PASSENGER AND LIGHT TRUCK TIRE OWNER'S MANUAL

TOYO TIRES®

driven to perform®

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IMPORTANT SAFETY INFORMATION

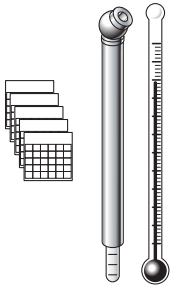
This manual is not intended to provide proper training or service procedures for tire mounting, dismounting, balancing, rotation, or repair. Please leave these tasks to qualified tire service professionals.

⚠ NOTICE

Toyo brand 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, tires must be maintained properly.

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

Tires can lose 1 psi per month under normal conditions



Inflation pressure can decrease by 1 psi for every 10°F temperature drop

Important factors in tire care are:

- Proper inflation pressure
- Proper vehicle loading
- Proper vehicle maintenance
- Regular inspection
- Good driving habits

Refer to your vehicle Owner's Manual for additional tire safety and service advice.

TIRE PRESSURE BASICS

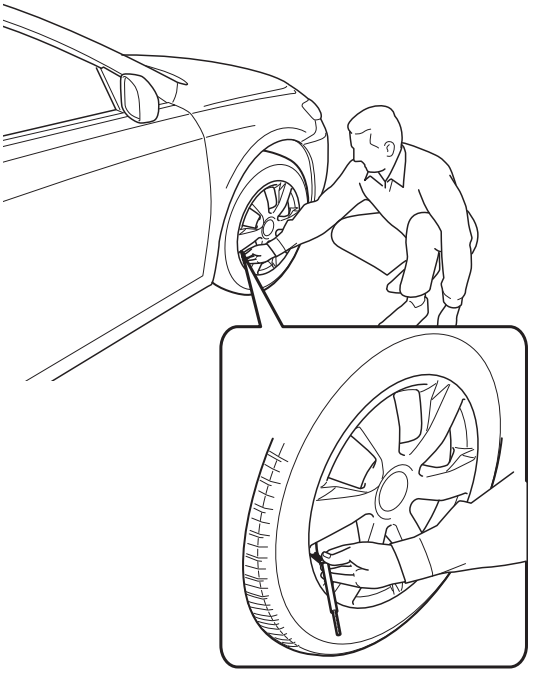
The combined effect of losing 1 psi per month over several months along with a 1 psi decrease for every 10°F temperature drop could add up to a severe "run low" condition; consequently, it is important to check your tires' inflation pressure at least once per month. Inflation pressure enables a tire to support its load; therefore, proper inflation is critical.

HOW TO DETERMINE PROPER TIRE INFLATION PRESSURE

It is impossible to determine whether tires are properly inflated just by looking at them.

25 PSI

35 PSI



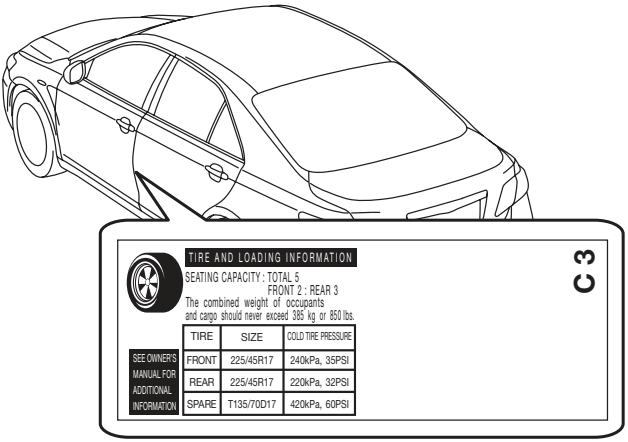
It is important to check your tires using an accurate tire pressure gauge, which can be purchased at your tire dealer or auto supply store.

Underinflation can overload tires. Check the inflation pressure every month, including for the spare tire, to make sure it's up to specification. Check it again before long trips or when carrying extra weight.

Look for the manufacturer's recommended inflation pressure listed on the Tire Information Placard usually located on your vehicle's door edge, door post, glove box, or inside the trunk lid.

⚠ NOTICE

The inflation pressure shown on the sidewall of the tire is not the intended inflation pressure for the vehicle! Always refer to the vehicle's Tire Information Placard.

