

**TOYO TIRES**<sup>®</sup>  
*driven to perform*<sup>®</sup>



**Commercial Truck**

Toyo Tires heavy-duty truck radials are designed to deliver unmatched durability, reliability, uniformity, and retreadability.

We're in business to help keep your business strong. With tires being the second highest expense (after fuel), the brand you select is a critical decision.

It's a decision that affects everything from the comfort and safety of your drivers to the profitability of your operation, including how many retreads you will see. We know you need three things from our tires – mileage, mileage, mileage.

Here's how we deliver.

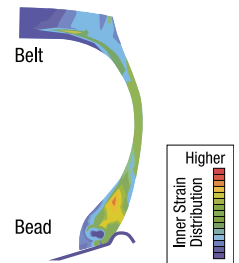


Toyo Tires e-balance™ technology for commercial truck tires improves fundamental performance characteristics and their compatibility with one another.



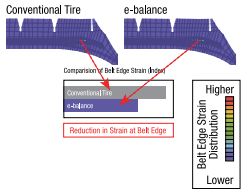
These performance characteristics are tire life, irregular wear resistance, endurance, and fuel consumption. All of these improvements help to lower fleet operating costs and make e-balance™ tires more environmentally friendly.

The technologies of e-balance™ incorporate improvements in the areas of tread profile retention, bead profile retention, and overall simulation for optimum tire design.

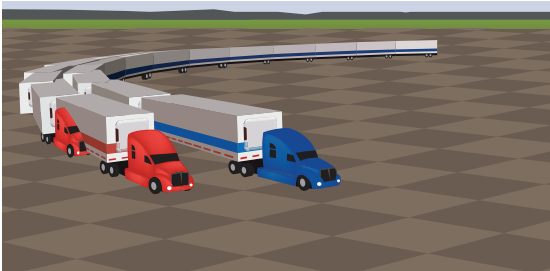


## Tread Profile Retention

Tires that utilize e-balance™ exhibit improved tread profile retention, meaning less surface growth compared to conventional tires. The flatter tread radius provides an optimized footprint shape resulting in even wear, less irregular wear, and longer life. Strain at the belt edge is reduced by approximately 30%, which also helps to improve tread profile retention.



## Simulation of Vehicle Behavior

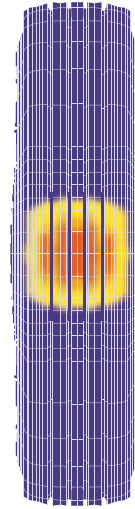
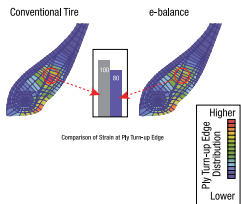


*Blue Truck: e-balance*  
*Red Truck: without e-balance V:40km/h Steering Angle 90°*

The e-balance™ tire has better handling performance than the tire without e-balance™.

## Bead Profile Retention

Tires that utilize e-balance™ have higher bead stiffness to achieve improvements in bead profile retention. This leads to a reduction in irregular wear and an improvement in endurance. The bead area profile is retained even after service. Increased bead stiffness is achieved through the use of a high-stiffness bead core, which is then surrounded by high-stiffness rubber. A low heat build-up rubber is also used in the bead filler area. Strain at the ply turn-up edge is reduced by approximately 20% over conventional tires.



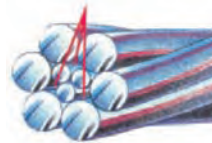
## Simulated Design Technology

DSOC II™ Technology (Dynamic Simulation Optimized Contact) is a Toyo Tires exclusive for simulating twists, bends, flexes and what-ifs under application-specific driving and road conditions. We analyze force, strain, shape and footprint under inflation and load. It's how we predict durability, treadwear, retreadability and low rolling-resistance before the first tire mold is made.

