



For Technology, Quality & Value Start with



Reaching the highest levels of Technology, Quality and Value for Our Customers



1980s

Establishment

- 1984 : JV between GM and Daewoo

1990s

Technology Independence

- 1998 : Established new tech center in Daegu, Korea
- 1999 : Completion of climatic wind tunnel
- Developed independent design and production technology

2000s

Expansion

- 2001 : Changed name to Korea Delphi Automotive Systems
- 2007 : Established manufacturing site and tech center in Changshu, China
- Started to diversify customers and entered the global market

2010s

Globalization & Network Expansion

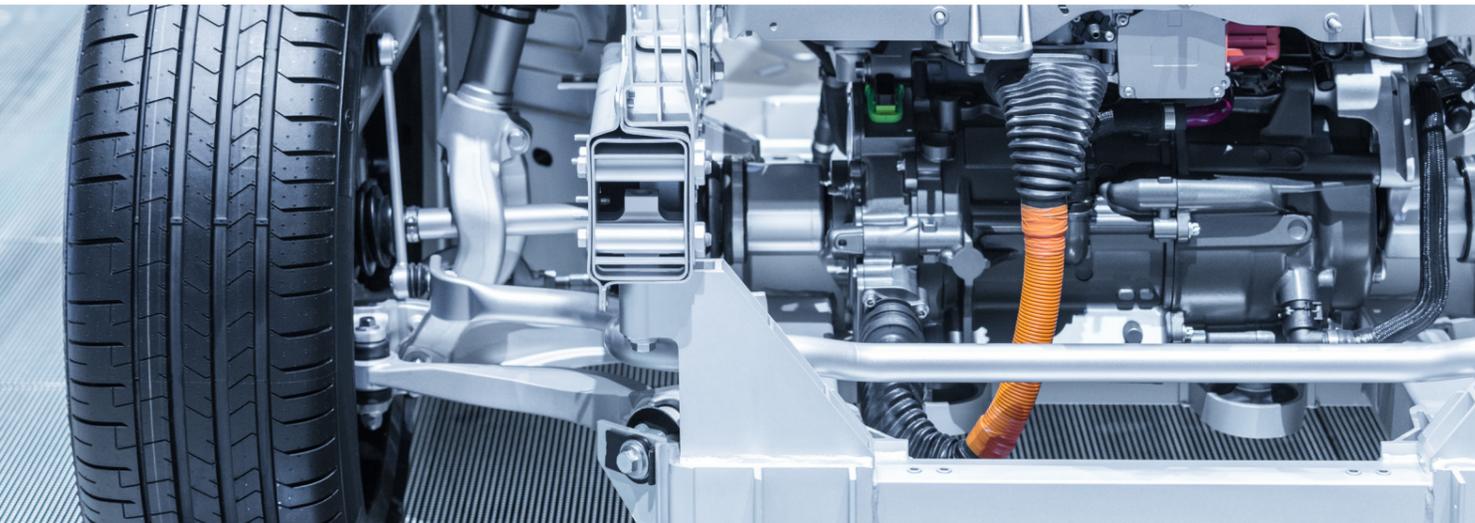
- 2010 : US tech center opened for US business
- 2013 : Established manufacturing site in Jilin, China
- 2017 : FATEC(Future Automotive Tech Center) founded
- 2017 : Changed name to ERAE AMS
- 2018 : Built US production site in Pontiac, Michigan
- Grown into a global company by establishing a global manufacturing, R&D and service network
- Received Excellent Supplier Awards from GM, Stellantis, Toyota

2020s

Transformation into a Future Technology Company

- 2021 : Selected as a “World Class 300+” company by the Korean government (title awarded only to the top 300+ companies in Korea)
- Growing into a company specialized in driveline system and electric powertrain
- Integrated a smart factory line in Daegu plant
- 2025 : Changed name to Hansae Mobility

Excellence in Developing and Supplying Automotive Components to Global Car Makers



Hansae Mobility is an established global automotive parts manufacturer with a diverse portfolio of products.

Hansae Mobility, formerly known as Korea Delphi, is an automotive components & systems supplier headquartered in Korea with nearly 40 years of corporate history and a global footprint (11 locations in 8 countries, including Michigan, US). We produce a wide array of auto components & systems ranging from more traditional products (e.g., driveline, chassis, brake, steering products) to products geared towards the future (e.g., electric powertrain). Since its establishment, its excellent technology has been acknowledged by world renowned automobile manufacturers (e.g., GM, Stellantis, Volkswagen, Rivian) as it has supplied compact and lightweight automotive components with outstanding performance and durability based on robust capabilities in management, production, and technology.