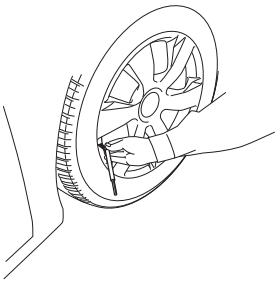


⚠ WARNING

Driving on tires with insufficient inflation pressure is dangerous because it will cause your tires to overheat. This can cause sudden tire failure, which may result in loss of vehicle control and lead to serious personal injury or death.

USING A TIRE PRESSURE GAUGE

For accuracy, check your inflation pressure with a tire pressure gauge when tires are cold (for example, after being parked overnight). Driving heats up tires and causes an inaccurate pressure reading.



To check inflation pressure with a tire pressure gauge:

1. Remove the tire valve cap.
2. Place the end of the tire pressure gauge over the valve.
3. Press the tire pressure gauge straight and firmly and take a reading.
4. If needed, inflate and recheck the pressure with the tire pressure gauge.
5. Replace the valve cap.

RECOMMENDATIONS FOR SAFE TIRE INFLATION

- If you must inflate your tires when they are hot, add 4 pounds per square inch (4 psi) (28 kPa) above the recommended inflation pressure specification. Recheck the inflation pressure when the tires are cold and adjust to the recommended inflation pressure shown on the vehicle's Tire Information Placard.
- Never release air or nitrogen from a hot tire in order to reach the recommended cold tire pressure. Normal driving causes tires to run hotter and inflation pressure to increase. If you release pressure when your tires are hot, you may dangerously underinflate your tires. If your tires lose more than 1 pound per square inch (1 psi) per month, the tire, the valve, or the wheel may be damaged. Consult your authorized Toyo Tires dealer for an inspection.
- Over-inflation can cause the tire to be more susceptible to impact damage.
- Over-inflation or underinflation may adversely affect vehicle handling.
- Remember to check your spare tire. Consult your vehicle Owner's Manual for the correct inflation pressure and use of a "temporary use" spare tire. The inflation pressure specified for a spare tire is typically different from that specified for your regular tires.
- Use valve caps to keep valve cores clean and clear of debris and to help guard against air leakage.

⚠ WARNING

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

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 pressure at least once per month when the tires are cold (for example, after being parked overnight). Tire pressure warning systems are not a substitute for regular tire pressure maintenance.

⚠ WARNING

If your vehicle is equipped with TPMS, read the vehicle Owner's Manual regarding its operation. Some TPMS systems do not alert you until the tires are significantly underinflated, which could result in permanent tire damage and possible sudden tire failure. In the event that your TPMS malfunction indicator lamp is displayed, you should immediately pull over to a safe parking area and check your tires.

IDENTIFYING DAMAGED TIRES

- All tires, including spares, should be inspected at least once a month. Regular inspection becomes particularly important the longer a tire has been in service.
- If your tire strikes a road hazard at any speed, internal tire damage could result, which may lead to sudden tire failure and loss of vehicle control. Tire failure may even occur miles after the initial impact. Impact damage from such hazards may not be visible on the outside of the tire. Have your Toyo Tires dealer dismount 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 wheel 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 a blister on the outside of the tire.
- 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 and dangerous separation within the tire body. Have your tire inspected by a qualified tire service person. It may be necessary to have the tire 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 2/32" (1.6 mm) or less tread groove depth, the tire is worn out and must be replaced. Never drive on tires to the point that the tire cord or the fabric is exposed.
- Inspect your tires for uneven wear. Wear on one side of the tread or flat spots in the tread may indicate alignment or other problems with the tires or the vehicle. Consult your authorized Toyo Tires dealer.

⚠ WARNING

Never drive on a tire if there is any evidence of damage. Driving on a damaged tire is dangerous. A damaged tire could suddenly fail, which may result in loss of vehicle control and lead to serious personal injury or death. Do not attempt to dismount, mount, or repair a tire yourself. See your Toyo Tires dealer immediately if you detect damage.

IDENTIFYING DAMAGED WHEELS

Periodically check to see if any of the following symptoms exist, in which case the wheel must be replaced:

- If the flange is bent.
- If welds or rivets are leaking.
- If the stud holes are elongated and not round. (Improper lug nut tightening could cause this.)
- If there are cracks in the wheel.

