Buying Tires: How to Get the Right Tire for You

Tires, by nature, wear out over time. Due to the large number of factors involved (such as speed, road conditions, inflation, vehicle maintenance, your driving habits, temperature), it is impossible to predict a firm figure for expected tread life. Tires should be inspected regularly and replaced when the tire is worn down.

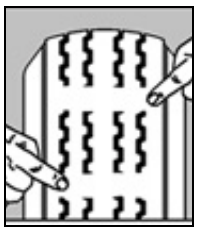
1. Checking for Wear

Tires are worn out when there is just 1.6-mm (2/32-inch) tread depth remaining. This can be measured with an inexpensive tread depth gauge, available at most auto supply stores. In the absence of a gauge, here are two quick methods to check to see if your tires are worn down to the point of replacement.

A. The Tire Wear Bars

Tires are manufactured with "wear bars" (see Figure 1) that indicate when there is less than 1.6 mm (2/32 inch) of tread depth remaining. When the tread is worn down to the point that the wear bars are flush with the tread, the tire must be replaced.

Figure 1: Tire Wear Bars



Exposed Wear Bars
(replace the tire)

B. The Penny Test

The Rubber Association of Canada suggests this simple test to measure the tread depth on your tires. Place a penny into a tread groove with the Queen's head down and facing you. If you can see the tips of the crown, it's time for a new tire.

Figure 2: The Penny Test

Crown Fully Exposed
(replace the tire)

2. Understand Your Tire Needs

Tires are manufactured in an overwhelming array of types and designs. Getting the best combination of value and performance is a result of clearly understanding your own vehicle and driving needs, and being able to communicate them to a tire professional who can assist with the final selection.

There are many tire attributes to consider when buying tires. No one tire satisfies everyone's driving needs, so it is important to consider the factors important to you, and be able to relate them to a tire professional, who can help select a tire that most meets your combination of requirements.

To help in the selection, a tire professional will often ask a series of "qualifying" questions, similar to the following. The combination of responses will help determine the best tire for your needs.

A. How Did Your Current Set of Tires Perform?

Compare your current tires with the following set of most commonly requested attributes. Which attributes would you like more of? Which are not as important? This will give you a great baseline for selecting your next set.

Tire Attributes
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1. *Durability (Long Tire Life):* Depending on a large variety of factors, passenger tires may last from less than 40 000 km to more than 140 000 km. High durability may be of importance to drivers who drive 50 000–60 000 km per year, but far less so to a driver who travels just 10 000 per year. All Season tires may be more durable than Winter tires or some Performance tires. Summer tires may also have more durability on harsher road surfaces.

2. *Traction:* The road and weather conditions you most commonly drive in will greatly influence your traction needs. All Season tires work well in most average conditions; however, Performance (generally "H" speed rated and higher) tires offer better "handling" and cornering traction, although often sacrificing ride comfort. Winter tires are clearly the best choice for stopping and cornering in winter conditions, but may not be as durable or quiet as All Season or Summer designs.

3. *Ride Comfort and Noise Levels*: Some drivers prefer a very "plush" quiet ride, which is generally available in many "H" and lower speed rated Summer and All Season tires. The better traction provided by Winter or Performance tires usually offsets some of this luxury feel.

4. *Fuel Efficiency:* Some manufacturers offer Low Resistance tires, which provide as much as a 20 percent reduction in rolling resistance, increasing fuel economy by approximately 4 percent and reducing exhaust emissions. Generally this attribute is available in higher quality All Season tires, but not in Winter or Performance tires.

5. *Appearance:* Some drivers are quite happy with "round and black," provided that the overall value they seek is there. Others may want the unique appearance of whitewall, white-lettered or lower aspect ratio tires.

6. *Extended Mobility:* Usually referred to as "run flat," these tires have strong appeal to drivers who want, or need, the security of knowing they will not have to stop on the roadside to change a tire. These tires may be available in All Season, Winter or even some Performance tire designs.

From an energy efficiency point of view, the most desirable attributes of a replacement tire are low rolling resistance and long tire life. Low rolling resistance reduces fuel consumption, and long tire life reduces the amount of used tires sent to land fills or recycling centres.

B. Do You Need a Passenger or Light Truck Tire?

Determine the category of tire you need. The majority of car owners and many pickup and SUV owners will be well served by a Passenger designation tire. Some pickup and SUV owners, however, will need the more robust characteristics of a Light Truck (LT) tire for towing or carrying heavier loads or working in rough conditions. Many drivers also prefer the look of LT tires. (Larger, more aggressive treads and a stronger, "beefier" appearance.) However, they may come with a higher rolling resistance that means a higher fuel penalty.

