

EDS SERIES

Electric drive systems for mechanical and
hydrostatic transmissions

 **Bonfiglioli**



EDS SERIES

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Engineering Sustainability



WWW.BONFIGLIOLI.COM

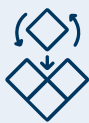
THE EDS APPLICATIONS

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.

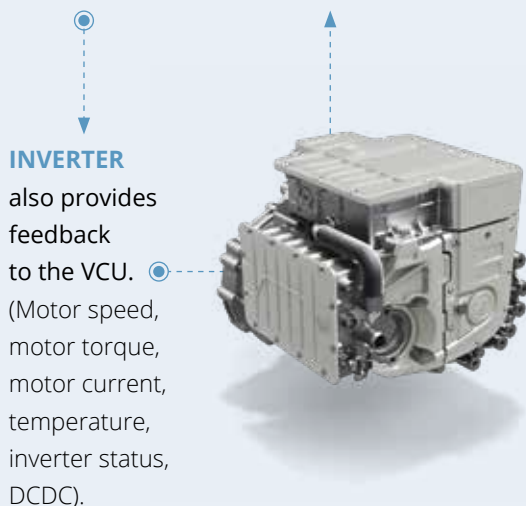
In order to make EDS more flexible and give customers the chance to adapt the e-powertrain to specific applications, a power control unit can be added to the traditional configuration.

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

ELECTRIC DRIVE SYSTEMS: POWERTRAIN CONTROL STRATEGY

SLAVE INVERTER

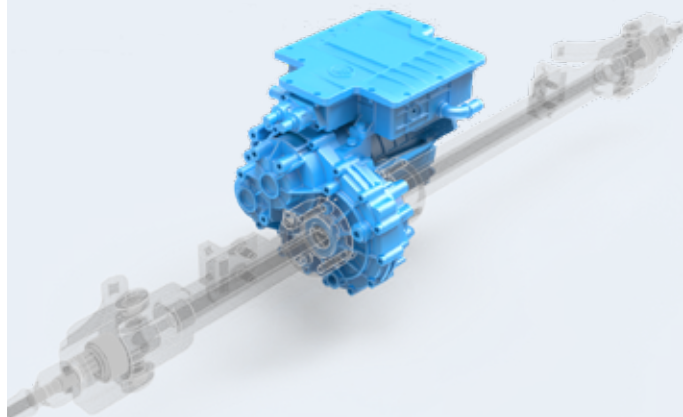
VCU collects information on the status of the various on-board devices (brake, throttle, gearshift, safety devices, batteries..), handles data, faults and alerts and sends messages to the inverter that manages the powertrain system.