WORN OUT TIRES

Tires must be replaced when tread is worn to 2/32" (1.6 mm). 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 2/32" (1.6 mm). Tires may lose sufficient wet and snow traction before reaching 2/32" (1.6 mm) of wear. Many wet weather accidents result from skidding on worn out tires.

Excessively worn tires are more susceptible to penetrations. Consider replacing your tires earlier if you drive in snow or wet conditions.

⚠ WARNING

Continued operation of your vehicle with excessively worn tires may lead to loss of vehicle control in adverse weather conditions, tire failure, and serious personal injury or death.

Any retail tire dealer will be glad to measure your tire's tread depth for you. Toyo Tires recommends that tires be replaced in matched sets of four.

TIRE SERVICE LIFE RECOMMENDATION

Toyo recommends that any tires in service 10 years or more from the date of manufacture, including spare tires, be replaced with new tires even if such tires appear serviceable and even if they have not reached the legal wear limit.

Some vehicle manufacturers have specific recommendations for tire replacement, which may be found in the vehicle owner's manual or on the vehicle manufacturer's website. To the extent those recommendations differ from those of Toyo, the vehicle manufacturer's recommendation should be followed.

You can determine the age of your tire by examining the DOT serial number imprinted on the sidewall of the tire, as shown on page 35 of this manual. The last 3 or 4 digits of the DOT serial number identify the week the tire was made in a particular year. For example, a DOT serial number ending in 3709 indicates the tire was manufactured in the 37th week of 2009. Prior to 2000, the manufacture date was generally indicated with only 3 digits, the third of which indicates the year of manufacture (i.e., 189 would indicate the 18th week of 1999).

Toyo's tire service life recommendation should not be considered a minimum serviceable life of any tire. Most tires will need to be replaced before they are 10 years old because of wear or service and storage conditions (punctures, impact damage, improper inflation, overloading, tread wear, and other conditions) that affect the useful life of all tires. Tires need to be regularly inspected to look for the wide variety of conditions that can require their replacement regardless of tire age.

TIRE REPAIRS

If any tire has sustained a puncture, have the tire dismounted and inspected internally by an authorized Toyo Tires dealer for possible damage that may have occurred. Only specially trained personnel using the proper tools and procedures should repair tires.

⚠ WARNING

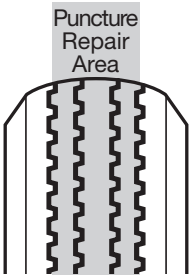
Before having your tire repaired, tell your authorized Toyo Tires dealer if you have used an aerosol puncture sealant to inflate/seal the tire. Aerosol puncture sealants could contain a highly flammable, explosive gas.

Driving on an improperly repaired tire is dangerous. An improper repair can cause further damage to the tire. It could fail suddenly, which can result in loss of vehicle control and lead to serious personal injury or death. To insure safety, go to your authorized Toyo Tires dealer for professional inspection and proper tire repairs.

Cosmetic Tire Alterations Can Be Dangerous! Remember — Do not perform or allow anyone to perform any alterations to your tires. Alterations may prevent proper performance, leading to tire damage, which could result in sudden tire failure and loss of vehicle control and lead to serious personal injury or death.

TIRE SAFETY AND MAINTENANCE INFORMATION

- Never repair a tire with 2/32" (1.6 mm) 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" (6.4 mm) 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 a 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.



- Never repair a tire with more than one puncture within the same 90 degree quadrant.
- Proper repairs are limited to 4 repairs per tire.

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

- Proper repair materials and procedures have been used.
- The damage or puncture is not larger than 1/4" (6.4 mm) in diameter.
- The repair will be the first repair performed on that tire. (Only one repair per tire is permitted in order to maintain a limited speed rating.)
- The tire must have more than 2/32" (1.6 mm) of tread remaining.

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

ORIGINAL SPEED RATING	AFTER PUNCTURE REPAIR
(Y), Y, W, Z, V, VR, H	H (maximum speed 130 mph)
T	T
S	S

The maximum speed of a vehicle is limited by the lowest-speed-rated tire on the car.

⚠ NOTICE

A tire's speed rating is void if the tire has been retreaded, damaged, 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 Tires for any reason. Toyo Tires speed ratings are voided for retreaded tires.

