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› National 493291 Wheel Seal Instruction Manual

National 493291

National 493291 Wheel Seal Instruction Manual

Model: 493291

INTRODUCTION

National has established a reputation as a respected name in the industry, providing premium sealing solutions for over 75 years. This manual offers essential information for the proper handling, installation, and maintenance of your National 493291 Wheel Seal, designed to deliver advanced solutions for today's vehicles.

PRODUCT OVERVIEW AND FEATURES

The National 493291 Wheel Seal is engineered for reliable performance in automotive applications. Key features include:

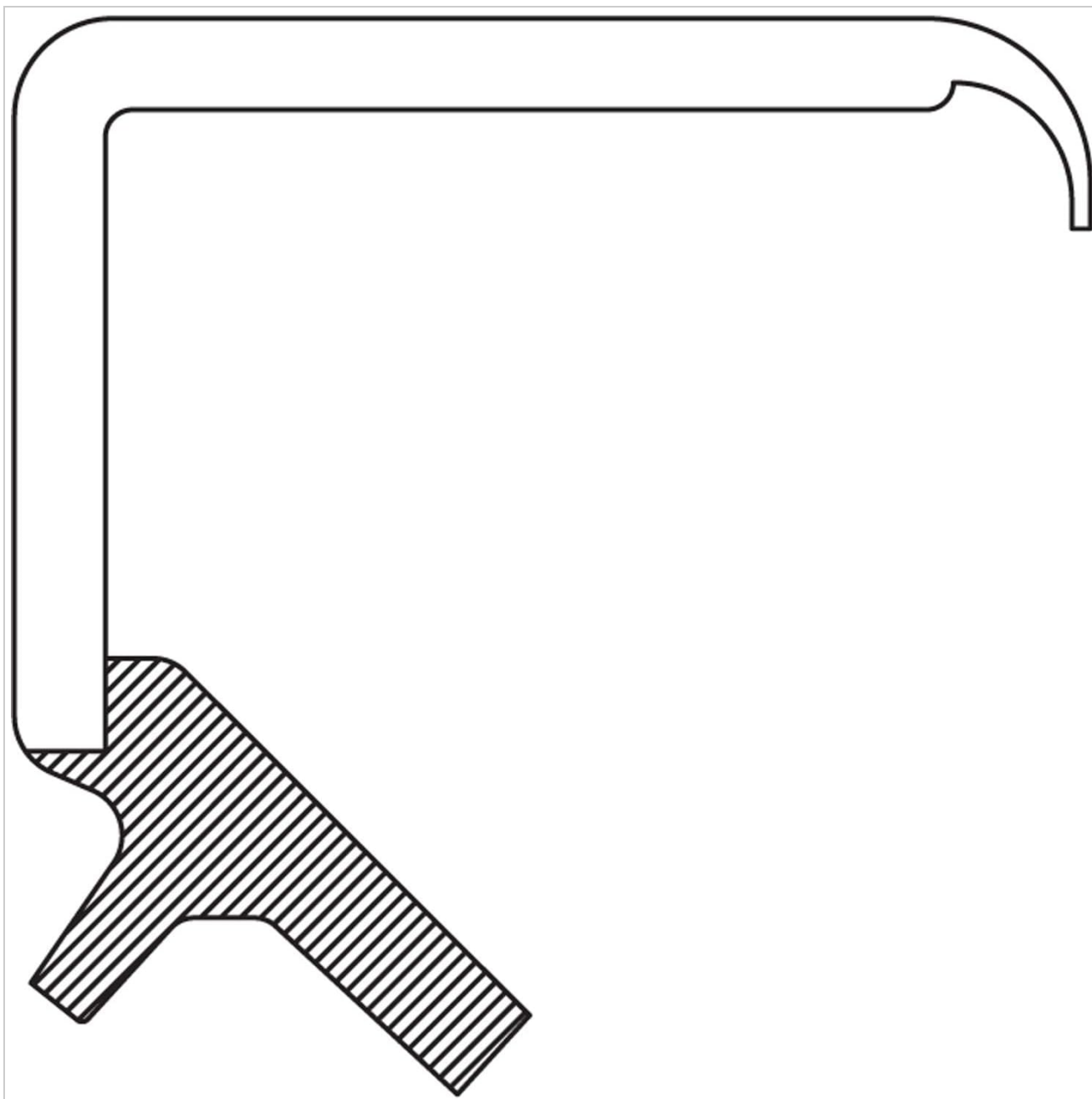
- Design type: Springless; multi-lip
- Temperature range: -40°F to 225°F / -40°C to 107°C
- Good low temperature capability
- Low swell in hydrocarbon fluids
- Material: Nitrile
- Delivers quality and reliable performance for every type of repair



This image displays the National 493291 Wheel Seal, showing its circular design and material composition. The seal is designed to prevent lubricant leakage and contamination ingress in wheel bearing assemblies.

