

EDS SERIES

Electric drive systems for mechanical and hydrostatic transmissions

 **Bonfiglioli**



EDS SERIES

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Engineering Sustainability



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THE EDS APPLICATIONS

UNIVERSAL SYSTEMS FOR ON HIGHWAY AND OFF HIGHWAY APPLICATIONS

The EDS-D, EDS-X and EDS-H product series were developed to meet the requirements of On Highway and Off Highway Markets.

Thanks to the modularity of the components included in the system, the controller using the slave powertrain control strategy and their "versatility" on multiple applications, EDS fit various transmission systems.

Those systems are compact and with high power density and efficiency up to 93%.



MODULAR

The basic product configuration consists of a permanent magnet motor and inverter. The optional components that can be added to the system are: Gearbox, DCDC Converter and Telematics Control Unit.



VERSATILE

Adaptable to many applications



CUSTOMIZED

EDS is even more flexible, and can be adapted to the application simply by adding the powertrain control unit

THE EDS APPLICATIONS

HIGHLY FLEXIBLE AND MODULAR PLATFORM FOR A WIDE RANGE OF APPLICATIONS

Bonfiglioli's technical team supports customers up to commissioning on the application:

- **Assessment:** Our team provides support, from the very early stages of the project, by helping our customers identify the best solution for the application, analyzing requirements and performing specific feasibility analyses on open projects
- **Commissioning:** we partner up with our customers to ensure a quick, cost-effective and successful installation, support to prototype integration and first system set up.

 UTILITY VEHICLES	 COMMERCIAL VEHICLES	 AIRPORT GROUND EQUIPMENT		
 AGRICULTURE	 FORESTRY	 COMMERCIAL VEHICLES	 AIRPORT GROUND EQUIPMENT	 ROAD CONSTRUCTION
 EARTH MOVING CONSTRUCTION	 MATERIAL HANDLING EQUIPMENT	 ROAD CONSTRUCTION	 FORESTRY	



EDS-D & EDS-X

ELECTRIC INTEGRATED POWERTRAINS FOR TRACTION

EDS-D and EDS-X fit various powertrain architectures on mechanical transmission vehicles. The **operating Voltage range is 250-420 Vdc**.

In its basic configuration, EDS-D and EDS-X consist of a permanent magnet motor and inverter.

The optional components that can be added to the system are: Gearbox, DCDC Converter and Telematics Control Unit.

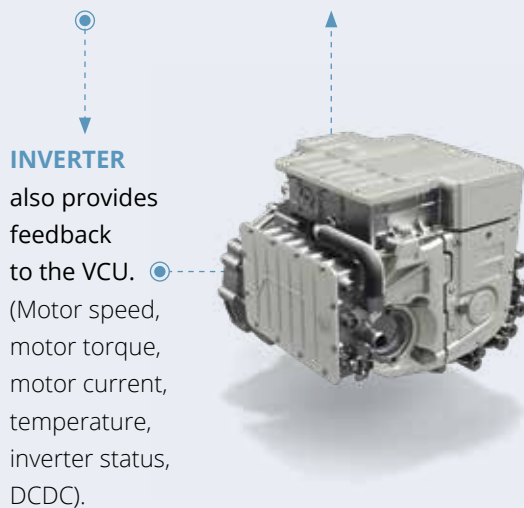
In order to make EDS more flexible and give customers the chance to adapt the e-powertrain to specific applications, a power control unit can be added to the traditional configuration.

EDS can be supplied as integrated system (All in One) or as standalone component.

