



# Agricultural Drive and Motion Systems

Dana's market-leading Spicer® and Brevini® drive and motion system products maximize agricultural vehicle performance.





# Drive and motion systems to meet your agricultural needs

Dana innovations are engineered to support increased crop yields, optimized harvesting operations, lower emissions, improved operator safety and comfort, and reduced total cost of ownership.



## Sprayers

Spicer® wheel drive technologies provide durable, efficient, and safe operation in agricultural applications, while our Brevini® products enable a range of sprayer working functions.

## Tractors

A wide range of Spicer® axle options offer cost-effective alternatives to meet unique regional and OEM-specific needs.



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## Brands

Spicer® drivetrain systems, including agricultural axle options, wheel and track drives, and hydrostatic transmissions, improve performance and efficiency as vehicles travel between and within worksites.

The comprehensive range of Brevini® products improves maneuverability, efficiency, productivity, speed, and safety of the machine working functions.



**SPICER®**

*Drivetrain Systems*



**BREVINI®**

*Motion Systems*



### Combines and Harvesters

Offering enhanced productivity, maneuverability, stability, and traction on any terrain while maintaining operator comfort.

### Telehandlers

Telehandler safety is enhanced with Spicer® Smart Suite™ Intelligent Load Monitoring System (ILMS) technology, using data from across the vehicle to prevent tip-over incidents.



# Spicer® Drivetrain Systems

Each day, off-highway equipment buyers are searching for technologies that can reduce overall vehicle operating expenses and enhance productivity. They'll find this and more with proven Spicer® drivetrain technologies.

## Spicer® Axles

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### Independent Front Suspension Axles

#### Agricultural tractors 285 to 370 kW (380 to 500 hp)

Ideal for open field tractor applications with increased torque limits, Spicer independent front suspension axles deliver enhanced speed and simpler assembly. The independent suspension on both sides of the axle integrates into the tractor frame, reducing vehicle complexity for OEMs.

A superior operator experience is delivered through integrated sensors that improve driving quality and comfort. With a maximum steering angle of 44 degrees, these double reduction axles can handle all types of terrain.

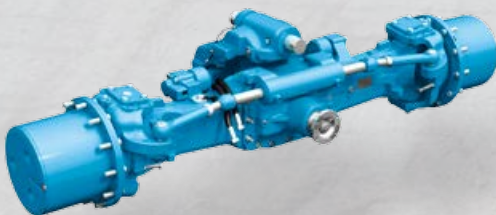


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### Standard Suspension Axle

#### Agricultural tractors 96 to 296 kW (192 to 397 hp)

Engineered for agricultural tractors, Spicer standard suspension axles offer reduced complexity and ease of assembly. The active suspension system improves vehicle control, traction, and handling with transit speeds up to 60 km/h.



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### Modular Axles

#### Agricultural tractors 33 to 301 kW (45 to 410 hp)

Assembled from three interchangeable pieces, the latest Spicer modular axles enable increased axle customization. Geared to meet specific local needs, this cost-effective modular axle technology reduces product development lead times.



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### Portal Axles

#### Compact utility tractors 19 to 41 kW (25 to 55 hp)

Spicer portal axle technologies offer compact utility tractors increased ground clearance, enhanced traction, improved pulling power, and reduced noise. The axle utilizes an integral hydraulic power steering cylinder and high steer angle, providing superior value to tractor manufacturers.



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### Combine Axles

#### Agricultural combines and harvesters 175 to 460 kW (235 to 625 hp)

With a four-wheel drive configuration offering greater maneuverability and traction, the Spicer combine axle enhances driving quality and comfort and improves controllability during on-road travel.





# Brevini® Motion Systems

## Proven Power Conveyance for Machine Working Functions

Designed to support work functions on both machines and their various working attachments, Brevini® hydraulic systems deliver reliable power through a combination of robust and efficient motors, pumps, and controls designed for both open and closed circuits. These products operate with smoothness and precision, even at high pressure and low flow. The line of Brevini mobile valves ranges from a simple, manually actuated design to a sophisticated, remote-operated, proportional configuration that optimizes the flow of hydraulic fluid.

Advanced mobile valves are supported by an electronic control system incorporating inclinometers, leveling systems, sensors, and human machine interfaces powered by proprietary software.



## Spicer® Wheel Drives

Dana's portfolio of drivetrains and associated technologies for agricultural equipment now includes Spicer planetary wheel and track drives with a wide range of maximum transmittable output torque values. Dana offers complete wheel drive packages to enhance braking performance at high travel speeds, as well as track drives with customized solutions that include hydraulic motors and components.



