

PRESS RELEASE



e-Axle - New drive platform for on- and off-highway vehicles from Bonfiglioli

One major goal of Bonfiglioli is to speed up the transition to electric solutions in on- and off-highway vehicles by supporting customers on the integration of the electric drive system into their battery electric vehicle (BEV) architecture. In order to push in this direction, Bonfiglioli extends the competence centre within the Mobility & Wind Business Unit by "Ennowing" to offer integrated, all in one mobile-electric powertrain solutions for different power ranges. For BEVs the product portfolio of Bonfiglioli is called e-Axle which is a modular system with an operating voltage range of 72 Volt DC to 450 Volt DC that can be integrated on several vehicle platforms

E-Axle, in its basic configuration, is composed by 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 e-Axle more flexible and to give to the customers the chance to adapt the e-powertrain to specific applications, a Power Control Unit could be added to the traditional configuration. Customers enjoy the advantages of easy installation and a reduced time to market for their vehicles. The partnership with Bonfiglioli lowers the need of EV-knowledge and gives some freedom in vehicle modifications. And in general, compared to vehicles with an internal combustion engine (ICE), there is a reduction of weight and volume of more than 80 percent and the power density goes up to 2.26 kilowatt per kilogram with the electric drives system versus 0.19 kilowatt per kilogram with an internal combustion engine.

E-Axle fits various powertrain architectures on mechanical transmission vehicles. This product family includes the e-Axle: electric motor connected with the inverter and transmission to the axle. This configuration includes motor, inverter and gearbox with differential. It can be installed on rear or front wheeled drive vehicles. The so-called TransAxle has the electric motor positioned transverse to the drive axle with inverter and optionally to be provided with or without gearbox. TransAxle can be installed on rear or front wheeled drive vehicles. CentrAxle is the type where the electric motor is positioned within the centre of the vehicle which is connected to the rear axle using a prop shaft. It includes inverter and optionally can be provided with or without gearbox. It can be used on rear wheeled drive vehicles. For e-Axle a DCDC-Converter can be added as optional to the traditional configuration. The Electric Drive Systems can be configured with Slave or Master Powertrain Control strategy.

Each of the three above mentioned configurations e-Axle, TransAxle, and CentrAxle are available in up to four power ranges. The air-cooled e-Axle 20 has a peak power of 20 kW at an operating voltage range of 72 to 120 VDC. Fitted with gearbox and differential the system delivers a torque of 667 Nm and a maximum speed of 900 rpm at a gear ratio of 8.34. Without gearbox peak torque is 80 Nm and maximum speed is 7,500 rpm.

The three larger sizes of the e-Axle platform are liquid cooled and rated with peak power of 70, 90, and 120 kW at an operating voltage range of 220 to 450 VDC. As complete systems they deliver a peak torque of 1,732 or 3,895 Nm respectively. The e-Axle 70 reaches a maximum speed of 1,143 rpm while e-Axle 90 and 120 go up to 734 rpm. As CentrAxle or TransAxle, i.e. without gearbox and differential e-Axle 70 has a peak torque of 165 Nm and a maximum speed of 12,000 rpm whereas e-Axle 90 and 120 reach 260 Nm and 11,000 rpm.

With e-Axle, Bonfiglioli goes one step further in providing their customers in the vehicle industry more energy-efficient solutions, the opportunity to reducing noise and harmful emissions as well as helping to increase the vehicle up-time and to reduce the total cost of ownership.

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About Bonfiglioli

Bonfiglioli is a worldwide designer, manufacturer and distributor of a complete range of gearmotors, drive systems, planetary gearboxes and inverters, which satisfy the most challenging and demanding needs in industrial automation, mobile machinery and renewable energy. The Group serves more industries and applications than any other drive manufacturer, and is a market leader in many sectors; her three business units - Discrete Manufacturing & Process Industries, Mechatronic & Robotics and Mobility & Wind Industries - embody all the expertise and experience acquired over the years in the respective industries.

Established in 1956, Bonfiglioli operates worldwide in 80 countries with 24 branches 10 of which with assembly, 13 production facilities, a wide distribution network comprising more than 550 partners, and can count on over 4.000 professionals. Excellence, innovation and sustainability are the drivers behind our growth as a company and team and represent the guarantee of the product and service quality we offer our clients. More information available at: www.bonfiglioli.com

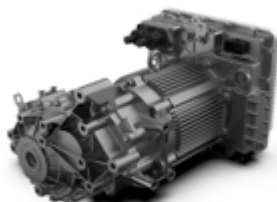
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Image files:

Bonfiglioli-e-Axle20.jpg

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Bonfiglioli offers a range of all in electric drive systems for vehicles: Here e-Axle 20 with 20 kilowatts, gearbox and differential.



Bonfiglioli offers a range of all in electric drive systems for vehicles: here TransAxle 70 with 70 kilowatts and no differential.

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