For Technology, Quality & Value Start with

EPSS Global

We will be the most suitable and reliable
business partner with you.

WHY CHOOSE US

ABOUT COMPANY

EPSS Global is providing
both conventional and advanced technology for auto parts

EPSS Global is established in April 2017 as an affiliated company of an automotive parts global player, erae AMS in Korea (formerly Korea Delphi, https://www.eraeams.com).

Our business consists of three categories. One is automotive parts trading with overseas buyers like PHINIA Inc, and the others are defense business and consulting. In case of the former, we can cover simple trading and technology licensing. We have so many experiences for the technology licensing business globally with partners in ASEAN, China and so on. And, our main markets are Middle East, China, Uzbekistan, Russia, North/South America, ASEAN, Europe, etc.

In order to achieve sustainable growth, we are trying to find new business opportunities other than current businesses and ready to collaborate with any partners who has state of art technology.

History of EPSS GLOBAL

2023	**March**	**Addition of defense and consulting business**
2019	**June**	**Master Cylinder Machining Line supplied to Crouse**
2018	**January**	**Purchase and supply agreement signed with Borgwarner PDS for Alternator and Starter aftermarket business**
	June	**Invited Uzbekistan Textile Association and its buyers to KORTEX 2018 hosted by Daegu City and DGMC**
2017	**April**	**EPSS Global registered**
	June	**Aftermarket business started**
	October	**Memorandum of Understanding (MOU) signed with DGMC for marketing automotive parts, machinery for machining and textile in Middle East, Uzbekistan and Russia**

PART I

AUTO PARTS TRADING

EPSS Global has strived to provide the best services and solutions in the after-service market as well as OE market based on over 30 years of experiences and expertise.

EPSS Global as a qualified player in the aftermarket has carried out continuous improvement to stay on the competitiveness in both pricing and quality.

Since 2017, EPSS Global has played a role as an exclusive distributor for erae AMS and Estra Automotive that are the global auto parts suppliers in Korea. With this strategic alliance, EPSS Global has supplied wide range of products to overseas aftermarket.

Also, EPSS Global signed out the Memorandum of Understanding with Daegu Gyeongbuk Machinery Cooperative back in October 2017 and has promoted automotive parts, machinery for machining and textile in India, Middle East, Uzbekistan and Russia.

In addition, EPSS Global has good business relationships with partners in India and Middle East for local OE business. In this regard, EPSS Global has cooperated with the partners for local OE business for brake system and driveline under the technical assistance agreement.

Steering & Driveline

- Steering Column
- Power Steering Pump
- Intermediate Shaft
- Steering Gear
- Halfshaft
- Intermediate Drive Shaft

Brake System

- Caliper Brake
- Proportioning Value
- Power Brake
- Parking Brake
- Drum Brake

Thermal

- HAVC Module
- Colling Fan
- Radiator
- Charge Air Cooler
- Condensor
- Compressor
- HAVC Control

Electric & Electronics

- Alternator
- EGR Value
- Ignition Coil
- ECM

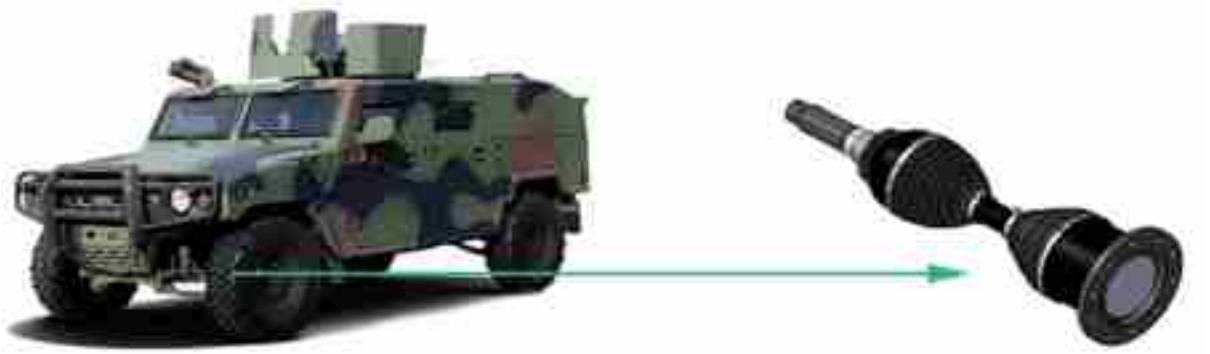
PART II

DEFENSE BUSINESS

EPSS Global has good business relationships with domestic customers for domestic defense companies, currently working on Ball Spline Shaft and Brake system including Motor on Caliper(MoC), Actuator and MoC Controller.