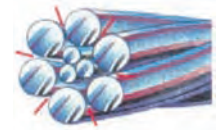


## Long Casing Life

Our High Tensile and Open Cord Construction for casing and belts keeps moisture and oxygen from entering the cord bundle to combat corrosion. The result is less fatigue, longer casing life, and higher retreadability.



*Non-Toyo Tires:  
Room for air*



*Toyo Tires: Improved  
rubber penetration*

## Maximum Retreadability

A corrosion-resistant belt package ensures an easy, effective retread. Our belt defender rubber compound helps to protect the third and fourth belts from corrosion migration caused by nicks and cuts. With belt defender, you will see higher casing acceptance and a lower total cost-per-mile.

## Durability and Wear

Tough and durable four-belt design is another key feature of Toyo Tires heavy-duty radials. It helps protect the tire against cutting, chipping and impact breaks. It also stabilizes the tread surface for longer wear as an extra measure of quality and protection.

## Global Production

Toyo Tires' global production capabilities continue to produce the best truck tires possible, using state-of-the-art technology and the finest workforce in the world.



## The Longest Warranty

We believe so strongly in our quality that we offer a 66-month limited warranty on our entire truck tire line. It includes casing allowances for two retreads and a retread rubber allowance for the first cap. Our warranty is yet another reason why Toyo Tires is the right choice. Contact your local Toyo Tires Regional Sales Representative for additional details.

## Glossary

### Tread Patterns

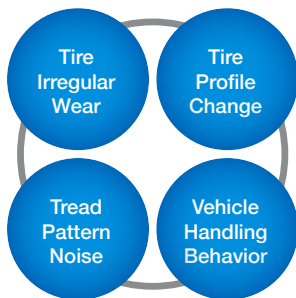
There are four basic tread patterns that are used for truck and bus lines. Each one is suited for a particular application.

- Rib** A pattern that has grooves that continue around the tire in the direction of rotation. Well suited for operating on paved surfaces. An example of this pattern is the Toyo Tires M122™.
- Lug** A pattern that has lateral grooves at a right angle from the direction of rotation. Used for vehicles that travel unpaved roads. A lug-pattern example is the Toyo Tires M506Z™.
- Rib-Lug** A pattern that has rib-style grooves in the center of the tire and lugs on the shoulders. Mainly used for on/off-road applications. An example of the rib-lug pattern is the Toyo Tires M320Z™.
- Block** A pattern that is composed of independent blocks. Ideal for drive-axles on highway vehicles. With the addition of small sipes, this tread pattern can also be used for snow tires. An example of the block pattern is the Toyo Tires M657™.

# Glossary

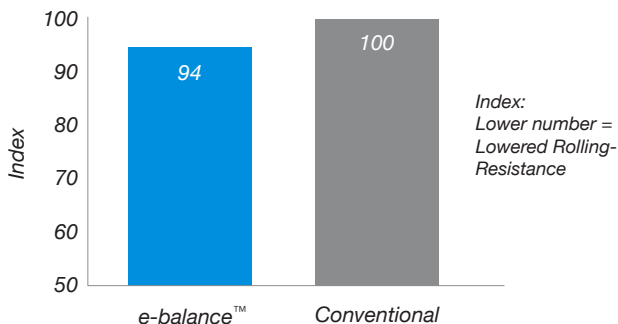
## Simulation

There are four simulation technologies utilized in e-balance™. These are irregular wear, tire profile change, tread pattern noise and vehicle handling behavior. All of these areas are analyzed with careful consideration as to how each affects the other. This simulation technology allows for optimization of tire design with much higher accuracy than was possible before.



