



Drive and Motion Systems Surface and Underground Mining Applications





People Finding A Better Way[®]

Established in **1904**. Employing **40,000** people across **141** major facilities in **31** countries. Shipping to **14,000** customers, leveraging a global network of technology centers across **9** countries.

Our Vision

Powering Innovation
To Move Our World

Our Mission

This mission is embodied in our company theme: People Finding A Better Way. Driving stakeholder value by:

- powering vehicles and machines around the world
- shaping sustainable progress through invention and execution
- making the amazing happen wherever people live, work, and play.

Our Values

- Value Others
- Inspire Innovation
- Grow Responsibly
- Win Together

Corporate Business Units

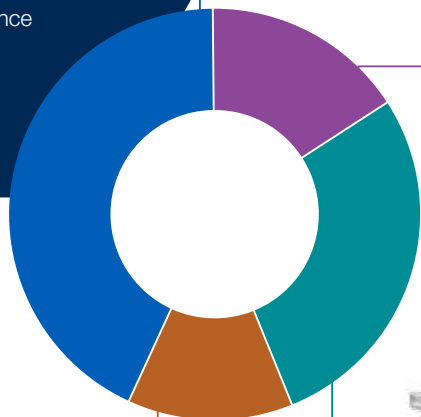
Dana serves the global light vehicle, medium- and heavy-duty vehicle, and off-highway markets through four business units: Light Vehicle Driveline Technologies, Commercial Vehicle Driveline Technologies, Off-Highway Drive and Motion Technologies, Power Technologies, which is the center of excellence for sealing and thermal management technologies that span all customers in our on-highway and off-highway markets.



Light Vehicle Drive Systems



Commercial Vehicle Drive and Motion Systems



Power Technologies



Off-Highway Drive and Motion Systems

Where there is a need, Dana finds a better way.

A new era of mobility is upon us.

Emissions regulations and government policies are manifesting at an ever-increasing pace, and visions of vehicles that reduce operating costs while enhancing productivity and safety are accelerating the need for alternative propulsion solutions.

For over 20 years, our group of highly focused engineers has been dedicated to research and development of new technology solutions aimed at electrification.

We have built a broad portfolio of award-winning, patented technologies, making us a leader in electrification.

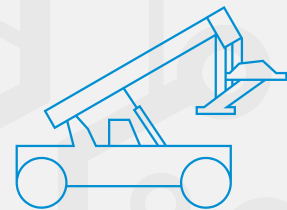
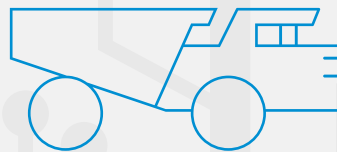
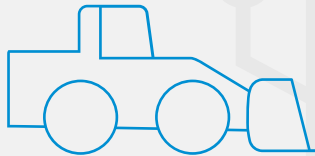
Why should you rely on Dana?

Solutions designed, engineered, and manufactured for maximum efficiency.

We approach electrification with a trained eye and an insightful, innovative perspective, utilizing market synergies to provide an advantage in electrifying offerings across multiple applications.

A component is only as good as the system in which it operates. That's why we take a systems-focused approach, seamlessly integrating our components into complete electrified systems.

We have an in-house, multi-disciplinary team of system solutions engineers who provide turnkey software and controls for our entire portfolio of technologies. This in-house knowledge and integration produces solutions that provide enhanced performance, packaging optimization, and reduced system weight. All of which results in savings to your bottom line.



