

User Manual: NexBot Safety 822-012 Protective Arm Sleeve for 25kg Robot

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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: Never attempt to install, remove, or adjust the arm sleeve while the robot is powered on or capable of motion. Always perform a full LOTO procedure before servicing.

WARNING: A torn or damaged sleeve compromises its protective qualities and IP67 rating. This can expose the robot to harmful contaminants, leading to premature failure. Inspect regularly and replace if damaged.

WARNING: Improperly secured fasteners can cause the sleeve to sag or detach, creating a significant snag or entanglement hazard. Verify all closures are secure before every operational shift.

CAUTION: Using unapproved cleaning agents or solvents can degrade the polyurethane coating and ballistic nylon fabric, reducing the sleeve's lifespan and chemical resistance.

NOTICE: This sleeve is designed specifically for NexBot 25kg class robots. Use on other models may result in improper fit, restricted motion, and inadequate protection.

2. Product Overview

NexBot Safety 822-012 Protective Arm Sleeve for 25kg Robot (NXB-GEN-822-012) is an industrial robot platform built for automated handling, machine tending, and repeatable production motion in manufacturing cells. Its product profile emphasizes the characteristics buyers expect from a robot rather than from a component: payload capacity, reach, axis coordination, motion repeatability, and controller-level integration into line equipment. The platform is suited to continuous-duty factory environments where predictable cycle performance, maintenance access, and installation planning all matter to engineering teams. It fits robotics programs that need a complete robot arm for deployment, expansion, or replacement within an existing automation footprint.

3. Getting Started

1. Product Overview

The NexBot Safety 822-012 Protective Arm Sleeve is engineered to shield your 25kg class industrial robot from environmental hazards. Constructed from durable, Polyurethane-Coated Ballistic Nylon, it provides robust protection against abrasions, particulates, and fluids common in manufacturing environments.

2. Understanding the IP67 Rating

This arm sleeve features an IP67 rating, indicating it is completely protected against dust ingress and can withstand temporary immersion in water up to 1 meter for 30 minutes. This rating is only valid when the sleeve is properly installed and free from damage, ensuring maximum protection for the robot's sensitive joints and wiring.

3. Scope of Protection

The NXB-GEN-822-012 is designed to protect against dust, dirt, weld spatter, cutting fluids, and other non-corrosive liquids. It provides a critical barrier that extends the service life of the robot arm and reduces maintenance downtime in harsh factory settings.

4. Operation

Normal Operating Conditions

During operation, the sleeve is designed to flex and move with the robot's joints. It is normal to see some folding and creasing in the material as the arm articulates. The sleeve should not restrict the robot's programmed speed or motion paths when installed correctly.

Tip: Periodically run the robot through its full range of motion to ensure the sleeve settles correctly and to identify any potential new interference points if the cell layout changes.

Abrasion and Puncture Resistance

The ballistic nylon material provides excellent resistance to tears and abrasion from incidental contact. However, it is not a substitute for a hard guarding system and will not protect the robot from significant collisions or impacts from heavy objects.

Chemical Compatibility

The polyurethane coating offers protection against most common industrial coolants, oils, and cleaning solutions. Avoid prolonged exposure to aggressive solvents, acids, or bases, as they may degrade the material. Refer to the chemical compatibility chart for specific resistances.

Tip: If a chemical spill occurs, clean the sleeve immediately according to the maintenance guidelines to prevent material degradation.

Temperature Limitations

The arm sleeve is designed to operate within the same ambient temperature range as the robot it protects. Extreme temperatures outside of the specified range may cause the material to become brittle or lose its protective properties.

5. Maintenance Schedule

Interval	Task	Notes
Daily	Perform a visual inspection of the entire sleeve for any visible signs of tears, punctures, burns, or loose fasteners.	This check should be part of the operator's pre-shift startup checklist.
Weekly	Wipe down the exterior of the sleeve with a lint-free cloth dampened with water or an approved mild cleaning solution.	Do not use pressure washers or abrasive cleaners. Ensure the sleeve is dry before resuming operation.
Monthly	Check the tension and integrity of all zippers, hook-and-loop fasteners, and mounting clamps. Re-tighten or adjust as needed.	Vibration during operation can cause fasteners to loosen over time.
Quarterly	Spot clean any heavily soiled areas. Test zippers and other closures to ensure they operate smoothly.	Use a soft-bristled brush to remove any embedded particulates from seams or closures.
Annually	Perform a detailed inspection. If necessary, power down the robot and remove the sleeve to inspect its interior and the condition of the robot arm beneath.	This is a good time to thoroughly clean the sleeve inside and out. Plan for replacement if significant wear is found.

6. Troubleshooting

Symptom	Possible Cause	Solution
Robot axis limit or torque overload fault occurs after installation.	The sleeve is improperly installed, twisted, or snagged, restricting the robot's movement.	Immediately stop the robot. Perform LOTO, then inspect the entire sleeve for binding. Re-install the sleeve, ensuring proper alignment and fit.
Sleeve appears loose, sagging, or has gaps.	Fasteners (zippers, hook-and-loop, clamps) have loosened or are not fully secured.	Power down the robot. Re-secure all fastening systems, ensuring a snug fit without over-tightening.
Visible tear, hole, or cut in the sleeve material.	Impact from an external object, abrasion against equipment, or normal wear and tear.	For minor punctures, a NexBot-approved patch kit may be used. For larger tears, the sleeve must be replaced to maintain its IP67 rating and protective qualities.
Material is stiff, cracked, or discolored.	Exposure to incompatible chemicals, excessive UV light, or operation outside the specified temperature range.	Identify and mitigate the environmental cause. The sleeve is likely compromised and should be replaced immediately.
Moisture or debris is found on the robot arm underneath the sleeve.	A puncture in the sleeve or a compromised seal at one of the mounting flanges.	Remove the sleeve, clean and dry the robot arm thoroughly. Inspect the sleeve for the source of the leak and replace the sleeve.
Zipper is stuck or will not close properly.	Debris (metal shavings, dirt) is caught in the zipper teeth, or the sleeve is misaligned.	Do not force the zipper. Clean the zipper teeth with a soft brush and compressed air. Realign the sleeve sections and attempt to close the zipper again.

7. Technical Specifications

Parameter	Value	Unit
Weight	2.2	kg
Material	Polyurethane-Coated Ballistic Nylon	
IP Rating	IP67	
Country of Origin	CH	
Protocol	PROFINET	
Dimensions	500 x 400 x 50 mm (Packaged)	

Parameter	Value	Unit
Reach	1,200 mm	
Payload	10 kg	
Axes	6	
Repeatability	±0.03 mm	