

**H** **TIREMAX<sup>®</sup> PRO**

# INFLATION ALONE IS NOT ENOUGH

*Control your tires with  
TIREMAX<sup>®</sup> PRO —  
advanced tire pressure  
control system*



**H** **HENDRICKSON**  
*The World Rides On Us<sup>®</sup>*

# INTRODUCTION

# INTRODUCTION

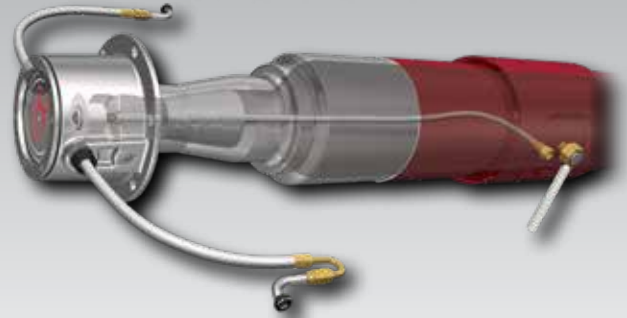
H-TIREMAAX<sup>®</sup> PRO

## The Problem...

- The increased popularity of automatic tire inflation systems (ATIS) has alerted fleets that trailers equipped with ATIS do not always maintain the desired target pressure.
- Many tire inflation systems are incapable of controlling desired pressure which can lead to overinflated conditions, or in the case of dual tires, mismatched pressures.
- Several factors contribute to this:
  - Typical inflate-only systems are only capable of indicating when a tire's pressure is low. Tire pressures that extend beyond the target pressure often go undetected.
  - Automatic tire inflation systems fill tires with air at ambient temperatures. In cold operating conditions, these systems fill tires with cold dense air, which can alter a tire's pressure, especially when the trailer returns to warmer temperatures. The increase in temperature causes air to expand and therefore pressure to increase.
- Persistently overinflated or mismatched tires can drastically decrease tire life resulting in less than desirable tread wear and leaving tires more susceptible to road hazards.

*From maintenance to downtime to overall operating costs, tires significantly impact a fleet's bottom line.*

## The Solution...



Hendrickson's advanced TIREMAAX<sup>®</sup> PRO system controls tire pressure by inflating low tires, equalizing pressure across all wheel positions and relieving pressure from overinflated tires.

