Tire Safety Provided by Toyo Tire U.S.A. Corp.
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Tire Safety

⚠ WARNING!

Tires must never be operated in excess of their rated speed limit !

Exceeding the tire's speed capability will cause overheating of the tire and sudden tire failure, possibly leading to loss of vehicle control. All Toyo passenger, light truck, and truck tires have a maximum speed rating depending on size and type. Consult your tire dealer or contact Toyo Tire @ 800-442-8696 if you are not sure about the maximum speed rating of your tires. Toyo Tire (U.S.A.) Corporation does not endorse the operation of any vehicle in an unsafe or unlawful manner. Obey all local speed limits. Tire speed ratings do not imply that a vehicle can be safely driven at the speed for which the tire is rated. Speed ratings are based on laboratory tests that relate to performance on the road, but are not applicable if tires are underinflated, overloaded, worn out, damaged or altered.

⚠ WARNING!

Use and Installation of Winter (snow) Tires

Winter driving presents special challenges for vehicle handling. The use of winter tires, studs, and/or chains, while improving snow traction performance, requires additional caution with regard to braking, cornering, and speed. The use of snow tires may reduce the vehicle's handling and braking capability. It is important to drive with care not only on snow and ice, but on dry and wet roads as well. Toyo recommends that snow tires be installed in matched, sets of four. This also applies for studded winter tires. When snow tires of a lower speed rating compared to the original tires are installed, the vehicle's speed capability is reduced. Follow all recommendations in the vehicle owner's manual regarding the use of winter tires. Consult your tire dealer for information regarding seasonal restrictions for stud usage.

⚠ WARNING!

Proper Selection of Replacement Tires

Replacement tires for any vehicle must be of a size, load range, and load capacity (by inflation) that are capable of supporting the load of the vehicle's originally installed (O.E.) tires. Failure to install tires with adequate load capacity will result in tire fatigue and sudden tire failure leading to possible loss of control or an accident.

IMPORTANT! Refer to the vehicle owner's manual for any specific safety advice regarding the application of replacement tires.

⚠ WARNING!

Tire and Rim Matching

NEVER MOUNT 16" RIM DIAMETER TIRES ON A 16.5" DIAMETER RIM! Any attempt to mount a 16" rim diameter tire on a 16.5" rim diameter will result in an explosion of the tire/rim assembly that can cause severe personal injury or death.

Prior to mounting any 16" rim diameter tires, always check the rim/wheel identification stamp to verify the correct rim diameter. Always check the tire size molded onto the sidewall. NEVER exceed 40 psi when seating the beads on rims.

Warning for additional sizes:

To avoid an explosion of the tire/rim assembly and personal injury or death:

- **Never attempt to mount 22" rim diameter tires on any 22.5" diameter rim!**
- **Never attempt to mount 24" rim diameter tires on any 24.5" diameter rim!**

⚠ WARNING!

Replacement Tires for Light Trucks – P-metric vs. LT-metric

Tire installers should exercise extreme caution when replacing tires on light trucks. LT type tires (e.g. LT265/75R16) may not offer adequate load capacity when replacing P-metric type tires (e.g. P265/75R16), depending on the vehicle's load requirements and the tire's load/ply rating. **LT type tires require much higher air pressures to carry equivalent loads of P-metric tires**.

If P-metric type tires are used to replace LT-metric tires, installers should verify the load requirement of the vehicle by checking the tire information placard. Always make sure that replacement tires offer equal or more load capacity (by inflation) compared to the originally installed tires.

If P-metric, or metric tires are intended to replace originally installed LT type tires, the load capacity of the P-metric tire is reduced by 9% at any inflation value. Consult manufacturer's load and inflation charts. Contact Toyo Technical Service with any tire replacement questions: 800 442 8696 (Pacific time), or 888-444-8696 (Eastern time).

Consumer Safety Advisory for Lifted Light Trucks

Rollover Propensity of Lifted Light Trucks

WARNING!

Consumers should be aware that the installation of larger diameter tires, including off-road type tires, combined with modified suspensions (lift kits) for increased off-road ground clearance will adversely affect the handling and maneuverability characteristics of the vehicle compared with the factory-equipped (original) vehicle.

When vehicles, especially light trucks, are lifted, the center of gravity is heightened, thus making them more prone to rollover. Rollover propensity is further increased with full passenger and/or cargo loads. Other aspects of handling and maneuverability may also be affected by altering the original manufacturer's design.

As with any vehicle, **extreme care must be used to prevent loss of control or rollover during sharp turns or abrupt maneuvers**.

Always wear seat belts and drive safely, recognizing that reduced speeds and specialized driving techniques may be required.

The installation of larger tire and wheel combinations will reduce the effectiveness of anti-lock braking systems and increase stopping distance.

Failure to safely drive any vehicle equipped with a lift kit may result in an accident resulting in serious injury or death.

Do not drive a lifted vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state.

Consult your owner's manual, the instructions accompanying the lift kit, and state laws before undertaking any vehicle suspension modifications.

You are responsible for the legality and safety of the vehicle you modify using lift-kit and tire modifications.

Tire Inflation: Multipurpose Passenger Vehicles

This bulletin supersedes all prior Toyo publications related to tire inflation for multipurpose passenger vehicles, including recreational vehicles. The purpose of this bulletin is to disseminate Toyo's recommendation and policy regarding inflation and tire maintenance of original equipment tires and direct replacement tires (same size and load range) on multipurpose passenger vehicles.

For the purpose of this bulletin, multipurpose passenger vehicles include all vehicles equipped with LT designated tires or medium duty truck tires. Multipurpose passenger vehicles include **recreational vehicles (including class A, C, and B RVs), busses, and EMS (emergency medical service) vehicles**.

Inflation of Original Equipment Tires on Multipurpose Passenger Vehicles:

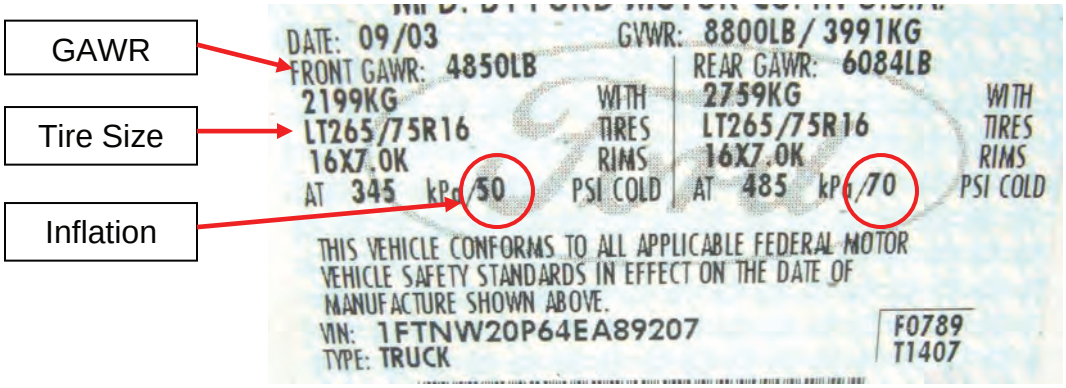
Toyo's policy is to maintain the pressure specified on the vehicle's tire information placard (certification label) as established by the vehicle manufacturer or final stage manufacturer.

Replacement tires must also be capable of supporting no less than the vehicle's GAWR (per axle).

Tire Inflation and GAWR Information:

The vehicle's *tire information placard (certification label)* includes information regarding the tire size, inflation, GAWR and other information. The tire information placard is usually located on the driver's door hinge pillar, door latch post, or the door edge. In RVs the tire information placard is placed on the bulkhead at the left of the driver's seating position.

Example – Tire Information Placard (Certification label):



Applicable Federal Motor Vehicle Safety Standards:

Federal Motor Vehicle Safety standard (FMVSS 571.120) requires the following of vehicle manufacturers in applying original tires to vehicles:

The sum of the maximum load ratings of the tires fitted to an axle shall not be less than the gross axle weight rating (GAWR) of the axle system as specified on the vehicle's certification label (tire information placard).

Consequently, vehicle manufacturers are required by federal regulations to apply tires of a sufficient size, load range, and load capacity (by inflation) to support no less than the GAWR.