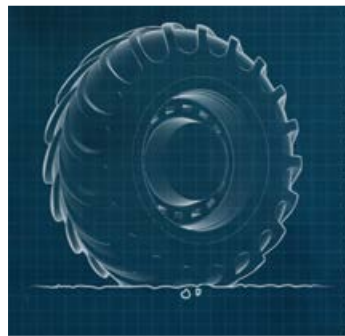
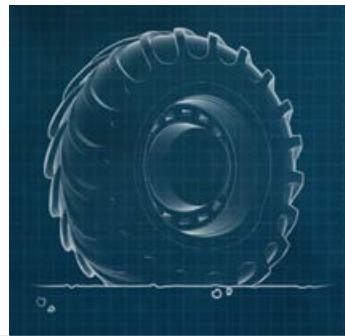
Spicer® Wheel Drive



# Smart Technologies for Tomorrow's Needs

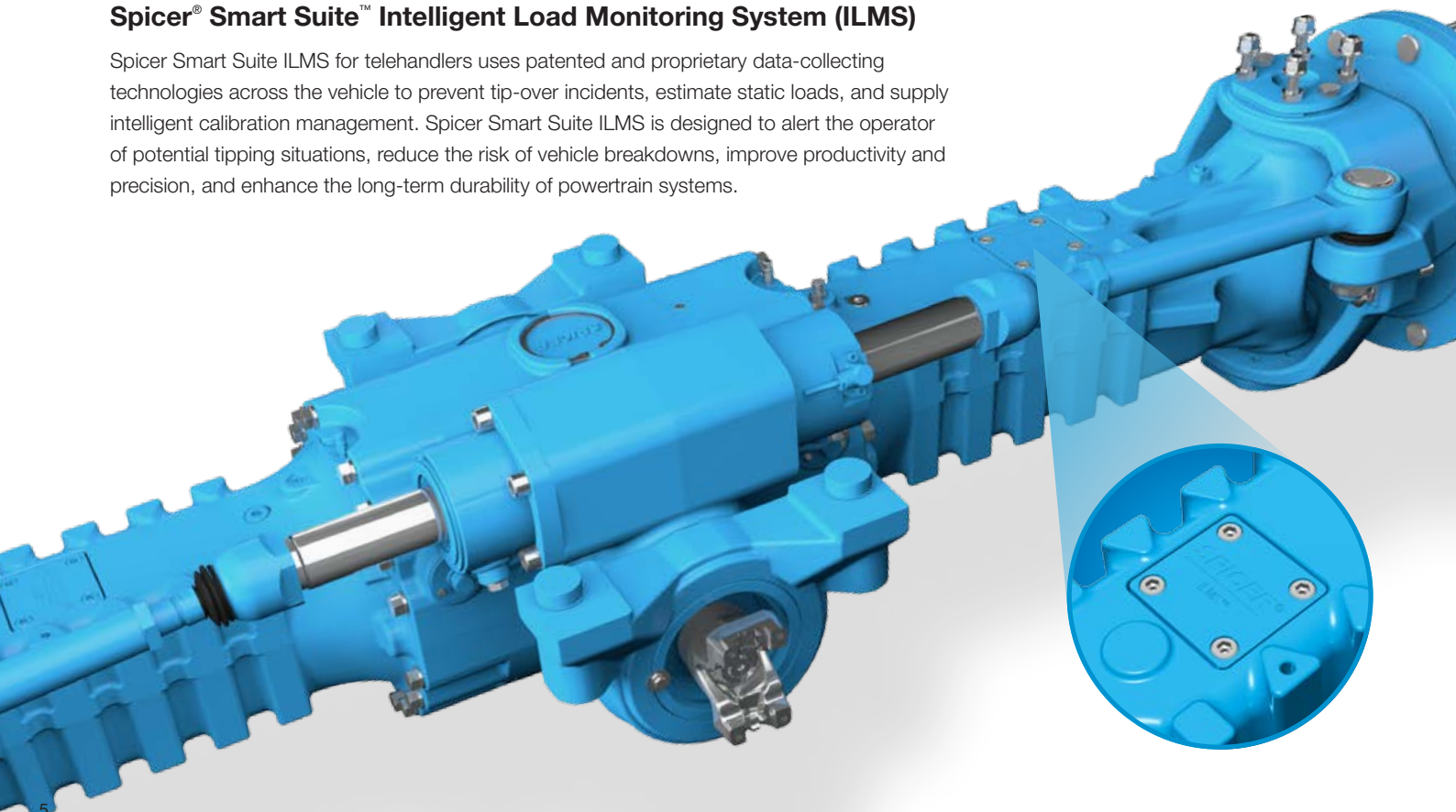
## Spicer® OpTiMa™ Central Tire Inflation System (CTIS)

