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## Tire Tech/Competition Tires

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### Competition Tire Heat Cycling Service

As participation in autocrossing, track days, driving schools and road racing continues to grow in popularity, the tire manufacturers have developed unique [DOT legal competition tires](#) which feature very sophisticated tread compounds. However just like other high performance parts, these tires will provide more consistent performance and last longer if they are properly broken-in.



The first time a competition tire is used is the most important. During that run, its tread compound is stretched, some of the weaker bonds between the rubber molecules will be broken (which generates some of the heat). If the tires are initially run too hard or too long, some of the stronger bonds will also be broken which will reduce the tire's grip and wear qualities. Running new tires through an easy heat cycle first, and allowing them to relax allows the rubber bonds to relink in a more uniform manner than they were originally manufactured. It

actually makes them more consistent in strength and more resistant to losing their strength the next time they are used. An important heat cycling step is that after being brought up to temperature, the tires require a minimum of 24 to 48 hours to relax and reform the bonds between their rubber molecules.



Looking at the heat cycling system, it positions a mounted and inflated tire between rollers which apply pressure while the tire is rolled up to speed. It is very important to note that this allows heat to be generated as a result of deflecting (stretching) the tire within its normal operating range. There is no "artificial" heat added (no oven, no forced air, etc). Then they receive the stamp showing they are Tire Rack heat cycled.

Measuring the tread temperatures with a tire pyrometer we confirmed that in our controlled environment we were able to achieve appropriate and more consistent temperatures across the tire's tread without causing treadwear. All of these are significant improvements over heat cycling tires on our test track. And the 24 to 48 hour waiting period efficiently occurs while the tires are in transit to you. That means the tires are ready to use when they arrive!

The cost of heat cycling is \$15 per tire. [Avon](#), [Hoosier](#), [Kumho](#) and [Yokohama](#) all recommend that their competition tires be "heat cycled" before being run in competition.

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