GAWR Definition:

The maximum allowable weight the axle assembly is designed to support as determined by the vehicle manufacturer. This includes both the weight of the axle and the portion of the vehicle's weight carried by the axle.

GVWR Definition:

The maximum permissible weight of the vehicle, including the unloaded vehicle weight plus all fluids, cargo, passengers, optional equipment and accessories. For safety and product performance, **do not exceed the GVWR**.

Checking Loaded Axle Weights & Load Distribution:

Consumers should make themselves aware of the loaded weight on each axle and wheel position of their vehicle and achieve as equal distribution of side-to-side weight as possible by redistributing cargo or payload as required. This can be determined by weighing each wheel position of the vehicle on a public scale. In any case where vehicle axle loads exceed the loads stated on the vehicle placard, all attempts should be made to reduce the vehicle's weight prior to driving. **A vehicle must never be operated when the loaded weight of any axle exceeds the GAWR, nor should any vehicle be operated when the actual loaded weight exceeds the gross vehicle weight rating (GVWR)**.

Tire Inspection & Tire Rotation:

The practice of rotating tires on multi-purpose vehicles should take into consideration any past under-inflation of tires. **Any tire that has been run under-inflated for any length of time may have become dangerously fatigued (damaged internally), and subject to sudden failure**. The term 'under-inflation' may be defined as the operation of any tire below an inflation level required to support the tire's actual load (according to tire load & inflation charts). Toyo recommends that any tire that was known or suspected of being run under-inflated or overloaded should be dismounted and fully inspected by a qualified tire professional for any damage or indications of fatigue before being rotated or returned to service.

Tire Damage and Aging (non commercial use):

Vehicle operating conditions and tire maintenance practices vary widely. Tires should be routinely checked for damage or signs of fatigue or aging. This should be done at scheduled vehicle maintenance intervals and preferably on a lift so that the tires can be thoroughly inspected by a tire professional.

Reducing Inflation Pressure – Vehicle Certification Label:

Under no circumstances should the tire inflation pressure be reduced below that stated on the vehicle's tire information (certification) placard to achieve improvements in ride comfort. If you do not know where the tire information placard is, contact your vehicle manufacturer for its location and tire inflation recommendation. For RVs, the certification label is usually placed on the wall or bulkhead to the left of the driver's position.

Air Compressor Capacity:

For vehicles equipped with air compressors: Some compressors may not be capable of inflating the tire to the required inflation pressure. In this case, consumers should take their vehicle to a retail tire shop or commercial vehicle repair shop with a higher capacity air compressor.

Check Cold Tire Inflation Pressure Prior to Driving:

The cold tire inflation pressures of each wheel should be checked at least once per week and any corrections in cold tire inflation pressure should be made prior to a trip. "Cold" means that the tires are at the same temperature as the surrounding air, such as when the vehicle has been parked overnight. Never bleed air from a tire that has been run. It is normal for a tire's inflation pressure to increase (hot inflation pressure) after running (for example 30 minutes or more driving time).

Tire Air Pressure Loss:

All tires lose air at the rate of 1 – 1.5 PSI per month due to natural permeation of the air through the tire's rubber membrane. Always check the cold inflation pressure of any vehicle that has not been driven for several weeks and reinflate the tires to the placard pressure before driving.

Tire pressure is affected by the ambient temperature to the extent of approximately 1 PSI per 10 degree (F) change in temperature. As an example, a 20 degree (F) drop in temperature will result in a 2 PSI drop. A 20 degree (F) increase in ambient temperature will result in a 2 PSI increase. As ambient temperatures drop, tire pressures should be checked and the air pressures increased as required.

Aside from tire pressure fluctuations due to ambient temperature, any unexplained air loss, such as 1 PSI or more per week should be investigated for the cause(s), such as a nail puncture, leaking valve stem, etc., and corrected prior to driving.

Driving Speed – Tire Fatigue:

Tires designated as 'LT' tires and medium duty truck tires have less resistance to heat build-up compared with passenger tires, and are more susceptible to internal damage and fatigue if they are run under-inflated, overloaded, or in excess of their (rated) speed capability. **Driving at sustained high speeds with under-inflated and/or overloaded tires may lead to immediate tire failure**. Driving in excess of the tire's speed capability – even if properly inflated – may result in sudden tire failure. **Consult the tire manufacturer regarding the speed limitation of the size and type tire you are using**. It is the driver's responsibility not to exceed posted speed limits.

FAQ for Tire Inflation on Multipurpose Vehicles:

Q: If my tire and axle loads are below the vehicle's GAWR, can Toyo recommend a more suitable air pressure than that shown on the vehicle's tire information placard?

A: No. The vehicle's placard pressure will provide some measure of air pressure "reserve" over that required for the actual load, thus providing a **safety margin**.

Q: What if the vehicle's certification placard inflation pressure is too high or low?

A: The vehicle's certification placard inflation is not determined at the whim of the vehicle manufacturer. It is established in accordance with Federal Motor Vehicle Safety Standards (FMVSS 571.120) that require the tire size, load range and load capacity (by inflation) shall provide load capacity not less than the vehicle's gross axle weight rating (GAWR). Although vehicle manufacturers must comply with this regulation, some originally installed tires may require higher or lower placard pressures depending on the size, load range, and load capacity of the tire.

Q: What are the consequences of inflating the tires to accommodate the actual loads?

A: If the inflation pressure corresponds to the actual tire load according to the tire manufacturer's load and pressure table, the tire will be running at 100% of its rated load at that pressure. **This practice may not provide a sufficient safety margin**. Any air pressure loss below the minimum required to carry the load can result in eventual tire failure.

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Item #0180251

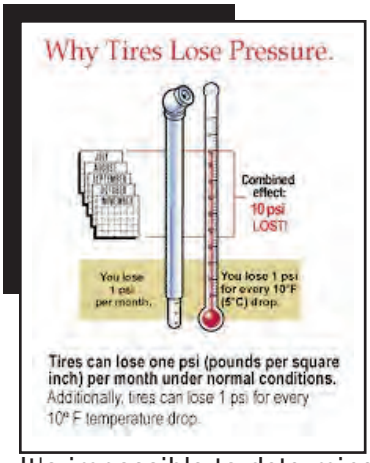
Important Safety Information Regarding Toyo Tires

Toyo Tires are designed and built with great care. Any tire, no matter how well constructed, can fail as a result of punctures, impact damage, underinflation/overloading, or other conditions resulting from use. Tire failures may create a risk of property damage or personal injury. To obtain the highest possible performance they must be maintained properly.

Important factors in tire care are:

- Proper Inflation Pressure
- Proper Tire Wear
- Good Driving Habits
- Proper Vehicle Loading
- Regular Inspection
- Vehicle Condition

Refer to your vehicle's owner's manual for additional tire safety and service advice.



Tire Pressure Basics

Tires can lose 1 psi (pound per square inch) per month under normal conditions.

Additionally, tires can lose one psi for every 10°F temperature drop. The combined effect of losing one psi per month over several months along with a one psi for every 10°F temperature drop could add up to a serious "run low" condition, consequently it is important to check your tire's inflation pressure frequently - at least once per month. Air pressure enables a tire to support the load, so proper inflation is critical.

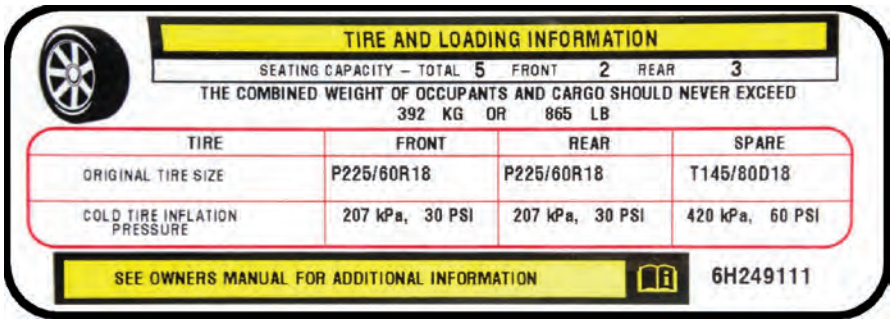
It's impossible to determine whether tires are properly inflated just by looking at them. It is important to check your tires using an accurate tire gauge, which can be purchased at your tire dealer, auto supply store or other retailer. (See photo below)

25 psi

35 psi

How To Determine Proper Tire Air Pressure For Originally Installed Tires:

Look for the manufacturer's recommended air pressure listed on the Tire Information Placard of your vehicle's door edge, door post, glove box, or inside of trunk lid. Example:



Note: The inflation pressure shown on the sidewall of the tire is NOT the intended inflation pressure for the vehicle! Always refer to the tire information placard (above).