ELECTRIC DRIVE SYSTEMS: POWERTRAIN CONTROL STRATEGY

SLAVE INVERTER

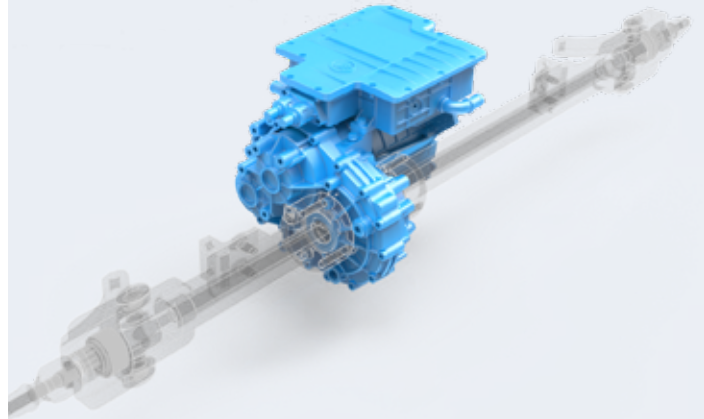
VCU collects information on the status of the various on-board devices (brake, throttle, gearshift, safety devices, batteries..), handles data, faults and alerts and sends messages to the inverter that manages the powertrain system.



The inverter processes the data that the **Telematics Control Unit** allows to store into the Cloud.

EDS-D

electric motor connected with the inverter and transmission to the axle. This configuration includes the motor, inverter and gearbox with differential (can be installed on rear or front wheel-drive vehicles)



