

OFF-ROAD TIRES FOR BEGINNERS

One of the areas that was trial and error for me was the selection of tires based on size. The following is what I learned during the next few years about purchasing tires for an off-road truck.



TIRE SIZES

The 225 75 16s that came on my truck are measured using an ISO Metric tire code. To calculate the height of the tire, you multiply the first number by the second, which is in hundredths (the aspect ratio). Multiply that by two and then divide by 25.4, e.g., $(225 \times 75 \times 2) / 25.4$. Then add that to the last number, which is the rim height.

The height based on this formula is approximately 29 inches. The 7.50 16s that I purchased later are measured using a Light Truck numeric. The first three or four digits are the width of the tire in inches. The aspect ratio of these tires is one hundred percent. So using this formula, the height calculated would be about 31 inches. However, most 7.50 16s are generally closer to 32 inches or a bit over. Flotation sizes such as 31 10.5 15 are more easily measured, as the height is the first two digits.

Bear in mind, though, that the size on the side of the tire can vary slightly from manufacturer to manufacturer.



STATIC LOADED RADIUS

The static loaded radius of a tire is the height from the ground to the center of the wheel when maximally loaded. In comparing two tire sizes, the difference in the static loaded radii of both tires will be the amount of ground clearance gained or lost between both tires.

The radius is a bit less than the actual diameter of the tire, depending on the weight of the vehicle. The increase in height/ground clearance on my truck was 1.5 inches. The height increase was quite visibly noticeable.

GEARING

Another noticeable effect of putting on taller tires was the decrease in RPM. With the shorter tires, the vehicle was quite revvy even in fifth gear. With the taller tires, the Patrol became much quieter. This is because taller tires decrease the gear ratio of your car.

The stock gear ratio on my vehicle was 4.88. Moving from a 29-inch to a 32-inch tire decreased that gear ratio by 10%. Bearing in mind that the 7.50s were stock, the effective gear ratio on the 225s was 110% more, or 5.36 (a lower gear). No wonder the engine was so revvy! There are many sites online where you can calculate the effect on gearing that a change in tire size will have on RPM for your vehicle.



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