P.S.I.™ THE INFLATION SYSTEM

COMMERCIAL FLEET TIRE DIGEST

The authoritative guide to reducing commercial tire expenditures from Pressure Systems International, the global leader in Automatic Tire Inflation Systems

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Setting Your Tire Pressure with Automatic Tire Inflation Systems

Automatic tire inflation systems, better known as ATIS, have been around for almost 25 years. ATIS is primarily used by the trailer and chassis industry to keep tires properly inflated ALL the time, even when the trailer is moving. Air is added directly to the tires whenever one or more drop below the cold pressure setting set by the regulator in the control box. The driver is notified by an indicator light mounted on the trailer or chassis, visible through the side view mirror. When the light is illuminated, the driver should then find a place to safely pull over and inspect the tire for the cause. Providing that nothing catastrophic has occurred, the driver can continue with their delivery and alert maintenance that they have a tire requiring attention.

Until the inclusion of trailers in the Green-House Gas Regulation – Phase II (currently on hold pending resolution of a Stay order by the US Court of Appeals), ATIS remains an optional feature available on all trailers. However, ATIS is so popular that most estimates put over 60% of all new trailer and chassis production for N.A. are built with ATIS. For the fifth straight year, ATIS was also included with the TMC SuperTech competition, acknowledging this continued upward trend.

Adopting ATIS for the first time provides the perfect opportunity to revisit your trailer tire cold pressure setting. When asked what setting the system should be set to, most quickly respond with "The same pressure as we have been running", which in many cases is not optimal for one of the following reasons;

- It was set to compensate for air loss because the equipment may not be seen for a long time
- It is easier for maintenance to have a single pressure for all steer, drive, and trailer tires
- It was based on maximum trailer loads that may have since changed

The use of ATIS will provide significantly better control over the pressure operating range, as well as optimizing pressure for a given tire position (trailer vs. drive vs. steer). The correct pressure is based on the worst case load the tire will see in actual service. Air is what carries the load so you cannot base the pressure on light or average loads. All tire manufacturers publish load/inflation tables, and you should consult your tire provider to help identify the correct pressure.

Consider the following example: In a case where the maximum load corresponds to an optimal cold pressure of 90 psi, but the trailer does not have ATIS. To compensate and allow for air loss, the cold pressure is set to 100 psi, 10 psi above what the load tables specify. If the fleet had previously seen numerous situations where the tire was found to come back at or below 80 psi, then the total operating range can easily be over 35 psi (assuming a hot pressure of 115 psi) and a mid-point of 97.5.

The same trailer equipped with ATIS and with a control box setting of 100 psi will never have a low tire (excepting a catastrophic issue such as a sidewall tear). The resulting pressure range would be 100 (cold) to 115 (hot) for only a 15-psi spread and effectively raising your average pressure over the duty cycle. Therefore, using ATIS allows the fleet to set the system for the maximum load (90 psi) by not having to compensate for pressure decreases.

This chart summarizes the differences between the three scenarios:

	Original Setting Before ATIS	Original Setting with ATIS	Adjusted Setting with ATIS
Cold Pressure	100	100	90
Air Loss	20	0	0
Max Pressure	115	115	105
Min Pressure	80	100	90
Range	35	15	15
Average Pressure	97.5	107.5	97.5

Always work with your tire professional to assure your fleet is running the correct pressure to carry the load.

How do your tire costs stack up?

To find out, see ATRI's (American Transportation Research Institute) analysis of the operational cost of trucking, here

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