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**NMD 25X35X8**

**NMD TC 25X35X8 Rotary Shaft Oil/Dust Seal User Manual**

Comprehensive Guide for Installation, Operation, and Maintenance

**1. INTRODUCTION**

This manual provides essential information for the proper handling, installation, operation, and maintenance of the NMD TC 25X35X8 Rotary Shaft Oil/Dust Seal. Adhering to these guidelines will help ensure optimal performance and longevity of the seal in your application. This seal is designed to prevent leakage of lubricants and protect against the ingress of dust and other contaminants in rotating machinery.

**2. PRODUCT DESCRIPTION**

The NMD TC 25X35X8 is a premium quality rotary shaft seal, commonly known as an oil seal or lip seal. It features a single main sealing lip with a garter spring for consistent radial force against the shaft, and an additional auxiliary dust lip to provide enhanced protection against external contaminants like dust and dirt. These seals are crucial components in various industrial and automotive applications where rotating shafts need to be sealed to retain lubricants and exclude foreign matter.



Figure 2.1: Cross-section of the NMD TC Rotary Shaft Oil/Dust Seal. This image displays a detailed cross-section of the TC rotary shaft oil seal. It highlights the main sealing lip, the auxiliary dust lip, and the garter spring which provides radial force to maintain contact with the shaft. The robust design ensures effective sealing against lubricants and protection from contaminants.

### 3. KEY FEATURES AND SPECIFICATIONS

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- **Type:** TC Rotary Shaft Oil/Dust Seal
- **Inner Diameter (ID):** 25mm
- **Outer Diameter (OD):** 35mm
- **Height/Width:** 8mm
- **Material:** Typically Nitrile Butadiene Rubber (NBR) with a steel insert and garter spring, suitable for general industrial applications. (Note: Specific material not provided, common material assumed.)
- **Function:** Designed for effective sealing against oil/lubricants and protection from dust/dirt ingress.
- **Manufacturer:** NMD
- **ASIN:** B0D9V134G4

These dimensions are critical for ensuring compatibility with your specific application. Always verify the shaft and bore dimensions before installation.

## 4. INSTALLATION GUIDELINES

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Proper installation is crucial for the performance and lifespan of the seal. Follow these steps carefully:

### 1. Preparation:

- Ensure the shaft and bore are clean, free from burrs, scratches, and any foreign particles.
- Inspect the seal for any visible damage before installation. Do not use a damaged seal.
- Apply a thin layer of the lubricant to be sealed (e.g., oil or grease) to the sealing lip and the shaft surface to facilitate smooth installation and initial lubrication.

### 2. Shaft Entry:

- If the seal needs to pass over sharp edges (e.g., keyways, splines, threads), use a protective sleeve or tape to prevent damage to the sealing lip.

### 3. Pressing the Seal:

- Use an appropriate installation tool (e.g., a press or a sleeve) that applies even pressure to the outer metal casing of the seal.
- **Do NOT** apply pressure directly to the rubber lip or the garter spring, as this can deform or damage the seal.
- Press the seal squarely into the bore until it is fully seated. Ensure it is not tilted or cocked.

### 4. Post-Installation Check:

- Verify that the seal is seated correctly and the garter spring is in place.
- Rotate the shaft manually a few times to ensure smooth operation and proper contact with the sealing lip.

**Important:** *Incorrect installation is a primary cause of premature seal failure. If unsure, consult a qualified technician.*

## 5. OPERATION AND FUNCTION

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Once correctly installed, the NMD TC 25X35X8 seal performs two primary functions:

- **Fluid Retention:** The main sealing lip, energized by the garter spring, maintains a tight seal against the rotating shaft, preventing the leakage of lubricants (e.g., oil, grease) from the sealed enclosure.
- **Contaminant Exclusion:** The auxiliary dust lip acts as a barrier against external contaminants such as dust, dirt, and moisture, protecting the main sealing lip and the internal components of the machinery from abrasive particles.

The seal operates by creating a thin hydrodynamic film of lubricant between the sealing lip and the shaft, which minimizes friction and wear while maintaining an effective seal.

## 6. MAINTENANCE AND INSPECTION

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Rotary shaft seals are wear components and have a finite lifespan. Regular inspection can help identify potential issues before they lead to significant problems.

- **Visual Inspection:** Periodically check the area around the seal for signs of leakage (oil stains, drips) or excessive dirt accumulation.
- **Shaft Condition:** Ensure the shaft surface where the seal runs remains smooth and free of grooves or corrosion. A worn shaft can lead to premature seal failure.
- **Replacement:** Replace seals during routine maintenance or whenever signs of leakage or wear are observed. It is generally

recommended to replace seals whenever the machinery is disassembled for other repairs, as seals are inexpensive compared to potential damage from leakage.

## 7. TROUBLESHOOTING COMMON ISSUES

If you experience issues with your seal, consider the following common problems and their potential causes:

| Problem        | Possible Cause(s)                                                                                                                                                                                                                                                                                                              | Solution                                                                                                                                                                                                                                                 |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Leakage        | <ul style="list-style-type: none"><li>Improper installation (cocked, damaged lip)</li><li>Worn or damaged sealing lip</li><li>Damaged or corroded shaft surface</li><li>Excessive shaft runout or vibration</li><li>Incorrect seal size or material for application</li><li>Over-pressurization of the sealed system</li></ul> | <ul style="list-style-type: none"><li>Reinstall correctly or replace seal</li><li>Replace seal</li><li>Repair or replace shaft</li><li>Address machinery imbalance</li><li>Verify seal specifications</li><li>Check system pressure</li></ul>            |
| Premature Wear | <ul style="list-style-type: none"><li>Abrasive contaminants (dust, dirt)</li><li>Insufficient lubrication</li><li>Excessive temperature</li><li>High shaft speed</li><li>Improper shaft surface finish</li></ul>                                                                                                               | <ul style="list-style-type: none"><li>Improve dust exclusion, check auxiliary lip</li><li>Ensure adequate lubrication</li><li>Verify operating temperature limits</li><li>Check speed limits for seal type</li><li>Ensure correct shaft finish</li></ul> |

For persistent issues, it is recommended to consult with a professional or the seal manufacturer.

## 8. WARRANTY INFORMATION

Specific warranty details for the NMD TC 25X35X8 Rotary Shaft Oil/Dust Seal are not provided in this manual. For information regarding product warranty, please refer to the terms and conditions provided by your point of purchase or contact the manufacturer, NMD, directly. Keep your purchase receipt as proof of purchase.

## 9. CUSTOMER SUPPORT

If you have questions or require further assistance regarding the NMD TC 25X35X8 Rotary Shaft Oil/Dust Seal, please contact the seller from whom you purchased the product. For technical inquiries or specific product details not covered in this manual, you may also reach out to the manufacturer, NMD, through their official channels. Please have the product model (25X35X8) and ASIN (B0D9V134G4) ready when contacting support to facilitate a quicker resolution.

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