PROPER SELECTION OF TIRES

When tires need to be replaced, don't guess what tire is right for your vehicle. First look at the vehicle Owner's Manual or the Tire Information Placard. They tell 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 same load as the vehicle's originally installed (OE) tires. Avoid installing used tires on a vehicle. There is no way to determine what road hazards or abuse a previously owned tire may have incurred.

⚠ WARNING

Failure to install tires with adequate load capacity will result in tire fatigue and sudden tire failure. This could lead to loss of vehicle control, possibly resulting in personal injury or death.

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

TIRE SAFETY AND MAINTENANCE INFORMATION

The following procedures concerning replacement tires must be followed:

- Confirm that the load-carrying capacity is greater than or equal to the load-carrying capacity of the OE tire size at the pressure indicated on the vehicle Tire Information Placard.
- Carefully note any differences between recommendations for front and rear axle positions regarding the tire size and/or inflation pressure.
- The 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.
- Tires should be mounted on approved wheel widths. If changing tire sizes, check to make sure the wheel has adequate load and inflation pressure capacity.
- Body and chassis clearance must be checked on the vehicle's front and rear axles.

In addition to the above, light truck tire replacements should take into consideration the following:

- Proper spacing between dual tires 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 the chains. The allowable outside diameter difference between a tire and its dual mate is ¼" (6.4 mm) for light truck tires.

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 of the original size or type.

TIRE AND WHEEL MATCHING AND MOUNTING

⚠ WARNING

Any attempt to mount a tire on a wheel with a different diameter will result in an explosion of the tire/wheel assembly that could cause severe personal injury or death.

Prior to mounting any tire, always check the wheel identification stamp to verify the correct wheel diameter. Always check the tire size molded onto the sidewall.

Never exceed 40 psi when seating the tire beads onto the wheel.

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 could burst with explosive force causing serious personal injury or death.

A new valve stem must be installed on the wheel 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 could result in a tire explosion, causing serious personal injury or death. This is a job for your authorized Toyo Tires dealer or other qualified tire service location only.

Serious personal injury or death can result from:

- *Failure to select the proper tire and wheel. The tire must match the width and diameter requirements of the wheel. When mounting truck type radial tires use only wheels approved for radial tires.*
- *Failure to inspect both the tire and wheel. The wheel must be free of cracks, dents, chips, and rust. The tire must be free of bead damage, cuts, and punctures.*
- *Failure to follow proper procedures. For proper mounting procedures, consult the Rubber Manufacturers Association's publication "Care and Service of Automobile and Light Truck Tires".*
- *Exceeding the maximum bead seating pressure of 40 psi. Be absolutely certain beads are fully seated before adjusting the inflation pressure to the level recommended for vehicle operation.*

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

TIRE MIXING

⚠ WARNING

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 an authorized Toyo Tires dealer for proper tire replacement.

- Toyo Tires recommends that all four tires be of the same size, speed rating, and construction (radial or non-radial). In some cases the vehicle manufacturer may require different sized tires for the front or rear axles. Never mix P-metric or European Metric passenger tires with LT-metric tires on the same vehicle.
- Match tire size designations in pairs on an axle, except during the temporary use of a spare tire.
- If two radial tires and two non-radial tires are used on a vehicle, put the 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 Information Placard and/or the vehicle Owner's Manual specifies speed-rated tires, the replacement tires must have the same or higher speed rating to maintain vehicle speed capability.
- If a replacement tire has a lower speed capability than that specified by the vehicle manufacturer, the vehicle's speed must be restricted to that of the replacement tire. Vehicle handling could also be affected. Consult the vehicle Owner's Manual or tire manufacturer for recommendations.
- If tires with different speed ratings are used, it is recommended that the lower-speed-rated tires 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 tread pattern types such as all-terrain and all-season.

STUDLESS WINTER/SNOW TIRES

- It is always preferable to apply winter/snow tires to all wheel positions, including dual tires, 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.
- 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.

⚠ WARNING

Unless winter/snow tires on the rear axle 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 can lead to serious personal injury or death.

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.
- 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.

⚠ 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 can result in a loss of vehicle control, which could cause serious personal injury or death.

⚠ NOTICE

In some cases, the vehicle manufacturer may specifically advise against replacing fewer 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 drivetrain damage or mechanical malfunction.

