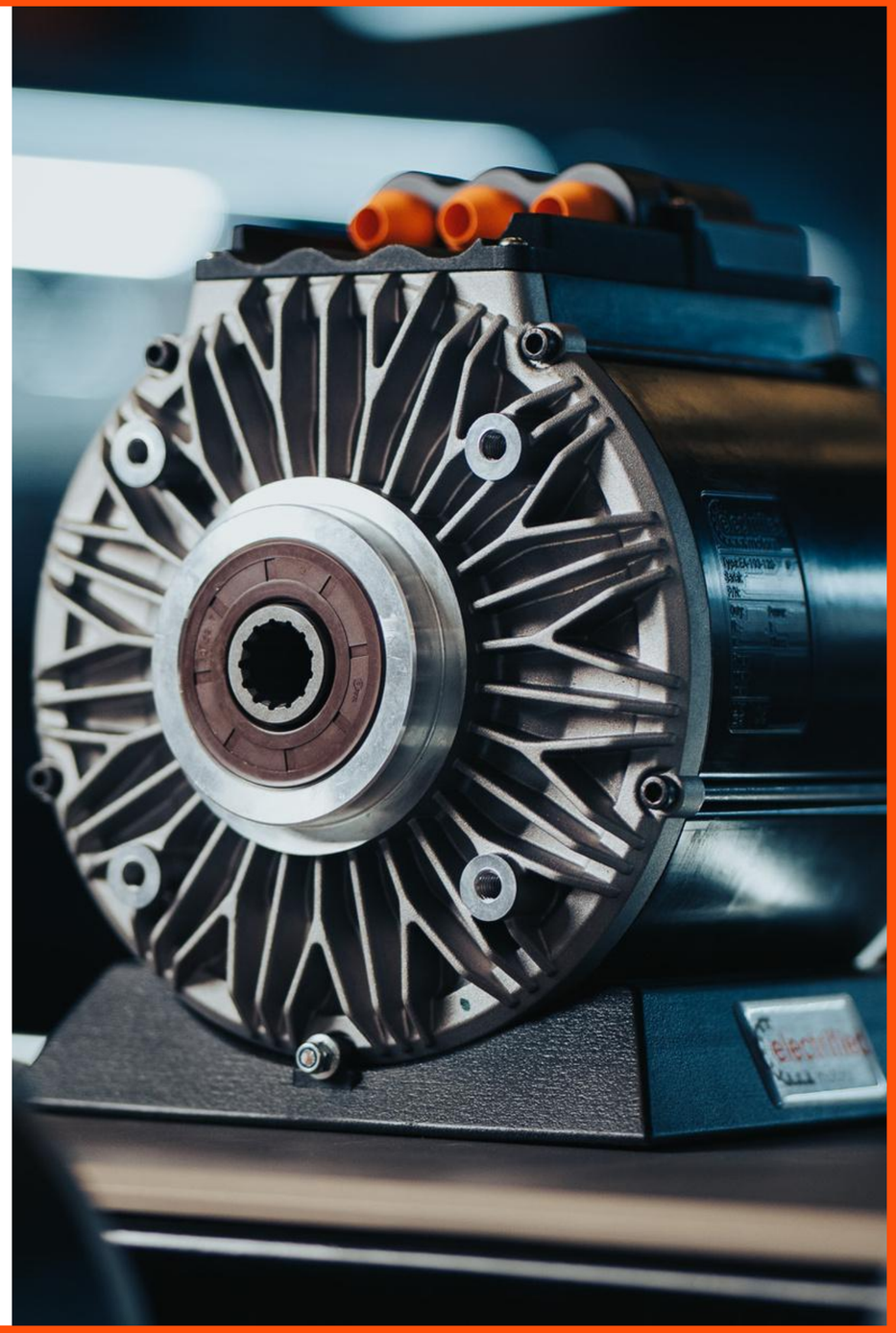
electrified motors

OVERCOMING CHALLENGES

IN POWERTRAIN INTEGRATION

MARKETS, DRIVERS AND SOLUTIONS

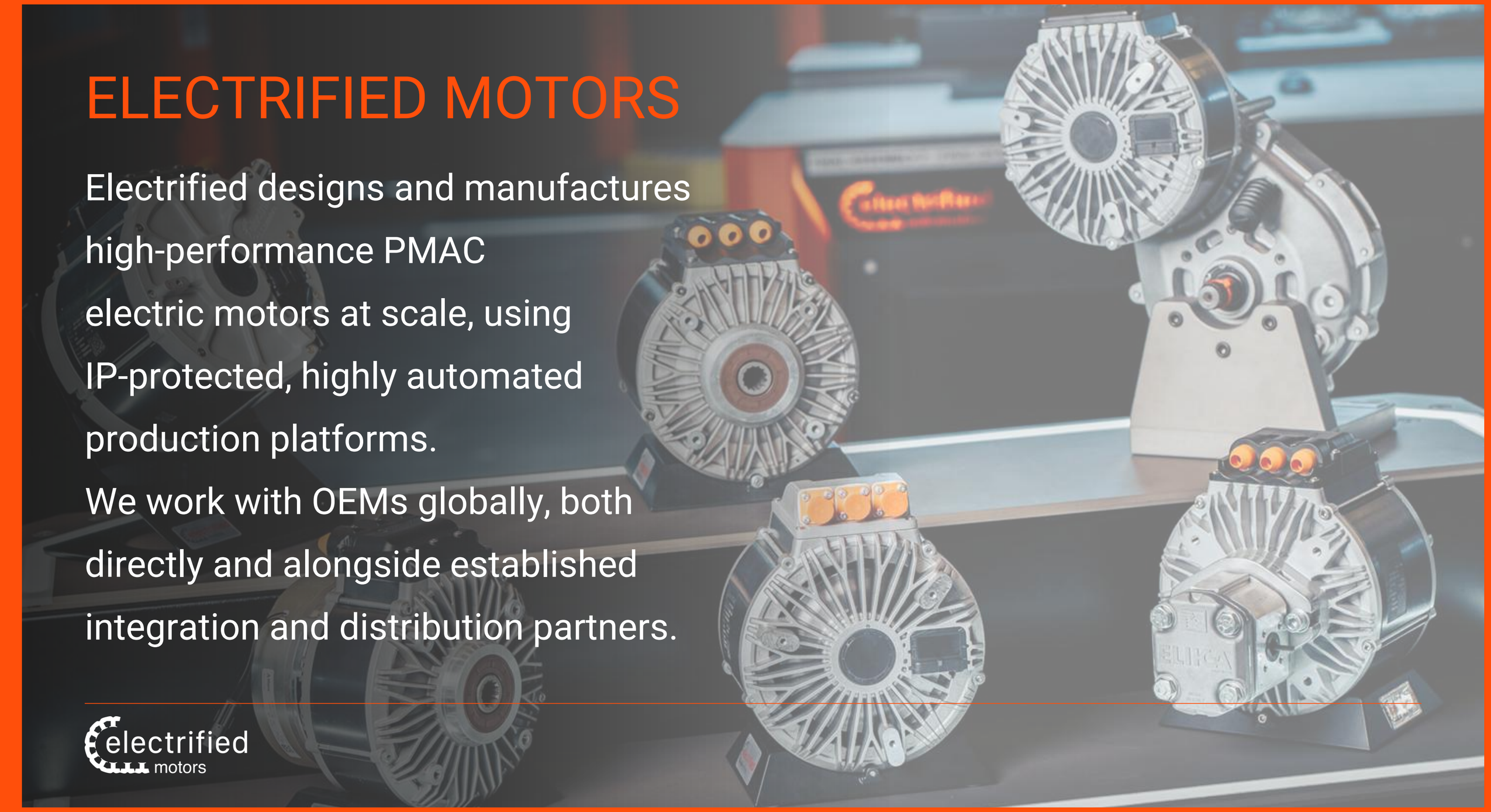
JIM WINCHESTER, MANAGING DIRECTOR



ELECTRIFIED MOTORS

Electrified designs and manufactures high-performance PMAC electric motors at scale, using IP-protected, highly automated production platforms.

We work with OEMs globally, both directly and alongside established integration and distribution partners.



electrified motors

OFF-HIGHWAY AND NICHE APPLICATIONS

Off-highway sectors such as construction and agriculture represent strong opportunities for electrification, driven by drives to cut emissions, reduce urban impact and manage cost pressures.

