

eLION Motor EMS1

Heavy duty design for Off-Highway applications

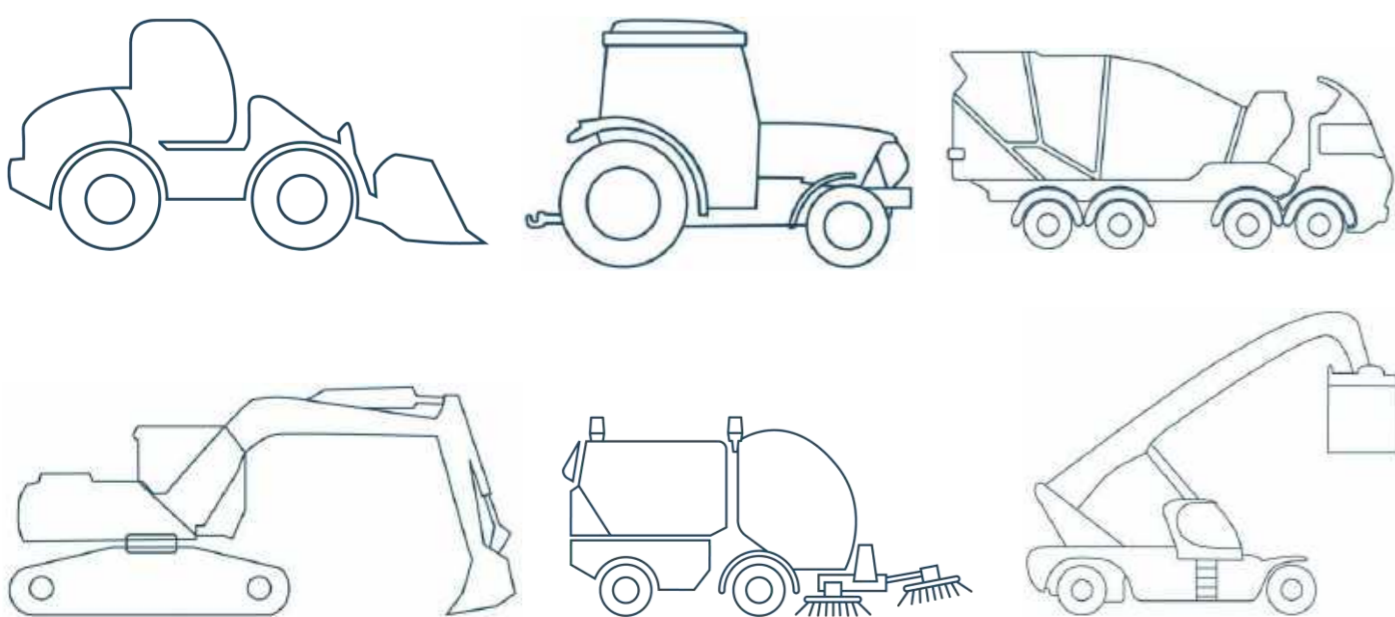


With environmental sustainability constantly in focus, Bosch Rexroth has designed its eLION high-voltage solution portfolio specifically for the off-highway vehicle market. As a result, the demands for increased machine productivity and performance, as well as improved efficiency or even local zero emissions are met. By also relying on its existing application and technology know-how, Bosch Rexroth is a strong engineering partner for off-highway vehicle manufacturers. The Rexroth eLION portfolio is perfect for providing electrified solutions for various functions in off-highway vehicles, whether they be diesel-electric, hybrid, or fully-electric.

CUSTOMER BENEFITS

- Robust design to endure off-highway conditions
- Optimized electrical machines for various machine functions
- Broad, modular and scalable portfolio
- Easy integration with standardized mechanical interfaces
- High efficiency
- Sustainable designs and solutions for mobile machines

APPLICATIONS



FUNCTION AND BENEFITS

Robust design to endure off-highway conditions

The eLION motors fulfill the protection rating IP6K7 and IP6K9K. Additionally, they have a mechanical strength of 50 g shock and 10 g vibration. The motors operate reliably between ambient temperatures of -40 °C and +100 °C and benefit from a resolver feedback.

Optimized electrical machines for various functions

To serve the off-highway market for applications such as construction, excavator, agriculture, material handling, among many others, the eLION motor portfolio is available in a wide range of performance. By taking advantage of the broad portfolio, various machine functions can be realized – such as traction, implements, or swing drive.

Broad, modular and scalable portfolio

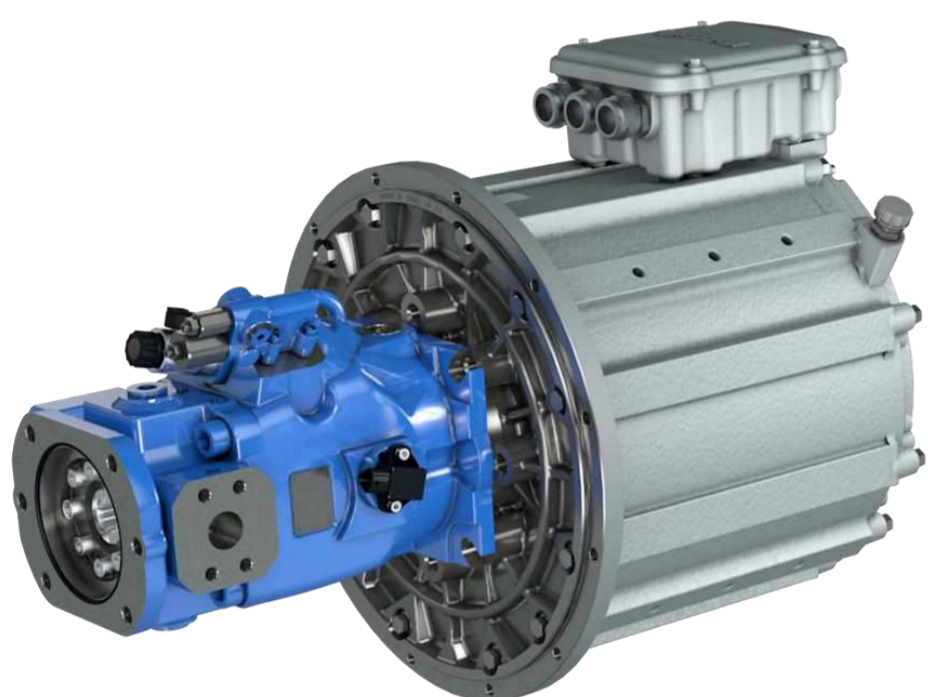
The scalable eLION motor portfolio provides solutions for various off-highway vehicle sizes and functions. The portfolio includes four motor diameters, each with four standard lengths, and various winding designs with both standard and high-speed variants available. In doing so, a nominal power of up to 229 kW and a nominal torque of up to 1,430 Nm can be achieved.

