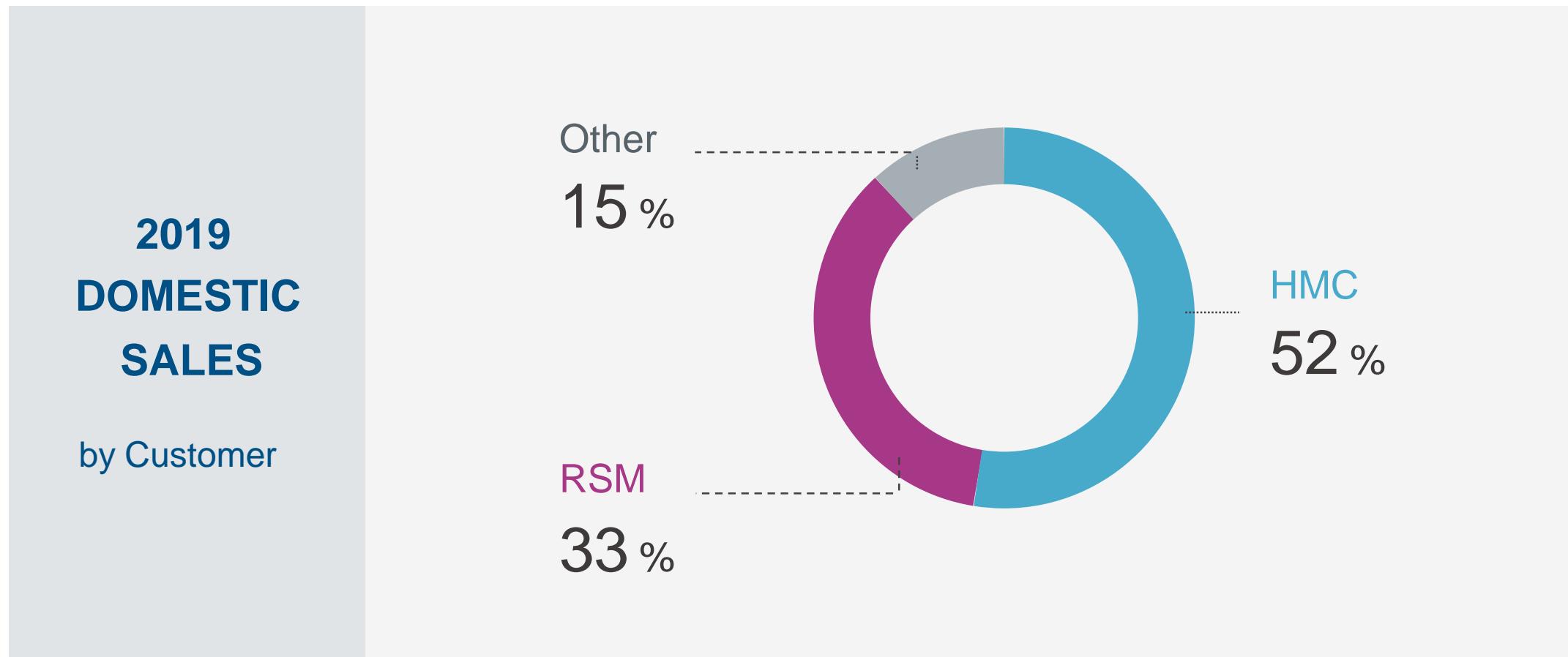
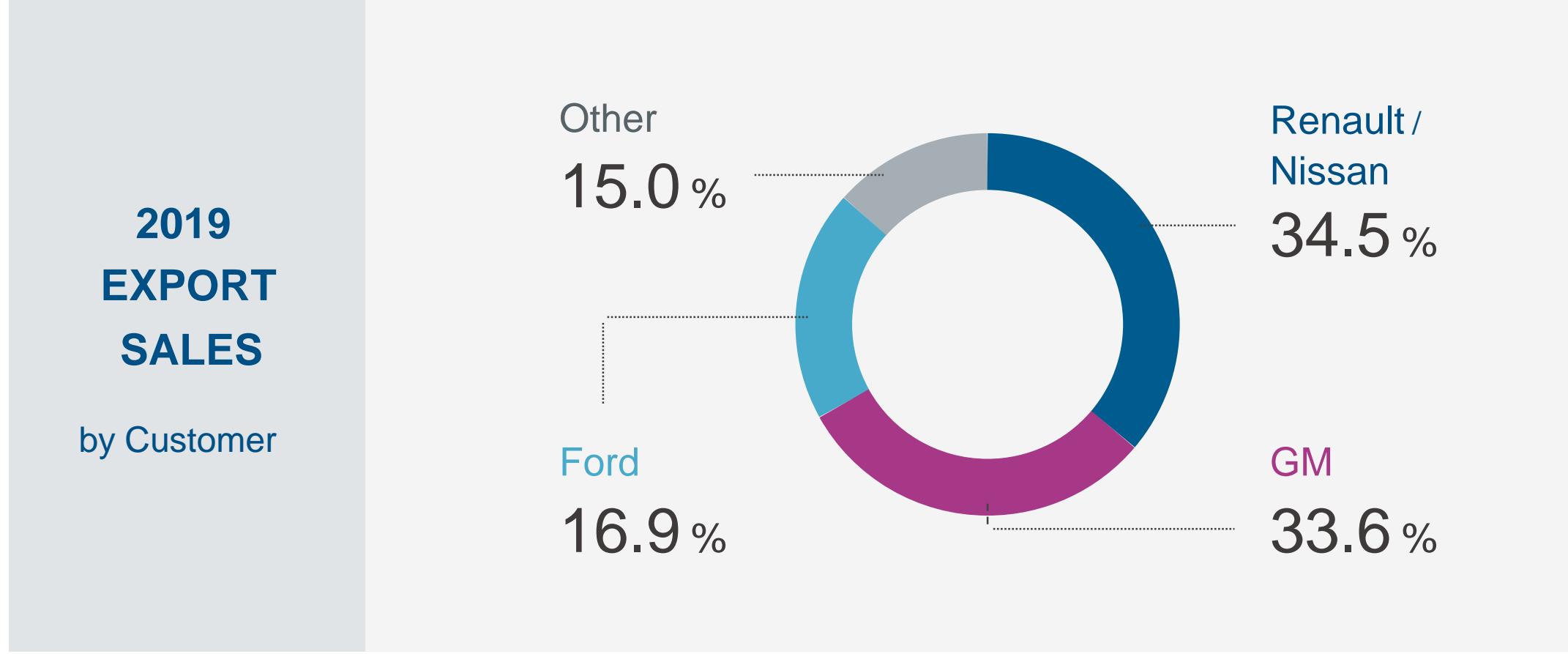
Sales Growth

■ HQ ■ WONSAN ■ ETC

UNIT : Mil. USD



Sales Analysis



02



BUSINESS INTRODUCTION

Business Area

Casting Process_ESDC

Casting Process_LPDC

Casting Process_GDC

Machining Process_Machining Line

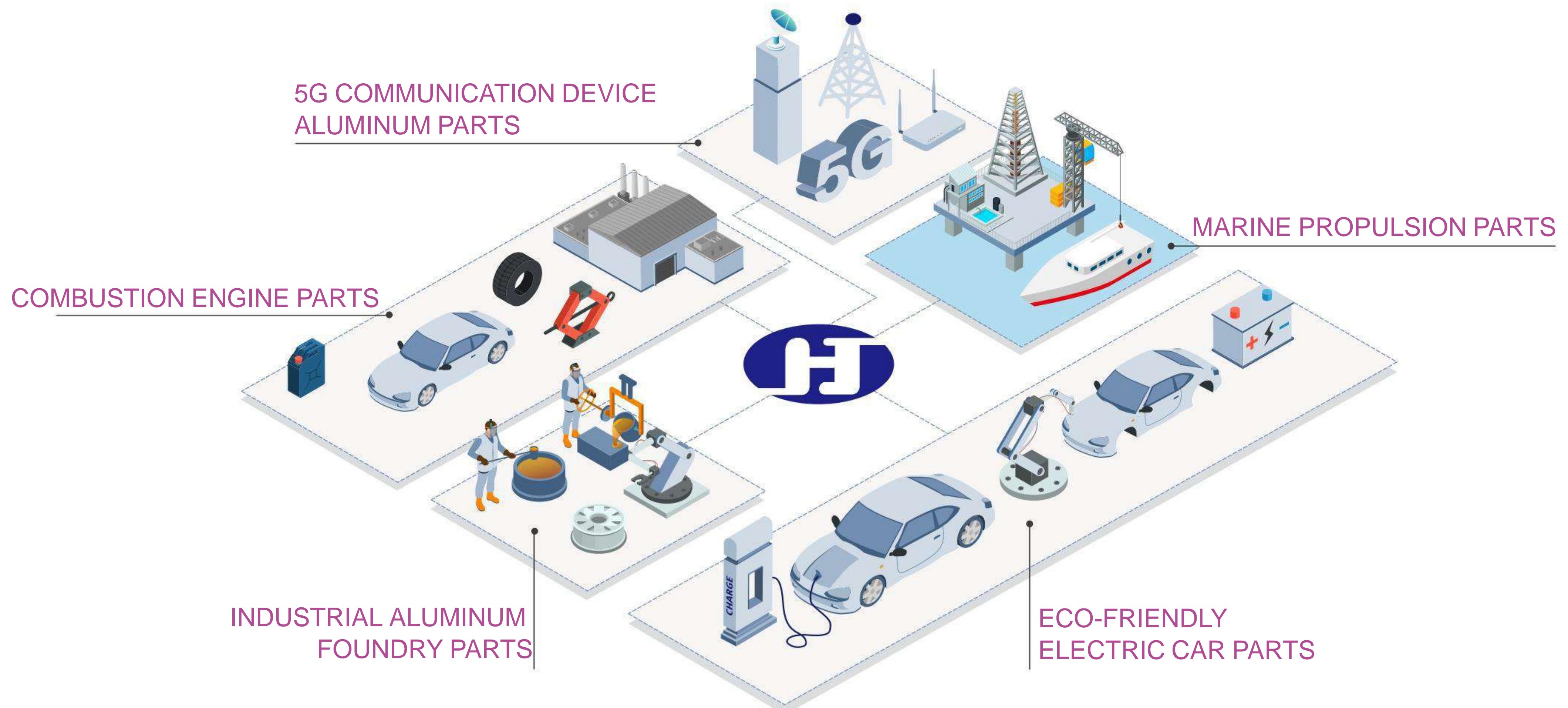
Products for_Engine Part Components

Products for_Chassis Part Components

Products for_EV Part Components

Products for_Marine Boat Part Components

Business Area



ESDC

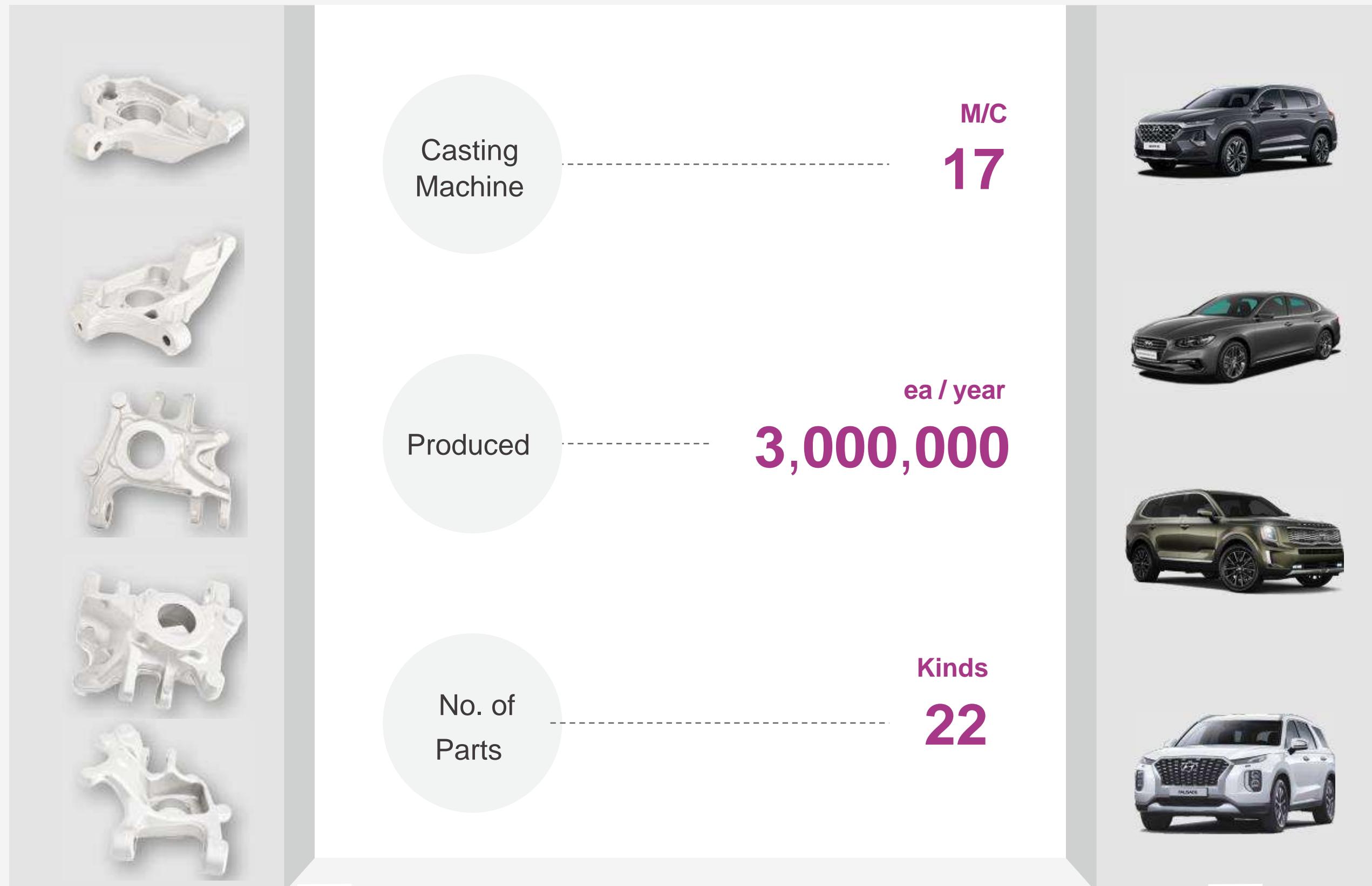
Electro - Magnetic Stirring Die Casting

Knuckle & Carrier

The knuckle and carrier are very important safety components that make up the vehicle, connecting the frame to the axle to hold up the vehicle's load, to absorb vibration from wheels, and steering

We apply high magnetic power to A356 aluminum alloy materials to produce high-strength, high-ductility AL parts.