REPLACING TWO 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 and must be of equal or higher speed rating than the front tires. Generally, new tires with deeper tread will provide better grip and evacuate water more effectively, which is important as a driver approaches 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.
- When two new tires have been installed onto the rear axle positions, they are to be kept on the rear but rotated from side to side. This is recommended after installing two new tires to the rear position, or if you discover significant tread depth differences between the front and rear positions during rotation intervals.

REPLACING ONE TIRE

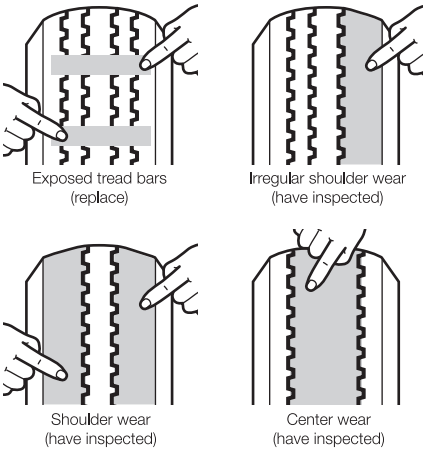
- Replacing a single tire on a vehicle can have an adverse effect on suspension systems, gear ratios, transmission, and tire treadwear.
- If single tire replacement is unavoidable, it is recommended that the single new tire be paired with the tire that has the deepest tread and both be placed on the 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.

WHEEL ALIGNMENT AND BALANCING

- Proper wheel alignment and balance are very important considerations for safety and getting the 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 when the inside shoulder of the tire is 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

your tires show irregular wear, have your vehicle's alignment checked immediately.

TIRE WEAR – VISUAL CHECK



⚠ WARNING

Beware of Sudden Tire Vibration. *A tire failure may lead to loss of vehicle control, which could cause serious personal injury or death. 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. Pull over to a safe area as soon as possible and inspect the tires for signs of bulges, blisters, or separations. Seek roadside assistance or change the damaged tire with your spare tire.*

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

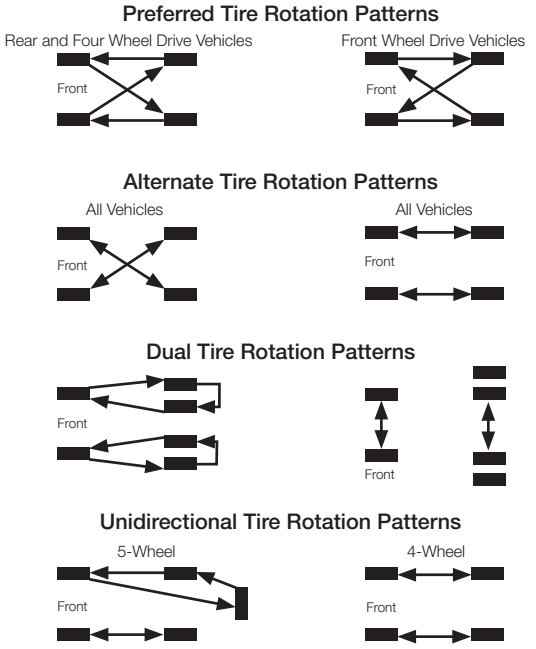
- When the tire failure occurs, you may hear a loud noise, or feel a vibration, and/or the vehicle may pull toward the side of the failed tire. Do not abruptly brake or turn.
- Maintain steady pressure on the accelerator pedal.
- Hold the steering wheel firmly and steer to maintain your lane position.
- Find a safe place to pull off the road and allow the vehicle to gradually 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 roadside 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 more uniform wear for all tires on a vehicle. Your tires should be thoroughly examined on a lift by a tire dealer for any abnormalities. If tires show uneven treadwear, ask the service person to check and/or correct any vehicle wheel alignment or other mechanical problem before rotation.

The following rotation patterns are acceptable. Please refer to your vehicle Owner's Manual for rotation advice.



Full-size spare tires (not temporary spares) of the same size, construction, and speed rating may be used in a five-tire rotation pattern.

After rotation, check the inflation pressure of all the tires. The front and rear tire pressures may vary according to the vehicle manufacturer's specifications.

TIRE SAFETY AND MAINTENANCE INFORMATION

Remember to follow your vehicle Owner's Manual for tire rotation intervals. Your Limited Warranty recommends Toyo brand 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 or a thorough vehicle inspection may be necessary if, upon inspection, irregular or erratic treadwear is beginning to appear.