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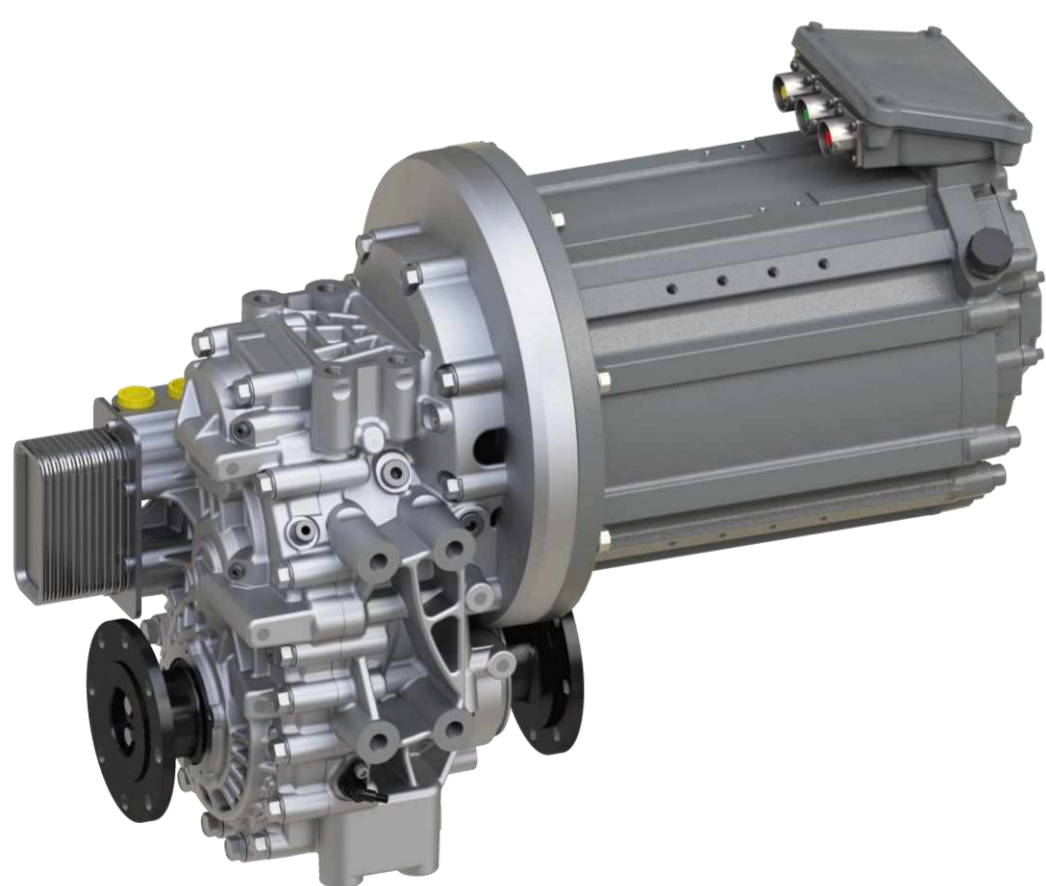
Heavy duty design for Off-Highway Applications

TECHNICAL DATA

| eLION Motor EMS1 | |
|-----------------------------|-----------------------------|
| Axial radius: | 100, 130, 160, 200 mm |
| Nom. voltage: | 270 ... 800 V _{DC} |
| Nom. power: | up to 229 kW |
| Max. power: | up to 530 kW |
| Nom. torque: | up to 1,430 Nm |
| Max. torque: | up to 2,520 Nm |
| Max. speed: | up to 12,000 rpm |
| Cooling: | 50:50 Water-Glycol Mixture |
| Coolant flow rate (@ 65 °C) | nom. 20 L/min |
| Data sheet: | RE96709 |



Motor-Pump Unit



Motor-Gearbox Unit

Easy integration with standardized mechanical interfaces

The eLION motors easily connect with axles, pumps and gearboxes using standardized flanges according to SAE J617 and SAE J744 as well as hub and spline shafts according to ANSI B92.1 and DIN 5480. Consequently, neither adaption flanges nor reduction connection stages are necessary and savings on weight, costs, and maintenance are achieved.

High Efficiency

Throughout the operating range, the eLION motor reaches peak efficiencies over 97 % over a wide range of speeds and torques. This is due to the selected materials and advanced magnetic design of the motor.

Sustainable designs and solutions for mobile machines

The eLION portfolio enables sustainable machine solutions, which offer a reduced or demanded local zero emissions. Through precise control and electrification of functions such as traction or implements, efficiency and machine performance are enhanced. And of course, the substantial reduction or complete elimination of local emissions and overall machine noise, assist Bosch Rexroth in its contribution.