

# Installation Guide: NexBot Drives 833-002 Washer And Spacer Set

SKU: NXB-GEN-833-002 | Revision: 1.0 | Category: Accessories & Mounting > Fasteners & Hardware > Washers & Spacers

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

## 1. Required Tools & Materials

- Calibrated Torque Wrench (range appropriate for joint fasteners)
- Hex Key / Allen Wrench Set (metric)
- Socket Wrench Set (metric)
- Digital Calipers for verification
- Lint-free cloths
- Isopropyl Alcohol (IPA) for cleaning surfaces
- Safety Glasses
- Nitrile Gloves

## 2. Pre-Installation Checks

1. Verify that the robot is powered down and a proper Lockout/Tagout (LOTO) procedure has been performed.
2. Confirm the part number on the packaging matches NXB-GEN-833-002.
3. Inspect each washer and spacer from the set for any shipping damage, burrs, or manufacturing defects.
4. Clean the mounting surfaces of the robotic joint, removing all old grease, debris, and contaminants.
5. Ensure all mating components, such as bolts and joint housings, are clean and free from thread damage.
6. Have the robot's specific service manual available to reference fastener torque specifications.

## 3. Installation Procedure

### Step 1: Component Selection and Verification

Select the correct washer and/or spacer from the NexBot Drives 833-002 set as specified in the robot's service manual for the joint being serviced. Use digital calipers to verify the dimensions if required.

**Warning:** Using an incorrect size or type of washer can lead to joint failure, improper alignment, and equipment damage.

### Step 2: Surface Preparation

Wipe the selected washer, spacer, and all mating surfaces with a lint-free cloth dampened with isopropyl alcohol. Allow the surfaces to dry completely before assembly to ensure a clean, burr-free contact.

### Step 3: Washer Placement

Carefully place the 304 stainless steel washer onto the bolt or shaft. Ensure the washer sits completely flat against the mounting surface without any rocking, which could indicate debris or surface damage.

### Step 4: Spacer Installation

If a spacer is required, slide it into position over the shaft or bolt. The spacer must be seated flush against the washer or housing component, ensuring it is perfectly perpendicular to the axis of the fastener.

**Warning:** An angled or improperly seated spacer will introduce stress and cause premature wear.

### Step 5: Component Assembly

Carefully guide the assembled components into the joint housing. Avoid jarring or forcing the parts, which could dislodge the washer or spacer from its correct position.

### Step 6: Initial Fastener Tightening

Insert the primary fastener (bolt or screw) and tighten it by hand until it is snug. This 'finger-tight' step ensures all components are properly aligned before applying final torque.

**Warning:** Do not use power tools for this step, as it can cause cross-threading or misalignment.

### Step 7: Torque Application

Use a calibrated torque wrench to tighten the fastener to the value specified in the robot's service manual. Apply torque in a smooth, steady motion to ensure an accurate reading and proper clamping force.

**Warning:** Over-torquing can damage the fastener and washer, while under-torquing can lead to joint loosening and failure.

## 4. Post-Installation Verification

1. Re-verify the torque on the primary fastener after a brief settling period (approx. 10-15 minutes).
2. Visually inspect the installed washer and spacer to ensure they are seated correctly and not deformed.
3. Carefully and slowly move the robotic joint through its full range of motion by hand (with power off) to check for any binding, noise, or unexpected resistance.
4. Remove all tools and cleaning materials from the work area.
5. Once the robot is safely powered on, perform a low-speed operational test of the affected joint, monitoring for vibration or unusual sounds.

6. Update the equipment maintenance log with the date of service and parts used (SKU: NXB-GEN-833-002).

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