Underinflation can create an overload on tires. Check your air pressure every month including the spare tire to make sure it's up to specification, especially before long trips or when carrying extra weight.

Driving on Tires with too little air pressure is dangerous. Your Tires will get overheated. This can cause a sudden tire failure that could lead to serious personal injury or death.

Using an Air Pressure Gauge

For accuracy, check your air pressure with a tire gauge when tires are cold (example: When your car has been parked overnight). Driving heats up tires and makes the reading incorrect.

a) Remove tire valve cap.
b) Place the end of the tire gauge over valve.
c) Press the tire gauge straight and firmly until the scale extends.
d) If needed, add air and recheck pressure with the tire gauge.
e) Replace valve caps.

Never inflate a tire unless it is secured to the vehicle or a tire mounting machine. Inflating an unsecured tire is dangerous. If it bursts, it could be hurled into the air with explosive force resulting in serious personal injury or death.

Recommendations for Safe Tire Inflation

- Check tire inflation pressure (including spare) at least once a month and before every long trip.

- If you must add air when your tires are hot, add four pounds per square inch (4 psi) (28 kPa) above the recommended cold air pressure. Recheck the inflation pressure when the tires are cold.
- Never release air from a hot tire in order to reach the recommended cold tire pressure. Normal driving causes tires to run hotter and air pressure to increase. If you release air when your tires are hot, you may dangerously under inflate your tires. If your tires lose more than one pound per square inch per month, the tire, the valve, or wheel may be damaged. Consult your authorized Toyo Tire dealer location for an inspection.
- Remember to check your spare tire. Consult your vehicle owner's manual for the correct inflation and use of a "temporary use" spare tire.
- Use valve caps to keep cores clean, clear of debris and to help guard against air leakage.

Vehicles equipped with Tire Pressure Monitoring Systems (TPMS)

Even if your vehicle is equipped with a tire pressure monitoring system you should check your tire's air pressure at least once per month when the tires are cold (example, after being parked overnight). Tire pressure warning systems are not a substitute for regular tire pressure maintenance.

Read your vehicle's owner's manual regarding the operation of installed TPMS. Some tire pressure monitoring systems do not alert you until the tires are significantly under inflated which may result in permanent tire damage and possible sudden tire failure. **In the event that your tire pressure monitoring system alarm is displayed you should immediately pull over to a safe parking area and check for a leaking, under inflated, or flat tire.**

Identifying Damaged Tires

- **Tire Damage from Impacts**: If your tire strikes an object at any speed such as road debris, curbs, potholes or any road hazard, internal tire damage could result which may lead to a sudden tire failure and loss of vehicle control, even many miles after the initial impact. **Impact damage from such hazards may not be visible on the outside of the tire**. Have your Toyo Tire dealer demount the tire and inspect it for damage. A tire may not have visible signs of damage on the tire surface or the interior. If the impact was sufficient to bend the rim flange, internal tire damage may have occurred, compromising the safety and integrity of the tire. Such impact damage may result in a sudden tire failure many weeks or months later. Tire replacement is highly recommended as a safety precaution.
- Indications of impact damage include, but are not limited to, a bubble or blister on the outside of the tire, or a wheel that has been bent from impact.
- Have your dealer inspect your tires if you see anything unusual or if cuts, cracks, splitting or bruises in the tread and sidewall areas are visible. Bumps or bulges may indicate a serious, dangerous, separation within the tire body. Have your tire inspected by a qualified tire service person. It may be necessary to have it removed from the wheel for a complete inspection.
- Inspect your tires for adequate tread depth. When the tire is worn to the built-in indicators at 2/32nd inch (1.6 millimeters) or less tread groove depth, or the tire cord or fabric is exposed, the tire is worn out and must be replaced.
- Inspect your tires for uneven wear. Wear on one side of the tread or flat spots in the tread may indicate an alignment problem with the tires or vehicle. Consult your authorized Toyo tire dealer.

Never drive on a tire if there is any evidence of damage. Driving on a damaged tire is dangerous. A damaged tire can suddenly fail causing serious personal injury or death. Do not attempt to dismount, mount or repair a tire yourself. See your Toyo dealer immediately if any condition is discovered.

Identifying Damaged Wheels

If any of the following symptoms exist, the wheel needs to be replaced:

- Check to see if the flange is bent.
- Are the welds or rivets leaking?
- Do the stud holes seem to be elongated rather than round? Improper lug nut tightening could cause this.
- Are there any cracks in the wheel?

Worn Out Tires Are Dangerous!

Tires should be replaced when tread is worn to 2/32". Treadwear indicators on Toyo tire treads show the 2/32" depth (1.6 mm). Most States require that tires be replaced when the tread depth is worn to 2/32nd". **Tires may lose sufficient wet and snow traction before reaching 2/32nd" of wear**. Many wet weather accidents result from skidding on bald or nearly bald tires. Excessively worn tires are also more susceptible to penetrations. Consider replacing your tires earlier if you drive in snow or wet conditions. **Always remove tires from service when they reach two thirty-seconds of an inch (2/32") remaining tread depth.**

Continued operation of your vehicle with excessively worn tires can lead to loss of vehicle control in wet weather conditions, tire failure and/or serious injury.

Any retail tire dealer will be glad to measure your tire's tread depth for you.

Toyo recommends that tires be replaced in matched sets of four.

Tire Repairs - See Toyo Authorized Dealer Immediately

Before having your tire repaired, tell your authorized Toyo tire dealer if you have used an aerosol puncture sealant to inflate/seal the tire. Aerosol puncture sealants could contain a highly flammable, explosive gas. Always remove the valve core outdoors, away from sources of excessive heat, flame or sparks and completely deflate the tire before removing it from the rim for repair.

If any tire has sustained a puncture, have the tire dismounted and inspected internally by an authorized Toyo dealer for possible damage that may have occurred.

- **ONLY SPECIALLY TRAINED PERSONNEL USING THE PROPER TOOLS AND PROCEDURES SHOULD REPAIR TIRES.**
- **NEVER** perform a tire repair without removing the tire from the rim/wheel assembly for internal inspection. (DO NOT perform an outside-in tire repair or on-the-wheel repair). It is essential that only a specially trained person remove any tire from the wheel when it has been damaged or is losing air. A thorough inspection for any internal damage can then be made.
- **NEVER** repair a tire that has an existing, improper repair (non-RMA repair); the tire must be scrapped.
- **NEVER** invert radial tires. (Avoid excessive spreading of the tire or tire beads.)
- **NEVER** buff the tire inner liner too deep, exposing the tire casing body (ply) cords. If this type of damage occurs, during buffing, the tire must be scrapped.
- **NEVER** repair a tire with 2/32nds inch (1.6 millimeters) or less tread remaining. At this tread depth, the tire is worn out and must be replaced.
- **NEVER** repair a tire with a puncture larger than 1/4 inch (6.4 millimeters) in diameter. Such tires cannot be properly repaired and must be replaced.
- Repairs of all tires (radial and non-radial) must be of the plug and inside patch type. Using plugs alone on any type of tire is not a safe repair.

- **Do Not** use rope type plug for repair. A tire must be removed from the wheel and inspected for interior damage. Any tire repair done without removing the tire from the wheel is improper and unsafe.
- **NEVER** repair a tire with a puncture or other damage outside the tread area. **Do not repair sidewall damage**. Such tires cannot be properly repaired and must be replaced.
- Tubes, like tires should be repaired only by a qualified tire service person.
- **NEVER** use a tube as a substitute for a proper repair.

Driving on an improperly repaired tire is dangerous. An improper repair can cause further damage to the tire. It may suddenly fail, causing serious personal injury or death. To be safe, go to your authorized Toyo tire dealer for professional inspection and proper tire repairs.

Cosmetic Tire Alterations Can Be Dangerous! Remember - Do not perform or allow anyone to perform any alteration to your tires. Alterations may prevent proper performance, leading to tire damage, which can result in sudden tire destruction.