On top of traditional auto parts business, EPSS Global is trying to expand its business to a variety of advanced products including LiDAR, unmanned tactical robot and so on with cooperation with strategic partners.

I. Halfshaft parts of small tactical vehicle



In July 2022, our company signed an agreement with the KRIT(Korea Research Institute for defense Technology planning and advancement all rights reserved) to localize the halfshaft parts of small tactical vehicle.

We developed halfshafts with more than equal performance compared to existing imports, and the performance was proven through durability, environmental, and system suitability tests.

Starting in 2024, we plan to deliver halfshafts for 13 types, including small tactical vehicles.

II. Brake, Ball spline shaft and Controller for unmanned search vehicles

It is currently under development to supply brakes and controllers to domestic defense companies starting in 2024.

PART III

CONSULTING BUSINESS

Currently EPSS Global is working as consultant for domestic drone developers to provide technical support to India partners for them to produce drones for local market.

I. Technical Consulting

- **Utilizing the weapon system of possessed technology (support for entry into the defense sector such as unmanned vehicles, drones, and robots)**
- **Localization of Parts Development**
- **Joint development of defense technology, technical cooperation, etc**

II. Management consulting

- **Domestic marketing targeting defense system and subsidiary system companies and related government agencies**
- **Business conversion due to changes in internal and external environments**

III. Other Consulting

- **Defense-related support such as compromised trade**
- **Support for the preparation of administrative documents such as proposals related to defense projects**
- **Defense procurement, contract procedures, methods, etc**

Our Partners around the world

PARTNERS

EPSS GLOBAL ALWAYS GIVES YOU A WELCOME

Contact Point

- AUTO PARTS TRADING : Victor.Park@epssglobal.com
- DEFENSE BUSINESS : young@epssglobal.com

EPSS

www.eraeams.com

e-book Brochure

For Technology, Quality & Value Start with erae AMS

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

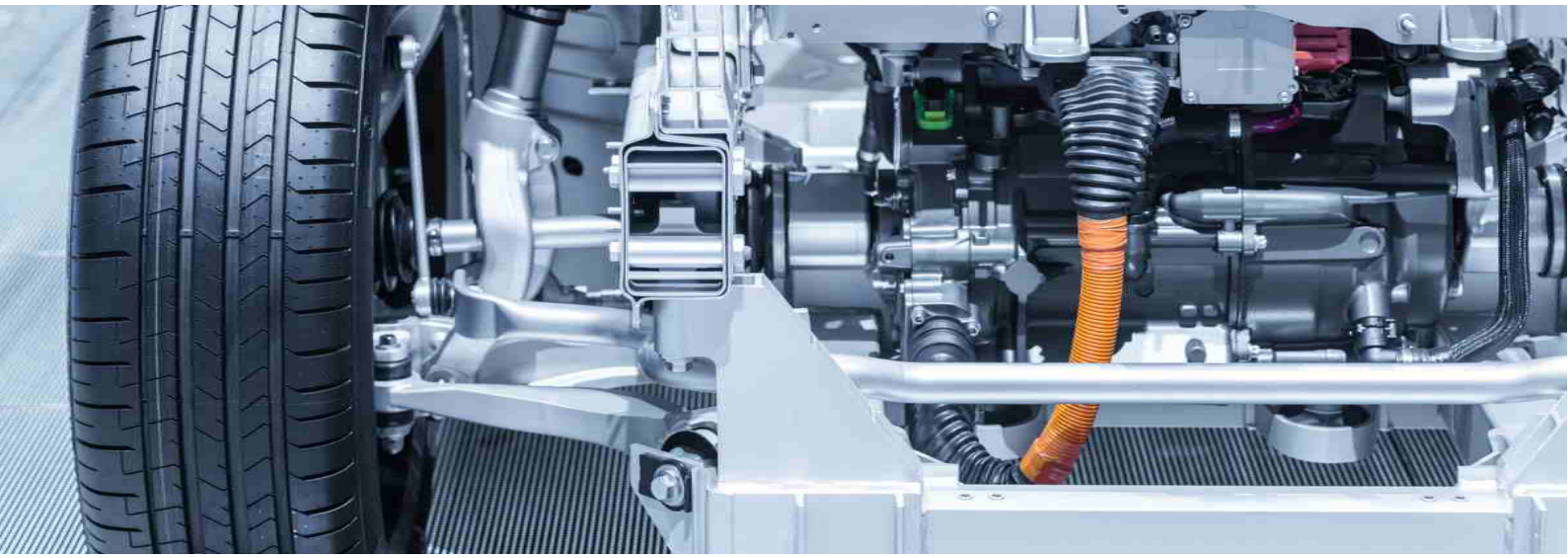
- 2010 : US tech center opened for US business
- 2013 : Established manufacturing site in Jilin, China
- 2017 : FATEC(Future Automotive Tech Center) founded
- 2017 : Changed name to ERAE AMS
- 2018 : Built US production site in Pontiac, Michigan
- Grown into a global company by establishing a global 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