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



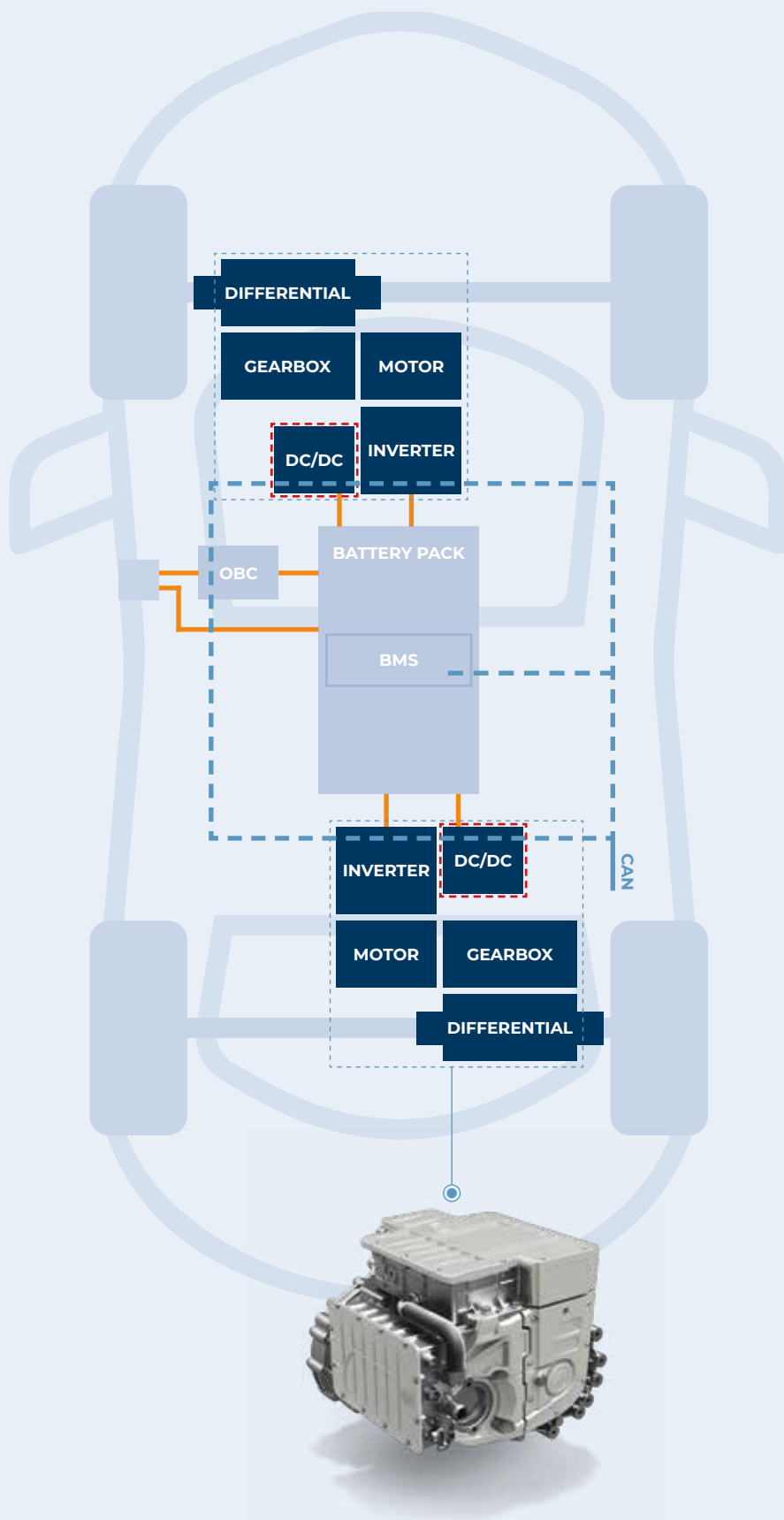
POWERTRAIN ARCHITECTURE

SUPPLIED BY
STRATEGIC ALLIANCES

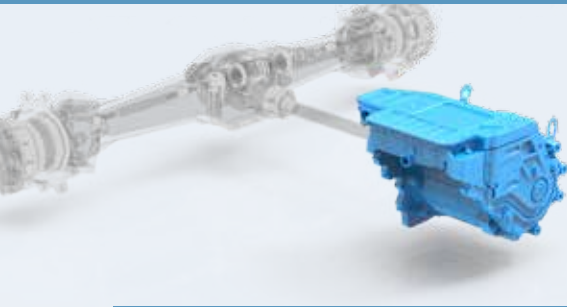
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AVAILABLE
AS AN OPTION

EDS-D APPLICABLE ON
FRONT OR REAR WHEEL
DRIVE.