Toyo speed rated passenger car tires may be repaired and returned to service under the following conditions:

- **Provided that proper repair materials and procedures are used.**
- **The damage or puncture must not be any larger than 1/4 inch (6.4 millimeters) in diameter.**
- **Only one repair per tire is permitted in order to maintain a limited speed rating.**
- **The tire must have at least 3/32-inch tread remaining.**

Toyo speed rated passenger tires that have been properly repaired qualify for reduced speed ratings as follows:

ORIGINAL SPEED RATING	AFTER PUNCTURE REPAIR
Y, W, Z, VR, H	**H (Maximum speed 130 MPH)**
T	T
S	S

Toyo realizes it is not practical to alter or remove the existing speed rating symbol on the repaired tire. **However it is important that the consumer be aware of this change in speed rating of a repaired tire. THE MAXIMUM SPEED OF A VEHICLE IS LIMITED BY THE LOWEST SPEED RATED TIRE ON THE CAR.**

Important Reminder: A tire's speed rating is void if the tire is retreaded, damaged or abused, or otherwise altered from its original condition. Thereafter, it should be treated as a non-speed-rated tire. In addition, retreaded passenger and light truck tires are not warranted by Toyo Tire U.S.A. Corporation, for any reason. Toyo Tire U.S.A. Corporation speed ratings are voided for retreaded tires.

Proper Selection of Replacement Tires

IMPORTANT: Always check the vehicle manufacturer's recommendation before replacing a tire with a different size and/or construction. **When tires need to be replaced, don't guess what tire is right for your vehicle. First look at the Tire Information Placard in the vehicle. It tells you the size of the tires that were on the vehicle as original equipment.**

Replacement tires for any vehicle must be of a size, load range, and load capacity (by inflation) that is capable of supporting the load of the vehicle's originally installed (O.E.) tires.

Replacement Tires Must have:

- Load-carrying capacity must be equal to or greater than the load carrying capacity of the OE tire size at the specified vehicle placard pressure.
    - When determining the proper tire inflation pressure settings for substitute tires, never exceed the maximum pressure listed on the sidewall of the tires.

- Carefully note any differences between recommendations for front and rear axle positions regarding the tire size and/or inflation pressure.

Failure to install tires with adequate load capacity will result in tire fatigue and sudden tire failure leading to possible loss of control or an accident.

- Speed rating must be equal to or greater than what is specified by the vehicle manufacturer if the speed capability of the vehicle is to be maintained.
- In addition to the above, light truck tire replacements should take into consideration the following:
  - Tires should be mounted on approved rim widths. If changing tire sizes, check to make sure the rim/wheel has adequate load and inflation pressure capacity. For rims/wheels not so identified or for service conditions exceeding the rated capacities, consult the rim/wheel manufacturer to determine the rim/wheel capabilities.
  - Body and chassis clearance must be checked on the vehicles front and rear axles.
  - Proper spacing between duals is necessary for optimum tire performance. If chains are used, particular care must be taken to assure adequate clearance between loaded tires to avoid damage from chains. Allowable outside diameter differences between a tire and its dual mate is 1/4" for light truck tires.
  - For tube type tires, be sure to use approved tubes/flaps/valves for the replacement tire. When used in radial tires, radial tubes and radial flaps are required.

Considerations In Plus Sizing: **ALWAYS** refer to and follow the vehicle manufacturer's replacement tire recommendations. In some cases, a vehicle manufacturer may specifically advise against the application of replacement tires that are not the original size or type.

Certain vehicle performance parameters, including ride comfort and handling, may be affected by substitute tire sizes. In some cases, particularly for SUV's and light trucks, failure to follow vehicle manufacturer's recommendations for tire replacement may adversely affect the safe handling of the vehicle possibly resulting in a loss of vehicle control leading to personal injury or death.

Tire And Rim Matching And Mounting

Any attempt to mount a tire on a rim with a different diameter will result in an explosion of the tire/rim assembly that can cause severe personal injury or death. Prior to mounting any tires, always check the rim/wheel identification stamp to verify the correct rim diameter. Always check the tire size molded onto the sidewall. NEVER exceed 40 psi when seating the beads on rims. Warning to avoid an explosion of the tire/rim assembly and personal injury or death:

- **NEVER** attempt to mount 14" rim diameter tires on any 14.5" diameter rim!
- **NEVER** attempt to mount 15" rim diameter tires on any 15.5" diameter rim!
- **NEVER** attempt to mount 16" rim diameter tires on any 16.5" diameter rim!
- **NEVER** attempt to mount 17" rim diameter tires on any 17.5" diameter rim!
- **NEVER** attempt to mount 19" rim diameter tires on any 19.5" diameter rim!
- **NEVER** attempt to mount 22" rim diameter tires on any 22.5" diameter rim!
- **NEVER** attempt to mount 24" rim diameter tires on any 24.5" diameter rim!

Always stand well clear of any tire mounting operation. This is especially important when the service operator inflates the tire. If the tire has been improperly mounted, it may burst with explosive force causing serious personal injury or death.

A new valve must be installed on the rim each time a worn out passenger or light truck tire is replaced.

Removing and replacing tires on wheels can be dangerous. Attempting to mount tires with improper tools or procedures may result in a tire explosion causing serious personal injury or death. This is a job for your authorized Toyo Tire dealer or other qualified tire service location only.

Serious personal injury or death can result from:

1. **Failure to select the proper tire and rim. Tire MUST match the width and diameter requirements of the rim. When mounting truck type radial tires use only wheels approved for radial tires.**
2. **Failure to inspect both the tire and rim. The rim must be free of cracks, dents, chips, and rust. The tire must be free of bead damage, cuts and punctures.**
3. **Failure to follow proper procedures. For proper mounting procedures, consult the RMA's publication: Care and Service of Automobile and Light Truck Tires (ref: www.rma.org).**
4. **Exceeding the maximum bead seating pressure of 40 PSI. Be absolutely certain beads are fully seated before adjusting inflation pressure to the level recommended for vehicle operation.**

NEVER put flammable substances in tire/rim assemblies at any time. Never put any flammable substance into a tire/rim assembly and attempt to ignite to seat the beads.

NOTE TO PROFESSIONAL TIRE INSTALLERS: Exceeding the maximum bead seating pressure. The tire service person must **NEVER** INFLATE BEYOND 40 POUNDS PRESSURE TO SEAT BEADS unless specified by the tire manufacturer! **NEVER STAND, LEAN OR REACH OVER THE ASSEMBLY DURING INFLATION!**

Tire Mixing Can Be Dangerous

Driving your vehicle with an improper mix of tire sizes, constructions, and speed ratings can be dangerous. Your car's handling characteristics can be adversely affected. You could have an accident resulting in serious personal injury or death. Consult your vehicle owner's manual or authorized Toyo tire dealer for proper tire replacement.

- **Toyo Tire U.S.A. Corporation recommends that all four tires be of the same size, speed rating, and construction (radial, non-radial)**. In some cases the vehicle manufacturer may require different sized tires for either the front or rear axles. NEVER mix P-metric or European Metric passenger tires with light truck sized tires on the same vehicle.
- Match tire size designations in pairs on an axle, except for temporary use of a spare tire.
- If two radial tires and two non-radial tires are used on a vehicle, put radials on the rear axle. If radial and non-radial tires are used on a vehicle equipped with dual rear tires, the radial tires may be used on either axle.
- **Speed rated tires** - If the vehicle tire placard and/or owner's manual specifies speed rated tires, the replacement tires must have the same or higher speed rating to maintain vehicle speed capability.
    - If replacement tires have lower speed capability than specified by the vehicle manufacturer, the vehicles speed must be restricted to that of the replacement tire. Also, vehicle handling could be affected. Consult vehicle manufacturer or tire manufacturer for recommendations.
    - With the exception of winter/snow tires, if tires with different speed ratings are used, it is recommended that the lower speed rated tires should always be placed on the front axle. This is to prevent a potential oversteer condition.
- **Four-wheel drive (4WD) and All-wheel Drive (AWD) vehicles** - If no instructions for tire mixing appear in the vehicle owner's manual, follow these guidelines:
    - **DO NOT** mix tire sizes. All four tires must be marked with the same tire size, unless otherwise specified by the vehicle manufacturer. This also applies to winter/snow tires.
    - **DO NOT** mix radial and non-radial tires. All four must be either radial or non-radial.
    - **DO NOT** mix tread pattern types such as all-terrain and all-season.
- **Winter/Snow Tires** - It is always preferable to apply winter/snow tires to all wheel positions, including duals, to maintain vehicle mobility and control.
    - If winter/snow tires are applied to the front axle of any vehicle, winter snow tires must also be installed on the rear axle. DO NOT apply winter/snow tires only to the front axle. This

applies to all passenger and light truck vehicles including front-wheel-drive, 4WD, and AWD vehicles.