It is important to remember the following:

- These tire rotation recommendations do not take into account different tire and construction types mixed on the vehicle.
- Some tires cannot be rotated in the manner described. Such tires include unidirectional tires. Unidirectional tread patterns must be rotated front-to-rear only so that 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.
- For 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 that limit the choice of rotation pattern. Consult the vehicle Owner's Manual.
- Do not include temporary spare tires in the rotation pattern. However, if your spare tire is the same size and type as a road tire (for LT tires of the same size, type, and load rating), 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, to use the appropriate rotation pattern shown, inserting the spare in the right rear position. Place the tire that would have gone to the right rear in the spare tire storage position as the new spare.
- Important! After rotation, adjust the pressure of the individual tires to the vehicle manufacturer's recommendation or the inflation pressure recommended 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 Tires dealer.

TIRE SPEED RATING

All Toyo Tires passenger, light truck, and truck tires have a maximum speed rating based on size and type. Tires must never be operated in excess of their rated speed limit! Consult your tire dealer or contact Toyo Tires (Pacific Time) if you are not sure about the maximum speed rating of your tires.

⚠ WARNING

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

Toyo Tires 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

High-speed driving with underinflated or overloaded tires may result in immediate tire failure, possibly leading to loss of vehicle control, which could cause an accident, including serious personal injury or death.

EXPLANATION OF TIRE SPEED SYMBOLS

Example: W=Speed Rating

A speed rating is designated by a letter that indicates the maximum speed capability of a tire. The speed rating of a tire is based on standards for reaching and sustaining a specified speed, and is determined via laboratory tests that simulate road performance at various speeds.

TIRE SAFETY AND MAINTENANCE INFORMATION

Tires may be marked with one of these speed symbols: M, N, P, Q, R, S, T, U, H, V, W, Y, or (Y) to identify the particular tire's speed rating. Additionally, the letter Z may appear in the size designation.

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

- Use the ranking in the following chart to compare the speed symbols of all the tires.
- 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 or higher speed rating. Remember, the "top speed" of the "lowest rated" tire on the car 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)**
(Y)	Over 186 mph (300 km/h)**

* 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 (e.g., 245/40ZR18). If the load index and the speed symbol are 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., 235/45ZR17 97W = maximum speed 168 mph [270 km/h]).

** Although no upper limit speed is specified, the indicated tires nonetheless have limited rated speed capability.

⚠ NOTICE

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

⚠ WARNING

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 reach a speed capable of disintegrating a tire with explosive force within a matter of seconds. Under some conditions, a tire may be spinning at twice the speed 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.

TOWING OR USE OF SLIDE-IN TRUCK CAMPERS

If you are towing a trailer or using a slide-in truck camper, refer to your vehicle Owner's Manual.

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.

⚠ WARNING

Studded tires may require longer braking distances on dry or wet paved surfaces. Failure to allow for adequate braking distance could result in serious personal injury or death.

- 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, do not exceed the lower-rated speed.
- Follow recommendations in the vehicle Owner's Manual for winter tires, studs, and chains.

- Consult your tire dealer, the Rubber Manufacturers Association or your state's Department of Transportation (DOT) for information regarding regulatory and seasonal restrictions for stud usage.
- Also see the "Tire Mixing" section in this manual for more details.
- Toyo Tires recommends that snow tires be installed in matched sets of four.

ADVERSE WEATHER DRIVING

Take special care when driving in adverse weather conditions.

- Rain and snow – 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. Three main factors 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 create 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 can result in a complete loss of traction and vehicle control. You should always reduce your speed with consideration for 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 for giving 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 more stopping distance on icy roads compared to dry road surfaces. Your ability to safely maneuver your vehicle in snow or ice conditions is considerably reduced if your tires are too worn to provide adequate road grip.

SAFE USE OF TEMPORARY SPARE TIRES

⚠ WARNING

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 and serious personal injury or death.

- The temporary spare tire is designed for temporary use only. It must not be used continuously as a standard tire. The temporary spare tire should be returned to the trunk as soon as it is convenient to have your standard tire repaired or replaced.
- The temporary spare tire should not be used for speeds exceeding 50 mph.
- 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.
- A full-size spare tire in your vehicle is intended for use as a spare when needed. Please see the "Tire Rotation" section for the proper procedures for including the same size construction and speed-rated tire (for LT tires of the same size, type, and load rating) in the rotation pattern. (Do not rotate a temporary spare tire.)

