

User Manual: NexBot Robotics 842-005 Conveyor Section 2000mm

SKU: NXB-GEN-842-005 | 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 climb, sit, stand, or ride on the conveyor section. It is designed for material transport only and is not rated to support human weight.

WARNING: Do not modify, drill, or cut the 842-005 Conveyor Section. Unauthorized modifications will void the warranty and can compromise the structural integrity of the entire system.

WARNING: Always wear appropriate Personal Protective Equipment (PPE), including safety glasses and gloves, when installing, maintaining, or working near the conveyor system.

CAUTION: Keep the area around the conveyor clear of debris and obstructions to prevent trip hazards and ensure safe access for maintenance.

NOTICE: The anodized aluminum surface provides corrosion resistance but can be scratched by sharp or abrasive objects. Handle materials and tools with care to protect the finish.

2. Product Overview

The NexBot Robotics 842-005 Conveyor Section is a modular, high-strength component designed for seamless integration into automated material handling systems and robotic work cells. This structural section serves as the foundational element for building custom-length transport lines for assembly, inspection, and packaging applications. Constructed from a robust, hard-anodized aluminum extrusion, this conveyor section offers an excellent combination of low weight and high rigidity, ensuring stable and reliable parts transport. The profile features integrated T-slots along its length, providing versatile mounting options for guide rails, sensors, stops, and other peripheral devices without the need for drilling or welding. This modularity significantly simplifies system setup, modification, and maintenance. The conveyor section has a total length of 2000 mm and a standard width of 500 mm, making it suitable for a wide range of part sizes and production layouts. Its design supports a distributed load capacity of up to 150 kg per meter, accommodating both lightweight components and heavier workpieces common in industrial environments. This conveyor section is engineered to work alongside NexBot Robotics systems, facilitating pick-and-place, machine tending, and line-tracking operations. By establishing a consistent and predictable flow of materials, it enables robots to perform tasks with greater efficiency and accuracy. Installation is straightforward, with standardized connection points allowing multiple sections to be joined together to create extended conveyor lines tailored to specific facility requirements. The 842-005 section is delivered as a structural frame, ready for the integration of a compatible belt, rollers, and drive system.

3. Getting Started

1. Product Overview

The NexBot Robotics 842-005 is a 2000mm structural conveyor section fabricated from a high-strength, hard-anodized aluminum extrusion. It serves as a modular building block for creating custom material handling systems. Its T-slot design allows for easy integration of sensors, guides, and other accessories.

2. Intended Use

This conveyor section is designed exclusively to serve as the structural framework for a material transport system. It must be combined with a drive system, conveyor belt media, and support legs to become operational. It is not a standalone unit and has no moving parts.

3. Component Identification

The unit consists of a single, integrated aluminum extrusion with dimensions of 2000 x 500 x 150 mm. Key features include the flat top surface for belt support and the T-slots located along the sides for mounting hardware and accessories. The SKU NXB-GEN-842-005 is laser-etched on the underside of the section.

4. Operation

Load Capacity Considerations

The load capacity of the 842-005 section is a function of the support leg spacing and the type of load (distributed vs. point). Always refer to the NexBot system design guide to ensure your application does not exceed the structural limits. Distribute weight as evenly as possible.

Tip: For heavy or concentrated loads, decrease the distance between support legs to increase overall system rigidity and prevent deflection.

Material and Environmental Compatibility

The anodized aluminum surface is compatible with most plastics, cardboard, and common packaging materials. Avoid direct, prolonged contact with highly caustic or acidic substances, which may damage the anodized finish over time. This component is intended for indoor, dry industrial environments.

Using the T-Slot Mounting System

The T-slots along the 500mm sides are designed for standard T-nuts (sold separately). These slots are ideal for mounting robotic guides, photo-eye sensors, product stops, and cable management trays. Ensure any mounted accessories do not interfere with the conveyor belt path.

Tip: Plan your sensor and guide placements before final assembly to simplify wiring and reduce installation time.

Integration with Conveyor Belting

The smooth, flat top surface of the 842-005 section is designed to act as a slider bed for compatible conveyor belting. Ensure the belt material is appropriate for this type of support surface to minimize friction and wear. Proper belt tension and tracking are critical for system performance.

5. Maintenance Schedule

Interval	Task	Notes
Weekly	Visually inspect the conveyor surface for debris, fluid spills, or foreign objects that could impede product flow or damage the conveyor belt.	Clean with a soft cloth and a mild, non-abrasive, pH-neutral cleaning agent. Avoid harsh chemicals.
Monthly	Check all accessible fasteners connecting the section to support legs and adjacent sections to ensure they remain tight.	Vibration can cause fasteners to loosen over time. Re-torque if necessary, following original specifications.
Monthly	Inspect the anodized surface for deep scratches or gouges that could snag products or accelerate belt wear.	Minor cosmetic scratches are normal, but deep gouges with raised edges should be carefully deburred.
Quarterly	Verify the conveyor section remains level both along its length and across its width using a precision level.	Building foundations can settle over time. Adjust support legs as needed to re-level the surface.
Annually	Perform a thorough structural inspection. Check for any signs of bending, twisting, or stress	This is especially critical for systems operating near their maximum designed load capacity.

Interval	Task	Notes
	fractures, especially at connection points and mid-span.	
As Needed	Clean the T-slots to remove any accumulated dust or debris that could interfere with mounting or adjusting accessories.	Use compressed air (with eye protection) or a vacuum with a narrow attachment for effective cleaning.

6. Troubleshooting

Symptom	Possible Cause	Solution
Conveyor belt (sold separately) consistently tracks to one side on this section.	The conveyor section is not level side-to-side.	Use a precision level across the 500mm width of the section and adjust the support legs until the surface is perfectly level.
A visible gap or vertical lip has formed between two connected conveyor sections.	Fasteners on the joining plate have loosened due to operational vibration.	De-energize the system. Loosen the joining plate fasteners, carefully realign the sections until they are flush, and re-tighten fasteners to the correct torque specification.
Excessive frame vibration or rattling noise.	Support legs are not securely fastened to the conveyor section or anchored to the floor.	Inspect and tighten all fasteners connecting the conveyor section to the support legs. If applicable, check that floor anchors remain secure.
Products are snagging or catching at a specific point on the conveyor surface.	A deep scratch or gouge on the aluminum surface, or a misaligned joining plate.	Inspect the surface for damage. Carefully smooth any minor burrs with a fine deburring tool. Realign adjacent sections if a lip has formed at the joint.
Accessories mounted in the T-slots are loose or have shifted position.	Incorrect T-nuts are being used, or they were not sufficiently tightened during installation.	Verify that the T-nuts are the correct size and profile for the extrusion. Remove and reinstall the accessory, ensuring the T-nut is properly engaged and securely tightened.
The conveyor section appears to be visibly sagging in the middle.	The load exceeds the capacity for the current support leg spacing, or the section has been damaged by a severe impact.	Immediately stop the conveyor and remove all load. Review the system design guide to either reduce the operational load or install an additional support leg mid-span. Inspect for permanent damage.

7. Technical Specifications

Parameter	Value	Unit
Weight	55.5	kg
Material	Anodized Aluminum	
Country of Origin	US	
Dimensions	2000 x 500 x 150 mm	