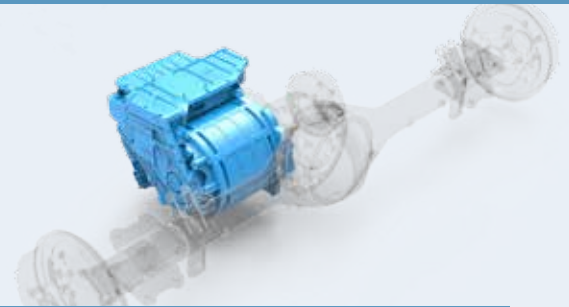


EDS-X



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

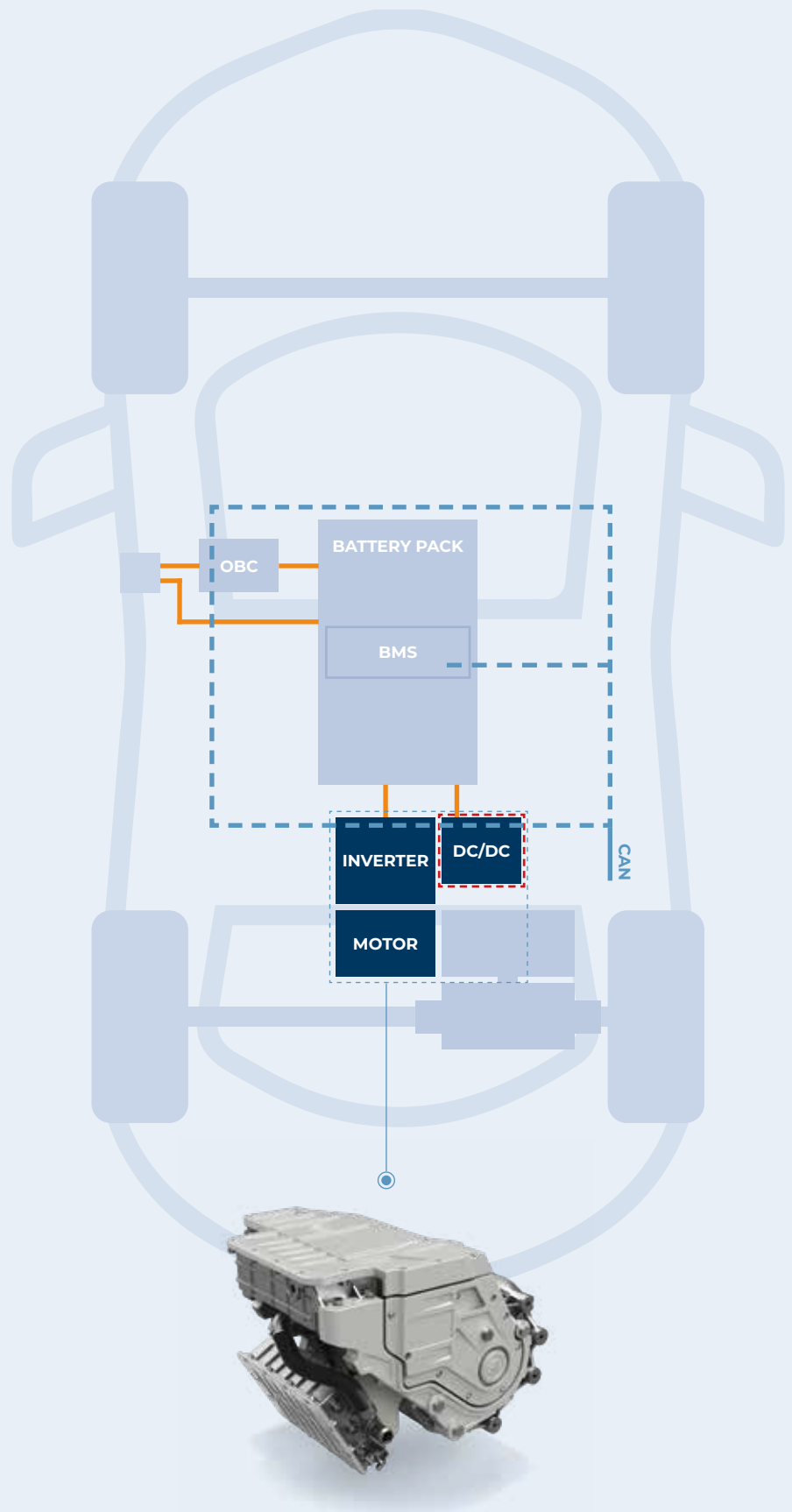


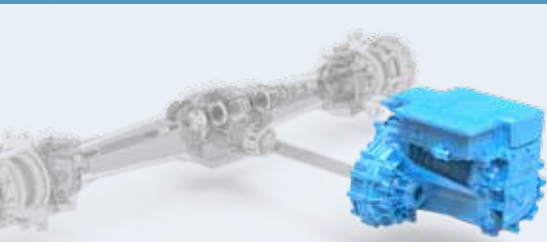
POWERTRAIN ARCHITECTURE

SUPPLIED BY
STRATEGIC ALLIANCES

SUPPLIED BY
BONFIGLIOLI

AVAILABLE
AS AN OPTION





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

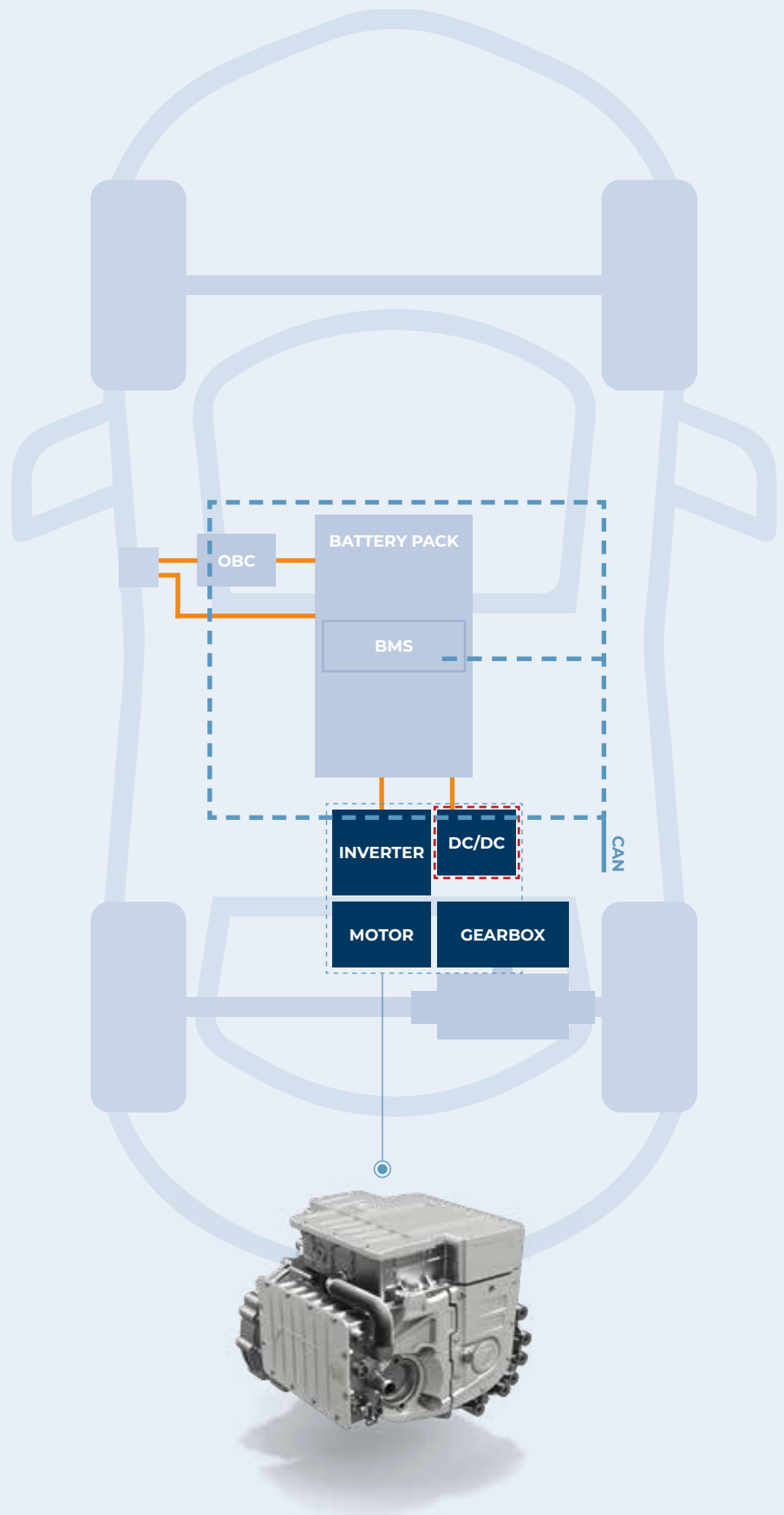


POWERTRAIN ARCHITECTURE

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AVAILABLE
AS AN OPTION



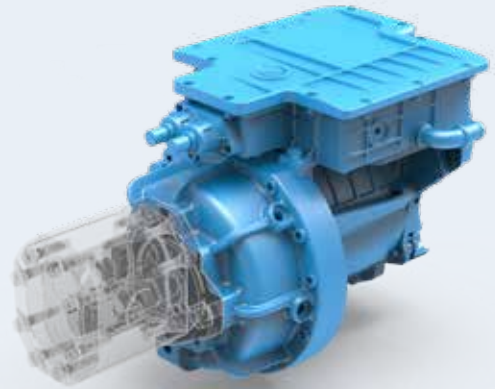
EDS-H

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

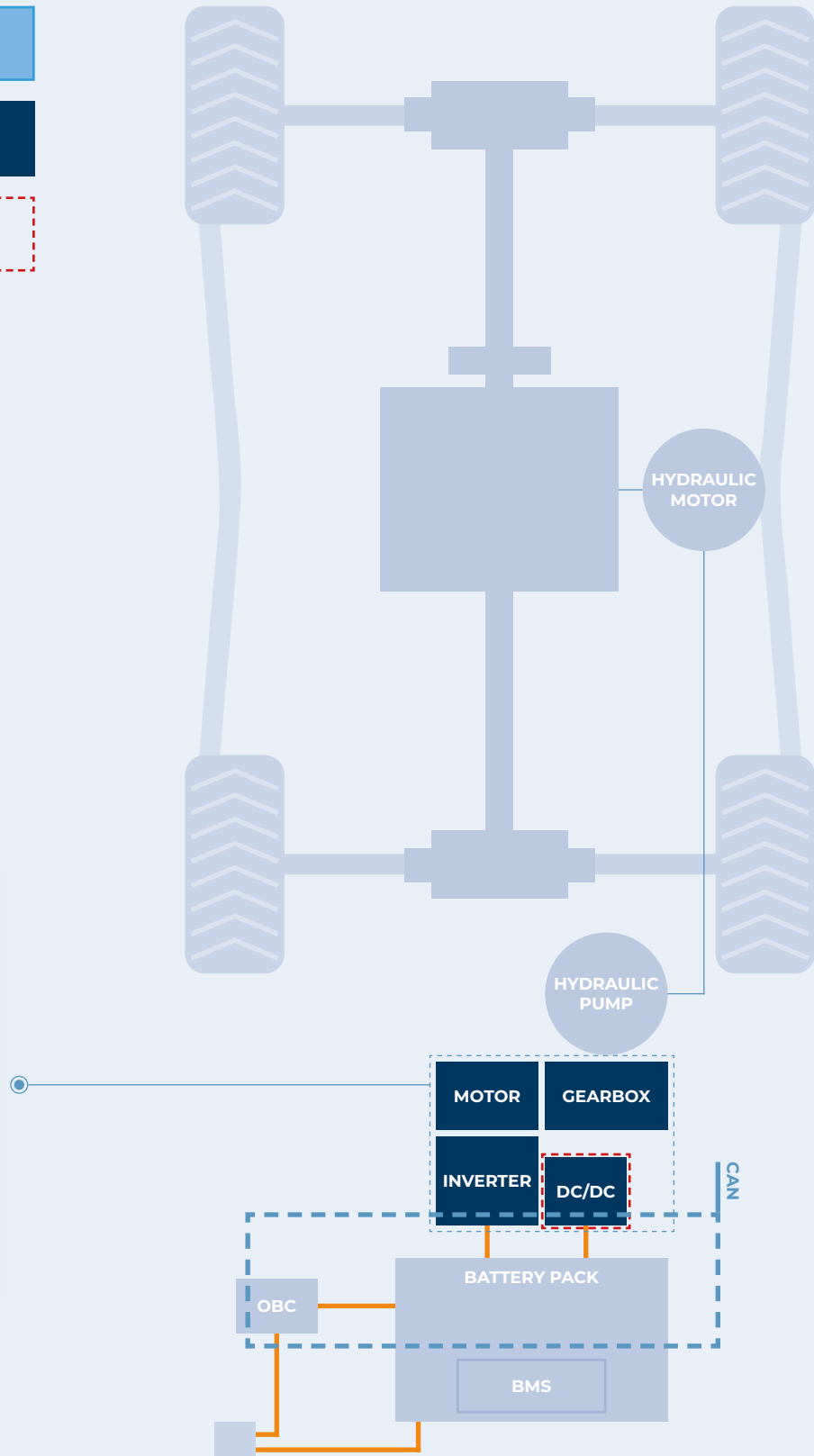


POWERTRAIN ARCHITECTURE