⚠ WARNING

Check inflation pressure before using your spare tire. Failure to have proper inflation pressure when using your spare tire may cause loss of vehicle control, which could result in serious personal injury or death. Maintain spare tire inflation pressures based on the vehicle Owner's Manual or the Tire Information Placard.

"T" Type high-pressure temporary spare tires 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. If you fail to follow this warning, 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 the proper use of your "temporary use" spare tire.

⚠ WARNING (continued)

Do not operate your vehicle with more than one temporary spare in use (this does not apply to a full size spare), and only operate it 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 harmful ozone-producing 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.

COMPETITION TIRE STORAGE

The rubber compounds used in these tires have unique properties that, when compared to other tires, can cause them to lose some of their flexibility when used or handled in conditions below 15°F (-9°C). This loss in flexibility can lead to potential cracking and other damage to the tire. To minimize the chances of this happening, you are advised to follow these instructions:

1. Do not move or operate the car with these tires in conditions below 15°F (-9°C).
2. Avoid moving these tires in conditions below 15°F (-9°C).
3. Before mounting and dismounting, store these tires for at least 24 hours in a temperature-controlled environment of 68°F (20°C) or warmer.
4. Remove these tires from the vehicle and deflate to half the normal air-pressure during prolonged periods of non-use or storage.

Always inspect tires for signs of cracking and never use tires that have cracked.

⚠ WARNING

Improper storage can damage your tires in ways that may not be visible and could lead to serious personal injury or death.

SPECIAL ADVICE FOR LIGHT TRUCKS

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

If you do not know the speed rating of your Toyo brand tire, contact your Toyo Tires dealer or Toyo Tire U.S.A. Corp. for current information.

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 mph 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).

REPLACEMENT TIRES FOR LIGHT TRUCKS – P-METRIC VS. LT-TRUCK

Tire installers should exercise extreme caution when replacing tires on light trucks.

The maximum load capacity stamped on the sidewall of a P-metric tire is reduced by a factor of 1.1 when used on a light truck, a sport utility vehicle, or a trailer.

⚠ WARNING

P-metric and LT-metric tires are not necessarily interchangeable. P-metric and LT-metric tires follow completely different Load/ Inflation tables and are designed to carry different loads at different pressures.

LT-metric tires carry their load at higher inflation pressures and do not always have adequate load capacity to replace P-metric tires of the same size.

After reducing a P-metric tire's load rating by dividing by 1.1 for fitment on a Light Truck, the P-metric tire may not offer sufficient load capacity to replace an LT-metric tire of the same size.

Contact your Toyo Tires dealer or Toyo Tires Technical Service for help determining how to choose a proper replacement size.

Driving with underinflated or overloaded tires may result in immediate tire failure, which can cause an accident and could lead to serious personal injury or death.

When a P-metric or metric tire is installed on a light truck (SUV, pickup, minivan), the load rating is reduced by dividing by 1.1. (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, the actual allowable load for the tire is 2805 lbs. (3086 lbs. divided by 1.1).

VEHICLES WITH MODIFIED SUSPENSION

⚠ WARNING

ROLLOVER HAZARD

Large-diameter tires and modified suspensions that increase ground clearance will alter vehicle handling.

- *The vehicle may become more likely to roll over.*
- *Braking distances may increase.*
- *Slower speeds may be required to maintain control.*

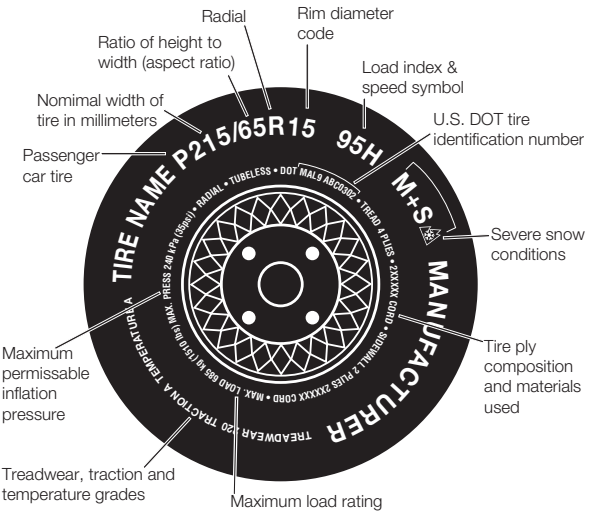
Drive with extreme caution until you become familiar with how your vehicle handles. Always wear your seat belt.

