THE INFLATION SYSTEM

COMMERCIAL FLEET TIRE DIGEST

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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What You Need to Know About Tire Valves

Most fleets consider tire valve stems and valve hardware as an afterthought but there are many issues associated with valve stem hardware that fleets need to be made aware.

The selection of valve hardware is based on: wheel type, wheel size, and tire air pressure specification. Most of today's valves are made out of brass because it is corrosion resistant and can easily be bent to facilitate servicing. Valves for aluminum wheels are brass with chrome plating. Companies that produce tire valves should have a TR number stamped on the valve stem. A TR number is the official Tire & Rim Association designation. Tire & Rim Association (*www.us-tra.org*) publishes industry recommended dimensions (specifications) for producing tires, wheels, and valves.

Truck valve stems are high-pressure valves that can handle the maximum tire pressure molded into the tire sidewall of commercial truck tires. Truck tire valves are typically rated at 200 psi. There are valve stems designed for steel wheels and other valve stems designed for aluminum wheels.

For the most common tubeless radial truck tires with a 5 degree drop center steel wheel & 0.625" diameter valve hole, valve stems TR500 and TR501 are typically spec'ed. The TR500 valve is 2.00" long compared to the TR501 which has a length of 1.50". The other common valve stem for steel wheels is the TR570C. These clamp-in style valves are not straight like the TR500/501 series. They have a bend angle. There are various bends available depending on your specific application. The valves with various bend angles are the TR571C, TR572C, and the TR573C. Recommended torque is 35 – 55 inch-pounds for the TR500, 501, 570-573 series.

Truck valves come furnished with standard rubber grommets that are normally rated to about 300°F. If your application sees excessive heat, there are special rubber grommets that are rated at 400°F and higher.

For aluminum wheels, there are several different types of truck valves depending on wheel type. O-ring seal type TR540 series is used on 15 degree drop center wheels with a 0.380" valve hole. If the valve hole is 0.625" then you must use either the TR509, 510, or 511 valves. These are all bent valves with various lengths. TR509 is 4.75" long, TR510 is 5.50", and TR511 is 4.25" in length. Recommended torque is 100 – 125 inch-pounds.

Valve cores are the secondary seal of the valve assembly and are exposed to heat. If there is no valve cap, then it is also exposed to ice and dirt. The valve core must be in good working order with no debris within it since debris will not allow the core to seal properly. Truck valve cores typically have a red seal with a temperature range up to 250° F. Valve caps are the primary seal to the valve stem assembly and prevent contamination of the valve core. A metal sealing, high temperature valve cap or inflate-thru cap must be used on every valve stem. Gaining in popularity are double seal or inflate-thru valve caps that provide two seals. These allow tires to be pressure checked, inflated, and deflated without removing the valve cap.

Always buy good quality valve stems that adhere to SAE standards and have a TR number. The major tire supply companies sell a valve stem torque wrench which is highly recommended.

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