EDS 70 D

PEAK POWER

• 70 kW

PEAK TORQUE

• 1732 Nm

MAX SPEED

• 1143 rpm

GEAR RATIO

• 10.5

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option



EDS 90 D

PEAK POWER

• 90 kW

PEAK TORQUE

• 3869 Nm

MAX SPEED

• 739 rpm

GEAR RATIO

• 14.88

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option



EDS 120 D

PEAK POWER

• 120 kW

PEAK TORQUE

• 3869 Nm

MAX SPEED

• 739 rpm

GEAR RATIO

• 14.88

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option



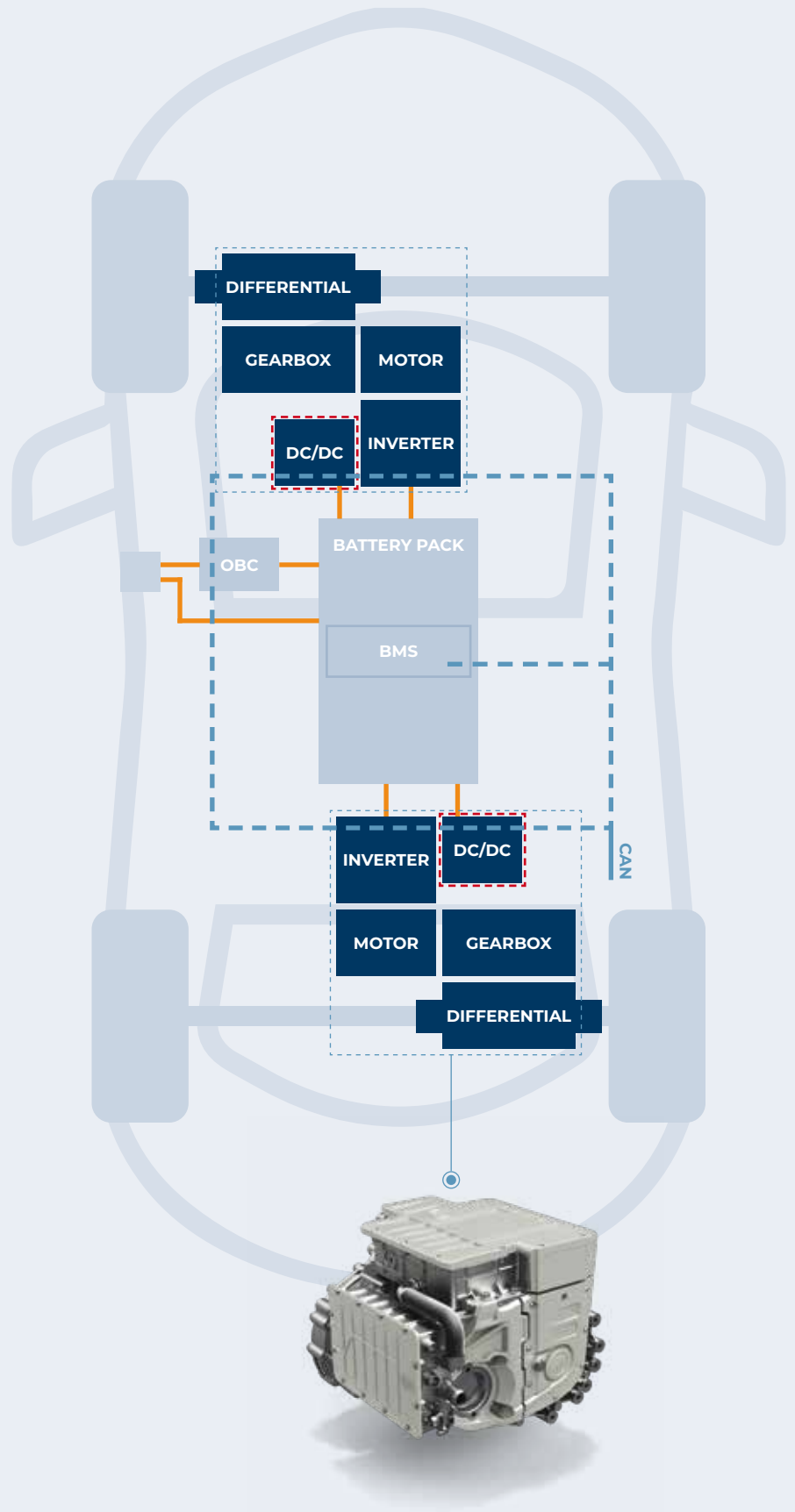
POWERTRAIN ARCHITECTURE

SUPPLIED BY STRATEGIC ALLIANCES

