Elaphe™ high-performance and extremely compact in-wheel electric propulsion technology leverages radical innovations in electromagnetic topology and mechanical design for achieving the highest specific torque, lowest motor weight and maximal performance.

www.in-wheel.com/products

Elaphe™
HIGH-EFFICIENCY
IN-WHEEL
PROPULSION
SYSTEMS

Simplifying your development

Modular and scalable

Market leading specific torque

According to automotive standards

Compatible with other vehicle devices

Standard disc and drum brake

Plug & play integration

www.in-wheel.com
When mass production is envisioned by our customers, Elaphe is the perfect partner for custom development of an electric motor. Scalability of the technology, flexibility of the team and the experience in custom development ensure that the final product is tailor-made for the customers’ needs.

**CUSTOM MOTOR DESIGN**

**S400**

Custom 13” or standard 14” steel rim

- Nominal voltage: 100 V
- Weight: 18 kg
- Peak torque: 400 Nm
- Top speed: 1560 rpm
- Peak power: 40 kW
- Continuous power: 29 kW

Designed out of the box for light-electric or hybrid vehicles, this small and powerful in-wheel motor is intended for light to medium load direct-drive applications and features possible integration with a standard 7" drum brake.

Perfect for medium, small or micro EVs (up to 1000 kg GVW) in need of additional space and an exciting launch power.

**M700**

Custom 15” or standard 16” rim

- Nominal voltage: 100 V - 400 V
- Weight: 23 kg
- Peak torque: 700 Nm
- Top speed: 1500 rpm
- Peak power: 75 kW
- Continuous power: 50 kW

An in-wheel motor with a wide range of possible applications, from electrification of existing platforms to bottom-up developed electric cars and light commercial electric vehicles.

- Designed around multiple standard OEM brakes and bearings, it’s as close as it gets to a plug and play electrification. Available in disc or drum brake versions.

**M1100**

Standard 17” steel rim

- Nominal voltage: 100 V - 370 V
- Weight: 40 kg
- Peak torque: 1100 Nm
- Top speed: 1160 rpm
- Peak power: 90 kW
- Continuous power: 70 kW

Heavy-duty applications are a perfect fit for the M1100, which is capable of bearing substantial radial loads (up to 2 ton per wheel). The motor is designed to operate in the toughest of conditions, making it ideal for train, bus and multi-purpose vehicle hybridization and electrification in the most demanding environments.

- Engineering for integration with friction brakes available upon request.

**L1500**

Custom 19” or standard 20” rim

- Nominal voltage: 350 V
- Weight: 34.5 kg
- Peak torque: 1500 Nm
- Top speed: 1250 rpm
- Peak power: 110 kW
- Continuous power: 65 kW

The most powerful compact in-wheel motor ever produced. With an integrated standard disc brake, outer caliper and a standard hub bearing, it is designed to fit the original vehicle knuckle.

Built for high-power requirements, this motor fits perfectly to SUVs and powerful sedans.

**OFF-THE-SHELF SOLUTION**

However, you can make your project development easier - you can simply use one of our readily available products to build vehicle prototypes faster and put together new testing and development platforms with full functionality. With their high torque and high-power, Elaphe™ motors are a perfect fit for a wide range of electric or hybrid vehicles.

**ELAPHE™ IN-WHEEL MOTOR RANGE**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor Size</th>
<th>GVW Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>S type</td>
<td>Micro/Small Class (13&quot;-16&quot; rim size)</td>
<td>500 - 1200 kg GW</td>
</tr>
<tr>
<td>M type</td>
<td>Medium/Large Class (16&quot;-21&quot; rim size)</td>
<td>1700 - 2700 kg GW</td>
</tr>
<tr>
<td>L type</td>
<td>Large/Utility Class (16&quot;-24&quot; rim size)</td>
<td>2100 - 3550 kg GW</td>
</tr>
</tbody>
</table>

**WWW.IN-WHEEL.COM**
**ELAPHE™ PATENTED DESIGN**

Elaphe™ patented EM topology enables highest torques at the lowest possible motor weight. Maximal performance is made possible by optimized magnetic paths, heat flow, and innovative mechanical design.

**LARGE INTEGRATION SPACE AVAILABLE**

- FLEXIBLE system integration with friction brakes, steering or a custom inverter

**IN-WHEEL ELECTRIC POWERTRAIN**

- inspired by optimizations from nature
- optimally designed power electronics
- unique control software and hardware
- intelligent vehicle propulsion control unit
- intuitive user infotainment interface with real-time data and control

**ULTRA COMPACT DESIGN**

- high specific torque
- slimmest on the market
- highly scalable

**OPTIMIZED MAGNETIC PATHS AND HEAT FLOW**

- innovative electromagnetic topology
- light-weight & compact active part
- low losses & innovative mechanical design
- high torque & low weight

**A COMPLETE PLUG & PLAY AND MODULAR PROPULSION PLATFORM**

Elaphe™ light-weight, modular, and compact direct-drive propulsion platform consists of packaging-friendly components: the automotive-grade, intelligent propulsion control unit (Elaphe™ PCU), dedicated high-power traction inverters and high-torque in-wheel electric motors, designed to fit inside standard rims and around an existing bearing and brake.

Coupled with dedicated high-power controllers using advanced in-wheel firmware, Elaphe™ multi-motor propulsion control, and the eDash™ wireless infotainment interface, they offer an ideal platform for the next generation of lightweight, efficient and modular electric vehicle powertrain designs – for existing and newly-engineered vehicle chassis & perfect for autonomous applications.

Motor compatibility and scalability around standard mass-produced parts enables the use of the platform design in both 2iWD and 4iWD configurations.
Elaphe multiple-motor propulsion control introduces advanced firmware and software solutions for unlocking the full potential of multiple-motor direct-drive propulsion, thus increasing control and making vehicles safer, more intelligent and fun to drive.

The modular Propulsion Control Unit and the Infotainment Interface allow for easy system integration into the new mobility paradigm, focused on autonomy, connectivity, user experience and customization. Agile development, following the latest automotive and safety standards allows for easy, hassle-free upgrades and customer-specific modifications.

**THE POWERBRAIN**
MULTIPLE-MOTOR PROPULSION CONTROL

<table>
<thead>
<tr>
<th>Traction Control</th>
<th>Torque vectoring</th>
<th>Anti-lock regenerative braking system (ARBS)</th>
<th>Configurable motor control</th>
<th>Complete propulsion APIs</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Car Icon" /></td>
<td><img src="image" alt="Car Icon" /></td>
<td><img src="image" alt="Spin Icon" /></td>
<td><img src="image" alt="Curve Icon" /></td>
<td><img src="image" alt="Flowchart Icon" /></td>
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</tbody>
</table>

Connected & Safely integrated
Battery power control
Condition monitoring
Data logging & Drive analytics
Various driving modes

MULTIPLE-MOTOR PROPULSION CONTROL UNLOCK THE POTENTIAL OF YOUR VEHICLE

www.in-wheel.com/technology
It just makes sense.