

**NITTO**

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**PASSENGER TIRE  
LIGHT TRUCK TIRE  
LIMITED WARRANTY  
AND OWNER'S MANUAL**

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EFFECTIVE DATE SEPTEMBER 2007



## SUMMARY OF LIMITED WARRANTY COVERAGE BY TREAD DESIGN

Pattern	Sizes	Mileage Warranty	Workmanship/ Materials Free Replacement Period	Warranty Duration
<b>A. Passenger</b>				
NT404™	All	None	First 25% worn	60 Months
NT420S™	All	None	First 25% worn	60 Months
NT450™	All	None	First 25% worn	60 Months
NT450™	15" & 16" Sizes	45,000	First 25% worn	60 Months
Neo Gen®	All	None	First 25% worn	60 Months
NT555™	All	None	First 25% worn	60 Months
Invo®	All	None	First 25% worn	60 Months
NT555R™	All	None	First 25% worn	60 Months
NT555R11™	All	None	First 25% worn	60 Months
NT01™	All	None	First 25% worn	60 Months
<b>B. Light Truck</b>				
Dura Grappler™	All	None	First 25% worn	60 Months
Dura Grappler™	"Dura-Belt™" Marked Sizes	45,000	First 25% worn	60 Months
Dura Grappler™	P-metric & Metric Sizes	60,000	First 25% worn	60 Months
Terra Grappler™	All	None	First 25% worn	60 Months
Dune Grappler®	All	None	First 25% worn	60 Months
Mud Grappler™	All	None	First 25% worn	60 Months



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NITTOTIRE.COM

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## ELIGIBILITY

You are covered under the terms of a limited warranty from Nitto® for the tire(s) you purchased if you are the original retail purchaser of any new Nitto® tire described in this limited warranty bearing the Nitto® brand name and Department of Transportation (D.O.T.) identification number. Limited warranty benefits are extended only to tires used on the vehicle on which they were originally installed. The D.O.T. serial number will be used to determine date of manufacture. It does not require the presence of a manufacturing anomaly in order to qualify for adjustment.

- A. In order to claim limited warranty benefits, the tires must be:
- Presented for inspection to an authorized Nitto® tire dealer
  - The correct size and load range for the make and type of vehicle
  - Used with correct air pressure either as described by the vehicle manufacturer's recommendations, the vehicle's Tire Information Placard or revised requirements for optional fitments
- B. In order to be eligible for limited warranty benefits, you must present your original purchase receipt, and this limited warranty booklet. The completed Tire Installation Record on page B and Tire Service Record on page C must be included. The time and place of tire rotations at 3,500-mile intervals or less for ultra high performance (low profile) tires or 7,500-mile intervals or less for standard passenger and light truck tires must be verifiable. See page 20 "Tire Rotation" for specific pattern requirements.
- C. See "What is Not Covered by this Limited Warranty" for conditions that are not covered. (Page 4-6)
- D. See "Limitations and Exclusions" for important information concerning limitations and exclusions on this Limited Warranty (Page 7).
- E. Adjustments are calculated by dividing the number of 32nds of an inch used by the original usable tread depth and multiplying by the actual current dealer selling price. The original usable tread is the original tread down to the level of the tread wear indicators (2/32nds remaining). Service charges or any applicable taxes are payable by you.
- F. Tires purchased before September 2007 are covered under a different limited warranty. See your Nitto® Dealer for more information.
- G. All limited warranty claims are subject to verification by Nitto® and/or your Nitto® Tire Dealer.

## WHAT IS COVERED BY THIS LIMITED WARRANTY AND FOR HOW LONG?

**Important:** In accordance with Federal Law, this warranty has been designated as a "Limited Warranty". Nothing in

this limited warranty is intended to be a representation that tire failures cannot occur.

## **1. Workmanship or Materials – this limited warranty covers against defects in workmanship and materials for new Nitto® tires as follows:**

### **A. Passenger**

**NT450™, NT404™, NT420S™, NT555™, Neo Gen®, Invo®, NT555R®, NT555RII™, NT01™**

If an examination by Nitto® shows that the tire(s) specified do not conform to this limited warranty, it will be replaced with a comparable new Nitto® brand tire by an authorized Nitto® tire dealer as follows:

- Nitto® will replace a tire submitted for uniformity problems like out of round; out of balance; pulling or noise complaints within the first 1/32nd of tread use (A set of four or more will not be considered due to the unlikely event of multiple tires with uniformity problems)
- When 25% or less of the original usable tread has been worn, the tire will be replaced with a new Nitto® tire free of charge. Mounting and balancing, service charges or any applicable taxes are payable by you.
- When *more than* 25% of the original usable tread has been worn, you must pay for the cost of a replacement tire based on the amount of tread used. Mounting and balancing, service charges or any applicable taxes are payable by you.
- Limited warranty duration is the life of the original usable tread (down to 2/32" remaining), or for 60 months from the date of purchase (as verified by a copy of the original purchase invoice), which ever comes first. In the event the original purchase invoice is unavailable, the D.O.T. serial number will be used to determine eligibility.

