Installation Guide: NexBot Robotics LA013-001 6-Axis Robot Arm 120kg Payload

SKU: NXB-ROB-LA013-001 | Revision: 1.0 | Category: Robots > Articulated Robots > Large Articulated (50-200kg)

> **DANGER:** Disconnect all power sources before beginning installation. Follow lockout/tagout (LOTO) procedures per OSHA 1910.147.

1. Required Tools & Materials

- Crane or forklift with >1500 kg lifting capacity
- Heavy-duty rigging straps and shackles
- Calibrated torque wrench (up to 1000 Nm)
- M24 concrete anchor bolt installation kit
- Precision machinist's level or laser level
- Digital multimeter with industrial probes
- PROFINET industrial ethernet cable tester
- Complete set of metric industrial hex keys and wrenches

2. Pre-Installation Checks

1. Verify the concrete foundation meets the specified thickness and curing requirements to support the robot's static weight (1280 kg) and dynamic loads.
2. Confirm the availability of a dedicated, locked-out 400-480VAC 3-Phase power source with appropriate circuit protection.
3. Inspect the shipping crate and robot for any signs of damage, such as dents, broken seals, or moisture ingress, before uncrating.
4. Unpack all components and verify the contents against the packing list, ensuring the robot model is LA013-001 and the controller matches.
5. Ensure the planned installation area is clean, level, and provides sufficient clearance for the robot's full 2,655 mm reach and maintenance access.

6. Confirm the ambient environment is within the operating specifications for an IP67-rated device.

3. Installation Procedure

Step 1: Robot Positioning and Uncrating

Carefully transport the crated robot to the designated installation site using appropriate lifting equipment. Follow the uncrating instructions marked on the crate to remove packaging without damaging the robot arm, cables, or surface finish.

> **Warning:** Use a crane or forklift with a capacity rated for at least 1500 kg. Ensure all personnel maintain a safe distance during lifting and transport.

Step 2: Securing the Robot Base

Using certified rigging, hoist the LA013-001 robot and carefully position it over the pre-drilled holes in the foundation. Gently lower the robot until the 950 x 750 mm base footprint is flush with the mounting surface, ensuring correct orientation.

> **Warning:** Never stand under a suspended load. Use guide ropes to control any swinging motion during placement.

Step 3: Anchoring and Leveling

Insert the specified M24 anchor bolts through the robot base into the foundation. Use a precision level across the machined base surface and apply leveling shims if necessary to achieve a perfectly level state before applying the final torque to the anchor bolts.

Step 4: Connecting Main Power

Ensure the main power disconnect is in the OFF and locked-out position. Connect the 400-480VAC 3-Phase power supply lines to the L1, L2, and L3 terminals and the ground wire to the PE terminal inside the robot base connection panel.

> **Warning:** All electrical work must be performed by a certified electrician in accordance with local codes. Incorrect voltage or phasing will cause severe equipment damage.

Step 5: Connecting Controller and Communication Cables

Route the main robot power and signal cables from the robot base to the robot controller unit, ensuring they are protected from damage. Connect the PROFINET communication cable from the controller to the plant network switch.

Step 6: Mounting End-of-Arm-Tooling (EOAT)

Securely mount the desired EOAT to the Axis 6 tool flange. Ensure that the combined weight of the tooling and the maximum workpiece does not exceed the robot's 120 kg payload limit. Connect any required pneumatic or electrical lines for the EOAT.

> **Warning:** An improperly secured or overweight EOAT can detach during operation, causing a catastrophic failure.

Step 7: Initial Power-Up and Mastering

Remove all tools and personnel from the work area. Power on the system and follow the software-guided procedure to master the robot. This process establishes the precise zero position for all six axes, which is critical for achieving the specified ±0.06 mm repeatability.

4. Post-Installation Verification

1. Perform a thorough visual inspection of all mechanical bolts and electrical connections to confirm they are secure.
2. Power on the controller and verify that no critical faults or alarms are present on the teach pendant.
3. Establish a connection to the robot over PROFINET and verify that the device is visible and communicating with the master PLC.

4. In manual mode and at low speed (10%), jog each of the 6 axes individually to their positive and negative software limits to ensure free and smooth movement.
5. Test all safety circuits, including all connected emergency stop buttons, safety gates, and light curtains, to confirm they stop robot motion as intended.
6. Execute a simple pre-written test program without a workpiece to verify the robot's ability to follow a programmed path correctly.

> **Note:** For technical support, contact your authorized service provider or visit https://robotics.barca.group/support.