Our product quality has been acknowledged by the largest car makers.

Namely, Hansae Mobility received the "Supplier of the Year Award" for 5 years from GM which is granted only to 2% of GM's suppliers worldwide. Hansae Mobility is fully dedicated to becoming a global leader in the automotive components industry by achieving a combination of world-class technology, quality, price competitiveness and service.

We have robust production and R&D capabilities.

Hansae Mobility has multiple state of the art manufacturing and R&D facilities worldwide. Our manufacturing facilities, including in Korea and Michigan, US ensure stable, reliable production of high quality products. The annual global production volume is over 2 million vehicle parts. They are backed by our strong R&D centers in which we invest significant resources.

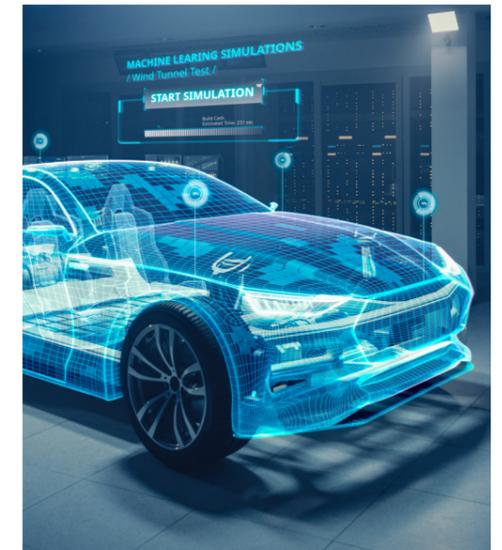
We supply components to global auto makers, including new EV makers.

Below are a few examples of our customers :

- Established car makers (longstanding and main customers):
GM, Stellantis, Volkswagen
- High-end car makers : Audi, Porsche, Maserati
- New EV makers : Rivian, Canoo

Hansae Mobility is transforming into a future technology company.

We are making continuous efforts to transition into the new electric vehicle paradigm. We have developed and are enhancing advanced new products, such as electric powertrain, and competitive core products for the next generation automotive business environment, will be unveiled soon.



Establishment

1984



Headquarters

Republic of Korea



Business

Driveline, Chassis &
Electric Powertrain



Intellectual Property

Domestic : 245
International : 137



Global Presence

11 Locations
8 Countries



Production Capacity

Over 2 Million
Vehicle Parts



Employees

1,182



R&D Personnel

118

Product Portfolio

Hansae Mobility's Vision is lead the Advanced Driveline System and Electric Powertrain to our customers

01. Driveline

- Halfshaft
- Rz/TP/DO/CG Joint
- Joint for propeller shaft
- Monobloc tubular shaft
- Ball splined shaft



03. Brake & Steering

- Wheel Brake
- Steering column
- Electric tilt & tele Column
- Intermediate shaft



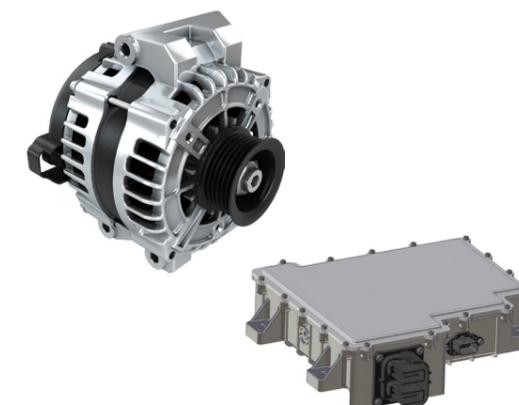
02. Electric Powertrain

- Micro to M segment available (2WD or 4WD)
- 1 or 2 speed transmission
- Motor-Inverter Module
- Various options : e-Parking, e-LSD, e-DD, Dual clutch torque vectoring



04. Electronics

- Alternator
- Inverter for Electric Powertrain



CONTENTS

+ Product Portfolio	07
+ Driveline	08
+ Brake	10
+ Steering	11
+ Electric Powertrain	12
+ Alternator	14
+ Capability	16
+ Global Footprint	18
+ Customers	19