## Rolling-Resistance

e-balance™ vs. conventional



Test tire: 11R22.5 rib type  
Test results at 60km/h

# Warranty

## The Toyo Tires Casing Warranty

For casings of an Eligible Tire within the Warranty Period, Toyo Tires will do the following:

If the casing of an Eligible Tire with at least 2/32" remaining tread depth becomes unserviceable during the Warranty Period due to a warrantable condition within the first or second retread, you will receive the applicable casing allowance specified below. The number of retreads must be identified on the sidewall of the Eligible Tire.

| Casing Allowances by Size          | 1st Retread | 2nd Retread |
|------------------------------------|-------------|-------------|
| 245/70R17.5                        | \$40.00     | \$20.00     |
| 215/75R17.5; 245/70R19.5           | \$40.00     | \$20.00     |
| 235/75R17.5                        | \$40.00     | \$20.00     |
| 265/70R19.5; 285/70R19.5           | \$40.00     | \$20.00     |
| 8.25R20; 9R22.5                    | \$40.00     | \$20.00     |
| 265/75R22.5; 245/75R22.5           | \$40.00     | \$20.00     |
| 9.00R20; 10R22.5; 10.00R15         | \$50.00     | \$25.00     |
| 255/70R22.5; 275/70R22.5; 10.00R20 | \$50.00     | \$25.00     |
| 11.00R20; 12R22.5                  | \$50.00     | \$25.00     |
| 12.00R20                           | \$50.00     | \$25.00     |
| 11R22.5                            | \$110.00    | \$80.00     |
| 295/80R22.5                        | \$110.00    | \$80.00     |
| 295/75R22.5                        | \$110.00    | \$80.00     |
| 11R24.5                            | \$110.00    | \$80.00     |
| 285/75R24.5                        | \$110.00    | \$80.00     |
| 385/65R22.5                        | \$110.00    | \$80.00     |
| 425/65R22.5                        | \$110.00    | \$80.00     |
| 305/70R22.5                        | \$110.00    | \$80.00     |
| 315/80R22.5                        | \$110.00    | \$80.00     |

If the casing of an Eligible Tire with at least 2/32" remaining tread depth becomes unserviceable due to a warrantable condition during the first retread within the Warranty Period, in addition to the casing allowance described above, you will also receive the applicable rubber allowance specified below.

| Remaining Tread Depth | Rubber Allowance |
|-----------------------|------------------|
| 15/32" or more        | \$50.00          |
| 8/32" to 14/32"       | \$30.00          |
| 7/32" or less         | No Allowance     |

For complete warranty details, please refer to:  
[ToyoTires.com/tbr/customer-care/warranty-information](http://ToyoTires.com/tbr/customer-care/warranty-information)

We are proud to manufacture  
EPA SmartWay  
and CARB Compliant  
Verified Technologies.

**TOYO TIRES**  
*driven to perform*



**M137™**  
A PREMIUM  
OVER-THE-HIGHWAY  
STEER TIRE

- Improved irregular wear resistance.



**M144™**  
A PREMIUM  
STEER RADIAL

- Improved mileage performance.



**M177™**  
A NEW PREMIUM  
REGIONAL STEER TIRE

- Improved rolling resistance.



**M657™**  
A PREMIUM LONG-HAUL  
HIGHWAY DRIVE TIRE

- Improved tire life.
- Improved fuel consumption.



**M157™**  
A PREMIUM FREE-  
ROLLING AXLE RADIAL

- Improved endurance.



## This company manufactures:

- EPA SmartWay verified technologies
- Verified equipment for SmartWay Certified Tractors, and/or,
- Verified equipment for SmartWay Certified Trailers

As a result, we assist SmartWay partners with meeting their goals of energy efficiency and emissions reductions.

Learn more about....

**SmartWay**  
[www.epa.gov/smartway](http://www.epa.gov/smartway)

## What is SmartWay?

The SmartWay verified technologies program identifies products and services that reduce transportation-related emissions, including low rolling-resistance tires. [www.epa.gov/smartway](http://www.epa.gov/smartway)

## New Regulations

The California Air Resources Board (CARB) requires all 2011 model year and newer day cab tractors that pull 53-foot or longer box-type trailers to run on low rolling-resistance tires that have been verified on the EPA's list of SmartWay verified technologies.