### **B. Light Truck**

**Dura Grappler™, Terra Grappler™, Dune Grappler®, Mud Grappler™**

If an examination by Nitto® shows that the tire(s) specified do not conform to this limited warranty, it will be replaced with a comparable new Nitto® brand tire by an authorized Nitto® tire dealer as follows:

- Nitto® will replace a tire submitted for uniformity problems like out of round; out of balance; pulling or noise complaints within the first 1/32nd of tread use (A set of four or more will not be considered due to the unlikely event of multiple tires with uniformity problems)
- When 25% or less of the original usable tread has been worn, the tire will be replaced with a new Nitto® tire free of charge. Mounting and balancing, service charges or any applicable taxes are payable by you.

- When *more than* 25% of the original usable tread has been worn, you must pay for the cost of a replacement tire based on the amount of tread used. Mounting and balancing, service charges or any applicable taxes are payable by you.
- Limited warranty duration is the life of the original usable tread (down to 2/32" remaining), or for 60 months from the date of purchase (as verified by a copy of the original purchase invoice), which ever comes first. In the event the original purchase invoice is unavailable, the D.O.T. serial number will be used to determine eligibility.

## 2. Treadwear (Mileage) Limited Warranty

A. The Nitto® tires listed in the following chart are expected to achieve an original treadwear life as indicated when used in non-commercial service and normal paved highway use depending on the tread pattern description.

<b>NT450™</b>	15" & 16" sizes only	45,000 miles
<b>Dura Grappler™</b>	Dura-Belt™ sizes ("Dura-Belt™" marking on sidewall)	45,000 miles
<b>Dura Grappler™</b>	P-Metric/ Metric sizes	60,000 miles

B. In the event the tires wear evenly across the tread, down to the treadwear indicators (2/32" remaining tread depth) before reaching the covered mileage, the tire(s) will be replaced with a comparable Nitto® tire for a pro-rated charge based on mileage received as follows:

- The consumer must pay for the cost of a replacement tire based on the amount of mileage received on the tires, when returned for adjustment consideration. The authorized Nitto® dealer will determine the charge by multiplying the percent of mileage received by the dealer's actual, current selling price of the Nitto® replacement tire.
- The cost of mounting, balancing and any other dealer service charges or applicable taxes are payable by you.
- See Section 3 below for what is not covered.

## 3. What Is Not Covered By Your Nitto® Tire Limited Warranty

- (1) Damage due to road hazards whether repairable or not (such as cut, snag, bruise, impact break, bulge, puncture; improper use of tire chains; stone drill, chip, scale). These types of damages or air loss always require tire removal and inspection by a qualified tire professional.
- (2) Irregular tread wear or rapid tread wear due to failure to rotate the tires at Nitto®'s recommended intervals, upon observation of erratic wear, or from vehicle misalignment.
- (3) Damage resulting from improper repair materials or procedures

such as rope type plugs. Nitto® does not warrant any inspection or repair process. The repair is entirely the responsibility of the repairer and should be made in accordance with established Rubber Manufacturers Association (RMA) tire repair procedures.