Excellence in Developing and Supplying Automotive Components to Global Car Makers



ERAE is an established global automotive parts manufacturer with a diverse portfolio of products.
ERAE, 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 (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, ERAE received the "Supplier of the Year Award" for 5 years from GM which is granted only to 2% of GM's suppliers worldwide. ERAE 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.
ERAE 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

ERAE 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

erae AMS

CONTENTS

erae AMS

Product Portfolio

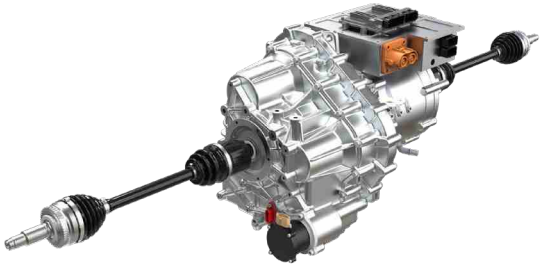
ERAE's Vision is lead the Advanced Driveline System and Electric Powertrain to our customers

01. Driveline

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

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

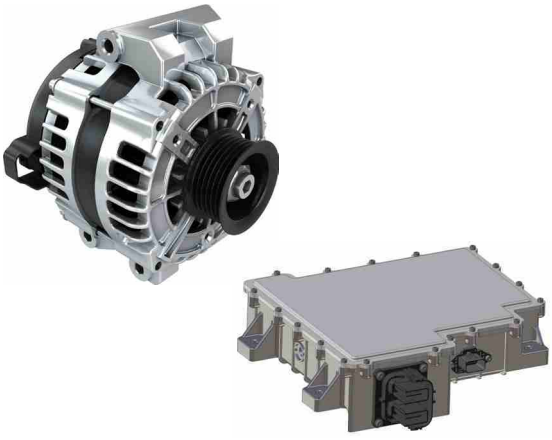


03. Brake & Steering

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

04. Electronics

· Altemator
· Inverter for Electric Powertrain



Driveline

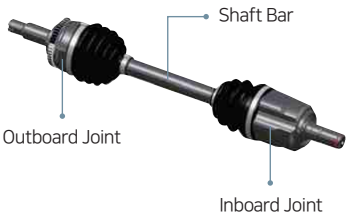
Halfshaft

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



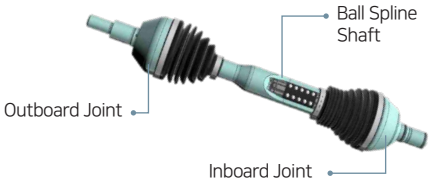
Ball Spline Halfshaft

Features

· By separation of absorbing function of angular and length displacement
  - Extremely low GAF (maximum 15N)
  - Extention 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



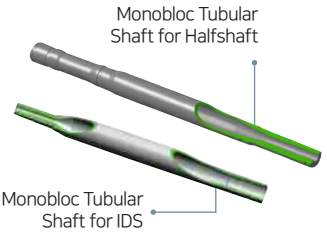
Monobloc Tubular Shaft (MTS)