OFF-HIGHWAY VEHICLES



LIGHT VEHICLE



COMMERCIAL VEHICLE



WEIGHT REDUCTION
For additional payload
or battery capacity



EFFICIENCY
Reduced energy
consumption means increased
range and cost savings



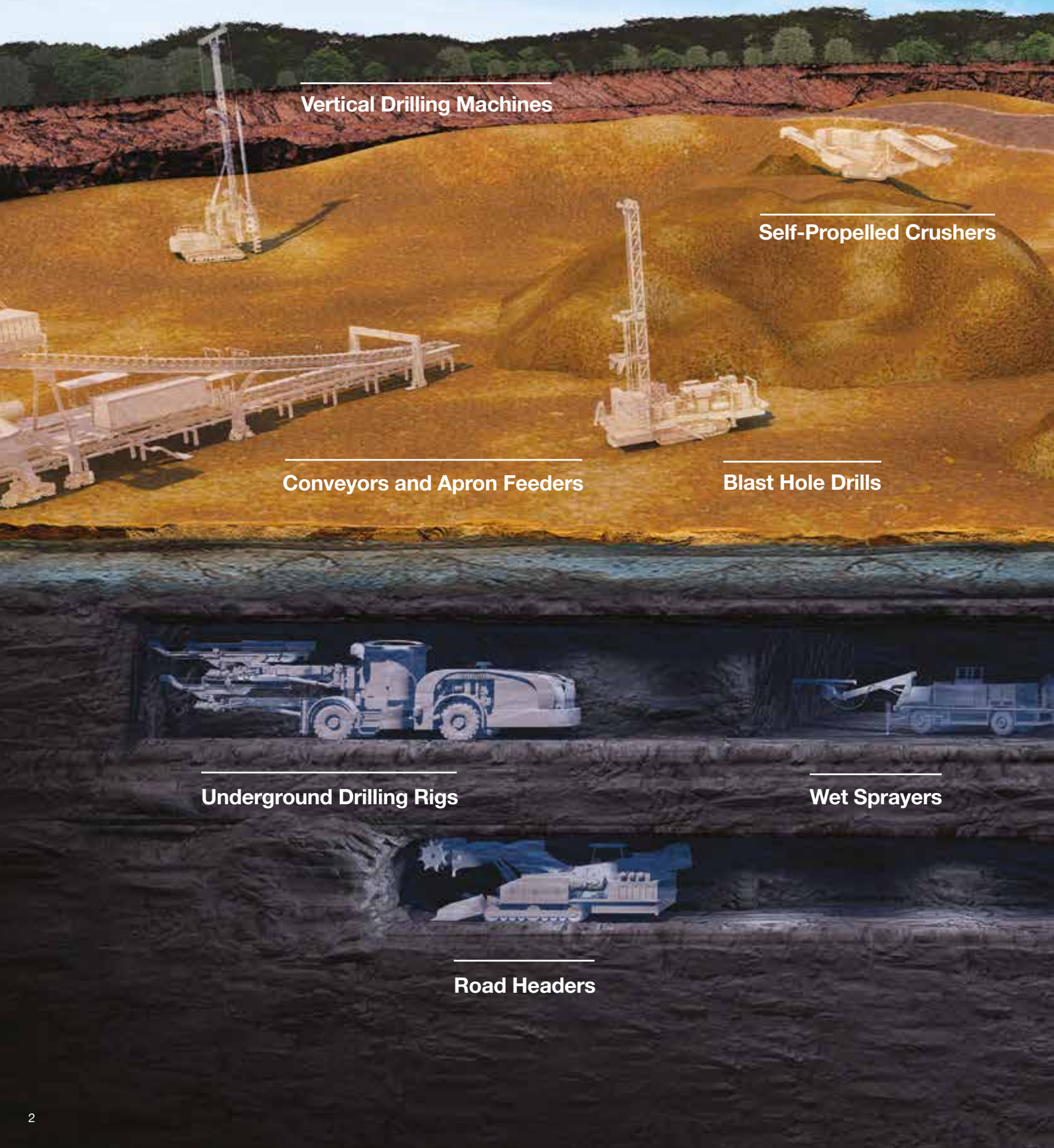
PACKAGING
Improved vehicle
integration for optimized
packaging space



COOLING SOLUTIONS
Capability to integrate
thermal-management solutions
with power sources

A Full Offering of Drive and Motion Systems for **Surface and Underground Mining Vehicles**

The expanded Dana family of products now includes solutions for both underground and surface mobile applications, as well as industrial surface mining.



