



Company Introduction

# HANJOO METAL

Introducing HANJOO METAL  
the solid company that has been  
constantly challenging

# World Class Global Hidden Champion

한주금속(주) 회장 | CEO 정 삼 순 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

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01

사훈

신용 · 성실 · 창의 개발

한주금속(주)제3공장준공기념  
2003 . 12 . 20

# COMPANY INTRODUCTION

Company History

Company Overview

Business Strategy

Organization Structure

Major Customers\_Export

Major Customers\_Domestic

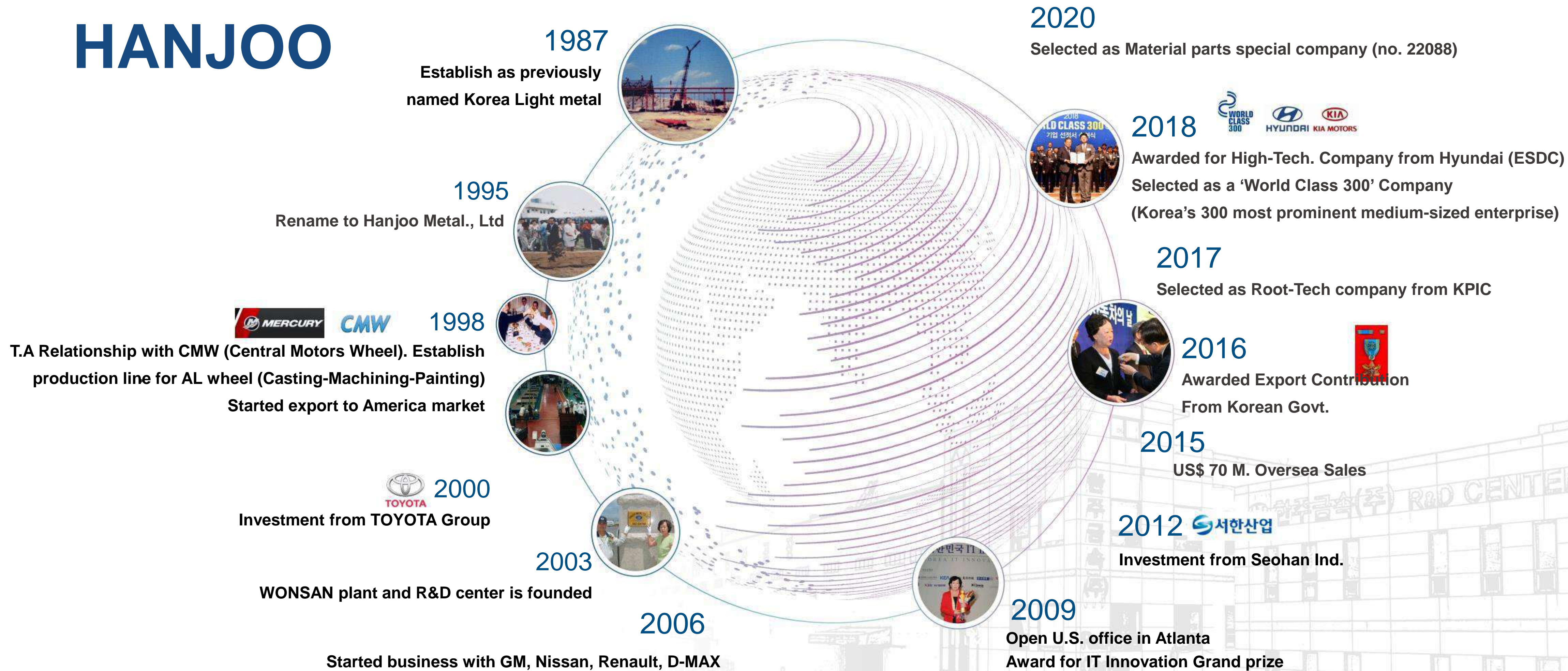
Sales Status\_Sales Growth

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 <sup>2</sup>
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 <sup>2</sup>
Staff	191 (Include Outsourcing 436)
Main Processes	GDC, LPDC, ESDC, Machining and Assembling





# Business Strategy

## MISSION

- Innovative Eco-friendly product
- Customer Satisfaction with New Products
- Leading the future industry with new technologies

Building an overwhelming global leader  
with AL casting expertise

## VISION

### Agenda for Vision

A Spirit of challenge  
unafraid of failure

Technology  
accumulation for  
the next generation

IT based  
information system

Expanding the global  
business industry

## COMPANY MOTTO

### TRUST

Trust, Consideration,  
Cooperation

### SINCERITY

Master mind,  
Challenge,  
Professional Spirit

### CREATION

Creation, Innovation

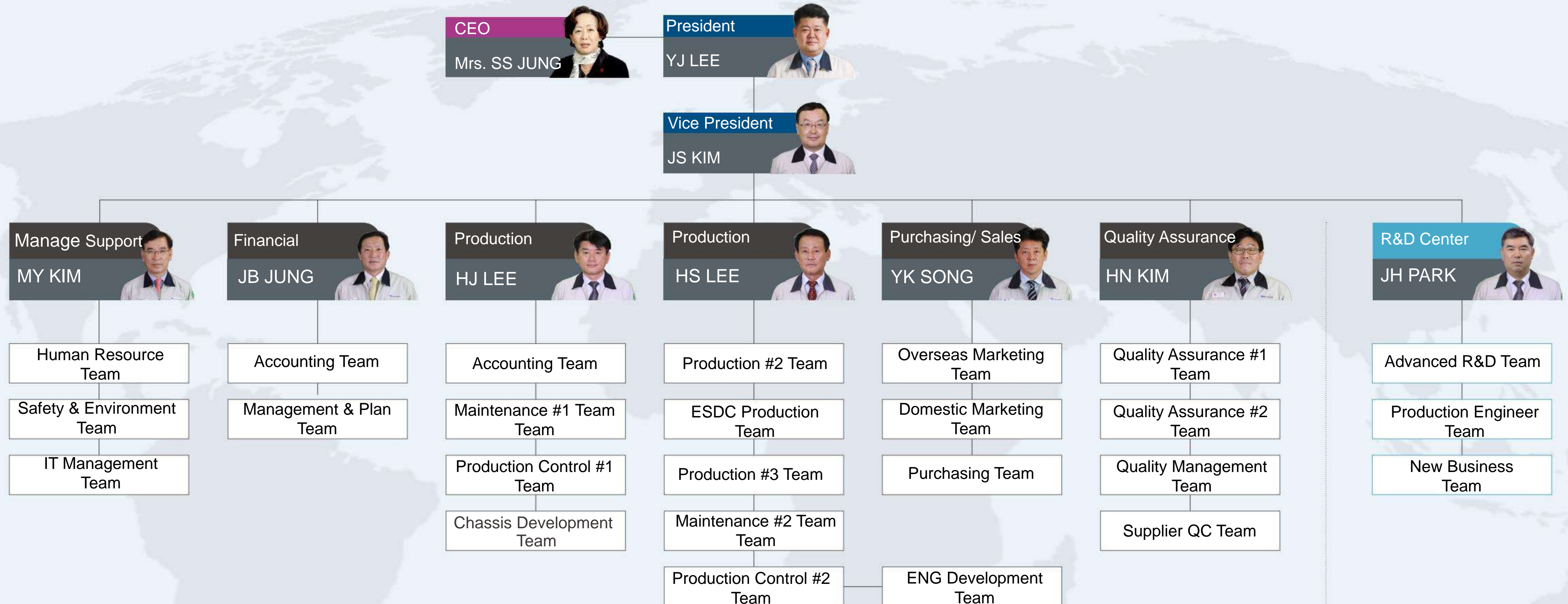
### GREEN

Ethical Management,  
Eco-friendly design





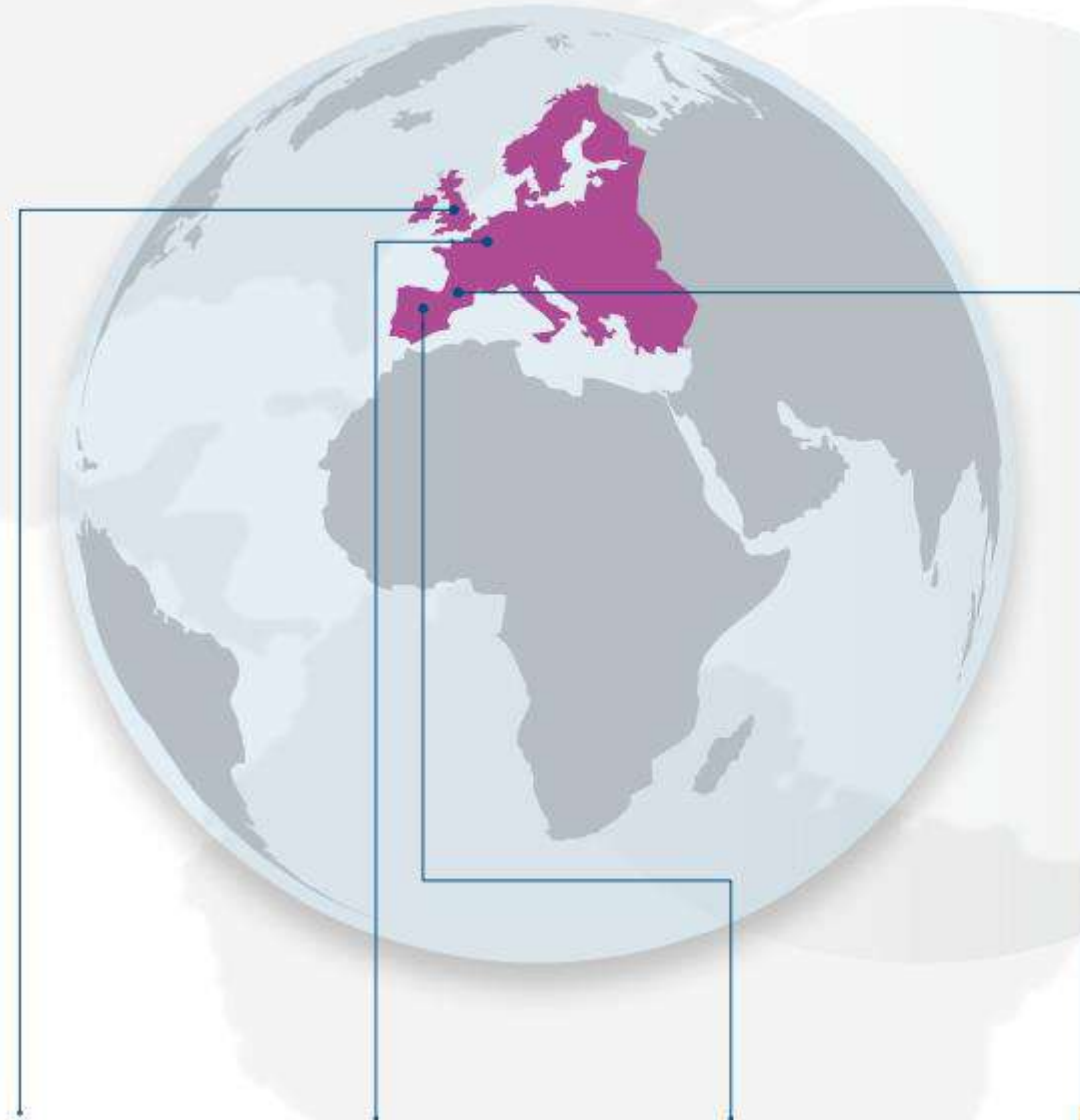
# Organization Structure





## Major Customers - Export

### EUROPE



U.K.