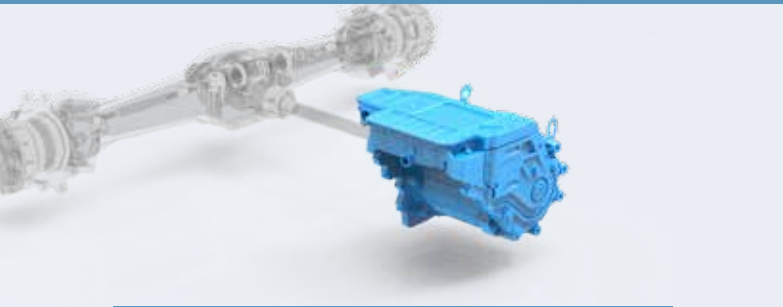
SUPPLIED BY BONFIGLIOLI

AVAILABLE AS AN OPTION

EDS-D APPLICABLE ON FRONT OR REAR WHEEL DRIVE.

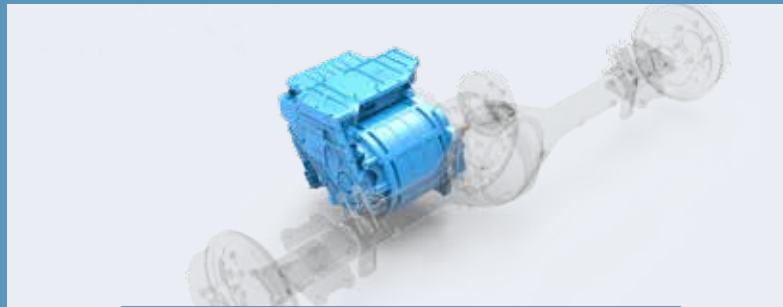


EDS-X



Centrally Mounted

electric motor positioned in the center of the vehicle which is connected to the rear axle using a prop shaft. It includes an inverter. EDS-X can be used on rear wheel-drive vehicles).



Transversally Mounted

electric motor positioned transversally to the drive axle with inverter. EDS-X can be installed on rear or front wheel-drive vehicles.

