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### Nitto 305/30R19 102Z

# Nitto INVO High Performance Tire User Manual

Model: 305/30R19 102Z

Brand: Nitto

## 1. PRODUCT OVERVIEW

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The Nitto INVO is an ultra-high performance tire engineered for exceptional performance, ride refinement, and quality. Its advanced tread pattern is designed to reduce road noise, enhance comfort, and provide superior traction in both dry and wet conditions. This tire combines state-of-the-art computer engineering with digital audio testing to deliver a unique and functional design.



Image 1.1: The Nitto INVO tire, showcasing its tread design and sidewall on a wheel.

## 2. KEY FEATURES

- **Large Twin Circumferential Grooves:** These grooves are designed to efficiently channel water away from the tire's contact patch, significantly improving wet weather traction and reducing the risk of hydroplaning.
- **3D Multi-Wave Sipes:** These sipes enhance wet weather performance by cutting through water on the road surface, providing additional biting edges for improved grip and stability.
- **Outer Large Reinforced Tread Blocks:** These robust tread blocks ensure a consistent contact area with the road, optimizing dry performance, grip, and cornering stability.
- **Sound Lap Test Tread Pattern:** Developed through advanced digital audio testing, this unique tread pattern minimizes perceived road noise, contributing to a quieter and more comfortable ride.



Image 2.1: Detailed view of the INVO's advanced tread design, showing the circumferential grooves and multi-wave sipes.

### **3. SETUP AND INSTALLATION**

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Proper installation is crucial for the performance and longevity of your Nitto INVO tires. It is highly recommended that tire installation be performed by a certified professional using appropriate equipment and following industry standards.

#### **3.1 Pre-Installation Checks**

- Verify that the tire size (305/30R19) and load index (102Z) match your vehicle's specifications as recommended by the vehicle manufacturer.
- Inspect the tire for any visible damage or defects prior to mounting.
- Ensure wheels are clean, free of rust, and compatible with the tire size.

#### **3.2 Mounting and Balancing**

- Use proper lubrication on the tire beads and wheel rim during mounting to prevent damage.
- Inflate the tire to the vehicle manufacturer's recommended pressure, typically found on a placard inside the driver's side door jamb or in the owner's manual. Do not exceed the maximum pressure listed on the tire sidewall.
- Perform dynamic balancing of the tire and wheel assembly to ensure smooth operation and prevent premature wear.

### 3.3 Post-Installation

- After driving approximately 50-100 miles, have the lug nuts re-torqued to the vehicle manufacturer's specifications.
- Check tire pressure regularly, at least once a month and before long trips, using a reliable tire pressure gauge.

## 4. OPERATING GUIDELINES

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Adhering to proper operating guidelines will maximize the performance, safety, and lifespan of your Nitto INVO tires.

### 4.1 Tire Pressure

Maintain correct tire inflation pressure as specified by your vehicle manufacturer. Under-inflation can lead to excessive heat buildup, reduced fuel efficiency, and irregular wear. Over-inflation can result in a harsher ride, reduced traction, and increased susceptibility to impact damage.

### 4.2 Driving Conditions

- **Wet Weather:** The INVO tire is designed for excellent wet traction. However, always reduce speed and increase following distance in wet conditions to maintain control.
- **Cornering:** The reinforced tread blocks provide enhanced cornering grip. Drive within safe limits and be aware of road conditions.
- **Speed:** Do not exceed the tire's speed rating (Z in 102Z) or the legal speed limit.



Image 4.1: Nitto INVO tires on a vehicle, demonstrating their high-performance application.

## 5. MAINTENANCE

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Regular maintenance is essential for extending the life of your tires and ensuring optimal performance.

### 5.1 Tire Rotation

Rotate your tires every 5,000 to 7,500 miles, or as recommended by your vehicle manufacturer. This helps promote even tread wear across all four tires.

### 5.2 Wheel Alignment

Have your vehicle's wheel alignment checked periodically, especially if you notice uneven tire wear, steering pull, or after hitting a significant pothole. Proper alignment ensures tires wear evenly and the vehicle handles correctly.

### 5.3 Tread Depth Inspection

Regularly inspect tread depth using a tread depth gauge. The INVO tire features tread wear indicators (small bars molded into the tread grooves). When the tread wears down to these bars, it indicates that the tire has reached its minimum safe tread depth (typically 2/32 inch) and should be replaced.

### 5.4 Cleaning

Clean tires with mild soap and water. Avoid harsh chemicals or petroleum-based products that can degrade the rubber.

## 6. TROUBLESHOOTING

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This section addresses common issues you might encounter with your tires.

Symptom	Possible Cause	Solution
Uneven Tread Wear	Improper tire pressure, misaligned wheels, unbalanced tires, worn suspension components.	Check and adjust tire pressure. Have wheel alignment and tire balancing checked by a professional. Inspect suspension.
Vibration or Shimmy	Unbalanced tires, bent wheel, worn suspension components, tire damage.	Have tires re-balanced. Inspect wheels and tires for damage. Consult a professional for suspension check.
Excessive Road Noise	Uneven wear, improper inflation, road surface type.	Ensure proper tire pressure and rotation schedule. While the INVO is designed for quietness, some road surfaces may generate more noise.
Loss of Traction (Wet)	Insufficient tread depth, improper tire pressure, excessive speed for conditions.	Check tread depth and replace if worn. Verify tire pressure. Reduce speed in wet conditions.

If you experience any persistent issues or concerns, it is recommended to consult with a qualified tire professional.

## 7. SPECIFICATIONS

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Attribute	Value
Brand	Nitto
Model	Invo

Attribute	Value
Size	305/30R19
Section Width	305 Millimeters
Load Capacity	1874 Pounds
Tread Depth	10 Inches
Tire Diameter	26.22 inches
Item Diameter	19 Inches
Item Weight	31.8 Pounds
Construction Type	Radial
Manufacturer Part Number	202970
UTQG	260-A-A
First Available Date	July 26, 2010

## 8. WARRANTY AND SUPPORT

For specific warranty information regarding your Nitto INVO tires, please refer to the official Nitto Tire warranty documentation provided at the time of purchase or visit the official Nitto Tire website. Warranty terms typically cover manufacturing defects for a specified period or mileage.

For technical support, product inquiries, or assistance with warranty claims, please contact Nitto Tire customer service or an authorized Nitto Tire dealer.

Official Website: [www.nittotire.com](http://www.nittotire.com)

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This manual is for informational purposes only. Always consult a professional for tire installation and maintenance.