This fine grain and minimized Si segregation micro-structure AL parts is being provided global customers.



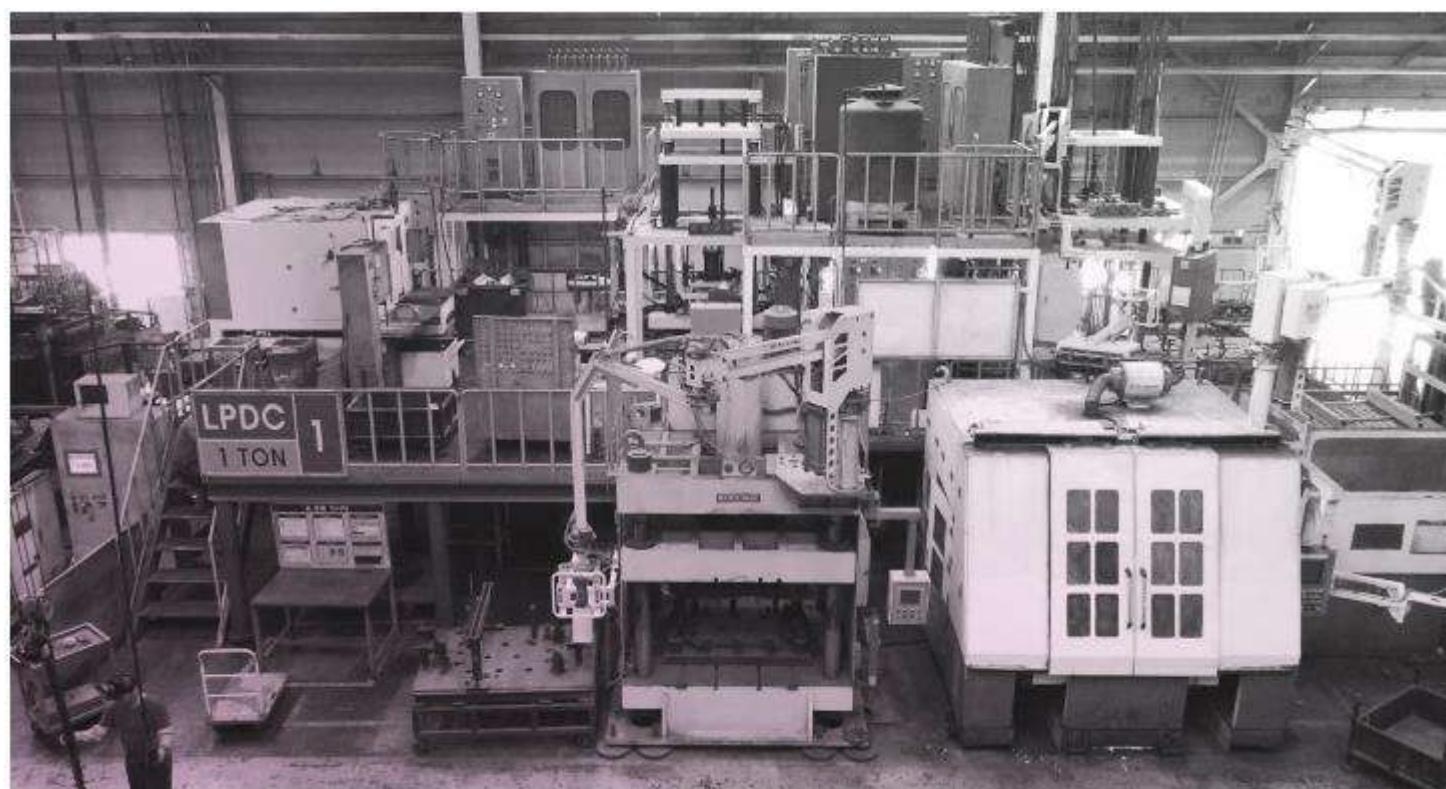
LPDC

Low Pressure Die Casting

Battery Case, EV Housing, Subframe, Control Arm, knuckle

The battery case, which is being extended to apply electric vehicles. It's not only requires high durability when it assemble to the vehicle, but it also isolates and protects the battery pack from external hazards that may occur while driving.

We manufacture battery cases, EV housing, sub-frame, swivel bracket, and low pressure knuckle that using AL large-scale low-pressure casting technology to provide global customers.



Casting
Machine

M/C
22

Produced

ea / year
1,000,000

Maximum
Size

mm
1300 x 800



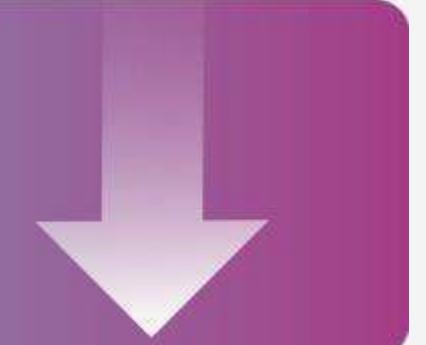
Weight



Perfomance



Cost



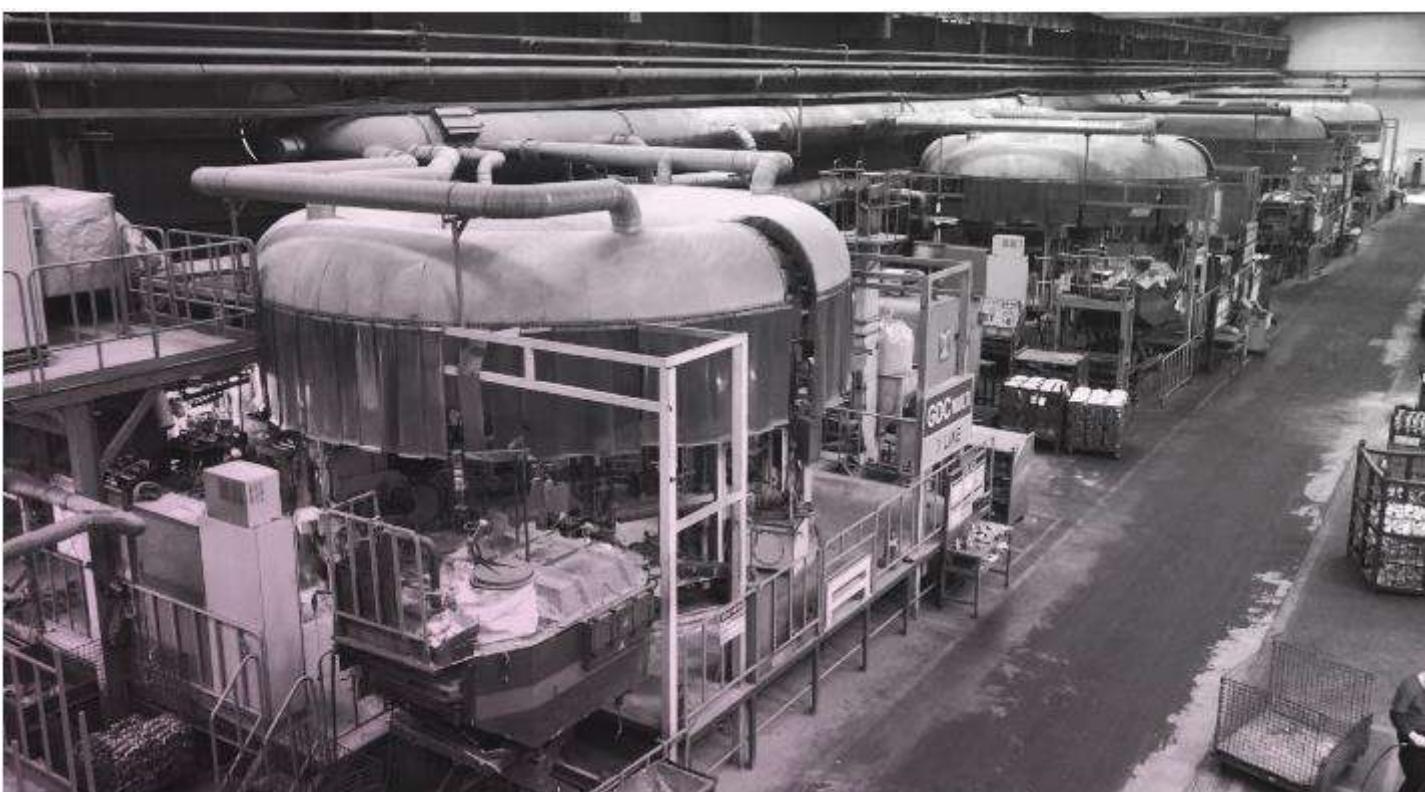
GDC

Gravity Die Casting

Intake Manifold, Water & Oil pump, Compressor/ EGR Housing

More than 3,000 types of parts, including housing, pipes, tubes, etc. which required for fuel/ intake & exhaust /cooler etc.

We manufacture low-cost, high-productivity, high-quality products to provide global customer through innovative gravity casting method development such as multi-gravity casting lines.

Single GDC
MachineMulti GDC
Machine

Produced

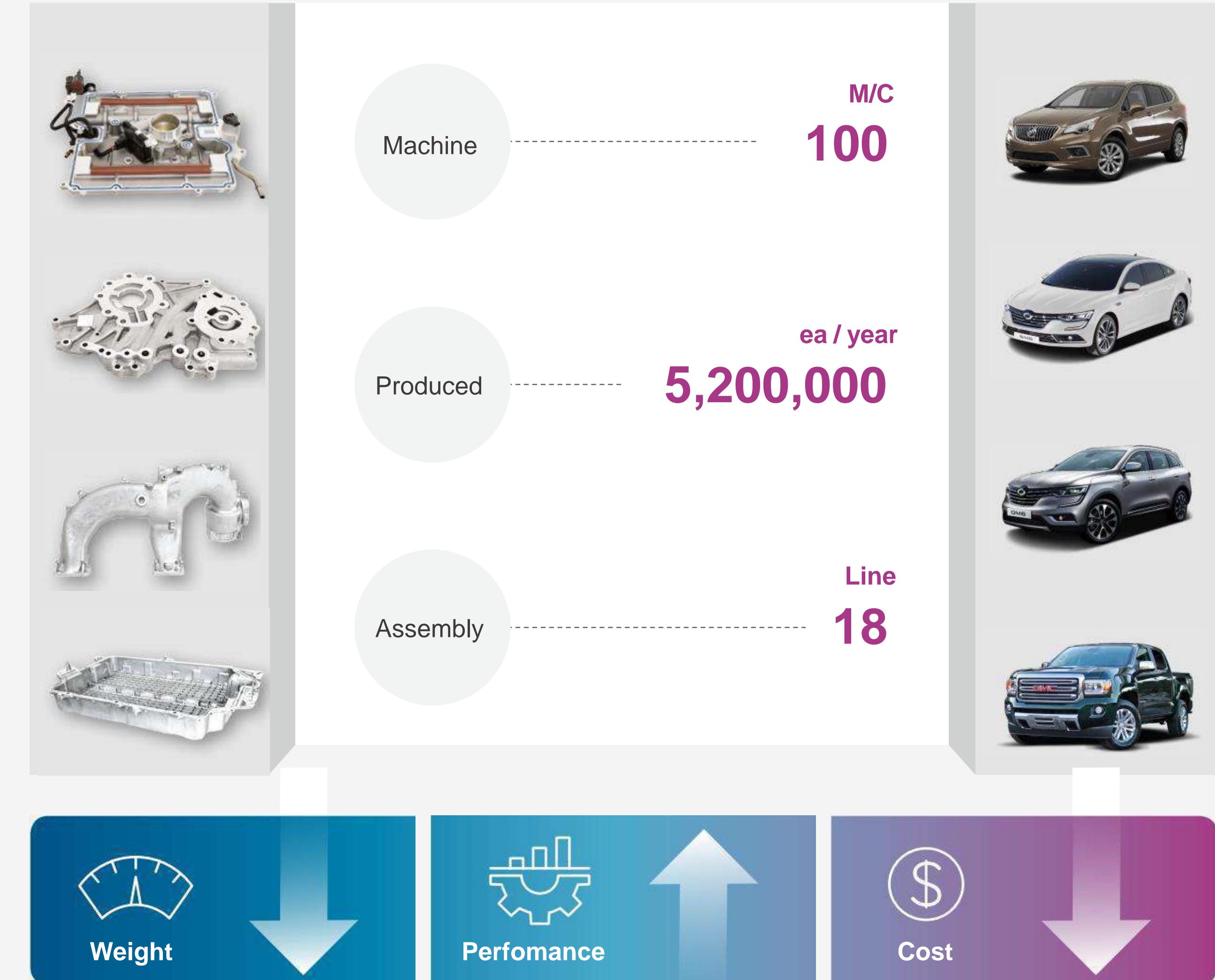
M/C
6M/C
16ea / year
2,100,000

Machining Line

Tapping Center, Machining Center, CNC Lathe

From small to large components, precision machining is performed to meet the customer requirements including leak test and function inspection.