Electric’s PMAC motors are compact, powerful and efficient, with predictable duty cycles and an IP-69K rating. This makes them well suited for many off-highway and niche on-highway vehicles.

MUNICIPAL VEHICLES

MARKET DRIVERS

Decarbonisation and increasingly strict noise regulations are driving the introduction of Low Emission Zones, while heightened awareness of urban hygiene following the pandemic is reshaping expectations for cleaner, quieter cities.

MARKET CHALLENGES

The electrification solution is required to deliver a full eight-hour operating shift on a single charge. Multiple motors are required per machine creating cost and complexity.

POWER WASHERS

MARKET DRIVERS

Decarbonisation and stricter noise regulations, including ‘Low Emission Zones’, are driving the shift toward cleaner powerwasher solutions. Post-pandemic there has also been increasing demand for quieter, more environmentally friendly equipment in public and urban spaces.

MARKET CHALLENGES

Switching powerwasher solutions from diesel to electric introduces challenges around shorter run-times between charges and higher upfront costs of electric units, which can affect operational efficiency and initial investment decisions.

GROUND SUPPORT EQUIPMENT

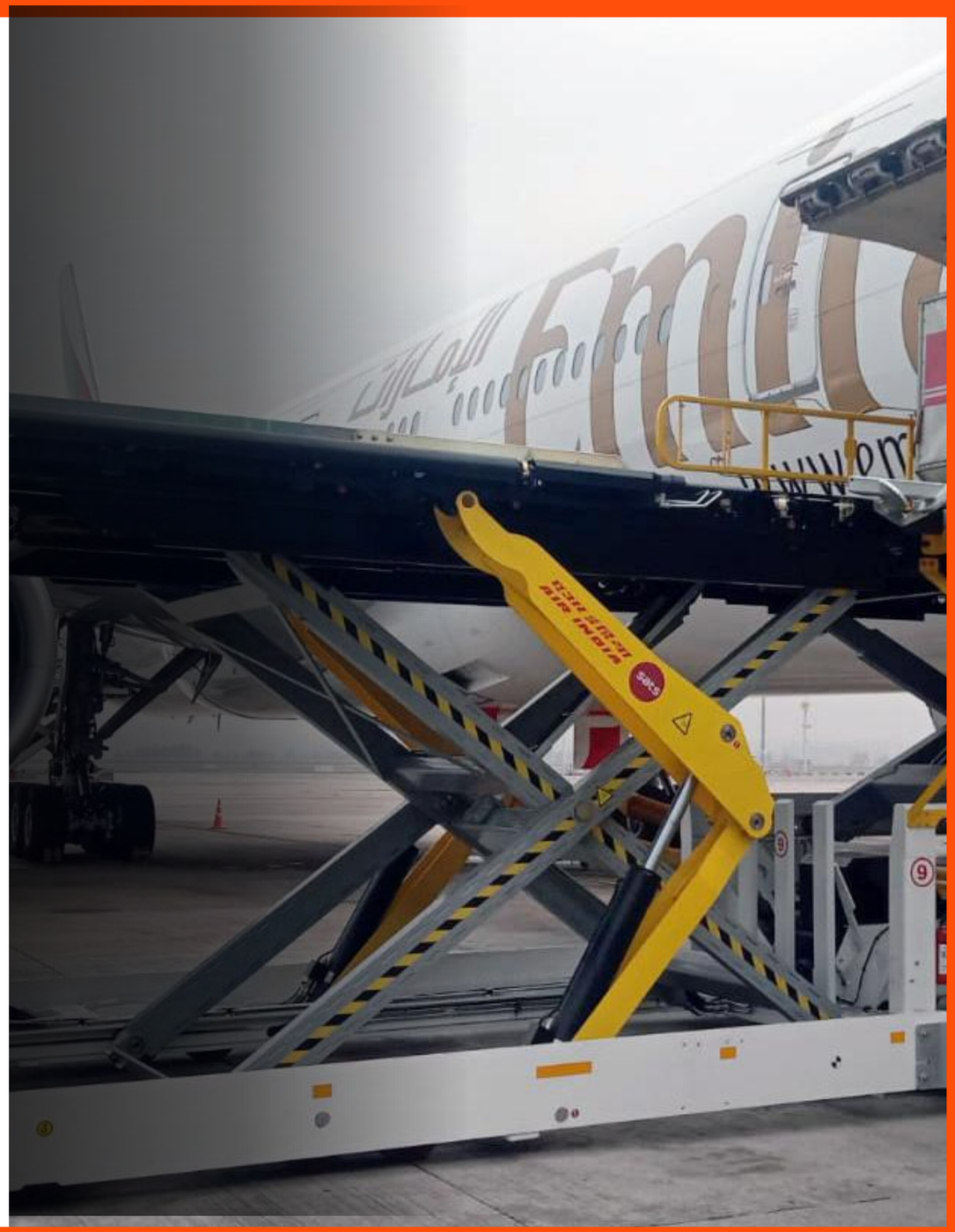
MARKET DRIVERS

The shift from diesel to electric GSE is driven by stricter airport emissions regulations, net-zero commitments and air-quality requirements.

Electric powertrains reduce operating and maintenance costs, lower noise, improve airside working conditions and achieve predictable duty-cycles to enable reliable, zero-emission ground operations.

MARKET CHALLENGES

The availability of infrastructure to support large fleets can be limiting, multiple motors are also required on many platforms generating increased cost and complexity.



CONSTRUCTION EQUIPMENT

MARKET DRIVERS

Tighter emissions and noise regulations such as EU Stage V, UK NRMM Low Emission Zones, and EPA Tier 4 are pushing construction equipment manufacturers toward electric and hybrid powertrains for cleaner, quieter and more sustainable operations.

MARKET CHALLENGES

Limitations on operational range and charge times, as well as the higher initial upfront cost of electric construction equipment can impact adoption despite regulatory pressures.

APPLICATION REQUIREMENTS

Operating Voltage	48V - 80V
Peak Torque	60Nm - 130Nm
Peak Power	13kW - 40kW
Rated Power	5.5kW - 15kW
Annual Volume <1000 (per platform)	
Custom Mechanical Interface	