C. What Kind of Driving Do You Do?

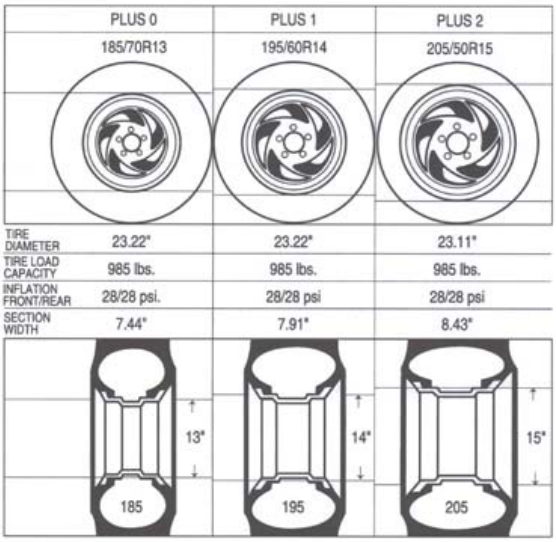
Think about the kind of driving you do. (Your current set of tires may not be suited to your conditions.) Do you commute long distances? (Consider durability, fuel efficiency and ride comfort.) Do you mostly take short trips around town? (Durability may not be as important as ride comfort or fuel efficiency.) Are you almost always on pavement, or do dirt and gravel roads comprise part of your drive? (If you encounter wet or winter conditions, traction may be more important than ride comfort or durability.) The combinations are endless, but knowing what is important to you will steer you toward an informed buying decision.

D. What Tire Size Is on Your Vehicle?

Be sure to buy the right tire size for your vehicle. The most appropriate size can be found on the tire information placard found on the driver's doorpost, or on the glove box, trunk or fuel door. The correct size is also listed in the owner's manual. It is important to get the appropriate size, speed rating and load capacity for your vehicle. If in doubt, be sure to ask a tire professional for guidance.

Performance oriented drivers may want to alter the appearance of their vehicle, or improve steering and handling response of their vehicles by changing tire size, or tire and wheel combination sizes. For many vehicles, this is possible through the use of a process called "plus sizing." Plus sizing is a process tire professionals use to fit larger (diameter and width) tires or tire and wheel combinations on vehicles. (See Figure 3.)

Figure 3: Plus Sizing



Caution: Plus sizing is a guideline only. Consult with a tire professional whenever attempting to fit tire sizes other than those specified by the owner's manual, or the tire information placard, to ensure proper outside diameter and load carrying capacity.

Plus Zero

This uses Original Equipment (OE) wheel diameter, with one-size-larger section width and one-step-lower aspect ratio. This may require a different width wheel.

Plus One

This is a combination of a one-size-larger wheel diameter, one-step-lower aspect ratio and one-size-larger section width. This will require a replacement wheel.

Plus Two

Plus two uses a two-inch-larger diameter rim than OE, a two-step down in aspect ratio from OE, and a two-size up in section width. This will require a replacement wheel.

3. Choose a Retail Tire Outlet

A good retail tire service outlet will provide a selection of brands, knowledgeable sales personnel and a well-equipped service department. Local newspaper ads, the Yellow Pages™ and local referrals are all helpful in making an outlet selection.

4. Use Caution When Mixing Tires

Replacement tires should be as near as possible to the original equipment tires.

Although it isn't necessary to buy the same brand, replacement tires should be chosen with the aid of a tire professional to reflect the vehicle's design requirements, type of driving expected and required tire performance. Unless the vehicle was originally equipped with different sizes on the front and rear axles, all tires on the vehicle should be of the same size, tread design, speed rating, load capacity and construction (i.e. radial or non-radial). If tire mixing cannot be avoided, the following guidelines are provided to help ensure your safety.

When Installing Two Tires Only

For best vehicle performance, it is strongly recommended that all tires be replaced at the same time.

When it is not practical or possible to replace all four tires, the simple phrase to remember is "Best to Back." In order to prevent an oversteer condition, the most stable, higher traction tires ***must*** be installed on the rear. For example:

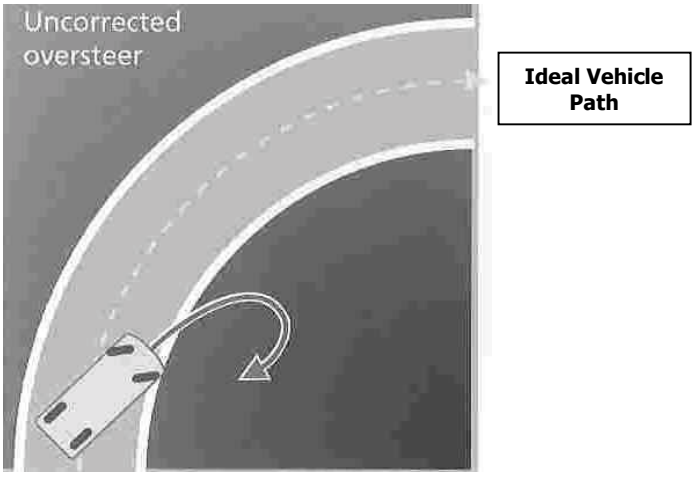
a. The two new tires when replacing with the same size, type and service description
b. The lowest aspect ratio
c. The highest speed rating
d. When radials are mixed with bias

Caution: Winter tires should always be installed in sets of four, especially on front-wheel-drive vehicles. ***Mounting two winter tires on the front only can create severe adverse handling conditions.*** Damage and injury may result.