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



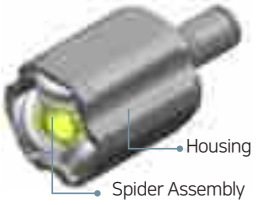
Anti-shudder Tripod Joint (VSJ)

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



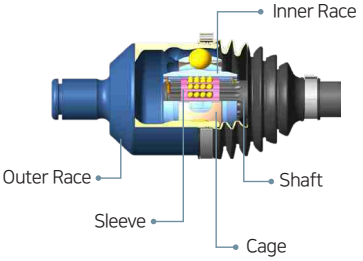
Inner Race Ball Spline Joint(IR BSJ)

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



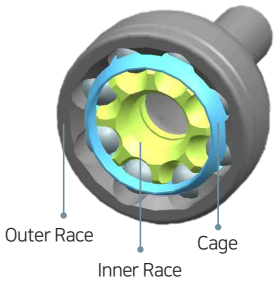
Ultra High Angle Rzeppa Joint (UARz)

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)

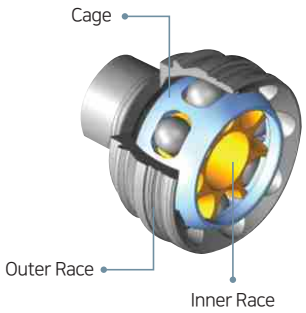
Features

· 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°)



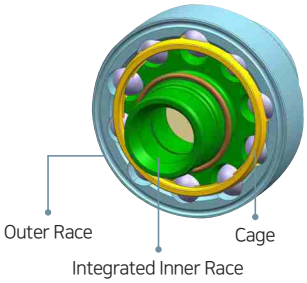
Counter Track Rzeppa Joint for Propeller Shaft (CTRz)

Features

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

Customer Benefits

· Light and compact package · High efficiency Propeller Joint



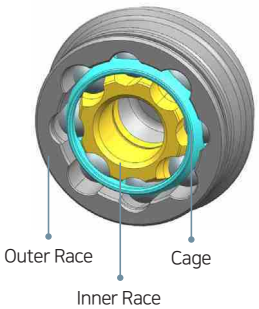
Counter Track Plunging Joint (CTPJ)

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

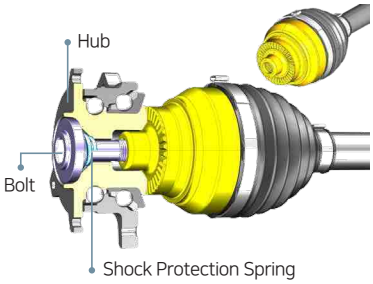
· No Shank · No Heat treatment on Face Spline

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

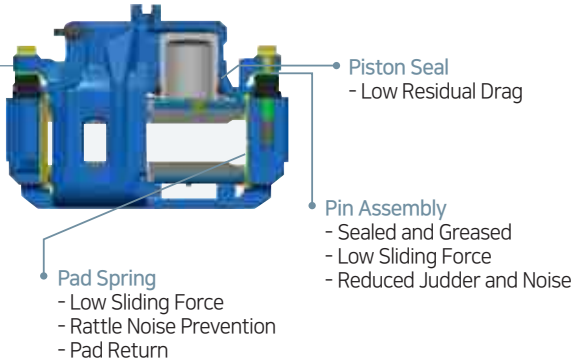


Brake

Caliper Brake

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

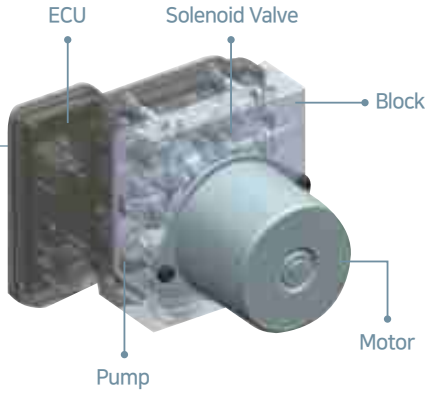
Customer Benefits
· High performance · Low residual drag
· Compact size and light weight · Reduced noise



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

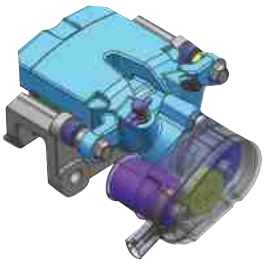


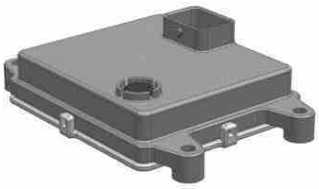
Electric Parking Brake (EPB)