- **WARNING!** Without winter/snow tires on the rear axle, which have comparable traction qualities to the tires on the front axle, the vehicle may experience adverse handling characteristics. This may result in loss of vehicle control, which could cause serious injury or death.
  - If winter/snow tires are installed on the rear axle of any vehicle, it is recommended (but not required) that they also be installed on the front axle.
- **Studded Winter/Snow tires** - Studded winter/snow tires have higher traction qualities under most winter weather conditions.
  - If studded winter/snow tires are installed on the front axle of any vehicle, studded winter/snow tires must also be installed on the rear axle. DO NOT apply studded winter/snow tires only to the front axle.
- **WARNING!** Installing only two studded winter/snow tires on the front axle of any vehicle (including front-wheel-drive vehicles) without studded winter/snow tires on the rear axle can cause adverse vehicle handling characteristics. This may result in loss of vehicle control, which could cause serious injury or death. If studded winter/snow tires are installed on the rear axle of any vehicle, it is strongly recommended that they should also be installed on the front axle. Only if studded winter/snow tires are installed on all wheel positions of a vehicle will optimum handling characteristics be achieved.

****IF Replacing Less Than Four (4) Tires****

IMPORTANT!

In some cases, the vehicle manufacturer may specifically advise against replacing less than all four tires. Always check and follow the recommendations in the vehicle owner's manual. For 4WD and AWD vehicles, even small differences in outside diameter may cause drive-train damage or mechanical malfunction.

When replacing tires on a vehicle, it is recommended and preferred that all four tires be replaced at the same time for continued optimal vehicle performance. However, for those cases where this is not feasible, below are some general guidelines to consider when replacing less than four tires for a light vehicle, whether it is one or two tires. If the vehicle manufacturer has alternate recommendations, always follow their recommendations.

REPLACING TWO (2) TIRES - When a pair of replacement tires is selected in the same size and construction as those on the vehicle, the two newer tires must be installed on the rear axle. All tires must be the same speed rating and must be of equal or higher speed rating than the tire that came as original equipment on the vehicle. New tires with deeper tread will provide better grip and evacuate water more effectively, which is important as a driver approaches (wet) hydroplaning situations. Placing greater traction on the rear axle on wet surfaces is necessary to prevent a possible oversteer condition and loss of vehicle stability and control.

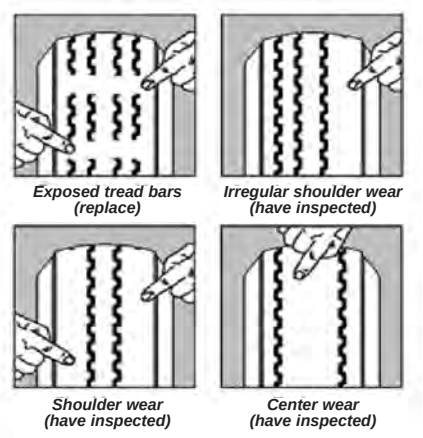
REPLACING ONE (1) TIRE - Replacing a single tire on a vehicle can have an adverse affect on suspension systems, gear ratios, transmission, and tire treadwear. If single tire replacement is unavoidable, it is recommended that the single new tire be paired with the tire that has the deepest tread depth and both be placed on the rear axle. Placing greater traction on the rear axle on wet surfaces is necessary to prevent a possible oversteer condition and loss of vehicle stability and control.

Wheel Alignment and Balancing Are Important For Safety and Maximum Mileage From Your Tires

Proper wheel alignment and balance are very important considerations for safety and maximum mileage from your tires. You need to check how your tires are wearing at least once a month.

Your vehicle may be out of alignment if your tires are wearing unevenly, such as the inside shoulder of the tire wearing faster than the rest of the tread. **This condition not only shortens the life of your tires, it adversely affects the handling characteristics of your vehicle, which could be dangerous**. If irregular wear is indicated, have your alignment checked immediately. Tires that have been run underinflated will show more wear on the shoulders than in the center of the tread. Such underinflation may cause damage to the tire structure. If you see any unusual wear developing, have the tires inspected by your dealer.

Tire Wear - Visual Check



CAUTION! Beware of sudden Tire Vibration. Serious personal injury or death may result from a tire failure. Many tire failures are preceded by vibration, bumps, bulges or irregular wear. If while driving your vehicle you experience any unusual vibration, pull, ride disturbance or noise and/or you suspect possible vehicle or tire damage, **do not continue to drive on tires that have developed a sudden vibration!** Pull over to a safe area as soon as possible and inspect the tires for signs of bulges, blisters or separations. Seek road-side assistance or change the damaged tire with your spare tire.

If you do experience a blow out or sudden tire failure, the following information should be helpful:

- When the tire failure occurs, you may hear a loud noise, feel a vibration, and/or the vehicle may pull toward the side of the failed tire. DO NOT ABRUPTLY BRAKE OR TURN.
- Maintain steady acceleration and momentum of the vehicle.
- Hold the steering wheel firmly, and steer to maintain your lane position.
- Find a safe place to pull off the road and allow the vehicle to decelerate. Apply light braking as required to stop safely.
- Gradually pull over to the shoulder and come to a stop. Look for a damaged tire on your vehicle.
- Seek road-side assistance or change the damaged tire with your spare tire.
- Have all of your tires and the vehicle thoroughly inspected by a tire professional.

Tire Rotation

The purpose for rotating tires is to achieve a more uniform wear for all tires on a vehicle. Tires should be thoroughly examined for any abnormalities on a lift by a tire dealer . If tires show uneven treadwear, ask the service person to check and/or correct any vehicle wheel alignment or other mechanical problem before rotation. **FULLSIZE SPARE TIRES (NOT TEMPORARY SPARES) OF THE SAME SIZE, CONSTRUCTION AND SPEED RATING MUST BE USED IN A FIVE-TIRE ROTATION**. Check if rotated tires require tire inflation adjustment as front and rear position tire pressure may vary according to the vehicle manufacturer's specifications.

REMEMBER, YOUR LIMITED WARRANTY REQUIRES TOYO TIRES TO BE ROTATED AS FOLLOWS:

- Every 3,500 miles or less for high performance (low profile) tires.
- Every 7,500 miles or less for standard passenger and light truck tires.

More frequent rotation may be necessary if, upon inspection, irregular or erratic treadwear is beginning to appear. Cross Rotation is highly recommended to reduce erratic tire wear.

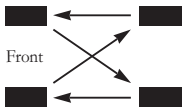
These rotation patterns are acceptable. Please refer to your vehicle owner's manual for safety specifications regarding tire rotation advice.