## Evolution of tire solutions



1 Checking



2 Monitoring



3 Inflating



4 Controlling

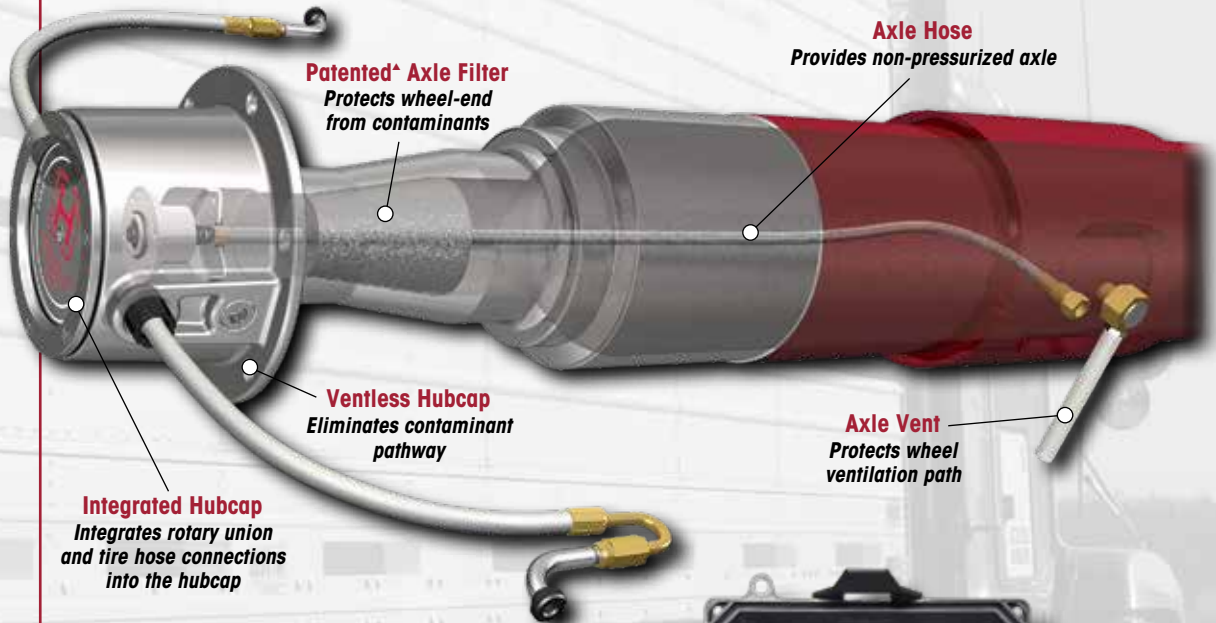
Evolution of tire solutions

# SYSTEM OVERVIEW

## SYSTEM OVERVIEW

An advanced tire pressure control system, TIREMAAX® PRO was specifically designed to allow air to flow in both directions — to and from tires.

The system features a unique integrated hubcap and sophisticated controller to address the problems of overinflation and mismatched tire pressures.



**Integrated Hubcap**  
Integrates rotary union  
and tire hose connections  
into the hubcap

**Patented\* Axle Filter**  
Protects wheel-end  
from contaminants

**Axle Hose**  
Provides non-pressurized axle

**Ventless Hubcap**  
Eliminates contaminant  
pathway

**Axle Vent**  
Protects wheel  
ventilation path

### Patented\* controller

- Controls tire pressures to maintain desired pressure level
- Relieves air from tires when target pressure is exceeded by venting excess air at the controller
- Inflates low tires to desired pressure level
- Equalizes tire pressure across all wheel positions to help reduce friction and maximize life on dual tires
- Isolates tires when trailer is parked

▲ This product is covered by at least one or more U.S. and/or foreign patents and/or pending U.S. and/or foreign patent applications. See Hendrickson for details.



H TIREMAAX PRO

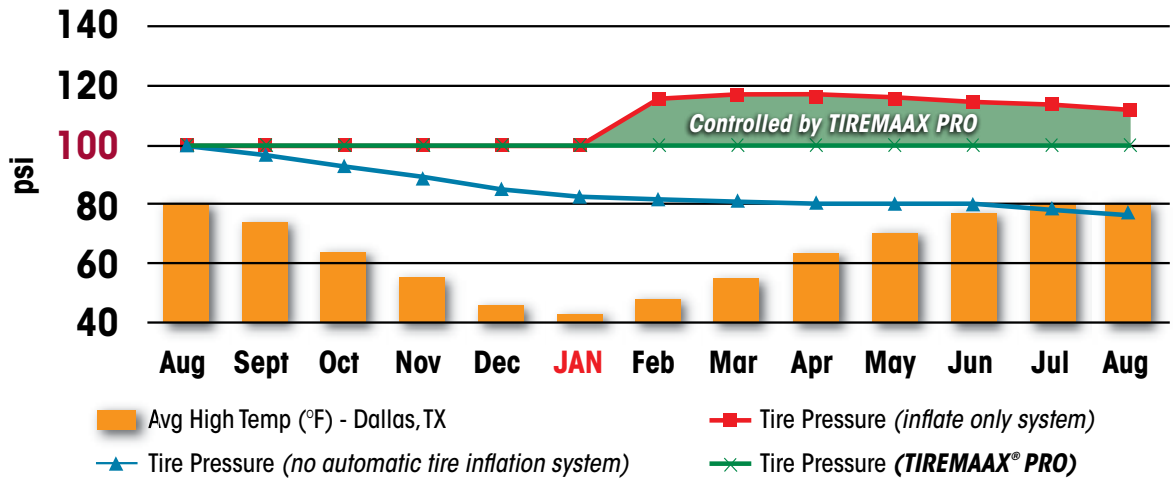
# ENVIRONMENTAL IMPACT

# ENVIRONMENTAL IMPACT

The graph below is an example showing the impact of one trip from Dallas, TX to Northern U.S. / Canada in January when equipped with a typical automatic tire inflation system.