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)


Single Cable Puller


Motor on Caliper (MoC)

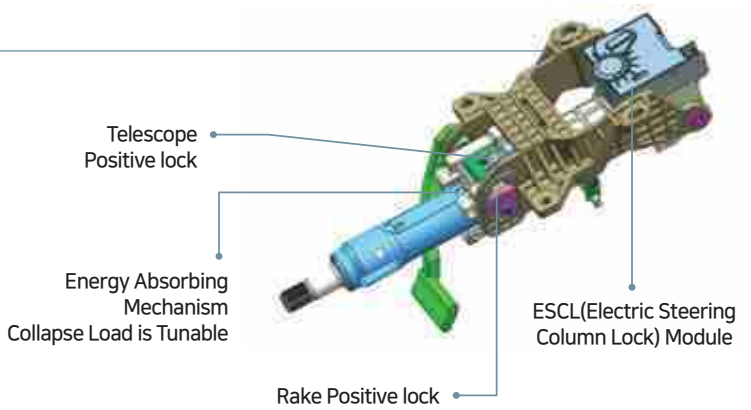

MoC Controller

Steering

Rake and Telescope Column

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

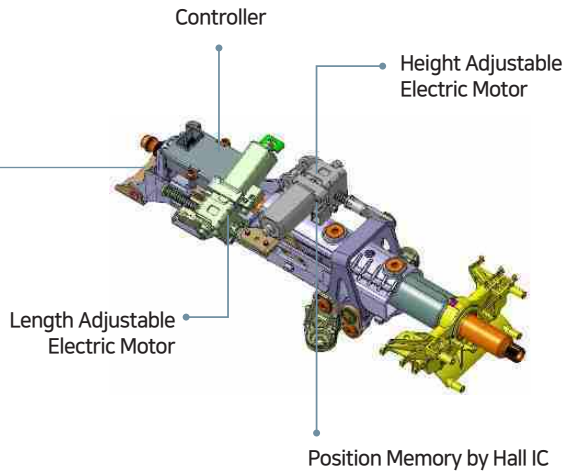
Customer Benefits
- High column stiffness
- Good NVH performance
- Cost competitive



Electric Tilt and Telescope Column

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

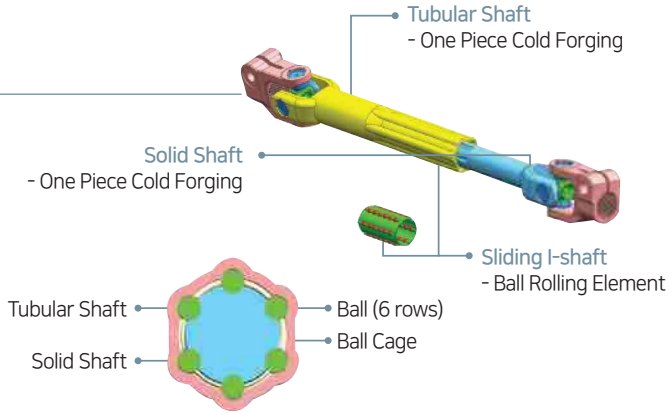
Customer Benefits
- PWM Motor control available (Operation Noise Enhancement)
- Good NVH performance



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)

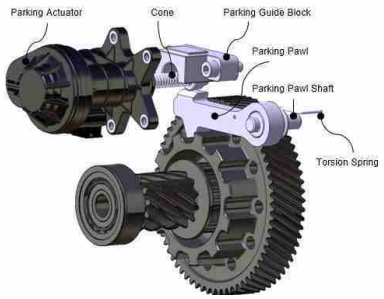
EM80-1SPP
(1 Speed Parallel type)