TIRE ROTATION CHART

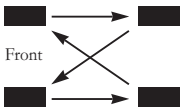
(only where tires are the same type and size)

Preferred Rotation Patterns

Rear- & Four-Wheel-Drive Vehicles



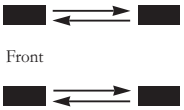
Front-Wheel-Drive Vehicles



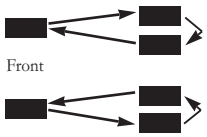
Alternate Rotation Patterns

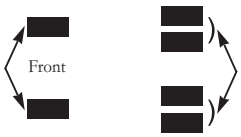
All Vehicles

All Vehicles



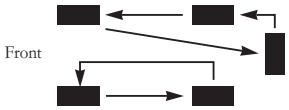
Dual Wheel Rotation Patterns



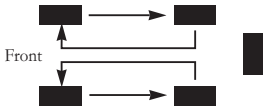


Unidirectional Tire Rotation Pattern

5-Wheel



4-Wheel



IMPORTANT to remember the following:

- These tire rotation recommendations do not take into account different tire types mixed on the vehicle. **Do not mix radials and bias ply tires on the same vehicle**.
- **Some tires cannot be rotated in the manner described**. Such tires include uni-directional tires. Unidirectional tread patterns must be rotated front-to-rear only so the direction of revolution does not change.
- **Some vehicles are designed with different tire sizes on the front and rear axles**. Normally, such combinations will not allow rotation. Prior to rotating, consult the vehicle owner's manual.
- **Vehicles with dual rear wheels** - see the vehicle owner's manual for the vehicle manufacturer's procedures. If your vehicle owner's manual is not available, please contact the vehicle manufacturer.
- **Some vehicles are equipped with wheels, which limit the choice of rotation pattern**. Consult the vehicle owner's manual.
- Do not include temporary spare tires in the rotation pattern. **HOWEVER**, if you have the same size and type road tire (for LT tires same size, type and Load Rating) as a spare tire, it should be included in the tire rotation process. The proper procedure is to use the vehicle manufacturer's recommended tire rotation procedures, or if not available use the appropriate rotation pattern shown, but insert the spare in the right rear position. Place the tire that would have gone to the right rear in the truck as the new spare.

- **IMPORTANT!** After rotation, **adjust individual tire air pressure to vehicle manufacturer's recommendation or recommended air pressure by Toyo Tires** for an optional fitment according to the tire's new location on the vehicle.
- Do not mix speed rated tires on the same axle. Higher speed rated tires must remain on the rear axle. Consult your authorized Toyo dealer.

Tire Speed Rating

Tires must NEVER be operated in excess of their rated speed limit!

Regardless of the speed and handling capabilities of your car and its tires, a **loss of vehicle control** can result from exceeding the maximum speed: (a) allowed by law or (b) warranted by traffic, weather, vehicle or road conditions. High-speed driving should be left to trained professionals operating under controlled conditions.

> No tire, **regardless** of its design or speed rating, has unlimited capacity for speed. **Exceeding the tire's speed capability will cause overheating and sudden tire failure, possibly leading to loss of vehicle control, which can cause an accident, including serious personal injury or death.**

All Toyo passenger, light truck, and truck tires have a maximum speed rating depending on size and type. Consult your tire dealer or contact Toyo Tire at **(800)-442-8696 (Pacific Time)** or **(888) 444-8696 (Eastern Time)** if you are not sure about the maximum speed rating of your tires. Toyo Tire U.S.A. Corporation does not endorse the operation of any vehicle in an unsafe or unlawful manner. Obey all local speed limits. Tire speed ratings do not imply that a vehicle can be safely driven at the speed for which the tire is rated. Speed ratings are based on laboratory tests and relate to performance on the road, but are not applicable if tires are underinflated, overloaded, worn out, damaged or altered.

WARNING! ALWAYS Observe Speed Limits - Never operate your vehicle in excess of lawful speeds or the maximum speeds justified by driving conditions.

Explanation of Tire Speed Symbols

Example: W=Speed Rating

Many of today's tires are marked, as part of the service description, with letters to indicate their speed rating, based on laboratory tests that relate to performance on the road. Tires may be marked with one of these speed symbols: M, N, P, Q, R, S, T, U, H, V, W, or Y to identify the particular tire's speed rating. Additionally, the letter Z may appear in the size designation (see chart below)

When purchasing or replacing speed rated tires, make sure to:

a) Use the ranking in the chart below to compare the speed symbols of all the tires, and

b) Follow the vehicle manufacturer's recommendations, if any, concerning the use of speed rated tires.

To avoid reducing the speed capability of the vehicle, replace a speed rated tire only with another tire having at least the same speed rating or higher speed rated tire. Remember, it's the "top speed" of the "slowest" tire on the car, which cannot be exceeded without risk of tire failure. The letter symbols and corresponding design speeds are:

Speed-Rated Symbol	Speed Category
M	Up to 81 mph (130 km/h)
N	Up to 87 mph (140 km/h)
P	Up to 93 mph (150 km/h)
Q	Up to 99 mph (160 km/h)
R	Up to 106 mph (170 km/h)
S	Up to 112 mph (180 km/h)
T	Up to 118 mph (190 km/h)
U	Up to 124 mph (200 km/h)
H	Up to 130 mph (210 km/h)
V	Up to 149 mph (240 km/h)
W	Up to 168 mph (270 km/h)***
Y	Up to 186 mph (300 km/h)***
Z R	Over 149 mph (240 km/h)**

** Although no upper limit speed is specified, the indicated tires nonetheless have limited rated speed capability. Call **(800) 442-8696 (Pacific Time)** or **(888) 444-8696 (Eastern Time)** for a referral for more technical information.

***** Any tire with a speed capability above 149 mph (240 km/h) can, at the tire manufacturer's option, include a "Z" in the size designation (i.e. 245/40ZR18). If a service description IS NOT included, the tire manufacturer must be consulted for the maximum speed capability [P245/40ZR18 speed capability is greater than 149 mph (240 km/h)]. If a service description is included with the size description, the speed capability is limited by the speed symbol in the service description [i.e. P235/45ZR17 97W = maximum speed 168mph (270 km/h)].**

These speed ratings are based on laboratory tests under specific, controlled conditions. Real-life driving is rarely identical to any test conditions. Your tire's actual speed capability may be less than its rated speed, since it is affected by factors such as inflation pressure, load, prior alteration or damage, driving conditions, alignment, wear, vehicle condition, and the duration for which high speed is sustained.

Tire Speed Symbols do not imply that vehicles can be safely driven at the maximum speed for which the tire is rated, **particularly under adverse road and weather conditions, or if the vehicle has unusual characteristics. Never operate a vehicle in an unsafe or unlawful manner**.

Tire Spinning Can Be Dangerous

Spinning a tire to remove a vehicle stuck in mud, snow or wet grass can be dangerous. This could cause serious personal injury or death to a bystander or passenger and extensive vehicle damage. A tire spinning at a speedometer reading above 35 miles per hour (55 km/h) can in a matter of seconds reach a speed capable of disintegrating a tire with explosive force. Under some conditions, a tire may be spinning at a speed twice that shown on the speedometer. **Never** spin a tire above a speedometer reading of 35 mph (55 km/h). **Never** allow anyone to stand near or directly behind the spinning tire. **Do not** spin if a drive wheel is off the ground.

Warning! The following situation can be dangerous:

Spin balancing a tire on the vehicle; at speeds exceeding a vehicle speedometer reading of 35mph (55 km/h) [70 mph (115 km/h) if the tire is being balanced off of the vehicle or if the vehicle is equipped with a limited slip differential]; can be dangerous. **The tire may fail with explosive force causing serious injury or death. Only trained personnel should spin balance tires**. You should stand well away from the work area when tires are being spin balanced either on or off the vehicle.

Towing or Use of Slide-in Truck Campers

Towing Considerations. If you anticipate towing a trailer, you should see your Toyo Tire dealer for advice concerning the correct size of tire and inflation pressures. Tire size and air pressure depend upon the type and size of trailer and hitch utilized, but **never exceed the maximum cold inflation pressure or the maximum tire load rating**. The only sure way to prevent overload is to weigh each corner of the trailer in its fully loaded state. Check the tire placard on the vehicle and the owner's manual supplied by the manufacturer of your vehicle for further recommendations on trailer towing.

Slide-in Truck Campers. Originally installed tires may not provide sufficient load capacity for the weight of a truck camper loaded with all its contents. WARNING! The correct tire size, load rating and inflation pressure can only be determined after weighing on a scale each corner (wheel position) of the vehicle with the camper and all of its contents. Toyo does not recommend the installation of its tires until the fully loaded, combined vehicle loads (truck and camper) are accurately determined. Contact Toyo Consumer Relations at **(800) 442-8696 (Pacific Time)** or **(888) 444-8696 (Eastern Time)** for further information.

Use and Installation of Winter (Snow) Tires

Winter driving presents special challenges for vehicle handling. The use of winter tires, studs and chains, while improving traction performance in snow and ice, requires additional caution and care with regard to braking, cornering and speed. It is important to drive with care not only on snow and ice, but on dry and wet roads as well.

