User Manual: NexBot Robotics 611-016 Perimeter Guard Panel 2000mm x 1000mm

SKU: NXB-GEN-611-016 | 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: Never enter a guarded area while the robotic system is operational. This physical barrier is part of a larger safety system that must not be defeated or bypassed.

WARNING: Do not climb on, hang from, or place heavy loads on the perimeter guard panels. Such actions can compromise the structural integrity of the safety system and lead to failure.

WARNING: Any modification, drilling, or cutting of the NexBot Robotics 611-016 panel is strictly prohibited. Unauthorized alterations will void the warranty and may compromise its safety function.

CAUTION: Inspect the panel regularly for damage. A bent or compromised panel may not provide adequate protection and must be replaced immediately.

NOTICE: The high-visibility yellow color is an intentional safety feature. Keep the panel clean to ensure it remains easily visible.

2. Product Overview

The NexBot Robotics 611-016 Perimeter Guard Panel is a critical component for constructing robust safety fencing systems around automated robotic workcells. This panel provides a physical barrier that prevents unauthorized or accidental access to hazardous areas during robot operation, ensuring compliance with essential industrial safety standards like ISO 13857 and RIA R15.06. Constructed from heavy-duty steel with a durable, corrosion-resistant powder-coat finish in a high-visibility yellow, the 611-016 panel is engineered for demanding industrial environments. The panel features a welded 40 mm x 40 mm wire mesh grid inside a rigid 40 mm tubular steel frame. This specific mesh size is a key safety feature, carefully calculated to prevent operators from reaching through the barrier into the robot's motion envelope. At the same time, it allows for clear visibility of the automated process. This transparency is essential for monitoring, troubleshooting, and maintaining operational awareness without compromising personnel safety. With overall dimensions of 2000 mm in height and 1000 mm in width, this panel offers substantial coverage and serves as a standard building block for modular fencing layouts. Its design ensures straightforward integration with the complete NexBot Robotics safety fencing ecosystem, including system posts, hinged or sliding access doors, and integrated safety interlock mounts. The modularity of the system enables the rapid design and deployment of customized workcell enclosures tailored to specific floor plans and application requirements, from simple single-robot cells to complex, multi-robot production lines. Typical applications for the 611-016 guard panel include creating secure perimeters for high-speed pick-and-place systems, material handling and palletizing cells, robotic welding stations, and automated assembly lines. Installation is streamlined through pre-drilled mounting points that align perfectly with NexBot Robotics safety posts (sold separately), ensuring a secure and rigid assembly. Regular visual inspection for physical damage or loose hardware is recommended as part of a comprehensive plant safety protocol to maintain the integrity of the safety system. This panel is a foundational element for building a safe, compliant, and productive automated environment.

3. Getting Started

1. Product Overview

The NexBot Robotics 611-016 Perimeter Guard Panel is a static physical barrier designed for industrial safety applications. Its primary function is to prevent personnel from accessing hazardous areas created by automated machinery, in compliance with global safety standards.

2. Role in the Safety System

This panel is one component of a complete safety fencing system. It works in conjunction with posts, gates, and interlock switches to create a fully enclosed, monitored perimeter. The integrity of the entire system depends on the correct installation and maintenance of each component, including this panel.

3. Compliance and Standards

The NXB-GEN-611-016 panel is designed and constructed to help facilities meet requirements outlined in standards such as ISO 13857 (Safety of machinery - Safety distances) and RIA R15.06 (Safety Requirements for Industrial Robots and Robot Systems). Proper system design and installation are required to achieve full compliance.

4. Operation

Normal Operation

During normal operation, the guard panel is a passive component. It requires no direct user interaction. Its purpose is to remain in place as a fixed, physical barrier.

Visual Awareness

The panel's high-visibility yellow finish serves as a constant visual reminder of the boundary between the safe pedestrian area and the hazardous operational zone of the machinery. Personnel should always remain aware of and outside this boundary during automated operations.

> **Tip:** Maintaining good lighting around the perimeter fence enhances the visibility and effectiveness of the safety coloring.

Interaction with Access Gates

Personnel must never attempt to bypass the panel. All access to the robotic workcell must be done through designated gates equipped with safety interlocks. These gates are the only approved points of entry and exit.

Emergency Procedures

In an emergency, do not attempt to breach or remove the panel. Use designated emergency stops and follow established facility lockdown and rescue procedures. The panel is designed to contain hazards within the cell, and removing it could create a greater danger.

5. Maintenance Schedule

Interval	Task	Notes
Weekly	Visual Inspection: Walk the perimeter and visually inspect each panel for signs of impact, bending, warping, or significant scratches.	Pay close attention to panels located in high-traffic areas or near material loading zones.
Monthly	Check Fastener Security: Manually check the tightness of the mounting bolts connecting the panel to the posts. Re-tighten any loose hardware.	Vibration from machinery can cause fasteners to loosen over time.
Quarterly	Cleaning: Clean the panel surfaces with a mild detergent and water. This maintains high visibility and allows for easier inspection of the surface condition.	Avoid using abrasive cleaners or solvents that could damage the powder-coat finish.
Annually	Corrosion Check: Closely inspect the panel frame, welds, and mesh for any signs of rust or corrosion, particularly at the base and at fastener locations.	If corrosion is found, clean the area and apply a color-matched, rust-inhibiting touch-up paint.
Annually	Structural Alignment Verification: Check the panel's alignment and	Building settling or impacts from mobile

Interval	Task	Notes
	ensure it remains level and plumb. Verify that gaps between panels and the floor are still within safety specifications.	equipment can cause misalignment over time.
As Needed	Impact Damage Response: If a panel is struck by a forklift or other equipment, it must be immediately inspected for structural damage and replaced if bent, cracked, or compromised.	Even minor-looking damage can weaken the panel's ability to withstand a future impact.

6. Troubleshooting

Symptom	Possible Cause	Solution
Panel is vibrating or rattling during machine operation.	Mounting fasteners have become loose due to machine vibration.	Power down the workcell according to safety procedures. Use a wrench to tighten all brackets and fasteners securing the panel to the posts.
Visible rust or corrosion on the panel surface.	The powder-coat finish has been scratched or chipped, exposing the underlying steel to moisture.	Clean the affected area, remove any loose rust, and apply a suitable touch-up paint that matches the high-visibility yellow finish to restore the protective coating.
Panel is bent or deformed.	The panel has sustained a significant impact from mobile equipment (e.g., forklift) or a failed robot.	The panel's structural integrity is compromised. It must be replaced immediately. Order and install a new NXB-GEN-611-016 panel.
Gap between the panel and an adjacent gate is too large or inconsistent.	A post has shifted, or the panel has slipped in its mounting brackets.	Loosen the panel's mounting fasteners, re-align the panel to achieve the correct gap, and re-tighten all fasteners securely.
The panel finish is faded or dull.	Prolonged exposure to UV light or harsh chemicals.	Clean the panel thoroughly. If visibility is significantly reduced, the panel should be replaced to maintain safety compliance.
Difficulty removing a panel for major equipment maintenance.	Fasteners are corroded or seized.	Apply a penetrating oil to the fasteners and allow it to soak in before attempting removal. If necessary, the fasteners may need to be cut and replaced with new hardware upon reinstallation.

7. Technical Specifications

Parameter	Value	Unit
Weight	24.5	kg
Material	Powder-Coated Steel	
Country of Origin	JP	
Dimensions	2000 x 1000 x 40 mm	