Driveline

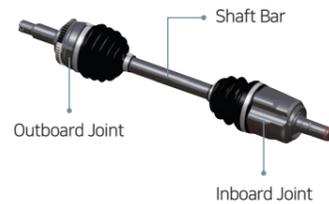
Halfshaft

Features

- Outboard Joint : Rzeppa / High Angle Rzeppa / High Efficiency Rzeppa / CGJ / CTPJ
- Inboard Joint : CGJ / CTPJ / TPJ / VSJ

Customer Benefits

- Light weight
- High durability
- Stable power delivery and enhanced driving feel



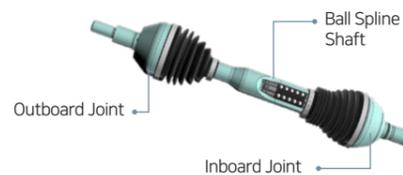
Ball Spline Halfshaft

Features

- By separation of absorbing function of angular and length displacement
 - Extremely low GAF (maximum 15N)
 - Extension of plunging capacity (100mm max.)

Customer Benefits

- Excellent NVH Performance due to lower GAF even high angle condition
- Absorption capacity of extremely wide suspension displacement



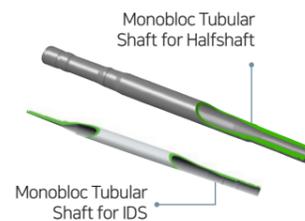
Monobloc Tubular Shaft (MTS)

Features

- Optimally sized monobloc tubular shaft
- Extended tubular section for the maximum weight reduction

Customer Benefits

- Light weight and fuel saving
- Highly stabilized NVH performance



Anti-shudder Tripod Joint (VSJ)

Features

- Low GAF in any running angle
- Simplified spider assembly
- Wide guiding housing structure

Customer Benefits

- Highly stabilized NVH performance
- Low cost achieved by less number of components and simplified assembly



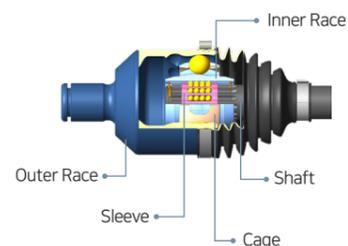
Inner Race Ball Spline Joint(IR BSJ)

Features

- Plunging function having between IR and Shaft instead of between shafts
- Place multiple balls in one window of Cage
- 8 ball application to the Joint

Customer Benefits

- Much more compact package : 30% smaller Shaft OD than conventional Ball Spline
- Much lighter weight : 10% lighter than conventional Ball Spline
- Cost saving : 20% lower than conventional Ball Spline



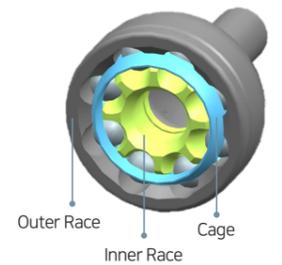
Ultra High Angle Rzeppa Joint (UARz)

Features

- Compact Joint with 6 ~ 8 balls
- Reverse ball track design

Customer Benefits

- Light and compact package
- Increased joint angle capacity (52°)



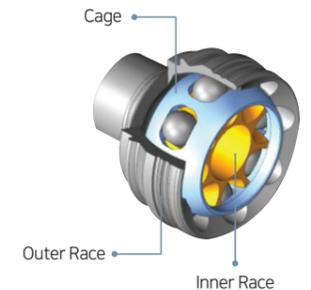
High Efficiency Rzeppa Joint (HERz)

Features

- Compact Joint with 8 balls
- Multi curve shaped ball track design

Customer Benefits

- High efficiency performance
- Light and compact package
- Increased joint angle capacity (50°)



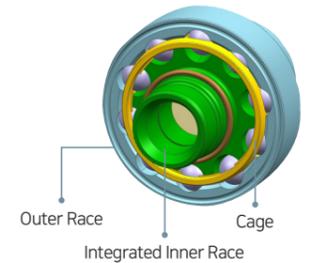
Counter Track Rzeppa Joint for Propeller Shaft (CTRz)

Features

- 8~10 balls design
- Counter ball track
- Closed design without clamp

Customer Benefits

- Light and compact package
- High efficiency Propeller Joint



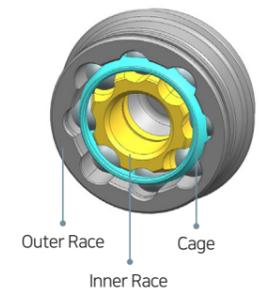
Counter Track Plunging Joint (CTPJ)

