

# User Manual: NexBot Drives 821-002 Joint Cover

SKU: NXB-GEN-821-002 | Version: 1.0 | Brand: NexBot Robotics

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## 1. Safety Information

**READ ALL SAFETY INSTRUCTIONS BEFORE OPERATION.** Failure to follow safety procedures may result in serious injury or equipment damage.

**DANGER:** Hazardous voltage and unexpected motion. Always perform Lockout/Tagout (LOTO) to fully de-energize the robot system before touching, inspecting, or replacing this component.

**WARNING:** The robot arm can move unexpectedly even when stopped. Maintain a safe distance from the robot's work envelope during operation and only enter a secured, zero-energy state cell for maintenance.

**CAUTION:** The cover weighs 1.2 kg. Use appropriate handling techniques to avoid dropping the part, which could cause foot injury or damage the component.

**CAUTION:** Surfaces of the robot and cover may be hot during or after operation. Allow components to cool before performing maintenance tasks.

**NOTICE:** Use of non-genuine parts or improper installation of the NXB-GEN-821-002 cover will void the manufacturer's warranty and may compromise the system's IP65 rating.

## 2. Product Overview

NexBot Drives 821-002 Joint Cover (NXB-GEN-821-002) is a joint covers used in industrial robotics equipment where category-specific fit, electrical or mechanical compatibility, and predictable serviceability are important to buyers. The product should be understood as the exact component named by its category path, not as a complete robot or a generic service item. It supports installation, replacement, and maintenance workflows in robotic production cells by giving procurement and maintenance teams a clearly defined part class, relevant engineering specifications, and application context that matches the actual hardware being purchased.

## 3. Getting Started

### 1. Product Overview

The NexBot Drives 821-002 Joint Cover (SKU: NXB-GEN-821-002) is a purpose-built protective component for specific NexBot robotic joints. Constructed from durable High-Density Polyethylene (HDPE), its primary function is to shield sensitive internal mechanisms from dust, liquids, and minor impacts, thereby ensuring long-term operational reliability.

### 2. Component Identification

Before use, verify that the component is the correct NXB-GEN-821-002 model. The part number is typically molded into a non-visible surface of the cover. This cover is not interchangeable with other models, as its specific dimensions (280x280x155 mm) and sealing design are critical for proper fit and function.

### 3. Scope of Use

This component is intended solely as a replacement or installation part for designated NexBot robotic systems. It is not a standalone product and provides no functionality on its own. Its correct installation is critical for maintaining the joint's environmental protection and overall system integrity.

## 4. Operation

### Environmental Protection

The NXB-GEN-821-002 is designed to provide an IP65 rating for the joint it covers. This means it protects against total dust ingress and low-pressure water jets from any direction. This protection is only valid when the cover is installed correctly with its integrated seal intact and all fasteners torqued to specification.

**Tip:** Regularly cleaning the exterior of the cover prevents buildup of debris that could degrade the material or hide potential damage.

## Material Properties

The High-Density Polyethylene (HDPE) construction offers excellent resistance to many industrial chemicals, oils, and solvents. However, it is important to consult a chemical compatibility chart if the robot operates in an environment with aggressive or unusual chemicals to ensure the cover's longevity.

## Impact Resistance

While the cover provides protection against incidental contact and minor impacts, it is not designed to withstand severe collisions. Following a significant impact event involving the robot arm, the joint cover should be carefully inspected for cracks or stress marks and replaced if any damage is found.

## Operational Inspection

During routine equipment walk-arounds, visually inspect the joint cover for any signs of physical damage, discoloration, or fastener loosening. A properly maintained cover is essential for protecting the significant investment of the robotic joint's internal hardware.

**Tip:** Pay close attention to the seam between the cover and the robot arm, as this is the most critical area for maintaining the environmental seal.

## 5. Maintenance Schedule

Interval	Task	Notes
Daily	Visually inspect the joint cover for major cracks, loose fasteners, or signs of detachment.	This can be performed as part of a standard pre-shift operator check of the robotic cell.
Weekly	Wipe the cover's exterior with a clean, damp cloth to remove accumulated dust and grime.	Do not use high-pressure washers or abrasive solvents, as they can damage the HDPE material or compromise the seal.
Quarterly	Check the security of all mounting fasteners. Do not re-torque unless they are found to be loose.	Overtightening can stress the material. A simple check for looseness is sufficient.
Annually	For robots in harsh environments, consider removing the cover (following LOTO) to inspect the integrity of the	Replace the cover if the seal shows signs of being brittle, compressed, or chemically damaged.

Interval	Task	Notes
	integrated seal and clean the mounting surface.	
As Needed	Replace the NXB-GEN-821-002 cover immediately if it becomes cracked, punctured, or otherwise damaged.	A compromised cover fails to provide its intended IP65 protection, putting the joint at risk.

## 6. Troubleshooting

Symptom	Possible Cause	Solution
Moisture or debris found inside the joint after cover was installed.	Improper installation, damaged seal, or a crack in the cover.	Power down and LOTO the robot. Remove the cover, inspect it for damage, and replace if necessary. If undamaged, clean all surfaces and reinstall, ensuring proper fastener torque sequence.
The joint cover appears warped or discolored.	Exposure to excessive heat or incompatible chemicals.	Identify and mitigate the environmental cause. Replace the cover with a new NXB-GEN-821-002 part.
A rattling or vibrating noise is coming from the cover area.	One or more mounting fasteners have loosened due to operational vibration.	Perform a LOTO procedure. Check and re-torque all fasteners to the robot manufacturer's specification.
The new cover does not align with the mounting holes.	Incorrect part for the robot model, or debris is obstructing the mounting surface.	Verify the part number is NXB-GEN-821-002 and that it is specified for your robot model. Remove the cover and thoroughly re-clean the mounting flange.
Visible crack or fracture on the cover.	Physical impact or material fatigue from stress.	The cover's integrity is compromised. It must be replaced immediately to restore IP65 protection. Order and install a new NXB-GEN-821-002.
Scraping sound when the robot joint moves.	The cover was misaligned during installation, causing it to interfere with another part of the robot arm.	Immediately stop the robot. Perform LOTO, then loosen, re-align, and re-torque the cover. Test range of motion manually before returning to service.

Symptom	Possible Cause	Solution
The integrated seal appears pinched or is extruding from the seam.	The cover was tightened unevenly or the seal was not seated correctly before installation.	LOTO the system. Remove the cover, inspect the seal for permanent damage (replace cover if damaged), and carefully reinstall using a crisscross pattern for tightening fasteners.

## 7. Technical Specifications

Parameter	Value	Unit
Weight	1.2	kg
Material	High-Density Polyethylene (HDPE)	
IP Rating	IP65	
Country of Origin	CH	
Dimensions	280 x 280 x 155 mm	