Typical inflate-only systems have no way to relieve pressures above the target pressure which can result in overinflated tire conditions that may persist for many months without manual intervention.

## Tire Pressure Over Time



In the above graph, a January exposure to an ambient temperature of -30 degrees Fahrenheit in Northern U.S. / Canada causes an immediate overinflated condition of more than 15 psi upon returning to Dallas, TX.

**TIREMAAX® PRO is capable of controlling overinflated tire conditions that result from exposure to extreme ambient temperature changes.**



TIREMAAX PRO

# OVERINFLATION

## DID YOU KNOW...

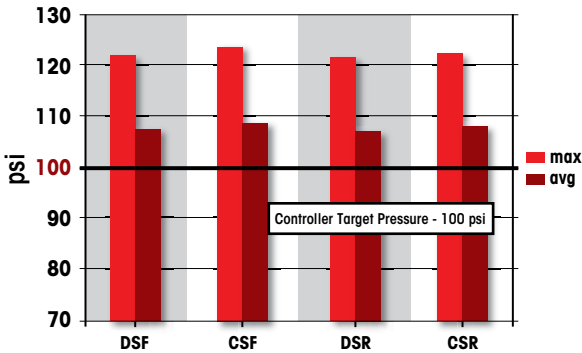
**1** Overinflated tires are harder than properly inflated tires making them more susceptible to tread surface cutting, impact breaks, punctures and shock damage.

**2** Overinflated tires change a tire's footprint which can affect tire traction and lead to irregular wear patterns.

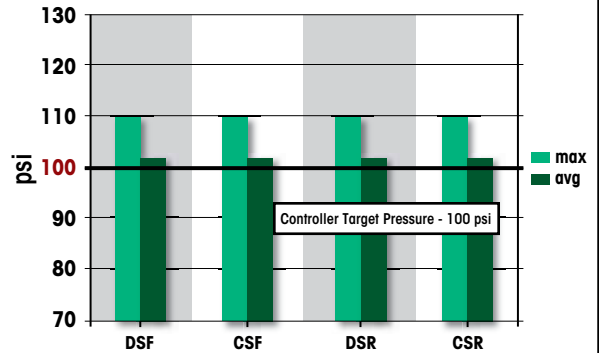
**3** A 2003 Federal Motor Carrier Safety Administration study found that 16 percent of all trailer tires are overinflated by more than 5 psi and 5 percent of tires by more than 10 psi.

**4** Overinflated tires can experience accelerated tread wear costing from 7 to 15 percent of life.

### Inflate-Only System\*



### TIREMAAX® PRO\*



### TIRE POSITION KEY

**DSF** - DRIVER SIDE FRONT    **CSF** - CURB SIDE FRONT

**DSR** - DRIVER SIDE REAR    **CSR** - CURB SIDE REAR

\*Based on actual field data collected by Hendrickson over a 3-month period

**TIREMAAX® PRO is a proven solution for addressing overinflated tires, maximizing tread wear, reducing instances of damage and achieving maximum tire life.**

**Hendrickson's field data shows that a typical inflate-only system does not address overinflated tire conditions.**

# EQUALIZATION

# EQUALIZATION

## DID YOU KNOW...

1

Mismatched tire pressures on dual tires can be problematic to tread wear, tire life and fuel economy.

2

Within a matter of weeks, mismatched pressures can cause permanent irregular wear patterns, which can lead to early tire removal.

3

Almost 25 percent of trailer dual assemblies have mismatched air pressures greater than 5 psi, and testing has shown that a 5 psi difference between duals can create a 5/16-inch difference in tire circumference.

