



Treading the Pressure

One cannot overstress the importance of maintaining correct tire pressures on your vehicle. Tires are engineered to operate within a certain pressure range for maximum handling and safety. The recommended inflation pressure can be found in the vehicle owner's manual and on a decal usually located on the driver's door area. This recommended pressure is designed to give the best combination of ride comfort, load carrying capacity and rolling resistance for your vehicle. Please note that the maximum cold inflation pressure on the sidewall of a tire is not the recommended inflation pressure. It is a maximum limit for the tire only. The recommended inflation pressure for most passenger car tires is 32 to 34 psi (cold).

Let's look at the issues of over and under inflation of your tires.

Increasing inflation pressure reduces rolling resistance (which aids fuel economy) and increases the load carrying capacity of the tire. But it also increases ride harshness. The maximum tire inflation pressure should never be exceeded. Too much pressure will stress the tire and increase the risk of a blowout.

Decreasing inflation pressure may improve ride quality by making the tire softer, and under certain conditions may help to improve traction slightly. But lowering the pressure reduces the tire's ability to carry weight and increases rolling resistance which lowers fuel economy. A tire low in pressure wears faster, because of increased rolling resistance and excess flexing in the tread scrubs away the rubber. This increased friction from under inflation also generates heat. So an underinflated tire will run much hotter than normal. The factors of heavy loads, faster speeds and hotter ambient air temperatures can all increase the risk of a tire failure or even worse a blow out. A blown tire can have severe consequences because it often causes the vehicle to lose control, and on vehicles like trucks and SUV's with a higher center of gravity, it greatly increases the risk of a rollover.

Tire pressures should be checked monthly as all tires lose pressure over time. It's not possible to judge a tire's inflation pressure by appearances alone, especially on a low profile radial tire which may be 10 to 15 psi underinflated before it is noticeable. Air seeps out through microscopic pores in the tire or tiny leaks in the bead seal area, and even through porous leaks in alloy wheels. These are also the reason, inflating your tires with nitrogen is becoming more popular. Nitrogen molecules are larger reducing those small leaks. While oxygen reacts at high temperatures and pressures damaging inner tire liners and belt packages, nitrogen being an inert gas will not.

Tire pressures must be tested when the tires are cold as driving generates friction and heat that raises the pressure inside the tires. The outside temperature also affects tire pressure (pressure drops about 1 PSI for every 3 deg C). Checking tire pressure requires a good quality tire gauge for accuracy. Do not cheap out on tire gauges; we've seen some off as much as 5 psi right out of the package.

Other important factors to consider for getting maximum wear and life from your tires are vehicle alignment, tire balance and driving habits. In recent years we have seen the introduction of tire



pressure monitoring systems on new vehicles to aid consumers in maintaining proper inflation of their vehicles tires. Look for our next month's article on Tire Pressure Monitors.

For more information go to www.betiresmart.ca.

January 2009