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 18 production sites, 23 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.


18

PRODUCTION SITES


23

COMMERCIAL SITES


80

COUNTRIES


550

DISTRIBUTORS


~4,700

PEOPLE

AUSTRALIA

Bonfiglioli Transmission (Aust.) Pty Ltd
2, Cox Place Glendenning NSW 2761
Locked Bag 1000 Plumpton NSW 2761
Tel. +61 2 8811 8000



BRAZIL

Bonfiglioli Redutores do Brasil Ltda
Av. Osvaldo Fregonezi, 171, cjs 31 e 44
CEP 09851-015 - São Bernardo do Campo
São Paulo
Tel. +55 11 4344 2322



CHINA

Bonfiglioli Drives (Shanghai) Co. Ltd.
#68, Hui-Lian Road, QingPu District,
201707 Shanghai
Tel. +86 21 6700 2000



Industry & Automation Solutions

#568, Longpan Road, Jiading District,
201707 Shanghai



Bonfiglioli Trading (Shanghai) Co. Ltd.

Room 423, 4th Floor, #38, Yinglun Road,
China (Shanghai) Pilot Free Trade Zone,
Shanghai



Selcom Electronics (Shanghai) Co., Ltd
A7, No.5399, Waiqingsong Road, QingPu
District,
201707 Shanghai
Tel. +86 21 6010 8100



A24, No.5399, Waiqingsong Road, QingPu
District,
201707 Shanghai
Tel. +86 21 6010 8100



FRANCE

Bonfiglioli Transmission S.A.S.
14 Rue Eugène Pottier
Zone Industrielle de Moimont II
95670 Marly la Ville
Tel. +33 1 34474510



GERMANY

Bonfiglioli Deutschland GmbH
Sperberweg 12 - 41468 Neuss
Tel. +49 0 2131 2988 0



Bonfiglioli Vectron GmbH

Europark Fichtenhain B6 - 47807 Krefeld
Tel. +49 0 2151 8396 0



O&K Antriebstechnik GmbH

Ruhrallee 8-12 - 45525 Hattingen
Tel. +49 0 2324 2050 1



INDIA

Bonfiglioli Transmission Pvt. Ltd.
Mobility & Wind Industries
AC 7 - 11, SIDCO Industrial Estate,
Thirumudivakkam
Kancheepuram - 600132 - Tamil Nadu
Tel. +91 844 844 8649



Industry & Automation Solutions

Survey No. 528/1, Perambakkam High Road
Mannur Village, Sriperumbudur Taluk
Kancheepuram - 602 105 - Tamil Nadu
Tel. +91 844 844 8649



Industry & Automation Solutions

Plot No E-5/2, Badhalwadi
Talegaon MIDC Phase II,
Pune - 410 507 - Maharashtra
Tel. +91 844 844 8649



Bonfiglioli Drive Systems Pvt. Ltd.

