

User Manual: NexBot Robotics 842-013 Conveyor Section 1.5m

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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.

WARNING: The conveyor system must be fully de-energized and locked out/tagged out before performing any cleaning, maintenance, or jam-clearing activities on this section.

WARNING: This unit weighs 45.5 kg. Use proper lifting equipment and procedures when moving or relocating the section to prevent crushing injuries or musculoskeletal damage.

CAUTION: Pinch points exist between conveyor sections, under the conveyor belt/rollers, and at all connection points. Keep hands, hair, and loose clothing away from these areas during operation.

CAUTION: Do not climb, sit, or stand on the conveyor section. It is designed only for transporting approved materials within its specified load capacity.

NOTICE: The Anodized Aluminum 6061-T6 surface is for industrial use but can be damaged by sharp impacts or abrasive materials. Do not drop tools or heavy, sharp-edged parts onto the conveyor.

2. Product Overview

The NexBot Robotics 842-013 is a standardized conveyor section engineered to facilitate reliable material transport within automated manufacturing environments. This 1.5-meter section provides a robust and flexible foundation for building or extending production lines for part transfer, assembly, inspection, and packaging applications. Its primary function is to move workpieces consistently and accurately into and out of robotic workcells, ensuring a smooth and efficient workflow. The core of the 842-013 section is its heavy-duty, anodized aluminum frame, constructed from 6061-T6 aluminum. This material choice offers an excellent strength-to-weight ratio, providing structural rigidity while remaining easy to handle and install. The frame incorporates standard T-slots along its length, allowing for the simple and secure mounting of guide rails, sensors, stops, and other peripheral equipment without the need for drilling or welding. This modularity is a key benefit, enabling rapid reconfiguration of the production line as process requirements change. With a uniform width of 500 mm, this conveyor section is designed to integrate seamlessly with other NexBot workstation equipment and is compatible with a wide range of NexBot robots, including the R-20 and C-10 series. The section is rated for a distributed load of up to 100 kg per meter, making it suitable for handling a variety of components, from small electronics to larger machined parts. The adjustable-height legs (sold separately) allow for precise leveling and ergonomic alignment with other machinery. Installation is straightforward, utilizing pre-drilled connection plates to join multiple sections together for longer transport lines. This design ensures that your material handling system can be scaled and adapted to meet future production demands.

3. Getting Started

1. Product Overview

The NexBot Robotics 842-013 is a 1.5-meter passive conveyor section designed for seamless integration into larger automated material handling systems. Its high-strength, lightweight Anodized Aluminum 6061-T6 construction provides a durable and corrosion-resistant foundation for your production line. This section serves to extend or bridge gaps within a larger powered conveyor network.

2. Intended Use

This conveyor section is intended for the transport of stable, solid workpieces in a dry, indoor industrial manufacturing environment. It is not designed for direct food contact, washdown environments, or use in explosive or highly corrosive atmospheres. Use is restricted to the load and speed ratings of the overall system into which it is integrated.

3. System Integration

As a passive mechanical component, the 842-013 relies on an external drive system to move materials. Proper performance is contingent on its correct installation and alignment with powered sections, robotic cells, and other workstation equipment. Ensure all guide rails, sensors, and safety devices from the larger system are correctly installed and configured around this section.

4. Operation

Normal Workflow

During operation, the 842-013 section acts as a stable transport surface. Workpieces should enter and exit the section smoothly, driven by the main conveyor belt or chain. Operators should ensure that parts are placed correctly onto the line to prevent them from catching on side rails or other components.

Monitoring Part Transfer

Visually monitor the transition points where parts move onto and off of the 842-013 section. Any hesitation, bumping, or twisting of the workpiece at these points may indicate a developing alignment issue that requires attention.

Tip: For tall or unstable parts, consider installing NexBot guide rails along the length of the section to improve stability and prevent tipping.

Load Capacity

The structural integrity of this section depends on respecting the load limits of the entire conveyor system. Avoid sudden shock loads, such as dropping heavy items onto the surface, as this can cause misalignment or permanent damage to the frame.

Clearing Material Jams

If a workpiece becomes jammed on this section, the entire conveyor line must be stopped using the nearest E-stop button. After following all lockout/tagout procedures, carefully remove the obstruction. Before restarting, investigate and rectify the cause of the jam to prevent recurrence.

Tip: Most jams are caused by incorrect part orientation, foreign debris on the line, or misaligned conveyor sections.

5. Maintenance Schedule

Interval	Task	Notes
Daily	Visually inspect the conveyor surface and frame for any loose debris, fluid spills, or foreign objects. Clear any obstructions.	This check should be part of the operator's pre-shift startup procedure.
Weekly	Check all visible external fasteners, including those connecting the 842-013 to adjacent sections, for tightness. Tighten if necessary.	Pay close attention to hardware in high-vibration areas.
Monthly	Clean the anodized aluminum frame and side rails using a cloth with a mild, non-abrasive industrial cleaner. This prevents buildup of grime that could interfere with sensors or moving parts.	Do not use corrosive chemicals or steel wool, as they will damage the anodized finish.

Interval	Task	Notes
Quarterly	Verify the section remains level. Place a spirit level across the width and along the length of the section and adjust the leveling feet if any deviation is found.	Settling of the floor or heavy use can cause gradual misalignment over time.
Annually	Perform a detailed structural inspection. Check all welds and connection points on the frame for any signs of stress fractures or fatigue.	This is especially important if the conveyor is subjected to loads near its maximum rated capacity.
As Needed	Inspect the condition of the moving surface (belt, chain, or rollers provided by the larger system) as it passes through this section. Address any tracking issues, tears, or damage.	The alignment of the 842-013 directly impacts the wear and performance of the system's moving components.

6. Troubleshooting

Symptom	Possible Cause	Solution
Workpieces snag or stop at the joint between sections.	The 842-013 section is misaligned or not level with the adjoining section, creating a lip.	De-energize the system. Loosen the connection hardware, re-level and align the sections until the transition is perfectly smooth, then re-tighten all hardware.
Excessive vibration or rattling noise originates from the section.	Leveling feet are not making firm contact with the floor, or connection bolts have loosened.	Verify all leveling feet are firmly on the floor and supporting the load. Check and tighten all fasteners on the frame and connection points.
The conveyor belt is tracking to one side specifically on this section.	The 842-013 section is not installed perfectly square to the rest of the conveyor line.	Perform a full re-alignment procedure. Measure diagonally from corner to corner to ensure the section is square before tightening fasteners.
Visible sag or bowing in the middle of the 1.5m span.	The section has been subjected to a load far exceeding the system's design specifications, causing permanent deformation.	Immediately stop use and remove all load. Inspect the frame for damage. The section must be replaced if bent or deformed.
Scratches or gouges appearing on the bottom of workpieces.	A loose fastener, foreign debris (like a screw or metal shaving), or a burr on the frame is protruding onto the transport surface.	Lock out the system. Carefully inspect the entire surface and frame of the 842-013 section. Remove any debris and file down any sharp points.

Symptom	Possible Cause	Solution
The section is slowly shifting position over time.	The unit was not anchored to the floor and is being moved by operational vibration or accidental contact.	Re-position the conveyor section correctly and install appropriate floor anchors through the provided mounting holes in the feet.

7. Technical Specifications

Parameter	Value	Unit
Weight	45.5	kg
Material	Anodized Aluminum 6061-T6	
Country of Origin	US	
Dimensions	1500 x 500 x 900 mm	