

## TYRE & WHEEL GLOSSARY

Word	Definition
<b>Air Pressure</b>	the measure of the force exerted by the air inside a tyre, measured in pounds per square inch (psi) or kiloPascals (kPa)
<b>Alignment</b>	refers to the correct angle settings of suspension components - the 3 alignment settings are caster, camber and toe.
<b>Aspect Ratio</b>	the dimensional relationship of the tyre's section height to the section width expressed as a percentage.
<b>Asymmetric</b>	tyres that have differing tread patterns on each half of the tyre
<b>Balance</b>	equal distribution of the weight of a tyre and wheel. If a tyre& wheel is not balanced it can lead to vibrations or uneven wear. For balancing, weights are attached to the wheel to compensate for uneven weight distribution.
<b>Backspacing</b>	also called rearspacing, it is the distance from the mounting pad to the back edge of the rim. This is different than wheel offset.
<b>Bead</b>	the part of the tyre in contact with the wheel flange. It is made of high tensile steel wires shaped to fit the rim and hold the tyre on the wheel. The steel wires are wrapped in woven fabric and held in place by the plies.
<b>Bead Seat</b>	the edge of the rim that creates a seal between the tyre bead and the wheel
<b>Belted Bias Tyres</b>	tyres constructed similar to bias tyres, but with reinforcing belts between the casing plies and the tread.

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<b>Belts</b>	rubber coated cords located between the plies and the tread. They help reinforce the tread, as well as help the tyre keep its shape against such forces as: tyre inflation pressure, centrifugal force, cornering and braking. These cords are made from such materials as steel, fiberglass, rayon, nylon, polyester or other material.
<b>Bias Tyre</b>	a tyre that is constructed with plies laid out in alternating directions in angles about 30-40 degrees to the center line of the tyre. The plies form a criss-cross pattern.
<b>Bolt Pattern</b>	the arrangement of the bolt holes on a wheel. A 4 bolt wheel with 100mm between opposite bolt holes would be written as 4/100. Some wheels have more than one bolt pattern on the same wheel to accommodate multiple fitments.
<b>Camber</b>	the angle of the centerline of a tyre and wheel relative to completely vertical.
<b>Cast</b>	wheels that are made from liquid metal being poured into a mold. Low pressure casting involves pouring into a mold, while counter pressure casting involves sucking the metal into the mold like a vacuum. The counter pressure technique reduces impurities making the wheel much stronger than a low pressure cast rim.
<b>Caster</b>	the angle between the vehicle's steering pivot axis and completely vertical.
<b>Centerbore</b>	the center hole in the wheel that centers the wheel on the hub of the car. Since most wheels are mass produced, they have a large center bore to accommodate several different vehicles. If this is the case, it is recommended that you use a hub ring. Hub rings are hard plastic or metal ring that fits between the wheel and the vehicle. This centers the wheel perfectly on the hub ensuring that there is no run out when the wheel is installed on to the vehicle. Without hub rings it is possible to get vibrations even if the wheel / tyre assembly is perfectly balanced.
<b>Chafer</b>	abrasion resistant rubber coated material to help prevent the tyre's beads from rim damage and chafing.
<b>Cold Inflation Pressure</b>	the measure of air pressure of a tyre that is not warm from driving (less than 1 mile or standing for at least 3 hours)

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<b>Compound</b>	the materials used in the construction of the tyre's rubber. The main materials used are rubber, carbon black, plasticizers, curing materials and ozone retardants. Different compounding formulas are used to achieve different tyre characteristics such as: heat resistance, increased traction, increased treadwear, cut resistance, cold resistance, etc.
<b>Cord</b>	strands of nylon, rayon, polyester, steel or fiberglass that make up the plies & belts of the tyre. The strength of a tyre & its load carrying capacity is determined by the strength of the cords.
<b>Crown</b>	the center section of the tyre's tread
<b>Curb Guard</b>	extra rubber running around the sidewall of a tyre. It is there to protect the side of the tyre and the wheel face from any damage that may come as a result of hitting a curb.
<b>DOT</b>	stands for Department of Transportation. The 10 digit code appearing after the DOT designation gives information such as the week and year the tyre was produced, as well as the manufacturer, plant, tyre line, and size.
<b>Footprint</b>	the area of the loaded tyre's tread that is in contact with the road. This is also called the contact patch.
<b>Forged</b>	Considered to be the best wheel manufacturing technique, forging allows for the compression of an aluminum billet (one solid piece of aluminum) into an aluminum wheel using over 13 million pounds of pressure combined with heat. This produces a wheel that is both stronger and lighter than your standard aluminum wheel.
<b>Grooves</b>	the space between two tread ribs of a tyre
<b>Hub Centric</b>	a wheel with a centerbore made to match up with a vehicle's hub diameter.
<b>Hub Centric Rings (Hubrings)</b>	hard plastic or aluminum rings mounted on a vehicle's hub before the wheel. They ensure the wheel is perfectly centered on the vehicle's hub. Without hub rings, there is a possibility of getting a vibration even if the wheel & tyre assembly is perfectly balanced.