Based on AL precision processing technology, our company builds ONE-STOP processes from raw materials, casting, machining, Inspection and shipment to provide our products with global customers.



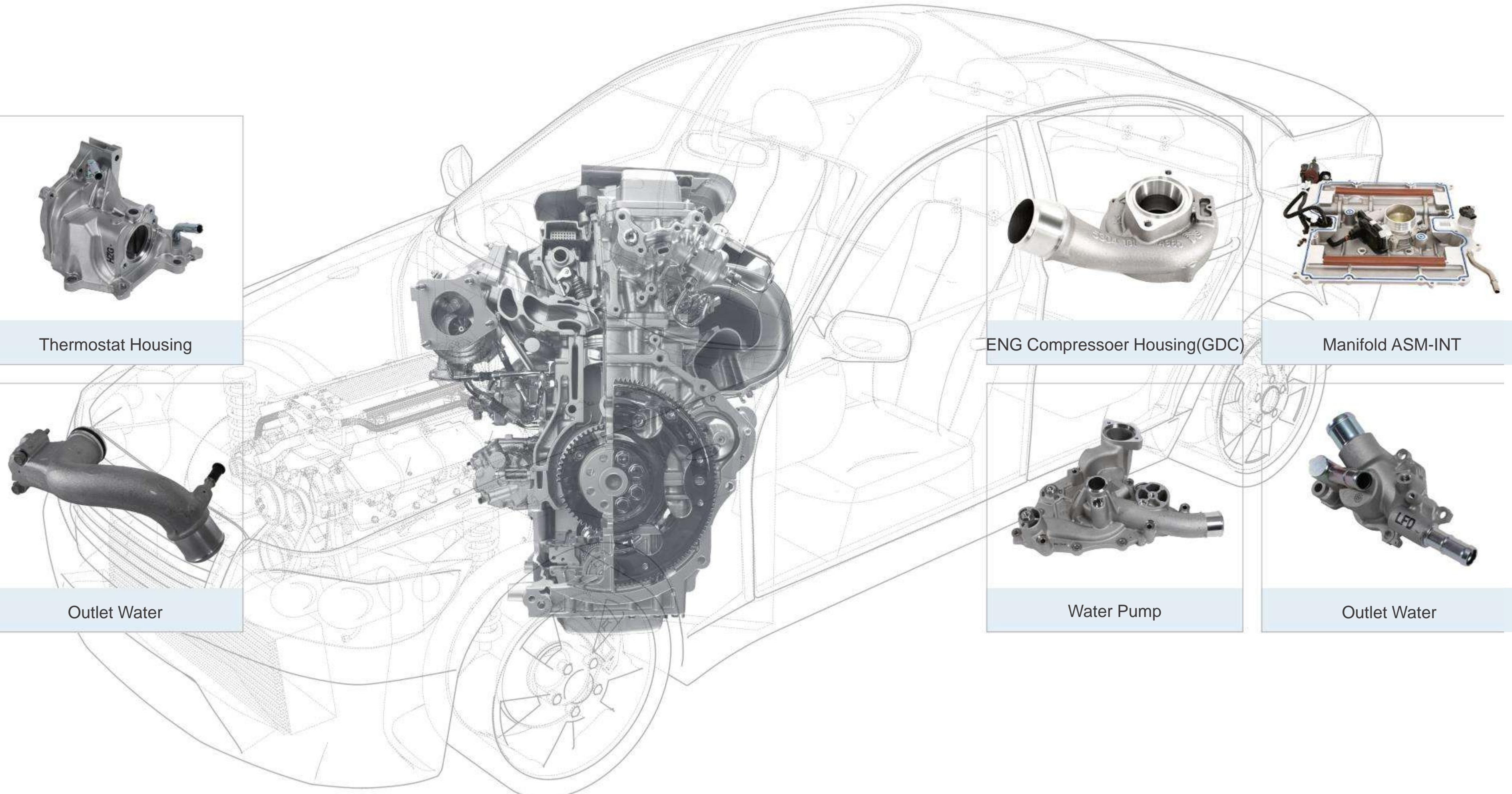
Business-1 Engine Components



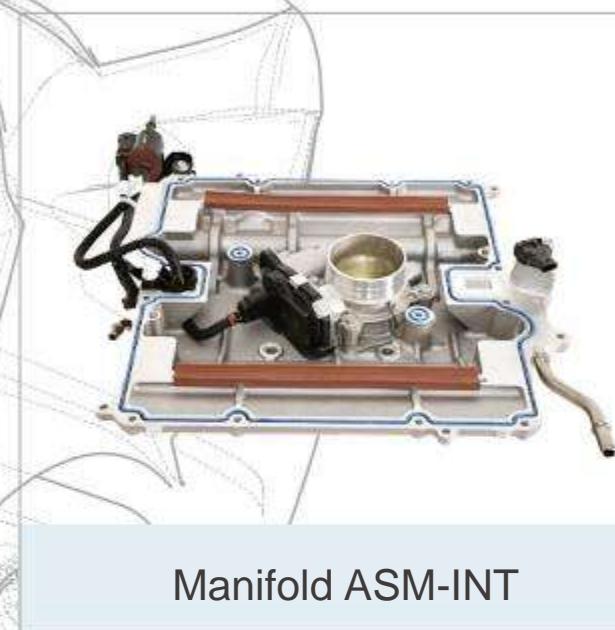
Tran. Oil Pump Cover(GDC)



Thermostat Housing



ENG Compressoer Housing(GDC)



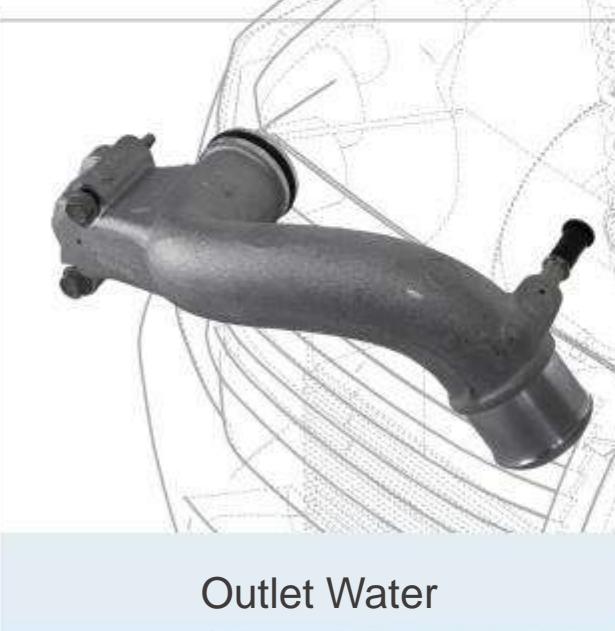
Manifold ASM-INT



Water Pump



Dissel - ENG EGR Housing(GDC)

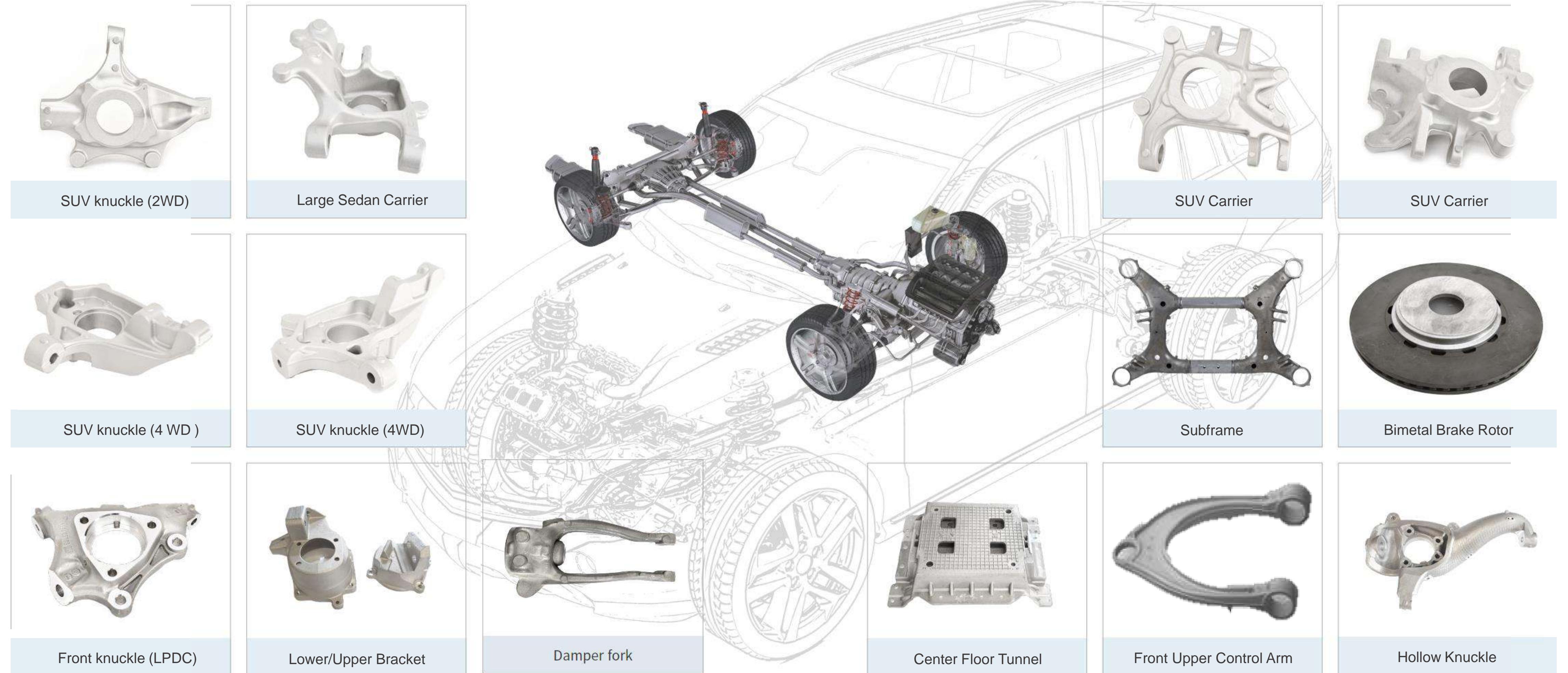


Outlet Water

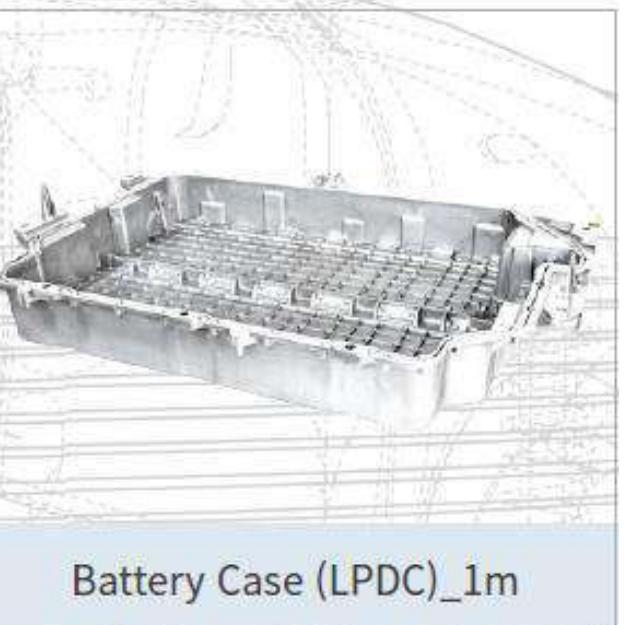
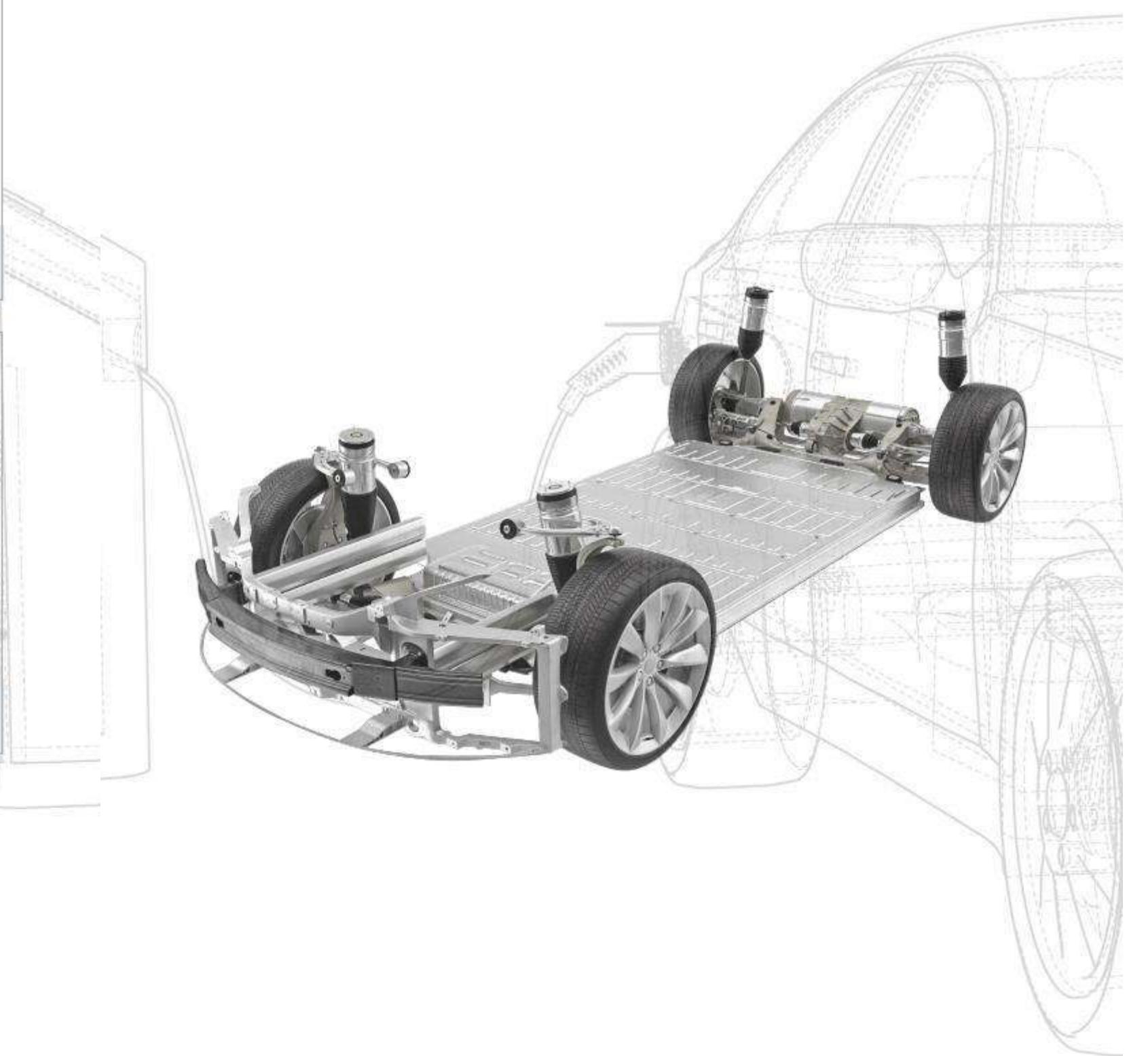


