

*The authoritative guide to reducing commercial tire expenditures from  
Pressure Systems International,  
the manufacturer of the Meritor Tire Inflation System by PSI™*

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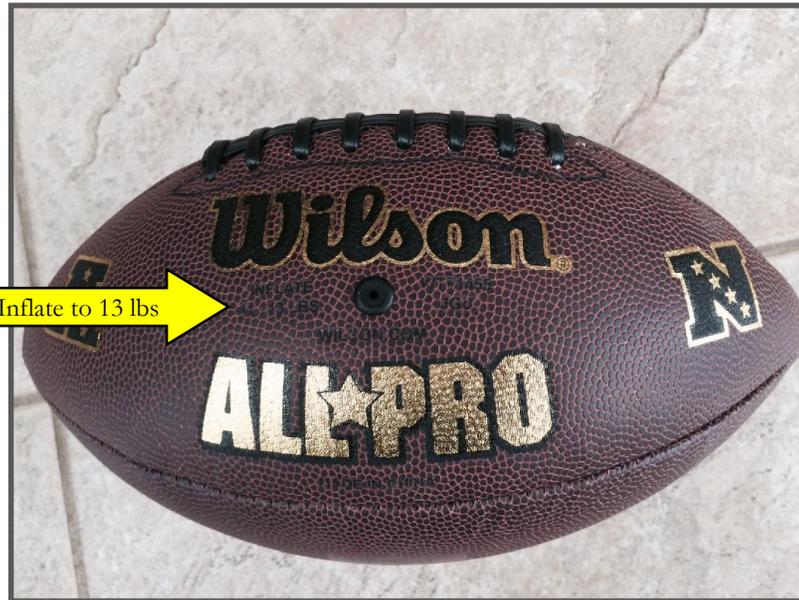


## P.S.I. By The Numbers

P.S.I.'s  
Automatic Tire  
Inflation  
Systems now  
being used in 44  
countries  
worldwide

## Footballs & Tires – A Lot of the same Issues

“Deflate-gate” sure has generated a lot of interest and controversy over the last several weeks. Football air pressure issues including temperature effect, and even pressure gauges, have come under scrutiny. It’s the same exact issues we have been preaching for over 20 years on how important it is to maintain the proper inflation in tires. We could give the NFL our take on this whole football deflation story. Air is what carries the load in tires. If you know the worst case load the tire sees in your service vocation, you can set the proper inflation which gives you the perfect tire footprint, maximizes fuel economy & treadwear and minimizes sidewall deflection. The football grip and aerodynamics behave differently when football air pressure is lower or higher versus spec. Wilson footballs have the recommended tire inflation stamped on every ball – 13 lbs.



**Official football: “Inflate to 13 lbs”**

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If you inflate a truck tire to 100 psi at an inside room temperature of 70° F and then move the tire into the hot sun, the tire air pressure will increase two psi for every increment of 10° F. So what does that mean? If the temperature was 110° F during the summer in Phoenix, the tire pressure would increase eight psi to 108 psi by just sitting there. Tire pressure would increase an additional 15 % or 16 psi to 124 psi after running the mounted tire on a loaded vehicle at 65 mph for 20 minutes.

If it was 0° F in Green Bay, Wisconsin. The same truck tire would lose 14 psi as the temperature moved from 70° F down to 0° F. So that 100 psi tire is now down to 86 psi at 0° F. Passenger car tires have much less volume compared to a truck tire. As a result, car tires only lose or gain one psi for every 10° F depending if the outside temperature was warmer or colder versus the 70° F when the tire was inflated. A football has even less volume than a car tire so the temperature effect would be significantly less than one psi for every 10° F. Tires are designed to handle this wide range of temperature extremes. Underinflation is always the worst scenario when it comes to tires leading to excessive heat build-up and premature tire removals.

The specification for proper football inflation pressure is 13 +/- 0.5 psi. So a football could be inflated to 13.5 psi and be OK and also to 12.5 psi to be in compliance. I checked the NFL rule book, and they mention the football pressure specification range but not at a specific temperature.