Germany



Spain



France



### ASIA



China



Japan



### NORTH AMERICA



Canada

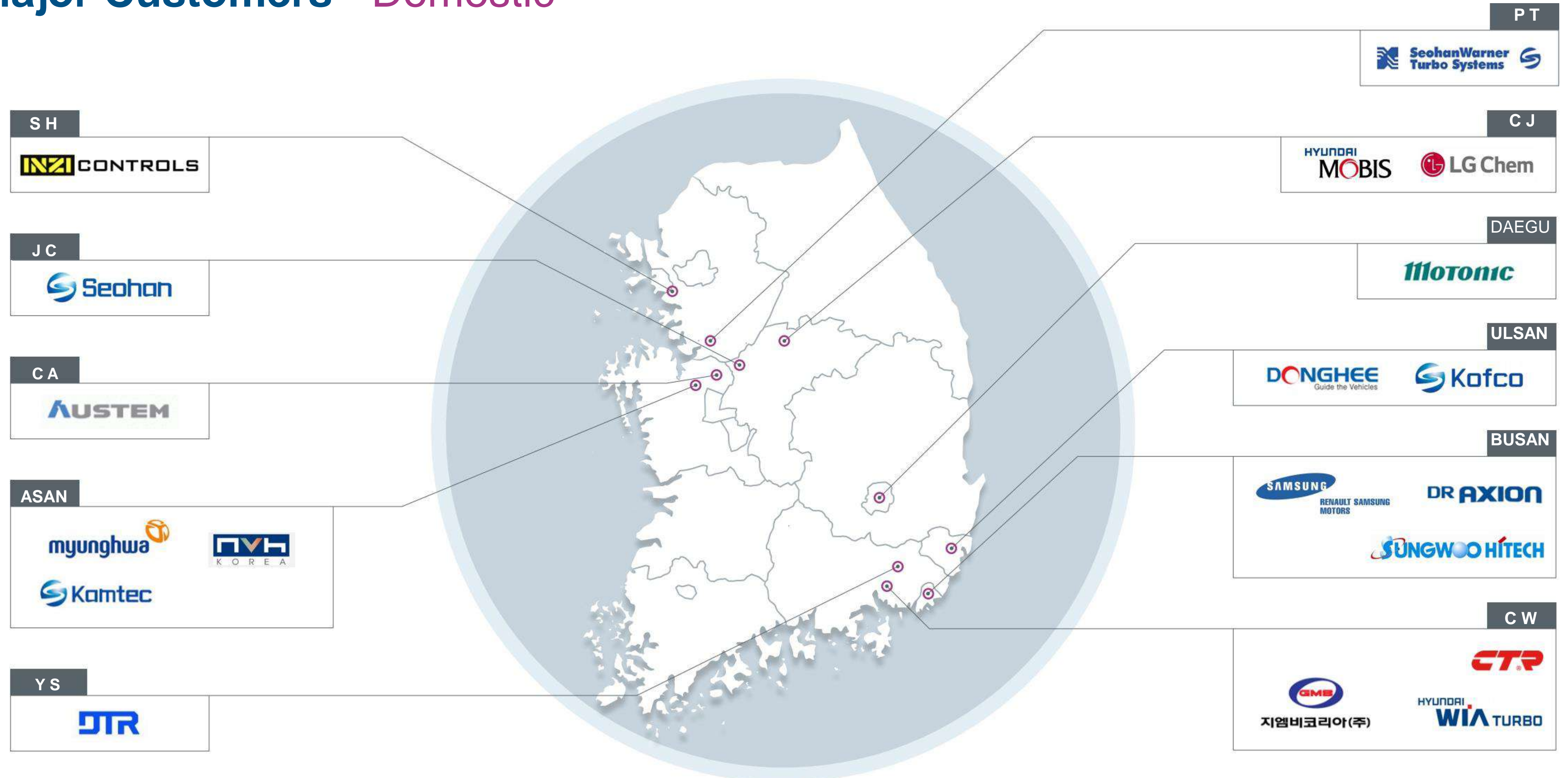


U.S.A





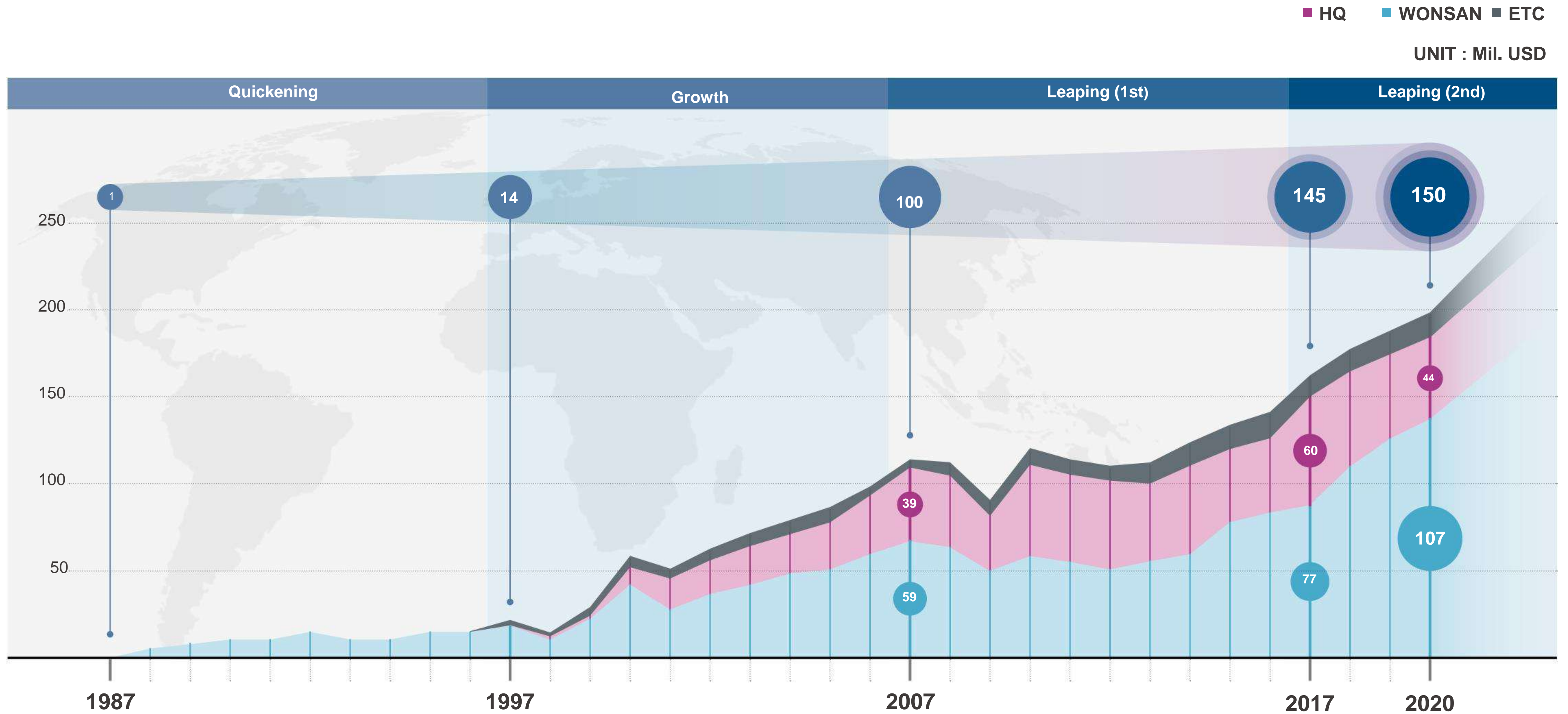
## Major Customers - Domestic







# Sales Growth



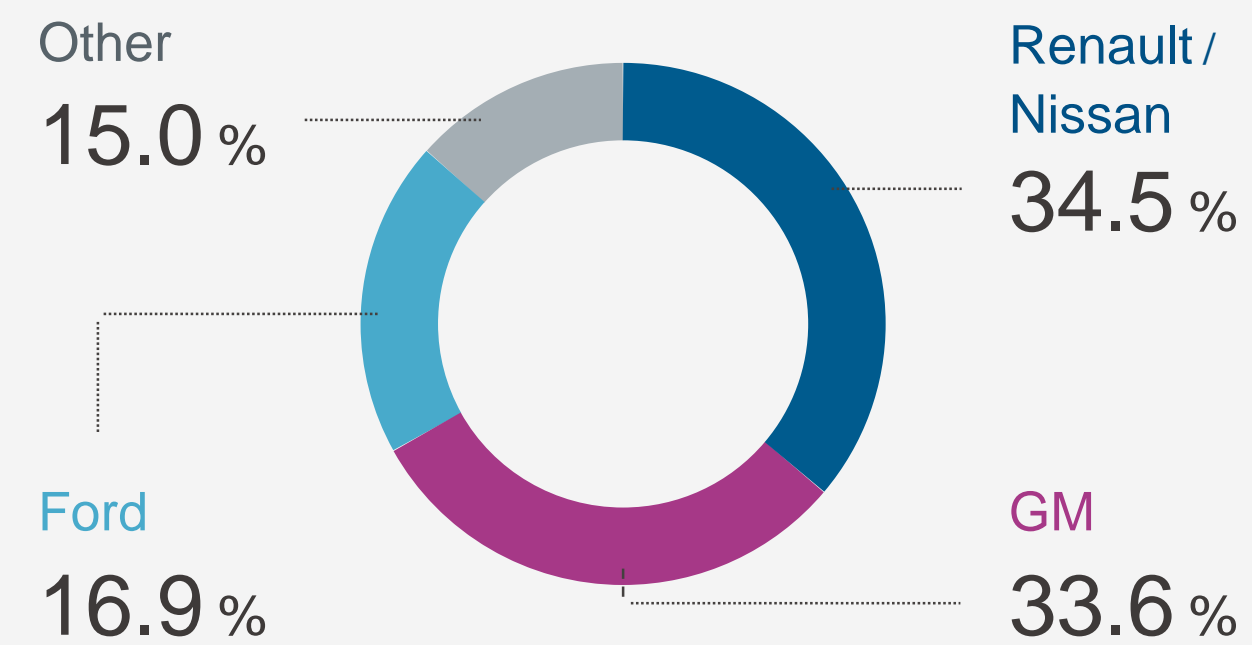




# Sales Analysis

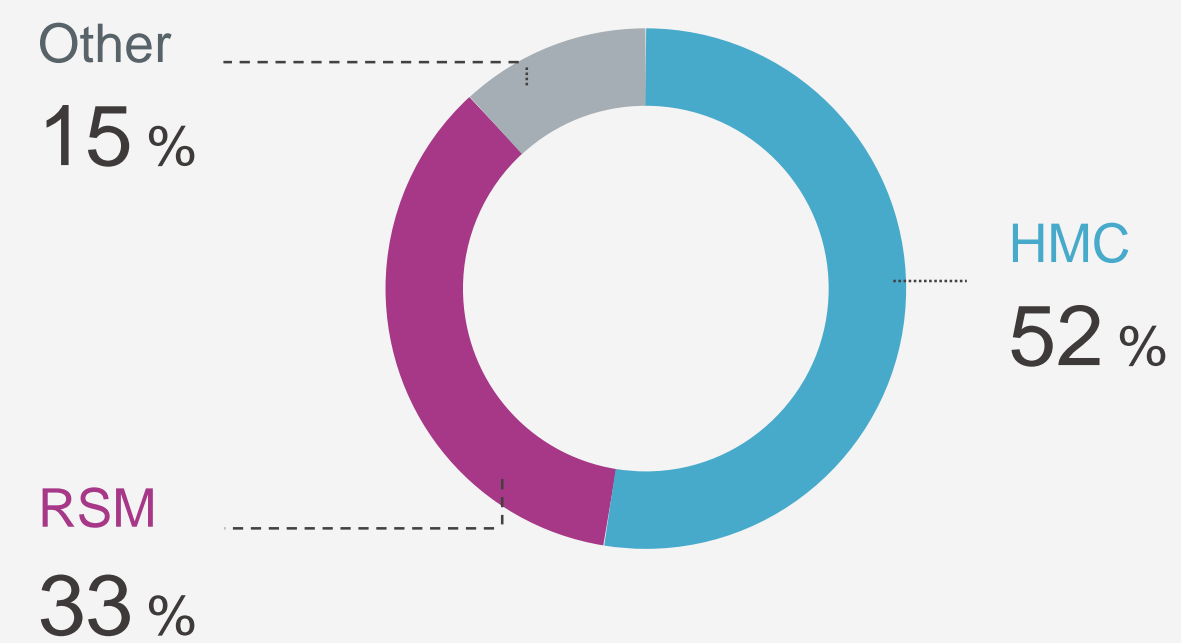
## 2019 EXPORT SALES

by Customer

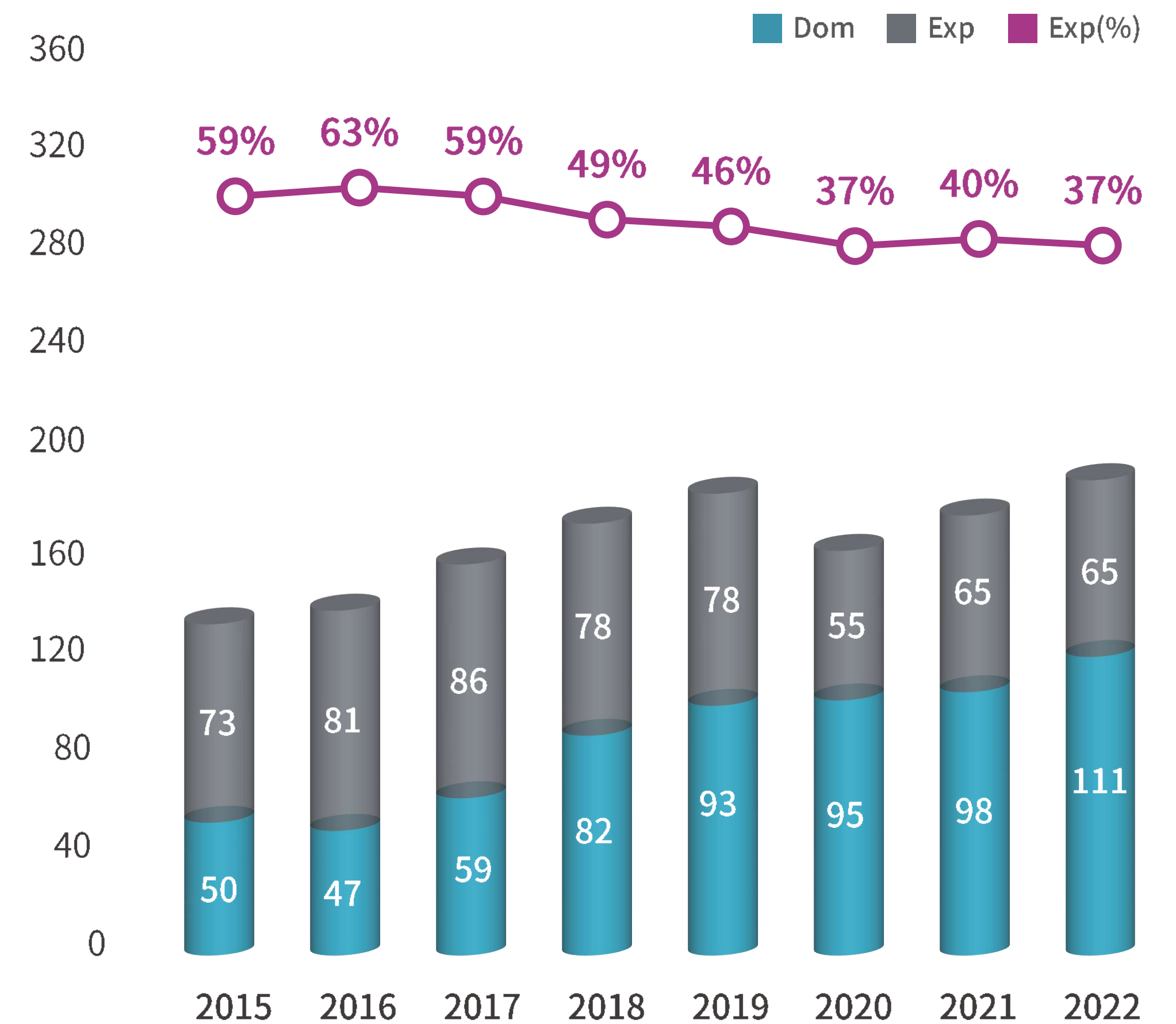


## 2019 DOMESTIC SALES

by Customer



UNIT : Mil. USD