Vertical Drilling Machines

Self-Propelled Crushers

Conveyors and Apron Feeders

Blast Hole Drills

Underground Drilling Rigs

Wet Sprayers

Road Headers



SPICER®
Drivetrain Systems



SPICER®
Torque-Hub™



BREVINI™
Motion Systems



Stacker Reclaimers

Mining Shovels

Load Haul Dumpers

Underground Mining Trucks

Mobile Applications

Surface Mining



Drive and Motion Systems



Brevini™ HPV proportional directional valves

Inlet flow up to 1200 l/min and pressure up to 270 bar. High modularity with mixable sizes. Smooth controls to improve operation functionality and accuracy.



Spicer Torque-Hub™ Track Drives

Wide range of ratios in combination with Dana Brevini® hydraulic motor and motion control valves. Compact design solution. Manual disengagement device for towing. Hub and spindle made of high-strength material. Dedicated sealing system designed for severe environmental conditions. Electric motor version available.



Brevini™ Slew Drive

Improved thermal capacity. Robust design. Reliable operation, engineered for harsh conditions. Spheroidal graphite cast iron housing for low temperature applications. Custom-made output support and pinion.



Brevini™ Orbital Motors

Available in gerotor and geroller set versions. Three timing system options: spool type, disc type, and disc type with separate driving link. Displacement up to 500 cc/rev and Torque up to 1220 Nm.



Brevini™ Bent Axis Motors

Heavy duty motors up to 216 cc/rev and 480 bar. Fixed and variable displacement, flanged and cartridge mounting available. Open or closed loop circuits.



Brevini™ Evolution Series Winches BWE

Winches for main end auxiliary hoist systems. Combine efficiency, smooth controls, custom option, and safe operations in a robust modular design. Equipped with high-speed Brevini® hydraulic motors and a wide range of controls to avoid damage to the winch, vehicles, and people on the job site.

Underground Mining



Drivetrain Systems



Spicer® Transmissions

Full powershift options with or without lockup and optional retarder.

Advanced electronic controls.

Highly efficient aluminum-cast converter.



Spicer® Axles

State-of-the-art design tools, rigorous program management, and comprehensive testing ensure efficient, reliable field performance.



Spicer® Driveshafts

Handles added input torque and heavy loads. Designed for longer life, minimal maintenance, and lower operating cost.



Spicer® Heavy Axles

Designed for high efficiency and ease of service.

Provides stable torque performance under the most severe duty cycles.

Spicer® Electronic Controls and Sensors

Best-in-class controls optimize productivity, maximize life, and reduce maintenance.

Support for OEM movement in digitalization and automation.

Capability to combine drive and motion on one platform.



Motion Systems



Brevini™ HPV proportional directional valves

Inlet flow up to 1200 l/min and pressure up to 270 bar.

High modularity with mixable sizes.

Smooth controls to improve operation functionality and accuracy.

Brevini™ Orbital Motors

Available in gerotor and geroller set versions.

Three timing system options: spool type, disc type, and disc type with separate driving link.

Displacement up to 500 cc/rev and Torque up to 1220 Nm.



Brevini™ Bent Axis Motors

Heavy duty motors up to 216 cc/rev and 480 bar.

Fixed and variable displacement, flanged and cartridge mounting available.

Open or closed loop circuits.



Industrial Applications

Surface Mining

Material Processing



Brevini™ Industrial Planetary Gearboxes – S Series

Modular concept.
Extensive ratio range.
Increased thermal capacity due to large bevel set.
Spheroidal graphite cast iron housing.

Dana offers a wide range of products for industrial applications and self-propelled machines – from planetary gearboxes to helical and bevel helical gearboxes to winches.

