

# AIRSTROKE™

ACTUATORS

# AIRMOUNT™

ISOLATORS

NEW!



## Engineering Manual & Design Guide

### Firestone

World's Number 1  
Air Spring.



FIRESTONE INDUSTRIAL PRODUCTS COMPANY



# ADVANTAGES OF FIRESTONE AIRSTROKE™ ACTUATORS

*Why use an Airstroke actuator (rather than air or hydraulic cylinder) for actuation?*

## **LOW COST**

Generally, initial cost is one-half or less than conventional pneumatic or hydraulic cylinders of the same force capabilities. This initial cost advantage is many times greater in the larger sizes.

## **WIDE SIZE RANGE**

Airstroke actuators are available in sizes ranging from 2.2 inches to 37 inches in diameter. The force capability is 100,000 pounds. Strokes of up to 14 inches are possible.

## **DURABLE FOR LONG LIFE**

Airstroke actuators are a further application of Firestone's time proven Airide springs for truck and bus suspensions. The long life and durability necessary for millions of miles of heavy duty suspension use under adverse environmental conditions are also important factors in machine design.

## **NO MAINTENANCE OR LUBRICATION REQUIRED**

## **NO INTERNAL ROD OR PISTON**

Airstroke actuators have no internal rod, piston, or sliding seals as do conventional cylinders. This allows for the design of Airstroke actuators into applications where dirt or grit would destroy the seals on conventional cylinders.

## **FRICTION FREE FOR IMMEDIATE RESPONSE**

Since Airstroke actuators have no sliding seals, there is no breakaway friction as with conventional cylinders

## **FLEXIBLE MEDIA**

An Airstroke actuator can do its work with either a liquid or gas (Please see page 14 for acceptable media choices.)

## **ANGULAR CAPABILITY**

An Airstroke possesses the unique capability of stroking through an arc without a clevis. Angular motion of up to 30 degrees is possible, along with the design advantage of generally less complex linkages.

## **SIDE LOADING CAPABILITY**

Airstroke actuators, within certain limits, are not affected by side loads as are conventional cylinders. This misalignment capability eliminates potential rod bending, scoring, and excessive seal wear common to conventional cylinders.

## **COMPACT STARTING HEIGHT**

Airstroke actuators have a low profile compared to conventional cylinders. Our smallest Airstroke actuator (2.2 inch/dia.) collapses to just 1.1 inches in height, while our largest triple convoluted Airstroke (37 inch/dia.) will collapse to a very compact 5.5 inches.

## **FACTORY SEALED AND TESTED**

Most Airstroke actuators feature Firestone's proven concept of crimped end plates. The crimped design allows for preshipment testing and quicker installation on equipment.

PLEASE REFER TO PAGE 15 FOR A THOROUGH DISCUSSION OF ACTUATION.

