



SPICER®

Drivetrain Systems

Perfection Is Possible

The Drive for the Most Powerful and Efficient Axle

Increasingly, companies of all sizes are gathering more and more data from a multitude of sources, but the real challenge is figuring out what to do with the data, and exactly what it is the companies want to achieve once it's collected. Without a plan or process to utilize ever-increasing volumes of data, companies run the risk of analysis paralysis.

That's one reason Dana has developed a networked solutions process based on and backed by data, which enables the company to optimize the performance of the entire vehicle, not just those technologies that the company provides. This approach drives Dana to deliver lightweight, fuel-efficient technologies that can be customized to add even greater value to individual vehicle platforms and regional market preferences.

For example, data is used to find opportunities for improvement based on the vehicle's duty cycle. As experts in measuring efficiency, Dana tests solutions extensively to achieve the most reliable, data-driven results that support the development of tailor-made system solutions designed to enhance the total vehicle powertrain.

In measuring an axle's efficiency, for example, it is important to keep in mind that the efficiency of any powertrain component is not fixed – every axle, transmission, engine, and so on has a footprint, and will perform differently depending on a multitude of variables. It is critical to understand these variables so that the best combination of products can be selected for a particular vehicle design.

With the company's ability to understand and map efficiency and performance at any temperature, output torque, and speed, it can assist its OEM partners in predicting vehicle fuel economy performance in any given regional duty cycle or criteria set. The company then recommends technologies based on these results to optimize fuel efficiency for specific driving conditions.

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The drive for improved fuel economy has OEMs searching for ways to maximize powertrain efficiency and reduce vehicle weight in an effort to meet the newer and stricter emission standards. The real question is how. A universal solution doesn't exist; instead, different approaches are required for varying market categories.

For instance, in the premium-vehicle market segment, where power, performance, and ride are of paramount importance, Dana is supplying one of the world's most efficient axles available to the light-vehicle market. This axle can be optimized for specific powertrains and duty-cycle parameters including torque, speed, and temperature. Through its complete line of Spicer® AdvanTEK® high-efficiency axle models, Dana's refined axle technology – designed using the very latest simulation techniques, materials, and manufacturing methods – offers high power density and reduced NVH designed specifically for the premium-vehicle segment.

These axles produce significant improvements in torque capacity and durability, as well as a full 13 to 32 percent reduction in mass using AdvanTEK® technology.

This high-efficiency axle offers improved fuel economy through the use of a lightweight, high-strength aluminum housing, which helps to decrease overall product weight through a compact design. The axle also comes equipped with numerous innovative standard features, such as angular contact ball bearings, a wider gear face, larger diameter pinion stems, high-power differential gearing, and optional upgrades to deliver increased fuel economy, durability, and reliability, as well as significantly less vibration for a smoother ride, superior performance, and an extended product life.

The Drive for Perfection

As regulations continue to get tougher and consumers continue to expect better fuel mileage, OEMs are feverishly working with their supply partners to develop cutting-edge fuel-saving technologies that will help them achieve that goal.

With constant focus on developing new, highly-efficient driveline systems, Dana works closely with its OEM partners to discover the best system solutions to achieve the next targets for fuel economy, and collaborates with them to test and validate not only the efficiency of its products, but also how they interact and impact the complete powertrain.

A prime example: Dana is developing an all-new, next-generation, high-efficiency axle designed to include many of the same features and options now available on its AdvanTEK® axles and combining innovations to help OEMs achieve requirements for efficiency regulations and superior performance.

Also integral to the next-generation of Spicer® AdvanTEK® axles are advanced gearing designs, which offer even more miles per gallon, greater power density, and lower power losses over competitor axles by up to 50 percent.

For more information:

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Learn more about how Dana is making "perfection possible."

Dana Holding Corporation

3939 Technology Drive
Maumee, Ohio, USA 43537
T: 419.887.3000
F: 419.887.5961
www.dana.com



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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.