- Traction is considerably reduced as snow tires approach 50% tread wear, and replacement should be considered in order to maintain effectiveness in heavy snow conditions.
- Tire speed rating - When lower speed rated winter tires replace higher speed rated touring and high performance all-season radial tires, speed should be reduced accordingly. Follow recommendations in vehicle owner's manual for winter tires, studs and chains.
- Follow all recommendations in the vehicle owner's manual regarding the use of winter tires. Consult your tire dealer or RMA website www.RMA.org for information regarding regulatory and seasonal restrictions for stud usage.
- Also see section “12. Tire Mixing Can Be Dangerous” of this manual for more details.

Toyo recommends that snow tires be installed in matched, sets of four. It is always preferable to apply winter/snow tires to all wheel positions, including duals, to maintain vehicle mobility and control. If winter/snow tires are applied to the front axle of any vehicle, winter/snow tires must also be installed on the rear axle. WARNING! DO NOT apply winter/snow tires only to the front axle. This applies to all passenger and light truck vehicles, including front-wheel-drive, 4x4, and all wheel-drive vehicles. WARNING! Without winter/snow tires on the rear axle, which have comparable traction qualities to the tires on the front axle, the vehicle may experience adverse handling characteristics. This may result in loss of vehicle control, which could cause serious injury or death.

Mountain/snowflake symbol

- **If winter/snow tires are installed on the rear axle of any vehicle, it is recommended (but not required) that they also be installed on the front axle.**

Studded Winter/Snow Tires - Studded winter/snow tires have higher traction qualities under most winter weather conditions.

- If studded winter/snow tires are installed on the front axle of any vehicle, studded winter/snow tires must also be installed on the rear axle. DO NOT apply studded winter/snow tires only to the front axle. **WARNING!** Installing only two studded winter/snow tires on the front axle of any vehicle (including front-wheel-drive vehicles) without studded winter/snow tires on the rear axle, can cause adverse vehicle handling characteristics. This may result in loss of vehicle control, which could cause serious injury or death.
- If studded winter/snow tires are installed on the rear axle of any vehicle, it is strongly recommended that they should also be installed on the front axle. Only if studded winter/snow tires are installed on all wheel positions of a vehicle will optimum handling characteristics be achieved.

Adverse Weather Driving

Take Special Care When Driving in Adverse Weather Conditions

- Driving in rain or snow considerably reduces the traction between your tires and the road surface. You must always reduce your speed to allow additional stopping distance between you and the vehicles ahead of you.
- Hydroplaning and wet weather driving - Hydroplaning occurs on wet roads and refers to the loss of tire contact with the road due to the build-up of water between the tire contact patch and the road surface. There are three main factors which affect hydroplaning, and consequently your tire traction on wet roads:
    1) Vehicle Speed. As speed increases, wet traction is considerably reduced.
    2) Water Depth. The deeper the water, the sooner your tires will lose traction. Even thin water layers can cause sufficient lubrication to cause traction loss at low speeds, depending on road conditions.
    3) Tire Tread Depth. As your tires wear down, their decreased ability to resist hydroplaning in wet conditions can result in complete loss of traction and vehicle control. You should always reduce speed with consideration to the traffic around you.
- Driving on ice and snow. Your all-season tires were designed to provide higher levels of snow traction compared to non-all-season tires. You have all-season tires if you find the letters "M&S" are molded into the sidewall near the bead. These letters mean "Mud and Snow." Tires designed for use in severe snow conditions generally have tread patterns, structure and materials to give superior performance. These tires are marked with the "M&S" designation plus **a mountain/snowflake symbol**. Even the best all-season tires will not provide acceptable levels of traction if you drive too fast in snow or ice conditions, and if you do not allow for up to 12 times more stopping distance on icy roads compared to dry road surfaces. As is the case with hydroplaning, your ability to safely maneuver your car in snow or ice conditions is considerably reduced if:
    1) You are driving too fast for the road conditions.
    2) You do not allow sufficient stopping distance between your car and traffic in front of you.
    3) Your tires are too worn to provide adequate road grip.

Temporary Use of Spare Tires For Safety

The spare tire your car is equipped with may be of a different size and construction from the other tires on your vehicle. When using any temporary type spare tire, be sure to follow the vehicle manufacturer's instructions. FAILURE TO OBSERVE RECOMMENDED PRECAUTIONS COULD LEAD TO ERRATIC VEHICLE BEHAVIOR AND/OR TIRE DAMAGE POSSIBLY RESULTING IN AN ACCIDENT.

- The temporary spare tire is designed for **temporary use only**. It must NOT be used as a standard tire continuously. The temporary spare tire should be returned to the trunk as soon as it is convenient to have your standard tire repaired or replaced.

- It should **NOT BE** used for speeds exceeding 50 miles per hour.
- **NEVER** use chains on temporary spare tires because it could cause damage to your vehicle.
- When you replace the temporary tire, replace it **only** with the same type of tire.
- **Check inflation pressure before use. Failure to have proper inflation pressure when using your spare tire can result in serious personal injury or death**. Maintain inflation pressure of 35psi for the temporary full size spare, and 60 psi for the "T" Type, high pressure, temporary spare tires.
- **The "T" type high pressure temporary spare tire should not be used with any other wheel nor should standard tires, snow tires, wheel covers or trim rings be used on the high pressure spare tire wheel. Your vehicle's handling characteristics can be seriously affected. You could have an accident resulting in serious personal injury or death. Consult your vehicle owner's manual for proper use of your "temporary use" spare tire.**
- **Do not operate your vehicle with more than one temporary spare in use** (this does not apply to a full size spare), and only at limited speeds and distances as indicated on the sidewall of the tire.
- The "T" Type temporary spare tire may lower ground clearance when used. Avoid driving over large obstacles and other road hazards. Check your vehicle Owner's Manual for other special clearance precautions when using the "T" Type temporary spare tire provided in your vehicle.

Tire Storage

Tires should be stored indoors in a cool dry place where water cannot collect inside the tires. The tires should be placed away from electric generators and motors and sources of heat such as hot pipes. Storage surfaces should be clean and free of grease, gasoline or other substances, which can deteriorate the rubber. Improper storage can damage your tires in ways that may not be visible and can lead to serious personal injury or death.

A full size spare tire in your vehicle is intended for use as a spare when needed. The spare tire carrier is not intended for long-term storage. Please see the section under "Tire Rotation" for the proper procedures to include the same size construction and speed rated tire (for LT tires same size, type and load rating) in the rotation pattern (Do not rotate a temporary spare tire).

Special Advice For Light Trucks

Never exceed the speed limit as indicated by the speed symbol on the tire's sidewall. See chart and explanation of speed ratings.

Tires designated as "LT" With no Speed Rating Indicated on The Sidewall:

It is not recommended that any light truck be operated at speeds in excess of legal limits. However, if it is anticipated that sustained driving at speeds in excess of 65 miles per hour may be required, then the following adjustments or recommendations should be followed:

- At speeds from 66 mph through 75 mph, cold inflation pressure must be increased 10 psi above the recommended pressures for the load being carried.
- Do not exceed the maximum inflation pressure of the wheel (all wheels have maximum allowable inflation pressures).

- Non-speed rated "LT" designated tires should not be operated at speeds in excess of 85 miles per hour.

Tires designated as P-metric:

- The maximum load capacity stamped on the sidewall of P-metric tires is reduced by 10% when used on a light truck, sport utility vehicle, or trailer unless the vehicle Tire Information Placard shows P-metric as an option.

Replacement Tires for Light Trucks - P-metric vs. LT-metric

Tire installers should exercise extreme caution when replacing tires on light trucks. WARNING! LT type tires (e.g. LT265/75R16) may not offer adequate load capacity when replacing P-metric type tires (e.g. P265/75R16), depending on the vehicle's load requirements and the tire's load/ply rating. LT type tires require much high air pressures to carry equivalent loads of P-metric tires. **WARNING!** P-metric tires may not offer sufficient load capacity to replace LT-metric tires. If P-metric type tires are used to replace LT-metric tires, installers should verify the load requirement of the vehicle by checking the Tire Information Placard. **Always make sure that replacement tires offer equal or more load capacity (by inflation) compared to the originally installed tires**. When a P-metric or metric tire is installed on a light truck (SUV, pickup, minivan), the load capacity of the tire is reduced by 10%. *(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 conditions when applied to light trucks)*. For example, 305/50R20 has a maximum load capacity of 3086 lbs. If this tire is fitted to a light truck then the actual allowable load for the tire is 2805 lbs. (3086 lbs. divided by 1.10). Consult manufacturer's load and inflation charts. Contact Toyo Technical Service with any tire replacement questions: **(800) 442-8696 (Pacific Time)** or **(888) 444-8696 (Eastern Time)**.