Features

- Compact Joint with 8 balls
- Counter ball track
- Plunging Joint for rear application

Customer Benefits

- Light and compact package
- High efficiency Joint



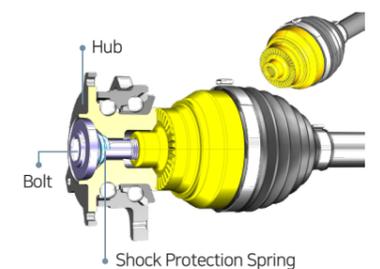
Face Spline

Features

- Shaped on the shoulder face of Outer Race
- No Shank
- No Heat treatment on Face Spline

Customer Benefits

- Perfectly prevent clicking noise generated when vehicle is accelerated rapidly from stop
- Free from shank fracture and weight reduction
- Reduce working time by very easy mounting or removing halfshaft in vehicle



Brake

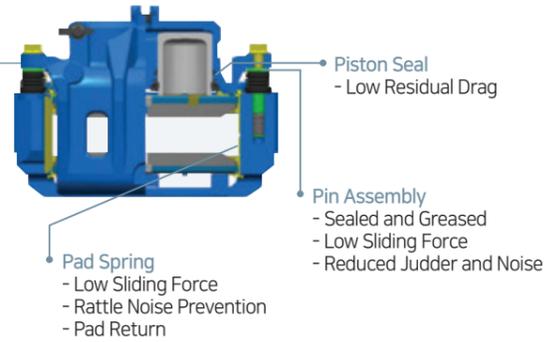
Caliper Brake

Features

- Separated function (Bracket mounted)
- Self-adjusted gap between disc and pad

Customer Benefits

- High performance
- Low residual drag
- Compact size and light weight
- Reduced noise



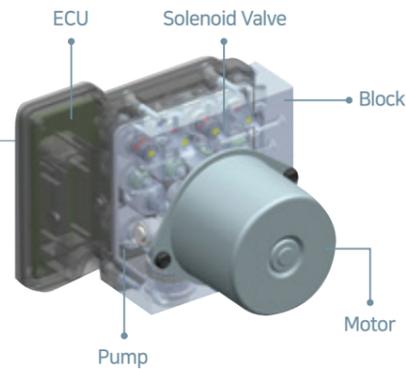
Electronic Stability Control (ESC)

Features

- Optimized design
- High efficiency and durability
- Available to ADAS like AEB

Customer Benefits

- Low weight and compact package
- High performance and fast response
- Provide driver with various function



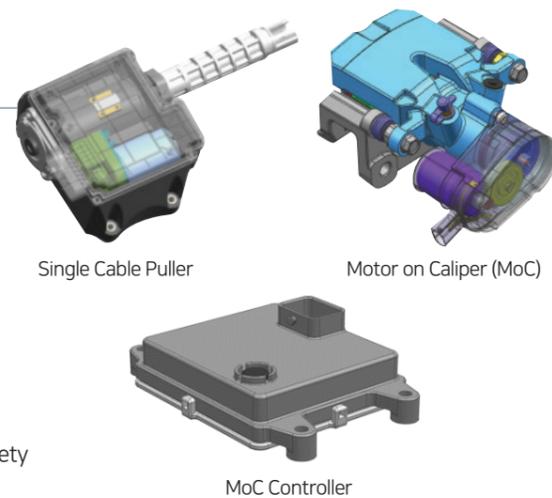
Electric Parking Brake (EPB)

Features

- Optimized response time and clamping force
- High efficiency gear train
- Drive away assist (Auto release)
- Auto apply
- Dynamic braking (Prevent rear wheel locking)
- Integrated parking and service brake (MoC)
- Integrated ECU (Controller, Cable Puller)

Customer Benefits

- Emergency release
- Compact package & fast response
- Provide variety of additional functions for driver comfort and safety
- Mass reduction by aluminum housing and plastic gears (MoC)