Some modifications may be illegal in your state. Consult your Owner's Manual, the instructions for this product, and state law before modifying your vehicle.

USEFUL TIRE INFORMATION

There is a lot of 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. The sidewall markings on passenger and light truck tires are slightly different.

TYPICAL PASSENGER TIRE

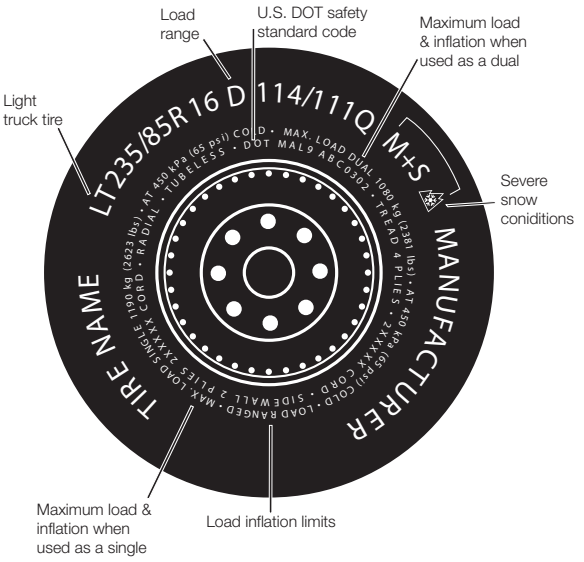


The letters “DOT” certify compliance with all applicable safety standards established by the U.S. Department of Transportation (DOT). Adjacent to this is a tire identification or serial number. This serial number is a code with up to 12 digits that are a combination of numbers and letters. The last characters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

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

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

TYPICAL LIGHT TRUCK TIRE



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 treadwear, 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 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 the 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.

⚠ NOTICE

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

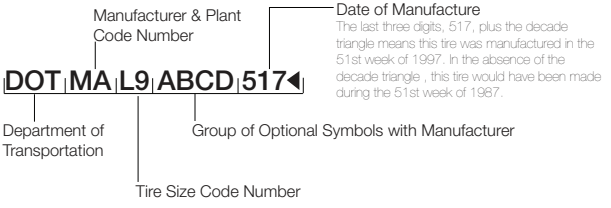
- Temperature - The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperatures can cause the materials 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 that 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

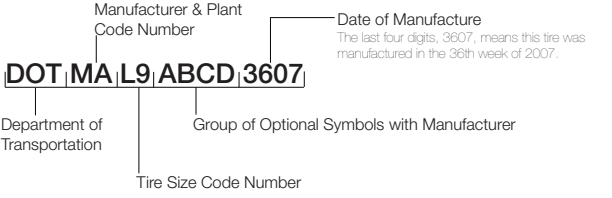
The temperature grade is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading either separately or in combination can cause heat buildup and possible tire failure. This can cause an accident, which could lead to serious personal injury or death.

- DOT Quality Grades - All passenger car tires must conform to federal requirements in addition to these grades.

DOT SERIAL NUMBER SYSTEM



(TIRES BUILT BEFORE 2000)



(TIRES BUILT SINCE JANUARY 1, 2000)

TIRE REGISTRATION

Your original equipment tires are registered through the vehicle manufacturer.

When you purchase replacement Toyo brand 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. Corp. provides a registration card at no charge to all Toyo Tires 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 it to the pre-addressed location on the form. Be sure to have your dealer complete their portion of the registration card at the time of purchase. The information contained in the registration card is an important means to notify you in the event of a product recall.

If you prefer, you may register your tires on our web page and select “Tire Registration.” Be prepared to provide the name and address of the dealer, the quantity of tires, and the DOT serial numbers from the sidewall of the tires.

IMPORTANT! If self-registering tires, make sure to include all letters and numbers (up to 12 digits) following the letters “DOT” on the tire’s sidewall near the bead. If you see only four letters next to the letters “DOT”, look on the other side of the tire for the full DOT number.