# 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

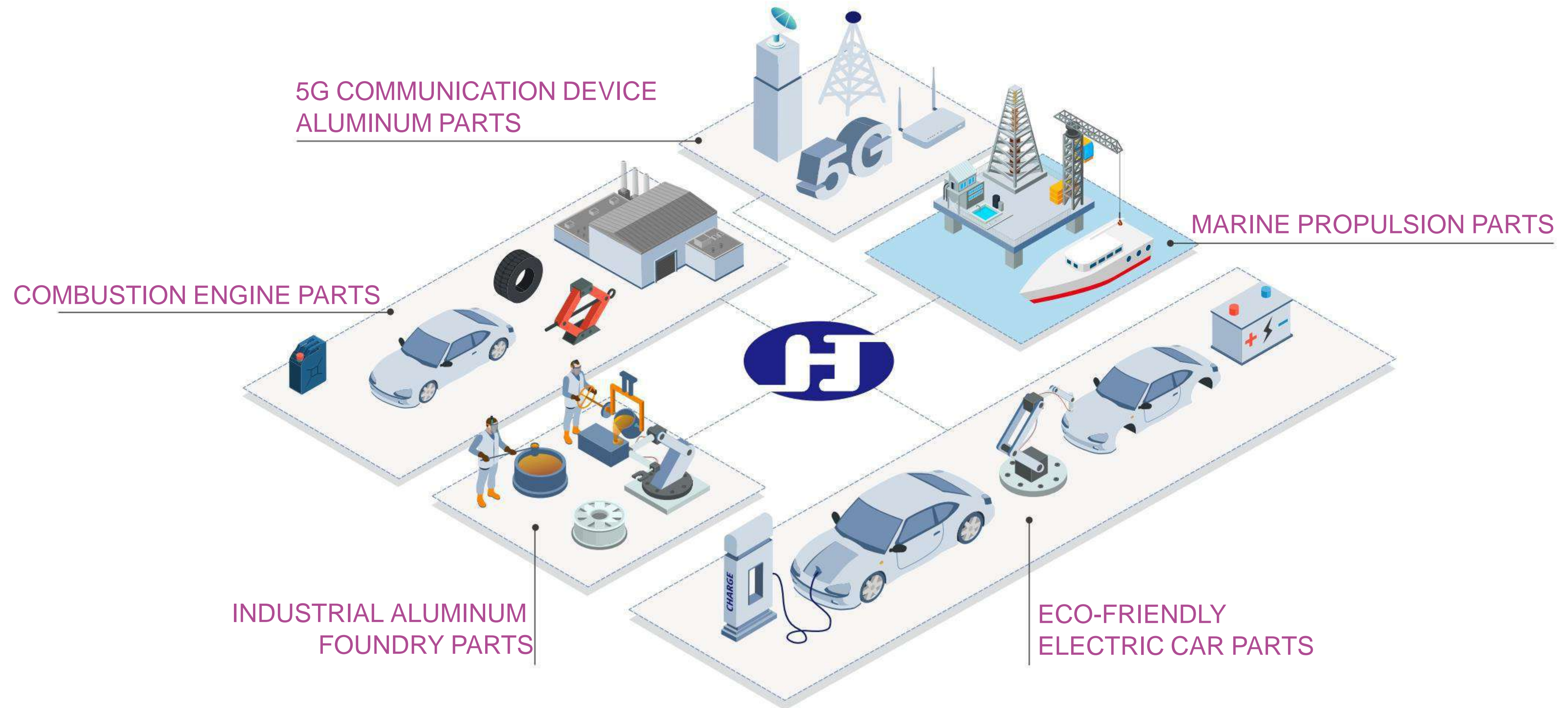
Products for\_EV Part Components

Products for\_Marine Boat Part Components





## Business Area





**ESDC**

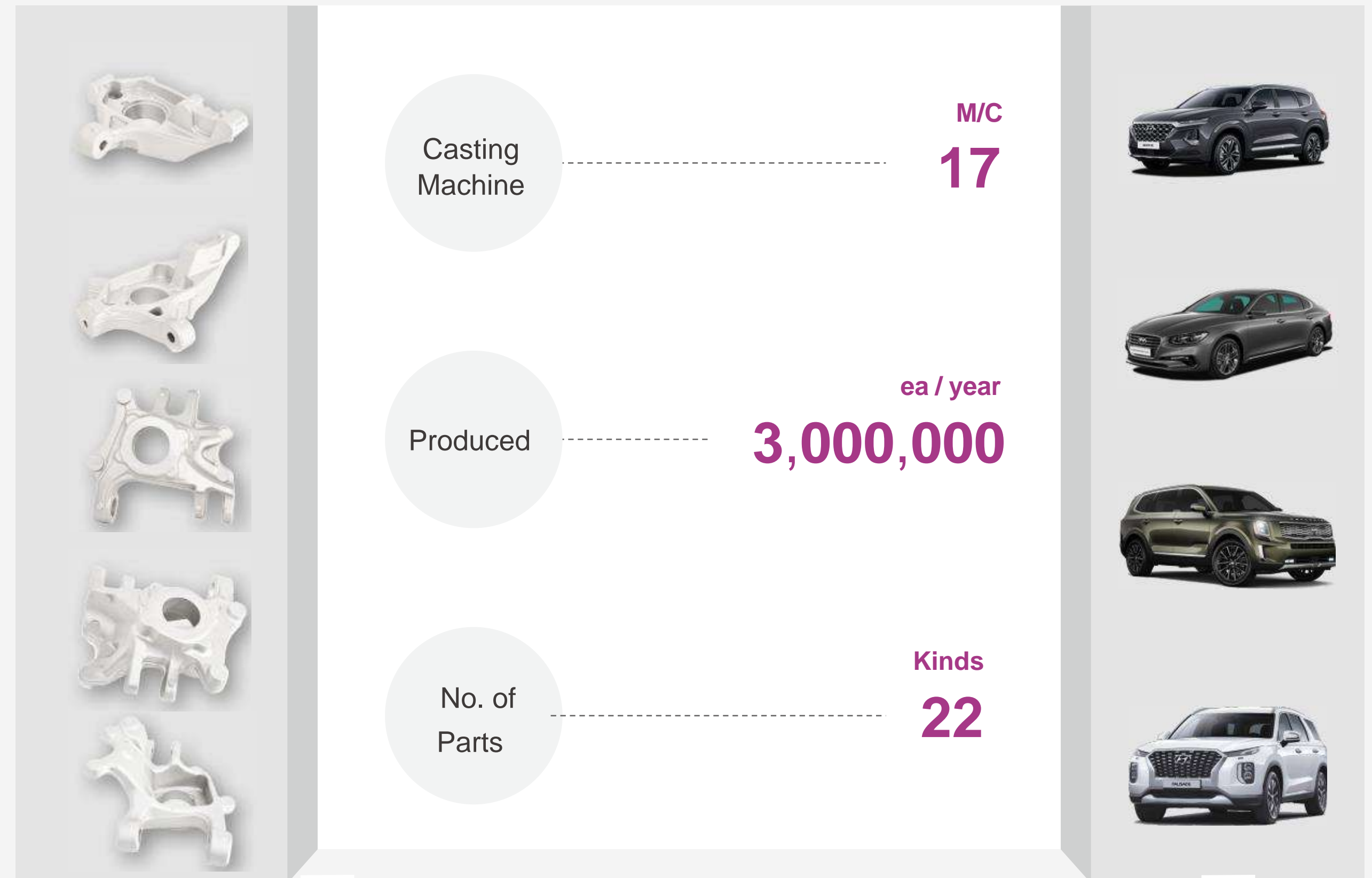
Electro - Magnetic Stirring Die Casting

## 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.

**Weight****Perfomance****Cost**



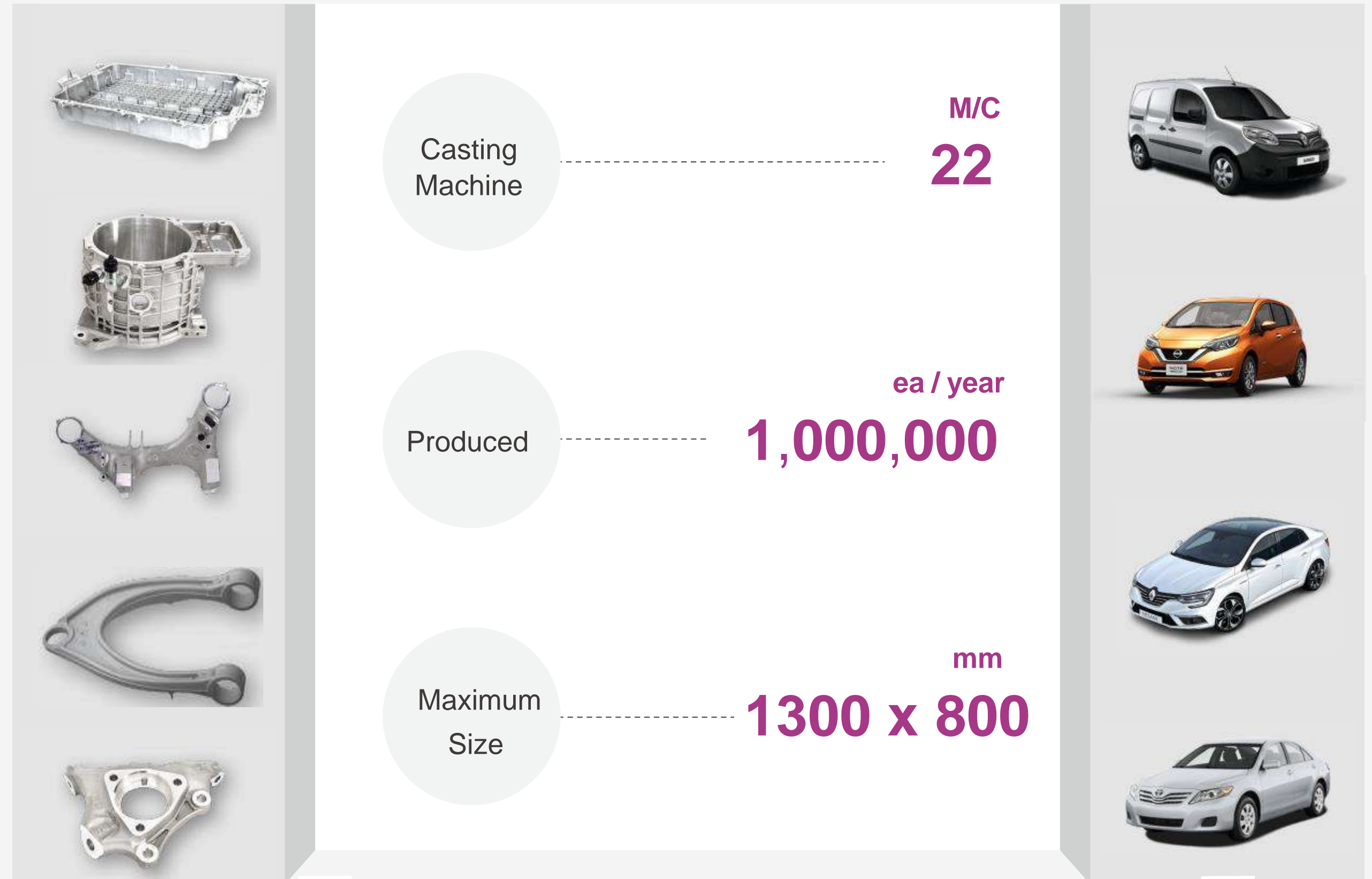
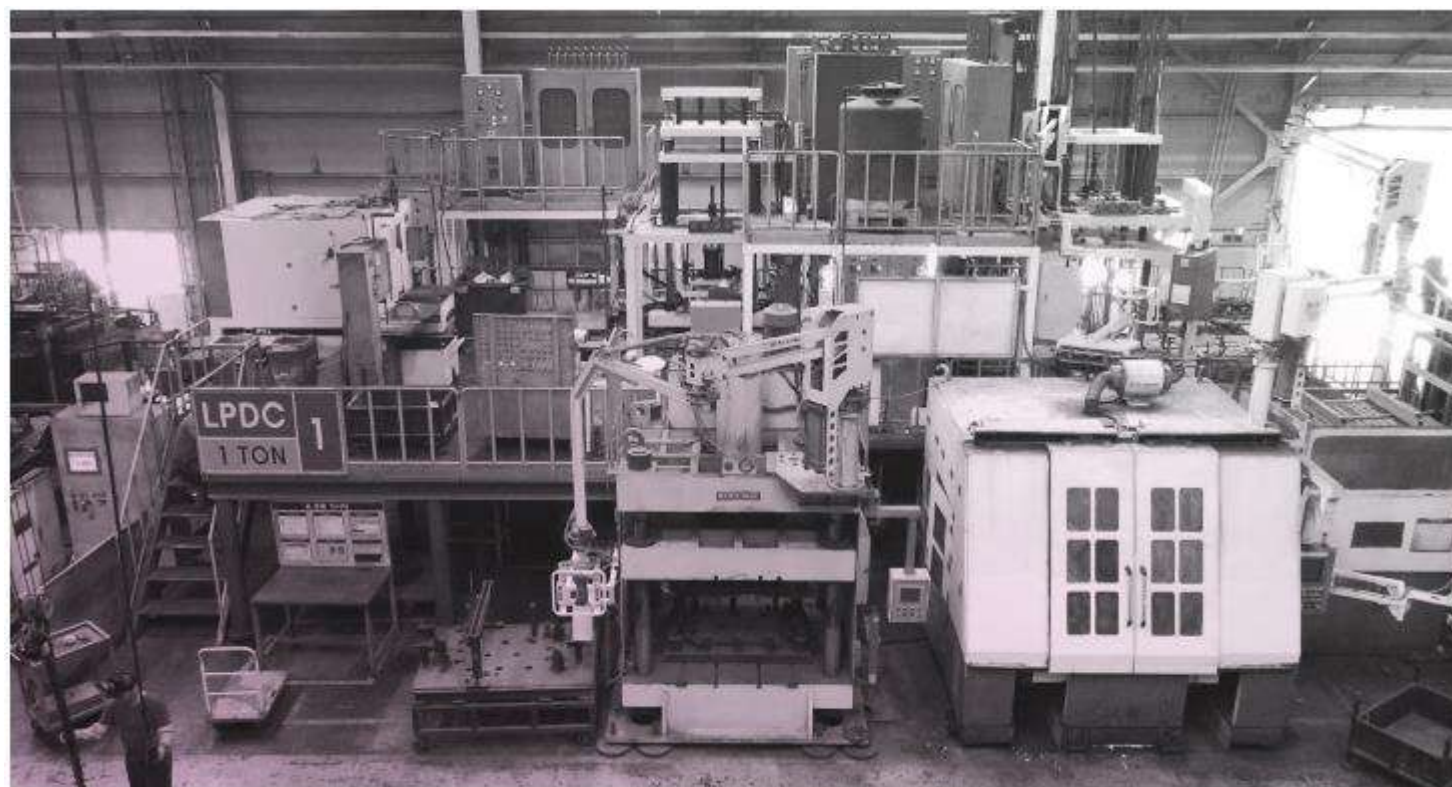
**LPDC**

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.