Steering

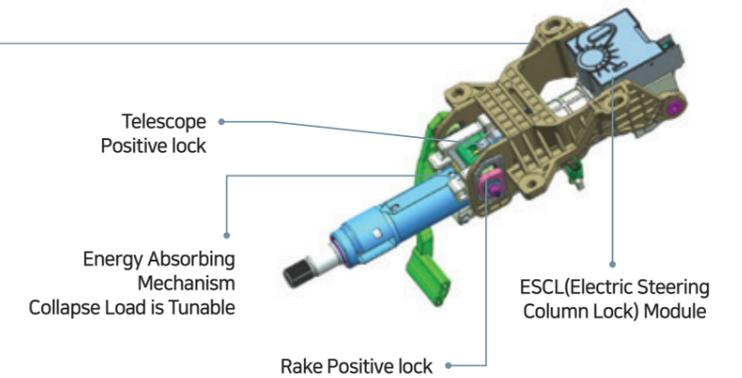
Rake and Telescope Column

Features

- Rake and Telescope Column
- Energy absorbing mechanism
- Rake & Telescope Positive lock
- ESCL Module

Customer Benefits

- High column stiffness
- Good NVH performance
- Cost competitive



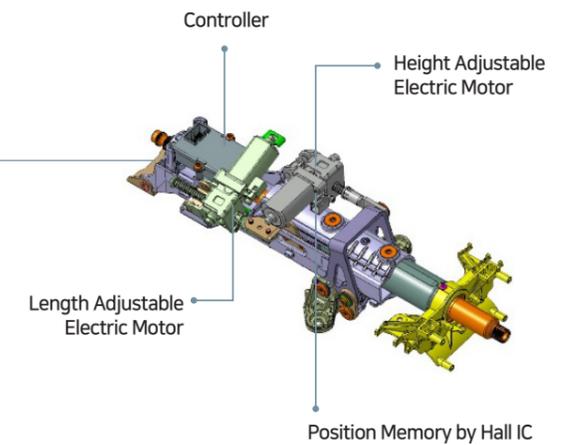
Electric Tilt and Telescope Column

Features

- Electrically adjustable in height and length
- Position memory function by hall IC
- Controller available

Customer Benefits

- PWM Motor control available (Operation Noise Enhancement)
- Good NVH performance



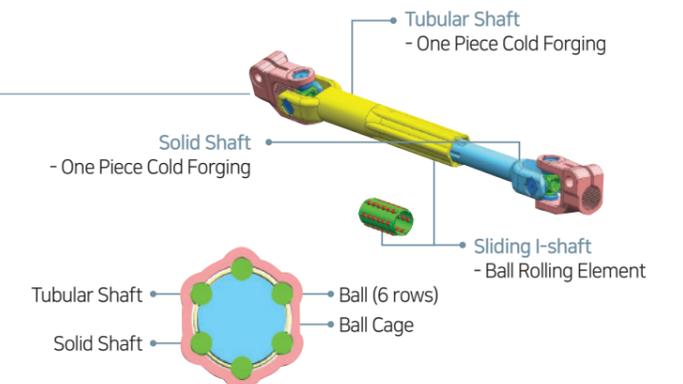
Low Friction Intermediate Shaft

Features

- Ball rolling element
- One piece solid yoke (Cold forging)

Customer Benefits

- Low sliding force
- Low lash
- High stiffness



Electric Powertrain

Product Range

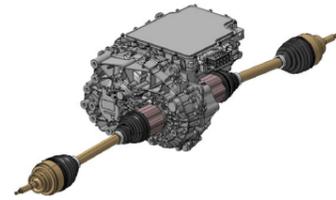
- Main e-Powertrain : C to D segment
- Main & Auxiliary e-Powertrain : D to M segment
- Vehicle drive type : FWD/RWD/AWD available

Product Features

- Increased energy efficiency
- Improved driving performance and stability by various options (e-DD for regenerative braking and 4WD, e-Parking, etc.)
- Integrated motor-MCU and co-axial & parallel type for compact package
- 400V, Max. 150kW (rated 80kW), 14,000rpm
- Open differential gear
- Current status : proto development



EM80-1SPC
(1 Speed Co-Axial type)



EM80-1SPP
(1 Speed Parallel type)

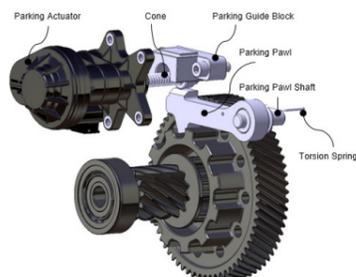


EM80-2SPC
(2 Speed Co-Axial type)

