

LAP 44 — LET'S TALK TIRES AGAIN

Way back on Lap #1 we discussed different types of tires, their performance characteristics and the relationship to driving style. Later, on lap #22, we reviewed tire pressure and the effect it has on the handling of your Mustang. Tires have the single most influence on the quality of your track time and it's worth spending more time on the subject. Going faster and reducing lap times means maximizing your tires and continuously running them at the limit of grip.

There are two types of track tires, radial and bias ply. The sidewalls of radials are more flexible than bias ply designs, which allows them to maintain a larger contact patch as side load increases resulting in a higher grip for a given side load. Bias ply tires achieve the same ultimate grip for a given side load but they do it by using a higher slip angle (the angular difference between where a tire is pointing and the direction it is actually traveling). This is what makes them much more fun to drive! Radial tires are less forgiving because they give little warning before ultimately losing grip. Bias ply designs lose grip more gradually as side loads increase, allowing you to more easily drive closer to the ultimate limit. I've mentioned before, Nirvana to a road racer is sliding through a corner in a four wheel drift, arms locked while using only the throttle to steer. This is more easily accomplished on Bias ply tires.

Learning to read your tires is important. Keeping an eye on them by watching for uneven wear and flat spots is a good idea but don't associate tread depth with their ability to grip. Grip is more a function of heat cycles and age than tread depth. Rubber fatigues with age, getting harder and reducing its ability to grip. This means you're better off putting on new tires at the beginning of the race weekend and using them all weekend rather than running old tires on Saturday and saving the new ones for Sunday. Using this practice, those new tires first run on Sunday and therefore only "half used" will perform very poorly in a few months on Saturday at the next event. Why not use your best performing tires on both Saturday and Sunday?

Tire pressures are a very important tuning mechanism for your Mustang. Generally, Mustangs have a weight distribution resulting in more load on the front tires. This means tire pressures in the front should be higher to get an evenly sized contact patch between the front and rear. A differential of 2 - 4 psi is a good starting point with the front pressure determined by reading temperatures across the face of the tread using a pyrometer. Adjust the pressure until an even reading is found between the inner, outer, and center edges.

Higher temperatures near the edges mean the pressure is too low, high in the center means the opposite. After achieving an even temperature profile note the pressure while the tire is still hot and remember it. Now you can increase or reduce the rear tire pressure to change the handling characteristics of your Mustang. Generally, as you lower the pressure rear grip will improve.

Remember, the only tire pressure that matters is the "hot" pressure because it's the one seen out on the track. That is the reason to measure your pressures soon after you exit the track. If you want to know the equivalent starting cold pressure you can make an educated guess by checking early the next morning before moving the car (provided you have no leakage). If your pressures are correct at the end of the day likely they'll

be correct when you start the next. Don't be alarmed if you see 8 - 10 psi of difference between hot and cold. If in doubt, run a lower pressure as too high is a common mistake.

Tires have the single most influence on the quality of your track time and it's worth spending more time on the subject. Going faster and reducing lap times means maximizing your tires and continuously running them at the limit of grip. Get the most out of your Mustang by selecting the right tire and understanding how usage and pressure affects its handling.

Next lap!

"TIRES HAVE THE SINGLE MOST INFLUENCE ON THE QUALITY OF YOUR TRACK TIME AND IT'S WORTH SPENDING MORE TIME ON THE SUBJECT. GOING FASTER AND REDUCING LAP TIMES MEANS MAXIMIZING YOUR TIRES AND CONTINUOUSLY RUNNING THEM AT THE LIMIT OF GRIP."

Charlie Jones, a.k.a.

Roadracer