**Weight****Perfomance****Cost**



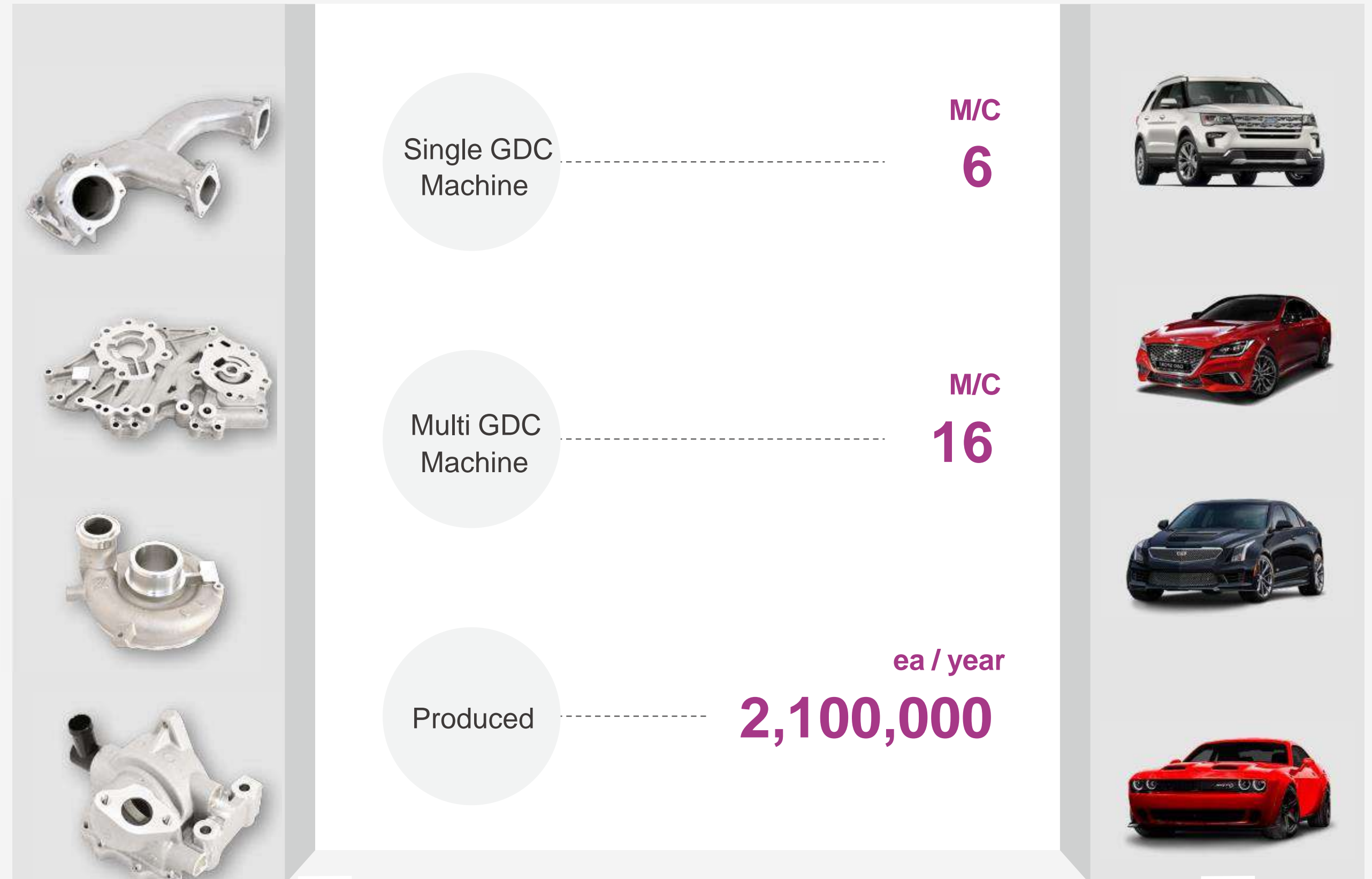
**GDC**

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.



Weight



Perfomance



Cost



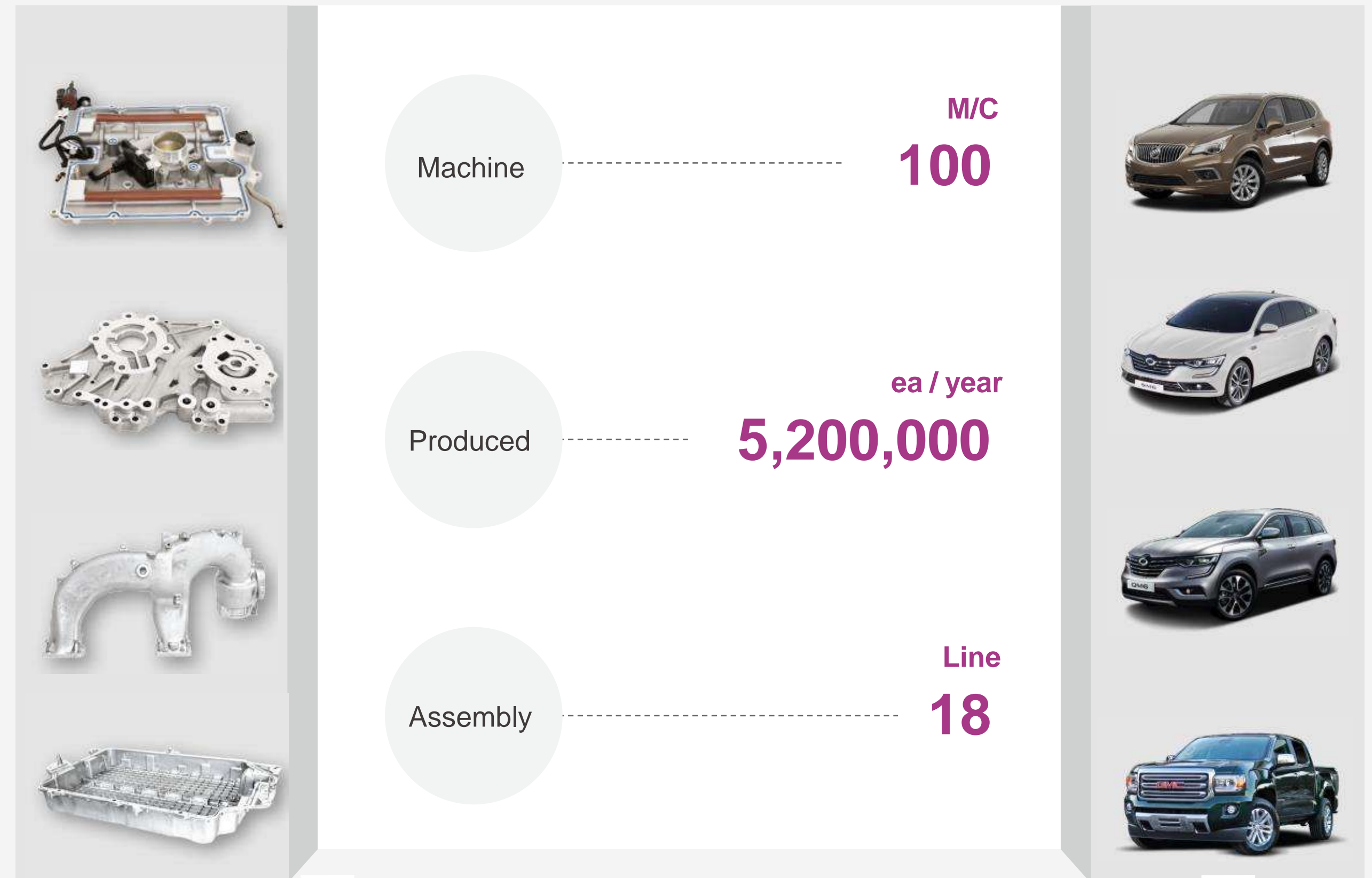


## Machining Line

### 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.



Weight



Perfomance



Cost





## Business-1 Engine Components



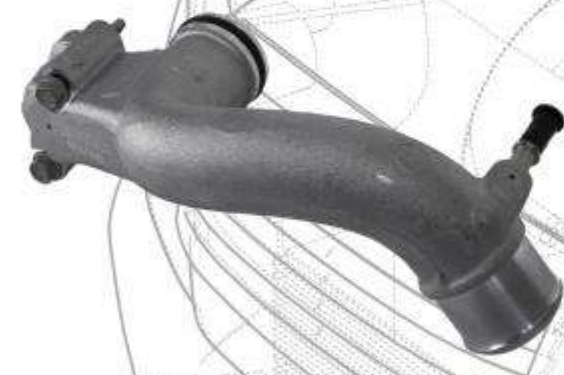
Tran. Oil Pump Cover(GDC)



Thermostat Housing



Dissel - ENG EGR Housing(GDC)



Outlet Water



ENG Compressoer Housing(GDC)



Manifold ASM-INT



Water Pump



Outlet Water



## Business-2 Chassis Components



SUV knuckle (2WD)



Large Sedan Carrier



SUV knuckle (4WD)



SUV knuckle (4WD)



Front knuckle (LPDC)