Industry & Automation Solutions

No 50, Pappambakkam Road,
Mannur Village, Sriperumbudur Taluk,
Kancheepuram - 602105 - Tamil Nadu
Tel. +91 844 844 8649



ITALY

Bonfiglioli Riduttori S.p.A.
Industry & Automation Solutions
Via Cav. Clementino Bonfiglioli, 1
40012 Calderara di Reno
Tel. +39 051 6473111



Industry & Automation Solutions

Via Sandro Pertini, lotto 7b
20080 Carpiano
Tel. +39 02985081



Industry & Automation Solutions

Via Saliceto, 15 - 40010 Bentivoglio



Mobility & Wind Industries

Via Enrico Mattei, 12 Z.I. Villa Selva
47122 Forlì
Tel. +39 0543 789111



Industry & Automation Solutions

Via Unione, 49 - 38068 Rovereto
Tel. +39 0464 443435/36



Selcom Group S.p.A.

Via Achille Grandi, 5
40013 Castel Maggiore (BO)
Tel. +39 051 6387111



Via Marino Serenari, 18
40013 Castel Maggiore (BO)
Tel. +39 051 6387111



Via Cadriano, 19
40057 Cadriano (BO)
Tel. +39 051 6387111



NEW ZEALAND

Bonfiglioli Transmission (Aust.) Pty Ltd
88 Hastie Avenue, Mangere Bridge,
2022 Auckland
PO Box 11795, Ellerslie
Tel. +64 09 634 6441



SINGAPORE

Bonfiglioli South East Asia Pte Ltd

8 Boon Lay Way, #04-09,
8@ Tadehub 21, Singapore 609964
Tel. +65 6268 9869



SLOVAKIA

Bonfiglioli Slovakia s.r.o.

Robotnícka 2129
Považská Bystrica, 01701 Slovakia
Tel. +421 42 430 75 64



SOUTH AFRICA

Bonfiglioli South Africa Pty Ltd.

55 Galaxy Avenue, Linbro Business Park,
Sandton, Johannesburg
2090 South Africa
Tel. +27 11 608 2030



SPAIN

Tecnotrans Bonfiglioli S.A

Avinguda del Ferrocarril, n° 14,
Polígono Industrial Can Estapé
08755 Castellbisbal - Barcelona
Tel. +34 93 447 84 00



TURKEY

Bonfiglioli Turkey Jsc

Atatürk Organize Sanayi Bölgesi,
10007 Sk. No. 30
Atatürk Organize Sanayi Bölgesi,
35620 Çiğli - İzmir
Tel. +90 0 232 328 22 77



UNITED KINGDOM

Bonfiglioli UK Ltd.

Unit 1 Calver Quay, Calver Road, Winwick
Warrington, Cheshire - WA2 8UD
Tel. +44 1925 852667



USA

Bonfiglioli USA Inc.

3541 Hargrave Drive
Hebron, Kentucky 41048
Tel. +1 859 334 3333



VIETNAM

Bonfiglioli Vietnam Ltd.

Lot C-9D-CN My Phuoc Industrial Park 3
Ben Cat - Binh Duong Province
Tel. +84 650 3577411





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.

HEADQUARTERS

Bonfiglioli S.p.A

Via Cav. Clementino Bonfiglioli, 1
40012 Calderara di Reno - Bologna (Italy)
Tel. +39 051 6473111