Outlet Water

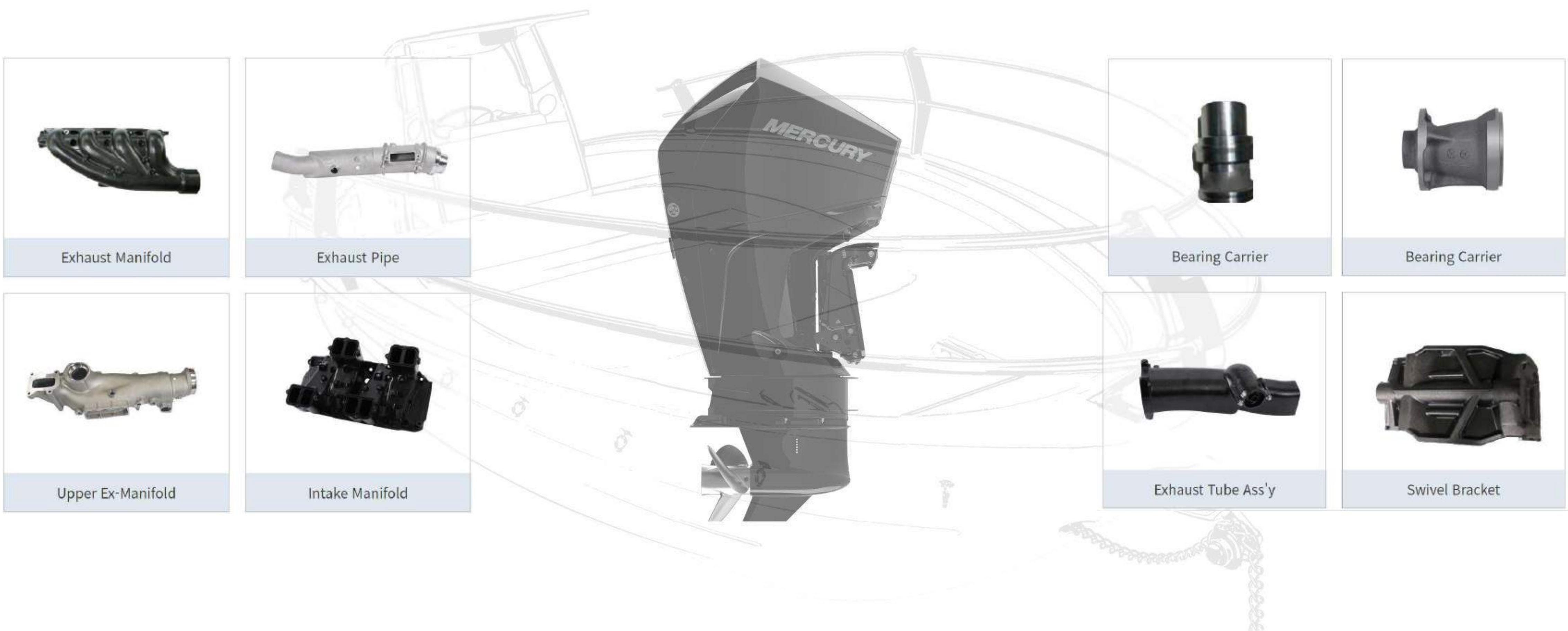
Business-2 Chassis Components



Business-3 EV Components



Business-4 Marine Boat Components



03



NEW
TECHNOLOGY ·
NEW PRODUCT

New Technology_ESDC

New Technology_Bimetal Brake Rotor

New Product_LPDC

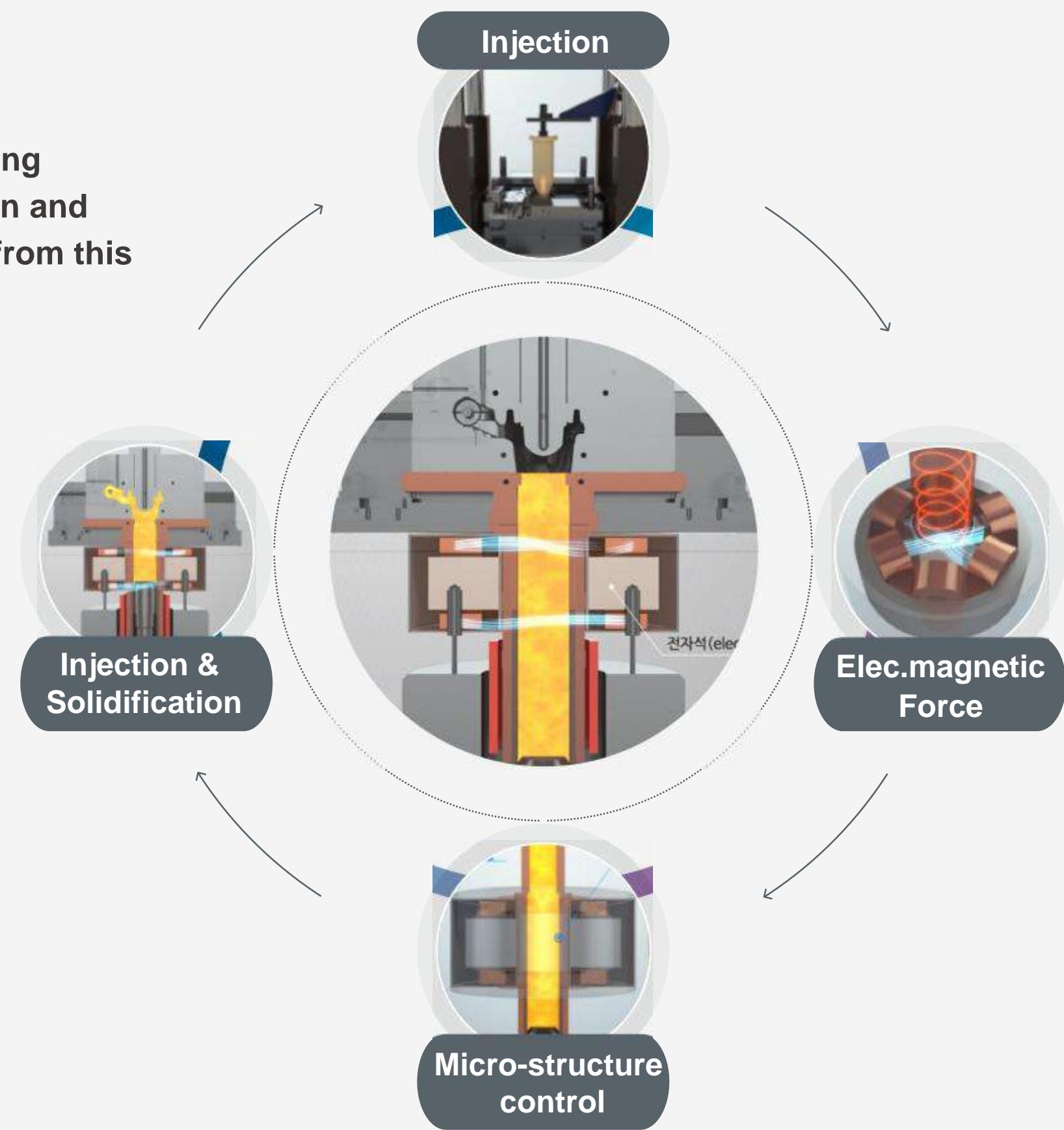
New Product_LPDC

Electro-Magnetic Stirring D.C | ESDC High strength / high ductility AL Knuckle & Carrier

1 PROCESS

Electro-Magnetic Stirring D.C

By using electro-magnetic force during AL injection process, high-strength and high-ductile AL parts manufactured from this casting process.
(Improve mechanical properties)



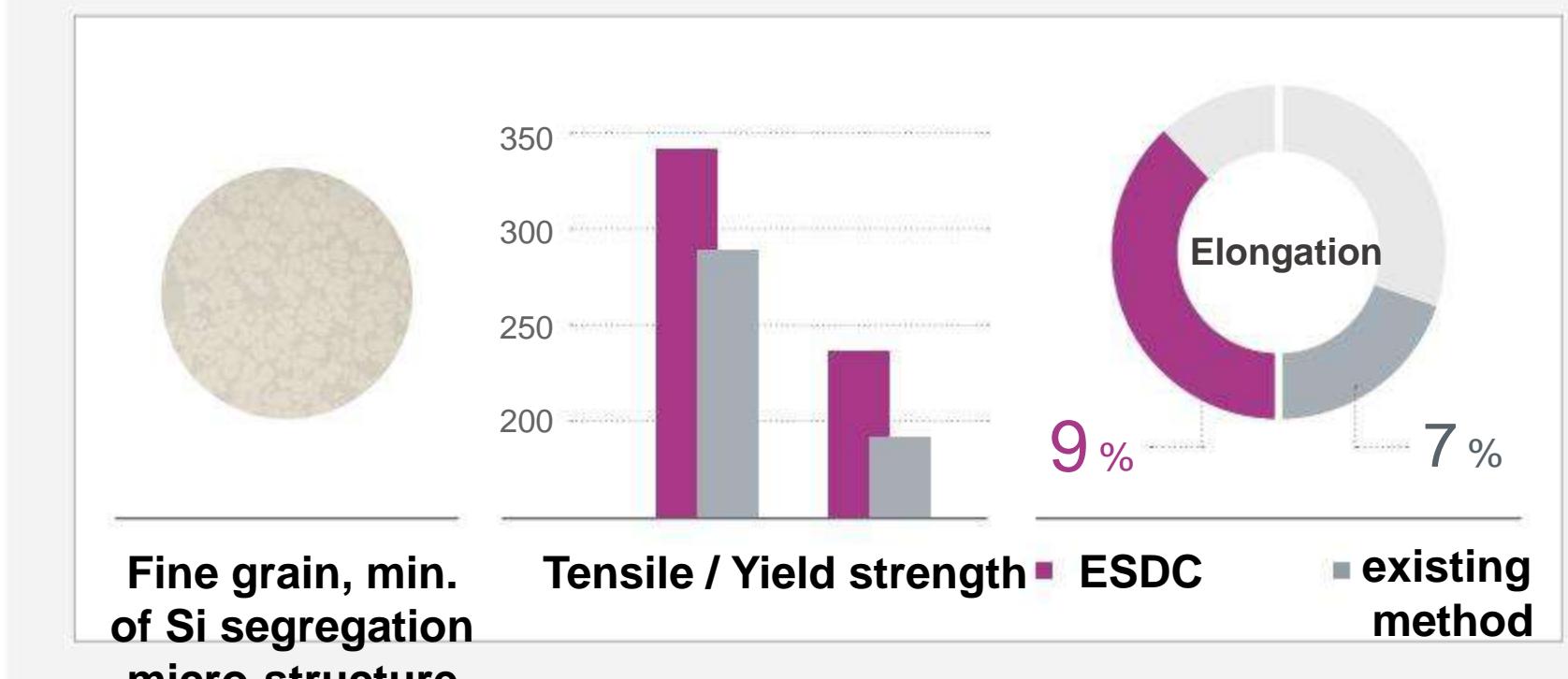
2 PARTS

AL part for Automobiles (Knuckle & Carrier)



