

User Manual: NexBot Robotics LA013-007 6-Axis Robot Arm 120kg Payload

SKU: NXB-ROB-LA013-007 | 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: Isolate all hazardous energy before servicing NexBot Robotics LA013-007 6-Axis Robot Arm 120kg Payload; stored electrical or mechanical energy may remain present after shutdown.

WARNING: Operate NXB-ROB-LA013-007 only within its intended Robots > Articulated Robots > Large Articulated (50-200kg) duty profile and published specification limits.

CAUTION: Use only approved tools, mating parts, and installation hardware to prevent premature wear or unsafe operation.

NOTICE: Protect the product from contamination, impact, and environmental exposure beyond IP67 (Arm) / IP54 (Base) during installation and service.

2. Product Overview

The NexBot Robotics LA013-007 is a high-payload, 6-axis articulated robot arm designed for demanding industrial automation tasks requiring both strength and precision. This robot is engineered to handle substantial loads and complex movements, making it an ideal solution for automating processes in manufacturing, logistics, and assembly environments. Featuring a robust 120 kg payload capacity, the LA013-007 robot arm can effortlessly manage heavy workpieces, large end-of-arm tooling, or multiple parts in a single cycle, significantly increasing throughput. Its expansive horizontal reach of 2,702 mm provides a large, versatile work envelope, enabling it to service multiple machines, cover wide conveyor belts, or stack pallets to considerable heights. This extended reach minimizes the need for additional transfer mechanisms and optimizes floor space utilization. Precision is paramount in modern automation. The LA013-007 delivers exceptional path accuracy and a position repeatability of ± 0.05 mm, ensuring consistent quality in applications like spot welding, material dispensing, and large-part assembly. The arm's rigid construction, utilizing a combination of cast iron and high-strength aluminum alloys, minimizes vibration and deflection even during high-speed operations. The streamlined design incorporates internal routing for cables and air lines, reducing interference and wear while simplifying integration. Built for reliability in harsh industrial settings, the robot arm is sealed to an IP67 rating, providing complete protection against dust and liquid ingress. This makes it suitable for deployment in environments with coolants, dust, or washdown requirements. Common applications for the LA013-007 include heavy-duty machine tending for CNCs and injection molding machines, end-of-line palletizing and depalletizing, automotive sub-assembly handling, and foundry operations. Its combination of high payload, long reach, and durable design provides a powerful and dependable automation platform.

3. Getting Started

1. Confirm product identity

Verify the installed item is NexBot Robotics LA013-007 6-Axis Robot Arm 120kg Payload with SKU NXB-ROB-LA013-007. Cross-check the unit against project documentation before applying power or connecting it to the host system.

2. Review operating context

Understand how the product is used within the Robots > Articulated Robots > Large Articulated (50-200kg) workflow, including any upstream and downstream dependencies, service intervals, and operator responsibilities.

3. Complete initial startup

Power up the unit under controlled conditions, observe indicator states, and verify the product initializes cleanly with the expected 400-480VAC 3-Phase operating setup.

4. Operation

Normal operation

Run NexBot Robotics LA013-007 6-Axis Robot Arm 120kg Payload within the documented workload, environmental, and service conditions. Track alarms, unusual noise, heat, or vibration so corrective action can be scheduled before unplanned downtime occurs.

Interface and controls

Use the supported electrical and control interfaces to commission, monitor, and troubleshoot the device. Validate all signal mappings and control behavior after maintenance or part replacement, especially where PROFINET communication is required.

Tip: Capture a baseline of healthy status indicators after commissioning so later diagnostics can be compared quickly.

Load and application limits

Keep the product within the published ratings for speed, force, load, and environmental exposure. Where applicable, confirm mounting, routing, and attached tooling do not compromise access, cooling, or serviceability; rated payload reference: 120 kg.

Change management

Whenever hardware, firmware, wiring, or connected tooling changes, repeat the relevant verification and commissioning checks before returning the equipment to production service.

Tip: Update maintenance records immediately after any wiring, parameter, or parts change.

5. Maintenance Schedule

Interval	Task	Notes
Daily	Inspect NexBot Robotics LA013-007 6-Axis Robot Arm 120kg Payload for visible wear, damage, contamination, loose hardware, and abnormal status indicators.	Record any abnormalities before the next production cycle begins.
Monthly	Verify mounting integrity, connector condition, and cable routing or strain relief points.	Retorque or reseal hardware only to the documented service specification.
Quarterly	Review diagnostic logs, event history, and operational trends for early signs of degradation.	Escalate recurring warnings before they develop into hard faults.
Annually	Perform a full service inspection covering mechanical condition, electrical connections, and functional verification.	Coordinate annual service with planned downtime to minimize production disruption.

6. Troubleshooting

Symptom	Possible Cause	Solution
	Incoming supply, controls wiring, or commissioning	Verify power quality, wiring continuity,

Symptom	Possible Cause	Solution
Unit does not initialize or remain ready	parameters do not match the documented 400-480VAC 3-Phase configuration.	protective devices, and startup parameters before restarting the unit.
Intermittent communication or status loss	Loose connectors, damaged cabling, or interface mismatch on PROFINET.	Inspect physical connections, confirm interface settings, and replace damaged cables or connectors as needed.
Unexpected wear, vibration, or overheating	Mechanical loading, contamination, misalignment, or duty cycle exceeds the intended application conditions.	Inspect the installation, restore proper alignment and cooling, and verify the product is being used within its published operating limits.
Connected equipment performance is inconsistent	The installed product is not configured correctly for the host system or compatible robot series (R-20).	Validate the configuration, confirm compatibility, and rerun the functional verification procedure after any corrections.

7. Technical Specifications

Parameter	Value	Unit
Weight	1280.0	kg
Material	Cast Iron and Aluminum Alloy	
Voltage	400-480VAC 3-Phase	
IP Rating	IP67 (Arm) / IP54 (Base)	
Country of Origin	KR	
Protocol	PROFINET	
Dimensions	850 x 720 mm (Base Footprint)	
Reach	2,702 mm	
Payload	120 kg	
Axes	6	
Repeatability	±0.05 mm	