

Firestone Industrial Products offers more than air springs for the transportation industry. Firestone's rugged, reliable rubber and fabric products provide a variety of durable solutions for the agricultural industry. To follow are just a few of the advantages of using Firestone Industrial Products:

Air Spring Benefits:

- Friction-free with no sliding seals, so the smallest pressure change initiates an immediate response
- Saves space thanks to a very compact starting and installed height
- Extends equipment life by handling vibratory input to the highest degree of isolation
- Stands up to wet, dirty outdoor environments with no internal rod, piston or sliding seals

Marsh Mellow™ Benefits:

- Corrosion-resistant thanks to rubber and fabric construction
- Consistent vibration isolation with variable loading due to variable spring rate
- Quiet operation with no spring chatter or high-frequency structural noise
- Protects equipment by not bottoming out under overload

Airpicker™/Airripper™ Benefits:

- Securely and gently handles delicate products with the air/rubber combination
- Handles different shapes, and light to heavy loads, with various inflation pressures in one model

Firestone Industrial Products are manufactured globally in an ISO-certified, quality-controlled environment. Connect with Firestone Industrial Products on LinkedIn for the latest industry news and information; or contact us with questions at www.firestoneip.com or 1-800-888-0650.



The North American farmers of today are growing more than 262% more food, with 2% less labor, seeds, feed and fertilizer than farmers in the 1950s. Certain areas of the world are unable to meet the current population demand; and with a world population estimated to increase from 7.5 to 10.5 billion by 2050, it's imperative that farming technology keeps up with the pace.

Firestone Industrial Products can help farming technology keep up—and then some. We offer a variety of air spring solutions that are superior to pneumatic or hydraulic cylinders or standard coil springs.

- In the agricultural industry, you'll find our products on hay balers, planters and cultivators, and conveyor and vibrating screens.
- Our durable products stand up to the harsh conditions found on the farm—from pervasive dirt and dust to prolonged moisture.
- The unique capabilities of our products make them ideal for friction-free, leak-free, flexible-force applications. For example, Firestone Airstroke actuators are used on hay balers, to adjust the belt tension to maintain bale density and apply constant force as the bale diameter changes.



**Firestone Airstroke™ actuators
 Planter/Cultivator Application**

Seed spacing, consistent depth and the right amount of seed-to-soil contact are essential for a healthy crop.

- Adjusts automatically to changing soil conditions and requirements with just the right amount of down force on the cultivator wheel or planter head
- Performs exceptionally in corrosive, abrasive environments
- Accepts and easily accommodates misalignment
- Maintains a high ratio of stroke-to-collapsed height

**Firestone Airstroke™ actuators
 Dairy Barn Milking Parlor Application**

- Provides years of trouble-free performance for flush valves and dairy stall automation equipment
- Resists dirt and corrosion with sealed, friction-free air springs

**Firestone Airpicker™/ Airripper™ end effectors
 Seedling Handling Device Application**

- Opens gently on a seedling transplanting head using gripper fingers
- Conforms automatically to multiple shapes and sizes due to inflatable rubber construction

**Firestone Marsh Mellow™ springs
 Conveyor/Vibrating Screen Application**

- Isolates and reduces vibrations when moving food product—from potato chips to fruits or grains
- Requires virtually no maintenance for fabric-reinforced rubber cylinders
- Does not require air to function
- Will not break, trap particles, corrode, or bottom out
- Accommodates a wide load range with consistent performance





Airmount™ isolators are used to support and isolate delicate objects from external vibrations, or support a vibrating load and prevent its energy from disturbing the surroundings. Airmount isolators provide the highest degree of protection of any type of vibration isolator and can also reduce structurally transmitted noise. Firestone isolators are capable of isolating loads of 100–100,000 pounds per mounting point.



Marsh Mellow™ springs are a fabric-reinforced rubber cylinder used like the Airmount™ isolators to protect systems from the effects of structurally transmitted vibration, without needing air inflation. Marsh Mellow springs are an effective passive isolator with superior characteristics to steel springs. Rubber springs have long been a subject of interest in the vehicular suspension and industrial application fields because of their reliability, corrosion resistance, low cost and basic simplicity. The superior characteristics of rubber and fabric springs surpass steel and rubber-only springs in performance.



Airstroke™ actuators perform the same type of actuation tasks as a hydraulic or pneumatic cylinder. Long used in the industrial market as pneumatic actuators, they have been incorporated into a wide variety of machinery designs in a vast array of industries. The advantages of a flexible-walled pneumatic actuator include: durability; operates well in dirty, corrosive and abrasive industrial environments; easily accepts angular and lateral misalignment; and a high ratio of stroke-to-collapsed height. Its unique capabilities make it ideal for friction-free, leak-free, flexible force applications.



AirPicker™ and AirGripper™ end effectors offer the user a wide range of advantages over traditional pick-and-place work-holding devices. Simply by varying the air pressure in the picker or gripper, the user can conform the end effectors to the shape and diameter that is being handled, and to the force being applied to the workpiece. This is especially critical in applications with sensitive, thin-walled or fragile objects. AirPicker and AirGripper end effectors have an elastomeric bladder construction that conforms to any shape. Each picker and gripper can work with a wide range of diameters and workpiece weights. Firestone offers a wide range of standard configurations and sizes of end effectors to meet most industrial applications. Special units can be developed to meet specific application needs.



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