# P.S.I. THE INFLATION SYSTEM

**Meritor Aftermarket**  
Written by Jonathan Bone [?] · January 26, 2015 at 4:30pm · Edited [?] · [?] · [?]

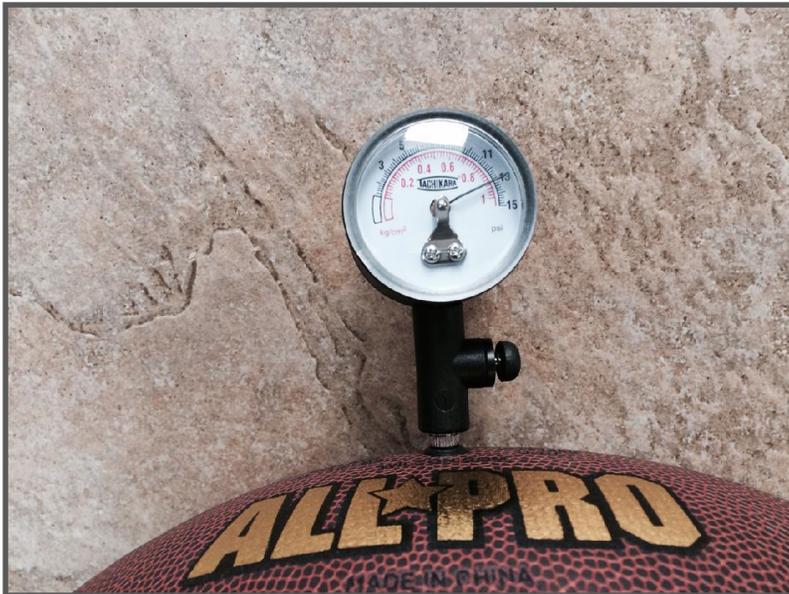
With our team deflation is never an issue. The Meritor Tire Inflation System (M.T.I.S.) by P.S.I.



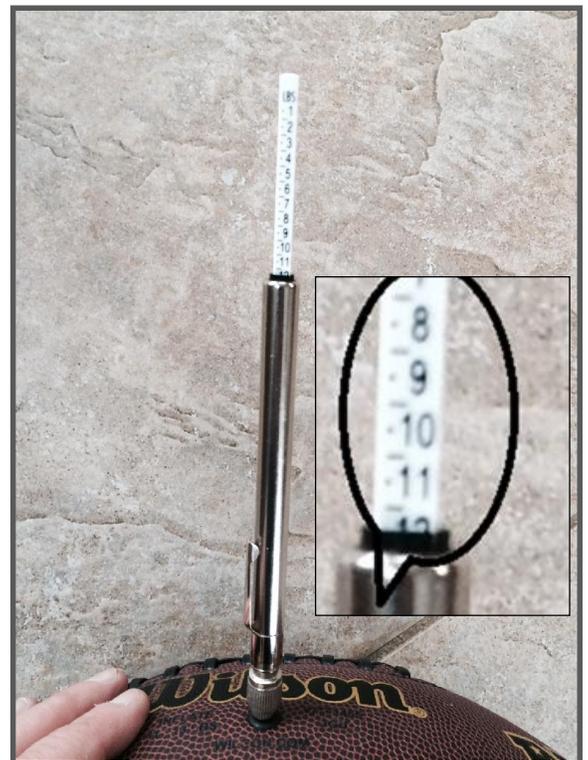
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This is where gauges come into play. Truck tire inflation gauges are accurate to only +/- 3 psi when they are brand new out of the box regardless of gauge brand. This means that a tire with 100 psi could be measured as 97 with gauge A or 103 psi using gauge B.

You drop it a few times on the hard concrete and the gauge accuracy drops even worse. Football pressure gauges cost in the \$5 - \$20 range and utilize the same design as truck tire gauges which are accurate to only +/- 3 %. All gauges need to be calibrated versus a master gauge on a regular basis. I purchased two ball gauges from different manufacturers and guess what, I got two different answers when checking the same ball.



**Dial gauge read 13 psi and the stick gauge showed 11.75 psi on the same football.**



If you look closely at this dial gauge face, the gauge reads from 2 to 15 psi. Gauges are most accurate in the middle of the range which is 5 - 9 psi. Gauge accuracy drops on both the low and high ends. In the case of footballs, 12.5 - 13.5 is near the top end of this gauge where the accuracy is less.

If I had purchased 50 gauges by each manufacturer, there would have also been a range of psi within the 50 gauges. There is variation from gauge to gauge by the same manufacturer and there is variation from vendor A to vendor B.

Bottom line is that there are many variables to consider & understand when it comes to football pressure, just like tire pressure.