EDS-X without gearbox



EDS 70 X

PEAK POWER

• 70 kW

PEAK TORQUE

• 165 Nm

MAX SPEED

• 12000 rpm

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option



EDS 90 X

PEAK POWER

• 90 kW

PEAK TORQUE

• 260 Nm

MAX SPEED

• 14000 rpm

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option



EDS 120 X

PEAK POWER

• 120 kW

PEAK TORQUE

• 260 Nm

MAX SPEED

• 14000 rpm

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option

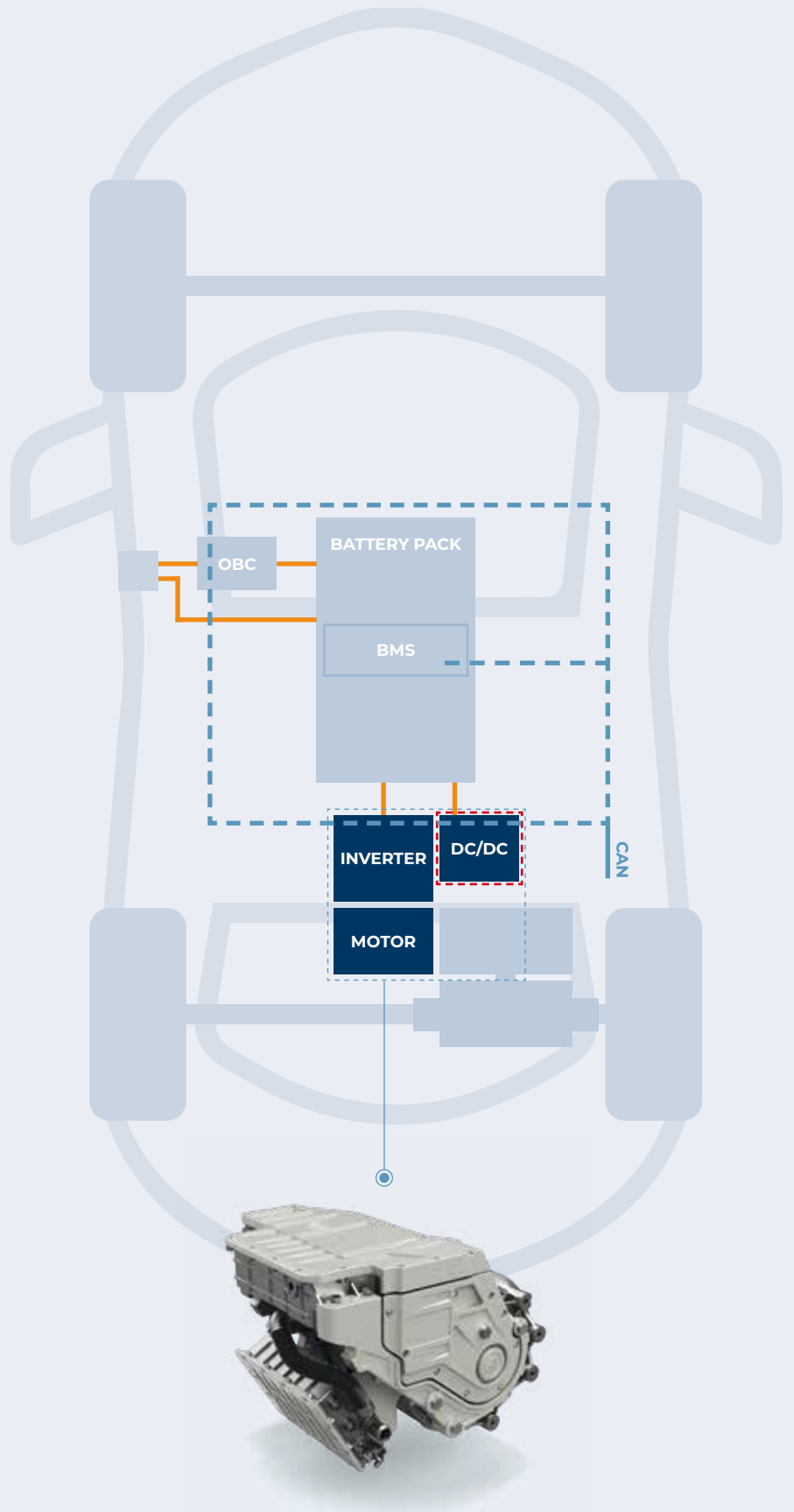


POWERTRAIN ARCHITECTURE

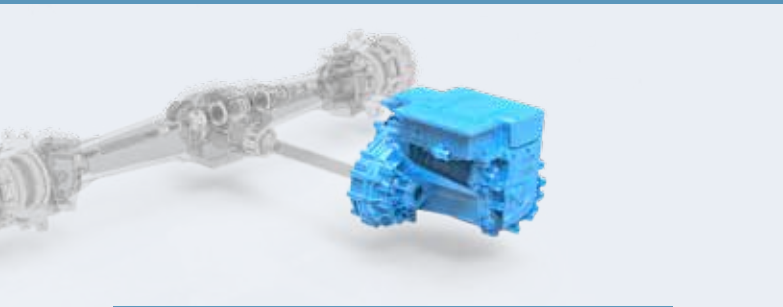
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AVAILABLE AS AN OPTION

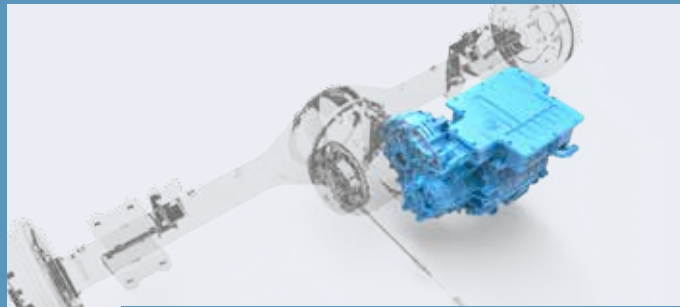


EDS-X



Centrally Mounted

electric motor positioned in the center of the vehicle which is connected to the rear axle using a prop shaft. It includes an inverter and gearbox. EDS-X can be used on rear wheel-drive vehicles.



Transversally Mounted

electric motor positioned transversally to the drive axle with inverter and gearbox. EDS-X can be installed on rear or front wheel-drive vehicles.

