

Installation Guide: NexBot Drives 821-002 Joint Cover

SKU: NXB-GEN-821-002 | Revision: 1.0 | Category: Accessories & Mounting > Covers & Shields > Joint Covers

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

1. Required Tools & Materials

- Torque driver with appropriate hex bits
- Lint-free industrial wipes
- Isopropyl alcohol (99%)
- Non-marring plastic pry tool
- Personal Protective Equipment (PPE): safety glasses, cut-resistant gloves
- Lockout/Tagout (LOTO) kit
- Digital caliper for inspection (optional)
- Small parts tray for fasteners

2. Pre-Installation Checks

1. Verify the robot system is powered down and all energy sources are isolated using a certified Lockout/Tagout (LOTO) procedure.
2. Confirm the part number on the new component packaging matches NXB-GEN-821-002.
3. Inspect the new NexBot Drives 821-002 Joint Cover for any signs of shipping damage, such as cracks or deformities in the HDPE material.
4. Ensure the robot joint's mounting surface is clean, dry, and free of any old gasket material, grease, or debris.
5. Confirm that the ambient temperature is within the recommended range for installation to ensure proper seal seating.
6. Read the entire installation procedure before beginning work.

3. Installation Procedure

Step 1: Step 1: Isolate Robot Power

Ensure the robot controller and all related power sources are de-energized and secured using an approved Lockout/Tagout (LOTO) procedure. Verify zero-energy state before proceeding.

Warning: Failure to properly isolate energy sources can result in electric shock, unexpected robot motion, and severe personal injury.

Step 2: Step 2: Remove Old Cover Fasteners

Using the appropriate hex bit, carefully loosen and remove the fasteners securing the old or damaged joint cover. Place all fasteners in a small parts tray to prevent loss.

Step 3: Step 3: Detach Existing Joint Cover

Gently remove the old joint cover from the robot arm. If it is stuck, use a non-marring plastic pry tool to carefully break the seal without scratching or damaging the robot's mounting surface.

Warning: Do not use metal tools like screwdrivers to pry the cover, as this can damage the sealing surface and compromise the IP rating.

Step 4: Step 4: Clean Mounting Surface

Thoroughly clean the robot joint's mounting flange and seal channel using a lint-free wipe and isopropyl alcohol. Ensure the surface is completely dry and free of any contaminants before proceeding.

Step 5: Step 5: Inspect New Cover Seal

Before installation, inspect the integrated seal on the new NXB-GEN-821-002 cover. Ensure it is properly seated in its channel, is free of defects, and has not been contaminated with dirt or grease.

Step 6: Step 6: Align and Position New Cover

Carefully align the new 280 x 280 x 155 mm cover with the mounting holes on the robot joint. The cover is keyed to fit in only one orientation. Ensure it sits flush against the mounting surface without any gaps.

Warning: Forcing the cover into position can damage the component or the robot joint. If it does not align easily, re-verify the part number and check for obstructions.

Step 7: Step 7: Secure Fasteners

Insert the original fasteners and hand-tighten them in a star or crisscross pattern to ensure even pressure on the seal. Do not fully tighten any single fastener before all are engaged.

Step 8: Step 8: Torque to Specification

Using a calibrated torque driver, tighten the fasteners to the specification listed in the primary robot service manual. Continue using the star pattern to apply final torque for a uniform seal.

Warning: Over-tightening can crack the HDPE cover or damage the seal. Under-tightening will compromise the IP65 rating.

4. Post-Installation Verification

1. Visually inspect the perimeter of the installed NexBot Drives 821-002 Joint Cover to ensure a uniform seal with no visible gaps.
2. Gently attempt to move the cover by hand to confirm it is rigidly mounted and all fasteners are secure.

3. Remove all tools, materials, and LOTO devices from the work area according to facility procedures.
4. Power on the robot system in a reduced-speed or manual mode.
5. Carefully move the affected joint through its full range of motion, listening for any sounds of interference or rubbing from the new cover.
6. Update the robot's maintenance log with the date of replacement and the part number NXB-GEN-821-002.

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