

Wheels and Tires: Part 4 of 4

Tire pressure

The factory recommended tire pressure settings were made with comfort on bias ply tires being an important condition, and to dial in a great deal of under steer. Although radial tires are much better, you should still maintain a pressure differential of 8 to 10 pounds front to rear, but you can improve the responsiveness and handling by raising the tire pressure up to about 25 front, 35 psi rear for street use. Autocross use is a bit trickier, as the construction of the tire has an effect on the amount of pressure in the tire. In short, there are two types of "Street" tires:

1.) The first is what most people mean when they say street tire, that is a tire designed to give a reasonable service life (~40k miles), good all weather performance, and perhaps a sporting amount of grip. The BF Goodrich Comp T/A HR4, Goodyear Eagle Aquatread, etc. fall into this category. These tires have a relatively soft sidewall, which gives them a nice ride, but they unfortunately allow the tire under hard cornering to try to roll under the rim, meaning you're now cornering on the sidewall instead of the tread. Bad plan. The proper solution is to get a set of competition tires (see below), which don't do this. But if you're just trying out the sport, there is a band-aid fix - more air. The additional pressure will stiffen the sidewall, which will help the handling, up to the point where the contact patch is so much smaller that the tire slips anyway. Generally, a 5 to 10 psi increase works well, *but* you may need to increase the front and rear tires different amounts to make the car well balanced.

Checking AutoX Tires

Here's a procedure, from a post by Mike Lukacs to the autocross list (Team.Net):

The classic method of determining correct tire pressures for autox is as follows:

A) Raise your tire pressures to ~10 lbs above mfg recommended pressures to start.

B) Mark the outside tread/sidewall corners of each tire with 3 or 4 patches of white shoe polish (sneaker polish) spaced around the tire.

C) After your first run, check the shoe polish patches to see if you are using the whole treadwidth, but not rolling over onto the sidewall too much.

D) If the shoe polish is getting rubbed off of the sidewall area, raise that tire's pressure by 1 or two pounds. If the shoe polish is NOT getting rubbed off of the outer tread area, lower that tire's pressure by a pound or two.

E) Repeat steps B, C, D, until you are happy.

Caveat: this method is only approximate; a tire pyrometer to measure the evenness of temperature across the tread is better.

Note: Don't forget to go back to your normal street pressures before you leave the event!

DOT race tires

2.) The second group are "R" tires, that is tires which meet the letter of the DOT regulations for street tires, but are really meant for competition use. Goodyear's Eagle VR-S, Yokohama A008-RSII, and BFG's Comp T/A R-1 are examples of this breed. These tires have the sidewall stiffened to avoid the tire rolling

over on its shoulder during hard use, so using the 25/35 tire pressure is still a good baseline.

Interchange tricks

Since many folks want to know what to shop for at swap meets, junkyards, etc., here is some info that might be helpful.

Earlies have 4 lugs on a 4 1/2" bolt circle. Other cars with that 4 on 4 1/2 pattern are:

- Acura Legend '86 to '89
- Chevy Nova, Chevy II '60 to '64
- Chevy Sprint '85 to '87
- Buick Special, Olds F-85 '61 to '63
- Datsun/Nissan, most RWD models to '89
- Dodge Colt '79 to '92
- Ford Falcon, Mustang (6 cyl) '60 to '73
- Ford Granada, Maverick '81 to '83
- Hyundai all years
- Mazda 323 '86 to '89
- Mazda 626, RX7 '83 to '87
- Mazda GLC '81 to '85
- MGA, MGB, MGC all
- Mitsubishi, most 4 lug all years
- Nissan 240SX all 4 cyl
- Nissan Altima '93 to '99
- Olds - F-85 '61 to '63
- Plymouth Arrow, Sapporo '79 to '88
- Saab, all to '87
- Toyota, most RWD except PU and MR2 all years
- Triumph TR3 through TR6 all

Most info from a wheel swapping chart of mid 1989. Thanks to Martin Scarr for this data. One thing to bear in mind is that the FWD cars listed here will have a lot of backspacing, so measure before you buy.