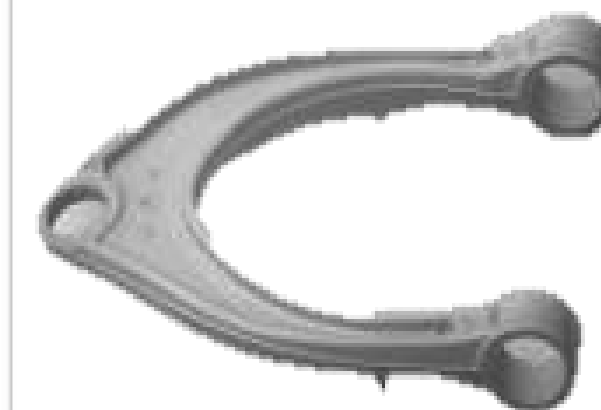
Lower/Upper Bracket



Damper fork



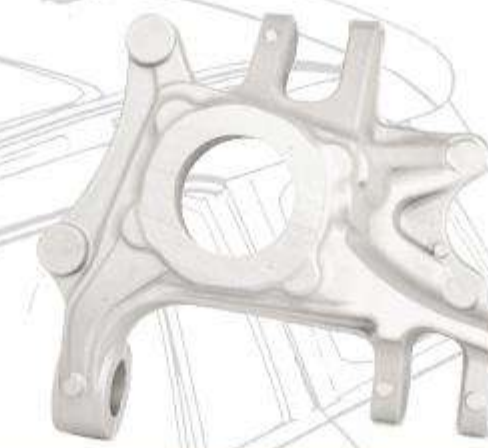
Center Floor Tunnel



Front Upper Control Arm



Hollow Knuckle



SUV Carrier



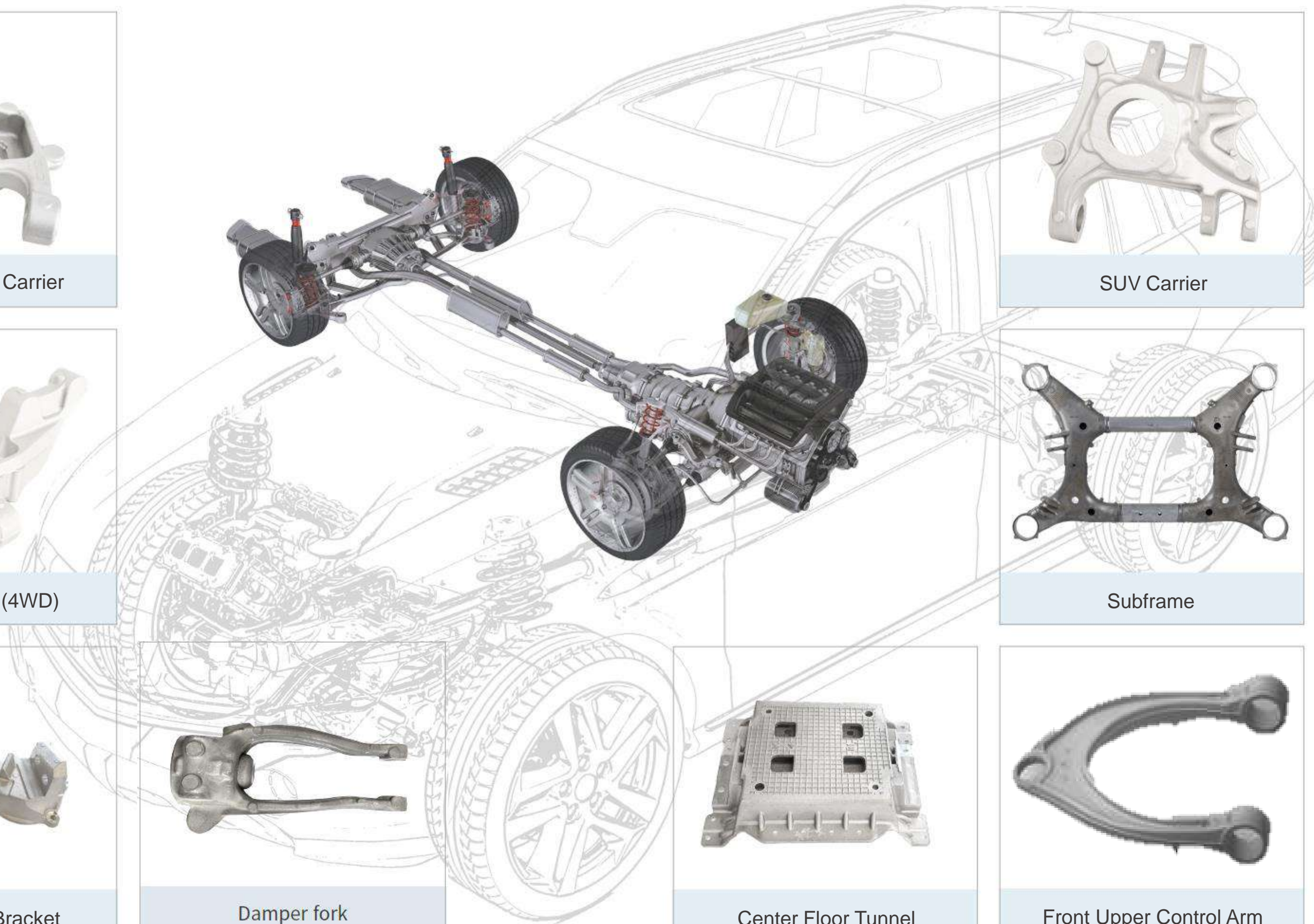
SUV Carrier



Subframe

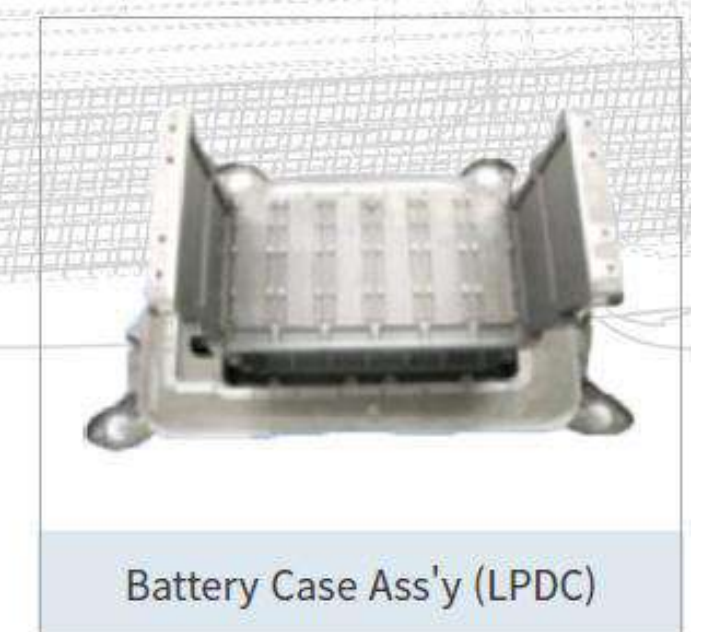
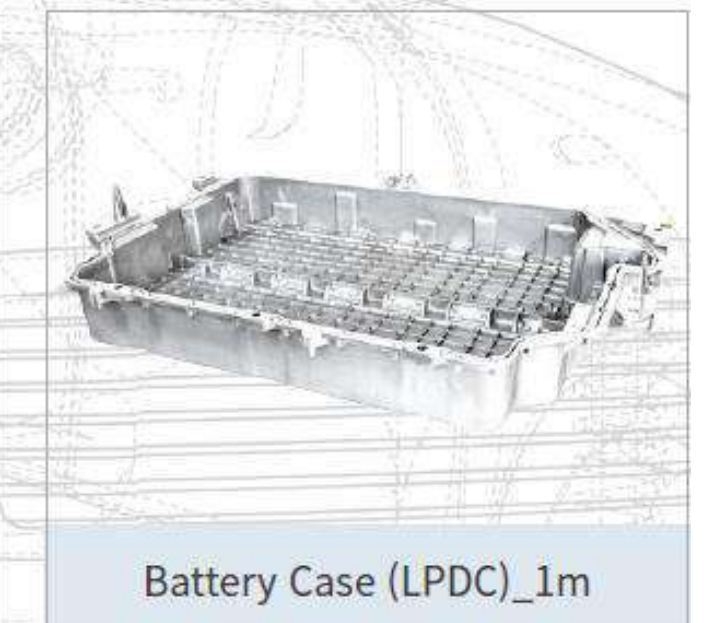
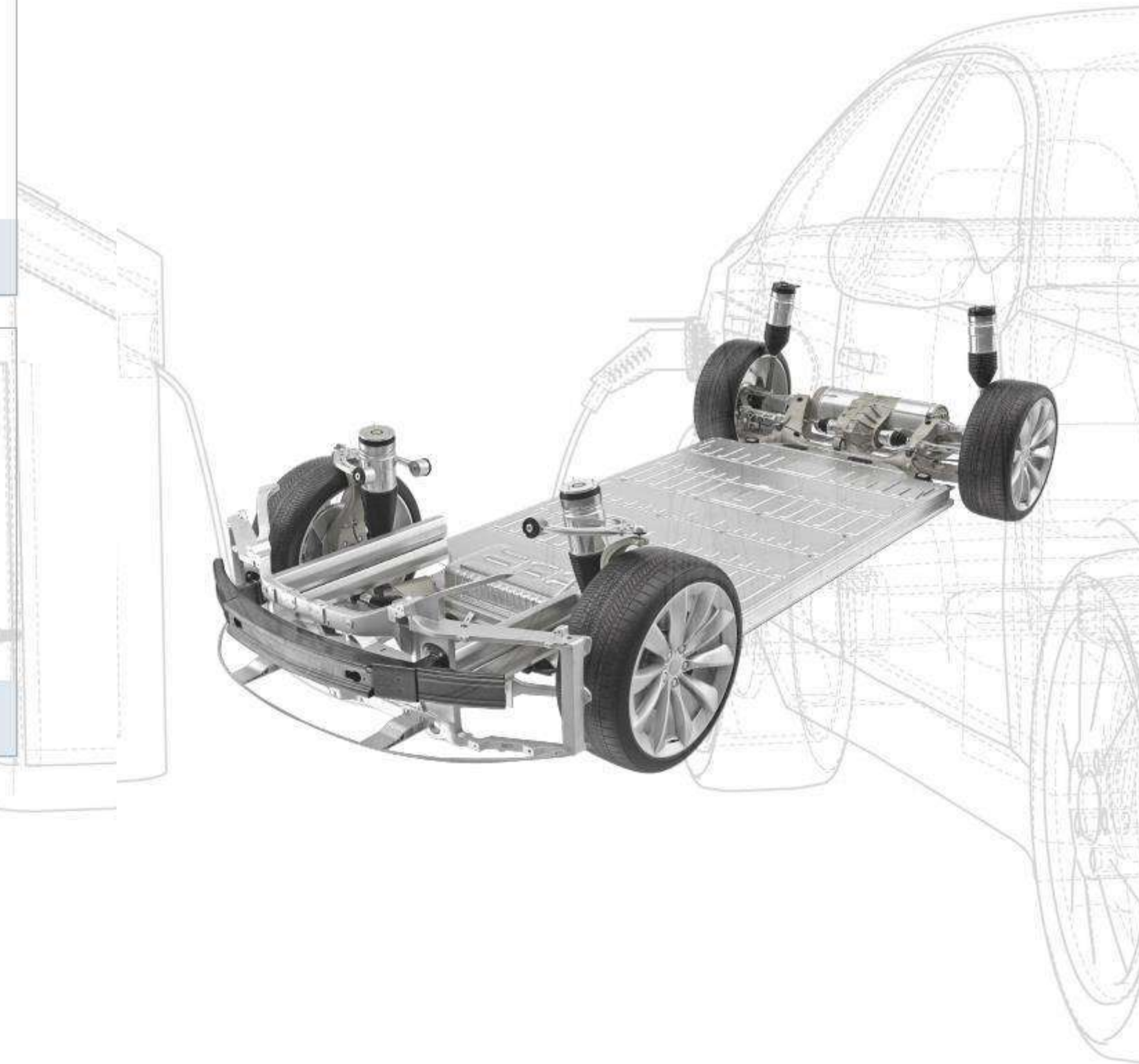


Bimetal Brake Rotor





## Business-3 EV Components





## Business-4 Marine Boat Components



Exhaust Manifold



Exhaust Pipe



Upper Ex-Manifold



Intake Manifold



Bearing Carrier



Bearing Carrier



Exhaust Tube Ass'y



Swivel Bracket





# 03

## NEW TECHNOLOGY · NEW PRODUCT

New Technology\_ESDC

New Technology\_Bimetal Brake Rotor

New Product\_LPDC

New Product\_LPDC

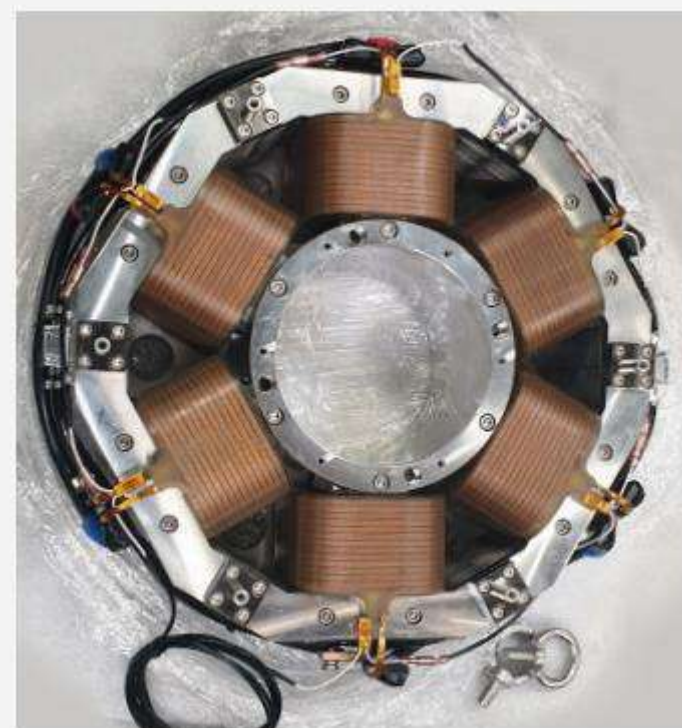
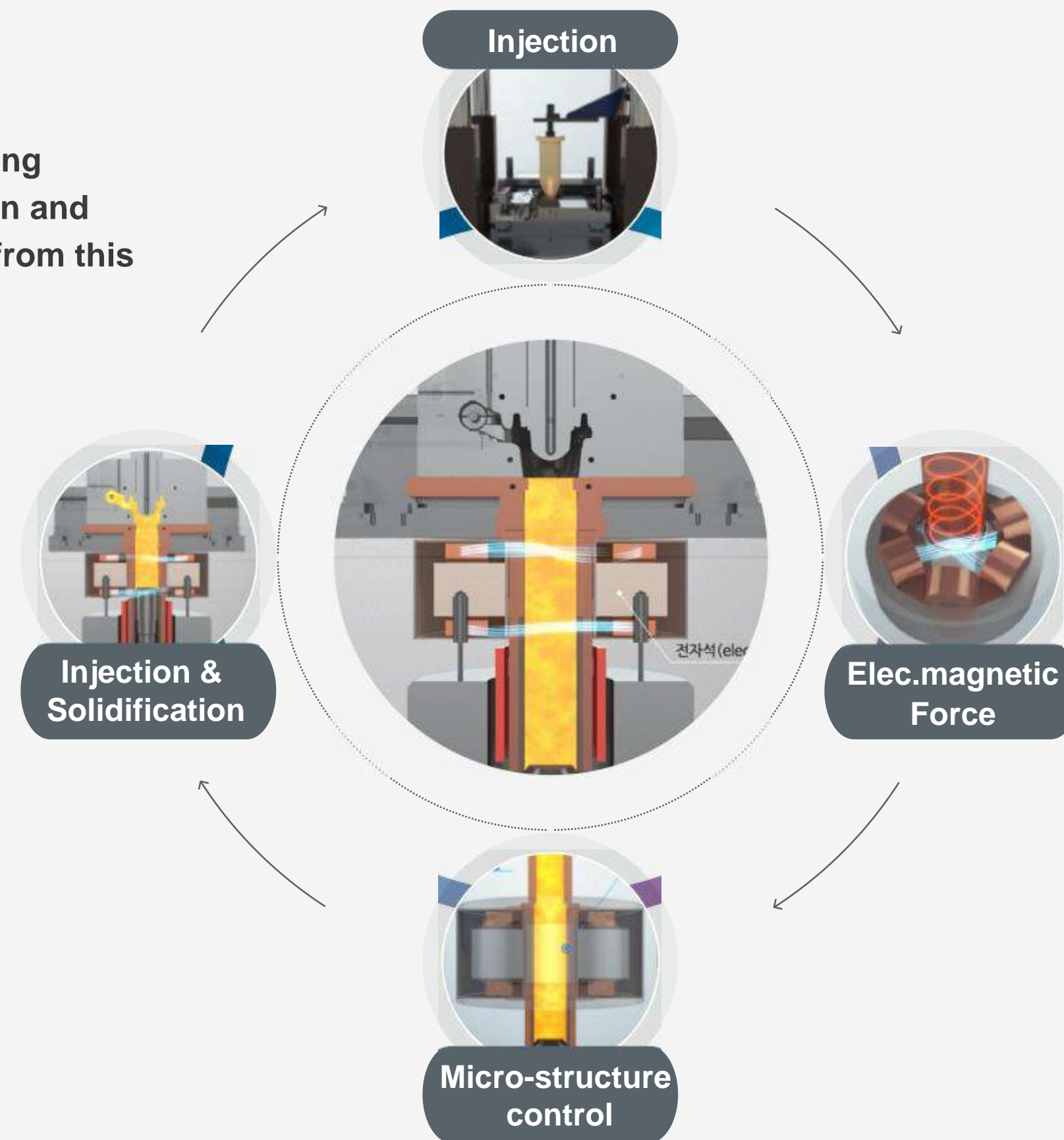