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

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

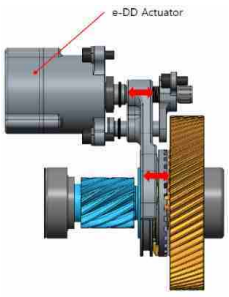
e-Parking

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



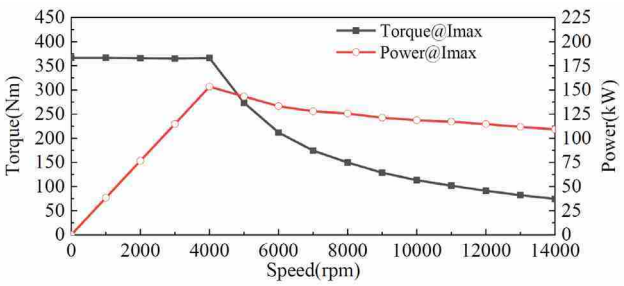
e-DD

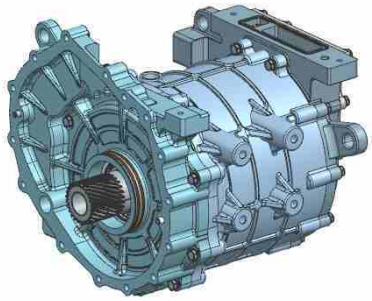
· Power cut-off & connecting device of auxiliary e-Powertrain for energy saving (4WD ↔ 2WD)
· On-demand type
· Actuator integrated controller



Motor Specification

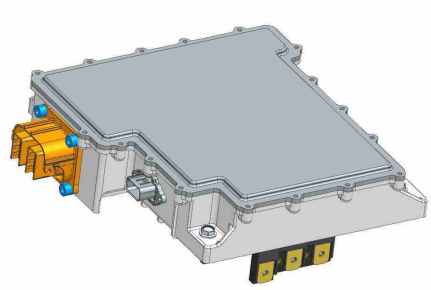
Items		Spec.
Motor Type		IPMSM Co-Axial
System Voltage		400 [Vdc]
Max. Current		540 [Arms]
Power	Max.	150 [kW]
	Rated	80 [kW]
Torque	Max.	360 [Nm]
	Rated	180 [Nm]
Speed	Max.	14,000 [RPM]
Efficiency		Max. 96 (%)
Cooling Type		Water Cooling
Position Sensor		Resolver





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

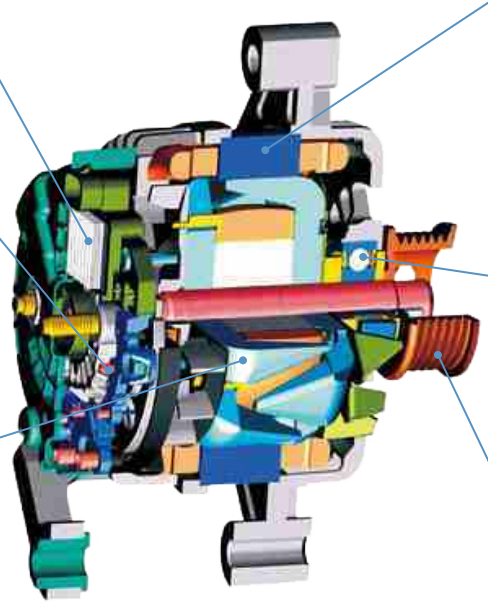
- Integrated Regulator
- No Brush Jam Design
- One Chip / Multi Functions

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

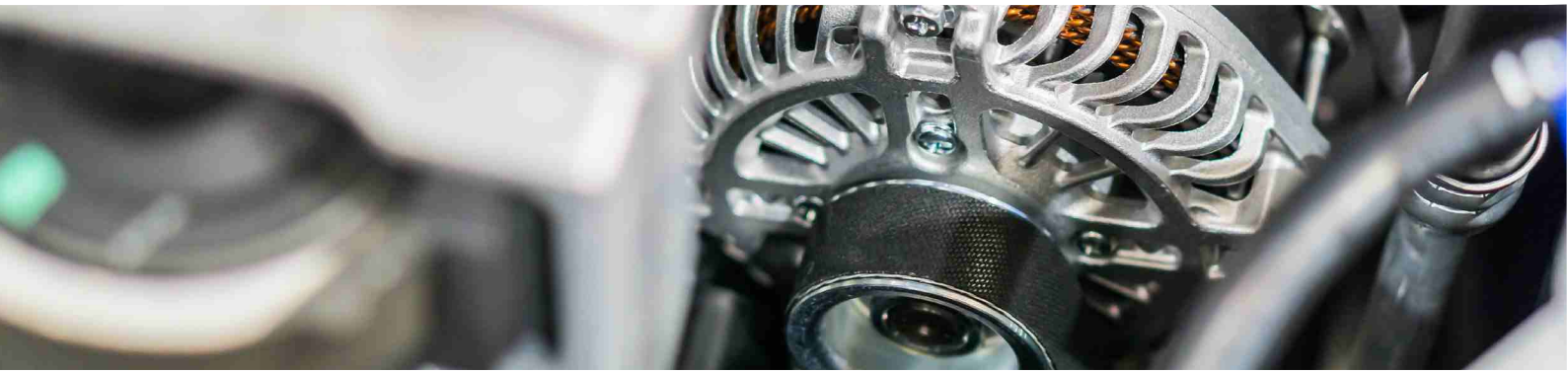
- High Fill Factor Winding
- Electrical Grade Steel
- Corrosion Protection Painting
- Bar Wire & Segment Conductor (UQ model)