EDS-X with Gearbox



EDS 70 X

PEAK POWER

• 70 kW

PEAK TORQUE

• 511 Nm

MAX SPEED

• 3870 rpm

GEAR RATIO

• 3.1

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option



EDS 90 X

PEAK POWER

• 90 kW

PEAK TORQUE

• 806 Nm

MAX SPEED

• 3870 rpm

GEAR RATIO

• 3.1

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option



EDS 120 X

PEAK POWER

• 120 kW

PEAK TORQUE

• 806 Nm

MAX SPEED

• 3870 rpm

GEAR RATIO

• 3.1

OPERATIVE VOLTAGE

• 250-420 Vdc

DCDC available as an option

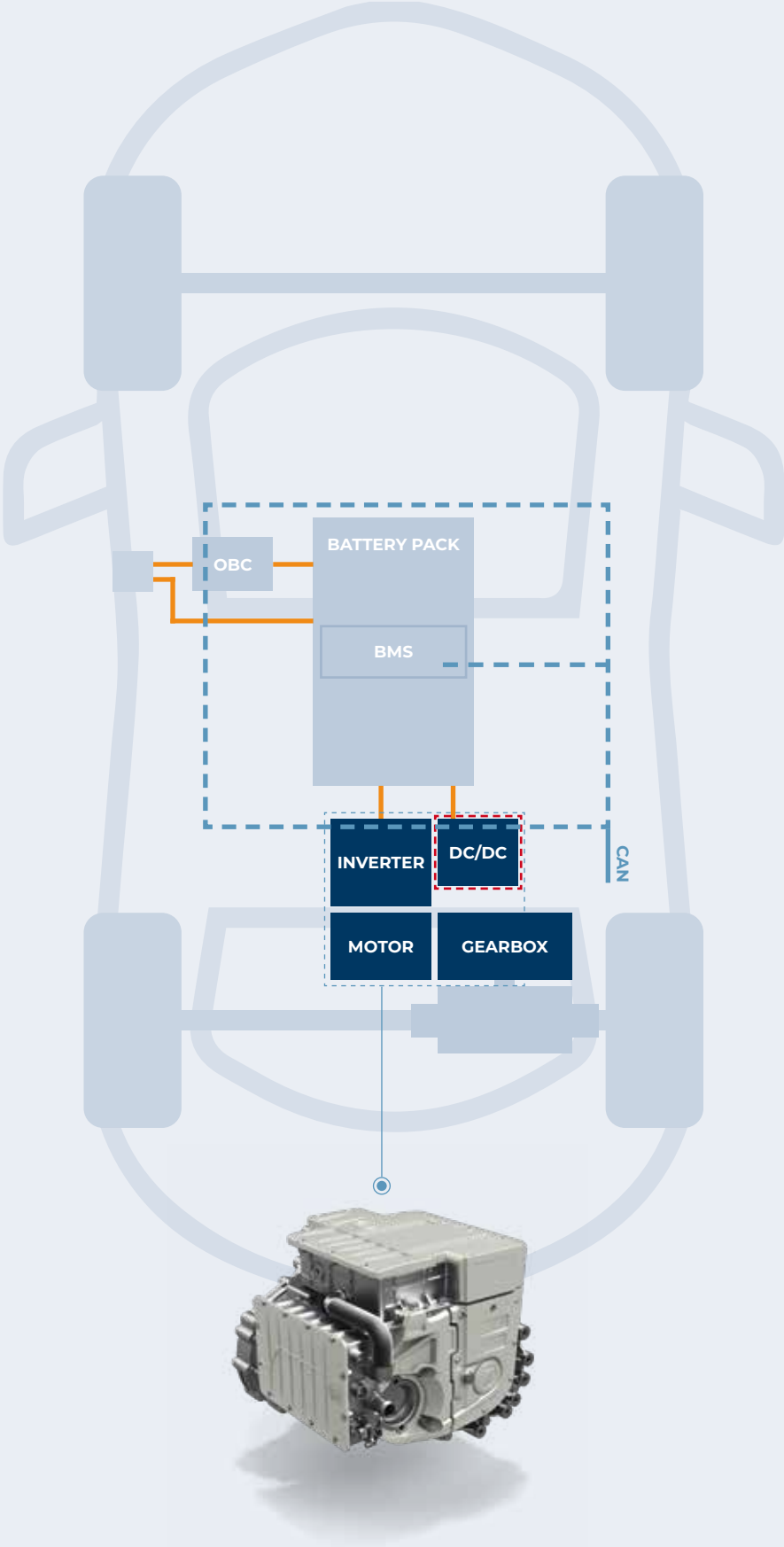


POWERTRAIN ARCHITECTURE

SUPPLIED BY STRATEGIC ALLIANCES

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AVAILABLE AS AN OPTION



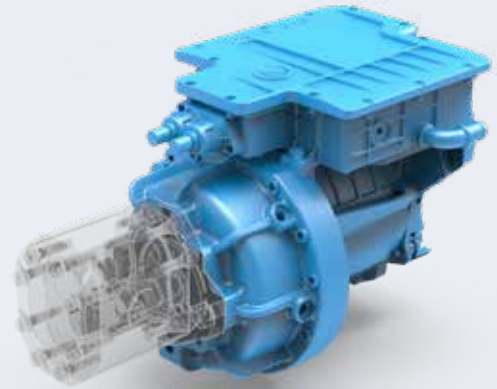
EDS-H

EDS-H fits various powertrain architectures on hydrostatic transmission vehicles.

EDS-H, powertrain comprising a motor, inverter and an optional gearmotor in some versions; preset for direct hydraulic pump connection.

DCDC Converter can be added as an option to the traditional configuration.

In order to make EDS-H more flexible and give customers the chance to adapt the e-powertrain to specific applications, a power control unit can be added to the traditional configuration.



