Introducing new features to reduce fuel consumption and enhance productivity, the Spicer® CTIS system takes vehicle mobility to a higher level.
Optimizing Tires to the Working Environment

When working either on- or off-road, agricultural productivity is markedly impacted by whether or not tires are inflated to optimal pressures. Today, it is widely accepted that a reliable tire inflation system can play an important role in modern farming.

Spicer® CTIS helps to increase traction, productivity, crop yield, and tire life. Further, it delivers a number of unique attributes and critical functions that competing systems simply cannot provide. Farmers seeking to enhance productivity with the most sophisticated and controllable tire inflation technology available need only look to Spicer CTIS.

Benefits on the Road
- Tire-pressure adjustment from the cab while machine is moving
- 10% tread deflection
- Reduced fuel consumption
- Safe, stable drive at optimum speed
- Longer tire life

Benefits in the Field
- Rapid inflate/deflate capability for enhanced productivity
- Higher crop yield
- Reduced soil compaction
- Longer tire life
- Reduced ground pressure and footprint depth

Attributes Unique to Spicer® CTIS
- Rapid inflation and deflation time
- Pneumatic lines pressurized only when system is in use
- One seal and one air channel per tire configuration is superior to competing products which use multiple seals that can cause power loss and reliability issues
- Wheel valves can be inspected and serviced without removing tires
- Pressure in each tire can be independently controlled
- Rotary joint design can be easily integrated into existing Dana axle designs
- Evacuation of air at a high central point avoids any build-up of debris around the axle, valves, or wheels
- Limp home feature avoids in-field repairs in the event of tire puncture
Growing concern: Soil compaction in agriculture

As farm tractors and field equipment become larger and heavier, soil compaction is emerging as a more significant consideration. While farmers expect a 5% to 10% yield loss each year from compaction, research indicates that the yield loss can be significantly higher.*

Wheel traffic is the top cause of soil compaction. And today, the weight of tractors has increased dramatically – from less than 3 tons in the 1940s to approximately 20 tons for modern four-wheel-drive units.

Soil structure is important because it determines the ability of a soil to hold and conduct water, nutrients, and air necessary for plant root activity.

Wet soil is particularly susceptible to compaction, which can lead to:
- Decreased crop yield
- Impeded root growth
- Increased risk of crop disease
- Nitrogen and potassium deficiencies

By keeping ground disturbance to a minimum, Dana’s Spicer CTIS system helps farmers maintain productive fields year after year.

*Source: Ward Vorhees, USDA ARS, 2000
The Spicer® CTIS Package

Depending on the specific application, the Spicer CTIS package delivers a flexible design that can be adapted to numerous vehicle configurations and aftermarket retrofitting.

This comprehensive tire inflation system is available worldwide. Grape farmers in the vineyards of France, canola farmers on the plains of Canada, and rice farmers in the fields of China can all rely on and benefit from this unique Original Equipment package.

Spicer® Control Panel
(Independent or OEM-integrated)
Enables tire-pressure monitoring and adjustment from the cab or remotely while the machine is moving.

Spicer® Mechatronic Control Unit (MCU)
Intelligent system control unit. Provides full air management, tire-pressure sensing, and centralized air-exhaust to avoid any build-up of debris around the axle, valves, or wheels. Capable of linking to external communication protocols and telematics systems.

Spicer® Wheel Valve
Controls air flow in and out while isolating the tire from the system. Simple to inspect and service without removing tires. Design can be customized per customer preference.

Spicer® Integrated Rotary Pneumatic Seal
Fully integrated into axle and pressurized only when in use. Features large air-flow ports to facilitate rapid inflation and deflation. Designed using a robust, single-channel, twin-seal design, reducing complexity and power loss.

Spicer® Front Axle
Compact, highly integrated solution packaging air channels inside the axle hubs without impacting overall external dimensions. Can be adapted to existing Dana axle designs.