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

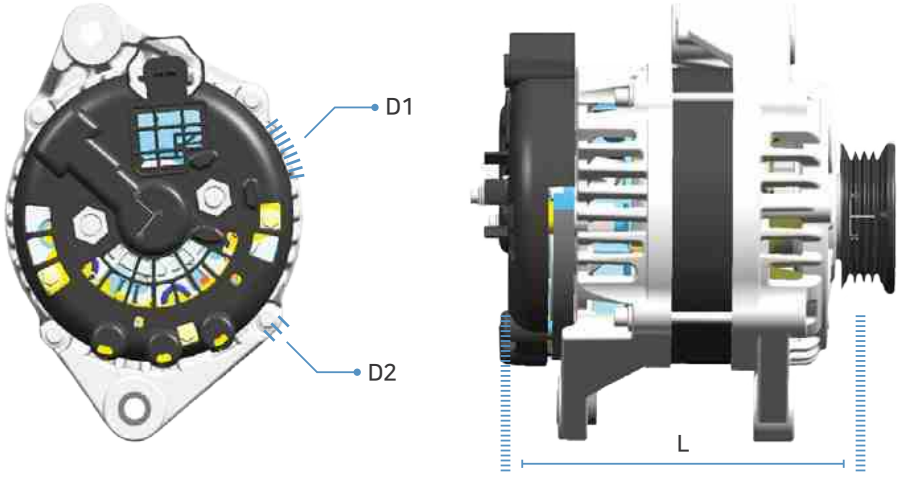
Customer Benefits

- Increased efficiency up to 80%
- Superior performance in light weight and compact sizes
- Improved performance and durability at higher temperature, 125℃
- 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		NP08	NP10	NP14	NP16	NP13Q	NP16Q	NP18Q
		High Efficiency				Ultra Quiet		
Performance (Amp@1,800 / 6,500rpm@14V,25℃)		40/90	50/100	76/140	90/160	76/150	85/160	90/180
Temperature Capability (℃)		125						
Package (mm)	D1	120	126	142	148	136	136	136
	D2	133	144	156	165	146	146	146
	L	140	140	140	142	130	130	132
Rotor Inertia (kg· cm^2)		15	15	32	36	26	26	28
VDA Efficiency (%)		64	6	67	67	72	72	72
Typical Mass (kg)		4.5	5.2	6.2	6.9	5.8	5.8	6.0
Noise (dB)		Standard				Ultra Quiet		
Speed Capability(rpm) (Continuous / Intermittent)		18.000 / 21.000						

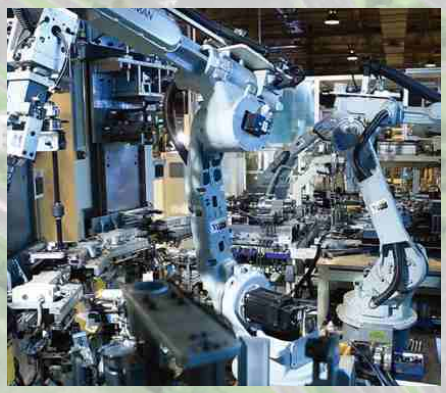
※ Note : VDA Efficiency = [0.25*N(1800)] + [0.40*N(3000)] + [0.25*N(6000)] + [0.1*N(10000)] where N N(1800), N(3000), N(6000), N(10000) are alternator efficiency values obtained at each of alternator rpm at 25℃ when supplying 50% of rated current at 6000rpm

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. ERAE has a complete range of Research, Test & Computer Aided Engineering facilities located at our main Tech Center in Daegu, Korea. ERAE is expanding its global presence with satellite Tech centers currently operating in the US and China.