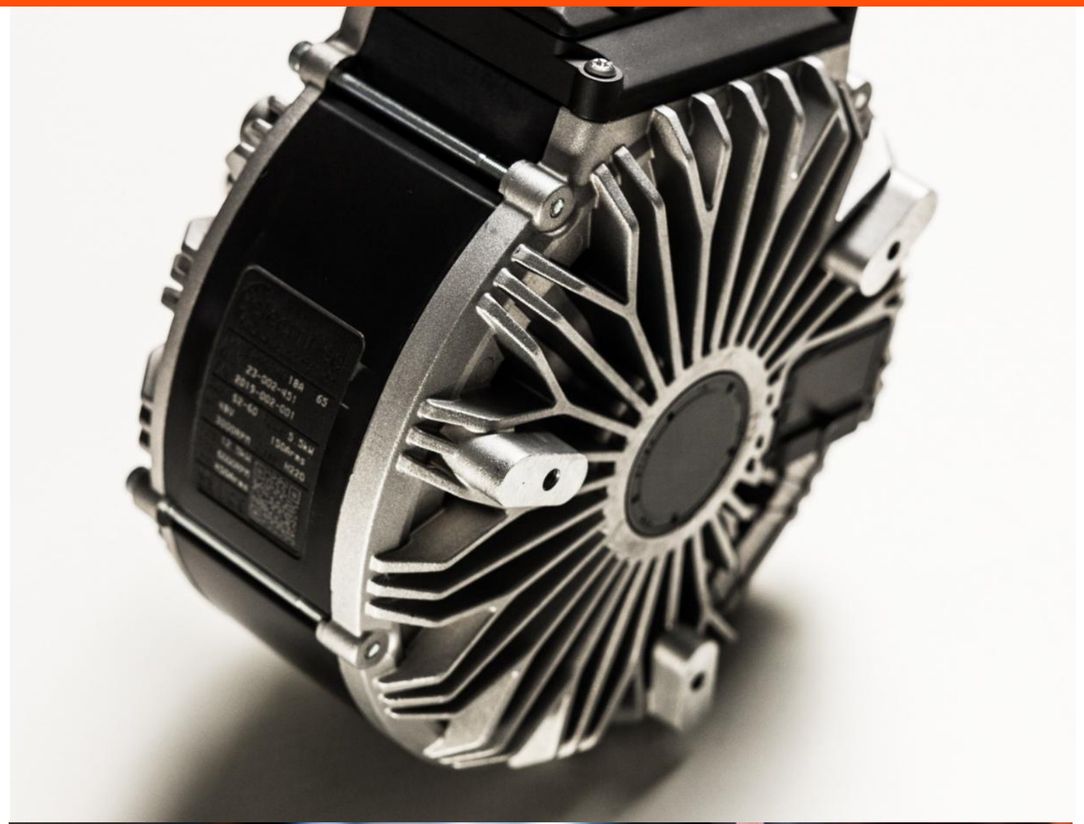

POWERTRAIN CHALLENGES

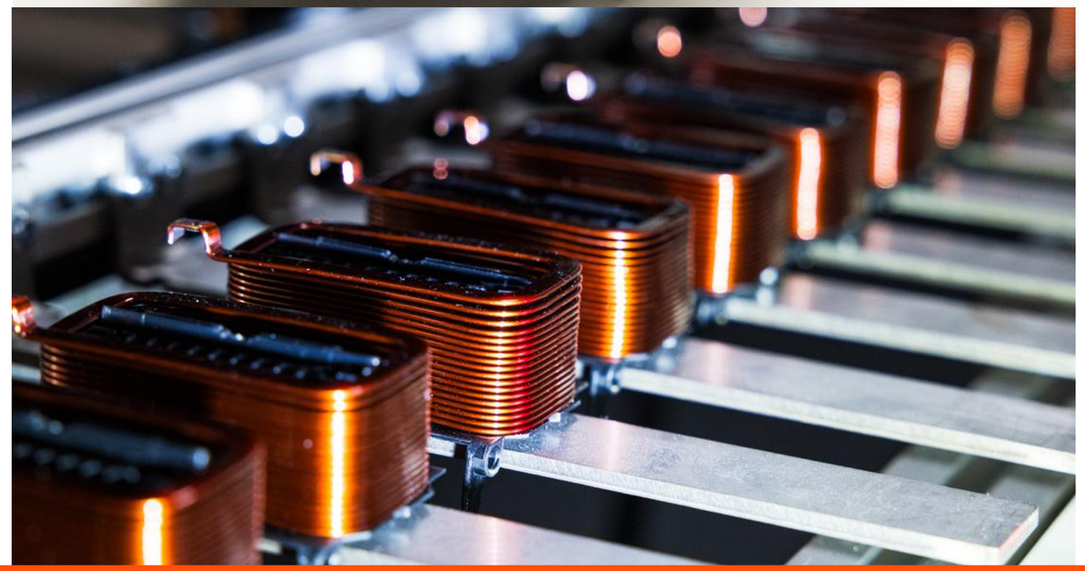
Efficiency key to range and battery cost.

Constraints surrounding space to locate components.

Limited capital available to invest in customisation.

Limited pool of suppliers to work with.





IPM SOLUTION

COMPACT I POWER DENSE I EFFICIENT

FEATURES

Built on fully automated production platforms for consistent quality, the motors combine class-leading kW/kg power density with highly efficient material utilisation to minimise weight and cost.
A field-serviceable encoder, configurable shaft options and modular architecture enable straightforward integration and maintenance.

SPECIFICATION

The motors operate across a voltage range of 24–144V, deliver rated power from 3kW to 15kW and are protected to IP69K. They achieve typical peak efficiencies of 94–95% and feature a moulded, fully encapsulated stator for enhanced durability.