Whether you require standard products or individual solutions engineered specifically for their needs – Dana can deliver a customized drive and motion system solution.



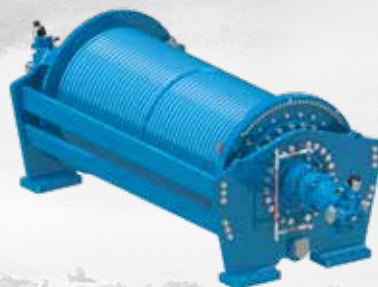
Brevini™ Plano Helical Gearboxes – High Power Series

Extensive ratio range.
Increased thermal capacity due to shared oil chamber.
Spheroidal graphite cast iron housing.



Brevini™ Plano Helical Gearboxes – Compact Drives

Light, compact solution.
Spheroidal graphite cast iron housing.
Easy to assemble/disassemble.



Brevini™ Winches and Winch Drives

Configurations capable of lifting up to 35 tons.
Suitable for hydraulic or electric motors.
Integrated hydraulic motor for compact solution.
Certified for marine applications.



Brevini EvoMax™ Gearbox Series

Extensive ratio range.
Increased thermal capacity.
Spheroidal graphite cast iron housing available.
Diverse low-speed shaft options.



GWB® Cardan Shafts

Complete product range featuring flange/swing diameters from 120 to 1300 mm.
Designed for ease of maintenance with service-free option.
Engineered to withstand harsh conditions.

The Only Supplier Delivering Complete **Fully Integrated e-Drive and e-Motion Systems**

Electrification.
Delivered.[™]

Today, Dana offers a full product portfolio for electrification needs.

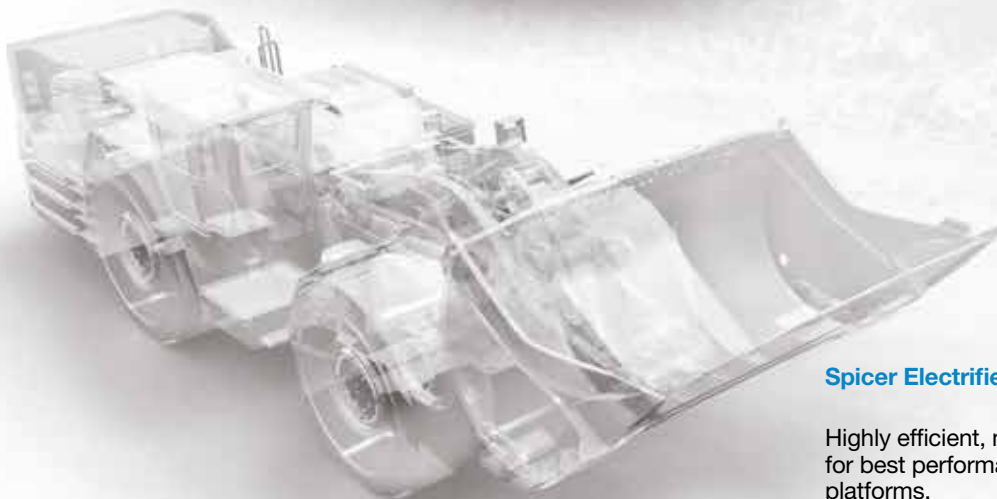
Through our market-proven brands, we can provide solutions for low- and high-voltage applications ranging from 24 to 800 V.

Our product offering includes solutions for both drive and motion systems.



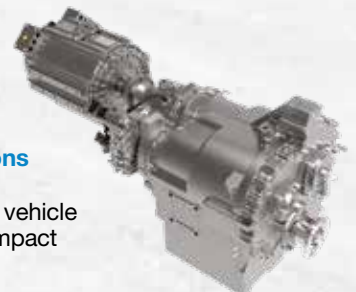
**Spicer Electrified™
e-Hub Drive and e-Axle**

eHub provides high efficiency in combination with maximum frame design freedom, while eAxle minimizes impact on existing vehicle frames.