Various options (e-Parking / e-DD) according to customer requirement

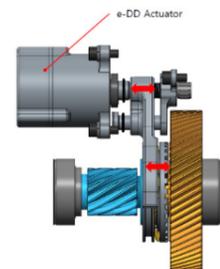
e-Parking

- Electric locking device for e-Powertrain parking
- Actuator integrated controller



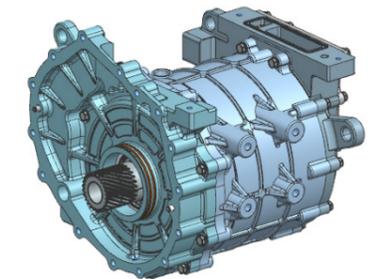
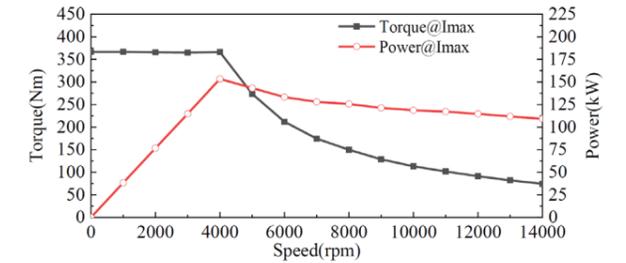
e-DD

- Power cut-off & connecting device of auxiliary e-Powertrain for energy saving (4WD ↔ 2WD)
- On-demand type
- Actuator integrated controller



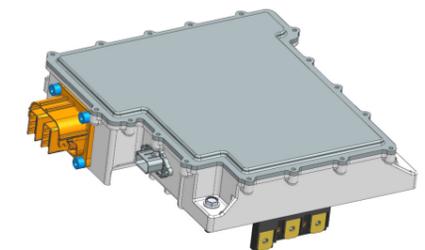
Motor Specification

Items		Spec.
Motor Type		IPMSM Co-Axial
System Voltage		400 [Vdc]
Max. Current		540 [Arms]
Power	Max.	150 [kW]
	Rated	80 [kW]
Torque	Max.	360 [Nm]
	Rated	180 [Nm]
Speed	Max.	14,000 [RPM]
Efficiency		Max. 96 (%)
Cooling Type		Water Cooling
Position Sensor		Resolver



Motor Control Unit(MCU) Specification

Output	Maximum 150kW
Input Voltage	Maximum 400V (Nominal 360V)
Control Power	12V
Power Module	Infineon Company HP2 900A/750V 1EA apply
Torque Control Precision	Within 5% of the maximum torque
RDC-Less	Using SAK-TC234LP CPU MCU-RDC Direct H/W & S/W



Motor Control Unit(MCU) Feature

- DSP & IGBT gate drive integrated circuit
- Circuit for intelligent PMIC selection and power supply
- H/W fault detection circuit
- 750V / 150kW class gate drive circuit
- Rated load MCU efficiency over 95%

Alternator

New NP Series Alternator

Regulator

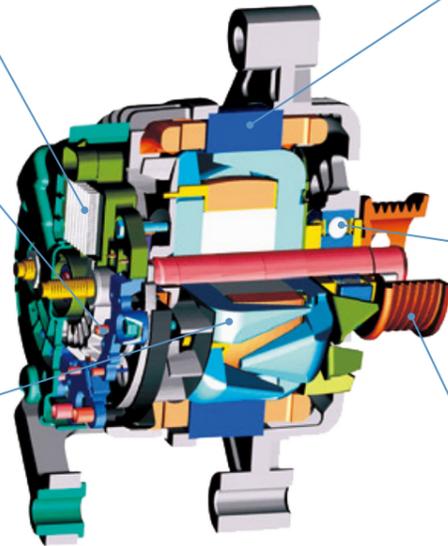
- Integrated Regulator
- No Brush Jam Design
- One Chip / Multi Functions

Rectifier

- High Heat Capability
- Press-fit Diodes
- Optimized Thermal Design
- Robust Design
- Tubular Terminal Bridge
- Metal Stack-up Design

Rotor

- Increased Electromagnetic Force
- Low Moment of Inertia
- Epoxy Molded Coil Connection
- Noise Tuned Segments



Stator

- High Fill Factor Winding
- Electrical Grade Steel
- Corrosion Protection Painting
- Bar Wire & Segment Conductor (UQ model)