The fuel-saving and/or emission-reducing benefits of our type of equipment has been verified by EPA's SmartWay program. SmartWay Certified Tractors and/or SmartWay Certified Trailers are equipped with verified technologies.

# Steer Position

## M137™

### Premium High-Performance Steer Radial

Premium over-the-highway steer tire designed for use in long-haul applications. Top differential groove and tread depth are optimized to minimize irregular wear and to maximize miles per 32nd. New e-balance™ technology improves profile retention while reducing strain at the belt and ply turn-up edges.



EPA SmartWay  
verified technologies.



Toyo's technology  
for truck tires.

## M154™

### Premium Regional/All-Position Steel Radial

Built using Toyo Tires e-balance™ technology, the M154™ is a premium steer tire designed specifically for regional driving. Product features include a stiffer belt package, stiffer bead construction, and optimization through computer simulation technology - resulting in better performance and improved fuel economy. It also provides exceptional value with a full 22/32nd tread depth (in most sizes) - addressing the demands of regional use and higher-scrub applications.



Toyo's technology  
for truck tires.

## M144™

### Premium Steer Radial

Built using Toyo Tires e-balance™ technology, the M144™ is a regional steer tire developed to deliver high mileage. Capable of being used in all positions, it provides highly competitive, low-cost mileage performance and better retreadability.



EPA SmartWay  
verified technologies.



Toyo's technology  
for truck tires.

## M177™

### Premium Long Regional Steer Radial

The M177™ is a premium EPA SmartWay verified, low rolling resistance steer radial tire designed for use in long haul applications. Created using e-balance™ technology, its optimized casing profile is designed to minimize irregular wear, to maximize miles per 32nd and to reduce strain energy at the belts and ply turn-up edges. It offers excellent durability and low rolling resistance using a top differential groove and new tread profile. It shows a 20% improvement in rolling resistance compared to its predecessor.



EPA SmartWay  
verified technologies.



Toyo's technology  
for truck tires.



# Steer Position

## M170™

### Premium Regional Steer Radial

The M170™ is a regional steer tire. e-balance™ technology provides improved bead durability and reduced irregular wear, for a longer and smoother drive.



*Toyo's technology for truck tires.*

## M147™

### Premium Steer Radial

A true premium steer radial designed for over-the-road use. It can also be used for regional to long haul, drive, and trailer applications. Toyo Tires' - leading edge DSOC II™ Technology, incorporating a unique Side Differential Groove™ (SDG), assures long original mileage with improved resistance to irregular wear without compromising traction, casing endurance or retreadability.

## M122™

### Durable All-Position Radial

Recommended for steer but suitable for all positions, the durable M122™ is designed specifically for local delivery and regional haul applications. All-steel, four-belt construction provides even tread wear plus extended tire and casing life. Other features include solid outer rib, special cap-and-base tread compounding, and multi-layer inner lining.

## M143™

### Premium Low-Profile All-Position Radial

Rugged design for demanding local delivery service, the M143 has superior casing integrity and excellent durability. Wide-belt design and solid outer rib ensure even wear and long treadlife. Low rolling-resistance improves fuel economy. Additional features include special compounding, heat resistance, and stone ejector grooves.





# Steer Position

## M120Z™

### Durable All-Position Radial

All-position radial designed for local to regional haul and delivery usage in stop-and-go situations. Well suited for all positions, including trailer. All-steel, four-belt construction braces the tread area for high mileage. Improved casing profile provides increased resistance to fatigue, longer casing life, and improved retreadability.

# Drive Axle Position

## M657™

### Premium Drive Radial

This tough drive-axle radial is designed for regional to long hauls where high resistance to irregular wear is required. Deep 28/32" tread depth increases tread life and lowers cost per mile. Large parallel center blocks combine with a solid shoulder and multi-pitch groove for exceptional mileage and excellent traction. e-balance™ technology optimizes design to offer extended casing life and exceptional durability.



EPA SmartWay  
verified technologies.



Toyo's technology  
for truck tires.

