

## Proper Selection of Replacement Tires

Based on consumer contact information, Toyo has noted an increasing trend on the part of some tire installers to disregard fundamental safety practices when replacing original tires on cars and light trucks.

The 'Golden Rule' for installing replacement tires on autos and light trucks:

“Replacement tires must be of a size, load range, and load capacities (by inflation) that are capable of supporting the load of the vehicles originally installed (O.E.) tires.”

Since the load carrying capacity of any tire is completely dependent upon the amount of inflation, it is necessary to consult the vehicle's *tire information placard* and determine the amount of load capacity provided by the original tire size at the specified placard pressure. This may require you to refer to tire load and inflation tables, which are available from Toyo and from reference manuals such as *The Tire and Rim Association* year book (see below).

### Determining a Tire's Maximum Load Capacity

All tires have their maximum load capacity engraved on the sidewall, near the bead. The simplest way to determine if a replacement tire has adequate load capacity is to compare the maximum load of the replacement tire to that of the originally installed tire. Tire load and inflation charts may also be consulted to determine the tire's load capacity at various inflation values.

### P-metric and Metric Tire Load Capacity is Reduced on Light Trucks

When P-metric or metric size designation tires are applied to light trucks (SUV, pickup, minivan), the tire's load capacity is reduced by a factor of 1.1 at any inflation value<sup>1</sup>. For

example, size 305/50R20 has a maximum load engraved on the sidewall of 3,086 pounds. If the tire is to be fitted to a light truck, the actual allowable load for the tire is 2,805 lbs. (3086 divided by 1.1). This reduced load must be equal to or greater than the load of the

original tire at the specified tire placard pressure in order to maintain the vehicle's load safety factor. This load reduction factor is not necessary for 'LT' designated tires.

If you are replacing tires on a light truck with the exact same type (P-metric, or metric designation), size designation and load range, the vehicle manufacturer has already considered the load reduction factor and no further discounting of the load is necessary.

Examples:

Toyo OPAT Tire Size	Load Index	Max Load (Passenger Application)	Max Load (LT SUV Application)
P265/75R16	114	2601 lbs	<b>2364 lbs</b>
LT265/75R16 'C'	112	2470 lbs	2470 lbs
LT265/75R16 'D'	119	3000 lbs	3000 lbs
LT265/75R16 'E'	123	3415 lbs	3415 Lbs
305/50R20	120	3086 lbs	<b>2805 lbs</b>
LT305/55R20 'E'	121	3195 lbs	3195 lbs

For additional information, refer to Toyo's Technical Bulletin, TSD-12-011, dated August, 2012, "**Replacing Tires on Light Trucks**", order number 0180324. Toyo dealers may order reprints.

**Attention! Matching Tires on Four-Wheel Drive and All Wheel Drive Vehicles:**

4WD and AWD vehicles require special attention to insure that all four tires are closely matched in diameter to avoid strain and possible damage to the vehicle's differentials and/or viscous couplings. Tire inflation pressure also affects the tire's rolling circumference and should be matched according to the vehicle manufacturer's recommendations. Always check the vehicle manufacturer's recommendations prior to installing new tires.

**Toyo Tire U.S.A. Corp. offers significant resources to our dealers to assist with any questions regarding replacement tire installation – particularly 'plus sizing' installations (see Toyo contact information below).**

## Tire Speed Ratings

As a general rule, Toyo recommends that replacement tires must have equal or greater speed rating compared to the original tire if the vehicle's speed capability is to be maintained. Toyo acknowledges, however that there are instances where speed downgrading is practiced, such as the application of traction or winter tires.

Toyo recommends that tire installers always consider the following:

1. Toyo does not recommend mixing different speed rated tires on any vehicle.
2. When installing only two new tires (except snow tires), they should be mounted on the rear axle, regardless of which axle is the drive axle.
3. Winter (snow) tires should always be fitted in matched sets of four.
4. It is recommended that tire installers refer to the vehicle owner's manual to identify any tire speed rating restriction or recommendation that could affect the operation of the vehicle.
5. In any case where the tire installer downgrades the speed rating of the original tire (such as the fitment of winter tires), it is advisable that the consumer be informed.

For more information, please contact Toyo Tire U.S.A. Corp.'s Consumer Relations Department at (800) 442-8696.

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[www.toyotires.com](http://www.toyotires.com)

Tire load and inflation tables and basic dimensional specifications are available from the following tire standards organizations:

The Tire and Rim Association, Inc.  
175 Montrose West Ave., Suite 150 Copley, Ohio 44321  
Web site: [www.us-tra.org](http://www.us-tra.org)  
e-mail: [TireandRim@AOL.com](mailto:TireandRim@AOL.com)

The European Tyre and Rim Technical Organisation  
32/2, Avenue Brugmann – B-1060 Brussels

**Belgium**  
**Fax : 32-2-344.12.34**  
**e-mail: info@etrto.org**

**Additional tire safety, training, and installation information is available from:**

**The Rubber Manufacturers Association**  
**1400 K Street, NW, Suite 900 Washington, DC 20005**  
**Web site: [www.rma.org](http://www.rma.org) . e-mail: [info@rma.org](mailto:info@rma.org)**

**Tire Industry Association**  
**1532 Pointer Ridge Place, Suite G Bowie, Maryland 20716**  
**Web site : [www.tireindustry.org](http://www.tireindustry.org) e-mail : [info@tireindustry.org](mailto:info@tireindustry.org)**

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<sup>i</sup>This load reduction factor is prescribed by Federal Motor Vehicle Safety Standards (FMVSS) and is based on the expectation that passenger type tires may experience more severe loading and usage