- (4) Damage from incorrect mounting or dismounting of the tire; incorrect wheel size; water or other material trapped inside the tire during mounting or failure to keep the tires balanced.
- (5) Damage or uneven tread wear from incorrect inflation, overloading, fire, theft, defective mechanical conditions such as brakes, shocks, rims, wreck or collision, misuse, misapplication, negligence, willful damage, abuse, vandalism, tire alteration, tire spinning, racing or competition purposes.
- (6) Damage, corrosion or rubber deterioration due to the use of oil-based chemicals, water-based sealers, balancing substances, or flammable gases.
- (7) Retreaded and used (not purchased as new) passenger and light truck tires are not warranted.
- (8) Uniformity problems such as ride, balance and vibration complaints after the first 1/32 inch of tread wear.
- (9) Replacement of four (4) or more tires from the same vehicle will not be accepted for ride disturbance complaints i.e. vibration; out of round, out of balance, pulling, noise, due to the unlikely event of multiple tires with uniformity problems.
- (10) Any tire which has been run with low air pressure or while flat.
- (11) Tires purchased and/or used outside the contiguous United States.
- (12) Passenger tires used on pick-up trucks with campers.
- (13) Tires used in commercial service.
- (14) Claims for weather/ozon cracking after 5 years from the date of manufacture.
- (15) Tires on vehicles regularly operated outside the contiguous United States.
- (16) Mileage claims for tires used on unpaved surfaces, or off-the-road service, or in any application not recommended by the vehicle or tire manufacturer.
- (17) Claims made by anyone other than the original retail purchaser for use of the tire.
- (18) Tires with the D.O.T. identification number removed or rendered illegible.
- (19) Any tire not presented and available for Nitto®'s inspection.
- (20) Tires submitted for a mileage adjustment that have worn out

unevenly and/or show a difference of 2/32" between major tread grooves or between front and rear sets.

- (21) Any tire for which mileage and tire rotation records are not available or verifiable.
- (22) Any tires worn beyond the treadwear indicators (less than 2/32" remaining tread).
- (23) Dealer service charges are not covered for routine or required maintenance of the tires such as alignments, rotation or balancing.
- (24) The cost of applicable federal, state and local taxes.

#### **4. Consumer's Obligation To Maintain Limited Warranty Coverage**

The consumer is responsible for proper tire care and maintenance:

- (1) Tires must be rotated as follows:
  - a) Every 3,500-miles or less for ultra high performance (low profile) tires: **NT450™**, **Neo Gen®**, **NT555™**, **Invo®**, **NT555R™**, **NT555RII™**, **NT404™**, **NT420S™**
  - b) Every 7,500-miles or less for standard passenger and light truck tires: **Dura Grappler™**, **Terra Grappler™**, **Dune Grappler®**, **Mud Grappler™**

More frequent rotation may be necessary if, upon observation, irregular or erratic tread wear is beginning to appear. As a general rule Nitto® recommends that, front and rear tire tread depth differential should be kept to 2/32<sup>nd</sup>" or less. Keep a record of the rotation in the TIRE SERVICE RECORD on page C of this limited warranty booklet.

- (2) The consumer must maintain the recommended air pressure in the tires according to the vehicle manufacturer's recommendation or recommended air pressure by Nitto® Tires for an optional fitment. Check tire inflation pressure level, including the spare tire, at least once a month. Maintaining proper inflation pressure is the single most important thing you can do to ensure tire durability and maximum tread life. To avoid injury, NEVER attempt to re-inflate a tire that has been run severely underinflated.
- (3) The consumer must maintain the vehicle's alignment in accordance with the manufacturer's specifications, or revised alignment specifications for 'plus' fitments (Consult your tire retailer).
- (4) The load capacity of the tires must not be exceeded.
- (5) The tire's maximum speed capability must not be exceeded.
- (6) The consumer must provide the original purchase invoice (the D.O.T. serial number will be used to determine eligibility in the absence of the original invoice.)



## 5. Limitations And Exclusions

THIS LIMITED WARRANTY APPLIES ONLY IN THE CONTIGUOUS UNITED STATES, EXCLUDING ALASKA, HAWAII AND PUERTO RICO AND IS THE ONLY WRITTEN WARRANTY PROVIDED BY NITTO®. No Nitto® employee, representative or dealer has the authority to make or imply any representation, promise or agreement, which in any way varies the terms of this limited warranty.

**LIMITATION AND EXCLUSION ON DAMAGES:** NITTO® SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY, (including, for example loss of time, loss of use of vehicle, towing charges, road service or inconveniences). Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions may not apply to you.

**Your Rights Under State Law:** This limited warranty gives you specific legal rights; and you may also have other rights, which vary from state to state.