3 ADVANTAGE

High strength / high ductility

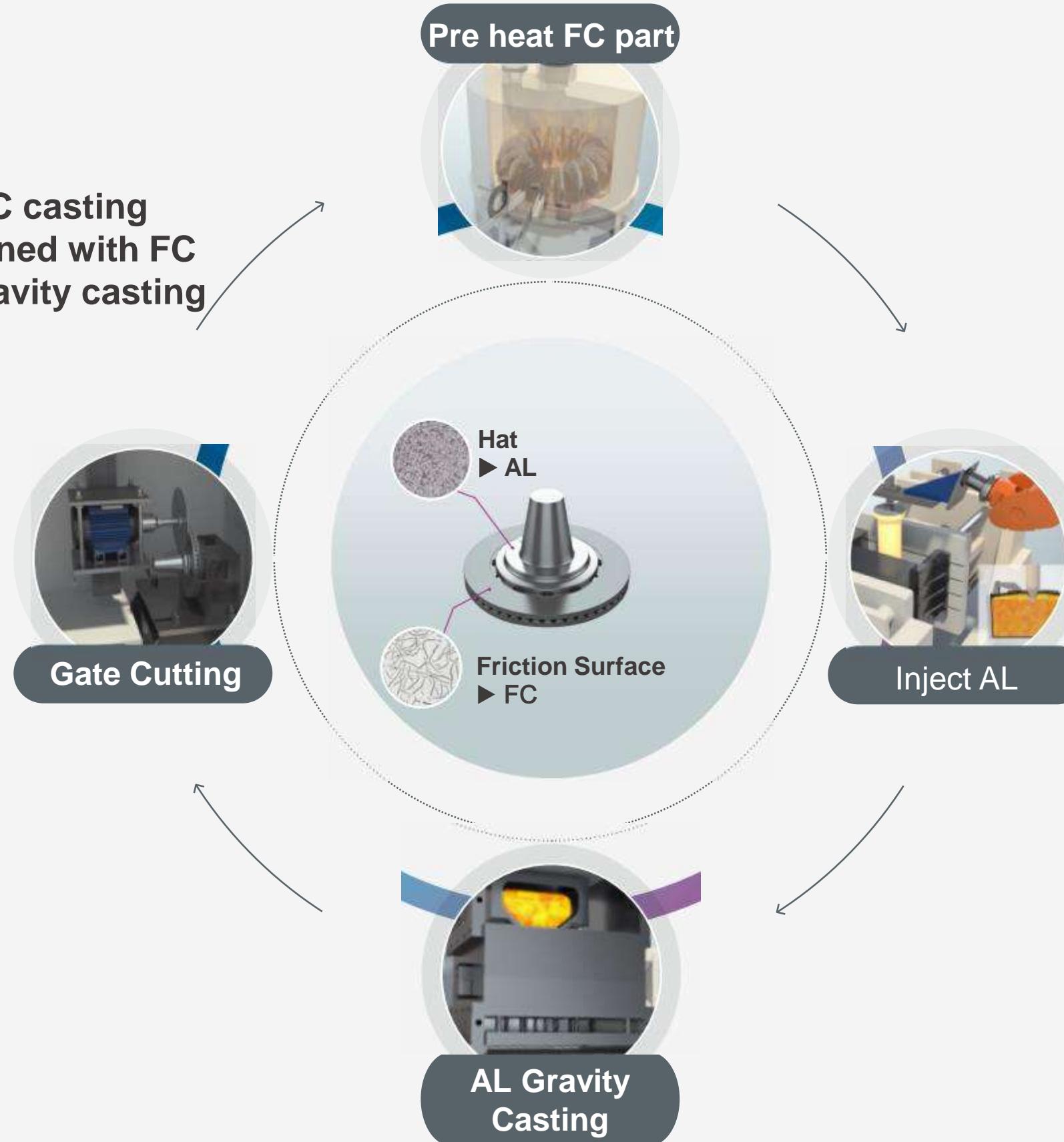
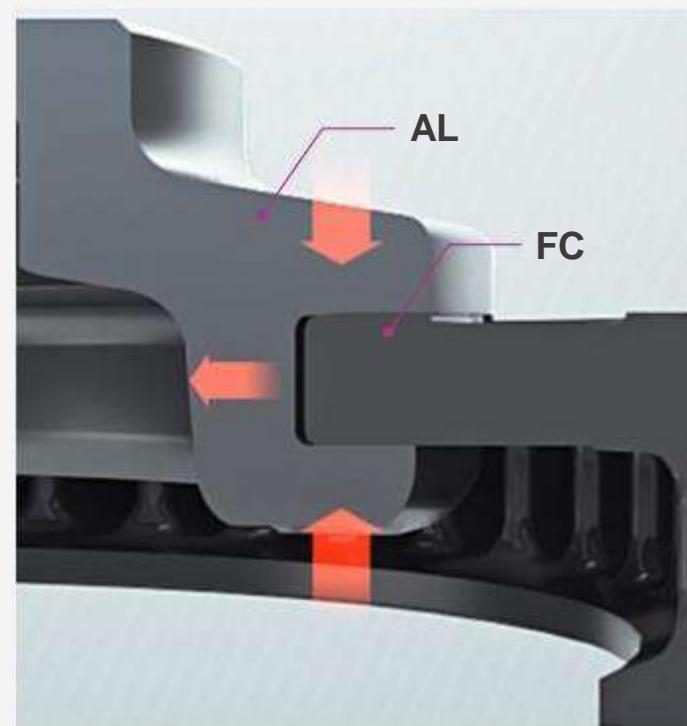


Bimetal Brake Rotor | BI-metal casting process

1 PROCESS

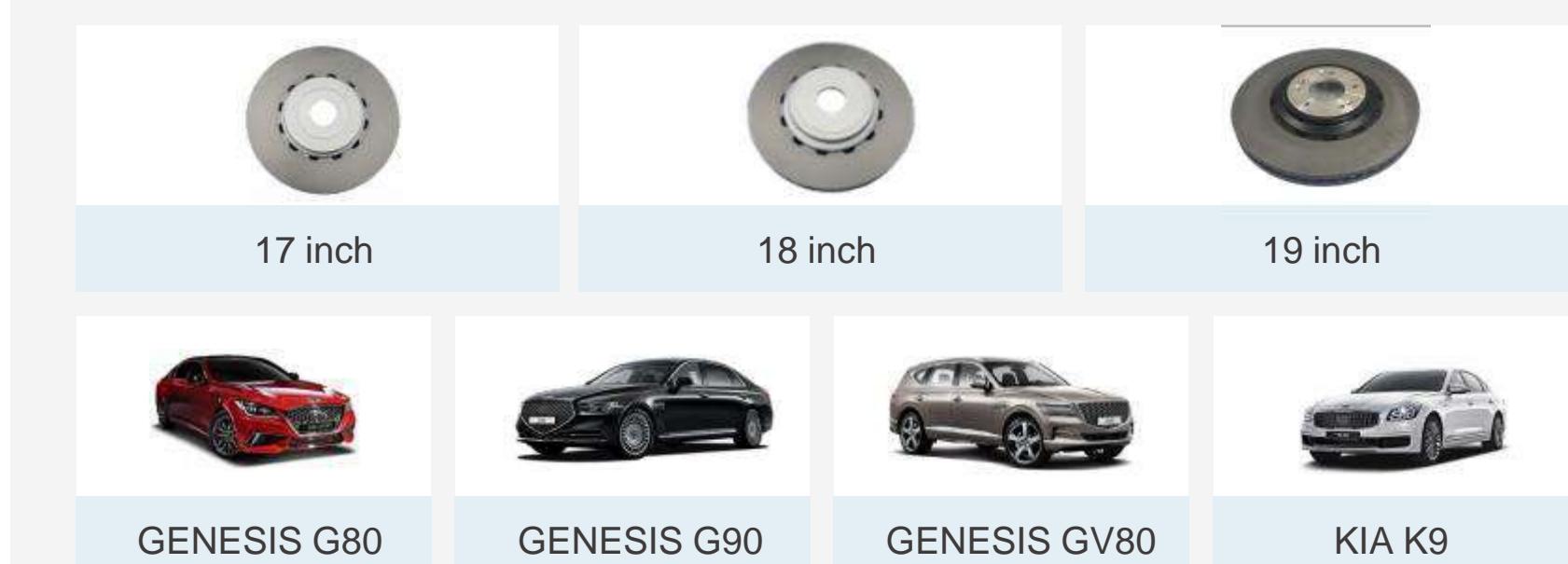
BI-metal casting process

Friction area in Disc is casted by FC casting process. HAT area of Disc is combined with FC casting part in mold to cast with gravity casting method.



2 PARTS

Weight reduction Hybrid Disc for Automobiles



3 ADVANTAGE

Weight reduction (25%)

Improve fuel efficiency

Improve NVH

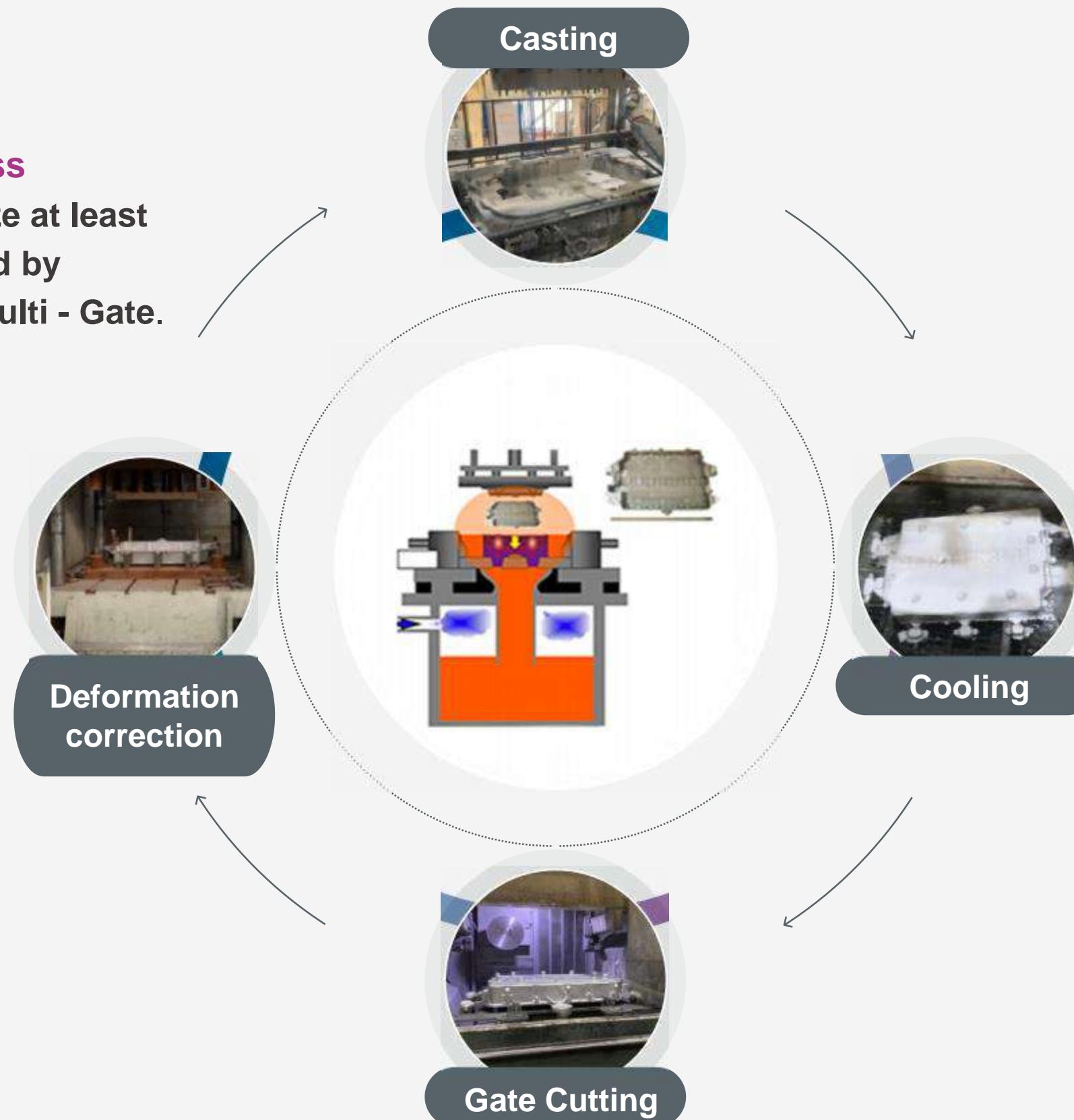
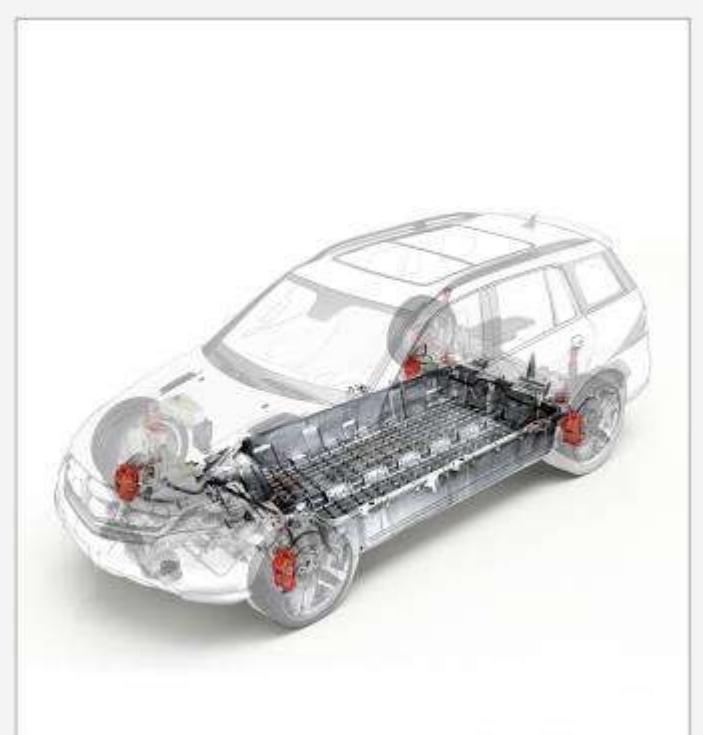
NVH(Noise, Vibration, Harshness)