# Electro-Magnetic Stirring D.C | ESDC High strength / high ductility AL Knuckle & Carrier

## 1 PROCESS

### Electro-Magnetic Stirring D.C

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



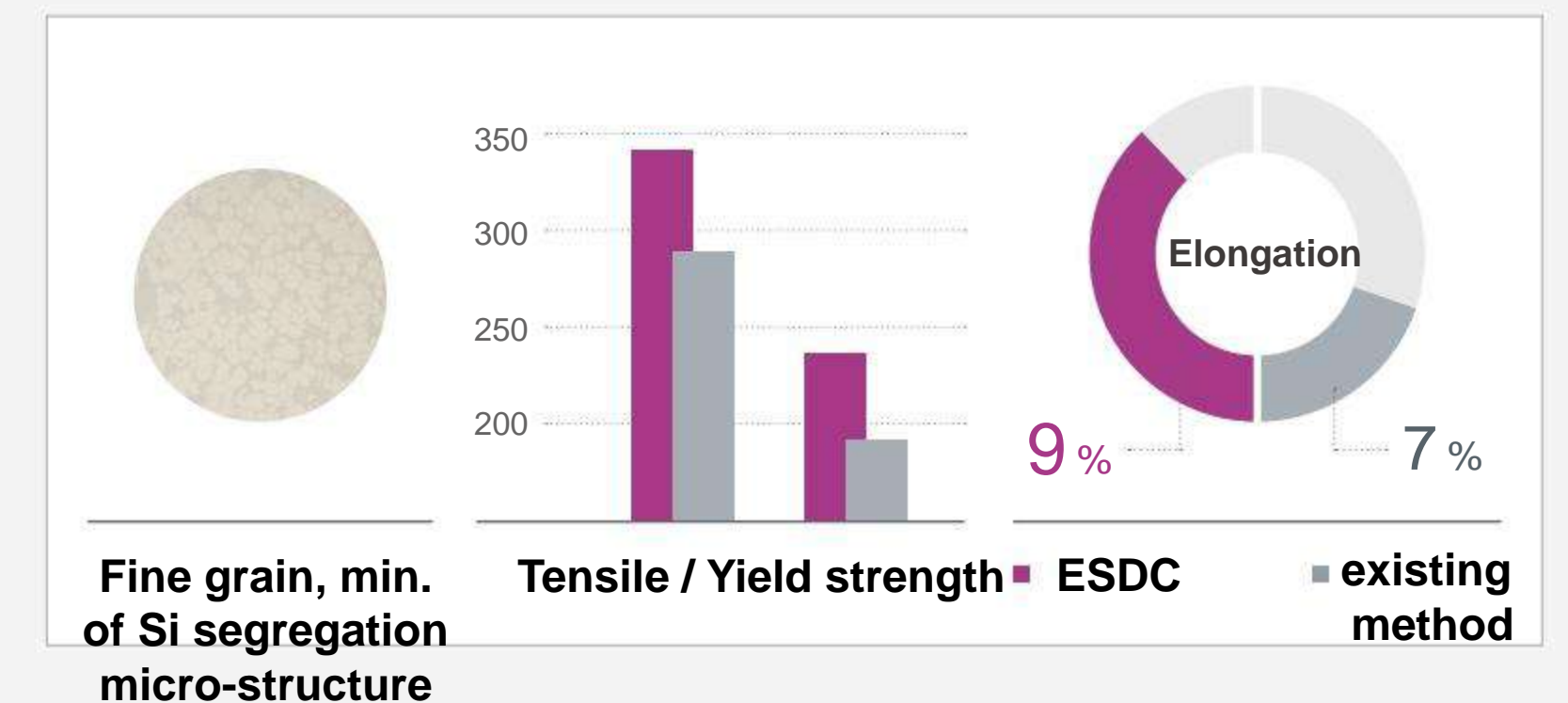
## 2 PARTS

AL part for Automobiles (Knuckle & Carrier)



## 3 ADVANTAGE

High strength / high ductility



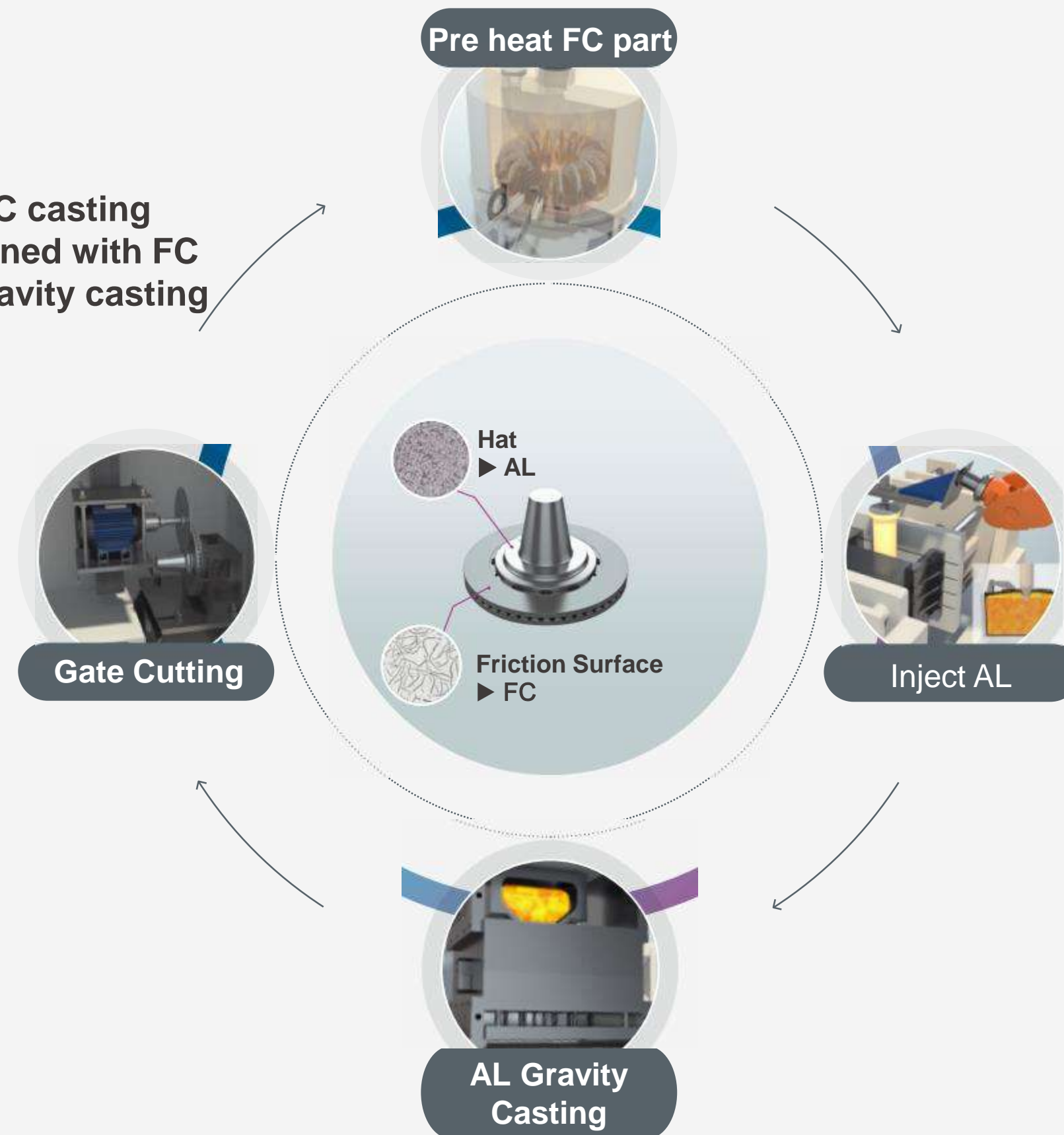
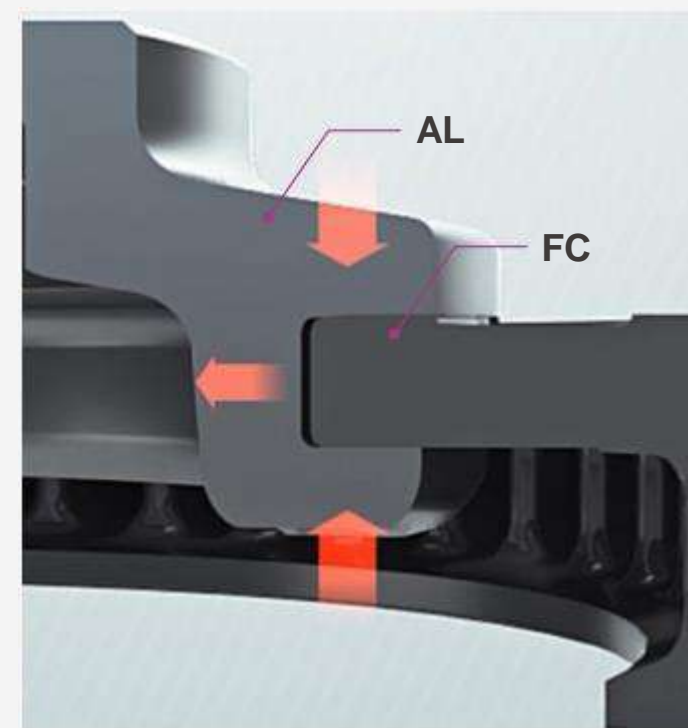


# Bimetal Brake Rotor | BI-metal casting process

## 1 PROCESS

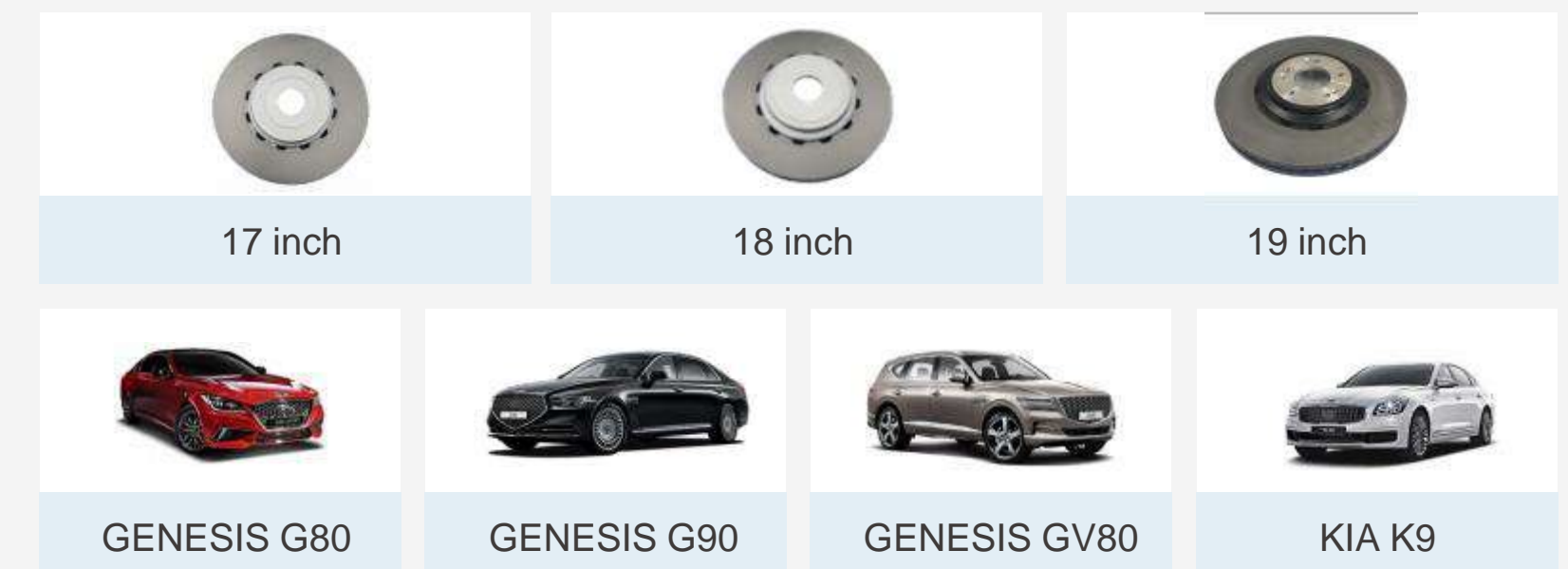
### BI-metal casting process

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



NVH(Noise, Vibration, Harshness)