Tires Installed On Vehicles With Modified Suspensions And Increased Ground Clearance

Consumers should be aware that the installation of off-road type tires combined with modified suspensions and increased ground clearance will significantly alter the handling characteristics of the vehicle, and may result in increased braking distances as well as significant changes in vehicle maneuverability and handling compared to the factory-equipped vehicle.

Failure to drive vehicles with modified suspensions and increased ground clearance safely may result in serious injury or death. Do not drive any vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain some control under all driving conditions. Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state. Consult your owner's manual, the instructions accompanying this product, and state laws before undertaking these modifications. You are responsible for the legality and safety of the vehicle you modify using these components.

Uniform Tire Quality Grading (UTQG)

The Uniform Tire Quality Grading ("UTQG") standards are intended to assist you in making an informed

choice in your purchase of passenger car tires by providing information indicating relative performance in the areas of tread wear, wet stopping traction, and temperature resistance. All passenger car tires must conform to federal safety requirements in addition to these grades.

- **Treadwear**
  The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test track. For example, a tire graded 200 would wear twice as long on the government course as a tire graded 100. It is wrong to link treadwear grades with your projected tire mileage. The relative performance of tires depends upon the actual conditions of their use and may vary due to driving habits, service practices, differences in road characteristics and climate.
- **Traction**
  The traction grades, from highest to lowest, are AA, A, B, and C, and they represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete.

WARNING: The traction grade assigned to tires is based on braking (straight ahead) traction tests and does not include cornering (turning) traction.

- **Temperature**
  The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the materials of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance, which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 139. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

WARNING: The temperature grade is established for a tire that is properly inflated and not overloaded. Excessive speed, under-inflation, or excessive loading either separately or in combination can cause heat buildup and possible tire failure.

- **DOT Quality Grades**
  All passenger car tires must conform to Federal Requirements in addition to these grades.

Remember, you are ultimately responsible for the tires installed on your vehicle.

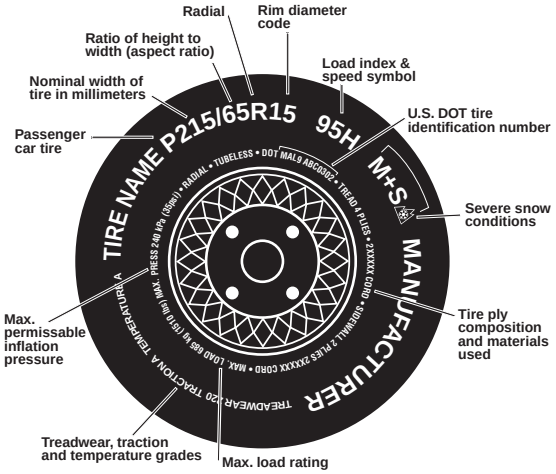
If you have any further questions, contact your local Toyo Tire Dealer or Toyo Tire U.S.A. Corporation at (800) 442-8696 (Pacific Time) or (888) 444-8696 (Eastern Time).

For more safety information, visit our website: http://www.toyo.com/

USEFUL TIRE INFORMATION

A lot can be learned from the useful information molded into the sidewall of a tire. It shows the name of the tire, its size, if it is tubeless or tube type, the maximum load and maximum inflation, and important safety warnings.

Passenger and Light Truck tires show different things related to the tires sidewall.



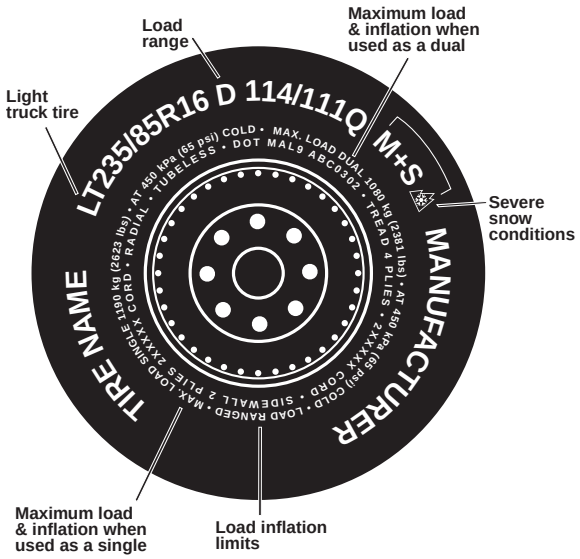
The sidewall of a popular “P-metric” speed rated auto tire P215/65R15 95H. “P” stands for passenger; “215” represents the width of the tire in millimeters; “65” is the ratio of height to width; “R” means radial;”15” is the nominal rim diameter code; and “95H” is the optional service description that consists of the load index (95) and the speed symbol “H”. Some older speed –rated tires may include the speed symbol immediately before the “R” instead of showing a service description. “M&S” with the mountain/snowflake symbol is the designation that the tire meets the RMA definitions for use in severe snow conditions. The maximum load is shown in kg (kilograms) and in lbs (pounds) and the maximum pressure in kPa (kilopascals) and in psi (pounds per square inch).

The letters “DOT” certify compliance with all applicable safety standards established by the Department of Transportation (DOT). Adjacent to this is a tire identification or serial number. This serial number is a code with up to 12 digits that are a combination of numbers and letters. The last characters are numbers identifying the week and year of manufacture. (Example ”1502” means fifteenth week of the year 2002.)

The sidewall also shows the type of cord and number of plies in the sidewall and under the tread.

The DOT requires tire manufacturers to grade passenger car tires based on three performance factors: Treadwear, Traction and Temperature resistance (See section on UTQG for more details).

Typical Light Truck Tire



Typical information on the sidewall of a light truck tire ("LT" stands for Light Truck), "LT235/85R16" is the size designation for a metric light truck tire. "M&S" with the mountain/snowflake symbol is the designation that the tires meet the RMA definition for use in severe snow conditions. "LOAD RANGE D" identifies the load and inflation limits; RADIAL indicates that the tire has a radial construction. "MAX LOAD SINGLE 1192 kg (2623 lbs) AT 1470 kPa (65 psi) COLD" indicates the maximum load rating of the tire and corresponding minimum cold inflation pressure for that load when used as a single. For normal operation, follow pressure recommendations in owner's manual or on vehicle placard; "MAX LOAD DUAL 1082 kg (2381lbs) AT 1470 kPa (65psi) COLD" indicates the maximum load rating of the tire and corresponding minimum cold inflation pressure when used in a dual configuration. The other markings on the sidewall have the same meanings as described for the passenger car tire.

Tire Registration

Your original equipment tires are registered through the vehicle manufacturer.

When you purchase replacement Toyo tires, the seller is required by the National Highway Traffic Safety Administration to present you with a tire registration form. Toyo Tire U.S.A. Corporation provides a registration card at no charge to all Toyo Tire dealers. The dealer must fill in the dealer name, address and serial numbers of the tires purchased. You, the buyer, should then fill in your name and address, place a stamp on the form and mail to the pre-addressed location on the form. Be sure to have your dealer complete his portion of the registration card included in this limited warranty at the time of purchase. The purpose is to notify you in the event of a product recall.

Or, if you prefer online registration instead, you may register your tires on our web page at www.toyo.com and select "Tire Registration". Be prepared to provide Dealer name and address; quantity of tires, and DOT serial numbers from the sidewall of the tires.

IMPORTANT! If self-registering tires, make sure to include all 12 letters and numbers following the letters 'DOT' on the tire's sidewall near the bead. If you see only 4 letters next to the letters 'DOT", look on the other side of the tire for the full DOT number.

FOR SERVICE ASSISTANCE OR INFORMATION

- Contact your nearest Toyo Tire Dealer.
- If you need assistance locating a Toyo Tire dealer please contact our Consumer Relations Department toll free at:

  (800) 442-8696 (Pacific Time)
  (888) 444-8696 (Eastern Time)

We can be reached in writing at:

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