

Wheel Size Basics

There are many things to consider when picking out a set of wheels for your vehicle. Factors such as style, finish, and detailing can influence which wheel you decide to put on your vehicle. However, the most important factor is choosing a safe fitment. Wheels need to be compatible with your vehicle and tyre selection, regardless of style preferences. This leads us to explain what “wheel size” is and how each dimension is important to consider.

The main dimensions of a wheel are as follows: diameter, width, bolt pattern, and offset. All of these individual dimensions come together to form the wheel size; and putting a wheel of incompatible size on your vehicle can be very unsafe.

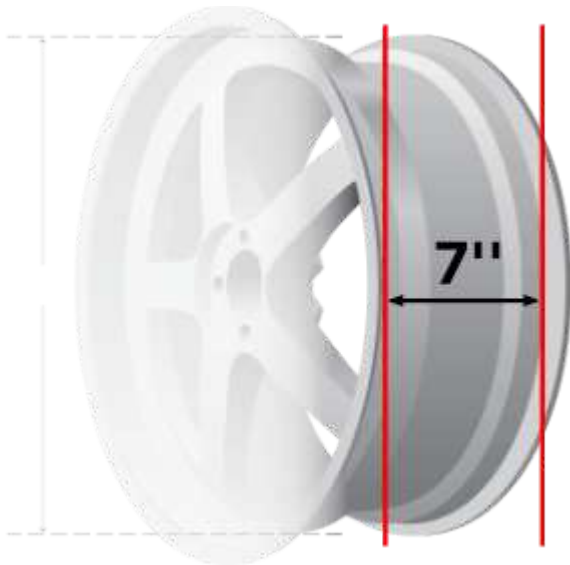
For simplicity, we will work with 16x7 4-100 40S as our example wheel size.

WHEEL DIAMETER



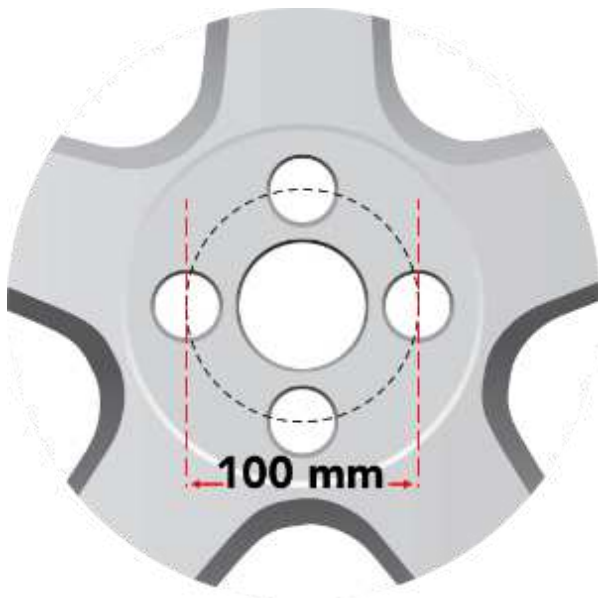
The wheel diameter in this example is the number 16. The definition of wheel diameter is the distance, in inches, measured across the face of the wheel, from bead seat to bead seat. Only wheels and tyres of the same diameter can be safely mounted together. As little as a half-inch difference in diameter can lead to an unsafe situation.

WHEEL WIDTH



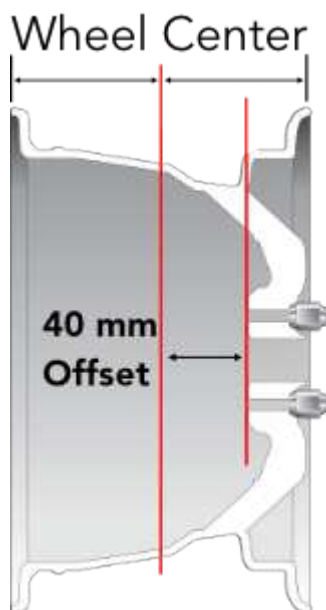
Wheel width is the distance, in inches, from bead seat to bead seat across the barrel of the wheel. The width of the wheel in this example is 7 inches. Wheel width has a direct effect on a tyre's contact patch. By varying the width of the wheel, it will either enlarge or shrink your tyre's contact patch, leading to changes in your vehicle's handling characteristics.

WHEEL BOLT PATTERN



The bolt pattern, in our example 4-100, is made up of two measurements. The first number, 4, indicates the number of lug holes in the wheel. The second number, 100, indicates the distance in millimetres from one hole to another, across the face of the wheel. It is common for the second number in a bolt pattern to either be displayed in inches or millimetres. A wheel's bolt pattern must match the bolt pattern of the vehicle it is being mounted on. If there is even a slight difference between the wheel and vehicle's bolt pattern, ride issues are inevitable and the possibility of the wheel remaining safely on the vehicle is minimized.

WHEEL OFFSET



Wheel offset is the distance in millimetres from the mounting surface of the wheel and the wheel's centreline. In our example, the wheel offset is 40 millimetres. Having the right offset is essential to proper wheel fitment. The offset determines where the tyre and wheel assembly sit in relation to the suspension and the vehicle fenders. There are different types of offsets: positive, zero, and negative.

All of these measurements are very important in determining whether or not a particular wheel will fit your vehicle. Proper vehicle and wheel fitment should be ensured before new wheels are purchased. It is also critical to ensure that the wheel and tyre are of a compatible width, and of the same diameter.