Oversteer and Understeer

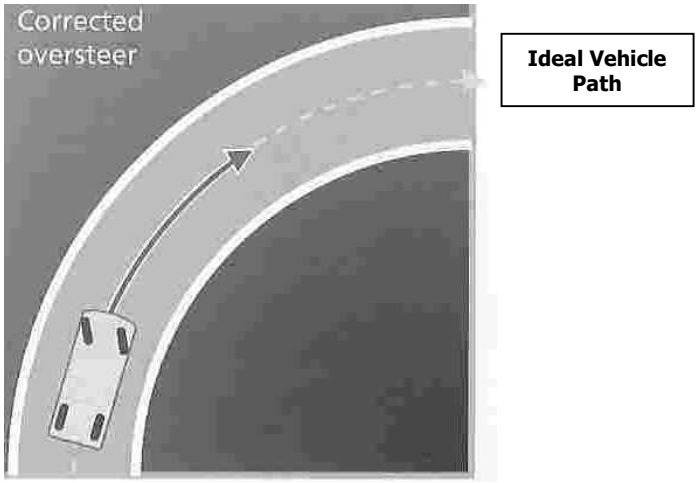
Oversteer is the tendency of a vehicle to take a tighter turn into a corner than intended by the driver. As speed increases or traction is reduced, this effect becomes more pronounced, causing the rear of the vehicle to "swing out," or even skid. (See Figure 4.)

Figure 4: Uncorrected Oversteer



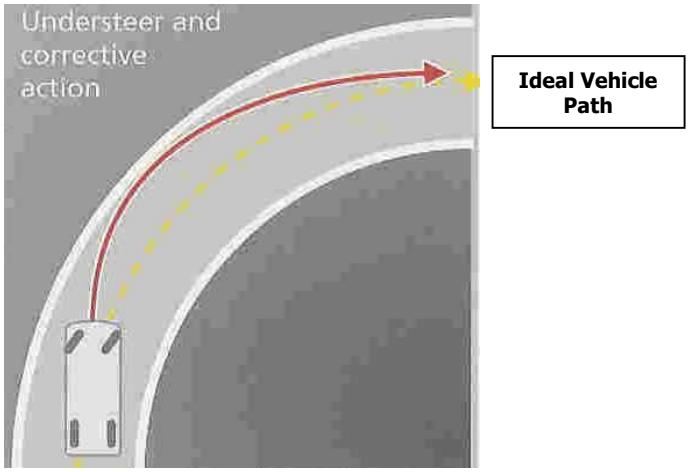
To correct for oversteer, drivers must steer into the direction of the skid; and with front-wheel-drive vehicles, accelerate. (See Figure 5.)

Figure 5: Corrected Oversteer



Understeer is the tendency of the vehicle to continue in a straight line when the driver is attempting to turn. The effect is more pronounced as speed increases, or traction is reduced. The corrective action is to slow down, increase the rate of turn or both. (See Figure 6.)

Figure 6: Understeer



Size Mixing

If it is necessary to mix tire sizes on a vehicle, the size of the tires on the same axle MUST be the same. Vehicles equipped with ABS, traction control, four-wheel drive and all-wheel drive systems MUST have equivalent tire sizes on all wheel positions. The only exception is when a temporary spare is in use.

Four-Wheel Drive

If no instruction for tire mixing appears in the vehicle owner's manual, adhere to the following guidelines:

- Do not mix sizes. All four tires must be branded with the same size tire.
- Do not mix radial and non-radial tires. All four tires must be either radial or non-radial.
- Be sure that the outside diameter of all four tires is within the vehicle manufacturer's specifications.
- Do not mix tread pattern types such as all-terrain and all-season.
- Rotate tires frequently (see owner's manual).

5. Register Your Tires

Be sure to fill in and return your tire registration form when you purchase new tires. In the event of a product recall, you will be contacted by the tire manufacturer. Some manufacturers now have on-line registration.

6. Key Points to Remember

1. Inspect your tires regularly and replace when worn, as indicated by the exposed wear bars or the "penny test."
2. Be an informed consumer: know and prioritize the tire attributes that you need.
3. Shop carefully for a retail outlet and a tire professional.
4. Use caution when mixing tires. Remember "Best to Back."
5. Be sure to register your new tires.