Engineered for use on Spicer® axles, the Spicer® OpTiMa™ rapid inflate/deflate Central Tire Inflation System (CTIS) offers distinct advantages over competing tire-pressure management systems on the market today. To minimize downtime and get machines back to work faster, the system can perform adjustments from within the cab or remotely while the machine is moving. The pressure in each tire can be set independently to a different level. Additionally, the system's highly integrated design eliminates the need for vulnerable external piping around mud guards, and it can be packaged within existing overall axle dimensions without adding external components.

 <p><b>10-13%</b> TREAD DEFLECTION</p>	 <p><b>20-22%</b> TREAD DEFLECTION</p>
<p><b>Benefits on the Road</b></p>	<p><b>Benefits in the Field</b></p>
<p>Tire-pressure adjustment from the cab while machine is moving</p>	<p>Rapid inflate/deflate capability for enhanced productivity</p>
<p>10% tread deflection</p>	<p>Higher crop yield</p>
<p>Reduced fuel consumption</p>	<p>Reduced soil compaction</p>
<p>Safe, stable drive at optimum speed</p>	<p>Longer tire life</p>
<p>Longer tire life</p>	<p>Reduced ground pressure and footprint depth</p>

## Spicer® Smart Suite™ Intelligent Load Monitoring System (ILMS)

Spicer Smart Suite ILMS for telehandlers uses patented and proprietary data-collecting technologies across the vehicle to prevent tip-over incidents, estimate static loads, and supply intelligent calibration management. Spicer Smart Suite ILMS is designed to alert the operator of potential tipping situations, reduce the risk of vehicle breakdowns, improve productivity and precision, and enhance the long-term durability of powertrain systems.



# Durable Driveshaft Technology, Built for Extreme Angles.

More than 100 years ago, Clarence Spicer developed the first practical application of the cardan universal joint. Since then, Dana has continuously developed new designs, materials, and processes for Spicer® driveshafts that provide more power, greater efficiency, and better overall performance.

Dana's Spicer driveshafts with cardan universal joints cover a wide variety of off-highway vehicles. Our double cardan technology is ideal for off-road applications. Typically used with independent and beam axles, it can accommodate high angles and high temperatures. Designed with advanced sealed center bearings and snap ring retention, double cardan joints allow easier maintenance and reduced drivetrain weight. Aluminum, steel, and additional yoke options are available for further customization.

Today, Dana can meet any need through the Spicer 10™ Series, Spicer Wing® Series, Spicer Life® Series, Spicer Compact™ Series, and Spicer centered double joint lines of driveshafts. Dana also offers multiple end-fittings, including wing-style end yokes and full round or Quick Disconnect™ options for round-style bearings. SAE, DIN, and cross-serrated flanges are also available.



*Since every vehicle is different, Dana works closely with OEMs to deliver custom-made driveshafts that live up to the Spicer® reputation for performance.*





# Technologies Customized to **Every Part of the Globe**

With a global presence in 33 countries, Dana Incorporated boasts more than 100 engineering, manufacturing, and distribution facilities. With a worldwide network of local service centers, each customer is assured of the local proximity and responsiveness they need.

## **About Dana Incorporated**

Dana is an integral partner for virtually every major vehicle and engine manufacturer worldwide. We are a leading supplier of drivetrain, sealing, and thermal technologies to the global automotive, commercial-vehicle, and off-highway markets. Founded in 1904, we employ thousands of people across six continents.



## **About Dana Off-Highway Drive and Motion Technologies**

Dana delivers fully optimized Spicer® drivetrain systems and individual product solutions to customers in construction, agriculture, material-handling, underground-mining, and forestry markets, plus Brevini® motion systems for machine working functions. We bring our global expertise to the local level with technologies customized to individual requirements through a network of strategically located technology centers, manufacturing locations, and distribution facilities.

Learn more about Dana's agricultural drive and motion systems at [dana.com/offhighway](http://dana.com/offhighway).

[dana.com/oh/contact](http://dana.com/oh/contact)



**SPICER®** **BREVINI®**

### **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.