Production Capability
Production Technology

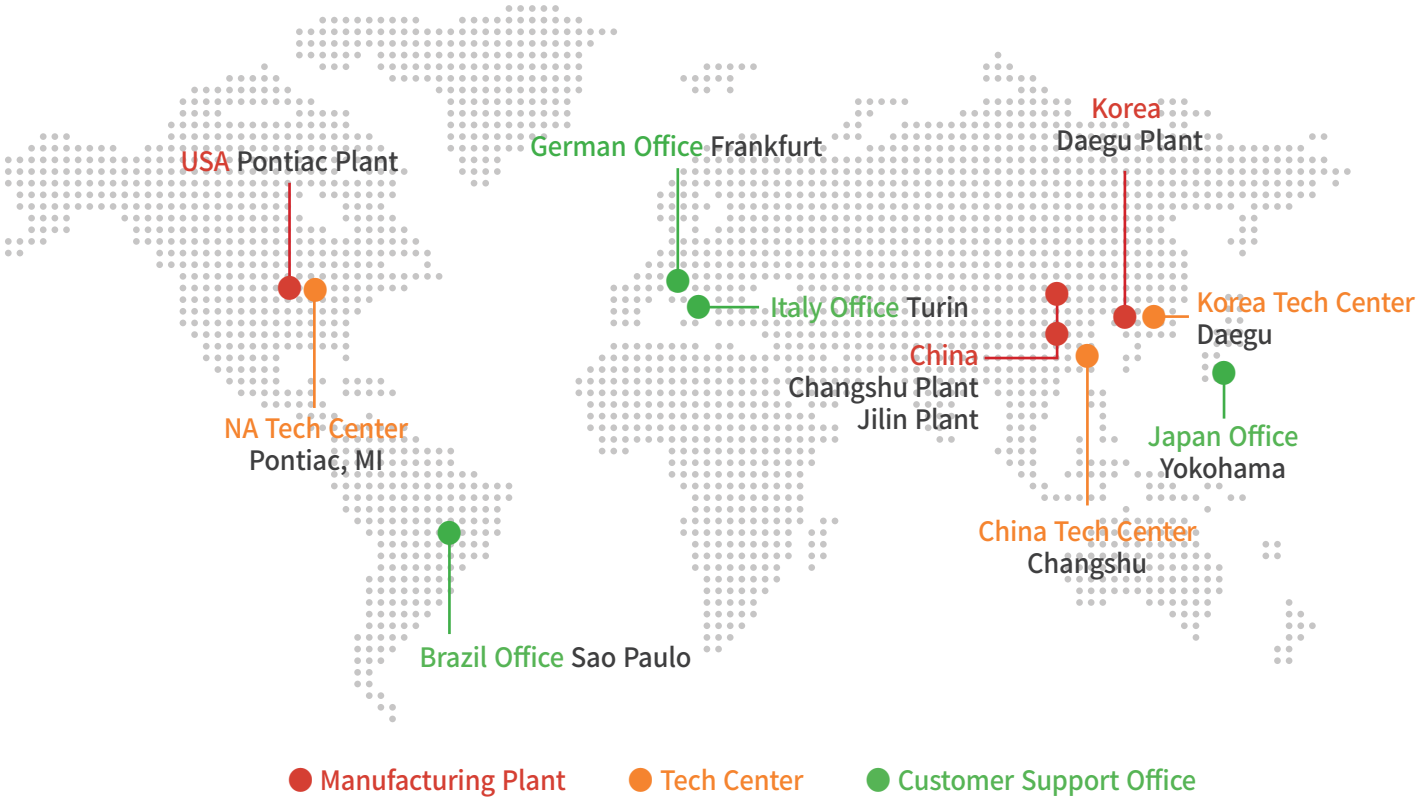
Production processes are highly automated as well as supporting functions such as material procurement, parts processing, manufacturing and testing are optimized to deliver efficient manufacturing of high quality products.



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

ERAE 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

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