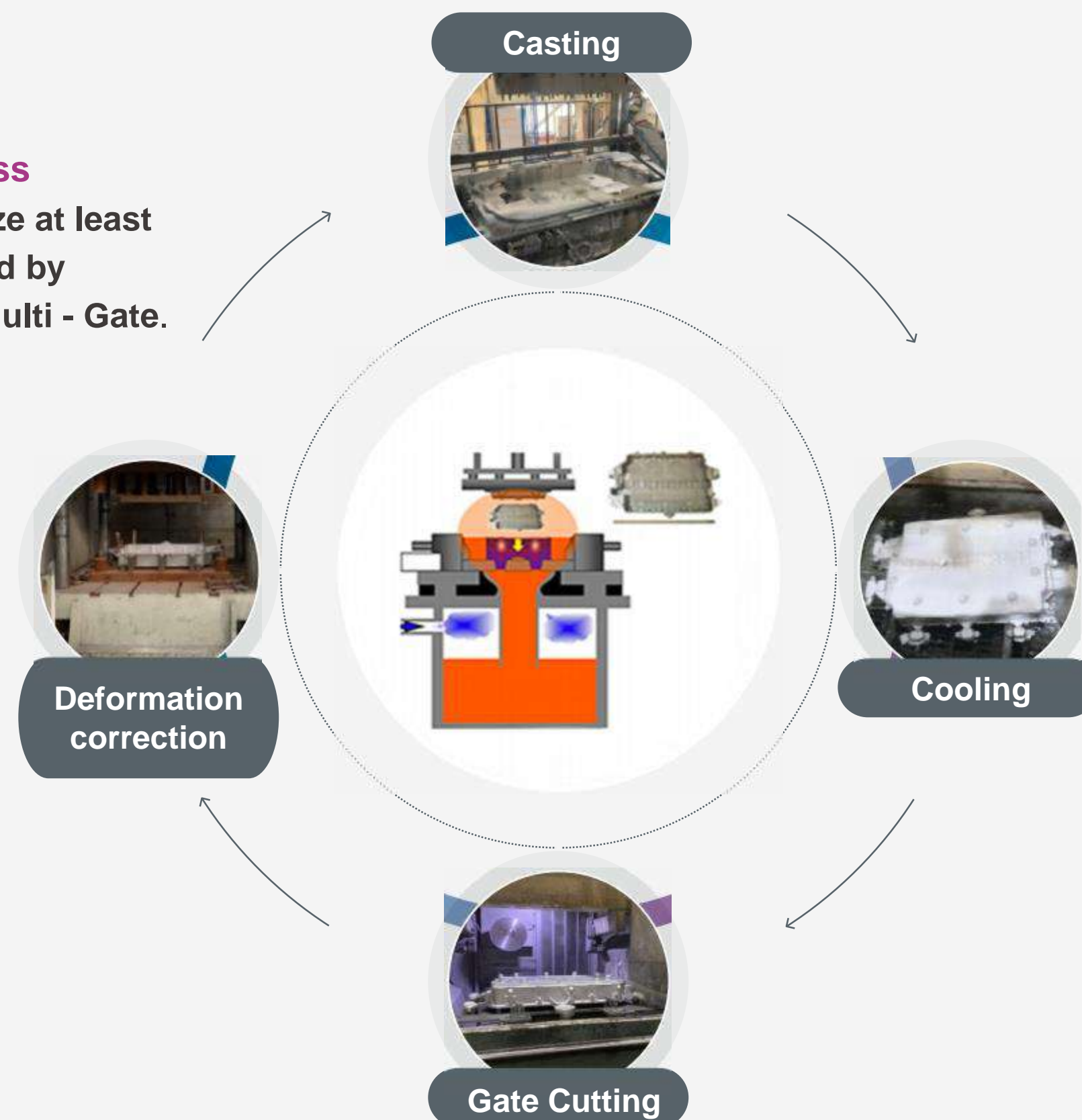


# Large-scale LPDC | Large-scale low pressure casting process

## 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



1m



1.3m

EV Battery Case



Renault Kangoo Z.E. Van



Renault Samsung SM3

## 3 ADVANTAGE



Component  
Simplification



Weight  
Reduction



Minimizing  
welding



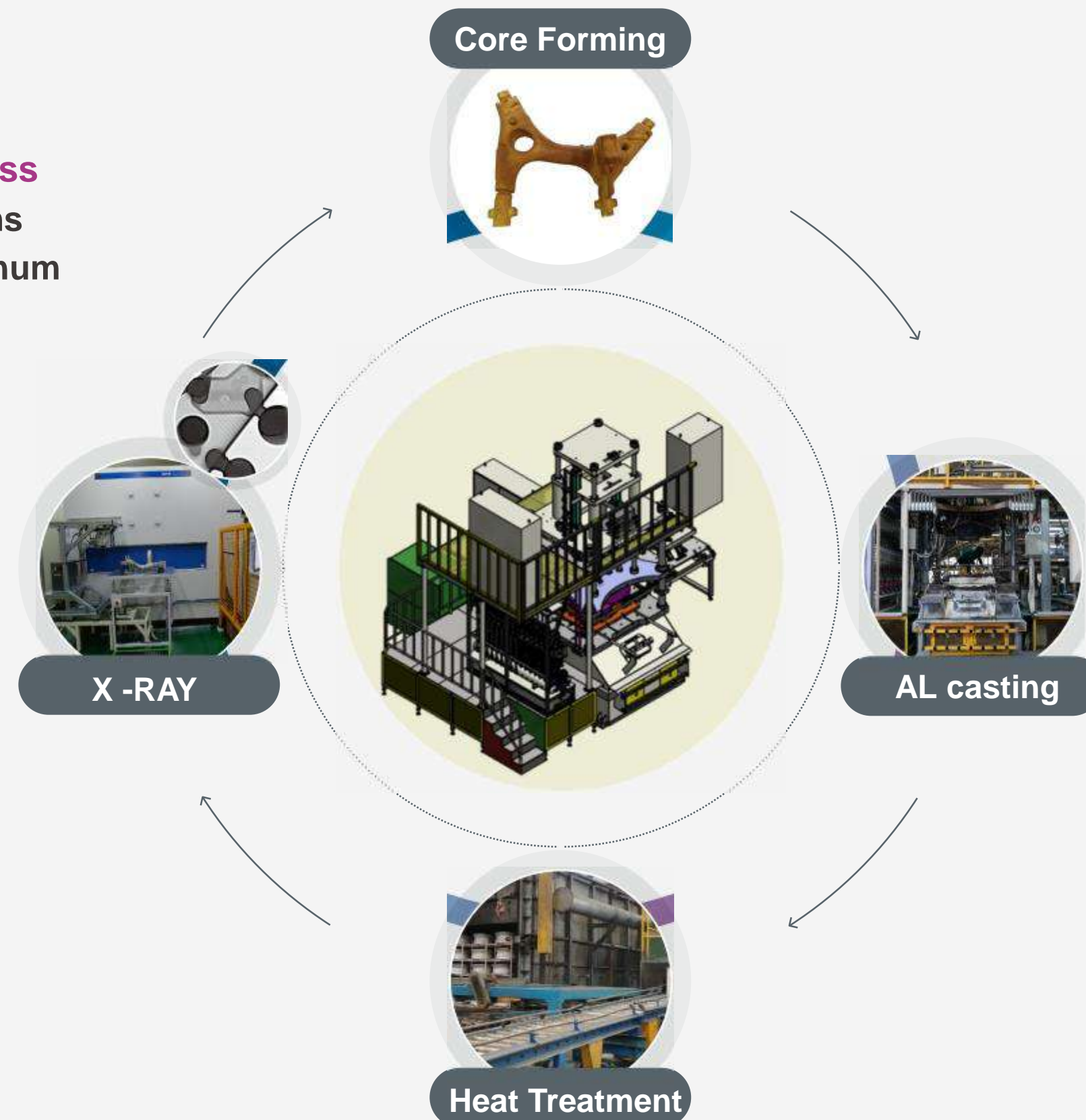
# Large-scale Hollow LPDC

Large scale hollow low pressure casting process – Side member

## 1 PROCESS

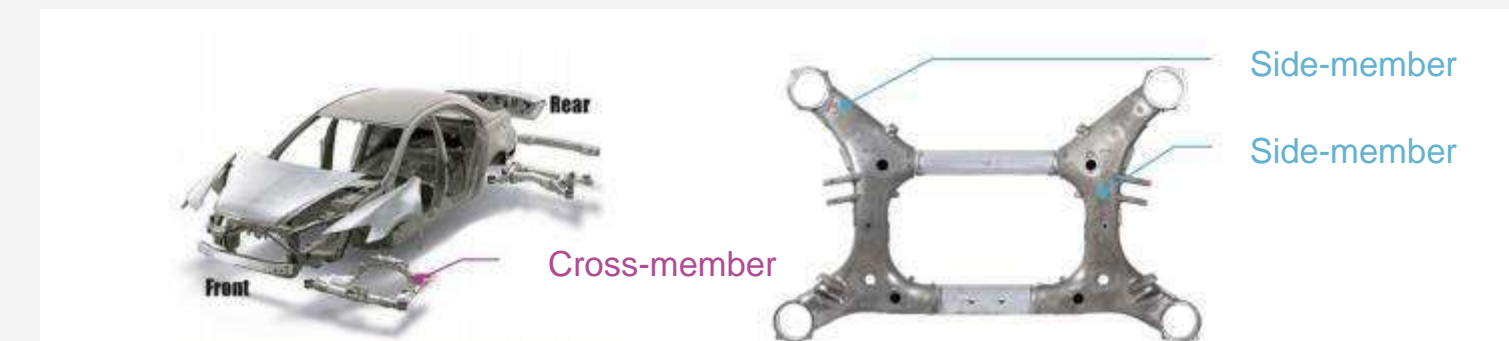
### Side-member manufacturing process

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



Coordinate Measuring Machine

Business Area

# DEVELOPMENT & QUALITY ASSURENCE

Research Development Process

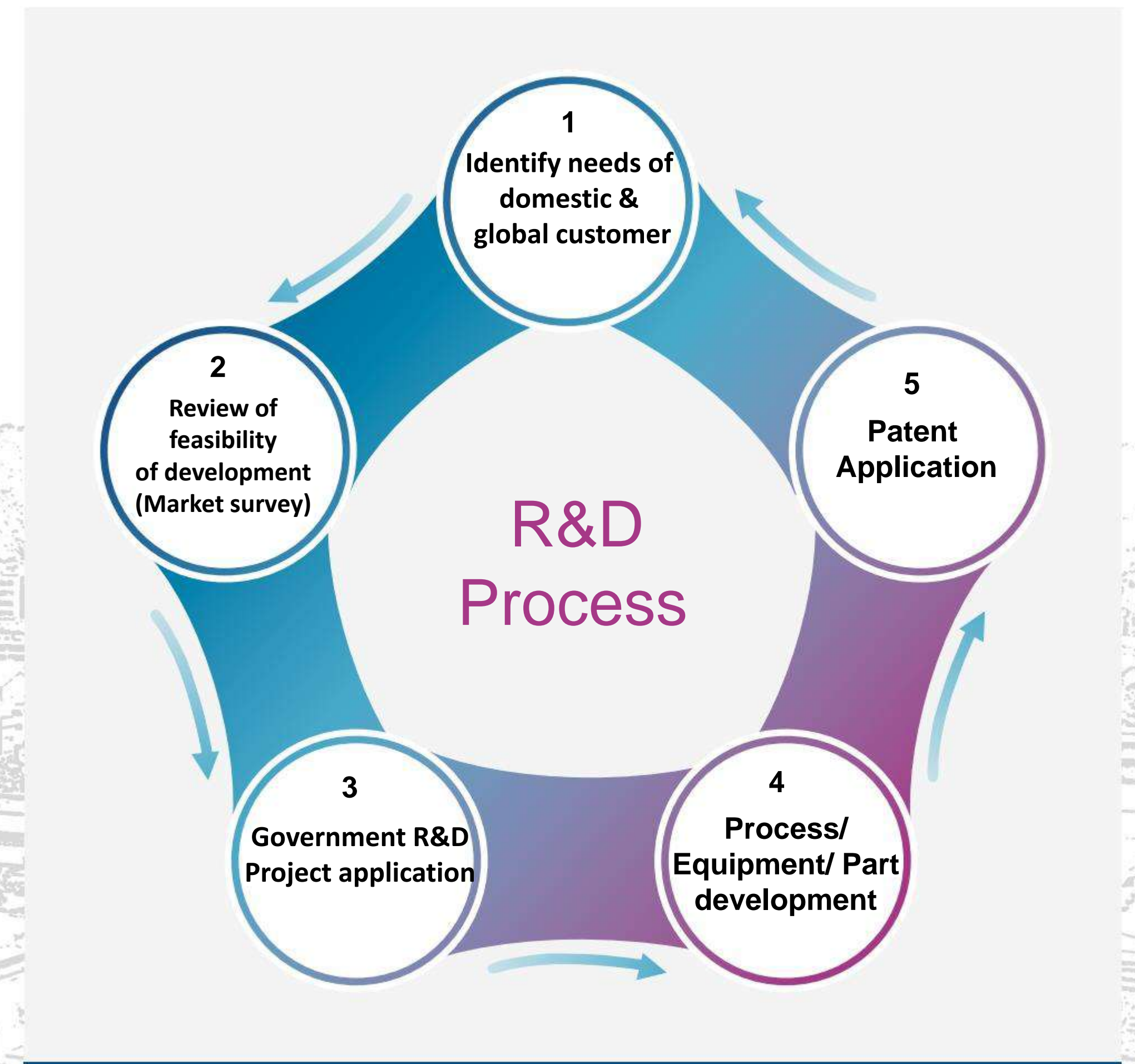
Product Development Process

Quality Assurance Process

# 04



# Research Development Process





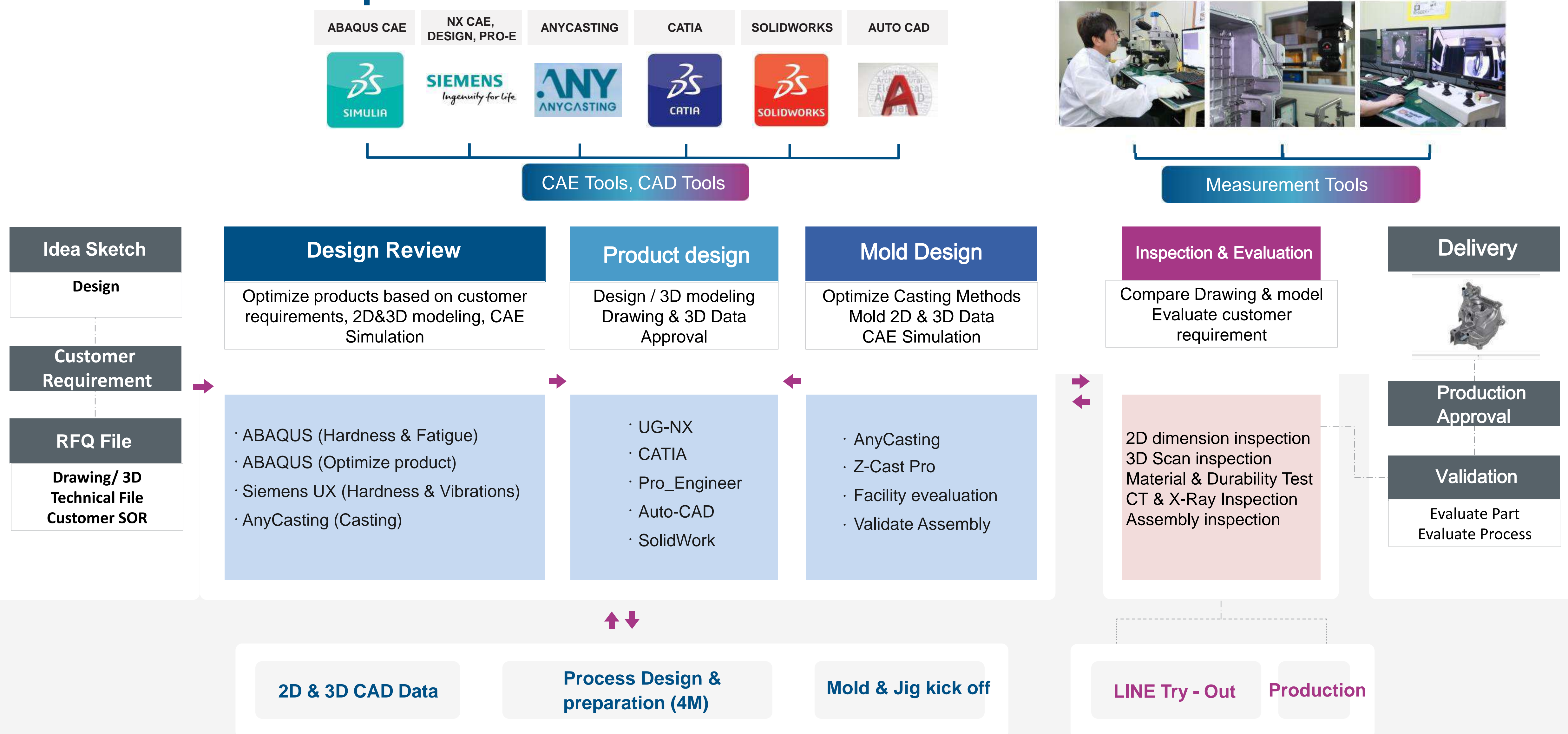


## Status of R&D National Project

				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





# Quality Assurance Process

Composition analysis



Material Inspection



Manage Sub supplier



GP12



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

Material &  
Sub part mgmt.

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

Sub supplier  
mgmt

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

Warranty mgmt

Achieve Customer  
satisfaction  
**Zero ppm**

Production process  