## M647™

### Premium Drive Radial

The M647™ is an extra deep 30/32" tread radial specifically designed for local-to-long haul highway applications. Toyo Tires' e-balance™ technology minimizes growth of the tread profile, while maintaining a more uniform and flatter tread radius for the entire life of the casing.



Toyo's technology  
for truck tires.

## M627™

### Premium Drive Radial

This tough drive-axle radial is designed for regional-to-long hauls where high resistance to irregular wear is required. Deep 28/32" tread depth increases tread life and lowers cost per mile. Large parallel center blocks combine with a solid shoulder and multi-pitch groove for exceptional mileage and excellent traction. DSOC II™ Technology optimizes design to offer extended casing life and exceptional durability.



# Drive-Axle Position

## M610ZL™

### Premium Drive Radial

The Toyo M610ZL™ is a durable radial designed for long haul, over-the-highway service and higher-torque operating conditions. Unique design and construction provide excellent traction and resistance to irregular wear. DSOC II™ Technology optimizes design for even wear and long life.

## M608Z™

### Premium Drive Radial

A dependable performer offering improved fuel efficiency, the Toyo Tires M608Z™ is a premium drive-axle radial ideal for local-to-regional hauls in over-the-highway use. Built to match or replace tires supplied as original equipment, its high-tech design yields high mileage, improved fuel economy, and exceptional traction. Advanced casing design and compounding allows for extended casing life and retreadability.

## M614Z™

### Low-Profile Drive Radial

The Toyo M614Z™ is an economical drive-axle radial designed for both regional and long haul over-the-highway use. Like all of Toyo Tires' commercial tires, the M614Z™ offers enhanced retreadability to maximize casing life and increase overall value.

## M920™

### Premium Drive Radial

The M920™ is a premium drive-axle radial tire designed for local and regional over-the-highway usage. This all-season traction tire features wider staggered tread blocks for improved traction and performance and maximizes resistance of irregular wear. Built using Toyo Tires e-balance™ technology, its high profile applies stiffness that maintains an improved uniform and flatter tire radius for the entire life of the casing.



Toyo's technology  
for truck tires.



## Trailer Position

### M157™

#### Premium Free-Rolling Axle Radial

A premium, free-rolling axle designed for non-drive axle positions, including steer axle use. Features e-balance technology, which improves profile retention while reducing strain at the belt and ply turn-up edges. In addition, the deep Differential Groove™ (DG) helps protect the shoulder ribs from premature wear.

### M1430™

#### Premium Low-Platform Trailer Radial

Ideal all-steel radial for low-platform trailers, including high-cube applications. Wide-belt construction and solid outer rib ensure even wear and long treadlife. Low rolling-resistance improves fuel economy. Special compounding and stone ejector grooves protect casing for durability and retreadability.



EPA SmartWay  
verified technologies.



Toyo's technology  
for truck tires.

## On/Off-Road

### M140Z™

#### All-Position Radial

The M140Z™ offers excellent performance in short, medium, and long haul over-the-highway applications. This trailer tire delivers long life, durability, traction performance, and minimized uneven wear.

### M506Z™

#### Heavy-Duty On/Off-Road Drive Radial

The Toyo M506Z™ is a premium extra-deep-tread drive-axle radial for severe on/off-road applications. The 30/32" deep, cut-resistant tread makes it the ideal tire for logging, construction or other severe service where muddy, slippery and abrasive surfaces are common. DSOC II™ Technology optimizes design to provide exceptional durability and extended casing life.



# On/Off-Road

## M320Z™

### Premium On/Off-Road Highway Radial

This premium, on/off-road radial is constructed with four steel belts designed for exceptional durability, extended treadlife, and superb traction. The M320Z™ is perfect for such applications as logging, mining, concrete mixers and refuse trucks.