Ball Bearing

- High Operation Durability
- High Temperature
- High Belt Load Capacity

Pulley

- OAP, OAD, Solid Pulley



Features

- Increased output and efficiency
- Several size ranges
- Up to 200Amps (Air-cooled)
- High temperature capability
- Packaging flexibility
- Long service life

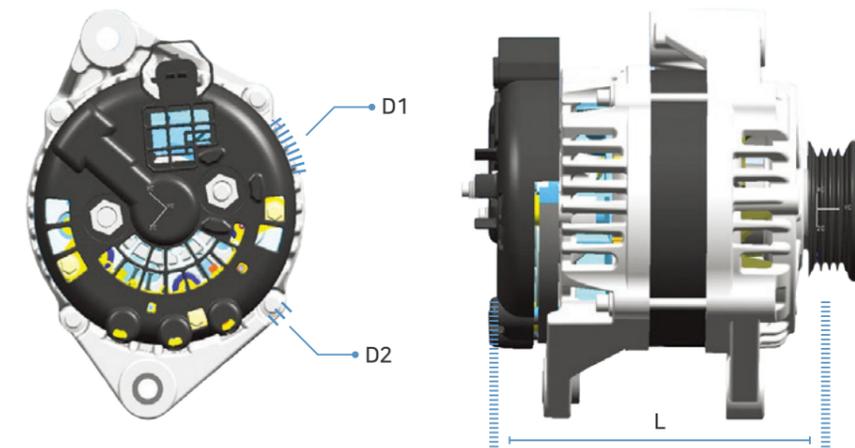
Customer Benefits

- Increased efficiency up to 80%
- Superior performance in light weight and compact sizes
- Improved performance and durability at higher temperature, 125°C
- Reduced magnetic and mechanical noise
- System integration (ECU communication type)
- 150,000 miles durability service life
- Ultra quiet noise level (UQ Model)

Regulator Types Available

- Conventional Type : Fixed Setting Voltage
- ECU (Electronic Control Unit) Communication Type
 - Setting voltage controlled by PWM signal (RVC, C-terminal, etc)
 - Setting voltage controlled by LIN protocol

Specification



MODEL		NP10	NP14	NP16	NP13Q	NP16Q	NP18Q	QH16	QH18	QH16S	
		3 Phases & Round wire			6 Phases & Bar wire						
Performance (Amp@1,800 / 6,500rpm@14V,25°C)		50/100	76/140	90/160	76/150	85/160	90/180	85/160	90/180	85/160	
Temperature Capability (°C)		125									
Package (mm)	D1	126	142	148	136	136	136	136	136	136	
	D2	144	156	165	146	146	146	146	146	146	
	L	140	140	142	130	130	132	130	132	130	
Rotor Inertia (kg·cm ²)		15	32	36	26	26	28	26	28	26	
VDA Efficiency (%)		66	67	67	72	72	72	77	77	80	
Typical Mass (kg)		5.2	6.2	6.9	5.8	5.8	6.0	5.8	6.0	5.8	
Noise (dB)		Standard			Ultra Quiet						
Speed Capability(rpm) (Continuous / Intermittent)		18,000 / 21,000									

※ Note : VDA Efficiency = [0.25*N(1800)] + [0.40*N(3000)] + [0.25*N(6000)] + [0.1*N(10000)] where N N(1800), N(3000), N(6000), N(10000) are alternator efficiency values obtained at each of alternator rpm at 25°C when supplying 50% of rated current at 6000rpm

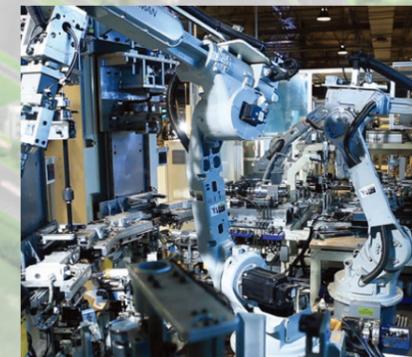
Engineering Capability Research & Development

A highly qualified team of Product Engineers, Technicians, Researchers and Program Managers is delivering the next generation of high technology, quality and value-driven systems and components. Hansae Mobility has a complete range of Research, Test & Computer Aided Engineering facilities located at our main Tech Center in Daegu, Korea. Hansae Mobility is expanding its global presence with satellite Tech centers currently operating in the US and China.