SPECIFICATIONS

Manufacturer	National
Brand	National
Model	National 493291 Multi Purpose Seal
Item Weight	0.352 ounces
Product Dimensions	3.25 x 0.88 x 3.25 inches
Item Model Number	493291
Manufacturer Part Number	493291
Position	Front
ASIN	B0012UI16M
Date First Available	January 20, 2008



This diagram illustrates the internal structure and multi-lip design of the National 493291 Wheel Seal, highlighting its sealing elements and profile for effective fluid retention and contaminant exclusion.

INSTALLATION INSTRUCTIONS

Proper installation is crucial for the longevity and performance of the National 493291 Wheel Seal. It is highly recommended that installation be performed by a qualified automotive technician using appropriate tools and following vehicle-specific service manual procedures.

General Guidelines:

1. **Safety First:** Ensure the vehicle is securely supported on jack stands or a lift. Wear appropriate personal protective equipment (PPE) such as safety glasses and gloves.
2. **Disassembly:** Carefully remove the wheel, brake components, and hub assembly as required to access the old wheel seal. Always refer to your vehicle's specific service manual for detailed disassembly steps.
3. **Old Seal Removal:** Use a suitable seal puller or pry tool to carefully remove the old seal. Exercise caution to avoid damaging the hub or spindle surfaces, which are critical for the new seal's function.
4. **Inspection and Cleaning:** Thoroughly clean the seal bore and the spindle/axle shaft. Inspect all mating

surfaces for any burrs, corrosion, or damage. Even minor imperfections can compromise the new seal's integrity and lead to premature failure.

5. **Lubrication:** Apply a thin, even coat of clean wheel bearing grease or an appropriate lubricant to the sealing lips of the new National 493291 seal. This lubrication aids in smooth installation and ensures proper initial operation.
6. **New Seal Installation:** Using a seal driver tool that matches the outer diameter of the seal, carefully and evenly press the new seal into the bore until it is fully seated. Ensure the seal is not cocked or damaged during installation. *Never use a hammer directly on the seal without a proper driver, as this can deform the seal.*
7. **Reassembly:** Reinstall the hub assembly, brake components, and wheel, strictly following the vehicle manufacturer's torque specifications for all fasteners.
8. **Final Check:** After reassembly, verify proper operation and conduct a visual inspection for any signs of lubricant leakage after a short test drive.

MAINTENANCE

Wheel seals are critical components that require periodic inspection to ensure continued vehicle safety and performance.

- **Regular Inspection:** During routine vehicle maintenance, such as tire rotations or brake service, visually inspect the wheel seal area for any signs of lubricant leakage or physical damage.
- **Address Leaks Promptly:** If any lubricant leakage is observed, the seal should be replaced immediately. Ignoring leaks can lead to bearing damage, brake contamination, and potential safety hazards.
- **Avoid Contamination:** Keep the area around the wheel seals clean to prevent dirt, dust, and debris from compromising the seal's integrity and leading to premature wear.

TROUBLESHOOTING COMMON ISSUES

Lubricant Leakage:

If lubricant is observed leaking from the wheel seal area, consider the following:

- **Improper Installation:** The seal may not have been seated correctly, or it could have been damaged during the installation process. Re-inspect the installation and replace the seal if necessary.
- **Damaged Sealing Surface:** The spindle or hub surface where the seal rides may be worn, grooved, or corroded. This condition requires repair or replacement of the affected component to ensure a proper seal.
- **Incorrect Seal Type:** Verify that the correct National 493291 seal was used for the specific vehicle application. Using an incorrect seal can lead to improper fit and leakage.
- **Over-lubrication:** While less common, excessive grease or lubricant can sometimes force its way past the seal. Ensure proper bearing lubrication levels are maintained.

Premature Seal Failure:

If a new seal fails shortly after installation, investigate these potential causes:

- **Contamination:** Dirt, grit, or foreign objects introduced during the installation process can quickly abrade and wear out a seal.
- **Heat Buildup:** Excessive heat generated by over-tightened bearings, brake drag, or other mechanical issues can degrade the seal material, leading to premature failure.
- **Chemical Incompatibility:** Exposure to incompatible fluids or harsh chemicals can degrade the seal material.

The National 493291 is designed for low swell in hydrocarbon fluids, but other chemicals may cause issues.

WARRANTY AND SUPPORT INFORMATION

For specific warranty details regarding your National 493291 Wheel Seal, please refer to the official National product warranty documentation provided at the point of purchase or visit the official National brand website. For technical support or further assistance, contact National customer service through their official channels.

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