EDS 70 H

PEAK POWER

• 70 kW

PEAK TORQUE

• 511 Nm

MAX SPEED

• 3870 rpm

GEAR RATIO

• 3.1

OPERATIVE VOLTAGE

• 250-420 Vdc

Front flange available for SAE A, SAE B and SAE C

DCDC available as an option



EDS 90 H

PEAK POWER

• 90 kW

PEAK TORQUE

• 806 Nm

MAX SPEED

• 3870 rpm

GEAR RATIO

• 3.1

OPERATIVE VOLTAGE

• 250-420 Vdc

Front flange available for SAE B and SAE C

DCDC available as an option



EDS 120 H

PEAK POWER

• 120 kW

PEAK TORQUE

• 806 Nm

MAX SPEED

• 3870 rpm

GEAR RATIO

• 3.1

OPERATIVE VOLTAGE

• 250-420 Vdc

Front flange available for SAE B and SAE C

DCDC available as an option

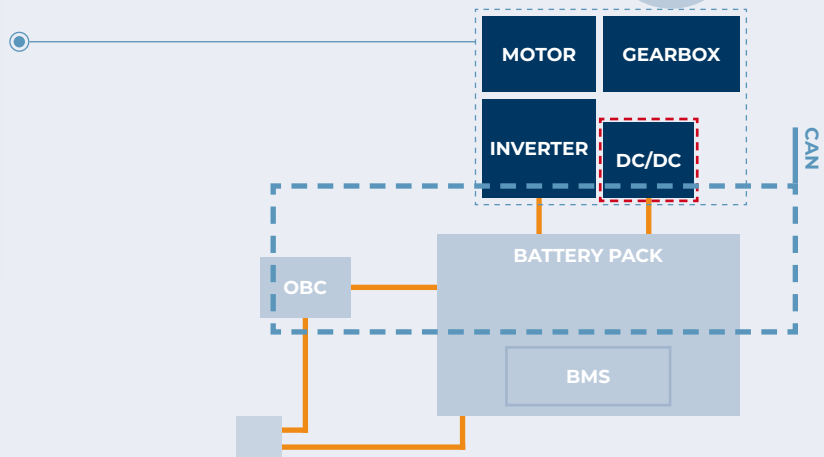
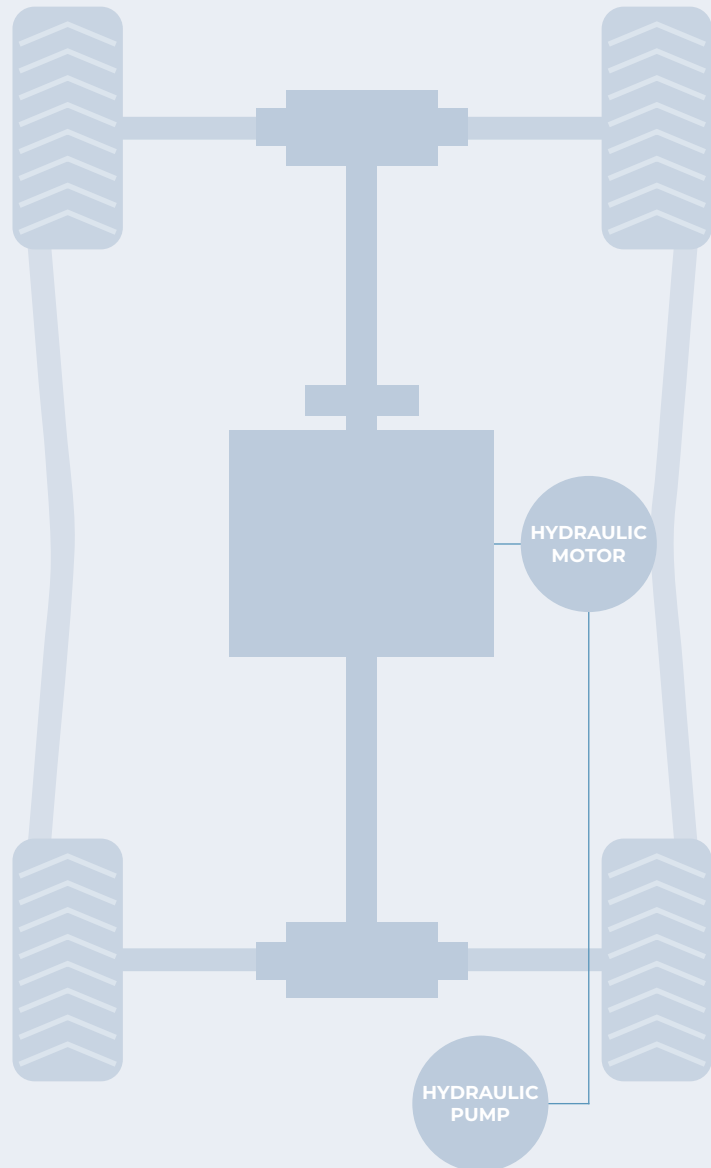