Large-scale LPDC | Large-scale low pressure casting process

1 PROCESS

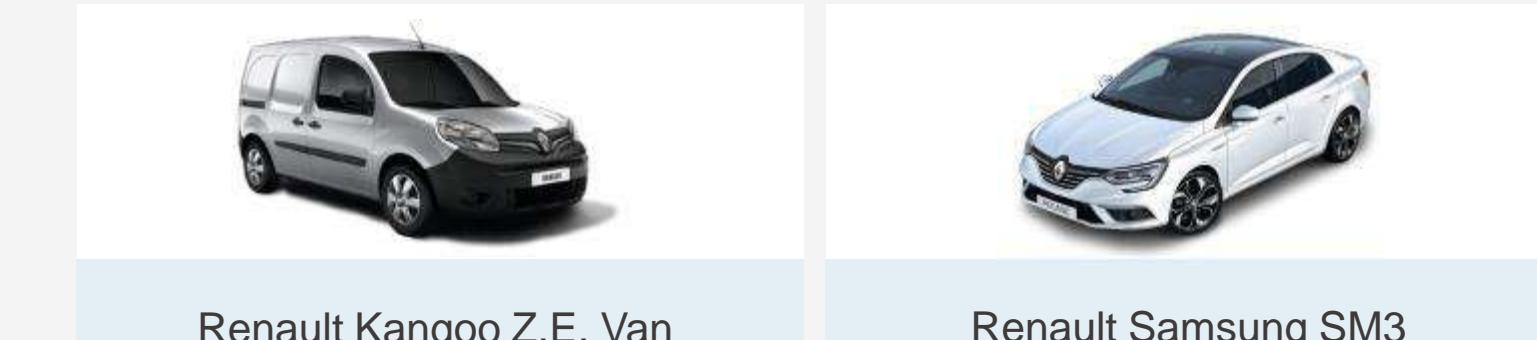
Battery Case manufacturing process

A large aluminum battery casting, size at least 1M in width and length, manufactured by low-pressure casting process with Multi - Gate.



2 PARTS

EV Battery Case



3 ADVANTAGE

Component Simplification

Weight Reduction

Minimizing welding

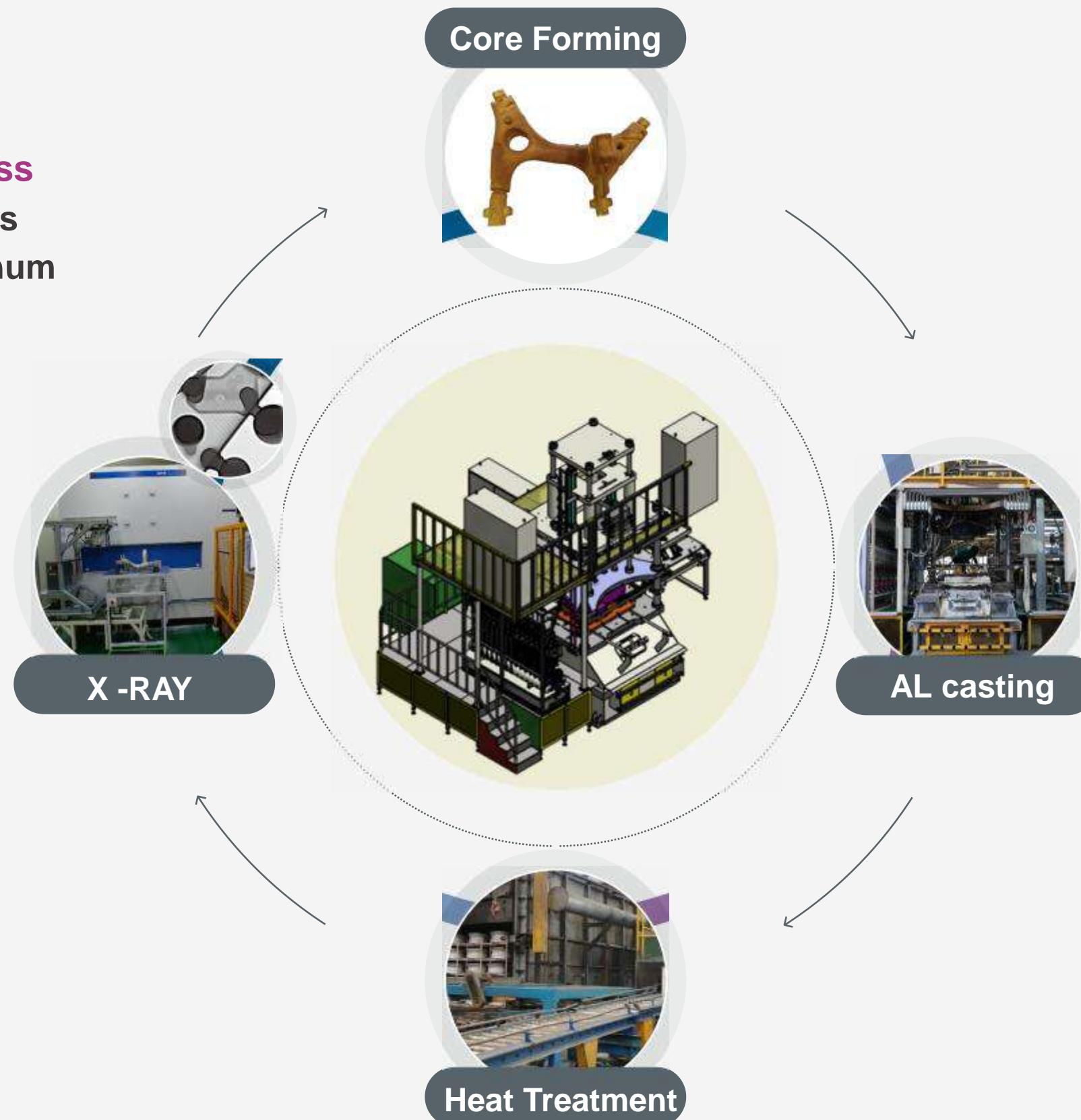
Large-scale Hollow LPDC

Large scale hollow low pressure casting process – Side member

1 PROCESS

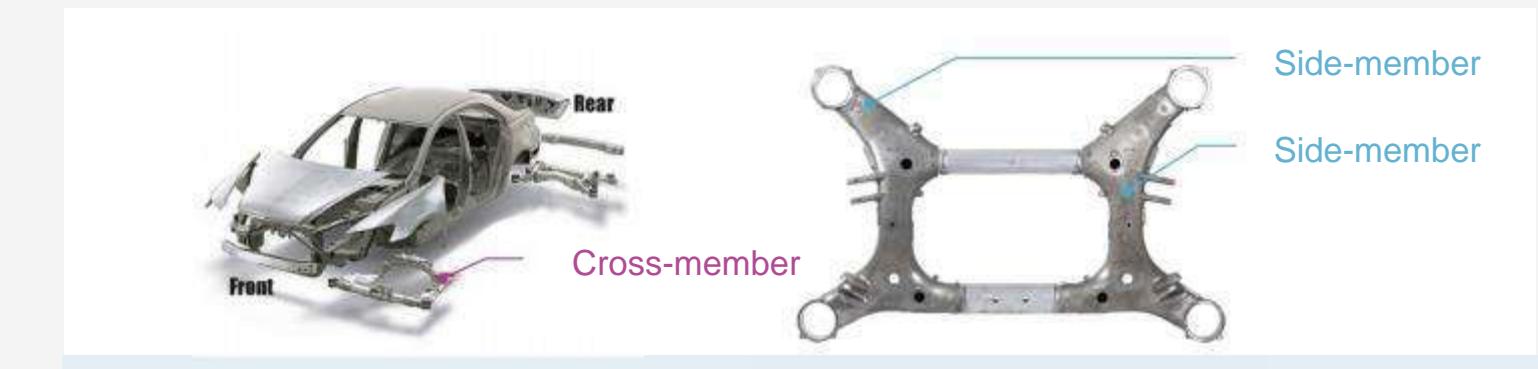
Side-member manufacturing process

A hollow type side-member that forms a ultra-light and high-strength aluminum with low-pressure casting process.