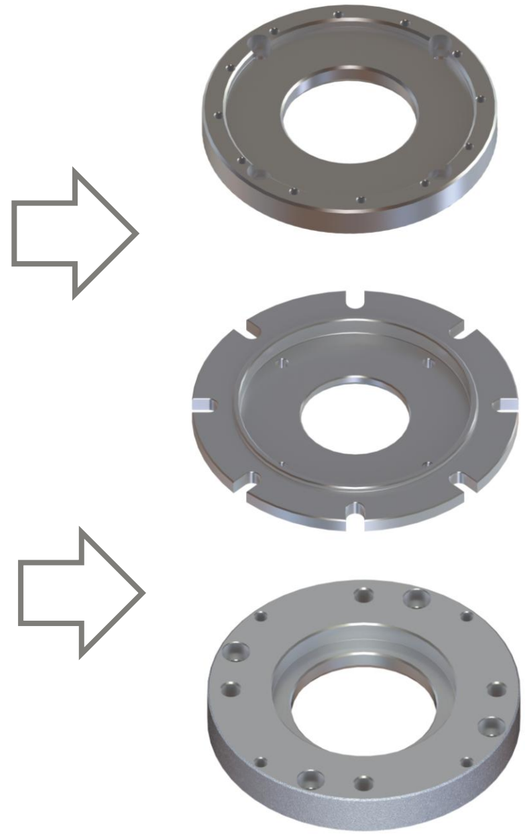
MODULAR DESIGN

BENEFITS OF AUTOMATED MANUFACTURING WHILST OFFERING CUSTOMISATION WITHOUT CAPITAL AND DEVELOPENT COSTS

NO-SHAFT MOTOR

SELECT SHAFT

SELECT ADAPTER

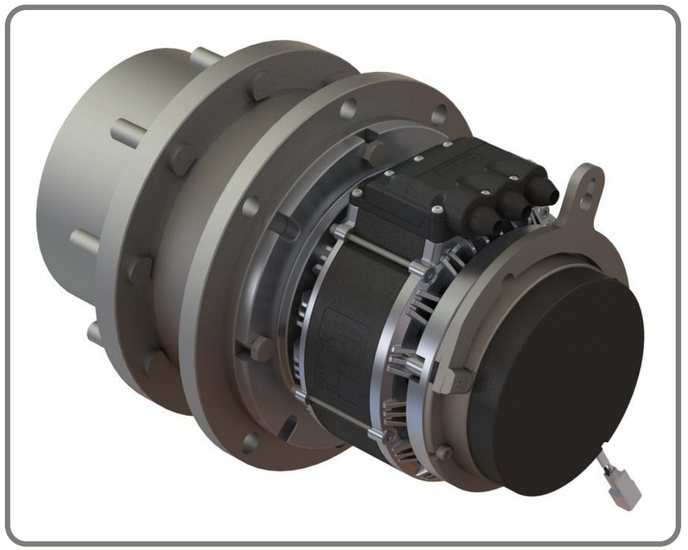


READY FOR APPLICATION

SYSTEM SOLUTIONS

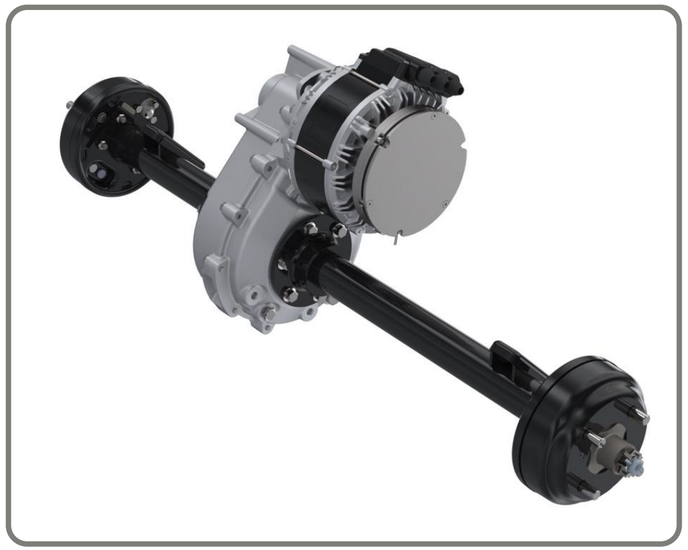
EM BRAKE SERIES

Supports multiple operating voltages, offers protection up to IP67, delivers up to 100 Nm of static holding torque and operates at input speeds up to 6,000 rpm. Available with or without a manual lever.



ELECTRIC WHEEL DRIVES

Delivers up to 7,000 Nm of output torque, offers gear ratios from 17.2:1 to 349:1. Supports input speeds of up to 7,000 rpm (model dependent), and is available with or without an electromagnetic brake.



ELECTRIC AXLES

Provides up to 33 Nm continuous torque and 98 Nm input torque. Supports loads of up to 1,360 kg, offers gear ratios up to 16.99:1 and features an open differential.

GET IN TOUCH

CONTACT US AND FIND OUT MORE ABOUT OUR LATEST INNOVATIONS, PRODUCTS AND SOLUTIONS

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