## M320Z™ (Wide Base)

### Premium On/Off-Road Wide-Base Highway Radial

Designed for durability in tough applications, the Toyo M320Z is an excellent all-steel radial designed for concrete mixers, dump and refuse trucks. This low-profile tire is ideal for all positions. Large blocks with functional sipes and three zig zag grooves effectively improve traction performance in both on and off-road conditions.

## M605Z™

### Premium Drive Lug Radial

This aggressive drive tire with deep tread is exceptional service for local and over the road applications. Special compounding and advanced casing design are combined for long lasting casing life.



# Specifications

| HIGHWAY     |                          |       |             |             |             |       |      |
|-------------|--------------------------|-------|-------------|-------------|-------------|-------|------|
| Tire        | Size                     | LR/PR | Type        | Tire        | Size        | LR/PR | Type |
| STEER       |                          |       |             | STEER       |             |       |      |
| M137        | 11R22.5                  | G/14  | TL          | M143        | 215/75R17.5 | G/14  | TL   |
|             | 295/75R22.5              | G/14  | TL          |             | 225/70R19.5 | F/12  | TL   |
|             | 295/75R22.5              | H/16  | TL          |             | 225/70R19.5 | G/14  | TL   |
|             | 11R24.5                  | G/14  | TL          |             | 245/70R19.5 | H/16  | TL   |
|             | 285/75R24.5              | G/14  | TL          |             | 265/70R19.5 | G/14  | TL   |
|             | 285/75R24.5              | H/16  | TL          |             | 285/70R19.5 | H/16  | TL   |
| M154        | 11R22.5                  | G/14  | TL          | M120Z       | 8R19.5      | F/12  | TL   |
|             | 11R22.5                  | H/16  | TL          |             | 9R22.5      | F/12  | TL   |
|             | 245/75R22.5              | G/14  | TL          |             | 10R22.5     | G/14  | TL   |
|             | 265/75R22.5              | G/14  | TL          | DRIVE       |             |       |      |
|             | 295/75R22.5              | G/14  | TL          | M657        | 11R22.5     | G/14  | TL   |
|             | 295/75R22.5              | H/16  | TL          |             | 295/75R22.5 | G/14  | TL   |
|             | 11R24.5                  | G/14  | TL          | 11R24.5     | G/14        | TL    |      |
|             | 11R24.5                  | H/16  | TL          | 285/75R24.5 | G/14        | TL    |      |
| 285/75R24.5 | G/14                     | TL    | M647        | 295/75R22.5 | G/14        | TL    |      |
| M144        | 305/70R22.5              | J/18  | TL          | M627        | 11R22.5     | G/14  | TL   |
|             | 305/70R22.5 <sup>1</sup> | L/20  | TL          |             | 11R22.5     | H/16  | TL   |
|             | 295/80R22.5              | H/16  | TL          |             | 295/75R22.5 | G/14  | TL   |
|             | 315/80R22.5*             | L/20  | TL          |             | 11R24.5     | G/14  | TL   |
| M147        | 11R22.5                  | G/14  | TL          | 11R24.5     | H/16        | TL    |      |
|             | 11R22.5                  | H/16  | TL          | 285/75R24.5 | G/14        | TL    |      |
|             | 295/75R22.5              | G/14  | TL          | M610ZL      | 11R22.5     | G/14  | TL   |
|             | 295/75R22.5              | H/16  | TL          |             | 11R22.5     | H/16  | TL   |
|             | 11R24.5                  | G/14  | TL          |             | 295/75R22.5 | G/14  | TL   |
|             | 11R24.5                  | H/16  | TL          |             | 11R24.5     | G/14  | TL   |
| 285/75R24.5 | G/14                     | TL    | 11R24.5     |             | H/16        | TL    |      |
| 285/75R24.5 | H/16                     | TL    | 285/75R24.5 | G/14        | TL          |       |      |
| M170        | 11R22.5                  | H/16  | TL          | M608Z       | 215/75R17.5 | F/12  | TL   |
|             | 12R22.5                  | H/16  | TL          |             | 225/70R19.5 | F/12  | TL   |
| M177        | 295/75R22.5              | G/14  | TL          | 225/70R19.5 | G/14        | TL    |      |
|             | 295/75R22.5              | H/16  | TL          | 245/70R19.5 | G/14        | TL    |      |
|             | 285/75R24.5              | G/14  | TL          | 265/70R19.5 | G/14        | TL    |      |
|             | 285/75R24.5              | H/16  | TL          | 285/70R19.5 | H/16        | TL    |      |
| M122        | 11R22.5                  | G/14  | TL          | 9R22.5      | G/14        | TL    |      |
|             | 295/75R22.5              | G/14  | TL          | M614Z       | 255/70R22.5 | H/16  | TL   |
|             | 255/70R22.5              | H/16  | TL          | M920        | 245/70R19.5 | G/14  | TL   |
|             | 11R24.5                  | G/14  | TL          |             | 11R22.5     | H/16  | TL   |
|             | 285/75R24.5              | G/14  | TL          |             |             |       |      |