2 PARTS

Cross-member



Welding with extrusion component



3 ADVANTAGE

Component Simplification

Weight Reduction

Improve NVH

04

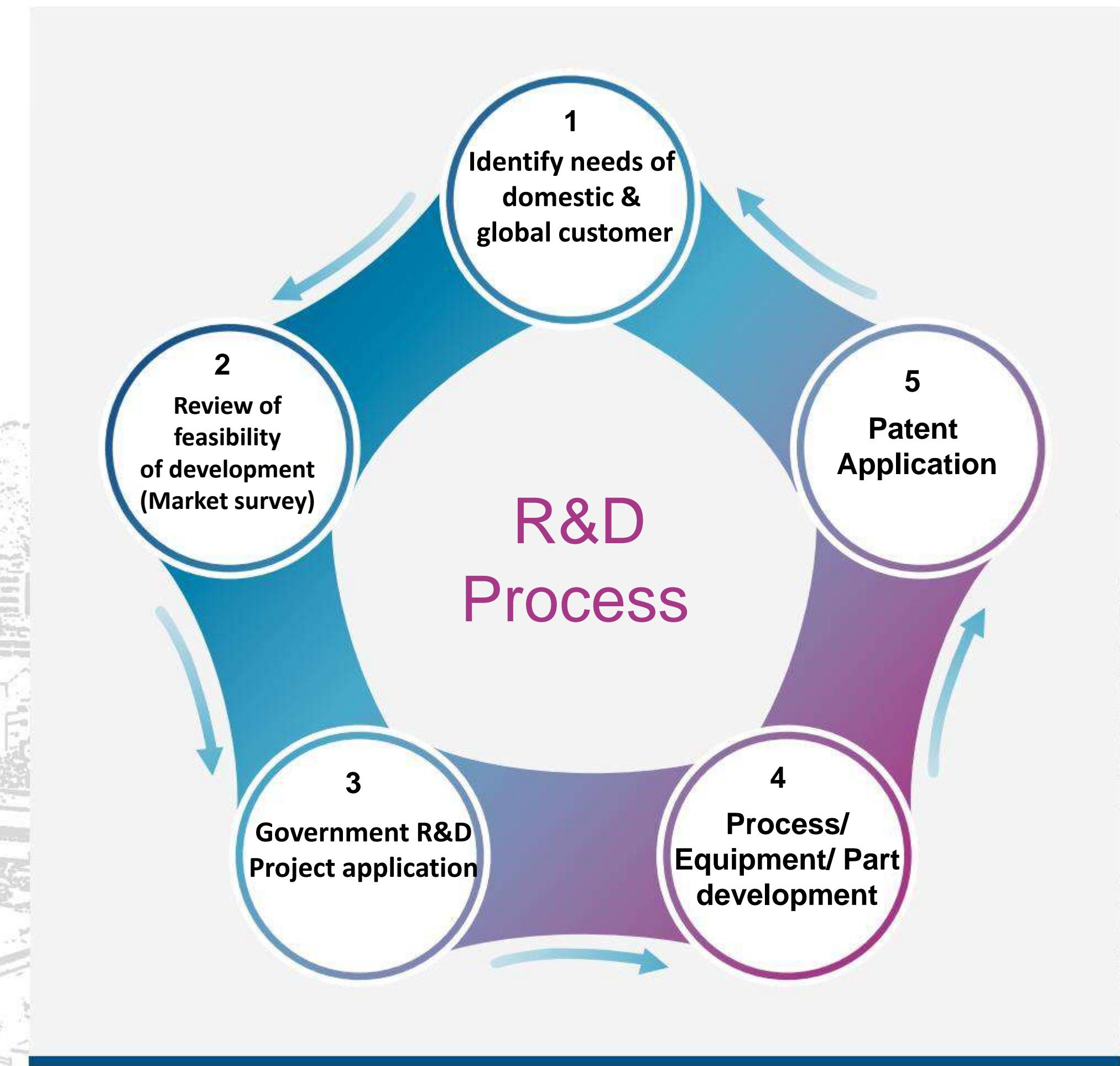
DEVELOPMENT & QUALITY ASSURANCE

Research Development Process

Product Development Process

Quality Assurance Process

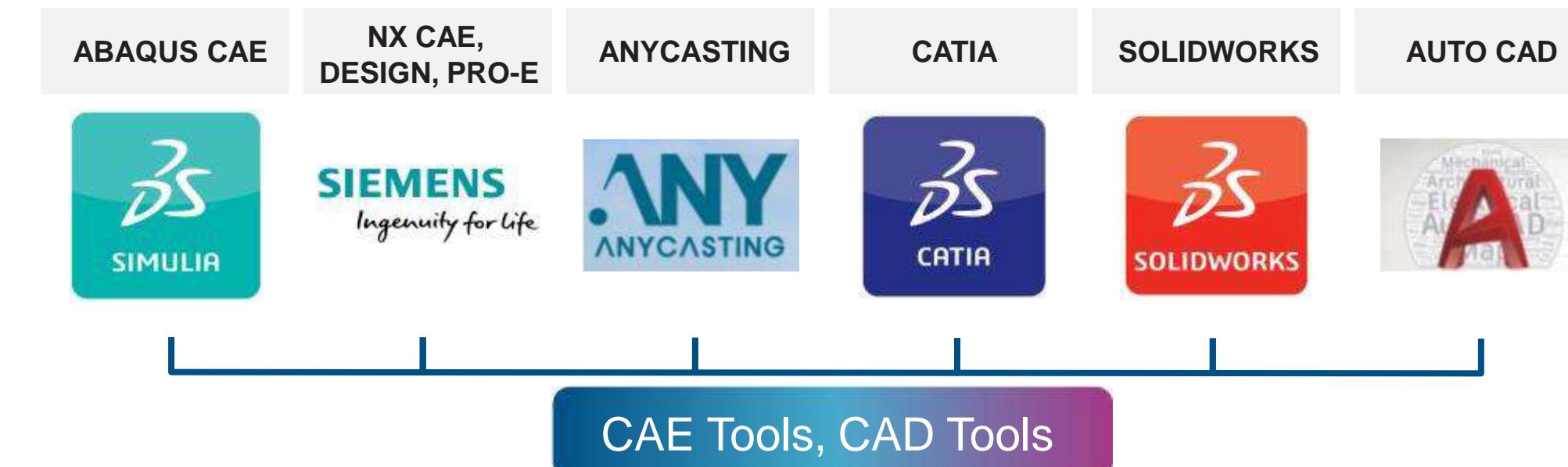
Research Development Process



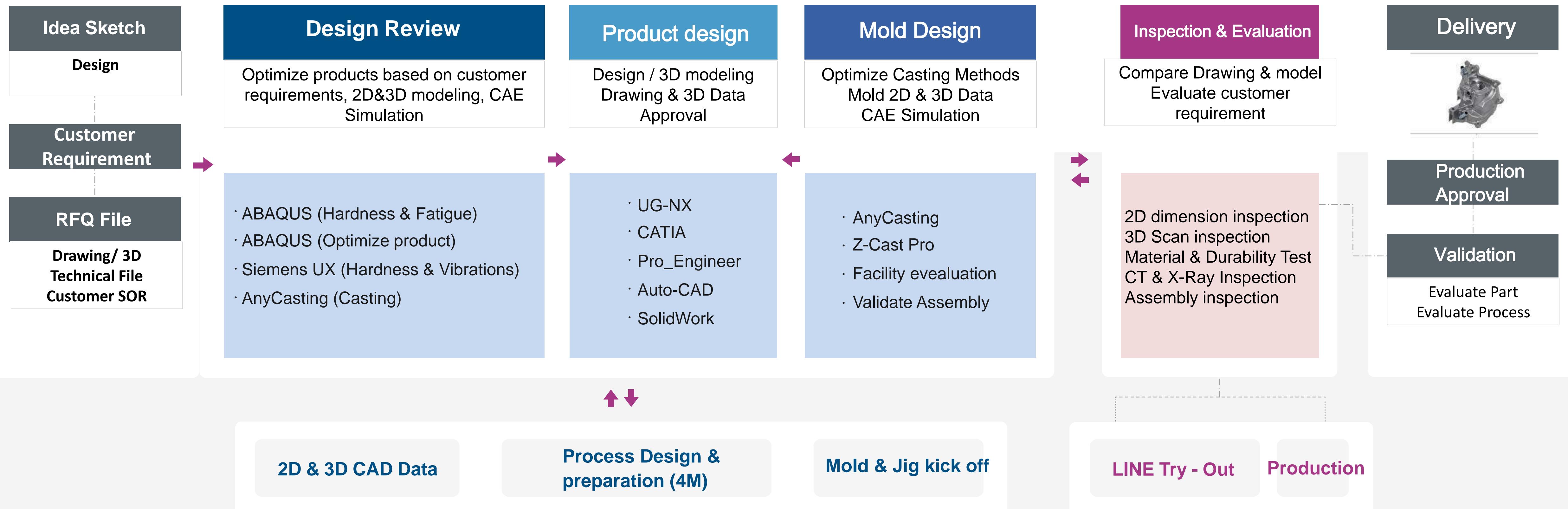
Status of R&D National Project

UNIT : K. USD				
Project Name	Project Period (month)	Development Detail	Project Budget	Achievement
LEAD World Class 300 R&D	2018.JUL~2022.DEC (54)	Development of Electro-Magnetic Stirring D.C equipment & Parts	6,063	New Process/ Equipment/ Parts
Part. Development of Core Technology in Machinery Industry	2020.MAR~2022.DEC (34)	Localization of Counter Pressure D.C equipment	3,482	New Equipment
Part. Technology Innovation Development	2020.APR~2022.MAR (24)	Development of Large-scale Low Pressure D.C equipment	681	New Equipment
LEAD Technology Development Project for Metropolitan Cooperation Area	2020.APR~2020.OCT (7)	Digitization of ESDC Cooling channel	20	New Technology
LEAD Customized Production Technology Support Project	2020.MAY~2020.OCT (6)	Development of High Efficiency Long-lived Titanium Sleeve	27	New Technology
LEAD Automotive Parts Enterprise Re-Provisions	2020.JUN~2021.MAY (12)	Development of hollow knuckle with NanoZnO materials	618	New Material / Parts
LEAD Business Support Project for Industrial Crisis Areas	2020.JUN~2020.DEC (7)	Development of Knuckle with Low Pressure D.C process	63	New Parts
LEAD Regional Vitality Project	2020.JUL~2021.FEB (8)	Development of Metal 3D equal cooling insert mold (Generator Housing)	122	New Technology
Part. Material Component Technology Development Project	2020.APR~2022.DEC (32)	Development one-piece Sub Frame	2,191	New Parts
TOTAL			13,270	

Product Development Process



Measurement Tools



Quality Assurance Process



- Material Property Evaluation
- Incoming Inspection
- Special management of important imported parts INGOT/Sand

- Periodic quality exchange meeting
- Technical support to sub supplier
- Regular system and part audits

- Early Production control System
- GP12
- Z-Quality Control Activity
- Inspector incentive

Material & Sub part mgmt.

Sub supplier mgmt

Warranty mgmt

Production process control

Part evaluation & warranty mgmt

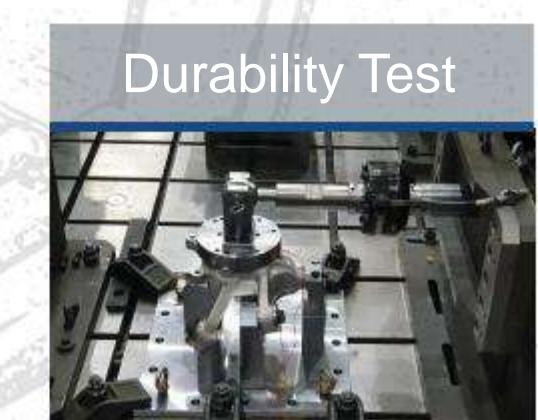
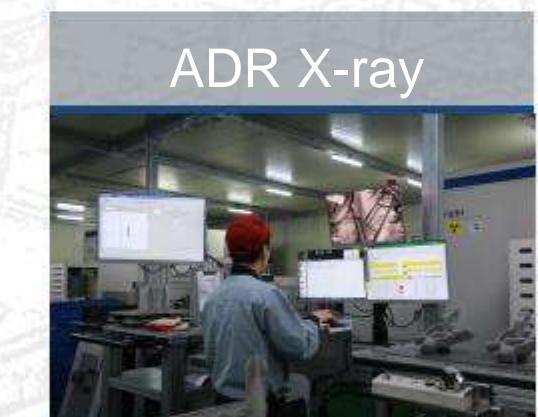
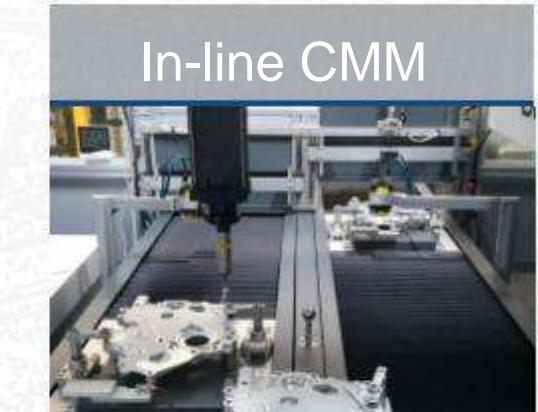
Part durability test mgmt

Achieve Customer satisfaction
Zero ppm

- MES Data Management System
- Frequent inspection / Process inspection
- In-line Auto dimension inspection
- BARCODE Production record system

- CMM dimension inspection
- ADR X-RAY inspection
- CT analysis (Internal defect)
- 3D Scan (Part Shape)

- Impact Test
- Fatigue Test
- Durability Test from external test agencies



ISO & IATF

05



CERTIFICATION & PATENT

ISO & IATF

Customer Audit

Patent & Company Certification

Award Certification

ISO & IATF

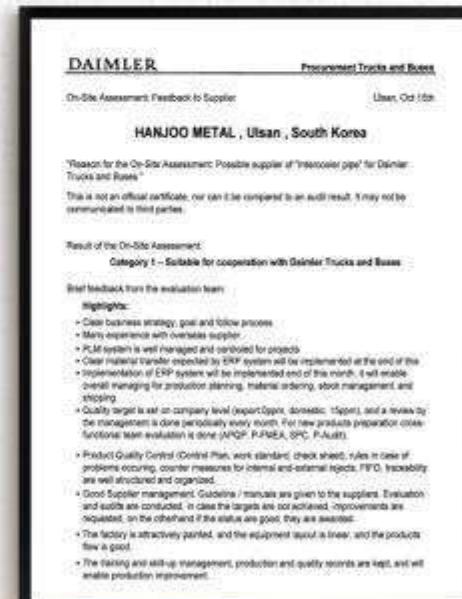
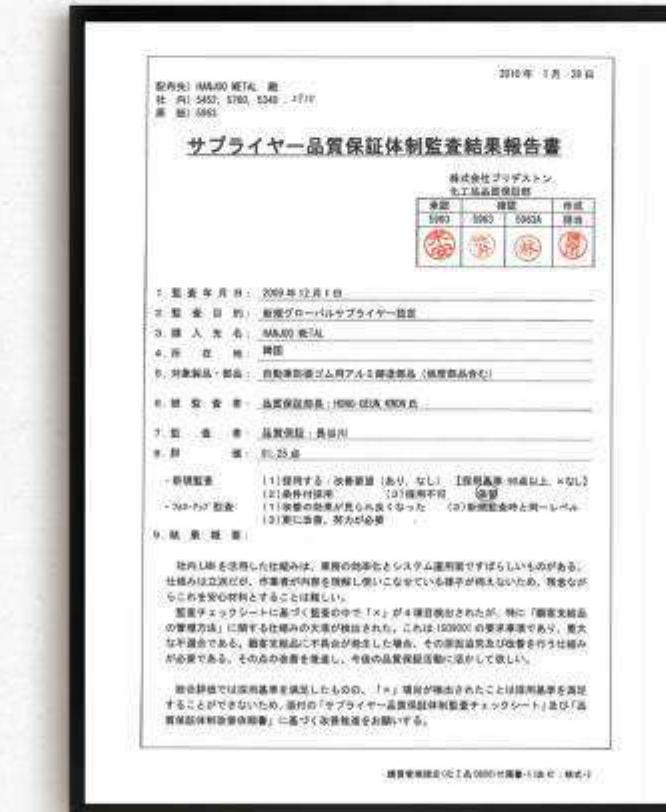
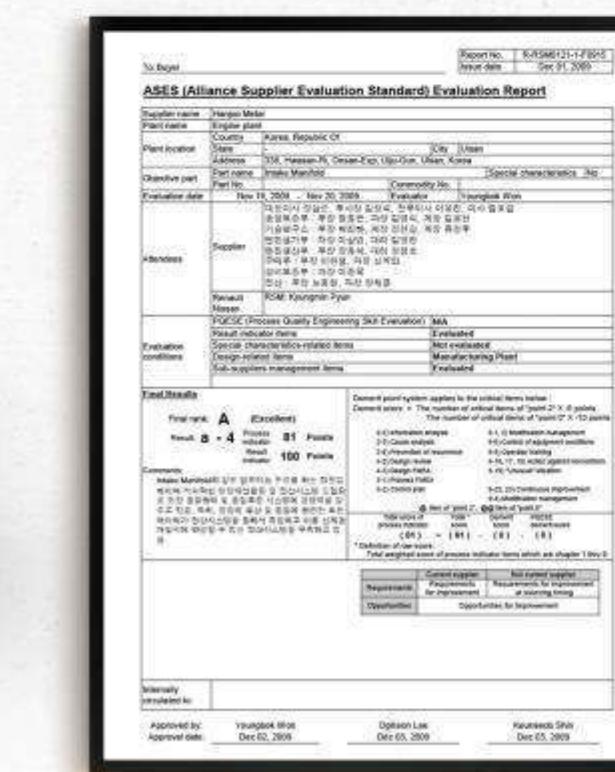
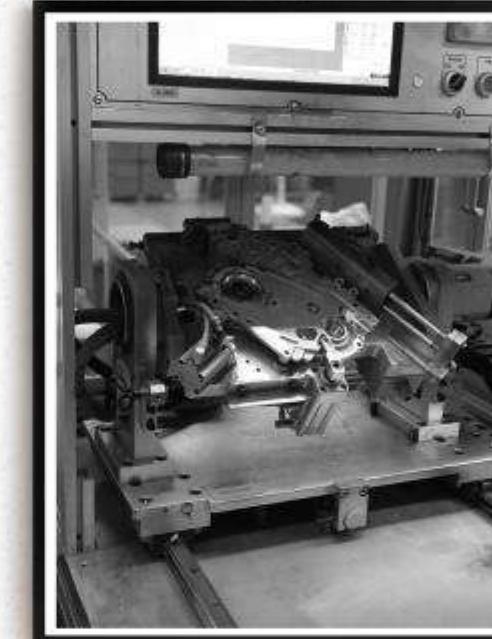
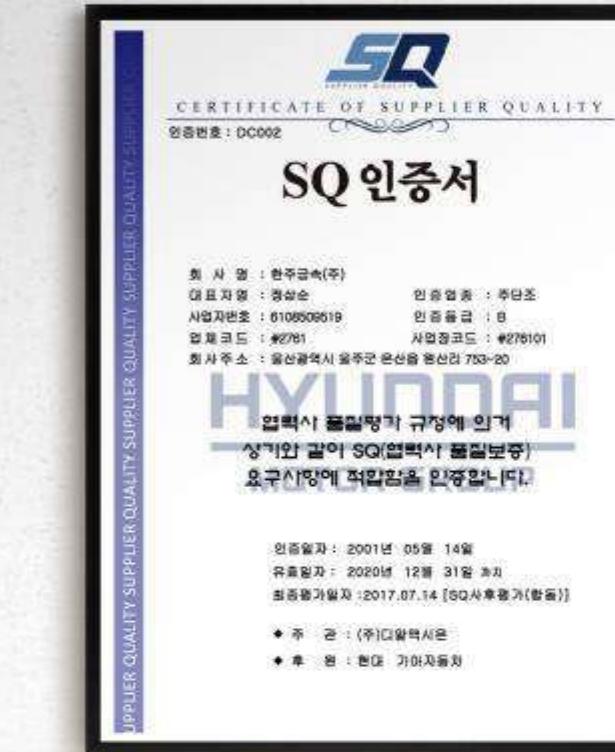
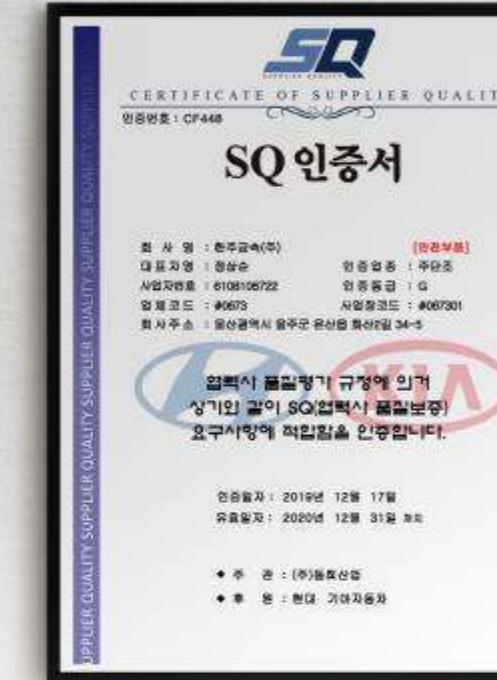
- ISO 9001 : 2015 (HQ PLANT)
알루미늄 휠, 다이캐스팅 부품 생산 (2015.09.09)
- ISO 9001 : 2015 (WONSAN PLANT)
모터보트 및 알루미늄 다이캐스팅 부품 생산 (2015.09.09)
- IATF 16949 : 2016 (HQ PLANT)
알루미늄 휠, 다이캐스팅 부품 생산 (2018.08.20)
- IATF 16949 : 2016 (WONSAN PLANT)
알루미늄 다이캐스팅 부품 생산 (2018.09.04)
- ISO 14001 : 2015
알루미늄 휠, 자동차 / 모터보트 다이캐스팅 부품 (2015.08.31)

