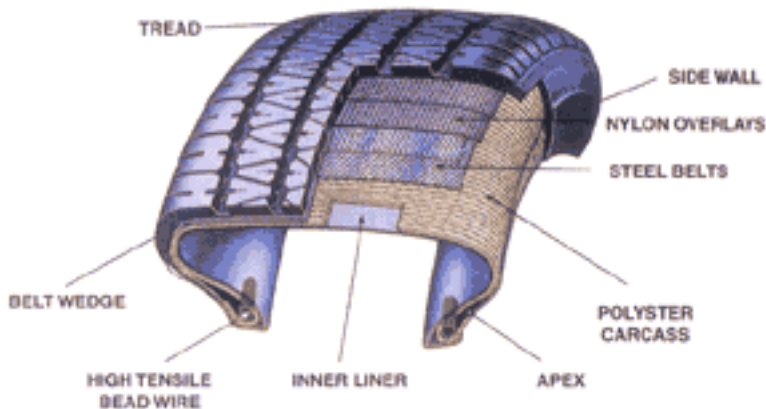


Tubeless Tyres - How tubeless tyres work?

354 Administrator Fri, Mar 5, 2010 [Automobiles](#) 1 14237



Tubeless tyres, as the name suggests, are tyres without the tube. The tyre is built in such a way that it can contain the air by itself. It does not require a tube within it. The tyre has a halo- or chloro-butyl lining on its inside which is airtight. Together with the airtight joint between the tyre and the wheel, the membrane forms a container that holds the air for the tyre.

During high speed cruises, the temperature within the tyre rises significantly. This in turn increases the pressure on the tyre tube. An ordinary tyre is fairly vulnerable under such circumstances. Any protrusion into the tyre which at other times will cause a routine puncture, due to such heat, causes the tube to burst like a balloon. The air escapes fast as the only air tight component in the tyre is the tube. Sometimes the air escapes with so much force that it tears the tyre as well. This may cause the driver to lose control of the vehicle which at a high speed can be fatal. The tubeless tyre is better suited to hold air than a much thinner tube. In case of a protrusion, the air escapes only through the hole that caused the puncture, which is plugged by the very thing that caused the puncture, and hence escapes at a slow pace giving the much required safety. As tubeless tyres contain the air themselves, they provide much more efficient dissipation of heat. This is enhanced if the wheels are made of alloys rather than the conventional ones.

Another problem with the tube is punctures which are often caused by pinholes. In case of tubeless tyres, these are not as frequent. There have been cases where a nail has protruded into the tyre and has stayed there for quite a few days without any significant loss in the air pressure as the nail itself seals the hole.

On an average, a tubeless tyre is lighter than a normal tube-type tyre by about 500g. This weight difference adds to the fuel economy of the vehicle. A tube in a tyre not only adds quite a few grams to the weight of the tyre, but during the motion, this amounts to higher unsprung weight which adversely affects the handling and overall dynamics of the vehicle. Something useful to the more adventurous drivers is the fact that on a rough terrain, one can very easily drive a tubeless tyre with a lower air pressure for better grip without fearing pinch flats. Apart from these significant advantages, the small niggles that are almost synonymous with a tube like wear-out or abrasion due to friction with the rim, pinholes, damages due to improper mounting, spurious tubes etc are done away with.

Another area of concern is the repair of a tubeless tyre. In case of a routine puncture caused by a nail or a nail-like protrusion, the most advisable method is to use a plug to seal off the puncture. Repair kits of this type are easily available and the cost depends on the number of plugs that the kit comes with. Using

the kit, a plug that looks like a mushroom, or like a nail with a disproportionately large head, is inserted into the puncture hole from the inside of the tyre and a solution is used as an adhesive for the plug. The extra bit of the plug that may stretch out of the tyre surface on the outside is trimmed. This is the simplest way to mend the most routine puncture. Seen once, you can do it yourself.

For a puncture that is too large for a plug, the remedy is to seal it by pasting a patch on the inside of the tyre. This is not the most recommended of the methods as this only seals the inside of the tyre, but ends up exposing the metal components of the tyre to external conditions. Another slightly complex method is to use a compound. In case of a puncture, the hole is sealed by inserting a compound into the cavity. Using tongs, the metal of the tyre is slightly moved to make room for the compound and then the compound is added to the cavity with the help of an additional adhesive.

The must-haves for a car with tubeless tyres are: a plug puncture repair kit and a spare tube. Now, why a tubeless tyre need a tube? In case of a puncture you cannot repair on the road, you can simply insert the tube into the tyre and use it just like an ordinary tube-type tyre until you get home.

Tubeless tyres are not standard on all cars in India yet, but the tyre manufacturers have tubeless tyres that will fit the rim size of almost all cars. Do make sure that you get these for your car when you make a purchase. Every penny that you will pay for them is worth it.

Online URL: <https://www.articlediary.com/article/tubeless-tyres-how-tubeless-tyres-work-354.html>