<sup>1</sup> 305/70R22.5 L/20 TL Sku # 548170  
152/150L features higher load capacity

\* 315/80R22.5 L/20 TL Sku# 548690,  
158/150L features higher load capacity

| HIGHWAY          |             |       |      |
|------------------|-------------|-------|------|
| Tire             | Size        | LR/PR | Type |
| TRAILER POSITION |             |       |      |
| M157             | 11R22.5     | G/14  | TL   |
|                  | 295/75R22.5 | G/14  | TL   |
|                  | 11R24.5     | G/14  | TL   |
|                  | 285/75R24.5 | G/14  | TL   |
| M1430*           | 215/75R17.5 | H/16  | TL   |
|                  | 235/75R17.5 | H/16  | TL   |
|                  | 235/75R17.5 | J/18  | TL   |
|                  | 245/70R17.5 | H/16  | TL   |
|                  | 245/70R17.5 | J/18  | TL   |
| M140Z            | 275/70R22.5 | H/16  | TL   |

\* Recommended: Trailer only

| ON/OFF HIGHWAY |             |       |      |
|----------------|-------------|-------|------|
| Tire           | Size        | LR/PR | Type |
| ON/OFF-ROAD    |             |       |      |
| M506Z          | 11R22.5     | H/16  | TL   |
|                | 11R24.5     | H/16  | TL   |
| M320Z          | 11R22.5     | H/16  | TL   |
|                | 12R22.5     | H/16  | TL   |
|                | 315/80R22.5 | L/20  | TL   |
|                | 11R24.5     | H/16  | TL   |
| M320Z (WB)     | 385/65R22.5 | J/18  | TL   |
|                | 425/65R22.5 | L/20  | TL   |
| M605Z          | 12R22.5     | H/16  | TL   |





# WARNING

## **TIRES MUST NEVER BE OPERATED IN EXCESS OF THEIR RATED SPEED LIMIT.**

Exceeding the tire's speed capability will cause overheating of the tire and sudden failure, possibly leading to loss of vehicle control. Toyo truck tires have a maximum speed rating depending on size and type. Consult your tire dealer or contact Toyo Tires at (800) 442-8696 if you are not sure about the maximum speed rating of your tires. Toyo Tire U.S.A. Corp. does not endorse the operation of any vehicle in an unsafe or unlawful manner. 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 which relate to performance on the road, but are not applicable if tires are underinflated, overloaded, worn out, damaged or altered.

## **ALWAYS OBEY ALL VEHICLE AND TRAFFIC LAWS!**

You are responsible for the legality and safety of any modifications to your vehicle, and for operating your vehicle in a safe and lawful manner. Consult your vehicle owner's manual, your local laws and vehicle suspension kit manufacturer before undertaking modifications to your vehicle's suspension.

**TOYO TIRES**  
*driven to perform*

Toyo Tire U.S.A. Corp.  
P.O. Box 6052  
Cypress, CA 90630  
800-442-8696  
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