## 6. To Make A Claim Under This Limited Warranty

In the event that you make a claim under the terms of this limited warranty, you must:

- (1) Present your tires, your vehicle, the original copy of this limited warranty and original purchase receipt to an authorized Nitto® tire dealer.  
(Call consumer relations at (888) 529-8200 if you need assistance locating a dealer or logon to [www.nittotire.com](http://www.nittotire.com)).
- (2) Your limited warranty booklet must include the completed TIRE INSTALLATION INFORMATION and TIRE SERVICE RECORD, showing the time and place of tire rotations at 3,500-mile intervals or less for ultra high performance (low profile) tires or 7,500-mile intervals or less for standard passenger and light truck tires. (See page 6)
- (3) Complete and sign the Nitto® Tire Limited Warranty Claim form provided by the dealer, keep a copy for your records and leave the tire with the dealer.
- (4) Adjustments will be determined based on the limited warranty that was in effect when the tire was purchased, as verified by the original purchase invoice.

## 7. Contact Information

FOR FURTHER ASSISTANCE

Contact your authorized Nitto® tire retailer or call Nitto® Consumer Relations at **(888) 529-8200** (Pacific Time).

Nitto® Tire North America, Inc., 6021 Katella Ave., Suite 250, Cypress, California 90630, gives this limited warranty.

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# 1. IMPORTANT SAFETY INFORMATION REGARDING NITTO® TIRES



Nitto® 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.

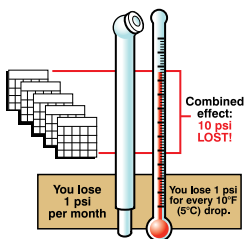
## Important factors in tire care are:

- 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.

## 2. TIRE PRESSURE BASICS

### Why Tires Lose Pressure.



**Tires can lose one psi (pounds per square inch) per month under normal conditions.** Additionally, tires can lose 1 psi for every 10°F temperature drop.

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:

TIRE AND LOADING INFORMATION			
SEATING CAPACITY - TOTAL 5 FRONT 2 REAR 3			
THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED 392 KG OR 865 LB			
TIRE	FRONT	REAR	SPARE
ORIGINAL TIRE SIZE	P225/60R18	P225/60R18	T145/80D18
COLD TIRE INFLATION PRESSURE	207 kPa, 30 PSI	207 kPa, 30 PSI	420 kPa, 60 PSI
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION			6H249111

**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.

### 3. 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.

- Remove tire valve cap.
- Place the end of the tire gauge over valve.
- Press the tire gauge straight and firmly until the scale extends.
- If needed, add air and recheck pressure with the tire gauge.
- 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.

#### 4. 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 Nitto® 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.

#### 5. VEHICLES EQUIPPED WITH LOW TIRE PRESSURE MONITORING SYSTEMS (TPMS)

**Even if your vehicle is equipped with a low 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 low pressure monitoring system alarm is displayed you should immediately pull over to a safe parking area and check for a leaking, underinflated, or flat tire.**

#### 6. 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 Nitto® Tire 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 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 Nitto® 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 Nitto® dealer immediately if any condition is discovered.**

## 7. 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?

## 8. WORN OUT TIRES ARE DANGEROUS!

Tires should be replaced when tread is worn to 2/32". Treadwear indicators on Nitto® 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.

Nitto® recommends that tires be replaced in matched sets of four.

## 9. TIRE REPAIRS – SEE NITTO® AUTHORIZED DEALER IMMEDIATELY

**Before having your tire repaired, tell your authorized Nitto® 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 Nitto® 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 ¼ 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, tire must be removed from wheel 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 Nitto® 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.

**Nitto® 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 ¼ 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.**

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

<u>ORIGINAL SPEED RATING</u>	<u>AFTER PUNCTURE REPAIR</u>
<b>Y,W,Z,V,VR, H</b>	<b>H (Maximum speed 130 MPH)</b>
T	T
S	S

Nitto® 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 Nitto® Tire North America, Inc., for any reason. Nitto® Tire North America, Inc., speed ratings are voided for retreaded tires.

## 10. 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. 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 O.E. 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.**

## 11. 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 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 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 Nitto® 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](http://www.rma.org)).**

**4. Exceeding the maximum bead seating pressure. 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!**

## 12. 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 Nitto® tire dealer for proper tire replacement.

- **Nitto® Tire North America, Inc., 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.



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 should be installed on the rear axle unless the new replacement tires are of a lower speed rating. 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.