Production Capability Production Technology

Production processes are highly automated as well as supporting functions such as material procurement, parts processing, manufacturing and testing are optimized to deliver efficient manufacturing of high quality products.



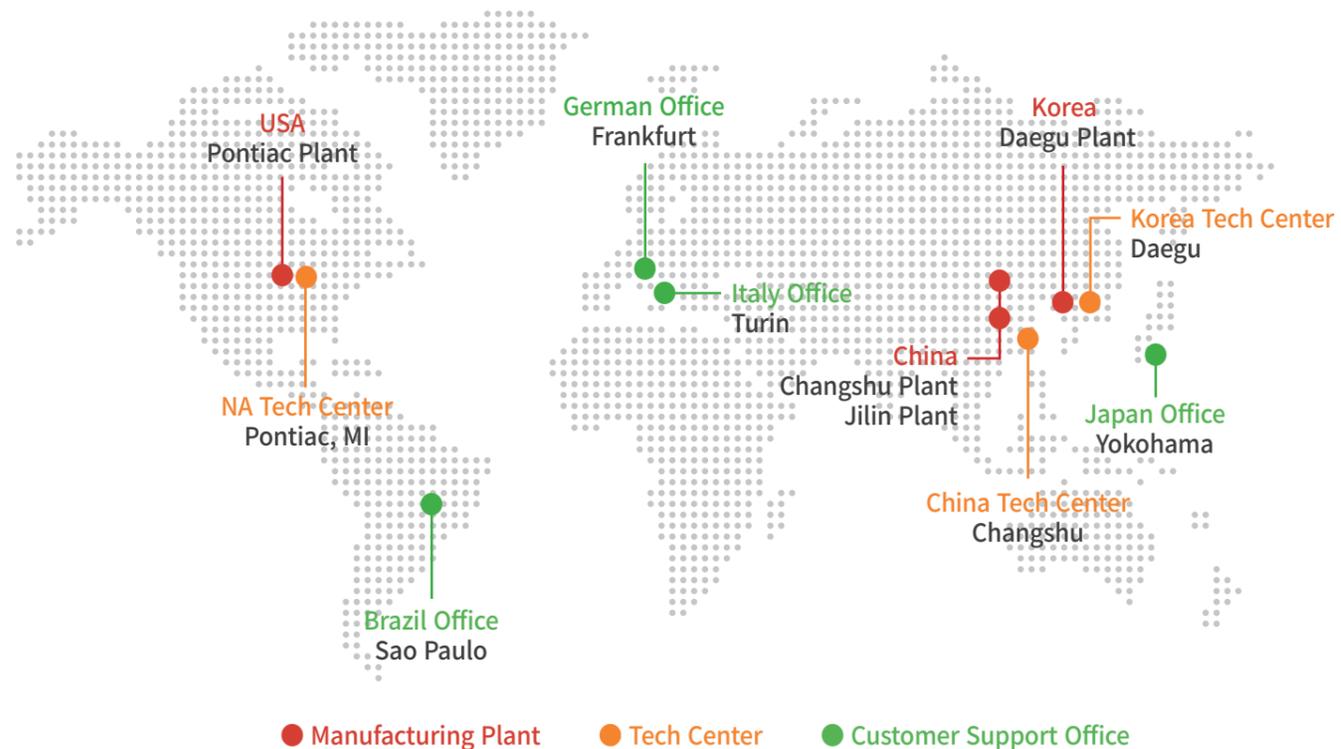
Vehicle Proving Ground



Global Footprint

4 Manufacturing Sites in 3 Countries

3 Technical Centers and 4 Customer Support Offices in 7 Countries



Korea Plant



USA Plant



China Plant

Customers

Hansae Mobility has gained trusted partnerships with customers through many years of technology & service. These relationships enable us to uncover market trends, understand the challenges and develop new solutions.



Contact Point

Item	Telephone	E-mail
Driveline for America	+82 10 9505 0515	yungkeun.yang@hansaemobility.com
Driveline for Europe & Asia	+82 10 9329 4421	jeongho.yang@hansaemobility.com
Korea Domestic	+82 10 5208 5449	heekook.choi@hansaemobility.com
Brake, Steering, Alternator & New Business	+82 10 2874 9189	hocheol.son@hansaemobility.com



**For Technology,
Quality & Value
Start with HANSAE MOBILITY**

