

Proper Selection of Replacement Tires

Based on consumer contact information, Nitto 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 capacity (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 Nitto 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 value¹. 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.

Example:

Tire Size	Load Index	Max Load (Passenger)	Max Load (LT / SUV Application)
LT265/75R16 'D'	119	3000 lbs	3000 lbs
P265/70R17	113	2535 lbs	2305 lbs
305/50R20	120	3086 lbs	2805 lbs
LT305/55R20 'E'	121	3195 lbs	3195 lbs

For additional information, refer to Nitto's Technical Bulletin, "***Replacing Tires on Light Trucks***".

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

4WD and AWD vehicles require special attention to ensure 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.

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

Tire Speed Ratings

As a general rule, Nitto 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. Nitto acknowledges, however that there are instances where speed downgrading is practiced, such as the application of traction or winter tires.

Nitto recommends that tire installers always consider the following:

1. Nitto 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.

Nitto contact information:

Corporate Office:

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Cypress, California 90630
Ph: 888-529-8200
Web site: www.nittotire.com

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

U.S. Tire Manufacturers Association
1400 K Street, Suite 900
Washington, DC 20005
Web site: www.ustires.org
e-mail: info@ustires.org

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:

U.S. Tire Manufacturers Association
1400 K Street, NW, Suite 900
Washington, DC 20005
Web site: www.ustires.org
Email: info@ustires.org

Tire Industry Association
1532 Pointer Ridge Place, Suite G
Bowie, Maryland 20716
Web site: www.tireindustry.org
e-mail: info@tireindustry.org

ⁱThis 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 conditions when applied to light truck.