Spicer Electrified™ eSP502 Transmission

Highly efficient, modular dual-input powershift transmission for best performance. Allows flexibility for multiple vehicle platforms.



**Spicer Electrified™
e-Powershift Transmissions**

Compatible with IC-engine vehicle architecture with minimal impact on vehicle frame.

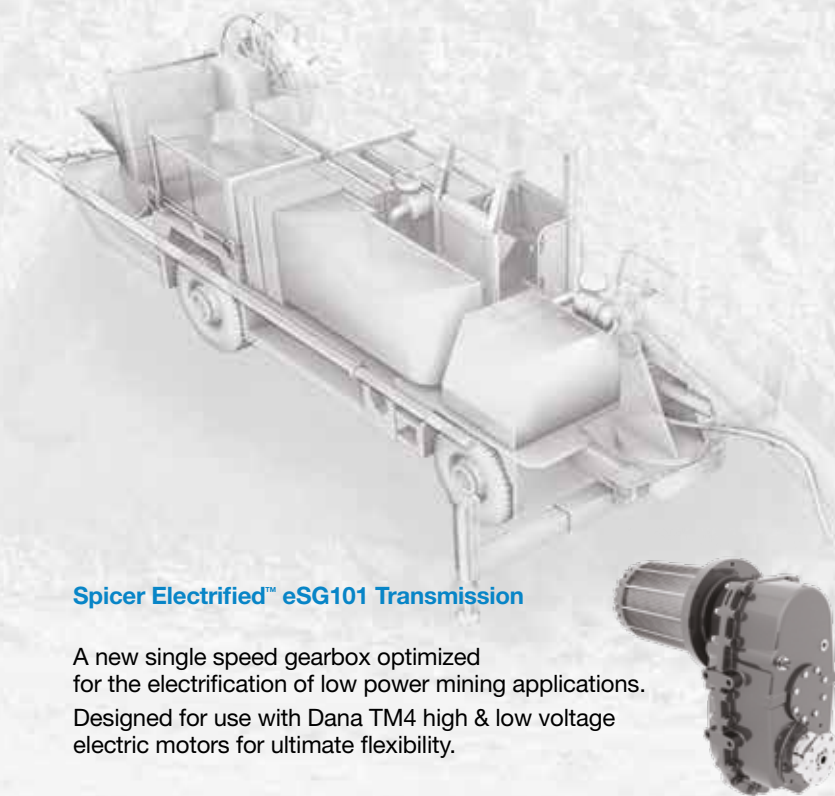
Leading the Charge in Vehicle Electrification

Dana is a leading drivetrain and motion systems provider for electrified off-highway applications.

Supported by a legacy of innovation in conventional drivetrains, Dana is at the forefront of integrating mechanical and electrical components for alternative propulsion applications.

We embrace evolution to be a step ahead in supporting new applications as they emerge and collaborating with customers as they develop tomorrow's vehicles.

Electrification. **Delivered.**[™]



Spicer Electrified™ eSG101 Transmission

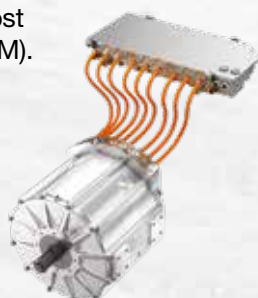
A new single speed gearbox optimized for the electrification of low power mining applications. Designed for use with Dana TM4 high & low voltage electric motors for ultimate flexibility.

Motors and Inverters

Wide product range from 24 up to 900V for both motors and inverters covering most of the technologies (ACIM, SR, SRIPM, IPM).