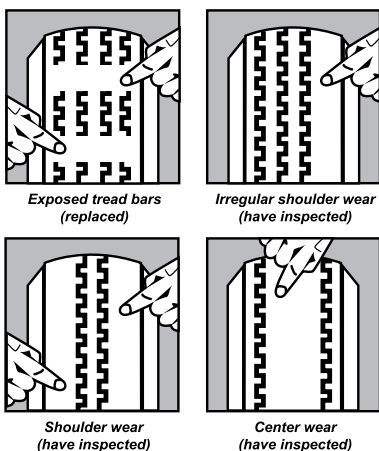
**REPLACING ONE (1) TIRE** – Replacing a single tire on a vehicle can have an adverse affect on suspension systems, gear ratios, transmission, and tire treadwear. If single tire replacement is unavoidable, it is recommended that the single new tire be paired with the tire that has the deepest tread depth 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.

### 13. 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.

### 14. 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, change the damaged tire with your spare, or go at reduced speeds directly to the nearest auto service facility to have the tires inspected.

It is not often that a properly maintained tire will “blow out” while you are driving. More commonly, if air is lost, it will be gradual. 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!
- Bring your vehicle to a tire retail shop for inspection without delay.

## 15. 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 NITTO® TIRES TO BE ROTATED AS FOLLOWS:

- Every 3,500 miles or less for ultra 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.**

The rotation patterns shown on Page 21 are acceptable. Please refer to your vehicle owner's manual for safety specifications regarding tire rotation advice.

IMPORTANT to remember the following:

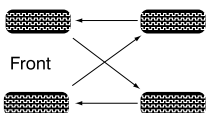
- These tire rotation recommendations do not take into account different tire types mixed on the vehicle. **Do not mix radials and bias ply tires on the same vehicle.**
- **Some tires cannot be rotated in the manner described.** Such tires include uni-directional tires and tires with asymmetric tread designs. Unidirectional tread patterns must be rotated front-to-rear only so the direction of revolution does not change.
- **Some vehicles are designed with a 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 Nitto® Tire** 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 Nitto® dealer.

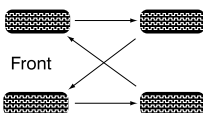
## TIRE ROTATION CHART

### Preferred Rotation Patterns

Rear and 4WD Vehicles

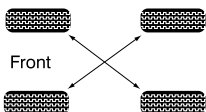


Front Wheel Drive Vehicles

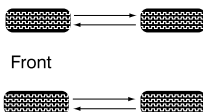


### Alternate Rotation Patterns

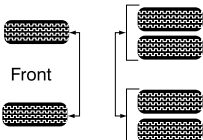
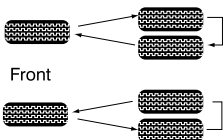
All Vehicles



All Vehicles

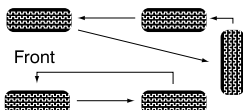


### Dual Wheel Rotation Patterns

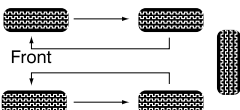


### Unidirectional Tire Rotation Pattern

5-Wheel



4-Wheel



## 16. 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 Nitto® passenger, light truck, and truck tires have a maximum speed rating depending on size and type. Consult your tire dealer or contact Nitto® Tire at (888) 529-8200 if you are not sure about the maximum speed rating of your tires. Nitto® Tire North America, Inc., 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.**

## 17. EXPLANATION OF TIRE SPEED SYMBOLS

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 **(888) 529-8200** 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.**

## 18. 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.

## 19. TOWING OR USE OF SLIDE-IN TRUCK CAMPERS

**IMPORTANT: Towing Considerations: Never exceed your tow vehicles “Tow Rating” or “Towing Capacity”. Manufacturer’s tow ratings, and consequently the originally installed tire load ratings address tongue weight, as well as the individual, combined, and fully loaded weights at which a vehicle can safely tow a trailer. To ensure you don’t exceed the tow vehicles towing capacity, GAWR, GVWR or the GCWR (Gross Combination Weight Rating), the fully loaded tow vehicle and trailer must be weighed. WARNING! For safe tire operation it is essential to maintain recommended inflation pressure when towing! Proper air pressure for your tow vehicle’s tires is found on the vehicle’s tire information placard. Always refer to the vehicle owner’s manual for additional information on towing.**

**IMPORTANT: Slide-in Truck Campers.** Installed tires may not provide sufficient load capacity for the weight of a truck camper loaded with all its contents. **WARNING!** Never exceed the GAWR or the GVWR of the vehicle! The correct inflation pressure is found on the vehicle’s tire information placard. Nitto® recommends that the fully loaded truck and camper with all its contents be weighed by individual wheel position to insure that the loads do not exceed the tire’s load capacity. Contact Nitto® Consumer Relations at: (888) 529-8200 (Pacific time) for further information.