control

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

Part evaluation &  
warranty mgmt

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

Part durability  
test mgmt

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

In-line CMM



ADR X-ray



CMM



Durability Test





# 05

ISO & IATF

## 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.

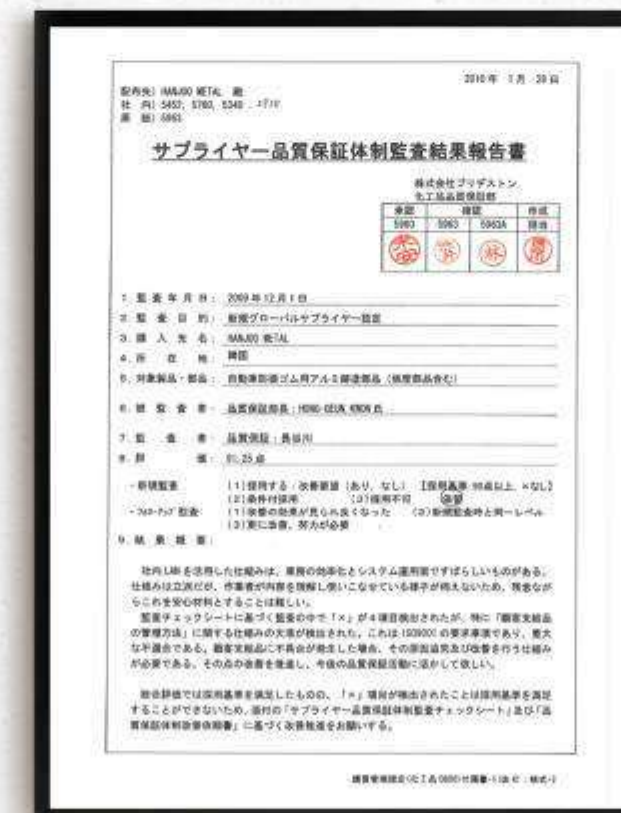
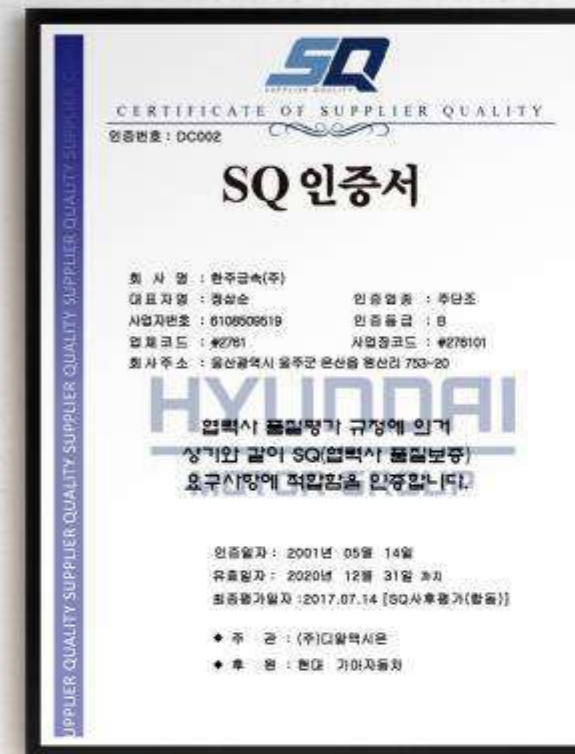






# Customer Audit

- 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)

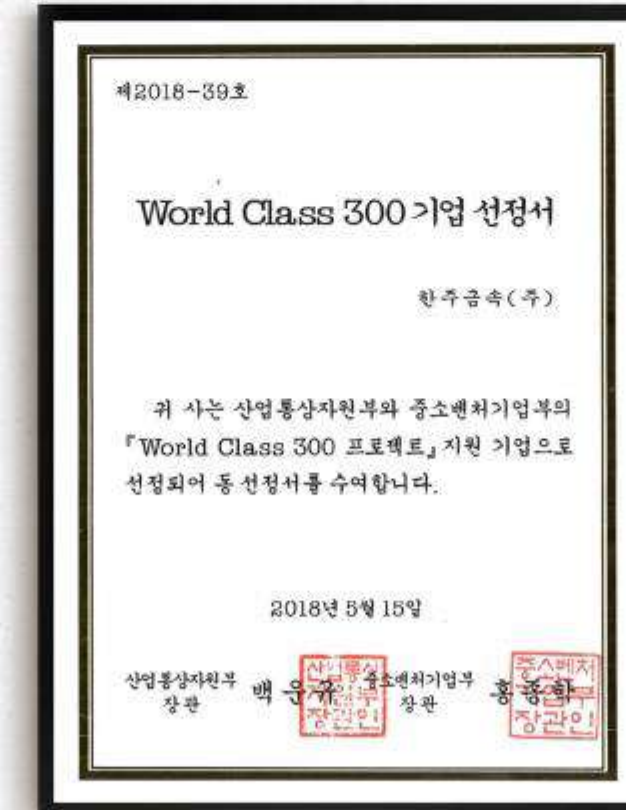
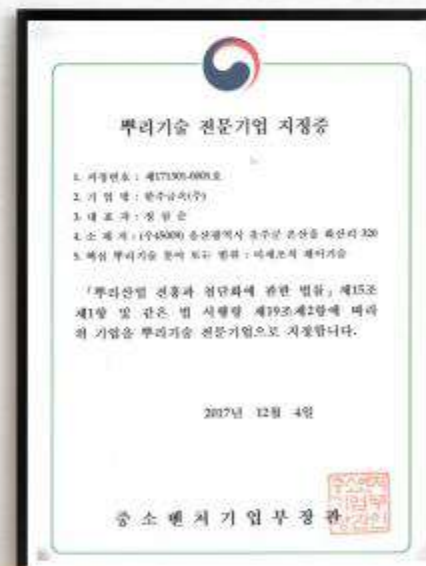






# Patent & Company Certification

- 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)
- Wolrd Class 300  
no. 2018-39 (2018.05.15)
- Expert on material, component, equipment  
no. 22088 (2020.04.29)

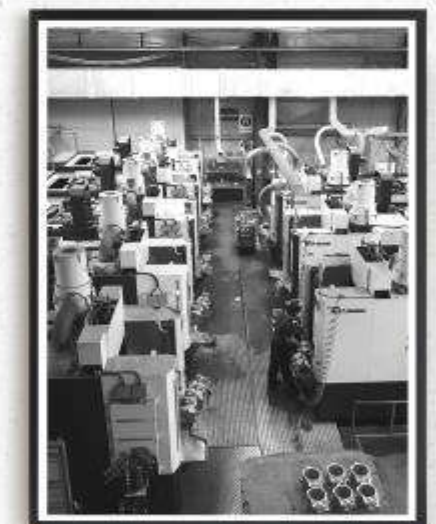






# Award Certification

- 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

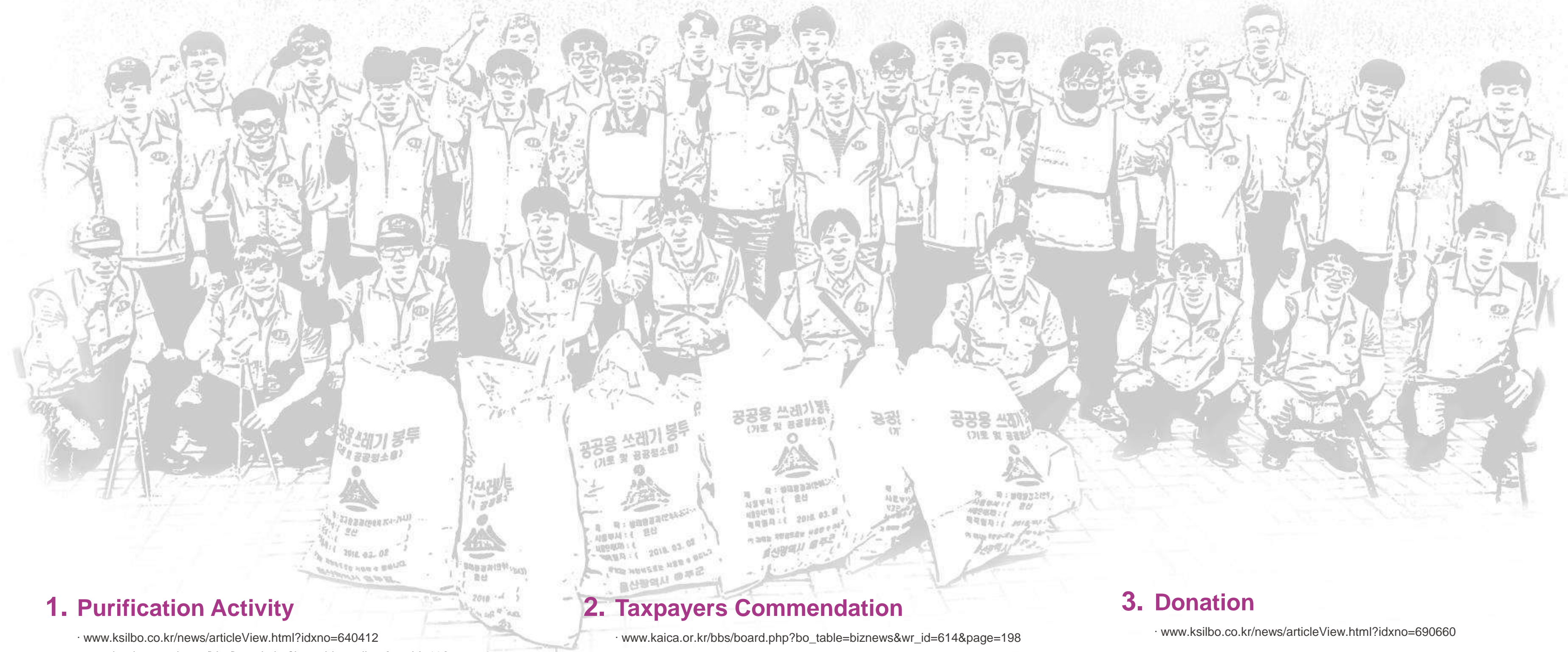
## SOCIAL CONTRIBUTION

Live Together





## Live together



### 1. Purification Activity

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 · [www.hanjoometal.com/bbs/board.php?bo\\_table=gallery&wr\\_id=12&page=3](http://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](http://www.kaica.or.kr/bbs/board.php?bo_table=biznews&wr_id=614&page=198)

### 3. Donation

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