4

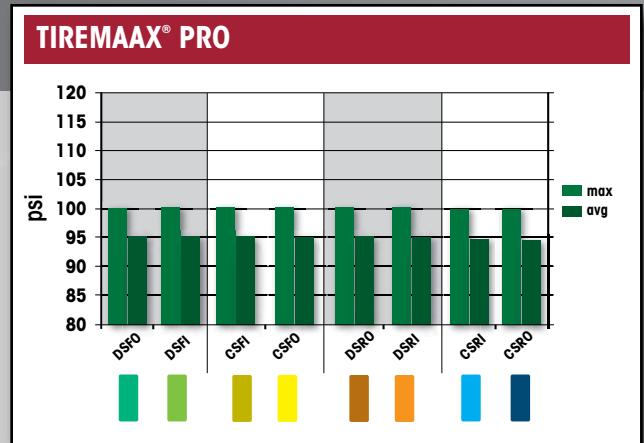
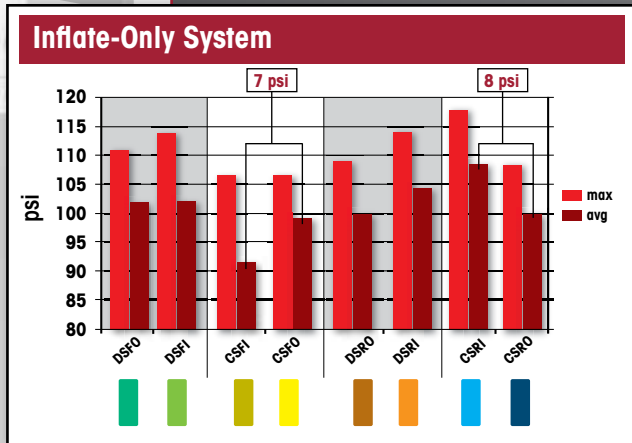
Since dual tires are bolted together and must rotate at the same speed, any differences in tire diameter can cause the smaller tire to be scuffed and dragged against the road.

5

The tire with the larger diameter carries a disproportionate amount of the trailer's load which can result in abnormal tread wear.

6

Ultimately, failure to properly equalize dual tire pressures can lead to unequal tread wear for both tires.



\*Based on actual field data collected by Hendrickson over a 3-month period

#### WHEEL POSITION GUIDE



In general, a tire makes about 500 revolutions per mile. In 100,000 miles, that's 50 million of those 5/16-inch drags and that works out to 246 miles. So it's as though you spun the smaller tire against the pavement at highway speed for 246 miles!

- Source: ©2006, Bridgestone/Firestone North America, LLC  
Real Answers, Volume 10, Issue 2



# TIREMAAX® PRO — ROI Calculator

**Try Hendrickson's ROI Calculator to see how specifying TIREMAAX® PRO can help impact your fleet's bottom line.**



***For more information, visit:***

**[www.hendrickson-intl.com/tiremaaxroi](http://www.hendrickson-intl.com/tiremaaxroi)**

**[www.hendrickson-intl.com/TIREMAAX](http://www.hendrickson-intl.com/TIREMAAX)**

Certain data and information in this publication are based upon internal testing, calculations, and/or other published materials. Actual product specifications and performance may vary depending upon equipment and vehicle configuration, operation, service and other factors. All applications must comply with applicable Hendrickson specifications and must be approved by the respective vehicle manufacturer with the vehicle in its original, as-built configuration. Contact Hendrickson for additional details regarding specifications, applications, capacities, operation, service and maintenance instructions.



**Hendrickson Trailer Commercial Vehicle Systems**

**2070 Industrial Place SE, Canton, OH 44707-2641 USA  
866.RIDEAIR (743.3247) 330.489.0045 Fax 800.696.4416**

**[www.hendrickson-intl.com](http://www.hendrickson-intl.com)**

**Hendrickson Canada**

**2825 Argenta Road, Unit #2 - 4, Mississauga, ON Canada L5N 8G6  
905.789.1030 Fax: 905.802.9423**

**Hendrickson Mexicana**

**Circuito el Marqués Sur #29, Parque Industrial El Marqués  
Pob. El Colorado, Municipio El Marqués,  
Querétaro, México C.P. 76246  
+52 (442) 296.3600 Fax: +52 (442) 296.3601**