## 20. 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 for information regarding regulatory and seasonal restrictions for stud usage.
- Also see section "12. Tire Mixing" of this manual for more details



**Nitto® 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.**

## 21. 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.

## 22. TEMPORARY USE OF SPARE TIRES FOR SAFETY



The spare tire in 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.

## 23. 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)

## 24. 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 in this manual on page 22.**

### **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.

## 25. 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 Nitto® Technical Service with any tire replacement questions: (888) 529-8200.

## 26. 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.**

## 27. 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. 109. 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.

### •D.O.T. 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 Nitto® Tire Dealer or Nitto® Tire North America, Inc. at (888) 529-8200.

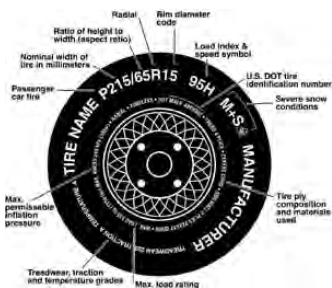
**For more safety information, visit our website:**

**<http://www.nittotire.com/safety>**

## 28. 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 (D.O.T.). 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 D.O.T. 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 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.**

## 29. TIRE REGISTRATION

Your original equipment tires are registered through the vehicle manufacturer.

When you purchase replacement Nitto® tires, the seller is required by the National Highway Traffic Safety Administration to present you with a tire registration form. Nitto® Tire North America, Inc., provides a registration card at no charge to all Nitto® 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.nittotire.com](http://www.nittotire.com), select "Tire Registration". Be prepared to provide Dealer name and address; quantity of tires, and D.O.T. 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 D.O.T. number.

#### FOR SERVICE ASSISTANCE OR INFORMATION

- Contact your nearest Nitto® Tire Dealer.
- If you need assistance locating a Nitto® Tire dealer please contact our Consumer Relations Department toll free at (888) 529-8200.

We can be reached in writing at:

Nitto® Tire North America, Inc.  
6021 Katella Ave., Suite 250  
Cypress, California 90630

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# TIRE INSTALLATION INFORMATION

To be completed at time of purchase

Date: \_\_\_\_\_ Odometer: \_\_\_\_\_

## **Customer Information:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone No: \_\_\_\_\_

## **Vehicle Information:**

Year: \_\_\_\_\_ Make/Model: \_\_\_\_\_

Tire size/design: \_\_\_\_\_

## **Recommended Tire Pressure:**

Front: \_\_\_\_\_ PSI

Back: \_\_\_\_\_ PSI

DOT No.:

Tire #1: \_\_\_\_\_

Tire #2: \_\_\_\_\_

Tire #3: \_\_\_\_\_

Tire #4: \_\_\_\_\_

Tire #5: \_\_\_\_\_

Tire #6: \_\_\_\_\_

Tire #7: \_\_\_\_\_

Tire Removal Information:

Date: \_\_\_\_\_ Odometer: \_\_\_\_\_

Dealer Name: \_\_\_\_\_

Dealer Address: \_\_\_\_\_

\_\_\_\_\_  
Dealer Signature: \_\_\_\_\_

## **IMPORTANT**

**TIRE OWNER – KEEP THIS PAGE AS PART OF YOUR WARRANTY**

(1) The information on this page must be completed to validate any warranty claim.

(2) In the event of a warranty claim, this page must be attached to the Nitto standard claim form.



To Mail:  
Place  
Stamp  
Here

**NITTO TIRE NORTH AMERICA, INC.**  
**PO BOX 6064**  
**CYPRESS CA 90630-6064**

# IMPORTANT

In case of recall, we can reach you only if we have your name and address. You **MUST** send in this card or register via [www.nittotire.com](http://www.nittotire.com) to be on our recall list.

To Mail: Affix Postcard Stamp to Reverse Side

Do it Today!      Date of Sale    /    /

CUSTOMER'S NAME (Please Print)	
CUSTOMER'S ADDRESS	
CITY	STATE      ZIP

SELLER COMPLETE (Can be Rubber Stamped)

SELLER'S NAME	
SELLER'S ADDRESS	
CITY	STATE      ZIP

OMB APPROVED    OMB NO 2127-0050

SHADED AREAS MUST BE FILLED IN BY SELLER

Register ONLY tire brand printed below



Seller Complete

## TIRE IDENTIFICATION NUMBERS

QTY	1	2	3	4	5	6	7	8	9	10	11	12