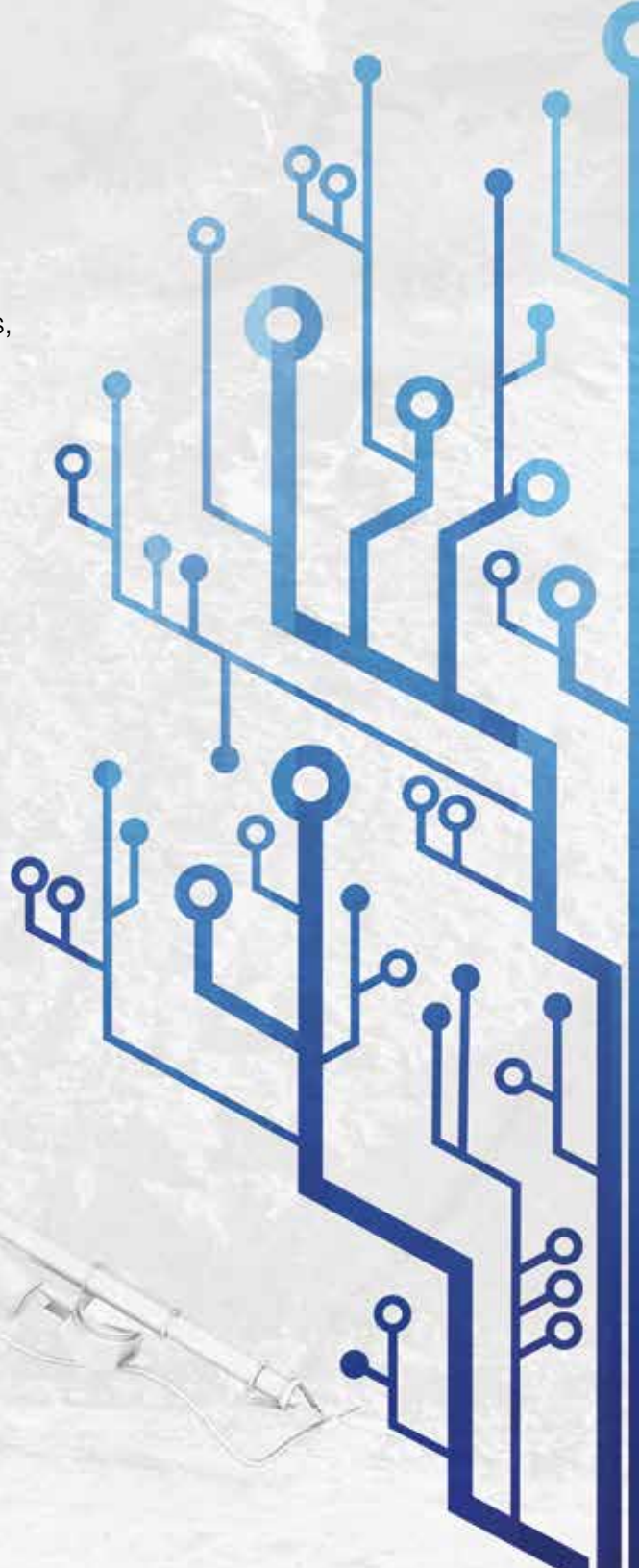
High-Voltage SUMO Traction Systems

High-torque motor and inverter systems meeting the highest standards for efficiency, reliability, and performance.



Low-voltage e-Motors and Inverters

IPM, Synchronous Reluctance and Induction e-Motors. Most power-dense inverters on the market.



Market-Driven **Innovation**

Off-Highway Performance Expectations

Safety

Productivity

Maneuverability

Durability

Serviceability

Total Cost of Ownership

About Dana Incorporated

Dana is a leader in the design and manufacture of highly efficient propulsion and energy-management solutions for all mobility markets across the globe.

The company's conventional and clean-energy solutions support nearly every vehicle manufacturer with drive and motion systems, electrodynamic technologies, thermal, sealing, and digital solutions.

About Dana Off-Highway Drive and Motion Systems

Dana delivers fully optimized solutions to customers in the construction, agriculture, material handling, mining, and industrial markets.



Dana.com/oh
Dana-industrial.com/contact-us

Application Policy

Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.

