

Wheels: *G.A. of Centerville writes by e-mail: “Recently we had my son's Subaru all-wheel-drive vehicle in the shop for an oil change. The oil change took place at a local dealer. When we picked the car up, we were told that we had one tire that was not the same tread as the other three tires and that this miss-match would cause differential problems in the future. We were advised to get the same tread as the other three tires and of course the dealership would be glad to sell us one. Is this true, do we need to match that one tire with the others to avoid differential problems? Any comment from you would be most appreciated!”*

Halderman: Yes, that is true. Having just one tire that is not within 1/32 inch of the others can cause premature wear or other problems, such a vibration or shattering conditions. Also, if the tires are not all the same size, premature wear can occur to driveline components. A four-wheel-drive vehicle is equipped with three differentials:

1. One at the front to allow the two front wheels to rotate at slightly different speeds when the vehicle turns corners as the outside wheel will travel a further distance than the inside wheel.
2. One at the rear wheel for cornering.
3. One in between the two axles to allow for a difference in speed between front and rear wheels.

While the differentials can allow for these differences, to keep them working as designed, all four wheels and tires should have the same exact diameter. If one tire is worn more than the others or if a new tire is installed in any location, the result is a slight difference in speed of rotation of the tire in relation to the others. Therefore, most experts recommend that all four tires be the same size and tire brand as there can be slight differences in diameter with different tire brands.