POWERTRAIN ARCHITECTURE

SUPPLIED BY STRATEGIC ALLIANCES

SUPPLIED BY BONFIGLIOLI

AVAILABLE AS AN OPTION



OUR PROJECTION INTO THE FUTURE

MORE THAN 250 EMPLOYEES AROUND THE WORLD ARE INVOLVED IN THE GROUP'S R&D ACTIVITIES.

DESIGN SIMULATION

Bonfiglioli has the most advanced **virtual simulation techniques** that allow to speed up the validation process, thus reducing time to market and providing customers with optimized and efficient solutions.



TEST LABORATORIES

In our R&D department we **research, develop, validate and certify** all the products and solutions which are engineered and manufactured in our plants across the world.



CO-ENGINEERING

At Bonfiglioli we **work close to our customers to satisfy all their needs** and requirements with a true tailor-made solution.



OUR CONSTANT AMBITION

QUALITY, HEALTH, SAFETY, ENVIRONMENT & ENERGY

QUALITY: WE CARE ABOUT OUR CUSTOMERS

Our team is wholly dedicated to continuous improvement in the quality, safety, environmental and energy spheres throughout the entire value chain, from the smallest supplier to the end client. Bonfiglioli is committed to achieving the highest quality standards, and our products are intended to generate value for our customers while respecting both people and the environment. We design, manufacture and supply effective products and services that set a benchmark for quality in the industry.

Bonfiglioli management systems are certified ISO 9001: 2015, ISO 14001: 2015, ISO 45001: 2018 and ISO 50001:2018, while our products are covered by 7 international certifications. Responsibility, excellence and continuous improvement are the basic elements that make us the favored partner of our clients and suppliers.

HEALTH & SAFETY: SUSTAINABILITY STARTS WITH SAFETY

Prevention of accidents and incidents is a key element of our company's sustainability strategy and an integral part of each one of our business processes. The successful management of risks is essential for protecting our employees and assets, thereby strengthening their contributions.

ENVIRONMENT & ENERGY: RESPECT THE PRESENT TO BUILD THE FUTURE

At Bonfiglioli, we believe that respect for the present and the adoption of environmental protection and energy efficiency policies are essential if we are to enjoy a better future.

OUR GLOBAL PRESENCE

Thanks to an international network of closely interconnected commercial and production sites, we can guarantee the same high standards of Bonfiglioli quality anywhere at any given time. We know that our direct presence in local markets is the key to long-lasting success, so our family includes 15 production sites, 24 commercial sites and more than 550 distributors around the world.

Our organization is always close by, offering complete and efficient solutions and supporting our customers with dedicated services, co-engineering and after-sales assistance.



15
PRODUCTION SITES



24
COMMERCIAL SITES



80
COUNTRIES



550
DISTRIBUTORS



~4.000
PEOPLE

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 PRODUCTION

 ASSEMBLY

 SALES

 SERVICE



We have a relentless commitment to excellence, innovation & sustainability. Our team creates, distributes and services world-class power transmission & drive solutions to keep the world in motion.

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