

## Brose drives: System expertise for hybrid and electric cars



The 48 V hybrid booster by Brose is based on a new modular motor and electronics system. With torque of up to 80 Nm, it can move the car for example in parking garages without having to use the internal combustion engine.

**Frankfurt am Main (13. September 2017)** Brose has systematically aligned its electric motors and drives to advances in vehicle electrification and will be showcasing its new modular motor and electronics system, among other things, at the International Motor Show. Standardized components enable the automotive supplier to react to a range of demands and meet a variety of electrical systems architecture requirements ranging from 12 to 810 Volts. A new addition to Brose's product portfolio is a 48 V booster drive for hybrid vehicles, which will be presented in Frankfurt for the first time.

Whether for steering, braking, drive trains or air conditioning, almost all of the mechatronics specialist's motors and drives have to work with different operational voltages so that they can also be used in hybrid or electric cars. Brose helps car manufacturers with a cost-effective solution: a cross-product modular motor and electronics system with standardized components covers voltages of up to 810 V. This transfers Brose's decades of experience and proven technologies to e-vehicles. Independent of the vehicle drive, carmakers benefit from short development times, robust products, a high level of flexibility and economies of scale in global production. Brose supplies about 200 million motors for various applications in the automotive industry worldwide.

### **New development: 48 V hybrid booster**

Brose is expanding the power range of its motors to over 15 kilowatts. Its portfolio includes auxiliary systems such as the electric oil pump and the newly developed 48 V booster drive for mild hybrid vehicles. This supports the main engine as needed. With torque of up to 80

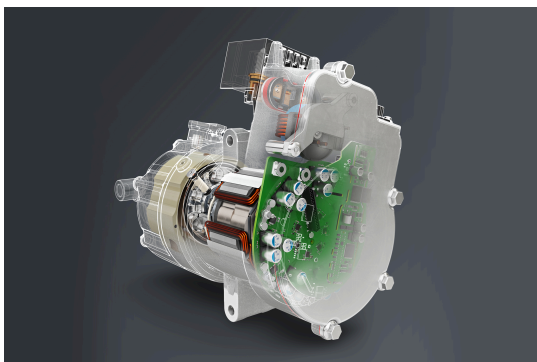
Newtonmetres, it can move the car in situations such as traffic jams or parking garages without having to use the internal combustion engine. The hybrid booster can be integrated at various points of the drive train and thus into different hybrid concepts. It also features a particularly compact design, low weight and high efficiency levels of over 92 percent.

#### **Focus on system solutions: electric air conditioning compressor**

Brose also applies its core expertise in the interaction of mechanical, electric and electronic systems to power auxiliary systems. One example is the electric air conditioning compressor, which combines the motor, compressor unit and power electronics to create a perfectly tuned system. This is more economical than conventional variants powered by an internal combustion engine because it only operates when it is needed. It can be used with vehicle electrical systems from 48 to 810 V and works with both chemical refrigerants and CO<sub>2</sub>. The compressor can also be used as a heat pump, ensuring heating and cooling of the vehicle interior – if desired even before the driver enters the vehicle. The high power density of Brose's efficient air conditioning compressor makes it especially well-suited for electric vehicles, since this minimizes the load on the battery and thus maximizes range. Brose has already received the first orders only two years after unveiling the product. Series production will start in 2020.

#### **Expansion of e-mobility competence**

Air conditioning is not the only challenge for cars without an internal combustion engine: the space needed for the batteries makes the wheelbase longer, which negatively impacts the driving experience. Brose is presenting a new drive for rear axle steering that prevents exactly that. It reduces the turning circle, improves handling and thus comfort, especially for parking or changing lanes at high speed. Customers can rely on the proven technology and solid expertise that Brose has already developed for front axle steering.



The electric air conditioning compressor by Brose can be used in electrical systems from 48 to 810 Volts and works either with chemical refrigerants or CO<sub>2</sub>.