Installation Guide: NexBot Robotics 712-004 Shaft Seal 60x80x8 mm

SKU: NXB-GEN-712-004 | Revision: 1.0 | Category: Wear Parts & Consumables > Bearings & Seals > Shaft Seals

DANGER: Disconnect all power sources before beginning installation. Follow lockout/tagout (LOTO) procedures per OSHA 1910.147.

1. Required Tools & Materials

- Safety Glasses and Nitrile Gloves
- Seal Puller Tool (Hook or Lever Type)
- Seal Driver Kit or appropriately sized press sleeve
- Soft-faced Mallet
- Lint-free Industrial Wipes
- Non-abrasive Cleaning Solvent
- Calipers for verification
- System-specified Lubricant

2. Pre-Installation Checks

1. Verify the new part is SKU NXB-GEN-712-004. Measure to confirm 60x80x8 mm dimensions.
2. Inspect the new seal for any manufacturing defects, cuts, or deformities in the NBR material or spring.
3. Ensure the robotic system is de-energized and placed in a zero-mechanical-state using approved Lockout/Tagout (LOTO) procedures.
4. Inspect the shaft surface and housing bore for pre-existing damage, scoring, or burrs that could damage the new seal.
5. Confirm the lubricant to be used is compatible with Nitrile Butadiene Rubber (NBR).
6. Clean the work area of any dirt, metal shavings, or other contaminants.

3. Installation Procedure

Step 1: Perform Lockout/Tagout (LOTO)

Before beginning any work, completely de-energize the robotic system. Follow all site-specific LOTO procedures to prevent accidental machine startup.

> **Warning:** Failure to de-energize and lock out the equipment can result in severe injury or death.

Step 2: Access the Seal Housing

Remove any protective covers, casings, or mechanical components that obstruct access to the existing shaft seal. Keep all hardware organized for reassembly.

Step 3: Remove the Old Seal

Carefully use a seal puller to extract the worn seal from the housing bore. Apply leverage evenly and take care not to scratch or gouge the shaft surface or the inner wall of the bore.

> **Warning:** Scoring the shaft or bore during removal can cause the new seal to fail prematurely.

Step 4: Clean and Inspect Sealing Surfaces

Thoroughly clean the housing bore and the shaft with a suitable solvent and lint-free wipes. Perform a detailed visual and tactile inspection for any burrs, nicks, or grooves that could compromise the seal.

Step 5: Prepare the New Seal

Apply a thin, clean film of the specified system lubricant to the outer diameter of the NexBot Robotics 712-004 seal. Also, apply a light coating of lubricant to the inner sealing lip to ensure smooth initial shaft rotation.

Step 6: Position the Seal

Carefully align the new seal with the housing bore, ensuring it is square to the shaft. The garter spring on the seal lip must face inward, towards the lubricant it is designed to retain.

> **Warning:** Installing the seal backward will result in immediate and catastrophic lubricant leakage.

Step 7: Press the Seal into Place

Select a seal driver or press sleeve that matches the 80 mm outer diameter of the seal. Use the driver to apply even pressure only to the rigid outer edge of the seal, pressing it smoothly into the bore until it is flush with the housing face or bottoms out on its mechanical stop.

> **Warning:** Never strike the flexible rubber element of the seal directly. Use a driver that only contacts the metal casing.

Step 8: Verify Final Seating

Visually inspect the installed seal to ensure it is seated squarely and uniformly within the bore. Check that it is recessed to the correct depth as specified by the equipment manual.

Step 9: Reassemble Components

Reinstall all components that were removed to gain access to the seal. Ensure all fasteners are torqued to the manufacturer's specifications.

4. Post-Installation Verification

1. Manually rotate the shaft, if possible, to confirm it moves freely without binding or unusual noise.
2. After removing LOTO and re-energizing the system, operate the corresponding robot axis at a low speed.
3. Carefully inspect the area around the newly installed seal for any signs of lubricant weeping or leakage.

4. Listen for any abnormal sounds such as squealing or grinding that might indicate an installation issue.
5. Run the system through a standard operating cycle and perform a final leak check.
6. Document the replacement in the equipment's maintenance log, noting the date and operating hours.

> **Note:** For technical support, contact your authorized service provider or visit *https://robotics.barca.group/support*.