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<b>Hydroplaning</b>	when a tyre loses traction as a result of water on the road. The water accumulates under the tyre's footprint and causes the tyre to lift from the road surface. Vehicle speed, tread pattern and water depth all affect hydroplaning.
<b>Load Index</b>	a number used to represent the maximum weight a tyre can support. The index number corresponds to the actual load carrying capacity. Truck tyres use a different system incorporating letter codes to establish a Ply Rating.
<b>M+S</b>	a sidewall marking indicating that the tyre is approved for Mud & Snow use. This approval is made by the RMA (Rubber Manufacturers Association).
<b>Mixing Tyres</b>	combining different tyre sizes or tyre models. This is not recommended as not all 4 tyres will respond the same and it may cause unpredictable handling. Some performance vehicles do come stock with different front and rear tyre sizes.
<b>Mounting</b>	installing tyres onto wheels
<b>Offset</b>	The offset of a wheel is the distance from the mounting surface of the wheel to the true centerline of the rim. A positive offset means the mounting surface of the wheel is positioned in front of the true centerline of the rim / tyre assembly. This in effect brings the tyre in to the fender well more. Conversely, a negative offset means the mounting surface of the wheel is behind the true centerline of the rim / tyre assembly. This will cause the tyre to stick out away from the vehicle.
<b>Overinflation</b>	when a tyre is inflated more than the recommended vehicle air pressure. This might be done for better performance but has negative consequences including: a less comfortable ride, damage to the tyres and stress on the suspension.
<b>P-Metric System</b>	a system for specifying tyre sizes using the treadwidth (millimeters), the aspect ratio, type or tyre construction and the rim diameter (inches). The sizes are written as such: P195/50R15
<b>Plus Sizing</b>	changing from the original stock tyre size of your vehicle. Plus sizing your wheel & tyre combination was

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designed to enhance vehicle performance and looks by allowing fitment of larger diameter rims and lower profile tyres. The theory is that while making these changes, you keep the overall tyre diameter within 3% of the original equipment tyres. This is important because larger variances can cause problems with transmission shift points which can decrease fuel mileage. It can also confuse braking system computers which can even lead to brake failure.

<b>Ply</b>	layers of cord fabric that give a tyre its strength. They are situated between the tyre tread and the innerliner, and they run from bead to bead. These cords are rubber coated.
<b>Profile</b>	refer to aspect ratio.
<b>PSI</b>	the most common measurement unit for tyre pressure. It stands for pounds per square inch and it measures the force exerted by the air inside a tyre.
<b>Radial Tyre</b>	tyres built with plies running perpendicular (90 degrees) across the crown of the tyre. To strengthen the tread, these tyres require belt plies going circumferentially around the tyre.
<b>Retreading</b>	applying new tread to a used tyre casing. This practice is common among medium & heavy trucks.
<b>Ribs</b>	rubber sections of the tread that run around the circumference of the tyre
<b>Rim Width</b>	the measurement between the flanges of a rim
<b>Rotation</b>	moving a vehicle's tyres from left to right and from front to rear. This is done in a set pattern and should be done periodically. Its purpose is to prevent uneven tyre wear and to extend treadlife.
<b>Section Width</b>	the distance between the sidewalls at their widest point of an inflated tyre not under load.
<b>Series</b>	refer to aspect ratio.
<b>Shoulder</b>	the outer edge of the tyre tread where it meets the sidewall

<b>Sidewall</b>	the side portion of a tyre between the tread and the bead.
<b>Sipes</b>	small slits in a tyre's tread that help push water away from the crown of the tyre for improved wet traction. They also provide biting edges for ice and snow traction.
<b>Speed Rating</b>	a letter that identifies a tyre's high speed durability. A tyre's capabilities are tested at preset speeds and the results of these tests determine the tyre's speed rating. Speed Ratings include: Q, S, T, U, H, V, Z, W, Y
<b>Tyre Placard</b>	a label on a vehicle that identifies the vehicle's stock tyre size and its recommended tyre air pressure. This label is often found on the inside of the vehicle's door.
<b>Toe</b>	the difference between the distance between the front left & right tyre and the distance between the rear left & right tyre. Toe-In means that the front of the tyres are closer together than the rear. Toe-Out means that the rear of the tyres are closer together than the front.
<b>Tread Blocks</b>	individual sections of the tread separated by lateral grooves
<b>Tread Depth</b>	the distance from the top of the tread to the grooves in a tyre. This measurement is taken at the centerline of a tyre and is measured in thirty-secondths of an inch.
<b>Tread Pattern</b>	the arrangement of grooves, blocks, sipes and channels on the tread.
<b>Tread Shaving</b>	shaving some of the tread from a tyre for optimal performance and durability in racing applications.
<b>Tread Wear</b>	also called the tread life, it is the measure of how long a tyre lasts. It is measured in miles or kilometers.
<b>Tread Wear Indicators</b>	narrow rubber bars built into the tread grooves that define the tyre's legal wear out point. Also called the wear bars, they are even with the tread when 2/32" of tread is left and then the tyres are ready to be replaced.
<b>Treadwidth</b>	the width of a tyre tread, normally measured in millimeters. This is narrower than the overall tyre width (called the Section Width)

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<b>Underinflation</b>	a tyre with less than the recommended air pressure for a given load. This may lead to tyre rollover and deflection.
<b>UTQG</b>	The Uniform Tyre Quality Grading rating is a quality rating system developed by the American Department of Transportation. It is designed to tell consumers the relative performance of passenger tyres (but does not apply to winter tyres).
<b>Wheel Weights</b>	weights attached to a wheel to balance a tyre& wheel. The weights can be on the inside or outside of the wheel and can be clipped, taped or self-adhered to the wheel.

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