Hanjoo Metal Co., Ltd. secures internal and external reliability by handling systematic manuals in corporate operation and customer response, Product productivity and quality are maintained at the highest level.



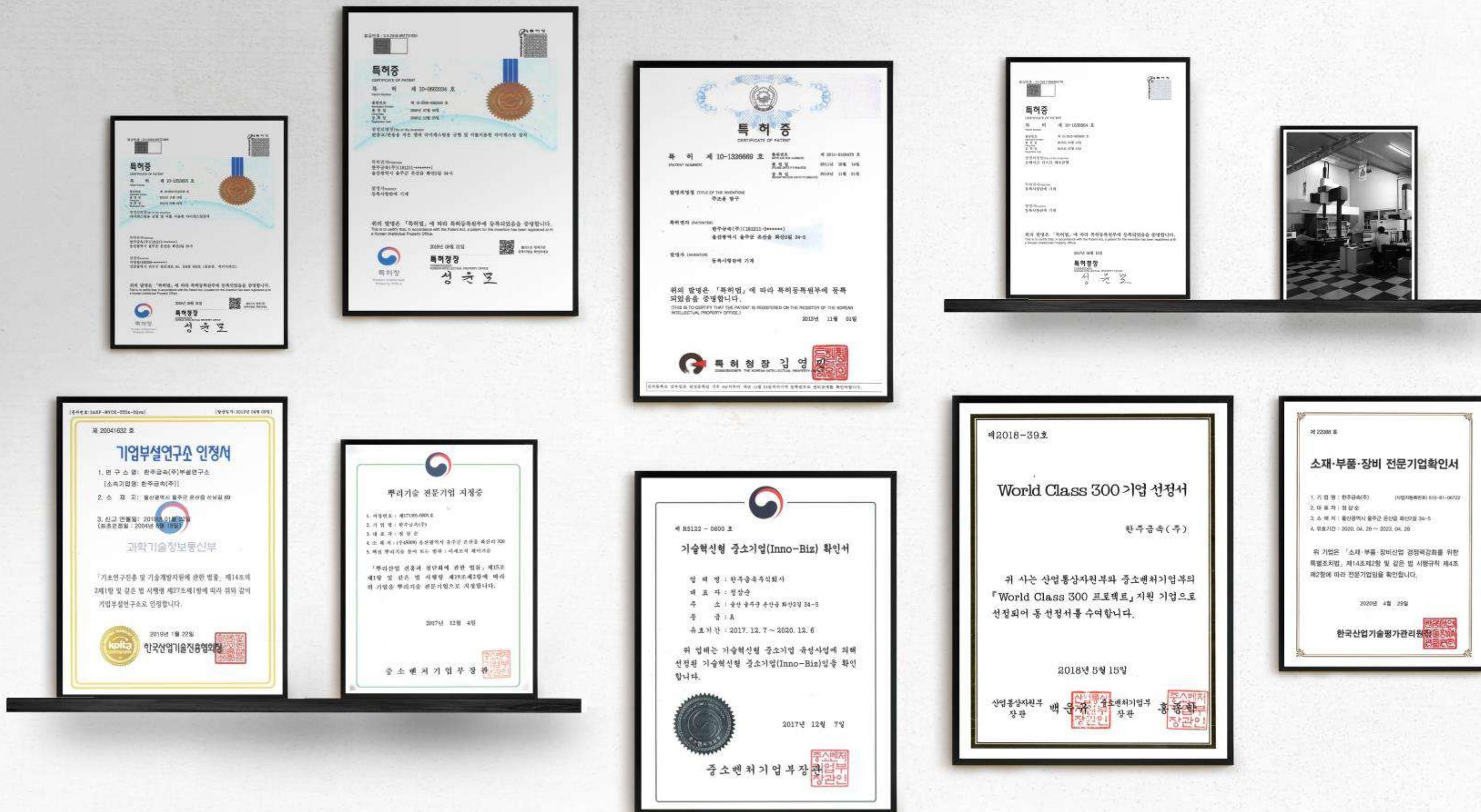
Customer Audit

- HKMC SQ (CASTING) – HQ PLANT
Rank : G (2019.12.17)
- HKMC SQ (CASTING) – WONSAN PLANT
Rank : G (2001.05.14)
- ASES (RSM, Wheel Disc) – HQ PLANT
Rank : B (Satisfactory)
- ASES (RSM, Intake Manifold) – WONSAN PLANT
Rank : A (Excellent)
- Bridgestone
점수 : 91.25 (2010.01.28)
- DAIMLER
Category 1 (2009.10.15)



Patent & Company Certification

- Patent no. 10-1253605
Die casting mold and device
- Patent no. 10-0662034
Low temp casting mold for Semi solid low and device
- Patent no. 10-1326669
- Casting Gate
- Patent no. 10-1539564
- Break disk casting mold
- Cert. of Affiliated research institute Company
no. 20041632 (2004.06.18)
- Selection of Root tech Company
no 171301-0001 (2017.12.04)
- Selection Innovation Company (Inno-Biz)
no. R5122-0600 (A Class)
- World Class 300
no. 2018-39 (2018.05.15)
- Expert on material, component, equipment
no. 22088 (2020.04.29)



Award Certification

- Award US\$ 70 M. Oversea Sales Tower
(2015.12.05)
- Award Steel Tower the Order of Industrial Service Merit
no 2674 (2016.05.12)
- **RENAULT SUPPLIER AWARD**
RENAULT QUALITY MADE
- **DAIMLER**
Plaque of Appreciation (2011)
- Renault Samsung Motors
ASES "A" Rank (2010)
- Renault Samsung Motors
Best Supplier Award (2012)
- **MERCURY**
CONTINUOUS IMPROVEMENT AWARD (2016)
- **GM**
Supplier Quality Excellence Award (2017)



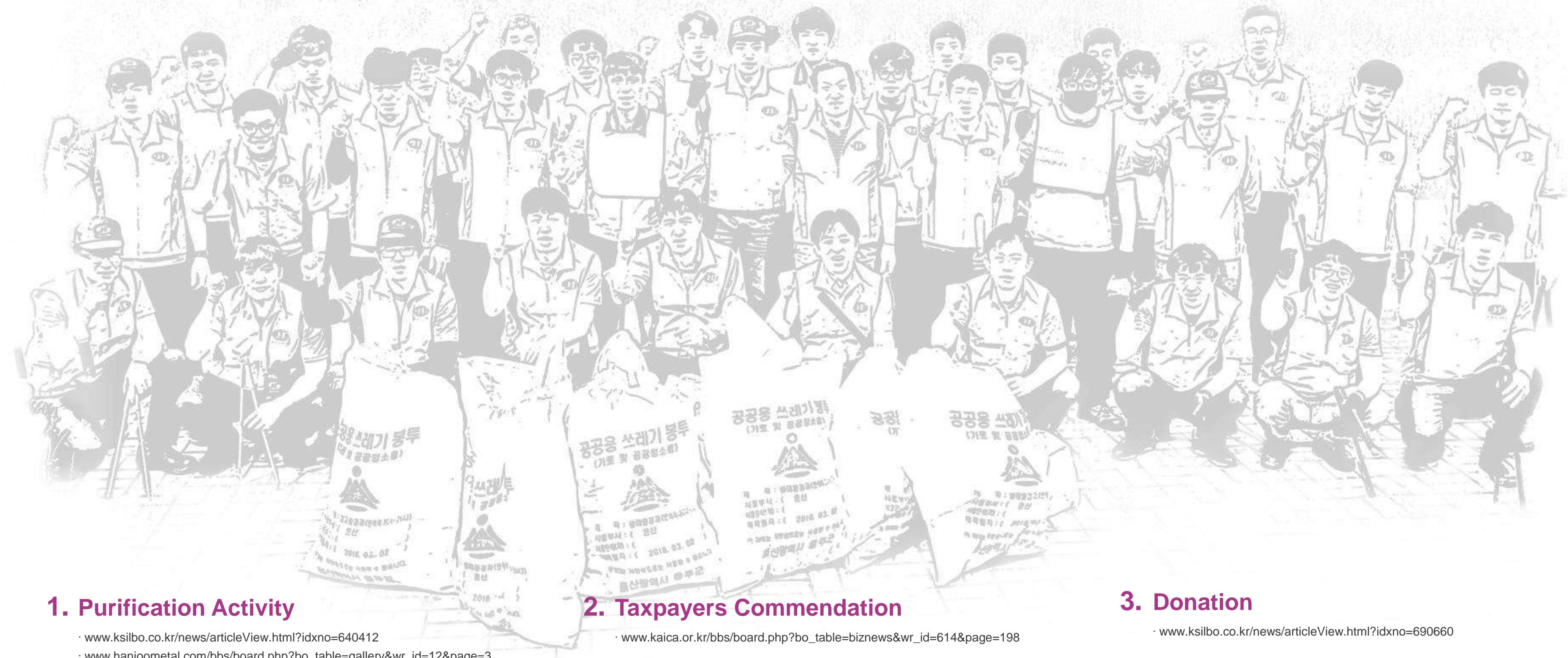
06



SOCIAL CONTRIBUTION

Live Together

Live together



1. Purification Activity

- www.ksilbo.co.kr/news/articleView.html?idxno=640412
- www.hanjoometal.com/bbs/board.php?bo_table=gallery&wr_id=12&page=3

2. Taxpayers Commendation

- www.kaica.or.kr/bbs/board.php?bo_table=biznews&wr_id=614&page=198

3. Donation

- www.ksilbo.co.kr/news/articleView.html?idxno=690660

4. Donation

03&aid=0001943028

5. Donation

- www.ksilbo.co.kr/news/articleView.html?idxno=277246



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THANK YOU

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